R E P O R T

of the

COMMITTEE OF THE BOARD OF HEALTH ~~ON THE~~

on the

W A T E R S U P P L Y O F

THE SAN DIEGO WATER COMPANY.

October 14th., 1889.

The reservoirs of this Company are enclosed and covered and are all well protected, and the water contained in them is clear and cool. They are covered in a manner that will admit of a free circulation of air, while the suns rays are excluded, thus keeping the temperature within the reservoir at all times low enough that with the exclusion of light will prevent the development or growth of animal or vegetable germs that it may contain.

The water supplied from this source will in all probability be better and clearer in future during the high water season, as the walls of all their wells are being raised so that the water will, at all seasons of the year, pass in under the walls, (which are so constructed as to prevent the water passing through them) instead of over them.

The water, to pass under these walls, is received at a depth of twenty-five feet of filtration through sand, thus in a great measure freeing it from all impurities that may be washed in with the surface water supplying the river.

We regard this water supply for the city use, as not only potable, but we believe that there are few cities on this continent supplied with healthier water than is given to uor city from the San Diego River by the system of our Water Company today.

COMMITTEE (F. R. Burnham)
(D. Gochenauer)

S U M M A R Y .

Number of wells 13

Wells in course of construction 1

PUMPS (Gaskill 2
(Movable 1
(Worthington 1

Daily capacity of pumps (5,000,000 Gallons,) (2,000,000 Gallons,) (750,000 Gallons,) Respectively.

Number of reservoirs 4

Capacity of reservoirs (3,000,000 Gallons,) (86,000 Gallons,) (120,000 Gallons,) (1,000,000 Gallons,) Respectively.

Elevation of reservoirs, 143, 193, 215, & 230 ft. respectively.

Stand pipe, 138 feet high, elevation 401 ft. Diameter 30 inches.

Size of supply pipes ... .From 20 inches down.

The Company obtains its supply from a series of wells in the bed of the San Diego River above Old Town, where it has erected a pumping station to pump the water from the wells to the distributing reservoirs.

These wells are thirteen in number, eleven of which are located on a straight line across the centre of the valley for a distance of 1042 feet. Some of these wells are walled with brick and cement and some with wrought iron, and are so arranged that the water comes in only at the bottom. Their average diameter is 28 feet, and their average depth from 14 to 15 feet below the surface of the water. In addition to the wells above mentioned there two more farther up stream, one about 90 and the other about 1460 feet distant and one in course of construction about 775 feet above Well No.12. For further particulars as to exact location, character, and diameter of wells, reference is made to the Plat attached to, and made a part of this report.

As to the capacity of the wells, we are informed that a test of two of them gives a result of 1,400,000 gallons in 23 hours.

The bed of the San Diego River is a large gravel basin which extends seven or eight miles down the river to a point about three miles from the coast. The average width of this gravel bed is about three thousand feet, and in the deepest part, it is estimated to be between sixty and seventy feet to bed rock or hard clay.

The fall, at the upper end, is about thirty-five feet in three miles, and the lower basin has a fall towards the mouth of the river of about thirty feet in four miles.

This strata of gravel is constantly charged with water coming from about three hundred square miles of mountainous country forming the water shed of the San Diego River. The top of the water is from two to three feet below the surface of the earth during the dry season, and on account of the gradual fall, the water stands at this depth all along the valley and percolates slowly through the sand.

According to the statements of Engineer Evans, the average flow of the river above the surface from 1881 to 1889 was 145.5 days per year. At the pumping works the rainfall averaged about ten inches per season, and in the mountains it is much greater.

All wells are connected by 12-inch cast iron pipes, except wells No. One and Two, which are connected by a 20-inch pipe, all being laid in a timbered tunnel, 5 X 6 .

The suction pipe of the pump connects with well No.1. This well is supplied from its own district, and all other wells through the connecting tunnels and pipes.

RESERVOIRS, ETC.

The Company owns four reservoirs and one stand pipe. The Old Town reservoir has a capacity of about three million gallons, and is about 145 feet above the tide. The bottom is 276 feet long and has an average width of 85 feet, the total depth being

14 feet. A gate house is provided for in the centre. The whole reservoir is covered with a wooden roof. When necessary to clean it the water can be discharged directly from the pumps through the gate chamber.

The two smaller reservoirs on the Mesa, of 86000 and 120000 gallons capacity respectively, were formerly supplied by the "Old Works" through a six inch pipe, but are seldom used now. Both are excavated in the ground, and partly walled with stone and cement.

The Hawthorne reservoir is covered and fenced. It is supplid from the main pump station through the stand pipe. Its bottom and sides are partly of concrete and its elevation about 193 feet above tide.

The stand pipe is supplied from the large pump at the main station. It is composed of quarter-inch sheet iron, is 30 inches in diameter, 138 feet high, and its top is 401 feet above tide.

FACILITIES FOR PUMPING.

The Company has two double Gaskill compound condensing cut off pumping engines, built by the Holly Manufacturing Company. The first one has a capacity of two million gallons for 24 hours, 200 feet elevation; and the second, three million, six hundred thousand gallons for 24 hours, 500 feet elevation. Both engines are set and securely anchored to a concrete foundation.

There are two 75-horse power boilers, 54 and 16 inch, each 60 3-inch tubes.

The small pump is connected with the 145 foot reservoir, and the large one pumps about one-third to the 400 foot stand pipe and two-thirds to the 145 foot reservoir.

At what is called "The Old Water Works" located about a mile above the pumping station before alluded to, the Company has a Worthington Compound Pump connected with a brick well 30 feet in diameter, and ten feet deep, by an eight inch suction pipe 300 feet long. The capacity of the pump is 750,000 gallons per 24 hours.

In addition to this, the Company has a movable pump of 150,000 gallons capacity.

From the records of the San Diego Water Co.

Report of the
Committee of the Board
of Health on the water
supply of the San Diego
Water Company.

1889