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Middletown

APR 30 1901

ANNUAL REPORT
OF THE
WATER COMMISSIONERS
OF THE
CITY OF MIDDLETOWN, N. Y.

1900

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W. D. STRATTON, PRESIDENT.

THIRTY-THIRD
ANNUAL REPORT
OF THE
BOARD OF
WATER COMMISSIONERS

OF THE
CITY OF MIDDLETOWN,
NEW YORK.

FRANKLIN INSTITUTE
FOR THE YEAR ENDING JANUARY 31, 1900.

MIDDLETOWN, N. Y.
L. S. & J. D. STIVERS, PRINTERS.
1900.

CITY OF MIDDLETOWN, N. Y.

BOARD OF WATER COMMISSIONERS.

W. D. STRATTON,	Term expires	March	1903.
F. O. TOMPKINS,	"	"	" 1902.
G. W. WEST,	"	"	" 1901.
IRA DORRANCE,	"	"	" 1904.
T. K. DEWITT,	"	"	" 1905.

W. D. STRATTON - - PRESIDENT

JAS. M. HILL - CLERK
T. W. DAVEY - SUPERINTENDENT

APR 1900

ANNUAL REPORT

OF THE

Board of Water Commissioners.



*To the Honorable, the Mayor and Common Council of the
City of Middletown, N. Y.*

GENTLEMEN:—Pursuant to the provisions of sub-division 7, of Section 3, of Title 12, City Charter, the Board of Water Commissioners present to you their 33d Annual Report of the condition of affairs of this department for the year, Feb. 1st, 1899, to Jan. 31st, 1900.

FILTRATION.

Realizing the evil effects of impure water on the health of the community and appreciating the fact that a city supplying an abundance of pure water attracts population and manufacturing enterprises, the Board of Water Commissioners resolved to take action toward improving the quality of our water supply, and to that end a Special Committee was appointed on May 7th, 1898, to fully investigate the various methods of filtration.

The committee visited several water works systems where filter plants of both the sand bed and the mechanical type were in active operation, and from time to time reported the result of their investigations to the Board.

Finally, in May, 1899, after having given the matter careful attention and having studied the peculiar conditions existing at our water supply, the character of the impurities of the city water, probable cost and the loss of head of the different methods of filtration, and the additional fact that if the sand bed filter plan

was adopted, two separate filter plants a considerable distance apart would have to be constructed and maintained, which in winter would be a most difficult matter to maintain and protect, the Board unanimously decided in favor of Mechanical Filtration and adopted the combined pressure and gravity system of the type which is so successfully used in many large towns and cities of the United States.

As competition was desired, estimates with plans and specifications were received and considered from both the New York Filter Company and the Continental Filter Company. The proposition of the Continental Filter Company was in all respects the most satisfactory. By virtue of the power and authority vested in the Board of Water Commissioners under sub-division 1, of Section 3, of Title 12, of our City Charter, and acting within our jurisdiction as defined in an opinion rendered on this matter by our Corporation Counsel whose opinion is on file in the office of the Water Board, a contract was drawn under the direction of the corporation counsel, between the Board of Water Commissioners and the Continental Filter Company of New York, with terms of payment and other conditions satisfactory to the Board.

As it has been the aim and wish of the Board to meet the cost of the proposed improvement entirely out of the revenue of this department, and not to ask the taxpayers for any appropriation, the time for meeting the several payments was extended over a period of two years.

Under our contract the Filter Company retains control of plant for two years, at the end of which time, if the filter plant does not come up to the specifications or the Filter Company in any way fails to fulfill its part of the contract, then said Continental Filter Company shall remove its plant and return to the Water Board all moneys paid to said company.

In the plan and system adopted we have entire confidence ; the materials and workmanship are in every way first class, and we fully believe that when completed, the taxpayers will be pleased to enumerate among the important institutions of our city the Model Filtration Plant connected with our Water Works

system. The plant is now nearing completion and we hope by May 1st it will be in operation, at which time the people of this city will enjoy pure, wholesome water, free from all objectionable color, odor or taste, and eminently fit for all domestic and manufacturing purposes.

ELECTROLYSIS.

During July and August, 1899, the Board engaged Mr. W. M. Sheehan, an electrical engineer of high standing, to make an examination of the water pipe system for the purpose of determining whether any damage was being done to the system by Electrolysis from escaping electric current from the electric railway system.

Mr. Sheehan's findings and recommendations were clearly set forth in an able report of considerable length, which together with the recommendation of this Board, were duly presented before your honorable body, and in regard to which the following resolution was passed at a regular session of the Common Council on the 9th of October, 1899:

W. B. Royce, Receiver of the Middletown-Goshen Traction Co., its successors or assigns.

Dear Sir:—I hereby certify the following to be a copy of a resolution passed at a regular session of the Common Council of the city of Middletown, N. Y., on the 9th day of October, 1899.

Resolved, That the Middletown-Goshen Traction Company, its successors or assigns, be and it is hereby required, ordered and directed to do all such work as may be necessary to prevent any injury or damage to the water mains or water pipes connected with the Middletown water supply system, in accordance with the conditions of its franchise, and that the work be done within sixty days' time, under the direction and supervision of the City Engineer and to the satisfaction of the Board of Water Commissioners. If this order is not complied with and the work is not done in the manner and within the time herein stated, then the Corporation Counsel is authorized and directed to commence legal proceedings and take all such other action as may be proper and necessary to terminate the franchise heretofore granted said Middletown-Goshen Traction Company, and to cause the consent

given by the Common Council to construct and operate an electric railway over and upon the public streets of the city of Middletown, to cease and be it further

Resolved, That the City Clerk be and he is hereby directed to deliver a certified copy of this resolution to the Superintendent or the Receiver of the Middletown-Goshen Traction Company, its successors or assigns.

I. B. A. TAYLOR, City Clerk.

Dated October 19, 1899.

It is a matter of vital importance to the city that the Electric Railway Company fully and completely carry out the provisions of the above resolution at the earliest date possible, otherwise the city may have to go to the expense of relaying a considerable portion of its distributing mains.

The following extract from a letter in regard to Electrolysis of the water mains addressed to our Superintendent explains itself:

“Mr. T. W. Davey, Supt. Water Works.

“DEAR SIR:—I cannot urge too prompt action on the part of your water commissioners as I believe that you will fully agree with me from what you saw, when I say, that unless conditions that now exist are not speedily checked and effectually remedied serious results are bound to follow.

“Respectfully submitted,

“W. M. SHEEHAN,

“Electrical Engineer.”

MANUFACTURERS' RATES.

On October 1st, 1897, the Board granted a reduction of 25 % from existing meter rates on all bills paid within 60 days from date. On July 1st, 1899, at the request of the manufacturers and in order to foster and encourage manufacturing enterprises, the Board granted a further reduction to manufacturers amounting in all to 40 %. It is the intention of this Board to make a further reduction in manufacturers' rates on May 1st, 1900, amounting in all to 50% from existing meter rates. As far as we know,

COM. F. O. TOMPKINS

COM. G. W. WEST.

1900

COM. IRA. DORRANCE.

COM. T. K. DEWITT.

WATER
COMMISSIONERS

OFFICERS

JAMES M. HILL. CLERK.

T. W. DAVEY. SUPT.

manufacturers' rates are lower in Middletown than in any other place in the State.

CONDITION OF DEPT. AND VALUE OF WATER WORKS SYSTEM.

We would call your attention to the Clerk's Report for the year, and the statement of the Assets and Liabilities of the city of Middletown and its water works system, which shows in detail the financial standing of the several branches of the System; and to the Superintendent's Report of the condition and operation of the water works, reports of which are annexed hereto.

In conclusion we would state that Middletown offers, in respect to the water question, as well as in other advantages, superior inducements to all those who are looking for a desirable place to make their future home, and to manufacturers requiring cheap water, good water and plenty of it.

Respectfully submitted,

W. D. STRATTON, President.

F. O. TOMPKINS, Com.

G. W. WEST, "

IRA DORRANCE, "

T. K. DEWITT, "

Attest:

JAS. M. HILL, Clerk.

Feb. 1st, 1900.

SUPERINTENDENT'S REPORT.

To the Honorable Board of Water Commissioners :

GENTLEMEN :—The following report of the operation of the Water Works Department for the year ending Jan. 31st, 1900, is respectfully submitted.

WATER SUPPLY.

The supply of water has been abundant notwithstanding there were seven months of the year when the rainfall was less than two inches per month, which is much below the average. Owing to the fact that 1898 was an unusually wet year, the total rainfall, not including snow, having been 54.82 inches, both Highland and Monhagen Reservoirs reached their full capacities in March, 1899, and on April 1st were overflowing. It was largely due to this fact that the supply of water has been sufficient throughout the year. By drawing from Highland into Monhagen Reservoir, we have been able to maintain a depth of 21 ft. until October 1st, since which time it has decreased to 19 ft. On March 15th a small dam was built in the old spillway of Highland Reservoir, which increased its storage capacity 70,000,000 gallons.

RAINFALL.

The rainfall for the year, including snow, was 45.33 inches.

CONSTRUCTION.

715 ft. of 6 in. iron pipe has been laid on Grand avenue between East Main street and Myrtle avenue.

1,551 ft. of 8 in. on North street to replace 300 feet of 4 in. iron and 1,251 feet of 6 inch wood pipe.

365 ft. of 6 in. on Low avenue between North and Smith streets.

187 ft. of 4 in. on Prospect street to replace 4 in. cement.

300 ft. of 4 in. on Beattie avenue to replace 4 in. cement.

412 ft. of 6 in. on California avenue.

180 ft. of 4 in. on West Main street.

180 ft. of 6 in. on Houston avenue.

228 ft. of 6 in. on Prince street.

261 ft. of 8 in. on Highland avenue between Wisner avenue and Church street.

876 ft. of 6 in. on Hanford street between West Main and Harding street, to replace 4 in. wood pipe.

A new spillway has been built at Highland Reservoir at the north end of Mapes' dam so that when the Reservoir overflows the water will continue in its natural course.

Cost of spillway \$922.11.

WOOD AND CEMENT PIPE.

All of the wood pipe mains have been taken out and replaced with iron pipe.

Of the cement pipe there remains 952 ft. of 16 in. in connection with the 12 in. Highland main.

617 ft. of 8 in. on Union street.

665 ft. of 4 in. on Grove street.

370 ft. of 4 in. on Montgomery street.

WEST MAIN STREET LOWERED.

On account of paving West Main street and lowering the grade of same, it was necessary to lower the 12 in. main to conform to the new grade.

HYDRANTS.

There has been set one single hydrant at end of main on California avenue and one double hydrant in tannery yard.

A single hydrant in front of the Armory has been changed to a double hydrant.

REPAIRS.

There has been one broken water main during the past year, which appeared to be due to electrolysis, and one broken hydrant branch due to the action of the frost. Several service pipes have also given out and many of them can be traced to electrolytic action.

MAINTENANCE.

The work of cleaning around the reservoirs, more especially

Monhagen, by digging out the flag roots and cutting the brush and weeds, has been continued, thus giving them a better appearance. There is, however, need of considerable more work in clearing up the grounds around the reservoirs in order that they may be ploughed and seeded with grass, which by mowing, will make it possible to maintain same in much better condition.

A new wire and board fence has been built along the road from the bridge to the dam; also a board fence on the lower side of the road below the dam.

In order to properly connect the filtration plant with the city mains it became necessary to lower the 20 in. main from Monhagen dam. The pipe was laid over an elevation of the ground and was lowered for a distance of 425 ft., ranging from one inch at either end to 4 ft. in the centre. In order to do this it was necessary to blast a considerable portion of rock from under the pipe. This undertaking was successfully accomplished without shutting off the water.

Total cost to lower, \$411.58.

PUMPING STATIONS.

Shawangunk Kill.—This plant has lain idle since Jan. 25th, 1890. The pumps are in a fair state of preservation considering their location and the length of time idle.

Monhagen avenue.—This plant has been idle since August 28th, 1898. The boiler and pumps are in good condition and can be started at a few days' notice.

INSPECTIONS.

The total number of inspections for the year was 2,969, and the annual inspection of rated consumers showed that there were 60 closets and 49 faucets leaking and 7 closets fastened to run all the time.

TAPS.

Number of taps inserted during the year, 103.

Total number to date, 2,026.

METERS.

Meters set to date, 129.

I would again renew a portion of my former report in regard to Monhagen Reservoir.

On examining the character of the ground near the spillway I find that the low dam formed by the roadway is composed of rock and earth loosely thrown in and is not water tight. The ground for several feet in depth is very stony and porous and when the water reaches a height of 21 or 22 feet a great amount of it is lost by leakage.

The leakage at this point could probably be entirely checked by building a new dam 300 or 400 feet long with a masonry core wall deep enough to cut off the leak.

In conclusion I respectfully tender my thanks to the Board and all its officers for courtesies extended throughout the year.

Feb. 1st, 1900.

T. W. DAVEY, Supt.

DISTRIBUTING MAINS.—(Length of Pipe and Diameter.)

DIAMETER.	20 in.	16 in.	14 in.	12 in.	10 in.	8 in.	6 in.	5 in.	4 in.	2 in.
Pipe laid prior to 1897.....	10,146	952	277	29,117	10,123	8,450	37,055	1,067	42,482	474
" " during 1897.....	.....	.....	.....	2,266	1,599	18	11,154	.....	2,717	.....
" " " 1898.....	.....	.....	.....	.....	610	1,105	9,178	.....	3,461	.....
" " " 1899.....	.....	.....	.....	.....	.....	1,812	2,776	.....	667	.....
Total laid to Jan 31, 1900..	10,146	952	277	31,383	12,332	11,385	60,163	1,067	49,327	474
Deduct pipe taken out in 1897, 1898, 1899.....	.....	.....	.....	.....	.....	.....	1,861	.....	6,932	474
Total Amount pipe in use Feb. 1, 1900.....	10,146	952	277	31,383	12,332	11,385	58,302	1,067	42,395	.....

HYDRANTS.

99 Single Matthews and Ayres.

173 Double " " "

272 Total in use Jan. 31, 1900.

VALVES.

20 inch	.....	6
16 "	.....	8
12 "	.....	30
10 "	.....	8
8 "	.....	19
6 "	.....	106
4 "	.....	104

Total in use Jan. 31, 1900 . . 281

WATERING TROUGHS.

- 1 at Franklin Square.
 1 " Wickham avenue, corner Cottage street.
 1 " Highland avenue, corner North street.
 1 " East Main street, near Prospect avenue.
 1 " Academy avenue, near Genung street.

5 Total number in use Jan. 31, 1900.

METERS.

NUMBER AND KIND IN USE JAN. 31, 1900.

MAKE.	3/8 in.	1/2 in.	1 in.	1 1/2 in.	2 in.	3 in.	4 in.	TOTAL.
Crown . . .	10	22	4	1	7	2	—	46
Gem . . .	—	—	—	—	2	3	2	7
Thomson . . .	25	37	11	3	—	—	—	76
	35	59	15	4	9	5	2	129

Total value Meters per appraisal, \$3,041.00.

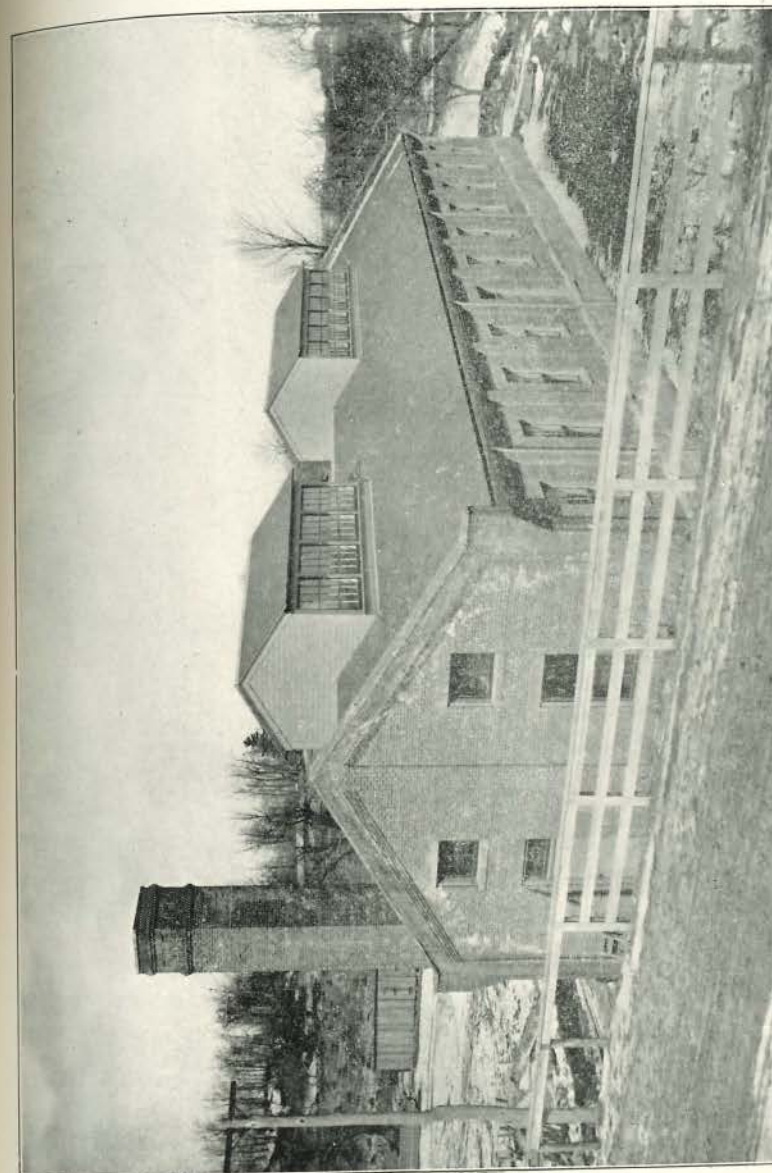
SERVICES.

Total number to Jan. 31, 1900, 2,026

RAINFALL IN INCHES.

MONTH.	1899.	1898.	1897.	1896.
January	2.91	4.33	.....	.....
February	1.62	4.02	2.18	.....
March	7.37	3.57	3.40	.....
April	1.59	3.67	3.19	.....
May	1.94	4.78	4.23	.....
June	6.03	3.78	3.27	5.82
July	8.17	7.65	9.53	4.82
August	1.94	10.40	3.35	2.57
September	8.80	1.72	3.15	4.40
October	1.43	4.59	.72	2.45
November	1.55	4.95	5.51	4.28
December	1.98	1.36	4.46	.52
Total for year	45.33	54.82	*42.99	†24.86

* Total for 11 months. † Total for 7 months.



FILTER HOUSE
 Looking north-east from Gate-house, Monhagen Reservoir, two miles west of city.

STANDING OF MONHAGEN RESERVOIR.

CAPACITY 24 FEET.

Depth on	1899	1898	1897	1896	1895	1894
January 1...	21 ft. 4 in.	19 ft. 6 in.	15 ft. 0 in.	15 ft. 3 in.	20 ft. 2 in.	15 ft. 6 in.
February 1..	21 8	20 11	14 8	14 0	21 0	15 8
March 1...	21 5	22 6	15 5	18 7	19 11	15 8
April 1.....	24 0	23 4	18 1	21 2	21 1	18 9
May 1.....	23 8	22 7	19 1½	21 4	22 5	16 6
June 1.....	22 2	22 9	19 9½	20 0	21 5	19 3
July 1.....	21 5	21 6	19 1	19 4	19 10	19 0
August 1...	21 7	20 9	19 9	18 5	18 4	18 3
September 1	20 4	23 4	19 9	17 0	17 0	18 0
October 1..	20 11	21 5	19 1	16 1	15 1	19 0
November 1	20 6	20 3	17 11½	14 10	15 3	20 0
December 1	20 3	21 2	17 9	15 10	15 10	20 0

STANDING OF HIGHLAND RESERVOIR.

CAPACITY 21 FT., 4 INS.

Depth on	1899	1898	1897	1896	1895	1894
January 1.	19 ft. 4 in.	12 ft. 0 in.	11 ft. 2 in.	6 ft. 10 in.	9 ft. 0 in.	7 ft. 3 in.
February 1.	19 7	13 4	10 10	6 10	10 0	7 0
March 1...	20 0	15 0	11 0	9 9	9 9	7 1
April 1.....	21 4	16 1	12 2	12 0	12 0	8 8
May 1.....	21 4	16 9	12 3½	12 3	12 2	9 5
June 1.....	20 3	17 4½	11 9	12 0	11 10	9 9
July 1.....	19 3	17 4	11 9	12 5	11 3	9 2
August 1...	19 2	17 3	12 0	12 4	10 10	8 6
September 1	18 3½	18 6	11 6	11 8	10 9	6 10
October 1..	17 9½	19 0	10 10½	11 2	9 1	7 0
November 1	17 1½	18 10	10 3	11 0	7 9	8 0
December 1	16 3	19 4½	10 7½	11 2	6 10	8 8

CLERK'S ANNUAL REPORT

FOR YEAR ENDING JAN. 31, 1900.

To the Honorable Board of Water Commissioners :

GENTLEMEN :—Herewith I submit the annual financial report for 1899. You will notice the receipts are \$5,574.07 in excess of last year and far exceed the receipts of any previous year.

The increase is due in part to frontage tax for 1897 and 1898, due in those years, but not received from the city until 1899 ; and partly to legitimate growth, there having been 103 taps inserted during the year.

The greater part of this increase however comes from water rents and the collection of arrears, and may be traced to improved methods adopted by the Board this year, in administering the affairs of the department.

It is also very gratifying to note that the operating expenses for the past year were the lowest in twelve years—this being due principally to the fact that it has not been necessary to use the pumps during the year.

RATED CONSUMERS.

Over 1,800 of the 2,026 service numbers on our books are rated consumers, which embrace families, stores, offices, boarding houses and all consumers who pay schedule semi-annual rates.

There has been collected from this source during the year \$16,845.16 and there are no arrears for 1899.

SPRINKLING.

Receipts from private street and yard sprinkling for the season, May to November, were \$1,193.77, which is over \$800 more than preceding year.

Under favorable conditions the receipts from this source should show a still further increase on account of the very low price at which water for this purpose is sold—the rate being on a 50 ft.

lot only \$2.50. The rate charged in many other towns and cities on a 50 ft. lot varies from \$3 to \$11, very few being under \$4 and \$5. This account is all paid up to date.

Additions and fractional term accounts are all squared up except \$30.57.

METER ACCOUNTS.

Of the 133 meters set, 129 constitute active accounts. The revenue from meter rents during the year was \$8,502.61. Arrears outstanding \$55.90. Arrears April 1st, 1899, \$516.88.

SPECIAL RATES.

Under this head are railroads and all consumers granted a fixed monthly rate. Receipts from this source were \$4,896.50 for the year, and there remains nothing unpaid.

SUNDRY RATES.

Comprise water sold for all purposes not enumerated under the above heads. Amount unpaid under this head, \$10.

Acknowledgment is here made to the Commissioners and officers of the Department for courtesies extended.

Respectfully submitted,

Feb. 1, 1900.

JAS. M. HILL, Clerk.

CLERK'S ANNUAL STATEMENT.

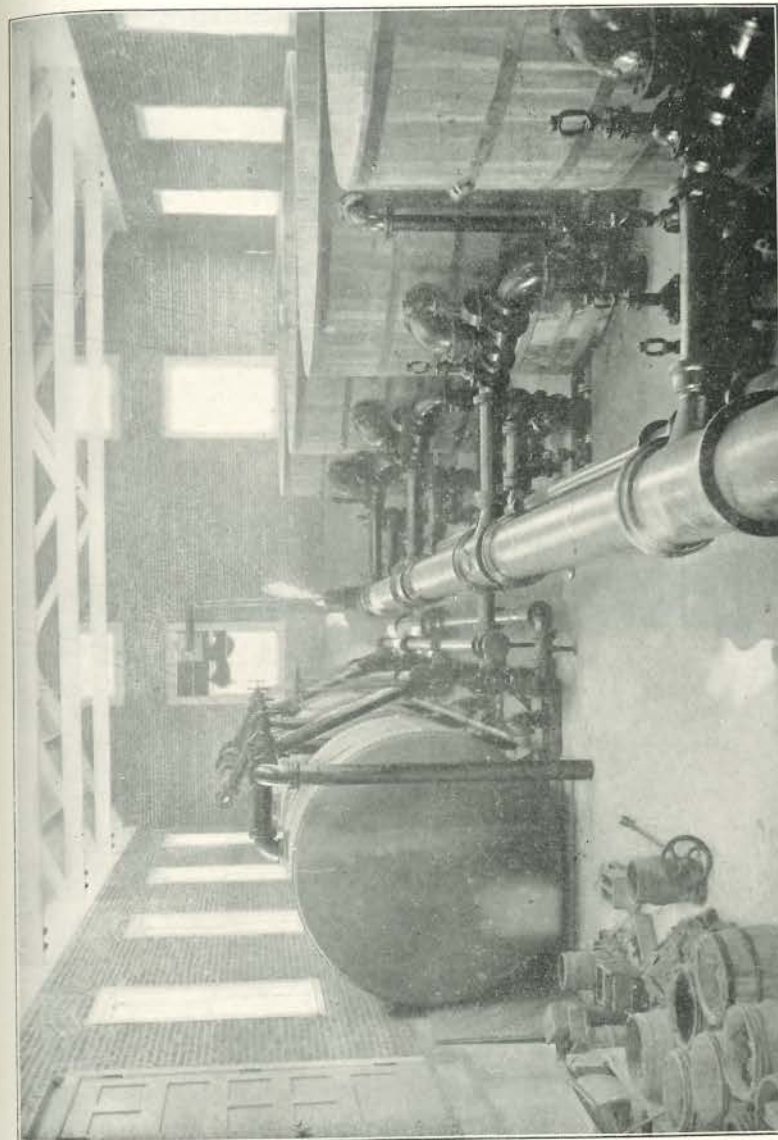
For year—Feb. 1st, 1899, to Jan. 31st, 1900.

INCOME.

Metered Water Consumers.....	\$8,502 61	
Special " " (Railroads).....	4,896 50	
		\$13,399 11
Rated " "		16,845 16
Sprinkling, yard and street, May to Nov.....		1,193 77
Building Purposes.....		64 69
1897 Frontage Tax from City.....		1,324 72
1898 " " Balance due.....		217 28
1899 " "		1,678 18
Savings Bank account from city.....		63 18
Sinking fund (for payment on bonds)		2,000 00
Taps.....		206 00
Water Boxes.....		278 55
Construction account—sale of material.....		279 69
Maintenance " —received for labor, etc.....		24 79
Expense " —sale of material, etc.....		26 89
		<hr/>
Total receipts.....		\$ 37,602 01
Cash balance on hand Feb. 1, 1899.....		1,432 04
		<hr/>
		\$ 39,034 05

DISBURSEMENTS.

Construction Mains.....	\$ 3,746 99	
" Monhagen Reservoir.....	456 09	
" Highland Reservoir.....	957 81	
" Meters.....	1,936 36	
" Filtration Plant.....	12,793 56	
		\$ 19,890 81
Maintenance and Repairs.....		889 01
" Pump House.....		3 00
General Expense.....	\$ 1,663 38	
Rent.....	180 00	
Telephones	63 50	
		\$ 1,906 88
Interest		8,137 57
Salaries and allowances.....		2,650 05
Taps		95 48
Water Boxes.....		338 67
Sinking Fund, paid on Bonds.....		2,000 00
Water Rents Rebate.....		75 04
Frontage Tax "		82 00
		<hr/>
Total Disbursements.....		\$ 36,068 51
Cash on hand Jan. 31st, 1900.....		2,965 54
		<hr/>
		\$ 39,034 05



Partial Interior View of Filter House during construction
Showing 4 Gravity Filters to right and 4 Pressure Filters to left.

**ASSETS AND LIABILITIES OF THE CITY OF MIDDLE-
TOWN AND ITS WATER WORKS SYSTEM.**

ASSETS.

Cash balance on hand Jan. 31, 1900. Bank Balance . . . \$	2,867 00		
Cash in Safe	98 54		
	2,965 54	\$ 2,965 54	
Orange Co. Trust and Safe Deposit Co. Special De- posit and Accrued Interest to Jan. 1st.		4 161 60	
Construction Account and Real Estate	{	Mains, value of, including Valves, Hy- drants, etc.	\$ 208,617 00
		Monhagen Reservoir and Real Estate.	53,544 93
		Highland Reservoir and Real Estate.	71,961 52
		Pumping Station, Monhagen Avenue.	8,579 36
		Filt. Plant (city's int. in) and Real Est.	13,093 56
		Meter Equipment.	3,041 00
		Shawangunk Kill Pumping Station and Real Estate.	62,467 56
		\$ 421,304 93	
Store and Materials Acct. per Inventory.		1,680 39	
Tools " "		850 00	
Taps and Tapping Machines " " Taps.	28 50		
2 Tap machines.	150 00		
	178 50		
Water Boxes, per Inventory.		68 85	
Pumping Station Maintenance, Coal on hand per Inv.		91 50	
Insurance—Value unexpired per Inventory.		34 36	
Office Fixtures " "		570 50	
Stationery and Supplies " "		15 00	
Horse and Wagon Acct. " "		75 00	
Accounts Receivable (ledger).		97 98	
Rated Consumers 1898 Arrears.	9 50		
" " Additions and Fractional Terms	30 57		
Sundry Rates.	10 00		
Metered Consumers, total amount charged to date	1,603 61	1,653 68	
		\$ 433,747 83	

LIABILITIES.

Bonds, Harlem Savings Bank 3½ per cent., maturing May 1, 1910.....	\$ 75,000 00
Bonds, Middletown Savings Bank 3½ per cent., maturing Feb. 1, 1913.....	10,000 00
Bonds, Bushwick Savings Bank 3½ per cent., maturing March 1, 1913.....	12,000 00
Bonds, Citizens' Savings Bank 3½ per cent., maturing July 2, 1918.....	100,000 00
Bonds, Comptroller State of New, York 4 per cent., maturing July 1, 1911.....	14,000 00
Bonds, Middletown Savings Bank 4 per cent., maturing Aug. 1, 1911.....	40,000 00
Water Works, City of Middletown, Net Capital.....	\$ 251,000 00
	182,747 83

\$ 433,747 83

COST OF SYSTEM.

DISBURSEMENTS BY YEAR FROM 1867 TO JAN. 31, 1900.

Annual Report.	Year.	Construction and Real Estate.	Annual Report.	Year.	Construction and Real Estate.
1st . . .	1867 to 1868	\$ 75,161 59	18th . . .	1884	1,751 48
2nd . . .	1868	720 44	19th . . .	1885	2,613 53
3rd . . .	1869	470 67	20th . . .	1886	3,509 51
4th . . .	1870	10,000 00	21st . . .	1887	4,590 62
5th . . .	1871	3,875 27	22nd . . .	1888	3,595 12
6th . . .	1872	28,191 84	23rd . . .	1889	2,411 10
7th . . .	1873	31,253 72	24th . . .	1890	2,527 31
8th . . .	1874	5,306 97	25th . . .	1891	2,819 10
9th . . .	1875	986 56	26th . . .	1892	5,395 92
10th . . .	1876	267 74	27th . . .	1893	2,162 74
11th . . .	1877	1,288 07	28th . . .	1894	2,176 76
12th . . .	1878	14,829 45	29th . . .	1895	14,360 19
13th . . .	1879	1,738 45	30th . . .	1896	10,060 09
14th . . .	1880	296 03	31st . . .	1897	13,269 89
15th . . .	1881	5,054 50	32nd . . .	1898	8,909 68
16th . . .	1882	908 14	33rd . . .	1899	19,611 12
17th . . .	1883	371 77			
			Total		\$280,485 37

Total Cost of Construction and Real Estate to Feb. 1, 1900.....	\$280,485 37
Highland Reservoir cost exclusive of General Fund.....	70,777 87
12-inch Pipe Line from Highland Reservoir to Monhagen Reservoir.....	21,193 75
Pumping Station (Wells) exclusive of General Fund.....	8,440 74
20-inch Pipe Line from Monhagen Reservoir to Highland Avenue, and other construction paid from this fund.....	40,407 20

Total Cost to date..... \$421,304 93

MAINS.

TOTAL VALUATION PER APPRAISAL.

42,395	ft. 4 in. Iron Pipe.	Cost to lay per ft. \$.494	\$ 20,943 13
1,067	" 5 " " "	" " " .609	649 80
58,302	" 6 " " "	" " " .712	41,511 02
11,385	" 8 " " "	" " " 1.021	11,624 09
12,332	" 10 " " "	" " " 1.266	15,612 32
22,905½	" 12 " " "	" " " 1.586	36,328 12
8,477½	" 12 " " laid thro' rock	" " " 2.50	21,193 75
277	" 14 " " "	" " " 2.05	567 85
952	" 16 " Cement Pipe	" " " 3.00	2,856 00
10,146	" 20 " Iron Pipe	" " " 3.46	34,699 32
Total 168,239 ft. } Total value main and distributing pipe lines \$185,985 40			
or } Total cost 281 Gate valves and setting..... 6,497 60			
31.86 miles } " " Hydrants " " " 7,962 00			
		" " Specials—150 tons at \$52.50 ton.. 7,875 00	
		" " Drinking Troughs (5) and setting 297 00	
		Total Value System of Mains... \$ 208,617 00	

MONHAGEN RESERVOIR.

COST OF CONSTRUCTION AND REAL ESTATE 1867, JAN. 31, 1900

1867 to 1868 Amount Disbursed.....	\$ 30,681 07
1868 " "	536 89
1869 " "	3,140 75
1870 " "	74 92
1871 " "	600 93
1872 " "	94 21
1873 " "	1,310 95
1874 " "	1,681 22
1875 " "	514 26
1876 " "	270 87
1877 " "	90 52
1878 " "	355 82
1879 " "	23 68
1880 " "	48 00
1881 " "	3,479 32
1882 " "	738 51
1883 " "	118 79
1884 " "	865 90
1885 " "	131 30
1886 " "	521 26
1887 " "	224 27
1888 " "	35 95
1889 " "	7,549 45
1890 " "	456 09
Other Disbursements.....	7,549 45
1899 to Jan. 31, 1900, Amount Disbursed.....	456 09

Total, Monhagen Reservoir..... \$ 53,544 93

HIGHLAND RESERVOIR.

CONSTRUCTION AND REAL ESTATE TO DATE.

Amount Disbursed 1889.....	\$	20 00
“ “ Year ending March 1, 1891.....		67,027 67
“ “ “ “ “ “ 1892.....		17,259 39
“ “ “ “ “ “ 1893.....		11,375 72
“ “ “ “ Feb. “ 1894.....		1,308 84
“ “ 1895.....		205 84
“ “ 1899 to Jan. 31, 1900.....		957 81
		<hr/>
	\$	93,155 27
Less value 12 in. pipe line connecting Highland and Monhagen Reservoirs 8,477½ ft. at \$2 50 per ft.....		21,193 75
Net cost Highland Reservoir and Real Estate.....	\$	71,961 52

PUMPING STATIONS AND WELLS.

VALUE OF, AND REAL ESTATE.

Total cost to March 1, 1893.....	\$	3,147 74
Real Estate.....		2,730 00
Paid Pierce Artesian and Oil Well Supply Co.....		2,000 00
Paid for Worthington Pump.....		470 00
Search and attorney's fees.....		93 00
Paid from General Fund.....		138 62
		<hr/>
Total to Jan. 31, 1900.....	\$	8,579 36

FILTRATION PLANT.

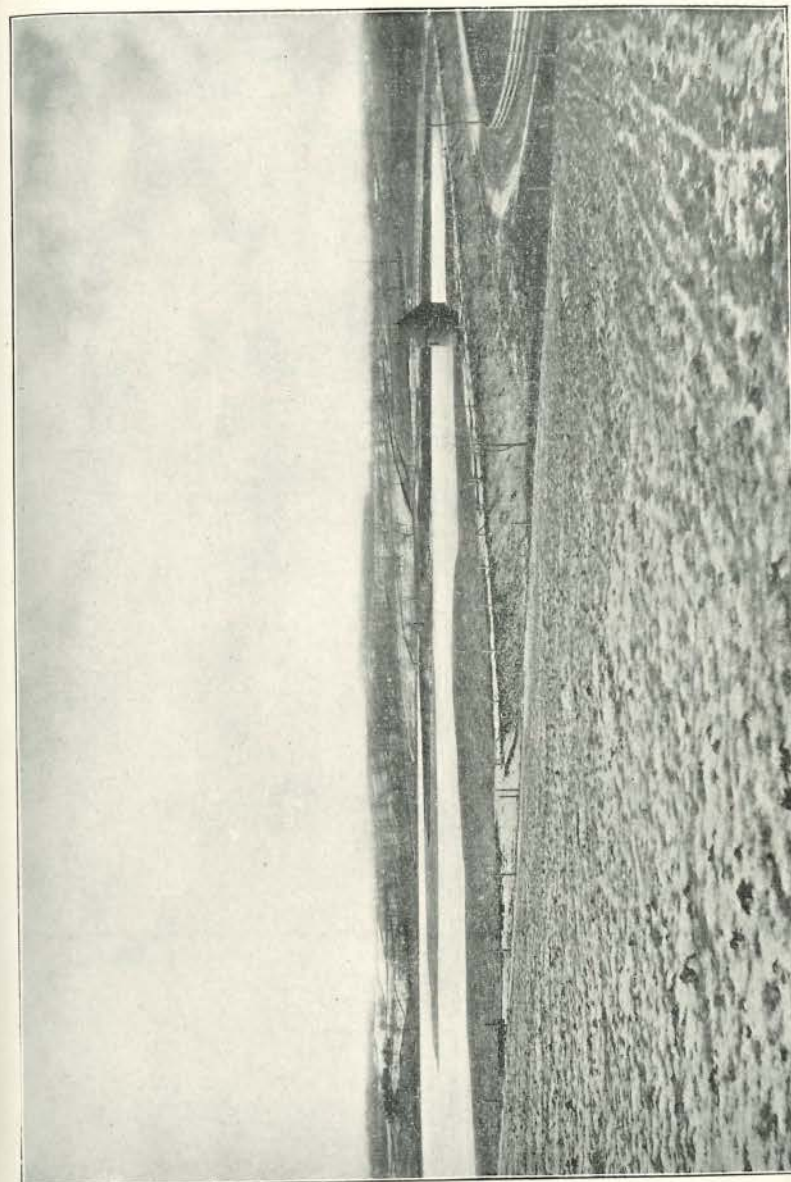
CITY'S INTEREST IN.

Continental Filter Co.'s first payment.....	\$	8,740 00
“ “ second “		2,500 00
Amount Disbursed for pipe, valves, specials, labor, lowering main, Etc.....		1,553 56
Value plot land on which plant is located not including S. Mott purchase.....		300 00
		<hr/>
Total to Jan. 31, 1900.....	\$	13,093 59

SHAWANGUNK KILL.

PUMPING STATION, REAL ESTATE, RIGHTS OF WAY AND PIPE LINE FROM KILL TO MONHAGEN RESERVOIR.

Amount disbursed per 1872 Report.....	\$	28,191 84
“ “ “ 1873 “		31,253 72
“ “ “ 1875 “		300 00
“ “ “ 1882 “ Litigation.....		2,722 00
		<hr/>
Total	\$	62,467 56



MONHAGEN RESERVOIR--Looking West.

RECAPITULATION.

Valuation of Mains.....	\$ 208,617 00
“ Monhagen Reservoir.....	53,544 93
“ Highland “.....	71,961 52
“ Pumping Station (wells).....	8,579 36
“ Filtration Plant (city's interest).....	13,093 56
“ Meter Equipment.....	3,041 00
“ Shawangunk Kill Pumping Station.....	62,467 56
Total cost Water Works system.....	\$ 421,304 93

ANNUAL RECEIPTS.--1887 to 1899.

	Total Water Receipts.	All Other Receipts.	Total.
1887	\$ 16,640 41	\$ 298 86	\$ 16,939 27
1888	18,124 51	630 99	18,755 50
1889	16 212 15	830 11	17,042 26
1890	18,490 27	6,648 24	25,138 51
1891	21,945 98	6,270 58	28,216 56
1892	19,328 23	7,064 80	26,393 03
1893	20,508 49	1,404 54	21,913 03
1894	28,113 76	870 37	28,984 13
1895	32,200 71	916 25	33,116 96
1896	30,612 21	584 74	31,196 95
1897	29,470 43	2,566 85	32,037 28
1898	29 297 83	2,730 11	32,027 94
1899	33,180 91	4,421 10	37,602 01

Average water receipts for last five years, \$30,952.

ANNUAL DISBURSEMENTS.--1887 TO 1899.

Year.	Construction Acct.	Purchasing Acct.	Maintenance and Repairs.	Pumping Station.	Expense.	Salaries and Allowances	Interest.	Sundries.	Total.
1887	\$ 4,590 62	\$ 1,180 24	\$ 3,065 65		\$ 1,561 92		\$ 8 010 00		\$ 18,408 43
1888	3,595 12	1,330 14	2,657 83		1,832 69		7,055 00		16,470 78
1889	2,411 10	5,897 80	2,425 27		3,946 17		4,982 50		19,662 84
1890	2,527 31	6,731 56	1,453 73		8,458 27		6,172 50		25,343 37
1891	2,819 10	9,564 46	2,300 10		3,695 94		8,205 00	5,287 43	31,872 03
1892	5,395 92	4,848 59	1,852 95		6,936 89		8,925 00		27,959 35
1893	2,162 74	7,760 24	1,628 61	1,687 39	2,920 65		8,430 00		24,589 63
1894	2,176 76		2,021 00	3,035 38	3,721 10	2,036 88	9,535 00	5,042 67	27,568 79
1895	14,360 19		1,172 92	2,970 67	2,587 24	2,600 74	9,468 34	667 34	33,827 44
1896	10,060 09		1,514 13	3,002 66	1,717 82	2,117 66	9,375 00	370 49	28,157 85
1897	13,269 89		1,026 20	3,249 85	2,267 45	2,141 58	9,295 00	2,461 99	33,711 96
1898	8,909 68		324 71	1,993 43	2,859 49	2,376 29	10,190 00	2,613 77	29,267 37
1899	19,611 12		892 01		1,906 88	2,650 05	8,137 57	2,870 88	36,068 51

Construction Account—Average for last five years \$13,242 00
 Annual Disbursements— “ “ “ “ “ 32,206 00

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OUTSTANDING BONDS.--January 31st, 1900.

Am't.	Issued.	Payable.	Rate of Interest	Amount of Annual Interest	Interest Payable Semi-Annually on	Where Payable.	Purpose Issued.	Number and Size.
\$ 75,000	May 1, 1890	May 1, 1910	3½	\$2,625 00	May 1—Nov. 1	Harlem Savings Bank, New York	Highland Reservoir	5-10s. 5-5s
10,000	Jan. 31, 1893	Feb. 1, 1913	3½	350 00	Feb. 1—Aug. 1	Middletown Savings Bank	Pumping Station—Driven Wells . . .	1-10
12,000	March 1, 1893	March 1, 1913	3½	420 00	Mar. 1—Sep. 1	Bushwick Sav. Bank, Brooklyn, NY	Highland Reservoir	12-1
100,000	June 30, 1888	July 2, 1918	3½	3,500 00	Jan. 2—July 2	† Citizens' Savings Bank, N. Y. . .	{ For redemption of \$101,000 of 5 pr ct. and 6 per cent. interest bearing bonds	10-10s
14,000	July 1, 1881	July 1, 1911	4	560 00	Jan. 1—July 1	‡Comptroller State of N. Y., Albany	§For redemption \$65,000 7 per ct. bonds	1-53(orig)
40,000	Aug. 1, 1891	Aug. 1, 1911	4	1,600 00	Feb. 1—Aug. 1	Middletown Savings Bank	20-inch Pipe Line	4-10s
\$251,000 Total amount of Bonds.				\$9,055 00 Total amount Annual Interest.				

* Redeemable in sums of \$2,000 or more at any time.
 † Redeemable at pleasure of City on or after July 2, 1898.
 ‡ This issue was originally \$53,000, but sum has been gradually reduced to \$14,000.

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SCHEDULE RATES.

	Per Year
Each dwelling house used by one family of not more than six persons, domestic purposes only.....	\$ 4 50
Where a dwelling is occupied by more than one family, for domestic purposes only, each family of not more than six persons.....	4 00
Where there are more than six persons in the family, for each additional person.....	50
Each family, of one person, for domestic purposes only.....	2 50
Water closets or urinals with self-closing valves, (for one or more) in dwelling or building where city water is not used for family, store or office purposes, for each family, office or store.....	2 00
Water closets or urinals with self-closing valves (for one or more) in dwelling or building where city water is used for family, store or office use for each family, office or store.....	1 50
Self-closing water closets or urinals (1 or more) for one family of one person.....	1 00
Water closets or urinals not provided with self-closing valves for each family or store.....	5 00
Bath (1 or more) for each family.....	1 50
“ “ “ “ of one person.....	1 00
Each office having water therein.....	3 00
Offices supplied with water from a faucet in the hall, each office.....	1 50
Boarding houses and boarding schools, for domestic use only, the same as for private families.....	
Bath rooms, water closets and urinals in connection with stores and offices for each store or office using same.....	1 50
Water for laundries furnished only through meter.....	
Barber shops, for first chair.....	3 00
Each additional chair.....	2 00
Hotels, saloons and livery stables furnished through meters; in no case will the amount charged be less than 75 cents per month.....	
Private stable, one horse.....	2 00
Each additional horse.....	1 50
The charge for stable use includes water for washing wagons.....	
Dry goods and fancy notion stores.....	7 50
Stores with fountains.....	10 00
Other stores.....	3 00 to 5 00
Cattle, single.....	1 00
Each additional one.....	50
Yard and street sprinklers, to be used only between 5 a. m. and 8 a. m. and between 4 p. m. and 9 p. m., and no sprinkler to be used over four hours per day, for season of six months, for every 50 feet or fraction thereof.....	2 50
Two cents per foot for each additional foot of frontage.....	
Water for building purposes.....	2 00 to 10 00
Greenhouses where products are utilized for sale, furnished through meter.....	
Private greenhouses, special rates.....	
Water for manufacturing purposes, furnished only through meter.....	
Water for all purposes not above enumerated, subject to special rates.....	

METER RATES.

1,667 cu. ft. or less per month.....	15 cents per 100 cu. ft.
1,667 to 2,000 cu. ft. per month lump sum.....	\$ 2.50
2,000 “ 3,200 “ “ “ “.....	12½ “ “ “
3,200 “ 4,000 “ “ “ “ lump sum.....	4 00
4,000 “ 6,000 “ “ “ “.....	10 “ “ “
6,000 “ 8,000 “ “ “ “ lump sum.....	6 00
8,000 “ 16,000 “ “ “ “.....	7½ “ “ “
16,000 “ 30,000 “ “ “ “ lump sum.....	12 00
30,000 cu. ft. or over.....	4 “ “ “

To manufacturers 50 per cent discount on above prices if paid within 60 days from date.

25 per cent discount to all other meter users on above rates, if paid within 60 days from date. Minimum meter rate 75 cents per month.

A cubic foot of water is equal to 7.48-100 U. S. gallons, therefore 1,000 cu. feet of water is equivalent to about 7,500 gallons. This should be considered in connection with the above rates.

THEORY OF MECHANICAL FILTRATION WHEN SULPHATE OF ALUMINA IS USED.

Extract from American Society Civil Engineer's Report.
Sept. 1899—pages 522-531.

* * * “The theory of mechanical filtration when sulphate of alumina has been added to the filtered water, may be described briefly as follows: The alumina causes an artificial precipitation; a portion of the alumina is decomposed, forming sulphates of other bases and a flocculent precipitate of aluminic hydrate. A portion of it also combines directly with the organic matter in the water, coagulating the same and thus helping to increase the precipitation.

“The degree of color of the water is also largely reduced by the uniting of the precipitated aluminic hydrate with the coloring matter in the water.”

“WESTON.”

FREE USE OF WATER FOR FIRE PROTECTION AND OTHER CITY PURPOSES.

It is the custom in many of the best regulated towns and cities for the city to pay over to the water board each year the amount which it would cost the city for the water for fire protection, and other city purposes if the water works were owned by a private company.

If this were done in this city, or the water works were owned by a private corporation, the amount to be paid over annually by the city, based on an estimate much below the average, would be approximately as follows:

Thrall Hospital and Old Ladies' Home, per year . . . \$	50 00
High School and ward schools	150 00
Fire engine houses	100 00
Flushing sewers	100 00
Paving streets	100 00
City parks	50 00
Five public watering troughs	100 00
249 public hydrants at \$40 each	9,960 00
Total annual cost	\$ 10,610 00

The price usually paid by municipalities to water companies per hydrant for water for fire purposes, varies from \$30 to \$100 each.

It might be well to state in this connection that during the past few years parties have intimated a willingness to buy the water works system of the city, and would be willing to pay many thousands of dollars more than it has cost.

A glance at our assets on another page reveals the fact that the system has cost the city \$421,304.93.

We fully believe that the water works plant (in spite of the fact that some mistakes may have been made in the past) *is worth to-day far more than it ever cost.*

This is proved by an examination of the yearly receipts and running expenses.

Of course it is understood that were the city to sell out to a private company the tendency would be to raise the rates rather than lower them.

STATISTICS.

SOURCE OF SUPPLY—Springs and surface water from watershed and driven wells.

SYSTEM—Gravity, and pumping to reservoirs from wells.

PRESSURE—From 40 to 90 pounds.

FIRE PRESSURE—From 40 to 90 pounds.

YEARLY REVENUE—Gross receipts, 1898, \$32,027.94. 1899—\$37,602.01.

YEARLY OPERATING EXPENSES—Varies from \$5,500 to \$11,000, depending to a great extent on length of time pumps are used. It cost \$3,000 per year to run pumps. During 1899 it was not necessary to use pumps.

ESTIMATED COST TO RUN THE FILTER PLANT—From \$2,500 to \$3,000 per year, which should be added to above operating expenses.

Annual interest (on \$251,000 bonds) \$9,055.00. Rate of interest 3½ and 4%.

Miles of mains 31 86-100; sizes, 4 in. to 20 in.

Kind of pipe, iron; make, Chas. Miller & Son and R. D. Wood.

No. of hydrants 273; make, Matthews & Ayers.

Elevation reservoirs: Monhagen, 161 ft. Highland 239 ft.

Distance from city of Monhagen Reservoir 2 miles; Highland Reservoir 5 miles.

Capacity of reservoirs: Monhagen 296,000,000 gallons; Highland 560,000,000 gallons.

Pumps, The Deane. Capacity pumps 1,500,000 gal. per day.

No. meters, 129. No. of each kind: Crown, 46; Gem, 7; Thomson, 76.

No. of taps, 2,026.

Kind of service pipe in use, galvanized iron and lead. (Department does not put in the service pipe.)

Filtration, mechanical; combined pressure and gravity.

Who constructed filters, Continental Filter Co.

Total cost of works to Jan. 31st, 1900—\$421,304.93.

CITY OFFICIALS.

1900.

Mayor—Charles L. Elwood.*Alderman-at-Large and President Common Council,*

W. C. F. Bastian.

ALDERMEN.

Charles E. Ducolon, 1st Ward.	F. M. Barnes,	3d Ward.
John D. Powers, " "	Wm. Ward,	" "
Chas. E. Gardner, 2d "	Robt. Lawrence,	4th "
W. M. Fiero, " "	John J. Wood,	" "

I. B. A. Taylor, City Clerk.

PAST WATER COMMISSIONERS.

E. M. Madden.	C. C. Luckey.
J. M. Matthews.	James G. Harding.
H. R. Wilcox.	Hudson E. Hulse.
U. T. Hayes.	I. R. Clements.
John L. Bonnell.	D. W. Berry.
William W. Reeve.	R. H. Dolson.
William Mills.	J. W. Canfield.
James B. Hulse.	E. Canfield.
Joshua Draper.	A. V. Boak.
D. C. Winfield.	W. E. Douglas.
N. W. Vail.	O. S. Fellows.
John Wilkin.	W. H. Rogers.
Charles J. Everson.	E. Millen.
William Millspaugh.	John F. Dicks.

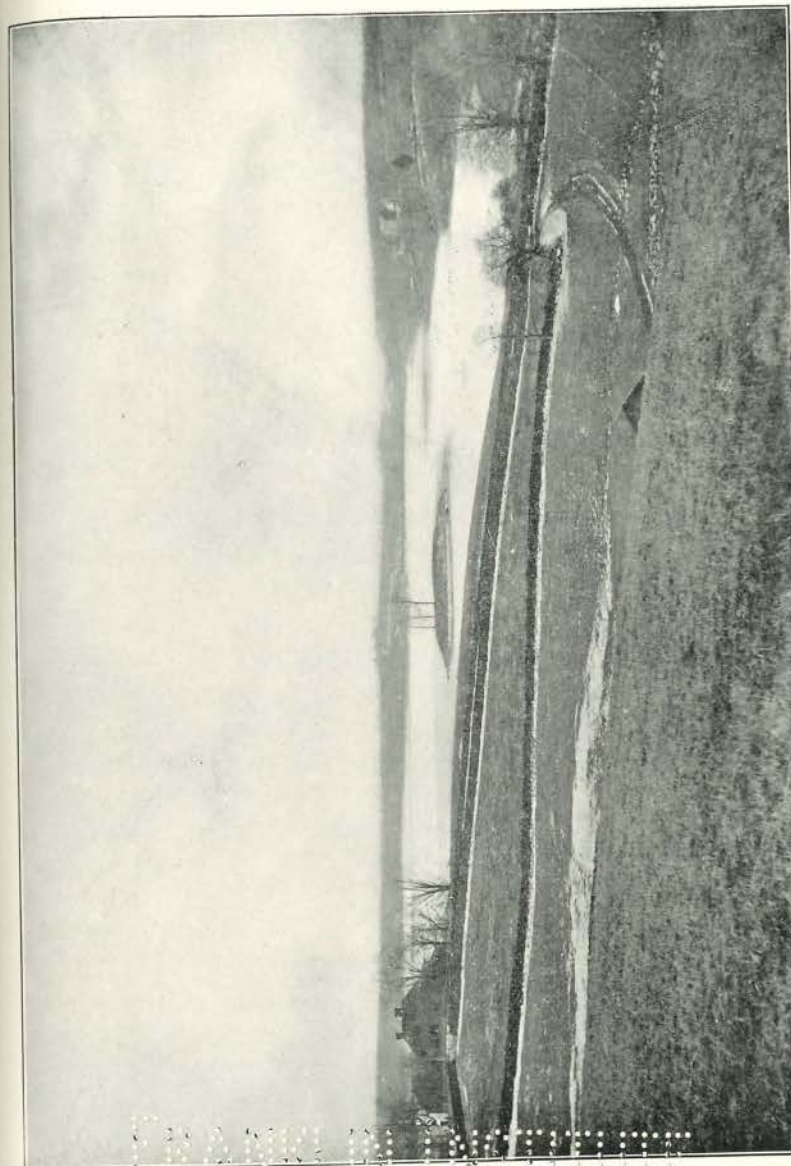
FORMER SUPERINTENDENTS.

S. D. King.	I. F. VanDuzer.
-------------	-----------------

FORMER CLERKS.

Jirah I. Foote.	J. M. Price.
S. D. King.	C. J. Boyd.
N. W. Vail.	D. F. Seward.

E. S. Merrill.



HIGHLAND RESERVOIR--Looking South.

PHILADELPHIA

HISTORY AND DESCRIPTION OF WATER WORKS.

On April 3d, 1866, an act was passed by the Legislature (chapter 347, laws of New York) conferring power on the taxable inhabitants of the village of Middletown to authorize the trustees of said village to construct water works for supplying the village with water, and to issue bonds to amount of \$50,000 for this purpose.

The first meeting of the taxable inhabitants was held in June, 1866.

A second meeting was held on October 12th of the same year, and subsequently the trustees were empowered to enter upon the construction of said work, and authority given them to issue \$50,000 in water bonds to defray expenses of same. Later it was found that \$25,000 additional would be required to construct the works, and an amendment to the original act was passed authorizing an additional issue of bonds.

E. M. Madden, J. M. Matthews and H. R. Wilcox were appointed Commissioners to take charge of the construction of the water works system.

The Water Works were a success from the start. On Jan. 1st, 1868, the gates were opened and water turned into the mains. A test was made with fire hose at the hydrant at the head of Mulberry street, throwing a stream 80 to 90 ft. high through a $1\frac{1}{4}$ in. nozzle. On Saturday, Jan. 4th, 1868, the fire department were out in full force and the capacity of the works for extinguishing fires was tested in various parts of the village.

MONHAGEN RESERVOIR.

Monhagen Reservoir is located about two miles from the center of the city, and 161 ft. above Franklin Square. It covers 74 acres, has a maximum depth of 24 ft., and holds 296,000,000 gallons of water. Its drainage area is 426 acres. Construction began in June, 1867, and the dam was completed in November of the same year.

SHAWANGUNK KILL PUMPING STATION.

1872—purchase of Otis factory property and real estate, construction of stone canal and pump house, and 12 inch pipe line from Shawangunk Kill to Monhagen reservoir.

1878—1879—additional 12 inch pipe line laid from Monhagen Reservoir to city.

HIGHLAND RESERVOIR.

This beautiful lake is situated about five miles from this city and 239 ft. above Franklin Square. It covers an area of 110 acres, has a maximum depth of 21 ft. 4 in., and holds 560,000,000 gallons of water. The construction of Highland reservoir and the 12 in. iron pipe line connecting this lake with Monhagen Reservoir began in 1890 and was completed in 1891.

1891—20 in. pipe line laid from Monhagen Reservoir to Highland avenue and West Main street.

1893—Monhagen avenue pumping station and driven wells.

1899—1900—Filtration Plant.

LOCATION OF FIRE HYDRANTS.

Hydrants on Monhagen Reservoir.		Hydrants on Highland Reservoir.		LOCATION.	
Single	Double	Single	Double	Street.	Near what point.
I				Academy ave	opposite Grant street
	I			" "	at High School
I				" "	corner Fulton street
I				" "	at Everett street
	I			" "	corner Genung street
I				" "	corner Hoffman street
I				" "	corner Bennett street
I				" "	at Hogan Boiler Works
I				Albert street	corner Ogden street
	I			" "	corner Beattie avenue
		I		Beacon "	near Prospect street
		I		" "	at No. 21 Beacon
I				Beattie avenue	at No. 16 Beattie avenue
	I			" "	corner Prince street
I				" "	corner Rowan street
I				Benton avenue	at No. 8 Benton avenue
I				" "	corner Sprague avenue
I				Bonnell street	opposite Chestnut street
	I			" "	opposite Olive street
	I			Broad street	at No. 16 Broad street
I				" "	corner Rowan street
I				" "	corner Albert street
	I			California ave	opp. R. N. Boak's res.
	I			" "	opp. J. H. Horton's res.
	I			Canal street	at Anglo-Swiss Co. stables
	I			" "	at Anglo-Swiss Condensery
	I			Centre street	bet. King and Depot streets
	I			Charles street	at Susquehanna railroad
	I			" "	corner Prospect avenue
	I			Chestnut street	bet. Bonnell and Knapp ave
	I			Cortland "	corner Linden avenue
	I			" "	corner Wickham avenue
	I			Cottage street	corner Roberts street
I				" "	at Saw Factory
I				" "	at No. 67 Cottage street
I				" "	at Elwood's Creamery
	I			" "	corner Wickham avenue
	I			" "	at No. 176 Cottage street
	I			" "	near Wisner avenue (north)
	I			" "	at end of street
	I			Depot street	at Wilson & Wood's coal yard
I				East avenue	bet. East Main and William
	I			" "	opp. Little avenue
I				" "	corner Washington street
I				" "	at No. 74 East avenue
I				" "	corner Fulton street
I				East Main street	opp. William street
	I			" "	opp. Orchard street
	I			" "	opp. Academy avenue
	I			" "	at No. 115 East Main street
	I			" "	corner Broad street
	I			" "	corner Grand avenue
	I			" "	at Prospect avenue

LOCATION OF FIRE HYDRANTS—Continued.

Hydrants on Monhagen Reservoir.		Hydrants on Highland Reservoir.		LOCATION.	
Single	Double	Single	Double	Street.	Near what point.
I				East Main street	opp. East Broadway
	I			" " "	corner Horton avenue
	I			" " "	corner Gardner avenue
I				Fairlawn avenue	corner Woodlawn avenue
	I			Fulton street	corner Mulberry street
	I			" " "	corner Canal street
	I			Franklin street	corner South street
	I			Gardner avenue	at Madison House
	I			" " "	top of hill
	I			Genung street	end of line
	I			Grand avenue	corner South street
	I			" " "	corner Myrtle avenue
I				" " "	corner Prince street
	I			" " "	at No. 52 Grand avenue
	I			Grant street	corner Lincoln street
	I			Grove street	at No. 19 Grant street
	I			" " "	at Thrall Hospital
	I			Hanford street	at No. 7 Grove street
	I			" " "	opposite Harding street
	I			" " "	at No. 55 West Hanford street
	I			Harding street	" 71 " " "
	I			Harrison street	south of Erie crossing
	I			" " "	corner Wickham avenue
	I			Henry street	corner Beattie avenue
	I			Highland Ave.	rear of Casino
	I			" " "	corner Hanford street
	I			" " "	corner West Main street
	I			" " "	corner Franklin street
	I			" " "	corner Cortland street
	I			" " "	at No. 66 Highland avenue
	I			" " "	" 100 " " "
	I			" " "	at W. N. Knapp's residence
	I			" " "	opposite Sunset street
	I			Hillside avenue	bet. Sunset and Wisner Ave.
	I			Hoffman street	at Cemetery
	I			Horton avenue	corner South
	I			" " "	bet. E. Main and Kenwood Sts.
	I			Hose tower	opposite Kenwood street
	I			Houston avenue	Centre street
	I			" " "	corner Academy avenue
	I			James street	corner Sprague avenue
	I			John street	corner Depot street
	I			" " "	corner North street
	I			King street	corner Linden avenue
	I			" " "	corner James street
	I			" " "	opposite Centre street
	I			Knapp avenue	corner North street
	I			" " "	corner Wickham avenue
	I			" " "	bet Wallkill Ave., Hanford St.
	I			Lake avenue	opposite Chestnut street
	I			" " "	corner Wickham avenue
	I			" " "	corner Wallkill avenue

LOCATION OF FIRE HYDRANTS.—Continued.

Hydrants on Monhagen Reservoir.		Hydrants on Highland Reservoir.		LOCATION.	
Single	Double	Single	Double	Street.	Near what point.
			I	Lake avenue	opposite Hanford street
			I	" " "	corner Columbia avenue
			I	" " "	corner Oliver street
			I	" " "	at Orange County Brewery
			I	" " "	at ice house
			I	Lenox avenue	bet. Liberty and Cantrell Sts
			I	" " "	opposite Cantrell street
			I	Liberty street	at No. 9 Liberty street
			I	" " "	corner Lenox avenue
			I	" " "	at end of street
			I	Linden avenue	corner Franklin street
			I	" " "	corner Wickham avenue
			I	" " "	opp. Low Block
			I	" " "	corner Short street
			I	" " "	corner Low avenue
			I	" " "	at No. 137 Linden avenue
			I	Linden Terrace	at No. 97 Linden Terrace
			I	" " "	corner Wisner avenue
			I	" " "	at No. 29 Linden Terrace
			I	" " "	at No. 15 Linden Terrace
			I	Little avenue	corner Academy avenue
			I	" " "	opp. Spring street
			I	Low avenue	opp. O. & W. Restaurant
			I	" " "	at Electric R'y power house
			I	Maryland avenue	corner West Main street
			I	Mill street	on bend, near W. Main street
			I	" " "	corner Fulton street
			I	Monhagen avenue	corner Hillside avenue
			I	" " "	corner Wilkes avenue
			I	" " "	near Fairview avenue
			I	" " "	bet. Fairview av. & W. Main st
			I	" " "	corner West Main street
			I	" " "	at No. 119 Monhagen avenue
			I	" " "	at State Hospital switch
			I	" " "	near residence of J. H. Horton
			I	Montgomery street	at file shops
			I	" " "	at saw shops
			I	" " "	O. & W. R. R. crossing
			I	" " "	corner Prince street
			I	Mulberry street	at Cemetery gate
			I	Myrtle avenue	corner East Main street
			I	" " "	at junction Charles street
			I	North street	corner East Main street
			I	" " "	at No. 43 North street
			I	" " "	at No. 128 North street
			I	" " "	corner Wickham avenue
			I	" " "	corner Prospect street
			I	" " "	corner Short street
			I	" " "	at No. 220 North street
			I	" " "	corner Low avenue
			I	" " "	at Ketcham's coal yard
			I	" " "	at No. 276 North street
			I	" " "	" 292 " "

LOCATION OF FIRE HYDRANTS.—Continued.

Hydrants on Monhagen Reservoir.		Hydrants on Highland Reservoir.		LOCATION.	
Single	Double	Single	Double	Street.	Near what point.
I				North street	at residence of D. R. Miller
	I			" "	corner Church street
	I			" "	at 352 North street
	I			" "	at Dineen's Hotel
I				Oak street	near Washington street
I				" "	corner Fulton street
	I			Ogden street	at No. 9 Ogden street
	I			Olive street	bet. Bonnell St., Knapp Ave
I				Orchard street	at Low Block
	I			" "	at No. 12 (Dr. Smiley's)
I				Prince street	corner Ogden street
	I			" "	corner Broad street
	I			Prospect avenue	bet. E. Main St., Myrtle Ave
	I			" "	opp. Myrtle avenue
	I			" "	corner Houston avenue
I				Prospect street	corner Linden avenue
		I		" "	bet. Beacon St., Highland Ave
		I		" "	corner Highland avenue
		I		" "	bet. Highland and Watkins Aves
	I			Railroad avenue	corner North street
I				" "	opposite silk mill
	I			" "	opposite Grove street
	I			" "	corner Cottage street
	I			" "	corner Montgomery street
	I			" "	at rolling mill
	I			Ridge street	bet. E. Main St., Myrtle Ave
	I			" "	near Children's Home
	I			Roberts street	rear of Presbyterian Church
	I			Smith street	bet. Wickham and Low Aves
	I			South street	corner North street
I				" "	opposite Washington street
I				" "	at No. 137 (Geo. W. Galloway)
	I			" "	opposite Bennett street
	I			" "	near Conkling avenue
	I			" "	at No. 171 (end of line)
I				Sprague avenue	corner Grant street
I				" "	opposite Little avenue
I				" "	corner Houston avenue
I				" "	opposite Fulton street
	I			Spring street	bet. Washington, Fulton Sts
	I			" "	corner Fulton street
	I			Sproat street	corner Wickham avenue
	I			" "	bet. Wickham, Wisner Aves
	I			Union street	opposite James street
I				Vail avenue	at Cemetery
I				Wallkill avenue	at No. 17 Wallkill avenue
		I		" "	corner Liberty street
		I		" "	bet. Liberty and Cantrell Sts
		I		" "	corner Cantrell street
I				Washington street	corner Academy avenue
I				" "	corner Spring street
	I			" "	opposite Prospect avenue
		I		Watkins avenue	corner Prospect street

LOCATION OF FIRE HYDRANTS.—Continued.

Hydrants on Monhagen Reservoir		Hydrants on Highland Reservoir.		LOCATION.	
Single	Double	Single	Double	Street.	Near what point.
			I	Watkins avenue	at No. 15 Watkins avenue.
			I	" "	corner Jay street
			I	" "	At No. 59 Watkins avenue
			I	" "	corner Sunset street
I				Wawayanda Ave	opposite tannery yard
	I			West Main street	corner North street
				" "	opposite Canal street
				" "	opposite Mulberry street
				" "	corner Henry street
				" "	opposite Union street
				" "	at No. 146 (B. B. Williams')
				" "	corner Hanford street
				" "	opposite Bonnell street
				" "	at No. 180 West Main street
				Wickham avenue	junction West Main street
			I	" "	opposite armory
				" "	corner Prospect street
				" "	opposite Grove street
				" "	No. 125 (near O. & W. crossing)
				" "	opposite Prince street
				" "	corner Wisner avenue
				Wilcox avenue	corner West Main street
				" "	at No. 8 Wilcox avenue
				" "	corner Hanford street
				Wilkes avenue	at Hillside Cemetery
			I	Wisner avenue	corner Highland avenue
				" "	corner North Beacon street
				" "	corner North street
				" "	at Type Factory
				" "	at O. & W. Crossing
				" "	at bridge
				" "	bet. bridge and Cottage street
				" "	corner Cottage street
				" "	at res. of W. D. Stratton
				" "	at res. of L. S. Wisner
				Woodlawn avenue	bet. E. Main and Kenwood Sts
				" "	corner Kenwood street
				" "	corner Wisner avenue
89	124	11	26		

Total Single Hydrants, 100. Total Double Hydrants, 150.

PRIVATE HYDRANTS.

3				Anglo-Swiss Milk Co.	Canal street
	I			Crane & Swayze	Montgomery street
I				Rolling Mill	" "
I				Saw Shop	Cottage street
	11			State Hospital	
I	I			The Howell-Hinchman Co.	Fulton street
	4			Wallkill Hat Works	Mill street
6	17				

January 31, 1900. Total number Hydrants, 273.

THE CITY OF MIDDLETOWN.

is beautifully located sixty-six miles from New York City, in the heart of the famous Orange County, and only two hours' ride from New York. Population 15,000. It is noted for its healthfulness, educational advantages, transportation facilities, churches, thrift and enterprise of its citizens.

As a manufacturing town Middletown offers superior inducements, and those interested are invited to address our Board of Trade. As a residence city Middletown is unsurpassed, and eminent physicians are yearly sending an increased number of people to this locality.

By virtue of its altitude, which is over 500 feet above sea level, its pure water and dry air, its natural advantages in location, and its undulating surface, which affords natural drainage, its excellent system of sanitary sewerage, Middletown continues to attract a large number of a desirable class of people within her environs.

In regard to its churches, schools, stores and business enterprises, its paved streets and shaded avenues, Middletown compares favorably with many cities of 40,000 to 50,000 inhabitants.

Our manufacturing interests are large and varied. There are four railroads, including the Erie and the Ontario & Western.

Express Companies—Four

Electric Railway—Fifteen miles, finely equipped, connecting all parks and Goshen.

Electric light.

Banks—five.

Business streets—Asphalt and brick.

Journals—Three daily and five weekly newspapers.

Hospitals—N. Y. State Homeopathic Hospital and Thrall Hospital.

Labor—Abundant, cheap, intelligent.

Twenty-Fourth Separate Co., N. G. N. Y.

Fine Armory.

Schools—New High School, costing \$90,000; ten ward schools, 3 business colleges, Ursuline Academy.

New Thrall Library.

Churches—Fourteen.

Fire Department—Most efficient and best equipped department in the State. Charles Higham, Chief Engineer.

Railroad Depots—Two beautiful, modern depots.

Parks—Thrall, Academy Avenue, Midway and Columbia Parks.

Board of Trade, Building and Loan Association, Etc., Etc.