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FOURTH ANNUAL REPORT

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SUFFOLK COUNTY

DEPARTMENT OF ENVIRONMENTAL CONTROL

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COMMISSIONER

THE INFORMATION CONTAINED IN THE FOURTH ANNUAL REPORT OF THE SUFFOLK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL IS PRESENTED AS A SUMMARY OF THE MAJOR ACTIVITIES WHICH OCCURRED DURING THE YEAR 1974. A LIST OF ACTIVE CAPITAL PROJECTS HAS BEEN INCLUDED AS APPENDIX A.

THE DEPARTMENT WILL BE GLAD TO ANSWER ANY QUESTIONS OR SUPPLY ADDITIONAL INFORMATION RELATIVE TO EITHER THE SUBJECT MATTER CONTAINED HEREIN OR ANY OTHER ACTIVITY FOR WHICH THE DEPARTMENT IS RESPONSIBLE AS MANDATED BY LAW AND PERTAINING TO THE ENVIRONMENT.

TABLE OF CONTENTS

	<u>PAGE</u>
I OPERATIONS DIVISION	1
II ENGINEERING DIVISION	1
III CONSTRUCTION DIVISION	4
IV ENVIRONMENTAL MONITORING DIVISION	
A. FRESH WATER RESOURCES	5
B. MARINE RESOURCES	6
C. WATER POLLUTION CONTROL	7
D. AIR POLLUTION CONTROL	8
V STAFF SERVICES	
A. CHEMISTRY LABORATORY	8
B. SPECIAL SERVICES	9
VI APPENDICES	
A. DEPARTMENT-SPONSORED CAPITAL PROJECTS	10
B. 1973-74 STATISTICAL COMPARISONS	11

OPERATIONS DIVISION

During 1974, the Operations Division of this Department directed the operation and maintenance of County Sewer Districts Nos. 1 and 2 - Port Jefferson and Holbrook and the Advanced Waste Treatment Facility at the Suffolk County Center at Hauppauge.

Research evaluation of an electrolytic sodium hypochlorite generating cell, which converts sea water to a chlorine solution usable for disinfection of sewage, was completed. Results showed that significant cost savings would result with full-scale use of this equipment.

A 24-hour emergency notification and alarm system was developed by the Division and implemented at all County Sewer Districts. By providing immediate notification of plant malfunction, a maintenance crew can respond to and correct a problem before it results in a serious health hazard to the community.

At the Advanced Waste Treatment Facility at Hauppauge County Center, the Operations Division designed, fabricated, and installed a raw wastewater flow equalization system. Using the latest concepts in plant operations research, this system resulted in an immediate and dramatic improvement in treatment efficiency.

ENGINEERING DIVISION

San Remo Collection District

Completed a feasibility study of forming the San Remo collection district with treatment service provided by the Kings Park treatment facility. The total project cost for this District was estimated at \$2,185,000.

A study was initiated to investigate three alternatives to serve only those areas which the Suffolk County Health Department specified as having continual waste disposal problems. These alternatives include a conventional gravity collection system, a pressure sewer system and a vacuum collection system. The maximum cost for this reduced collection system was estimated at \$604,300 for a total length of 8" pipe of 13,785 feet. These proposals, along with their respective costs, have been incorporated into Addendum No. 2 to the Feasibility Study, Proposed San Remo Collection District.

South Huntington Sewer District

Completed a general planning study for this proposed

district, which lies north of the Long Island Expressway, between the Nassau-Suffolk County line and the Sagtikos Parkway. The results of this study were incorporated into a revision of the "Comprehensive Studies of Population and Flows - Southwest Sewer District," August, 1973, by Bowe, Walsh and Associates.

Yaphank Sewer District

The Yaphank Sewer District will encompass an area of 41 square miles, or approximately 26,000 acres in the central portion of the Town of Brookhaven.

The 1970 residential population in the district was approximately 10,000 people, and the 1974 population is estimated at 18,000 people. By the year 2000 the residential population is estimated to be 96,000 and by the year 2020 it will be approximately 175,000. The area encompassed by the proposed sewer district is currently being subjected to intense development by residential developers.

Approximately 3,300 acres, or 14 percent of the area, was developed by 1970 and has no provision for sewerage service. Sixteen percent, or 3,800 acres, of the area is currently under development with subdivisions subject to a Sewer Agency contract and thus providing sewerage services. The remaining 70 percent, or 19,000 acres, is vacant land that is zoned primarily for residential development. This vacant land will almost totally be developed pursuant to a contract between the Suffolk County Sewer Agency and the land developers.

The proposed project consists of the construction of an intercepting sewer system to serve the southern two-thirds of the district, a 10 mgd wastewater facility providing advanced waste treatment, an effluent pumping station, recharge force mains and recharge basins. The proposed district will provide service to those areas that have dry lateral sewers or have made contributions toward future sewerage service, and also to those areas currently vacant. As of December, 1974, there were 13 "subdivision size" wastewater treatment facilities in the proposed district, and it is estimated that an additional 40 treatment facilities will be constructed if the district is not formed.

Cost for the project, escalated to the date of construction, totals \$268,079,500. The project is estimated to be eligible for Federal and State Construction Grant Aid, which is equal to 75 percent Federal and 12½ percent State Aid on the eligible portions of the project. Thus, total Federal and State Aid would amount to \$234,000,000, leaving a net cost to the district of \$34,000,000.

The estimated costs per homeowner is based on a \$90

per dwelling unit flat rate plus \$3 per \$100 full assessed value once the dwelling unit is connected to the system. For those non-users, a charge of \$5 per \$100 of assessed value for land only, exclusive of improvements, will be made; and since the average assessed value of land for improved residential property in the district is \$300, this charge will amount to approximately \$15 annually per lot.

Holbrook, Birchwood North Shore and Parkland Study

Completed a study on the feasibility of combining County Sewer District No. 2 - Holbrook, Birchwood North Shore and/or Parkland III sewerage facilities.

Cost estimates for the separate upgrading of each facility and an estimate of the costs for upgrading combined facilities were prepared, projected operation and maintenance costs were obtained, and an estimated cost per house in each subdivision was computed.

208 Planning Activities

Prepared the documentation required to support the Nassau-Suffolk Regional Planning Board's request for designation as the areawide waste treatment management agency for Nassau and Suffolk Counties. The area and agency designation request was submitted to Albany and approved by Governor Wilson on December 27, 1974. This request is currently under review by the U.S. Environmental Protection Agency's Region II office in New York City.

County Sewer District No. 1 - Port Jefferson

Initiated a study to develop a preliminary facilities plan, which will evaluate sites for both wastewater treatment facilities and recharge locations, effluent disposal to marine waters, as well as the cost effective analyses of sewer construction, degrees of treatment, sludge disposal, and phased construction.

Solid Waste

The Three Town Solid Waste Disposal Corporation is progressing in its mission to establish a solid waste disposal facility for the Towns of Babylon, Huntington, and Islip. This three-town corporation has contracted with the New York State Environmental Facilities Corporation for the procurement of a facility site and a regional solid waste program. The engineering-planning phase has been completed by the William F. Cosulich Associates, and the proposed plan has been distributed to all interested parties as a "Regional Resource Recovery and Solid Waste Management Program."

CONSTRUCTION DIVISION

In the Southwest Sewer District, 13 additional contracts went to bid in 1974, while two projects which started in 1972 were completed. A total of 159 miles of main line sewer, 60 miles of house connections, and 2,775 manholes were inspected by the field personnel.

On May 9, bids were received for the construction of the Water Pollution Control Plant at Bergen Point, Town of Babylon. Contracts were awarded to the apparent low bidders; namely, Terminal Construction Co. (General Construction), Johnson Electrical Construction Co. (Electrical), Simpson Metal Industries (Heating & Ventilating), and James McCullaugh Co. (Plumbing). Surveying services were furnished by a consultant land surveyor to establish and stake out the northerly and easterly property lines and to set monuments for horizontal and vertical control on the plant site. Plans and specifications for the construction of a 6' galvanized wire fence along the northern property line of the plant site were prepared and were advertised for bids in December.

Other municipal work performed included 22 house connections in the Port Jefferson Sewer District, inspection of three facilities (Kings Park Hospital STP expansion, Port Jefferson STP Interim Expansion, and the Riverhead Sewer District Pump Station at Middle Road) and the inspection of the collection system for the Yaphank County Center.

A total of 160 projects were inspected by the Construction Division during 1974. Of these, 92 were completed and 68 carried over to 1975. Of the \$110 million of construction projects undertaken, \$16 million were completed, and of these, \$9 million are completions in the Southwest Sewer District. Pertinent statistical data on the completed projects is as follows:

	<u>Completed Projects</u>	<u>Total Footage</u>		<u>Manholes</u>	<u>STP Cap (MGD)</u>
		<u>Main</u>	<u>House Conn.</u>		
Subdivisions	34	98,864	76,700	381	0
Gdn. Apts. & Condominiums	13	36,819	16,391	165	0.553
Municipal-Tot.	3	9,283	439	35	0.9
SWSD	2	837,294	314,720	2,775	0
House Connecs.	22	-	1,046	-	-
Other	18	36,271	31,942	178	1.582
1974 Totals	92	1,018,531	441,238	3,534	3.035
1973 Totals	167	733,891	391,199	2,837	3.154
Increase-Decrease	-75	+284,640	+50,039	+697	-.119

Of the above-listed projects (not including S.W.S.D.), 68 are collection systems, 22 are sewage treatment plants for a total treatment capacity of 3.035 MGD and 5 are private development pumping stations handling 694,000 gallons per day.

ENVIRONMENTAL MONITORING DIVISION

Fresh Water Resources

Stream Sampling - All stream surveys have been completed, and we now routinely monitor quality and quantity for 102 county streams. A satisfactory data base has also been accumulated. Special studies done in this program include an investigation of Awixa Creek pollution, a Department of Labor stream cleanup program, and two detailed investigations of surface water bodies drying up due to sewer construction. The highlight of the year was testimony given by department officials for the reclassification of some 50 streams and ponds.

Test Wells and Monitoring - Ninety-four test wells were completed in 1974 bringing the total number of test wells to 187. This program will be completed in early 1975, and we will then have test wells in all ten townships. In 1975 we hope to begin establishing base maps for data recording, plot quality contours and produce detailed water level maps.

Sewage Treatment Plant Wells - During 1974, 12 more monitoring wells were installed at new sewage treatment plants. We now have 26 wells installed with initial chemical and water level results. During 1975, we will resample these wells to begin noting any changes which may be occurring in their quality due to sewage treatment plant effluent.

Deep Observation Wells - As part of the project to establish monitoring for salt water intrusion at the barrier beach, three wells were constructed at Smith Point Park. The wells were drilled to depths of 1,720, 1,350 and 1,735 feet respectively. Water levels and water quality samples will be routinely taken. As expected, the wells did not encounter any salt water intrusion at any depths.

South Fork Water Study - The first phase of this study was completed with the planning and implementation report produced. The plan calls for an expansive data collection program which has been undertaken by this department with the assistance of the U.S. Geological Survey and the Suffolk County Water Authority. Two complete meteorological stations have been installed, 12 streams were routinely monitored, two gauging stations have been established and 200 water levels and 50 water samples were taken during 1974. The monitoring activities will expand somewhat in 1975.

Carll's River Study - This project, ready for bidding, includes the installation of monitoring facilities in and around the Carll's River for measuring ground-water levels, horizontal and vertical permeabilities. The design report, plans and specifications for the facilities were reviewed and approved. As part of the project, a meteorological station was installed at Belmont Lake State Park. In 1975 we expect to bid the project, install

the facilities, and begin accumulating data.

Twelve Pines Recharge Facility - Early in 1974, experiments with the recharge of secondary effluent were completed. The expansion of the sewage treatment plant allowed us to begin testing for recharge characteristics of denitrified and filtered effluent. A series of tests have been completed and will continue through the first half of 1975. Results have shown that much greater recharge rates can be experienced with a denitrified filtered effluent (up to ten times that of secondary effluent).

Ground-water mounding under very high recharge rates does not seem to be a problem; however, the effect of precipitation upon recharge seems to be a problem which has to be investigated. Finally, we are finding that very little quality changes are experienced in water which is recharged at the surface and water which is sampled by wells just at the ground-water table within each basin.

Lawn and Garden Fertilizers Study - The objective of this program is to monitor the quality of the ground-water in a new subdivision where sewers have been installed to see if ordinary lawn and garden fertilizers will cause a change in ground-water quality.

Results for three years appear to show that we are seeing the effects of ground-water quality changes in the aquifer due to the construction of a "subdivision" in that original residual ammonia and organic nitrogen, which are leached to the ground-water from existing ground cover, have been diluted and changed in state; and nitrates are now present.

Summer Environmental Employment Program - The 1974 summer program consisted of two individual projects. The first was a recharge basin cleanup program. Over 500 basins were surveyed in the five western towns, and 200 basins actually had debris of assorted shapes and sizes and various quantities removed from them. In addition, data was gathered regarding the chemical quality of clogged basins. Preliminary results indicate algae growth observed in some of the basins seems to be reducing the nutrient levels of the water standing in the basins.

The second program consisted of data collection of water levels which were obtained from over 450 monitoring wells in the county. The data will be used for the creation of water level hydrographs and for drawing water-table contour maps.

Marine Resources Section

Routine Monitoring Program - 1974 saw this program grow to peak performance. By comparing previous statistics, bacteriological and chemical sampling has increased three to sixfold. The routine sampling divides the county into ten general areas with 19 distinct sampling entities consisting of smaller bays and harbors.

Dewatering Project: In order to ensure that dewatering activities in the Southwest Sewer District will not have an effect upon the receiving waters, the dewatering discharges have been monitored for bacteriological quality, nitrate and detergent concentrations. The program will continue throughout the length of dewatering activities in the district, and results thus far have shown that the operation is not causing a problem with receiving waters.

Dredging: 1974 saw a large increase in the number of U.S. Army Corps of Engineers applications as well as a significant increase of applications filed with NYSDEC as per the Wetlands Act. One hundred forty-seven (147) Army Corps and 27 State applications, and 7 impact statements from the Department of Public Works were received and reviewed. The applications vary from dredging and bulkheading to installation of groins and pilings. A total of 119 applications were inspected, and the breakdown is as follows:

<u>No. of Applications</u>	<u>Cubic Yards Dredging</u>	<u>Ft. Bulkheading</u>	<u>Ft. Groins</u>	<u>No. of Pilings</u>
119	348,651	36,125	1,115	210

Water Pollution Control Section

The substance of this section's activities is to inspect industries and waste water facilities where effluents are discharged and to verify, through regular inspection and sampling, that the quality of the effluent meets assigned standards and operating permit requirements.

The surveillance of sewage treatment plants is now done on a quarterly basis for 92 plants. With the institution of the new State permit system, all of these plants had to reapply for new permits. This was done during the year and, thus far, 11 permits have been issued. The effectiveness of this sewage treatment plant inspection program is evidenced by the fact that no new sewage treatment plant cases had to be referred to NYSDEC during 1974 - indicating either that all plants are in compliance or voluntary resolving of problems ensued.

Almost 2,000 industrial waste inspections were made on 476 industries. Again, the new State permit program has required all these industries to obtain permits. Thus far, 68 draft permits have been approved by this office and sent to the State. However, no new permits have been forthcoming.

The New York State Department of Environmental Conservation has finally provided the necessary legal assistance this Department needs to resolve violations of State regulations. Only three case reports submitted in 1974 remain unresolved.

After one year of hearings and over 1,000 pages of testimony, the case against Blue Point Laundry was resolved with the signing of a consent order to redesign the plant. As a result of this, the remaining commercial laundries have agreed to enter into similar consent orders.

The main road salt storage company in Farmingdale (International Salt Company) was cited for storing unprotected salt, and they have agreed to install diked impervious runoff collection systems for their salt piles such that the brine could be removed by scavenger trucks. Similar compliance has taken place with many other communities within the County.

Air Pollution Control Unit

In late 1973, the department worked on possibilities for the Long Island Lighting Company to handle coal as a primary fuel at the Port Jefferson generating station. The ramifications have been studied and strategies developed so that they may use this material and, although the need is not present, it is very likely that they will be mandated in some near future date to burn coal as a primary fuel. In conjunction with this shortage, the shortage of low sulphur fuel oil remained, and the dual fuel system developed for Suffolk County is now in the development stages to be used in Nassau County as well.

During 1974, as a result of stack tests initiated, it was found that under present operating conditions, LILCO's Port Jefferson generating station had been exceeding standards for particulate emissions. A change in the mode of operation of their precipitators has brought them within standards.

The department prepared a report for the Village of Patchogue which resulted in the Village signing a consent order phasing out its incinerator and agreeing to the purchase of the necessary additional equipment in order to haul their refuse to the Town of Brookhaven's refuse disposal landfill.

The Pollen Program attained wide recognition with many radio stations publicizing the daily local pollen counts. The program will be continued and possibly expanded to encourage people to become more aware of ragweed pollen and its hazards.

STAFF SERVICES

Chemistry Laboratory

The accomplishments of the laboratory section are most easily summarized by giving the statistical breakdown of samples analyzed for the year according to type:

	<u># Samples</u>	<u># Parameters</u>
Marine	1,141	6,126
Fresh Water - Wells	229	3,213
Streams	337	5,381
12 Pines	88	558
Miscellaneous	44	329
W.P.C. - Sewage	442	1,757
Industrial	474	2,494
Spec. Serv. - Rain	48	712
O & M - Sewage	44	130
Design - Sewage	39	129
YEAR TOTALS	2,886	20,829

Special Services

The Water Budget Verification Study (WAVES) - designed to resolve uncertainties about the amount of natural recharge of precipitation and its variation within the County - got underway with the construction of a fully-instrumented site in East Hampton.

An amended working draft of the proposed Suffolk County Environmental Protection Law was prepared and is under review by the County Executive and Chairman of the Environmental Control Committee. The amended draft then will become the basis for the proposed law and circulated for general review.

Hearings before the New York State Board on Electric Generation and the Environment began on a proposal by Long Island Lighting Company to construct two 1,150 megawatt nuclear powerplants at Jamesport. In November, Irving Like was retained by the County Executive to take charge of the county's efforts. The hearings will last into the summer of 1975, and increased effort of DEC staff will be required in order to establish and present the county's position regarding the LILCO application.

Arrangements were made with the consulting firm of Dubin-Mindell-Bloome Associates to study LILCO's projected load growth from the standpoint of energy conservation in order to make an independent assessment of the need for the powerplants. The study is to start in earnest February 1975 and take 5 months to complete.

The draft beverage container law made little progress. A public hearing held April 16th by the Environmental Control Committee of the County Legislature was attended by numerous industry representatives. The suggestion of an economic impact study was the dominant outcome of the hearing. Correspondence with a representative of the beverage industry as to whether the industry or the county should take responsibility for such a study was inconclusive.

APPENDIX A

DEPARTMENT SPONSORED CAPITAL PROJECTS

<u>PROJECT #</u>	<u>DESCRIPTION</u>	<u>EST. COMP. DATE</u>	<u>EST. TOTAL COST</u>	<u>PROJECT #</u>	<u>DESCRIPTION</u>	<u>EST. COMP. DATE</u>	<u>EST. TOTAL COST</u>
8101	Sanitation Comprehensive Sewage Study of Five Eastern Towns	1974	75,000	8120	Research & Experimentation in the Use of Recharge Systems in Sewage Disposal	1977	733,500
8102	Construction of New Sewage Treatment Plant For County Sewer District #1-Port Jefferson	1980	20,770,000	8122	Improvements to Collection Systems - County Sewer District #1-Port Jefferson	1977	649,000
8103	Construction of New Outfall for County Sewer District #1-Port Jefferson	1980	7,947,000	8125	Planning for Construction of West Central Sewer District	1978	250,000
8104	Site Acquisition for County Sewer District #1 Port Jefferson	1975	600,000	8126	Planning for construction of South Central Sewer District	1978	250,000
8105	Reconstruction of Pumping Station & Force Main for County Sewer Dist. #1-Port Jeff.	1980	2,436,000	8128	Great Cove Pollution Study-Islip	1979	660,000
8106	Construction of Sewage Treatment Plant & Pumping Station for C.S.D. #3-Southwest	1978	87,400,000	8129	Planning for Construction of Yaphank Sewer District	1976	150,000
8107	Construction of Outfall for County Sewer District #3-Southwest	1978	86,700,000			TOTAL	686,537,500
8108	Construction of Intercepting Sewers for County Sewer District #3-Southwest	1978	216,200,000		<u>Water Supply</u>		
8109	Acquisition of Right-of-Way for Construction of Southwest Sewer District	1977	1,851,500	8201	Construction of Test Wells	1975	776,000
8110	Construction of Lateral Sewers for County Sewer District #3-Southwest	1980	248,073,500	8202	Study of Salinity Effects on Bay Ecology	1974	64,000
8111	Soil & Foundation Engineering Services for County Sewer District #3-Southwest	1974	500,000	8203	Construction of Salt Water Intrusion Wells	1975	100,000
8112	Preparation of Special Assessment Rolls for County Sewer District #3-Southwest	1974	75,000	8204	Submarine Borings adjacent to Sewer Outfalls	1975	60,000
8113	Interim Improvements to County Sewer District #1-Port Jefferson	1975	287,000	8205	Water Budget Verification Studies	1977	116,000
8114	Interim Improvements to County Sewer District #2-Holbrook	1976	95,000	8206	South Fork Water Resources Study	1978	296,000
8115	Acquisition of&Improvements to Huntington Sanitary Corp. Sewage Treatment Facilities	1978	1,800,000	8207	Study of Effects on Pollution of the Ground Water due to Agricultural & Turf Fertilization	1977	199,930
8116	Acquisition of & Improvements to Suffolk San. Corp. Sewage Treatment Facilities	1978	2,700,000	8208	Purchase of Soil Boring & Drilling Rig	1975	200,000
8117	Acquisition of & Improvements to Selden San. Corp. Sewage Treatment Facilities	1978	6,110,000			TOTAL	1,811,930
8119	Test Borings in Connection with the Construction of County Sewer District #3-Southwest	1975	225,000		<u>Solid Waste Disposal</u>		
				8404	Research for Monitoring Effluents from Existing Incinerators, Residue Landfills & Sanitary Landfills	1975	278,000
						TOTAL	278,000
						<u>GRAND TOTAL-ALL PROGRAMS</u>	<u>688,627,430</u>

APPENDIX B

STATISTICAL COMPARISONS

ENVIRONMENTAL MONITORING DIVISION

	<u>WATER</u>	<u>AIR</u>	<u>MARINE</u>	<u>W.P.C.</u>	<u>1974 TOTAL</u>	<u>CHANGE VS. '73</u>
COMPLAINTS RECEIVED	100	396	67	366	929	+ 120
ORIG. INSPECTIONS	54	1130	40	3235	4459	- 164
REINSPECTIONS	3	1061	-	452	1516	+ 2
VIOLATIONS FOUND	3	242	-	390	635	+ 62
VIOLATIONS CORRECTED	3	242	-	390	635	+ 55
SAMPLES	1490	1754	3637	1162	8043	+2368

ENGINEERING DESIGN REVIEWS

	<u>APPROVED</u>	<u>IN PROCESS</u>
<u>PUMP STATIONS</u>		
COUNTY	6	1
REGULATORY	3	-0-
<u>COLLECTION SYSTEMS</u>		
COUNTY	14	9
REGULATORY	19	9
<u>FORCE MAINS</u>		
COUNTY	3	-0-
REGULATORY	-0-	-0-
<u>ENGINEERING REPORTS</u>		
COUNTY	8	4
REGULATORY	8	1
<u>SEWAGE TREATMENT PLANTS</u>		
COUNTY	6	9
REGULATORY	6	7
<u>INDUSTRIAL WASTE</u>		
	<u>49</u>	<u>47</u>
TOTAL PROJECTS - 1974	122	87
CHANGE VS. 1973	-23	+48

