

1924

★ The Mayor

212355

REPORT ON
Water Works Improvements

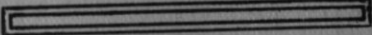
Under Bond Issue
Authorized by the People
March 27, 1922



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CEDAR RAPIDS, IOWA

VBA pv. 120



City of Cedar Rapids, Iowa

Commission Plan of Government

J. F. RALL, Mayor, *Dept. of Public Affairs*

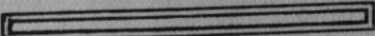
LOUIS ROTH, *Dept. of Accounts and Finances*

S. C. VILES, *Dept. of Public Safety*

L. J. ZIKA, *Dept. of Streets and Public Improvements*

JAMES D. KENNEDY, *Dept. of Parks & Public Property*

H. F. BLOMQUIST *Supt. of Water Works*



Cedar Rapids (Ia.) Water Dept.

REPORT ON
Water Works Improvements

Under Bond Issue
Authorized by the People
March 27, 1922



CEDAR RAPIDS, IOWA

Constructed 1921-1922 City Officials

1921

J. F. RALL

Dept. of Public Affairs

J. P. WINN

Dept. of Accounts and Finances

MARTIN EVANS

Dept. of Public Safety

L. J. ZIKA

Dept. of Streets and Public Improvements

HARRY J. WHITFIELD

Dept. of Parks and Public Property

1922

C. D. HUSTON

LOUIS ROTH

MARTIN EVANS

L. J. ZIKA

J. D. KENNEDY

H. F. BLOMQUIST

Superintendent of Water Works

Superintendent of Construction

OFFICE OF
CITY WATER WORKS

July 9, 1924.

To the Honorable Mayor and Council,
City of Cedar Rapids, Iowa.

Gentlemen:

The undersigned begs to submit herewith a report covering improvements in the Water Department made under the Improvement Bond Issue authorized by vote on March 27, 1922.


The work contemplated under this improvement has all been completed with the exception of approximately 3,000 feet of 12-inch secondary feeders which have not yet been laid; but material is on hand for the same and will be finished during such times as our construction organization is not occupied with other work.

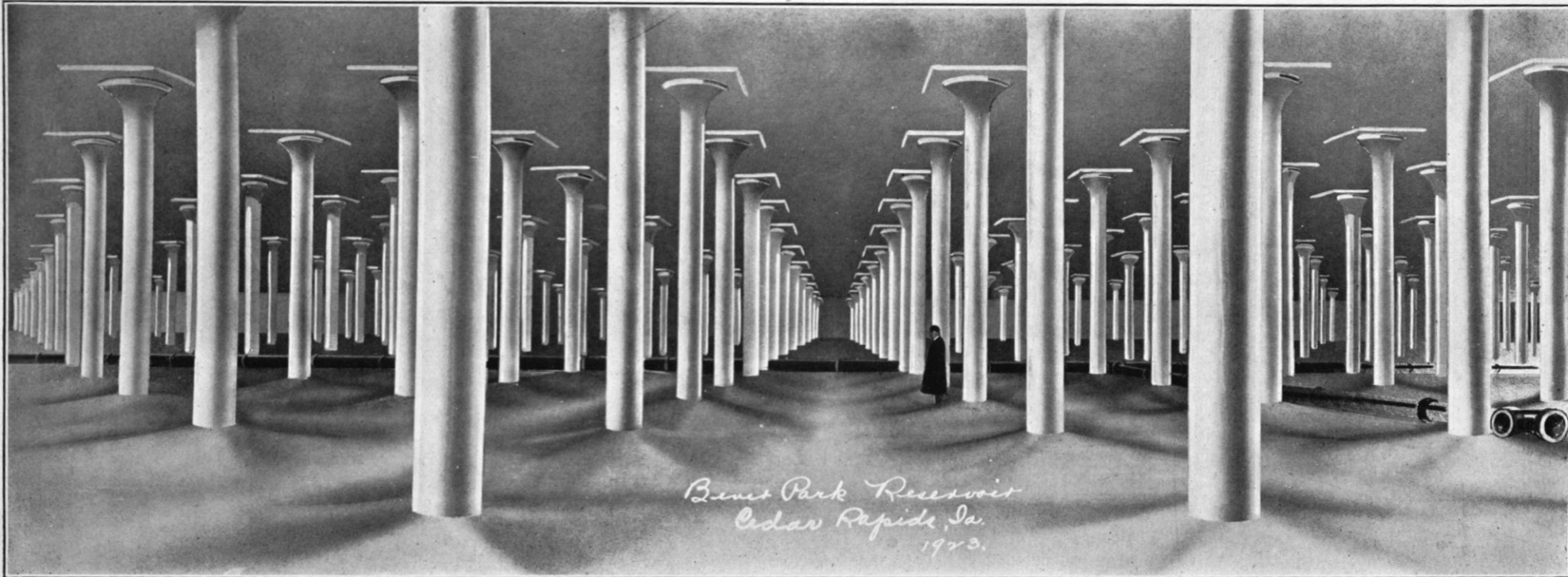
The report also contains some historical data such as a summary of the operating costs and records of output of the Water Works since purchased by the City on July 1, 1903, which constitute a history of the plant and its operation under municipal ownership.

Since this report contains much information obtained from records of the past years, I respectfully recommend that authority be given to have the same printed so as to have copies available for those that are interested in the operation of our Water Works.

Respectfully submitted,

H. F. BLOMQUIST,
Superintendent.





H. F. Blomquist, Designing Engineer
Hatton, Holmes & Anthony, Associate Engineers

John Klepach Const. Co., Contractors

BEVER PARK RESERVOIR Constructed 1922

Showing an interior view of the completed reservoir. A system of pipe lines are placed on the floor for distributing the water throughout the whole area. Eleven inlets and outlets with light check valves are so arranged as to cause a circular motion of the water when pumped in or taken out to prevent stagnation of water in storage. A portion of the water is drawn off each day and a corresponding amount pumped in at night.

The cover is supported by 164 reinforced concrete columns 18 inches in diameter, placed 18 ft. apart. The concrete roof slab is covered with about 15 inches of earth to protect it from direct exposure to heat and cold. The completed reservoir has two ventilating shafts extending 10 ft. above the cover, and the wall is supported by earth fill at 1 to 1½ slope.

The construction of the reservoir required 18,396 cu. yds. excavation and fill, 4,722 cu. yds. concrete, and 3,190 tons of steel. The total cost, including pipe connections and drains, engineering services and inspections, was \$111,285.23, or \$13,910.65 per million gallons capacity.

The depth of water is continuously recorded on a chart at the pumping station 2½ miles away by means of an electrical device.

Office of City Water Works

By action of the voters of the City of Cedar Rapids on March 27, 1922, Water Works Improvement Bonds in the sum of \$450,000.00 were authorized for the construction of a reinforced concrete water reservoir as an addition to the City Water Works, and for extensions of city water mains. Of this amount only \$400,000.00 have been issued which together with \$10,790.00 premium on the sale of bonds make a total of \$410,790.00 available for the improvements. This amount was found to be sufficient to complete the work as outlined.

The bonds are dated June 15, 1922, and bear interest at the rate of 4% annually. Interest is payable semi-annually, on June 15th and December 15th of each year. The bonds mature at the rate of \$20,000 each year payable June 15th until 1942.

The proceeds from the sale of bonds were used as follows:

Par value of bonds sold	\$400,000.00
Premium received on sale of same	10,790.00
	<hr/> \$410,790.00

Construction of Bever Park Reservoir	\$111,285.23
Water level recording and indicating instruments	520.02
Water mains laid as per itemized report	271,053.85
Money used for part payment of mains previously laid under contract	27,930.90
	<hr/>

Total Expenditures ----- \$410,790.00

The work was started immediately and consist of:

1. An eight million gallon covered reinforced concrete reservoir built in Bever Park at an elevation of 172 feet

above the floor of the main pumping station, which makes it also approximately 170 feet above the general elevation of the business section of the city, and gives a static pressure of 73 pounds per square inch in that section when the reservoir is full.

2. A system of large feeder pipe lines to connect the reservoir with the existing pipe system in various sections of the city. The main pipe line connects the large grid iron pipe system laid a few years ago through the business section of the city, with the reservoir by means of two miles of 24 inch pipe line. Large branches extend from the main pipe line to all sections of the city.

ADVANTAGES OF THE IMPROVEMENTS

The use of the reservoir made possible a change from direct pumping, which has been used heretofore, to a gravity system under which pumping may be done at a uniform rate throughout the twenty-four hours of each day, or may be stopped altogether and water supplied from the reservoir which holds forty hours supply at present average consumption. This change has two distinct advantages: First, it permits the purification plant to be operated uniformly at a much lower rate than would be possible during the heavy demand periods under direct pumping, thereby effecting a greater degree of purification as well as making it possible to purify a much larger quantity of water with the existing plant. The storage facilities makes it also possible to utilize the maximum amount of well water by being able to operate wells continuously at night as well as day time. Secondly, it provides a large amount of water under a fair pressure ready for use in case of fires.

NECESSITY FOR IMPROVEMENTS

A system of feeder pipes had become necessary on account of the continual extensions of small pipe lines into remote sections of the city without necessary feeders; a condition which made it impossible to maintain adequate pressure in the outlying sections of the city during hours of heavy consumption.

Prior to the installation of the large feeder pipes only one main larger than six inches in diameter, and this was only an eight inch main on First Avenue, extended easterly of 6th Street from the business section for supplying the large residential districts besides some larger industries located easterly of this point. This condition restricted the flow of water to such extent that some outlying sections had very low pressures during heavy consumption, and relief for this condition was imperative.

CONSTRUCTION

The construction of the Bever Park Reservoir was done by John Klepach Construction Company of Cedar Rapids under contract at a total cost of \$101,688.63 which did not include the necessary pipes, fittings and drains which were furnished and laid by the Water Department. The total construction cost of the reservoir was \$111,285.23 which includes pipe connections, plans, specifications, supervision, curbing and drains around the top of the same.

The reservoir was filled and placed in service Feb. 7, 1923, and has since been used continuously except for one day, on May 14, 1924, when it was drained, cleaned and examined. Only a small film of sediment had been deposited on the bottom which was found to be an iron compound precipitated from the well water when mixed with filtered water in our supply. There has been no indications of leak or other defects in the structure.

The depth of the water in the reservoir is continuously recorded on a chart at the pumping station, also shown by an indicating instrument at the Superintendent's office. This is accomplished by electrically operated instruments connected by three wires with a transmitter at the reservoir, which show variations in the depth of water as closely as an inch.

The construction of the pipe system was successfully done by the Water Department's own construction organization. The primary feeder pipes were finished on Dec. 10, 1922. The pipes laid are of adequate size for future growth of the city, and gives to all sections of the city adequate quantities of water under uniform pressure.

Other data and tables in the report show the growth of the plant and its financial history, as well as details of operating costs and earnings for the past two years, with summaries of the same since the plant was purchased and operated by the City, and are presented herewith for their value in studies of the future development of the Water Works.

The Water Works was purchased by the City on July 1, 1903, and operated by a Board of Water Works Trustees until August 10, 1920. Since that time it has been operated under direct control of the City Council.

It is interesting to note comparative operating costs which show that recent improvements have helped to make it possible to decrease the operating costs from \$60,055.69 during the fiscal year ending in 1921; \$57,931.89 in 1922; \$56,468.54 in 1923 to 53,441.18 in 1924, although the amount of water pumped has increased from 1,311,866,395 gallons in 1921; 1,399,817,270 in 1922; 1,472,328,820 in 1923, to 1,636,614,450 in 1924, and the cost per million gallons has decreased from \$45.75 in 1921; \$41.40 in 1922; \$38.25 in 1923, to \$32.70 in 1924.

Water Mains Laid Under Water Works Improvement Bond Issue Authorized March 27, 1922

WATER MAINS	Size	No. of ft.	Cost	Cost per ft.
S. 20th St. E., alley S. to 5th Ave. --	3"	204	\$ 225.77	1.10
Crescent St. connection to 1st Ave. --	4"	70	222.73	3.181
17th Ave. W., B to C Sts. -----	4"	325	395.25	1.22
21st Ave. W., A to C Sts. -----	4"	735	863.46	1.174
Division St., 9th St. S. to alley -----	4"	240	378.04	1.57
20th Ave. W., A to C Sts., -----	6"	622	784.50	1.26
L St. W., 15th to 19th Aves. -----	6"	1083	1,349.26	1.24
N St. W., 15th to 18th Aves. -----	6"	687	859.64	1.25
N. 8th St. W., L to M Aves. -----	6"	540	822.01	1.52
N. 4th St. W., M to O Aves. -----	6"	757	854.49	1.13
D St. W., 20th to Bowling Sts. -----	6"	659	933.27	1.416
Bowling St. W., D to 19th Aves. ---	6"	432	560.78	1.298
Hayes St. W., D to 19th Aves -----	6"	694	794.81	1.14
Alley between Blake & Grande Aves. ---	6"	490	674.45	1.37
S. 20th St. E., Mt. V. to 9th Aves. --	6"	328	577.16	1.69
N. 3rd St. W., L to N Aves. -----	6"	942	1,668.44	1.77
N. 1st St. W., L to N Aves. -----	6"	930	1,259.96	1.35
12th St. W., 3rd to 8th Aves. -----	6"	580	767.99	1.32
D Ave. E., 29th to 32nd Sts. -----	6"	1260	1,879.82	1.50
31st St. E., C to D Aves. -----	6"	360	410.47	1.14
N Ave. W., 1st to 3rd Sts. -----	6"	136	207.58	1.52
E Ave E., 17th to 19th Sts. -----	6"	1400	2,525.51	1.80
N. 4th St. W., K Ave. North -----	6"	180	357.08	1.98
N. 5th St. W., O Ave. to 1st St. -----	6"	538	782.87	1.45
S. 2nd St. W., 17th to 19th Aves. ---	6"	380	748.57	1.97
N. 3rd St. W., K to L Aves. -----	6"	606	829.16	1.36
K Ave. W., 3rd to 4th Sts. -----	6"	261	418.48	1.60
19th Ave. W., 9th to 10th Sts. ----	6"	304	543.64	1.78
Franklin Ave., 29th to 32nd Sts. ---	6"	1252 }	2,479.69	1.56
31st St., D Ave. to Franklin -----	6"	332 }		
Grande Ave., Blake Blvd. W. to alley	6"	152	308.52	2.03
Linn Blvd., Cottage Grv. to Crswys. --	6"	1124	1,399.09	1.24
C St. W., 22nd to 23rd Sts. -----	6"	352	545.58	1.55
18th Ave. W., 11th to 14th Sts. -----	6"	2203	3,124.59	1.42
27th St. E., Conn. to Country Club --	6"	48	74.97	1.56
14th St. W., 18th to 19th Aves. -----	6"	416	811.96	1.95
19th Ave. W., 11th to 14th Sts. -----	6"	2368	3,744.85	1.58
28th St. E., 2nd to E Aves. -----	6"	538	835.78	1.55
Lake Ave., 12th St. South -----	6"	331	618.82	1.87
S. 17th St. W., South of 8th Ave. ---	6"	345	631.45	1.83
Conn. 22nd St. and Bever Ave. -----	6"	88	311.29	3.53
H Ave. E., West of 10th St. -----	6"	160	265.27	1.65
B Ave. E., 21st to 22nd Sts. -----	6"	344	585.87	1.70
20th St. E., B to C Aves. -----	6"	346	973.35	2.81
A Ave. E., West of 24th St. -----	6"	128	183.70	1.43
N. 24th St. E., 1st to A Aves. -----	6"	384	603.65	1.57
Mallory St. W., South of 19th Ave. ---	6"	295	468.95	1.59
C Ave. E., 23rd to 27th Sts. -----	6"	150	243.00	1.62
23rd St. E., B to C Aves. -----	6"	150	277.75	1.82
21st St. E., alley 4th to Bever -----	6"	220	501.31	2.27

WATER MAINS	Size	No. of ft.	Cost	Cost per ft.
22nd St. E., Upland to Meadowbrook	6"	283	654.79	2.31
21st St. E., B to C Aves. -----	6"	45	81.00	1.80
C Ave. E., 20th to 21st Sts. -----	6"	262	479.84	1.89
South 13th St. W. -----	6"	224	342.61	1.53
Conn. 9th Ave. at Wellington -----	6"	20	71.07	
1st Ave. W., 10th St. Westerly ---	8"	482	1,378.84	2.86
19th St. E., Blake to alley -----	8"	200	706.91	3.53
B Ave. W., 13th to 15th Sts. -----	8"	655	1,413.66	2.16
3rd Ave. W., 17th to 18th Sts. -----	8"	380	779.03	2.05
Grande Ave., Blake Blvd. to Bever Pk.	8"	395	1,030.09	2.61
N. 12th St. W., 1st to B Aves. -----	8"	1218	2,981.24	2.44
N. 15th St. W., Hinkley to B Aves. -	8"	357	947.99	2.65
Conn. A Ave. & 8th St. E. -----	8"	49	230.73	4.71
9th Ave. E., 6th St. to Mt. V. Ave.---	12"	1840	7,905.88	4.29
S. 6th St. E., 4th to 9th Aves. -----	12"	1505	6,092.45	4.04
13th St. W., B to E Aves. -----	12"	1110	3,967.44	3.57
13th St. W., E to I Aves. -----	10"	1335	3,737.20	2.79
Mt. Vernon Road, 14th to 18th Aves.	12"	677	2,512.93	3.70
Mt. V. Rd., 24th St. to Memorial Dr.	10"	1320	3,735.60	2.83
2nd Ave. E., 6th to 7th Sts. -----	12"	400	2,229.72	5.57
17th St. E., 1st to 3rd Sts. -----	12"	850	2,751.86	3.23
Oakland Road -----	12"	4274	12,782.18	2.99
Oakland Road -----	10"	571	1,210.52	2.12
1st Ave. E., 30th to 31st Sts. -----	12"	501	2,322.58	4.63
N. 8th St. W., C to E Aves. -----	12"	765	3,084.07	4.03
B Ave. W., 6th to 8th Sts. on C Ave.---	12"	696	2,695.45	3.87
E Ave. W., 7th to 8th Sts. -----	12"	312	1,361.59	4.36
6th St. W., 6th to B Aves. -----	12"	2372	10,671.68	4.49
7th Ave. E., 3rd to 6th Sts. -----	16"	1137	7,290.69	6.41
In Bever Park, Bever Ave. to Resv. -	16"	1749	9,502.95	5.43
6th Ave. W., 3rd to 6th Sts. -----	16"	1262	7,536.20	5.97
3rd St. W., 6th to 7th Aves. -----	16"	360	2,024.81	5.62
7th Ave. W., 2nd to 3rd Sts. -----	16"	267	2,213.04	8.28
15th St. E., 3rd to E Aves. -----	16"	2802	15,004.75	5.35
S. 7th St. E., 1st to 4th Aves. -----	16"	430	2,709.00	6.30
S. 7th St. E., 1st to 4th Aves. -----	20"	780	6,046.26	7.74
4th Ave. E., 6th to 15th Sts. -----	20"	380	3,192.00	8.40
4th Ave. E., 6th to 15th Sts. -----	24"	3225	31,910.19	9.89
Blake Blvd., 3rd Ave. to Forest Dr. -	24"	3344	26,702.04	7.98
15th St. E., 4th to 3rd Aves. -----	24"	1375	13,863.22	10.08
Forest Dr. & Linden Dr. to Resv. --	24"	1814	13,770.97	7.59
15th St. E., 4th to 3rd Aves. -----	24"	1030	9,444.15	9.17

Total Cost of Mains -----

\$271,053.85



H. F. Blomquist, Designing Engineer
 Hatton, Holmes & Anthony, Associate Engineers

John Klepach Const. Co., Contractors

BEVER PARK RESERVOIR Constructed 1922

The above picture shows mixing plant, forms for circular wall and centering for cover during construction. The reservoir is circular in shape, 266 ft. 4 in. in diameter with 19½ ft. available water depth, giving a capacity of 8,000,000 gallons.

Inverted groined arches, not reinforced, built in 18 ft. square sections form the floor and foundations for 164 pillars which support the concrete slab cover.

The wall is of reinforced concrete 14 inches thick resting on a footing 4 ft. 2 in. wide. It is reinforced with steel rods to withstand the internal water pressure by horizontal tension.

All reinforced steel was placed in the wall, and the forms built before a continuous pouring of concrete completed it in about 60 hours.

Condensed Financial Report for Year Ending March 31, 1923

RECEIPTS

Balance Reserve Fund -----		\$ 2,596.69	
Balance cash -----	\$ 40,420.99		
Water Rents -----	146,008.69		
Interest and premiums on Liberty Bonds -----	548.63		
Interest on Bank balance -----	4,942.76		
Premium on Bonds -----	10,790.00		
From Bond Sale -----	346,740.48		
Acc'ts Receivable, Taps Conn. Adjustments, etc. -----	18,723.81	568,175.36	\$570,772.05

DISBURSEMENTS

Expense Account:			
Maintenance -----	\$ 11,482.50		
Operating Expenses -----	58,366.61		
General Expenses -----	5,983.50		
Salaries -----	10,767.32		
Interest Coupons -----	8,332.00		
Insurance -----	907.16		
Interest -----	2,836.31	\$ 98,675.40	

OUTLAYS ACCOUNT

Bills Payable C. R. National Bank --	\$ 35,000.00		
Refunded to Hedges & Co. -----	995.83		
Refunded to C. F. W. & N. Ry. ---	800.00		
Deposit for Coal -----	900.00		
C. & N. W. Ry. Co. -----			
Account Rigby -----	692.40		
Account Dice -----	4,604.00		
Interest on Coupons -----			
Account Bond Co. -----	4,968.00		
Material, Fuel, etc. -----	41,063.27	\$ 89,023.50	

PERMANENT IMPROVEMENTS

A. Pumping Station and Filter Plant:

Improvement to Chlorinator -----	\$ 399.49		
Steam Line -----	410.76		
Settling Tanks -----	298.66		
Coal Track -----	72.00		
Water Cooler -----	53.42		
Storeroom for Pipe -----	310.79		
Lime and Alum Line -----	61.97		
Filters -----	404.87		
New Pump -----	17.87		
Fire Protection -----	60.48		
Air Compressor -----	5,193.15	\$ 7,283.46	

B. Water Main Extensions:

Main N. 13th St. E. -----	\$ 7.27		
Main Cottage Grove Ave. -----	6.97		
Main 9th Ave. E. -----	4,175.14		
Main 20th Ave. W. -----	784.50		
Main L St. W. -----	1,349.26		
Main N St. W. -----	859.64		
Mains Purchased -----	35,283.41		

Manholes -----	859.17	
Blow Offs -----	270.29	
Main N. 8th St. W. -----	822.01	
Main I Ave. W. 10th St. -----	1,378.84	
Main S. 13th St. W. -----	342.61	
Main N. 4th St. W. -----	854.49	
Main S. 6th St. E. -----	6,092.45	
Main D St. W., 20th to Bowling -----	933.27	
Main Blake Blvd. -----	24,372.76	
Main Bowling St. W. -----	560.78	
Main Hayes St. W. -----	794.81	
Main Mt. Vernon Road -----	6,248.53	
Main 2nd Ave., 6th to 7th Sts. -----	2,229.72	
Main S 7th St. E. -----	8,652.88	
Main 4th Ave. & 6th St. E. -----	33,405.67	
Main 16th Ave. W., B to C Aves. -----	395.25	
Main alley bet Blake and Grande -----	674.45	
Main S. 20th St., Mt. V. to 9th Aves. -----	557.16	
Main 19th St. E., Blake to Grande -----	706.91	
Main 21st Ave. W., A to B Sts. -----	863.46	
Main N. 3rd St. W., L to N Aves. -----	1,668.44	
Main 7th Ave. E. -----	624.19	
Main 15th Ave. E. -----	8,916.40	
Main 3rd Ave. E. -----	13,739.48	
Main N. First St. W. -----	1,259.96	
Main S. 15th St. E. -----	53.04	
Main 12th St. W. -----	767.99	
Main D Avenue E. -----	1,879.82	
Main Forest Ave. -----	13,597.95	
Main 31st St. E. -----	410.47	
Main N Ave. W. -----	207.58	
Main E Avenue -----	2,525.51	
Main 17th St., 1st to 3rd -----	2,619.72	
Main B Avenue W. -----	1,292.66	
Main N. 4th St. W. -----	357.08	
Main N. 5th St. W. -----	782.87	
Main S. 2nd St. W. -----	748.57	
Main N. 3rd St. W. -----	829.16	
Main K Ave. W. -----	418.48	
Main Oakland Road -----	13,917.24	
Main 19th Ave. W. -----	543.64	
Main Franklin Ave. -----	1,264.26	
Main 3rd Ave. W. -----	779.03	
Main Bever Park to Reservoir -----	9,502.95	
Main Grande Ave. to Bever Park -----	1,036.30	
Main Grande Ave. to Blake -----	323.54	
Main Division St. -----	396.53	\$213,944.56

C. Auxiliary Piping at Station:

20" Suction to Old & New Pump ----\$	750.39	
D. New Fire Hydrants -----	4,812.52	
E. New Meters Added -----	8,773.81	
F. Bever Park Reservoir -----	89,249.60	
Sewer at Reservoir -----	190.16	
G. Tools -----	3,297.57	
Ford Cars -----	1,734.20	\$108,808.25
Balance cash on hand -----	53,036.88	
		\$570,772.05 \$570,772.05

Financial Statement for First Quarter Ending June 30, 1922

RECEIPTS

Balance cash on hand -----	\$ 40,420.99	
Balance reserve fund -----	2,596.69	
Interest on Liberty Bonds -----	425.00	
Water rents, etc. -----	39,496.29	
Premium on Liberty Bonds sold ---	123.63	\$ 83,062.60

DISBURSEMENTS

Maintenance -----	\$ 1,728.56		
Operating expenses -----	12,380.45		
General expenses -----	899.07		
Salaries -----	3,764.38		
Interest -----	2,106.08	\$ 20,878.54	
Insurance -----	\$ 225.50		
Interest coupons on bonds, \$76,- 000.00-5 %-6 months -----	1,900.00	2,125.50	
Material, fuel, tools, and pipe lines -	97,546.60		
Less vouchers payable -----	\$ 29,838.02	\$ 67,708.58	\$ 90,712.62
Cash over drawn -----			\$ 7,650.02
There are dues and accounts collect- ible -----			10,057.45
Leaving available funds -----			2,407.43

THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:

Rentals accrued paid and unpaid --	\$ 33,441.71	
Profit sales -----	124.57	
Tapping and Service -----	265.47	\$ 33,831.75
Operating expenses detailed above -	\$ 20,878.54	
Insurance pro rata 3 months -----	56.25	
Interest on \$76,000.00 Bonds, 5 %, 3 months -----	950.00	21,884.79
Net Earnings For Quarter -----		\$ 11,946.96

Financial Statement for Second Quarter Ending Sept. 30, 1922

RECEIPTS

Water Rents, etc. -----	\$ 40,781.99	
From sale of Bonds -----	162,528.85	\$203,310.84
Less Cash overdrawn -----		7,650.02
		<u>\$195,660.82</u>

DISBURSEMENTS

Maintenance -----	\$ 2,283.73	
Operating Expenses -----	18,595.93	
General Expenses -----	974.18	
Salaries -----	4,522.86	
Interest -----	61.94	\$ 26,438.64
Insurance -----		669.26
Material, Fuel -----		
Tools, Pipe Lines, etc. -----	\$159,401.12	
Less Vouchers Payable -----	13,936.40	
		<u>145,464.72</u>
		172,572.62
Balance Cash on hand -----		\$ 23,088.20
There are dues and acc'ts collectible -----		10,992.00
		<u>\$ 34,080.20</u>
Against this are vouchers payable -	\$ 13,936.40	
Interest accrued on		
\$76,000.00-5%-5 months -----	1,583.33	
\$400,000.00-4%-%-3 1/2 months -----	5,541.67	21,061.40
		<u>\$ 13,018.80</u>

THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:

Accrued Interest on Bonds -----	\$ 3,991.63	
Rentals Accrued paid and unpaid -	37,746.69	
Profit on Sales -----	\$ 233.28	
Profit on Tapping -----	322.41	
Profit on Long and Shorts -----	54.20	609.89
		<u>\$ 42,348.21</u>
Operating Expenses detailed above -	\$ 26,438.64	
Insurance pro rata 3 months -----	279.51	
Interest on \$76,000.00-5% Bonds 3 months -----	950.00	
Interest on \$400,000.00-4%-% Bonds 3 1/2 months -----	5,541.67	33,209.82
		<u>\$ 9,138.39</u>
Net Earnings for Quarter -----		

Financial Statement for Third Quarter Ending Dec. 31, 1922

RECEIPTS

Water Rents, etc. -----	\$ 47,357.39	
From sale of Bonds -----	149,944.39	\$197,301.78

DISBURSEMENTS

Maintenance -----	\$ 4,293.34	
Operating Expenses -----	14,588.13	
General Expenses -----	1,212.50	
Salaries -----	4,203.27	
Interest -----	480.91	\$ 24,778.15
Insurance -----		12.40
Coupons on Bonds \$76,000.00-5% - 6 months -----		1,900.00
Coupons on Bonds, \$400,000.00- 4% % -6 months -----		9,500.00
Material, Fuel, Tools, Pipe Lines, Reservoir, etc. -----	\$140,951.15	
Less Vouchers Payable -----	2,928.12	138,023.03 174,213.58
Balance Cash on Hand -----		\$ 23,088.20
There are Dues and Acc'ts Collectible -----		10,754.27
		\$ 33,842.47
Against this are Vouchers Payable --	\$ 2,928.12	
Interest accrued on \$76,000.00-5% -2 months -----	633.33	
\$400,000.00-4% % -1/2 month -----	791.67	4,353.12
Leaving Available Funds -----		\$ 29,489.35
Also \$100,000.00 not turned over to Water Works Funds -----		100,000.00
Interest on same, daily balances --		438.57
		\$129,927.92

THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:

Interest on Daily Bank Balances --	\$ 438.57	
Accrued Interest on Bonds -----	976.37	
Rentals, Accrued paid and unpaid	38,424.25	
Premium on Sales of Bonds -----	10,790.00	
Profit on Sales, etc. -----	215.41	
Profit on Tapping -----	183.79	
Profit on Long and Short Service Pipes -----	33.00	51,061.39
Operating Expenses detailed above--	\$ 24,778.15	
Insurance pro rata 3 months -----	285.71	
Interest on \$76,000.00 Bonds 5% 3 months -----	950.00	
Interest on \$400,000.00 Bonds 4% % 3 months -----	4,750.00	\$ 30,763.86
Net Receipts for Quarter -----		\$ 20,297.53
Less Premium on Bond Sales ----		10,790.00
Net Earning for Quarter -----		\$ 9,507.53

Financial Statement for Fourth Quarter Ending March 31, 1923

RECEIPTS

Balance cash on hand -----	\$ 22,305.11	
Water Rents, etc. -----	39,683.52	
From Sale of Bonds -----	50,000.00	\$111,988.63

DISBURSEMENTS

Maintenance -----	3,176.87		
Operating Expenses -----	12,802.10		
General Expenses -----	3,341.95		
Salaries -----	3,760.06		
Interest -----	187.38	\$ 23,268.36	
Material, fuel, tools, pipe lines, res- ervoir, etc. -----	\$ 42,362.31		
Less Vouchers payable -----	6,678.92	35,683.39	58,951.75
Balance Cash on hand -----			\$ 53,036.88
There are dues and Acct's Collectible -----			11,393.86
			<hr/>
Against this are vouchers payable --		\$ 6,678.92	
Interest accrued on \$76,000.00			
Bonds, 5% for 5 months ----		1,583.33	
On \$400,000.00 Bonds 4¾%, 3½			
months -----		5,541.67	13,803.92
			<hr/>
			\$ 50,626.82
Also \$50,000.00 not turned over to Water Works -----		\$ 50,000.00	
Interest on same, daily balances --		5,608.83	55,608.83
			<hr/>
Leaving Available Funds -----			\$106,235.65

THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:

Rentals Accrued paid and unpaid --	\$ 37,352.19	
Profit on Sales, etc. -----	856.41	
Profit on Long and Short Service Pipes -----	35.10	
Interest on Daily Bank Balances ---	1,885.50	\$ 40,129.20
	<hr/>	
Operating Expenses Detailed above	\$ 23,268.36	
Insurance pro rata 3 months -----	285.69	
Interest on \$76,000.00 Bonds, 5%		
3 months -----	950.00	
Interest on \$400,000.00 Bonds, 4¾%		
3 months -----	4,750.00	29,254.05
	<hr/>	
Net Earnings for Quarter -----		\$ 10,875.15

Condensed Annual Financial Report for Year Ending March 31, 1924

RECEIPTS

Balance on hand -----	\$ 53,036.88	
Water rents -----	161,835.36	
Interest on bank balance -----	2,324.07	
Balance of bonds sold -----	53,284.76	
C. & N. W. Ry. Co. Acct. Rigby ----	1,442.40	
Accounts receivable -----	18,352.06	
Connections and turn ons, taps ---	4,051.46	
Insurance -----	25.74	\$294,352.73

DISBURSEMENTS

Expense Account:		
Maintenance -----	\$ 15,814.80	
Operating expenses -----	55,385.61	
General expense -----	4,200.03	
Salaries -----	14,300.80	
Interest coupons -----	22,325.00	
Insurance -----	23.94	\$112,050.18

OUTLAYS ACCOUNT

Bonds retired -----	\$ 20,000.00	
Material, fuel, etc. -----	8,124.62	28,124.62

PERMANENT IMPROVEMENTS

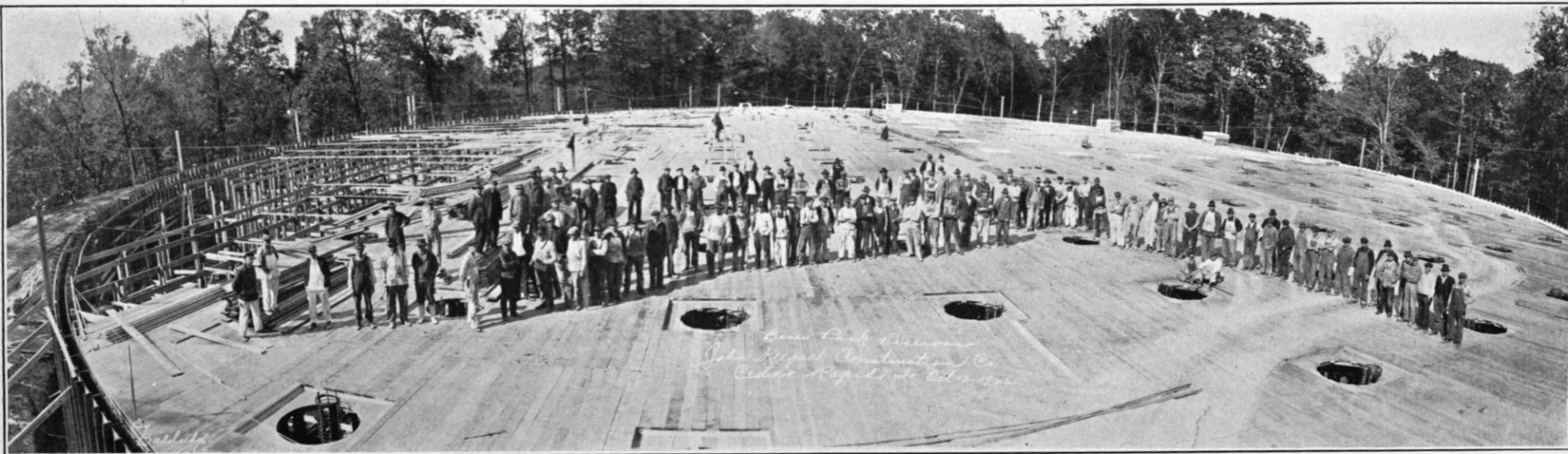
A. Pumping Station and Filter Plant:

Coal Tracks -----	\$ 30.80	
Air compressor and pump -----	9,281.36	
Water heater -----	995.06	
Boiler feed pumps -----	490.98	
Lime and alum line -----	7.19	
Water gauge -----	520.02	
Bath Tub -----	16.81	
Weir box -----	22.26	11,364.48

B. Water Main Extensions:

Man holes -----	\$ 240.17	
Blow Offs dead ends -----	671.42	
Main Blake Blvd. 3rd to Forest ---	1,784.32	
Main B Ave. W., 13th to 15th ----	121.00	
Main Oakland Road -----	75.46	
Main Linn Boulevard -----	1,399.09	
Main Forest and Linden -----	133.16	
Main 1st Ave. and Crescent -----	222.73	
Main N. 12th St., 1st to B West ---	2,981.24	
Main N. 15th St. W., to B Ave. ----	947.99	
Sundry New Mains -----	544.96	

Main 4th Ave. E., 6th to 15th Sts. ---	1,696.52	
Main C St. W., 22nd to 23rd Aves.---	545.58	
Main 18th Ave. W., 11th to 14th Sts. ---	3,124.59	
Main 27th St. E. to Country Club ---	74.97	
Main 14th St. W., 18th to 19th Aves. ---	811.96	
Main 1st Ave. E., 30th to 31st Sts. ---	2,322.58	
Main 19th Ave. W., 11th to 14th Sts. ---	3,744.85	
Main 15th St. E., 4th to 3rd Aves. ---	527.75	
Main 28th St. E., from 2nd to E Aves. ---	835.78	
Check Valves -----	240.79	
Main 7th Ave. E., 3rd to 6th Sts. ---	6,666.50	
Main Forest Ave. -----	39.86	
Main 9th Ave. and Wellington ----	71.07	
Main Lake Ave. -----	618.82	
Main S. 17th St. W., S. of 8th Ave. ---	631.45	
Main A Ave. and 8th St. E. -----	230.73	
Main 22nd St. and Bever Ave. -----	311.29	
Main 6th Ave. W., 3rd to 6th Sts. ---	7,536.20	
Main 3rd St. W., 6th to 7th Aves. ---	2,024.81	
Main Franklin Ave. -----	1,215.43	
Main 7th Ave. W., 2nd to 3rd Sts. ---	2,213.04	
Main 17th St. E., 1st to 3rd Aves ---	132.14	
Main N. 8th St. W., C to E Aves. ---	3,084.07	
Main B Ave. W., 6th to 8th Sts. ---	2,695.45	
Main S. 20th St., 4th to 5th Aves. ---	82.10	
Main 15th St. E., 3rd to E Aves. ---	14,951.71	
Main H Ave. E., West of 10th St. ---	265.27	
Main E Ave. W., 7th to 8th Sts. ---	1,361.59	
Main B Ave. E., 21st to 22nd Sts. ---	585.87	
Main 20th St. E., B to C Aves. ---	973.35	
Main A Ave. E., West of 24th St. ---	183.70	
Main N. 24th St., 1st to A Aves. ---	603.65	
Main 7th St. E., 1st to 4th Aves. ---	102.38	
Main Mallory St. W. -----	468.95	
Main 21st St. E., A to B Aves. -----	81.00	
Main C Ave. E., 23rd to 27th Sts. ---	243.00	
Main C Ave. E., 20th to 21st Sts. ---	479.84	
Main 6th St. W., 6th to B Aves. ---	10,671.68	
Main 3rd Ave. E., 15th to Blake ---	123.74	
Main 23rd St. E., B to C Aves. ---	227.75	
Main 21st St. E., 4th to Bever Aves. ---	17.02	
Main 22nd St. E., Upland to Meadow Brook -----	654.79	\$234,134.44
C. New Hydrants -----	\$ 6,670.18	
D. Reservoir Bever Park -----	20,971.18	
E. New Meters Added -----	6,874.82	
F. Tools -----	111.28	
G. Construction		
Workmen's compensation -----	1,108.08	\$ 35,735.54
Balance Cash on Hand -----		24,482.75
		<hr/>
		\$294,352.73 \$294,352.73



H. F. Blomquist, Designing Engineer
Hatton, Holmes & Anthony, Associate Engineers

John Klepach Const. Co., Contractors

BEVER PARK RESERVOIR Constructed 1922

The above picture shows the centering, or support for cover slab and method of supporting same during construction, also openings for column heads which support the cover.

The support for cover slab was made of two-inch materials sufficiently strong to carry automobile trucks which were used in distributing the concrete, both for wall and cover, from a central mixing plant shown in the first picture.

Financial Statement for First Quarter Ending June 30, 1923

RECEIPTS

Balance cash on hand -----	\$ 53,036.88	
Water rents, etc. -----	41,518.68	
From sale of bonds -----	53,284.76	
Interest on deposits -----	2,324.07	\$150,164.39

DISBURSEMENTS

Maintenance -----	4,187.66		
Operating expenses -----	15,029.38		
General expenses -----	1,231.38		
Salaries -----	3,909.02	\$ 24,357.44	
Interest on Bonds			
\$76,000.00, 5%, 6 months -----	\$ 1,900.00		
\$400,000.00, 4 3/4 %, 6 months -----	9,500.00	11,400.00	
20 \$1,000.00 Bonds -----		20,000.00	
Material, fuel, tools, pipe lines, etc. --	\$ 73,350.79		
Less vouchers payable -----	8,030.48	65,320.31	\$121,077.75
Balance cash on hand -----			\$ 29,086.64
There are dues and Acc'ts collectible			14,546.99
			\$ 43,633.63
Against this are vouchers payable --	\$ 8,030.48		
Interest accrued on \$76,000.00, 5%, 2 months -----	633.33		
On \$380,000.00, 4 3/4 %, 1/2 month -	752.08	\$ 9,415.89	
Leaving available funds -----			\$ 34,217.74
THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:			
Rentals accrued paid and unpaid --	\$ 37,965.33		
Profit on sales, etc. -----	212.69		
Profit on tapping -----	206.43		
Interest and insurance -----	2,341.65	\$ 40,726.10	
Operating expenses detailed above -	\$ 24,357.44		
Interest on Bonds			
\$76,000.00, 5%, 3 months -----	950.00		
\$400,000.00, 4 3/4 %, 2 1/2 months -----	3,958.33		
\$380,000.00, 4 3/4 %, 1/2 month ----	752.08	\$ 30,017.85	
Net earnings for Quarter -----			\$ 10,708.25

Financial Statement for Second Quarter Ending Sept. 30, 1923

RECEIPTS

Balance cash on hand -----	\$ 29,086.64	
Water rents, etc. -----	41,865.79	
Sundries -----	4,481.00	\$ 75,433.43

DISBURSEMENTS

Maintenance -----	\$ 4,127.40		
Operating expenses -----	15,957.79		
General expenses -----	1,288.28		
Salaries -----	4,196.28		
Insurance -----	11.44	\$ 25,581.19	
Material, fuel, tools, pipe lines, etc. --	\$ 30,984.30		
Less vouchers payable -----	3,915.43	27,068.87	\$ 52,650.06
Balance Cash on Hand -----			\$ 22,783.37
There are dues and acc'ts collectible			19,488.80
			\$ 42,272.17
Against this are vouchers payable -		\$ 3,915.43	
Interest accrued on			
\$76,000.00, 5%, 5 months -----		1,583.33	
On \$380,000.00, 4 3/4 %, 3 1/2 months		5,264.58	\$ 10,763.34
Leaving Available Funds -----			\$ 31,508.83
THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:			
Rentals accrued paid and unpaid --		\$ 41,006.66	
Profit on sales, etc. -----		439.89	
Profit on tapping -----		167.74	\$ 41,614.29
Operating expenses detailed above -		\$ 25,581.19	
Interest on Bonds			
\$76,000.00, 5%, 3 months -----		950.00	
On \$380,000.00, 4 3/4 %, 3 months --		4,512.50	31,043.69
Net Earnings for the Quarter -----			\$ 10,570.60

Financial Statement for Third Quarter Ending Dec. 31, 1923

RECEIPTS

Balance cash on hand -----	\$ 22,783.37	
Water rents -----	39,910.53	
Sundries -----	4,103.45	\$ 66,797.35

DISBURSEMENTS

Maintenance -----	\$ 3,767.62	
Operating expenses -----	12,078.86	
General expense -----	1,232.49	
Salaries -----	4,263.32	
Insurance -----	5.00	\$ 21,347.29
Coupons on Bonds		
\$76,000.00, 5%, 6 months -----	\$ 1,900.00	
\$380,000.00, 4 3/4 %, 6 months -----	9,025.00	10,925.00
Material, fuel, tools, pipe lines, etc. --	\$ 33,962.28	
Less vouchers payable -----	3,347.54	30,614.74
		62,887.03
Balance Cash on hand -----		\$ 3,910.32
There are dues and acc'ts collectible		21,253.67
		\$ 25,163.99
Against this are vouchers payable -	\$ 3,347.54	
Interest accrued on		
\$76,000.00, 5%, 2 months -----	\$ 633.33	
\$380,000.00, 4 3/4 %, 1/2 month -----	752.08	1,385.41
		4,732.95
Leaving Available Funds -----		\$ 20,431.04

THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:

Rentals accrued paid and unpaid ---	\$ 40,504.52	
Profit on Sales -----	472.12	
Tapping Mains -----	283.00	
Income tax and insurance -----	10.28	\$ 41,269.92
Operating expenses detailed above -	\$ 21,347.29	
Interest on Bonds		
\$76,000.00, 5%, 3 months -----	\$ 950.00	
\$380,000.00, 4 3/4 %, 3 months -----	4,512.50	5,462.50
		26,809.79
Net Earning for Quarter -----		\$ 14,460.13

Financial Statement for Fourth Quarter Ending March 31, 1924

RECEIPTS

Balance cash on hand -----	\$ 3,910.32	
Water rents -----	42,608.89	
Sundries -----	11,218.68	\$ 57,737.89

DISBURSEMENTS

Maintenance -----	\$ 3,732.12	
Operating expenses -----	12,319.58	
General expense -----	447.88	
Salaries -----	1,932.18	\$ 18,431.76
Material, fuel, tools, pipe lines, etc. --	\$ 16,448.80	
Less vouchers payable -----	1,625.42	14,823.38
		33,255.14
Balance cash on hand -----		\$ 24,482.75
There are dues and Acc'ts collectible		12,876.74
		\$ 37,359.49
Against this are vouchers payable -	\$ 1,625.42	
Interest accrued on		
\$76,000.00, 5%, 5 months -----	1,583.33	
\$380,000.00, 4 3/4%, 3 1/2 months ---	5,264.58	6,847.91
		8,473.33
Leaving available funds -----		\$ 28,886.16

THE REVENUE AND COST OF OPERATION HAVE BEEN AS FOLLOWS:

Rentals accrued paid and unpaid --	\$ 42,591.21	
Profit on sales, etc. -----	93.29	
Long and short services -----	14.80	\$ 42,699.30
Operating expenses detailed above --	\$ 18,431.76	
Interest on Bonds		
\$76,000.00, 5%, 3 months -----	\$ 950.00	
\$380,000.00, 4 3/4%, 3 months ----	4,512.50	5,462.50
		23,894.26
Net Earnings for the Quarter -----		\$ 18,805.04

Operating Costs for 1922, 1923, and 1924

PUMPING STATION AND PURIFICATIONS

	1922	1923	1924
Salaries Engineers and Firemen -----	\$12,075.03	\$12,040.26	\$12,135.60
Salaries Filter Operators -----	5,714.47	6,050.23	5,768.24
Lighting and Electric Power at Pump Station -----	522.10	748.32	833.04
Fuel for Pumping Station -----	17,944.86	17,722.98	18,646.35
Supplies for Pump Station -----	855.92	615.18	735.91
Supplies for Water Filters -----	4,616.42	5,572.53	7,645.67
Supplies for Water Softener -----	224.19	162.62	193.05
Care Settling Tanks -----	30.68	254.96	517.68
Care Reservoir -----			418.15
TOTALS -----	\$41,983.67	\$43,167.08	\$46,893.69

WELLS

Elect. Energy for Stat. Well. -----	\$ 7,734.69	\$ 5,296.71	\$ 1,274.46
Elect. Energy for West Side Well -----	6,759.72	6,359.29	3,773.12
	\$14,494.41	\$11,656.00	\$ 5,047.58
Booster Stations:			
Elect. Energy for 4th Ave. Sta. -----	\$ 1,134.88	\$ 1,143.96	\$ 861.03
Elect. Energy for Md. Farm Sta. -----	318.93	501.50	638.88
	\$ 1,453.81	\$ 1,645.46	\$ 1,499.91

TOTAL OPERATING COSTS ----- \$57,931.89 \$56,468.54 \$53,441.18

MAINTENANCE COSTS

Repairs to Machinery -----	\$ 5,436.37	\$ 2,804.20	\$ 3,312.70
Repairs to Filters -----	5,727.75	1,240.92	2,036.15
Repairs to Mains and Valves -----	1,501.12	2,135.91	2,758.44
Repairs to and care of Fire Hydrants -	1,772.05	1,435.36	1,724.96
Repairs to Buildings and Grounds ----	971.81	1,041.41	2,044.03
Repairs to Water Meters -----	2,343.88	2,824.70	3,938.52
Repairs to West Side Well -----	526.86	308.36	391.28
Repairs to Station Well -----	1,486.74	169.70	23.91
Repairs to 4th Ave. Booster Station ---	21.87	242.48	341.15
Repairs to Mound Farm Station -----	592.66	137.14	290.20
	\$20,381.11	\$12,340.18	\$16,861.34

MISCELLANEOUS EXPENSE

General Expenses -----	\$ 2,444.96	\$ 1,333.34	\$ 2,319.02
Stationery and Printing -----	1,164.18	711.43	557.51
Med. Service -----	45.50	611.00	5.00
Off and On Water -----	1,663.39	1,534.00	1,318.50
Automobile Depreciation -----	1,238.34	444.20	368.00
	\$ 6,556.37	\$ 4,633.97	\$ 4,568.03
Salary Account—Salaries Paid -----	\$13,977.56	\$16,250.57	\$16,636.62
Interest Account—Interest Paid -----	3,800.00	11,168.31	22,325.00
Insurance Account—Insurance Paid ---	897.90	907.15-3 yrs.	

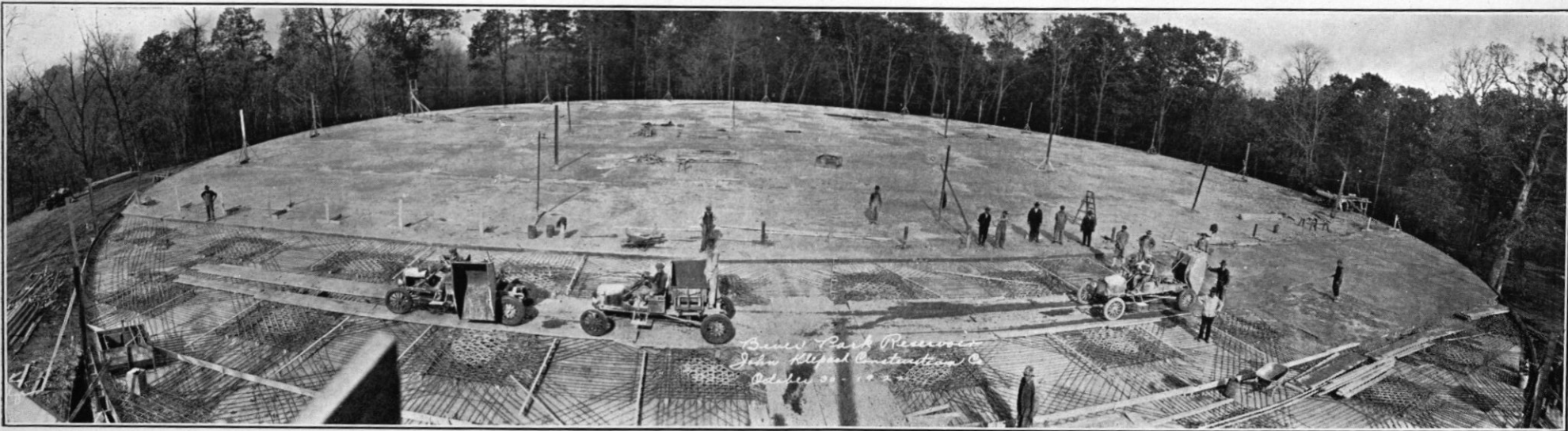
Water Mains Purchased from Property Owners Which had Previously been Laid by Them under Contract to be Taken Over and Paid for by Water Department at a Later Date

Date Purchased	From Whom	Date of Contract	Location	Size	Length	Cost
Aug. 2, 1922	Harcourt Land Company	Aug. 15, 1916	C Ave. West from 11th St. westerly 350 ft.-----	6"	350'	\$ 1,811.94
			D Ave. West from 11th St. westerly 700 ft.-----	6"	700'	
			E Ave. West from 11th St. westerly 740 ft.-----	4"	740'	
Oct. 10, 1922	Park Avenue Realty Co.	Nov. 9, 1916	Alley bet. Park and Wash. Aves., 20th to 21st Sts.---	6"	650'	977.79
Oct. 28, 1922	Elmer A. Higley	Aug. 26, 1915	8th Ave. E. from 17th St. easterly 350 ft.-----	6"	350'	829.34
Oct. 28, 1922	Elmer A. Higley	Oct. 30, 1913	17th St. from Mt. Vernon Rd. to 16th St.-----	6"	313'	
Oct. 28, 1922	Harry T. Hedges	Nov. 1, 1915	F Ave. W., N. 10th St. to N. 13th St.-----	8"	850'	5,611.35
		June 11, 1916	G Ave. W. from point 150' west of 10th St. to N. 13th St.-----	6"	640'	
		June 9, 1920	H Ave. W. from point 150' west of 10th St. to N. 13th St.-----	6"	640'	
		May 4, 1922	E Ave. W. from point 70' west of 10th St. westerly 150 ft. thence -----	8"	290'	
			North to alley thence west in alley to E Ave.-----	6"	660'	
Nov. 15, 1922	Harry T. Hedges	No contract	F Ave. from 13th St. westerly 200 ft.-----	8"	200'	1.00
Nov. 15, 1922	Pawnee Land & Imp. Co.	June 18, 1914	N. 12th St. E. from G to H Aves.-----	2"	1000'	
			N. 16th St. from H Ave. west to alley, thence north in alley to J Ave.-----	6"	1620'	3,415.20
			I Ave. from point bet. 16th St. and Park Dr. easterly to 17th St.-----	6"	640'	
			Greene Ave. from N. 16th St. running east 300 ft. thence north to alley bet. Greene Ave. and J Ave. thence west to N. 16th St. thence south to Greene Ave.-----	6"	980'	
			Greene Ave. from N. 17th St. westerly 160 ft.-----	8"	190'	
Nov. 15, 1922	Higley Land Company	Sept. 12, 1913	18th St. from 8th Ave. to 9th Ave.-----	6"	530'	2,663.41
		June 3, 1914	19th St. from 8th Ave. to Mt. Vernon Rd.-----	6"	810'	
			9th Ave. from 19th St. to pt. 200 ft. west of 18th St.-----	6"	650'	
			Wellington St. from 8th Ave. to 9th Ave.-----	6"	420'	
Dec. 6, 1922	North View Land Co.	Jan. 24, 1914	27th St. from 1st Ave. northerly 368 ft.-----	8"	368'	3,158.29
		April 23, 1915	B Ave. from 27th St. to 22d St.-----	6"	2320'	
		Sept. 15, 1916	21st St. from A Ave. to B Ave.-----	6"	240'	
			B Ave. from 21st St. southerly about 200 ft.-----	6"	280'	

Jan. 16, 1923	Highland Realty Co.	1913	Highland Dr. from Hinkley Ave. to C Ave. W.-----	6"	700'	3,696.10
		1914	Johnson Ave. from Hinkley Ave. to 18th St. W.-----	6"	480'	
		1915	Alleys in Blocks 8, 9 and 10, West Highlands Addn.-----	6"	1245'	
		1917	B Ave. from Highland Dr. westerly 800 ft. -----	6"	800'	
			Maple Dr. from 17th to 18th Sts. -----	6"	450'	
July 10, 1922	Grande Avenue Land Co.	Oct. 27, 1908	19th St. E. from Grande Ave. north to alley-----	8"	190'	4,800.00
			Alley bet. Grande Ave. and Blake Blvd. easterly to			
			alley east of Crescent St., thence north to alley			
			bet. Linden Dr. and Blake Blvd., thence easterly			
			in alley 600 ft., thence north to Linden Dr.,			
			thence easterly to a point 570 ft. westerly from			3760'
			west line of Bever Park -----	6"		
Mar. 24, 1923	Grande Avenue Land Co.	June 28, 1920	In Auditor's Plat No. 110 from Linden Dr. southerly			933.63
			361 ft. -----	4"	361'	
Mar. 17, 1923	John Redmond and Arthur Poe	Nov. 1, 1916	27th St. E. from Second Ave. easterly 1200 ft. -----	6"	1200'	1,250.00
Mar. 21, 1923	Grande Avenue Land Co.	April 29, 1910	Alley bet. Grande Ave. and Blake Blvd. -----	6"	1620'	
		July 5, 1910	Alley and Blake Blvd. -----	4"	885'	7,193.75
		June 11, 1913	Linden Dr. east of Bever Park -----	6"	450'	
		Nov. 5, 1913	Forest Ave. from alley north of Grande Ave. to Blake	6"	1080'	
		May 12, 1920	Blvd and easterly on Blake Blvd. 150 ft. -----	4"	546'	
		Sept. 12, 1921				
TOTAL AMOUNT-----						\$36,341.80

Water Mains Laid and Paid for by Property Owners under Contracts with City up to June 1, 1924, to be Taken Over and Paid for by City Water Works at a Later Date According to Stipulations

Date	From Whom	Water Mains	Size	No. of Feet	Cost	Cost per Foot	Guarantee Expires
July 24, 1923	Mound Farm Real Estate Co.	20th St. E., C to F Aves. -----	6"	1200	\$2,247.60		
July 24, 1923	Mound Farm Real Estate Co.	21st St. E., C to E Aves. -----	6"	765	1,432.00		
July 24, 1923	Mound Farm Real Estate Co.	22d St. E., C to D Aves. -----	6"	365	683.00		
July 24, 1923	Mound Farm Real Estate Co.	23d St. E., C to D Aves. -----	6"	340	636.90		
July 24, 1923	Mound Farm Real Estate Co.	C Ave. E., 20th to 21st Sts. -----	6"	262	479.84	1.875	Dec. 17, 1930
July 24, 1923	Mound Farm Real Estate Co.	D Ave. E., 20th St. to E Ave. -----	6"	2110	3,952.00		
July 24, 1923	Mound Farm Real Estate Co.	E Ave. E., 20th to 27th Sts. -----	6"	2350	4,430.82		
July 24, 1923	Mound Farm Real Estate Co.	F Ave. E., 20th St. to E Ave. -----	6"	1028	1,925.34		
July 24, 1923	Mound Farm Real Estate Co.	N. 27th St. from point bet. B and C Aves. to C Ave. -----	8"	112	248.50	2.22	Dec. 17, 1930
July 24, 1923	Mound Farm Real Estate Co.	N. 27th St., C Ave. to C. M. & St. P. Ry. ----	10"	480	1,217.03	2.53	Dec. 17, 1930
Dec. 22, 1923	M. V. Bolton & Md. Fm. R. E. Co.	C Ave. E., 23d to 27th Sts. -----	6"	1301	2,111.72	1.62	Dec. 21, 1930
Dec. 22, 1923	M. V. Bolton	23d St. E., B to C Aves. -----	6"	232	429.55	1.85	Dec. 21, 1930
Dec. 22, 1923	Don C. Cook	2d Ave. E., N. Crescent -----	6"	316	546.00	1.72	Dec. 21, 1930
Nov. 23, 1923	North View Land Co.	21st St. bet. B and C Aves. -----	6"	250	449.03	1.80	Dec. 21, 1930



H. F. Blomquist, Designing Engineer
Hatton, Holmes & Anthony, Associate Engineers

John Klepach Const. Co., Contractors

BEVER PARK RESERVOIR Constructed 1922

The above picture shows construction of reinforced concrete cover slab and trucks used in distributing the concrete. The steel rods are shown laid to form the direct and diagonal belt type of reinforcement for flat slab construction. Thickness of slab is 12 inches for 6 ft. square over columns, the balance is 8 inches thick. There is a slip joint between the cover and wall.

Summary of Operating Data, City Water Works, Cedar Rapids, Iowa

Year	INCOME				FIXED CHARGES			OPERATING COSTS							No. of Taps	No. of Fire Hydrants	Net Earnings	Year
	Water Rents	Other Receipts	Special Tax	Total Income	Interest and Income Tax	Insurance	Total Fixed Charges	Operation of Plant	Salaries, Rents, Etc.	Total Cost of Operation	Maint'nce Costs	Permnt. Impvmts. Auditor's Statem't	Value of Meters					
1904	\$ 55,464.56	\$ 582.67		\$ 56,047.23	\$20,606.25	\$ 893.94	\$21,500.19	\$10,829.89	\$ 7,967.20	\$18,797.09	\$ 3,158.74	\$ 6,620.24	\$ 2,298.04	3,369		\$12,591.21	1904	
1905	54,225.10	682.86		54,907.96	19,582.50	603.58	20,186.08	13,611.36	7,766.79	21,378.15	1,410.38	3,280.52	2,287.91	3,539		11,933.35	1905	
1906	57,015.07	715.68	15,000.00	72,730.75	18,525.00	472.75	18,997.75	13,294.82	7,838.09	21,132.91	741.67	25,317.51	2,257.06	3,702		16,858.42	1906	
1907	58,565.06	261.64		58,826.70	17,625.00	498.94	18,123.94	13,859.66	7,552.86	21,412.52	2,536.71	28,202.52	3,249.13	3,915		16,753.53	1907	
1908	62,215.54	354.55	15,585.88	78,155.97	16,725.00	447.04	17,172.04	14,558.89	7,483.90	22,042.79	1,697.77	26,842.85	1,875.12	4,128		21,657.49	1908	
1909	66,970.49	972.27	11,000.00	78,942.76	16,294.00	876.94	17,170.94	15,240.26	8,123.12	23,363.38	1,090.97	30,429.33	2,857.47	4,701	380	26,317.47	1909	
1910	73,687.25	869.77	15,384.31	89,941.33	15,394.00	1,325.30	16,719.30	17,395.24	9,230.19	26,625.43	2,193.77	44,195.08	3,301.31	5,155	438	29,018.52	1910	
1911	83,034.78	706.42	11,914.23	95,655.43	14,259.50	2,056.62	16,316.12	16,904.93	11,828.69	28,733.62	2,790.66	23,368.07	16,396.15	5,518	450	35,900.78	1911	
1912	81,719.20	889.24	11,610.51	94,218.95	13,146.76	825.73	13,972.49	17,866.71	12,088.23	29,954.94	4,473.86	32,838.68	2,865.95	5,761	467	34,207.15	1912	
1913	89,367.11	1,251.72	17,694.25	108,313.08	12,464.77	1,217.60	13,682.37	20,565.66	11,981.42	32,547.08	7,161.74	36,795.85	7,275.94	6,141		37,227.64	1913	
1914	102,010.92	1,492.10	8,270.49	111,773.51	11,743.32	1,195.65	12,938.97	24,245.21	12,412.48	36,657.69	7,209.11	45,993.44	3,805.07	6,625		46,697.25	1914	
1915	101,274.94	12,484.87	6,699.24	120,459.05	10,847.38	725.00	11,572.38	24,757.52	11,386.10	36,143.62	11,025.12	49,858.14	4,226.79	7,252		44,967.37	1915	
1916	78,137.56*	1,339.83*		79,477.39*	5,111.14*		5,111.14*	19,609.93*	8,888.68*	28,498.61*	4,199.51*	7,520.12*	4,450.25*	7,438*		38,687.06*	1916	
1917	114,253.14	6,351.43		120,604.58	9,260.72	660.72	9,921.44	31,239.31	11,109.52	42,348.83	4,451.17	51,784.46	1,083.06	7,822		59,199.42	1917	
1918	120,814.00	1,461.00		122,275.00	8,117.75	1,738.94	9,916.69	38,011.57	11,852.88	49,864.45	5,801.28	15,337.24	3,587.85	8,080		56,692.58	1918	
1919	132,771.52	711.57		133,483.09	5,746.36	396.86	6,143.22	48,508.68	11,543.52	60,052.20	4,795.76	4,429.29	954.41	8,170		62,491.91	1919	
1920	124,786.76	613.46		125,400.22	5,374.78	795.23	6,170.01	49,144.15	12,739.45	61,883.60	10,344.48	9,806.70	4,039.26	8,554		48,602.13	1920	
1921	135,806.30	9,579.07	2,183.32	147,568.69	816.11	1,028.01	1,844.12	60,055.69	18,641.59	78,697.28	37,131.47	87,679.97	2,717.85	8,972	629	29,239.88	1921	
1922	153,375.81	6,550.36		159,926.17	2,995.21	897.90	3,893.11	57,953.76	20,533.93	78,487.69	20,359.24	56,117.75	4,657.44	9,310	636	51,235.01	1922	
1923	146,964.84	18,723.81		165,688.65	11,168.31	907.16	12,075.47	58,366.61	16,750.82	75,117.43	11,482.50	328,709.87	7,454.61	9,926	640	60,838.49	1923	
1924	162,067.72	22,429.26		184,496.98	20,000.93		20,000.93	55,385.61	18,500.83	73,886.44	15,814.80	122,709.08	5,836.52	10,534	680	54,478.65	1924	

* Period of nine months only on account of change in date of ending fiscal year from June 30th to March 31st.

Pumping Record, City Water Works, Cedar Rapids, Iowa

Year	January	February	March	April	May	June	July	August	September	October	November	December	Estimated Popula- tion	Daily per Capita	Total for Fiscal Year	Daily Average	Lbs. of Coal Used	Cost of Coal Used	Coal per Ton	Coal Cost Million Gals.
1903							76,355,017	73,206,006	67,533,472	66,049,490	64,709,739	73,691,119			862,269,172	2,355,927	7,131,190	\$ 6,859.98	\$1.93	\$ 7.95
1904	77,476,725	81,612,975	74,221,619	64,567,607	70,152,786	72,692,617	69,048,497	73,785,006	67,016,556	66,443,591	63,373,628	70,814,864			819,395,045	2,244,918	6,780,710	6,750.67	1.99	8.20
1905	74,457,866	78,172,643	78,865,227	58,728,219	59,796,966	58,891,982	65,944,505	70,213,826	67,692,858	64,343,548	63,055,125	71,467,079			840,661,472	2,303,182	6,518,981	6,676.59	2.05	7.93
1906	78,837,744	74,825,462	73,724,834	67,892,092	67,510,746	70,820,685	78,184,507	74,616,029	74,054,681	70,251,364	64,783,704	71,467,079			839,220,805	2,299,235	7,291,114	6,989.77	1.92	8.33
1907	69,063,509	69,553,782	67,152,735	62,862,250	69,568,738	67,662,427	71,753,992	73,741,454	71,355,709	73,428,541	67,969,217	67,764,704			830,659,889	2,269,563	7,637,165	7,284.75	1.91	8.78
1908	66,835,101	71,008,781	66,791,138	65,133,006	66,069,946	68,810,295	75,367,735	78,277,880	78,277,880	71,487,995	66,689,877	70,041,073			849,617,447	2,327,719	7,927,480	7,579.37	1.92	8.94
1909	76,523,476	62,583,506	66,352,410	66,667,058	70,820,892	68,139,807	80,139,367	88,333,851	68,080,790	68,553,381	65,596,068	76,112,525			950,957,415	2,605,363	8,625,780	8,829.62	2.05	9.28
1910	83,185,202	76,078,400	84,472,448	77,362,812	80,695,690	102,346,881	118,427,130	100,414,224	83,121,701	83,036,635	72,820,703	72,282,409			946,799,629	2,593,971	8,863,718	8,830.43	1.99	9.34
1911	79,067,487	73,448,106	68,713,945	60,610,587	63,305,883	71,550,819	77,361,431	71,911,703	70,166,138	68,737,921	67,623,480	72,228,644			858,619,021	2,345,954	8,147,359	8,977.36	2.21	10.51
1912	79,249,644	73,205,383	76,308,975	71,704,019	67,866,522	72,725,030	74,893,460	96,683,532	97,384,220	93,686,195	80,277,785	85,122,955			867,617,308	2,377,033	8,314,879	9,979.45	2.40	11.47
1913	73,711,011	66,484,320	72,033,590	69,563,855	72,725,030	74,893,460	96,683,532	97,384,220	91,512,207	83,862,035	71,243,295	75,623,750			1,065,144,968	2,918,205	10,177,470	10,365.88	1.76	9.70
1914	87,132,950	89,526,750	84,826,945	84,663,120	84,439,200	92,407,196	103,221,550	106,785,014	91,512,207	83,862,035	71,243,295	75,623,750			867,617,308	2,377,033	8,314,879	9,979.45	2.40	11.47
1915	74,371,745	73,607,885	78,864,102	79,877,140	78,888,770	76,373,416	81,245,890	97,876,285	99,316,815	87,234,360	83,878,440	89,257,345			944,233,909	2,723,928	8,762,176	9,245.56	2.11	9.32
1916	81,316,418	78,743,465	79,311,910	70,033,817	70,033,817	81,245,890	97,876,285	99,316,815	87,234,360	83,878,440	89,257,345	91,990,230			741,309,304*	2,695,670	6,212,320	6,422.24	2.07	8.66†
1917	84,012,555	81,334,925	91,446,365	81,019,180	94,460,100	116,966,235	104,294,370	103,969,360	86,905,335	95,674,150	78,800,880	86,724,080			1,034,747,327	2,834,924	8,119,390	9,624.86	2.37	9.30†
1918	84,910,925	83,280,850	97,469,880	87,534,250	115,207,425	126,980,375	97,807,685	119,092,690	113,660,955	112,926,245	101,104,000	106,048,295			1,289,798,015	3,533,693	8,324,890	17,583.56	4.22	13.63†
1919	85,045,630	71,577,600	90,171,955	90,185,280	102,600,920	97,807,685	119,092,690	113,660,955	112,926,245	101,104,000	106,048,295	111,482,760			1,178,206,112	3,227,962	6,913,488	15,848.42	4.59	13.45†
1920	92,754,728	90,875,824	105,025,515	96,099,145	100,499,190	123,537,750	118,476,395	128,576,020	145,073,540	120,741,505	120,656,565	111,388,705			1,311,866,395	3,594,154	6,978,833	20,195.91	5.78	15.39†
1921	112,124,215	99,288,935	109,594,495	107,320,575	117,151,565	128,576,020	145,073,540	123,531,490	129,913,430	126,814,505	129,254,555	120,732,290			1,399,817,270	3,835,116	5,781,999	17,944.86	6.20	12.82†
1922	100,848,500	100,543,800	107,868,900	105,526,550	115,463,015	129,392,565	123,531,490	129,913,430	126,814,505	129,254,555	120,732,290	126,087,025			1,472,328,820	4,033,777	5,506,557	17,722.98	6.45	12.02†
1923	130,030,365	106,797,635	128,785,395	132,315,405	124,120,575	134,669,900	169,112,980	148,017,270	136,466,745	139,961,235	130,938,570	128,982,440			1,636,614,450	4,471,624	7,645,082	18,646.35	4.87	11.40†
1924	142,811,520	120,974,630	128,243,180																	

* Nine months period due to change in date of ending fiscal year.

† Part of water pumped by electricity which cost is not included.

Pumping Record, Station Well

Since installation of pumps

Year	January	February	March	April	May	June	July	August	September	October	November	December	Amount Pumped During Fiscal Year	Repairs	Cost of Electric Current	Cost of Current and Repairs Fiscal Year	Current and Repairs per Million Gals.
1915		23,800,000	43,400,000	42,000,000	43,400,000	42,000,000	32,173,000	43,400,000	42,000,000	42,890,000	42,000,000	43,400,000	194,600,000	\$	\$	\$ 2,058.24	\$13.28
1916	43,400,000	26,000,000	43,000,000	30,070,000	41,820,000	42,000,000	40,820,000	43,400,000	38,410,000	43,300,000	41,850,000	43,400,000	358,263,000			4,051.68	11.83
1917	43,400,000	39,200,000	39,535,000	28,794,000	31,000,000	29,790,000	30,454,000	30,561,000	30,000,000	30,436,000	29,328,000	30,685,000	487,205,000			6,042.00	12.42
1918	30,433,000	27,550,500	30,612,000	29,731,000	31,000,000	30,000,000	30,583,328	30,812,500	30,000,000	31,000,000	29,934,032	31,000,000	359,643,500			5,639.09	14.14
1919	31,000,000	27,916,652	30,833,333	29,829,859	30,875,000	30,000,000	31,000,000	30,843,750	29,645,834	30,875,000	30,000,000	31,000,000	363,810,845			5,766.94	15.87
1920	31,000,000	29,000,000	31,000,000	30,000,000	31,000,000	19,440,000	20,011,500	20,088,000	20,440,000	21,088,000	19,440,000	20,068,000	365,069,443			5,634.90	15.42
1921	4,100,000	21,900,000	19,000,000	30,000,000	14,094,000	15,928,500	17,825,500	19,582,500	18,242,000	15,484,000	8,400,000	546,000	246,575,500			11,048.73*	44.75
1922	394,500	12,410,500	7,556,500	1,380,000	1,687,000	6,800,000	20,450,500	22,500,000	20,800,000	6,800,000	1,830,000	860,000	160,464,000	1,486.74	7,734.69	9,221.43	57.50
1923	732,000	5,214,000	12,900,000	13,167,000	18,306,000	2,880,000	26,600,000	39,855,000	37,890,000	27,690,000			101,953,500	169.70	5,296.71	5,466.41	53.40
1924	7,080,000	19,500,000	42,470,000										235,438,000	23.91†	1,274.46†	1,298.37†	

Pumping Record, West Side Well

Since it was put in operation

Year	January	February	March	April	May	June	July	August	September	October	November	December	Amount Pumped During Fiscal Year	Repairs	Cost of Electric Current	Cost of Current and Repairs Fiscal Year	Current and Repairs per Million Gals.
1916							15,515,000	22,880,000	24,310,000	15,265,000	16,170,000	17,325,000		\$	\$	\$	\$
1917	8,630,000	5,960,000	28,385,000	28,465,000	17,463,000	34,690,000	25,139,000	22,828,000	18,710,000	23,171,000	14,754,000	13,069,000	154,440,000			2,880.37	18.65
1918	11,998,000	18,376,000	25,840,000	20,366,000	33,443,000	24,527,000				25,057,500	25,723,000	15,315,000	254,503,000			5,307.15	20.85
1919	990,000	1,060,000	18,163,000	3,765,000	2,072,000								164,644,500			3,868.03	23.55
1920			12,810,000	22,010,000	21,315,000	23,178,015	21,526,155	20,266,515				3,057,075	18,647,000			5,438.58	291.60
1921	13,170,000	13,800,000	15,800,000	13,221,150	5,072,050	1,287,250	7,050,000	15,102,980	15,902,920	6,126,920	1,125,180	958,800	154,122,760			9,994.36	64.85
1922	870,000	9,761,400	3,069,000	675,000	1,154,700	7,511,400	18,333,000	21,388,800	8,767,800	1,910,700	594,000	751,500	79,547,680	526.86	6,759.72	7,286.58*	91.50*
1923	446,400	3,850,200	7,831,800	4,189,500	4,137,300	19,476,000	14,554,800	2,520,000	2,290,500	2,137,500	1,593,900	954,900	73,215,300	308.36	6,359.29	6,667.65	90.90
1924	1,936,800	403,200	4,072,500	6,544,800	1,041,300								58,266,900	391.28	3,773.12	4,164.40	71.50

* The amount paid for electric current in 1921 includes \$4,023.05 deferred payments pending adjustment for increased cost of producing energy since 1918 and higher rate from Mar. 8, 1920, when old contract expired.
† Note change from electric to steam power, June, 1923.