

Philadelphia, January 20th, 1932.

BUREAU OF WATER

--ANNUAL REPORT - 1931--

During the year the Bureau has completed the construction of two (2) transmission mains. One, the ninety three (93) to seventy two (72) inch steel conduit, has no connection at the pumping terminal but intermediate sections of the line may be utilized. The second, a thirty (30) inch steel main is functioning by delivering water to the Oak Lane Basin territory.

The improvements and extensions of the Pennsylvania Railroad in West Philadelphia have involved the Water Bureau and considerable work has been done towards the laying of new lines.

The construction of subways has also engaged the activities of Bureau forces on South Broad, Locust and 8th streets.

The contractor employed to determine and correct sub-surface leakage throughout the distribution system completed the survey which has been active during the last five years.

There has been an average daily consumption of water throughout the City of 316 m. gallons, making a per capita rate of 160 gallons per day. During the period of hot weather there were issued by the City permits to attach spray devices to the low pressure fire hydrants. These permits specified as to hour of the day and period of time to operate - all for the purpose of water shower refreshment to children in heated neighborhoods.

Volume of water supplied to the city was sufficient except during a period of excessively high temperature at which time abuse of the fire hydrants by unauthorized agents reduced the pressure in the street mains.

The quality of water furnished is clearly registered by the typhoid fever rate than which a better index could not be offered. The death rate for typhoid fever is 0.87 per 100,000 inhabitants and this record places the city on the honor roll which includes all cities of any size in the country.

The activities of the various Branches of the Bureau follow in sequential order:

RIVER PATROL

In spite of reduced and at some plants suspended production at the industrial plants located on the banks and tributary streams of the Schuylkill River, the observation along the banks has continued between the Belmont Pool on the Schuylkill River and up the stream to Reading. This inspection produces valuable data as to character of water at different localities and has a splendid influence on opera-

tion of plants scattered along the circuit of observation.

A period of fish mortality visited this river during the early Fall and the nuisance was quite pronounced. The dry period low flows and the atmospheric changes in temperature are charged with the death of fish, the life sustaining influences being absent in the water.

PUMPING STATIONS

All pumping plants have functioned in a satisfactory manner and no serious troubles have been experienced at either the electric power or steam driven stations. 1932

At the Torresdale Station there has been landscape improvements, some of the work being performed by the unemployed labor assigned.

At the Lardner's Point Station a marked improvement was effected in moving the Chief Engineer and office force to a room attached to but away from engine and boiler room confusion. In this room have been installed new discharge lines recording equipment of the latest approved type.

A more flexible rail approach for the delivery of coal was added to the plant and the general operation repairs to engines, auxilliary units and boilers have kept in step with the pumping demands and all equipment reflects the economic operating costs in the reduction of coal consumption.

At the Belmont Station there has been completed the work on three pumping units kept intact but modified upon power side. The entire station now is electrically driven and there was also completed the heating plant which is of an oil type. A renewal of plumbing and ventilating conveniences was effected and the Chief Engineer's office was relocated. New steel floor members have been placed and a section of new floor is in the process of construction. The former steam plant was cleared of boilers and tanks, also the old generators have been removed. On the exterior of the station the insertion of Venturi tubes and control valves have been applied to several of the discharge mains.

At the Shawmont Station there have been installed more efficient control valves on pump discharge mains and a removal from engine room of two useless steam engines was accomplished. The former boiler house has been stripped of the old units and a general clearing has been effected.

At the Queen Lane Station the usual operation has imposed no burden and a normal year of efficiency prompts only favorable comment.

At the Oak Lane High Service Station there has been added to the installation a fifteen million (15) gallon centrifugal pump and surrounding the station have been laid additional pipe to further the flexibility of the station as regards service to remote areas.

The High Service Stations at Roxborough, Chestnut Hill, Belmont, Torresdale and Lardner's Point have operated satisfactorily and only minor irregularities have occurred, all of which have been met and the regular service maintained.

FILTERS

All plants have met the burden imposed and their operation has been efficient both economically and as to the removal ability of bacteria and suspended matter contributed by the raw river waters.

The Torresdale plant has had a continued contribution of turbid water caused by the dredging of the Delaware channel by the U. S. Government.

The annual cleaning of the sedimentation basins at Belmont and Queen Lane shows clearly the amount of suspended soil carried by raw water and through the means of alum application volume of mud is interrupted and precipitated before reaching the filter units.

At the Belmont Plant a group of "unemployed" was set at work removing a portion of the sediment in the West Reservoir. Also at this plant a modification of one of the mechanical units was set up for operation. The wash water control was improved and a set of vertical, metal baffles placed.

At the Queen Lane Plant a new set of metal ventilators was placed on all units. Grave concern over the condition of this plant is emphasized. The floors and roofs of the final units are badly in need of immediate repairs in order to forestall a collapse of the plant.

DISTRIBUTION

To meet the relocation program of the Pennsylvania Railroad in West Philadelphia, there have been new pipe lines laid on Market street location.

The Subway construction on South Broad, Locust and on 8th street has involved the water lines to a marked extent and some lines have been relocated while others were abandoned and a larger and more flexible system is being laid.

Building operations have been materially reduced which appreciably lessened the laying of new service mains.

Added to the Distribution System during the year were nineteen (19) miles of pipe, giving for all sizes from ninety-three (93) to four (4) inch, a grand total of twenty-four hundred and fifty-nine (2459) miles. To the system were added - one hundred and thirty (130) fire hydrants, totalling twenty thousand one hundred and fifty-seven (20,157) and six hundred and forty-one (641) valves increasing the total to forty-eight thousand, seven hundred and forty-four (48,744) throughout the entire city.

Further extension of thirty-eight hundred (3800) lineal feet was made to the High Pressure Fire Mains and at various locations there have been relocation of the existing mains. The miles of pipe now functioning totals sixty-three (63) and the number of valves and hydrants are respectively eighteen hundred and seventy two (1872) and ten hundred and seventy (1070).

The volume of water used on fires amounted approximately to seven million five hundred thousand (7,500,000) gallons.

METERS

The total number of metered services is one hundred ninety eight thousand, eight hundred and twenty six (198,826) and increase during the year of four thousand seven hundred and thirty one (4731)

Repairs were made to fifteen thousand and thirty-five (15,035) meters of which number three thousand and sixty-eight (3068) were repaired on premises of consumer.

R E V E N U E S

There has been returned \$6,860,748.61 contributed from the following sources:-

Water Rents:-

Flat rates -

Fixtures - Current	\$2,504,256.38	
Fixtures - Delinquent	<u>45,138.22</u>	
		\$2,849,394.60

Meter Rates -

Meters - Current	\$3,362,397.44	
Meters - Delinquent	<u>350,503.83</u>	
		3,712,901.27

Water Pipe Searches	1,686.50	
Frontage - Water Pipe	88,247.40	
Specials	7,150.31	
Meter Repairs	59,321.12	
New Services	13,652.00	
Miscellaneous	<u>128,395.41</u>	
		198,452.74

\$6,860,748.61

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FINANCIAL

Salary and wages	\$1,482,395.12	
Material and equipment	1,399,983.77	\$2,882,378.89
Additions and betterments		<u>998,685.20</u>
Grand Total		\$3,881,064.09

CONSTRUCTION WORK

STATIONS

Lardner's Point -

Improvement of coal delivery facilities.
 Installation of Recorders to register volume through
 pumping mains.
 New Chief Engineer's office with equipment occupied.

Belmont -

Electric motors installed to operate pumping units.
 Installation of heating and ventilating plants.
 Insertion of venturi tubes and valves on several dis-
 charge mains.

Oak Lane -

Installation of additional 15 m.g. electric driven pump
 with attendant piping around station.

FILTERS

Torresdale -

New steel wash water pipe on Preliminary Units.

Queen Lane -

New steel ventilators on all units.

Belmont -

Modification of mechanical unit to improve operation.

DISTRIBUTION

Pipe Lines -

Activities have centered on developments of the Penn-
 sylvania Railroad in West Philadelphia and on Subway con-
 tracts on Broad, Locust and 8th streets.

The laying of service mains have measured with the land
 operations which were reduced throughout the year.

Fire Service
Lines -

On Huntingdon, Cumberland, York streets and Park avenue
 there has been laid some thirty eight hundred (3800)
 feet of pipe with valves and hydrants.

CONTEMPLATED WORK 1932

Belmont Station -

New floor, roof and window sash.

Queen Lane Filters -

Construction insuring the safety and integrity of the roof of the Filters and work to correct the leakage through the floors of the final units.



CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC WORKS
CITY HALL



January 12, 1932

From: The Director's Office

To: Mr. John H. Neeson, Chief
Bureau of Engineering and Surveys
Mr. Dudley T. Corning, Chief
Bureau of Highways
Mr. C. Thomas Hayes, Chief ✓
Bureau of Water
Mr. A. M. Soby, Chief
Bureau of Street Cleaning
Mr. Walter J. Carlin, Chief
Bureau of Lighting
Dr. William Robinson, Chief
Bureau of Gas
Commander Robert S. Hettler, Consulting Engineer,
Department of Public Works
Major M. J. Pickering, Manager
Bureau of Convention Hall and Stadium
Mr. George R. Mackenzie, Engineer Secretary,
Zoning Commission.

Subject: ACTIVITIES FOR YEAR 1931.

The following is copy of letter dated January 11th received from his Honor, Mayor Moore:

"Section 4 (c) of Article III of the City Charter reads as follows:

'The several heads of departments, the City Architect, the Zoning Commission, the City Planning Commission, and the Art Jury shall present to the Mayor annually on or before the first Monday of February, a report of their proceedings during the preceding year, and he shall transmit the same to the Council, with any recommendations he may think proper to make.'

"Accordingly, will you kindly forward to this office, on or before Monday, February 1, 1932, the report of the activities of your department for the year 1931?"

Please comply with the above request, forwarding this report in duplicate to the Director's Office not later than January 25th.

W. J. Logan
WILLIAM J. LOGAN,
Chief Clerk.

FRANK H. CAVEN

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January 25, 1932.

From: Chief, Bureau of Water
To: Director, Dept. Public Works
Subject: ACTIVITIES FOR YEAR 1931.

In compliance with your request as contained in communication dated January 12, 1932, attached hereto is a report of the activities for the year 1931.

The figures on the revenue receipts will be forwarded when received from the Registrar.

C. T. HAYES
Chief of Bureau.

	<u>SALARY & WAGES</u>	<u>MATERIAL & EQUIPMENT CONSUMED</u>	<u>TOTAL</u>
<u>CONSTRUCTION WORK IN PROGRESS</u>	\$ 9,459.81	\$ 297,929.32	\$507,389.13
<u>ADDITIONS AND BETTERMENTS</u>			
Filter Plants	248.17	1,817.59	2,065.76
Distribution System	7,821.92	8,145.23	15,967.15
Headquarters	138.00	67.48	205.48
Philadelphia Authority	<u>13,042.18</u>	<u>913.16</u>	<u>13,955.34</u>
	\$21,250.27	\$10,945.46	\$32,193.73
 GRAND TOTAL	 <u>*992,037.51</u>	 <u>**1,600,351.62</u>	 <u>2,592,389.13</u>

**Includes \$450,715.82 Electric Current for Power & Light furnished by Phila. Electric Co.

*Includes \$ 50,622.19 Labor furnished by Mechanical Equipment Bureau.

The technical force of the Bureau during the latter months of the year was increased by applying loan funds for salaries and materials. The efforts of this group were applied to the development of plans for general improvement and extension of the water supply.

The activity and preceding formalities were associated with requirements set up for P.W.A. participation towards construction covering pipe lines, filter plants, pumping stations and the development of a sub-surface source for additional water to supply areas of the City insufficiently fed by existing works.

ACTIVITIES OF THE WORKS PROGRESS ADMINISTRATION

Queen Lane:

Repairing Filter structure and waterproofing floors with restoration of ground and sand. The maximum number of men engaged - 618

Belmont:

Replacing roof on slow sand filter bed, removal and replacing filter medium in two units of Mechanical Plant; painting Mechanical Plant Interior; removal of sediment from Sedimentation Reservoir. The maximum number of men engaged - 243

Roxborough:

Cleaning slow sand Filters and landscaping of the Upper Basin involving outside slopes and adjacent ground areas. The maximum number of men engaged - 55

Shawmont:

Construction of retaining wall in front of pumping station; the landscaping of grounds and drives. The maximum number of men engaged - 55

Torresdale:

The cleaning of sand in slow sand and preliminary filters, the landscaping of grounds and river front adjacent to pumping station. The maximum number of men engaged - 187

WATER MAIN SURVEY

Throughout the City a collection of data to be transcribed as permanent records on plates and sheets. The maximum number of men engaged - 177

East Park Reservoir:

Reservoir slopes and walks. The Maximum number of men engaged - 106

Grand Total 1,441

Such work as this force of men have done has rendered assistance to the Bureau, the greater part of the efforts being of essential value.

Respectfully submitted,