# Historic Resources Evaluation Avenue Water Treatment Plant, Ventura, California

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The lead agency is responsible for the identification of "potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource." The specified methodology for determining if impacts are mitigated to less than significant levels are the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (1995), publications of the National Park Service. (PRC §15064.5(b)(3-4))

## 4. Historical Setting

*San Buenaventura Mission (1782-1869)*

The first attempt to design a water system for human consumption in the Ventura area was a complicated engineering feat undertaken by the Mission fathers, using Chumash Indians as laborers. The water was brought to the mission grounds between 1792 and 1815 by constructing an approximately seven mile-long aqueduct using gravity flow from a dam at or near the junction of San Antonio Creek and the Ventura River. The aqueduct was a stone and mortar wall supported by heavy buttresses, built according to Roman designs. The large stone and mortar sections were built primarily across canyon openings and creeks. The rest of the aqueduct, or *zanja*, was an open ditch along the hillsides. Only portions of the aqueduct remain today, with the largest extant sections at Weldon Canyon and Cañada Larga Road.

The water was brought to the Mission grounds by gravity flow, where it was taken through pipes and open ditches to *lavenderias* and fountains for domestic use. A filtration building was constructed west of the Mission quadrangle to clarify the water. Unfiltered water was taken by pipe to a *lavenderia* for washing clothes or for irrigating the mission gardens. The filtered water, it is believed, was taken by mission tile pipe to a reservoir behind the church. This reservoir, constructed of mission-made brick and Roman mortar, held a volume of approximately 4,000 gallons (Browne, 1982: 31).

This water system remained in place until the heavy storms of 1860-61, some of the most destructive on record, which damaged the system extensively. Afterwards, according to one account, repairs were made and a flume built, following the same course as the original ditch, to carry water to a higher point on the hillside where a second reservoir was constructed. Other accounts reported that repairs were not made, and that water was hauled in barrels from the river to Ventura residents.

Following the city's incorporation in 1866, the town trustees set themselves to the task of constructing a water system more suitable to the needs of a growing community. The first water franchise to provide water to the town of San Buenaventura for a fifty year period was granted to Jose Arnaz, Victor Ustusaustegui and Francisco Moleda on January 4, 1869. On June 26, 1871, this franchise was assigned to Thomas R. Bard and A.A. Chaffee, who in 1874 assigned it to the Santa Ana Water Company (Stetson, 1964: II-1).

*Santa Ana Water Company (1870-1901)*

The Santa Ana Water Company incorporated on January 10, 1870, for the purpose of building a dam on the San Buenaventura River and distributing the water through pipes and other means for irrigation purposes and to supply the town of San Buenaventura. The Trustees of the corporation were Walter S. Chaffee, Thomas R. Bard and William S. Patterson.

In February of 1874, the company had acquired all rights, titles, and interests of the Catholic Church to the water and ditches, flumes and aqueducts formerly operated by the Mission. The franchise to provide water to the City of San Buenaventura was provided to the Santa Ana Water Company on March 26, 1874. Minutes from the Board of Trustees meeting of March 12, 1875, stated the company's intentions "to negotiate a loan of $16,000... [so that] work can be carried on in laying pipe to reservoir on Cañada Larga." The site of this reservoir, or even whether it was constructed, is unknown. (Minute Book of Santa Ana Water Company 1870-1887)

The company built a new ditch, higher up the hillside than the previous Mission ditch, to transport water from San Antonio Creek to a reservoir above Poli Street. The winter rains made continuous repairs necessary, so that by 1888 the first metal pipeline was built along Ventura Avenue to supply water to the ranches along the avenue and to the town. Two earthen reservoirs were built by the company in 1888 on a 17.36 acre portion of the Weldon Tract purchased from W.R.H. Weldon, Hannah I. Weldon and Jane A. Weldon. These reservoirs, with a capacity of two million gallons, occupied the site of the present Kingston Reservoir, and received water through a ditch and flume system built along the Ventura River to an intake upriver. (Wood, 1942: 2; Grant Deed, book 23, p. 514; Schedule of Property, 1895).

An irrigation network, called the Power Ditch Irrigation System, was constructed along Ventura Avenue by the Santa Ana Water Company, and was originally independent from the city water system. Water was diverted to the ditch from the Ventura River near Foster Park, and was conveyed by flume and ditch to the Power Reservoir, located behind the Avenue School. Water was distributed by flumes and ditches from the reservoir for irrigation and power use (Stetson, 1964: II, 2-3).

In 1890 the Ventura Land and Water Company was organized as a subsidiary of the Santa Ana Water Company. Its purpose was to deal in lands and other issues in which the Santa Ana Water Company might have an interest. One of these interests was water-driven electricity generation. The company built a waterwheel adjacent to the Avenue Mill, diverting water to the generator at night when the mill was non-operational. Eventually another dam and ditch were constructed for this purpose. On July 25, 1890, the Ventura Land and Power Company was granted a franchise by the Ventura County Board of Supervisors to supply electricity to the county.

During this time, many city residents expressed dissatisfaction with the quality of the water supply, especially after storms, when the Ventura River would dump muddy water into the ditches and pipes. In 1895, the Ventura Land and Water Company offered to sell the water system to the city. City voters approved the sale of bonds to fund the takeover, but the bonds were withdrawn because clear title to the land could not be obtained. (Peterman, 1959: 2)

*Ventura County Light and Power Company (1901-1906)*

In May, 1901 the Santa Ana Water Company was taken over by a Los Angeles-based corporation, the Ventura County Light and Power Company. The acquisition included the water rights to the Ventura River, the reservoirs, pipelines, and franchises in Ventura, as well as the electric light and power plant systems. Management of the company was transferred to Ventura in 1902, and E.P. Foster elected president. Continued poor service led the city in 1905 to again attempt to take over the water and power company. A bond was approved by the voters, but challenged by the company. The courts ruled that the city had exceeded the bonded indebtedness limits contained in the city's charter, and invalidated the bond issue.

*Ventura County Power Company (1906-1917)*

Before taking over the Ventura County Light and Power Company in 1906, this company, formed in 1903, had been operating gas, electric, and water services in Ventura, Santa Paula and Oxnard. In 1906-07, the company began constructing a submerged dam at Casitas Narrows, in Foster Park, approximately one mile north of the three small reservoirs which would later become Kingston Reservoir, along with a 36-inch concrete pipeline to the reservoirs, replacing the open ditch and flume. Another reservoir extant at that time, Power Reservoir, was located behind the present day Avenue School.

The submerged dam, constructed of reinforced concrete, was built to intercept the underflow through the gravel in the Ventura River channel and to bring it to the surface in order to supplement surface runoff available for diversion for use by the city. Construction began on the western side of the river and continued across the channel for 973 feet to the east. The structure varied in depth from six feet to 50 feet, depending on the depth to bedrock under the riverbed. Because of increased cost and construction difficulties associated with the deeper bedrock at the eastern end of the site, the project was never

entirely completed, and a 300 foot gap remained at the eastern end. The date construction ceased ranges from 1907 to 1911, depending on the source (Peterman, 1959:13; Lippincott, 1934).

At the time the dam was constructed, perforated clay pipelines were buried on the upstream side of the dam. Apparently three perforated lines were constructed in total, two at the bedrock level and one closer to the surface. The water collected by these lines was transferred by gravity to an intake building housing a 32 foot deep wet well, where it was outflowed to the treatment plant by gravity and electric pumps.

By 1910, three small "city reservoirs" on the Cañada Larga site occupied the location of the present Kingston Reservoir. After 1929, these three reservoirs would be combined into the one large reservoir extant today. The Pacific Light and Power Corporation, a regional company operated by Pacific Electric Railway magnate Henry Huntington, acquired a controlling interest in the Ventura County Power Company in 1914. (Ventura County Power Company, 1910) [Figure 2]

*Southern California Edison Company (1917- 1923)*

In 1917 Southern California Edison Company acquired the business, franchise, and property of the Pacific Light and Power Corporation, including the water distribution systems of the Ventura Power Company as well as their electric and gas businesses. In 1921, Southern California Edison requested authorization to increase rates. Hearings before the Railroad Commission, the regulatory agency for power companies at that time, brought out the many difficulties the company was having providing consistent services to Ventura residents. These problems included the "lack of pressure in many part of the city, the presence of silt, fish and eels, bad tastes and odors..." (Wood, 1942: 4). The Edison Company made extensive improvements, including replacing pipeline, constructing new reservoirs and pumping plants, and the institution of a new metering system. Another result of the 1921 hearings was the acquisition of the water system by the City of Ventura in May, 1923, including the three small reservoirs on the 17 acre Cañada Larga property.

*City of Ventura (1923 to present)*

After taking over the operation of the water system, the City of Ventura immediately began to make improvements. One of the first tasks was to drill wells in various locations and to install pumps. Three wells were installed in the gap at the uncompleted end of the submerged dam in order to draw on water held in storage underground in the gravels above the dam and to intercept the underflow through the gap.

Prior to this time, the city's entire water supply came from the Ventura River. Despite these new wells, shortages continued, however, especially of the higher-quality domestic water. An increase in oil development in the Ventura River Valley increased water demand, especially for industrial use. Oil wells drilled in the Ventura River bottom lands, together with the discharge of waste water, impregnated the ground waters with mineral salts, leaving much of the groundwater unfit for domestic consumption.

During the 1930s, city officials began planning for a water treatment plant to correct the recurring problem of poor water quality. In 1936 the city Engineering Department began to study the most economical location for such a plant. The study recommended a site adjacent to the Kingston Reservoir, located six miles north of Ventura, in the Ventura River Valley.

In May, 1938 an application was filed for a Public Works Administration grant to construct a water works project to provide soft water to the city. Following assurances that the grant would be approved, the city hired the Los Angeles architectural and engineering firm of Taylor and Taylor to design and supervise construction of the treatment plant. In November of 1938, the final plans were completed for the treatment plant and the reconstruction of Kingston Reservoir for the storage of untreated water. That same month, the PWA grant was approved, and bids were opened in December of 1938 for the construction of the plant and reservoir improvements. The construction contract was awarded to Gates and Huntley of Los Angeles. Land adjacent to the Power Reservoir was purchased by the city for the treatment plant, sludge beds, wash water basin, and other improvements.

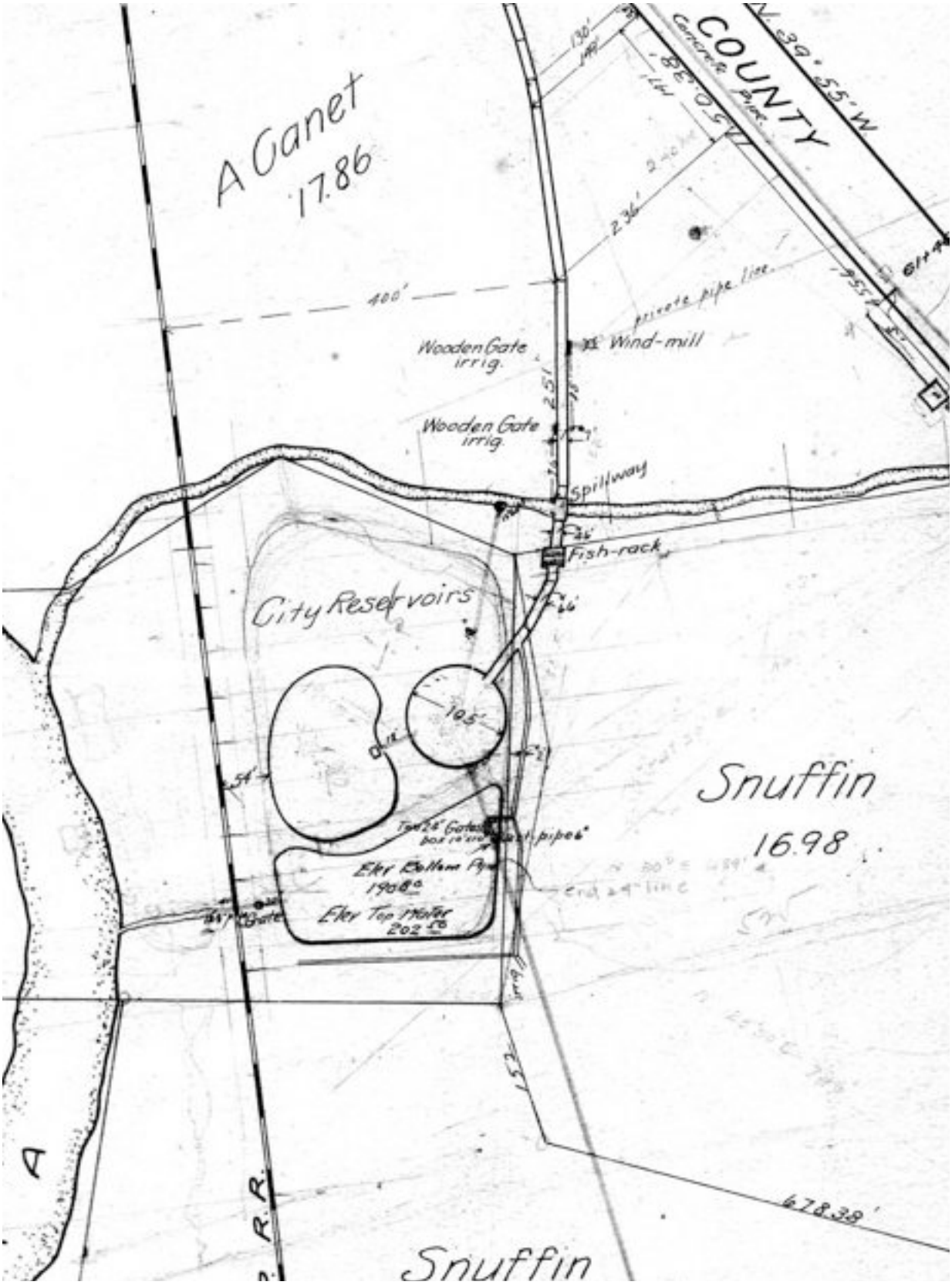


FIGURE 2. Ventura County Power Co. Facilities at Cañada Larga
Source: Book of Ventura Avenue Showing Location of Ditches, Flumes, Pipe-lines, Reservoirs and other Property of the Ventura County Power Company, March 1910 (with later pencil notations).

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Three other segments of the water treatment program built in 1939 included the construction of a raw water pipe line from the Kingston reservoir to the city limits for irrigation purposes; the roofing over the Power Reservoir to protect the treated water from algae growth; and the concrete lining of the Weldon Channel north of the reservoirs to prevent bank erosion. Changes to the water treatment process undertaken by the city during the 1950s and 1970s resulted in minor alterations to the facility. [Photo 1]

## 5. Site Description

The descriptions of buildings and structures on the site are keyed to Figure 3.

**[1] Administration Building.** The administration building is square in plan (40 by 40 feet), three stories in height plus a basement with a one story (97 by 12 foot) wing attached on the west side and is constructed of reinforced concrete with a grout lock brick exterior, painted white. The low steel-framed hipped roof of Spanish clay tile roof is capped with a four-sided cupola that repeats the rounded arches found in the windows of the second floors. Louvered wood vents are located within the arches. The Spanish Colonial Revival style building is symmetrical in design with a centered entry flanked by wood frame windows. A hipped roof covers the recessed entry supported by wrought iron brackets. The second floor features three round radiating arched multipaned double hung wood windows evenly spaced across the front (east) elevation. The third floor (east elevation) is divided from the second by a stringcourse and features a grouping of five narrow rectangular openings on each side with a single decorative vent in the middle. All of these openings serve as vents. The narrow vents have been covered with plywood. Decorative brick is used to create a cornice line. [Photo 2]

The one-story long rectangular-plan wing features a low gable roof covered with Spanish clay tiles with exposed rafters under the shallow eaves. The rectangular wood windows are organized in three groups of three windows each across the front (east) elevation. The windows run across the entire west elevation, interrupted by a four-paned glass and wood door in the middle. Most all of the wood windows on the west side have been replaced with aluminum windows within the original openings. Three wood and glass doors are located on the west side. The upper half of the west side of the building is covered with wide horizontal wood siding and corbeled wood pilasters. The lower half is constructed of brick.

On the north side of the building is a concrete loading ramp extending up to the second floor, with a large round arched paneled recessed entrance door flanked by two round arched multi-paned wood windows. Above the entrance is a decorative brick vent with five narrow openings on either side, repeating the design on the front of the building. Underneath the ramp are three segmented arched openings with radiating brick. A wrought iron railing extends the length of both sides of the ramp. [Photo 3]

The west (rear) elevation consists of two, flat roofed concrete block wings, probably added between 1958 and 1973. The small northern addition (electrical equipment room) features metal-framed windows. The southern addition is long and narrow and open on the north side for chlorine tank storage enclosed behind a metal fence. Above the additions are three evenly spaced rectangular wood windows. Five narrow vent openings are repeated under the roofline. Two contain their original louvered vents, and three are covered with plywood. [Photo 4]

The interior of the building was altered with the addition of dropped ceilings and dividing walls. The first floor of the building houses a laboratory and administrative offices. The second floor was originally used as a chemical storage area. The third floor held large wash-water storage tanks, which were removed after 1952. The basement contains a workshop and pipe gallery.

**[2] Treatment and Settling Basins.** On the north and south sides of the administration building are large reinforced concrete basins for treating raw water from the reservoirs. These basins are surrounded by brick walls painted white and capped with red brick. Metal catwalks with pipe railings extend over the basins. The water treatment process consists of several steps. The first step is the coagulation and flocculation basin. The second step is the sedimentation process where the water stands in quiet pools for settling out