

# MUELLER RECORD

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*Autumn in the Ozarks — Saline River  
Between Little Rock and Hot Springs, Arkansas*

NOVEMBER, 1937

# WATERWORKS ON AIR

## John B. Dean Gives Interesting Story Concerning The St. Louis System . . .



**JOHN B. DEAN**  
Water Commissioner,  
St. Louis,  
Mo.

Mr. John B. Dean, Water Commissioner of St. Louis, is doing a fine bit of work in his radio broadcasting facts concerning the city's water works. The average citizen in the average city knows little or nothing concerning the water works in his town. He seems to be without interest, content to know that when he turns the faucet in his home he will receive an ample supply of water. He is apparently not concerned with the source of supply or the method of distribution, al-

though he is absolutely dependent upon the water works for a pure healthful supply of water. No municipal enterprise is so closely interwoven in the lives of the whole population of a city. The very lives of the people depend upon the character and quality of the water that is served them. No greater calamity could happen any community than to have the water supply shut off if only for a few days.

### Commendable Plan

Mr. Dean's plan of broadcasting facts concerning the St. Louis water works is most commendable, and we hope that he has and will have an interested audience. Surely what he says should get preference over the silly features that burden the wires by day and night. One of Mr. Dean's first broadcasts outlined the history of the St. Louis plant. We reproduce it in the belief that it will interest our water works readers.

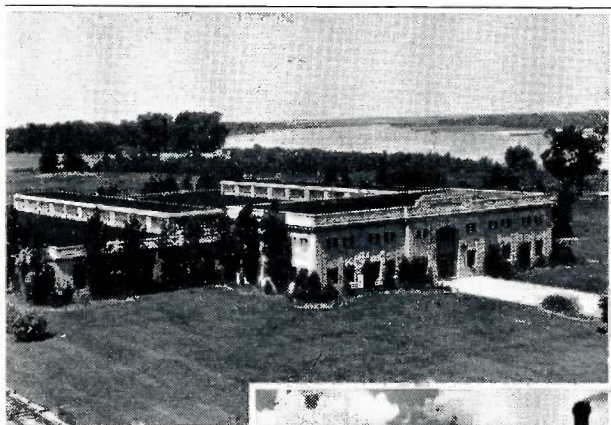
### Early History

On Feb. 15, 1764, a young man in charge of a party of thirty helpers, landed and encamped on the west bank of the Mississippi River at a point 17 miles below the mouth of the Missouri. The young man was Pierre Laclede, and he was in the act of founding the City of St. Louis.

The early settlers obtained water from springs and wells, from Mill Creek and from the Mississippi River. Mill Creek was then a clear stream, draining Chouteau's Pond, which was fed by cold springs in the vicinity of the Rock Springs neighborhood. The wells were expensive to construct and not very satisfactory, and a large part of the water used was hauled in barrels from the river to the various residences.

### First Efforts to Secure Plant

In 1823, when the population had increased to approximately 4,000, the settlement was incorporated as the City of St. Louis, and Dr. William Carr Lane was elected the first mayor. As a young man he attended college in Philadelphia which then had a waterworks, and had learned to appreciate the convenience of city water. He made a very strenuous effort to have a water works built for the City of St. Louis, but nothing was accomplished toward this end until 1829, when a contract was made with John C. Wilson and Company to construct and operate a water works and to

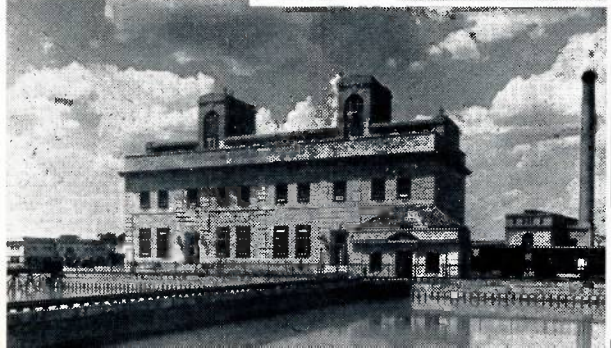
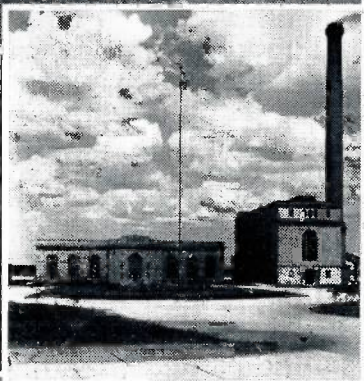


Filter Plant

*Buildings at  
Howard Bend  
Plant*

High and Low  
Service Pumping  
Station, Stack  
275 Feet High

Coagulant House





collect the revenue from the sale of water for a period of 25 years, after which the plant was to become the property of the city. Under this contract a pumping station was built at the foot of Smith Street, and a reservoir 64 feet by 58 feet by 12 feet deep was constructed on the Little Mound at Dickson and Collins Streets, three blocks west of the pumping station. A small part of Smith Street still appears on the city map near the foot of Cass Avenue.

#### Only Small Pump Required

The first pump, which had a 10-inch steam cylinder and a 6-inch water cylinder with a 4-foot stroke, proved unsatisfactory, and was replaced by two rotary pumps purchased from Asahel Hubbard. These pumps were hauled by ox-cart from Windsor, Vermont, to Albany, New York, whence they were shipped to Chicago by boat and hauled across the prairies to St. Louis. Mr. Hubbard took as part payment a white horse, and rode him back to Windsor where the animal was known for many years as the "St. Louis horse". During the building of the plant, the contractors got into financial difficulties and sold three-quarters interest to the city. Mr. Wilson withdrew from the firm, leaving the work in charge of his partner, Abraham Fox.

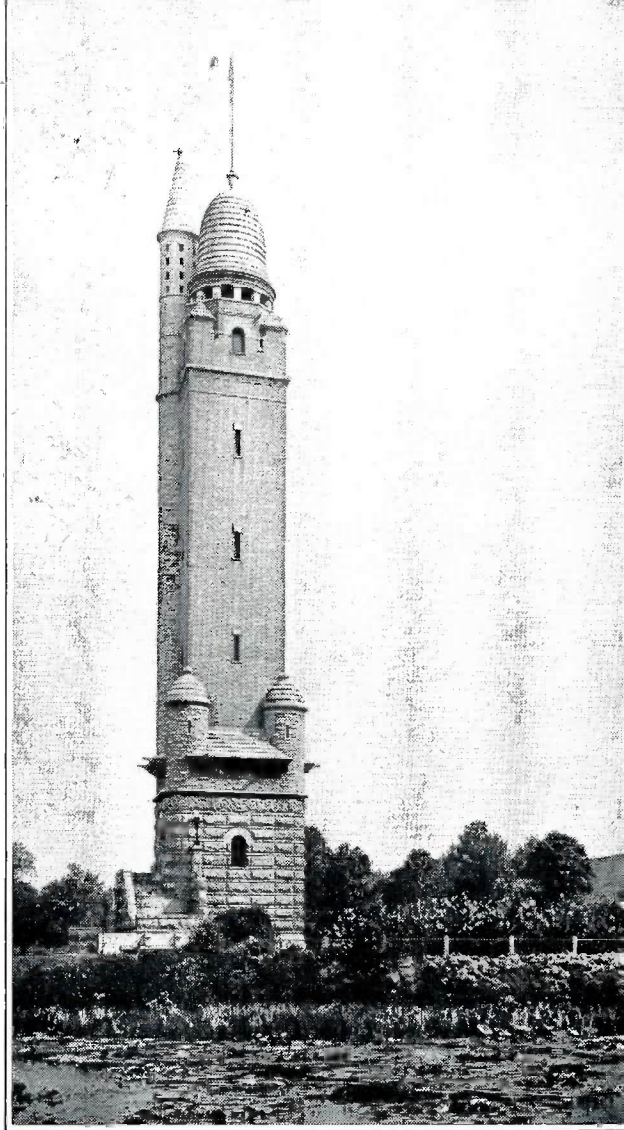
#### First Distribution System

In 1831, the water works was put into operation with Mr. Fox as the first superintendent. The first distribution system consisted of a 6-inch pipe from the Little Mound down Third Street to Wash Street, thence east to Main Street and south on Main Street to what is now Poplar Street, a distance of about  $1\frac{1}{4}$  miles. There were only 12 fire hydrants on this main. Mr. Fox continued to act as superintendent until 1835, when he sold his interest in the water works to the city, and was succeeded as superintendent by John A. Wimer, who afterwards became mayor. Since 1835, or for more than 100 years, the St. Louis water works has been municipally owned.

The original plans called for a basin on the river bank, into which the river water was to be pumped and clarified by settling, whence it was to be repumped to the storage reservoir on the Little Mound. This settling basin was never built because solid rock was encountered a short distance under the surface of the proposed site. Therefore, the one small basin was necessarily used for settling and storage, and practically no settling took place.

#### Install Wooden Reservoir

In order to alleviate this condition, a wooden reservoir 100 feet square and 12 feet deep was constructed in 1845 on top



*Water Tower in Reservoir Park at Compton Hill*

of the original basin. Additional pipe lines were laid from time to time to extend the distribution system. Later two reservoirs were built at Twentieth and Benton Streets, one completed in 1849 and the other in 1855. Even with these additions the early basins were not of sufficient size to permit settling the water long enough to remove much of the sediment, so that the water delivered to the consumer was very little better than the river water. As there were many people living upstream from the pumping station, the water pumped from the river was somewhat polluted by sewage.

#### Gravity Pressure

The pressure in the mains depended on gravity, and because the reservoirs were not high enough and the mains were too small, and too few in number, the pressure was insufficient for proper fire protection, par-

ticularly in the high-lying districts. Furthermore, there were never enough reserve pumps, and practically all parts of the system were barely sufficient to meet the immediate demands.

### The Bissell Point Plant

This unsatisfactory condition prevailed until two years after the close of the Civil War, when the construction of a well-designed plant was started at Bissell's Point. This new plant consisted of a low service station for pumping water from the river into four sedimentation basins, and a high service station to pump the clarified water from Bissell's Point to the Compton Hill reservoir, which was also a part of the project. The east Grand Avenue water tower, which is in the form of a Corinthian column, 154 feet high, was built at the same time. This familiar landmark is known to practically all St. Louisians.

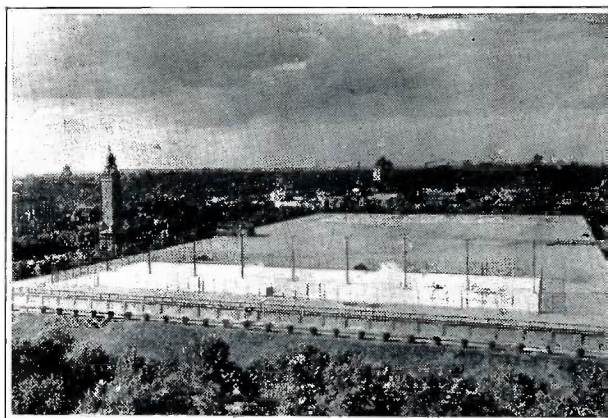
The Bissell's Point plant was designed to supply about 15 million gallons of purified water per day, but the city had grown very rapidly and the per capita consumption had increased so that by 1886, the peak consumption had reached 37 million gallons per day. In the meantime, several pumps had been added and the second 36-inch main was laid to Compton Hill, but the supply barely kept up with the demand, and once during the winter of 1883-84, Compton Hill reservoir was completely drained.

### Chain of Rocks Plant

After much investigation and discussion, an ordinance was passed in 1887 authorizing the immediate construction of a purification plant at the Chain of Rocks, the discontinuance of pumping from the river at Bissell's Point, and the use of the basins there for storing only clarified water. The construction of six settling basins and a low service station to pump from the river at the Chain of Rocks, as well as a masonry conduit to Bissell's Point was completed in 1894. The high service station at Baden for pumping water into the city mains was completed in 1897.

### First Chemicals Employed

The greatest improvement in the history of the St. Louis Water Works occurred in the spring of 1904, when chemicals were first applied to improve sedimentation, with the result that cloudiness disappeared and the water was suddenly as clear as spring water. This process, then in the experimental state, was introduced by Mr. Ben C. Adkins, Water Commissioner, and Mr. Edward E. Wall, Assistant Water Commissioner. The improvement was highly desirable because the World's Fair was about to open and bring many visitors to St. Louis.



*Compton Hill storage basin in Reservoir Park with all weather tennis courts on roof. Capacity, 85 million gallons.*

At times, when the river water is very muddy or when the consumption is very high, a great amount of basin capacity is required even with the aid of chemical coagulation and, at best, the quality of the water clarified by sedimentation alone never equals that of properly filtered water. Ten years after the introduction of chemical coagulation, it was evident that either additional settling basins or a filter plant would be required to take care of the city's needs. As filtration was the cheaper and more satisfactory method, it was recommended by Water Commissioner Wall, who prepared the plans for a filter plant which was completed at the Chain of Rocks in 1915.

As a city grows, the demand for water almost invariably increases more rapidly than the population. People use more water, and industries requiring large amounts become established, so that the water works engineer must constantly look forward to the future requirements.

### Howard Bend Plant

Prior to 1923, a study of the future requirements at St. Louis had been made and it had been decided that the capacity of the works existing at that time would soon be insufficient and that the proper location for the next extension would be on the Missouri River, an entirely independent supply and nearer to the probable future center of population to be served. In order to provide funds for this extension, an item of \$12,000,000.00 was provided for in the bond issue which was favorably voted upon in 1923. In fact, the idea of the whole bond issue grew up around the proposed bond issue for an addition to the water works.

Work on the Howard Bend Plant located



on the Missouri River was started the same year, and on August 15, 1929, it was put into operation 24 hours per day and has been in continuous operation since. The water is delivered to the City of St. Louis through two 60-inch steel conduits. This is one of the most attractive and satisfactory water purification plants in existence. You are cordially invited to visit this plant at any time.

### ANSWERS AT "EXAM"

Answers to examination questions by pupils in the fifth grade bring an amused smile to the faces of erudite elders.

But let's move up to the higher brackets and have a merry haw-haw. Here are some of the answers given at Baylor University by 650 freshmen in the required psychological examination at registration.

Oxygen—an eight sided figure.

Nero—nothing.

Homer—a type of pigeon.

Ulysses Grant—a tract of land upon which several battles of the civil war were fought.

Quorum—a place where fish are kept.

Vegetarian—a horse doctor.

Henry Clay—a mud treatment for the face.

All the answers are "good" except the one given for "Homer." The student displayed his ignorance by failure to answer—a four base hit.

### CONFUSING

"Now, sir," said the counsel to the witness, "did you, or did you not, on the date in question, or at any time, previously or subsequently say or even intimate to the defendant or anyone else, whether friend or mere acquaintance, or in fact a stranger, that the statement imputed to you, whether just or unjust, and denied by the plaintiff, was a matter of no moment or otherwise? Answer—did you or did you not?"

"Did I or did I not what?" asked the witness weakly.

Square thy self for use; a stone that may fit in the wall is not left in the way.

A patent was recently issued by the United States Patent Office for an air-filled, stream-lined horsecollar?

They laughed when I came on the stage in my glove-tight shorts, but when I bent over they split.—Froth.

The only place that some men shine is in the top of the head.

### THE LIFE WORTH LIVING

It is easy enough to be prudent,  
When nothing tempts you to stray;  
When without or within no voice of  
sin  
Is luring your soul away;  
But it's only a negative virtue  
Until it is tried by fire,  
And the life that is worth the honor  
of earth,  
Is the one that resists desire.

—Ella Wheeler Wilcox.

### "THANK YOU MARM"

The above colloquialism was used by President Roosevelt in his October 12 radio broadcast. He said that the people feel that, so long as the country is traveling the right road, it does not make much difference if it occasionally hits a "thank you marm." The president's language is usually good. He expresses himself by use of the simple but effective words, and practically any one can grasp his meaning, but this colloquial "thank you marm," had, to use another colloquialism, many persons "up a stump."

Webster defines the expression in this way:

"A small ridge or hollow made, usually diagonally across a road, especially on a hillside, to deflect water. It comes from the sudden bobbing or bowing of a person when a vehicle strikes the ridge or hollow. The expression was therefore used as if making polite acknowledgment of a courtesy."

Thanks, Mr. President, for getting us "up a stump" for a brief period and you, Mr. Webster, for assisting us down.

### TAXI WENT ROUND AND ROUND

The drunk hailed a cab and fell into the back seat.

"Shay, driver," he ordered, "drive me aroun' the block a hundred timesh."

The driver was startled—but he obliged just the same. Around and around the block they went. And on the sixty-fifth trip, the stew leaned over to the driver.

"Step on it, buddy," he hic-coughed, "I'm in a hurry."

To be a "comer" start by being a "goer".

Doing easily what other find difficult is talent; doing what is impossible for talent is genius—Amiel.