# NEW YORK CITY

# FILTRATION AVOIDANCE

# DETERMINATION

**USEPA - May 1997**

# SURFACE WATER TREATMENT RULE DETERMINATION

## NEW YORK CITY'S CATSKILL AND DELAWARE PUBLIC WATER SYSTEMS

### INTRODUCTION:

This document sets forth the background and the basis and purpose for the United States Environmental Protection Agency's (EPA) determination on whether New York City is required to provide filtration of a portion of its drinking water supply, the Catskill and Delaware public water systems. New York City shall comply with all conditions of this determination. The determination is applicable until a further determination, scheduled for April 15, 2002, is made by EPA, in consultation with the New York State Department of Health (NYSDOH), or earlier, should EPA in consultation with NYSDOH determine that New York City (NYC) has significantly failed to meet the conditions of the determination and/or the avoidance criteria of the Surface Water Treatment Rule (SWTR).

REGULATORY BACKGROUND:

As required under the Safe Drinking Water Act (SDWA) Amendments of 1986, EPA promulgated the SWTR on June 29, 1989, specifying the criteria under which filtration is required as a treatment technique for public water systems supplied by a surface water source. The SWTR is codified in Subpart H of 40 CFR, Part 141 - National Primary Drinking Water Regulations. Its purpose is to reduce the contamination of drinking water by microbial pathogens, including *Giardia lamblia* cysts and viruses.

The SWTR requires all public water systems supplied by unfiltered surface water sources to meet a series of water quality, operational, and watershed control criteria. These criteria, referred to as the filtration avoidance criteria, are detailed in 40 CFR §141.71. If, at any time, a system fails to meet the avoidance criteria, it may be required to provide filtration within 18 months of such failure.

FEDERAL AND STATE ROLES IN DETERMINING WHETHER FILTRATION IS REQUIRED:

In New York State, EPA delegated primary enforcement responsibility (primacy) of the Safe Drinking Water Act to the New York State Department of Health (NYSDOH) on September 9, 1977. Under this delegation, NYSDOH has primacy for implementation and enforcement of

the drinking water regulations. EPA is responsible for overseeing NYSDOH's implementation and enforcement of the drinking water program. However, when EPA promulgates a new rule, such as the SWTR, EPA retains primary enforcement responsibility for the new rule until it has approved a State's primacy package. On July 30, 1993, EPA announced its determination that it approved NYSDOH's primacy package and intended to delegate primacy of the SWTR to NYSDOH. A public hearing on that determination was requested and a hearing was held on December 7, 1993. EPA received public comments at the hearing and thereafter. Based on those comments, the primacy revision package, and other applicable information, EPA anticipates delegating primacy to NYSDOH for the SWTR for all public water systems in New York State, except NYC’s Catskill and Delaware Public Water Systems. Primacy for the SWTR for the Catskill and Delaware Public Water Systems will be delegated to NYSDOH May 15, 2007.

APPLICABILITY OF THE SURFACE WATER TREATMENT RULE TO NEW YORK CITY'S CATSKILL AND DELAWARE SYSTEMS:

The source of New York City's water supply consists of unfiltered surface water sources that comprise three public water systems: the Croton, the Catskill and the Delaware. NYCDEP intends to filter its Croton system and entered into an enforceable Stipulation Agreement with NYSDOH which establishe the schedule for completion of construction of the Croton filtration plant by December 31, 2000. More recently, on April 24, 1997, the United States filed a complaint in Federal District Court for the Eastern District of New York against the City to enforce the SWTR for the Croton System. NYCDEP seeks to avoid filtration for its Catskill and Delaware systems.

EPA'S FIRST DETERMINATION:

Following NYCDEP’s submission of an application not to filter its Catskill and Delaware water systems, in July 1992, EPA began an in-depth review of New York City's water supply in order to determine whether the Catskill and Delaware systems could fully meet the avoidance criteria. EPA concluded that the Catskill and Delaware systems met each of the objective criteria for filtration avoidance, including meeting raw water coliform and turbidity requirements, demonstrating that the systems are not the source of waterborne disease outbreaks, and controlling of *Giardia lamblia* and viruses

through disinfection inactivation. EPA also concluded that the City's existing watershed protection programs were currently adequate and met the SWTR goal for a watershed control program, but that the program's ability to meet the criteria in the future was uncertain. Accordingly, on January 19, 1993, EPA issued its conditional Determination granting filtration avoidance until a further determination was made, on or before December 31, 1993, or earlier if the City failed to meet the Determination's conditions for avoidance (January 19, 1993 Determination). The Determination required compliance with sixty-six conditions for avoidance, the purposes of which were to undertake studies and programs to identify sources of pollution, to develop programs to assure the long-term protection of the watershed, and to address actual and potential sources of contamination of the water supplies. The January 19, 1993 Determination also imposed substantial reporting requirements to monitor NYCDEP's progress in its programs and to evaluate whether NYC continued to meet the conditions for avoidance during the term of the determination.

EPA'S SECOND DETERMINATION :

In September 1993, in support of its request that the Catskill and Delaware public water systems be allowed to remain unfiltered after December 31, 1993, NYCDEP submitted “New York City's 1993 Long-Term Watershed Protection and Filtration Avoidance Program” to demonstrate that the Catskill and Delaware systems could and would continue to meet the filtration avoidance criteria in the future.

EPA reviewed historic and 1993 water quality data, “New York City's 1993 Long-Term Watershed Protection and Filtration Avoidance Program”, NYC's achievements meeting the sixty-six conditions contained in EPA's January 19, 1993 conditional Determination, the EPA March 23, 1993 Expert Panel Report, public comments received, including those received on EPA's January 19, 1993 conditional Determination and at the public hearing held on the conditional Determination, and additional documentation submitted by the NYCDEP and interested parties on the watershed.

EPA concluded that the Catskill and Delaware systems met each of the SWTR objective criteria for filtration avoidance, including meeting raw water coliform levels and turbidity criteria and achieving control of *Giardia lamblia* cysts through disinfection inactivation. EPA also concluded that the NYCDEP's existing watershed protection programs continued to be adequate and met the SWTR's criteria for a watershed control program, but that the program’s ability to meet the criteria in the future remained uncertain. EPA determined that progress was made toward enhanced watershed protection programs. At the same time, NYCDEP had undertaken the required preliminary steps toward design of a filtration facility or facilities for the Catskill and Delaware systems should filtration have been required. However, EPA sought more refined characterization of the watershed and more specific data concerning the identification and location of the activities within the watershed. EPA also wanted the watershed protection programs to operate for a longer period in order to

evaluate the effectiveness of the programs' long-term abilities to monitor and control activities in the watershed with the potential to pollute the water system, thereby assuring that the overall watershed control program would be adequate to minimize potential contamination of the source water by *Giardia lamblia* cysts and viruses.

On December 30, 1993, EPA issued a second conditional determination that New York City's Catskill and Delaware public water systems would be allowed to remain unfiltered (December 30, 1993 conditional Determination). This second Determination was intended to be effective until December 15, 1996 and contained over one hundred-fifty (150) conditions related primarily to enhanced watershed protection and monitoring programs, pathogen studies, reservoir modeling and other efforts to characterize the watershed and its activities. The conditions also included continued design of filtration facilities should EPA deem filtration necessary in the future.

A major concern of the December 30, 1993 Determination was preventing pollution of the Kensico Reservoir, the terminal reservoir for the Catskill and Delaware systems. NYCDEP conducted the Kensico Water Pollution Control Study to identify actual and potential sources of pollution and to identify measures to remediate those sources. The Kensico Reservoir Water Quality Control Program (KRWQCP) resulting from that study consists of implementation of a waterfowl management program, maintenance dredging of the reservoir and undertaking

stormwater best management practices, including installation of detention basins and streambank stabilization projects. A water quality model was also developed and calibrated for the Kensico Reservoir. Activities which are part of the KRWQCP are detailed in the Final Environmental Impact Statement for that program, dated December 1995.

The study identified Malcolm Brook as a tributary which periodically contributed high levels of turbidity to the Kensico Reservoir. Short term remediation efforts such as sediment barriers, erosion control blankets and turbidity curtains were installed until permanent controls could be implemented.

The study also examined the possibility of relocating the effluent chambers from the Kensico Reservoir and the installation of aeration or mixing equipment as coliform and turbidity controls. The review of existing information did not indicate that either option would significantly improve water quality.

Concern over pathogenic, bacterial and viral contamination resulted in an extensive study of the sewers and septic systems within the Kensico watershed. Results indicated that septic systems and sewer lines are not major contributors of fecal coliform to the reservoir. However, NYCDEP will continue a ground water monitoring program and sewer inspections will be continued to assure that these potential sources do not become a source of contamination. NYCDEP also evaluated the feasibility and benefits of having local governments

install additional sewer lines within their sewer districts. NYCDEP determined that sewer extensions provided no net benefit toward pollution reduction. Also, NYCDEP continues to monitor septic systems in the Kensico Reservoir watershed. If failures occur in a particular area, NYCDEP will evaluate the need for sewer service extensions in the vicinity.

In addition to addressing microbial contamination and turbidity, the study addressed hazardous materials. In order to prevent hazardous materials from entering the Kensico Reservoir, a spill response strategy was developed. This strategy includes a notification process, formalized response procedures and staff training programs. Additionally, NYCDEP has undertaken discussions with facilities' owners and operators to minimize the risk of hazardous materials reaching the reservoir. As a further protection measure, NYCDEP is beginning the design of eleven spill containment structures that will be located between Interstate 684 and the Kensico Reservoir. In the event of a spill these structures will capture and contain the material for clean up.

As another means of reducing the risk of contamination, NYCDEP fully implemented measures to control access to the Kensico Reservoir. These control measures consist of installation of guardrails along roads adjacent to the reservoir, installation of natural vegetative barriers along steep slopes to identify accessways for fishing and boating activities, increasing security around reservoir intake chambers, increasing police patrols along and in the vicinity of the

reservoir, stricter enforcement and development and implementation of a comprehensive public awareness program.

EPA'S CURRENT DETERMINATION:

Beginning in late November, 1995, EPA undertook a comprehensive review of NYCDEP's accomplishments toward fulfilling the conditions of the December 1993 FAD at the two year mark: the preliminary results of water quality data collected as required by several monitoring programs established or implemented as part of the December 1993 FAD; “New York City's Long-Term Watershed Protection and Filtration Avoidance Program”; NYCDEP's 1994 and 1995 annual reports on NYC's achievements toward meeting the over one hundred-fifty conditions contained in the December 1993 FAD; public comments received, including those received on the December 1993 FAD and the comments given in conjunction with the public hearings held; and additional documentation submitted by the NYCDEP and interested parties on the watershed.

Based on this review, EPA finds that New York City's Delaware and Catskill public water systems continue to meet the following SWTR conditions for unfiltered surface water supply systems: source water quality conditions found at 40 CFR §141.71(a); the disinfection requirements of 40 CFR §141.72(a); and the site specific conditions found at 40 CFR §141.71(b)(1), (3) ,(4), (5) and (6). The data on raw water turbidity and coliform levels, measured at the Catskill

and Delaware aqueduct intakes at Kensico, demonstrate that the Catskill and Delaware systems comply with 40 CFR §141.71(a)(1) and (2). Until 1994, NYCDEP bypassed Kensico Reservoir during fall and winter months in order to assure compliance with the source water quality criteria. Beginning in Fall, 1994, NYCDEP has not bypassed the Kensico Reservoir. Since January 1996, the Catskill water system has been in limited use due to high turbidity levels, and was put back into full use as of June, 1996. Other water quality and watershed program data submitted in accordance with the December 30, 1993 Determination confirm that the Catskill and Delaware systems continue to meet the following site-specific SWTR criteria:

§141.71 (b)(1)(i): CT[1] requirements.

§141.71 (b)(1)(ii): Redundant disinfection and auxiliary power.

§141.71 (b)(1)(iii): Entry point disinfectant residual requirements.

§141.71 (b)(1)(iv): Disinfectant residual in distribution system.

§141.71 (b)(3): Annual on-site inspection.

§141.71 (b)(4): System is not a source of a waterborne disease outbreak.

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1. "CT" is the product of the residual disinfectant concentration (C) in mg/l determined at or before the first customer, and the corresponding disinfectant time "T" in minutes.

§141.71 (b)(5): System meets coliform maximum contaminant level (MCL) eleven months of the year.

§141.71 (b)(6): System complies with trihalomethane requirements.

NYCDEP currently meets the SWTR requirement to comply with the total coliform MCL for at least 11 months of the year, §141.71 (b)(5). Since the effective date of the SWTR, June 29, 1989, NYCDEP has never violated the monthly coliform MCL (i.e., positive total coliform samples in five percent of the monthly compliance samples). From May 1993 through October 1994, NYC has had eight *Escherichia coli* (*E. coli*) violations of the Total Coliform Rule. EPA and NYSDOH have agreed with NYCDEP's conclusions in its 1993 and 1994 coliform events reports and in its Hillview Reservoir studies prepared as part of the December 30, 1993 Determination that the preponderance of data indicated that the contamination that resulted in these violations was not representative of source water quality. Yet the reports did not conclusively determine the source of contamination.

In its reports and studies, NYCDEP suspected that *E. coli* bacteria contamination in the distribution system may have resulted from waterfowl located at Hillview Reservoir, and scouring of sediment containing fecal coliform from the bottom of Hillview Reservoir. As a result, in order to reduce the potential for future coliform incidents attributable to sediment and the bottom of the Reservoir and to protect treated water from the effects of open storage, NYCDEP entered into a stipulation with NYSDOH which requires NYCDEP to

remove sediment from the Hillview Reservoir and to cover the Reservoir as a treated water storage reservoir. In February 1996, NYCDEP submitted its Phase I preliminary report prepared in conjunction with these tasks. The report stated that NYCDEP determined that sediment is likely a primary source of coliform at Hillview Reservoir. As a result of NYCDEP and NYSDOH entering into the enforceable stipulation, EPA is not including these conditions in the current Determination. Delays in the implementation of these tasks is an item of concern for EPA. EPA expects that a modified stipuation will be executed in the near future and that the time frame for sediment removal and covering of the Reservoir set forth in the modified stipulation will be enforced under the terms of that order.

The SWTR also requires the Catskill and Delaware systems to meet the site-specific condition of maintaining a watershed control program which minimizes the potential for contamination by *Giardia lamblia* cysts and viruses, 40 CFR §141.72(b)(2). In the December 30, 1993 Determination, the main area of concern to EPA remained the degree of NYCDEP's control over activities in the watershed which may have an adverse impact on the microbiological quality of the source water as required under §141.71(b)(2). During the term of the December 30, 1993 Determination, NYCDEP undertook numerous tasks that were intended to identify and address actual and potential sources of microbiological contamination of watershed source waters. Many of

these tasks have been completed, while others are ongoing programs that become more refined with more data and staff experience.

As part of its program to assure that NYCDEP meets the SWTR objective criteria, NYCDEP has undertaken an aggressive cross-connection control program. Accordingly, EPA will allow NYCDEP to submit semi-annual program reports of inspection results.

Additional requirements of §141.71(b)(2) are the following:

(i) Characterization of the watershed hydrology and land ownership.

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

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

The watersheds of the Catskill and Delaware systems cover an area of approximately 1600 square miles (approximately one million acres). New York City owns approximately six percent. New York State owns approximately twenty percent. Generally, NYCDEP's land ownership is limited to a buffer zone of a few hundred feet around the City's reservoirs (approximately 36,400 acres) and the land beneath the reservoirs themselves (approximately 25,900 acres). The Catskill and Delaware systems' watershed includes reservoir basins east of the

Hudson River (Kensico, Boyds Corner, and West Branch Reservoirs)("EOH"). Residential and commercial development exist around the reservoirs and along the tributaries. The Catskill and Delaware systems' watershed also includes reservoir basins west of the Hudson River (Schoharie, Cannonsville, Pepacton, Ashokan, Neversink and Rondout Reservoirs)("WOH"). The total population of the Catskill and Delaware watershed is approximately 77,000 persons.

EPA has concerns about potential contamination by *Giardia lamblia* and viruses that results from activities associated with residential and commercial development. In addition, EPA has concerns about the potential for significant threats to water quality from other human activities, including runoff from dairy farming operations and discharges from wastewater treatment plants (WWTPs) that are violating their State Pollutant Discharge Elimination System (SPDES) permits. EPA also has a concern about the recurring high turbidity in the Catskill system that threatens long-term compliance with the raw water turbidity requirements of the SWTR.

Based on results from its *Giardia lamblia* cyst and virus monitoring program, NYCDEP determined that pathogen contamination is not often detected in the watershed. When cysts were detected in the source water, their concentrations were low. NYCDEP's watershed pathogen monitoring program has indicated that the three most significant sources of these pathogens are WWTPs, urban activities and agricultural land uses. NYCDEP has three mechanisms to respond to

these potential sources of pathogens: the installation of microfiltration or its equivalent at WWTPs located in the Catskill and Delaware systems' watershed, new Watershed Rules and Regulations and the Watershed Agricultural Program.

In order to reduce actual and potential contamination from point sources of pollution, EPA finds that many WWTPs with current SPDES permits must be upgraded. The WWTPs will require significant increases in SPDES permit requirements, and will require compliance, inspections, monitoring and enforcement oversight by the regulatory agencies, including NYSDEC and NYCDEP. Prior to the December 30, 1993 Determination, NYCDEP developed and, since then, further refined and implemented WWTP inspections and compliance program protocols. NYCDEP also developed with NYSDEC joint agency procedures for enforcement of SPDES permits and NYC Watershed Rules and Regulations. NYCDEP has been and will continue to submit to EPA quarterly reports on NYCDEP/NYSDEC enforcement activities, including inspection and follow-up summaries on WWTPs of concern to NYCDEP located West of the Hudson.

NYCDEP has doubled the number of its inspectors since 1990 and increased the number of regular and compliance inspections at non-City owned watershed WWTPs, resulting in the facilities being upgraded and in improved operation and maintenance at the plants. In addition, NYCDEP has agreed to provide funds necessary to existing non-City owned watershed WWTPs to meet specific requirements of the new NYC watershed rules and regulations. At its City-owned WWTPs

construction is underway to upgrade the treatment processes pursuant to deliverable 312b-1 of this Determination. Further reductions in potential contamination from point and non-point discharges will be achieved through the enforcement of New York City's new watershed regulations which will require more stringent treatment controls on wastewater discharges.

NYCDEP has made progress during the past two years to address non-point source pollution in the Catskill and Delaware watershed. It began implementation of non-traditional non-point source control approaches, such as the Watershed Agricultural Program.

The Watershed Agricultural Program, jointly developed between NYCDEP and the watershed farm community, has been promoting pollution prevention through Whole Farm Planning (WFP) since 1994. Phase I resulted in the successful development and implementation of WFP on ten demonstration farms and a publication of a Whole Farm Planning guide. As of
April 11, 1997, 250 farmers have signed up to participate in Phase II, with 118 plans approved and several plans in development. Voluntary implementation of plans reduces the potential of pathogenic, nutrient, chemical and other contamination by agricultural activities.

Additionally, the Watershed Agricultural Program resulted in completion of a digital soil survey and a listing of agricultural best management practices for the watershed. An investigation of the

significance of wildlife as an important nonpoint source of pathogens in the watershed determined that little published information was available. Accordingly, a Wildlife Research Workplan was developed.

In order to assure continued development and implementation of the Watershed Agricultural Program, NYC provided funding to the Watershed Agricultural Council of over thirty-five (35) million dollars to fund this program through 1999.

Further reductions in potential contamination from non-point sources of pollution will be achieved through implementation and enforcement of NYC's new watershed regulations, which require stormwater pollution prevention plans to be reviewed and approved.

Since the December 30, 1993 Determination, NYCDEP completed development of a Geographic Information System(GIS) and gathered additional data on the hydrology and land uses in the watershed. NYCDEP completed mapping of all watershed wetlands of one-acre or more in size. The GIS is updated regularly with new watershed data, such as location of wetlands and new land uses, and the GIS program is modified regularly with updated software and equipment, all of which includes training of NYCDEP staff on the use of the GIS.

NYCDEP has completed development and calibration of a three-dimensional water quality model of the Kensico Reservoir and has developed the Cannonsville Reservoir and terrestrial models upon which models of the remaining Catskill and Delaware Reservoirs shall

be based. NYCDEP has progressed in its development of a multi-tiered model of the entire watershed that will allow NYCDEP to evaluate the impact of sources of contamination on downstream water quality and optimize reservoir withdrawal operations based on water level and water quality.

NYCDEP investigated the feasibility of including pathogen transport in the Cannonsville Reservoir and terrestrial modeling efforts. NYCDEP concluded and EPA agrees that incorporation of pathogen loadings into the models was not feasible because the current state of knowledge on pathogen source occurrence, fate and transport is insufficient for predictive modeling. NYCDEP has identified basic research needs and plans to support research efforts directed toward filling the data gaps.

NYCDEP has been and will continue to be required to perform studies on filtration of the Catskill and Delaware systems, leading up to completion of conceptual and draft preliminary design of a filtration plant or plants. The Determination maintains a "time-neutral" concept, whereby NYC must proceed with the draft preliminary design of filtration facilities so that no time will be lost if filtration is later determined to be necessary. The NYCDEP will have an opportunity, prior to the end of this determination, to request relief from the requirements to continue its design efforts through final preliminary design and full detail design based on its substantial compliance with the terms of this Determination.

NEW YORK CITY WATERSHED MEMORANDUM OF AGREEMENT:

In 1995, when NYCDEP's implementation of certain conditions of the 1993 Determination was delayed, EPA and other interested parties, urged the Governor of New York State to intercede. The Governor agreed to bring the parties together, and EPA participated in full partnership with the State and the City, in a consensus-building approach to negotiate reasonable, effective and scientifically-defensible watershed protection programs that culminated in an historic Agreement-in-Principle.

The Agreement-In-Principle, announced on November 2, 1995 between the State of New York, City of New York, watershed communities including, the Coalition of Watershed Towns, Putnam and Westchester Counties, the environmental parties and EPA, was reached with the expectation of NYCDEP receiving a land acquisition permit from the New York State Department of Environmental Conservation so that land acquisition goals could begin to be met and on the approval and promulgation of new NYCDEP Watershed Rules and Regulations that will protect New York City's drinking water supply into the next century.

The Agreement-in-Principle calls for new Watershed Rules & Regulations, the establishment of economic partnerships between the City and Watershed Communities to assist parties in their efforts to protect the watershed, and the implementation of an extensive land acquisition program through which the City will solicit a minimum of

355,050 acres of eligible watershed land in the most sensitive areas over the next 10 years.

In addition, the agreement mandates wastewater treatment plant upgrades, nonpoint source pollution controls, and the review of the current monitoring program. By April, 2002, EPA will fully evaluate the effectiveness of the existing protection programs, including the Rules & Regulations, in an attempt to determine if the City's efforts at protecting its water supply meet the requirements of the SWTR.

A formal document signed by the above parties, titled the New York City Watershed Memorandum of Agreement or "MOA", details the above agreements. In addition to the above agreements, the MOA establishes water quality protection programs in both the East of Hudson and West of Hudson watersheds, to further aid the City's efforts to protect the water supply. The MOA provides that because certain conditions were met, EPA issued a four-month Interim Filtration Avoidance Determination (“Interim FAD”) on January 21, 1997 and this new 1997 Filtration Avoidance Determination (“1997 FAD”), granting New York City respective third and fourth conditional avoidance determinations from filtering its Catskill and Delaware water systems until April 15, 2002.

The MOA further outlines that this 1997 FAD would be issued only if the Watershed Rules and Regulations became effective on or about April 15, 1997, and all of the pre-conditions of the Interim FAD, listed below, remained operative. The pre-conditions of the Interim

FAD are: NYSDEC has issued a final land acquisition permit as set forth in the MOA, NYSDOH has approved New York City's Watershed Rules and Regulations with conditions agreed to by the Parties to the MOA, the MOA has been fully executed, and New York City has submitted for registration all the contracts identified in the MOA as requiring immediate execution pursuant to the City Charter.

This 1997 FAD will supersede the January 21, 1997 Interim FAD and will be applicable until a further determination is made in consultation with NYSDOH. Such further determination is scheduled for April 15, 2002, but may occur earlier. Prior to the April 15, 2002 determination, the EPA, in consultation with the City and NYSDOH, will formally review and evaluate the City's compliance with the terms and conditions of the 1997 FAD by April 15, 2000.

In addition, during negotiations of the MOA, EPA and the City jointly reviewed the provisions of the December 1993 FAD and modified several requirements, tasks and programs based on the results of studies and current program requirements of the December 1993 FAD. EPA and NYSDOH agreed to issue a new filtration avoidance determination that reflected their evaluation of the City's achievements to date as well as the agreements and requirements of the MOA.

EPA expects that the MOA and its partnership programs will assist New York City in meeting the conditions of both the Interim FAD and the 1997 FAD.

EPA has determined that NYC's existing watershed protection programs are currently adequate and meet the goal for a watershed control program found at 40 CFR §141.71(b)(2). However, EPA finds that NYCDEP must immediately implement its Watershed Rules and Regulations and must immediately commence acquisition of watershed lands, consistent with the MOA, in order to assure NYCDEP's ability to meet the avoidance criteria in the long-term. NYCDEP has not yet completed certain tasks associated with these watershed protection programs as set forth in the December 30, 1993 Determination. Accordingly, at this time, EPA finds that the documentation submitted by NYCDEP to date does not conclusively demonstrate that the Catskill and Delaware systems will continue, in the long term, to meet the avoidance criteria for a watershed control program as required by 40 CFR § 141.71(b)(2). Therefore, EPA is issuing this 1997 Determination that requires NYCDEP: 1) begin, continue or complete certain programs, not inconsistent with programs set forth in the MOA and the December 1993 FAD; 2) to implement and administer the Watershed Rules and Regulations; 3) to immediately and continuously implement the land acquisition program set forth in the MOA; and 4) to continue the dual-track progress of filtration avoidance and filtration planning towards completion of the conceptual design, preliminary design, and final design of filtration facilities for the Delaware and Catskill public water systems should events occur that require a filtration determination in the future. With these conditions, EPA issues this Determination until April 15, 2002.

The provisions of this Determination, if complied with, will achieve the objectives of the Safe Drinking Water Act, and the regulations promulgated thereunder, in particular the Surface Water Treatment Rule (SWTR). The SWTR was promulgated to reduce the risk of water borne disease outbreaks from microbial contaminants at public water systems with surface water sources, either through filtration or meeting the stringent water quality, disinfection and site-specific avoidance criteria which make filtration unnecessary. Compliance by the City with the conditions of this Determination is necessary to continue to meet the objective criteria of the SWTR and the site specific criteria to protect the source waters of the Catskill/Delaware system from microbiological contamination.

In summary, EPA has determined that until a further determination is made, or until April 15, 2002, whichever is earlier, New York City will not be required to filter its Catskill and Delaware public water systems. This Determination is conditional upon NYCDEP complying, in a manner acceptable to EPA and NYSDOH, with the filtration avoidance criteria and all conditions set forth below: