

The Kentucky-American Water Company 1885-1985



A Century of Service

INAUGURATION AND DISPLAY OF THE Lexington Water Works!

Friday, January 30th, 1885.

PROGRAMME OF FIRE STREAMS.

10:30 A. M., SIX SIMULTANEOUS STREAMS

From Hydrants at the corners of Winchester and Race, Limestone and Seventh, Georgetown and Third, Broadway and Bolivar, Maxwell and Rose and Court House.

Run thirty minutes.

After a test at Limestone and Seventh, a change of stream will be made to Hamilton College.

1:20 P. M., TEN ONE-INCH STREAMS

On Main street, bet. Dewees and Spring streets.

Run twenty minutes.

2:10 P. M., TWO ONE-INCH STREAMS

Through

500 feet and 1000 feet of hose,

On Main street, near Court House.

Run twenty minutes.

2:30 P. M., ONE TWO-INCH STREAM

Through

Siamese Attachment

At Court House.

Run thirty minutes.

C. G. HILDRETH,

President, Lexington H. & M. Co.

M. KAUFMAN,

Chairman, Water Works Committee.

The Transcript Print.

Inaugural program

Water for drinking, cooking, and bathing was the reason the first explorers camped beside a spring-fed stream. They named their camp Lexington. As the settlers moved out into the surrounding land, they dug wells and cisterns. For over 100 years springs, wells, and cisterns provided the water supply for Lexington.

The time came in Lexington's development that wells, cisterns, and springs simply weren't enough. Buildings became so large that the water stored in cisterns could not stop a raging fire. Many houses were clustered so closely together that the waste from the privies would seep into the wells and contaminate the water. Plentiful, clean water was needed.

A source of pure water has been a major consideration for civilizations throughout the world. The distribution of that water is linked with industrial and social development in the community. The sophistication of the water treatment process is a direct reflection of the complexity of the society itself.

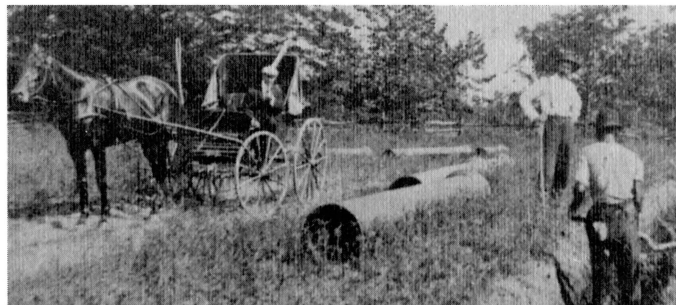
Quality water service doesn't just happen. Keeping up with the demands of a growing community presents many challenges. This booklet is about how those challenges have been met by Kentucky-American Water Company over the last 100 years. It is about the men and women who have dedicated themselves to the water utility industry. It is about a century of service to the people of Lexington.



Early letterhead



Holly hydrant



Howard K. Bell inspecting pipeline installation

Significant Dates

- 1882 Lexington Hydraulic and Manufacturing Company is chartered on February 27, 1882, by three Lexington businessmen.
- 1883 Lexington City Council adopts a Water Works Ordinance on December 6, 1883.
- 1884 Reservoir 1 dam is completed October, 1884.
- 1885 Water treatment and pumping station adjacent to Reservoir 1 is completed. Water service begins with an inauguration of the new system on January 30, 1885.
- 1893 Reservoir 2 is completed.
- 1903 Reservoir 3 is completed.
- 1906 Reservoir 4 is completed.
- 1913 Reservoir 4 is enlarged to present capacity.
- 1922 Company name is changed to Lexington Water Company.
- 1927 Company becomes part of what is now the American Water Works System when it is acquired by Community Water Service Company
- 1930 Pipeline to Kentucky River is constructed to augment Reservoir 4 during a severe drought. Pipeline is put in service on December 10, 1930.
- 1958 A second pipeline to the river and a new treatment plant are built. The Kentucky River treatment plant is put in service August, 1958.
- 1964 Reservoirs 2 and 3 are sold to a private development because they are no longer utilized for water supply.
- 1966 A third pipeline to the river is completed.
- 1966-1972 Eight water districts are acquired.
- 1968 A 386-acre tract of land surrounding Reservoir 4 is leased to the city and county jointly for 50 years.
- 1970 Company moves into its present office complex on Richmond Road
- 1972 Park at Reservoir 4 is dedicated and named Jacobson Park in honor of former company manager, E.E. Jacobson.
- 1973 Two more water districts, including the West Scott County Water District, are acquired.
- 1973 Company name is changed to Kentucky-American Water Company to reflect expanded service area.
- 1976 Sludge disposal facilities are constructed at the Kentucky River Station.
- 1982 Kentucky River Station is significantly expanded and additional storage facilities are added. Total system treatment capacity is 60 million gallons a day.
- 1985 Kentucky-American Water Company celebrates a century of service.

The Beginning - The First Reservoir

When the Lexington Water Works was inaugurated on January 30, 1885, it marked the end of more than a decade of debate over the need for a public water works system.

The local newspapers, the *Gazette* and *Press*, and many prominent Lexington citizens had been calling for a water works plan for years, but as late as 1882, a bill was voted down which would have allowed the city to build a water works.

It was not that a water works system wasn't needed. On the contrary, the city had suffered from successive droughts which caused severe water shortages for a community which was dependent on cisterns, wells, and springs. To add to this, many of the wells were polluted by nearby privies, and deaths from typhoid and cholera were not uncommon.

Still, prominent politicians, among them, Dennis Mulligan, opposed a public water works. People did not understand the connection between pure water and disease. Mulligan claimed typhoid was caused by "overheated young people who cooled off at open windows or on the pavement."

Politicians also worried that the higher taxes needed to build and operate a municipal water system would drive businesses away from Lexington. They argued, "Which will do most to encourage the growth of manufacturies and the increase of a substantial population: water



Convicts digging Reservoir 1

works and heavy taxation, or no water works and light taxation?"

The factor which probably most prompted the water works was the need for fire protection. In 1879 the Phoenix Hotel burned; 17 stores burned in 1881; and in 1883 fire gutted the Street Railway's barn and stables killing the mules and destroying the street cars.

If it weren't for the efforts of one man, Gilbert Hinds King, the water works would not have been initiated until later. King's efforts have been recorded in a book by his granddaughter, Frances L.S. Dugan. Privately published in 1953, the book is titled, *Rainfall Harvest: Gilbert Hinds King and the Lexington Hydraulic and Manufacturing Company*.

When the proposal to form a municipally-owned water works system failed, King and two other Lexingtonians, General William Preston and Colonel R.H.S. Thompson, procured a charter for a private water works company. Thus, the Lexington Hydraulic and Manufacturing Company was chartered on February 27, 1882.

But this did not end the debate. Saying the reservoir would be nothing more than a stagnant pool, leading citizens criticized the operation. The company was unable to get financial backing from local interests. The need for such a system was a major issue in the 1883 mayoral race, but Dennis Mulligan, who opposed the water works because it was too expensive, was defeated by Claude Johnson, who favored the system.

On December 6, 1883, the city adopted a water works ordinance, and on December 12, Mayor Johnson signed a contract for construction. The contract gave the Lexington Hydraulic and Manufacturing Company the franchise and privilege of constructing and maintaining "a water works to supply (Lexington) inhabitants with pure and wholesome water for public and private use." The agreement specified that the machinery and hydrants would be manufactured by the Holly Manufacturing Company of Lockport, New York. A Lexington Water Works Company was chartered by the Kentucky General Assembly in February, 1884, to provide the means of financing construction.

The construction of the water works was not without some controversy. Many residents complained when convict labor was employed to

dig a reservoir in July, 1884. Even though this was a common practice of the time, some Lexingtonians were concerned about the establishment of a camp of "sullen and dangerous convicts" just beyond the city limits. Others laughed at the "duck pond" and claimed its limestone base would never hold water.

In a 1980 article for the *Lexington Herald*, Bettye Lee Mastin wrote about some of the problems. "The charter had to be renewed before surveying and building the reservoir and power plant could begin; farm owner General William Preston failed to sign the incorporation papers and could not be found; convict labor escaped and hid at Cynthiana and the 'usually quiet village' of Nicholasville. Part of the camp was set on fire, and the press said Lexington was in a terror."

Nevertheless, the reservoir and original treatment facilities were constructed on what had been the Preston Farm on Richmond Road. The reservoir covered 40 acres and had the capacity to impound 122 million gallons on the headwaters of West Hickman Creek. It was called Lake Ellerslie after Levi Todd's historic estate across the road.

The long-fought battle was not without a price. Just weeks after the reservoir dam was completed in October, 1884, the *Transcript* carried a small announcement that Gilbert Hinds King had become critically ill. The exhausting effort had taken its toll. Three days later he was dead. Ironically, his funeral arrangements were complicated by the fact that South Limestone Street where he lived was torn up by the laying of the water mains.

TO THE LEXINGTON HYDRAULIC AND MANUFACTURING COMPANY,

We undersigned, OWNERS of the following described premises, hereby make application for water service on said premises. Subject to the Rules and Regulations of your Company

+ Special Case

DATE	Signature	Premises	TAP NO.	Frontage	R. NO.
Jan 8/85	John Carson	116 1/2 Broadway	1	40	1
Jan 8/85	A. B. McElwain	120 1/2 Broadway	2	40	2
Jan 8/85	John Shelby	68 W. Third	3	40	3
May 15/85	H. H. C. B. W.	112 1/2 Second St.	4	40	4
Jan 16/85	Wm. H. H. H.	112 1/2 Second St.	5	40	5
Jan 16/85	John H. H. H.	112 1/2 Second St.	6	40	6

The first ledger

The long-awaited system was placed into operation in January, 1885, with a grand public demonstration and inaugural ceremonies. The handbill describing the "Programs of Five Streams" is reproduced on the inside cover.

After a dramatic downtown celebration, people crowded to the water works on Richmond Road. There, General Preston dedicated the facilities. As Frances Dugan notes in *Rainfall Harvest*, "With his fine, soldierly figure silhouetted against the water, the old general drew cheers and laughter when he said that they had come to see the duck pond which — it had been predicted — would never hold water and they all wanted to look at the 'geese' who had constructed it. He referred to his long interest in the matter and of the refusal of the local financiers

to risk money on such an uncertain project.... During a burst of 'rap-turous applause,' the old gentleman tapped a bottle of Mums [*sic*] Extra Dry, drank a toast to the new lake, then dashed some of the champagne across the sparkling waters below him."

The two-hour celebration ended with the two new pump engines being named after Gilbert Hinds King and Mayor Claude Johnson. Also, at the ceremony a telegram from the financiers was read. It proposed a toast:

"Bluegrass, the pride of Kentucky, Lexington, the pride of the Bluegrass; may our water works be the pride of Lexington."

Additional Water Sources - Reservoirs 2, 3 and 4

As Lexington grew, more reservoirs were necessary for water supply. Reservoirs 2 and 3 were created by damming the headwaters of West Hickman Creek.

Reservoir 2 was built in 1893, covering 80 acres and impounding approximately 325 million gallons. Reservoir 3 was added in 1902, covering 90 acres and impounding approximately 426 million gallons. They were connected by a system of 36-inch pipes.

A 1903 publication of the Lexington Water Works states, "the reservoirs, known collectively as 'Lake Ellerslie,' make probably the largest artificial lake in the South...A boat ride along its shores is an experience once enjoyed but not to be forgotten."

The reservoirs were excavated by using mules and drag pans to transport the dirt. Construction was not without incident, as noted in a 1903 *Lexington Herald* article on the building of the dam for Reservoir 3: "One of the mules became frightened and, backing the cart to which he was hitched off the dam, fell to the bottom of the slope, a distance of seventy feet. Strange to say, the cart was not broken, nor was the mule injured. He was hitched up again and put to work. The next day another mule did the same thing, with the same result."

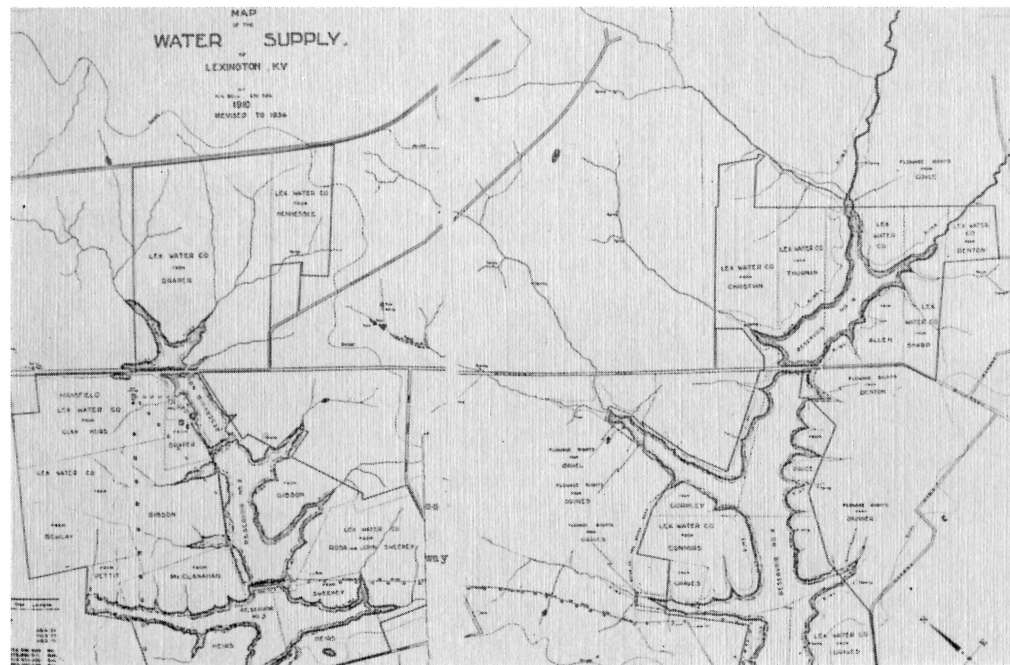
When Reservoir 4 was built in 1906, three miles from the original chain of reservoirs, it was expected to end all of Lexington's water supply worries. Originally, it covered approximately 250 acres and

impounded approximately 630 million gallons, and it was enlarged to approximately 270 acres which would hold 745 million gallons.

Workers came from all over the Southeast. One was Thomas Cleveland Sadler, who worked on the enlargement in 1913. In a letter, he recalled work on the dam: The drag pans "were on two wheels and when the pan was loaded it was raised and the wheels took over and a small pair of mules could handle it. But loading the pan was quite different. They had to have what they called a snatch team hooked on in front of the two already hitched to the pan....It took a real he-man to handle the snatch team....The driver wore a very wide leather belt like a lineman wears with a loop in the front. When he unhooked the team from the one pan he hooked it to his belt and had to take all that weight until he could get the team in place for the next pan."

Providing approximately 25 percent of the community's water, Reservoir 4 is still a vital part of Lexington's water supply. Reservoir 1 is still owned by the water company and is used to augment the Kentucky River and Reservoir 4 sources of supply on an emergency basis.

Reservoirs 2 and 3 are now privately owned by local residents. These reservoirs and the land were sold in 1964 because they were no longer needed for water supply.



Drought Forces Pipeline To The River



Excavating by hand in the 1930's



Digging the line to the intake

The summer of 1930 marked the worst drought on record for the Central Kentucky area. Now referred to as the 100-year drought, this extreme weather left many communities without water.

In spite of this, a pipeline to the river was controversial. Many citizens simply prayed that the community would be "blessed with a good rain any day now." When far below normal rainfall continued through September, water company officials announced that "construction of a water line to the Kentucky River would be made within the shortest possible time regardless of cost."

This was no easy task. The shortest route from Reservoir 4 to the river was 6½ miles over rocky terrain. Once there the pipeline would have to be reinforced to go down a 400-foot vertical drop to the river. This meant the pipeline and materials had to be custom-designed and manufactured.

Even though the company was still negotiating with landowners over disputed right-of-ways, work began on October 4, 1930. While the 6½ miles of 20-inch cast-iron pipe were being manufactured in Birmingham, Alabama, local workers were busy digging the trench.

Special attention was given to the design of the pipeline to be installed on the cliff down to the river. Lexington's Howard K. Bell, Consulting Engineers, worked closely with a steel company in Pittsburgh in the manufacture and design. As noted by Grant S. Bell a

member of the firm, and Clark Cramer, Station Engineer of the water company, "Wooden slides, controlled by a hoist at the top of the hill, were used to lower steel pipe. The figuring of the bends and the distances between to fit the steep part of the cliff was one of the most difficult jobs confronting engineers and manufacturers. Transits work rather awkwardly on 48 degree slopes."

Installation of the steel pipeline was also a challenge. Piers supporting the steel pipe were anchored into the rock with concrete footing between the piers.

So that work could proceed on both operations at the same time, a pumping station was built at the base of the cliff, out of line with the pipeline up the hill. Bell and Cramer reported, "If built first, the plant would have been destroyed by falling rock from the pipeline anchoring operations." In addition to this, two power substations were built and 10½ miles of electrical lines were laid.

The entire project was completed in just 70 days. On December 10, 1930, the \$350,000 project was put in operation and could deliver four million gallons of water daily.

One official lamented spending so much on a project which would only be needed for "3 or 4 months." Little did he know that in fewer than 30 years the company would add a second pipeline to this location at the river and construct a new treatment facility at the river site.



Steel pipeline to the river

Today approximately 75 percent of the community's water supply is provided by the Kentucky River. The company continues to use one of the pipelines to the river as a "raw" water line to augment the supply of water to Reservoir 4 during periods of high usage.

Then And Now

Customers

The Lexington Hydraulic and Manufacturing Company had 222 customers during its first year in service. By the end of 1884, Kentucky-American Water Company served 66,582 customers.

Billing

The original schedule of rates, as set forth in the Water Works Ordinance adopted by the city council in 1883, established annual charges based on the dwelling, rather than usage. Families with five or fewer persons paid \$5.00 for their first faucet and \$2.00 for each additional

THIS BILL IS DUE AND PAYABLE ON PRESENTATION.
The Collector will call **BUT ONCE**, if not paid to him, it must be paid promptly at the office, or the water will be cut off.

Ap No. _____ LEXINGTON, KY., APR 1 1887 18
Meter No. 9 *my R Sharpe*
To Lexington Hydraulic & Manufacturing Company, Dr.

FOR WATER RENT BY METER MEASUREMENT AS FOLLOWS:

Present Reading of Meter	<u>1137-00</u>	Cubic Feet.
Last Reading of Meter	<u>1129-00</u>	" "
Difference	<u>80</u>	" "
	<u>37-0</u>	Gallons at \$.90
Minimum Rate Per Month, (see other side)		Months at \$

Early metered bill

faucet. It was \$5.00 for one bath tub and \$2.00 for each additional tub. A water closet cost \$5.00. The charge was \$4.00 for a one-horse stable and an additional \$1.50 for each carriage.

Water meters were introduced by 1903. Meters enabled the company to charge customers based on actual usage, regardless of the number of faucets in a home. W.S. Cramer, who served as company manager from 1910-1931, earned the reputation of being the first superintendent in the United States to have an all-metered water system.