ST. LOUIS WATER WORKS

OPERATED UNDER THE SUPERVISION OF THE WATER COMMISSIONER

PHYSICA	L VALUE	\$35,288.433.45
BONDED	DEBTS	6,225,000.00

TOTAL PUMPING CAPACITY:

Low	Service	million	gallons	per	day
High	Service	million	gallons	per	day

STREET LEVEL PRESSURES:

Maximum	125	lbs.
Minimum	15	lbs.

CONSUMPTION-1924-25:

Maximun	ı daily,	Dec.	29,	1924	152.4	million	gallons
Minimum	daily,	June	1, 19	924	85.5	million	gallons
Average	daily,	1924-2	25		113.1	million	gallons

EACH PERSON USED:

December 29, 1924	gallons
June 1, 1924105.0	gallons
Average per day for 1924-1925140.0	gallons

PURIFICATION CAPACITY:

160 million gallons per day.

- Cost of purifying one million gallons of water in 1924-25, \$11.25.
- Mud removed from each million gallons of water in 1924-25, 11,250 pounds.
- Bacteria taken out of each million gallons of water in 1924-25, 47,000,000,000.

CHEMICALS USED DURING THE YEAR 1924-25:

Lime			16	,830	tons		
Sulfate of Iron			2	,356	tons		
Sulfate of Alumina			4	,114	tons		
Liquid Chlorine			•••••	64	tons		
Grains per gallon,							
Rate of Use Ma	aximum	Minin	านทา	Αve	rage		
Lime	6.25	2.	0		5,36		
Iron	2.5	0			0.75		
Sulfate of Alumina	2.0	0.	75		1.38		
Liquid Chlorine in pounds per million gallons	5.75	0.	5		2.98		
VITAL STATISTICS:							
D 1 100.000	1903	1913	1923		1924		
from all diseases		1389	1149		1243		
Deaths, per 100,000, from Typhoid	47	17	4.2		3.8		





HE City of St. Louis acquired the ownership of the Water Works in 1835, the purchase price being \$54,000. The population of the City at the time was 8,316. The present Water Works cost \$33,250-

WEST INTAKE TOWER

000 and supplies a population of over 800,000.

HE entire supply is taken from the Mississippi River through two Intake Towers located at the Chain of Rocks, which is about ten miles north of the Eads Bridge. The water is pumped into seven Settling Basins having a combined capacity of about 200 million gallons.

HE pumping equipment at the Chain of Rocks consists of four Allis-Chalmers vertical compound engines, each having a capacity of 30 million gallons per 24 hours; two DeLaval



EAST INTAKE TOWER

twin centrifugal steam turbine driven pumps, each having a capacity of 35 million gallons, and one 110 million gallon DeLaval steam turbine driven pump.



BEFORE the water enters the Settling Basins a solution of milk of lime, which is prepared in the Coagulant House, is added, after which it flows through the limemixing conduit, traveling a distance of 9,520

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feet before it reaches the Settling Basins. As it leaves the lime-mixing conduit a solution of Sulfate of Iron, also prepared in the Coagulant House, is added. The water remains in

the Settling Basins an average of 34 hours, the settled water being drawn into a collecting conduit and passing from this conduit through two 8-foot venturi meters into two other basins. As the water passes through the meters a solution of Sulfate



COAGULANT HOUSE

of Alumina, which is prepared in the Head House, at the Filter Plant, is added. The water is then passed through rapid sand filters having a total rated capacity of 160 mil-

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lion gallons per 24 hours. The filtered water is sterilized with liquid chlorine as it enters the conduits leading to the High Service Pumping Stations, one at Baden four and one-half miles south and the other at Bissell's Point seven miles south of the Settling Basins.

ST. LOUIS RAPID SAND FILTERS-LARGEST PLANT IN THE WORLD

ST. LOUIS WATER WORKS

A T the Baden Pumping Station the water is pumped into 36-inch cast iron outlets directly into the High Pressure distributing system, which is practically a closed system having an outlet through No. 3 standpipe



PUMPING STATION, BADEN

into the Basins at Compton Hill. The pumping equipment at the Baden Station consists of six Allis-Chalmers triple expansion high duty engines with a total capacity of 80 million gallons per 24 hours.

ST. LOUIS WATER WORKS

A T the Bissell's Point Pumping Station the water is pumped into 36-inch cast iron outlets into a Low Pressure distributing system connected to the Compton Hill



Reservoir, which has a storage capacity of 85 million gallons. The pumping equipment at the Bissell's Point Station consists of three Allis - Chalmers vertical triple expansion high duty engines, each with a capacity of 20

ST. LOUIS WATER WORKS

million gallons per 24 hours; three Holly vertical triple expansion high duty engines, each with a capacity of 20 million gallons per 24 hours, and one Cameron two stage centrifugal steam turbine driven pump, with



a capacity of 20 million gallons per 24 hours.

THE pumps at the Chain of Rocks work against an average dynamic head of 58 feet, at Baden 288 feet, at Bissell's Point 185 feet.

WATER METERS PREVENT WASTE

THE distribution system consists of 1,050 miles of pipe, in sizes ranging from 3 inches to 48 inches. All of this pipe, with the exception of five miles of 36-inch pipe, is cast iron. This line, which extends from Bissell's



Point Pumping Station to Compton Hill Reservoir, is lock bar steel with riveted joints.

THE maintenance of the distribution system is handled through six service

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stations, which are centrally located in their respective districts.

A LL service pipes, either of lead or cast iron, are installed and maintained at the expense of the property owners. There are



about 130,000 service connections at the present time, of which 10,200 are metered.

THE Water Division owns and operates a combined steam and electric railway extending from Bissell's Point to the Chain of Rocks, a distance of about $7\frac{3}{4}$ miles. Employees only are carried between Bissell's Point and Baden; between Baden and the Chain of Rocks adult passengers are carried



HEAD HOUSE

for a 5 cent cash fare, children 3 cent cash fare.

THE Parks at the Chain of Rocks and at Compton Hill Reservoir are maintained under the direction of the Water Division.