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\*\*\* THIS SECTION IS CURRENT THROUGH THE 1995 LEGISLATIVE SESSION \*\*\*

PUBLIC HEALTH LAW  
ARTICLE 11 Public Water Supplies; Sewerage and Sewage Control  
TITLE I Potable Waters

NY CLS Pub Health § 1100 (1995)

§ 1100. Rules and regulations of the department

1. The department may make rules and regulations for the protection from contamination of any or all public supplies of potable waters and water supplies of the state or United States, institutions, parks, reservations or posts and their sources within the state, and the commissioner of environmental protection of the city of New York and the board of water supply of the city of New York may make such rules and regulations subject to the approval of the department for the protection from contamination of any or all public supplies of potable waters and their sources within the state where the same constitute a part of the source of the public water supply of said city.

2. Every such rule or regulation shall be published at least once in each week for two consecutive weeks, in at least one newspaper of the county where the waters to which it relates are located. The cost of such publication shall be paid by the corporation, municipality, state or United States or state or United States institution, park, reservation or post benefited by the protection of the water supply to which the rule or regulation published relates.

3. The affidavit of the printer, publisher or proprietor of the newspaper in which such rule or regulation is published shall be filed, together with the rule or regulation published, in the county clerk's office of such county, and such affidavit and rule and regulation shall be conclusive evidence of such publication, and of all the facts therein stated in all courts and places.

4. All rules and regulations heretofore duly made and published for the sanitary protection of public water supplies, pursuant to chapter five hundred forty-three of the laws of eighteen hundred eighty-five, and chapter six hundred sixty-one of the laws of eighteen hundred ninety-three, as amended, are hereby legalized, ratified, confirmed and continued in force, until new rules and regulations become operative.

5. This section shall not be construed to repeal or affect any of the provisions of chapter three hundred seventy-eight of the laws of eighteen hundred ninety-seven, or its amendments.

HISTORY:

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\*\*\* ARCHIVE DATA \*\*\*

\*\*\* THIS SECTION IS CURRENT THROUGH 1997 SESSION \*\*\*

PUBLIC HEALTH LAW  
ARTICLE 11. PUBLIC WATER SUPPLIES; SEWERAGE AND SEWAGE CONTROL  
TITLE I. POTABLE WATERS

NY CLS Pub Health § 1104 (1998)

§ 1104. Sewage removal or purification; condemnation of property

1. When the department or the commissioner of environmental protection of the city of New York, or the board of water supply of the city of New York, shall, for the protection of a water supply from contamination, makes orders or regulations the execution of which will require or make necessary the construction and maintenance of any system of sewerage, or a change thereof, in or for any village or hamlet, whether incorporated or unincorporated, or the execution of which will require the providing of some public means of removal or purification of sewage, the municipality, corporation, state or United States or state or United States institution, park, reservation or post owning the waterworks benefited thereby shall, at its own expense, construct and maintain such system of sewerage, or change thereof, and provide and maintain such means of removal and purification of sewage and such works or means of sewage disposal as shall be approved by the department. For such purpose said municipality, corporation, state or United States or state or United States institution, park, reservation or post, may acquire, by condemnation the necessary real estate or interest therein or the easement or use thereof whether now used for public or private purposes.

2. When the execution of any such regulations of the department, or the commissioner of environmental protection of the city of New York, or the board of water supply of the city of New York will occasion or require the removal of any building or buildings, the municipality, corporation, state or state institution, park, reservation or post owning the waterworks benefited thereby shall, at its own expense, remove such buildings and pay to the owner thereof all damages occasioned by such removal.

3. When the execution of any such regulation will injuriously affect any property the municipality, corporation, state or state institution, park, reservation or post owning the waterworks benefited thereby shall make just and adequate compensation for the property so taken or injured and for all injuries caused to the legitimate use of operation of such property.

4. Until such construction or change of such system or systems of sewerage, and the providing of such means of removal or purification of sewage, and until such works or means of sewage disposal and the removal of any buildings are so made

by the municipality, corporation, state or state institution, park, reservation or post owning the waterworks to be benefited thereby at its own expense, and until, except in the case of a municipality, state or state institution, park, reservation or post, the corporation owning the waterworks benefited shall make just and adequate payment for all injuries to property and for all injuries § caused to the legitimate use or operation of such property, there shall be no action or proceeding taken by any such municipality, officer, board, person, commission or corporation against any person or corporation for the violation of any regulation of the department under this article, and no person or corporation shall be considered to have violated or refused to obey any such rule or regulation.

HISTORY: Add, L 1953, ch 879, eff June 1, 1954.

Derived from former § 73.

Sub 1, amd, L 1969, ch 407, § 82, L 1978, ch 655, § 92, eff July 25, 1978.

Sub 2, amd, L 1969, ch 407, § 82, L 1978, ch 655, § 92, eff July 25, 1978.

NOTES:

See 1969 note under § 572.

RESEARCH REFERENCES AND PRACTICE AIDS:

51 NY Jur 2d, Eminent Domain §§ 27, 28

108 NY Jur 2d, Water § 635

63 NY Jur (Rev ed), Waterworks and Water Companies § 90

56 Am Jur 2d, Municipal Corporations, Counties, and Other Political Subdivisions § 569-574

ANNOTATIONS:

Mandamus to compel ascertainment of compensation for property taken or for injuries inflicted under the power of eminent domain. 91 ALR2d 991

Depreciation in value, from project for which land is condemned, as a factor in fixing compensation. 5 ALR3d 901

Compensation for diminution in value of the remainder of property resulting from the taking or use of adjoining land of others for the same undertaking. 59 ALR3d 488

Consideration of fact that landowner's remaining land will be subject to special assessment in fixing severance damages. 59 ALR3d 534

Measure of damages payable on condemnation of real property by federal government. 60 L Ed 2d 1107

When is taking of property for "public use" so as to be permissible under federal constitution if just compensation is provided--Supreme Court cases. 81 L Ed 2d 931

TEXTS:

The New York Environmental Law Series Ch 27

#### CASE NOTES

A board of health may abate a nuisance of a public character and it may exercise every power necessary to this end, and as an incident to this power it may make a permanent improvement calculated to prevent a recurrence of the nuisance, provided the work bears a legitimate and necessary relation to the

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PUBLIC HEALTH LAW  
ARTICLE 11. PUBLIC WATER SUPPLIES; SEWERAGE AND SEWAGE CONTROL  
TITLE I. POTABLE WATERS

NY CLS Pub Health § 1105 (1998)

§ 1105. Sewage removal or purification; rights of property owners

1. The owner of any building the removal of which is occasioned or required, or which has been removed by any rule or regulation of the department, or the commissioner of environmental protection of the city of New York, or the board of water supply of the city of New York, made under the provisions of this article, and all persons whose rights of property are injuriously affected by the enforcement of any such rule or regulation, shall have a cause of action against the municipality or corporation, and shall have the right to present a claim against and to the state or state institution, park, reservation or post owning the waterworks benefited by the enforcement of such rule or regulation, for all damages occasioned or sustained by such removal or enforcement, including all injuries caused to the legitimate use or operation of such property.

2. (a) An action for such damages may be brought against such municipality or corporation in accordance with the provisions of the eminent domain procedure law.

(b) [Deleted]

3. [Deleted]

HISTORY: Add, L 1953, ch 879; Amd, L 1977, ch 840, § 72, eff July 1, 1978. (Laws 1977, ch 841, changed the effective date from Jan 1, 1978 to July 1, 1978.).

Derived from former § 73.

Sub 1, amd, L 1969, ch 407, § 83 L 1978, ch 655, § 93, eff July 25, 1978.

Sub 2, par (a), amd, L 1977, ch 840, § 72, eff July 1, 1978.

Sub 2, par (b), deleted, L 1977, ch 840, § 2, eff July 1, 1978.

Sub 3, deleted, L 1977, ch 840, § 72, eff July 1, 1978.

NOTES:

See 1969 note under § 572.

See 1977 note under § 401.

RESEARCH REFERENCES AND PRACTICE AIDS:

108 NY Jur 2d, Water § 635

63 NY Jur (Rev ed), Waterworks and Water Companies § 90

## Chapter 18

# *Protection from Contamination of the New York City Water Supply and Its Sources*

§18-01	Definitions
§18-02	Distances
§18-03	Deposit, Storage and Disposal of Human Excreta
§18-04	House and Similar Wastes
§18-05	Dead Animals, Manure, Garbage and Other Refuse
§18-06	Places Where Dung May Accumulate
§18-07	Manufacturing and Other Similar Wastes
§18-08	Washing, Bathing, Wading and Swimming
§18-09	Interments
§18-10	General Clause
§18-11	Penalties

### §18-01 Definitions.

**Department.** The term "Department" means the Department of Environmental Protection of the City of New York, acting by its Commissioner or such other official or officials as he shall from time-to-time in writing designate to execute or supervise the execution of these rules.

**Reservoir.** The term "reservoir" includes any natural or artificial lake or pond.

**Water Course.** The term "water course" includes aqueducts, pipe lines, natural or artificial streams or channels through which water flows continually, intermittently or occasionally.

**Watersheds.** The "watersheds" herein referred to are those from which the City of New York, or any private water company serving any portion of said City, obtains any part of its water supply. All springs, marshes, water courses and reservoirs herein referred to are such as are located on a watershed described above.

**§18-02 Distances.** (a) When any limiting distance is mentioned, it shall refer to the distance by horizontal measurement from the high water mark of spring, marsh, water source or reservoir, except that where there is a precipitous bank, such limiting distance shall refer to the distance by horizontal measurement from the top of such bank.

(b) Any limiting distance may be decreased where in the opinion of the Department, this can be done without danger to water supply, or where the limits or size of the property concerned render this necessary; and any limiting distance may be increased where in the opinion of the Department, this is necessary for the protection of the water supply against contamination.

**§18-03 Deposit, Storage and Disposal of Human Excreta.**

(a) No human excreta shall be deposited in any spring, marsh, water course or reservoir.

(b) No human excreta shall be deposited on the ground within two hundred and fifty (250) feet of any spring, marsh, water course or reservoir, nor anywhere in such manner that they can be washed into the same by rain, melting snow or otherwise.

(c) No privy or other place for the deposit or storage of human excreta, except water-flushed toilets, connected by a suitable water-tight pipe to a sewage disposal system that has been approved by the Department shall be constructed, located or maintained within fifty (50) feet of any spring, marsh, water course or reservoir, or at such place or in such manner as to contaminate or threaten to contaminate the same.

(d) Beyond said distance of fifty (50) feet, and for a further distance of two hundred (200) feet from a spring, marsh, water course or reservoir, no human excreta shall be deposited or stored except

(1) in water-flushed toilets of the character above described or

(2) in privies with a water-tight and flyproof vault, or other approved receptacle.

(e) In emptying a vault, or other approved receptacle, or transferring its contents to a transportable receptacle, all necessary care shall be exercised to prevent the contamination of any spring, marsh, water course or reservoir. All such transportable receptacles shall be provided with tightly fitting covers, securely fastened during the process of removal to the place of ultimate disposal. After each use, such receptacles shall be thoroughly cleaned and deodorized.

(f) All places of ultimate disposal of human excreta, other than sewage disposal plants, shall be located not less than two hundred and fifty (250) feet from any spring, marsh, water course or reservoir. In the absence of any other method of disposal approved by the Department, the excreta shall be buried in trenches of moderate depth, so located that there shall be no contamination of the ground water.

(g) All sewage disposal systems shall be operated and maintained in a manner approved by the Department. Before any existing sewage disposal system is altered or any new sewage disposal system is constructed, the plans in relation thereto shall have been first approved by the Department.

**§18-04 House and Similar Wastes.** No house slops, sink, laundry, garage or stable wastes, swimming pool discharges, nor any other polluted liquid shall be thrown or discharged into any spring, marsh, water course or reservoir, nor shall any such matter be thrown or discharged upon or into the ground within two hundred and fifty (250) feet thereof, unless it shall have been previously purified in a manner deemed adequate by the Department (as through treatment with an approved disinfectant or filtration through the soil).

**§18-05 Dead Animals, Manure, Garbage and Other Refuse.** No dead animal, manure, garbage, compost, vegetable or any putrescible matters shall be deposited in any spring, marsh, water course or reservoir, nor on nor in the ground within one hundred (100) feet thereof nor anywhere in such manner that it can be washed by rain, melting snow or otherwise over the surface of the ground into any spring, marsh, water course or reservoir.

**§18-06 Places Where Dung May Accumulate.** All stables, pigsties, poultry or barnyards, slaughter houses, standing places for horses or cattle, and all other places where animal dung or urine may accumulate, shall be so arranged and maintained that no washings or drainage therefrom shall flow (whether through open or covered drains or channels or otherwise) into any spring, marsh, water course or reservoir unless such matter shall have been previously purified in a manner deemed adequate by the Department.

**§18-07 Manufacturing and Other Similar Wastes.** No filth, decaying or putrescible matter, toxic substances, waste products, liquid or trade waste from any industrial, commercial or institutional plant or establishment of any other kind shall be discharged, drained or washed into any spring, marsh, water course or reservoir, unless such matter shall have been previously purified in a manner deemed adequate by the Department.

**§18-08 Washing, Bathing, Wading and Swimming.** No clothes or unclean objects of any kind shall be washed in any spring, marsh, water course or reservoir. Bathing, wading and swimming are prohibited in any water course or reservoir owned by the City of New York.

**§18-09 Interments.** No interments shall be made within one hundred and thirty (130) feet of any spring, marsh, water course or reservoir, nor in such manner and place as to result in any pollution thereof. In the case of a reservoir whose waters are delivered directly into an aqueduct or pipe line for transportation to the City of New York, such distance shall be three hundred (300) feet.

**§18-10 General Clause.** In addition to observing the foregoing requirements, all persons living on or visiting a watershed shall refrain from any action, though not hereinbefore specified, which may result in contamination of any portion of the water supply of the City of New York.

**§18-11 Penalties.** For the violation of or non-compliance with any of the above rules and regulations relating to a permanent source or supply or act of contamination of any public supply of potable water or sources of such supply of the City of New York, the following penalties are hereby fixed in accordance with the provisions of §11-01 of the Public Health Law, viz.:

For a violation of the provisions of §§18-03, 18-04, 18-05, 18-07 or 18-09, a penalty of twenty-five dollars (\$25.00) for the first violation and a penalty of fifty dollars (\$50.00) for each additional violation.

For a violation of the provisions of §§18-09 and 18-10 a penalty of ten dollars (\$10.00) for the first violation and a penalty of twenty dollars (\$20.00) for each additional violation.



## § 141.71

(2) For a system which collects fewer than 40 samples/month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

(b) Any fecal coliform-positive repeat sample or *E. coli*-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in § 141.32, this is a violation that may pose an acute risk to health.

(c) A public water system must determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms.

(d) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section:

(1) Protection of wells from contamination by coliforms by appropriate placement and construction;

(2) Maintenance of a disinfectant residual throughout the distribution system;

(3) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, and continual maintenance of positive water pressure in all parts of the distribution system;

(4) Filtration and/or disinfection of surface water, as described in subpart H, or disinfection of ground water using strong oxidants such as chlorine, chlorine dioxide, or ozone; and

(5) For systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.

[54 FR 27566, June 29, 1989; 55 FR 25064, June 19, 1990]

### Subpart H—Filtration and Disinfection

SOURCE: 54 FR 27527, June 29, 1989, unless otherwise noted.

#### § 141.70 General requirements.

(a) The requirements of this subpart H constitute national primary drinking water regulations. These regulations establish criteria under which filtration is required as a treatment technique for

public water systems supplied by a surface water source and public water systems supplied by a ground water source under the direct influence of surface water. In addition, these regulations establish treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, and turbidity. Each public water system with a surface water source or a ground water source under the direct influence of surface water must provide treatment of that source water that complies with these treatment technique requirements. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99.9 percent (3-log) removal and/or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer; and

(2) At least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.

(b) A public water system using a surface water source or a ground water source under the direct influence of surface water is considered to be in compliance with the requirements of paragraph (a) of this section if:

(1) It meets the requirements for avoiding filtration in § 141.71 and the disinfection requirements in § 141.72(a); or

(2) It meets the filtration requirements in § 141.73 and the disinfection requirements in § 141.72(b).

(c) Each public water system using a surface water source or a ground water source under the direct influence of surface water must be operated by qualified personnel who meet the requirements specified by the State.

#### § 141.71 Criteria for avoiding filtration.

A public water system that uses a surface water source must meet all of the conditions of paragraphs (a) and (b) of this section, and is subject to paragraph (c) of this section, beginning December 30, 1991, unless the State has determined, in writing pursuant to § 1412(b)(7)(C)(iii), that filtration is required. A public water system that uses a ground water source under the direct influence of surface water must meet all of the conditions of paragraphs (a) and (b) of this section and is subject to paragraph (c) of this section, beginning 18 months after the State determines that it is under the direct influence of surface water, or December 30, 1991, whichever is later, unless the

## § 141.71

State has determined, in writing pursuant to § 1412(b)(7)(C)(iii), that filtration is required. If the State determines in writing pursuant to § 1412(b)(7)(C)(iii) before December 30, 1991, that filtration is required, the system must have installed filtration and meet the criteria for filtered systems specified in §§ 141.72(b) and 141.73 by June 29, 1993. Within 18 months of the failure of a system using surface water or a ground water source under the direct influence of surface water to meet any one of the requirements of paragraphs (a) and (b) of this section or after June 29, 1993, whichever is later, the system must have installed filtration and meet the criteria for filtered systems specified in §§ 141.72(b) and 141.73.

(a) *Source water quality conditions.* (1) The fecal coliform concentration must be equal to or less than 20/100 ml, or the total coliform concentration must be equal to or less than 100/100 ml (measured as specified in § 141.74 (a) (1) and (2) and (b)(1)), in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurements made for the 6 previous months that the system served water to the public on an ongoing basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion, in this paragraph must be met.

(2) The turbidity level cannot exceed 5 NTU (measured as specified in § 141.74 (a)(4) and (b)(2)) in representative samples of the source water immediately prior to the first or only point of disinfectant application unless: (i) the State determines that any such event was caused by circumstances that were unusual and unpredictable; and (ii) as a result of any such event, there have not been more than two events in the past 12 months the system served water to the public, or more than five events in the past 120 months the system served water to the public, in which the turbidity level exceeded 5 NTU. An "event" is a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(b) *Site-specific conditions.* (1)(i) The public water system must meet the requirements of § 141.72(a)(1) at least 11 of the 12 previous months that the system served water to the public, on an ongoing basis, unless the system fails to meet the requirements during 2 of the 12 previous months that the system served water to the public, and the State determines that at least one of these failures was caused by circumstances that were unusual and unpredictable.

(ii) The public water system must meet the requirements of § 141.72(a)(2) at all times the system serves water to the public.

(iii) The public water system must meet the requirements of § 141.72(a)(3) at all times the system serves water to the public unless the State determines that any such failure was caused by circumstances that were unusual and unpredictable.

(iv) The public water system must meet the requirements of § 141.72(a)(4) on an ongoing basis unless the State determines that failure to meet these requirements was not caused by a deficiency in treatment of the source water.

(2) The public water system must maintain a watershed control program which minimizes the potential for contamination by *Giardia lamblia* cysts and viruses in the source water. The State must determine whether the watershed control program is adequate to meet this goal. The adequacy of a program to limit potential contamination by *Giardia lamblia* cysts and viruses must be based on: the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed. At a minimum, the watershed control program must:

(i) Characterize the watershed hydrology and land ownership;

(ii) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(iii) Monitor the occurrence of activities which may have an adverse effect on source water quality.

The public water system must demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the source water. The public water system must submit an annual report to the State that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and describes how the public water system expects to address them. For systems using a ground water source under the direct influence of surface water, an approved wellhead protection program developed under section 1428 of the Safe Drinking Water Act may be used, if the State deems it appropriate, to meet these requirements.

(3) The public water system must be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. Either the State or a party approved by the State must conduct the on-site inspection. The inspection must be conducted by competent individuals such as sanitary and civil engineers, sanitarians, or technicians who have experience

and knowledge about the operation and maintenance of a public water system, and who have a sound understanding of public health principles and waterborne diseases. A report of the on-site inspection summarizing all findings must be prepared every year. The on-site inspection must indicate to the State's satisfaction that the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection must include:

- (i) A review of the effectiveness of the watershed control program;
- (ii) A review of the physical condition of the source intake and how well it is protected;
- (iii) A review of the system's equipment maintenance program to ensure there is low probability for failure of the disinfection process;
- (iv) An inspection of the disinfection equipment for physical deterioration;
- (v) A review of operating procedures;
- (vi) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and
- (vii) Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.

(4) The public water system must not have been identified as a source of a waterborne disease outbreak, or if it has been so identified, the system must have been modified sufficiently to prevent another such occurrence, as determined by the State.

(5) The public water system must comply with the maximum contaminant level (MCL) for total coliforms in § 141.63 at least 11 months of the 12 previous months that the system served water to the public, on an ongoing basis, unless the State determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.

(6) The public water system must comply with the requirements for trihalomethanes in §§ 141.12 and 141.30.

(c) *Treatment technique violations.* (1) A system that (i) fails to meet any one of the criteria in paragraphs (a) and (b) of this section and/or which the State has determined that filtration is required, in writing pursuant to § 1412(b)(7)(C)(iii), and (ii) fails to install filtration by the date specified in the introductory paragraph of this section is in violation of a treatment technique requirement.

(2) A system that has not installed filtration is in violation of a treatment technique requirement if:

- (i) The turbidity level (measured as specified in § 141.74(a)(4) and (b)(2)) in a representative sample of the source water immediately prior to the first or only point of disinfection application exceeds 5 NTU; or

- (ii) The system is identified as a source of a waterborne disease outbreak.

**§ 141.72 Disinfection.**

A public water system that uses a surface water source and does not provide filtration treatment must provide the disinfection treatment specified in paragraph (a) of this section beginning December 30, 1991, unless the State determines that filtration is required in writing pursuant to § 1412(b)(7)(C)(iii). A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must provide disinfection treatment specified in paragraph (a) of this section beginning December 30, 1991, or 18 months after the State determines that the ground water source is under the influence of surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to § 1412(b)(7)(C)(iii). If the State has determined that filtration is required, the system must comply with any interim disinfection requirements the State deems necessary before filtration is installed. A system that uses a surface water source that provides filtration treatment must provide the disinfection treatment specified in paragraph (b) of this section beginning June 29, 1993, or beginning when filtration is installed, whichever is later. A system that uses a ground water source under the direct influence of surface water and provides filtration treatment must provide disinfection treatment as specified in paragraph (b) of this section by June 29, 1993, or beginning when filtration is installed, whichever is later. Failure to meet any requirement of this section after the applicable date specified in this introductory paragraph is a treatment technique violation.

(a) *Disinfection requirements for public water systems that do not provide filtration.* Each public water system that does not provide filtration treatment must provide disinfection treatment as follows:

- (1) The disinfection treatment must be sufficient to ensure at least 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts and 99.99 percent (4-log) inactivation of viruses, every day the system serves water to the public, except any one day each month. Each day a system serves water to the public, the public water system must calculate the CT value(s) from the system's treatment parameters, using the procedure specified in § 141.74(b)(3), and determine whether this value(s) is sufficient to achieve the specified inactivation rates for *Giardia lamblia* cysts and viruses. If a system uses a disinfectant other than chlorine, the system may demonstrate to the State, through the use of a State-approved protocol for on-site disinfection challenge studies or other information

(F) Definitions

(1) Agency means any local, state or federal department, agency, board, public benefit corporation, public authority, commission, district, or governing body, including any city, county, and other political subdivision of the State.

(2) Alteration or modification means any change in physical circumstances, location, plans, design, site, capacity, treatment standard or method, or other change in a regulated activity.

(3) Approval has the meaning set forth in Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR) Part 617.

(4) Aquatic herbicide means any substance used for the control or elimination of aquatic vegetation.

(5) Base flow means visible sustained or fair weather runoff. Base flow is composed of groundwater inflow.

(6) Best management practices means methods, measures or practices determined to be the most practical and effective in preventing or reducing the contamination to or degradation of the water supply, the contravention of the water quality standards set forth in Part 128.3, and the impairment of the use of the water supply for drinking, culinary, or food processing purposes. Best management practices include, but are not limited to, structural and nonstructural controls and operations and maintenance procedures, that can be applied before, during or after regulated activities to achieve the purposes stated herein.

(7) City means the City of New York.

(8) Commissioner means the Commissioner of the New York City Department of Environmental Protection or its successors.

(9) Construction activity means any building, demolition, renovation, replacement, restoration, rehabilitation or alteration of any new or existing structure which involves the disturbance of at least 10,000 square feet of total land area.

(10) Contamination means the introduction of any pollutant to the water supply.

(11) Controlled lake means a lake from which the City may withdraw water pursuant to rights acquired by the City or as a right of ownership. The controlled lakes are: Kirk Lake, Lake Gleneida and Lake Gilead (all in the Croton System).

(12) Degradation means a process of reduction or deterioration of the water quality of the water supply, including the process of eutrophication.

(13) Deicing substances means the solid compounds or the solutions that are commonly used for the abatement of winter road ice, including, but not limited to, sodium chloride, calcium chloride and sand.

(14) Department means the New York City Department of Environmental Protection or its successors.

(15) Discharge means the disposal, deposit, injection, emission, application, dumping, spilling, leaking, washing off, running off, draining or placing of any solid, semi-solid, liquid, or any other non-gaseous waste or other substance into or onto any land or water so that such waste or other substance may directly or

indirectly enter into any watercourse, reservoir, reservoir inflow, controlled lake or groundwater.

(16) Effluent means water or wastewater that flows out from a wastewater treatment plant or other individual facility or treatment process.

(17) Erosion means the increased or concentrated transport of sediment, by such physical agents as wind or water, that is caused by such practices including, but not limited to, the disturbance of ground cover including stripping or removing vegetation, construction, or tilling.

(18) Eutrophication means the process or set of processes driven by excessive inorganic nutrients, organic matter, and/or silt addition, that leads to increased biological production and/or decreased volume in the water supply.

(19) Excessive inflow/infiltration means that water which, when it enters a sewer system, causes: (i) the capacity of the wastewater treatment plant to be exceeded, or (ii) the strength of the sewage influent to the wastewater treatment plant to be diluted to a level that adversely affects the efficacy of the treatment process.

(20) Extended detention means a practice designed to store stormwater runoff by collection as a temporary pool of water, usually having less than a 24 hour residence time, including practices used to control peak discharge rates, and which provides gravity settling of pollutants.

(21) Fertilizer means any commercially produced mixture,

generally containing phosphorus, nitrogen and/or potassium, that is applied to the ground to increase the supply of nutrients to plants.

(22) Groundwater means those waters in saturated zones. Saturated zones are any extensive portions of the earth's crust that contain sufficient water to fill all interconnected voids or pore spaces.

(23) Hazardous material means any liquid, solid, semi-solid, or gaseous substance, excluding petroleum products, which:

(a) is a hazardous waste as defined in 6 NYCRR Part 371 (July 15, 1988); or

(b) is listed, irrespective of reportable quantity, in 6 NYCRR 597.2, Table 1, (July 15, 1988).

(24) Impervious means resistant to penetration by moisture. Impervious materials include, but are not limited to, paving, concrete, asphalt, roofs, or other hard surfacing material.

(25) Intermittent stream means a stream that periodically goes dry or whose lowest annual mean discharge during seven consecutive days with a recurrence interval of ten years (MA7CD/10) is less than 0.1 cubic foot per second and which periodically receives groundwater inflow.

(26) Junkyard means an area where four or more unregistered motor vehicles are being accumulated for purposes of disposal, resale of used parts or reclaiming certain materials such as metal, glass, fabric or other material.

(27) Landfill means a disposal facility or part of a facility

where solid waste, hazardous waste, or their residue after treatment is placed in or on land and at which such waste will remain after closure.

(28) Limiting distance means the shortest horizontal distance from the nearest point of a structure or object to the contour line coinciding with the reservoir spillway elevation or to the edge, margin or steep bank forming the ordinary high water mark of a watercourse, reservoir, reservoir inflow or controlled lake.

(29) Nonconforming use means a building, structure or use of land, lawfully existing at the time of the effective date of these regulations or amendments thereto, which does not conform to the requirements of these regulations.

(30) Nonpoint source has the meaning set forth in Environmental Conservation Law (ECL) 17-1403.

(31) Nutrient means an element or compound absorbed by bacteria, phytoplankton and other aquatic organisms which stimulates growth in such organisms and includes, but is not limited to: nitrogen (as ammonia, nitrate, nitrite and urea), phosphorus (as phosphates) and potassium.

(32) Owner or Operator has the meaning set forth in ECL 17-1003.

(33) Pathogenic means a material that contains disease-producing organisms, including but not limited to: bacteria, fungi, protozoa, viruses, Giardia, Cryptosporidium, or other material that is infectious.

(34) Person has the meaning set forth in ECL 17-0105.



(35) Pesticide has the meaning set forth in 6 NYCRR Part 325.1.

(36) Petroleum product has the meaning set forth in Navigation Law section 172.

(37) Point source means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft from which pollutants are or may be discharged.

(38) Pollutant has the meaning set forth in ECL 17-0105, and also includes hazardous materials as defined in these regulations.

(39) Proposed activity means any activity which, in conjunction with a regulated activity may result in a cumulative impact to the water quality of the reservoir, reservoir inflow, controlled lake or watercourse downstream of the activity, and

(a) for which any approval, permit, rezoning, variance, application or other authorization or approval is currently pending before the State of New York, the City, any locality or any agency or subdivision of the foregoing; or

(b) of which the person desiring to conduct a regulated activity has actual notice.

(40) Radioactive material has the meaning set forth in 6 NYCRR Part 380.

(41) Regulated activity means any action in the watershed listed under Part 128.2, including such actions which are alterations or modifications of existing structures or activities.

Excluded from this definition are:

(a) construction activities which involve the disturbance of less than 10,000 square feet of total land area except where otherwise noted in these regulations,

(b) activities relating only to alterations or modifications to existing single family homes, unless otherwise noted in these regulations, or

(c) noncommercial activities undertaken by individuals which may result in unintended, unanticipated, insignificant discharges of pollutants into the water supply.

(42) Reservoir means any natural or artificial impoundment owned or controlled by the City which is tributary to the City water supply system.

(43) Reservoir basin means a section of a reservoir separated from the remainder of the reservoir either by the natural geological shape of the basin or by a causeway, dam, embankment or other obstruction.

(44) Reservoir inflow means any stream segment which is tributary to a reservoir and lies within 500 feet of the reservoir, or within the boundary of water supply lands, whichever is greater.

(45) Sewerage system has the meaning set forth in ECL 17-0105.

(46) Sediment means organic or mineral solids or colloids that are transported by the process of hydrologic, hydraulic, or atmospheric transport, including but not limited to erosion.

(47) Sewage has the meaning set forth in ECL 17-0105, and shall also be referred to as "wastewater".

(48) Sewage disposal system means any system used for collecting, treating and disposing of sewage, including, but not limited to, wastewater treatment plants (WWTPs) and subsurface sewage disposal systems (SSDSs), including those of individual households.

(49) Solid waste has the meaning set forth in ECL 27-0701.

(50) Stormwater means that portion of precipitation that is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, that flows off the land by surface runoff or by subsurface interflow to watercourses, reservoirs, reservoir inflows and controlled lakes, i.e., that portion of the water supplied to surface drainage that is not groundwater or base flow.

(51) Subsurface sewage disposal system (SSDS) means any facility installed for the purpose of treating, neutralizing, stabilizing or disposing of sewage below the surface of the ground.

(52) Wastewater Treatment Plant (WWTP) means any facility installed for the purpose of treating, neutralizing, stabilizing or disposing of sewage.

(53) Water supply means the New York City public water supply system, and includes all watercourses, reservoirs, reservoir inflows and controlled lakes tributary thereto.

(54) Water supply lands means those land areas within the watershed that are owned, leased or controlled by the City of New York.

(55) Watercourse means any perennial river, stream, creek,

spring, pond, lake, wetland, or natural or man-made depression (including established drainage ways for carrying stormwater runoff) that is sustained primarily through base flow and is tributary to the water supply. Watercourse shall not include reservoir, reservoir inflow, and controlled lake, as defined in these regulations, nor shall it include drainage areas which contain water only during and immediately after a rainstorm.

(56) Watershed shall mean the land area contributing water to the water supply.

(57) Wetland has the meaning set forth in ECL 24-0107.

128.2      REGULATED ACTIVITIES AND GENERAL STANDARDS FOR

REGULATED ACTIVITIES

(A) Regulated Activities

Regulated activities fall into four categories:

(1) Those which are prohibited or otherwise restricted in the watershed;

(2) Those which require review and approval by the Department;

(3) Those which require notification and/or reporting to the Department;

(4) Those which take place on water supply lands. Standards and requirements for regulated activities which take place on water supply lands are in Part 128.7 of these regulations.

(B) General Standards for Regulated Activities

The following general standards set forth in this subsection apply to all regulated activities unless specifically noted otherwise, whether or not the regulated activity also requires the review and approval of the Department. In addition, certain regulated activities must meet additional standards set forth in this subsection or in other subsections where noted.

(1) All regulated activities, whether alone or in conjunction with other proposed activities, shall be planned, designed,

into compliance with these regulations within a specified period of their effective date, are exempted from the requirements of paragraphs (iv) and (v) of this subsection.

(i) No nonconforming use shall be enlarged, extended, altered or modified in any manner without the prior review and approval of the Department, provided that a nonconforming use may be reduced in size or extent without such review and approval unless such reduction could pose a threat to the quality of the water supply.

(ii) In the event that a nonconforming use is discontinued for a period of six months or more, it shall permanently desist.

(iii) A nonconforming use may not be changed to a different nonconforming use.

(iv) Within 60 days of the effective date of these regulations, the owner, operator, or person in charge of a nonconforming use<sup>3</sup> shall provide written notification to the Department of the nonconforming use at the addresses listed in Part 128.1(E), and may also be required to submit periodic reports describing the nature and extent of the use, any intended sale of the property on which the use is located, and any results of local, State or Federally mandated, or local, State or Federally conducted, tests or audits. In addition, such owner, operator, or person shall provide to the Department copies of any reports or applications submitted to local, State and Federal agencies.

(v) The Department may require the owner, operator, or person in charge of a nonconforming use to submit for review and

approval by the Department within ninety days, a plan to protect the water supply from potential threat to the quality of the water supply posed by such use. Such plan may include, but shall not be limited to, restriction or management of activities, use of best management practices, drainage control, development of procedures (including disposal procedures) and training of employees. The decisions whether to require submission of a plan and whether to approve a plan shall be based upon the risk of contamination to or degradation of the water supply, the contravention of the water quality standards in Part 128.3, and the impairment of use of the water supply for drinking, culinary or food processing purposes, and the burden upon the nonconforming use.

(vi) Should a nonconforming use cause a contamination to the water supply, be a source of degradation of the water supply, or otherwise cause a significant threat to the life, health, and safety of the water supply users, the Commissioner may order that such use, in whole or in part, either conform to the requirements of these regulations immediately or within a limited period of time at the Commissioner's discretion, or be discontinued immediately.

(C) Prohibited or Otherwise Restricted Regulated Activities

(1) Pathogenic Materials

Discharge of pathogenic materials is prohibited.

(2) Hazardous and Radioactive Materials

(a) Discharge of hazardous materials is prohibited.

(b) Discharge of radioactive materials is prohibited.

(c) The storage of greater than [200] gallons or [1,600] pounds of hazardous materials within [500; 1,000] feet of any watercourse or within [1,000; 2,500] of any reservoir, reservoir inflow or controlled lake is prohibited.

(d) Nonconforming facilities, including activities taking place at such facilities, shall not be subject to the provisions of subparagraph (c).

(3) Petroleum Products

(a) Discharge of petroleum products is prohibited.

(b)(i) The storage of any amount of petroleum products within [250; 500] feet of any watercourse or within [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake is prohibited, except that a volume reasonable for on-site use for heating purposes may be stored within these distances so long as such storage is in a separate container, whether above ground or underground, inside a solid structure which can contain 125% of the container's capacity.

(ii) The storage of greater than 1,100 gallons of petroleum products within the watershed is prohibited except in compliance with the requirements of 6 NYCRR Parts 612, 613, and 614.

(iii) Nonconforming facilities shall not be subject to



the provisions of subparagraph (b)(i).

(4) Sewage Disposal Systems

(a) Wastewater treatment plant (WWTP) discharges directly into any reservoir, reservoir inflow, intermittent stream, wetland, or controlled lake are prohibited.

(b) Construction of any seepage unit or tile field for subsurface sewage disposal systems (SSDSs) within [250; 500] feet of a watercourse or within [500; 1,000] feet of a reservoir, reservoir inflow or controlled lake is prohibited. The only SSDS discharges permitted less than [250; 500] feet from a watercourse or [500; 1,000] feet from a reservoir, reservoir inflow or controlled lake are sand-filtered, disinfected effluents. Such sand-filtered disinfected subsurface effluents, however, must maintain a minimum limiting distance to all reservoirs, reservoir inflows, controlled lakes and watercourses of 100 feet.

(c) Combined sewerage systems are prohibited. A combined sewerage system is a hydraulic structure used for conveying both sewage and stormwater.

(d) Nonconforming SSDSs or combined sewerage systems shall not be subject to the provisions of subparagraphs (b) and (c).

(5) Storm Sewers and Miscellaneous Outfalls

(a)(i) Any storm sewer outlet, other than a storm sewer outlet serving a single or two-family dwelling, directly into or within 100 feet of any watercourse, reservoir, reservoir inflow or

controlled lake without extended detention is prohibited.

(ii) Nonconforming storm sewer outlets shall not be subject to the provisions of this subparagraph.

(b)(i) Discharge of untreated effluent by any vehicle washing facility into any watercourse, reservoir, reservoir inflow or controlled lake is prohibited. A vehicle washing facility is a facility at which the washing of cars, trucks, buses, trains, etc. regularly occurs.

(ii) Nonconforming vehicle washing facilities shall not be subject to the provisions of this subparagraph on the effective date of these regulations. However, owners and operators of such vehicle washing facilities shall ensure that all effluent discharged from such facilities is treated beginning no later than one year from the effective date of these regulations. The treatment required for a particular facility will vary depending upon the nature and volume of the effluent, and the site of discharge of the effluent.

(c)(i) Any other point source discharge other than WWTP point source discharges in conformance with the standards in these regulations, into a (1) reservoir or controlled lake, (2) reservoir inflow, or (3) wetland is prohibited.

(ii) Nonconforming point source discharges shall not be subject to the provisions of this subparagraph.

#### (6) Creation of Impervious Surfaces

(a) The rendering impervious of any amount of land area

within 100 feet of any watercourse, reservoir, reservoir inflow or controlled lake is prohibited, except for the construction of roads as provided herein.

(b) The rendering impervious of more than ten percent (10%) of any lot or 2,500 square feet, whichever is greater, in the area within 100 to [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake, or in an area within 100 to [250; 500] feet of any watercourse is prohibited. Multiple parcels of real property that are contiguous with each other and under common ownership at the time that land is rendered impervious shall constitute one lot for purposes of this subparagraph.

(c) The rendering impervious of any amount of land area within 100 feet of a reservoir, reservoir inflow, or controlled lake or within 50 feet of any watercourse for the purposes of construction of roads is prohibited.

(d) Nonconforming impervious surfaces shall not be subject to the provisions of subparagraphs (a), (b) and (c).

(e) The provisions of this paragraph shall not apply to bridges, or to stream crossings constructed under a valid permit from the New York State Department of Environmental Conservation.

(7) Siting of Landfills and Junkyards

(a) Siting of a landfill within [500; 1,000] feet of a watercourse or within [1,000; 2,500] feet of a reservoir, reservoir inflow or controlled lake is prohibited.

(b) Siting of a junkyard within [250; 500] feet of a

watercourse or within [500; 1,000] feet of a reservoir, reservoir inflow or controlled lake is prohibited.

(c) Nonconforming landfills and junkyards shall not be subject to the provisions of this paragraph.

(8) Solid Waste Discharge and Sewage Receptacles

(a) Discharge of solid waste into any watercourse, reservoir, reservoir inflow or controlled lake is prohibited.

(b) Discharge of solid waste within [250; 500] feet of any watercourse or within [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake is prohibited.

(c) Emptying or transferring the contents of a sewage vault or other sewage receptacle into any reservoir, reservoir inflow, controlled lake or watercourse or in such manner that may cause the contamination to or degradation of the water supply, the contravention of the water quality standards set forth in Part 128.3, or the impairment of the use of the water supply for drinking, culinary, or food processing purposes is prohibited.

(d) Use of transportable sewage receptacles without tightly fitting covers which are securely fastened during transport is prohibited.

(e) Discharge of human excreta into any watercourse, reservoir, reservoir inflow or controlled lake or within [250; 500] feet of any watercourse or within [250; 1,000] feet of any reservoir, reservoir inflow or controlled lake is prohibited.

(9) Agricultural Activities: Storage of Animal Wastes and Artificial Fertilizers, Discharge of Agricultural Drainage and Grazing of Stock

(a) Open storage of animal wastes or artificial fertilizers within [100; 500] feet of any watercourse or within [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake is prohibited.

(b) Discharge of drainage from barnyards, feedlots, and yarding areas into any watercourse, reservoir, reservoir inflow or controlled lake or within [100; 500] feet of any watercourse or within [250; 1,000] feet of any reservoir, reservoir inflow or controlled lake is prohibited.

(c) Spreading of manure or artificial fertilizers on any land surface within 100 feet of any watercourse or within [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake is prohibited.

(d) Management of areas for the grazing of stock must be practiced so as to eliminate the surface runoff of stormwater from grazing areas into any watercourse, reservoir, reservoir inflow or controlled lake, in accordance with the following criteria:

- (i) placement of dikes or berms around the grazing area;
- or
- (ii) conformance with other best management practices.

(e) Nonconforming facilities, including activities taking place at such facilities, shall not be subject to the provisions of this paragraph until one year from the effective date of these regulations.

(10) Use of Construction and Demolition Fill

(a) Use of solid waste that is not construction and demolition debris as defined in 6 NYCRR Subpart 360-1, for fill in construction activities in the watershed is prohibited.

(11) Pesticides and Fertilizers

(a) Discharges from the washing of pesticide or fertilizer application equipment into any watercourse, reservoir, reservoir inflow or controlled lake are prohibited.

(b) Use of water directly from a reservoir, reservoir inflow or controlled lake for pesticide or fertilizer make-up is prohibited.

(c) Use of water directly from a watercourse for pesticide or fertilizer make-up without the use of an anti-siphon device is prohibited.

(12) Snow Disposal and Deicing Substances

(a) Disposal of snow removed from streets, roads, and parking areas directly into a watercourse, reservoir, reservoir inflow or controlled lake is prohibited.

(b)(i) Commercial, industrial, or governmental storage of

road deicing substances, including but not limited to chloride salts and abrasive chloride-salt mixtures, but not including sand, is prohibited, except in a watertight ventilated structure constructed on an impervious surface that prevents seepage and runoff. To protect the structure's contents from exposure to weather, all entrances without permanent doors shall be covered with a properly secured waterproof material. Any outside areas used for loading, handling or mixing shall be constructed of impervious material, sealed and diked in such manner so as to prevent seepage and runoff from entering any watercourse, reservoir, reservoir inflow or controlled lake.

(ii) Commercial, industrial, or governmental storage of abrasive deicing substances, including, but not limited to sand, is prohibited, except in a manner which prevents uncontrolled runoff into any watercourse, reservoir, reservoir inflow, or controlled lake.

(iii) Nonconforming storage facilities shall not be subject to the provisions of this subparagraph until one year from the effective date of these regulations.

(c) Use of deicing substances by commercial, industrial, or governmental entities is restricted to the amounts necessary to protect public safety as set forth in Appendix B.

### (13) Cemeteries

New cemeteries shall not be established, and boundaries of existing cemeteries shall not be expanded within [250; 500] feet of

any watercourse or within [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake.

(D) Regulated Activities Which Require Departmental Review and Approval

The following activities require prior notification to, review by, and written approval of the Department. Standards for regulated activities which require review and/or approval by the Department are listed in Part 128.4 of these regulations, in addition to section B of Part 128.2. Application procedures for regulated activities which require review and approval of the Department are listed in Part 128.5 of these regulations.

(1) Sewage Disposal and Collection

(a) In addition to any review and approval by either the New York State Department of Health or the New York State Department of Environmental Conservation, or any other agency, design, construction, maintenance and operation plans for sewage disposal systems, sewerage systems, and service connections to sewerage systems and sewage disposal systems in the watershed are subject to the prior review and approval of the Department.

(b) In addition, the Department shall be notified as set forth in Part 128.5, of any proposed alteration or modification or permit renewal of a sewage disposal system, sewerage system, or service connection to a sewage disposal system or sewerage system,



and such system or connection shall require the review and approval of the Department.

(c) Except as provided in subparagraph (b), nonconforming sewage disposal systems, sewerage systems, and service connections to sewage disposal systems and sewerage systems shall not be subject to the provisions of this paragraph.

(2) Stormwater Runoff Management and Stormwater Drainage Control Structures

(a) In addition to any review and approval by the New York State Department of Health or the New York State Department of Environmental Conservation or any other agency, the design, construction, maintenance and operation plans for stormwater drainage control and management of stormwater runoff are subject to the prior review and approval of the Department when the activity is:

(i) a construction activity as defined in these regulations, which involves land clearing or grading on slopes of 10% or greater; or

(ii) a land clearing or land grading project involving five or more acres; or

(iii) a residential development consisting of five or more dwelling units, unless each dwelling unit is on a lot of two or more acres; or

(iv) an industrial and/or commercial project which results in an impervious surface(s) involving one or more acres.

(b) In addition, the Department shall be notified as set forth in Part 128.5 of any alteration or modification of any stormwater drainage control structures or activity, and such alteration or modification shall require the review and approval of the Department.

(c) Except as provided in subparagraph (b), nonconforming stormwater drainage control structures or activities shall not be subject to the provisions of this paragraph.

(3) Application of Pesticides

Commercial, industrial, or governmental application of pesticides by utilities, highway departments, landowners or others shall not be performed within [100; 500] feet of any watercourse or within [500; 1,000] feet of any reservoir, reservoir inflow or controlled lake without the prior review and approval of the Department, provided that, this paragraph shall not apply to applications of pesticides within fully enclosed structures or to the application of pesticides to active cropland done in accordance with DEC and other applicable regulations.

(4) Application of Aquatic Herbicides

Application of aquatic herbicides in lakes, ponds or other watercourses requires the Department's prior review and approval.

(5) Use of Road Deicing Substances

Commercial, industrial, or governmental application of road

deicing substances other than sodium chloride, calcium chloride, or sand, requires the prior review and approval of the Department.

(E) Regulated Activities Which Require Notification and/or Reporting

The following activities require notification and/or reporting to the Department. Where such notification or reporting must be made in writing, it must be sent by certified mail by the person, owner or operator proposing to engage in the regulated activity to the local representative in the portion of the watershed in which the regulated activity takes place at the addresses listed in Part 128.1(E)(2)-(4), as well as by certified mail to the Office of the Chief, Environmental Programs, Sources Division, listed in Part 128.1(E)(1). Where such notification must be made by telephone, it must be made by the person, owner or operator proposing to engage in the regulated activity to the local representative at the telephone number listed in Part 128.1(E)(2)-(4) as well as to the Office of the Chief, Environmental Programs, Sources Division, at the telephone number listed in Part 128.1(E)(1).

Except as otherwise provided, this subpart shall apply to existing or ongoing activities or facilities, provided, however, that except as provided in paragraph (1) of this subpart, no reporting pursuant to this subpart shall be required of existing or ongoing activities or facilities until 60 days after the effective date of these regulations.

TO: DEPARTMENT OF ENVIRONMENT AND PLANNING  
10/15/77

(1) Releases, Discharges or Spills  
~~petroleum products to or from any local, State or Federal agency.~~

All releases, discharges or spills of petroleum products, hazardous materials, or of any other substances which are required to be reported pursuant to local, State or Federal law, shall also be reported to the Department by telephone immediately when the person, owner, or operator knows or has reason to know that such release, discharge or spill has occurred, and in writing within five days.

(2) Storage and Use of Hazardous Materials

(a) Any person, owner, or operator required to provide notification of or to obtain any approval for the storage or use of a hazardous material to or from any local, State, or Federal agency, shall also notify the Department in writing including the method of storage and security of the facility, and of the quantity stored and intended use of the materials.

(b) Whenever such person, owner, or operator applies for any permit, registration or any other approval or any renewal or modification pursuant to local, State, or Federal law, the person, owner, or operator shall notify the Department in writing, within ten days of submission of an application, and include a copy of the complete application in such notification.

(3) Storage and Use of Radioactive Materials

(a) Any person, owner, or operator required to provide notification of or to obtain any approval for the storage or use of

radioactive materials to or from any local, State, or Federal agency, shall also notify the Department in writing including the method of storage and security of the facility, and the quantity stored and the intended use of the materials.

(b) Whenever such person, owner, or operator applies for any permit, registration or other approval or any renewal or modification pursuant to local, State, or Federal law, the person, owner, or operator shall notify the Department in writing, within ten days of submission of an application, and include a copy of the complete application in such notification.

(4) Storage and Use of Pesticides

(a) Any person, owner, operator, or commercial or private applicator as defined in 6 NYCRR Part 325, required to provide notification of or to obtain approval for the storage and use of pesticides to or from any local, State, or Federal agency, shall also notify the Department in writing including the method of storage and security of the facility and the quantity stored and intended use of the pesticides.

(b) Whenever such person, owner, or operator applies for any permit, registration or other approval or any renewal or modification pursuant to local, State, or Federal law, the person, owner, operator, or commercial or private applicator shall notify the Department in writing within ten days of submission of an application, and include a copy of the complete application in such notification.

(5) Storage and Use of Deicing Substances

Any commercial, industrial, or governmental applicators of deicing substances to roadways shall submit annual reports to the Department on April 1st of each year, detailing the amounts, locations and names of the substances applied and stored, the method of storage and security of the facility. Notwithstanding the preceding sentence, annual reports for the year in which these regulations become effective shall be due 180 days after the effective date of these regulations.

(6) Storage of Petroleum Products

(a) Any person, owner, or operator required to provide notification of or to obtain any approval for the storage of petroleum products to or from any local, State, or Federal agency, shall notify the Department in writing including the method of storage and security of the facility and the quantity stored and intended use of the petroleum product.

(b) Whenever such person, owner, or operator applies for any permit, registration or other approval or any renewal or modification pursuant to local, State, or Federal law, such person, owner, or operator shall notify the Department in writing, within ten days of submission of an application, and include a copy of the complete application in such notification.

## WHICH REQUIRE DEPARTMENTAL REVIEW AND APPROVAL

(A) Standards for Wastewater Treatment Plants (WWTPs)(1) Catskill and Delaware Watersheds--Treatment Requirements

(a) No visible effluent discharges are permitted from any wastewater treatment plant (WWTP) located in the Catskill or Delaware watersheds, except where the ultrafiltration process is being used, as defined in this subpart.

(b) The Department requires that all WWTPs provide the following treatment processes (the definitions in this subsection apply to all uses of these terms in this Part):

(i) Preliminary treatment means a series of processes designed to treat raw sewage to make it suitable for primary treatment. These processes consist of coarse screening, comminuting (i.e., grinding), flow measurement, and grit removal.

(ii) Primary treatment means a process in which sewage which has received preliminary treatment is passed through a tank at a rate which allows coarse solids to settle out and be removed.

(iii) Secondary treatment means a biological process using oxidation to decompose and stabilize the putrescible matter remaining in sewage after it has received primary treatment.

(iv) Nutrient removal means a process designed to reduce the amounts of phosphorus and nitrogen in sewage to levels that

will not cause eutrophication in receiving waters.

(v) Sand filtration means a process using sand as a granular media to filter sewage to further stabilize and decompose the putrescible matter remaining after secondary treatment and nutrient removal.

(vi) Disinfection means a process in which a strong oxidizing agent is applied to sewage to destroy or inactivate pathogenic organisms remaining after it has been filtered.

(vii) Subsurface discharge means discharge to a tile field or leaching pit--a process designed to allow filtered, disinfected sewage effluent to be discharged into the ground as a means of ultimate disposal.

(c) If an applicant can demonstrate, to the satisfaction of the Department, that the nature of the site makes a subsurface discharge impossible, an approved ultrafiltration process may be substituted for such discharge. Ultrafiltration means a process in which sand filtered, disinfected, sewage effluent passes through a membrane filter having a molecular weight cutoff rate of 100,000 or less, to make it suitable for discharge into a receiving stream on the watershed.



(2) Croton Watershed--Treatment Requirements

(a) All WWTPs located in the Croton watershed must provide the following treatment:

- (i) Preliminary treatment
- (ii) Primary treatment
- (iii) Secondary treatment
- (iv) Nutrient removal
- (v) Sand filtration
- (vi) Disinfection
- (vii) Ultrafiltration

(b) If an applicant can demonstrate, to the satisfaction of the Department, that the site conditions are such that subsurface discharge of filtered, disinfected effluent is possible, such discharge may be substituted for ultrafiltration.

(3) Design Standards for Wastewater Treatment Plants

(a) The criteria used by the Department to approve any proposed WWTP shall include, but shall not be limited to, the following published standards:

(i) Design Standards for Wastewater Treatment Works, Intermediate Sized Sewerage Facilities, New York State Department of Environmental Conservation, 1988.

(ii) Recommended Standards for Sewage Works, Great Lakes--Upper Mississippi River Board of Sanitary Engineers, 1978.

(b) The Department shall not approve a WWTP, nor any modification or alteration of a WWTP should there be excessive

inflow/infiltration into a sewerage system entering the plant.

(c) The Department shall not approve any WWTP which will discharge directly into an intermittent stream.

(d) The Department shall not approve any WWTP which will discharge directly into a wetland.

(e) The Department's approval of a WWTP shall not replace the approval by any other agency.

(4) Operation and Maintenance of Wastewater Treatment Plants

All WWTPs located within the watershed shall be operated and maintained in a manner approved by the Department, such that treatment of discharges includes, but is not limited to, removal of solids, nutrients, and other substances to a level where such discharges do not constitute a source of contamination to or degradation of the water supply, do not cause a contravention of the water quality standards set forth in Part 128.3, do not impair the use of the water supply for drinking, culinary or food processing purposes, and meet the specific requirements of this subpart.

(5) Reliability of the Treatment Process

Uninterrupted reliable operation of WWTPs in the watershed is critical. All WWTPs must meet the following requirements to insure such reliable operation.

(a) All WWTPs must be provided with standby power units sufficient to run the entire plant in the event of utility power

failure.

(b) All WWTPs shall be located above the 100-year flood plain. If an applicant can demonstrate, to the satisfaction of the Department, that such location is not possible, and that the plant must be located within the 100-year flood plain, such plant shall be designed to withstand all damage from a 100-year flood and remain fully operational in a 50-year flood.

(c) All disinfection equipment shall include a backup system capable of handling 100% of the plant flow.

(d) In WWTPs of less than 50,000 gpd capacity, there shall be a minimum of two (2) sand filters, each rated to handle the full plant flow. In WWTPs of greater than 50,000 gpd capacity, there shall be a minimum of three (3) sand filters; each rated to handle one-half (1/2) of the full plant flow.

(e) All operators of WWTPs in the watershed shall, prior to commencement of operation of such WWTPs, and as a condition of approval by the Department, deposit with the Department a surety bond in an amount sufficient to insure the full and faithful performance of the operators of the WWTP, their successors and assigns, with regard to their obligation to properly maintain the WWTP in accordance with all requirements of law and according to the conditions set by the Department in its approval. The Commissioner may, in his or her discretion, increase the amount of such surety bond, but not to exceed such amount. Such bond shall be the most satisfactory available on the market, and the terms and conditions of such bond shall be consistent with standard

performance bonds required by the Department. The bond shall not expire until such time as the WWTP ceases to operate.

The Commissioner may authorize the provision of other security, including cash, if the Commissioner finds that compliance with the bond requirement is not reasonably possible and the public interest would be served by such authorization.

(B) Standards for Subsurface Sewage Disposal Systems (SSDS)

(1)(a) The criteria used by the Department to approve any proposed SSDS shall include, but shall not be limited to, the following published standards:

(i) Design Standards for Wastewater Treatment Works, Intermediate Sized Sewerage Facilities. New York State Department of Environmental Conservation, 1988.

(ii) Waste Treatment Handbook--Individual Household Systems, New York State Department of Health, 1983.

(iii) Recommended Standards for Individual Sewage Systems, Great Lakes--Upper Mississippi River Board of State Sanitary Engineers, 1980.

(b) For the counties of Dutchess, Ulster and Westchester the following other design standards, when they are more stringent, are also used by the Department to review and approve plans for SSDSs to be located in those counties.

(i) In Dutchess County, for systems less than 1,000 gallons per day, the Department uses the Dutchess County Health

Department's Policies on Septic Systems Rules and Regulations for Individual Systems.

(ii) In Ulster County, the Department uses the Ulster County Health Department's Recommendations for a Small Sewage Disposal System.

(iii) In Westchester County, the Department uses the Westchester County Health Bulletin SD 22, Design and Installation of Separate Sewage Disposal Systems, 1966.

(c) The Department's approval of a SSDS shall not replace the approval by any other agency.

(2) Seepage units and tile fields of SSDSs must meet the limiting distance requirements of Part 128.2(C)(4)(b).

(3) Where the percolation rate is 60 minutes/inch or slower, the use of SSDSs is prohibited.

(4) Where the percolation rate is 3 minutes/inch or faster, the use of SSDSs is subject to further restrictions required by site conditions.

(5) Any new SSDS shall be located outside the 100-year flood plain.

(6) Inflow/infiltration to, or exfiltration (i.e., leaking of sewage) from, a sewerage system tributary to a SSDS is prohibited.

In addition, the SSDS itself shall be designed to prevent the entrance of groundwater or the direct inflow of surface water.

(7) When a subsurface discharge system is processing filtered, disinfected, WWTP plant effluent, the loading rate to the absorption trench or absorption bed may be twenty-five percent (25%) greater than that required when processing septic tank effluent.

(8) No sewage disposal system for individual households shall be permitted to discharge visible effluent.

(9) The use of pumping, mechanical dosing or other mechanical devices for new individual household SSDSs is prohibited.

#### (C) Standards for Sewerage Systems

(1)(a) The criteria used by the Department to approve any sewerage system designed for the collection of sewage for conveyance to a sewage disposal system shall include, but shall not be limited to, the following published standards.

(i) Design Standards for Wastewater Treatment Works, Intermediate Sized Sewerage Facilities, New York State Department of Environmental Conservation, 1988.

(ii) Recommended Standards for Sewage Works, the Great Lakes--Upper Mississippi River Board of Sanitary Engineers, 1978.

(b) The Department's approval of a sewerage system shall not replace the approval by any other agency.

(2) Sewerage systems shall be maintained in such manner as to prevent excessive inflow/infiltration to, or exfiltration from, a sewerage system.

(3) Service connections to sewerage systems or sewage disposal systems will be prohibited if the capacity of the sewerage system or the sewage disposal system has been met or the sewage disposal system cannot process the type of sewage to be conveyed through the connection or there is excessive inflow/infiltration to, or exfiltration from, said sewerage system or sewage disposal system.

(D) Standards for Stormwater Runoff Management and Stormwater Drainage Control Structures

(1) Stormwater runoff shall not contravene the water quality standards set forth in Part 128.3, nor shall it cause contamination, degradation, additional erosion or new stream erosion, or its ensuing increased or concentrated sediment accumulation in the receiving watercourse, reservoir, reservoir inflow or controlled lake, or the impairment of the use of the water supply for drinking, culinary or food processing purposes, and stormwater drainage control structures shall be designed and maintained to achieve these standards.

(2)(a) The criteria used by the Department to approve stormwater runoff management and stormwater drainage control structure plans shall include, but shall not be limited to, the following criteria.

(i) New York State Department of Environmental Conservation, Stormwater Management Guidelines for New Development, Division of Water Technical and Operation Guidance Series (5.1.8), April, 1990. (Appendix C)

(3) In addition to the criteria set forth in Appendix C, analysis of storm water flow and management shall take into account the 25- and 50-year storms, and shall be based on the worst storm duration for the particular drainage area.

(4) Where a sediment basin is used in stormwater management, sediment shall be removed from the sediment basin when the sediment storage volume of the basin is reduced to 50% of its designed sediment storage volume. The removed sediment shall not be allowed to enter any watercourse, reservoir, reservoir inflow or controlled lake.

(5) Notwithstanding any other provision of these regulations, wetlands shall not be used as sediment basins or stormwater detention areas except for artificial wetlands specifically constructed and approved by the Department for such purpose.



(E) Standards for Application of Pesticides and Aquatic Herbicides

(1)(a) At least three (3) days prior to the application of any pesticides pursuant to Departmental approval under Part 128.2(D)(3), notification shall be given to the Department. The Department shall be given full access and opportunity to make all inquiries, observations, inspections, tests, and any other actions it deems necessary to the monitoring and control of the application activity.

(b) At least seven (7) days prior to the application of any aquatic herbicides pursuant to Departmental approval under Part 128.2(D)(4), notification shall be given to the Department. The Department shall be given full access and opportunity to make all inquiries, observations, inspections, tests, and any other actions it deems necessary to the monitoring and control of the application activity.

(2) Only pesticides registered for use by the Department of Environmental Conservation or the United States Environmental Protection Agency (USEPA) shall be applied.

(3) All chemicals and containers shall be removed from the site of application at the end of each day on which such application occurs. If the Department determines that additional cleanup is required, the work shall be performed by the person(s) who engaged in the application activity.

(4) The Department may require the modification or suspension of the application activity, if the Department determines that such suspension or modification is necessary to prevent the contamination to or degradation of the water supply, or that the application activity may cause a contravention of the water quality standards set forth in Part 128.3, or may cause the impairment of the use of the water supply for drinking, culinary or food processing purposes.

EXHIBIT E

**DEP**

April 19, 1993

Mr. Richard Caspe, P.E.  
Director  
Water Management Division/Region 2  
U. S. Department of Environmental Protection  
26 Federal Plaza  
New York, NY 10278

New York City  
Department of  
Environmental  
Protection

Dear Mr. Caspe:

This office has received the "Report of the Expert Panel on New York City's Water Supply." We will be filing detailed technical and factual comments at the end of May. However, we believe it would be helpful if we submitted this brief overview now.

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The report is a significant disappointment, less for its conclusion which, given the biases towards filtration that the Expert Panel's Chairman so candidly and consistently stated, was clearly foreordained, than for the manner in which it is stated. The Panel's report is a simple advocacy document and, as such, is riddled with the inconsistencies in logic and factual understanding that generally characterize such attempts to rationalize a preconceived position.

ALBERT F. APPLETON  
Commissioner

I am highlighting below just a few of the problems that make the report's character clear.

The report claims the City is in only marginal compliance with objective source water standards and then further alleges that there is little evidence that DEP can achieve a cohesive and effective watershed control program. It then turns around and argues that DEP has overstated the cost of filtration because it could use "modified filtration" because of the high quality of its water and because watershed protection would keep down the cost.

The report gives an ad terrorem characterization of the presence of Giardia and Cryptosporidium in city water. The report signally fails to acknowledge that these organisms are present in nearly all of the country's water supplies, although its own chart (see pages 26 & 27) clearly shows that presence in both source and filtered waters. While at least one full year of data needs to be collected before any long-term conclusions can be drawn, the results of DEP's monitoring to date are very positive, since they show only a minimal presence of Giardia or Cryptosporidium in the City's source waters. The panel report also fails to disclose that the use of standard filtration practices does not preclude all cysts from entering a drinking water distribution system. In fact, the ability of filtration works to protect against cysts is directly related to the quality of source

water, and some of the country's most significant outbreaks of cryptosporidiosis have taken place in filtered water systems.

Filtration works, particularly those with poor source water, must be operated 365 days a year, 24 hours a day forever without error. In discussions, the Panel was extremely dismissive of the City's concern that filtration created a public health vulnerability because of the dependence it would place on error free human management. The report completely ignores the issue. Recent events have dramatically illuminated the City's concern and reaffirm that the best safeguard of public health is to protect pristine water.

The Panel argues that currently City water consumers are protected only by disinfection and that the issue is whether or not that is sufficient. That completely misstates the issue. As pointed out many times, the City's unique system of reservoirs serves as a giant natural outdoor filter system. The real issue is whether or not the City will protect the integrity of that natural filtration system, which now produces water of outstanding quality and taste, or place its principal reliance on a concrete and steel filtration system instead.

Time and again when discussing a condition they are concerned with in the New York City watershed, the Panel fails to note that it is already being addressed by the City's watershed protection program. The Panel never identifies a condition that cannot be dealt with faster and more decisively by this program instead of relying on filtration, nor does it ever do that analysis from either a risk based or cost effective perspective.

Though the Panel argues for both filtration and watershed protection, the unpleasant reality has been that once a water system adopts filtration, filtration becomes its primary public health strategy. The reasons for this are obvious: cost and political and managerial convenience. The City is already under significant pressures to relax many watershed regulations in the Croton watershed because of its plans to filter that water supply. As a practical matter, the use of filtration has meant, not the addition of a barrier, but the subtraction of the multiple barriers of watershed protection and their replacement by a single barrier technology.

As standard sedimentation and media filtration systems have been required to meet new standards for controlling water borne cysts, synthetic chemicals, and disinfection byproduct precursors, the need for aggressive watershed

protection is becoming increasingly apparent. Today the City has water that exceeds the parameters of most filtered waters because of the protection afforded by its watershed. It is clear from the most elementary levels of risk management that vigilant protection of the watershed will serve the City far better than any filtration works will.

The City does not object to filtration as such and supports it in appropriate circumstances. The City will be filtering the Croton watershed, despite the fact it meets all Safe Drinking Water Act parameters. What the City finds objectionable about the Expert Panel report is its knee jerk devotion to filtration technology in any circumstances, and its torturing of the factual record to justify this preconceived position.

All three of New York City's reservoir systems -- the Catskill, Delaware and Croton -- produce water that consistently and comfortably meets all drinking water quality standards. The only exception is a seasonal one when the Croton system sometimes fails to meet secondary quality standards for color and iron, due to natural chemical processes that can occur in the Croton Reservoir.

In addition to monitoring required under the Surface Water Treatment Rule (SWTR), DEP maintains an extensive program to monitor water quality within the City. This monitoring program not only meets but far exceeds State and Federal requirements. Sampling is conducted seven days a week at 235 distribution points located throughout the City. These samples are analyzed for numerous microbiological, chemical and physical parameters. This extensive analytical program provides detailed daily information on water quality conditions throughout New York City. DEP also collects and analyzes samples to test for compliance with Federal and State organic and inorganic chemical standards.

Overall, more than 15,000 samples are collected and 300,000 analyses performed by DEP staff every year. The City continues to meet all Federal and State standards in all categories. EPA comprehensively reviewed the City's raw water data before granting its January 19, 1993, avoidance determination and confirmed these findings.

The panel alleges that New York City's water only "marginally" meets SWTR source water and disinfection requirements and raises concerns about fecal coliform. To meet the avoidance criteria, the USEPA not only demands excellent source water quality, as measured in coliform and turbidity levels, but also specifies a strict disinfection regime as a backup to kill any residual disease-causing

organisms. Since these requirements have gone into effect, DEP has continuously met both the source water quality and disinfection requirements.

To ensure that a water supplier's basic source water--the water entering the system immediately before it is disinfected--is of acceptable quality, a fecal coliform limit was set. The Federal regulations say that source water must contain fewer than 20 coliforms per 100 millimeters in at least 90% of the samples collected during any 6-month period.

Although only required to collect five samples per week, DEP collects coliform samples every day from the two Catskill/Delaware source water points at the Kensico Reservoir. In addition, although not called for by the SWTR, DEP also collects daily coliform samples from the Croton source water entry point at Croton Lake.

Since our source waters always meet the coliform standard of the SWTR, it is hard to understand why the Report categorizes the City's water quality as marginal.

It is equally difficult to understand why our disinfection procedures for the control of giardia are categorized as "often marginal" when here too compliance is achieved 100% of the time.

To meet the avoidance criteria, the USEPA not only demands excellent source water quality but also specifies a strict disinfection regime as a back-up to kill any residual disease-causing organisms. The City uses chlorine as a disinfectant, adding it to Catskill/Delaware water at Kensico Reservoir and to Croton water at Croton Reservoir. When Catskill/Delaware water reaches Hillview Reservoir, chlorine is added again just before the water enters the City distribution system. The same procedure is followed at Jerome Park Reservoir before Croton water enters the distribution system.

To qualify for avoidance, a water supply system must both maintain a sufficient chlorine concentration-- known as "C"--and hold the water long enough for the chlorine to disinfect the water--called contact time or "T"--to provide a combined chlorine dose/time factor--CT--that gives a 3 log removal of Giardia lamblia, waterborne cysts that can cause gastrointestinal illness. (Three log removal means the ability to reduce 1000 cysts to 1 cyst.) This level of disinfection must be constantly maintained and reported daily. Once again, since this requirement has gone into effect, DEP has continuously maintained this protective level of disinfection.

As required by the SWTR, the City provides a CT sufficient to kill 999 Giardia lamblia cysts out of 1000. To determine the actual concentration of these potentially disease-causing cysts in New York City's source waters, in June 1992, DEP initiated a monitoring program to detect the incidence and distribution of Giardia lamblia, Cryptosporidium and viruses. So far, their presence has been found to be minimal.

The report expressed a concern that Trihalomethane (THM) values in the City's water might not meet Maximum Contaminant Levels (MCL) if higher chlorine levels are required to reduce microbial risk. The THM levels in New York City's drinking water, again reflecting source water purity, are far below national norms, including the levels in most filtered waters and, most important in terms of SWTR, are also well below the maximum allowed by the rule. Based on a study performed early in 1993, DEP does not anticipate any difficulty in meeting newly proposed, more stringent disinfection by-product regulations.

We find it difficult to understand how a supply which meets all of the SWTR source water and disinfection requirements all the time, and has raw water parameters that exceed those of most filtered systems can be categorized as "marginal."

A requirement of the SWTR is that there be no outbreaks of waterborne disease. The purity of our source waters plus the effectiveness of our disinfection process accounts for the fact that there have been no outbreaks of waterborne disease since the institution of our modern water supply and disinfection systems. To provide even greater assurance, DEP and the New York City Department of Health entered into an agreement whereby DOH will enhance its present disease surveillance program to perform active surveillance of Giardiasis immediately and Cryptosporidiosis after it becomes classified as a reportable disease by the New York State Department of Health. Active disease surveillance will provide a clearer picture of the endemic levels of disease.

Existing data indicate that New York City has a very low level of Giardia risk. The panel's own report shows that New York City's level of risk is about half that of New York State and about 20% of that in the United States as a whole.

The expert panel indicates that the most immediate watershed control problem within New York City's watersheds is the Kensico Reservoir Basin, and that the Kensico situation alone is sufficient for a denial of avoidance.

The panel report asserts that household wastewater and stormwater runoff are the primary sources of bacteria within the reservoir basin. The results of DEP's two-year study of the Kensico watershed, released in March 1993, showed that the rise in Kensico Reservoir bacteria levels during the late fall/early winter peak period coincided directly in time and location with the increased number of waterfowl present on the reservoir. The main basin of the reservoir is where both maximum number of geese and the maximum concentration of bacteria are found. The panel report completely overlooked waterfowl as an important source of bacteria within the basin. Although stormwater bacterial inputs to the reservoir need to be addressed, they are of lesser concern than the waterfowl bacteria input, which DEP is currently remediating via an aggressive control program.

We were pleased to see that the panel recognizes the great potential of the City's watershed protection program and notes that it "could be adequate to control" the watersheds as required by the current SWTR. But we were astonished that the panel then inexplicably concludes that there is "little evidence that DEP can achieve a cohesive and effective watershed control program..." Clearly, the evidence indicating the City's intense commitment to watershed protection is overwhelming. It is hard to understand how the panel could have overlooked or ignored this evidence.

The City's expansive and comprehensive watershed protection program includes the promulgation of new and more protective watershed rules and regulations, the acquisition of critical watershed lands, the development of a comprehensive farm program to reduce the discharge of pollutants from this source, the development of a broad cooperative watershed community planning program to both reduce present pollution and assure control in the future, stream buffers, stormwater controls, coliform and phosphorus limits, sewage treatment and septic upgrades, comprehensive modelling and GIS, wetland regulations, and the most aggressive record of citizen suits in the country. The farm and community planning efforts represent New York City's unique and forward thinking approaches to the solution of problems that effect water supplies everywhere. The success of these programs to date is a tribute to the considerable efforts of DEP, the upstate farmers, residents and officials, and relevant State and Federal agencies. The effort sprang from the belief that genuine, long-term watershed protection can best be achieved through continued upstate/downstate understanding and cooperation.

The City's program represents a comprehensive



environmental strategy organized around good science, risk assessment and management, pollution prevention, non-point source controls, and the development of site specific pollution controls in collaboration with other interested agencies and local interests. It is far more sophisticated than the rather one dimensional strategy of modeling and regulation the panel seems to believe the City should be following.

In light of the above, it is extremely difficult to understand how the panel could ignore not only the City's efforts, but the efforts of the upstate communities and so many others, and give this innovative watershed protection program virtually no credit or recognition. To dismiss this important work represents a totally unrealistic and undeservedly pessimistic point of view, unsupported by the facts.

The report expresses concern that sometime in the future EPA might call for new regulations for the waterborne pathogen Cryptosporidium and disinfection by-products, and that the City's water might not meet those yet-to-be-established regulations. To cite vague and menacing possibilities of future regulations that do not yet exist as a reason for the City to filter shows how little substance exists in the panel's argument for filtration. Moreover, in the areas the panel points to, the City has such a comfort margin that, as the anticipated improvements in water quality from its watershed protection program accrue, it can face these future threats without fear.

As prudent water system managers, we do share the concern of the panel about not losing important time should filtration become necessary in the future. We therefore concurred with EPA that, as a condition of filtration avoidance approval, DEP should proceed with a conceptual design of a filtration plant, including pilot testing. This will provided whatever future security is appropriate.

The report also alleges that DEP's estimated costs of filtration and plant capacities are in excess of what is needed. The reasons for taking this position are obvious, but the rationale for it is lacking. The total filtration plant capacity of 1100 million gallons a day (MGD) cited by the Expert Panel falls way short of summer and fall peak demands even after water conservation, would provide no system redundancy, and would not even meet current Department of Health standards for a filtration plant.

Moreover, it is patently unrealistic to imagine that, were New York City ever required to filter, any responsible DEP commissioner, or any responsible public health

regulator, would allow the City to build a "modified" filtration plant providing only marginal filtration. Few things are more inconsistent with the panel's stated concerns for public health than their endorsement of this filtration approach and nothing better illustrates the filter for filtration's sake bias of the panel.

Lastly, the Panel states that "Granting avoidance sends the wrong signal and has already had national ramifications impacting states and cities still in the process of making a decision on filtration." Translating this polite language, what the Panel is really saying is, that if New York City is given an avoidance, New York City will be cited as an example by other jurisdictions as to why they should also get an avoidance, whether or not they deserve one. What the Panel is suggesting is that EPA will lack the scientific integrity and political courage to refuse avoidance to other jurisdictions who will claim that New York City received special treatment because of its size and political influence and they should too. The Panel seemingly wishes that New York City be ordered to filter so that EPA will have the bureaucratic crutch of being able to say to other applicants we made New York City filter so you have to do so too.

We take a less jaundiced view of the ability of EPA to carry out its statutory mandate to make science-based, objective decisions about filtration avoidance.

The City sees nothing in this report that argues that its superb natural filtration system will not do the job or that adding a steel and concrete filtration system to it, particularly the modified filtration approach that the Panel recommends, will add any protection that carrying out the City's current plans for water protection would not obtain faster, cheaper and at least as reliably.

Pure and protected source waters are key to any water quality assurance effort. The Panel offers nothing to alter the conclusion that New York City's water customers will be far better served by concentrating our resources and efforts on protecting our excellent water supply rather than by expending precious resources to build filtration hardware.

Very truly yours,

  
Albert F. Appleton