INTERSTATE SANITATION COMMISSION

1974

NEW YORK NEW JERSEY CONNECTICUT

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R E P O R T

of the

INTERSTATE SANITATION COMMISSION

on the
Water Pollution Control Activities
and the
Interstate Air Pollution Program

INTERSTATE SANITATION COMMISSION

10 COLUMBUS CIRCLE • NEW YORK, N. Y. 10019

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January 24, 1975

To His Excellency, Brendan T. Byrne
His Excellency, Hugh L. Carey
Her Excellency, Ella T. Grasso
and the Legislatures of the States
of New Jersey, New York, and Connecticut

Your Excellencies:

The Interstate Sanitation Commission respectfully submits its report for the year 1974.

The members of the Commission are confident that with the continued support of the Governors and the members of the Legislatures, the Commission will maintain active and effective water and air pollution abatement programs.

Respectfully submitted,

Natale Colosi

For the State of New York — Chairman

John B. Dioguardi

For the State of Connecticut — Vice Chairman

Louis J. Fontenelli

For the State of New Jersey — Vice Chairman

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***

*

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Alan I. Mytelka, Ph.D.
Assistant Secretary

INTERSTATE SANITATION COMMISSION

STAFF

Thomas R. Glenn*
Director & Chief Engineer

Alan I. Mytelka, Ph.D.*
Assistant Chief Engineer

Mitchell Wendell, Ph.D.*
Counsel

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Clifford A. Haupt
Michael P. Nosenzo
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George T. Wolff, Ph.D.**
Walter Pyrch

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G. Irene Guise*

*Part Time on Air Pollution Program
**Full Time on Air Pollution Program

C O N T E N T S

I L L U S T R A T I O N S

I. SUMMARY OF ACTIVITIES

The Interstate Sanitation Commission was formed in 1936 by the States of New York and New Jersey. The State of Connecticut joined the Commission in 1941. The Commission is organized under the Tri-State Compact for the abatement of existing water pollution and the control of future water pollution in the tidal waters of the New York Metropolitan Area. In 1962, air pollution was added to the scope of the Commission's activities, and in 1970, the Commission was designated as the official Planning and Coordinating Agency for New Jersey-New York-Connecticut Air Quality Control Region.

This Report, which is prepared each year, provides a record of water and air pollution activities of the Interstate Sanitation Commission on technical assistance, monitoring, laboratory analyses, and coordination of interstate problems which promote the construction of water pollution control projects in the Interstate Sanitation District.

Water Pollution

In its activities for water pollution abatement, the Commission provides assistance in coordinating approaches to regional problems. Priorities in this area receiving attention are: pretreatment of industrial wastes, removal of oils from the District waters, compliance monitoring, thermal pollution, enforcement, and combined sewers. It is anticipated that more than $4.688 billion will be spent in the region on wastewater treatment in the next several years. This money is designated for the upgrading and expansion of existing sewage treatment systems and to provide for a minimum of secondary treatment.

One of the major problems in the Interstate Sanitation District is what to do with the present and increasing quantities of sludge produced from municipal waste treatment plants. The Commission is responsible for managing a two-year three-phase program to develop a viable and coordinated system for sewage sludge disposal in the New York-New Jersey Metropolitan Area by June 1976. A description and scope of this "New York-New Jersey Metropolitan Area Sewage Sludge Disposal Management Program" is contained in this Report.

During this past year, the Commission continued to operate its own automatic water quality monitors and those that it leases from the United States Environmental Protection Agency. Graphs showing the monthly high, minimum, and average values for temperature, dissolved oxygen, pH, and conductivity are presented.

In order for the States to have an analytical basis on which to allocate wasteloads, the Commission has, at the request of and through funding provided by the U. S. Environmental Protection Agency, let a contract to model the entire New York Harbor area. A description of this program is included in this Report.

The Commission has continued its cooperation with the States and other enforcement agencies. This has been accomplished by assisting the States in certification of discharges in District waters, providing laboratory analyses for state and federal enforcement agencies, and by Commission personnel taking part in various actions on behalf of the States and other agencies.

Air Pollution

The Commission has continued to coordinate the air pollution warning system in the New Jersey-New York-Connecticut Air Quality Control Region. Instrumentation to measure ozone and oxides of nitrogen parameters were added to the two mobile air units to increase their effectiveness.

The Commission was awarded a grant by the U. S. EPA to coordinate the investigation of "Control of Suspended Particulates" in the Metropolitan Area. Participating agencies include the States of New York, New Jersey, and Connecticut, the City of New York, the Mount Sinai School of Medicine, the Cooper Union, and the Polytechnic Institute of New York.

The Commission, in cooperation with the States of New York, New Jersey, and Connecticut, has continued to investigate the problem of oxidants in the region. A report titled "Preliminary Investigation of the Photochemical Oxidant Problem in the New Jersey-New York-

Connecticut Air Quality Control Region" was published based upon oxidant data from the summer of 1973. Additional investigations in this area are continuing.

II. WATER POLLUTION

GENERAL

A total of 152 water pollution control projects were completed, were placed under construction, or were being evaluated for future expansion or upgrading within the Interstate Sanitation District during 1974.

Funding for these various projects amounted to more than $4.688 billion, of which $290.92 million was utilized for 32 projects which were completed, $2.463 billion for 33 projects under construction, and $1.935 billion for 87 future projects. These federal, state, and local expenditures are being utilized to construct new facilities as well as to expand and upgrade existing facilities so as to insure that the effluents being discharged into District waterways will receive a high degree of treatment.

The allocations presented above are exclusive of large expenditures by the industrial sector for water pollution control projects.

The Commission obtained the technical and fiscal information for the water pollution control projects presented in the following section from responsible officials within state or local governmental agencies, sewerage authorities, or consulting engineering firms.

A map of the Interstate Sanitation District shown on the following page depicts the locations of wastewater treatment plants discharging into District waters, the type of treatment at each plant, and the Interstate Sanitation Commission's water classifications. Additional information on each plant is presented in the Appendix.

CONNECTICUT WATER POLLUTION CONTROL PROJECTS

Bridgeport East Side Plant, Conn.

Project Under Construction

Although this secondary treatment plant was completed in 1973, various units have yet to receive acceptance testing. These include the chemical treatment unit and the computer system. The sludge incineration facilities have been completed and are awaiting checkout testing.

This plant has been designed to treat a flow of 24 million gallons per day. The total cost for this project is approximately $11 million.

Bridgeport West Side Plant, Conn.

Completed Project

This secondary plant was completed in 1973. Various process units, however, are not fully operational. These include the chemical treatment equipment and the computer system.

Project Under Construction

The conversion of the former primary settling tanks to storm water treatment tanks is in progress.

The total cost for the expansion and upgrading of this 60 million gallons per day plant is approximately $14 million.

Darien, Conn.

Future Projects

This primary plant is scheduled to be converted to a pump station and tied into the Stamford Treatment Plant which will be upgraded.

Three additional pump stations in the Darien area are to be constructed prior to the target date of July 1975 for tie-in.

Fairfield, Conn.

Project Under Construction

The expansion of the existing sewer system has continued throughout the year.

Greenwich, Conn.

Completed Project

The Glenville section construction has been completed at a cost of $3 million.

Future Project

A project to sewer Hillside Drive and Byram Shore Road is still in the planning stage. Its estimated cost is $1 million.

Milford-Beaver Brook, Conn.

Completed Project

A force main and a pump station were completed in May 1974. This system diverts flow to this plant from the Harbor and Town Meadows plants.

Project Under Construction

A tributary construction project which will connect the southern portion of Milford to the treatment plant is expected to be completed at the end of 1974.

The estimated cost for this project is approximately $4.5 million.

Milford-Gulf Pond, Conn.

Future Project

Milford and the Town of Orange are planning to utilize the Gulf Pond plant for treatment of their sewage. When plans are completed, the Gulf Pond plant

will triple its present flow capacity.

Milford-Harbor, Conn.

Project Under Construction

This plant will be abandoned at a future date and the flow diverted to the Beaver Brook wastewater treatment plant. A pump station is being constructed to divert this flow.

Milford-Town Meadows, Conn.

Completed Project

The sewer lines connecting the newly constructed pump station with the Beaver Brook plant are now operational.

New Haven-Boulevard, Conn.

Future Project

Construction to upgrade this primary plant to an activated sludge facility is expected to begin early in 1975. The existing primary settling basins will be rehabilitated and two new tanks will be constructed. Additions to the plant include eight mechanical aeration basins, eight final settling tanks, two chlorine contact chambers, two multiple heated incinerators, vacuum filters, and a centrifugal dewatering system. The plant will also receive the primary effluent from the East Street plant and process it through the secondary system. The primary plant is designed to treat 31 million gallons per day while the secondary system is designed to treat 135 million gallons per day. The biochemical oxygen demand and suspended solids removal will be 85 percent. This project will cost more than $60 million.

New Haven-East Shore, Conn.

Future Projects

The existing primary plant is scheduled for expansion and upgrading to a secondary treatment plant with a design flow of 35 million gallons per day. The primary tanks will be rebuilt and new mechanical aeration basins are planned.

An additional 54" diameter sewer from the south bank of the Quinnipiac River to the plant is planned to augment the existing line.

Construction of these projects is expected to begin some time during 1975. The cost will be in excess of $28 million.

New Haven-East Street, Conn.

Future Project

The primary effluent from this plant will be conveyed to the New Haven-Boulevard plant upon completion of that plant's secondary treatment facility. The cost of this proposed 36 million gallons per day tie-in is expected to be more than $15 million.

Norwalk, Conn.

Project Under Construction

This upgraded and expanded secondary treatment plant is expected to be fully operational at the end of 1974.

The plant has been designed to treat 30 million gallons per day of sewage, more than twice the present flow. Biochemical oxygen demand and suspended solids removals have been designed at 95 percent efficiencies.

This plant is utilizing a fluid-bed incinerator to decompose the sludge produced through treatment of sewage.

The cost of this project is estimated at $8 million.

Future Project

A supplemental treatment plan is being developed to eliminate the final 5 percent of sludge waste. The equipment associated with this plant is expected to be added in two years. Plans have also been developed for the construction of a storm water treatment plant at the Norwalk treatment plant site.

The estimated cost for this project is $4 million.

Stamford, Conn.

Project Under Construction

This plant is in the process of being upgraded to a step aeration activated sludge plant with its capacity being expanded from 10 million gallons per day to 20 million gallons per day to accommodate additional influents. The plant is designed for 95 percent removal of biochemical oxygen demand. Existing digesters are being converted to holding tanks. The plant is scheduled to be completed in 1975 at a cost of more than $16.5 million.

Stratford, Conn.

Completed Project

The $12 million upgrading and expansion project was recently completed. The new activated sludge plant has a design flow of 11.5 million gallons per day. Sludge will be removed by vacuum filtration and disposed of by incineration. This new expanded capacity will provide treatment for some areas of the city which were not previously sewered.

West Haven, Conn.

Completed Project

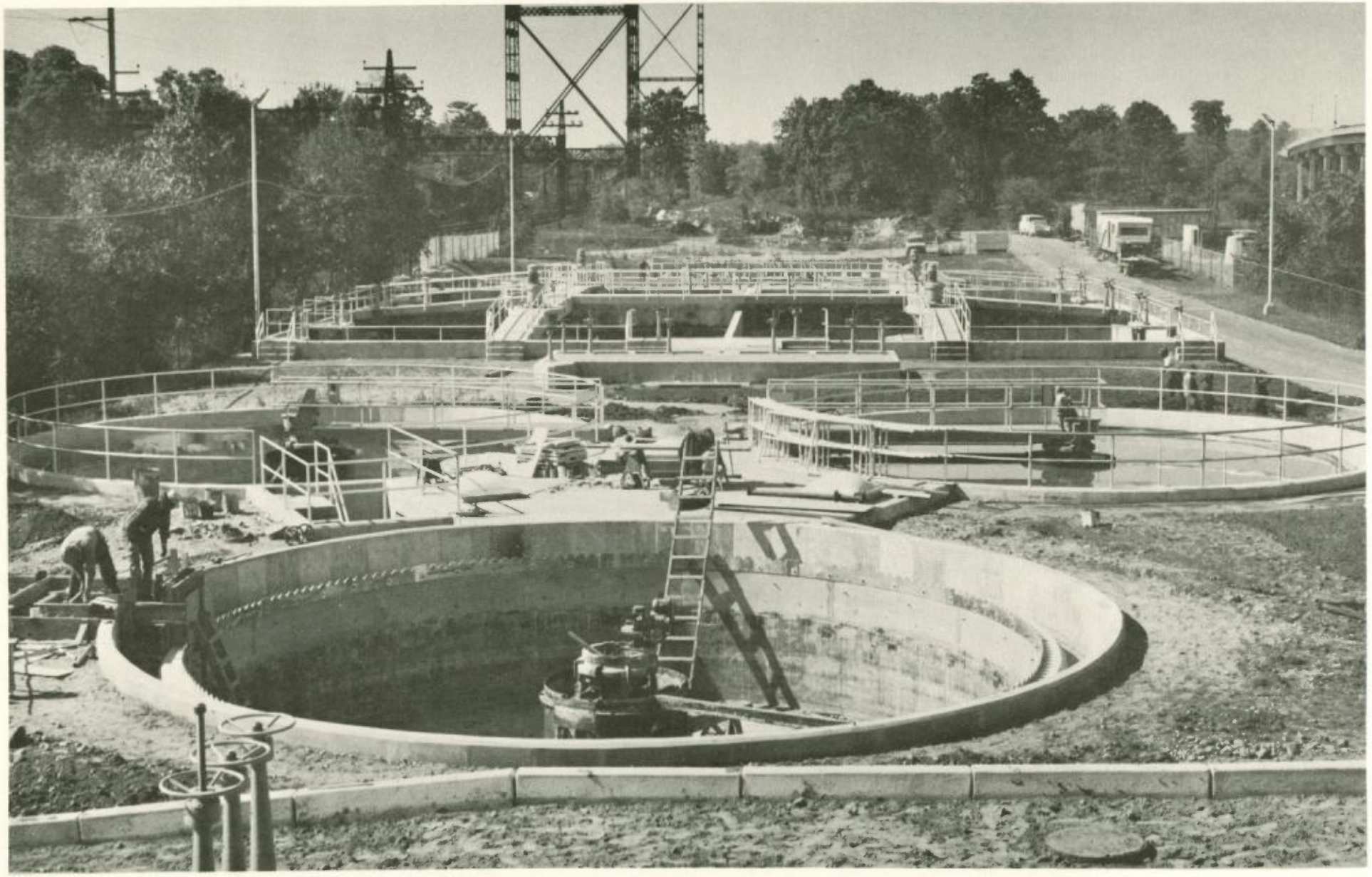
Upgrading of the existing 23 million gallons per day activated sludge plant has been completed in the past year. The new equipment includes aeration tanks, secondary settling tanks, a vacuum filter, and a sludge incinerator. The system is designed to remove 95 percent of the biochemical oxygen demand and suspended solids. Total cost of the upgrading project was $6.5 million.

Westport, Conn.

Completed Project

This expanded treatment plant is expected to commence full secondary operation in December 1974. It has the capacity to treat a flow ranging from 2.8 to 9 million gallons per day with a 95 percent reduction in biochemical oxygen demand and suspended solids. New construction and equipment include a Parshall flume, grit chamber, three primary clarifiers, four mechanical aeration basins, three secondary settling tanks, two chlorine contact chambers, a vacuum filter, two sludge digesters, a four-section sludge drying bed, and emergency generators.

The approximate cost for this project is $8 million.



CONSTRUCTION AT THE WESTPORT SEWAGE TREATMENT PLANT, WESTPORT, CONNECTICUT
Consulting Engineers: Whitman and Howard Inc.

NEW JERSEY WATER POLLUTION CONTROL PROJECTS

Atlantic Highlands, N.J. (Monmouth County)

Future Project

A secondary treatment plant to serve jointly Highlands and Atlantic Highlands will be built at an expected cost of $2 million. The plant will have a design flow of 2 million gallons per day and will be an activated sludge type plant with 85 percent removal of biochemical oxygen demand and suspended solids.

The existing treatment plants will be converted to pump stations and the treated waste from the new plant will discharge to the ocean outfall being constructed by the Monmouth County Bayshore Outfall Authority.

Construction of the Highlands, Atlantic Highlands Regional Sewerage Authority Plant awaits technical and financial approval which is expected in January 1975. Awarding of contracts is expected by March 1975 with plant completion expected by March 1976.

Bayonne, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment standards as part of the overall Hudson County treatment system.

Bayshore Regional Sewerage Authority Treatment Plant, N.J. (Monmouth County)

Completed Project

The construction of a secondary treatment plant of the activated sludge design has been completed and is now operational. The plant has been designed to treat an average daily flow of 6 million gallons per day with removal efficiencies of 95 and 90

percent for biochemical oxygen demand and suspended solids, respectively. Included in the plant's design are a grit chamber, primary and secondary settling tanks, aeration tanks, chlorination equipment, and sludge incineration equipment. The effluent from this plant is now serviced by the Monmouth County Bayshore Outfall Authority's ocean outfall.

The plant is treating approximately 3 million gallons per day.

Future Projects

Negotiations are being conducted to convert the Keansburg Treatment Plant into a pump station and divert its present flow to the new regional plant. It is also anticipated that the existing treatment plants at Keyport and Matawan will be converted into pump stations with their flows being diverted to the regional plant. As these plants tie in, the flow to the Bayshore plant will reach design capacity.

Funds are now being sought for expansion of the plant to 8 million gallons per day. The target date for the plant funding is 1974-1975. Trunk line funding is expected during the latter part of 1976.

The total development cost for these projects is estimated to be $20 million.

Carteret, N.J. (Middlesex County)

Future Project

The present primary treatment plant is to be converted into a pump station which will divert flow to the Middlesex County Sewerage Authority Treatment Plant.

Earle Naval Ammunition-U.S.N. Leonardo, N.J. (Monmouth County)

Future Project

This plant is to be phased out of operation and converted into a pump station with flow diverted to the Middletown Sewage Plant.

Funds for this project are still to be allocated.

Edgewater, N.J. (Bergen County)

Completed Project

A pilot plant utilizing the "Bio-Surf" method of secondary treatment is operational.

Future Project

The feasibility of upgrading this plant to secondary treatment using this method of treatment will depend upon economic considerations and the ability to achieve average removals of 90 percent biochemical oxygen demand and total suspended solids.

Projected cost of plant upgrading is estimated at $3 million.

An alternative plan consists of converting this plant into a pump station and discharging to the Bergen County Sewerage Authority at Little Ferry.

Elizabeth Joint Meeting, N.J. (Union County)

Future Project

Plans for upgrading the present plant to an activated sludge facility now only await approval of the Federal Government. The conversion to an activated sludge process will cost approximately $50 million. The treatment plant will have a capacity of 75 million gallons per day and achieve 90 percent removal of biochemical oxygen demand and total suspended solids.

Bids for construction of an aeration tank, final settling tank, and additional sludge storage will be let after Federal approval is obtained.

Highlands, N.J. (Monmouth County)

Future Project

The existing treatment plant will be converted to a pump station after completion of a new secondary plant called the Highlands, Atlantic Highlands Regional Sewage Authority.

The new secondary treatment plant utilizing an activated sludge system will remove a minimum of 85 percent of the biochemical oxygen demand and suspended solids. The Dorr-Oliver F-S incineration system will dispose of sludge. The 2 million gallons per day plant, together with 2 pumping stations and force mains, will cost approximately $3.231 million to construct. Effluent from the new plant will be discharged to the ocean outfall being constructed by the Monmouth County Bayshore Outfall Authority.

Construction awaits technical and financial approval which is expected by January 1975. This would result in awarding of contracts by March 1975 and completion of the plant by March 1976.

Hoboken, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment standards as part of the overall Hudson County treatment system.

Hudson County Regional Sewerage Authority, N.J. (Hudson County)

Future Project

An engineering consultant has been engaged by the Hudson County Regional Sewerage Authority to

prepare the facilities plan for all of Hudson County.

The cost for facilities construction within Hudson County is estimated at $178 million.

Jersey City East Side, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment standards as part of the overall Hudson County treatment system.

Jersey City West Side, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment standards as part of the overall Hudson County treatment system.

Keansburg, N.J. (Monmouth County)

Future Project

The present treatment plant is to be converted to a pump station. This pump station is to be joined to the Bayshore Regional Sewerage Authority.

The cost of this construction is expected to be $750 thousand.

Appeals have been made to the Federal Housing and Urban Development Department for the upgrading of existing mains.

Kearny, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment

standards as part of the overall Hudson County treatment system.

Keyport, N.J. (Monmouth County)

Future Project

Plans call for the abandonment of this plant upon construction of necessary interceptor and gravity feed sewage lines to the Bayshore Regional Authority Treatment Plant.

Linden-Roselle Sewerage Authority, N.J. (Union County)

Future Project

Plans have been completed and approved by the New Jersey State Department of Environmental Protection for upgrading the existing primary treatment plant to an activated sludge secondary treatment plant. The expanded plant will have a treatment capacity of 18.5 million gallons per day and provide 90 percent removals for biochemical oxygen demand and settleable solids. The present method of sludge disposal, barging to sea, is being reconsidered. Following this determination, the application for federal funding will be resubmitted. Acquisition of the additional farm acres required for plant expansion is proceeding.

Funding of $19 million for this project still awaits federal approval.

Madison Township Sewerage Authority-Laurence Harbor, N.J. (Middlesex County)

Future Project

The present plant will be converted into a pump station which will divert sewage into the central treatment plant of the Middlesex County Sewerage Authority.

Middlesex County Sewerage Authority, N.J. (Middlesex County)

Project Under Construction

Plans for this plant include upgrading its capacity to 120 million gallons per day and providing for an activated sludge treatment system utilizing pure oxygen along with incorporation of the existing primary facilities. With the following additions, the plant is expected to provide a 90 percent biochemical oxygen demand removal and an 85 percent suspended solids removal:

(1) primary treatment facilities including aerated grit chambers, influent piping, meter chamber, and primary sedimentation tanks;

(2) secondary treatment facilities including oxygenation tanks and equipment, final settling tanks, oxygen generation facilities, effluent conduits and piping, and chlorination facilities; and

(3) aerobic sludge digestion and disposal facilities for barging to sea.

Construction of these additional facilities commenced early in 1974 and should be completed in the spring of 1977. The estimated total project cost is $110 million.

The final design of the South Bay Collection System being prepared by the City of South Amboy and the Borough of Sayreville should be completed in the near future. This design includes the conversion of the municipal primary treatment plants at South Amboy, Morgan and Melrose in the Borough of Sayreville to pumping stations. All wastes will be conveyed from these pumping stations to the central plant of the Middlesex County Sewerage Authority through interceptors and force mains.

CONSTRUCTION AT THE MIDDLESEX COUNTY SEWERAGE AUTHORITY TREATMENT PLANT, MIDDLESEX COUNTY, N.J.
Consulting Engineers: Metcalf and Eddy, Inc.

Monmouth County Bayshore Outfall Authority, N.J.

Completed Projects

Construction of a 42-inch diameter line from Middletown to the Bayshore Regional Sewerage Authority Treatment Plant was completed in February 1974.

The Union Beach pump station became operational in April 1974.

The development cost for these projects, which included a 48-inch force main from Middletown to Sandy Hook and a 4000-foot outfall and diffuser to the Atlantic Ocean, was approximately $10.5 million. The project also included two 6 million gallons per day effluent pump stations and detention basins for peak flow conditions.

Passaic Valley Sewerage Commissioners (Essex County)

Future Projects

The following proposed facilities have been submitted to both the New Jersey Department of Environmental Protection and the United States Environmental Protection Agency and have been approved by both agencies. Engineering contracts have been awarded and engineering on the Phase I construction is expected to be completed by May 30, 1975, for submission to regulatory agencies. It is expected that construction will start September 1975, provided the specifications and grant applications receive timely approval.

Proposed Phase I construction consists of Part A - Main Treatment Plant and Part B - Sludge Handling Facilities.

Upon completion of Phase I, the new plant will provide secondary sewage treatment with 83-85 percent removal efficiencies for biochemical oxygen demand and suspended solids and 93 percent following Phase II. The facility will be capable of treating an average

of 300 million gallons per day with peak flows of 720 million gallons per day. The first phase of construction will take place around the existing primary treatment plant and be accomplished while the present plant is fully operational. After this construction (1978), these new secondary units will be utilized for treatment of the flow and the existing sedimentation basins (primary treatment) will be destroyed and new primary clarifiers will be built in a second phase.

Part B of Phase I construction consists of sludge treatment facilities. A thermal conditioning system will be used to treat the sludge.

The estimated construction costs are $183.520 million for Part A - Main Treatment Plant and $85.257 million for Part B - Sludge Handling Facilities for a total cost of $268.778 million for Phase I construction. An additional $12 million for the cost of supervision during construction must be added to the construction costs.

Phase II construction includes new primary clarifiers, a bridge over Doremus Avenue, landscaping, dock modifications, and renovations to existing sludge facilities. The estimated cost for Phase II is $50.53 million.

The Commissioners are also purchasing land needed for the construction projects described. Funds for purchase of land is on hand and no further financing need be instituted at this time.

Perth Amboy, N.J. (Middlesex County)

Future Project

This plant is scheduled for conversion to a pump station and the flow diverted to the central treatment plant of the Middlesex County Sewerage Authority. An 18-month period of time has been allowed for an infiltration and inflow study and an assessment of the impact of different pipeline

routes. By that time, mid-1975, a timetable for construction will have been established.

Rahway Valley Sewerage Authority, N.J. (Middlesex County)

Completed Project

The existing primary plant has been upgraded to secondary treatment with an 85 percent biochemical oxygen demand and suspended solids removal capability. The new plant is of the activated sludge type with step aeration.

This new $16 million plant is operating at a present rate of 12 million gallons per day. The plant and its sub-systems are presently being monitored to check all phases of operation.

Sayreville-Melrose, N.J. (Middlesex County)

Future Project

The present plant will be converted to a pump station and all waste will be treated by the Middlesex County Sewerage Authority Treatment Plant.

The joint conversion cost of the Melrose and Morgan plants will be approximately $4 million.

Sayreville-Morgan, N.J. (Middlesex County)

Future Project

Elimination of various small pump stations and service areas of Sayreville that are presently unsewered and reduction of flow in overtaxed force mains and sewers will result from the construction of a new Crossway Creek interceptor sewer which will convey all waste to the Morgan section of Sayreville.

The present primary treatment plant will be converted to a pump station for diversion of flow to South Amboy on its route to the Middlesex County

Sewerage Authority Treatment Plant.

The total cost for conversion of the Morgan and Melrose plants will be $4 million.

South Amboy, N.J. (Middlesex County)

Future Project

The effluent from the presently operating primary treatment plant will be diverted to a pump station, and a force main to the Middlesex County Sewerage Authority will be built.

The estimated cost for this project is $350 thousand.

West New York, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment standards as part of the overall Hudson County treatment system.

Woodbridge, N.J. (Middlesex County)

Future Project

Plans call for the conversion of the existing plant into a pump station for relaying wastes to the Middlesex County Sewerage Authority Treatment Plant. Construction is to begin early in 1976 and is to be completed by 1977.

The combined cost of linking and building both the Keasby and Woodbridge plants to the Middlesex County Sewerage Authority will be $13 million.

Woodcliff-North Bergen, N.J. (Hudson County)

Future Project

Facilities planning is being conducted for upgrading of wastewaters to secondary treatment standards as part of the overall Hudson County treatment system.

NEW YORK WATER POLLUTION CONTROL PROJECTS

Bay Park Sewage Treatment Plant (Nassau County Disposal District No.2, N.Y. (Nassau County)

Completed Project

An engineering study and report has been completed. This report discussed various options to expand and upgrade the existing Bay Park Treatment Plant.

Project Under Construction

As required under the Clean Water Act, an additional study is in progress at an approximate cost of $1 million. This study will span a period of 18 months and will include an investigation of inflow and infiltration, possible discharge effects on the Bay, and area-wide planning.

Belgrave Sewer District, N.Y. (Nassau County)

Future Project

A Phase II program to upgrade the plant by the year 1985 to tertiary treatment (addition of activated sludge units following trickling filters) is under Review by the New York State Department of Environmental Conservation. Expansion of the treatment capacity of the plant to 4.4 million gallons per day by the year 1995 is also under review by the New York State Department of Environmental Conservation.

The estimated development cost for this program is $2.6 million.

Blind Brook (Rye), N.Y. (Westchester County)

Future Project

This existing primary plant is scheduled to be converted to a 7 million gallons per day secondary treatment plant capable of achieving 85 percent biochemical oxygen demand and suspended solids removals.

Bowery Bay, N.Y. (Queens County)

Project Under Construction

The construction necessary to upgrade and expand the present plant has been 35 percent completed. The scheduled completion date is February 1977. Ultimately, this plant will have the capacity to treat 150 million gallons per day by step aeration with a minimum removal efficiency of 90 percent for biochemical oxygen demand and suspended solids.

The total estimated development cost for this project is $88 million.

Briarcliff Manor, N.Y. (Westchester County)

Future Projects

The sewage presently being treated by septic tanks at River Road and Scarborough Dock will be diverted by the installation of pump stations to the County plant to be built at Ossining. An engineering report is now being prepared.

Buchanan, N.Y. (Westchester County)

Completed Project

An advance model 206 MAS chlorinator was installed in May 1974.

Future Project

Plans are still in progress for the construction of sludge drying beds.

Cedar Creek Water Pollution Control Plant (Nassau County Disposal District No.3)

Completed Project

The plant has been designed to treat 45 million gallons per day utilizing a step aeration activated

sludge process. The plant is designed to provide a 90-95 percent reduction in the biochemical oxygen demand and suspended solids.

The estimated development cost for this project was $48 million.

Project Under Construction

The construction of an outfall line for this plant is in progress. Contracts I and II, consisting of the land portion out to the barrier reef, have been completed. The Bay portion is also complete but major repairs are in progress because of a break in this line. The ocean portion of the line has been completed to the diffuser section and the diffuser is being assembled to this section.

The estimated cost for the construction of the entire outfall line is approximately $54 million.

Future Project

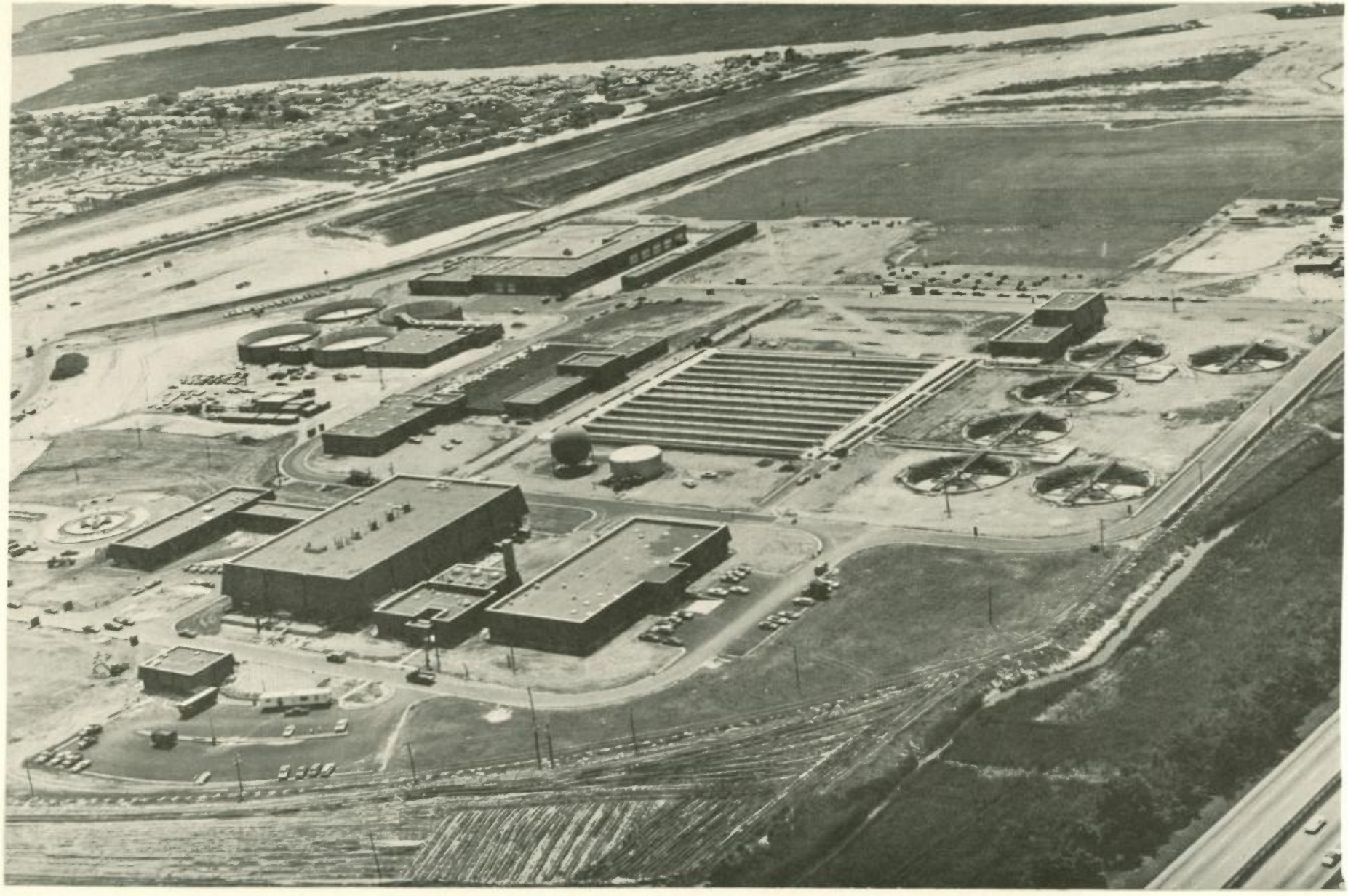
Plans call for a $15 million advanced wastewater treatment plant at Wantagh with nitrogen removal.

Cedarhurst, N.Y. (Nassau County)

Completed Projects

Skimmers have been placed on two final settling tanks and are now operational. The development cost for this project was $50 thousand.

An inflow infiltration study has been completed at an approximate cost of $13 thousand.



CEDAR CREEK WATER POLLUTION CONTROL PLANT, NASSAU COUNTY DISPOSAL DISTRICT NO.3, NASSAU COUNTY, N.Y. Photo courtesy of New York State Department of Environmental Conservation and Department of Public Works, Nassau County. Consulting Engineers: Consoer, Townsend & Associates

Coney Island, N.Y. (Kings County)

Completed Projects

Completed projects at this facility include a building to enclose sludge thickeners, improvement to digestion tank equipment, and partial construction of an interceptor along Shore Parkway.

The cost of these projects was approximately $7 million.

Future Project

No appropriations have been received for the fiscal year 1974-1975 for plant upgrading which will change the treatment process from the present modified aeration to step aeration. This upgrading will result in greater than 90 percent removals for biochemical oxygen demand and suspended solids.

Croton-on-Hudson, N.Y. (Westchester County)

Future Project

This 750 thousand gallons per day primary plant will be converted to a pump station.

Flows will be pumped to the proposed Westchester County Treatment Plant in Ossining sometime in 1979.

Elmwood Homes, N.Y. (Richmond County)

Project Under Construction

The construction of this plant to expand the flow capacity is 90 percent completed and should be concluded by the end of 1974 at an approximate cost of $325 thousand.

F.D.R. Veterans Administration Hospital, N.Y. (Federal & Military) (Westchester County)

Completed Project

New sludge collectors have been installed in the No. 2 primary tank.

Project Under Construction

A roto skimmer and scum pit to handle solids from the secondary clarifier is scheduled for completion in the early part of 1975 at a cost of $16 thousand.

Future Project

Funding of $100 thousand is still being sought in order to improve the preliminary treatment facilities.

Freeport, N.Y. (Nassau County)

Future Project

Plans have been developed to phase this plant out and have it included in the Cedar Creek Water Pollution Control District.

The pump station at Ray Street would be expanded and modernized and an additional pump station would be constructed to transfer flow to the Cedar Creek facility.

The development cost for this project is approximated at $4.5 million. The design concept and funding allocation for this project are currently

under review by the New York State Department of Environmental Conservation.

Glen Cove, N.Y. (Nassau County)

Completed Project

The Morgan Island Estates plant has now been converted to a pump station which is in operation.

Future Projects

Design plans will be submitted to the New York State Department of Environmental Conservation by March 1975 for conversion of the Morris Avenue plant to a step aeration activated sludge facility. This facility will also be designed to achieve tertiary removals as well as removal of 90 percent of the biochemical oxygen demand and suspended solids.

The development cost of the new facilities at Morris Avenue is $13 million.

An outfall to extend from the Morris Avenue plant into the Long Island Sound is also planned. The development cost for this project is approximately $8 million, but funding is awaiting New York State approval.

Great Neck Sewer District, N.Y. (Nassau County)

Project Under Construction

Phase I construction has been approved. This phase includes the improvement of the sludge digestion system, the expansion of the laboratory facilities at the plant, and the connection of a new public water main.

Additional sludge digesters and a new vacuum filter will be purchased and the existing sludge digesters modified.

The funding for this project is $1.32 million.

Future Project

Phase II construction is still to be approved. This phase involves the expansion of the plant to treat a flow of approximately 4.5 million gallons per day and will be designed for the anticipated population in the year 2000.

The cost for this phase is approximately $4.8 million but does not include the design and construction of an outfall which would require additional funding of $10-20 million.

Great Neck Village, N.Y. (Nassau County)

Completed Project

Five new pumps have been installed at various pump stations. In addition, a comminutor and sludge pump have been installed at the main plant.

Haverstraw, N.Y. (Rockland County)

Future Project

Future plans call for this plant to be converted to a pump station with flows diverted to the Joint Regional Sewerage Board-Town of Haverstraw for treatment.

Huntington Sewer District, N.Y. (Suffolk County)

Completed Project

Modification has been made to the effluent line of the grit chamber.

Future Project

Plans are being made to expand the District so as to incorporate additional laterals to newly constructed homes.

Hunts Point, N.Y. (Bronx County)

Projects Under Construction

The upgrading and expansion program for this facility is 80 percent completed. The plant will have the ability to treat 200 million gallons per day utilizing step aeration when it becomes fully operational in September 1975.

New pumping stations will also be constructed so as to direct the waste flows now being treated at Orchard Beach, Hart Island, and City Island to the Hunts Point plant.

The total development cost for these projects is estimated to be $70 million.

Iona Island State Park, N.Y. (Rockland County)

Future Project

A request for $600 thousand shall be made in April 1975 so that construction can begin on this 80 thousand gallons per day bio-disc plant.

The necessary discharge permits have been filed and the Hudson River will receive this plant's effluent.

The plant and the park it will serve are scheduled to be opened in 1978.

Irvington, N.Y. (Westchester County)

Project Under Construction

Construction on the intercepting sewers and pump station is now in progress.

Future Project

Flow from this plant will be diverted to the Yonkers Treatment Plant at the end of 1975 or the first quarter of 1976.

Jamaica, N.Y. (Queens County)

Project Under Construction

Construction to upgrade the plant to step aeration has been 67 percent completed and should be fully completed on schedule in April 1976. This will provide the capability of achieving 90 percent removal efficiencies for biochemical oxygen demand and suspended solids.

The total development cost for this project is estimated at $34 million.

Jamaica Bay Unit of the Gateway National Park, N.Y. (Kings County)

Completed Project

This plant, located at Floyd Bennett Field, is now providing treatment for the newly established Gateway National Park. The plant is treating approximately 40-50 thousand gallons per day which is about 10 percent of its design capacity.

This plant was formerly operated by the U.S. Navy but is now operated by the U. S. Department of the Interior.

Joint Regional Sewerage Board-Town of Haverstraw, N.Y. (Rockland County)

Future Project

Phase I funding has been approved for the abandonment of the Village of Haverstraw Treatment Plant and replacement with a pump station to divert flow to the Joint Regional Sewerage Board Plant.

This project will be initiated in early 1975 and will cost approximately $1 million.

Phase II construction will take place in 1976 if funds are available and will involve expansion of

mains and incorporation of the Letchworth Village plant. The cost for this phase is approximately $900 thousand.

Phase III construction, which involves the expansion of the plant flow capacity to 8 million gallons per day, will occur in 1977 if funds are available.

The cost estimate for this phase is $3.5 million.

Kings Park State Hospital, N.Y. (Suffolk County)

Completed Project

Construction is now complete on a 100 thousand gallons holding tank.

Other additions and modifications to this plant include construction of a reception building for two tank vehicles, and ozonator for odor control, two grit chambers with conveyors, renovation of existing aerators, installation of an emergency generator, and conversion to commercial water and electric supplies.

The total cost for modifications to this plant was approximately $658 thousand.

Long Beach, N.Y. (Nassau County)

Future Project

A revised engineering study has been made and is currently under review by the New York State Department of Environmental Conservation. The treated flow capacity at this facility shall be increased to 13 million gallons per day.

Additional equipment to be added to this plant include a grit chamber, main sewage pump, 2 primary settling tanks, recirculation and sludge pumps, a sludge storage tank and skimmer, additional weirs for existing settling tanks, and miscellaneous piping.

The estimated development cost for this project is $4 million.

An infiltration study is being conducted and a report will be prepared for this project.

Longwood Harbor Apartments, N.Y. (Suffolk County)

Future Project

This plant will tie in to the Suffolk County (SW) Sewer District Plant when construction is completed.

Mamaroneck, N.Y. (Westchester County)

Future Project

A study is continuing exploring the feasibility of converting this primary plant to a secondary treatment facility.

New Rochelle, N.Y. (Westchester County)

Completed Project

The construction at the Fifth Avenue pump station has been completed and it is now operating.

Future Project

The treatment plant itself will be upgraded from primary to secondary treatment at a cost of $14 million.

The new system will utilize activated sludge in an environment of pure oxygen to achieve removal efficiencies of 85 percent for both suspended solids and biochemical oxygen demand.

Newtown Creek, N.Y. (Kings County)

Completed Project

The Manhattan Pumping Station has been completed. The cost of this contract was $13 million.

Project Under Construction

Repair of an interceptor to convey the flow to the Manhattan Pumping Station to the treatment plant is underway. Completion is expected in July 1975.

Two pilot plant studies are in progress at this facility. The first utilizes a pure oxygen system to treat approximately 20 million gallons per day of wastewater. Preliminary results indicate removal efficiencies of 85, 90, and 80 percent for suspended solids, biochemical oxygen demand, and chemical oxygen demand, respectively.

The second pilot study under design will evaluate the rotating disc method to treat wastewater. Tertiary system removals will be effected, i.e., nitrates and phosphates, for flows of 20 million gallons per day.

Future Projects

This plant is scheduled to be upgraded to step aeration treatment at an anticipated cost of $300 million unless an alternate type of process, such as one of those currently under study, is used. However, an $8 million contract will be let first on a project to improve the screening process and thickener and digestion operations and to alleviate other operational difficulties encountered since the plant began operating.

North River, Manhattan (New York County)

Completed Projects

All interceptors servicing this plant have been completed at an approximate cost of $125 million.

The 100,000 cubic foot capacity sludge vessel has also been completed at a cost of approximately $7 million.

Project Under Construction

This new plant has been designed to operate by step aeration and treat 220 million gallons per day with minimum removal efficiencies of 90 percent for biochemical oxygen demand and suspended solids. The foundation is 60 percent completed. Advertisement for bids for the superstructure will begin in the third quarter of 1975.

The plant should be completed by the first quarter of 1980 reaching full operational status shortly thereafter.

North Tarrytown, N.Y. (Westchester County)

Project Under Construction

Construction on the intercepting sewers and pump station is now in progress.

Future Project

Flow from this plant will be diverted to the Yonkers Treatment Plant at the end of 1975 or the first quarter of 1976.

Nyack, N.Y. (Rockland County)

Project Under Construction

Conversion of this primary plant to a pump station is underway.

The force main connecting the Nyack plant to the Orangetown District Treatment Plant has been completed and the pump station is 50 percent completed.

This project, along with the conversion of the Upper Nyack Plant to a pump station, will be completed in January 1975 at a total cost of $5 million.

Oakwood Beach, Staten Island, N.Y. (Richmond County)

Project Under Construction

Contracts have been awarded to increase this plant's capacity from 15 to 40 million gallons per day and upgrade the treatment process to step aeration. Construction is approximately 8 percent completed.

The total development cost for this phase of the project is approximately $57 million.

Future Projects

Approval to advertise two interceptors an outfall and force main on approved contracts is anticipated in the coming months.

An application for aid has been submitted to New York State for the construction of an additional interceptor and two pumping stations.

Orangetown Sewer District, N.Y. (Rockland County)

Future Project

The three Nyack plants will divert their flows to this secondary plant for treatment.

Estimated cost for this project is set at $5 million. In the interim, Orangetown will set up a pilot plant to achieve tertiary treatment of its flows.

Ossining, N.Y. (Westchester County)

Future Projects

The two existing treatment plants in Ossining, Liberty Street and Water Street, are scheduled to divert their flows to a new Westchester County Treatment Plant to be built at Ossining.

Design plans for this new plant have been completed and are under review by the New York State Department of Environmental Conservation.

Completion is scheduled for 1979 at an estimated cost of $18.6 million.

Ossining Correctional Facility, Ossining, N.Y. (Westchester County)

Future Project

The present plant will be converted to a pump station for relaying waste to the new Westchester County Treatment Plant to be built in Ossining.

Owls Head, N.Y. (Kings County)

Future Projects

No appropriations have been received for the fiscal year 1974-1975 for the plant upgrading. The plant is scheduled to be converted from the present modified aeration process to a step aeration process. This upgrading will result in greater than 90 percent removals for biochemical oxygen demand and suspended solids.

The anticipated development cost for this project in conjunction with a pumping station and interceptors is $210 million.

Oyster Bay, N.Y. (Nassau County)

Project Under Construction

An infiltration study is in progress and a report will be prepared.

Peekskill, N.Y. (Westchester County)

Future Projects

This facility will be upgraded to an activated sludge plant and incorporated into the Westchester

County Environmental Facilities system. The cost of the construction is set at $29 million with an additional $150 thousand allotted for an inflow-infiltration study.

Penn Central Company, Harmon, N.Y. (Westchester County)

Completed Project

The construction of a chemical feed building, sand filters, and waste oil tank has been completed.

Port Chester, N.Y. (Westchester County)

Future Project

Plans call for this plant to be upgraded to a 5.8 million gallons per day activated sludge plant.

Port Jefferson, N.Y. (Suffolk County)

Completed Project

The capacity of the existing primary plant has been increased. Construction of a new primary clarifier and a new chlorine contact chamber has provided an increase in the design flow of the plant from 1.5 million gallons per day to a 2.5 million gallons per day capacity.

The cost for these changes was approximately $200 thousand.

Future Project

A study is in progress to acquire a site for a new 5 million gallons per day activated sludge plant. The plant will be designed to remove 95 percent of the biochemical oxygen demand and the suspended solids. No date has been set for the start of construction.

The cost of the new plant is estimated at $10 million.

Port Richmond, N.Y. (Richmond County)

Projects Under Construction

The upgrading and expansion of this 10 million gallons per day primary plant to a 60 million gallons per day step aeration plant is 50 percent completed. Upon completion in February 1976, the plant will be able to provide 90 percent removals for suspended solids and biochemical oxygen demand.

The construction of the Hannah Street pumping station is now 75 percent completed. The anticipated completion date is July 1975.

The East Branch interceptor system is now 45 percent completed, and it is anticipated that this project will be completed in June 1975.

The development cost for the entire Port Richmond expansion and upgrading program is estimated to be $170 million.

Port Washington, N.Y. (Nassau County)

Future Project

A construction program plan for this facility has been submitted to the New York State Department of Environmental Conservation and is currently under review.

Included in the expansion program are the following items: activated sludge units, a new pump station at the plant, additional force main lines, two primary settling tanks, a sludge thickener, various pumps, and a chlorine contact chamber.

The estimated cost for this expansion project is $3.9 million but may be revised depending upon whether the Roslyn Treatment Plant will be converted to a pump station and deliver flow to Port Washington.

Red Hook, N.Y. (Kings County)

Future Projects

An application has been approved by New York State and the Federal Government for the construction of an interceptor, the first phase of this project. Advertisement for bids will begin shortly.

An application has been submitted for construction of the Gowanus Pumping Station and is currently being reviewed by New York State.

An application for the construction of the Red Hook Treatment Plant utilizing the step aeration process with a capacity of 70 million gallons per day is being prepared along with the finalization of plans and specifications. The sludge will be treated by the Zimmerman process, with ultimate disposal of the sludge at a sanitary landfill site.

The estimated cost of development for this project is $325 million.

Rockaway, N.Y. (Queens County)

Project Under Construction

The capacity of this plant will be increased from 30 to 45 million gallons per day. Modifications will also be made to treat the wastewater by means of step aeration rather than modified aeration, thus resulting in increased removal efficiencies for biochemical oxygen demand and suspended solids.

Approximately 47 percent of this upgrading and expansion program has been completed. The total development cost for this project is estimated to be $48 million.

Rockland County Sewer District No. 1, N.Y. (Rockland County)

Future Projects

Plans are presently being formulated for doubling the present 10 million gallons per day capacity of this activated sludge plant.

Besides plant expansion, system improvements include the construction of five pump stations and thirty miles of interceptors and force mains to provide service for presently unsewered areas of the District.

Estimated construction costs are currently set at $45 million.

The results of a $100 thousand inflow-infiltration study are due late this year.

Roslyn, N.Y. (Nassau County)

Future Project

A plan to expand the facilities at this plant has been submitted to New York State Department of Environmental Conservation for review.

Included in the new equipment for this plant are the following: tertiary treatment units, sludge incinerator, and emergency generators.

The estimated cost for this expansion program is $1 million.

A study is also in progress to evaluate whether to convert the plant to a pump station and divert flow to Port Washington for treatment.

South Nyack, N.Y. (Rockland County)

Project Under Construction

Conversion of this primary plant along with the Nyack Plant to pump stations that will convey their

flows to the Orangetown District Treatment Plant is underway.

The excavation for the pump station has been completed.

Project completion is slated for January 1975 at a total cost of $5 million.

Suffolk County (Southwest) Sewer District No. 3, N.Y.

Project Under Construction

The construction of separate trunk and lateral sewer lines is in progress. The total cost for this project is estimated at $800 million.

Future Projects

Plans for the construction of an activated sludge treatment plant with a flow capacity of 30 million gallons per day have been submitted for re-bid.

Construction is expected to start in 1975 at an approximate cost of $40 million.

A separate contract to construct an outfall into the Atlantic Ocean has also been submitted to a re-bid. Anticipated cost for this project is $60 million.

Tallmans Island, N.Y. (Queens County)

Projects Under Construction

Construction to upgrade and expand this plant from 60 to 80 million gallons per day is now 55 percent completed. Step aeration treatment will provide at least 90 percent suspended solids and biochemical oxygen demand removals.

The plant upgrading should be completed in 1976 at an estimated development cost of $43 million.

A pilot plant study is being conducted to study the effectiveness of culturing plankton, shellfish, and seaweed as an adjunct modification to biochemical treatment of sewage. The pilot plant treats approximately 10 thousand gallons per day of wastewater. The cost of this privately-funded study is estimated at $350 thousand.

Tarrytown, N.Y. (Westchester County)

Future Project

The conversion of this primary plant to a pump station will be completed at the end of 1975 or the first quarter of 1976 at which time flow will be pumped to the Yonkers Treatment Plant.

26th Ward, N.Y. (Kings County)

Project Under Construction

Plant expansion to 85 million gallons per day and upgrading to step aeration treatment is now 87 percent completed.

Completion of this project is expected in May 1975 at a total development cost of $49 million.

Upper Nyack, N.Y. (Rockland County)

Project Under Construction

Conversion of this plant to a pump station that will convey flows to the Orangetown District Treatment Plant is underway.

The trunk line connecting the completed pump station to the Nyack Plant has been completed.

Project completion is scheduled for January 1975 at a cost of $250 thousand.

Wards Island, N.Y. (New York County)

Project Under Construction

Expansion of the plant's capacity to 290 million gallons per day and upgrading to step aeration treatment are now 34 percent completed.

The scheduled completion date is August 1976, and the total development cost is estimated at $117 million.

West Long Beach, N.Y. (Nassau County)

Project Under Construction

A survey is in progress to determine the need for the installation of dual media filtration units as a final treatment process.

Yonkers Joint Treatment, N.Y. (Westchester County)

Project Under Construction

The new step aeration activated sludge plant is undergoing construction. This facility will provide a high degree of secondary treatment for flows up to 93 million gallons per day.

The estimated cost of the project is now set at $100 million.

NEW YORK-NEW JERSEY METROPOLITAN AREA SEWAGE SLUDGE DISPOSAL MANAGEMENT PROGRAM

Much of the sewage sludge in the New York-New Jersey Metropolitan Area is presently disposed of by barging to sea. The current uncertainties about the future of this means of disposal and the tripling of sewage sludge volume expected within the next several years because of the upgrading to secondary treatment plants pose a tremendous problem. There is now a real need to focus on a regional basis the question as to how to dispose of this sewage sludge. Based upon meetings between the States of New York and New Jersey, the U.S. EPA-Region II, and the Interstate Sanitation Commission, it was agreed that EPA-Region II would fund a $500,000 two-year, three-phase program for the Commission to be responsible for developing a viable and coordinated system for sewage sludge disposal in the New York-New Jersey Metropolitan Area by June 1976.

In developing the guidelines for the program, the following EPA-Region II policies were to be kept in mind:

(1) New sludge incinerators at each individual waste treatment plant would not be considered.

(2) Land disposal techniques must not contaminate groundwaters.

(3) It is to be assumed that the heavy metals and toxic chemical contents of sludges will be reduced to levels consistent with EPA pretreatment guidelines.

Description of the Program

Phase 1

Phase 1 of the program is to be completed by May 1975. A Contract was awarded to Camp, Dresser & McKee, Environmental Engineers, to do a preliminary investigation of feasible alternatives to ocean disposal. It consists of a general review of the alternatives for the ultimate disposal of municipal sewage sludges in the New York-New Jersey Metropolitan Area. This will identify the entire spectrum of feasible alternatives and make preliminary

estimates of disposal costs and the environmental impact of each. The ultimate objective of this phase is to recommend a limited number of the most attractive alternatives (other than ocean disposal) for in-depth investigation in Phase 2. Phase 1 includes, but is not limited to, the following disposal techniques:

(1) Land disposal alternatives: a) sanitary landfill, b) spreading as soil conditioner and fertilizer, c) various sludge solidification processes, d) drying and selling for fertilizer and soil conditioner.

(2) Disposal by combustion (incineration): a) incineration of raw sludge, b) incineration in combination with solid wastes, c) incineration to include power or steam generation.

(3) Disposal as a salable product: a) activated carbon, b) oil, c) natural gas; each of the above through pyrolysis, d) building products.

The above investigation will define the problem in terms of the present and projected sources of sludges produced and their chemical, physical, and biological properties. The final report will recommend a limited number of further alternatives for in-depth investigation in Phase 2.

Phase 2

Phase 2 of the program is scheduled to begin in July of 1975 and will conclude in June 1976. The in-depth study will include:

(1) Good cost estimates;

(2) Thorough assessment of the environmental impact;

(3) Specific design recommendations; and

(4) Recommendations relative to New York-New Jersey Metropolitan Sludge Management Plan.

Concurrently with Phases 1 and 2, the National Oceanographic and Atmospheric Administration (NOAA) is conducting a study in the New York Bight which will include the impact of ocean disposal. EPA will provide the Commission with input on the environmental consequences of ocean disposal so that a comparison can be made between controlled ocean disposal (taking into account economic and environmental impact) and the in-depth study of the alternatives investigated in Phase 2 in order for the Commission to recommend the best overall sewage sludge disposal program.

Phase 3

Phase 3 (undertaken concurrently with Phases 1 and 2) is an in-house investigation of legal and institutional requirements. It includes a study of legal and institutional requirements to establish a New York-New Jersey Metropolitan regional sewage sludge management authority or authorities and to determine whether such an authority can function on an interstate basis in all respects. It will also identify and examine alternatives possible for coordination or integration of sludge collection and disposal with reference to the present or possible legal basis, administrative feasibility, and financial attributes and feasibility. Also, drafts of sample statutes and/or interlocal and interstate agreements and contracts needed to implement the recommended legal-institutional approach to the problem will be presented.

Management of the Program

In order for the program to be successful and so that all sectors affected or potentially affected by the results of the program can be kept informed and be able to make an input into the program, the management of the program was developed for two-way communication. While the Commission is responsible for the overall management of the development program, an Executive Committee composed of a representative from the State of New Jersey, the State of New York, the Environmental Protection Agency-Region II, the waste treatment agencies operating in New Jersey, the waste treatment agencies operating in New York, and the Interstate Sanitation Commission has been established. This Committee advises the Interstate Sanitation Commission

concerning the conduct of the investigation. Technical advisory subcommittees have been established both by New Jersey and New York waste treatment agencies. In New Jersey, a legal subcommittee has been established. These committees advise and present their views to the waste treatment agencies' representatives on the Executive Committee and thus provide an input into the entire program. With this program structure, information will be able to flow both ways. In this manner, agencies will also be able to be kept apprised through meetings with the operating agency representative on the Executive Committee as to how the program is progressing.

Summary

As a result of this Program, the most favorable land-based technology developed on the basis of the Phase 1, 2, and 3 investigations will be compared with the pros and cons of the most favorable ocean disposal techniques developed in the concurrent NOAA-EPA studies. The most cost-effective management program with the minimum environmental impact will be selected on the basis of this comparison.

AUTOMATIC WATER QUALITY MONITORING SYSTEM

This year, the Commission continued operation of its automatic water quality monitoring system. The system is comprised of Commission-owned units and units leased from the United States Environmental Protection Agency. In April, the Commission installed a remote monitoring unit at Fort Wadsworth in Staten Island. This unit monitors the water at The Narrows and, like the other units presently in the monitoring network, measures temperature, conductivity, dissolved oxygen, and pH. Each remote unit telemeters its data on an hourly basis to a central receiver at the Commission office.

Summary reports of the monitor data are prepared daily by computer and are sent to the appropriate state and federal agencies. As part of the Commission's data interchange program with other agencies, the Commission receives daily summaries of monitoring data of the Hudson River at Verplanck from the New York State Department of Environmental Conservation.

Late in the year the Commission installed a seventh remote unit to monitor the Arthur Kill at the Outerbridge Crossing. Also, sites are being investigated along the Hudson River for installation of an eighth remote monitor.

A map and listing of the remote water quality monitors in the Interstate Sanitation District appear on the following pages. Following the map and listing are graphs showing the monthly minimum, the monthly maximum, and the monthly average for the parameters measured at each of the Commission-operated stations.

REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS IN THE INTERSTATE SANITATION DISTRICT

INTERSTATE SANITATION COMMISSION OWNED AND OPERATED

1. Arthur Kill - Consolidated Edison Arthur Kill Generating Station, Staten Island, New York

2. East River - Consolidated Edison Ravenswood Generating Station, Long Island City, New York

3. East River - Throgs Neck Bridge, Fort Schuyler, Bronx, New York

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY OWNED AND INTERSTATE SANITATION COMMISSION OPERATED

4. Raritan River - Victory Bridge, Perth Amboy, New Jersey

5. Arthur Kill - Outerbridge Crossing, Staten Island, New York

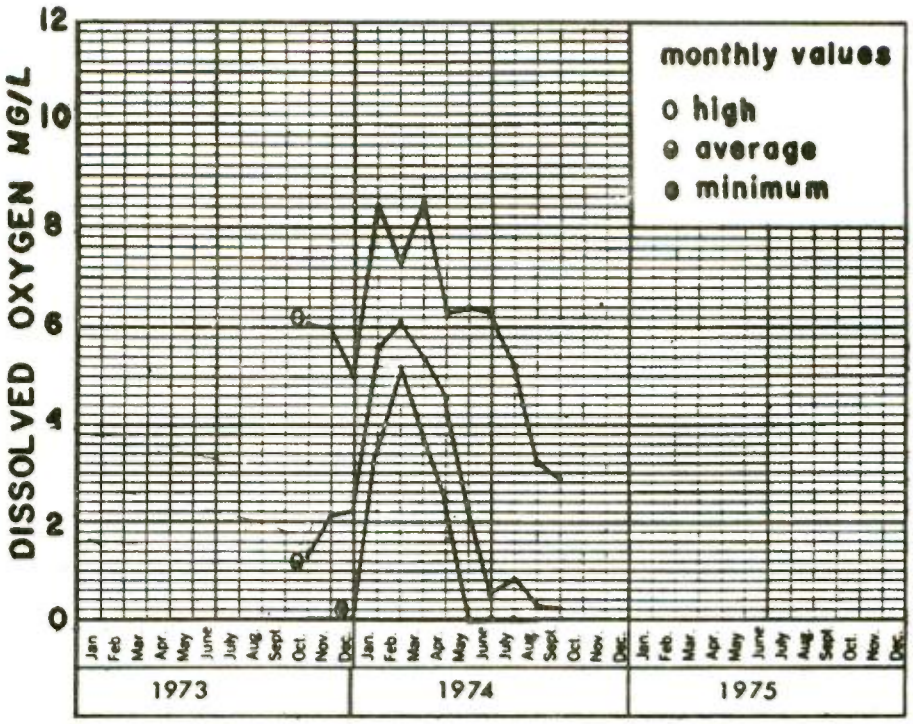
6. The Narrows - Fort Wadsworth, Staten Island, New York

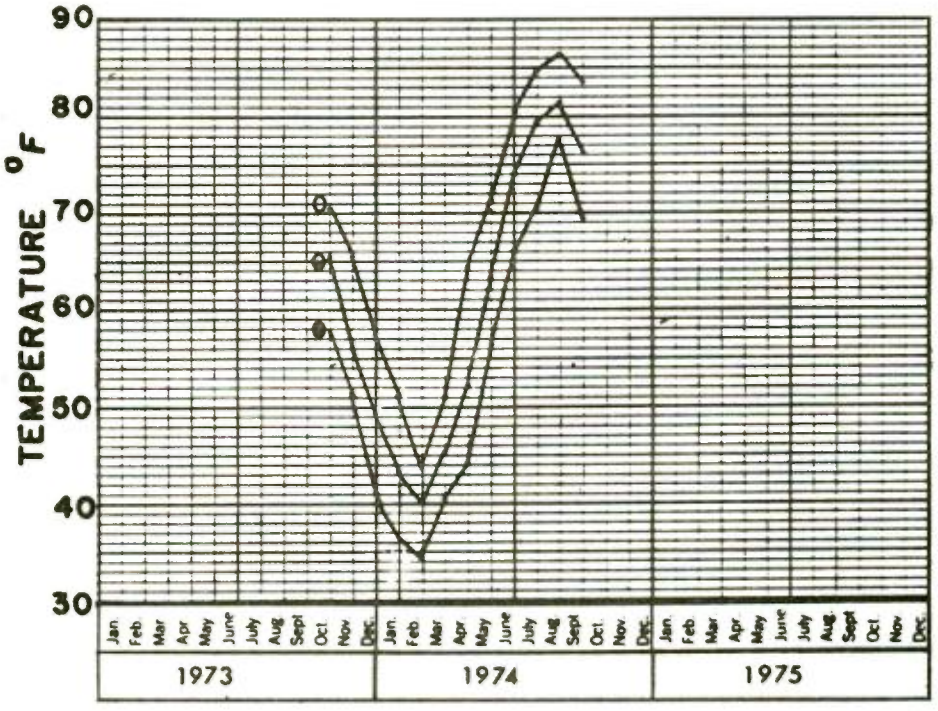
7. Kill Van Kull - U.S. Gypsum Company, Staten Island, New York

8. Hudson River - Site being determined

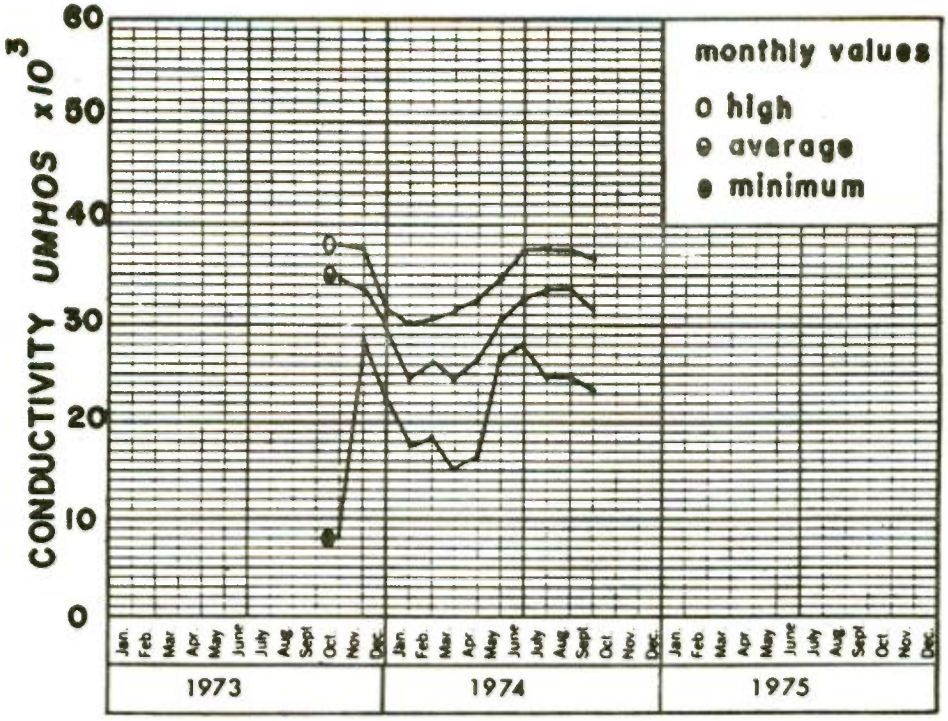
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION OWNED AND OPERATED

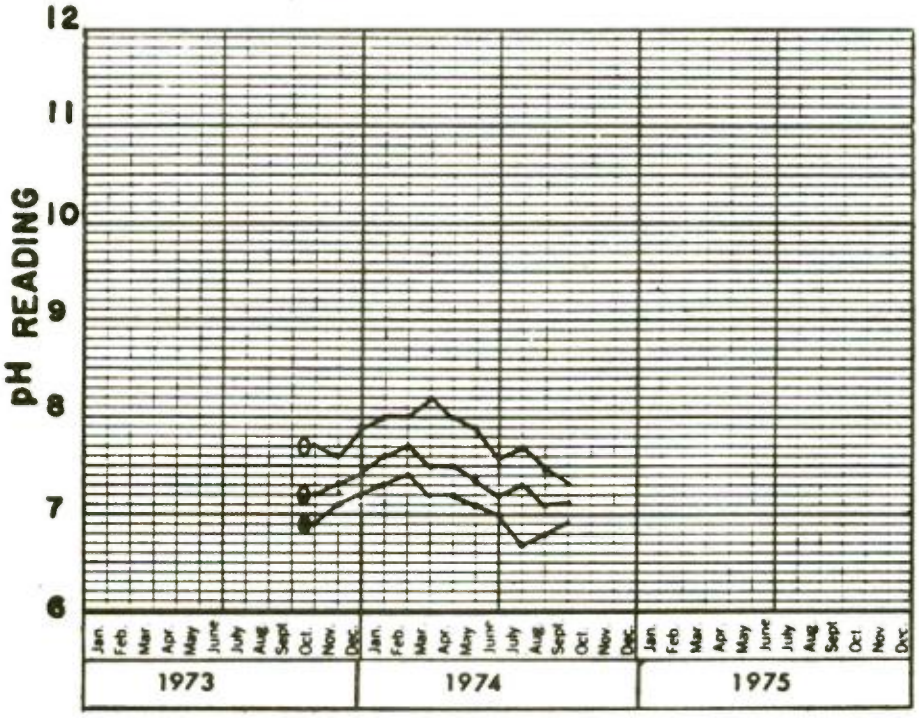
9. Hudson River - Verplanck, New York



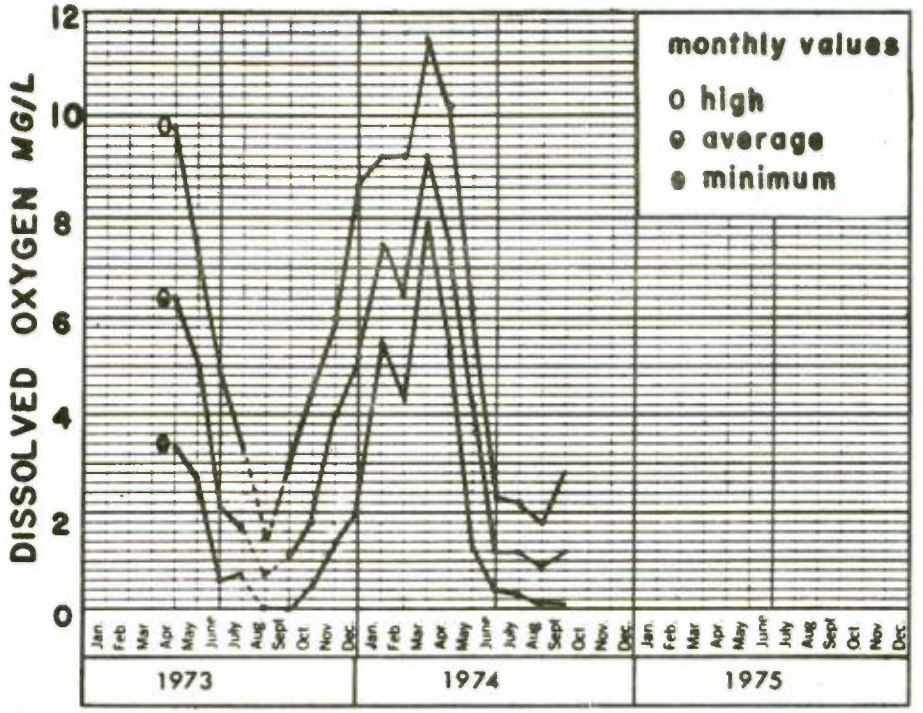


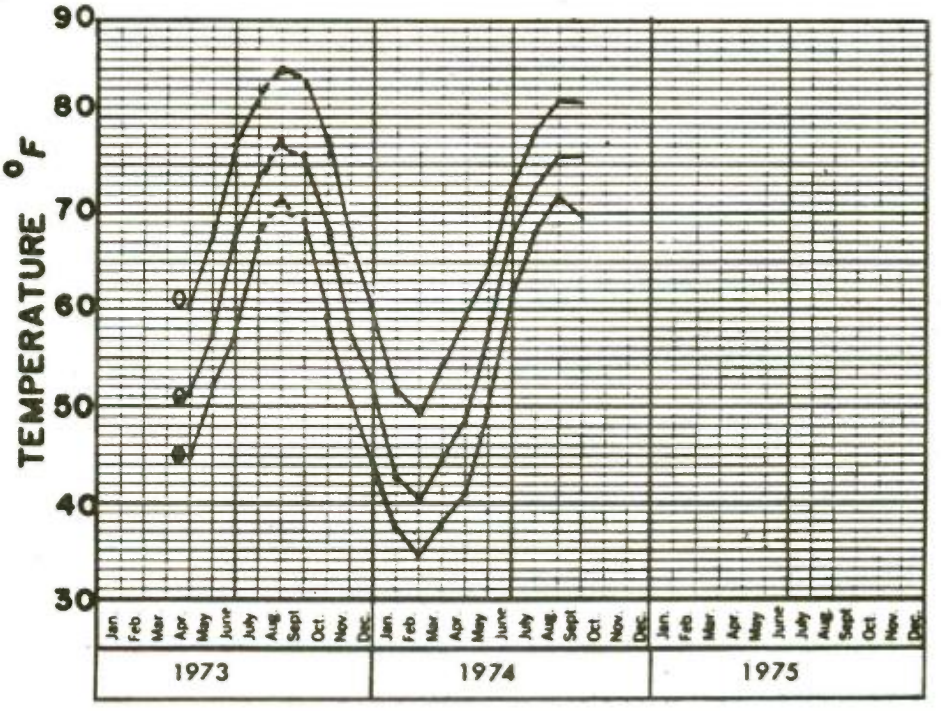
ARTHUR KILL - CON ED.
station no. 1



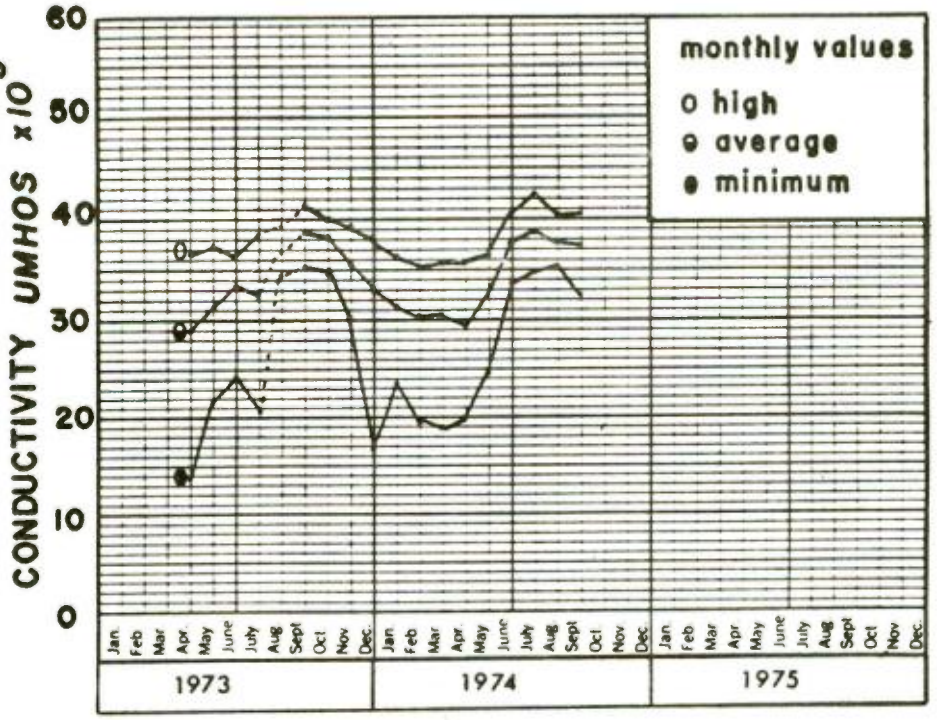


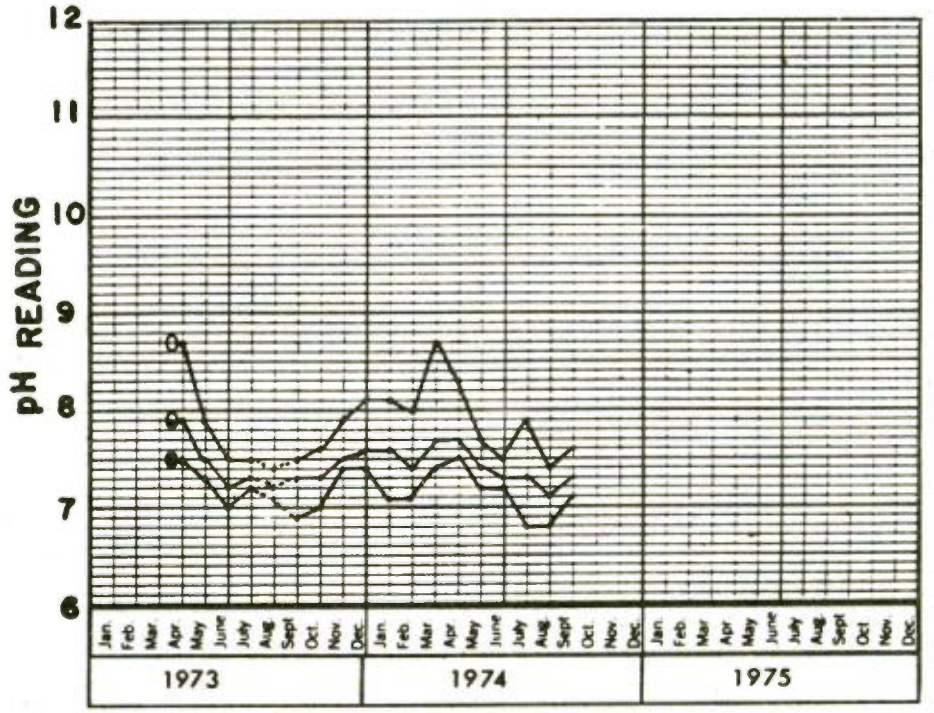
ARTHUR KILL - CON ED.
station no. 1



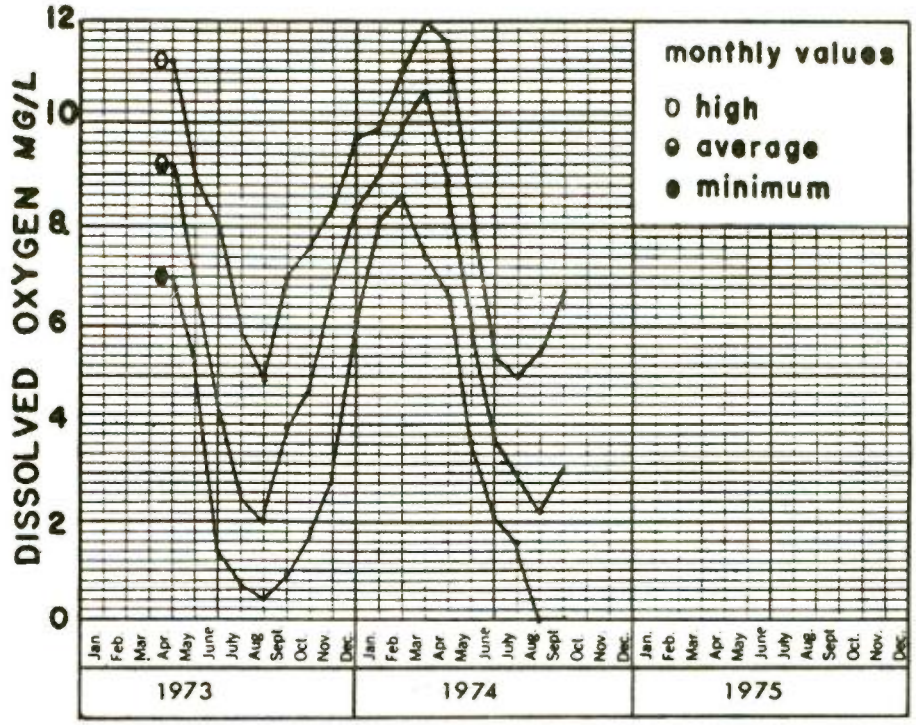


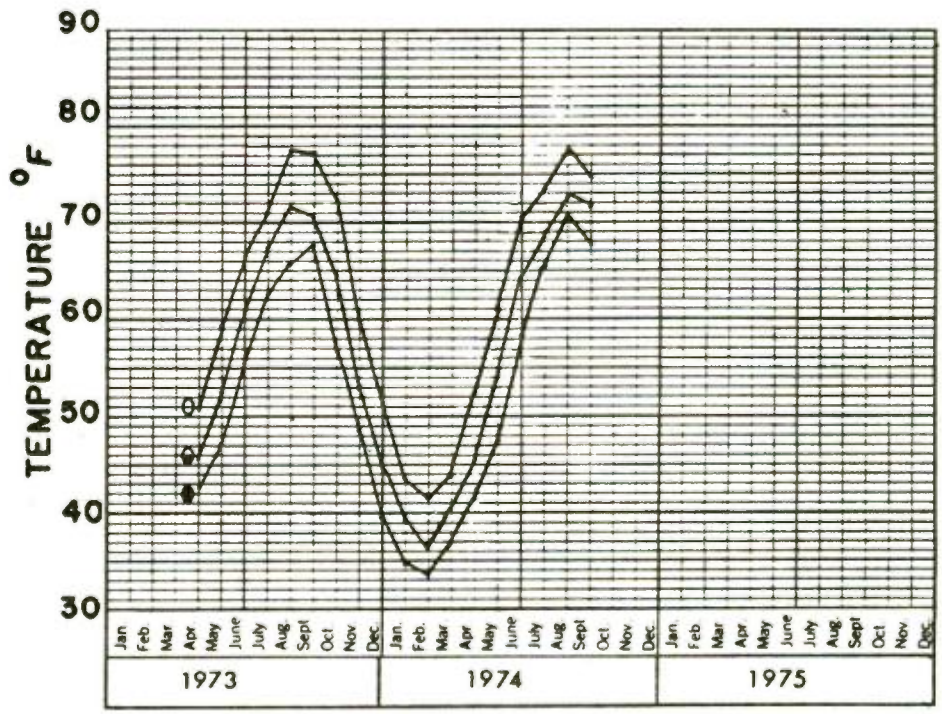
EAST RIVER - CON. ED.
station no. 2



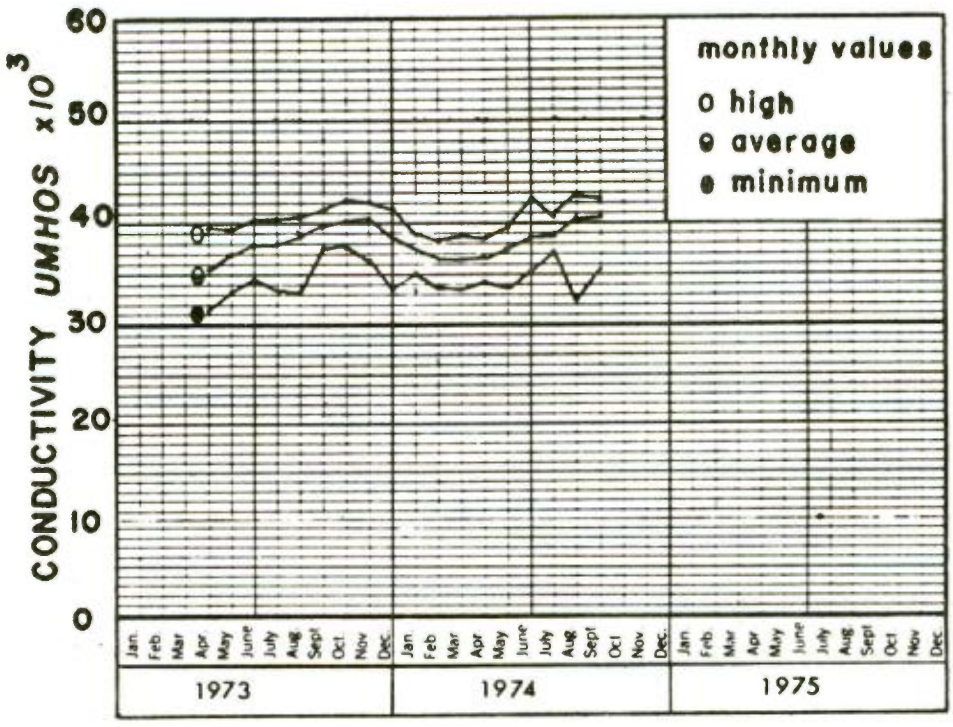


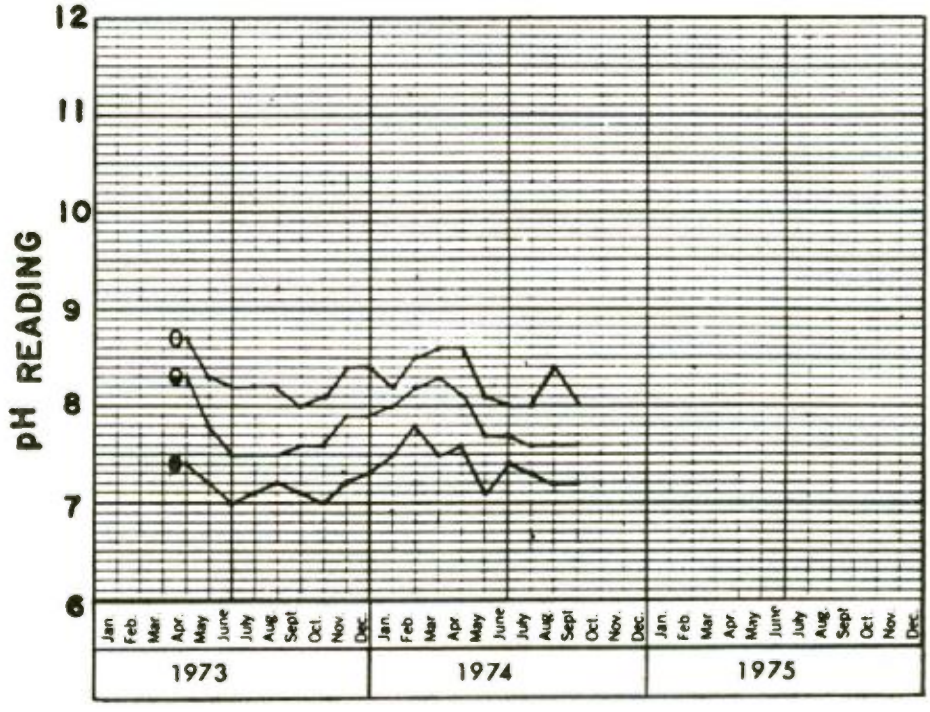
EAST RIVER - CON. ED.
station no. 2



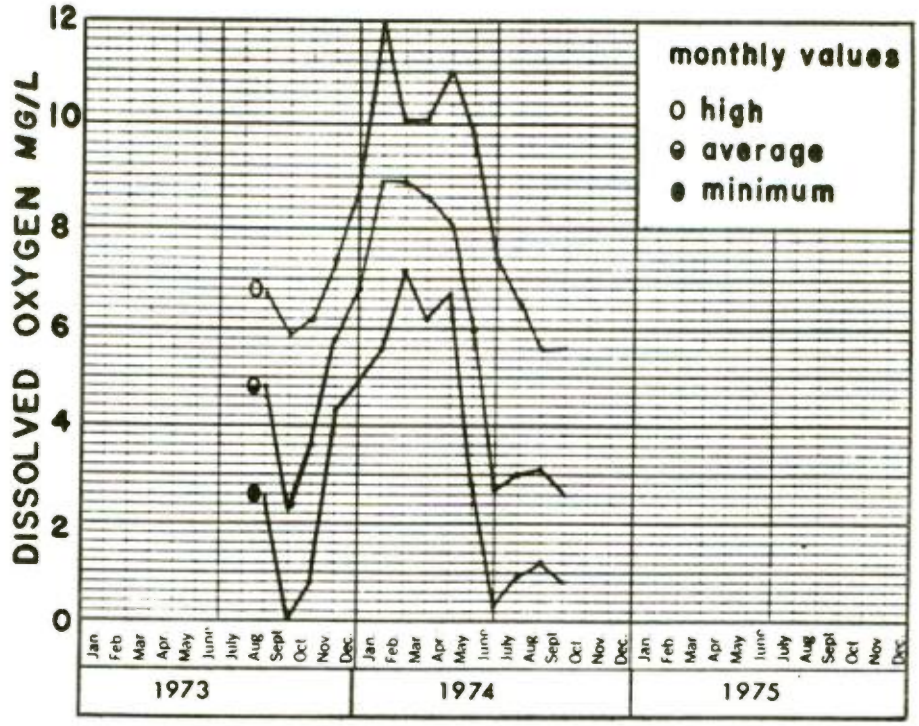


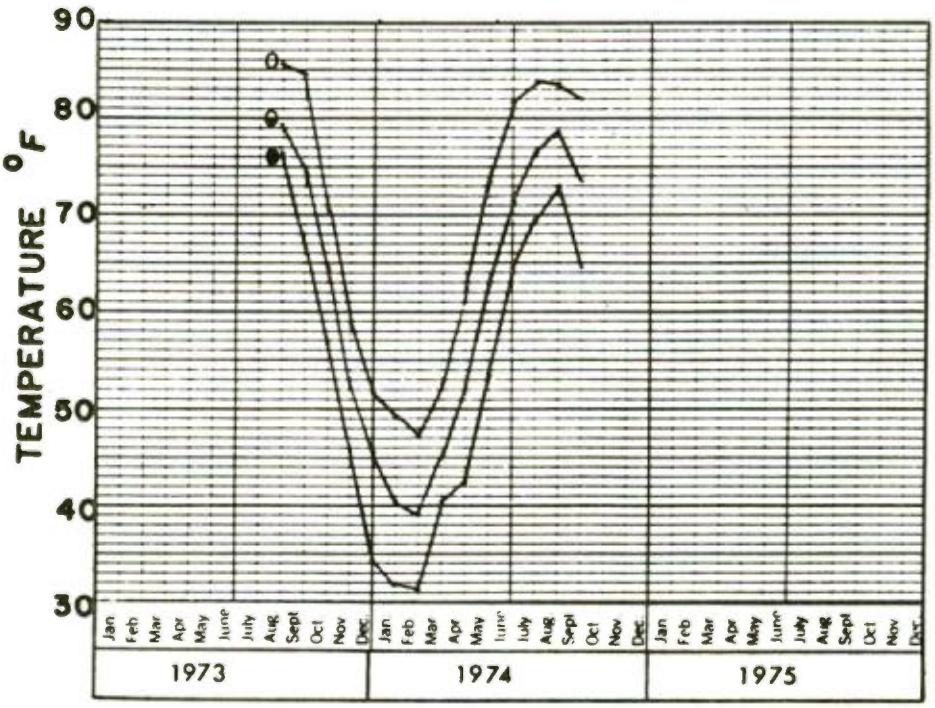
EAST RIVER - THROGS NECK
station no. 3



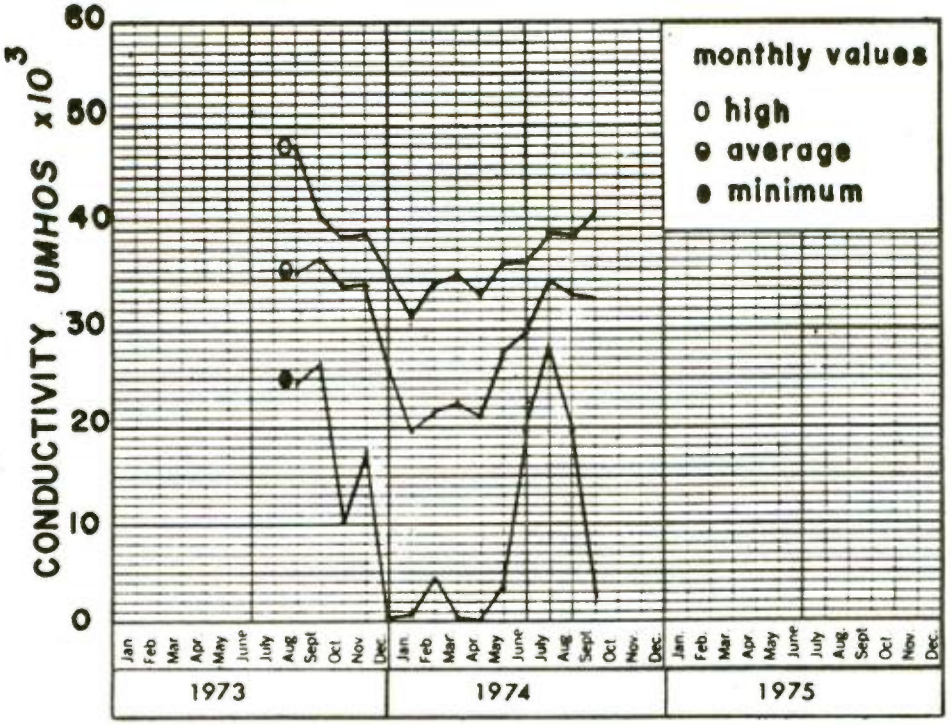


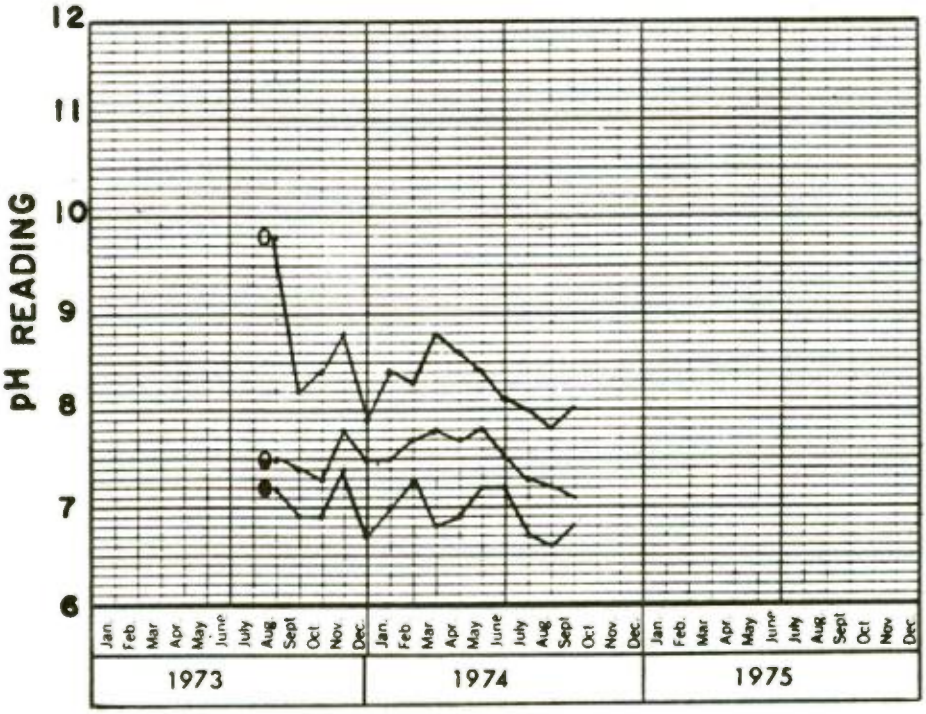
EAST RIVER - THROGS NECK
station no. 3



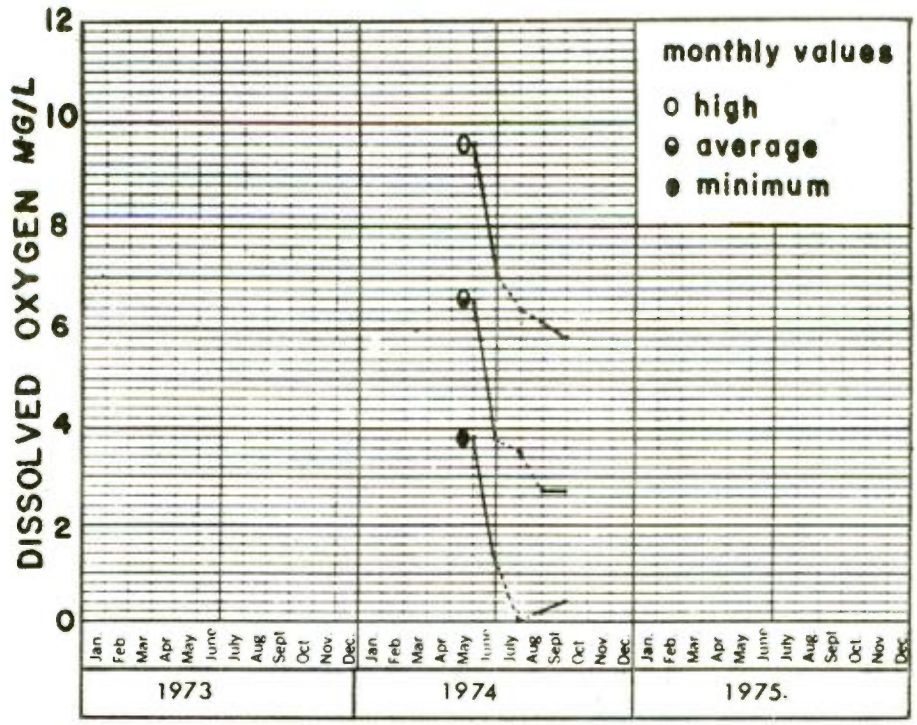


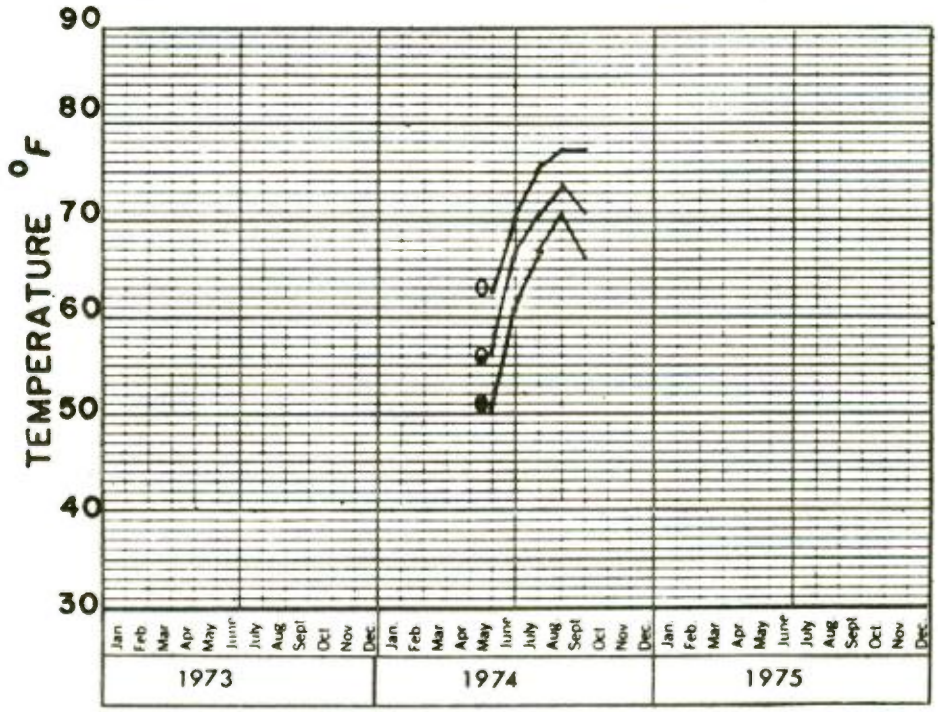
RARITAN RIVER - VICTORY BRIDGE
station no. 4



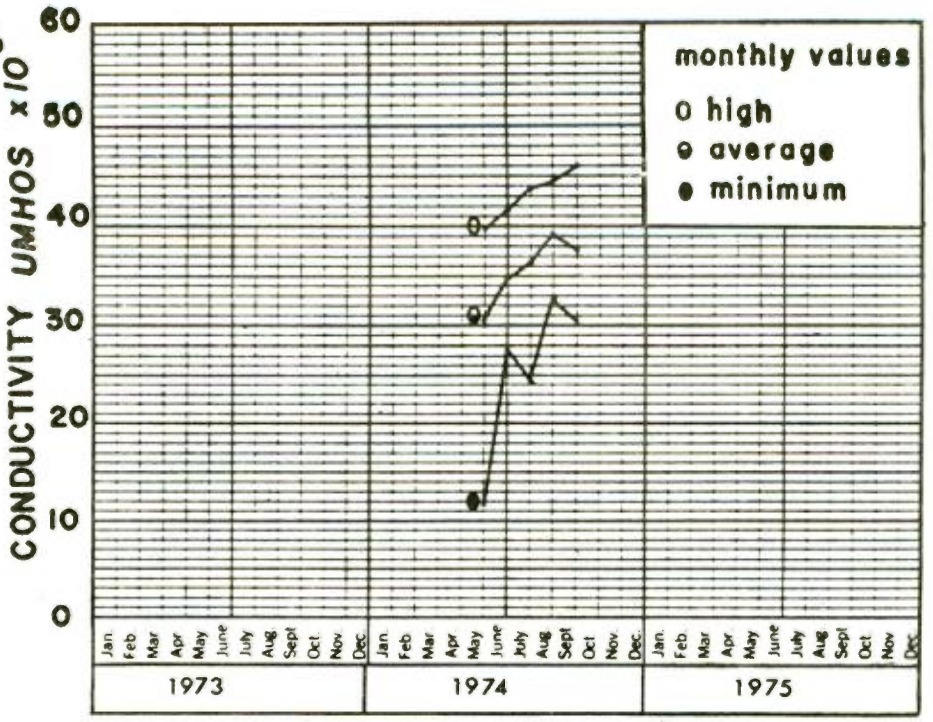


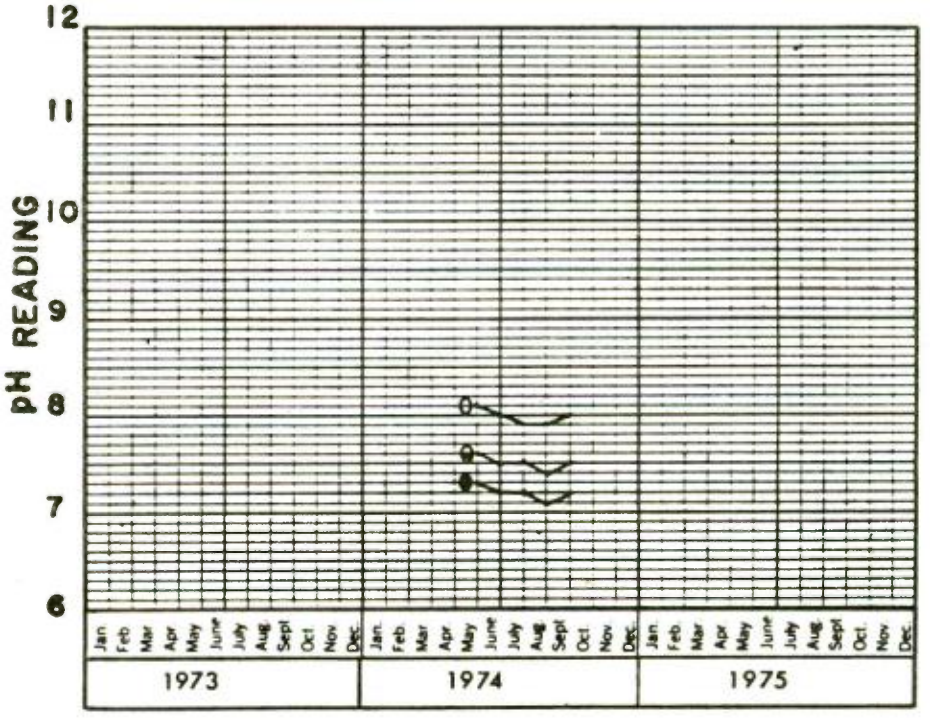
RARITAN RIVER - VICTORY BRIDGE
station no. 4





THE NARROWS - FT. WADSWORTH
station no. 6





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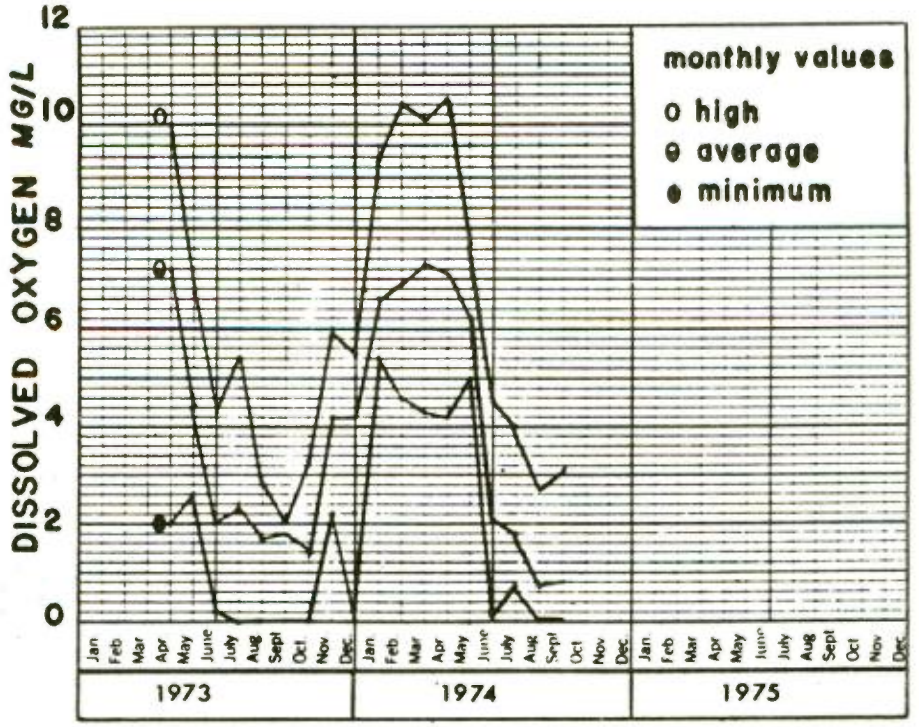
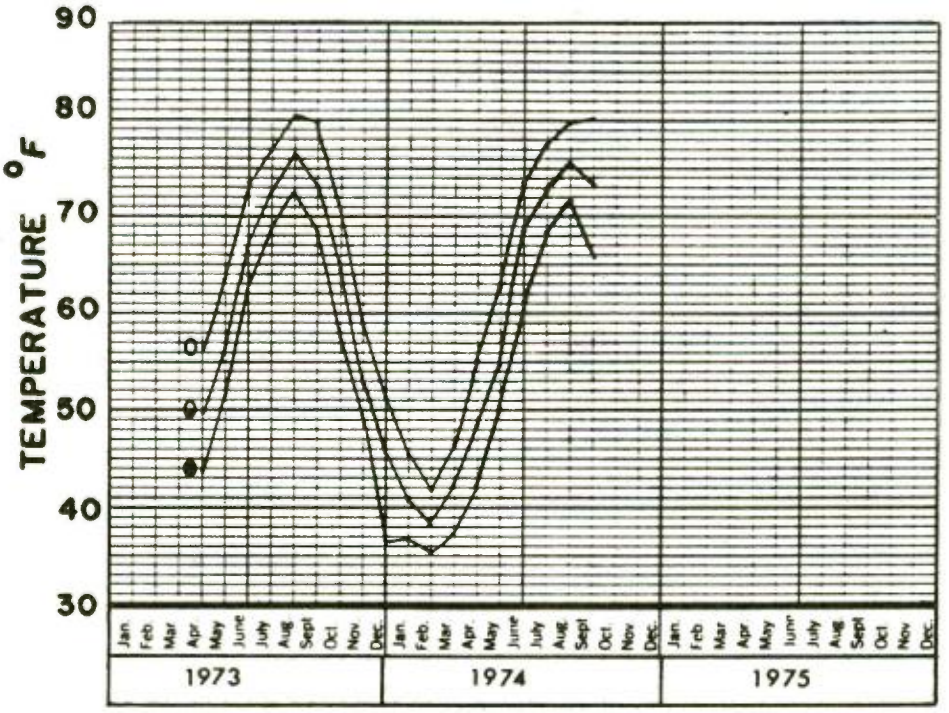
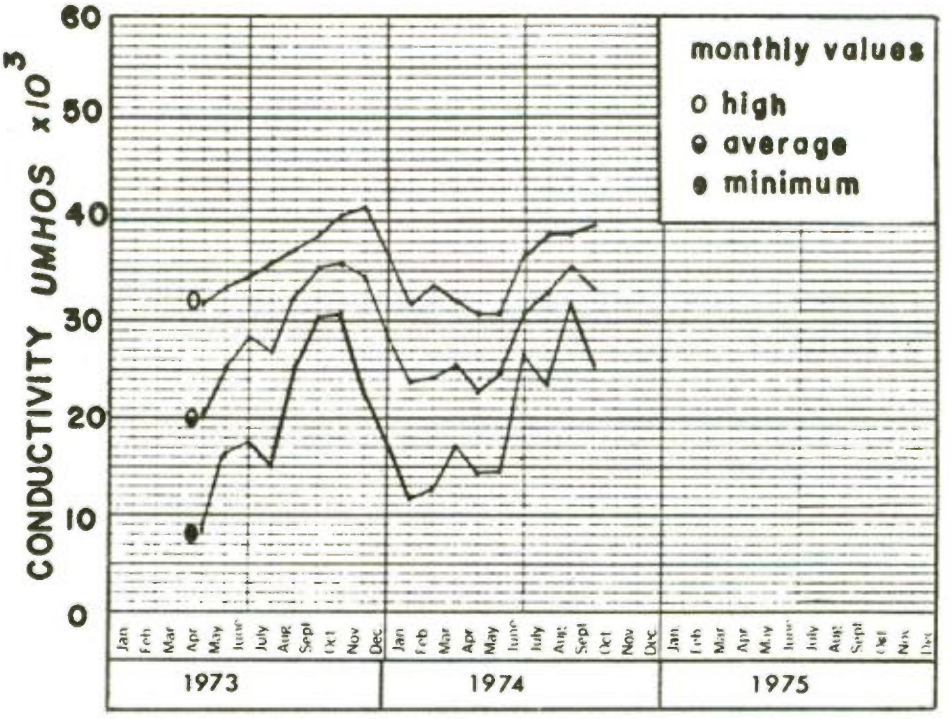
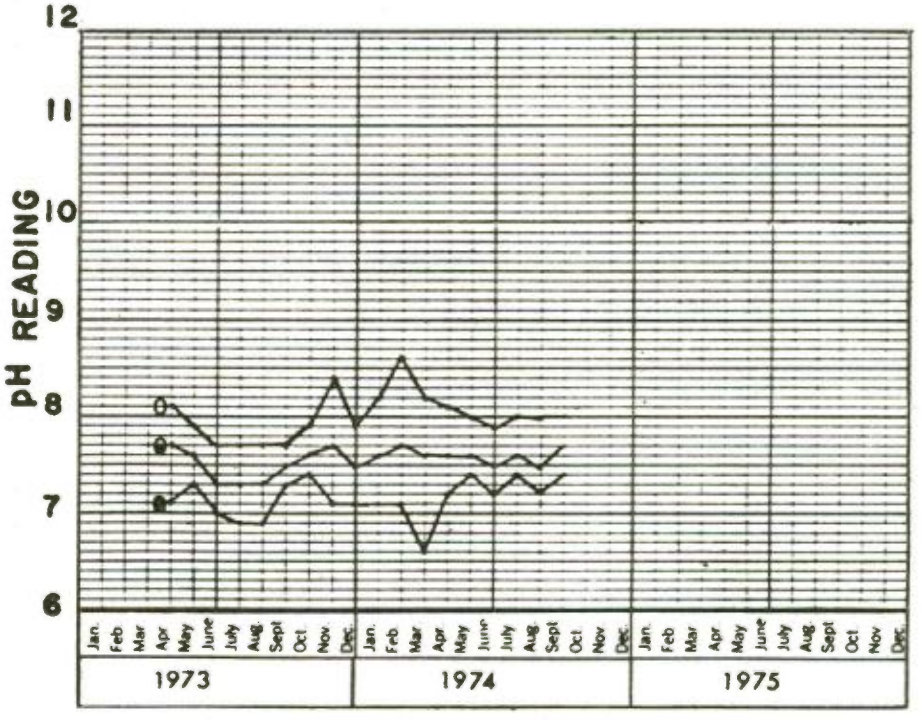
station no. 6





KILL VAN KULL - U.S. GYPSUM
station no. 7





KILL VAN KULL - U.S. GYPSUM
station no. 7

NEW YORK HARBOR MODEL

In order for the States to have an analytical basis upon which to allocate wasteloads, the Commission has let a contract to Hydroscience, Inc., at the request of and through funding provided by the United States Environmental Protection Agency to model the entire New York Harbor area. This is an 8-month contract that commenced in November 1974.

Basic Objectives of the Project

The principal objectives of the water quality modeling study of New York Harbor and adjacent waterways are as follows:

A. To construct, on the basis of readily available information, a comprehensive single water quality model of the entire New York Harbor complex that can be used for management decision making and planning purposes. The boundaries of the model assigned are to be as follows:

1. Upstream Boundaries -

    a) Hudson River at the Bear Mountain Bridge

    b) Hackensack River at Oradell Dam

    c) Passaic River at Dundee Dam

    d) Raritan River at Fieldville Dam

    e) South River at Duhernal Dam

2. Coastal Boundaries -

    a) Long Island Sound west of the Sands Point-Long Beach Point traverse

    b) Lower New York Bay west of the Sandy Hook-Breezy Point traverse

B. To verify the comprehensive water quality model with observed data. Verification runs will be performed not only on data from previous investigations used to construct the model, but also on "independent" water quality data such as remote monitor data measured by the Interstate Sanitation Commission.

C. To identify on the basis of the verification procedure the strengths, and weaknesses, if any, of the model, the degree to which all factors affecting water quality in the study area are documented and understood, and any additional work which may be necessary in portions of the study area before the model is fully dependable as a planning tool.

D. To transfer the model, its application, and the results of the study to the Interstate Sanitation Commission and the States for the purpose of providing a working tool to be used in the analysis and planning of water quality and wastewater management procedures.

ANALYTICAL SERVICES

Automatic Data Processing and Analysis

In 1974, the Commission's data processing was performed using the CALL/370 Time-Share System, with access to the system being gained through communications terminals located in the Commission office.

The Commission's two water pollution data banks were updated with all the information collected in 1974. One data bank contains influent and effluent data collected during municipal and industrial investigations and the second contains water quality information collected by the Commission's Automatic Water Quality Monitoring System. The Commission is also in the process of creating a data bank of its harbor sampling results.

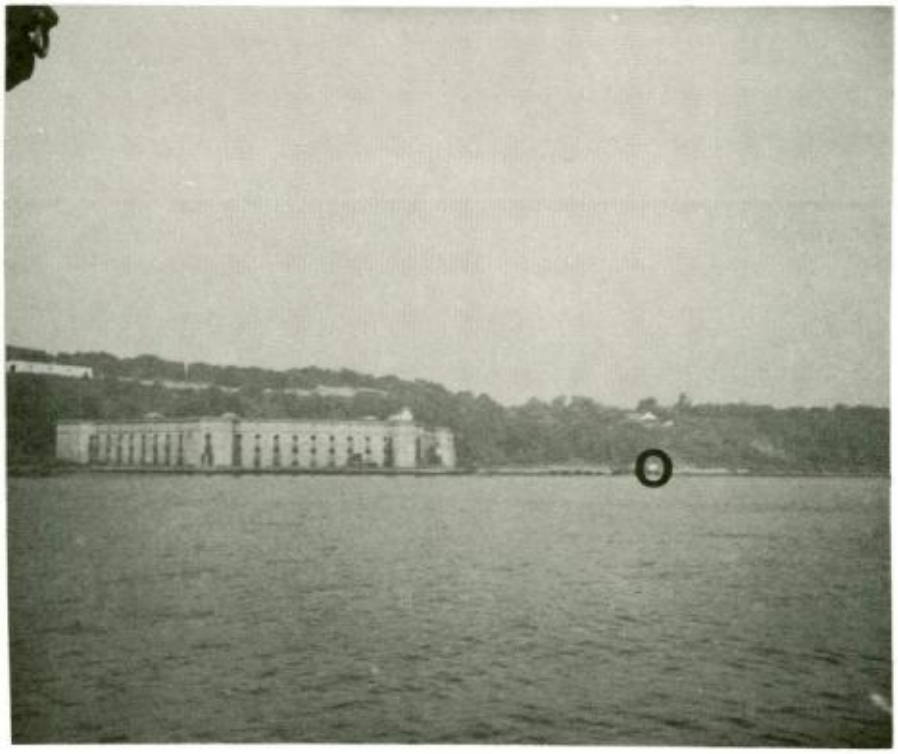
The Commission supplied printouts of all investigations and daily summaries of the water monitor data to the appropriate state and other agencies. In addition to the data mentioned above, the United States Environmental Protection Agency also received tapes of the influent/effluent data and hourly values of the water quality monitor data for input to STORET. The New York State Department of Environmental Conservation also received tapes of the hourly values of the water quality monitor data for input to their data bank.

This year, the access time to the CALL/370 Time-Share System was expanded to 21 hours per day, 7 days per week. This greatly enhances the Commission's data handling capabilities during periods of high air pollution potential.

In addition to the day-to-day routine data processing, mathematical and statistical analyses (including computer graphing) were performed on data for several special projects.

The Commission's Data Analyst and Programmer conducted a one-week data processing course attended by all Commission Senior Engineers. The course covered all the Commission's routine water and air pollution programs. In addition to explaining how to run the programs, the course also covered non-routine data handling and in-depth explanations of the

INTERSTATE SANITATION COMMISSION PERSONNEL
SAMPLING DURING NEW YORK HARBOR SURVEY



NEW YORK HARBOR SAMPLING POINT OFF FORT WADSWORTH, STATEN ISLAND.
INTERSTATE SANITATION COMMISSION REMOTE WATER OUALITY MONITOR SHED
IS AT END OF PIER

COMBINED SEWERS

The Commission continued its efforts in the investigation of combined sewer overflows and evaluation of their pollution impact within the Interstate Sanitation District.

Two regulator sites were under study during the past year. Samples were manually obtained from these two regulators during dry weather periods (dry weather flow) as well as during five rainfall periods (wet weather flow). Because of the limitation of staff and logistic support, these two regulators and others could not be sampled during other major storms.

The Commission recognizes that the determination of bypass flows and analyses of flow samples during storm periods is vital to an effective study of this problem within the District. Therefore, the Commission purchased an automatic sampler which can be lowered into a manhole to sample bypass flows. The Commission also developed an activation device which automatically initiates the sampler, starts the flow meter, and records time of bypass when signalled by a flow switch. This sytem has been tested at a regulator site and has proved successful.

It is anticipated that this automated sampling and flow measuring system in conjunction with remote rain gauges will provide a maximum quantity of data on a 24-hour basis with a minimum expenditure of man hours.

III. AIR POLLUTION

GENERAL

During 1974, the Interstate Sanitation Commission continued to expand its activities in air pollution. On April 9, the Commission was awarded a grant from the United States Environmental Protection Agency to coordinate the investigation of the "Control of Suspended Particulates." The participating agencies include the States of New York, New Jersey, and Connecticut, the City of New York, Mount Sinai School of Medicine, the Cooper Union, and the Polytechnic Institute of New York.

During the spring, the Commission concluded the preliminary phase of a study to characterize photochemical oxidants in the New Jersey-New York-Connecticut Air Quality Control Region. In cooperation with the three States, the City of New York, and the Surveillance & Analysis Division of the EPA-Region II, the Commission began the second phase of the study this summer. This phase is still in progress.

The Commission continued to expand its air monitoring capabilities by installing chemiluminescence NO, NO_2, NO_x, and O_3 units in its mobile vans. The vans are now capable of continuously measuring O_3, NO_x, SO_2, CO, smoke shade, wind speed and direction, and temperature. The vans have been employed extensively in the photochemical oxidant study.

As the Commission is responsible for the investigation of air pollution complaints which may be of interstate origin, the two mobile vans are also on call 24 hours a day to assist in these investigations.

REGIONAL AIR POLLUTION WARNING SYSTEM

The Interstate Sanitation Commission coordinates the New Jersey-New York-Connecticut Air Quality Control Region Air Pollution Warning System. During 1974, the meteorological conditions were such that it was not necessary to activate the system. However, several steps were initiated to improve the system including modifying computer procedures and establishing a series of periodic mock alerts.

PHOTOCHEMICAL OXIDANT STUDY

The Commission, in cooperation with the States of New York, New Jersey, and Connecticut and the City of New York, conducted a preliminary analysis of the photochemical oxidant data from the summer of 1973. The results were published in April in a report by the Commission entitled "The Preliminary Investigation of the Photochemical Oxidant Problem in the New Jersey-New York-Connecticut Air Quality Control Region." The major findings and conclusions are summarized below.

(1) Transport of ozone and its precursors (hydrocarbons and nitrogen oxides) is widespread both within and into the Region.

(2) The most favorable meteorological conditions which support ozone buildup and transport occur most frequently when the winds are southwesterly.

(3) When the morning mixing depth was less than or equal to 500 m. and the afternoon temperatures were equal to or greater than 86°F, one or more of the stations in the Region measured ozone levels exceeding the Federal Standard of 0.08 ppm for 1 hour, 100% of the time on weekdays.

(4) There is no relationship between ozone levels and afternoon mixing heights.

(5) The inverse linear relationship between pollutant concentrations and wind speed does not apply for ozone levels in this Region.

As a consequence of this preliminary investigation, a more comprehensive study was undertaken this past summer in cooperation with the three States, the City of New York, and the United States Environmental Protection Agency-Region II. The number of chemiluminescent ozone monitors in the Region nearly doubled from the previous summer, and this included several non-urban sites. One of the Commission's mobile air pollution vans was stationed at Fort Hancock, New Jersey, for a portion of the summer. A Commission van also measured ozone at Sea Girt, New Jersey,

for several days in an attempt to characterize the effect of the sea breeze on ozone levels near the coast line. Additional ozone measurements were made on two aerial flights and on a boat trip in the Raritan Bay and the adjacent waters of the Atlantic Ocean. On the flights, ozone measurements were taken from southwest of Philadelphia to northeast of New Haven.

Preliminary findings of this summer's investigation are listed below:

(1) The highest levels in the Region are found in Connecticut.

(2) In general, non-urban values of ozone are comparable with urban values.

(3) Non-urban sites in New Jersey record higher levels of ozone than urban sites. Urban monitors in New Jersey are generally located in central business districts which are high traffic density areas. Consequently, local emissions of nitric oxide reacted with and reduced the ozone concentrations in these areas.

(4) Frequently, air masses entering the Air Quality Control Region contain levels of ozone exceeding the Federal Standard.

(5) Ozone levels in the non-urban sites in the Region cannot be attributed to urban emissions within the Region.

The agencies involved participated in a collaborative ozone calibration study in the beginning of June. The purpose of this was to assure uniform procedures and calibration of the monitors in the three States.

SAMPLING SITE AND AIR POLLUTION VAN
AT FORT HANCOCK, NEW JERSEY

EQUIPMENT USED IN THE AERIAL OZONE
SURVEY

CONTROL OF SUSPENDED PARTICULATES PROJECT

The Commission is involved in a project to characterize the sources and the reintrainment of suspended particulates. The Commission is coordinating and administering the program while the sampling and analysis are being conducted by the States of New York, New Jersey, and Connecticut and the City of New York. Other organizations involved in the project are the Mount Sinai School of Medicine, the Cooper Union, and the Polytechnic Institute of New York. The two-year project is being funded by a grant from the United States Environmental Protection Agency. The goals of the project are to:

(1) Obtain the elemental composition and particle size distribution of particulates from each major type of particulate source which are found in the Region. This will provide a "fingerprint" of each source.

(2) Obtain the elemental composition and particle size distribution of ambient suspended particulates. The contribution of each source will be determined by comparing results of the analysis of the ambient samples with the source "fingerprints."

(3) Characterize and quantitate the impact of reintrainment on ambient levels of suspended particulates.

(4) Characterize the organic fraction of suspended particulates.

Source samples will be obtained from power plants, incinerators, space heating units, and industrial sources. Samples collected on filters will be analyzed for all elements with an atomic number greater than sodium. The filters will also be analyzed for the common ions (i.e. sulfates, silicates, chlorides, phosphates, etc.) and the organic fraction will be identified and quantitated. Particle size data will be obtained in two ways: The optical particle size will be determined by electron microscopy. Aerodynamic sizes will be obtained by replacing the filter holder in the stack sampling train with an impactor.

Ambient samples collected from high volume samplers will be analyzed in the same manner. Impactor heads attached to the high volume sampler inlet will fractionate the particulates according to their aerodynamic size.

Elemental particle analysis will be obtained with a microprobe. This technique is applicable to all elements heavier than sodium and at present is semi-quantitative. The microprobe is based on the principle that characteristic x-rays are emitted from each element following the bombardment of the sample by a beam of high energy electrons.

Quantitative analysis of the heavy metals will be obtained by x-ray fluorescence. The common ions will be determined by wet chemical techniques. The organic fraction of the filters will be identified and quantitated using such techniques as mass spectroscopy, infrared spectroscopy, and high pressure liquid chromatography.

The impact of particle reintrainment by vehicular traffic will be determined by multi-correlation analysis of particulate levels (from high volume samplers and a real-time mass monitor), traffic counts, and meteorological data. The effect of street washings and traffic diversions will also be determined.

In addition to mass determinations, the high volume filter samples also undergo the complete set of analysis previously discussed.

AIR MONITORING TELEMETRY STATIONS

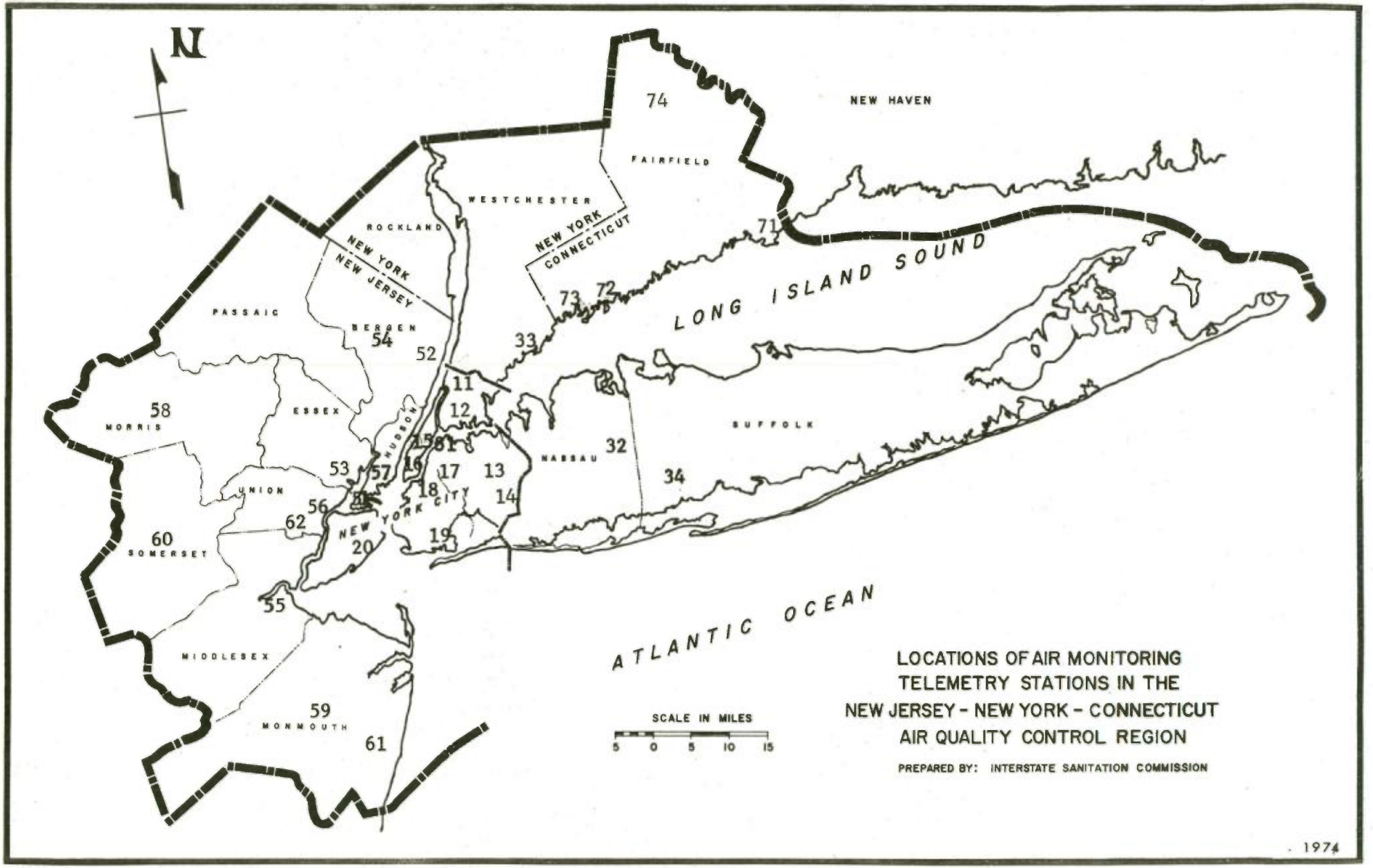
The Connecticut Department of Environmental Protection activated a telemetry station at Danbury this year. This increases the number of such air monitoring stations to four for Connecticut.

There are 30 telemetry stations operating in our Region. An updated list of the stations and a map of the station locations are shown on the following pages.

LOCATION OF AIR MONITORING
TELEMETRY STATIONS

ISC NO.	BOROUGH	CITY	STATE
11	Bronx	New York	New York
12	Bronx	New York	New York
13	Queens	New York	New York
14	Queens	New York	New York
15	Manhattan	New York	New York
16	Manhattan	New York	New York
17	Brooklyn	New York	New York
18	Brooklyn	New York	New York
19	Brooklyn	New York	New York
20	Staten Island	New York	New York
31		New York	New York
32		Hempstead	New York
33		Mamaroneck	New York
34		Babylon	New York
51		Bayonne T (1)	New Jersey
52		Hackensack	New Jersey
53		Newark T (1)	New Jersey
54		Paterson	New Jersey
55		Perth Amboy	New Jersey
56		Elizabeth	New Jersey
57		Jersey City	New Jersey
58		Morristown	New Jersey
59		Freehold	New Jersey
60		Somerville	New Jersey
61		Asbury Park	New Jersey
62		Elizabeth T (1)	New Jersey
71		Bridgeport	Connecticut
72		Stamford	Connecticut
73		Greenwich	Connecticut
74		Danbury	Connecticut

(1): T represents comprehensive laboratory trailers. Other stations are fixed in buildings.


N
74
NEW HAVEN
FAIRFIELD
WESTCHESTER
ROCKLAND
NEW YORK
NEW JERSEY
NEW YORK
CONNECTICUT
71
LONG ISLAND SOUND
73
72
PASSAIC
BERGEN
54
52
33
11
12
58
MORRIS
ESSEX
HUDSON
15
16
17
13
SUFFOLK
NASSAU
32
53
57
18
14
34
UNION
56
NEW YORK CITY
62
60
SOMERSET
20
19
55
ATLANTIC OCEAN
MIDDLESEX
59
MONMOUTH
61
SCALE IN MILES
5 0 5 10 15
LOCATIONS OF AIR MONITORING
TELEMETRY STATIONS IN THE
NEW JERSEY - NEW YORK - CONNECTICUT
AIR QUALITY CONTROL REGION
PREPARED BY: INTERSTATE SANITATION COMMISSION
1974

IV. LEGAL ACTIVITIES

INTRODUCTION

During the current year the legal activities of the Commission have been substantial. They have also seen the Commission in an unusual procedural role -- that of defendant. However, this has been a matter of form rather than one of substance. The reasons for the litigations have continued to be the prosecution of our effluent requirements and policies.

Two different sets of events have given rise to the current suits. Each of them will be discussed in turn.

PORT CHESTER, NEW YORK

It will be recalled that during the 1960s the Commission undertook enforcement action against the Village of Port Chester, New York. When the proceeding began, Port Chester had an antiquated facility which did not even provide primary treatment. An administrative order issued by the Commissoon, followed by litigation, resulted in the construction by the Village of a new treatment plant. However, this facility continued not to meet required standards. Accordingly, the Commission secured a court order in 1966 requiring further remedial action. After still further negotiations and proceedings, the Commission secured an agreement from Port Chester to proceed with the necessary design and construction. However, at that point, Westchester County assumed responsibility for inclusion of Port Chester in its regional collection and treatment system.

Public and private interests on the Connecticut side of the Byram River have been dissatisfied with the failure to secure sufficient abatement of pollution from the Village of Port Chester. Late in 1973 these interests served summons and complaint on the Village of Port Chester, Westchester County, the County Executive of Westchester County, the New York State Department of Environmental Conservation and its Commissioner, the Interstate Sanitation Commission and its Director and Chief Engineer. The complaint charged failure to exercise due diligence in proceeding against Port Chester and Westchester County to secure abatement.

All of the defendants except the Interstate Sanitation Commission and its Director and Chief Engineer moved to dismiss the suit on various grounds. The Commission's choice not to move for dismissal was in the hope that the proceeding could be used as an expeditious enforcement device. Nevertheless, the suit was dismissed in the United States District Court for the District of Connecticut and transferred to the Southern District of New York.

In November 1974 a new summons and complaint was served on the same defendants by the same plaintiffs.

The Commission continues to have as its interest the most expeditious securing of progress toward improvement of waste discharges emanating from the Village of Port Chester, regardless of the forum or the type of proceeding to be employed. Early in 1974 the Commission authorized the holding of a new hearing which, in view of the changed circumstances since the Commission undertook its proceedings during the 1960s, would also include the County of Westchester. However, the staff was directed to use its discretion in the calling of this hearing and to give the court proceeding and negotiations under way between the New York State Department of Environmental Conservation, Westchester County, and Port Chester a reasonable opportunity to be fruitful. The Commission will proceed in whatever manner seems most appropriate as this complex set of activities evolves.

THE EXXON LITIGATION

The Commission has a requirement relating to limits on the discharge of oil and grease into the waters of its District. The compact, and standards adopted by the Commission in 1971, call for the discharge of no oil or grease. However, as an operational matter, it has been the policy of the Commission to accept discharges of not more than one part per million as being close enough to its standard so as not to merit the taking of legal action.

The Federal Water Pollution Control Act Amendments of 1972 have added to the methods for placing limitations on pollutant discharges and for proceeding against violators. In particular the Federal Environmental Protection Agency

now has the authority to issue permits covering discharges. All dischargers are required to have such permits. However, the Federal Act also contains a provision under which states are provided the opportunity to certify to the probable effect of the proposed discharge on the meeting of applicable water quality standards. If EPA receives an adverse certification, the permit is to be denied.

Certain permits issued to oil terminals were objected to by the State of New Jersey on the ground that they would allow discharges of ten parts per million of oil and grease and so be in violation of the stricter requirements of New Jersey and the Interstate Sanitation Commission.

The Exxon Corporation has challenged the validity of the one part per million requirement. The suit which is against New Jersey and the Interstate Sanitation Commission is now in its preliminary stages. The Delaware River Basin Commission was also served as a defendant but the suit was dismissed as to it.

CONTRACT INVESTIGATIONS

During 1974 the Commission has been unusually active in the performance of investigations both in the fields of air and water pollution. The details of these undertakings are set forth elsewhere in the report of the Commission. Suffice it to say that these investigations involve work on particulates and on the regional management of sludge in the New York metropolitan area. The work is being carried forward through grants from EPA. Counsel has been involved in the legal work relating to these grants and the securing of subcontractors and cooperating agencies for portions of the work.

OTHER MATTERS

As in past years, a large part of the work of Counsel consists of giving advice to the Commission and its staff. A variety of matters, many of them connected with the routine administration of the Commission's programs, have been involved.

A P P E N D I X

WASTEWATER TREATMENT PLANTS
Discharging Into The
INTERSTATE SANITATION DISTRICT WATERS

WASTEWATER TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1 9 7 4

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served (1970)
CONNECTICUT						
Fairfield County						
Bridgeport - East Side	B-1	1973+	8.5	24.0	Secondary (AS)	47,000
- West Side	B-1	1973+	29.4	60.0	Secondary (AS)	109,000
Darien	A	1956+	1.3	1.2	Primary	20,400
Fairfield	A	1967+	6.0	8.0	Secondary (AS)	30,000
Greenwich - Central	A	1964+	7.3	8.5	Secondary (AS)	48,000
*Handy & Harmon	A	1973	-	0.25	Physical/Chemical	Industrial
Norwalk	B-1	1974	12.4	30.0	Secondary (AS)	60,000
Stamford	B-1	1943+	15.5	10.0	Primary	60,000
Stratford	A	1974	7.9	11.5	Secondary (AS)	48,000
Westport	A	1973+	0.7	3.0	Secondary (AS)	5,000
New Haven County						
Milford - Beaver Brook	A	1970	0.21	3.2	Secondary (AS)	-
- Gulf Pond	A	1960	3.2	2.5	Secondary (AS)	6,000
- Harbor	A	1937	0.7	0.5	Secondary (AS)	4,000
- Town Meadows	A	1954	1.4	1.2	Secondary (AS)	10,000
New Haven - Boulevard	B-1	1959+	13.3	13.0	Primary	63,100
- East Shore	B-1	1953+	8.6	12.5	Primary	35,000
- East Street	B-1	1966+	17.6	22.5	Primary	67,100
West Haven	B-1	1973+	7.9	23.5	Secondary (AS)	40,000
NEW JERSEY						
Bergen County						
Edgewater	B-1	1958+	2.1	4.0	Primary	5,000
Hudson County						
Bayonne	B-2	1954	11.8	20.0	Primary	73,000
Hoboken	B-1	1958	18.1	20.0	Primary	70,000
Jersey City - East Side	B-1	1967+	32.0	45.4	Primary	160,000
- West Side	B-2	1967+	21.0	36.0	Primary	110,000
Kearny	B-2	1955	2.6	4.0	Primary	30,000
West New York	B-1	1953	8.3	7.5	Primary	50,000
Woodcliff - North Bergen	B-1	1962	1.8	4.4	Primary	14,740
Middlesex County						
Carteret	B-2	1953	3.1	3.0	Primary	21,000
Madison Township Sewerage Authority (Laurence Harbor)	A	1963+	1.4	1.4	Primary	8,000
Middlesex County Sewerage Authority	A	1965+	72.9	78.0	Primary	525,000
Perth Amboy	A	1934	6.0	10.0	Primary	41,000
Rahway Valley Sewerage Authority	B-2	1973+	37.7	35.0	Secondary (AS)	68,000
**Sayreville - Melrose	A	1949	0.03	0.1	Primary	1,000
- Morgan	A	1951	-	0.3	Primary	2,000
South Amboy	A	1940	1.2	1.0	Primary	9,000
Woodbridge	B-2	1954	4.8	10.0	Primary	25,000
Monmouth County						
Atlantic Highlands	A	1928	0.6	0.6	Primary	5,000
Highlands	A	1928	0.6	1.2	Primary	5,000
Keansburg	A	1964+	2.2	5.0	Primary	9,700
Keyport	A	1962+	0.8	2.9	Primary	6,400
Union County						
Elizabeth Joint Meeting	B-2	1958+	66.9	100.0	Primary	500,000
*Exxon Company (Bayway Refinery)	B-2	1970	13.0	15.0	Primary	Industrial
Linden-Roselle	B-2	1952	11.8	12.5	Primary	75,000
Essex County						
**Passaic Valley	B-1	1937+	250.0	-	Primary	2,899,000

WASTEWATER TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1 9 7 4

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served (1970)
NEW YORK						
Nassau County						
Belgrave Sewer District	A	1965+	1.5	2.0	Secondary (TF)	17,000
Bay Park	A	1962+	66.7	60.0	Secondary (AS)	600,000
Cedar Creek	A	1974	4.7	45.0	Secondary (AS)	60,000
Cedarhurst	A	1934+	0.7	1.5	Secondary (TF)	7,200
Freeport	A	1960+	3.4	6.0	Secondary (TF)	42,000
Glen Cove - Morris Avenue	A	1965+	5.0	12.0	Secondary (TF)	27,000
Great Neck Sewer District	A	1962+	2.7	2.7	Secondary (TF)	16,000
Great Neck Village	A	1948+	0.9	1.5	Secondary (TF)	10,000
Inwood	A	1961	2.6	2.5	Secondary (TF)	9,000
Jones Beach	A	1951	0.07	1.0	Secondary (TF)	Seasonal
Lawrence	A	1966+	0.7	1.5	Secondary (TF)	6,500
Long Beach	A	1953+	6.8	6.6	Secondary (TF)	39,000
*Long Island Lighting Company (Glenwood Landing)	A	1929	-	-	3-Septic Tanks	Industrial
Oyster Bay Sewer District	A	1965+	1.5	1.2	Secondary (TF)	7,500
Port Washington Sewer District	A	1952+	3.2	3.0	Secondary (TF)	28,000
*Quantitative Biology Laboratory	A	1965	-	0.008	Imhoff Tank Plus Sand Filter	40
Roslyn	A	1950+	0.4	0.45	Secondary (TF)	4,500
West Long Beach Sewer District	A	1960+	0.5	1.5	Secondary (TF)	10-25,000
NEW YORK CITY						
Bronx County						
City-Hart Island	A	1942	1.0	1.5	Primary	5,000
Hunts Point	B-2	1965+	128.3	150.0	Secondary (AS)	770,000
Orchard Beach	A	1945+	-	0.1	Primary	Seasonal
Kings County (Brooklyn)						
Coney Island	A	1965+	94.0	110.0	Secondary (AS)	535,000
Newtown Creek	B-2	1967	166.6	310.0	Intermediate (AS)	2,500,000
Owls Head	B-1	1952	98.1	160.0	Intermediate (AS)	750,000
26th Ward	A	1951+	66.2	60.0	Secondary (AS)	385,000
New York County (Manhattan)						
Dyckman Street	B-1	1917	5.0	7.5	Screening	39,000
Wards Island	B-2	1948+	168.5	220.0	Secondary (AS)	1,470,000
Queens County						
Bowery Bay	B-2	1958+	124.2	120.0	Secondary (AS)	1,000,000
Jamaica	A	1965+	85.1	100.0	Secondary (AS)	415,000
Rockaway	A	1961+	16.7	30.0	Secondary (AS)	90,000
Tallman Island	B-1	1964+	61.2	60.0	Secondary (AS)	251,000
Richmond County (Staten Island)						
*Arden-Sano	A	1972	-	1.0	Extended Aeration	3,000
*Elmwood Homes	B-2	1968	0.34	1.0	Extended Aeration	4,000
*Heartland Village	B-2	1967	0.35	1.0	Extended Aeration	4,000
*Mount Loretto Home - Plant #1	A	-	-	-	Septic Tank	-
- Plant #2	A	-	-	-	Septic Tank	-
*Nassau Smelting & Refining	B-2	1973	-	0.43	Physical/Chemical	Industrial
Oakwood Beach	A	1956	18.8	15.0	Secondary (AS)	85,000
Port Richmond	B-2	1953	18.0	10.0	Primary	60,000
*Public School #7	A	1965	-	-	Extended Aeration	2,200
*Richmond Memorial Hospital	A	1936	-	-	Septic Tank	-
*Saint Joseph's School	A	1965	-	-	Septic Tank with Sand Filtration	910
Rockland County						
*Clevepak Corporation	A	1954+	2.1	3.0	Secondary	Industrial
Haverstraw	A	1940	0.7	1.0	Primary	6,000
Joint Regional Sewerage Board-Town of Haverstraw	A	1971	1.9	4.0	Secondary (AS)	10,000
*Kay-Fries Chemicals, Inc.	A	1966	-	0.01	Neutralization	-
Nyack	A	1940	1.2	1.0	Primary	6,000

WASTEWATER TREATMENT PLANTS
Discharging into the
INTERSTATE SANITATION DISTRICT WATERS
1 9 7 4

Plant	ISC Receiving Water Classification	Date of Const.	Flow MGD Average	Flow MGD Design	Type of Treatment	Estimated Population Served (1970)
NEW YORK (continued)						
Rockland County (continued)						
*Orange & Rockland Utilities	A	-	-	-	Secondary (AS)	Industrial
Orangetown Sewer District	A	1967+	6.1	8.5	Secondary (TF)	50,000
Palisades Interstate Park						
(Bear Mountain Plant)	A	1951+	0.13	0.3	Secondary (TF)	Seasonal
(Tallman Mountain Plant)	A	1969	Seasonal	0.024	Extended Aeration	Seasonal
Rockland County Sewer District #1	A	1968	14.3	10.0	Secondary (AS)	60,000
**South Nyack	A	1941	0.3	0.6	Imhoff Tank	3,100
Stony Point	A	1969	0.7	1.0	Secondary (AS)	1,000
**Upper Nyack	A	1953	0.1	0.1	Imhoff Tank	1,500
Suffolk County						
Huntington Sewer District	A	1957+	1.8	2.0	Secondary (TF)	20,000
*Kings Park State Hospital	A	1964+	0.7	2.0	Secondary (AS)	7,000
*Longwood Harbor Apartments	A	1968	0.03	0.1	Secondary	-
Northport	A	1949+	0.14	0.3	Secondary (AS)	1,900
Port Jefferson Sewer District	A	1963+	1.4	1.5	Primary	5,000
Westchester County						
*American Yacht Club (Rye)	A	-	Seasonal	-	2-Septic Tanks	Seasonal
Briarcliff Manor - River Road	A	1951+	-	-	Septic Tank	200
- Scarborough Dock	A	1926+	-	-	Imhoff Tank	1,500
Buchanan	A	1962	0.16	0.55	Secondary (AS)	2,500
*Coach Light Square Condominiums	A	1971	0.03	0.06	Secondary (AS)	800
Croton-on-Hudson	A	1951	0.9	0.75	Primary	7,000
Irvington	A	1950	1.1	1.0	Primary	6,000
*Metropolitan Petroleum Corporation	A	1954	-	-	Septic Tank	-
North Tarrytown	A	1940+	1.7	1.7	Primary	8,300
Ossining - Liberty Street	A	1939	0.4	1.0	Imhoff Tank	5,000
- Water Street	A	1940	1.7	5.0	Primary	18,000
Peekskill	A	1953	3.6	4.0	Primary	19,000
*Penn C.R.R. Harmon Shop (Croton)	A	1973+	0.05	0.7	Physical/Chemical	Industrial
Port Chester	B-1	1965+	3.9	6.0	Primary	26,000
*Shenerock Shore Club (Rye)	A	-	Seasonal	-	Septic Tank	Seasonal
*Ossining Correctional Facility	A	1950+	0.4	0.6	Primary	2,000
Springvale	A	1959	0.1	0.1	Secondary (TF)	1,000
Tarrytown	A	1940+	1.6	1.5	Primary	9,500
Westchester County D.P.W.						
Blind Brook (Rye)	A	1963+	2.2	5.0	Primary	15,000
Mamaroneck	A	1965+	16.3	70.0	Primary	95,000
New Rochelle	A	1955+	13.8	15.0	Primary	60,000
Yonkers Joint Treatment	B-1	1960+	67.6	60.9	Primary	550,000
FEDERAL & MILITARY						
**Camp Smith - (Westchester Co.)	A	-	0.06	0.24	Secondary (TF)	-
Earle Naval Ammunition (Monmouth Co.)	A	1944	-	0.18	Imhoff Tank Plus Sand Filter	-
FDR Veterans Administration Hospital (Westchester Co.)	A	-	0.2	0.4	Secondary (TF)	-
Floyd Bennett Field (Kings Co.)	A	-	-	-	Secondary (TF)	-
Military Ocean Terminal (Hudson Co.)	B-1	1972+	0.09	1.0	Secondary (AS)	-

\+ Year of major additions or reconstruction

* Private, institutional or industrial sewage treatment plants

** Estimated Flows

(AS) Activated Sludge

(TF) Trickling Filter