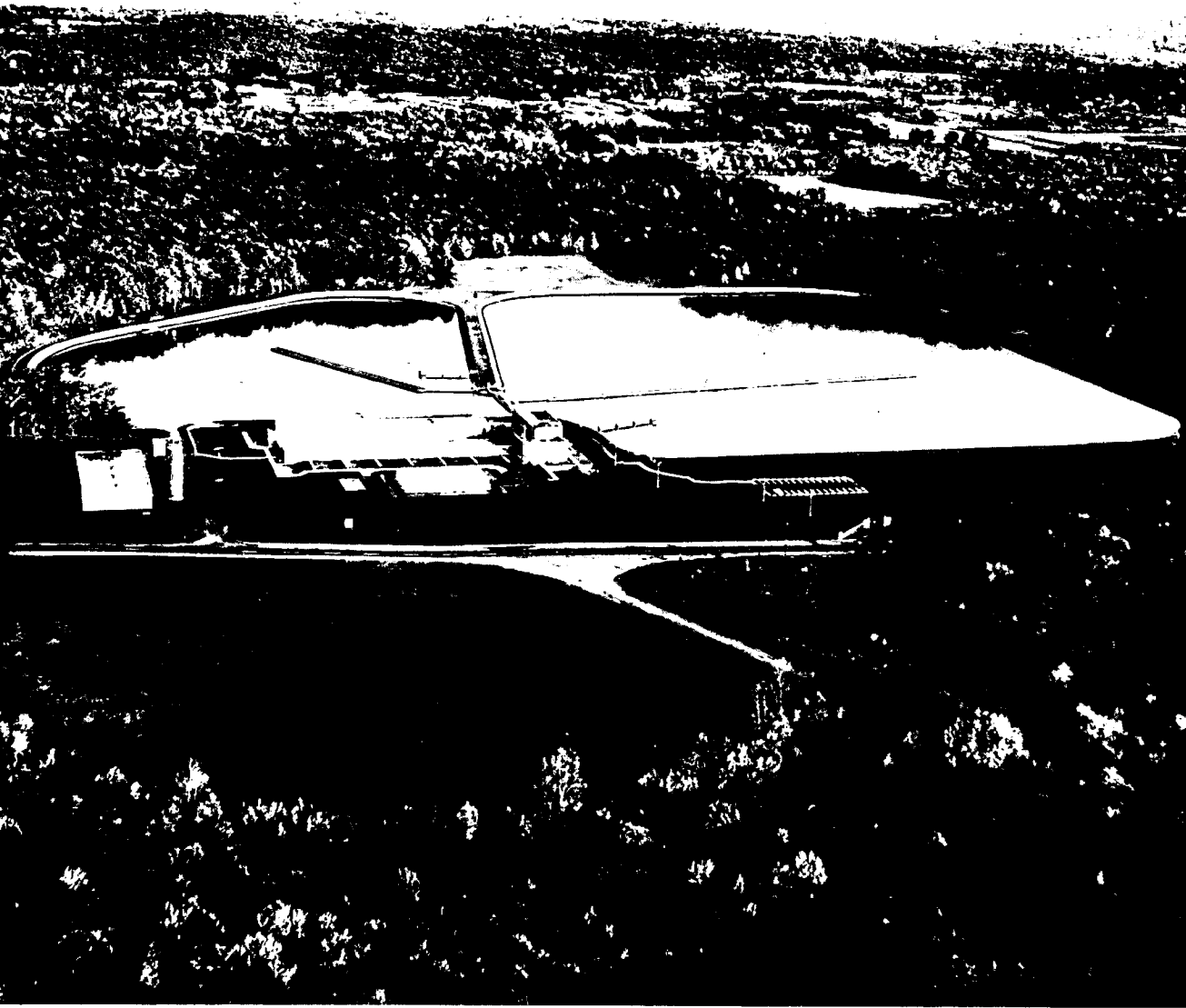


CITY DOCUMENT



ANNUAL REPORT  
*of the*  
WATER SUPPLY BOARD  
*of the*  
CITY OF PROVIDENCE

For the Year Ended September 30, 1965

IN CITY COUNCIL  
FEB 17 1966

READ:

WHEREUPON IT IS ORDERED THAT  
THE SAME BE RECEIVED.

*Vincent Vespa*  
CLERK

R E P O R T

ADMINISTRATIVE OFFICE  
WATER SUPPLY BOARD  
CITY OF PROVIDENCE

TO THE HONORABLE JOSEPH A. DOORLEY JR., MAYOR  
AND THE HONORABLE CITY COUNCIL:

Gentlemen:

In compliance with Chapter XX of the Charter of the City of Providence, enacted by the General Assembly of the State of Rhode Island at its January Session, A. D. 1940, and approved April 26, 1940, we have the honor to present the twenty-fifth annual report of the Water Supply Board for the year ended September 30, 1965.

On January 8, 1965, John J. Tierney was reappointed a member of the Board for the ensuing term ending on the first Monday in January, 1969.

At the re-organization meeting held on January 8, 1965, John A. Doherty was re-elected Chairman and John J. Deary was reappointed Secretary.

The Board has held regular meetings throughout the year, meeting practically every week, at which careful consideration has been given to the many problems arising in connection with maintenance and operating activities, the Department's financial structure, matters relative to taxes levied on property owned in nearby communities, and other miscellaneous departmental duties which properly come before the Board. Special meetings were held throughout the year for consideration of particular problems which have arisen.

The report of the Chief Engineer with many important tables and statistical data is appended hereto, to which we invite your attention for details and particular information regarding the finances of the Department and conduct of the work during the above period.

Respectfully submitted,

WATER SUPPLY BOARD  
John A. Doherty, Chairman  
Earl H. Ashley  
Ugo Riccio  
John J. Tierney  
David R. McGovern, Ex-Officio

*John A. Doherty*  
John A. Doherty, Chairman  
DEPT. OF CITY CLERK  
PROVIDENCE, R.I.  
FEB 11 2 52 PM '66  
FILED

REPORT OF THE CHIEF ENGINEER

Providence, R. I.  
October 1, 1965

WATER SUPPLY BOARD  
CITY OF PROVIDENCE

Gentlemen:

The following is the report of operations of the Providence Water Works for the fiscal year ended September 30, 1965.

The present dry spell represents the longest sustained drought that the Providence Water Works has experienced in over 50 years. It started during the 1962 fiscal year and since that date the accumulated deficiency in rainfall totals 24.80 inches. The loss in runoff during this same period, which is the amount of rainfall actually collected in our impounding reservoirs, amounts to 24.88 inches. This is equivalent to a reduction in runoff on the watershed of over 40 billion gallons of water. The loss in water collected over this 4-year period was in excess of the volume of water consumed for the last two years. It is greater than the storage capacity of Scituate Reservoir that totals 37 billion gallons.

For the fourth successive year, the average daily yield on Scituate Watershed dropped well below the long term average. Actual daily yield was only 62,993,170 gallons compared to the 50-year long-term average of 108,890,000 gallons, a decline of 45,896,830 gallons daily. The yield for this fiscal period was much lower than the Estimated Safe Yield of 84,020,000 gallons daily and was only surpassed in 1930 and 1944 when the daily yield was 53,130,000 gallons and 58,940,000 gallons respectively. From April through September was the driest period in 50 years and produced a lower yield during these months than what occurred in 1930.

Coincidental with the severe drought, the average daily water consumption continued on the increase with an all-time record established for the year ended September 30, 1965. During this period, the cities and towns supplied from the Providence system consumed 53,344,150 gallons daily. This compares with 50,226,820 gallons daily for the 1964 fiscal year; 47,914,490 gallons in 1963 and 45,719,285 for 1962 which was the first year of the present drought. Another record was broken concerning the demand of the maximum day. The previous high of 87,215,000 gallons established on June 27, 1963 was exceeded on June 23, 1965 when the maximum daily requirements reached 88,455,000 gallons. However, the maximum hourly rate of consumption on this date was only 134,064,000 gallons which fell below the record of 139,620,000 gallons that occurred on June 30, 1964.

As the result of studies conducted by the department, it was determined that it would be impossible to deliver sufficient quantities of water by gravity from the Gate House to the Water Purification Works throughout periods of extreme drought or days of maximum demand. Projected yield studies based on the runoff from the Abbott Run drainage basin during the dry years 1910, 1911 and 1912, and applied to the Scituate watershed, with necessary correction factors for the variance in land and water surfaces, indicated that booster pumps would be required by June, 1967. In order to meet the full potential of the draft from Scituate Reservoir to fulfill the requirements of the maximum day, we must be able to deliver to the Purification Works 144 million gallons daily. For design purposes, we are using 150 million gallons daily. The station will consist of four 50 M.G.D. units, three of which will carry the entire load and the fourth will be an auxiliary pump in case of breakdown to one of the other units. To obtain high efficiency over the wide range in head characteristics, we are planning to provide dual electrical synchronous motor drives on each pump. One motor will be 300 HP-2300 volts at 300 RPM and the other 700 HP at 400 RPM.

At the last general election held on November 3, 1964, the voters of Providence approved a referendum, by a three-to-one majority, that authorized the City to issue bonds in the amount of \$13,000,000 to build a new tunnel and aqueduct, additional filters, and other incidental construction necessary in connection therewith. Under Chapter 46 of the Public Laws of 1965, the General Assembly passed enabling legislation authorizing Providence to issue bonds in the sum of \$13,000,000 for the construction of major improvements to the Providence Water Supply System. At this same session, Chapter 40 of the 1965 Public Laws authorized "the City of Providence to acquire land to build a supplementary Tunnel and Aqueduct to meet water needs of areas entitled to receive water from the City of Providence under the provisions of Chapter 1278 of the Public Laws of 1915, as amended, etc.". On June 15, 1965, the City signed an agreement with Charles A. Maguire and Associates for Engineering Services in connection with the Design and Construction of the Proposed Tunnel and Aqueduct from the Water Purification Works in Scituate to Budlong Road in Cranston and including Land Condemnation Plans and Descriptions for the Routing of the Proposed Tunnel and Aqueduct. The first phase of the project is scheduled for public bidding sometime in January, 1966 and construction should start in the early spring of 1966.

Construction of the final stage of the Northwesterly Trunk Main was completed on June 11, 1965. This project, which began on June 25, 1964, was constructed by the Capaldi Brothers Corporation of Smithfield, Rhode Island, who received a contract award as low bidder on June 2, 1964 in the amount of \$311,390.00. This contract completes the Northwesterly Force Main between Neutaconkanut Pumping Station in Johnston and the High Service Longview Distribution Reservoir in North Providence, and included the installation of

8,302 linear feet of 24-inch, and 256 linear feet of 30-inch mains. Prestressed reinforced concrete cylinder pipe designed for 150 P.S.I. working pressure was used, being the lowest of alternate price bids for this contract. The final construction cost for this work, which required a submerged crossing of the Woonasquatucket River, insertion of a 36-inch gate valve at Longview Reservoir, main sectionalizing valves, reinforcement connections to the high service distribution system and repairs to all paved areas was \$309,131.14.

Bids were received by the Board of Contract and Supply on June 28, 1965 for construction of the Final Stage of the Southeasterly Trunk Main in Providence between Allens Avenue at Ernest Street and the intersection of Public and Eddy Streets. The Panning and Doorley Construction Company of Providence was awarded a contract for this work, in the amount of \$326,140.00, on the basis of the lowest alternate bid submitted for furnishing and installing prestressed reinforced concrete cylinder pipe conforming to specification requirements. The project involves an approximate total of 6,100 linear feet of 30-inch water main, with 3,300 feet to be provided with a special protective sulphate resistant concrete coating for use in areas adjacent to the tidal waters along the Providence River. Work began on this project on September 14, 1965 and it is anticipated that completion will be made early in the spring of 1966.

Replacement of high service pumping equipment at the Bath Street Station began on November 22, 1964 after demands on the system diminished from the higher seasonal loads. This project, under a \$54,500 contract with the D'Amario Plumbing Company of Providence, who submitted the lowest competitive bid, included the replacement of electric motor and gasoline engine-driven pumping units, originally installed in 1927. Under the contract, two new 2500 gallons per minute electric motor-driven units were installed together with one auxiliary 5000 gallons per minute gasoline engine-driven unit. Also covered in the contract were necessary changes to piping, valves and electrical switchgear. The new centrifugal pumps were manufactured by the Worthington Pump Corporation and the field tests showed their actual operating performance well in excess of the guaranteed efficiencies called for under the contract. The tests were conducted in January, 1965 and the units placed into regular service immediately following the acceptance tests.

The Hydro-Electric Station at Scituate, which had been out of service since July 6, 1964 for a major project of Building Alterations and Improvements, Replacement of the High Voltage Electrical Switchgear and Installation of a New Hydraulic Turbine, together with other extensive repairs to the power generating equipment, was restored to operating service on March 5, 1965. With the completion of this work, together with the work done in the two preceding years, which included rebuilding and repairs to the 2300 Volt-1875 KVA turbo generator and reconditioning of the

15000 foot pound hydraulic governor, the Hydro-Electric Station is considered to be in a good, reliable operating condition. Other than periodic inspections of the submerged equipment and minor repairs and adjustments to the several appurtenant features of the station, this facility should be free from major maintenance and repair problems for a period of several years. The total cost of this project was \$175,697.72 which included a contract with the A. C. Beals Company of Providence in the amount of \$49,473.28 for Building Alterations and Improvements; a contract for Installation of New High Voltage Metal Clad Switchgear with the Crawford Electric Construction Company in the amount of \$61,500.00; a new turbine runner, rebuilding of the turbine wicket and field inspection with supervisory installation service by the Allis-Chalmers Manufacturing Company of York, Pennsylvania; rigging and erection services by Zavota Brothers of Providence, and architectural design services and supervisory construction inspection by Mr. Oresto DiSaia, Providence Architect.

"Open House" for public visitation to the Water Purification Works was held on October 11, 1964, and again on May 16, 1965. An estimated 3,700 persons were given guided tours by plant personnel. The enthusiastic compliments on the many modern and unique features duplicated reactions observed during previous Open House days. It is intended to repeat these visitations during the fall of 1965 and the spring of 1966 to afford others an opportunity to tour the facilities of the modernized Water Purification Works.

The program of guided tours of the Water Purification Works, for school children of the advanced grades and their instructors, was continued throughout the year. As part of the tours, lectures were given in the plant auditorium to explain the collection, treatment, and distribution of water by a large modern water supply system. Including visitors from all academic levels, a total of 875 students and teachers, comprising thirty-four school, college, and university groups, participated in the program. In addition, tours were also conducted for approximately 250 visitors from various civic, engineering and vocational groups.

The installation of new extensions to the distribution system and the replacement and relocation of existing mains required the installation of 52,113.37 feet of various size and kind of pipe. A major part of the footage was installed by contractors under competitive bidding. C. Brito Construction Company completed the Group 50 Contract that was awarded the previous year and included the laying of 12,168.30 ft. during this fiscal year. This same firm laid 15,153.40 ft. under the Group 51 Contract and under the Group 52 Contract installed 5,669.00 ft. before the end of the fiscal year. In connection with the replacement and relocation of mains resulting from the State highway construction program, M. A. Gammino Construction Company laid 1,791.78 ft. of water mains and Campanella and Cardi 5,549.39 ft. Capaldi Brothers Corporation laid

8,558.03 ft. under the Northwesterly Trunk Main Contract and Fanning and Doorley Construction Company replaced 105.80 ft. of main in connection with a sewer contract.

Other extensions involved the laying of 1,434.08 ft. of main, consisting of 1,296.08 ft. of 6-inch asbestos cement main and 138.00 ft. of 8-inch asbestos cement, which was laid by the department's forces.

Two hundred and six main installations were made in various streets during the year. At the end of the year, approximately 7,300 ft. of main extensions contracted for remained to be laid.

Under Cranston City Council Resolution No. 165, approved September 28, 1964, the department was requested to install 49 hydrants in various locations throughout Cranston. The Contract was awarded to the A. E. Bragger Construction Company on February 8, 1965, and work was started on March 10, 1965. The Contract was completed on April 30, 1965. The contractor supplied all materials except the hydrants, which were furnished by the department. The final payment to the contractor was \$20,387.62 and the cost of the hydrants was \$8,697.50, making a total installation cost of \$29,085.12.

Capital improvements for the fiscal year totalled \$1,024,504.14. Included in this amount was \$309,131.08 for the Northwesterly Trunk Main reinforcement, new main extensions \$408,373.59, services \$111,232.18, hydrants \$121,955.19, and new gate valves \$73,812.10.

Applications for water services totalled 1,022, or 42 less than in the previous year. Of this number, 94 required extensions to the distribution system. A total of 966 new services were installed, 950 general supplies and 16 fire supplies.

Under the terms of Chapter 1525 of the Ordinances and Resolutions of the City of Providence for 1946, this department was charged with the operation of the sewer rental law, which took effect on October 1, 1946. During the fiscal year ended September 30, 1965, the net sewer rental collection totalled \$140,023.12.

Automotive and construction equipment owned and in use by the department totalled 29 various trucks, 20 passenger cars including 2 jeeps, 11 compressors, 3 trenchers, various pumps and other miscellaneous equipment. The records of the department indicate that the trucks were operated a total of 43,118 hours at a cost of 75 cents per hour and passenger cars were driven 214,863 miles at a cost of 7 cents per mile.



## SOURCE OF SUPPLY

### SCITUATE WATERSHED - RAINFALL AND RUNOFF

The rainfall on the 92.8 square mile Scituate Watershed above Gainer Dam was measured as usual by rain gages at Rocky Hill, Hopkins Mills, North Scituate, Westcott District, and Gainer Dam. Due to the extended severe drought, a total of only 38.13 inches was recorded for the year ended September 30, 1965. This was the fourth lowest yearly rainfall experienced during the 50-year (1916-1965) period; it was 9.91 inches less than the long-term average of 48.04 inches and only 58% of the maximum of 66.28 inches established during the year ended September 30, 1958.

There were five long periods when no rainfall was recorded, two of seven days and three of eight days duration. The three eight-day periods were from March 30 through April 6, 1965, July 19 through July 26, 1965, and from August 5 to 12, 1965 inclusive. There was one interval of five days, one of six, and one of eleven days of successive rainfall, with the most productive of these occurring from December 17 through December 27, 1964. During this time, a total of 3.40 inches was recorded, with a high of 1.93 inches on December 27 and a low of 0.008 inches on December 23.

As mentioned above, the total rainfall of 38.13 inches was the fourth lowest yearly amount recorded during the 50-year (1916-1965) period. The lowest was for the year ended September 30, 1957, when a total of 33.43 inches was measured; the second lowest was 1930, with 34.77 inches; the third lowest was 1925, with 34.94 inches. During the months of December, 1964 and February, 1965 the rainfall exceeded the 50-year averages, the maximum monthly rainfall occurring in December when 6.28 inches were measured. This was 2.24 inches greater than the 50-year average and was the sixth highest rainfall recorded for December, the maximum for that month being 9.83 inches measured in 1937. The minimum monthly rainfall during the past year occurred in September when a total of only 1.96 inches was recorded, an amount 2.12 inches below the long-term average for that month. The maximum day's rainfall for the year occurred on February 25, 1965, when a total of 2.46 inches was recorded, with the station at North Scituate measuring 2.75 inches.

The runoff for the year totalled 14.26 inches, which was 10.40 inches less than the 50-year (1916-1965) average of 24.66 inches. It was the third lowest yearly runoff during the 50 years of observations, the lowest being 12.02 inches for the year ended September 30, 1930; the second lowest was 13.37 inches for the 1944 year. Except for December, 1964, when the runoff equalled

the 50-year average for that month, and February, 1965, when it exceeded the long-term average, runoff during each month was less than the 50-year averages. The maximum monthly runoff occurred in February, when 3.43 inches were recorded, an amount 0.65 inches more than the long-term average for that month. The minimum monthly runoff during the past year was measured in August, when minus 0.14 inches were recorded, an amount 0.64 inches less than the long-term average of 0.50 inches for that month.

Statistical rainfall and runoff data for the year ended September 30, 1965, and the years of previous watershed record, may be found in Tables 1, 2, 3, and 4 of the Appendix.

#### SCITUATE WATERSHED - STORAGE, DRAFT, AND YIELD

On October 1, 1964 the water in Scituate Reservoir was at elevation 274.98, or 9.03 feet below the spillway level. The total storage then amounted to 27,681,000,000 gallons, or 74.8% of capacity. At the end of the year, October 1, 1965, the reservoir was at elevation 272.71, or 11.30 feet below the spillway level, with a storage of 25,624,000,000 gallons, or 69.2% of capacity. From October 1, 1964, the elevation decreased at a moderately rapid rate to 270.94 on November 25, or 13.07 feet below the spillway. The total storage at that time amounted to 24,034,000,000 gallons, or 64.9% of capacity, the smallest amount in storage during the entire year. Following a moderately rapid rise to 273.08 on January 1, and then a slow rate of rise to 273.81 on February 1, the elevation rose quite rapidly to 280.27 on April 1. A slow increase brought the elevation to the maximum for the year of 281.42 on May 3, or 2.59 feet below the spillway. At that time the total storage amounted to 34,239,000,000 gallons, or 92.5% of capacity. The continued effect of the drought then brought about a large decrease of 8.71 feet in the elevation, from 281.42 on May 3 to 272.71 at the end of the year.

On October 1, 1964 the combined storage on the watershed, including Regulating, Westconnaug, Barden, Moswansicut, Ponaganset and Scituate Reservoirs, amounted to 31,471,000,000 gallons, or 76.3% of combined total capacity. At the end of the year, the combined storage was 29,407,000,000 gallons, or 71.3% of capacity. The maximum combined storage was on May 2, 1965, when 38,550,000,000 gallons, which is 93.4% of capacity, were impounded. The minimum combined storage was on November 21, 1964, when 27,980,000,000 gallons, which is 67.8% of capacity, were impounded.

Available storage statistics will be found in Table 5 of the Appendix.

The total draft from the Scituate Watershed for the year was 25,056,513,000 gallons, or an average of 68,648,000 gallons per

day. The draft for water supply purposes was 19,929,533,000 gallons, or an average of 54,601,000 gallons per day. The discharge into the north branch of the Pawtuxet River totalled 5,126,980,000 gallons, equal to 14,047,000 gallons per day. The discharge to the river was released at rates and during the hours which were most advantageous to the mills on the Pawtuxet River below Gainer Dam.

The yield from the Scituate Watershed for the year was 22,992,513,000 gallons, or an average of 62,993,000 gallons per day, which was 5,655,000 gallons per day less than the average daily draft, and 45,897,000 gallons per day less than the 108,890,000 gallons per day average yield for the 50-year period 1916 through 1965.

Draft and yield statistics will be found in Table 6 of the Appendix.

#### SCITUATE WATERSHED

#### WATERSHED MANAGEMENT OPERATIONS - 1965

##### THE MAINTENANCE PROGRAM

Turfed cover on Gainer Memorial Dam, on the distribution reservoirs, and at the Purification Works continues to receive careful management. Increased application rates of fertilizer and lime were made in accordance with recommendations resulting from soil tests taken at the various turfed sites.

A total of 16.1 miles of firelanes and forest access roads, 6.5 miles of roadside fenceline, and 3.0 miles of aqueduct and rights-of-way were sprayed with herbicides during the summer growing season. Hardwood sprout growth was mechanically cleared from shoreline areas in the Rockland and Brandy Brook sections of Scituate Reservoir.

Initiated during the year was improvement of a forest-access road system in the Ashland Block of the watershed forest. Upon completion of presently scheduled work, forest access roads in this forested block will total 7.9 miles. Other forest access roads totalling 8,650 feet were cleared and improved during cultural operations conducted in the Quonopaug and Riverview forest blocks. A 4,000-foot access road was opened on marginal watershed property adjacent to the east shoreline of Moswansicut Reservoir. Inspection of the east section of the reservoir is facilitated by the new access road.

Maintenance of distribution reservoirs, pipeline rights-of-way, fencelines, roadside areas, firelanes, forest access roads and miscellaneous facilities was performed as scheduled. Fence and barrier installation and repairs were accomplished as necessary.

Personnel of the department carried out annual maintenance to turf and access roads of Rockland Cemetery as required.

#### THE FORESTRY PROGRAM

An additional professional forester has been employed to assist the Watershed Manager and assume responsibility for forest management operations on the Scituate Reservoir Watershed. Development of the watershed management program will proceed in a number of areas such as: (1) work toward a master plan for the sustained management of the watershed forests; (2) effective control of timber-harvest and timber-culture operations; (3) inspection and protection of property boundaries and watershed forests; (4) research and study of vegetative influences on the watershed; and (5) supplemental support of administrative and supervisory functions.

#### TIMBER PRODUCTION

Timber-harvest operations were reduced during the year because of concentrated efforts in other watershed management activity. Harvested in thinnings and timber-stand improvement operations were 265.4 tons of softwood pulpwood, 318 cords of hardwood pulpwood and fuelwood, 24.5 cords of red cedar, and 3,500 board feet of sawlogs. The sawtimber was removed in a salvage operation from the site of a 7.3-acre burn in the Tunk Hill Block.

#### TIMBER CULTURE

In a commercial cutting operation in the North Scituate Block, 21.0 acres were cleared of overstory mixed oak. Removal of the hardwood trees of low quality provided a complete release of white pine which had become naturally established in the understory. Scattered throughout the area are over-mature white pine which apparently escaped being wind thrown in the 1938 hurricane. It is significant that these white pine produced a heavy cone crop in 1965. Inspection of the area during the next several years will determine the extent of white-pine regeneration occurring as a result of the 1965 seed crop and the cutting operation. Larch and hemlock seedlings were planted in the spring of 1965 to reinforce established and expected white-pine regeneration.

Release of planted and volunteer conifers by girdling and frilling overstory hardwoods is an important winter operation. Acreage released by this method totalled 201.5 acres. The greatest portion of this work included 124.4 acres in the Riverview Block and 54.4 acres in the Quonopaug Block. Three acres of native black spruce (Picea mariana) were partially released in Quonopaug Swamp. Timber-stand improvement work consisting of pruning, mechanical and chemical release, or precommercial thinning was accomplished on an additional 32.7 acres of developing watershed forest.

## VEGETATIVE INFLUENCES

In harvest or release operations which involve the removal or deadening of a major portion of the forest canopy, the evapotranspiration rate is considerably altered. Experimental research by the U. S. Forest Service has shown that water yield from a given watershed is increased by removal of all or part of growth. The amount of increased water yield is dependent upon a number of factors such as annual precipitation, soil depth, location of treatment, and recovery of the site by vegetation. It can be assumed that some increase in water yield has occurred where significant harvest or release operations have been accomplished on the Scituate Reservoir Watershed.

Operations involving removal of riparian or streamside vegetation were initiated during the year on Huntinghouse and Westconnaug streams. Riparian vegetation will transpire at a high rate since roots are in the water table or drawing water directly from the stream. Removal of streamside growth should not only reduce loss of water through transpiration but also lessen deposition of leaves and clogging organic materials in the stream.

An experimental reclamation project was carried out in a six-acre swamp south of Gainer Dike. A primary consideration in reclamation of the swamp was aesthetic improvement by establishment of coniferous trees. Water draining from the swamp was of poor quality with high color. Initially, lanes were cut through the swamp approximately 40 feet apart to permit access. Foliage of existing vegetation was treated with a herbicide applied from a shoulder-mounted mist sprayer. The herbicidal application was made primarily to deaden the significant number of poison-sumac shrubs growing in the swamp. During the winter season, all hardwood trees and shrubs were cut, piled, and burned. Contractual work by Fanning and Doorley Construction Company of Providence included the lowering of a culvert at the drainage outlet on Tunk Hill Road and ditching of the cleared swamp. In the spring of 1965, balsam and Fraser fir transplants and hemlock seedlings were planted at a 6 ft. x 8 ft. spacing. Recent investigation has indicated considerable mortality of the newly planted trees. A reinforcement planting is scheduled for 1966.

## REFORESTATION

Timber-culture projects, swampland reclamation, and reforestation of a burned-over site necessitated increased emphasis in the reforestation program. A total of 23,000 trees were planted on 43.8 acres. A forest fire on October 28, 1964 destroyed 7.3 acres of woodland on Tunk Hill. The area was forested with a mixture of low-quality oak, scattered volunteer white pine and planted red pine. The standing pine and smaller hardwood were cut to

facilitate access. Because of the threat of pales weevil, which is attracted by the resinous odor emitted from pine slash, cut material was destroyed by burning and all pine stumps were treated with creosote. A mixture of white pine, hemlock, and larch was planted in the spring of 1965. Inspection of the area throughout the spring and summer season indicated a low incidence of damage by pales weevil.

#### PROTECTION OF THE WATERSHED

Forest Fires: In addition to the 7.3-acre fire of October 28, 1964 on Tunk Hill, five other fires occurred on City-owned watershed property. Three local volunteer fire companies and forestry personnel of the Water Supply Board contributed to the timely control of a two-acre fire in the North Scituate Block on May 10, 1965. On May 31, 1965, 3.4 acres of City woodland burned in the Trintown Block. Three other fires of one acre or less occurred in the Moswansicut, Brandy Brook, and Kent Blocks of the watershed forest. Woodland injured or destroyed by forest fires during the period of this report totalled 14.5 acres. This is the greatest number of acres burned since 1952 when 15 acres of woodland were destroyed by fire in the Riverview Block.

The Tunk Hill Fire Tower operated 183.5 hours during 30 days of the 1964 fall fire season. The spring fire season necessitated operation of the tower 280 hours during 42 high-hazard days. Acreage destroyed by fire has been held to a minimum because of quick detection, improved accessibility, and prompt action by suppression personnel.

Forest Insects: White-pine weevil control measures were conducted on 22 acres of white-pine plantations averaging 3 to 15 feet in height. In cooperation with the U. S. Forest Service, experimental research plots have been established to study incidence of white-pine weevil damage. A gypsy-moth infestation on the periphery of the watershed was under surveillance by State agencies. Control measures were taken for a second consecutive year to check the spread of the epidemic. The deleterious effects of a large-scale defoliation of forested areas by gypsy moth are significant in forest management. Defoliation coupled with droughty conditions could result in widespread mortality within forest stands.

Forest Diseases: Infection centers of Fomes annosus continue to be noted in coniferous plantations on the watershed. The root and butt disease has caused significant mortality and damage in plantations of white pine, red pine, white spruce, and Norway spruce. The disease has most recently been found in a 14-year old planting of white pine which was given a precommercial thinning in 1961. It is interesting to note that protection from F. annosus was a major consideration in the decision to thin early in the

development of the plantation. Apparently, roots of the planted pine had already intergrown and root grafts had occurred permitting spread of the disease to standing trees.

Freshly cut stumps of all conifers are being treated to prevent infection and spread of F. annosus. Based upon trial experiments and practice of the U. S. Forest Service and commercial timber producers, borax or urea are being used in the treatment of stumps.

Experimental work was initiated in a 5.7-acre plantation which is heavily infected with F. annosus in the Brandy Brook Block. Different methods of site treatment are being applied to five separate 1/5-acre plots to determine the degree to which desired natural reproduction can be encouraged and subsequently cultured.

Control of Trespass: Recorded violations of City watershed property totalled 219 during the period of this report. Local and State authorities cooperated in the prosecution of nine chronic violators. Eighteen juvenile offenders were referred to the local police agency for disciplinary action or for payment of property damage. Six incidents of unauthorized roadside rubbish disposal were resolved with police assistance. Vandalism, theft of trees during the Christmas season, theft of rock from stone walls, roadside littering, and boundary encroachment by abutting property owners are mounting problems in the management of the watershed forest in a suburban environment.

#### GAINER DAM - HYDRO-ELECTRIC PLANT

The Hydro-Electric Station at Gainer Dam, undergoing a major rebuilding and reconditioning program which began in the previous year, was out of service between October 1, 1964 and March 5, 1965. A detailed description of the scope and nature of the repair and reconditioning program is contained elsewhere in this report. During the out-of-service or shutdown period, the obligated discharge of water to the Pawtuxet River was accomplished through the 36-inch blowoff valve at the base of Gainer Dam on a computed 24-hour flow basis, concentrated between Mondays A. M. and Fridays P. M. in each week.

From the resumption of service on March 5 to the end of the year, September 30, the Hydro-Electric Generator was operated for a total of 147 days or 1,259 hours.

The total discharge of water to the Pawtuxet River from Scituate Reservoir for the entire year was 5,126,980,000 gallons, of which 2,482,380,000 gallons were used for generation of power, and the balance of 2,644,600,000 gallons discharged through the 36-inch blowoff valve.

Power generated from the 2,482,380,000 gallons discharged through the 1875 KVA Hydro-Electric Turbo Generator to the Pawtuxet River amounted to 262,800 kilowatt hours, requiring 9,446 gallons of water for each kilowatt hour of generation. The reduced level of Scituate Reservoir, resulting from the extended drought, is reflected in the increased quantity of water needed for power generation, which was 77% greater than the average amount used in the past five years per kilowatt hour of generation. Also, as a result of the extended drought, for the first time since the year 1930, the net exchange of electricity with the Narragansett Electric Company showed no surplus of generation and it was necessary to obtain from the Power Company's system 342,800 kilowatt hours in excess of generated power for use at the Water Purification Works.

Of the 262,800 kilowatt hours generated, 120,200 kilowatt hours, or 45.74% of generation was delivered to the Narragansett Electric Company, and 142,600 kilowatt hours was used at the Water Purification Works. The discharge to the Pawtuxet River of water used for power generation, which was concentrated during the hours of downstream mill operations, was at an average rate of 47.33 million gallons per day.

Hydro-Electric Plant statistics on the basis of the "Contract Year" with the Narragansett Electric Company are shown in Table 8 of the Appendix.

#### WATER PURIFICATION WORKS

The Water Purification Works, located on the North Scituate-Hope Road about three-fourths of a mile from the Scituate Reservoir, has been in continuous and satisfactory operation throughout the year.

Water was drawn from Scituate Reservoir between elevations 213 and 220 and totalled 19,929,533,000 gallons, or an average of 54,601,000 gallons per day; the maximum for any one day being 87,144,000 gallons on June 29, 1965, and the minimum 35,069,000 gallons on November 26, 1964.

This water was treated with Ferri-Floc, aerated, dosed with slaked lime, mixed in the tangential mixer, and coagulated in two concrete basins operated in series. Following a sedimentation period averaging slightly less than three days it was filtered through rapid sand filters, treated with sodium silicofluoride, and finally chlorinated before being delivered into the Scituate Aqueduct leading to the water distribution system.

With the exception of a few short-period shutdowns to service equipment and examine plant structures, influent flow and chemical



treatment were carried on 24 hours daily to obtain a constant and unvarying degree of coagulation and filter efficiency. The Ferri-Floc feeders and the quicklime feeders and slakers are the loss-in-weight gravimetric type, the automatic operation of each being controlled by an electric signalling device proportional to the rate of flow of water through the influent Venturi.

Water for dissolving Ferri-Floc and for lime slaking was maintained at a temperature of from 90 to 100 degrees Fahrenheit. The Ferri-Floc was dissolved by using a ratio of three pounds of water to each pound of chemical, and the quicklime was slaked by using a ratio of six pounds of water to each pound of material.

Ferri-Floc used totalled 2,002,976 pounds, or an average of 5,485 pounds daily; with a maximum for any one day of 8,030 pounds on June 29, 1965, and a minimum of 3,388 pounds on September 6, 1965. The dosage averaged 0.70 grains per gallon, the maximum for any one day being 0.77 and the minimum 0.61 grains per gallon.

Quicklime used during the year totalled 1,858,696 pounds, or an average of 5,092 pounds daily; with a maximum for any one day of 8,993 pounds on August 18, 1965, and a minimum of 2,940 pounds on November 26, 1964. The lime dosage averaged 0.65 grains per gallon, the maximum for any one day being 0.78 and the minimum 0.57 grains per gallon.

Filters were operated a total of 74,889.35 hours during the year, at an average of 205.18 filter hours per day; the average length of filter runs being 61.57 hours, which is 0.57 hours, or 0.9 per cent less than the average of 62.14 hours for the previous year. The maximum daily average of filter runs was 118.75 hours on May 5, 1965, as compared to a maximum of 107.50 hours during the previous year; and the minimum was 32.69 hours on December 2, 1964, as compared to a minimum of 28.30 hours during the previous year.

Wash water rates varied from 17 to 33 inches rise per minute, the rate of rise being adjusted inversely to the temperature of the wash water. Filters 1 to 10, exclusive of number 2, were washed at rates which varied from 21 to 33 inches rise per minute, and an average sand expansion of 33%. These nine filters have sand with an effective size of 0.52 millimeters. Filter number 2, which has 0.65 millimeter sand, was washed at rates varying from 30 to 32 inches per minute rise, and an average sand expansion of 27%. Filters 11, 12, 13 and 14, which have 0.46 millimeter sand, were washed at rates varying from 17 to 29 inches per minute rise, and an average sand expansion of 40%. A total of 132 tests were made during the year to determine the sand expansion and rate of rise. The total wash water used was 156,445,000 gallons, an average of 429,000 gallons per day, or 128,234 gallons per wash. The 156,445,000 gallons of wash water used was 4.3% more than the 149,993,000 gallons for the previous year.

The total water filtered for the year amounted to 19,627,740,000 gallons, an average of 53,775,000 gallons daily; the maximum day being 89,645,000 gallons on June 23, 1965, and the minimum 35,158,000 gallons on January 3, 1965. The average rate of filtration per filter was 6,290,000 gallons per day, and the average amount of water filtered per filter per run was 16,140,000 gallons, or 2.0% less than the 16,470,000 gallons for the previous year.

The total plant effluent, or pure water delivered to the Scituate Aqueduct and the Kent County Water Authority, amounted to 19,471,295,000 gallons, an average of 53,346,000 gallons per day, with a maximum of 88,637,000 gallons on June 23, 1965, and a minimum of 35,081,000 gallons on December 26, 1964.

With the exception of a few short period shutdowns to make inspections and adjustments to the fluoridizers, fluoridation of the plant effluent delivered to the Scituate Aqueduct was carried on 24 hours daily. With respect to fluoridation, the City of Providence Water Supply Board is acting solely as the agent of the R. I. State Health Department in carrying out their directives relative to the chemical used, the applied dosage and the type of feeding equipment. Sodium silicofluoride has been added in amounts sufficient to produce a fluoride ion concentration of 1.0 part per million throughout the distribution system.

Plant effluent delivered to the Scituate Aqueduct and treated with sodium silicofluoride amounted to 19,025,602,000 gallons, an average of 52,125,000 gallons per day. Sodium silicofluoride used during the year totalled 234,197 pounds, or an average of 642 pounds per day; with a maximum for any one day of 1,093 pounds on June 23, 1965, and a minimum of 415 pounds on both November 26 and December 26, 1964. The actual dosage of fluoride ion averaged 0.88 parts per million. Water delivered to the Kent County Water Authority is not treated with sodium silicofluoride. The amount of plant effluent delivered to the Authority totalled 347,728,000 gallons, an average of 953,000 gallons per day.

Chlorination of the plant effluent delivered to the Scituate Aqueduct was carried on continuously, out of abundant caution. The amount treated with chlorine totalled 19,123,567,000 gallons, an average of 52,393,000 gallons per day. Water delivered to Kent County is chlorinated separately by their facilities. Chlorine used during the year totalled 35,107 pounds, or an average of 96 pounds per day; with a maximum for any one day of 149 pounds on June 23, 1965, and a minimum of 56 pounds on January 3, 1965. The chlorine dosage averaged 0.22 parts per million, the maximum and minimum dosages being 0.27 and 0.19 parts per million. Chlorine residual of the water at a point adjacent to the main aqueduct averaged 0.015 parts per million; it averaged 0.007 parts per million in the Providence Journal Building tap water.

The following tabulation shows that the cost of chemical treatment for the year was \$4.79 per million gallons, or 2% less than the figure of \$4.89 last year. The price per ton of Ferri-Floc was \$54.05 for the entire year, which was the same as for the previous year. Quicklime was purchased for \$20.27 a ton from October 1, 1964 to July 1, 1965; shipments received between July 2 and the end of the year cost \$20.19 per ton. This compares with a price range of \$20.40 down to \$20.27 per ton during the prior fiscal year. The price per ton of sodium silicofluoride was \$164.00 for the period October 1, 1964 to August 22, 1965, and \$163.80 from August 23 to the end of the year. The cost of this material during the year ended September 30, 1964 decreased from \$164.40 to \$164.00 a ton. Chlorine was purchased for \$135.00 a ton, the same price that was paid during the previous year.

	Year Ended Sept. 30, 1964	Year Ended Sept. 30, 1965
Ferri-Floc	0.70 G.P.G.	0.70 G.P.G.
Quicklime	0.66 G.P.G.	0.65 G.P.G.
Sodium Silicofluoride	*0.92 P.P.M.	*0.88 P.P.M.
Chlorine	0.28 P.P.M.	0.22 P.P.M.
Length of Filter Runs	62.14 Hours	61.57 Hours
Tap Water Color	4 P.P.M.	4 P.P.M.
Tap Water Iron	0.02 P.P.M.	0.01 P.P.M.
Cost of Chemicals per M.G. of Water Treated	\$4.89	\$4.79

\*Dosage expressed as P.P.M. (parts per million) of fluoride.  
G.P.G. = Grains per gallon.

Operating figures and statistics relative to chemical use and cost will be found in Tables 9 and 10 of the Appendix.

The Ferri-Floc used as a coagulant was obtained under contract from Faesy & Besthoff, Inc., New York, for the period October 1, 1964 to September 30, 1965 at \$54.05 per ton.

Specifications for Ferri-Floc received prior to November 25, 1964 read as follows: "The material furnished shall be ferric sulphate. It shall contain not less than sixty-nine per cent (69%) of water soluble Ferric Sulphate ( $\text{Fe}_2(\text{SO}_4)_3$ ). The content of ferrous iron shall not exceed one and one-half per cent (1.5%) as (Fe). It shall be free of foreign material or material deemed undesirable in water purification processes. The material shall be in granular or lump form. Not more than forty-five per cent (45%) shall pass a 20 mesh per inch screen, and no particle shall be larger than will pass a one-inch mesh screen. Deliveries to be

made in cars suitably lined to protect the material from moisture and foreign matter." A request by Faesy & Besthoff, Inc. to amend the contract was approved by the Board of Contract and Supply. This permitted a change in the specifications covering shipments received on and after November 25, 1964. The changes allowed the maximum ferrous iron content to be increased to two and one-half per cent (2.5%) and the maximum amount passing a 20 mesh per inch screen to be increased to sixty per cent (60%). Other provisions of the specifications were left unchanged, including one that allows us to penalize the manufacturer at the end of the contract year in event that the total amount of material received falls below an average of sixty-nine per cent (69%) of water soluble ferric sulphate ( $\text{Fe}_2(\text{SO}_4)_3$ ).

Ferri-Floc has been delivered in bulk carload lots to the railroad siding at Washington, R. I., about five and one-half miles from the Water Purification Works. Deliveries to the plant have been made by our force with the use of a pneumatic transfer truck, which removes the material from the car and delivers it into a storage silo of glazed segment tile masonry. This silo has an inside diameter of 16 feet, a height of 55 feet, and a capacity of 180 tons of the material. A combination suction-pressure pneumatic conveying system transfers the material from the silo to three 20-ton secondary steel storage hoppers located directly over the three Ferri-Floc feeders in the Central Operations and Control Building. The 240 tons storage provided by the silo and hoppers assures a maximum of approximately 87 average days' supply.

Analysis of the Ferri-Floc received prior to November 25, 1964 showed an average ferrous iron content of 1.91%, which was 0.41% more than the maximum of 1.50% allowed by the specifications in force at that time. The average water soluble ferric sulphate ( $\text{Fe}_2(\text{SO}_4)_3$ ) content of the three deliveries received was 72.46%, or 3.46% more than the minimum of 69% permitted by specification requirements. The average amount of material passing a 20 mesh per inch screen was 44.4%, as compared to the permissible maximum of 45.0%. The following table shows the date of delivery, together with the per cent of ferrous iron, per cent of water soluble ferric sulphate, and per cent passing a 20 mesh per inch screen.

Date Received	Percent Ferrous Iron	Percent Water Soluble Ferric Sulphate	Percent Passing a 20 Mesh per Inch Screen
October 16, 1964	2.21	72.07	49.7
October 21, 1964	1.79	72.96	46.4
October 28, 1964	1.74	72.35	37.0

The table shows that all three shipments failed to meet the specifications with respect to ferrous iron content, and two did not meet screen size requirements. However, the average screen size of the three deliveries was actually 0.6% less than the permissible maximum of 45% passing a 20 mesh per inch screen.

Analysis of the Ferri-Floc received on and after November 25, 1964 showed an average ferrous iron content of 1.93%, which was 0.57% less than the maximum of 2.50% allowed by the amended specifications. The average water soluble ferric sulphate content of the nineteen shipments received was 71.45%, or 2.45% more than the minimum of 69% permitted by specification requirements. The average amount of material passing a 20 mesh per inch screen was 56.7%, as compared to the permissible maximum of 60%. The following table shows the date of delivery, together with the per cent of ferrous iron, per cent of water soluble ferric sulphate, and per cent passing a 20 mesh per inch screen.

Date Received	Percent Ferrous Iron	Percent Water Soluble Ferric Sulphate	Percent Passing a 20 Mesh per Inch Screen
November 25, 1964	1.79	71.56	56.5
December 7, 1964	1.79	71.99	57.7
December 14, 1964	1.68	71.17	55.7
January 11, 1965	1.92	72.71	55.8
January 13, 1965	1.70	71.42	62.0
January 27, 1965	1.70	74.40	73.4
February 26, 1965	2.00	70.40	55.6
March 8, 1965	2.00	72.30	59.5
March 15, 1965	2.20	72.70	56.4
April 9, 1965	2.20	69.80	53.4
April 23, 1965	2.10	69.50	51.6
April 23, 1965	2.10	70.50	50.5
June 10, 1965	1.80	70.90	57.0
June 18, 1965	1.40	70.50	53.1
June 21, 1965	1.70	72.30	52.3
August 4, 1965	2.10	73.40	59.8
August 13, 1965	2.01	69.98	58.6
August 20, 1965	2.20	71.20	54.5
September 22, 1965	2.23	70.81	54.5

The table shows that all nineteen deliveries met the specifications with respect to ferrous iron content and water soluble ferric sulphate content. However, the January 13 and January 27, 1965 shipments showed amounts passing a 20 mesh per inch screen in excess of the maximum permissible figure of 60%. The manufacturer was notified that these two deliveries failed to meet specification requirements

and that future shipments not conforming to specifications would be rejected.

Quicklime was obtained under contract with the Minerals, Pigments, and Metals Division of Charles Pfizer and Company, Inc., Adams, Mass. at a price of \$20.27 per ton for deliveries received between October 1, 1964 and July 1, 1965, and \$20.19 a ton for those received between July 2 and September 30, 1965. Specifications for the quicklime purchased from this company read as follows: "The material furnished shall be granular or fine grain quicklime, of which 100% shall pass a 4 mesh per inch screen and not less than 90% shall be retained on a 100 mesh per inch screen. Insoluble matter shall be less than 2%, and magnesium oxide shall be less than 3%. It shall have an available calcium oxide (CaO) content of not less than 90%. The calculation of the available lime shall be on an 'As Received' basis."

Analysis of the quicklime received showed an average available calcium oxide content of 94.7%, or 4.7% more than specification requirements. The per cent of material passing a 4 mesh per inch screen was 100% on every delivery, and the amount retained on a 100 mesh per inch screen averaged 99.5%. The following table shows the date of delivery, together with the per cent of available calcium oxide and the per cent of material retained on a 100 mesh per inch screen:

Date Received	Percent Available Calcium Oxide	Percent Retained on a 100 Mesh per Inch Screen
November 4, 1964	95.4	99.8
November 13, 1964	93.1	96.9
November 23, 1964	95.1	99.4
February 1, 1965	95.1	99.2
February 8, 1965	95.1	99.5
February 12, 1965	94.5	99.5
March 17, 1965	93.9	99.5
March 24, 1965	94.8	99.1
March 26, 1965	95.3	99.8
May 5, 1965	95.6	99.5
May 7, 1965	95.6	99.7
July 2, 1965	95.3	99.9
July 9, 1965	93.7	99.8
July 14, 1965	95.6	99.9
July 21, 1965	93.7	99.9
July 23, 1965	93.4	99.9
August 2, 1965	95.6	100.0
September 10, 1965	94.5	99.9
September 17, 1965	94.2	99.9
September 17, 1965	93.9	99.6

The table shows that all twenty deliveries met specification requirements.

Quicklime has been delivered in bulk carload lots to the railroad siding at Washington, R. I. Deliveries to the plant have been made by our force with the use of the same pneumatic transfer truck used for transporting the Ferri-Floc. The material has been delivered into a storage silo of the same size and construction as the Ferri-Floc silo. A combination suction-pressure pneumatic conveying system transfers the material from the silo to three 20-ton secondary steel storage hoppers located directly over the three combination lime feeders and slakers in the Central Operations and Control Building. The 240 tons storage provided by the silo and hoppers assures a maximum of approximately 94 average days' supply.

Sodium silicofluoride was purchased under contract with the Henry Sundheimer Company, New York, for the period October 1, 1964 to August 22, 1965 at \$164.00 per ton, and for the period August 23 to September 30, 1965 at \$163.80 per ton. The specifications covering this material are the American Water Works Association Standard for Sodium Silicofluoride, AWWA B702-60, with slight modifications as to size and type of shipping containers, and exclusion of material not of domestic manufacture. Among other requirements, the specifications call for a minimum of 98 per cent sodium silicofluoride which corresponds to approximately 59.4 per cent fluoride ion. The average sodium silicofluoride content of eight shipments received was 99.2%. The following table shows the date of delivery and per cent of sodium silicofluoride:

Date Received	Percent Sodium Silicofluoride
October 7, 1964	99.8
*November 30, 1964	99.8
January 27, 1965	99.6
February 18, 1965	99.7
March 24, 1965	99.8
May 18, 1965	98.9
June 14, 1965	98.0
August 23, 1965	98.0

\*Experienced difficulty with this material; it was too free flowing, and flooded past the Rotolock feeders on the Fluoridizers. The supplier removed this shipment and replaced it with the delivery received on February 18, 1965.

The table shows that all eight deliveries met specification requirements with respect to the sodium silicofluoride content.

Sodium silicofluoride has been delivered to the plant in 400-pound fiber drums and stored in a separate room on the second floor of the Central Operations and Control Building. Space for storage of 40-tons of the chemical provides a maximum of approximately 125 average days' supply. The material is conveyed by a suction type pneumatic transfer system from the drums to either of two 6000-pound capacity storage-receiver units. These units are located in an adjacent room, directly over the loss-in-weight gravimetric fluoridizers. The fluoridizers are automatically and proportionally controlled to the plant effluent by summation metering equipment.

The liquid chlorine used to treat the water was obtained under contract with the Fields Point Manufacturing Company, Inc., Providence, for the period October 1, 1964 to September 30, 1965 at \$135.00 per ton. This material was delivered to the Purification Plant by our force in lots of two cylinders, each containing one ton of chlorine. Special tramrail equipment is used to transfer the containers from tailboard delivery to platform scales. Two one-ton cylinders are carried on each of two platform scales, with four additional containers stored in cradles in the same room.

This room, equipped with a special exhaust system to remove any escaping chlorine fumes, is located on the second floor of the Central Operations and Control Building, directly over the gas feed chlorinators. Total storage of 16,000 pounds assures a maximum of approximately 167 average days' supply.

Number 6 fuel oil used for heating the plant from October, 1964 to May, 1965 and during August and September, 1965, totalled 52,565 gallons, an average of 4,380 gallons per month. Number 2 fuel oil for heating water was used during October, 1964 and from May to September, 1965. The amount used totalled 6,559 gallons, an average of 547 gallons per month.

#### WATER PURIFICATION WORKS

##### LABORATORY

The fully equipped and modern laboratory maintained at the Purification Works for control over the quality of the water supply, from the raw water on the watershed to the tap at the consumers' premises, has been in operation throughout the year, with constant vigilance being exercised by the chemists and bacteriologists. Samples of tap water were obtained daily from not less than eight consumers' taps in various parts of the distribution system. A daily tap sample was also collected at the



Providence Journal building. In addition, samples were taken daily from Longview and Neutaconkanut distribution reservoirs. Also, samples for analysis were obtained from the brooks, streams and reservoirs on the watershed, the raw water from the lower intake of Scituate Reservoir, the reservoir surface water, Gainer Memorial Dam meter chamber, Fiskeville Reservoir, twelve locations on the Pawtuxet River below the Dam, the various stages of the purification process, coincident with the investigation of complaints, from extensions to the distribution system, selected locations in the distribution system, and from miscellaneous sources.

The total number of samples obtained from all sources during the year amounted to 12,044 which, based on a forty-hour work week, means that one sample or another was obtained every 10 minutes. Tests made on these samples included chemical, sanitary chemical, and mineral analyses, and bacteriological and microscopical examinations. The total number of tests made amounted to 98,915 which, based on a forty-hour work week, means that the water was receiving one test or another every 76 seconds. Each delivery of Ferri-Floc and quicklime was tested to determine conformance to specifications and the optimum dosages required for coagulation and pH control. Deliveries of sodium silicofluoride were also tested, not only for conformance to specifications, but to assure that the proper concentration of fluoride ion would be maintained throughout the distribution system. Filter washings were regulated by means of tests on the sand expansion and rate of rise of wash water. Samples taken after disinfection of extensions to the distribution system were tested for chlorine residual, coliform bacteria, and 35°C and 20°C bacteria before permitting any extension to be placed in service. Consumer complaints were serviced, and recommendations made to eliminate the source of trouble.

Some idea of the laboratory control over the quality of the water supply may be had by a comparison of our sampling schedule with that recommended by the U. S. Public Health Service Drinking Water Standards. The following table, compiled from a graph in the Standards, shows the minimum number of bacteriological samples that should be obtained from the distribution system per month for any given population served:

Population Served	Minimum Number of Samples per Month
2,000 and under	2
10,000	13
25,000	30
100,000	105
1,000,000	320
2,000,000	400
5,000,000	510

The population served by the City of Providence water supply is approximately 383,635. In accordance with the above table, the minimum number of bacteriological samples that should be obtained from the distribution system per month for this population is 210.

However, of this total of 383,635 the City of Warwick, the Kent County Water Authority, the East Smithfield Water Company and the Smithfield Water Department furnish Providence water, through distribution systems owned and maintained by them, to an estimated population of 94,126. These communities have engaged other laboratories to provide the services necessary to meet the Standards.

This leaves a total of approximately 289,509 supplied directly by our distribution system. The above mentioned table shows that a minimum of 190 bacteriological samples should be obtained per month for this population. The actual number of samples collected from our distribution system amounted to a total of 3,118, or an average of 260 per month; a figure 37% greater than recommended by the Standards, and about equal to the number required for a population of 600,000. A sample for chemical and sanitary chemical analysis was also obtained with each bacteriological sample.

Coagulation tests were made on one liter quantities of raw water treated with various amounts of Ferri-Floc and slaked lime, simulating all the operations of the purification processes on a laboratory scale for the purpose of determining the most economical dosage consistent with good coagulation.

Civil Defense activities were continued during the year, consisting of monitoring the water for radioactivity, and of continual study of developments in the field.

Samples of water obtained from dead end cast iron mains were tested for fluoride concentration. These tests, together with earlier studies, established that no conditions known to exist in a water main will cause extraction of significant amounts of fluoride from the water or solution from coatings which now exist there.

Rigid laboratory control has resulted in the continuation of economies consistent with an excellent quality of water. Constant vigilance over the chemical treatment machines and filter operation has aided greatly in keeping the cost of treatment low despite high costs for chemicals. These operations have been responsible for maintaining long filter runs and an excellent quality of water.

Tables 11 to 21 of the Appendix show statistics relative to the quality of the water and the kind and number of laboratory examinations made during the past year.

## TRANSMISSION AND DISTRIBUTION

### SCITUATE AQUEDUCT

The Scituate Aqueduct, which conveys the effluent water from the Water Purification Works in Scituate to the distribution system, has been in continuous and satisfactory service throughout the year.

Maintenance of the property along the Scituate Aqueduct included cutting and burning brush, repairs to grassed embankments, repairs to fencing, and other miscellaneous work as required.

### HIGH SERVICE PUMPING STATIONS

Neutaconkanut and Bath Street Pumping Stations, supplying water to the high service portion of the distribution system generally above elevation 140, and to the special high pressure fire service in the congested area of downtown Providence, have been in satisfactory operation. The Neutaconkanut Station operated throughout the year but the Bath Street Station was out of service from November 22, 1964 to January 21, 1965, during which time four 2000 gallons per minute pumps, installed when the station was first constructed in 1927, were replaced with two 2500 gallons per minute electric motor-driven pumps and one 5000 gallons per minute auxiliary gasoline engine-driven pump. A detailed description of this work will be found in an earlier section of this report.

Water pumped into the high service area totalled 3,333,355,000 gallons, or an average of 9,132,000 gallons per day.

Neutaconkanut Station pumped 1,371,890,000 gallons through the east Venturi and 1,296,245,000 gallons through the west Venturi meter for a total of 2,668,135,000 gallons, or 7,310,000 gallons per day, and Bath Street Station pumped 665,220,000 gallons, or 1,822,000 gallons per day.

The total power required for pumping at both stations amounted to 1,328,020 kilowatt-hours. Neutaconkanut Station required 1,056,000, and Bath Street Station 272,020. The cost of power at both stations was \$22,141.08, or \$6.64 per million gallons pumped.

Test runs of the auxiliary gasoline engine-driven pump at the Neutaconkanut Pumping Station were made weekly, the pump being operated a total of 48 hours, pumping 21,200,000 gallons during the year. Periodic test runs of the auxiliary gasoline engine-driven pumps at the Bath Street Pumping Station were made throughout the year. These pumps, one of which was removed and one replaced as part of the replacement program mentioned previously, were operated a total of 17 hours and 55 minutes, pumping 3,480,000 gallons for the year.

Operating statistics for the high service pumping stations will be found in Tables 22 and 23 of the Appendix.

#### DISTRIBUTION RESERVOIRS

The 40.03 million gallon Aqueduct Low Service Distribution Reservoir, located off Scituate Avenue in Cranston, the 38.58 million gallon Neutaconkanut Low Service Distribution Reservoir, on Neutaconkanut Hill in Johnston, and the 11.94 million gallon Longview High Service Distribution Reservoir at Mineral Spring Avenue and Smithfield Road in North Providence, have been in continuous and satisfactory operation throughout the year.

Routine maintenance activities at the three reservoirs were carried on with respect to the care of equipment, grounds, fencing, etc.

Operating statistics for the Distribution Reservoirs will be found in Tables 24, 25, and 26 of the Appendix.

#### WATER DISTRIBUTION SYSTEM

The water distribution system has been maintained in satisfactory and continuous operation throughout the year. Extensions of mains, the installation of various types of valves, hydrants and services, and necessary repairs and replacement of the system's appurtenances were made when and where required. The construction of new highways and the reconstruction and repairs to existing highways during the year accounted for a major part of the repairs to and the replacement of the appurtenances.

The amount of pipe laid during the year, all sizes, totalled 52,113.37 feet, including 34,279.38 feet of asbestos cement pipe, 7,356.96 feet of cement lined cast iron pipe, and 10,477.03 feet of prestressed reinforced concrete steel cylinder pipe.

A total of 16,422.12 feet of pipe was removed or abandoned, resulting in a net increase to the distribution system of 35,691.25 feet. In the City of Providence, there was a decrease of 585.58 feet. In the City of Cranston, there was an increase of 15,807.20 feet; in the Town of Johnston, the increase amounted to 8,412.50 feet and the Town of North Providence 12,057.13 feet.

At the end of the year the total length of mains in the distribution system aggregated 792.47 miles, including 12.78 miles in the special high service fire system in the City of Providence. Asbestos cement pipe in the system totalled 981,082.74 feet, consisting of 504,219.35 feet of 6-inch, 435,246.64 feet of 8-inch, 29,586.15 feet of 12-inch, 8,615.28 feet of 16-inch, and 3,415.32

feet of 20-inch. Prestressed reinforced concrete steel cylinder pipe totalled 67,062.18 feet, consisting of 2,380.54 feet of 16-inch, 42,388.88 feet of 24-inch, 19,809.89 feet of 30-inch, 116.01 feet of 36-inch, 126.97 feet of 48-inch, and 2,239.89 feet of 60-inch. Reinforced concrete steel cylinder pipe totalled 36,597.00 feet, including 715.00 feet of 36-inch, 15,312.00 feet of 48-inch, and 20,570.00 feet of 60-inch. Steel pipe totalled 10,032.00 feet, consisting of 1,584.00 feet of 48-inch and 8,448.00 feet of 66-inch. The remaining footage was of cast iron pipe including 1,876,594.24 feet of 6-inch, 522,951.27 feet of 8-inch, 12,172.78 feet of 10-inch, 359,908.41 feet of 12-inch, 143,939.32 feet of 16-inch, 16,756.92 feet of 20-inch, 62,306.15 feet of 24-inch, 60,086.49 feet of 30-inch, 9,235.80 feet of 36-inch, and 25,500.74 feet of 42-inch, totalling 3,089,425.12 feet.

Details of pipe laid, removed and in use at the end of the year are shown in Tables 27 and 28 of the Appendix.

Stop gates installed during the year, including replacements, totalled 188. In Providence, a total of 77 stop gates was installed, forty-six 6-inch, twenty-three 8-inch, six 12-inch, and two 20-inch. In Cranston a total of 64 stop gates was installed, twenty-two 6-inch, thirty-three 8-inch, six 12-inch, and three 24-inch butterfly valves. Stop gates installed in Johnston totalled 20 including one 6-inch, eighteen 8-inch and one 20-inch, and in North Providence a total of 27 was installed, four 6-inch, thirteen 8-inch, five 12-inch, three 24-inch butterfly valves, one 30-inch, and one 36-inch inserting valve.

Stop gates removed or abandoned totalled 91. In Providence a total of 72 was removed including fifty-eight 6-inch, ten 8-inch, two 12-inch, and two 20-inch. In Cranston a total of 16 was removed, including fifteen 6-inch and one 12-inch. In Johnston one 6-inch and one 8-inch were removed and in North Providence one 6-inch.

At the end of the year there was a total of 10,853 stop gates in use in the system, ranging from 6-inch to 60-inch, including five 12-inch and fifteen 16-inch rotary plug valves, and ten 16-inch, two 20-inch, nine 24-inch, two 30-inch, four 36-inch, one 42-inch, eight 48-inch and one 60-inch butterfly valves.

Hydrant gates in use at the end of the year totalled 4,589, which included 3,021 six-inch and 1,568 eight-inch. In Providence there were 1,412 six-inch, an increase of 60 over the previous year while the number of eight-inch dropped to 1,552, a decrease of 15. In Cranston the six-inch totalled 1,043 representing an increase of 46 while the eight-inch numbered 5, the same as the previous year. In Johnston there are 269 six-inch, an increase of 4 and no change in the eight-inch with the number remaining 11. North Providence has 297 six-inch, an increase of 4.

Gates on unwatering hydrants and blowoffs totalled 41; nine 6-inch, twenty-six 8-inch and six 12-inch.

The total number of gates in the system, not including service gates, all sizes, in use at the end of the year totalled 15,483.

Details of gates in use September 30, 1965 are shown in Table 29 of the Appendix.

Private pipes connected to the distribution system at the end of the year totalled 190. In Providence, there was a total of 109, in Cranston 49, in Johnston 14 and in North Providence a total of 18.

A total of 966 services, including general and fire supplies, was installed during the year; 282 in Providence, 388 in Cranston, 118 in Johnston and 178 in North Providence. The number of active services in the system at the end of the year, including both general and fire supplies, totalled 62,696, consisting of 62,648 metered services and 48 unmetered services. Active metered services at the end of the year constituted 99.92% of the total active services in the system.

Statistics relative to services will be found in Tables 30 and 31 of the Appendix.

Public fire hydrants in use at the end of the year totalled 4,795, which included 762 flush type hydrants. Post hydrant installations totalled 240 including 162 in Providence, 60 in Cranston, 8 in Johnston and 10 in North Providence. In Providence, 151 flush hydrants were removed and replaced with the post type, and 6 post hydrants were removed; 16 post hydrants were removed in Cranston, 6 in Johnston and 6 in North Providence.

Statistics relative to public fire hydrants will be found in Table 32 of the Appendix.

Leaks in the transmission and distribution mains totalled 80 during the year, 33 occurring at joints and 47 as a result of ruptured mains. Leaks at joints averaged 1 for every 24 miles of mains, while total leaks averaged 1 for every 9.90 miles of mains.

The number of meters repaired and tested in our meter repair shop was 8,819, while those receiving attention in the field numbered 132, making a total of 8,951, or 344 more than during the previous year. The cost of meter repairs in the shop averaged \$2.20 per meter as against \$2.13 last year. Meters requiring service in the field involved an average expenditure of \$3.23 during the current year, as compared to \$2.78 the previous year.

The number, make and size of meters on active services at the end of the year are shown in Table 33 of the Appendix.

## CONSUMPTION

Water consumption for the year ended September 30, 1965 amounted to 19,470,615,000 gallons, or an average of 53,344,150 gallons per day. This average was 3,117,330 gallons per day more than the average for the previous year. With the exception of May, when the consumption averaged 2,250,000 gallons a day less than during the corresponding month last year, increases occurred in every month, ranging from 100,000 gallons per day in March to 10,040,000 gallons per day in August.

On June 23, 1965 a maximum daily record was established when the consumption totalled 88,455,000 gallons. This exceeded the previous maximum of 87,215,000 gallons on June 27, 1963 by 1,240,000 gallons. An analysis of the hourly consumption for June 23, 1965 showed that the peak demand came between 10 and 11 A. M. when the rate of consumption was 134,064,000 gallons per day. This was second only to the record maximum hourly rate of 139,620,000 gallons per day which occurred on June 30, 1964.

The maximum month's consumption was in August, 1965, when 1,964,479,000 gallons were used, and the minimum was in February, 1965, when 1,342,183,000 gallons were consumed.

Water consumption statistics will be found in Tables 34, 35, 36, 37 and 38 of the Appendix.

## FINANCIAL SUMMARY

The gross income for the year ended September 30, 1965 totalled \$3,476,069.93, an increase of \$48,274.00 over the previous year. Revenue from the sale of water alone was \$3,113,868.26, an increase over the previous year of \$127,311.31. The remaining income of \$362,201.67 was received from other sources, including hydrant rentals, installation of services, miscellaneous items and the surplus in the Meter Revolving Fund. The receipts for these items show a decrease of \$79,037.31.

During the year total payments for water main extensions amounted to \$115,577.01, a decrease from the previous year of \$12,958.17. Income from service connection charges amounted to \$94,524.00, a decrease of \$1,292.00 from the previous year. At the end of the fiscal year, unpaid water bills totalled \$251,832.97 as compared with \$232,886.36 at the beginning of the year or 7.2% of the total net billing. Miscellaneous Accounts Receivable amounted to \$13,513.23 at the end of the year as compared with \$13,840.70 at the beginning of the year.

Operating Expenses, including Taxes, Employees' Retirement System and Social Security payments totalled \$2,226,535.01, an increase over the previous year of \$140,090.08.

Interest on the Bonded and Floating Debt, Principal Payments on Serial Bonds and the Floating Debt, plus the appropriation to the Water Depreciation and Extension Fund totalled \$1,147,920.87. The aggregate of all expenditures of the Board during the year was \$3,374,455.88, which deducted from the gross revenue of \$3,476,069.93, leaves a net balance of \$101,614.05. According to law this reverts to the Sinking Fund for the retirement of water bonds. During the present fiscal year ended September 30, 1965, \$4,000,000.00 in Sinking Fund Bonds were retired. This leaves a balance of \$1,500,000.00 of Sinking Fund Bonds still outstanding.

The total Bonded Debt as of September 30, 1965 is \$4,520,000.00 and the reserve for the retirement of Bonds \$2,259,814.96, which leaves a net Bonded Debt at the end of the present fiscal year of \$2,260,185.04 and outstanding short term notes of \$178,050.00.

Financial accounts of the department, tabulation of water works property, statements of revenues, expenses, various special funds, outstanding bond issues and sinking fund requirements, inventories and other statistics may be found in Tables 40 to 60 of the Appendix. A summary of statistics of the Providence Water Supply Board for the year ended September 30, 1965 may be found in Table 61 of the Appendix.

Respectfully submitted,

Philip J. Holton, Jr.  
Chief Engineer



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TABLE 1  
MONTHLY RAINFALL IN INCHES ON SCITUATE WATERSHED  
YEAR ENDED SEPTEMBER 30, 1965

1964-1965	STATIONS ON WATERSHED					Average
	Rocky Hill	Hopkins Mills	North Scituate	Westcott	Gainer Dam	
October	3.02	3.07	2.75	2.59	2.76	2.84
November	4.12	3.82	3.85	3.87	3.39	3.81
December	6.58	6.13	6.32	6.30	6.06	6.28
January	3.47	3.86	4.64	4.15	4.51	4.13
February	4.58	4.12	4.70	4.55	4.60	4.51
March	2.54	2.04	2.03	2.06	2.00	2.13
April	2.74	2.55	2.29	2.66	2.46	2.54
May	2.05	1.86	2.35	2.28	1.60	2.03
June	3.27	2.67	3.00	2.27	2.34	2.71
July	2.51	2.89	2.84	2.37	2.42	2.61
August	3.25	2.57	2.13	2.46	2.47	2.58
September	2.39	1.71	1.82	1.85	2.04	1.96
Total	40.52	37.29	38.72	37.41	36.65	38.13*
Monthly Average	3.38	3.11	3.23	3.12	3.05	3.18

\*Total of averages.

TABLE 2

## MONTHLY AND YEARLY RAINFALL IN INCHES ON SCITUATE WATERSHED

Year	YEARS ENDED SEPTEMBER 30													Jan. Dec.	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Year	Total
1915-1916	2.75(e)	2.88	5.86	1.88	5.88	2.46	3.60	4.83	5.71	7.38	1.33	1.24	45.80	1916	42.56
1916-1917	2.61	2.34	3.30	3.96	2.18	4.91	2.70	4.15	4.54	1.51	6.13	2.66	40.99	1917	43.16
1917-1918	6.71	0.48	3.23	3.56	3.73	2.15	4.56	3.12	4.49	5.13	4.14	8.79	50.09	1918	47.09
1918-1919	1.07	2.60	3.75	4.89	3.42	6.05	4.31	5.99	3.65	5.47	6.65	6.07	53.92	1919	56.42
1919-1920	2.29	5.05	2.58	3.03	6.10	4.90	6.28	3.95	7.93	4.44	3.86	3.04	53.45	1920	55.81
1920-1921	1.34	5.85	5.09	3.46	3.06	3.72	5.45	3.73	4.30	6.80	2.97	2.53	48.30	1921	47.84
1921-1922	1.26	8.02	2.54	1.91	2.67	6.40	1.98	5.22	6.34	8.36	9.09	5.35	59.14	1922	54.76
1922-1923	2.92	1.41	3.11	6.78	1.82	3.73	5.92	1.48	4.93	2.78	2.35	2.15	39.38	1923	48.39
1923-1924	5.67	5.68	5.10	4.49	2.92	2.80	6.12	3.66	1.49	1.72	5.85	5.28	50.78	1924	39.15
1924-1925	0.21	2.23	2.38	4.41	2.22	4.76	2.85	2.72	2.36	6.14	1.70	2.96	34.94	1925	44.45
1925-1926	4.32	4.83	5.18	3.26	6.10	3.73	2.46	2.27	1.74	3.80	3.94	1.89	43.52	1926	43.33
1926-1927	5.04	5.55	3.55	2.98	3.31	1.59	2.56	3.41	3.36	3.99	8.55	2.61	46.50	1927	52.45
1927-1928	5.24	9.22	5.63	2.72	4.32	2.70	5.43	1.45	3.91	5.06	5.50	4.80	55.98	1928	45.59
1928-1929	3.99	2.50	3.21	5.20	4.89	3.92	7.56	3.47	2.27	2.06	2.93	1.35	43.35	1929	43.95
1929-1930	3.09	3.06	4.15	2.86	2.88	3.23	2.03	2.74	3.05	3.33	3.00	1.35	34.77	1930	35.58
1930-1931	3.36	4.65	3.10	3.55	2.57	6.37	3.36	4.19	6.31	3.74	5.96	1.97	49.13	1931	44.43
1931-1932	2.22	1.03	3.16	6.16	2.38	6.16	1.97	2.57	2.75	2.57	6.44	11.75	49.16	1932	58.60
1932-1933	6.63	7.13	2.09	2.02	3.81	6.55	6.18	3.76	4.04	2.00	3.60	7.56	55.37	1933	48.13
1933-1934	3.41	1.48	3.72	3.87	4.53	4.03	5.24	3.98	4.79	2.20	3.89	7.37	48.51	1934	51.14
1934-1935	3.25	4.44	3.55	7.24	3.09	1.93	4.76	2.27	5.12	4.10	1.42	3.59	44.76	1935	41.30
1935-1936	1.04	5.86	0.88	8.81	4.16	9.31	3.80	1.98	2.98	2.63	3.28	7.72	52.45	1936	57.75
1936-1937	2.00	1.25	9.83	5.02	2.45	4.09	5.42	3.05	3.40	1.58	6.47	4.19	48.75	1937	50.58
1937-1938	3.92	8.10	2.89	5.29	2.91	2.70	2.60	4.17	8.62	11.49	3.10	6.76	62.55	1938	57.83
1938-1939	2.64	3.91	3.64	3.08	5.06	5.86	4.53	0.94	2.95	1.20	6.52	3.47	43.80	1939	44.17
1939-1940	5.76	1.40	3.40	2.82	5.97	4.04	6.00	5.75	2.45	4.41	2.01	2.63	46.65	1940	47.18
1940-1941	2.00	6.81	2.28	3.12	3.37	2.97	1.36	3.16	4.92	5.90	4.00	0.20	40.09	1941	37.88
1941-1942	1.75	3.35	3.78	4.95	3.30	8.35	0.89	2.80	3.88	5.38	4.32	1.94	44.69	1942	51.98
1942-1943	4.26	5.52	6.39	3.56	1.95	3.68	3.90	3.87	1.99	3.41	2.15	1.30	41.98	1943	36.84
1943-1944	6.38	3.43	1.22	1.79	2.50	5.05	4.11	1.35	3.75	1.74	2.01	11.03	44.36	1944	48.82
1944-1945	2.71	8.45	4.33	3.45	5.79	2.13	3.36	4.89	5.17	2.74	3.06	2.84	48.92	1945	52.25
1945-1946	2.21	9.03	7.58	3.82	3.81	1.42	2.37	4.92	3.31	2.49	11.48	3.69	56.13	1946	43.01
1946-1947	0.48	1.32	3.90	2.98	2.60	3.85	5.40	3.37	4.10	4.86	2.91	4.02	39.79	1947	47.68
1947-1948	3.26	6.42	3.91	7.14	2.57	4.26	3.97	9.36	4.20	3.73	3.14	1.59	53.55	1948	55.70
1948-1949	4.86	7.43	3.45	4.38	3.62	2.47	4.65	4.03	0.10	1.24	6.07	3.49	45.79	1949	38.58
1949-1950	2.27	3.47	2.79	3.68	4.62	3.99	3.68	3.51	2.93	1.62	5.04	2.03	39.63	1950	45.11

(e Estimated)

TABLE 2 (Continued)

## MONTHLY AND YEARLY RAINFALL IN INCHES ON SCITUATE WATERSHED

YEARS ENDED SEPTEMBER 30															
Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Jan.-Dec.	
														Year	Total
1950-1951	2.23	7.21	4.57	4.95	4.48	5.91	3.97	5.20	2.71	3.36	3.08	2.41	50.08	1951	55.38
1951-1952	4.14	9.64	5.53	4.88	4.81	4.13	4.41	3.97	3.16	1.20	7.33	2.21	55.41	1952	45.26
1952-1953	1.94	3.02	4.20	7.38	4.64	9.33	7.54	3.24	1.67	4.27	2.94	2.74	52.91	1953	61.10
1953-1954	5.57	6.22	5.56	2.91	3.16	4.36	5.37	4.91	1.55	2.76	9.10	7.63	59.10	1954	57.44
1954-1955	3.13	5.65	6.91	1.00	4.96	4.17	4.16	1.78	4.53	2.43	12.75	4.53	56.00	1955	57.74
1955-1956	11.48	5.23	0.72	5.39	4.39	7.91	3.84	2.42	2.10	4.13	1.56	3.98	53.15	1956	49.06
1956-1957	2.96	4.92	5.46	2.90	2.46	3.33	5.01	1.55	0.72	0.96	1.58	1.58	33.43	1957	36.13
1957-1958	3.07	5.50	7.47	8.46	4.50	5.46	7.55	3.84	2.69	7.04	4.58	6.12	66.28	1958	58.88
1958-1959	3.83	3.03	1.78	2.56	4.12	7.13	4.41	1.15	5.55	6.74	2.27	0.57	43.14	1959	53.82
1959-1960	8.37	5.35	5.60	3.59	5.65	3.27	3.06	4.49	1.15	4.86	2.55	8.10	56.04	1960	47.42
1960-1961	3.58	2.86	4.26	3.24	3.48	4.27	5.92	5.65	2.25	3.01	4.02	9.43	51.97	1961	50.52
1961-1962	2.60	3.18	3.47	4.55	6.15	3.67	2.16	2.05	4.68	1.33	3.37	3.49	40.70	1962	47.58
1962-1963	8.95	4.20	2.98	3.23	3.41	3.71	2.03	3.06	3.36	3.59	1.65	4.41	44.58	1963	40.63
1963-1964	1.59	7.82	2.77	6.32	5.36	2.63	5.65	1.15	1.98	3.86	2.14	3.56	44.83	1964	45.58
1964-1965	2.84	3.81	6.28	4.13	4.51	2.13	2.54	2.03	2.71	2.61	2.58	1.96	38.13	1965	33.21**
50 Years Average	3.58	4.68	4.04	4.15	3.85	4.35	4.18	3.45	3.57	3.78	4.33	4.08	48.04*	Avg.	47.98
50 Years Maximum	11.48	9.64	9.83	8.81	6.15	9.33	7.56	9.36	8.62	11.49	12.75	11.75	66.28	Max.	61.10
50 Years Minimum	0.21	0.48	0.72	1.00	1.82	1.42	0.89	0.94	0.10	0.96	1.33	0.20	33.43	Min.	33.21

\*Total of monthly averages.

\*\*Minimum of Record.

TABLE 3

## MONTHLY AND YEARLY RUNOFF IN INCHES ON SCITUATE WATERSHED (92.8 SQ. MI.)

YEARS ENDED SEPTEMBER 30															
Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Jan.-Dec. Year	Total
1915-1916	0.75(a)	1.24(a)	3.03(a)	2.50	3.70	3.99	4.64	3.69	3.42	2.74	1.09	0.42	31.21	1916	28.25
1916-1917	0.51	0.58	0.97	1.91	1.30	4.29	3.05	2.79	2.18	0.79	0.71	0.63	19.71	1917	22.41
1917-1918	1.79	1.59	1.38	1.83	4.04	3.17	3.40	2.24	1.24	0.47	0.82	1.81	23.78	1918	23.75
1918-1919	1.02	1.34	2.37	3.81	2.27	5.01	4.43	3.86	1.27	1.35	0.91	3.33	30.97	1919	32.65
1919-1920	1.45	2.25	2.71	1.19	1.69	9.60	5.10	3.73	4.15	1.38	0.79	0.34	34.38	1920	33.29
1920-1921	0.37	1.73	3.22	2.79	1.69	4.19	3.68	2.85	0.95	2.56	0.93	0.31	25.27	1921	24.52
1921-1922	0.24	1.65	2.68	1.13	1.80	4.81	3.92	3.50	2.39	3.50	3.59	4.39	33.60	1922	33.32
1922-1923	1.66	1.26	1.37	4.16	2.46	6.10	4.06	2.68	1.15	0.64	0.40	0.25	26.19	1923	29.75
1923-1924	1.27	2.01	4.57	4.52	1.88	3.43	5.70	3.38	1.05	0.20	0.56	0.68	29.25	1924	23.31
1924-1925	0.49	0.45	0.97	0.91	3.65	3.41	2.46	1.46	0.52	0.58	0.39	0.32	15.61	1925	19.04
1925-1926	0.61	1.48	3.23	2.23	3.11	4.38	3.00	1.70	0.62	0.40	0.42	0.17	21.37	1926	21.03
1926-1927	0.76	2.15	2.09	3.34	2.64	3.05	1.71	2.03	1.44	0.32	1.59	0.64	21.76	1927	30.14
1927-1928	1.95	6.73	4.70	2.62	3.76	2.86	3.18	2.05	1.15	1.08	1.17	0.80	32.05	1928	23.03
1928-1929	1.21	1.16	1.99	4.02	3.65	5.56	6.09	3.56	0.48	0.06	0.07	-0.09	27.76	1929	25.18
1929-1930	0.07	0.53	1.18	1.96	2.38	2.74	1.84	0.88	0.42	0.09	0.04	-0.11	12.02	1930	11.82
1930-1931	0.12	0.63	0.83	1.56	2.11	5.95	3.21	3.10	2.97	0.69	0.85	0.10	22.12	1931	21.67
1931-1932	0.07	0.15	0.91	3.35	2.16	4.10	3.08	1.35	0.39	0.07	0.35	3.27	19.25	1932	30.15
1932-1933	3.48	6.29	2.26	2.24	2.70	6.28	6.88	1.93	1.57	0.17	0.25	1.52	35.57	1933	27.13
1933-1934	0.95	0.82	1.82	3.78	1.18	5.48	6.08	2.88	1.47	0.08	0.14	1.40	26.08	1934	28.94
1934-1935	1.33	1.91	3.21	4.78	2.83	4.22	4.05	1.71	1.78	0.62	-0.14	0.26	26.56	1935	21.82
1935-1936	-0.13	1.09	0.75	3.94	1.93	11.51	4.45	1.59	0.44	0.03	-0.02	0.82	26.40	1936	31.64
1936-1937	0.46	0.43	6.06	4.59	2.77	3.34	3.79	2.52	0.75	0.02	0.60	0.57	25.90	1937	27.16
1937-1938	0.79	4.17	3.25	4.15	2.99	2.99	2.29	1.84	2.85	6.93	1.32	1.66	35.23	1938	33.76
1938-1939	1.22	1.90	3.62	2.11	4.12	5.24	4.90	1.08	0.31	-0.24	0.22	0.09	24.57	1939	21.35
1939-1940	0.63	1.35	1.54	2.03	1.51	4.86	6.89	3.17	1.65	0.84	-0.14	-0.04	24.29	1940	23.98
1940-1941	-0.07	1.63	1.65	1.53	2.88	2.42	1.65	1.16	1.33	0.54	0.10	-0.41	14.41	1941	12.43
1941-1942	-0.15	0.52	0.86	1.87	2.54	7.14	1.75	1.06	0.59	0.86	0.26	-0.17	17.13	1942	22.77
1942-1943	0.45	1.86	4.56	2.45	3.46	4.40	2.68	3.01	0.36	0.02	-0.16	-0.22	22.87	1943	17.97
1943-1944	0.60	0.95	0.42	0.73	1.23	3.24	3.53	1.08	0.43	-0.26	-0.31	1.73	13.37	1944	18.61
1944-1945	0.50	3.16	3.55	2.91	2.58	5.61	2.15	3.10	1.26	0.15	-0.12	-0.15	24.70	1945	24.02
1945-1946	0.06	1.88	4.59	3.93	2.98	3.70	1.43	2.50	1.65	0	2.35	0.56	25.63	1946	21.08
1946-1947	0.49	0.30	1.19	2.16	1.52	4.01	3.31	2.86	1.09	0.53	0.12	0.31	17.89	1947	20.47
1947-1948	0.23	2.94	1.39	1.55	3.15	7.16	3.76	5.25	3.12	0.56	0.15	-0.21	29.05	1948	29.08
1948-1949	0.35	2.24	2.00	3.57	3.22	2.92	3.20	1.78	-0.02	-0.26	0.02	0.09	19.11	1949	16.40
1949-1950	0.05	0.57	1.26	2.03	2.42	4.16	3.01	2.20	1.00	-0.11	0.22	-0.02	16.79	1950	19.39

(e Estimated)

TABLE 3 (Continued)

## MONTHLY AND YEARLY RUNOFF IN INCHES ON SCITUATE WATERSHED (92.8 SQ. MI.)

Year	YEARS ENDED SEPTEMBER 30												Total	Jan.-Dec.	
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		Year	Total
1950-1951	0.04	1.85	2.59	3.24	4.95	4.36	4.30	2.70	1.21	0.14	0.07	-0.07	25.38	1951	30.16
1951-1952	0.34	4.62	4.30	4.24	3.30	5.02	2.97	2.46	0.98	-0.35	0.53	-0.20	28.21	1952	20.27
1952-1953	-0.20	0.37	1.15	4.61	4.35	7.24	6.36	3.20	0.20	0.07	-0.05	-0.13	27.17	1953	32.41
1953-1954	0.38	1.86	4.32	2.12	2.66	3.56	4.01	3.71	0.33	-0.01	0.93	3.96	27.83	1954	32.15
1954-1955	1.33	3.65	5.90	2.46	3.61	4.26	2.76	1.62	0.89	0.02	4.04	1.19	31.73	1955	35.13
1955-1956	7.22	5.56	1.50	3.27	4.09	4.57	6.57	1.98	0.96	0.37	-0.22	0.05	35.92	1956	25.87
1956-1957	0.23	1.10	2.90	2.41	2.10	2.78	4.54	0.58	-0.18	-0.41	-0.38	-0.22	15.45	1957	14.20
1957-1958	0.06	0.52	2.40	6.59	2.69	6.03	6.89	3.88	0.83	0.85	0.86	1.31	32.91	1958	35.66
1958-1959	2.05	1.85	1.83	1.65	2.58	5.86	4.52	1.45	1.23	2.09	0.07	-0.23	24.95	1959	26.97
1959-1960	1.17	2.18	4.40	3.29	5.09	3.15	4.01	2.19	0.35	0.38	0.00	1.54	27.75	1960	25.51
1960-1961	0.98	2.11	2.42	2.21	3.68	4.97	4.75	3.63	1.30	0.25	0.20	2.30	28.80	1961	27.93
1961-1962	1.28	1.53	1.83	4.32	1.66	5.24	3.61	1.53	0.98	-0.09	0.04	0.07	22.01	1962	24.34
1962-1963	1.89	2.97	2.12	1.81	1.88	4.47	1.69	1.88	0.54	0.10	-0.25	-0.02	19.08	1963	15.25
1963-1964	-0.11	1.59	1.67	4.68	2.82	3.47	4.61	0.87	0.01	0.03	-0.14	-0.11	19.39	1964	19.30
1964-1965	0.11	0.47	2.48	1.68	3.43	3.02	1.89	1.04	0.44	-0.10	-0.14	-0.06	14.26	1965	11.89
50 Years Average	0.85	1.86	2.48	2.86	2.78	4.67	3.84	2.37	1.15	0.61	0.50	0.69	24.66*	Avg.	24.57
50 Years Maximum	7.22	6.73	6.06	6.59	5.09	11.51	6.89	5.25	4.15	6.93	4.04	4.39	35.92	Max.	35.66
50 Years Minimum	-0.20	0.15	0.42	0.73	1.18	2.42	1.43	0.58	-0.18	-0.41	-0.38	-0.41	12.02	Min.	11.82

\*Total of monthly averages.



TABLE 4

## MONTHLY AND YEARLY PERCENT OF RAINFALL COLLECTED ON SCITUATE WATERSHED

YEARS ENDED SEPTEMBER 30

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Jan.-Dec. Year Total
1915-1916	27.3(e)	43.0(e)	51.7(e)	133.0	62.9	162.2	128.9	76.4	59.9	37.1	82.0	33.9	68.1	1916 66.4
1916-1917	19.5	24.8	29.4	48.2	59.6	87.4	113.0	67.2	48.0	52.3	11.6	23.7	48.1	1917 51.9
1917-1918	26.7	331.2	42.7	51.4	108.3	147.4	74.6	71.8	27.6	9.2	19.8	20.6	47.5	1918 50.4
1918-1919	95.3	51.5	63.2	77.9	66.4	82.8	102.8	64.4	34.8	24.7	13.7	54.8	57.4	1919 57.9
1919-1920	63.3	44.6	105.0	39.3	27.7	195.9	81.2	94.4	52.3	31.1	20.5	11.2	64.3	1920 59.6
1920-1921	27.6	29.6	63.3	80.6	55.2	112.6	67.5	76.4	22.1	37.6	31.3	12.2	52.3	1921 51.2
1921-1922	19.0	20.6	105.5	59.2	67.4	75.2	198.0	67.0	37.7	41.9	39.5	82.0	56.8	1922 60.8
1922-1923	56.8	89.4	44.0	61.4	135.2	163.5	68.6	181.1	23.3	23.0	17.0	11.6	66.5	1923 61.5
1923-1924	22.4	35.4	89.6	100.7	64.4	122.5	93.1	92.3	70.5	11.6	9.6	12.9	57.6	1924 59.5
1924-1925	233.3	20.2	40.8	20.6	164.4	71.6	86.3	53.7	22.0	9.4	22.9	10.8	44.7	1925 42.8
1925-1926	14.1	30.6	62.7	68.4	51.0	117.4	122.0	74.9	35.6	10.5	10.6	9.0	49.1	1926 48.5
1926-1927	15.1	38.7	58.9	112.1	79.8	191.8	66.8	59.5	42.8	8.0	18.6	24.5	46.8	1927 57.5
1927-1928	37.2	73.0	83.5	96.3	87.0	105.9	58.6	141.4	29.4	21.3	21.3	16.7	57.2	1928 50.5
1928-1929	30.3	46.4	62.0	77.3	74.6	141.8	80.6	102.6	21.1	2.9	2.4	-6.7	64.0	1929 57.3
1929-1930	2.3	17.3	28.4	68.5	82.6	84.8	90.6	32.1	13.8	2.7	1.3	-8.1	34.6	1930 33.2
1930-1931	3.6	13.5	26.8	43.9	82.1	93.4	95.5	74.0	47.1	18.4	14.3	5.1	45.0	1931 48.8
1931-1932	3.2	14.6	28.8	54.4	90.8	66.6	156.3	52.5	14.2	2.7	5.4	27.8	39.2	1932 51.4
1932-1933	52.5	88.2	108.1	110.9	70.9	95.9	111.3	51.3	38.9	8.5	6.9	20.1	64.2	1933 56.4
1933-1934	27.9	55.4	48.9	97.7	26.0	136.0	116.0	72.4	30.7	3.6	3.6	19.0	53.8	1934 56.6
1934-1935	40.9	43.0	90.4	66.0	91.6	218.6	85.1	75.3	34.8	15.1	-9.8	7.2	59.3	1935 52.8
1935-1936	-12.5	18.6	85.2	44.7	46.4	123.6	117.1	80.3	14.8	1.1	-0.6	10.6	50.3	1936 54.8
1936-1937	23.0	34.4	61.6	91.4	113.1	81.7	69.9	82.6	22.0	1.3	9.3	13.6	53.1	1937 53.7
1937-1938	20.2	51.5	112.5	78.4	102.7	110.7	88.1	44.1	33.1	60.3	42.6	24.6	56.3	1938 58.4
1938-1939	46.2	48.6	99.4	68.5	81.4	89.4	108.2	114.9	10.5	-20.0	3.4	2.6	56.1	1939 48.3
1939-1940	10.9	96.4	45.3	72.0	25.3	120.3	114.8	55.0	67.3	19.0	-7.0	-1.5	52.1	1940 50.8
1940-1941	-3.5	23.9	72.4	49.0	87.4	81.5	121.3	36.7	27.0	9.2	2.5	-205.0	35.9	1941 32.8
1941-1942	-8.6	15.5	22.8	37.8	77.0	85.5	196.6	37.8	15.2	16.0	6.0	-8.8	38.3	1942 43.8
1942-1943	10.6	33.7	71.4	68.8	177.4	119.6	68.7	77.8	18.1	0.6	-7.4	-16.9	54.5	1943 48.8
1943-1944	9.4	27.7	34.4	40.8	49.2	64.2	85.9	80.0	11.5	-14.9	-15.4	15.7	30.1	1944 38.1
1944-1945	18.4	37.4	82.0	84.3	44.6	263.4	64.0	63.4	24.4	5.5	-3.9	-5.3	50.5	1945 46.0
1945-1946	2.7	20.8	60.6	102.9	78.2	260.6	60.3	50.8	49.8	0	20.5	15.2	45.7	1946 49.0
1946-1947	102.1	22.7	30.5	72.5	58.5	104.2	61.3	84.9	26.6	10.9	4.1	7.7	45.0	1947 42.9
1947-1948	7.0	45.8	35.5	21.7	122.6	168.1	94.7	56.1	74.3	15.0	4.8	-13.2	54.2	1948 52.2
1948-1949	7.2	30.1	58.0	81.5	89.0	118.2	68.8	44.2	-20.0	-21.0	0.3	2.6	41.7	1949 42.5
1949-1950	2.2	16.4	45.2	55.2	52.4	104.3	81.8	62.7	34.1	-6.8	4.4	-1.0	42.4	1950 43.0

(e Estimated)

TABLE 4 (Continued)

## MONTHLY AND YEARLY PERCENT OF RAINFALL COLLECTED ON SCITUATE WATERSHED

	YEARS ENDED SEPTEMBER 30													Jan.-Dec.	
Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total	Year	Total
1950-1951	1.8	25.6	56.7	65.4	110.5	73.8	108.3	51.9	44.6	4.2	2.3	-2.9	50.7	1951	54.5
1951-1952	8.2	47.9	77.8	86.9	68.6	121.5	67.3	61.7	31.0	-29.2	7.2	-9.0	50.9	1952	44.8
1952-1953	-10.3	12.2	27.4	62.5	93.8	77.6	84.4	98.8	12.0	1.6	-1.7	-4.7	51.4	1953	53.0
1953-1954	6.8	29.9	77.7	72.8	84.2	81.6	74.7	75.6	21.3	-0.4	10.2	51.9	47.1	1954	56.0
1954-1955	42.5	64.6	85.4	246.0	72.8	102.2	66.3	91.0	19.6	0.8	32.7	26.3	56.7	1955	60.8
1955-1956	62.5	122.7	208.3	60.7	93.2	57.8	171.1	81.8	45.7	8.9	-14.1	1.2	67.6	1956	52.7
1956-1957	7.8	22.4	53.1	83.1	85.4	83.5	90.6	37.4	-25.0	-42.7	-24.1	-13.9	46.2	1957	39.3
1957-1958	2.0	9.5	32.1	77.9	59.8	110.4	91.3	101.0	30.9	12.1	18.8	21.4	49.7	1958	60.6
1958-1959	53.5	61.1	102.8	64.5	62.6	82.2	102.5	126.1	22.2	31.0	3.1	-40.4	57.8	1959	50.1
1959-1960	14.0	40.7	78.6	91.6	90.1	96.3	131.0	48.8	30.4	7.8	-0.1	19.0	49.6	1960	53.8
1960-1961	27.4	73.8	56.8	68.2	105.7	116.4	80.2	64.2	57.8	8.3	5.0	24.4	55.4	1961	55.3
1961-1962	49.2	48.1	52.7	94.9	27.0	142.8	167.1	74.6	20.9	-6.8	1.2	2.0	54.1	1962	51.1
1962-1963	21.1	70.7	71.1	56.0	55.1	120.5	83.3	61.4	16.1	2.8	-15.2	-0.5	42.8	1963	37.5
1963-1964	-6.9	20.3	60.3	74.1	52.6	131.9	81.6	75.7	0.5	0.8	-6.5	-3.1	43.3	1964	42.3
1964-1965	3.9	12.3	39.5	40.7	76.1	141.8	74.4	51.2	16.2	-3.8	-5.4	-3.1	37.4	1965	35.8
50 Years Average	23.7	39.7	61.4	68.9	72.2	107.4	91.9	68.7	32.2	16.1	11.5	16.9	51.3	Avg.	51.2
50 Years Maximum	233.3	331.2	208.3	246.0	177.4	263.4	198.0	181.1	74.3	60.3	82.0	82.0	68.1	Max.	66.4
50 Years Minimum	-12.5	9.5	22.8	20.6	25.3	57.8	58.6	32.1	-25.0	-42.7	-24.1	-205.0	30.1	Min.	32.8

TABLE 5

## SCITUATE WATERSHED

(92.8 Square Miles)

## STATISTICS OF STORAGE - YEAR ENDED SEPTEMBER 30, 1965

	1 Regulating Reservoir		2 Westconnaug Reservoir		3 Barden Reservoir		4 Moswansicut Reservoir		5 Ponaganset Reservoir		Total 1-5		6 Scituate Reservoir		Total 1-6	
1964	Avail.		Avail.		Avail.		Avail.		Avail.		Avail.	% of	Avail.		Avail.	% of
1965	Storage		Storage		Storage		Storage		Storage		Storage	*Total	Storage		Storage	**Total
	Elev.	M.G.	Elev.	M.G.	Elev.	M.G.	Elev.	M.G.	Elev.	M.G.	M.G.	Avail.	Elev.	M.G.	M.G.	Avail.
October	283.50	276	452.05	340	344.95	841	301.30	655	631.07	556	2,668	85.1	274.98	27,281	29,949	75.4
November	283.07	247	452.00	337	345.20	861	301.40	665	631.17	562	2,672	85.2	272.78	25,296	27,968	70.4
December	284.30	331	452.35	355	345.40	877	301.85	710	631.57	589	2,862	91.3	271.28	23,925	26,787	67.4
January	285.65	433	454.55	474	345.40	877	302.05	730	633.02	691	3,205	102.2	273.08	25,587	28,792	72.4
February	285.60	429	453.85	435	345.35	873	301.95	720	633.35	716	3,173	101.2	273.83	26,204	29,377	73.9
March	285.75	441	454.58	476	345.55	889	302.15	741	633.63	738	3,285	104.8	277.38	29,680	32,965	82.9
April	285.60	429	454.47	470	345.30	869	302.00	725	633.35	716	3,209	102.4	280.27	32,653	35,862	90.2
May	285.65	433	454.30	460	345.35	873	302.00	725	633.43	722	3,213	102.5	281.38	33,797	37,010	93.1
June	285.58	427	454.30	460	345.05	849	301.95	720	633.28	711	3,167	101.0	281.06	33,454	36,621	92.1
July	285.35	409	454.05	446	344.75	825	301.70	695	633.07	694	3,069	97.9	279.60	31,956	35,025	88.1
August	284.55	349	453.60	421	345.05	849	301.53	678	632.95	685	2,982	95.1	277.26	29,560	32,542	81.9
September	283.15	253	453.15	395	344.85	832	301.15	641	632.77	672	2,793	89.1	274.89	27,197	29,990	75.5
Maximum for Year	Feb.27;Mar.6	445	February 27	480	December 5	909	February 27	746	Feb.27;Mar.6	739	February 27	105.6	May 3	33,839	May 2	93.2
Minimum for Year	September 25	187	November 14	328	June 19	813	September 11	626	October 10	549	November 14	83.8	November 25	23,634	November 21	66.6
1. Regulating	Reservoir-Spillway Elev.	285.50;	Total Storage	428 M.G.;	Dead Storage	7 M.G.;	Total Available Storage	421 M.G.								
2. Westconnaug	"	"	"	454.17;	"	"	453 "	"	"	"	0 "	"	"	"	"	453 "
3. Barden	"	"	"	345.10;	"	"	853 "	"	"	"	0 "	"	"	"	"	853 "
4. Moswansicut	"	"	"	301.90;	"	"	1,781 "	"	"	"	1,066 "	"	"	"	"	715 "
5. Ponaganset	"	"	"	633.05;	"	"	742 "	"	"	"	49 "	"	"	"	"	693 "
Total 1-5																
6. Scituate	Reservoir-Spillway Elev.	284.01;	Total Storage	4,257 M.G.;	Dead Storage	1,122 M.G.;	Total Available Storage	*3,135 M.G.								
-Total 1-6																

TABLE 6

## SCITUATE WATERSHED

(92.8 Square Miles)

DRAFT AND YIELD - YEAR ENDED SEPTEMBER 30, 1965

1964 1965	DRAFT FROM SCITUATE RESERVOIR Million Gallons				WATERSHED YIELD Million Gallons				
	To River Over Spill- way	Below Gainer Dam Through Gate- house	Total	To Water Purification Works	Total For Month	Average per Day	For Month	Average per Day 1964-1965	50-Year Mean 1916-1965
October	0	547.11	547.11	1,613.71	2,160.82	69.70	179.82	5.80	44.22
November	0	447.66	447.66	1,490.08	1,937.74	64.59	756.74	25.22	99.99
December	0	483.42	483.42	1,517.40	2,000.82	64.54	4,005.82	129.22	129.02
January	0	565.04	565.04	1,565.00	2,130.04	68.71	2,715.04	87.58	148.79
February	0	474.88	474.88	1,463.27	1,938.15	69.22	5,526.15	197.36	158.71
March	0	532.55	532.55	1,438.22	1,970.77	63.57	4,867.77	157.02	242.95
April	0	490.46	490.46	1,405.02	1,895.48	63.18	3,043.48	101.45	206.43
May	0	353.43	353.43	1,718.41	2,071.84	66.83	1,682.84	54.29	123.30
June	0	306.06	306.06	1,997.69	2,303.75	76.79	707.85	23.59	61.82
July	0	310.24	310.24	2,002.86	2,313.10	74.62	-169.90	-5.48	31.73
August	0	312.95	312.95	2,008.14	2,321.09	74.87	-230.91	-7.45	26.01
September	0	303.18	303.18	1,709.73	2,012.91	67.10	-92.09	-3.07	37.09
For Year	0	5,126.98*	5,126.98	19,929.53	25,056.51	68.65	22,992.51	62.99	108.89

\*Of this amount, 2,644.60 M.G. were discharged to the Pawtuxet River through the 36-inch blow-off outlet from the south 60-inch steel pipe aqueduct.

TABLE 7

## SCITUATE WATERSHED - REFORESTATION

## NUMBER AND KINDS OF TREES PLANTED IN VARIOUS YEARS

Planted During Calendar Year	Fraser Fir	Balsam Fir	Red Pine	White Pine	Douglas Fir	Austrian Pine	Scotch Pine	Jack Pine	White Spruce	Norway Spruce	Hemlock	Larch	Total Number Planted Yearly
1926	0	0	160,000	40,000	0	0	0	0	0	0	0	0	200,000
1927	0	0	60,000	150,000	0	0	0	0	0	0	0	0	210,000
1928	0	0	10,000	10,000	0	0	0	0	0	0	0	0	20,000
1929	0	0	10,000	75,000	0	0	0	0	0	0	0	0	85,000
1930	0	0	40,000	40,000	0	0	0	0	0	0	0	0	80,000
1931	0	0	40,000	50,000	0	0	0	0	9,000	0	0	0	99,000
1932	0	0	40,000	40,000	0	0	0	0	20,000	0	0	0	100,000
1933	0	0	0	0	0	0	0	0	0	0	0	0	0
1934 & 1935	0	0	755,000	255,000	0	36,000	136,000	4,000	505,000	204,000	3,000	0	1,898,000
1936	0	0	453,700	111,000	0	14,400	0	0	20,000	15,000	26,000	0	640,100
1937	0	0	481,100	0	0	0	0	0	213,200	0	0	0	694,300
1938	0	0	229,000	21,693	0	0	0	0	0	0	0	0	250,693
1939	0	0	8,000	761,000	0	0	0	50,000	0	0	0	0	819,000
1940	0	0	267,387	618,828	0	45,916	0	67,750	0	0	0	0	999,881
1941	0	0	51,000	295,650	0	0	0	0	34,350	0	0	0	381,000
1942	0	0	0	308,120	0	0	0	0	0	0	0	0	308,120
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 7 (Continued)

## SCITUATE WATERSHED - REFORESTATION

## NUMBER AND KINDS OF TREES PLANTED IN VARIOUS YEARS

Planted During Calendar Year	Fraser Fir	Balsam Fir	Red Pine	White Pine	Douglas Fir	Austrian Pine	Scotch Pine	Jack Pine	White Spruce	Norway Spruce	Hemlock	Larch	Total Number Planted Yearly
1951	0	0	0	1,500	12,000	0	0	0	0	0	0	0	13,500
1952	0	0	20,000	0	0	0	0	0	10,000	0	0	10,000	40,000
1953	0	0	10,000	0	0	0	0	0	6,000	0	0	0	16,000
1954	0	2,000	0	0	2,000	0	0	0	0	0	0	6,000	10,000
1955	0	0	0	5,000	0	0	0	0	0	0	0	5,000	10,000
1956	0	0	0	5,000	0	4,500	0	0	0	0	0	0	9,500
1957	0	0	0	6,000	0	0	0	0	0	0	0	0	6,000
1958	0	0	2,700	2,000	0	0	0	0	0	0	0	0	4,700
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	140	540	6,874	784	405	0	0	3,401	49	0	3,461	15,654
1961	0	0	0	2,300	144	0	0	0	0	0	2,000	0	4,444
1962	0	0	0	5,000	0	0	0	0	150	0	2,000	2,000	9,150
1963	0	0	0	5,000	0	0	0	0	170	0	5,000	5,000	15,170
1964	0	0	0	5,000	0	0	0	0	510	0	5,000	5,000	15,510
1965	1,000	2,000	0	5,000	0	0	0	0	0	0	10,000	5,000	23,000
Totals	1,000	4,140	2,638,427	2,824,965	14,928	101,221	136,000	121,750	821,781	219,049	53,000	41,461	6,977,722

TABLE 8

## GAINER DAM HYDRO-ELECTRIC PLANT\*

POWER STATISTICS ON THE BASIS OF THE "CONTRACT YEAR" WITH  
THE NARRAGANSETT ELECTRIC COMPANY

Contract Year	KWH Generated at Gainer Dam	KWH Used at Gainer Dam and Water Purification Works	Net KWH Delivered to Narragansett Electric Co.	Payment Received
(Period June 20-30, 1930)	87,000	6,470	75,100	\$ 300.40
July 1930-June 1931	3,023,000	152,940	2,758,340	20,000.00
July 1931-June 1932	4,201,500	158,070	3,980,570	19,600.00
July 1932-June 1933	7,024,900	155,210	6,697,656	26,790.62
July 1933-June 1934	5,080,900	152,420	4,837,371	19,349.48
July 1934-June 1935	7,102,900	174,710	6,756,101	27,024.40
July 1935-June 1936	5,761,200	173,530	5,394,176	21,576.70
July 1936-June 1937	5,626,000	174,110	5,262,807	21,051.23
July 1937-June 1938	6,438,300	156,710	6,069,927	24,279.71
July 1938-June 1939	8,915,000	159,860	8,457,980	33,831.92
July 1939-June 1940	4,681,100	231,850	4,329,115	17,316.46
July 1940-June 1941	3,291,200	185,540	2,982,991	16,000.00
July 1941-June 1942	2,585,300	194,250	2,322,916	15,600.00
July 1942-June 1943	4,655,800	170,520	4,372,359	17,489.44
July 1943-June 1944	2,290,100	183,250	2,096,811	14,597.25
July 1944-June 1945	4,146,200	187,080	3,879,622	15,518.49
July 1945-June 1946	4,754,100	200,200	4,460,596	17,343.70
July 1946-June 1947	3,494,400	251,270	3,224,049	13,600.00
July 1947-June 1948	5,576,900	249,940	5,313,209	21,252.84
July 1948-June 1949	3,790,500	264,160	3,521,404	14,085.62
July 1949-June 1950	1,972,200	303,460	1,548,000	9,288.00
July 1950-June 1951	4,965,900	322,220	4,476,900	26,861.40
July 1951-June 1952	6,381,400	329,080	5,836,700	35,020.20
July 1952-June 1953	4,993,400	351,080	4,429,900	26,579.40
July 1953-June 1954	3,945,700	389,050	3,389,000	20,334.00
July 1954-June 1955	6,776,900	422,250	6,111,000	36,666.00
July 1955-June 1956	9,521,700	480,300	8,747,900	52,487.40
July 1956-June 1957	2,195,400	466,480	1,608,100	9,648.60
July 1957-June 1958	4,141,000	541,760	3,432,900	**20,597.40
July 1958-June 1959	4,987,600	504,310	4,297,300	25,783.80
July 1959-June 1960	5,754,000	515,280	5,078,000	30,468.00
July 1960-June 1961	4,912,500	583,050	4,159,400	24,956.40
July 1961-June 1962	3,998,900	614,800	3,267,600	19,605.60
July 1962-June 1963	2,116,200	679,400	1,334,800	8,008.80
July 1963-June 1964	2,550,450	735,790	1,716,800	10,418.40
July 1964-June 1965	184,800	717,500	0	0.00

\*1875 KVA 3 Phase, 60 Cycle, 2300 Volts, 80 Ft. Head Turbo-Generator.

\*\*Involves net exchange for portion of previous year.

TABLE 9

## WATER PURIFICATION WORKS

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

	Influent Aerator	Plant Influent Mil. Gals.		Water Filtered Mil. Gals.		Wash Water Mil. Gals.			Plant Effluent Mil. Gals.		Plant Effluent Flow	Number of Filters in Operation		
	Hours Operated	Total	Average per Day	Total	Average per Day	Total	Average per Day	% of Water Filt.	Total	Average per Day	Hours	Max.	Min.	Avg.
1964														
1965														
October	744.7	1,613.707	52.055	1,614.368	52.076	17.346	0.560	1.1	1,597.022	51.517	745.0	11.0	4.0	8.8
November	720.0	1,490.077	49.669	1,486.397	49.547	12.407	0.414	0.8	1,473.990	49.133	720.0	11.0	4.0	8.5
December	744.0	1,517.399	48.948	1,501.740	48.443	13.681	0.441	0.9	1,488.059	48.002	744.0	11.0	5.0	8.2
January	744.0	1,565.000	50.484	1,492.433	48.143	12.453	0.402	0.8	1,479.980	47.741	744.0	11.0	5.0	8.2
February	668.8	1,463.274	52.260	1,351.833	48.280	10.020	0.358	0.7	1,341.813	47.922	672.0	11.0	4.5	8.2
March	740.7	1,438.221	48.394	1,444.857	46.608	8.875	0.286	0.6	1,435.982	46.322	744.0	10.5	4.5	7.9
April	719.0	1,405.025	46.834	1,414.510	47.150	8.440	0.281	0.6	1,406.070	46.869	719.0	10.0	5.0	8.1
May	740.0	1,718.410	55.433	1,688.638	54.472	14.464	0.467	0.9	1,674.174	54.006	744.0	14.0	3.5	8.9
June	717.0	1,997.696	66.590	1,974.350	65.812	16.794	0.560	0.9	1,957.356	65.252	720.0	14.0	4.0	9.0
July	744.0	2,002.859	64.608	1,976.085	63.745	13.327	0.430	0.7	1,962.758	63.315	744.0	13.0	3.5	8.7
August	744.0	2,008.136	64.779	1,977.817	63.801	14.728	0.475	0.7	1,963.089	63.325	744.0	13.0	5.0	8.7
September	720.0	1,709.729	56.991	1,704.712	56.824	13.910	0.464	0.8	1,690.802	56.360	720.0	13.5	5.0	9.3
Totals	8,746.2	19,929.533		19,627.740		156.445			19,471.295		8,760.0			
Average	728.9		54.601		53.775		0.429	0.8		53.346	730.0			8.5

Raw water treated with Ferri-Floc before Influent Aeration.  
 Quicklime added to Ferri-Floc treated water in conduit to tangential mixer.  
 Chlorine added to water after filtration.  
 Sodium Silicofluoride added to water after filtration.  
 Raw water drawn from lower intake at Gainer Memorial Dam all year.



TABLE 9 (Continued)  
WATER PURIFICATION WORKS  
OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

1964 1965	Average Rate of Filtration per Filter M.G.D.	Number of Filters Washed		Average Filter Run Hours	Ferri-Floc Used			Quicklime Used			Chlorine Used			Sodium Silicofluoride Used		
		Total	Avg. per Day		Lbs.	Avg. per Day	Gr. per Gal.	Lbs.	Avg. per Day	Gr. per Gal.	Lbs.	Avg. per Day	Parts per Mil.	Lbs.	Avg. per Day	Parts per Mil.*
October	5.88	117	3.8	56.76	173,787	5,606	0.75	140,195	4,522	0.61	3,311	107	0.25	19,322	623	0.87
November	5.86	87	2.9	69.73	161,270	5,376	0.76	127,103	4,237	0.60	3,076	103	0.26	17,524	584	0.86
December	5.88	111	3.6	56.42	163,553	5,276	0.76	133,259	4,299	0.62	2,881	93	0.24	17,693	571	0.87
January	5.88	111	3.6	54.56	168,156	5,424	0.75	135,863	4,383	0.61	2,435	79	0.20	16,607	536	0.86
February	5.88	91	3.3	59.07	156,870	5,603	0.75	134,016	4,786	0.64	2,244	80	0.21	16,044	573	0.88
March	5.88	81	2.6	72.65	154,615	4,988	0.75	135,260	4,363	0.66	2,392	77	0.20	17,792	574	0.90
April	5.87	69	2.3	84.11	151,809	5,060	0.76	131,759	4,392	0.66	2,369	79	0.20	17,490	583	0.90
May	6.14	112	3.6	60.96	166,220	5,362	0.68	148,810	4,800	0.61	2,820	91	0.21	20,650	666	0.90
June	7.33	129	4.3	50.58	187,212	6,240	0.66	183,872	6,129	0.64	3,333	111	0.20	24,258	809	0.90
July	7.29	102	3.3	61.63	186,782	6,025	0.65	193,451	6,240	0.68	3,338	108	0.21	23,425	756	0.86
August	7.31	107	3.5	62.24	185,489	5,984	0.65	209,553	6,760	0.73	3,357	108	0.21	23,243	750	0.86
September	6.10	103	3.4	65.33	147,213	4,907	0.60	185,555	6,185	0.76	3,551	118	0.26	20,149	672	0.86
Totals		1,220			2,002,976			1,858,696			35,107			234,197		
Average	6.29		3.3	61.57		5,488	0.70		5,092	0.65		96	0.22		642	0.88

Total filter hours for year, 74,889.35; average per day, 205.18.  
Average quantity of water filtered per filter per run, 16.14 m. g.  
\*Dosage expressed as p.p.m. of Fluoride ion.

TABLE 10

## WATER PURIFICATION WORKS

CHEMICALS USED - YEAR ENDED SEPTEMBER 30, 1965

Chemicals	Pounds of Chemicals Used Total	Lbs. per Day (Average)	Total Gallons of Water Treated	Cost of Chemicals	Pounds of Chemicals Used per 1,000,000 Gals. of Water Treated (Average)	Cost of Chemicals per 1,000,000 Gals. of Water Treated
Ferri-Floc	2,002,976	5,488	19,916,264,000	\$54,130.43	100.57	\$2.72
Quicklime	1,858,696	5,092	19,919,208,000	18,817.05	93.31	0.94
Chlorine	35,107	96	19,123,567,000	2,369.72	1.84	0.12
Sodium Silicofluoride	234,197	642	19,025,602,000	19,204.15	12.31	1.01
Totals	4,130,976			\$94,521.35		\$4.79

Price of Ferri-Floc--From Oct. 1, 1964 to Sept. 30, 1965--\$54.05 per ton.

Price of Quicklime---From Oct. 1, 1964 to July 1, 1965--\$20.27 per ton; from July 2 to Sept. 30, 1965--\$20.19 per ton.

Price of Chlorine--From Oct. 1, 1964 to Sept. 30, 1965--\$135.00 per ton.

Price of Sodium Silicofluoride--From Oct. 1, 1964 to Aug. 22, 1965--\$164.00 per ton; from Aug. 23 to Sept. 30, 1965--\$163.80 per ton.

TABLE 11  
WATER PURIFICATION WORKS

\*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1965

		Monthly Averages												Avg. for Year
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Alkalinity														
Raw		4.0	4.1	3.9	3.9	3.9	4.0	3.9	3.8	3.8	4.0	4.1	4.8	4.0
**Effluent		13.4	12.6	12.9	12.7	13.4	13.8	13.8	13.3	14.3	15.3	17.0	18.6	14.3
Tap		12.2	11.3	11.4	11.2	11.6	12.3	12.2	12.0	12.7	13.8	15.3	16.8	12.7
Hardness														
Raw		11	11	11	12	12	12	11	11	11	11	11	10	11
**Effluent		29	28	28	29	31	31	30	29	30	30	31	31	30
Tap		29	29	29	30	31	31	31	29	30	30	32	31	30
pH														
Raw		6.5	6.5	6.5	6.4	6.1	6.1	6.2	6.1	6.0	5.9	5.8	5.8	6.2
Aerated Influent		4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.3	4.2
Treated		10.3	10.3	10.4	10.4	10.3	10.3	10.4	10.3	10.2	10.2	10.2	10.1	10.3
Settled		10.2	10.2	10.2	10.3	10.2	10.2	10.2	10.2	10.2	10.1	10.1	10.1	10.2
Filtered		10.1	10.2	10.2	10.3	10.2	10.2	10.2	10.2	10.2	10.1	10.1	10.0	10.2
**Effluent		10.1	10.1	10.2	10.3	10.2	10.2	10.2	10.2	10.2	10.1	10.1	10.1	10.2
Tap		10.0	10.0	10.1	10.2	10.2	10.1	10.2	10.1	10.0	10.0	10.0	9.9	10.1
Free CO <sub>2</sub>														
Raw		1.6	1.4	1.3	1.7	3.1	2.8	2.0	2.2	3.1	4.8	6.6	7.7	3.2
Aerated Influent		7.0	7.2	7.4	7.9	9.0	8.3	7.7	6.8	7.3	8.0	8.5	8.5	7.8
Phenolphthalein Alkalinity														
Treated		9.2	8.6	9.2	8.7	9.0	9.3	9.6	9.1	9.5	10.1	11.0	12.0	9.6
Settled		8.6	7.8	8.2	8.0	8.1	8.4	8.7	8.3	8.7	9.3	10.1	11.2	8.8
Filtered		8.4	7.6	8.0	7.8	7.9	8.2	8.5	8.2	8.7	9.2	10.0	10.9	8.6
**Effluent		8.4	7.6	8.0	7.8	8.0	8.3	8.5	8.2	8.7	9.2	10.1	11.0	8.7
Tap		6.2	5.7	5.8	5.7	5.8	6.1	6.1	6.0	6.3	6.9	7.6	8.3	6.4
Color														
Raw		8	7	7	10	14	12	11	11	11	8	9	12	10
**Effluent		3	3	3	4	6	4	4	4	5	5	4	5	4
Tap		3	3	3	3	5	4	3	4	4	4	4	4	4
Turbidity														
Raw		0.4	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.5	0.2
Settled		0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
**Effluent		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iron														
Raw		0.10	0.07	0.07	0.08	0.09	0.07	0.04	0.04	0.04	0.03	0.08	0.17	0.07
Settled		.28	.27	.37	.51	.59	.40	.34	.36	.35	.29	.27	.22	.35
**Effluent		.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
Tap		.01	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.01	.01
Manganese														
Raw		0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.17	0.03
Settled		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
**Effluent		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Tap		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Fluoride														
Raw		0.15	0.14	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.15
**Effluent		.13	.11	.10	.11	.12	.12	.12	.13	.13	.13	.15	.14	.12
Tap		1.00	1.00	1.00	.97	.98	1.00	1.00	1.00	1.00	1.00	.98	1.00	.99
Temperature (°F.)														
Air (Avg. of Daily Max.)		63	56	43	36	41	46	59	74	79	82	81	74	61
Air (Avg. of Daily Min.)		41	33	26	18	20	29	37	47	53	57	58	53	39
Raw Water		58	50	39	34	35	37	40	46	49	51	53	56	46
Water on Filters		56	48	37	33	32	36	41	50	53	56	57	57	46
Tap		61	55	46	41	40	43	47	55	60	63	63	63	53

\*Parts per million, except pH and Temperature.

\*\*Before treatment with chlorine and sodium silicofluoride.

TABLE 12

## WATER PURIFICATION WORKS

\*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS  
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1965

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Color													
Ponaganset Reservoir	9	6	6	4	6	3	2	3	5	6	13	12	6
Coventry Brook	23	15	90	23	18	23	44	32	13	14	30	23	29
Wilbur Brook	85	55	132	28	32	33	46	115	135	65	80	72	73
Westconnaug Reservoir	20	12	115	12	18	18	12	23	13	18	16	13	24
Barden Reservoir	10	7	23	23	23	17	18	18	13	11	13	15	16
Cork Brook	17	12	90	17	16	19	23	22	12	17	**	**	25
Rush Brook	33	23	56	32	15	24	27	56	28	27	15	15	29
Huntinghouse Brook	28	18	47	13	13	17	18	31	17	22	25	**	23
Harrisdale Brook	12	8	32	17	18	17	17	32	17	17	17	12	18
Blanchard Brook	115	90	90	82	68	64	96	340	430	**	**	**	153
Moswansicut Pond	11	9	9	12	12	17	12	12	12	12	12	10	12
Regulating Reservoir	11	8	17	13	18	13	11	25	13	13	16	11	14
Quonapaug Brook	85	85	140	64	43	55	90	180	235	60	**	**	104
Hemlock Brook	8	22	27	23	27	32	38	21	12	8	10	9	20
Betty Pond Stream	28	27	115	22	13	12	18	47	32	**	25	**	34
Spruce Brook	28	23	27	22	23	28	44	67	33	27	38	**	33
Brandy Brook	43	27	45	55	44	33	65	74	32	28	28	17	41
Moswansicut-South	18	32	56	18	7	17	18	13	22	17	33	8	22
Windsor Brook	**	12	28	13	12	16	17	32	18	13	18	**	18
Paine Pond	22	**	46	33	22	17	17	27	23	17	18	**	24
Unnamed Brook-A	**	**	90	33	32	33	67	110	**	**	**	**	61
Unnamed Brook-B	22	**	43	8	8	8	23	13	**	**	**	**	18
Turbidity													
Ponaganset Reservoir	0.4	0.5	0.1	0.4	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.6	0.2
Coventry Brook	0.3	0.5	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.1
Wilbur Brook	0.1	0.5	0.0	0.2	0.1	0.0	0.0	0.4	0.1	0.0	0.2	2.0	0.3
Westconnaug Reservoir	0.3	0.1	0.0	0.2	0.3	0.4	0.3	0.3	0.4	0.0	0.1	0.3	0.2
Barden Reservoir	0.2	0.1	0.1	0.2	0.4	0.2	0.1	0.0	0.1	0.1	0.1	0.3	0.2
Cork Brook	0.6	0.4	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	**	**	0.2
Rush Brook	0.8	0.3	2.3	0.1	0.4	3.5	0.3	0.8	0.5	2.9	0.2	3.0	1.3
Huntinghouse Brook	1.3	0.1	0.1	0.2	0.1	0.0	0.3	0.1	0.2	0.0	0.2	**	0.2
Harrisdale Brook	0.3	0.1	0.6	0.3	0.1	0.0	0.2	0.1	0.3	0.0	0.2	0.3	0.2
Blanchard Brook	0.4	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	**	**	**	0.1
Moswansicut Pond	0.2	0.3	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Regulating Reservoir	0.9	0.2	0.3	0.3	0.4	1.6	0.1	1.3	0.1	0.0	0.1	0.2	0.5
Quonapaug Brook	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.3	0.6	0.0	**	**	0.2
Hemlock Brook	0.0	0.1	0.5	0.3	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1
Betty Pond Stream	0.6	0.4	14.0	1.7	0.5	0.0	0.4	0.0	0.5	**	0.2	**	1.8
Spruce Brook	0.4	0.3	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.1	**	0.1
Brandy Brook	0.0	0.2	0.0	1.0	0.1	0.4	0.4	0.0	0.0	0.0	0.1	0.1	0.2
Moswansicut-South	0.1	0.5	0.3	0.5	0.4	0.4	0.4	0.0	0.4	0.1	0.2	0.1	0.3
Windsor Brook	**	0.2	0.0	0.1	0.4	0.0	0.2	0.0	0.2	0.1	0.1	**	0.1
Paine Pond	0.3	**	0.1	0.2	0.4	0.0	0.1	0.0	0.3	0.0	0.0	**	0.1
Unnamed Brook-A	**	**	0.1	0.5	0.1	0.0	0.3	0.0	**	**	**	**	0.2
Unnamed Brook-B	0.3	**	0.0	0.2	0.1	0.1	0.0	0.0	**	**	**	**	0.1

\*Parts per million.

\*\*No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 12 (Continued)

## WATER PURIFICATION WORKS

\*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS  
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1965

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
<b>Iron</b>													
Ponaganset Reservoir	0.18	0.13	0.06	0.05	0.06	0.08	0.01	0.13	0.16	0.07	0.15	0.16	0.10
Coventry Brook	.08	.00	.32	.02	.02	.03	.05	.05	.02	.04	.10	.08	.07
Wilbur Brook	.70	.34	.34	.12	.06	.09	.14	.64	.75	.75	1.14	1.40	.54
Westoonaug Reservoir	.18	.10	.34	.09	.08	.16	.15	.26	.24	.26	.14	.15	.18
Barden Reservoir	.07	.02	.08	.08	.04	.05	.03	.08	.14	.02	.15	.15	.08
Cork Brook	.00	.00	.10	.02	.02	.03	.06	.07	.09	.04	**	**	.04
Rush Brook	.08	.05	.46	1.88	1.35	.07	.08	.30	.48	.49	.48	.52	.52
Huntinghouse Brook	.04	.42	.06	.02	.02	.02	.03	.12	.13	.08	.09	**	.09
Harrisdale Brook	.05	.02	.08	.08	.04	.04	.07	.27	.25	.04	.22	.13	.11
Blanchard Brook	.40	.35	.19	.03	.19	.14	.16	.80	1.70	**	**	**	.44
Moswansicut Pond	.00	.01	.02	.40	.02	.05	.02	.02	.03	.01	.02	.02	.05
Regulating Reservoir	.06	.04	.08	.03	.04	.08	.01	.23	.13	.08	.16	.06	.08
Quonapaug Brook	.35	.40	.24	.06	.10	.11	.17	.45	1.50	.11	**	**	.35
Hemlock Brook	.04	.02	.08	.05	.16	.09	.07	.14	.03	.01	.05	.65	.12
Betty Pond Stream	.08	.05	.65	.19	.03	.03	.08	.27	.48	**	.15	**	.20
Spruce Brook	.02	.03	.45	.03	.04	.04	.05	.08	.04	.05	.16	**	.09
Brandy Brook	.17	.14	.34	.14	.15	.10	.14	.46	.24	.24	.24	.08	.20
Moswansicut-South	.25	.50	.17	.14	.14	.08	.14	.65	.72	.22	.68	.02	.31
Windsor Brook	**	.00	.03	.00	.00	.01	.00	.08	.02	.03	.03	**	.02
Paine Pond	.06	**	.13	.10	.07	.09	.02	.06	.10	.23	.03	**	.09
Unnamed Brook-A	**	**	.14	.09	.02	.03	.22	.45	**	**	**	**	.16
Unnamed Brook-B	.06	**	.07	.00	.00	.01	.05	.01	**	**	**	**	.03
<b>Manganese</b>													
Ponaganset Reservoir	0.07	0.06	0.07	0.08	0.09	0.08	0.04	0.10	0.07	0.06	0.06	0.05	0.07
Coventry Brook	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Wilbur Brook	.03	.00	.01	.00	.00	.00	.00	.02	.02	.02	.00	.20	.03
Westoonaug Reservoir	.00	.00	.00	.00	.00	.01	.00	.01	.01	.03	.00	.02	.01
Barden Reservoir	.00	.00	.00	.00	.02	.00	.00	.00	.00	.03	.01	.03	.01
Cork Brook	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	**	**	.00
Rush Brook	.00	.01	.03	.00	.06	.02	.00	.00	.05	.08	.02	.04	.03
Huntinghouse Brook	.02	.03	.02	.00	.00	.00	.00	.00	.03	.02	.00	**	.01
Harrisdale Brook	.00	.00	.00	.00	.00	.00	.00	.00	.02	.02	.03	.00	.01
Blanchard Brook	.00	.00	.02	.01	.02	.00	.00	.00	.00	**	**	**	.01
Moswansicut Pond	.00	.02	.00	.01	.00	.00	.00	.00	.02	.00	.00	.00	.00
Regulating Reservoir	.00	.00	.00	.00	.00	.00	.01	.00	.11	.00	.00	.04	.01
Quonapaug Brook	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**	**	.00
Hemlock Brook	.00	.00	.06	.00	.03	.03	.00	.00	.00	.00	.00	.00	.01
Betty Pond Stream	.00	.00	.01	.01	.00	.00	.00	.00	.00	**	.00	**	.00
Spruce Brook	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**	.00
Brandy Brook	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
Moswansicut-South	.00	.04	.02	.03	.03	.01	.00	.00	.00	.02	.04	.14	.03
Windsor Brook	**	.00	.02	.00	.00	.00	.00	.02	.00	.00	.01	**	.01
Paine Pond	.00	**	.00	.00	.00	.04	.00	.00	.00	.00	.00	**	.00
Unnamed Brook-A	**	**	.	.00	.00	.00	.00	.00	**	**	**	**	.00
Unnamed Brook-B	.00	**	.	.02	.03	.01	.02	.02	**	**	**	**	.01

\*Parts per million.

\*\*No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 12 (Continued)

## WATER PURIFICATION WORKS

\*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS  
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1965

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
pH													
Ponaganset Reservoir	5.1	4.7	5.2	4.7	4.7	4.7	4.7	4.7	4.8	5.1	5.3	5.4	4.9
Coventry Brook	6.2	6.2	5.4	6.0	6.1	6.0	5.8	6.2	6.4	6.6	6.6	6.3	6.2
Wilbur Brook	5.6	6.1	5.0	5.3	5.6	5.5	5.7	5.8	6.6	6.5	6.5	6.3	5.9
Westconnaug Reservoir	6.7	6.1	6.1	6.4	6.3	6.2	6.3	6.6	6.8	6.8	6.7	6.6	6.5
Barden Reservoir	6.1	6.4	5.6	6.5	5.6	5.5	5.7	6.2	6.4	6.2	7.0	6.8	6.2
Cork Brook	5.9	6.0	5.1	5.6	5.7	5.6	5.7	6.0	6.3	6.1	**	**	5.8
Rush Brook	6.1	6.3	5.0	5.7	6.0	6.0	6.2	6.2	6.3	6.1	6.2	6.3	6.0
Huntinghouse Brook	6.4	6.6	5.1	6.2	6.2	6.1	6.3	6.5	6.6	6.5	6.6	**	6.3
Harrisdale Brook	6.9	7.1	6.0	6.1	6.5	6.5	6.7	6.9	6.9	6.9	6.8	6.9	6.7
Blanchard Brook	4.7	4.9	4.8	4.9	5.0	5.1	5.1	5.2	5.5	**	**	**	5.0
Moswansicut Pond	6.5	6.6	6.2	6.6	6.5	6.6	6.6	6.5	6.5	6.9	6.8	6.8	6.6
Regulating Reservoir	6.8	6.9	6.6	6.4	6.1	6.3	6.6	6.0	6.7	6.9	6.8	6.6	6.6
Quonapaug Brook	5.3	5.7	5.0	5.3	5.3	5.5	5.7	5.8	6.1	6.3	**	**	5.6
Hamlock Brook	5.9	6.3	5.3	5.5	5.3	5.2	5.4	5.8	6.3	6.4	6.4	6.5	5.9
Betty Pond Stream	6.0	6.3	5.6	5.7	5.6	6.1	6.1	6.2	6.3	**	5.8	**	6.0
Spruce Brook	6.3	6.0	5.0	5.3	5.5	5.4	5.5	5.7	6.2	6.6	6.3	**	5.8
Brandy Brook	6.7	6.8	6.3	6.7	6.6	6.6	6.5	6.8	6.7	6.7	6.8	6.7	6.7
Moswansicut-South	6.5	6.2	6.2	6.4	6.5	6.4	6.2	6.5	6.7	6.6	6.4	6.9	6.5
Windsor Brook	**	6.3	5.6	5.8	5.8	5.8	5.7	6.2	6.5	6.4	6.7	**	6.1
Paine Pond	5.8	**	5.8	5.6	5.4	5.5	5.7	5.6	5.8	5.3	5.0	**	5.6
Unnamed Brook-A	**	**	6.3	5.7	5.8	6.6	6.0	6.3	**	**	**	**	6.1
Unnamed Brook-B	6.6	**	5.2	5.1	5.1	5.2	5.1	5.1	**	**	**	**	5.3
Free CO <sub>2</sub>													
Ponaganset Reservoir	2.0	2.5	3.0	3.0	5.5	4.0	3.5	3.5	3.0	2.0	1.5	2.0	3.0
Coventry Brook	6.0	4.5	5.5	2.0	4.5	3.0	3.5	3.5	3.0	3.5	4.0	5.5	4.0
Wilbur Brook	14.5	8.0	9.5	8.0	8.5	6.0	6.0	10.5	4.5	4.5	7.5	9.0	8.0
Westconnaug Reservoir	3.0	2.5	5.5	1.5	3.0	3.0	2.5	3.0	2.5	2.0	2.5	2.5	2.8
Barden Reservoir	2.5	2.0	3.5	3.5	4.0	3.5	2.5	2.5	2.0	2.5	2.5	2.0	2.8
Cork Brook	7.0	5.0	7.5	2.5	3.5	3.5	3.5	3.5	2.0	5.0	**	**	4.3
Rush Brook	6.0	4.5	5.5	3.5	5.0	3.0	3.0	5.0	2.0	8.5	12.0	5.5	5.3
Huntinghouse Brook	5.5	4.5	4.0	1.5	2.5	3.0	2.5	4.0	2.0	5.5	5.5	**	3.7
Harrisdale Brook	2.0	2.0	4.5	1.0	2.0	2.5	2.0	2.0	1.5	2.5	4.0	2.5	2.4
Blanchard Brook	10.5	11.0	11.0	4.5	9.5	6.5	5.5	12.5	8.5	**	**	**	8.8
Moswansicut Pond	2.5	3.0	1.0	1.5	2.0	2.0	2.0	3.0	1.5	2.0	2.0	2.0	2.0
Regulating Reservoir	1.5	1.5	2.5	1.0	2.0	1.5	2.0	2.5	1.5	2.0	3.5	2.0	2.0
Quonapaug Brook	11.5	14.5	10.0	7.0	10.0	6.5	7.5	11.0	12.0	12.5	**	**	10.3
Hamlock Brook	2.0	2.5	4.0	2.0	3.5	4.5	2.5	2.5	1.5	1.5	1.5	1.5	2.5
Betty Pond Stream	3.0	3.5	5.5	3.5	5.5	2.5	2.5	2.5	3.5	**	4.5	**	3.7
Spruce Brook	2.5	6.0	7.5	4.0	4.0	4.5	5.0	4.5	2.0	2.5	3.5	**	4.2
Brandy Brook	2.5	2.5	2.5	2.5	3.0	2.5	2.5	2.0	2.0	3.5	1.5	3.5	2.5
Moswansicut-South	5.0	13.5	1.5	8.0	3.0	3.0	3.5	3.0	2.0	5.0	4.5	2.0	4.5
Windsor Brook	**	4.5	4.5	2.5	2.5	3.0	3.0	2.5	0.5	3.5	2.0	**	2.9
Paine Pond	4.0	**	7.0	6.0	9.0	6.5	2.5	5.0	3.0	4.0	6.5	**	5.4
Unnamed Brook-A	**	**	5.0	4.0	7.0	4.5	6.5	6.5	**	**	**	**	5.6
Unnamed Brook-B	2.5	**	5.0	5.0	5.5	4.5	5.0	5.0	**	**	**	**	4.6

\*Parts per million, except pH

\*\*No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 12 (Continued)

## WATER PURIFICATION WORKS

\*CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER IN VARIOUS BROOKS AND RESERVOIRS  
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1965

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Alkalinity													
Ponaganset Reservoir	2.0	2.0	2.0	1.0	1.5	1.5	1.0	1.5	1.5	3.0	2.0	2.0	1.8
Coventry Brook	5.0	6.0	4.0	4.0	3.5	3.5	4.0	4.5	3.0	7.0	6.5	7.5	4.9
Wilbur Brook	4.5	5.5	2.5	3.5	4.0	3.5	4.0	6.0	4.5	7.0	9.5	11.0	5.5
Westconnaug Reservoir	8.0	8.0	5.5	4.0	4.0	4.0	5.0	6.5	2.5	8.0	8.0	6.0	5.8
Barden Reservoir	3.0	3.0	3.0	3.5	3.0	2.5	3.0	3.0	2.0	4.0	12.0	9.5	4.3
Cork Brook	4.0	3.5	2.5	3.0	3.0	2.5	3.0	4.0	2.0	5.0	**	**	3.3
Rush Brook	4.5	5.0	1.5	8.5	5.0	3.5	4.0	6.0	2.0	9.5	8.5	9.0	5.6
Huntinghouse Brook	8.5	9.0	2.5	4.0	4.0	3.5	4.5	7.0	2.0	12.0	12.0	**	6.3
Harrisdale Brook	8.5	10.0	5.0	6.0	6.0	5.5	6.0	8.5	1.5	12.0	14.0	12.0	7.9
Blanchard Brook	1.0	3.0	2.0	2.0	2.5	2.0	3.0	3.0	8.5	**	**	**	3.0
Moswansicut Pond	6.0	6.5	6.0	5.5	5.0	5.5	6.0	5.5	1.5	6.0	6.0	6.5	5.5
Regulating Reservoir	6.5	7.0	6.0	6.0	3.5	4.5	5.0	6.0	1.5	7.5	6.5	6.0	5.5
Quonapaug Brook	3.5	6.0	2.5	3.0	4.0	3.5	4.5	7.0	12.0	13.0	**	**	5.9
Hemlock Brook	3.0	4.5	3.0	3.0	2.5	2.0	3.0	3.0	1.5	3.5	4.0	4.0	3.1
Betty Pond Stream	3.5	4.5	40.0	9.0	4.0	4.0	4.0	4.5	3.5	**	3.5	**	8.1
Spruce Brook	4.5	5.0	2.0	2.5	2.5	2.5	3.0	3.5	2.0	6.0	6.0	**	3.6
Brandy Brook	8.0	8.5	4.5	8.0	7.0	5.0	7.0	8.5	2.0	11.0	10.0	10.5	7.5
Moswansicut-South	11.5	14.0	7.5	8.5	8.0	6.5	7.5	11.5	2.0	11.0	10.0	5.5	8.6
Windsor Brook	**	4.5	4.0	3.0	3.0	3.5	3.0	4.0	6.0	7.0	7.5	**	4.6
Paine Pond	3.0	**	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.0	**	3.3
Unnamed Brook-A	**	**	7.0	4.5	5.0	4.5	6.0	9.0	**	**	**	**	6.0
Unnamed Brook-B	5.0	**	2.5	2.0	3.0	2.5	3.0	2.0	**	**	**	**	2.9

\*Parts per million.

\*\*No sample obtained--Dry.

NOTE: Unnamed Brook A is just north of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 13  
WATER PURIFICATION WORKS  
CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER  
IN VARIOUS PARTS OF THE DISTRIBUTION SYSTEM

YEAR ENDED SEPTEMBER 30, 1965

	Monthly Averages												Avg. for
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
pH													
Neutaconkanut Reservoir	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.0	10.0	10.0	10.0	9.9	10.1
Phenix Avenue, Cranston	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.0	10.0	10.0	10.0	9.9	10.1
Westminster St., Olneyville	10.0	10.0	10.1	10.3	10.2	10.1	10.1	10.1	10.1	10.0	10.0	9.9	10.1
1291 Reservoir Ave., Cranston	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.1	10.0	10.0	10.0	9.9	10.1
750 Reservoir Ave., Cranston	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.0	10.1	10.0	10.0	9.9	10.1
Biltmore Hotel	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.1	10.0	10.0	10.0	9.9	10.1
Dexter Manor	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.1	10.1	10.0	10.0	9.9	10.1
State Office Building	10.0	10.0	10.1	10.3	10.2	10.1	10.2	10.1	10.1	10.0	10.0	10.0	10.1
*Longview Reservoir	10.0	10.1	10.2	10.4	10.3	10.2	10.2	10.2	10.1	10.0	10.0	10.0	10.1
Police & Fire Hdqrs., Prov.	10.0	10.0	10.1	10.2	10.1	10.1	10.1	10.1	10.1	10.0	10.0	9.9	10.1
Phenolphthalein Alkalinity													
Neutaconkanut Reservoir	6.3	5.9	5.8	5.9	5.7	6.1	6.1	6.0	6.3	6.8	7.4	8.4	6.4
Phenix Avenue, Cranston	6.2	5.5	5.5	5.8	5.7	6.1	6.0	5.9	6.3	6.8	7.4	8.4	6.3
Westminster St., Olneyville	6.2	5.7	5.5	5.8	5.7	6.1	6.0	6.0	6.3	6.9	7.4	8.4	6.3
1291 Reservoir Ave., Cranston	6.2	5.6	5.8	5.9	5.7	6.1	6.0	6.0	6.4	6.9	7.4	8.4	6.4
750 Reservoir Ave., Cranston	6.2	5.6	5.7	5.9	5.7	6.1	6.0	6.0	6.3	6.9	7.5	8.5	6.4
Biltmore Hotel	6.2	5.6	5.7	5.8	5.8	6.1	6.1	6.0	6.4	6.9	7.5	8.5	6.4
Dexter Manor	6.3	5.7	5.9	5.8	5.8	6.1	6.1	6.0	6.4	7.0	7.6	8.5	6.4
State Office Building	6.2	5.7	5.8	5.8	5.8	6.2	6.2	6.0	6.4	7.0	7.6	8.4	6.4
*Longview Reservoir	7.2	6.4	6.5	7.0	6.7	7.2	7.2	7.1	7.3	7.6	7.8	8.8	7.2
Police & Fire Hdqrs., Prov.	6.3	5.7	5.8	5.7	5.7	6.0	6.1	6.0	6.3	6.9	7.6	8.4	6.4
Methyl Orange Alkalinity													
Neutaconkanut Reservoir	12.5	11.7	11.6	11.6	11.6	12.2	12.1	12.0	12.6	13.7	15.1	16.8	12.8
Phenix Avenue, Cranston	12.1	11.0	11.4	11.3	11.5	12.2	12.0	11.8	12.6	13.7	15.2	16.8	12.6
Westminster St., Olneyville	12.1	11.2	11.5	11.3	11.5	12.3	12.0	11.9	12.7	13.8	15.2	16.9	12.7
1291 Reservoir Ave., Cranston	12.1	11.1	11.4	11.4	11.6	12.2	12.0	11.9	12.7	13.8	15.3	17.0	12.7
750 Reservoir Ave., Cranston	12.1	11.1	11.3	11.3	11.6	12.2	12.1	11.9	12.7	13.8	15.3	17.0	12.7
Biltmore Hotel	12.0	11.1	11.4	11.2	11.6	12.3	12.1	11.9	12.7	13.8	15.3	17.0	12.7
Dexter Manor	12.3	11.2	11.5	11.2	11.7	12.3	12.2	11.9	12.8	14.0	15.4	17.0	12.8
State Office Building	12.2	11.4	11.5	11.3	11.7	12.3	12.2	12.1	12.8	13.9	15.4	17.0	12.8
*Longview Reservoir	14.4	13.0	12.7	13.2	13.3	14.0	13.9	13.8	14.1	14.9	15.7	17.6	14.2
Police & Fire Hdqrs., Prov.	12.3	11.3	11.6	11.3	11.7	12.2	12.0	12.0	12.8	13.9	15.4	17.0	12.8
Color													
Neutaconkanut Reservoir	3	3	3	3	5	3	3	3	4	4	3	3	3
Phenix Avenue, Cranston	3	3	3	3	5	3	3	3	4	3	3	3	3
Westminster St., Olneyville	3	3	2	3	4	3	3	3	4	3	3	3	3
1291 Reservoir Ave., Cranston	3	3	3	3	5	3	3	3	4	3	3	3	3
750 Reservoir Ave., Cranston	3	3	3	3	4	3	3	3	4	3	3	3	3
Biltmore Hotel	3	3	3	3	5	3	3	3	4	4	3	3	3
Dexter Manor	3	3	3	3	5	3	3	3	3	3	4	3	3
State Office Building	3	3	2	3	5	3	3	3	3	3	3	3	3
*Longview Reservoir	5	6	4	3	5	5	4	5	6	6	5	6	5
Police & Fire Hdqrs., Prov.	3	4	3	3	5	3	3	3	4	4	5	6	4
Iron													
Neutaconkanut Reservoir	0.01	0.00	0.01	0.01	0.02	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.01
Phenix Avenue, Cranston	.00	.01	.00	.00	.02	.01	.01	.01	.02	.00	.00	.01	.01
Westminster St., Olneyville	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
1291 Reservoir Ave., Cranston	.00	.00	.00	.01	.02	.01	.01	.00	.01	.01	.01	.01	.01
750 Reservoir Ave., Cranston	.00	.01	.00	.01	.02	.01	.01	.01	.01	.01	.01	.00	.01
Biltmore Hotel	.00	.00	.01	.01	.02	.02	.01	.01	.01	.01	.01	.01	.01
Dexter Manor	.00	.00	.01	.01	.02	.02	.01	.01	.01	.01	.01	.03	.01
State Office Building	.00	.00	.01	.01	.01	.01	.00	.00	.01	.01	.01	.01	.01
*Longview Reservoir	.04	.06	.05	.05	.06	.06	.04	.03	.04	.04	.03	.04	.05
Police & Fire Hdqrs., Prov.	.00	.01	.02	.01	.03	.02	.02	.01	.01	.01	.03	.06	.02

\*Sample obtained at Our Lady of Fatima Hospital, North Providence.



TABLE 13 (Continued)

## WATER PURIFICATION WORKS

CHEMICAL AND PHYSICAL CHARACTERISTICS OF WATER  
IN VARIOUS PARTS OF THE DISTRIBUTION SYSTEM

YEAR ENDED SEPTEMBER 30, 1965

	Monthly Averages												Avg. for
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
Chlorides													
Neutaconkanut Reservoir	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	5.9	6.0	5.3
Phenix Avenue, Cranston	5.1	5.2	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.0	6.0	5.3
Westminster St., Olneyville	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.4	6.0	6.0	6.0	5.3
1291 Reservoir Ave., Cranston	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.0	6.0	5.3
750 Reservoir Ave., Cranston	5.3	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.0	6.0	5.3
Biltmore Hotel	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.4	6.0	6.0	6.0	5.3
Dexter Manor	5.1	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.4	6.0	6.0	6.0	5.3
State Office Building	5.1	5.2	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.0	6.0	5.3
*Longview Reservoir	5.1	5.2	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.0	6.0	5.3
Police & Fire Hdqrs., Prov.	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.0	6.0	5.3
Nitrites													
Neutaconkanut Reservoir	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phenix Avenue, Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Westminster St., Olneyville	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1291 Reservoir Ave., Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
750 Reservoir Ave., Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Biltmore Hotel	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Dexter Manor	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
State Office Building	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
*Longview Reservoir	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Police & Fire Hdqrs., Prov.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Taste													
Neutaconkanut Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
Phenix Avenue, Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Westminster St., Olneyville	0	0	0	0	0	0	0	0	0	0	0	0	0
1291 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
750 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Biltmore Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Dexter Manor	0	0	0	0	0	0	0	0	0	0	0	0	0
State Office Building	0	0	0	0	0	0	0	0	0	0	0	0	0
*Longview Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
Police & Fire Hdqrs., Prov.	0	0	0	0	0	0	0	0	0	0	0	0	0
Odor													
Neutaconkanut Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
Phenix Avenue, Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Westminster St., Olneyville	0	0	0	0	0	0	0	0	0	0	0	0	0
1291 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
750 Reservoir Ave., Cranston	0	0	0	0	0	0	0	0	0	0	0	0	0
Biltmore Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Dexter Manor	0	0	0	0	0	0	0	0	0	0	0	0	0
State Office Building	0	0	0	0	0	0	0	0	0	0	0	0	0
*Longview Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0
Police & Fire Hdqrs., Prov.	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluoride													
Neutaconkanut Reservoir	1.00	1.00	1.00	0.93	0.98	1.00	1.00	1.00	1.00	1.00	0.98	1.00	0.99
Phenix Avenue, Cranston	1.00	0.99	0.99	0.89	0.98	1.00	1.00	1.00	1.00	0.99	0.99	1.00	0.99
Westminster St., Olneyville	1.00	0.99	0.99	0.90	0.96	0.98	1.00	1.00	0.99	1.00	0.99	1.00	0.98
1291 Reservoir Ave., Cranston	1.00	1.00	1.00	0.89	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99
750 Reservoir Ave., Cranston	1.00	0.99	1.00	0.90	0.99	1.00	1.00	1.00	1.00	0.99	0.99	1.00	0.99
Biltmore Hotel	1.00	1.00	1.00	0.96	0.98	0.99	1.00	1.00	1.00	1.00	0.98	1.00	0.99
Dexter Manor	1.00	0.99	1.00	0.96	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99
State Office Building	1.00	0.99	1.00	0.95	0.96	0.98	1.00	0.99	1.00	1.00	0.99	1.00	0.99
*Longview Reservoir	1.00	1.00	1.00	0.98	0.96	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99
Police & Fire Hdqrs., Prov.	1.00	0.99	1.00	0.96	0.98	1.00	1.00	1.00	1.00	1.00	0.99	1.00	0.99

\*Sample obtained at Our Lady of Fatima Hospital, North Providence.

TABLE 14

## WATER PURIFICATION WORKS

## BACTERIOLOGICAL EXAMINATION OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1965

1964-1965	Raw-A.M.			Raw-P.M.			Settled			*Effluent-A.M.			*Effluent-P.M.			Tap		
	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
October	150	23	60	130	30	63	40	0	16	45	1	16	50	0	14	10	0	1
November	200	13	39	55	12	31	55	6	24	80	4	30	75	2	6	2	0	0
December	60	6	23	60	3	23	117	0	36	90	0	45	100	2	37	3	0	0
January	70	15	39	270	12	44	6,000	2	750	1,800	1	261	2,000	3	190	1	0	0
February	32	10	20	40	5	18	6,000	1	1,219	3,500	0	824	1,800	4	453	3	0	1
March	35	2	13	40	2	12	1,000	0	90	500	0	36	200	0	21	5	0	1
April	35	2	8	15	1	6	50	0	16	65	0	30	60	0	15	8	0	2
May	200	5	24	35	5	14	150	1	38	200	6	51	50	1	19	3	0	1
June	45	5	20	50	7	23	155	1	32	90	0	31	60	1	13	5	0	1
July	102	5	52	130	10	59	40	0	10	35	0	10	45	0	14	2	0	0
August	86	6	34	120	9	40	56	0	12	60	0	13	21	0	7	1	0	0
September	145	12	61	150	10	71	280	0	91	120	2	45	140	1	31	20	0	1
For Year	200	2	33	270	1	34	6,000	0	195	3,500	0	116	2,000	0	68	20	0	1

\*Before treatment with chlorine and sodium silicofluoride.

A.M. refers to samples obtained in the morning, P.M. to samples obtained in the afternoon.

TABLE 15

## WATER PURIFICATION WORKS

## BACTERIOLOGICAL EXAMINATION OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1965

Bacteria per ML. (24 Hours on Agar at 35° C.)

1964 1965	Raw-A.M.			Raw-P.M.			Settled			*Effluent-A.M.			*Effluent-P.M.			Tap		
	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.
October	55	2	14	35	3	14	6	0	1	3	0	0	23	0	2	2	0	0
November	14	0	4	60	0	24	1	0	0	30	0	2	4	0	0	2	0	0
December	12	0	3	20	1	3	1	0	0	1	0	0	0	0	0	3	0	0
January	34	0	6	10	0	4	10	0	0	2	0	0	1	0	0	7	0	0
February	30	1	6	15	1	5	7	0	1	13	0	1	2	0	0	1	0	0
March	45	0	5	9	0	4	10	0	1	1	0	0	2	0	0	1	0	0
April	6	0	2	6	0	3	5	0	0	2	0	0	1	0	0	5	0	0
May	20	0	4	5	0	2	2	0	0	7	0	1	1	0	0	2	0	0
June	14	0	3	6	0	2	30	0	2	50	0	2	8	0	1	3	0	0
July	32	1	10	113	1	20	22	0	2	3	0	1	15	0	2	85	0	3
August	30	0	10	30	0	10	6	0	1	13	0	2	7	0	2	17	0	1
September	140	1	26	80	4	26	55	0	3	16	0	1	40	0	4	30	0	2
For Year	140	0	8	113	0	10	55	0	1	50	0	1	40	0	1	85	0	1

\*Before treatment with chlorine and sodium silicofluoride.

A.M. refers to samples obtained in the morning, P.M. to samples obtained in the afternoon.

TABLE 16

## WATER PURIFICATION WORKS

## BACTERIOLOGICAL EXAMINATION OF WATER IN PROCESS OF FILTRATION

YEAR ENDED SEPTEMBER 30, 1965

## Coliform Bacteria

	Raw-A.M.			Raw-P.M.			Settled			*Effluent-A.M.			*Effluent-P.M.			Tap		
	No. of 10 ml. Tested	No. of Con- firmations	Index per ml.	No. of 10 ml. Tested	No. of Con- firmations	Index per ml.	No. of 10 ml. Tested	No. of Con- firmations	Index per ml.	No. of 10 ml. Tested	No. of Con- firmations	Index per ml.	No. of 10 ml. Tested	No. of Con- firmations	Index per ml.	No. of 10 ml. Tested	No. of Con- firmations	Index per ml.
1964																		
1965																		
October	78	69	.088	46	1	.002	52	1	.002	52	0	.000	46	0	.000	130	0	.000
November	66	65	.098	38	8	.021	44	2	.005	44	0	.000	38	0	.000	110	0	.000
December	78	77	.099	40	32	.080	52	1	.002	52	0	.000	40	0	.000	130	0	.000
January	75	64	.085	40	40	.100	50	1	.002	50	0	.000	40	0	.000	125	0	.000
February	69	19	.028	36	32	.089	46	4	.009	46	2	.004	36	0	.000	115	1	.001
March	78	6	.008	42	39	.093	52	2	.004	52	0	.000	42	0	.000	130	0	.000
April	78	21	.027	42	6	.014	52	0	.000	52	0	.000	42	0	.000	130	0	.000
May	72	9	.013	38	6	.016	48	4	.008	48	5	.010	38	1	.003	120	0	.000
June	78	2	.003	44	1	.002	52	0	.000	52	0	.000	44	0	.000	130	0	.000
July	78	2	.003	42	0	.000	52	0	.000	52	0	.000	42	3	.007	130	0	.000
August	75	0	.000	44	6	.014	50	3	.006	50	0	.000	44	2	.005	125	0	.000
September	75	42	.056	42	18	.043	50	1	.002	50	0	.000	42	0	.000	125	0	.000
For Year	900	376	.042	494	189	.038	600	19	.003	600	7	.001	494	6	.001	1,500	1	.000

\*Before treatment with chlorine and sodium silicofluoride.

A. M. refers to samples obtained in the morning, P. M. to samples obtained in the afternoon.

TABLE 17

## WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN VARIOUS BROOKS AND RESERVOIRS  
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1965

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
Bacteria per Ml. 48 Hours on Agar at 20° C.													
Ponaganset Reservoir	150	25	250	35	60	10	320	280	45	170	315	175	153
Coventry Brook	2,600	330	1,700	95	160	45	800	380	390	600	780	1,350	769
Wilbur Brook	4,800	750	2,500	150	150	120	310	450	420	420	900	1,800	1,064
Westconnaug Reservoir	850	350	3,000	200	450	700	230	140	440	330	460	300	621
Barden Reservoir	280	20	150	130	300	34	75	120	280	1,400	4,400	160	612
Cork Brook	350	150	2,100	50	110	40	580	450	1,900	840	**	**	657
Rush Brook	750	240	4,000	1,600	5,000	85	550	3,100	850	750	1,000	900	1,569
Huntinghouse Brook	1,300	900	2,800	240	600	80	350	900	350	750	980	**	841
Harrisdale Brook	700	190	5,200	90	140	160	730	1,500	900	490	240	400	895
Blanchard Brook	110	200	5,500	300	100	45	600	2,600	2,100	**	**	**	1,284
Moswansicut Pond	230	90	90	60	45	80	140	500	650	540	360	480	272
Regulating Reservoir	170	30	1,600	75	120	110	80	150	150	300	52	8,600	953
Quonapaug Brook	550	420	1,500	270	80	70	500	600	1,200	840	**	**	603
Hemlock Brook	600	110	600	800	350	240	220	50	35	65	73	330	289
Betty Pond Stream	800	170	1,100	1,800	600	60	400	180	170	**	440	**	572
Spruce Brook	2,500	300	700	450	150	95	1,500	700	800	500	1,060	**	796
Brandy Brook	3,500	650	1,300	900	800	320	1,200	550	400	264	380	700	914
Moswansicut-South	6,000	800	3,000	1,500	700	450	3,000	1,900	600	1,150	2,000	500	1,800
Windsor Brook	**	210	800	90	150	70	600	240	250	1,350	750	**	451
Paine Pond	5,000	**	3,600	100	130	270	350	70	80	335	900	**	1,084
Unnamed Brook--A	**	**	2,000	110	150	300	1,500	1,100	**	**	**	**	860
Unnamed Brook--B	450	**	2,400	70	120	40	1,400	60	**	**	**	**	649
Bacteria per Ml. 24 Hours on Agar at 35° C.													
Ponaganset Reservoir	30	0	30	1	8	3	1	70	40	216	200	105	59
Coventry Brook	115	18	140	6	9	9	34	45	140	140	465	1,400	210
Wilbur Brook	130	45	180	15	10	21	20	170	800	220	500	1,500	301
Westconnaug Reservoir	65	17	30	12	11	6	19	130	55	260	330	140	90
Barden Reservoir	60	8	6	5	16	10	8	55	240	1,700	1,575	110	316
Cork Brook	50	15	150	12	5	7	40	150	270	870	**	**	157
Rush Brook	110	12	550	160	110	8	25	900	450	420	220	500	289
Huntinghouse Brook	85	20	800	20	12	45	13	380	85	350	450	**	205
Harrisdale Brook	90	23	230	15	25	90	22	320	880	370	300	200	214
Blanchard Brook	80	46	900	250	40	110	110	2,000	900	**	**	**	493
Moswansicut Pond	250	40	5	8	30	50	10	440	420	400	525	700	240
Regulating Reservoir	200	1	110	9	19	8	15	350	105	330	55	3,500	392
Quonapaug Brook	40	20	80	11	14	150	35	190	190	700	**	**	143
Hemlock Brook	15	25	30	15	17	15	17	45	100	125	90	650	95
Betty Pond Stream	160	15	65	20	50	9	25	200	600	**	680	**	182
Spruce Brook	50	6	70	12	9	7	30	40	110	130	1,000	**	133
Brandy Brook	90	30	220	40	120	25	70	150	170	110	145	250	118
Moswansicut-South	45	600	600	80	150	30	400	480	350	750	2,400	170	505
Windsor Brook	**	30	60	9	8	5	45	60	160	350	530	**	126
Paine Pond	3,000	**	110	5	10	9	10	45	280	400	1,320	**	519
Unnamed Brook--A	**	**	90	15	14	10	30	350	**	**	**	**	85
Unnamed Brook--B	120	**	150	7	12	1	40	20	**	**	**	**	50

\*\*No sample obtained--Dry.

NOTE: Unnamed Brook A is just North of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 17 (Continued)

## WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN VARIOUS BROOKS AND RESERVOIRS  
ON SCITUATE WATERSHED

YEAR ENDED SEPTEMBER 30, 1965

Monthly Analyses	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Coliform Bacteria Index per 100 Ml.												
Ponaganset Reservoir	6	0	25	6	6	0	5	13	25	70	25	13
Coventry Brook	25	25	70	0	70	25	110+	25	70	70	110+	110+
Wilbur Brook	110+	70	70	6	0	25	13	70	13	70	25	70
Westconnaug Reservoir	6	25	110+	0	25	6	5	6	70	70	110+	25
Barden Reservoir	0	25	70	25	25	25	5	0	110+	70	110+	70
Cork Brook	25	25	110+	20	25	70	70	6	70	110+	**	**
Rush Brook	13	25	110+	25	110+	6	70	110+	70	70	110+	110+
Huntinghouse Brook	70	25	110+	6	25	70	70	70	110+	70	70	**
Harrisdale Brook	25	25	110+	25	25	6	20	25	110+	25	25	70
Blanchard Brook	110+	70	110+	110+	110+	110+	13	25	110+	**	**	**
Moswansicut Pond	25	0	25	0	6	6	13	110+	70	110+	70	110+
Regulating Reservoir	0	25	70	0	25	25	70	25	25	110+	25	110+
Quonapaug Brook	110+	70	70	6	25	6	110+	70	25	110+	**	**
Hemlock Brook	0	70	110+	6	70	0	0	0	0	70	6	0
Betty Pond Stream	6	6	110+	6	25	6	0	6	25	**	70	**
Spruce Brook	25	25	70	6	25	6	70	25	70	110+	110+	**
Brandy Brook	25	70	110+	6	70	13	110+	25	70	110+	110+	25
Moswansicut-South	110+	110+	110+	25	110+	25	110+	110+	110+	110+	110+	70
Windsor Brook	**	0	110+	6	25	70	110+	13	70	110+	110+	**
Paine Pond	25	**	25	0	25	0	0	110+	110+	110+	70	**
Unnamed Brook--A	**	**	25	25	110+	110+	70	70	**	**	**	**
Unnamed Brook--B	13	**	110+	25	25	6	110+	70	**	**	**	**

\*\*No sample obtained--Dry.

NOTE: Unnamed Brook A is just North of Scituate Town Dump. Unnamed Brook B is southwest of the Foster Nike Site.

TABLE 18

## WATER PURIFICATION WORKS

BACTERIOLOGICAL EXAMINATION OF WATER IN VARIOUS PARTS  
OF THE DISTRIBUTION SYSTEM

YEAR ENDED SEPTEMBER 30, 1965

Monthly Averages	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
	Bacteria per Ml. 48 Hours on Agar at 20° C.												
Neutaconkanut Reservoir	1	0	0	1	0	0	0	0	1	0	0	0	0
Phenix Avenue, Cranston	2	0	0	1	1	1	1	1	1	1	0	1	1
Westminster St., Olneyville	0	0	0	0	0	0	1	1	1	0	0	0	0
1291 Reservoir Ave., Cranston	0	0	0	2	1	0	2	2	1	0	0	2	1
750 Reservoir Ave., Cranston	0	0	0	2	0	0	0	0	1	0	0	0	0
Biltmore Hotel	0	0	1	1	0	2	1	0	0	0	1	1	1
Dexter Manor	1	0	0	1	1	1	1	0	0	0	2	0	1
State Office Building	1	0	0	0	0	0	1	1	0	0	0	0	0
*Longview Reservoir	1	0	1	2	18	2	6	8	5	1	3	2	4
Police & Fire Hdqtrs., Prov.	0	1	1	1	2	3	3	2	1	0	1	4	2
	Bacteria per Ml. 24 Hours on Agar at 35° C.												
Neutaconkanut Reservoir	1	1	1	0	0	0	0	1	1	0	1	3	1
Phenix Avenue, Cranston	2	0	1	0	0	0	0	0	0	0	1	1	0
Westminster St., Olneyville	0	3	0	0	0	1	5	0	0	0	2	0	1
1291 Reservoir Ave., Cranston	1	0	1	0	0	0	0	1	0	0	7	9	2
750 Reservoir Ave., Cranston	0	0	0	0	0	0	0	1	0	0	1	3	0
Biltmore Hotel	1	0	0	0	0	0	0	0	0	0	1	15	1
Dexter Manor	0	0	0	0	0	0	0	0	0	0	3	2	0
State Office Building	0	0	0	0	0	0	20	0	0	0	2	1	2
*Longview Reservoir	2	0	0	0	0	0	0	0	1	2	3	3	1
Police & Fire Hdqtrs., Prov.	0	0	0	0	4	0	0	1	0	0	1	1	1
	Coliform Bacteria Index per Ml.												
Neutaconkanut Reservoir	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Phenix Avenue, Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Westminster St., Olneyville	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1291 Reservoir Ave., Cranston	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
750 Reservoir Ave., Cranston	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000	.000	.000	.000
Biltmore Hotel	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Dexter Manor	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
State Office Building	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000	.002	.000
*Longview Reservoir	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000
Police & Fire Hdqtrs., Prov.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

\*Sample obtained at Our Lady of Fatima Hospital, North Providence

TABLE 19

## WATER PURIFICATION WORKS

MINERAL ANALYSIS OF WATER - YEAR ENDED SEPTEMBER 30, 1965

Parts per Million	Raw Water*					Tap Water				
	1964 Oct.- Dec.	1965 Jan.- Mar.	1965 Apr.- June	July- Sept.	Avg.	1964 Oct.- Dec.	1965 Jan.- Mar.	1965 Apr.- June	July- Sept.	Avg.
Aluminum	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.02	0.02
Arsenic		0.00		0.00	0.00		0.00		0.00	0.00
Calcium	3.1	3.0	3.4	3.4	3.2	8.5	10.0	10.2	9.6	9.6
Chloride	5.1	5.0	5.1	5.5	5.2	5.2	5.0	5.3	6.0	5.4
Copper	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Fluoride	0.14	0.15	0.16	0.15	0.15	1.00	0.98	1.00	0.99	0.99
Hardness	11	12	11	11	11	29	31	30	31	30
Iron	0.08	0.08	0.04	0.09	0.07	0.01	0.02	0.01	0.01	0.01
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Magnesium	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Manganese	0.01	0.02	0.02	0.08	0.03	0.00	0.00	0.00	0.00	0.00
Phenolic Compounds		0.000		0.000	0.000		0.000		0.000	0.000
Selenium		0.00		0.00	0.00		0.00		0.00	0.00
Silica	3.5	5.0	4.5	4.0	4.3	3.5	4.5	4.5	4.0	4.1
Sulphate	8.9	7.8	8.2	8.0	8.2	15.6	14.4	14.2	12.9	14.3
Total Solids	33	35	34	34	34	44	51	55	51	50
Loss on Ignition	12	15	13	15	14	14	17	18	17	17
Total Alkalinity	4.0	3.9	3.8	4.3	4.0	11.6	11.7	12.3	15.3	12.7
Phenolphthalein Alkalinity	0.0	0.0	0.0	0.0	0.0	5.9	5.9	6.1	7.6	6.4
Zinc		0.0		0.0	0.0		0.0		0.0	0.0

\*Water from bottom of Scituate Reservoir as received at Purification Works.



TABLE 20

## WATER PURIFICATION WORKS

SANITARY CHEMICAL ANALYSIS (P.P.M.) - YEAR ENDED SEPTEMBER 30, 1965

	Raw Water*									Tap Water								
	Ammonia		Nitrites		Chlorides	Dissolved Oxygen		Total Solids	Loss on Ignition	Ammonia		Nitrites		Chlorides	Dissolved Oxygen		Total Solids	Loss on Ignition
	Free	Alb.				P.P.M.	% Sat.			Free	Alb.				P.P.M.	% Sat.		
1964																		
1965																		
October	0.044	0.056	0.000	0.02	5.1	7.4	72.0	33	13	0.008	0.040	0.000	0.01	5.2	---	---	53	17
November	0.024	0.052	0.000	0.00	5.1	8.6	74.1	32	12	0.016	0.048	0.000	0.00	5.2	---	---	40	13
December	0.012	0.072	0.000	0.03	5.0	12.8	92.1	34	12	0.020	0.068	0.000	0.03	5.1	---	---	39	11
January	0.028	0.060	0.000	0.01	5.0	13.0	90.3	40	15	0.016	0.052	0.000	0.01	5.0	---	---	41	15
February	0.024	0.080	0.000	0.02	5.0	11.9	86.4	39	21	0.024	0.056	0.000	0.03	5.0	---	---	60	19
March	0.028	0.064	0.000	0.03	5.0	12.4	91.2	26	10	0.020	0.060	0.000	0.02	5.0	---	---	52	16
April	0.020	0.080	0.000	0.03	5.0	12.1	96.8	33	14	0.003	0.040	0.000	0.03	5.0	---	---	54	16
May	0.024	0.056	0.000	0.03	4.9	10.6	89.1	36	14	0.012	0.044	0.000	0.05	5.0	---	---	52	18
June	0.027	0.063	0.000	0.04	5.5	9.3	80.9	32	10	0.017	0.043	0.000	0.11	6.0	---	---	60	21
July	0.030	0.060	0.000	0.06	5.5	7.5	67.0	34	12	0.015	0.044	0.000	0.07	6.0	---	---	58	20
August	0.025	0.065	0.000	0.05	5.5	5.0	45.9	38	16	0.016	0.039	0.000	0.05	6.0	---	---	51	15
September	0.059	0.082	0.000	0.06	5.6	4.4	43.1	30	17	0.003	0.033	0.000	0.06	6.0	---	---	45	17
Averages	0.029	0.066	0.000	0.03	5.2	9.6	77.4	34	14	0.014	0.047	0.000	0.04	5.4	---	---	54	17

\*Water from bottom of Scituate Reservoir as received at Purification Works.

TABLE 21

## WATER PURIFICATION WORKS

LABORATORY EXAMINATIONS MADE DURING THE FISCAL YEAR ENDED SEPTEMBER 30, 1965

Source of Water Tested	Frequency of Test or Examination	Number of Tests or Analyses Made During the Fiscal Year						Total
		Chemical	Bacteriological	Microscopical	Sanitary Chemical	Mineral	Miscellaneous	
I Brooks and Streams on Watershed Fourteen Brooks, Two Streams and One Pond	Monthly	1,246	1,553		66			2,865
II Smaller Storage Reservoirs on Watershed								
Regulating Reservoir	Monthly	84	99					183
Westconnaug Reservoir	Monthly	84	101					185
Barden Reservoir	Monthly	84	98					182
Moswansicut Pond	Monthly	84	98					182
Ponaganset Reservoir	Monthly	84	90					174
III Scituate Reservoir								
Surface Water	Bi-Weekly	208	305	14	156			683
Subsurface Water (See Purif. Wks.--Raw Water)								
IV Pawtuxet River--Below Gainer Dam								
Gainer Dam Meter Chamber	Bi-Weekly	182			156			338
Fiskeville, R. I.	Bi-Weekly	182			156			338
Twelve other locations on Pawtuxet River	Bi-Weekly	2,340	1,643		2,184			6,167
V Water Purification Works								
Raw Water (from Bottom of Scituate Reservoir)	Daily	2,975	3,846		1,436		359	8,616
Raw Water (from Bottom of Scituate Reservoir)	Bi-Weekly			14	26			40
Raw Water (from Bottom of Scituate Reservoir)	Monthly				72			72
*Raw Water (from Bottom of Scituate Reservoir)	Every 13 Weeks					36		36
Aerated Influent	Daily	718						718
Mixer	Daily	1,836						1,836
Settled	Daily	2,449	1,224				359	4,032
Settled	Bi-Weekly			14	26			40
Settled	Monthly				48			48
Filtered	Daily	1,077						1,077
Filtered	Monthly				48			48
Unchlorinated Effluent	Daily	3,174	1,209		1,436			5,819
Unchlorinated Effluent	Bi-Weekly			14	26			40
Unchlorinated Effluent	Monthly				24			24
Chlorinated Effluent	Daily	1,500	1,750		1,250			4,500
Raw Water (from Bottom of Scituate Reservoir)	Daily at 3:00 P.M.	988	1,195		988			3,171
Unchlorinated Effluent	Daily at 3:00 P.M.	988	997		988			2,973

TABLE 21 (Continued)

## WATER PURIFICATION WORKS

LABORATORY EXAMINATIONS MADE DURING THE FISCAL YEAR ENDED SEPTEMBER 30, 1965

Source of Water Tested	Frequency of Test or Examination	Number of Tests or Analyses Made During the Fiscal Year						Total
		Chemical	Bacteri- ological	Micro- scopical	Sanitary Chemical	Mineral	Miscel- laneous	
VI Neutaconkanut Distribution Reservoir								
Sample from nearby Tap	Daily	1,500	1,750		1,000			4,250
Sample from nearby Tap	Bi-Weekly			14				14
VII Longview Distribution Reservoir								
Sample from nearby Tap	Daily	1,500	1,751		1,000			4,251
Sample from nearby Tap	Bi-Weekly			14				14
VIII Distribution System								
Providence Journal Bldg. Tap Water	Daily	2,408	2,101		1,505		301	6,315
Providence Journal Bldg. Tap Water	Bi-Weekly			14				14
Providence Journal Bldg. Tap Water	Monthly				60			60
*Providence Journal Bldg. Tap Water	Every 13 Weeks					32		32
**Sectional Tests	Monthly	768	480		360			1,608
Consumers' Complaints (42 during the year)		397	126		105			628
Disinfection of Newly Laid Mains			1,107		128			1,235
***Sectional Tests	Daily	10,374	12,107		6,916			29,397
IX Miscellaneous Tests								
Coagulation Tests to Determine Chemical Dosages		60					30	90
Analysis of Ferri-Floc used for Treatment		66					22	88
Analysis of Quicklime used for Treatment		20					40	60
Analysis of Sod. Silicofluoride used for Treatment		7						7
Water, Filter Sand and Other Materials		1,570	4,177		586		132	6,465
Totals		38,953	37,807	98	20,746	68	1,243	98,915

\*Composite of 13 Weekly Samples.

\*\*Samples from 10 Random Dwellings (location changed monthly).

\*\*\*Samples from seven fixed locations.

TABLE 22

## WATER DISTRIBUTION SYSTEM

## NEUTACONKANUT HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

	Electrically-Driven Pumps						Gasoline Engine-Driven Pump			
	No. 1 10" Pump 2700 GPM. TDH 90'	No. 2 12" Pump 3800 GPM. TDH 104'	No. 3 16" Pump 7000 GPM. TDH 96'	Power Used*			No. 4 16" Pump 7000 GPM. TDH 96'	**Operated		Gas. Oil
	Operated Hours and Minutes	Operated Hours and Minutes	Operated Hours and Minutes				Hours and Minutes			Used Used
	Days Minutes	Days Minutes	Days Minutes	KWH	Cost		Days Minutes	Days Minutes	Gals Qts.	
1964										
1965										
October	1 5-00	31 736-30	0 0-00	83,500	\$ 1,323.12		3 3-00		79	0
November	11 148-35	29 671-55	0 0-00	76,000	1,251.40		4 4-00		110	0
December	28 372-45	31 727-40	1 5-20	106,500	1,559.16		5 5-00		160	0
January	25 283-40	31 722-00	0 0-00	91,500	1,406.31		4 4-00		118	0
February	13 140-00	28 652-00	0 0-00	87,000	1,361.76		4 4-00		242	0
March	2 17-00	31 735-30	0 0-00	75,000	1,246.05		4 4-00		20	0
April	0 0-00	30 715-30	0 0-00	89,000	1,387.51		3 3-00		36	0
May	6 57-30	28 557-45	13 113-30	82,000	1,345.97		4 4-00		129	0
June	0 0-00	28 537-15	12 168-00	86,000	1,354.13		5 5-00		145	0
July	0 0-00	31 492-15	18 238-30	99,500	1,441.54		4 4-00		65	0
August	2 4-30	28 461-30	18 267-00	98,000	1,452.18		4 4-00		125	0
September	6 65-45	30 601-45	10 76-00	82,000	1,285.57		4 4-00		120	0
Totals	94 1,094-45	356 7,611-35	72 868-20	1,056,000	\$16,414.70		48 48-00		1,349	0***

\*Narragansett Electric Co. Power Rate G.

\*\*Engine Test Run.

\*\*\*104 Qts. required for oil change.

TABLE 22 (Continued)

## WATER DISTRIBUTION SYSTEM

## NEUTACONKANUT HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

	Electrically-Driven Pumps			Gasoline Engine-Driven Pump	Total Water Pumped	
	No. 1 10" Pump 2700 GPM. TDH 90'	No. 2 12" Pump 3800 GPM. TDH 104'	No. 3 16" Pump 7000 GPM. TDH 96'	No. 4 16" Pump 7000 GPM. TDH 96'	Mil. Gals.	Avg. per Day
	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	Water Pumped Mil. Gals.	For Month	
1964-1965						
October	0.90	205.74	0	1.23	207.87	6.71
November	24.45	175.69	0	1.65	201.79	6.73
December	62.61	179.83	2.03	2.07	246.54	7.95
January	49.45	187.55	0	1.74	238.74	7.70
February	25.92	178.15	0	1.86	205.93	7.35
March	3.20	208.52	0	1.78	213.50	6.89
April	0	203.34	0	1.41	204.75	6.83
May	12.32	156.54	48.16	2.01	219.03	7.07
June	0	152.43	71.69	2.10	226.22	7.54
July	0	138.38	102.45	1.79	242.62	7.83
August	0.88	129.95	114.31	1.76	246.90	7.96
September	12.86	166.80	32.79	1.80	214.25	7.14
Totals	192.59	2,082.92	371.43	21.20	2,668.14	7.31

TABLE 23

## WATER DISTRIBUTION SYSTEM

## BATH STREET HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

1964-1965	Electrically-Driven Pumps						Gasoline Engine-Driven Pumps					
	Pump No. 1 2000 GPM. TDH 98'		Pump No. 2 2000 GPM. TDH 98'		Power Used*		Pump No. 3 2000 GPM. TDH 98'; 150 HP Sterling Engine			Pump No. 4 2000 GPM. TDH 98'; 150 HP Sterling Engine		
	Operated Hours and Days Minutes	Operated Hours and Days Minutes	Operated Hours and Days Minutes	Operated Hours and Days Minutes	KWH	Cost	**Operated Hours and Days Minutes	Gas. Used Gals.	**Operated Hours and Days Minutes	Gas. Used Gals.	Gas. Used Gals.	Gas. Used Gals.
October	1 12-00	30 315-15	17,500	\$ 409.20	1 1-00	0	1 1-00	0	1 1-00	0		
November	6 30-15	21 259-45	21,140	493.15	2 2-00	0	2 2-00	0	2 2-00	0		
December	0 0-00	0 0-00	840	132.11	0 0-00	0	0 0-00	0	0 0-00	0		
***January	8 33-15	7 7-30	3,360	216.94	3 1-25	0	3 1-25	0	0 0-00	0		
February	16 112-50	4 10-45	4,900	225.95	1 0-15	37	1 0-15	37	0 0-00	0		
March	31 192-30	1 5-30	14,420	361.50	3 9-30	3	3 9-30	3	0 0-00	0		
April	30 213-00	0 0-00	14,000	354.41	0 0-00	75	0 0-00	75	0 0-00	0		
May	29 392-15	8 88-30	26,320	569.52	0 0-00	0	0 0-00	0	0 0-00	0		
June	29 383-00	25 332-30	38,500	701.67	1 0-30	0	1 0-30	0	0 0-00	0		
July	29 420-00	29 406-00	51,800	835.91	0 0-00	0	0 0-00	0	0 0-00	0		
August	31 397-30	27 324-00	45,500	773.75	0 0-00	0	0 0-00	0	0 0-00	0		
September	25 247-00	28 311-45	33,740	652.27	1 0-15	0	1 0-15	0	0 0-00	0		
Totals	235 2,433-35	180 2,061-30	272,020	\$5,726.38	12 14-55	115	12 14-55	115	3 3-00	0		

\*Narragansett Electric Co. Power Rate G

\*\*Engine Test Run.

\*\*\*New Pumps Installed

Electrically-Driven Pumps

Pump No. 1 2500 GPM. TDH 100'	Pump No. 2 2500 GPM. TDH 100'
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Gasoline Engine-Driven Pump

Pump No. 3 5000 GPM. TDH 100' 150 HP Climax Engine
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TABLE 23 (Continued)

## WATER DISTRIBUTION SYSTEM

## BATH STREET HIGH SERVICE PUMPING STATION

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

	Electrically-Driven Pumps		Gasoline Engine-Driven Pumps		Total Water Pumped  Mil. Gals.	Avg. per Day
	Pump No. 1 2000 GPM. TDH 98'	Pump No. 2 2000 GPM. TDH 98'	Pump No. 3 2000 GPM. TDH 98'; 150 HP Sterling Engine	Pump No. 4 2000 GPM. TDH 98'; 150 HP Sterling Engine		
1964-1965	Water Pumped Mil.Gals.	Water Pumped Mil.Gals.	Water Pumped Mil.Gals.	Water Pumped Mil.Gals.	For Month	
October	1.65	43.33	0.13	0.13	45.24	1.46
November	4.01	35.28	0.26	0.27	39.82	1.33
December	0	0	0	0	0	0
*January	5.54	1.23	0.39	0	7.16	0.23
February	18.52	1.76	0.07	0	20.35	0.73
March	31.70	0.80	2.01	0	34.51	1.11
April	35.63	0	0	0	35.63	1.19
May	62.91	13.00	0	0	75.91	2.45
June	56.14	48.11	0.15	0	104.40	3.48
July	60.61	57.71	0	0	118.32	3.82
August	56.95	45.56	0	0	102.51	3.31
September	35.81	45.49	0.07	0	81.37	2.71
Totals	369.47	292.27	3.08	0.40	665.22	1.82

## \*New Pumps Installed

Electrically-Driven Pumps  
 Pump No.1      Pump No.2  
 2500 GPM.      2500 GPM.  
 TDH 100'      TDH 100'

Gasoline Engine-Driven Pump  
 Pump No. 3  
 5000 GPM. TDH 100'  
 150 HP Climax Engine

TABLE 24

## WATER DISTRIBUTION SYSTEM

## AQUEDUCT DISTRIBUTION RESERVOIR\*

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

7 A.M.Statistics on First Day of Month			Operating Characteristics During Month											
1964 1965	Water Level	Storage Mil.Gals.	Water Level			Storage--Mil.Gals.			Daily Water Level Fluctuation--Ft.			Daily Storage Fluctuation--M.G.		
			Max.	Min.	Avg.**	Max.	Min.	Avg.**	Max.	Min.	Avg.	Max.	Min.	Avg.
October	229.44	40.78	230.18	226.72	229.25	42.04	36.12	40.46	3.22	0.85	1.89	5.52	1.46	3.30
November	228.95	39.95	230.17	226.59	229.13	42.02	35.90	40.25	3.13	0.69	1.82	4.87	1.18	3.12
December	228.72	39.55	229.87	226.89	229.12	41.52	36.41	40.24	2.68	0.88	1.76	4.66	1.51	3.03
January	228.61	39.36	229.99	226.77	229.20	41.72	36.21	40.37	3.13	0.65	1.78	5.45	1.11	3.02
February	229.70	41.23	229.78	226.08	229.12	41.37	35.02	40.24	2.88	0.38	1.92	4.94	0.65	3.23
March	229.60	41.06	230.10	226.76	229.31	41.91	36.19	40.56	3.10	0.92	2.00	5.31	1.58	3.43
April	229.50	40.89	230.22	226.55	229.30	42.11	35.83	40.55	3.51	1.35	2.18	5.06	2.28	3.62
May	229.40	40.72	230.35	226.40	229.56	42.32	35.57	40.99	3.06	0.96	2.26	5.22	1.65	3.88
June	229.84	41.47	230.37	226.24	229.88	42.35	35.30	41.54	3.76	1.04	2.38	6.44	1.78	4.07
July	230.15	41.99	230.40	226.26	229.93	42.40	35.33	41.62	3.81	1.16	2.65	6.53	1.99	4.55
August	230.15	41.99	230.53	226.91	229.98	42.62	36.45	41.71	3.36	0.64	2.09	5.71	1.09	3.56
September	229.25	40.46	230.43	226.44	229.60	42.45	35.64	41.06	3.39	0.85	2.08	5.78	1.45	3.56
For Year:			230.53	226.08	229.45	42.62	35.02	40.80	3.81	0.38	2.07	6.53	0.65	3.53

\*Storage capacity at overflow elevation of 231.00=43,400,000 gallons. \*\*Average of 7 A.M. statistics.

NOTE: Water levels are elevations in feet above mean high water in Providence harbor.



TABLE 25

## WATER DISTRIBUTION SYSTEM

## NEUTACONKANUT DISTRIBUTION RESERVOIR\*

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

1964 1965	7 A.M. Statistics on First Day of Month		Operating Characteristics During Month											
	Water Level	Storage Mil.Gals.	Water Level			Storage--Mil.Gals.			Daily Water Level Fluctuation--Ft.			Daily Storage Fluctuation--M.G.		
			Max.	Min.	Avg.**	Max.	Min.	Avg.**	Max.	Min.	Avg.	Max.	Min.	Avg.
October	226.15	40.60	226.83	223.90	226.19	41.81	36.64	40.67	2.41	0.28	1.49	4.20	0.49	2.61
November	226.38	41.00	226.63	224.00	226.26	41.45	36.82	40.79	2.49	0.14	1.33	4.37	0.26	2.33
December	225.93	40.22	226.66	224.00	226.19	41.50	36.82	40.67	1.93	0.16	1.08	3.39	0.28	1.90
January	226.25	40.77	226.65	224.21	226.23	41.48	37.19	40.74	1.92	0.13	1.11	3.35	0.22	1.95
February	226.49	41.19	226.77	224.41	226.25	41.70	37.54	40.77	2.13	0.19	1.25	3.74	0.40	2.19
March	226.43	41.09	226.65	224.25	226.32	41.48	37.26	40.90	2.10	0.11	1.17	3.69	0.17	2.04
April	226.40	41.04	226.78	224.18	226.32	41.72	37.14	40.90	2.07	0.29	1.35	3.63	0.51	2.37
May	226.19	40.67	226.61	222.18	226.27	41.41	33.62	40.81	3.74	0.17	1.74	6.58	0.30	3.06
June	226.37	40.98	226.65	221.70	226.12	41.48	32.78	40.55	4.40	1.23	2.67	7.73	2.17	4.69
July	226.17	40.64	226.85	221.79	226.14	41.84	32.93	40.58	4.23	0.15	2.05	7.58	0.27	5.04
August	226.30	40.86	226.81	221.98	226.30	41.77	33.26	40.86	4.13	0.45	2.46	7.26	0.79	4.32
September	226.13	40.57	226.74	222.35	226.26	41.64	33.92	40.79	4.09	0.42	2.04	7.19	0.80	3.58
For Year			226.85	221.70	226.24	41.84	32.78	40.75	4.40	0.11	1.65	7.73	0.17	3.01

\*Storage capacity at overflow elevation of 227.00=42,090,000 gallons. \*\*Average of 7 A.M. statistics.

NOTE: Water levels are elevations in feet above mean high water in Providence harbor.

TABLE 26

## WATER DISTRIBUTION SYSTEM

## LONGVIEW DISTRIBUTION RESERVOIR\*

OPERATING STATISTICS - YEAR ENDED SEPTEMBER 30, 1965

1964 1965	7 A.M. Statistics on First Day of Month		Water Level			Storage--Mil.Gals.			Daily Water Level Fluctuation--Ft.			Daily Storage Fluctuation--M.G.		
	Water Level	Storage Mil.Gals.	Max.	Min.	Avg.**	Max.	Min.	Avg.**	Max.	Min.	Avg.	Max.	Min.	Avg.
October	304.65	11.78	305.49	302.02	304.90	12.16	10.56	11.89	2.58	1.17	1.89	1.18	0.54	0.88
November	305.17	12.02	305.53	301.87	304.79	12.18	10.49	11.84	2.85	1.12	1.86	1.32	0.53	0.86
December	305.02	11.95	305.47	302.28	304.86	12.15	10.68	11.87	2.95	1.09	1.76	1.36	0.50	0.83
January	304.76	11.83	305.49	302.09	304.74	12.16	10.59	11.82	3.19	1.26	2.02	1.48	0.59	0.95
February	305.19	12.03	305.42	302.60	304.92	12.13	10.83	11.90	2.62	1.40	1.94	1.21	0.65	0.90
March	304.98	11.93	305.52	302.31	304.83	12.18	10.69	11.86	2.76	1.34	1.94	2.03	0.62	0.93
April	305.16	12.01	305.57	301.69	304.81	12.20	10.40	11.85	2.60	1.37	1.96	1.36	0.64	0.91
May	304.76	11.83	305.86	299.85	304.51	12.34	9.55	11.71	4.73	1.16	2.36	2.19	0.54	1.08
June	304.30	11.61	305.20	299.10	304.46	12.03	9.21	11.69	5.52	0.40	2.54	2.55	0.46	1.25
July	304.35	11.63	305.51	299.26	304.16	12.17	9.28	11.55	4.85	0.65	2.70	2.25	0.30	1.23
August	303.14	11.07	305.39	301.04	304.27	12.12	10.10	11.60	3.64	0.72	1.95	1.69	0.33	0.91
September	304.07	11.50	305.25	301.55	304.11	12.05	10.34	11.52	2.96	0.89	1.59	1.37	0.41	0.74
For Year			305.86	299.10	304.61	12.34	9.21	11.76	5.52	0.40	2.04	2.55	0.30	0.96

\*Storage capacity at overflow elevation of 306.00=12,400,000 gallons. \*\*Average of 7 A.M. statistics.

NOTE: Water levels are elevations in feet above mean high water in Providence harbor.

TABLE 27  
WATER PIPE LAID, REMOVED AND ADDED  
YEAR ENDED SEPTEMBER 30, 1965

City or Town	Pipe Laid in Feet								Total
	6"	8"	10"	12"	16"	20"	24"	30"	
Providence	4,538.87	2,252.18	1.66	237.89	131.15	1,638.38	0	0	8,800.13
Cranston	7,246.65	11,051.66	0	2,338.40	0	0	1,919.00	0	22,555.71
Johnston	564.80	6,734.35	0	0	0	0	1,401.25	0	8,700.40
North Providence	821.60	4,078.75	0	0	0	0	6,900.55	256.23	12,057.13
Totals	13,171.92	24,116.94	1.66	2,576.29	131.15	1,638.38	10,220.80	256.23	52,113.37

City or Town	Pipe Removed in Feet								Total
	6"	8"	10"	12"	16"	20"	24"	30"	
Providence	7,577.22	199.49	236.00	10.20	121.00	1,241.80	0	0	9,385.71
Cranston	5,372.86	103.00	0	1,272.65	0	0	0	0	6,748.51
Johnston	0	287.90	0	0	0	0	0	0	287.90
North Providence	0	0	0	0	0	0	0	0	0
Totals	12,950.08	590.39	236.00	1,282.85	121.00	1,241.80	0	0	16,422.12

City or Town	Net Length Added to Distribution System								Total
	6"	8"	10"	12"	16"	20"	24"	30"	
Providence	-3,038.35	2,052.69	-234.34	227.69	10.15	396.58	0	0	-585.58
Cranston	1,873.79	10,948.66	0	1,065.75	0	0	1,919.00	0	15,807.20
Johnston	564.80	6,446.45	0	0	0	0	1,401.25	0	8,412.50
North Providence	821.60	4,078.75	0	0	0	0	6,900.55	256.23	12,057.13
Totals	221.84	23,526.55	-234.34	1,293.44	10.15	396.58	10,220.80	256.23	35,691.25

TABLE 28

## PUBLIC WATER MAINS IN USE ON SEPTEMBER 30, 1965

	Providence		Cranston		Johnston		North Providence		Total*		Special High Pressure Fire Service Providence	
	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles
6-inch	1,480,549.05	280.41	623,842.50	118.15	118,089.98	22.37	158,332.06	29.99	2,380,813.59	450.91	82.06	0.02
8-inch	336,356.88	63.70	340,429.31	64.48	162,116.55	30.70	119,295.16	22.59	958,197.91	181.48	1,233.44	0.23
10-inch	12,172.78	2.31	0	0	0	0	0	0	12,172.78	2.31	0	0
12-inch	240,949.06	45.63	105,055.89	19.90	10,855.71	2.06	32,633.90	6.18	389,494.56	73.77	6,157.02	1.17
16-inch	145,029.20	27.47	3,512.31	0.66	6,393.63	1.21	0	0	154,935.14	29.34	55,726.64	10.55
20-inch	20,172.24	3.82	0	0	0	0	0	0	20,172.24	3.82	0	0
24-inch	56,375.11	10.68	6,301.43	1.19	32,749.23	6.20	9,269.26	1.76	104,695.03	19.83	4,299.44	0.81
30-inch	43,992.47	8.33	31,894.62	6.04	0	0	4,009.29	0.76	79,896.38	15.13	0	0
36-inch	4,555.68	0.86	5,511.13	1.05	0	0	0	0	10,066.81	1.91	0	0
42-inch	2,893.25	0.55	22,607.49	4.28	0	0	0	0	25,500.74	4.83	0	0
48-inch	14,918.00	2.83	1,710.97	0.32	394.00	0.07	0	0	17,022.97	3.22	0	0
60-inch	5,559.00	1.05	12,910.89	2.45	4,340.00	0.82	0	0	22,809.89	4.32	0	0
66-inch	0	0	8,448.00	1.60	0	0	0	0	8,448.00	1.60	0	0
Totals	2,363,522.72	447.64	1,162,224.54	220.12	334,939.11	63.43	323,539.67	61.28	4,184,226.04	792.47	67,498.60	12.78

\*Special High Pressure Fire Service Included.

The length of 6-inch mains tabulated for Providence includes 691.45 feet in Pawtucket.

"	"	"	12-inch	"	"	"	"	44.47	"	"	"
"	"	"	12-inch	"	"	"	Johnston	146.00	"	"	Smithfield.
"	"	"	6-inch	"	"	"	North Providence	179.30	"	"	Pawtucket.

TABLE 29  
GATES IN USE ON SEPTEMBER 30, 1965

Stop Gates												Gates on Public Fire Hydrants				Gates on Unwatering Hydrants			Gates on Blow-offs				Total Number of Gates
PROVIDENCE																							
6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	Total	6"	8"	Total	6"	8"	12"	Total				
4,499	959	17	635	273	28	72	36	6	3	10	0	6,538	1,412	1,552	2,964	2	14	16	1	2	1	4	9,522
CRANSTON																							
6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	Total	6"	8"	Total	6"	8"	12"	Total				
1,725	829	0	211	9	0	11	16	13	13	4	1	2,832	1,043	5	1,048	3	5	8	0	2	3	5	3,893
JOHNSTON																							
6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	Total	6"	8"	Total	6"	8"	12"	Total				
325	340	1	29	12	6	5	0	0	0	2	0	720	269	11	280	3	0	3	0	0	2	2	1,005
NORTH PROVIDENCE																							
6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	Total	6"	8"	Total	6"	8"	12"	Total				
434	249	0	73	0	0	5	1	1	0	0	0	763	297	0	297	0	3	3	0	0	0	0	1,063
TOTALS																							
6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	Total	6"	8"	Total	6"	8"	12"	Total				
6,983	2,377	18	948	294	34	93	53	20	16	16	1	10,853	3,021	1,568	4,589	8	22	30	1	4	6	11	15,483

NOTE: The above table includes all gates in the special high pressure fire system in Providence and gates on Neutaconkanut Conduit and Scituate Aqueduct east of the Siphon Chamber.

TABLE 30

## SERVICE PIPES INSTALLED AND REMOVED--YEAR ENDED SEPTEMBER 30, 1965

City or Town	INSTALLED				REMOVED			
	General		Fire Supply		General		Fire Supply	
	Copper 3/4"-2"	Cast Iron 4"-12"	Cast Iron 4"-12"	Total	Lead or Copper 1/2"-2"	Cast Iron 4"-12"	Cast Iron 4"-12"	Total
Providence	255	16	11	282	270	12	3	285
Cranston	378	5	5	388	104	1	0	105
Johnston	117	1	0	118	2	0	0	2
North Providence	176	2	0	178	6	0	0	6
Totals	926	24	16	966	382	13	3	398

TABLE 31

## NUMBER AND SIZE OF ACTIVE SERVICES--YEAR ENDED SEPTEMBER 30, 1965

	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	16"	24"	30"	Totals
Providence	230	25,265	7,321	1,610	529	336	517	6	988	875	71	4	7	2	0	0	37,761
Cranston	5	6,994	7,723	1,421	42	303	286	0	81	77	27	0	4	0	1	1	16,965
Johnston	0	768	2,168	627	10	115	49	0	8	8	2	0	0	0	0	0	3,755
North Providence	0	1,083	2,211	641	6	178	64	0	18	8	4	0	2	0	0	0	4,215
Totals	235	34,110	19,423	4,299	587	932	916	6	1,095	968	104	4	13	2	1	1	62,696

TABLE 32

## PUBLIC FIRE HYDRANTS

HYDRANT ACTIVITIES DURING YEAR ENDED SEPTEMBER 30, 1965

	Providence	Cranston	Johnston	North Providence	Totals
Post Hydrants Installed	162	60	8	10	240
Post Hydrants Removed	6	16	6	6	34
Flush Hydrants Removed	151	0	0	0	151

## HYDRANTS IN DISTRIBUTION SYSTEM ON SEPTEMBER 30, 1965

Post Hydrants	2,389	1,049	295	300	4,033
Flush Hydrants	762	0	0	0	762
Totals	3,151	1,049	295	300	*4,795

\*Includes Post Hydrants and Flush Hydrants in Special High Pressure Fire Service in Providence.

TABLE 33  
NUMBER, MAKE AND SIZE OF METERS ON ACTIVE SERVICES  
YEAR ENDED SEPTEMBER 30, 1965

PROVIDENCE													
Make	5/8"	3/4"	1"	1½"	2"	3"	4"	6"	8"	10"	12"	16"	Total
Trident	25,672	2,724	807	1,082	1,383	87	69	60	15	5	-	-	31,904
Thomson	4,645	450	264	52	119	2	4	-	-	-	-	-	5,536
Empire	39	-	8	40	18	1	-	-	-	-	-	-	106
Crown	15	5	3	2	1	-	-	-	-	-	-	-	26
Hersey	-	-	-	2	3	2	13	68	6	-	-	-	94
Venturi	-	-	-	-	-	-	-	-	-	-	-	2	2
Totals	30,371	3,179	1,082	1,178	1,524	92	86	128	21	5	-	2	37,668

*CRANSTON													
Make	5/8"	3/4"	1"	1½"	2"	3"	4"	6"	8"	10"	12"	16"	Total
Trident	13,789	904	350	245	263	2	6	13	4	1	1	-	15,578
Thomson	1,193	36	22	8	11	-	-	-	-	-	-	-	1,270
Empire	7	-	-	-	-	-	-	-	-	-	-	-	7
Hersey	-	-	-	-	1	-	-	3	4	-	-	-	8
Venturi	-	-	-	-	-	-	-	-	-	-	2	-	2
Totals	14,989	940	372	253	275	2	6	16	8	1	3	-	16,865

\*Includes 1-6" Trident Compound Meter supplying City of Warwick.  
2-6" Trident Protectus Meters supplying City of Warwick.  
1-10" Trident Protectus Meter supplying City of Warwick.  
1-12" Trident Crest Meter supplying Kent County Water Authority.  
1-12" Venturi Meter supplying Kent County Water Authority at Water Purification Works.

*JOHNSTON													
Make	5/8"	3/4"	1"	1½"	2"	3"	4"	6"	8"	10"	12"	16"	Total
Trident	2,983	418	82	34	39	-	-	-	1	-	-	-	3,557
Thomson	180	10	4	-	-	-	-	-	-	-	-	-	194
Totals	3,163	428	86	34	39	-	-	-	1	-	-	-	3,751

\*Includes 1-8" Trident Crest Meter supplying East Smithfield Water Co.

*NORTH PROVIDENCE													
Make	5/8"	3/4"	1"	1½"	2"	3"	4"	6"	8"	10"	12"	16"	Total
Trident	3,259	405	184	48	31	1	2	3	-	-	1	-	3,934
Thomson	260	7	6	1	1	-	-	-	-	-	-	-	275
Empire	-	-	-	1	-	-	-	-	-	-	-	-	1
Hersey	-	-	-	-	-	-	-	5	-	-	-	-	5
Venturi	-	-	-	-	-	-	-	-	-	-	1	-	1
Totals	3,519	412	190	50	32	1	2	8	-	0	2	-	4,216

\*Includes 1-12" Trident Crest Meter supplying East Smithfield Water Co.  
1-12" Venturi Meter supplying Town of Smithfield.



TABLE 34  
CAPACITY AND CONSUMPTION

Year Ended Sept. 30	Purification Works Capacity M.G.D.	Total During Year M.G.	Average M.G.D.	Consumption			Rate in M.G.D.	Maximum Hour	
				Total M.G.	Maximum Day Percent of Plant Capacity	Percent of Average Day		Percent of Plant Capacity	Percent of Average Day
1941	61.6	11,020.9	30.2	40.8	66.2	135.1	66.7	108.3	220.9
1942	61.6	11,409.3	31.3	38.3	62.2	122.4	54.7	88.8	174.8
1943	61.6	11,586.8	31.7	46.7	75.8	147.3	77.0	125.0	242.9
1944	61.6	12,538.9	34.3	49.5	80.4	144.3	69.8	113.3	203.5
1945	61.6	12,528.9	34.3	43.6	70.8	127.1	71.3	115.7	207.9
1946	61.6	12,685.3	34.8	50.5	82.0	145.1	82.1	133.3	235.9
1947	61.6	13,169.0	36.1	49.8	80.8	138.0	71.8	116.6	198.7
1948	61.6	13,644.7	37.3	54.7	88.8	146.6	82.3	133.6	220.6
1949	61.6	13,510.3	37.0	60.2	97.7	162.7	89.3	145.0	241.4
1950	61.6	13,373.8	36.6	62.0	100.6	169.4	98.4	159.7	268.9
1951	61.6	13,721.6	37.6	56.4	91.6	150.0	91.2	148.1	242.6
1952	61.6	13,829.3	37.8	70.0	113.6	185.2	110.4	179.2	292.1
1953	61.6	14,182.8	38.9	66.4	107.8	170.7	100.8	163.6	259.1
1954	105.0	13,840.6	37.9	68.6	65.3	181.0	118.1	112.5	311.6
1955	105.0	14,933.0	40.9	70.2	66.9	171.6	117.1	111.5	286.3
1956	105.0	15,145.2	41.4	68.8	65.5	166.2	103.6	98.7	250.2
1957	105.0	15,963.8	43.7	84.7	80.7	193.8	131.0	124.8	299.8
1958	105.0	14,761.0	40.4	68.5	65.2	169.6	108.7	103.5	269.1
1959	105.0	15,430.0	42.3	71.1	67.7	168.1	111.5	106.2	263.6
1960	105.0	15,859.0	43.3	77.4	73.7	178.8	120.3	114.6	277.8
1961	105.0	16,495.9	45.2	69.3	66.0	153.3	112.3	107.0	248.5
1962	105.0	16,687.5	45.7	73.8	70.3	161.5	112.5	107.1	246.2
1963	105.0	17,488.8	47.9	87.2	83.0	182.0	129.3	123.1	269.9
1964	105.0	18,383.0	50.2	86.0	81.9	171.3	139.6	133.0	278.1
1965	105.0	19,470.6	53.3	88.5	84.3	166.0	134.1	127.7	251.6

TABLE 35

## CONSUMPTION OF WATER - MILLION GALLONS

YEAR ENDED SEPTEMBER 30, 1965

1964 1965	Low Service (1)			Total	High Service (2)			Total	Total Service (1,2)			Total
	Max. Day	Min. Day	Avg. Day		Max. Day	Min. Day	Avg. Day		Max. Day	Min. Day	Avg. Day	
October	50.14	29.45	43.37	1,344.34	8.79	6.80	8.16	252.87	58.81	36.25	51.52	1,597.21
November	47.36	28.53	41.12	1,233.56	8.72	6.87	8.06	241.68	55.78	35.60	49.17	1,475.24
December	47.29	28.27	40.04	1,241.16	8.68	6.68	7.96	246.66	55.27	34.95	47.99	1,487.82
January	45.87	27.55	39.73	1,231.80	8.51	6.73	7.93	245.69	54.28	34.28	47.66	1,477.49
February	46.20	28.77	39.85	1,115.79	8.54	7.11	8.09	226.39	54.35	35.88	47.94	1,342.18
March	43.63	29.32	38.33	1,188.19	9.12	6.62	8.00	247.93	51.82	36.45	46.33	1,436.12
April	43.31	28.20	38.87	1,166.23	8.89	6.74	8.02	240.56	52.18	34.94	46.89	1,406.79
May	62.77	32.23	44.46	1,378.18	13.08	7.52	9.52	295.15	75.85	39.75	53.98	1,673.33
June	73.28	33.54	54.23	1,626.75	15.22	7.83	11.02	330.61	88.46	41.36	65.25	1,957.36
July	64.84	27.77	51.66	1,601.60	14.92	7.10	11.66	361.50	79.61	34.86	63.33	1,963.10
August	67.54	33.16	52.11	1,615.50	14.59	8.13	11.26	348.98	81.69	41.29	63.37	1,964.48
September	57.46	32.11	46.47	1,394.16	11.59	6.41	9.84	295.33	69.05	38.51	56.32	1,689.49
For Year	73.28(a)	27.55(b)	44.21	16,137.26	15.22(c)	6.41(d)	9.13	3,333.35	88.46(e)	34.28(f)	53.34	19,470.61
	(a) June 23; (b) Jan. 1				(c) June 29; (d) Sept. 19				(e) June 23; (f) Jan. 1			

(1) Includes water supplied to City of Warwick, Kent County Water Authority and to State Institutions.

(2) Includes water supplied to East Smithfield Water Co. and Smithfield Water Department.

TABLE 36

## WATER SOLD TO STATE INSTITUTIONS AND CITY OF WARWICK

YEAR ENDED SEPTEMBER 30, 1965

	STATE INSTITUTIONS				CITY OF WARWICK					
	S.S. 50,767 Sockanosset Rd. Cranston 12"x5.50" Venturi Meter	S.S. 24,215A East St. Cranston 8" Tri-Prot. Meter	Total Gallons per Month	Average Gallons per Day	S.S. 47,269 Petta- consett Cranston 10" Tri- Protectus Meter	S.S. 47,475 Pawtuxet Bridge Cranston 6" Tri-Comp. Meter	S.S. 61,515 Oaklawn Avenue Cranston 6" Tri- Protectus Meter	S.S. 61,780 Dresden Street Cranston 6" Tri- Protectus Meter	Total Gallons per Month	Average Gallons per Day
1964										
1965										
October	49,297,000	45,450	49,342,450	1,591,692	98,912,775	655,718	5,137,875	13,369,396	118,075,764	3,808,896
November	44,782,000	138,675	44,920,675	1,497,356	85,580,775	676,867	4,682,550	15,180,726	106,120,918	3,537,364
December	47,980,000	586,725	48,566,725	1,566,669	96,327,525	Closed 12/1	5,007,750	2,536,350	103,871,625	3,350,698
January	39,318,000	17,400	39,335,400	1,268,884	96,418,650	0	5,212,050	3,931,875	105,562,575	3,405,244
February	36,458,000	12,450	36,470,450	1,302,516	89,045,625	0	5,025,825	4,447,725	98,519,175	3,518,542
March	40,233,000	3,225	40,236,225	1,297,943	96,484,350	Opened 4/26	5,488,800	4,437,825	106,410,975	3,432,612
April	35,849,000	9,150	35,858,150	1,195,272	98,769,075	192,615	6,001,425	4,834,950	109,798,065	3,659,936
May	35,137,000	13,200	35,150,200	1,133,877	154,697,956	1,194,210	10,673,550	17,151,075	183,716,791	5,926,348
June	46,266,000	57,825	46,323,825	1,544,128	215,314,656	3,277,050	18,313,725	33,260,700	270,166,131	9,005,538
July	41,035,694	45,375	41,081,069	1,325,196	159,193,180	2,425,347	19,327,200	40,201,425	221,147,152	7,133,779
August	42,407,333	3,375	42,410,708	1,368,087	159,193,180	2,425,347	16,629,975	28,793,775	207,042,277	6,678,783
September	39,566,000	36,525	39,602,525	1,320,084	154,057,922	2,347,116	8,937,450	13,049,850	178,392,338	5,946,411
For Year	498,329,027	969,375	499,298,402	1,367,941	1,503,995,669	13,194,270	110,438,175	181,195,672	1,808,823,786	4,955,682

TABLE 37

WATER SOLD TO EAST SMITHFIELD WATER COMPANY, SMITHFIELD WATER DEPARTMENT  
AND KENT COUNTY WATER AUTHORITY

YEAR ENDED SEPTEMBER 30, 1965

		EAST SMITHFIELD WATER COMPANY				SMITHFIELD WATER DEPT.		KENT COUNTY WATER AUTHORITY			
1964-1965		S.S.51,198 Waterman Street No. Prov. 12"	S.S.52,403 Dean Avenue Smithfield 8"	Total Gallons per Month	Average Gallons per Day	S.S.71,980 Smithfield Road North Providence 12" Flow Meter	Average Gallons per Day	S.S.58,985 Oaklawn Avenue Cranston 12"	S.S.60,757 Purification Works Scituate 12"	Total Gallons per Month	Average Gallons per Day
		Tri-Crest Meter	Tri-Crest Meter					Tri-Crest Meter	Venturi Meter		
		Gallons per Month	Gallons per Month			Gallons per Month	Gallons per Day	Gallons per Month	Gallons per Month		
63	October	8,166,750	4,559,250	12,726,000	410,516	Opened 12/11		5,433,000	20,680,000	26,113,000	842,355
	November	7,731,750	4,265,250	11,997,000	399,900			5,050,500	31,063,000	36,113,500	1,203,783
	December	7,830,000	5,655,750	13,485,750	435,024			7,600,500	40,619,000	48,219,500	1,555,468
	January	12,006,750	5,188,500	17,195,250	554,685	1,068,785	34,477	6,978,000	38,425,000	45,403,000	1,464,613
	February	8,236,500	4,173,000	12,409,500	443,196	154,500	5,518	6,386,250	33,638,000	40,024,250	1,429,438
	March	12,597,000	4,827,000	17,424,000	562,065	116,100	3,745	6,153,750	25,862,000	32,015,750	1,032,766
	April	11,086,500	4,220,250	15,306,750	510,225	196,800	6,560	5,499,750	17,621,000	23,120,750	770,692
	May	11,418,750	4,733,250	16,152,000	521,032	56,600	1,826	8,184,750	26,527,000	34,711,750	1,119,734
	June	13,177,500	5,523,000	18,700,500	623,350	991,200	33,040	9,234,000	30,721,000	39,955,000	1,331,833
	July	12,780,000	5,651,250	18,431,250	594,556	6,573,500	212,048	10,675,500	31,719,000	42,394,500	1,367,565
	August	13,060,500	5,645,250	18,705,750	603,411	28,219,500	910,306	9,227,250	27,816,000	37,043,250	1,194,944
	September	11,802,750	4,879,500	16,682,250	556,075	18,494,800	616,493	7,209,750	23,037,000	30,246,750	1,008,225
	For Year	129,894,750	59,321,250	189,216,000	518,400	56,595,800	192,503	87,633,000	347,728,000	435,361,000	1,192,770

TABLE 38

## AVERAGE DAILY CONSUMPTION OF WATER PER MONTH IN MILLION GALLONS

Year Ending Sept. 30	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
1877				2.27	2.26	1.84	2.25	2.53	2.94	2.91	2.76	3.01	2.53*
1878	2.61	2.22	2.30	2.16	2.15	2.20	2.32	2.85	2.89	3.88	3.12	3.17	2.66
1879	2.84	2.39	2.38	2.82	2.93	2.59	2.38	3.22	3.48	3.78	3.52	3.32	2.97
1880	3.38	2.89	2.97	2.94	2.86	2.90	2.96	3.68	5.05	4.18	3.92	3.82	3.46
1881	3.67	3.35	3.22	3.54	4.07	3.13	2.98	3.54	3.81	4.05	4.46	4.16	3.66
1882	3.92	3.60	3.38	3.30	3.27	3.06	3.05	3.24	4.02	4.69	5.09	3.84	3.70
1883	3.40	3.33	3.65	3.94	3.74	3.91	3.43	3.82	4.64	5.24	5.18	4.70	4.08
1884	3.81	3.67	3.58	4.24	3.87	3.90	3.43	3.79	4.70	4.38	4.06	4.82	4.02
1885	4.24	3.67	3.99	4.48	4.73	4.80	4.10	4.10	5.44	5.56	5.01	4.92	4.59
1886	4.37	4.20	4.71	4.82	4.75	4.83	4.33	4.53	4.93	6.02	4.88	4.94	4.78
1887	4.62	4.24	4.94	5.06	4.90	4.84	4.41	4.90	5.16	5.58	5.00	5.08	4.89
1888	4.80	4.40	5.10	5.44	5.79	5.39	4.86	4.84	6.17	6.51	5.87	5.32	5.37
1889	5.34	5.18	5.51	5.72	7.34	5.80	5.27	5.75	6.14	5.69	5.59	5.52	5.74
1890	5.41	5.17	6.14	6.34	6.79	6.28	6.84	6.60	6.90	8.11	7.13	6.72	6.54
1891	6.28	6.08	6.83	6.35	6.53	6.72	6.67	7.55	7.75	7.73	7.78	7.57	6.99
1892	7.53	7.32	7.69	7.65	7.83	7.62	7.27	6.77	8.37	9.30	9.11	8.63	7.92
1893	8.00	7.65	8.48	9.30	8.85	8.74	8.07	8.58	9.92	10.78	10.50	9.48	9.03
1894	8.79	7.85	8.61	9.11	9.07	9.09	8.73	9.97	11.28	12.39	10.76	10.22	9.66
1895	10.20	8.86	9.08	9.02	9.82	8.60	7.70	8.78	9.49	8.99	9.50	9.10	9.10
1896	8.15	8.19	9.56	10.19	8.79	8.74	8.60	9.26	9.64	9.93	9.70	8.83	9.13
1897	8.49	8.05	8.98	8.83	8.52	8.44	8.06	8.27	8.90	9.13	8.70	9.07	8.62
1898	8.76	8.29	8.63	8.56	9.09	8.68	8.38	8.35	10.04	10.10	9.44	9.84	9.01
1899	8.94	8.75	9.64	9.45	9.53	8.91	8.52	9.18	11.18	10.21	10.12	9.70	9.51
1900	9.15	9.27	9.53	9.81	9.49	9.66	9.23	8.59	10.48	12.11	10.95	11.71	10.00
1901	9.99	9.54	9.95	10.09	10.52	10.20	8.92	10.05	11.50	12.02	11.69	11.15	10.47
1902	10.91	10.70	11.02	11.65	11.00	10.92	10.52	10.48	11.85	12.09	11.97	11.66	11.23
1903	11.89	11.81	12.85	12.84	12.62	11.92	12.33	13.92	13.02	13.54	12.91	13.76	12.78
1904	13.09	13.89	13.49	14.29	14.58	13.42	12.07	12.72	13.94	14.21	13.18	13.85	13.56
1905	14.57	14.86	14.60	14.20	14.65	13.88	13.85	14.77	15.06	16.34	14.30	13.99	14.59
1906	13.73	14.96	14.63	15.00	15.07	14.77	14.49	15.01	15.69	15.08	15.74	16.06	15.02
1907	15.02	14.37	14.25	15.74	16.24	16.26	15.62	16.29	17.18	18.50	18.00	15.02	16.04
1908	15.34	15.13	15.34	15.46	16.07	15.21	14.53	14.67	16.63	16.77	15.42	15.62	15.52
1909	15.83	15.80	15.44	15.16	14.87	14.88	13.94	14.04	15.54	17.71	16.15	14.80	15.35
1910	14.76	14.66	15.28	15.62	15.65	15.22	14.74	14.72	15.53	17.13	15.95	15.61	15.40
1911	15.56	14.98	16.11	16.39	16.27	16.00	15.30	16.19	17.09	19.36	17.09	16.08	16.37
1912	16.29	16.49	16.44	18.12	18.14	17.16	16.39	16.70	17.32	20.54	17.62	17.06	17.36
1913	17.36	16.72	17.17	17.49	17.98	17.59	17.06	17.12	18.95	19.55	18.40	17.12	17.71
1914	16.76	16.87	17.27	17.83	18.52	17.60	16.99	17.43	20.24	17.62	17.09	18.51	17.73
1915	17.29	16.43	17.27	17.07	17.60	17.44	16.80	16.68	18.04	16.49	16.76	17.80	17.14
1916	16.90	17.03	17.79	18.16	18.47	18.57	17.43	17.57	17.82	17.90	16.58	18.76	17.75
1917	18.51	18.08	18.50	19.73	20.62	19.31	18.09	17.67	18.28	19.61	20.03	18.76	18.93
1918	18.62	18.71	20.64	23.82	22.98	23.07	22.43	22.31	21.85	22.23	21.50	20.63	21.56
1919	20.42	20.31	21.04	21.72	20.94	19.35	19.45	19.60	21.77	20.70	20.40	20.68	20.53
1920	20.62	20.18	21.64	23.80	23.16	23.03	20.67	20.45	20.98	21.06	21.58	21.89	21.59

\*Average for 9 months.

TABLE 38 (Continued)

## AVERAGE DAILY CONSUMPTION OF WATER PER MONTH IN MILLION GALLONS

Year Ending Sept. 30	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Avg. for Year
1921	21.41	20.46	20.97	21.64	21.43	20.77	20.21	20.92	22.84	21.18	21.63	22.86	21.36
1922	22.84	22.16	22.18	24.14	23.64	22.01	21.64	21.49	22.18	21.91	22.11	22.53	22.40
1923	22.78	23.23	23.08	23.66	24.96	23.84	22.95	24.12	24.49	23.90	24.08	24.31	23.78
1924	24.68	24.09	23.33	24.19	24.58	23.44	23.51	23.28	24.10	25.11	22.48	22.51	23.78
1925	22.84	23.70	23.76	24.22	23.61	22.70	23.13	23.03	24.82	23.54	23.20	23.81	23.53
1926	23.41	22.47	23.29	23.95	24.12	24.25	23.36	22.80	24.16	24.80	23.94	23.53	23.67
1927	21.76	22.60	23.24	22.92	22.41	22.57	22.32	22.68	23.62	23.27	22.27	23.27	22.74
1928	23.37	22.99	22.39	23.04	22.80	23.21	22.79	23.83	23.05	24.31	26.69	25.38	23.65
1929	26.82	25.54	26.17	26.84	27.01	25.42	23.05	22.91	25.73	26.53	24.94	24.24	25.43
1930	23.83	24.24	24.29	23.85	24.88	23.34	23.38	25.15	26.85	26.81	25.95	27.45	25.00
1931	26.30	24.04	23.80	23.71	24.36	23.64	23.11	23.76	25.35	26.20	26.22	26.31	24.73
1932	25.36	23.42	23.82	23.20	23.23	22.99	22.72	23.47	25.27	25.34	25.16	24.59	24.05
1933	24.15	23.65	23.51	24.00	24.25	24.01	23.41	25.32	26.92	28.77	27.65	26.00	25.14
1934	24.89	24.43	25.04	25.55	28.05	26.38	24.78	25.78	27.95	31.00	28.77	26.39	26.58
1935	26.50	25.39	25.16	26.35	27.06	26.31	25.71	27.02	27.47	29.47	31.14	28.23	27.15
1936	29.45	28.03	27.42	27.97	28.73	26.44	25.75	27.02	30.27	30.23	30.79	29.23	28.44
1937	27.94	26.72	27.06	25.77	26.13	27.16	25.73	25.93	28.45	31.43	31.85	29.18	29.79
1938	27.84	26.42	25.57	25.11	24.67	24.38	23.56	24.56	27.13	26.34	28.82	28.34	26.07
1939	27.90	27.21	26.85	27.07	27.62	27.16	26.25	27.48	30.84	32.81	33.62	30.31	28.77
1940	30.12	28.96	28.26	28.74	28.06	27.23	25.77	26.15	28.49	30.10	31.57	28.96	28.54
1941	29.55	27.86	28.36	28.67	29.02	28.78	29.07	29.91	31.74	32.87	32.66	33.78	30.19
1942	32.74	31.44	31.84	31.34	31.21	29.84	29.18	29.76	31.34	32.13	32.14	32.11	31.26
1943	29.88	29.27	30.40	29.93	30.67	30.35	30.05	29.65	35.13	36.35	35.47	33.71	31.74
1944	31.87	31.25	32.35	32.29	32.52	32.95	31.51	34.27	36.80	39.10	40.60	35.43	34.26
1945	33.77	32.77	33.33	34.89	34.57	33.78	33.37	33.23	35.44	35.73	36.34	34.67	34.32
1946	32.74	32.27	33.21	34.01	33.69	33.80	33.64	33.59	36.70	40.70	35.92	36.69	34.75
1947	36.37	35.34	35.58	35.95	35.83	35.01	33.27	33.94	35.72	37.35	39.34	39.21	36.08
1948	38.91	36.19	35.55	34.84	37.31	36.92	36.15	33.95	36.90	39.33	41.55	39.76	37.28
1949	36.27	35.34	35.11	33.98	34.00	33.88	33.12	35.12	46.65	44.56	40.18	35.77	37.01
1950	34.61	35.94	34.51	33.92	34.34	34.71	33.39	34.90	40.27	43.27	41.40	38.24	36.64
1951	39.96	36.91	34.80	36.10	35.92	34.81	34.21	37.21	39.31	43.49	39.98	38.20	37.59
1952	36.92	34.79	33.63	34.20	34.59	33.98	33.98	34.33	41.21	54.79	40.66	40.11	37.78
1953	37.09	35.75	35.27	34.59	33.95	34.20	34.61	35.63	50.68	46.76	43.63	43.95	38.86
1954	38.20	35.43	35.03	34.85	35.63	35.31	35.10	35.05	45.09	45.27	40.72	39.22	37.92
1955	39.84	37.82	37.17	37.24	38.42	37.85	37.00	41.54	44.52	49.90	47.08	42.25	40.91
1956	40.29	38.30	38.18	38.42	39.31	38.37	38.55	40.08	49.50	44.93	48.86	41.70	41.38
1957	40.78	38.65	36.74	39.14	38.43	36.98	38.50	44.48	60.45	57.12	48.16	45.16	43.74
1958	42.22	38.27	38.42	39.09	38.20	37.40	40.03	38.60	42.57	45.05	43.60	41.63	40.44
1959	40.35	38.01	39.35	39.34	39.46	38.65	39.04	44.02	45.05	45.16	51.33	47.28	42.27
1960	41.93	40.00	39.63	39.48	40.19	39.72	40.34	42.06	51.75	49.75	49.49	45.57	43.33
1961	42.22	42.53	40.99	41.24	43.54	42.26	41.00	42.96	51.71	51.06	52.80	50.01	45.19
1962	43.66	41.94	40.90	42.42	41.91	42.38	42.74	46.45	53.07	51.39	54.38	47.10	45.72
1963	45.86	44.44	43.38	44.26	44.81	44.80	45.77	47.96	55.81	55.87	54.40	47.58	47.91
1964	46.77	42.66	43.07	45.45	45.81	46.23	46.54	56.23	63.98	57.44	53.33	55.16	50.23
1965	51.52	49.17	47.99	47.66	47.94	46.33	46.89	53.98	65.25	63.33	63.37	56.32	53.34

TABLE 39

## FUEL OIL CONSUMPTION

YEAR ENDED SEPTEMBER 30, 1965

1964-1965	Administration and Operations Building	Water Purification Plant		Forestry and Maintenance Building	Neutaconkanut Pumping Station	Bath Street Pumping Station	Total	
	Gallons Used	Gallons Used		Gallons Used	Gallons Used	Gallons Used	Gallons Used	
	No.6	No.2	No.6	No.2	No.2	No.2	No.2	No.6
October	2,873	139	3,785	728	55	0	922	6,658
November	4,134	0	5,556	1,560	285	125	1,970	9,690
December	6,258	0	8,143	1,616	591	300	2,507	14,401
January	6,858	0	8,984	4,104	688	376	5,168	15,842
February	5,960	0	7,576	2,240	577	268	3,085	13,536
March	5,857	0	7,909	2,273	567	300	3,140	13,766
April	3,957	0	5,681	1,487	326	40	1,853	9,638
May	1,653	1,006	3,856	494	87	0	1,587	5,509
June	915	1,394	0	255	33	0	1,682	915
July	502	1,415	0	163	32	0	1,610	502
August	475	1,438	268	166	27	0	1,631	743
September	1,343	1,167	807	416	15	0	1,598	2,150
Totals	40,785	6,559	52,565	15,502	3,283	1,409	26,753	93,350

TABLE 40  
FINANCIAL STATEMENT OF THE PROVIDENCE WATER SUPPLY BOARD  
YEAR ENDED SEPTEMBER 30, 1965

REVENUE

Water Rents	\$3,113,868.26
Hydrant Rental	102,692.72
Electric Power	0.00
Setting Meters	5,475.00
Repairing Meters	1,687.18
Rents from Non-Operating Property	673.56
Repairs to Water Services	1,227.21
Repairs to Distribution Mains	6,966.54
Repairs to Hydrants	5,022.92
Repairs to Gates and Valves	244.75
Installation of New Fire Supplies	3,166.00
Installation of New Water Services	91,358.00
Installation of New Water Mains	115,577.01
Revolving Fund - Water Meters	9,098.31
Sale of Scrap Iron, Brass, Lead, Etc.	13,537.05
Sale of Pulpwood, Logs and Miscellaneous Timber Products	1,197.25
Sale of Material	1,003.41
Sale of Abandoned Mains	1,311.15
Sundries	1,963.61
<b>Total Revenue</b>	<b>\$3,476,069.93</b>

DISEURSEMENTS

OPERATING EXPENSE:

Salaries	\$909,566.65
Services Other Than Personal	144,679.11
Materials and Supplies	280,008.93
Special Items	21,782.45
Capital Outlay	63,619.90
Other Structures and Improvements (Water Main Extensions)	239,761.03
Taxes	469,802.12
Employees' Retirement System	68,671.00
Social Security F.O.A.S.I.	28,643.82
<b>Total Operating Expense</b>	<b>*\$2,226,535.01</b>
Interest on Floating Debt	5,614.60
Interest on Bonded Debt	289,206.25
Retirement-Serial Bonds	65,000.00
Retirement-Floating Debt	38,100.02
Depreciation and Extension Fund	750,000.00
Payable to Sinking Fund	** 101,614.05
<b>Total Disbursements</b>	<b>\$3,476,069.93</b>

Gross Water Rents	\$3,218,320.52
Minus Refunds (Current Year)	104,445.41
Minus Refunds (Prior Year)	6.85
<b>Net Water Rents</b>	<b>\$3,113,868.26</b>

\*See Table 41 for detailed account of Operating Expense.

\*\*Subject to change due to anticipated discounts on Outstanding Commitments.



TABLE 41

## WATER SUPPLY BOARD OPERATING EXPENSES

YEAR ENDED SEPTEMBER 30, 1965

## ADMINISTRATIVE

## Salaries:

001 Officials	\$32,338.44	
Clerical-Chief Engineer's Office	4,426.44	
Clerical-Accounting	42,261.79	
Engineering	67,240.52	
Labor-General	12,025.24	
008 Sick Leave Payrolls	2,605.76	
009 Vacation Payrolls	7,626.65	
034 Holiday Payrolls	3,627.07	
Total		\$172,151.91

## Services Other Than Personal:

102 Expert Consultant and Other Service Fees	\$ 30.00	
109 Fees Not Otherwise Classified	7,409.79	
111 Telephone and Telegraph	2,165.26	
112 Postage, Freight and Express	93.65	
115 Transportation of Persons-Conventions	78.24	
116 Transportation of Persons-Other	3.50	
117 Travel Subsistence-Conventions	171.50	
118 Travel Subsistence-Other	38.00	
119 Special Subsistence	7.61	
121 Printing, Binding and Reproduction Services	2,269.07	
122 Advertising	812.34	
131 Light and Power	1,800.00	
141 Repairs-Office Machinery	715.91	
142 Repairs-Automobiles	305.10	
146 Repairs-Plant Equipment	137.35	
150 Repairs-Structures and Improvements	275.65	
151 Maintenance and Servicing	177.88	
154 Installation of Communication Systems	48.25	
181 Laundry and Cleaning	108.00	
183 Dues and Subscriptions	121.00	
199 Miscellaneous Services	10,430.92	
Total	\$27,199.02	
Total--Services Other Than Personal		\$ 27,199.02

## Materials and Supplies:

201 Stationery and Office Supplies	\$ 1,391.48	
202 Small Tools and Shop Supplies	584.97	
211 Motor Fuel	893.39	
213 Tires and Tubes	138.40	
214 Repair Parts and Supplies-Trucks and Autos	334.94	
221 Repair Parts and Supplies-Office Machinery	93.00	
222 Repair Parts and Supplies-Plant Equipment	73.00	
229 Repair Parts and Supplies-Other Equipment	49.00	
231 Medical, Chemical and Laboratory Supplies	3.43	
241 Fuel	1,068.44	
244 Housekeeping Supplies and Minor Equipment	19.52	
259 Other Agricultural and Landscaping Supplies	44.59	
266 Lumber and Hardware	5.41	
268 Plumbing and Electrical Supplies	60.39	
299 Miscellaneous Materials and Supplies	42.00	
Total	\$4,801.96	
Total--Materials and Supplies		\$ 4,801.96

Special Items:

331 Payment of Claims and Damages	\$ 231.60	
350 Blue Cross and Physicians Service	2,224.30	
Total	\$ 2,455.90	
Total--Special Items		\$ 2,455.90

Capital Outlay:

501 Office Furniture, Machinery and Equipment	\$ 755.00	
502 Books, Maps and Charts	16.97	
511 Automobiles	1,611.40	
Total	\$ 2,383.37	
Total--Capital Outlay		\$ 2,383.37

Total--Administrative \$ 208,992.16

SOURCE OF SUPPLY

Hydro Electric Station:

Salaries:

001 Labor-Operation	\$ 10,083.70	
Repairs-Structures and Improvements	319.68	
Repairs-Machinery and Equipment	864.72	
Total		\$ 11,268.10

Services Other Than Personal:

111 Telephone and Telegraph	\$ 113.50	
143 Repairs-Construction and Other Automotive Equipment	37.85	
146 Repairs-Plant Equipment	156.80	
149 Repairs-Other Equipment	227.13	
150 Repairs-Structures and Improvements	30.16	
151 Maintenance and Servicing	997.27	
Total		\$ 1,562.71

Materials and Supplies:

201 Stationery and Office Supplies	\$ 283.09	
202 Small Tools and Shop Supplies	30.91	
212 Lubricants	77.52	
231 Medical, Chemical and Laboratory Supplies	42.00	
265 Fabricated Metal Products	248.75	
266 Lumber and Hardware	89.21	
267 Paint and Painters' Supplies	47.24	
268 Plumbing and Electrical Supplies	8.72	
271 Pipe	63.58	
272 Valves and Fittings	20.92	
Total		\$ 911.94

Water Purification Plant:

Salaries:

001 Supervision	\$ 19,954.27	
Labor-Operation	48,748.38	
Technical	24,086.05	
Clerical	4,705.50	
Repairs-Structures and Improvements	258.19	
Repairs-Machinery and Equipment	155.41	
Repairs-Care of Grounds and Buildings	3,464.34	
Total		\$101,372.14

Services Other Than Personal:

102	Expert Consultant and Other Service Fees	\$	10.00
111	Telephone and Telegraph		1,458.47
112	Postage, Freight and Express		9.71
115	Transportation of Persons-Conventions		157.20
117	Travel Subsistence-Conventions		200.25
121	Printing and Binding		394.74
122	Advertising		390.00
131	Heat, Light and Power (Gas)		4,489.24
141	Repairs-Office Machinery		85.56
142	Repairs-Trucks and Autos		27.22
143	Repairs-Construction and Other Automotive Equipment		148.23
146	Repairs-Plant Equipment		586.58
150	Repairs-Structures and Improvements		758.08
151	Maintenance and Servicing		1,112.35
181	Laundry and Cleaning		1,297.81
183	Dues and Subscriptions		5.25
199	Miscellaneous Services		648.00

Total

\$ 11,778.69

Materials and Supplies

201	Stationery and Office Supplies	\$	623.94
202	Small Tools and Shop Supplies		119.50
204	Wearing Apparel and Personal Supplies		64.68
211	Motor Fuel		184.12
213	Tires and Tubes		71.36
214	Repair Parts and Supplies-Trucks and Autos		18.92
222	Repair Parts and Supplies-Plant Equipment		1,651.95
229	Repair Parts and Supplies-Other Equipment		36.00
231	Ferric Sulphate		54,329.19
231	Lime		16,691.67
231	Chlorine		1,890.00
231	Sodium Silicofluoride		19,512.60
231	Miscellaneous Laboratory Supplies		3,134.67
241	Fuel		3,500.58
244	Housekeeping Supplies		774.76
252	Seeds, Fertilizer, Trees and Shrubs		613.20
262	Cement, Plaster and Related Products		17.82
265	Fabricated Metal Products		160.00
266	Lumber and Hardware		190.66
267	Paint and Painters' Supplies		240.63
268	Plumbing and Electrical Supplies		301.09
271	Pipe		29.03
272	Valves and Fittings		255.82
299	Miscellaneous Materials and Supplies		21.90

Total

\$104,434.09

Special Items:

302	Liability Insurance	\$	125.00
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Total

\$ 125.00

Scituate Reservoir:

Salaries:

001	Labor-Operation	\$	4,827.84
	Repairs-Care of Grounds		7,538.51

Total

\$ 12,366.35

Services Other Than Personal:

111	Telephone and Telegraph	\$	41.78
142	Repairs-Trucks and Autos		731.44
149	Repairs-Other Equipment		8,379.51

Total

\$ 9,152.73

Materials and Supplies:		
213	Tires and Tubes	\$ 36.80
252	Seeds, Fertilizer, Trees and Shrubs	934.36
266	Lumber and Hardware	112.27
267	Paint and Painters' Supplies	109.00
Total		\$ 1,192.43
Capital Outlay:		
511	Automobiles	\$ 1,775.00
Total		\$ 1,775.00
Other Reservoirs:		
Salaries:		
001	Labor-Operation	\$ 4,883.55
	Repairs-Care of Grounds	4,166.51
	Repairs-Structures and Improvements	41.78
Total		\$ 9,091.84
Services Other Than Personal:		
142	Repairs-Trucks and Autos	\$ 125.50
Total		\$ 125.50
Materials and Supplies:		
213	Tires and Tubes	\$ 111.92
214	Repair Parts and Supplies-Trucks and Autos	42.40
Total		\$ 154.32
Forestry and Maintenance:		
Salaries:		
001	Supervision	\$ 9,070.53
	Labor-Operation	2,529.47
	Repairs-Care of Grounds	14,114.39
Total		\$ 25,714.39
Services Other Than Personal:		
102	Expert Consultant and Other Service Fees	\$ 274.50
109	Fees Not Otherwise Classified	8.00
111	Telephone and Telegraph	78.29
115	Transportation of Persons-Conventions	13.31
116	Transportation of Persons-Other	6.00
117	Travel Subsistence-Conventions	64.30
118	Travel Subsistence-Other	3.46
142	Repairs-Trucks and Autos	447.78
143	Repairs-Construction and Other Automotive Equipment	162.10
149	Repairs-Other Equipment	38.71
183	Dues and Subscriptions	9.00
199	Miscellaneous Services	48.00
Total		\$ 1,153.45
Materials and Supplies:		
201	Stationery and Office Supplies	\$ 71.90
202	Small Tools and Shop Supplies	245.49
204	Wearing Apparel and Personal Supplies	406.57
212	Lubricants	199.22
213	Tires and Tubes	141.00
214	Repair Parts and Supplies-Trucks and Autos	244.36
229	Repair Parts and Supplies-Other Equipment	885.19

241	Fuel	\$ 1,741.97
244	Housekeeping Supplies and Minor Equipment	93.08
252	Seeds, Fertilizer, Trees and Shrubs	625.40
259	Other Agricultural, Horticultural and Landscaping Supplies	2,249.76
265	Fabricated Metal Products	23.97
266	Lumber and Hardware	84.97
267	Paint and Painters' Supplies	81.79
268	Plumbing and Electrical Supplies	3.72
299	Miscellaneous Materials and Supplies	12.10
Total		\$ 7,110.49
Special Items:		
331	Payments of Claims and Damages	\$ 25.00
Total		\$ 25.00
Capital Outlay:		
502	Books, Maps and Charts	\$ 4.29
512	Trucks and Tractors	2,395.00
561	Shop and Plant Equipment	90.16
571	Agricultural and Landscaping Equipment	1,128.16
591	Equipment Not Otherwise Classified	1,958.00
Total		\$ 5,575.61
General:		
Salaries:		
001	Clerical	\$ 1,780.24
	Labor-Operation	9,078.80
	Repairs-Machinery and Equipment	122.76
	Repairs-Care of Grounds	5,019.35
	Repairs-Care of Grounds-Rockland Cemetery	513.95
008	Sick Leave Payrolls	4,850.20
009	Vacation Payrolls	8,132.75
034	Holiday Payrolls	2,776.47
Total		\$ 32,274.52
Services Other Than Personal:		
102	Expert Consultant and Other Service Fees	\$ 5.00
109	Fees Not Otherwise Classified	166.75
112	Postage, Freight and Express	100.00
121	Printing and Binding	165.67
142	Repairs-Trucks and Autos	89.20
151	Maintenance and Servicing	412.84
199	Miscellaneous Services	6,432.72
Total		\$ 7,372.18
Materials and Supplies:		
201	Stationery and Office Supplies	\$ 53.80
211	Motor Fuel	1,710.61
212	Lubricants	40.20
213	Tires and Tubes	136.08
214	Repair Parts and Supplies-Trucks and Autos	219.26
231	Medical, Chemical and Laboratory Supplies	321.52
244	Housekeeping Supplies and Minor Equipment	17.59
252	Seeds, Fertilizer, Trees and Shrubs	74.97
259	Other Agricultural and Landscaping Supplies	43.37
261	Gravel, Sand and Stone	44.04
265	Fabricated Metal Products	220.50
266	Lumber and Hardware	68.48
269	Construction Materials Not Otherwise Classified	319.36
Total		\$ 3,269.78

Special Items:		
350 Blue Cross and Physicians Service	\$ 2,371.80	
Total		\$ 2,371.80
Capital Outlay:		
591 Equipment Not Otherwise Classified	\$ 704.00	
Total		\$ 704.00
Outstanding Commitments-Materials and Supplies		41.72
Total--Source of Supply		\$ 350,923.78

#### TRANSMISSION AND DISTRIBUTION

Pumping Station:		
Salaries:		
001 Labor-Operation	\$ 21,746.18	
Total		\$ 21,746.18
Services Other Than Personal:		
102 Expert Consultant and Other Service Fees	\$ 5.00	
109 Fees Not Otherwise Classified	94.98	
111 Telephone and Telegraph	279.73	
131 Light and Power	23,084.77	
146 Repairs-Plant Equipment	49.76	
149 Repairs-Other Equipment	535.00	
150 Repairs-Buildings	1,574.00	
151 Maintenance and Servicing	410.25	
181 Laundry and Cleaning	48.00	
199 Miscellaneous Services	36.00	
Total		\$ 26,117.49
Materials and Supplies:		
201 Stationery and Office Supplies	\$ 129.94	
202 Small Tools and Shop Supplies	1.98	
211 Motor Fuel	198.70	
214 Repair Parts and Supplies-Automotive and Construction Equipment	93.30	
222 Repair Parts and Supplies-Plant Equipment	37.25	
241 Fuel	493.69	
252 Seeds, Fertilizer, Trees and Shrubs	102.90	
259 Other Agricultural and Landscaping Supplies	28.15	
267 Paint and Painters' Supplies	167.62	
268 Plumbing and Electrical Supplies	52.92	
272 Valves and Fittings	12.96	
Total		\$ 1,319.41
Capital Outlay:		
501 Office Furniture, Machinery and Equipment	\$ 75.50	
Total		\$ 75.50
Pipe Lines:		
Salaries:		
001 Supervision	\$ 9,186.32	
Clerical	8,296.64	
Labor-Operation	110,189.36	
Repairs-Trucks and Autos	7,293.81	
Repairs-Care of Grounds and Buildings	9,316.29	

Repairs-Transmission Mains	\$ 712.55
Repairs-Distribution Mains	15,204.38
Repairs-Gates and Valves	19,980.77
Repairs-Hydrants	16,991.53
Repairs-Services	17,723.29
New Work-Distribution Mains	3,038.74
New Work-Gates and Valves	6,582.89
New Work-Hydrants	21,110.64
New Work-Services	48,520.68
New Work-Meters (Emergency)	230.28
Retirement Work-Distribution Mains	494.18
Retirement Work-Gates and Valves	418.52
Retirement Work-Hydrants	145.08
Retirement Work-Services	3,300.34
Total	\$298,736.29
Services Other Than Personal:	
102 Expert Consultant and Other Service Fees	\$ 218.00
109 Fees Not Otherwise Classified	56.50
111 Telephone and Telegraph	870.27
112 Postage, Freight and Express	493.56
131 Light and Power	262.40
141 Repairs-Office Machinery	48.01
142 Repairs-Trucks and Autos	2,002.69
143 Repairs-Construction and Other Automotive Equipment	1,637.15
150 Repairs-Buildings	34.00
151 Maintenance and Servicing	788.84
153 Repairs-Street Openings	10,646.70
154 Installation of Communication Systems	40.00
162 Rental-Automotive and Construction Equipment	196.00
163 Rental-Other Equipment	912.00
165 Rental of Land	273.00
181 Laundry and Cleaning	318.04
199 Miscellaneous Services	895.40
Total	\$ 19,692.56
Materials and Supplies:	
201 Stationery and Office Supplies	\$ 325.15
202 Small Tools and Shop Supplies	2,470.46
204 Wearing Apparel and Personal Supplies	98.60
211 Motor Fuel	5,436.55
212 Lubricants	303.56
213 Tires and Tubes	312.65
214 Repair Parts and Supplies-Trucks and Autos	3,358.19
231 Medical, Chemical and Laboratory Supplies	328.73
241 Fuel-Kerosene Oil	309.12
244 Housekeeping Supplies and Minor Equipment	205.23
261 Gravel, Sand and Stone	304.85
262 Cement, Plaster and Related Products	515.48
265 Fabricated Metal Products	31.16
266 Lumber and Hardware	652.78
267 Paint and Painters' Supplies	814.15
268 Plumbing and Electrical Supplies	4,776.36
271 Pipe-Cast Iron	3,075.31
271 Pipe-Service	9,117.82
271 Pipe-Asbestos Cement	3,350.48
271 Pipe-Other	41.46
272 Hydrants, Valves and Fittings	78,670.67
272 Gates and Valves	22,075.63
279 Water System Materials and Supplies Not Otherwise Classified	5.80
299 Miscellaneous Materials and Supplies	180.00
Total	\$136,760.19

Special Items:		
331 Payment of Claims and Damages	\$ 8,031.50	
Total		\$ 8,031.50
Capital Outlay:		
512 Trucks and Tractors	\$ 26,863.00	
521 Construction and Engineering Equipment	1,410.00	
571 Agricultural and Landscaping Equipment	112.60	
Total		\$ 28,385.60
Other Structures and Improvements:		
721 New Main Extensions	\$212,317.78	
Total		\$212,317.78
Distribution Reservoirs:		
Services Other Than Personal:		
111 Telephone and Telegraph	\$ 50.00	
131 Light and Power	24.95	
151 Maintenance and Servicing	12.50	
159 Repairs-Other Structures	450.00	
Total		\$ 537.45
Materials and Supplies:		
201 Stationery and Office Supplies	\$ 47.85	
252 Seeds, Fertilizer, Trees and Shrubs	1,071.92	
259 Other Agricultural and Landscaping Supplies	449.40	
265 Fabricated Metal Products	11.50	
Total		\$ 1,580.67
General:		
Salaries:		
001 Labor-Operation	\$ 1,089.45	
Repairs-Structures and Improvements	553.36	
Repairs-Trucks and Autos	2,862.32	
008 Sick Leave Payrolls	7,023.43	
009 Vacation Payrolls	15,241.86	
025 Injured Employees' Payrolls	2,342.72	
034 Holiday Payrolls	4,406.84	
Total		\$ 33,519.98
Services Other Than Personal:		
169 Rentals Not Otherwise Classified	\$ 36.41	
181 Laundry and Cleaning	108.00	
199 Miscellaneous Services	36.00	
Total		\$ 180.41
Materials and Supplies:		
201 Stationery and Office Supplies	\$ 220.02	
241 Fuel	619.44	
244 Housekeeping Supplies and Minor Equipment	14.70	
Total		\$ 854.16
Special Items:		
350 Blue Cross and Physicians Service	\$ 4,472.20	
361 Expenses for Various Ceremonies	1,011.75	
Total		\$ 5,483.95
Outstanding Commitments-Services Other Than Personal		39.35
Outstanding Commitments-Materials and Supplies		1,076.95
Outstanding Commitments-New Main Extensions		27,443.25
Total--Transmission and Distribution		\$ 823,898.67



# METERING

## Salaries:

001	Supervision	\$ 15,509.70	
	Clerical	56,201.37	
	Labor-Operation	42,228.04	
	Repairing Meters	11,330.51	
	Removing and Setting Meters	19,805.61	
	Testing Meters	4,883.13	
	Inspection-Services	4,132.36	
	General-Operation	17,248.95	
008	Sick Leave Payrolls	7,510.82	
009	Vacation Payrolls	8,644.95	
025	Injured Employees' Payroll	42.39	
034	Holiday Payrolls	3,787.12	
Total			\$191,324.95

## Services Other Than Personal:

102	Expert Consultant and Other Service Fees	\$ 110.40	
109	Fees Not Otherwise Classified	28.50	
111	Telephone and Telegraph	2,000.00	
112	Postage, Freight and Express	666.00	
116	Transportation of Persons-Carfares	1,062.80	
121	Printing and Binding	189.40	
131	Light and Power	1,907.17	
141	Repairs-Office Machinery, Furniture and Furnishings	1,345.79	
142	Repairs-Trucks and Autos	817.70	
146	Repairs-Plant Equipment	124.43	
150	Repairs-Structures and Improvements	23.00	
151	Maintenance and Servicing	591.43	
181	Laundry and Cleaning	1,774.69	
199	Miscellaneous Services	29,126.26	
Total			\$ 39,767.57

## Materials and Supplies:

201	Stationery and Office Supplies	\$ 4,576.45	
202	Small Tools and Shop Supplies	315.00	
204	Wearing Apparel and Personal Supplies	413.28	
211	Motor Fuel	1,473.78	
212	Lubricants	108.68	
213	Tires and Tubes	263.58	
214	Repair Parts and Supplies-Trucks and Autos	716.80	
222	Repair Parts and Supplies-Machinery and Equipment	20.42	
231	Medical, Chemical and Laboratory Supplies	78.56	
241	Fuel	616.37	
244	Housekeeping Supplies and Minor Equipment	298.21	
252	Seeds, Fertilizer, Trees and Shrubs	35.67	
268	Plumbing and Electrical Supplies	666.66	
272	Valves and Fittings	351.64	
274	Meter Parts	6,430.15	
299	Miscellaneous Materials and Supplies	95.57	
Total			\$ 16,460.82

## Special Items:

331	Payment of Claims and Damages	\$ 180.00	
350	Blue Cross and Physicians Service	3,109.30	
Total			\$ 3,289.30

Capital Outlay:

501 Office Furniture, Machinery and Equipment  
511 Automobiles  
512 Trucks and Tractors

\$ 12,366.82  
1,394.00  
1,535.00

Total  
Outstanding Commitments-Materials and Supplies  
Outstanding Commitments-Capital Outlay

\$ 15,295.82  
40.00  
9,425.00

Total--Metering

\$ 275,603.46

Taxes  
Employees' Retirement System  
Social Security F.O.A.S.I.

469,802.12  
68,671.00  
28,643.82

TOTAL OPERATING EXPENSE

\$2,226,535.01

TABLE 42  
STATEMENT OF REVENUE - ESTIMATED AND ACTUAL  
YEAR ENDED SEPTEMBER 30, 1965

Account	Estimated Revenue	Actual Revenue
Water Rents	\$2,950,000.00	\$3,113,868.26
Hydrant Rental	99,000.00	102,692.72
Electricity	10,000.00	0.00
Stores Account (Meters)	9,000.00	9,098.31
Repairing and Setting Meters	7,000.00	7,162.18
Fire Supplies and Miscellaneous Repairs	11,000.00	16,627.42
New Service Installations	84,000.00	91,358.00
New Main Extensions	120,000.00	115,577.01
Rentals	500.00	673.56
Other Miscellaneous Receipts	9,500.00	19,012.47
Total	\$3,300,000.00	\$3,476,069.93

TABLE 43  
SUMMARY OF ANNUAL WATER WORKS REVENUES 1930-1965

Fiscal Years Ended September 30	Receipts from Sale of Water	Miscellaneous Receipts	Total
1930	\$1,384,369.54	\$218,844.87	\$1,603,214.41
1931	1,414,836.00	237,172.64	1,652,008.64
1932	1,375,450.77	223,058.31	1,598,509.08
1933	1,345,444.69	212,066.79	1,557,511.48
1934	1,387,876.73	184,133.47	1,572,010.20
1935	1,409,269.47	237,518.68	1,646,788.15
1936	1,427,881.10	265,357.71	1,693,238.81
1937	1,429,107.08	229,317.39	1,721,424.47
1938	1,426,986.49	106,359.70	1,533,346.19
1939	1,491,918.63	124,901.37	1,616,820.00
1940	1,551,917.24	115,540.98	1,667,458.22
1941	1,615,351.79	114,960.58	1,730,312.37
1942	1,679,058.50	103,368.22	1,782,426.72
1943	1,629,268.35	86,580.98	1,715,849.33
1944	1,761,016.12	87,946.71	1,848,962.83
1945	1,812,311.82	99,271.44	1,911,583.26
1946	1,808,993.17	123,247.90	1,932,241.07
1947	1,877,471.18	124,372.47	2,001,843.65
1948	2,005,242.58	222,419.41	2,227,661.99
1949	2,031,633.37	229,317.72	2,260,951.09
1950	2,082,814.82	199,061.80	2,281,876.62
1951	2,078,209.84	214,868.70	2,293,078.54
1952	2,053,427.76	322,761.07	2,376,188.83
1953	2,093,625.85	343,477.23	2,437,103.08
1954	2,146,947.18	302,707.38	2,449,654.56
1955	2,166,180.84	379,010.13	2,545,190.97
1956	2,236,331.86	371,715.61	2,608,047.47
1957	2,262,879.80	322,948.62	2,585,828.42
1958	2,273,583.77	318,752.87	2,592,336.64
1959	2,255,865.23	374,493.67	2,630,358.90
1960	2,528,805.97	330,120.32	2,858,926.29
1961	2,758,603.26	351,179.65	3,109,782.91
1962	2,794,556.45	440,769.75	3,235,326.20
1963	2,947,872.00	366,756.30	3,314,628.30
1964	2,986,556.95	441,238.98	3,427,795.93
1965	3,113,868.26	362,201.67	3,476,069.93

TABLE 44

## STATEMENT OF WATER WORKS DEPRECIATION AND EXTENSION FUND

YEAR ENDED SEPTEMBER 30, 1965

	Investment	Cash	Due From Other Funds	Total
Balance September 30, 1964	\$200,000.00	\$212,009.32	\$600,000.00	\$1,012,009.32
Increase During Year Ended September 30, 1965		720,002.38		
Disbursements During Year Ended September 30, 1965		536,820.00	600,000.00	
Accounts Receivable Year Ended September 30, 1965			750,000.00	
Balance September 30, 1965	\$200,000.00	\$395,191.70	\$750,000.00	\$1,345,191.70

TABLE 45

STATEMENT OF WATER SUPPLY BOARD BONDS OUTSTANDING AND  
SINKING FUND REQUIREMENTS ON A 3% BASIS

YEAR ENDED SEPTEMBER 30, 1965

Bonds Payable from Sinking Fund	Rate of Interest %	Year of Issue	Maturity	Issued	Outstanding	Sinking Fund Requirements on a 3% Basis
Water Supply	4	1928	1968	\$1,500,000.00	\$1,500,000.00	\$1,345,835.34
Total Water Supply Debt and Sinking Fund Requirements					\$1,500,000.00	\$1,345,835.34
Sinking Fund Assets Allocated to Water Supply Debt per City Controller's Report on Sinking Fund September 30, 1965 (Includes \$101,614.05 *Water Operating Balance for Year Ended September 30, 1965 plus Prior Year Adjustments of \$74.73 or a total of \$101,688.78)						\$2,259,814.96
Amount of Surplus of Requirements on 3% Basis						\$ 913,979.62

\*Subject to change due to anticipated discounts on Outstanding Commitments,  
see Table No. 41.

TABLE 46

## STATEMENT OF SERIAL BONDS OUTSTANDING

YEAR ENDED SEPTEMBER 30, 1965

Description	Rate of Interest %	Year of Issue	Maturity	Serial Requirement	Bonds Issued	Outstanding
Additions, Alterations and Improvements to the Water Purification Works	3 $\frac{1}{4}$	1962	1992	\$20,000.00	\$1,100,000.00	\$1,060,000.00
New 40 Million Gallon Distribution Reservoir	3 $\frac{1}{4}$	1962	1992	45,000.00	2,050,000.00	1,960,000.00
Total Serial Bonds and Requirements				\$65,000.00	\$3,150,000.00	\$3,020,000.00

TABLE 47

## STATEMENT OF FLOATING DEBT OUTSTANDING

YEAR ENDED SEPTEMBER 30, 1965

	Issued	Interest	Principal	Outstanding
Water Purification Improvements II Note No. 9977	\$273,000.00	**\$5,733.00	*\$54,600.00	\$163,800.00
Water Purification Improvements II Note No. 10023	19,000.00	** 498.75	4,750.00	14,250.00
Totals-Floating Debt	\$292,000.00	\$6,231.75	\$59,350.00	\$178,050.00

Note: Paid from Balance - New Aqueduct Reservoir Account \*\$21,249.98  
Paid from Balance - Purification Plant 3-91 and 3-92 \*\*\$617.15

TABLE 48

## A SUMMARY OF INVENTORIES OF PERSONAL PROPERTY

YEAR ENDED SEPTEMBER 30, 1965

REMOVABLE PROPERTY INVENTORY		\$163,761.00
SOURCE OF SUPPLY:		
Purification Works	\$25,860.81	
Laboratory	1,850.24	
General & Reforestation	7,269.30	34,980.35
TRANSMISSION AND DISTRIBUTION:		
Pipe Lines	\$123,366.61	
Pumping Stations	279.14	
Garage	5,960.28	129,606.03
METERING		47,929.20
SUPPLIES		4,990.65
Total Personal Property Inventory		\$381,267.23

TABLE 49

## STATEMENT OF STORES REVOLVING FUND

YEAR ENDED SEPTEMBER 30, 1965

Cash Balance September 30, 1964		\$10,000.00
Outstanding Commitments September 30, 1964		27,162.96
Receipts--October 1, 1964 to September 30, 1965		95,241.75
Total Available		\$132,404.71
Disbursements September 30, 1965	\$80,433.12	
Outstanding Commitments September 30, 1965	32,873.28	
Transferred as Income to General Fund	9,098.31	
Total Disbursements		\$122,404.71
Cash Balance September 30, 1965		\$ 10,000.00

TABLE 50

## STATEMENT OF THE MISCELLANEOUS WATER MAIN EXTENSIONS ACCOUNT

YEAR ENDED SEPTEMBER 30, 1965

Transferred from Depreciation and Extension Fund-July 29, 1957		\$ 15,000.00
Transferred from Depreciation and Extension Fund-July 15, 1958		50,000.00
Transferred from Depreciation and Extension Fund-May 21, 1959		60,000.00
Transferred from Depreciation and Extension Fund-July 7, 1961		35,000.00
Transferred from Depreciation and Extension Fund - July 24, 1962		75,000.00
Transferred from Depreciation and Extension Fund-Jan. 11, 1963		60,000.00
Transferred from Depreciation and Extension Fund-Sept. 13, 1963		15,000.00
Transferred to Acc't. 3-91 Purification Works-December 26, 1963		-1,014.57
Total Available		\$308,985.43
Disbursements September 30, 1965	\$307,108.83	
Outstanding Commitments September 30, 1965	NIL	
Total Disbursements		\$307,108.83
Cash Balance September 30, 1965		\$ 1,876.60

TABLE 51

## STATEMENT - ACCOUNT FOR INSERTING NEW VALVES

Transferred from Depreciation and Extension Fund - May 12, 1958		\$ 10,000.00
Transferred from Depreciation and Extension Fund - May 13, 1959		30,000.00
Transferred from Depreciation and Extension Fund - July 7, 1961		65,000.00
Transferred from Depreciation and Extension Fund - May 25, 1962		60,000.00
		<hr/>
Total Available		\$165,000.00
Disbursements September 30, 1965	\$137,102.57	
Outstanding Commitments September 30, 1965	Nil	
	<hr/>	
Total Disbursements		\$137,102.57
Cash Balance September 30, 1965		<hr/> \$ 27,897.43

TABLE 52

## ADDITIONS, ALTERATIONS AND IMPROVEMENTS AT THE WATER PURIFICATION WORKS

Authorized Bond Issue (Chapter 102, P. L. of R.I. 1959)		
Approved May 27, 1959 - Account 3-91		\$1,100,000.00
Authorized Floating Debt (Chapter 102, P. L. of R.I. 1959) (Reforestation Garage)		
Approved May 27, 1959 - Account 3-92 - \$300 000.00. Amount Issued		292,000.00
Transferred from Depreciation and Extension Fund June 15, 1960 - Account 3-93		550,000.00
Transferred from Depreciation and Extension Fund June 5, 1962 - Account 3-93		120,000.00
Income from Deposits for Plans Not Returned		75.00
Interest Rebated from Banks December 27, 1962		3,928.66
Transferred from Account 3-89 December 26, 1963		1,014.57
		<hr/>
Total Available		\$2,067,018.23
Disbursements September 30, 1965 - Account 3-91	\$1,105,468.56	
Disbursements September 30, 1965 - Account 3-92	291,549.67	
Disbursements September 30, 1965 - Account 3-93	670,000.00	
	<hr/>	
Total Disbursements		\$2,067,018.23
Cash Balance September 30, 1965 (Account Closed)		<hr/> Nil

TABLE 53

## NEW 40-MILLION GALLON WATER DISTRIBUTION RESERVOIR

Authorized Bond Issue (Chapter 103, P. L. of R.I. 1959) Approved May 27, 1959		\$2,150,000.00
Minus Adjustment to Bond Issue - December 11, 1962		100,000.00
		<hr/>
Corrected Authorized Bond Issue - December 11, 1962		\$2,050,000.00
Transferred from "Construction of New Aqueduct Reservoir Account"		
Closed September 30, 1959		49,759.28
Income from Deposits for Plans Not Returned		150.00
Interest Rebated from Banks - January 3, 1963		7,731.10
		<hr/>
Total Available		\$2,107,640.38
Disbursements September 30, 1965	\$2,107,640.38	
Outstanding Commitments September 30, 1965	Nil	
	<hr/>	
Total Disbursements		\$2,107,640.38
Cash Balance September 30, 1965 (Account Closed)		<hr/> Nil

TABLE 54

## REPAIRS TO STRUCTURES AT PONAGANSET AND COOMER RESERVOIRS

Transferred from Depreciation and Extension Fund - Res. No. 298		\$32,000.00
Transferred from Depreciation and Extension Fund - Res. No. 670		3,800.00
Total Available		<u>\$35,800.00</u>
Disbursements September 30, 1965	\$35,761.97	
Transferred to Depreciation and Extension Fund		
September 30, 1965	38.03	
Total Disbursements	<u>          </u>	\$35,800.00
Cash Balance September 30, 1965 (Account Closed)		<u>Nil</u>

TABLE 55

## REPAIRS AND RENOVATIONS TO THE HYDRO ELECTRIC STATION

Transferred from Depreciation and Extension Fund - Res. No. 616		\$125,000.00
Transferred from Depreciation and Extension Fund - Res. No. 299		35,000.00
Transferred from Depreciation and Extension Fund - Res. No. 669		13,000.00
Transferred from Depreciation and Extension Fund - Res. No. 262		3,500.00
Total Available		<u>\$176,500.00</u>
Disbursements September 30, 1965	\$175,697.72	
Transferred to Depreciation and Extension Fund	802.28	
Total Disbursements	<u>          </u>	\$176,500.00
Cash Balance September 30, 1965 (Account Closed)		<u>Nil</u>

TABLE 56

## NORTHWESTERLY TRUNK MAIN REINFORCEMENT ACCOUNT

Transferred from Depreciation and Extension Fund - Res. No. 707		\$415,000.00
Disbursements September 30, 1965	\$314,000.44	
Transferred to Depreciation and Extension Fund	100,999.56	
Total Disbursements	<u>          </u>	\$415,000.00
Cash Balance September 30, 1965 (Account Closed)		<u>Nil</u>



TABLE 57

## SOUTHEASTERLY TRUNK MAIN REINFORCEMENT ACCOUNT

Transferred from Depreciation and Extension Fund-Res. No. 261		\$372,000.00
Disbursements September 30, 1965	Nil	
Outstanding Commitments September 30, 1965 (Contract)	\$326,140.00	
Total Disbursements		<u>\$326,140.00</u>
Cash Balance September 30, 1965		<u>\$ 45,860.00</u>

TABLE 58

## PUMPS - BATH STREET PUMPING STATION ACCOUNT

Transferred from Depreciation and Extension Fund-Res. No. 297		\$60,000.00
Disbursements September 30, 1965	\$48,807.90	
Outstanding Commitments September 30, 1965	5,423.10	
Transferred to Depreciation and Extension Fund	5,769.00	
Total Disbursements		<u>\$60,000.00</u>
Cash Balance September 30, 1965 (Account Closed)		<u>Nil</u>

TABLE 59

## WATER WORKS IMPROVEMENTS

Transferred from Depreciation and Extension Fund-Res. No. 719		\$54,500.00
Disbursements September 30, 1965	\$47,106.49	
Transferred to Depreciation and Extension Fund	7,393.51	
Total Disbursements		<u>\$54,500.00</u>
Cash Balance September 30, 1965 (Account Closed)		<u>Nil</u>

TABLE 60

## TAXES PAID TO VARIOUS CITIES AND TOWNS

(OCTOBER 1, 1964 TO SEPTEMBER 30, 1965)

Location of Property	Land Area (Acres)	ASSESSED VALUATIONS			TAX	
		Land	Buildings and Improvements	Total	Rate per \$100	Amount Paid
City of Warwick	0.060	\$ 160.00	\$ 0	\$ 160.00	\$3.11	\$ 4.98
City of Cranston	110.757	28,840.00	942,340.00	971,180.00	--	42,489.17
Town of Foster	1,994.280	180,840.00	3,000.00	183,840.00	3.50	6,434.40
Town of Gloucester	73.300	14,700.00	0	14,700.00	4.19	615.93
Town of Johnston	103.130	-----	-----	364,100.00	--	26,579.30
Town of North Providence	8,529	30,900.00	185,100.00	216,000.00	3.55	7,668.04
Town of Scituate	13,149.970	890,000.00	7,410,000.00*	8,300,000.00*	--	385,950.00
Total Real Estate	15,440.026			\$10,049,980.00		\$469,741.82**

\*Includes \$10,000.00 Tangible Personal.

\*\*In addition to this amount, \$52.80 was paid to the West Gloucester Fire District and \$7.50 to the Harmony Fire District.

Notes: Cranston was paid four equal installments of \$8,255.03 @ \$3.40 per \$100 tax rate. A fifth payment of \$9,469.05 @ \$3.90 per \$100 was made due to an advance in tax collection dates.

Johnston was paid \$12,743.50 @ \$3.50 per \$100 tax rate. A second payment of \$13,835.80 @ \$3.80 per \$100 was made due to an advance in tax collection date.

Scituate was paid three equal installments of \$95,450.00 @ \$4.60 per \$100 tax rate and one payment of \$99,600.00 @ \$4.80 per \$100.

Land area in Scituate reduced as follows:

North Scituate Bypass Condemnation Plat 1377 Parcel No. 23 25.79 Acres

TABLE 61  
SUMMARY OF STATISTICS  
PROVIDENCE WATER SUPPLY BOARD  
YEAR ENDED SEPTEMBER 30, 1965

PROVIDENCE*	PROVIDENCE	RHODE ISLAND
(City or Town)	(County)	(State)

GENERAL STATISTICS

Population of Providence (1965 State Census)	187,061
Estimated population supplied in suburbs (1965)	196,574
Total population supplied	383,635
Date of construction	1870-76; 1915-28; 1935; 1938-40; 1954; 1960-62
By whom owned	City of Providence
Source of Supply	Surface water collected in Scituate Reservoir and five smaller reservoirs on north branch of Pawtuxet River.
Available storage capacity of six impounding reservoirs	39,746 m.g.
Mode of supply	82.9% by gravity; 17.1% by pumping

STATISTICS OF CONSUMPTION OF WATER

1. Estimated population supplied	383,635
2. Total raw water influent for the year, gallons	19,929,533,000
3. Average daily raw water influent, gallons	54,601,000
4. Raw water consumption per capita, gallons daily	142.3
5. Total consumption for the year, gallons	19,470,615,000
6. Total registration on customers' meters, gallons	18,420,789,700
7. Percentage of consumption accounted for on customers' meters	94.6%
8. Average daily consumption, gallons	53,344,150
9. Per capita consumption, gallons daily	139.0
10. Gallons per day to each tap	651
11. Cost of supplying water, per million gallons, based on operating and maintenance expense	\$87.33
12. Cost of supplying water, per million gallons, based on operating and maintenance expense plus fixed charges	\$146.29

\*Supplying Providence, Cranston, and portions of Johnston, North Providence, Warwick, Smithfield, Coventry, West Warwick and Scituate.

TABLE 61 (Continued)  
SUMMARY OF STATISTICS  
PROVIDENCE WATER SUPPLY BOARD  
YEAR ENDED SEPTEMBER 30, 1965

FILTRATION

1. Type of filters	Rapid Sand
2. Number of filter units	14
3. Capacity of filter plant	14 units @ 7.5=105 m.g.d.
4. Chemicals used	Ferri-Floc, Quicklime, Chlorine and Sodium Silicofluoride
5. Total water filtered during year, gallons	19,627,740,000
6. Average quantity filtered per day, gallons	53,775,000
7. Total filtered water delivered to the distribution system during the year, gallons	19,471,295,000

STATISTICS RELATING TO THE DISTRIBUTION SYSTEM

1. Kind of pipe	Asbestos-Cement, Cast Iron, Steel and Concrete
2. Sizes	From 6 to 66 inches
3. Installed	52,113.37 feet
4. Removed	16,422.12 feet
5. Net increase	35,691.25 feet
6. Total now in use	792.47 miles
7. Number of leaks per mile	0.10
8. Range of pressure on mains	14 to 95 pounds
9. Range of pressure on mains (special high pressure fire service)	94 to 130 pounds
10. Number of hydrants installed	240
11. Number removed	185
12. Net increase	55
13. Number of hydrants now in use	4,795
14. Number of stop gates installed	188
15. Number removed	91
16. Net increase	97
17. Number of stop gates now in use	10,853

TABLE 61 (Continued)  
SUMMARY OF STATISTICS  
PROVIDENCE WATER SUPPLY BOARD  
YEAR ENDED SEPTEMBER 30, 1965

STATISTICS RELATING TO THE DISTRIBUTION SYSTEM  
(Continued)

18. Kind of services	Lead, Copper and Cast Iron
19. Sizes	$\frac{1}{2}$ -inch to 30 inches
20. Number of service taps installed	966
21. Number removed	398
22. Net increase	568
23. Number of services now in use	62,696
24. Number of meters installed	2,399
25. Number removed or condemned	1,653
26. Net increase	746
27. Number of meters now in use	62,500
28. Per cent of services metered	99.92