

**United States Department of the Interior
National Park Service**

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**National Register of Historic Places
Inventory—Nomination Form**

received

date entered

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Shreveport Water Works, Pump Station

and/or common McNeil Street Pump Station

2. Location

street & number On Cross Bayou off Common Street Extension ___ not for publication

city, town Shreveport ___ vicinity of

state Louisiana code 122 county Caddo code 017

3. Classification

Category	Ownership	Status	Present Use	
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> museum
<input checked="" type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input type="checkbox"/> military	<input type="checkbox"/> other:

4. Owner of Property

name City of Shreveport

street & number 1234 Texas Avenue

city, town Shreveport ___ vicinity of state Louisiana

5. Location of Legal Description

courthouse, registry of deeds, etc. Caddo Parish Courthouse

street & number 500 Texas Street

city, town Shreveport state Louisiana

6. Representation in Existing Surveys

National Register of Historic Places
title Historic American Engineering Record has this property been determined eligible? yes no

date 1979-1980 federal state county local

depository for survey records National Park Service

city, town Washington, D.C. 20240 state

7. Description

Condition

excellent
 good
 fair

deteriorated
 ruins
 unexposed

Check one

unaltered
 altered

Check one

original site
 moved date _____

Describe the present and original (if known) physical appearance

The McNeil Street Pumping Station was constructed between the 1880s and 1921. Originally it consisted of a low service room, a high service room, and a boiler room. The service rooms contain pumps and pumping engines. (See sketch plan.) The low-service pump was set in a fifteen-foot diameter pit which ran forty-five feet below the building's floor. The low-service pump brought water from nearby Cross Bayou into the plant. The high-service pump supplied water to the city.

The first filter room was built, and equipment installed, in 1892. In 1905 and again in 1911, additional filters were installed and the room was enlarged.

These early buildings have brick foundations, six feet deep, wood and metal truss pitched roofs, and cast iron frame windows. Rooms are connected by graceful brick archways and the walls are ornamented with brick pilasters and corbell tables.

In 1901 the brick and iron chimney stacks were replaced by the present Adophus Custodis stack. One hundred feet tall, the stack has an inside diameter of four feet and rests on a concrete foundation.

In 1921 the City made major renovations and additions to the plant. The low-service engine room was replaced by a new structure of heavy masonry, concrete and steel construction. The north, east, and west walls were removed as well as the wood floor system. The pump pit and pump engine remained. This addition provided room for three large new pumps.

Also in 1921 the coal fire boilers were replaced with gas fire boilers and the coal storage area was converted into the present service area. Finally, the old wooden flooring in the plant was replaced with concrete flooring. (See illustration 2).

There was also a low-service pump north of the plant near Cross Bayou. It had its own deep pit which was surmounted by a small turret-like building. An adjacent pit was built in 1921. All of this construction still exists, but it has been abandoned for many years and the condition of the pumps is unknown.

INVENTORY OF MACHINERY:

(A) Old engines and pumps

1. Low-service pumping engine: an H. R. Worthington vertical triple expansion engine, installed in 1898. In 1911 an Epping Carpenter 21" x 18" duplex, 5-million gallon vertical water end was installed on the Worthington steam end. This pump is in operational condition but only used as a back-up pump. It is still powered by steam.

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		

Specific dates 1887

Builder/Architect

Statement of Significance (in one paragraph)

Introduction

Securing an adequate water supply for the Nation's towns and cities has been a major preoccupation of local officials since the beginning of the American urban experience. Fire protection, public health, bathing, washing, cooking, and sewerage are all dependent on one of nature's most abundant and most precious resources. "Without it cities simply could not exist," wrote Nelson M. Blake in his history of the urban water supply problems in the United States.¹

Like many of her sister cities throughout the country in the second half of the nineteenth century, Shreveport, Louisiana, faced the problem of constructing a public waterworks. The cisterns, wells, and spring water on which the community had relied since its founding in the mid-1830s were by the 1880s no longer adequate. In 1887 a private company constructed Shreveport's first public waterworks. The facility was called officially the Shreveport Water Works, but it also came to be known as the McNeil Street Pumping Station. Since 1887, with many additions and changes, this waterworks has served the Shreveport community. The facility is unique, because its physical plant and its now unused but still extant in situ machinery, illustrate the history of a municipal waterworks from the nineteenth century to the present.

History

By the beginning of the 1880s the city fathers of Shreveport recognized that their community, already the largest city in northern Louisiana, required a modern water supply to satisfy the public health and personal comfort needs of the citizens and to provide fire protection for the city's homes and businesses. The wells and cisterns, both private and public, upon which Shreveport has long depended were no longer adequate. The capacity of the public cisterns was too small to provide sufficient water in the event of fire. Many businesses had in the past burned down before the fire department could set up its equipment and bring a steady stream of water to bear. Private wells, often located in the vicinity of outdoor laboratories, were always in danger of being polluted. To continue to grow, Shreveport simply had to build a modern public water supply.

Although the need for a municipal water supply was recognized, Shreveport did not have the public funds to do the job. The local business community had long favored selling bonds to subsidize railroad construction and the city's debt was such that no more bonds could be sold. Shreveport thus turned to private industry to construct a waterworks, a common practice throughout the

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This engine was installed in a special pit and structure on the banks of Cross Bayou in 1911. It has not been used for many years and remains in the pit in undetermined condition.

3. High-service pumping engine: H. R. Worthington triple expansion duplex condensing engine installed in 1900.

(B) Filters

In 1892 four Hyatt rapid-sand filters of the pressure type were installed. In 1898 they were remodeled and fitted with Jewel collecting and strainer systems. In 1908 they were remodeled again and changed from the closed-pressure type to the open rapid-sand gravity type. These open tanks are 10' in diameter by 13' high and fitted with operating valves and piping. These filters are no longer in operating condition. A new filter house has been built on another part of the site.

(C) Boilers

All of the boiler equipment was replaced. Present boilers are gas-fired and were installed in 1921.

PAT. 1917 Heine Water-Tube Boiler
Manufactured by Heine Safety Boiler Co.
St. Louis, Missouri

(D) Settling Basins

This is part of the original plant and is in the hill south of the building. The two basins are 180' x 230' and 23'4" deep and each is divided into two parts. The basins are constructed of brick laid on edge on a 6" concrete base. All brick lining is plastered.

(E) Relatively new engines and pumps

The following equipment was added in the 1921 addition after the City of Shreveport bought the property in 1916:

Low-Service Pumping Engine: vertical triple expansion pump
Worthington Pump and Machinery Corporation
Epping-Carpenter Works
Pittsburgh, PA Engine #18545

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High-Service (present number): triple expansion duplex condensing engine
Worthington Snow Pumping Engine
Worthington Pump and Machinery Corporation
Snow Holly Works
Buffalo, N.Y. Engine #S 368-1920

High-Service (present number)
Allis-Chalmers Co.
Milwaukee, Wisconsin Engine #46-36-134

Installed with #3 and #4 High-Service Engines is a:

Ingersoll-Rand Co. New York City
Cameron Division
"Centrifugal Pump" electric
Size 10 ALV #c453072

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country at the time. After studying the question for approximately six years, the city in 1886 finally awarded a water franchise to Samuel B. Bullock and Company. Within a year Bullock built the McNeil Street Pumping Station and laid a distribution system of mains, hydrants, and connections. In return for the service the Shreveport Water Works, as the company was called in Shreveport, received payments from the city and from private users.

From the beginnings, and, indeed, as long as the Shreveport Water Works was in private ownership, the city quarreled with its operator. Bullock was apparently interested only in low original costs, maximum return on his investment, and quick sale to another buyer. As a result he did not install the best equipment. He remained in Shreveport only five years. When in 1892 a local businessman named Peter Youree purchased the Shreveport Water Works Company, he soon discovered that significant portions of the McNeil Street Pumping Station required replacement. Youree made the necessary changes in the plant and sincerely hoped to improve the system. Soon, however, he too experienced troubles with the city. The turbidity of the water drawn from Cross Bayou, the source for the system, as well as fears that the water was badly polluted led to citizen complaints. By 1899 Youree had had enough and he sold the company to the American Water Works and Guarantee Company (AWWG) of Pittsburgh. The AWWG was a holding company that already held some thirty franchises throughout the region. The company had experience in public water systems and, if anybody could correct the Shreveport difficulties, it should have been AWWG.

Between 1899 and 1912 AWWG invested heavily in the Shreveport Water Works. The company without question made an impressive effort to straighten out the problems that plagued the system since its opening in 1887. Among AWWG's more notable accomplishments was the installation of modern, reliable, and efficient pumping engines. According to Terry S. Reynolds, the author of a definitive history of the station sponsored by the Historic American Engineering Record:

The appropriateness of these engines for Shreveport's system is evidenced by their long life. The Worthington high-service triple expansion engine installed in 1900 was retired only in 1980; the Worthington high-service triple expansion installed in 1905 was taken out of service only in the 1960s. The 1898 Blake, used for six years in Birmingham and installed in McNeil in 1904, was retired in 1927, after twenty-nine years of service. The Worthington compound, non-condensing engine, installed on an incline on the bayou and moved in 1911 to a pump pit on the bayou, was retired only in the 1950s, after more than a half century of use. The long operating life of these engines contrasts quite vividly with the short lives and high rate of turnover of the engines installed in McNeil before 1899.²

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Although AWWG made strenuous efforts to upgrade the capacity and water quality at the Shreveport Water Works, such as introducing chlorine as a purifier shortly after it became available, AWWG by 1912 found itself in an adversary relationship with the city. First, its franchise was due to expire in 1917. Fearing that the franchise would not be renewed, the company had little incentive after 1912 to make sizeable capital improvements in the Shreveport water system. There would be no return on the investment. Second, Shreveport's hydrology and geology made it difficult to secure abundant quantities of high quality water. Cross Bayou, even when supplemented with water from a nearby stream called Twelvemile Bayou, remained of questionable quality. In summer, when Cross Bayou was low, AWWG was forced to turn to the Red River for additional supplies. The Red River water was very turbid and exceptionally hard. Drilling into the aquifer was attempted but water was 220 feet down. Getting it to the surface would require pumping. Moreover, the supply from the aquifer was simply not large enough to cover Shreveport's needs. These were all problems beyond AWWG's power to control. Shreveport's major need was an entirely new source of water.

In 1917 the City of Shreveport purchased the water system from AWWG for \$800,000. The purchase price was below the true market value of the McNeil Street Pumping Station, the water supply system, and the distribution system. The city, however, quickly learned that municipal ownership was no panacea to Shreveport's problems. In 1919 it became evident that the McNeil Street Pumping Station would have to be significantly enlarged to accommodate new boilers, a much larger clear water tank, and additional high- and low-service pumping engines and other improvements.

Shortly after completing these improvements, the city moved to solve its number one water problem, a source of large quantities of high quality water. Since the turn of the century water supply engineers had eyed Cross Lake just west of Shreveport as a potential source of water. In 1910 the city recognized that it would eventually have to turn to Cross Lake and it began purchasing the lake bed. By 1924 land ownership conflicts had been resolved. In 1925 construction started on the necessary improvements to create a 12,000-acre, 30-billion-gallon reservoir. They were completed by the beginning of 1926. A conduit was concurrently constructed to carry water from Cross Lake to the McNeil Street Pumping Station. On January 19, 1926, water was turned into the conduit. Also in 1924 and 1925 further additions and other improvements were made at the McNeil Street Pumping Station. When all the work was completed, Shreveport authorities had reason to be proud. The city at last possessed a modern public water system that fulfilled the city's current and, hopefully, long term water needs.

From 1926 to the present the McNeil Street Pumping Station has continued to play an important role in the Shreveport water system. In 1930 another waterworks was constructed at Cross Lake, but McNeil's location near the downtown business district was sufficiently advantageous to keep McNeil in operation. The Great Depression and World War II also contributed to the

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retention of McNeil with its then almost antique steam pumping engines. Money was simply not available to upgrade the system. It was not until the 1950s that electric pumps began to replace the steam pumping engines. And it was not until the dramatic increase in natural gas prices in the 1970s that these engines became truly obsolete. Today electric pumping engines hum methodically at McNeil. The large boilers and steam driven pumping engines that once filled the station with noise are silent.

Significance

The Shreveport Water Works is a significant historic resource for two major reasons. First, the McNeil Street Pumping Station is an illustration and document of the evolution of a typical American waterworks from 1887 to the present. It was not until the second half of the nineteenth-century that municipal authorities recognized that, if they wished their towns and cities to grow and prosper under the impact of urbanization and industrialization, a dependable public water supply was an absolute necessity. Public health, fire protection, personal comfort, and the needs of industry all dictated good quality water be available to the community. In response to this demand the number of public water systems grew between 1860 and 1890 from 136 to 3,196.³ By 1923, ninety-seven percent of the country's urban population was served by public water systems. Throughout this century, and especially in the 1960s and 1970s with the rise of the environmental movement with its concern for clean air and pure water, the quality and quantity of the Nation's water has remained a consistent matter of public care and attention.

The Shreveport Water Works illustrates how one typical American city has supplied its inhabitants with potable water. The McNeil Street Pumping Station's growth, from the original 1887 facility (see illustration two), documents the explosive increase in the demand for water that is characteristic of almost all American towns and cities. The station is an example of the evolution of a type of public utility without which our cities could not exist. Although no nationwide survey of municipal waterworks has been conducted, it has been suggested that the Shreveport Water Works is one of the few extant historic waterworks that retain a high degree of physical integrity.

The second reason for the McNeil Street Pumping Station's significance is that the station contains in its structures and machinery a history of the evolution of the technology or engineering of a municipal waterworks.

McNeil's steam pumping engines still in situ, are unique. According to Robert Vogel, curator of the Smithsonian Institution's mechanical engineering department, the two vertical and one horizontal direct-acting, Worthington pumps at McNeil are, as far he knows, "the sole survivors of the two types

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in the United States."⁴ The importance of the Worthington steam pumping engines in the history of the technology of American waterworks is large. Henry R. Worthington's invention in the 1840s of direct-acting steam pumps was, according to a biographer, "one of the most ingenious advances in engineering in the nineteenth century."⁵ These pumps were especially well suited for waterworks projects. Before the end of the century there were 1,160 important Worthington installations which could pump more than 2.9 billion gallons of water per day.⁶ Worthington steam pumping engines were in service at many waterworks into the 1940s, when they were replaced by electric pumping engines. The Worthington steam pumping engines at the McNeil Street Pumping Station may be the last surviving examples of the type of technology that at one time supplied a large portion of our Nation's towns and cities with water (see illustration three for a complete installation record of the pumping engines at the McNeil Street Pumping Station).

In addition to the pumping engines, the McNeil Street Pumping Station also contains a range of water filters that illustrate the changes in water purification technology during this century (see illustration four for the installation record of filters at McNeil). Boilers, sedimentation basins, aerators, and mixing chambers are also among the other interesting artifacts of the McNeil Street Pumping Station that contribute to its engineering significance. The station is in fact an extant public waterworks that documents in situ an important area of American engineering and technological achievement: the provision of safe and clean water without which modern urban life would be impossible.

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Footnotes

1. Nelson M. Blake, Water for the Cities, A History of the Urban Water Supply Problem in the United State, (Syracuse: Syracuse University Press, 1956), p. 2.
2. Terry S. Reynolds, "A Cardinal Necessity, the McNeil Pumping Station and the Evolution of the Water Supply System of Shreveport, Louisiana," Historic American Engineering Record, Department of the Interior, National Park Service, 1980, p. 48.
3. Stuart Galishoff, "Triumph and Failure: The American Response to the Urban Water Supply Problem, 1960-1923," in Martin V. Melosi, ed., Pollution and Reform in American Cities, (Austin: University of Texas Press, 1980), p. 35.
4. As quoted in Reynolds, "A Cardinal Necessity...", p. 147.
5. "Henry R. Worthington," Dictionary of American Biography, (New York: Charles Scribners Sons, 1936), p. 569.
6. "Worthington Pump Complex," National Register of Historic Places Nomination-Inventory Form, Prepared by the American Association for State and Local History for the National Historic Landmarks Program, Department of the Interior, National Park Service, 1978, (on file History Division, National Park Service, Washington, D.C.).

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"Worthington, Henry R." Dictionary of American Biography, 10, (New York: Charles Scribners Sons, 1936).

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