

DEPARTMENT OF THE INTERIOR  
UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

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DEVELOPMENT OF UNDERGROUND WATERS

IN THE

CENTRAL COASTAL PLAIN REGION  
OF SOUTHERN CALIFORNIA

BY

WALTER C. MENDENHALL



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## LETTER OF TRANSMITTAL.

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DEPARTMENT OF THE INTERIOR,  
UNITED STATES GEOLOGICAL SURVEY,  
HYDROGRAPHIC BRANCH,  
*Washington, D. C., November 3, 1904.*

SIR: I transmit herewith a report entitled "The Development of Underground Waters in the Central Coastal Plain Region of Southern California," prepared by Mr. W. C. Mendenhall, under the general direction of Mr. N. H. Darton, and recommend that it be published as a Water-Supply and Irrigation Paper.

This paper is similar to the one just published entitled "The Development of Underground Waters in the Eastern Coastal Plain Region of Southern California," and contains the results of work in the portion of the coastal plain just west of the area described in that paper. A third paper will treat of the area northwest of that here described and will complete the series of preliminary papers on the coastal plain of southern California.

The studies, a part of whose results are being made available in this way, are planned to cover all the important water-bearing lands of the valley of southern California. In most instances the facts gathered concerning the wells and the distributing systems will be supplemented by a study of the local geology, in so far as it controls the amount, distribution, and circulation of the ground waters. The hydrographic data and the geologic data will then be discussed and issued together in one report. In the coastal plain area, however, the geologic conditions being relatively simple, and the hydrographic data being large in volume and of paramount importance, it is deemed best to issue the latter at once, rather than to delay it pending the working out more fully of the comparatively unimportant geologic problems. Therefore the tables and maps are presented here for the consideration of water users, with a comparatively brief text, which is chiefly descriptive, but which includes a discussion of the effects of development and drought in bringing about those changes in water levels and in the outlines of artesian areas which have been most marked within the last five or six years.

Very respectfully,

F. H. NEWELL,  
*Chief Engineer.*

HON. CHARLES D. WALCOTT,  
*Director United States Geological Survey.*



# DEVELOPMENT OF UNDERGROUND WATERS IN THE CENTRAL COASTAL PLAIN REGION OF SOUTHERN CALIFORNIA.

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By W. C. MENDENHALL.

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## INTRODUCTION.

This paper is similar to Water-Supply Paper No. 137, on the "Development of Underground Waters in the Eastern Coastal Plain Region of Southern California." It contains the data gathered by the Survey in the Downey and Las Bolsas quadrangles,<sup>a</sup> just west of the two quadrangles described in the earlier publication. It includes tables of the wells, with data as to their position, depth, diameter, cost of installation, and yield, and maps of the irrigated lands and distributing systems. These data give a résumé of the individual experiences of well owners in the region as well as of the general effects of the great amount of development which has taken place within the last ten years.

By the valley of southern California is meant that lowland area extending from Santa Monica to Redlands, and from the base of the San Gabriel and San Bernardino ranges southward 30 or 40 miles. It includes the coastal plain, the broad portions of the Santa Ana, San Gabriel, and Los Angeles river valleys, and the irregular groups of hills which add picturesque variety to these lowlands and separate them into distinct tillable areas. Much of this region is intensively cultivated. The foothill belt from Pasadena eastward to Ontario, the Riverside Mesa lands, and the Redlands and Highlands benches are justly famous citrus regions, where agricultural lands have high values. In the coastal plain, which is not so well adapted to citrus culture, there is greater agricultural diversity; dairying, market gardening, the raising of deciduous fruits and vegetables and of English walnuts, celery, and sugar beets being important industries.

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<sup>a</sup> A quadrangle is the unit of survey adopted by the United States Geological Survey for the topographic and geologic atlas of the United States. It is a rectangular area 15 minutes, 30 minutes, or 1 degree in extent each way, bounded by parallels and meridians, and having an area of one-sixteenth, one-quarter, or 1 square degree. The quadrangles disregard political boundaries, such as those of States, counties, and townships. To each is given the name of some well-known place or feature within its limits. A sheet is the topographic map of one of the above areas.

In all of this agricultural and horticultural activity, the first requisite is water. The entire region is semitropic and semiarid and irrigation is necessary in order to mature any except a few of the less valuable crops. As is generally the case in regions of little rain, the soils are rich because they have not been leached of their soluble fertile elements, and when water is applied to them they yield abundantly. As is fully recognized by agriculturists, constant sunshine and warmth, with the artificial application of water in the right quantities at the right times, give ideal conditions for large yields; hence the lands in arid or semiarid regions, when brought into cultivation by means of an abundant artificial water supply, are much more valuable than those in regions of greater rainfall, where irrigation is not practiced.

In southern California lands under irrigation usually bring several hundred dollars per acre, are not infrequently valued at \$1,000 per acre, and may, in exceptional cases, bring \$2,000 or even more. Since the greater part of the cultivable dry lands quickly acquire such values when water is applied to them, the story of the growth of this region becomes a story of the utilization and application of its available waters. To the practical solution of water problems, engineering and legal, much of the best talent of the country has been devoted for many years, and will be for many years to come.

The first settlers, the Mission Fathers, after them the Mexicans, and still later the Americans, secured their first holdings near the flowing streams or the "ciénaga" lands, the sites of perpetual springs. As the areas under cultivation slowly increased, the waters of the mountain canyons were gradually appropriated and applied to the adjacent lands. Then engineering devices were resorted to for increasing the flow of springs, for intercepting the underflow of streams, or for storing the flood waters by means of dams and reservoirs. Lastly, attention was turned to the underground waters, which proved to occur in large quantities and to be widely distributed, so that entire communities have sprung up which depend wholly on these sources for their irrigation water. Developments during the last ten years have been chiefly those of underground sources, and the maps and tables in this paper show their extent in a small part of the valley of southern California. (See Pls. I, II, and IV.)

#### THE COASTAL PLAIN.

The district under immediate consideration is the central portion of the coastal plain of southern California. This plain extends inland from the Pacific Ocean 15 or 20 miles to the base of the hills which represent the Coast Range, and stretches coastwise for 50 miles from Sherman to the foot of the San Joaquin Hills. It is generally level or gently sloping, is fringed on the coastward side by a belt of salt marshes and sand dunes, and has an area of 775 square miles.



THE INNER EDGE OF THE COASTAL PLAIN WEST OF WHITTIER, CAL.

On the northeast it is bounded by the Santa Ana Mountains and their extension, the Puente Hills. Near the Pacific its even surface is interrupted by a line of low hills which, in the vicinity of Huntington Beach and Los Alamitos Bay, lie close to the coast, but which to the northwest are found farther inland as the shore line swings westward about San Pedro Hill. This line of low hills of irregular height marks the seaward boundary of the coastal artesian belt. As a topographic feature it is broken by the valleys of Santa Ana, San Gabriel, and Los Angeles rivers which cross it on their way to the sea; but as a structural feature and as a barrier to the subterranean waters which percolate slowly seaward, it appears to be continuous throughout. The Downey and Las Bolsas quadrangles, which constitute the central coastal plain region, include an area that extends from the shores of the Pacific at San Pedro Bay across the coastal plain to its inner edge in the neighborhood of Whittier and the Paso de Bartolo (Pl. III). These quadrangles lie about midway of the east-west extent of the plain and include the broadest part of the artesian belt; they contain more wells than any area of equal size in southern California.

The greater part of this area is underlain by loose sediments—sand, gravels, and clays—which were brought down from the mountains by the rivers and distributed by them and by the waves and currents of the Pacific off the shore of this part of the continent. The coastal plain is believed to have been at one time a broad embayment with San Pedro Hill as an island well offshore, as Santa Catalina is now. As a result of the accumulation of the débris brought out by the streams, and perhaps also in part as a result of uplift through crustal movement, this great bay has been reclaimed from the sea, and is now a prosperous and, throughout much of its area, densely settled agricultural region.

### SOILS AND CROPS.

The soils of the Downey and Las Bolsas quadrangles do not exhibit the great diversity found in some areas of the same size in the southern part of the State, although a number of more or less distinct varieties are recognized and mapped by the Agricultural Department.<sup>a</sup> The soils are rather uniform in texture, ranging only from the sands or fine gravels of San Gabriel Wash or of the beach dunes, to the dark adobes of the marshes and tule lands. They vary in origin from the washes brought by the streams from the distant mountains to the clays of the benches east of Whittier, which are derived from the Tertiary shales of the adjacent hills. They include the rich loams of the peat swamps, which owe their fertility in part to the vegetable

<sup>a</sup> Mesmer, Louis, Soil survey of the Los Angeles area. Field Operations Bureau of Soils, U. S. Dept. Agriculture, 1904.

mold which has accumulated through the decay of plant growths. These soils are generally productive, except in the sandy washes or dunes and in some of the lower lands where alkalies are found in excess. The latter trouble probably can be remedied by drainage in all cases, but few systematic attempts have yet been made in this direction. The more alkaline lands are generally included in the wide pastures of the larger undivided ranchos.

The crops exhibit the diversity which is characteristic of the coastal belt. On the benches about Whittier are extensive citrus orchards. In the lowlands, under the San Gabriel irrigation systems, are many flourishing walnut groves and orchards of deciduous fruits. Berry growing, gardening, alfalfa raising, dairying, and grape culture are practiced about Florence and Compton. Sugar beets and alfalfa are raised in quantities in the vicinity of Los Alamitos, and celery, potatoes, corn, and fruits are grown in the fertile and highly cultivated peat-land region south of Westminster.

Large parts of the Los Cerritos, Los Alamitos, and Los Coyotes ranchos are not under cultivation, but are reserved as pasture lands and stock ranges. As these ranchos include considerable areas of moist land, grazing is possible throughout the year over much of their acreage without irrigation.

#### WATER SUPPLY.

Both the surface and the subsurface waters of the Downey and Las Bolsas quadrangles are supplied largely by San Gabriel and Los Angeles rivers. Part of the underground waters of the southeastern portion of this area are probably contributed by the Santa Ana drainage system. These three streams, the largest in southern California, carry to the Pacific almost all of the run-off from the southern and western faces of the San Gabriel and San Bernardino ranges, which are the most effective mountain masses in this section of the State from the point of view of their capacity to induce precipitation. This is due to their height and to the fact that no high land intervenes between them and the Pacific, whence the moisture-laden winds come.

The channel of each of these streams, in its passage seaward from the mountains, crosses one or more wide valleys filled with loose sands and gravels. The waters are absorbed by this débris, and percolate slowly through it, beneath the surface, to reappear at some lower point where an obstruction to the underground passage forces them to the surface. At these points the underground waters become surface flows again, until absorbed later by another body of loose material. Thus the Santa Ana sinks in the wash above Redlands, rises to the surface above the Bunker Hill "dike," sinks below it, rises from Riverside to Bedrock Canyon below El Rincon, sinks in

the wash above Santa Ana, and finally partly rises again in the large peat-land springs about Talbert. The San Gabriel and the Los Angeles exhibit the same characteristics, but disappear and reappear less often in their much shorter courses to the sea.

This natural habit of the streams has been more or less seriously interfered with by the irrigation systems developed since the settlement of the region. At present irrigation canals head at the mouth of the mountain canyon from which each stream first debouches upon the plain, and at every place where the subterranean waters reappear the water is distributed upon the adjacent lands, where a much smaller proportion of it sinks and joins the underflow than before it was thus diverted.

The winter flood waters, which have always furnished the most important addition to the underground supply, are interfered with but little by the irrigation developments, and are still available for the annual recharge of the gravels.

### IRRIGATION SYSTEMS.

The only important system of canals in the Downey and Las Bolsas quadrangles is the one which diverts the San Gabriel River waters that rise to the surface in the neighborhood of the Paso de Bartolo (see Pl. II). A number of ditches here, some of them among the oldest in southern California, take out the river water as it rises in springs, and distribute it over the irrigable lands in the neighborhood of Whittier, Rivera, Downey, and Norwalk.

The available measurements of flowing waters at the Paso de Bartolo are as follows:

*Discharge measurements at the Paso de Bartolo.*

	Discharge.		
	Aug. 7, 1900.	Oct. 2, 1903.	Oct. 5, 1904.
	<i>Second-feet.</i>	<i>Second-feet.</i>	<i>Second-feet.</i>
Sheep Creek ditch.....	2. 46	4. 6	1. 35
Rincon ditch.....	2. 47	3. 4	1. 5
Old Temple ditch.....	1. 20		
Cate ditch.....	8. 71	5. 5	11. 1
Standefer ditch.....	14. 56	14	12. 9
Banta and Los Nietos ditches.....	15. 44	28	19. 5
Rio Hondo under Mission bridge.....	23. 18	29	22. 19
Baldwin's ditch.....			2. 89
Total.....	68. 12	84. 50	71. 43

It is to be expected that October measurements will be higher than those of August, the evaporation being lighter in the fall, but the effect of the greater rainfall preceding the summer of 1903, as compared with the summer of 1904, is clearly shown in the difference between the two October measurements. None of the waters measured are developed waters, and none of them reach the pass as surface streams. All represent underflow below the mesa lands north of the pass, forced to the surface by the constricted character of the outlet and the comparative nearness of bed rock to the surface.

The following brief descriptions of some of the principal ditches which take their supply from this region and distribute it over the irrigable lands south of the pass are summarized in part from William Ham. Hall's "Irrigation in Southern California." They are brought up to date by additional information gleaned from various sources.

#### RINCON DITCH.

This ditch is nearly 6 miles long and takes its water from San Gabriel River about 2 miles below the Southern Pacific Railroad crossing. It was built by Mr. Strong in 1871. It is about 4 feet wide on the bottom, unlined except in the vicinity of the pumping plant, and carries a variable depth of water. The land which it serves lies in the Paso de Bartolo and along the upper edge of the coastal plain just west of Whittier. In 1888 about 586 acres were reported as served by the ditch, and in 1904, 800 acres. In 1902 the supply of water from the river was augmented by the installation of a pumping plant, which is now used to make up the deficiency in the river supply. In 1904 this plant was in operation for about four months, day and night, and produced during that time about 120 miner's inches. The pumping company is incorporated as the Rincon Irrigation Company, but its stockholders are the irrigators owning land served by the ditch.

#### CATE DITCH.

This ditch, built by J. W. Cate in 1867, takes its waters from the San Gabriel at about the point where the stream deserted its old channel in the flood of 1867-68. The ditch is about  $3\frac{1}{4}$  miles long, and serves an area lying in and below the Paso de Bartolo and between Rio Hondo and San Gabriel River. The amount of land irrigated by this ditch has remained nearly constant, for 1,200 acres were reported under irrigation in 1880, 1,300 acres in 1886, and 1,300 acres in 1904. Until 1900 the ditch was of earth construction and the loss of water by seepage was considerable. On April 19 of that year the water users incorporated as the Cate Ditch Water Company, with 3,600 shares at \$1 per share. Money was borrowed and improvements were at once undertaken. At present (January 1, 1905,) one-half mile at the head of the ditch

and 1 mile at the lower end of the ditch remain unimproved, over 2 miles are cemented, and 1,000 feet of wood flume have been put in. These improvements are reported to have cost about 50 cents per running foot. The water stock is appurtenant to the land and is nontransferable. The thirty-five irrigators are assessed \$1 per acre to cover running expenses and interest and to provide a sinking fund. The expenses are low, the cost of repairs on the dam and charges for cleaning, improving, and maintaining the ditch amounting to only about \$350 annually.

When water is abundant in the spring the ditch is divided into three heads; in the summer, when the amount available is less, but two heads are available, and at times of particularly low water there is only enough for one head. A "head" under these conditions is a variable quantity, but is said always to exceed 100 miner's inches. The period of rotation varies from twelve to sixteen days. Each irrigator in turn has the use of a head of water for thirty minutes per acre, except when the ditch carries but one head, when the period is reduced to fifteen minutes.

The available measurements of the flow in the Cate ditch follow:

*Flow in Cate ditch, California.*

	Miner's inches: <sup>a</sup>
August, 1900.....	435
October, 1903.....	275
October, 1904.....	555

**STANDEFER OR RANCHITO DITCH.**

This ditch was constructed in 1871 by settlers who had purchased lands on the Paso de Bartolo Rancho from Pío Pico. Its title is inherited by prescription and riparian ownership from the rancho, whose proprietors had used the water, although in a very unsystematic way, for years. The diversion from the San Gabriel is by a sand and brush dam, owned and constructed by the Standefer, Banta, and Los Nietos ditches jointly, at about the narrowest part of the pass. The main ditch is over 3 miles long and discharges into San Gabriel River below the Santa Fe Railroad. During the past two or three years the Pallett and Walnut branches and about 2,800 feet of the main ditch have been cemented. The rest is of earth construction. In 1902 the irrigators under this ditch incorporated on a basis of 10 shares per acre, or 13,000 shares in all. The expenses of cleaning and maintenance,zanjero's fees, etc., are met by charges of 10 cents per hour per head for day service and 5 cents per hour for night service. The ditch carries three or four heads of 150 to 200 inches. Charges for new construction, cementing, etc., are met by special assessments.

<sup>a</sup> The old California miner's inch is used throughout this report. It is equivalent to 9 gallons per minute, one-fiftieth second-foot, or 14.478 acre-feet per year.

## BANTA AND LOS NIETOS DITCHES.

The Los Nietos ditch, which was built previous to 1838 by Don Pío Pico, the grantee of the Paso de Bartolo rancho, and the Banta ditch, built by P. Banta in 1867, have used the same canal for about 2 miles below their diversion works since 1884, when the original upper Los Nietos ditch was destroyed by flood. Below the section which is owned and operated jointly, the Banta ditch is about 2 miles long and serves about 800 acres southwest of Whittier and below the lands watered from the Rincon ditch. Twenty-three irrigators are served by this ditch at present (1904).

The Los Nietos ditch extends south about  $3\frac{1}{2}$  miles from the point of its diversion from the Banta ditch and serves about 1,000 acres lying just east of San Gabriel River. In 1885 its interests were incorporated on the basis of 1,500 shares, which are not transferable out of the district.

The total flow in the San Gabriel at the headworks of the Standefer, Banta, and Los Nietos ditches, which was estimated at from 1,200 to 1,500 miner's inches in 1888, is proportioned among the three ditches in the order named in the ratio of 12:9:7, the division being effected on the following basis: The total flow is divided into four parts, each ditch receiving one part and the remaining fourth being shared by the Standefer and Banta ditches, the former receiving the water five and the latter two days in each week.

The combined flow of the two ditches on August 7, 1900, as determined by S. G. Bennett, was 772 inches, and on October 2, 1903, as measured by W. B. Clapp, was 1,400 inches. October 5, 1904, Mr. Clapp reported 975 inches at the headworks.

## ARROYO DITCH.

This ditch takes its supply from Rio Hondo, about 2 miles below the pass, and serves a large district lying east of this stream and west of the territory supplied by the Standefer ditch and its extensions.

The canal was built in 1869 and succeeded an earlier crude ditch which was really an old arroyo into which water had been diverted. The title is inherited from the riparian rights of the Rancho Santa Gertrudes, but no systematic attempt was made to use the water prior to the subdivision and sale of the rancho by Governor J. G. Downey in the late sixties.

In 1885 the irrigators organized the Arroyo Ditch and Water Company, which was incorporated with a capital stock of \$22,500. Before this time more or less indefinite attempts at organization had been made, but they were only partially successful. Indeed, about fifteen irrigators owning lands near the head of the ditch finally refused to join in the incorporation, but successfully defended their right to the

use of their proportion of the water. At this time there was much internal dissension among the various irrigators supplied by it.

The total length of the main line from the intake below the pass to the terminus,  $1\frac{1}{2}$  miles south of Downey, is about 7 miles; the Sandridge branch, which leaves the main ditch at the crossing of the Santa Fe Railroad, is about 4 miles long.

In 1888 the ditch was reported to have a minimum supply of about 1,200 inches, and to serve about 3,800 acres. The acreage supplied by it has varied but little, being about 4,000 in 1871 and in 1903. The flow of Rio Hondo at the Mission bridge, all of which is diverted below into the Arroyo ditch, is reported by W. B. Clapp as follows:

*Flow of Arroyo ditch, California.*

	Second-feet.
August, 1900.....	23. 18
October, 1903.....	29
October, 1904.....	22. 19

**SAN ANTONIO DITCH.**

This ditch is supposed to serve a few hundred acres lying west of Rio Hondo and midway between the Southern Pacific and Santa Fe railroads. It uses the upper part of the Arroyo ditch, and later delivers 135 inches of water to the Gage ditch. It is of sand and earth construction throughout, is poorly cared for, and choked with weeds, so that little or no water is actually delivered to the lands served.

The water at the head of the Arroyo ditch was originally divided equally between that ditch on the one hand and the San Antonio and the Foster, or Gage, ditches on the other, the right of the Foster to 135 inches being acknowledged.

The Arroyo Ditch Company at an early day improved the upper part of its canal and thereby effected a saving of 100 inches. As the San Antonio Ditch Company declined to share in the cost of this improvement, the water saved went to the Arroyo ditch in accordance with the terms of an agreement entered into in 1885. Recently further improvements have resulted in an additional saving, also claimed by the Arroyo Ditch Company, which has borne the expense of the improvements.

The title to this last increment, however, is not admitted by the San Antonio Company, and the matter is not as yet finally settled.

The basis of division now is this: The first 100 inches belongs without dispute to the Arroyo Ditch Company, and the first 235 inches is claimed by them. The remainder is divided equally between the San Antonio and the Gage ditches on the one hand and the Arroyo ditch on the other. Of the first part 135 inches is assigned to the Gage ditch. The part remaining after this is taken out belongs to the San Antonio ditch, but as it flows for 2 miles through the sandy bed of Rio Hondo a large part of it seeps away and is lost.

### OTHER DISTRIBUTING SYSTEMS.

In addition to these principal ditches which have been mentioned, the Little Lake ditch, the Section Line ditch, the Agricultural ditch, and the New River ditch represent lower diversions from the San Gabriel, which receive such excess as may be left after the older rights are satisfied. Their supplies are received chiefly in the winter season.

The town of Whittier secures its domestic supply from two wells just east of San Gabriel River, on the Whittier-Los Angeles road. The water is pumped from these wells into a reservoir on a knoll above the village, whence it is distributed by gravity.

Long Beach and Los Alamitos Beach are supplied by flowing wells in the artesian basin, north of Signal Hill.

Part of the Long Beach supply reaches the town by gravity from the vicinity of Bixby station; another portion flows into a reservoir and is pumped thence into higher reservoirs on Signal Hill, whence it is distributed. This latter plan is followed by the Alamitos Beach Water Company.

Another important line not yet mentioned is that owned by the East Whittier Water Company. The water supply in this case is not secured from the water-bearing lands of the coastal plain but from the San Gabriel Valley, north of the Paso de Bartolo, near Woyden Station, on the Southern Pacific. A well-equipped air-pumping plant has been installed here and coupled with a number of wells. The water thus developed is conveyed by flume, covered ditch, and cement and steel pipe lines to the lands served in the East Whittier and La Habra districts. This system of covered and lined canals throughout is an example of a modern up-to-date distributing plant.

### DRAINAGE DISTRICT.

In Water-Supply Paper No. 137, on the underground waters of the eastern coastal plain region, the Bolsa and the Willows drainage districts of the peat lands of Orange County have been briefly described. The greater part of the older of these two districts, the Bolsa, is on the Las Bolsas quadrangle. Its outlines are shown on Pl. II.

The earliest ditch in this district is reported by Mr. W. B. Lamb to have been dug twenty or thirty years ago by the Stearns Rancho Company. Later the county improved and extended this original ditch, and finally, in 1899, the Bolsa drainage district was organized under a State law passed two years before.

Under this law three commissioners were elected especially to make a levy upon the district for the maintenance and extension of the ditch. These commissioners levied \$15,000 for the expenses of the first ten years, but the amount will not prove sufficient, and an additional levy is expected within a year or two. The expenditures each

year are determined by a board of three directors elected to serve two years. They decide year by year the amount of the original levy that is to be expended. When this annual levy has been determined, it is collected by the county from the landowners within the districts, and the expenditures are then paid by warrants drawn upon the county treasurer.

About 15 miles of ditch are reported within the district, and the annual maintenance charges, exclusive of new construction, are given as about \$1,000. Several miles of private drain have been put in, with outlets in the main ditches. The land has thus been greatly improved, until now the district contains some of the most valuable of the famous Orange County peat lands.

### UNDERGROUND WATER.

#### SOURCES.

The chief supply for the underground as well as for the surface waters of the Downey and Las Bolsas quadrangles comes from Los Angeles and San Gabriel rivers, both of which flow across the Downey quadrangle; another portion of it is probably furnished by Santa Ana River, whose surface channel lies entirely to the east of this area, but whose percolating subsurface waters may contribute to the underground supply in the Las Bolsas quadrangle and in the southeastern part of the Downey quadrangle. An unknown, but no doubt minor, amount is contributed by the summer underflow of these streams, and that part of the surface flow that is not lost by direct evaporation or by transpiration through the plants, in the process of irrigation for which it is all utilized, also becomes available. This proportion of return water must vary greatly with locality, soil, and manner of irrigation. On the mesa lands, whose soils are warm and dry and are often underlain by an impervious hardpan, and whose water supply is expensive and never used in excess, the proportion of return waters must necessarily be small. On the other hand, on the sandy lands between San Gabriel River and Rio Hondo, where water is applied in abundance, sometimes in excess, upon a sandy absorptive soil, the return must be large; here it is probably much more than the 30 per cent which is often assumed as the proportion of return waters. A third minor source of supply is the light surface and sub-surface drainage from the adjacent slopes of the Puente Hills. This yields a relatively small amount. The winter season is the period of most effective restoration of the subterranean supply. The direct rainfall upon the coastal plain averages approximately 12 inches, almost all of which falls at that time; but the most important sources are the flood waters of the streams and the usual normal winter flow, a smaller proportion of which is utilized for irrigation when the rains reduce the necessity for the latter.

As these flood waters pass over the sandy washes they are absorbed rapidly and are thus added to the underground stores. A proportion of the greater floods often escapes absorption by reaching the sea over the surface. It is thus wholly lost.

In considering the sources of these underground waters there may be dismissed at once the suggestion that the sea water, by some great extension of the power of capillarity, is drawn inland and freed of its salt, or that a portion of the waters of Colorado River, or some equally distant stream, flows in an underground channel through the great intervening mountain barriers. These theories have no basis in fact, and are generally expressions of wishes rather than of sober belief.

#### DISTRIBUTION OF UNDERGROUND WATER.

Since the coastal plain is underlain by irregular sheets of more and less pervious material—gravels, sands, and clays—which slope gently toward the sea and increase in coarseness inland, the underground waters that percolate seaward along the coarser beds are often caught beneath a less pervious layer and accumulate pressure from the weight of the water behind them. A bed of open material may wedge out seaward between impervious strata, or may abut against an earlier ridge, or may, with the beds above and below it, be folded into an anticline, or may become gradually finer and less permeable seaward, so that the escape of its waters in that direction is cut off or rendered less easy than their entry farther inland. Under these conditions, whenever the overlying confining stratum is penetrated by a pipe or a drill, the confined waters tend to rise to the level of their source. This is the general explanation of the artesian conditions which exist here.

Since the percolating waters gravitate seaward and the finer beds, which are as essential to artesian conditions as the coarser, occur more often along the lower portion of a stream's course, it follows that the artesian areas are in the lower parts of a basin distant from canyon mouths, where only comparatively coarse detritus is deposited. All of the southern California streams are alternately surface and subterranean, the Santa Ana, San Gabriel, and Los Angeles each disappearing and reappearing several times between the mountains and the sea. The area in which the surface channels, during the summer seasons at least, are dry, is always a wide valley region; while the waters flow on the surface either in canyons, where bed rock is near the surface, or in open plains, where there is an effective, if inconspicuous, obstruction to the subsurface circulation.

Near the lower edge of practically every lowland in the valley of southern California across which a stream flows is an artesian basin, large or small, whose existence is due to conditions like those just outlined. After the waters escape from one such basin and flow

over its lower rim, the conditions are duplicated in the next basin below, and artesian waters are again found there. Thus, the waters of the Santa Ana first pass through the San Bernardino artesian belt. They escape over its lower rim, the "Bunker Hill dike" above Colton, and again sink and enter the small and unimportant Riverside basin. At Riverside Narrows they are forced out by the proximity of bed rock, flow over the surface through the lower Santa Ana Canyon, and finally enter the coastal plain artesian belt. At a point farther north than the mouth of the Santa Ana, where a wider strip separates the lower edge of the coastal plain artesian area from the Pacific, waters from this belt again occur under pressure in the small Ballona artesian area near Playa del Rey (Pl. I).

Where other conditions, such as amount of water available, are equal, those artesian basins which exist along the upper portion of a stream, though smaller, should be more efficient than the basins lower down, since near the source of the *débris* the water-bearing strata are usually coarser and more abundant. Such coarse strata yield their water more readily, giving wells of greater flow, and are replenished more quickly after exhaustion because they absorb flood waters with greater rapidity. At such a higher point, however, conditions are less favorable for the widespread deposition of the fine, relatively impervious clays, which are as essential as the coarser beds to the existence of artesian basins, hence the higher artesian basins are apt to be less extensive than those farther downstream, although they yield water more readily and are therefore perhaps more likely to be exhausted by reckless development.

The coastal plain artesian basin is much the largest of a number of basins which occur at various points between the sources and the mouths of the rivers of this part of southern California. It is in fact a union of the lowest basins of the three principal streams of this part of the State. Its area at present (August, 1904) is about 190 square miles. Originally it was somewhat less than 300 square miles. A large part, both of the present and of the original coastal belt, is included in the area treated in this report—the Downey and Las Bolsas quadrangles. There are now approximately 121 square miles of artesian water-bearing lands in this area, 105 square miles in the Downey quadrangle, and 16 square miles in the Las Bolsas quadrangle (Pl. IV).

There has been no decrease in the artesian area in the Las Bolsas quadrangle, because it lies along the lower edge of the artesian lands, the last portion to be affected by dry years or by excessive drafts. The artesian area in the Downey quadrangle has decreased 45 square miles, or 30 per cent from the original 150 square miles. The southwestern seaward edge of this basin is marked by a low, irregular ridge, whose highest point, Los Cerritos, 2½ miles northeast

of Long Beach, is 364 feet above sea level. Dominguez Hill, another prominent point west of the channel of Los Angeles River, has an elevation of 195 feet. Toward Huntington Beach the ridge is lower and indeed is entirely cut away for several miles by the outlets of San Gabriel River, Anaheim Creek, and Bolsas Creek, so that along the coast between Los Alamitos Beach and Huntington Beach only isolated knobs, like Landing Hill, Bolsa Chica, and Las Bolsas exist as surface expressions of the underground structure that acts as a barrier to the subterranean waters in their slow movement seaward.

Beyond the artesian area, both north and south, are broad belts in which the water is not under sufficient pressure to flow but is near enough to the surface to be readily available for pumping. Such belts include areas that were originally artesian. They extend, on the one hand, to the base of the Puente Hills or to the northern edge of the Downey quadrangle, and on the other, practically to the shores of the sea. The position of the surface of the zone of saturation throughout the areas where the ground water is important as a source of supply is shown on Pls. I and IV by means of contours drawn upon that surface as a plane. The depth to the ground-water level at any point may be determined by subtracting the altitude of the ground-water level, as shown by the hydrographic contours, from the altitude of the surface, as shown by the topographic contours.

#### DEVELOPMENT OF UNDERGROUND WATER.

In the Downey quadrangle there are more than 3,000 wells, all of which draw to a greater or less extent on the underground supplies. In the adjacent Las Bolsas quadrangle there are 300 wells. Of this total of 3,300, 175 are equipped with pumping plants operated by electricity, steam, or gasoline. These plants represent an investment of about \$150,000, and the wells upon which the pumps have been installed have cost about \$75,000; the pumped wells and their installation, therefore, represent a capital of \$225,000.

Of the 3,300 wells, about 1,635, nearly one-half, were artesian in the spring of 1904, and their estimated cost—the estimate being based on reports from about 800—was \$400,000.

There are about 700 windmill wells in the area, which, with the mills with which they are equipped, represent an outlay of approximately \$200,000. The 790 domestic wells that make up the balance of the 3,300 must bring the total capital invested in wells and equipment in the Downey and Las Bolsas quadrangles to the neighborhood of \$1,000,000. This is independent of the money invested in ditches, pipes, or other devices for the distribution of the water for irrigation.



A. TYPICAL 10-INCH WELL.



B. WELL NO. 991, DOWNEY QUADRANGLE.



The possible yield of these wells is very large. The output of the pumping plants when in service, based upon the measured or reported yield of five-sixths of their number, is 265 second-feet. The flow from 685 of the 1,635 artesian wells is over 200 second-feet, an average of about 15 miner's inches to each well. If this average is maintained by each of the 1,635 wells, the total yield approaches 500 second-feet, and the combined capacity of the pumping plants and artesian wells exceeds 750 second-feet, or 37,500 miner's inches. It is difficult to estimate how much of this yield is actually used. The pumping season varies from fifty to one hundred and twenty-five days usually. As artesian water is cheaper than pumped water it is used more freely, and many wells flow unchecked throughout the year. Others are open only during the actual irrigating season. On the whole it is considered conservative to estimate that the yield of 750 second-feet is maintained for two or three months of the twelve, equivalent to a continuous withdrawal of developed water amounting to from 125 to 200 second-feet throughout the year from the 268 square miles of the coastal plain which are included in the Downey and Las Bolsas quadrangles.

#### EFFECTS OF DEVELOPMENT OF UNDERGROUND WATERS.

This development, which began in a small way forty years ago and has continued at an accelerating rate since, the increase in the number and aggregate yield of wells having been particularly marked during the last decade, must inevitably affect the quantity of water in the underground reservoir from which the wells draw.

Before development began the outlines of the artesian basin and the ground-water level expressed a condition of balance between the supply and the natural drainage at that time. With any marked increase in supply, such as may have been brought about by a series of years of excessive rainfall, the ground-water level would rise, increasing the flow from all sources fed by it, and the artesian area would expand and pressure within it would increase, thus increasing the yield of those springs and streams whose sources were artesian waters, until this increased discharge balanced the temporarily increased supply, and a condition of stability resulted. Similarly, during a series of dry years the ground-water level fell and the artesian area contracted, until drainage declined to an equality with the decreased supply. Thus ground-water levels and artesian areas varied within certain limits previous to the change in conditions brought about by development. But with the appearance of man upon the scene, disturbing elements were introduced. The first change in natural conditions consisted of the diversion of the normal summer flow of

streams, which before the diversion sank and added their volume to the stored subsurface waters. A part of this flow, it is true, was added to the underground supply after diversion in the form of return waters from irrigation, but the amount thus added, while a variable proportion of the original, is always distinctly a minor part of it. It may be roughly estimated to run from 5 to 50 per cent of the whole. Thus the supply was sensibly diminished. Meanwhile, the boring of numerous wells in the artesian area increased the freedom of drainage. This factor at a later stage of development was rendered more important by the installation of pumping plants outside of the artesian belt. The water secured by these means, like that secured by stream diversion, was largely used for irrigation and a portion of it thus returned to augment the ground-water supply. Yet transpiration through the plants and evaporation in the ditches, and especially from the soil surface in the process of irrigation, dissipates the greater part of the water thus applied.

These two disturbing elements—the decrease of supply and the increase of drainage through development—must destroy the balance reached before they were introduced, and bring about a readjustment of the ground-water level and a rearrangement of the outlines of the artesian areas. Since they both operate in one direction, namely, to lessen the amount of ground water, the readjusted water level must stand at a lower point than the original level, and the new outlines of the artesian area must be within the original outlines.

#### PERMANENCE OF UNDERGROUND-WATER SUPPLY.

The entire coastal plain, underlain everywhere by saturated sands, gravels, and clays, has an extent of 775 square miles. Under about one-fourth of this area the waters are under pressure and are artesian. The thickness of these saturated gravels is unknown, but wells more than 1,300 feet deep near the inner edge of the plain fail to reach bed rock. It is safe to say that over much of the area their thickness must be expressed in thousands rather than in hundreds of feet. There can be no doubt that practically all of this mass is saturated, so that the total amount of water which exists there is enormous. Its sole source is the rainfall within the drainage basins tributary to the coastal plain, but the gravels themselves and the water saturating them have accumulated during long periods, and since the waters always have been supplied much more rapidly than the gravels they move slowly through as well as over these from an intake along the inner edge of the coastal plain and along the washes of the streams to an outlet at a lower point nearer the coast. The underground waters then are not in any sense lake-like; they simply

fill the voids in the gravels, sands, and clays, and move at varying rates through these voids, under the impulse of gravity and pressure from a constant if varying supply received chiefly at the inner edge of the plain. This continuous movement seaward checks any tendency of the sea water to move inland. It is indeed so completely paramount that it is probable that wells sunk into the sea floor, at short distances off the coast, would at many points yield fresh water, and probably fresh-water springs discharge into the sea at numerous localities.

While the total amount of water underlying the coastal plain then is large, only a small portion of it can be made available for purposes of irrigation. Only that part which is sufficiently near to the surface to pump at a profit, say within 250 feet, or which, although found at a greater depth, will rise under artesian pressure to or near to the surface, can be utilized. Obviously this useful surface zone is most sensitive to diversions of the supply, or to any of the forms of drainage which are included in the general term "development." No matter from what part of a reservoir the water may be drawn, the surface will be lowered; hence the fact that an enormous quantity of water is stored beneath the coastal plain has no particular bearing upon the practical aspects of the case. The amount of water within reach and the rate of its withdrawal and replenishment, not the total amount existing, are of moment to the water user. Thus in this discussion the exhaustion of the underground supplies means the lowering of the water level until the cost of pumping absorbs all the profits from the crops raised and so becomes prohibitive.

With the original ground-water level and the original outlines of the artesian basin in the Downey and Las Bolsas quadrangles, there was but little if any of the valley or mesa land which did not have water within easy reach. With the shrinkage of the artesian belt, a broad zone along the north edge of the Downey quadrangle in which water originally flowed, was thrown into the pumping zone. Water here now has to be lifted and there is a tendency to complain because of the increased cost and trouble of this method. The general effect is excellent, however, because there are few artesian wells which are not misused. This cheap form of water induces carelessness, almost invariably more water is applied than is needed, and the result is not only a loss of water but injury to the land. With the more costly pumped water, greater care is exercised in its application. It may be stated, then, that throughout the zone originally artesian, but no longer so, a marked saving has been effected in the amount of water used, even where the acreage under irrigation has not diminished.

The rate of the general lowering of the water plane throughout the central coastal plain belt and the accompanying contraction of the artesian area have of course been accelerated by the series of dry years from 1893 to 1900, and by the moderate rainfall slightly below the average since. In consideration of the fact that all of the changes in natural conditions which are due to man's use of water have tended to reduce the supply and so to disturb the balance, of which the original artesian outlines and the original ground-water level were the expression, it must be concluded that a part at least of this lowering and contraction is due to development and is permanent.

Furthermore, so long as the new developments result in adding to the amount of water produced in a given area, the decline must continue. With the decline, springs decrease in yield or cease to flow, artesian wells fall off in output, and pumping plants are used more sparingly, because the water has become more expensive, so that finally the decrease in the amount of water secured by these means reduces the output to an equality with the supply. Then a new balance is reached, and the water level no longer falls. The point at which this new balance is reached depends upon the amount of development. The greater this amount the lower the water level will fall.

The rate of this lowering, even under the influence of the great development which has taken place in the coastal plain, especially within the last decade, has been very slow, even during the dry years, and will be still slower during years of average rainfall, because the body of water drawn upon is so great and the accessions from floods and return waters so nearly balance the withdrawals. It will not continue indefinitely if development ceases now, because the drafts decrease as the water plane lowers and the artesian area shrinks, and probably in part because with the drainage of the gravels the absorptive capacity is increased, so that a smaller proportion of the occasional floods escapes over them to the sea. But the shrinkage which is now in progress and which is expected to continue intermittently for some years, being interrupted by periods of partial restoration during winters of unusual rainfall, does not affect all parts of the coastal plain alike. Always those parts of an artesian belt which lie nearest its lower edge are affected last and least by the shrinkage. Wells will continue to flow here after they have ceased elsewhere, and pressures will be maintained here after they have seriously diminished at other points. It is probable that in so large a basin as that of the coastal plain some of these most favorably located wells will never cease to flow.

The favored places for tapping the ordinary ground waters are not distributed exactly as are those for tapping waters under pressure. Ground water will always be found near the surface, just above the upper edge of an artesian area, but in addition it is not infrequently found within easy reach near the source of supply for a basin, as just below the Paso de Bartolo, while the decline is greatest in some intermediate region. If ground water remains close to the surface near the intake of a basin, while its levels are generally lower in other localities, it is because there is some obstruction below the body of ground water which holds up the percolating moisture for a time. Such an obstruction may be a bed-rock shelf, extending out from near-by bed-rock hills, or it may be only a body of fine clay or dense alluvium.

Declines will likewise be greater in the immediate vicinity of developments, unless those developments are along a line of strong underground flowage, in which case the effect of intercepting this flowage may be more marked at some point below, which is supplied by it, than in the immediate neighborhood of the intercepting wells. In the relatively fine sands and gravels of the coastal plain, however, through which the water probably percolates ordinarily at a rate of less than 25 feet per day, the effect of a battery of pumps must be to draw out the near-by water more rapidly than it is replaced by the slow inflow and thus to lower the water plane locally to a marked degree. With the cessation of pumping, this zone is filled again by infiltration from the surrounding saturated gravels, the effect being finally to spread the depression in the water plane over an area so wide that it is no longer measurable.

A continuous series of observations upon the fluctuations in the ground-water level has not been maintained at any point in the area under discussion, but at Anaheim, a few miles east, systematic records have been kept since February, 1898, by Mr. J. B. Neff. These are of great value for comparison with rainfall records, and when so compared throw much light upon the relative importance of development and drought in bringing about the decline in water levels which has been so generally observed throughout southern California during the past decade.

*Rainfall, in inches, at Anaheim, Cal.*

Year.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
1878-79.....	0.00	0.00	0.00	0.15	Tr.	0.95	1.96	0.57	0.35	0.37	Tr.	0.00	4.35
1879-80.....	.00	.00	.00	.11	1.72	3.10	1.29	1.32	1.57	2.20	0.00	.00	11.31
1880-81.....	.00	.00	.00	.28	.44	4.92	.25	.28	.85	.06	.00	.00	7.08
1881-82.....	.00	.00	.00	.81	.34	.37	.40	1.90	2.42	.48	.40	.00	7.12
1882-83.....	.00	.00	.00	.26	.78	.00	1.48	1.98	1.22	.10	2.78	.00	8.60
1883-84.....	.00	Tr.	.00	1.12	.00	1.40	2.80	10.58	6.70	1.75	.54	1.28	26.17
1884-85.....	.00	.00	.00	.15	.64	3.72	.61	.00	.00	.64	.00	.00	5.76
1885-86.....	.00	.00	.00	Tr.	2.93	1.16	4.63	.82	2.70	2.51	.00	.00	14.75
1886-87.....	.00	Tr.	.00	.00	.33	Tr.	.43	5.71	.00	2.21	Tr.	.00	8.68
1887-88.....	.00	.00	Tr.	.75	.92	2.16	6.29	.92	5.90	Tr.	.00	.00	16.94
1888-89.....	Tr.	.00	.00	Tr.	3.75	4.19	.14	1.28	7.97	.24	.57	.00	18.14
1889-90.....	.00	Tr.	.76	2.31	.30	10.95	3.36	1.54	.78	.00	Tr.	.00	20.00
1890-91.....	.00	.00	.29	.00	.19	3.36	.24	9.05	.59	1.81	.40	.00	15.93
1891-92.....	.00	.00	.00	.00	.00	1.44	.77	2.35	1.23	.15	1.48	.00	7.42
1892-93.....	.00	.00	.00	.19	.94	1.48	2.98	2.06	6.07	.23	.00	.00	13.95
1893-94.....	.00	.00	.00	.00	.30	2.38	.68	.35	.48	.13	.10	.00	4.42
1894-95.....	Tr.	Tr.	.10	.00	.00	5.69	6.92	.68	2.63	.05	.10	.00	16.07
1895-96.....	.00	.00	.00	.00	.97	.48	3.25	.00	3.03	Tr.	.00	.00	7.73
1896-97.....	.00	.00	.00	1.98	1.40	1.59	3.00	4.35	2.20	.00	.00	.00	14.52
1897-98.....	.00	.00	.10	1.60	.00	.00	1.65	.10	1.00	.20	1.00	.00	5.65
1898-99.....	.00	.00	Tr.	.00	.00	.20	2.78	.15	1.61	.20	.00	.51	5.25
1899-1900.....	.00	.00	.07	1.32	.84	1.45	1.29	.00	.73	1.09	1.49	.09	8.37
1900-1901.....	.00	.00	.00	.34	4.81	.00	3.50	3.11	.59	Tr.	2.30	.00	14.65
1901-2.....	.00	.00	.00	1.34	.50	.00	1.70	3.16	3.20	.11	.07	Tr.	10.08
1902-3.....	Tr.	.00	.00	.40	1.36	3.83	1.22	2.61	5.58	4.47	.00	.00	19.47
1903-4.....	.00	.00	.38	.06	.00	.00	.19	1.39	3.61	.82	(?)	.00	6.45

Average, twenty-six years, 11.45 inches.

The Anaheim records have been discussed in an earlier paper;<sup>a</sup> but as the conclusions to be drawn from them are of general interest, a résumé of the discussion is repeated here.

For purposes of comparison with Mr. Neff's profile, the rainfall records at Anaheim and Los Angeles have been plotted in such a way as to bring out particularly the departures from the average at each of these places. At Anaheim rainfall records covering a period of twenty-six years are available, and the average for this time has been 11.45 inches. At Los Angeles records have been kept for twenty-seven years, and the average is 15.35 inches. The San

<sup>a</sup> Water-Sup. and Irr. Paper No. 137, U. S. Geol. Survey.

Bernardino average for thirty-four years is 15.06 inches. In the charts which have been prepared these averages are selected as base lines, and the amount of rainfall in excess of the average for any

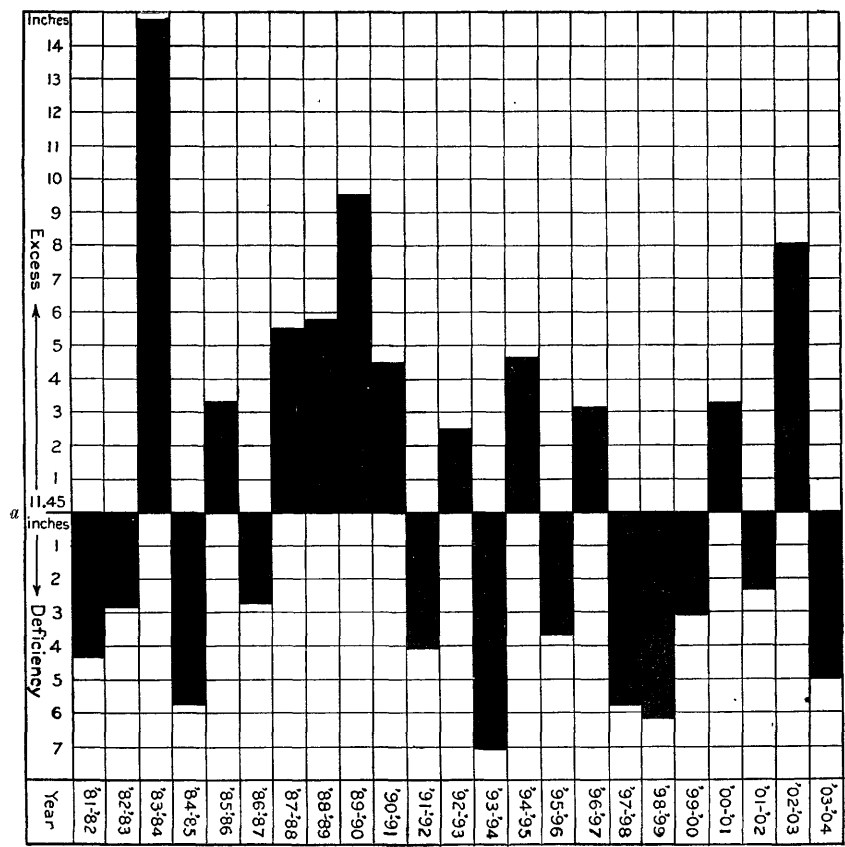


FIG. 1.—Chart showing departures from average rainfall at Anaheim, Cal. <sup>a</sup> Average for 26 years (11.45 inches).

year is plotted above this base, and the deficiency for any year below it. Thus one sees at a glance what years are years of excessive rainfall and what are years of deficiency.

*Rainfall, in inches, at San Bernardino, Cal.*

Year.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
1870-71.....	0.00	0.00	0.02	0.09	3.11	0.89	6.91	2.21	0.19	0.34	0.11	0.07	13.94
1871-72.....	.00	.04	.13	.60	.88	3.91	.00	2.20	.37	.79	.06	.00	8.98
1872-73.....	.00	.18	.04	.00	1.17	4.40	6.50	1.25	.51	.84	.21	.00	15.10
1873-74.....	.00	1.06	.02	.01	.74	5.73	5.51	8.76	1.08	.48	.42	.00	23.81
1874-75.....	.00	.00	.06	1.82	1.88	2.20	7.20	.15	.22	.07	.05	.00	13.65
1875-76.....	.00	.00	.00	.00	7.50	.02	6.55	1.92	3.41	.44	.03	.03	19.90
1876-77.....	.00	.00	.00	.20	.40	.00	3.50	4.03	.83	.26	.30	.00	9.52
1877-78.....	.00	.00	.00	.86	.50	3.95	3.33	6.68	2.57	1.71	.66	.07	20.33
1878-79.....	.07	.00	.02	.14	.05	4.70	3.59	1.00	.50	1.20	.24	.03	11.54
1879-80.....	.11	.02	.01	.94	3.40	6.50	1.56	1.33	1.45	5.00	.04	.00	20.36
1880-81.....	.00	.00	.00	.14	.67	8.80	1.40	.36	1.66	.46	.01	.00	13.50
1881-82.....	.00	.00	.00	.80	.27	.50	1.11	2.65	3.30	2.91	.00	.00	11.54
1882-83.....	.00	.00	.00	.10	.15	.45	1.60	1.10	2.82	2.95	.00	.00	9.17
1883-84.....	.19	.00	.53	.85	.09	2.63	1.63	12.20	9.95	5.68	3.17	.59	37.51
1884-85.....	.00	.00	.00	.00	.11	3.75	2.79	.11	.28	1.89	1.69	.19	10.81
1885-86.....	.00	.00	.00	.39	4.36	1.20	6.34	2.52	4.18	2.36	.32	.16	21.83
1886-87.....	.00	.00	.00	.00	.11	.61	.39	6.44	4.41	1.90	.42	.22	14.50
1887-88.....	.11	.04	.09	1.17	2.29	1.91	4.01	3.60	3.41	.58	.52	.03	17.76
1888-89.....	.00	.00	.00	.05	4.12	4.64	.93	1.50	6.55	2.05	1.13	.00	20.97
1889-90.....	.17	.63	.11	2.30	2.23	10.85	5.44	2.52	.89	.00	.31	.00	25.45
1890-91.....	.13	2.16	.88	.58	1.27	3.02	.00	7.78	.06	.53	1.67	.00	18.08
1891-92.....	.00	.91	.93	Tr.	Tr.	1.67	3.24	3.30	1.75	.37	2.10	.08	14.35
1892-93.....	.00	.00	.00	.16	1.02	2.23	4.53	3.37	8.00	.48	.03	.00	19.82
1893-94.....	.20	.00	.05	1.05	.30	2.28	1.26	.88	1.15	.40	.56	.00	8.13
1894-95.....	.00	.16	.37	.15	.00	7.25	7.39	1.14	3.44	.64	.44	.00	20.98
1895-96.....	.00	.00	.00	.00	1.14	.66	2.02	.00	2.92	.37	1.00	.00	8.11
1896-97.....	Tr.	.17	.00	2.10	.98	1.09	3.40	5.40	3.41	.08	.11	.00	16.74
1897-98.....	Tr.	.00	.13	2.10	.21	.57	2.10	.60	.97	.48	1.08	.00	8.24
1898-99.....	.00	.00	.00	.03	.05	.44	2.03	.51	3.22	.07	.19	.95	7.49
1899-1900.....	.00	Tr.	.01	.81	1.47	.84	.92	.00	.92	1.96	1.71	.00	8.64
1900-1901.....	.34	.00	.23	.36	6.10	.00	3.48	4.58	.43	.56	1.23	.05	17.36
1901-2.....	.00	.27	.07	1.09	.28	.04	1.65	3.02	3.89	.57	.12	.15	11.15
1902-3.....	.01	.00	.00	.09	1.94	1.94	1.96	1.67	6.47	3.10	.24	.00	17.42
1903-4.....	.00	.15	.46	.07	.00	.00	.18	2.21	5.34	.80	.16	.00	9.37

Average, thirty-four years, 15.06 inches.

Since the rainfall which is most efficient in supplying the surface and subsurface waters of the coastal plain is that which falls in the mountains in which Los Angeles, San Gabriel, and Santa Ana rivers rise, the Los Angeles and the San Bernardino rainfall charts are of more value for purposes of comparison with the profile of the water level than the Anaheim record, which indicates coastal conditions.

Each of these records shows that during the past eleven rainy seasons there has been a marked deficiency. For seven of the eleven this deficiency aggregates about 52 inches at Los Angeles and

about 45 inches at San Bernardino, while the other four years give excessive precipitations of 12 inches at San Bernardino and 7 inches

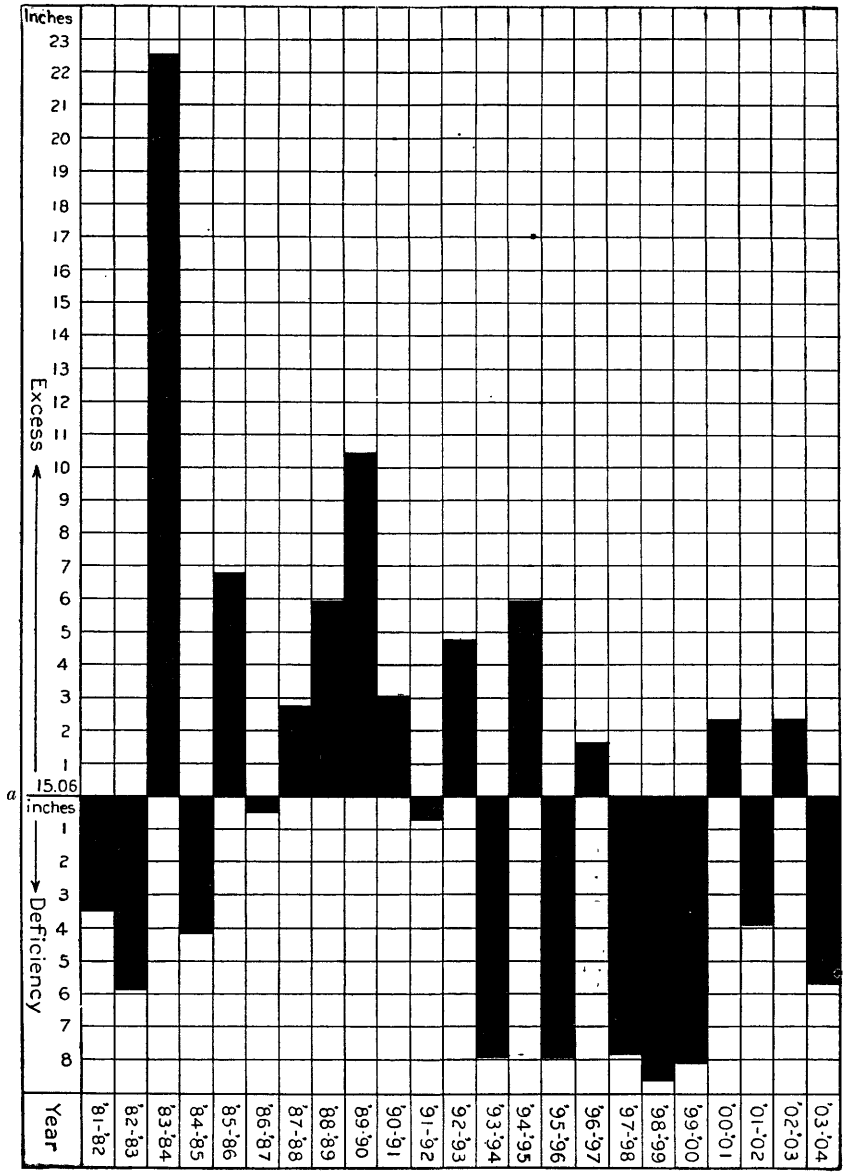


FIG. 2.—Chart showing departures from average rainfall at San Bernardino, Cal. • Average for 34 years (15.06 inches).

at Los Angeles. The average deficiency during the period, therefore, has been about 26 per cent at Los Angeles, 20 per cent at San

Bernardino, and 11 per cent at Anaheim. So marked a falling off in rainfall is in itself sufficient to account for much shrinkage in the ground waters, hence a general decline in water levels is not surprising.

*Rainfall, in inches, at Los Angeles, Cal.*

Year.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
1877-78.....	0.00	0.00	0.00	0.86	0.45	3.93	3.33	7.68	2.57	1.71	0.66	0.07	21.26
1878-79.....	.00	Tr.	.00	.14	Tr.	4.70	3.59	.97	.49	1.19	.24	.03	11.35
1879-80.....	.00	.00	.00	.93	3.44	6.53	1.33	1.56	1.45	5.06	.04	.00	20.34
1880-81.....	Tr.	Tr.	.00	.14	.67	8.40	1.43	.36	1.66	.46	.01	.00	13.13
1881-82.....	.00	Tr.	Tr.	.82	.27	.52	1.01	2.66	2.66	1.83	.63	Tr.	10.40
1882-83.....	.00	.00	Tr.	.05	1.82	.08	1.62	3.47	2.87	.15	2.02	.03	12.11
1883-84.....	Tr.	.00	.00	1.42	.00	2.56	3.15	13.37	12.36	3.54	.34	1.39	38.13
1884-85.....	Tr.	Tr.	Tr.	.30	1.06	4.64	1.05	Tr.	.01	2.00	.06	Tr.	9.12
1885-86.....	Tr.	Tr.	Tr.	.26	5.52	1.63	7.72	1.38	2.50	3.29	.00	.01	22.31
1886-87.....	.24	.21	.00	.01	1.18	.18	.20	9.25	.24	2.30	.20	.04	14.05
1887-88.....	.07	.00	.15	.12	.78	2.67	6.03	.77	3.15	.11	.02	Tr.	13.87
1888-89.....	.03	.08	Tr.	.36	4.01	6.26	.25	.92	6.48	.27	.62	.00	19.28
1889-90.....	.00	.61	.0	6.95	1.35	15.80	7.83	1.66	.66	.22	.03	.02	34.83
1890-91.....	.0	.03	.06	.03	.13	2.32	.25	8.56	.41	.26	.31	.00	12.36
1891-92.....	Tr.	.00	.06	.00	.00	1.99	.88	3.19	3.39	.22	2.06	.06	11.85
1892-93.....	.00	.01	.00	.33	4.40	4.18	6.29	2.27	8.52	.19	.06	.03	26.28
1893-94.....	.00	.00	Tr.	.75	.20	3.65	.94	.49	.37	.13	.20	Tr.	6.73
1894-95.....	Tr.	.01	.73	.02	.00	4.62	5.84	.46	3.77	.46	.19	.01	16.11
1895-96.....	Tr.	Tr.	Tr.	.24	.80	.78	3.23	Tr.	2.97	.19	.30	Tr.	8.51
1896-97.....	.02	.01	Tr.	1.30	1.66	2.12	3.70	5.62	2.31	.02	.10	Tr.	16.86
1897-98.....	Tr.	.00	.00	2.47	.01	.05	1.26	.51	.98	.03	1.75	Tr.	7.06
1898-99.....	.07	Tr.	.02	.09	Tr.	.12	2.64	.04	1.81	.18	.04	.58	5.59
1899-1900.....	.00	.01	Tr.	1.59	.90	.90	1.17	Tr.	.99	.54	1.81	Tr.	7.91
1900-1901.....	Tr.	Tr.	Tr.	.26	6.53	Tr.	2.49	4.38	.45	.68	1.50	Tr.	16.29
1901-2.....	Tr.	.09	.03	1.88	.46	Tr.	1.62	3.35	2.98	.16	.03	Tr.	10.60
1902-3.....	Tr.	Tr.	Tr.	.40	2.08	2.50	2.10	1.52	6.93	3.77	Tr.	.02	19.32
1903-4.....	.00	Tr.	.43	Tr.	.00	Tr.	.14	2.68	4.50	.97	Tr.	Tr.	8.72

Average, twenty-seven years, 15.35 inches.

A close examination of the Anaheim profile shows that the decline was steady and uninterrupted during the three very dry years which preceded and included the winter of 1899-1900. The succeeding winter was one in which the rainfall at Anaheim, at Los Angeles, and at San Bernardino was somewhat in excess of the normal, the excess varying from 9 per cent at Los Angeles to 28 per cent at Anaheim.

During the early part of the winter of 1901 the Anaheim profile shows a sharp rise in the water level, the gain during the first three months of the year being approximately 2 feet, but by the middle of the succeeding August the water had fallen again to a lower level than it had reached at any time before this winter, whose rainfall exceeded the normal.

In short, the decline continued during a winter of excessive rainfall. Throughout the season of 1901-2 also it continued, but as this again was a winter of marked deficiency, a loss was to be expected.

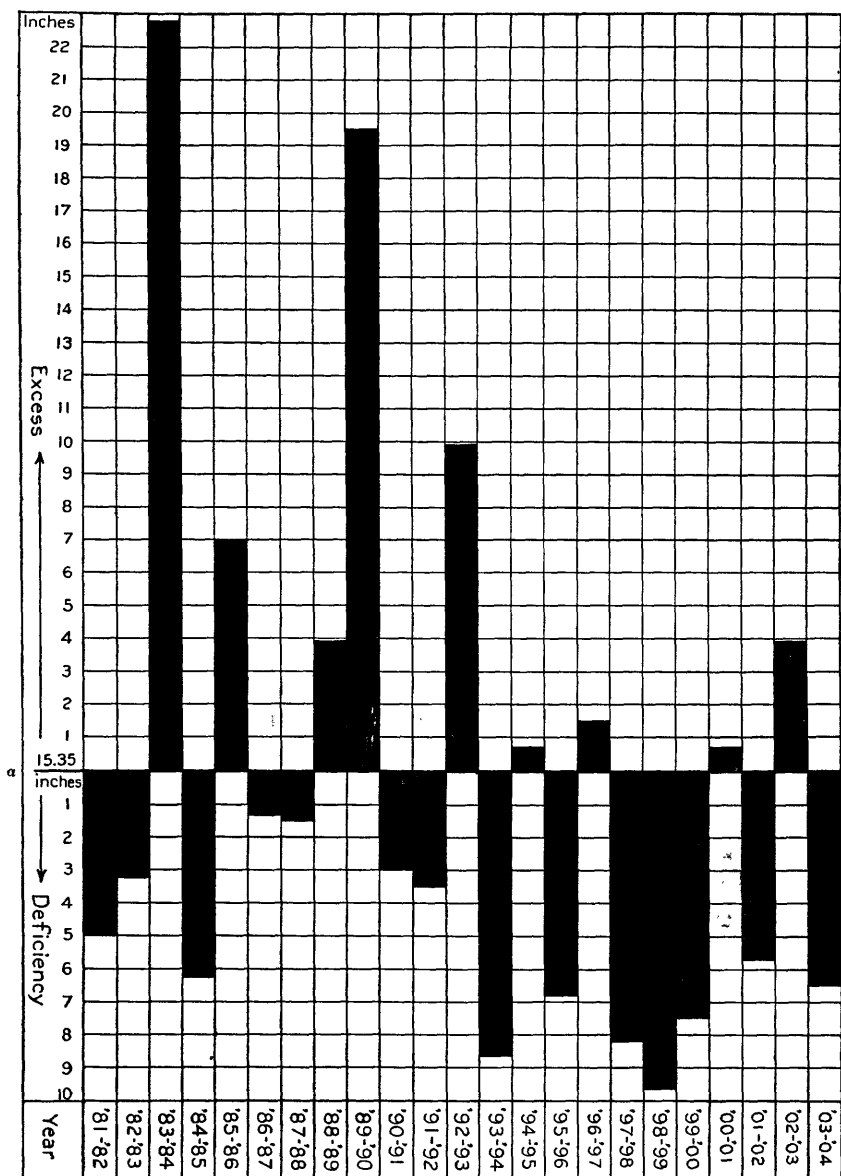


FIG. 3.—Chart showing departures from average rainfall at Los Angeles, Cal. *a*, average for 27 years (15.35 inches).

But the season of 1902-3 was again a winter of rainfall in excess. This excess amounted to about 15 per cent of the normal at San Bernardino, about 70 per cent at Anaheim, and about 22 per cent at

Los Angeles. The effect upon the Anaheim water level, while less marked than that of the heavy rainfall two years before, was more lasting, the rise of April and May, 1903, not being wholly lost until January 1, 1904. Since that time there has been no heavy rainfall and the decline has been continuous.

The important point in this comparison is the fact that the water level has continued to decline during two years of marked excess in precipitation. This fact seems to point unmistakably to excessive drafts upon the underground waters in the region to which it applies.

Direct observations of this kind have not been made in the Downey quadrangle, where there are only the general phenomena of decline

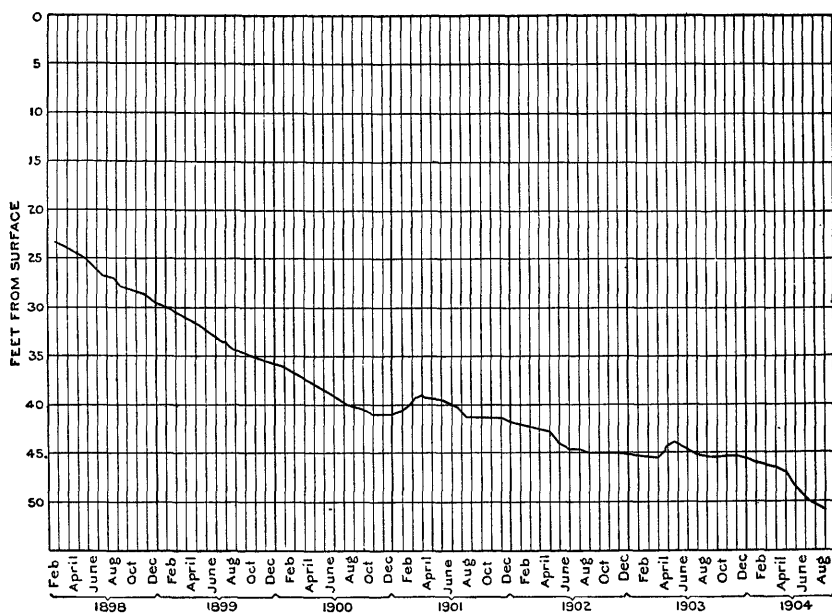


FIG. 4.—Diagram showing variation of water level near Anaheim, Cal.

from which to draw conclusions. The artesian area exhibits as marked shrinkage in the Downey as in the Anaheim region, and it is known that ground-water levels have fallen there markedly. There are more artesian wells but fewer pumping plants. Since the yield of flowing wells is very sensitive to the fluctuations in the ground-water levels and to the accompanying changes in pressure, while the output of pumped wells responds much less freely to these variations, pumping may be considered the more efficient agent in reducing the supply. So as yet the conditions at Anaheim are thought to be extreme rather than general. The unlimited extension of developments, however, may soon result in their becoming general.

## SUMMARY.

The discussion and conclusions as to the underground water supply in the central coastal plain region may be summarized thus:

(a) The supply is large, since it consists of the water saturating all of that part of the coastal plain gravels within pumping distance, say 250 feet from the surface, over an area of 600 or 700 square miles.

(b) The annual additions to the supply are large, consisting of a part of the flood waters of the San Gabriel, Los Angeles, and Santa Ana rivers, of the return waters from irrigation on the coastal plain, of the relatively small underflow of the rivers named, and of local rainfall upon this part of the coastal plain and the adjacent hills.

(c) The drafts upon these waters are large and seem certainly to be in excess of the supply in parts of the area at present.

(d) With present developments the water plane is expected to continue slowly to decline, and the artesian area to shrink until drainage is checked by these shrinkages at a point where it no longer exceeds supply. This decline should not prove serious *if present developments are not greatly increased.*

(e) So long as water developments continue at a rate which increases the output the shrinkage will continue.

(f) The lowering of the ground-water level and the shrinkage of artesian areas, even with continued development, will no doubt be interrupted by periods of rising water levels and expanding artesian areas, which will follow seasons of excessive rainfall.

(g) The shrinkage of the artesian belt will be most manifest along its northern edge. The effect farther south will be rather a decrease of flow and a lessening of pressure.

(h) Shallow artesian wells will generally be affected earlier and to a more marked extent than deeper ones.

## DESCRIPTION OF MAPS AND TABLES.

The maps in this paper show the lands irrigated in 1903-4, the irrigation canals, all of which head in or near the Paso de Bartolo, the present and the original artesian basins, and the location of wells, artesian, pumped, or domestic, in the Downey and Las Bolsas quadrangles (Pls. I, II, and IV).

The irrigated lands and those not irrigated are less clearly differentiated in the naturally more or less moist lands of the lower parts of the coastal plain than on the dry mesa and bench lands, and irrigation practice is often vague and unsystematic there. In many cases winter irrigation is practiced, the waters of the San Gabriel reaching the lower stretches of the river channel or the lower ditches only at this season, when water is abundant. It is then used to augment the rainfall on pasture lands. Irrigation of this type is

included in our classification of irrigated lands. The total area under irrigation in the Downey and Las Bolsas quadrangles is nearly 45,000 acres, or about 25 per cent of the total area.

The map of the artesian basin, past and present (Pl. I), is self-explanatory. It is to be said, however, that the boundaries differ for wells of differing depth, since deep wells may flow when they are some distance farther north than shallower wells that have ceased to flow.

As the limits have been drawn on the maps they include within the artesian area all wells flowing at the time the data were collected in the summer of 1903 and the succeeding winter. After a very wet year the northern boundary of the present artesian area may shift to the north; with average rainfall and continued development it will probably shift to the south. The southern limit should show but little change.

Outside of the artesian basin the ground-water level has been shown by hydrographic contours (Pl. I). These are lines showing the elevation of the surface of the plane of saturation. The depth to ground water at any point is determined by finding the difference between the elevations indicated by the topographic contours and those indicated by the hydrographic contours. The line of hills which forms the southern limit of the artesian basin follows a zone in which the water levels are so irregular that it was not practicable to extend the hydrographic contours across it.

Three kinds of symbols are used to indicate wells that flow, wells at which pumping plants have been installed, and the small wind-mill and domestic wells. Thus the map shows approximately the artesian belt and the areas of greatest development by pumping. Both artesian wells and pumping plants are constantly increasing, and by the time this report is ready for distribution many more will exist than are shown on the map, although this list was nearly complete for artesian wells and pumping plants at the time the field work was finished, in the spring of 1904. Many of the small domestic wells have not been examined and do not appear in the lists. Each well visited has been located on the map and numbered there. The information collected concerning it appears in the tables opposite this number. The information includes the name of the owner, the rancho, or, if on public land surveys, the town, range, and section, the date of completion, the size and depth of the well, the depth of water and the elevation of its surface, the approximate amount of dissolved solids in parts per 100,000, the method used in raising the water, the approximate cost of the well and of the machinery installed, and the amount of water secured. The greater part of this information was obtained from the owner of the well, data as to cost being in all cases supplied by him. The

depths of shallower wells that were accessible were measured. If the well is more than 300 feet deep, or was capped or otherwise closed, the owner's statement was taken or the driller's record consulted.

In a great many cases it was necessary also to accept the owner's statement as to the output of his well. This was particularly true of the pumping plants. Artesian wells could much more often be measured, and in every case where it was possible determinations of output were made, whether the water was artesian or pumped. Owners' statements are usually excessive.

The purity of the water was rapidly and approximately determined in the field with an electrolytic bridge, the method being based upon the fact that a definite relation exists between the amount of dissolved solids in the waters and the electrical resistance. The degree of accuracy attained in this work is probably somewhat less for the Downey quadrangle than for the Las Bolsas quadrangle, which was examined at a cooler season, as high temperatures affect the accuracy of the method. It is hoped, however, that the tests are correct within five or six parts per 100,000 in nearly all cases and that their usual accuracy is much closer than this. The results are tabulated with the other data about the wells and have also been assembled on a map (fig. 5) on which the underground waters have been classified upon the basis of their alkalinity, and on which the distribution of the broader zones is shown. Such a map furnishes general evidence as to the course of the underground circulation, and in this case indicates that the waters which come out through the Paso de Bartolo spread into a broad stream, unite with those of the Los Angeles and Santa Ana systems, and seek an outlet to the ocean in the region between Los Alamito Beach and Newport Beach. The preparation of this map showed that shallow wells, even in the areas of generally pure water, often contain very notable amounts of alkalies and that the deeper wells generally carry a smaller proportion of salts than the shallower ones. The zones, as they have been mapped, represent the general condition of waters drawn from sufficient depth to be free from surface contamination. They illustrate well the effect of the run-off from the shale hills upon the waters in the adjacent lowlands, and show also the greater purity of the ground waters in the zones of freest underground circulation, as between the passes by which the greater streams reach the coastal plain and the seashore. They illustrate, too, the somewhat inferior quality of those ground waters which lie upon the seaward side of the ridge which limits the artesian basin on the southwest. These waters, it is to be said, are irregular in their alkalinity, near-by wells often exhibiting considerable differences in the quantity of dissolved salts. Within the lower parts of the

artesian basin, on the contrary, the waters are very uniform in quality and contain but little mineral matter.

The waters of several of the deep wells of the Downey quadrangle are more or less impregnated with sulphureted hydrogen, and some of them are stained brown, probably by vegetable matter, peaty in character, which has been buried as the sands and gravels have accumulated. The subterranean waters in contact with these peaty beds are colored just as surface waters in contact with vegetable matter in swamps or marshes become stained. These gaseous

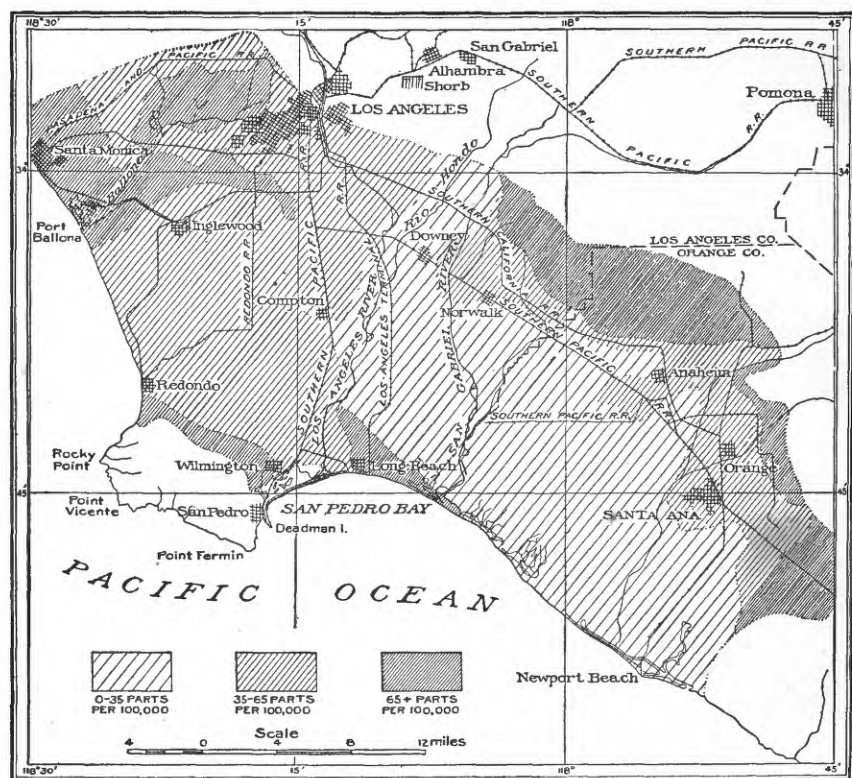


FIG. 5.—Map showing approximate amounts of dissolved solids in underground waters of coastal plain region of southern California.

and organic elements affect the electrical resistance but little, if at all, and therefore do not appear in the tabulated and mapped results.

#### ACKNOWLEDGMENTS.

Much the greater part of the work of collecting the information in the field concerning wells and water levels on the Downey quadrangle was done by Messrs. A. C. Hansen and E. R. Furstenfeld, who also mapped the irrigated lands. Mr. W. N. White is chiefly responsible for the field work in the Las Bolsas quadrangle. The

task of tabulating the results of the field work and preparing maps and tables for publication has fallen principally upon Messrs. A. J. Fisk, jr., and W. N. White.

Acknowledgments are due also to the well owners and water companies who have responded to queries and have thereby enabled the data to be procured.

The work which has resulted in the collection of this material was originally planned and inaugurated by Messrs. J. B. Lippincott and Homer Hamlin, engineers of the Reclamation Service. The credit for its initiation is theirs exclusively, and except that the increasing pressure of the important work of the Reclamation Service has come to claim more and more of their energies this work would probably have been carried out to completion under their direction.

## WELL DATA.

*Wells in the Downey quadrangle.*

\* Cost of well and equipment combined; † yield estimated or statement of owner taken; ? doubtful. The miner's inch used in these tables is the old California miner's inch, i. e., the amount of water which flows from a 1-inch orifice under a 4-inch head; it is equal to 9 gallons per minute, 14,478 acre-feet per year or one-fiftieth second-foot.]

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1	J. H. Dutcher.....	San Antonio.....	A-1.....	1903	Bored, 10-inch.....	173	135	115			\$175.00		Irrigation.....	.....
2	J. A. Gar.....	do.....	A-2.....	1895	Bored, 7-inch.....	169	133	69	59	Wind.....	70.00	\$175.00	Domestic.....	.....
3	F. Ahrens.....	do.....	A-2.....	1898	Bored, 10-inch.....	176	132?	100	61		140.00		Irrigation.....	60
4	Z. S. Spaulding.....	do.....	A-2.....	1898	do.....	174	144?	100		Propeller pump.....	150.00	1,250.00	do.....	90
5	A. B. Merrill.....	do.....	A-2.....	1889	Bored, 7-inch.....	174	133	55		Wind.....	65.00	75.00	Domestic; irrigation.....	1½
6	C. Dutcher.....	do.....	A-2.....	1897	do.....	167	129?	100		Electric motor.....	115.00	1,200.00	Irrigation.....	100
7	J. H. Dutcher.....	do.....	A-2.....	1895	Bored, 8-inch.....	162	133	104	65	do.....	175.00	1,200.00	do.....	80
8	Chas. Gillon.....	do.....	A-1.....	1900	Bored, 10-inch.....	175	135	87		Electricity.....	300.00	1,500.00	do.....	135
9	Mrs. M. J. Russell.....	do.....	A-2.....	1883	Bored, 7-inch.....	156	131	87	68	Hand.....	90.00	20.00	Domestic.....	.....
10	Geo. Logie.....	do.....	A-3.....	1900	Bored, 3½-inch.....	150	128	93	69	do.....	85.00	15.00	do.....	.....
11	Mrs. Sarah Braby.....	do.....	A-3.....	1883	Bored, 7-inch.....	148	128	93		Wind.....			do.....	.....
12	Julius Conrad.....	do.....	A-3.....	1896	Bored, 10-inch.....	146	129	480	30	Gas.....	600.00	1,000.00	Irrigation; domestic.....	100
13	do.....	do.....	A-3.....	1896	Bored, 8-inch.....	146	129	140	56	do.....	125.00		do.....	.....
14	Annette Thaxter.....	do.....	A-3.....	1876	do.....	142	128	111	54	Wind.....	150.00	175.00	Domestic.....	.....
15	Geo. Nadeau.....	do.....	A-3.....	1883	Bored, 7-inch.....	144	124	180?	63	do.....	180.00	135.00	do.....	.....
17	D. W. Moore.....	do.....	A-2.....	1902	do.....	155	128?	115	61	do.....	118.75	90.00	do.....	.....
18	Quong Lung.....	Los Angeles city.....	A-1.....	1897?	Bored, 6-inch.....	185	138	54		do.....			do.....	.....
19	J. Inverarity.....	do.....	A-1.....	1900	Bored, 7-inch.....	188	137	60	52	do.....	65.00	200.00	do.....	.....

20	A. Rueff.....	A-1.....	1898	.....do.....	89	137	54	62	.....do.....	157.50	2,200.00	.....do.....	Irrigation.....	120
21	I. Gibbs.....	A-1.....	1902	Bored, 12-inch.....	193	138	90	57	Gas.....	65.00	200.00	.....do.....	Domestic.....	1
22	James Haddock.....	A-1.....	1891	Bored, 7-inch.....	193	139	60	.....	Wind.....	.....	.....	.....do.....	.....	.....
23	Mrs. P. B. Hardenberg.....	A-1.....	1899?	.....do.....	195	140	65	52	.....do.....	.....	.....	.....do.....	.....	.....
24	Pacific Electric Ry. Co.....	A-1.....	1899	.....do.....	194	138	70	.....	.....do.....	.....	.....	.....do.....	.....	.....
25	Ida McClure.....	A-1.....	1882	.....do.....	192	137	61	46	.....do.....	.....	.....	.....do.....	.....	.....
26	Chas. Hull.....	A-1.....	1881	.....do.....	191	122	77	48	.....do.....	85.00	75.00	.....do.....	.....	.....
27	W. A. Ross.....	A-1.....	1902	.....do.....	183	135	68	38	.....do.....	56.00	152.00	.....do.....	Irrigation; domestic.....	50
28	Burbank & Baker.....	A-2.....	1902	Bored, 10-inch.....	180	135	91	45	Gas.....	.....	.....	.....do.....	.....	.....
29	Estavan Herrera.....	A-2.....	.....	Bored, 7-inch.....	179	134	75	43	Wind.....	.....	.....	.....do.....	Domestic.....	1
30	John B. Morrison.....	A-2.....	1901	Bored, 10-inch.....	176	144?	97	.....	Gas.....	140.00	1,375.00	.....do.....	Irrigation.....	142
31	I. H. Bryson.....	A-2.....	1898	.....do.....	171	133	92	30	Electricity.....	200.00	1,050.00	.....do.....	.....	75
32	Wm. R. Roney.....	A-2.....	1901	.....do.....	164	128	415	49	.....do.....	1,500.00	1,500.00	.....do.....	.....	52
33	T. E. Cleland.....	A-2.....	1897	.....do.....	156	126?	260	42	.....do.....	500.00	1,200.00	.....do.....	.....	175
34	R. A. Innes.....	A-2.....	1901	Bored, 7-inch.....	159	129	75	42	Wind.....	86.00	170.00	.....do.....	Domestic; irrigation.....	1
35	Michael Cudahy.....	B-2.....	1899	Bored, 12-inch.....	156	122	400?	.....	Compressed air.....	1,000.00	2,000.00	.....do.....	Irrigation.....	60
36	.....do.....	B-2.....	1900	.....do.....	155	121	400	34	.....do.....	1,000.00	2,000.00	.....do.....	.....	60
37	L. Wright.....	A, B-2.....	1887	.....do.....	169	133	85	51	Wind.....	.....	164.00	.....do.....	Domestic.....	1½
38	E. V. Baker.....	B-1.....	1902	Bored, 10-inch.....	181	135	277	39	.....	456.00	.....	.....do.....	Not used.....	.....
39	Dan Cunningham.....	B-2.....	1900	Bored, 12-inch.....	170	134	400	45	Compressed air.....	1,000.00	.....	.....do.....	Irrigation.....	15
40	Chas. Miles.....	B-2.....	1884	Bored, 7-inch.....	169?	132	85	42	Wind.....	.....	.....	.....do.....	Domestic.....	.....
41	Gail Borden.....	C-2.....	1884	.....do.....	153	126	91	40	.....do.....	.....	.....	.....do.....	.....	.....
42	.....do.....	B-2.....	1900	Bored, 10-inch.....	158	128	121	37	.....	.....	.....	.....do.....	Irrigation.....	60
43	J. G. Bell.....	C-2.....	1899	Bored, 12-inch, 262 feet; 9½-inch, 374 feet.....	158	133?	636	41	Propeller pump.....	.....	.....	.....do.....	Domestic; irrigation.....	150
44	E. G. Greening.....	C-½.....	1902	Dug, 3 by 3 foot.....	164	148	173	49	Hand.....	10.00	6.00	.....do.....	Domestic.....	.....
45	W. N. Angel.....	C-1.....	1894	Bored, 7-inch.....	177	142	112	44	Wind.....	125.00	100.00	.....do.....	Domestic; irrigation.....	1½
46	James Gillespie.....	B-1.....	1892	.....do.....	177	137	128	43	.....do.....	150.00	50.00	.....do.....	Domestic.....	1½
47	G. W. Brookins.....	C-1.....	1900	Bored, 10-inch.....	179	148?	135	.....	Propeller pump.....	200.00	.....	.....do.....	Irrigation.....	95
48	Fruitland Water Co.....	B-1.....	1898	Bored, 12-inch.....	177	126	250	.....	Compressed air.....	1,000.00	1,700.00	.....do.....	.....	50
49	John H. Van Nest.....	C-1.....	1873	Bored, 7-inch.....	182	133	285	35	Wind.....	.....	100.00	.....do.....	Domestic.....	.....
50	Steven Musante.....	C-1.....	1898	.....do.....	183	154	106	55	.....do.....	110.00	100.00	.....do.....	Domestic; irrigation.....	1½

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
51	J. S. Quinn.....	San Antonio.....	C-1.....	1901	Bored, 9-inch.....	180	140	100	39	Wind.....	\$300.00	.....	Domestic.....	1½
52	A. E. Bell.....	San Pedro.....	D-2.....	1898	Bored, 10-inch.....	148	136	1,360	39	Electricity.....	1,500.00	\$1,200.00	Irrigation.....	150
53	F. F. Culver.....	do.....	B-8.....	1873?	Bored, 6-inch.....	73	73	230	.....	Artesian.....	400.00	.....	Domestic.....	1
54	Frank Walton.....	do.....	A, B-8.....	1902	Bored, 10-inch.....	73	73	500	32	do.....	700.00	.....	Irrigation.....	1½
55	A. C. Bird.....	do.....	A-8.....	1885	Bored, 7-inch.....	82	82	170	33	Wind, artesian.....	150.00	350.00	Domestic.....	1½
56	Mrs. Minnie Stuart.....	do.....	A-8.....	1891	do.....	84	81	160	.....	Gas.....	500.00	400.00	Irrigation.....	30
57	Mrs. H. C. Montague.....	do.....	A-8.....	1894	do.....	81	81	192	.....	Artesian.....	600.00	450.00	Not used.....	40
58	Chas. Marble.....	do.....	A-8.....	1898	do.....	89	.....	300	.....	Gas.....	600.00	600.00	Irrigation.....	40
59	C. A. Conklin.....	do.....	A-7.....	1896	do.....	88	.....	200	.....	do.....	400.00	600.00	do.....	40
60	Mrs. A. C. Brown.....	do.....	A-8.....	1902	Dug, 3½ by 3½ foot.....	89	70	20	115	Hand.....	20.00	3.50	Stock.....	.....
61	J. E. Paradis.....	do.....	A-8.....	1881?	Bored, 7-inch.....	94	81	198	.....	Gas.....	300.00	1,000.00	Irrigation.....	75
62	W. D. Suly.....	do.....	A-7.....	1892	Bored, 6-inch?.....	90	82	200	.....	Wind.....	150.00	30.00	Domestic.....	1½
63	F. M. Elliott.....	San Antonio.....	A-7.....	1895?	Bored, 7-inch.....	84	84	200	33	Gas, artesian.....	.....	900.00	Domestic; irrigation.....	30
64	Francis E. Barron.....	San Pedro.....	A-7.....	1898	do.....	79	79	260	40	Artesian.....	400.00	.....	do.....	.....
65	H. P. Schildwachter.....	San Antonio.....	A-7.....	1883	do.....	82	82	140	.....	Wind, artesian.....	.....	145.00	Domestic.....	.....
66	F. L. Walton.....	do.....	A-7.....	1895	Hydraulic, 2-inch.....	84	84	223	43	do.....	100.00	140.00	do.....	Small.
67	do.....	do.....	A-6, 7.....	1895	do.....	87	87	228	.....	do.....	180.00	150.00	do.....	.....
68	J. E. Lodge.....	do.....	A-6.....	1897	Bored, 7-inch.....	88	88	200	44	Gas, artesian.....	350.00	600.00	Irrigation; domestic.....	75
69	E. S. Gunby.....	do.....	A-6.....	1888	do.....	91	91	240	.....	do.....	500.00	750.00	do.....	85
70	I. E. Herson.....	do.....	A-6.....	1900	do.....	91	91	250	.....	do.....	350.00	700.00	do.....	60
71	Geo. Wittman.....	do.....	A-5.....	.....	do.....	96	91	.....	43	Artesian.....	.....	.....	Domestic.....	† 5
72	G. H. Bollinger.....	do.....	A-5, 6.....	1883	do.....	98	98	240	42	do.....	600.00	.....	do.....	† 1

73	J. G. Beileu.....	do.....	A-5.....	1889.....	do.....	100	100	70	55	do.....	100.00	Domestic; irriga- tion.	1
74	Miss Hersey.....	do.....	A-5.....	1891.....	Bored, 10-inch.	102	102	80	do.....	do.....	do.....	Domestic; irriga- tion.	15
75	Z. A. Towne.....	do.....	A-4, 5.....	1897.....	Bored, 7-inch.	112	112	77	56	do.....	77.00	Domestic.	Small.
76	Mrs. L. Diller.....	do.....	A-5.....	1882.....	do.....	112	112	87	61	do.....	do.....	Domestic.	do.....
77	Mrs. F. E. Rausaur.....	do.....	A-4.....	1881.....	Bored, 10-inch.	117	117	72	51	Wind, artesian.	90.00	do.....	do.....
78	David Elcoat.....	do.....	A-4.....	1896.....	Bored, 7-inch.	123	123	87	55	do.....	100.00	do.....	do.....
79	H. D. Merrill.....	do.....	A-4.....	1883.....	do.....	124	124	120	66	Gas.....	125.00	Irrigation.....	50
80	A. E. Putney.....	do.....	A-3.....	1892.....	do.....	135	126	137	66	Compressed air.	225.00	do.....	70
81	J. N. Stone.....	do.....	A-3.....	1873.....	do.....	134	127	122	61	Gas.....	180.00	Irrigation; do- mestic.	50
82	Hugh Glassell.....	do.....	A-3.....	1872.....	Bored, 12-inch.	144	126	do.....	do.....	do.....	do.....	Irrigation.....	75
83	A. D. Westbrook.....	do.....	A-3.....	do.....	Bored, 7-inch.	144	127	112	53	Wind.....	do.....	Domestic.	do.....
84	Mrs. Jennie E. Fall.....	do.....	A-3.....	1902.....	do.....	151	127	67	71	do.....	85.00	do.....	1
85	Michael Cudahy.....	do.....	B-3.....	1889.....	do.....	144	131	35	47	do.....	125.00	do.....	do.....
86	do.....	do.....	B-3.....	1890.....	do.....	137	134	140	do.....	do.....	90.00	do.....	do.....
87	E. Northote.....	do.....	A-3.....	do.....	do.....	133	124	120	do.....	do.....	do.....	do.....	do.....
88	Mr. Slauson.....	do.....	B-3.....	1882.....	do.....	134	126	133	49	Hand.....	do.....	do.....	do.....
89	H. T. Starks.....	do.....	A-4.....	1900.....	Bored, 10-inch.	122	121	132	37	Gas.....	400.00	Irrigation.....	100
90	Jacob Boshard.....	do.....	A-4.....	1898.....	Bored, 7-inch.	125	122	85	63	Wind.....	102.00	Domestic.	1
91	Mrs. Mary Tweedy.....	do.....	B-4.....	1887.....	Bored, 4-inch.	126	123	113	57	do.....	do.....	do.....	1
92	F. H. Robinson.....	do.....	B-4.....	1885.....	Bored, 7-inch.	109	108	106	52	do.....	100.00	do.....	1
93	Mrs. H. C. Carson.....	San Pedro.....	B-7.....	1875.....	Bored, 2-inch.	75	75	259	32	Artesian.....	do.....	do.....	do.....
94	P. J. Boland.....	do.....	B-7.....	1890.....	Bored, 4-inch.	76	76	135	37	do.....	do.....	do.....	do.....
95	L. F. Stockwell.....	San Antonio.....	B-6, 7.....	1898.....	Bored, 3-inch.	75	75	241	do.....	do.....	100.00	Domestic; irriga- tion.	10
96	Mr. F. Walton.....	San Pedro.....	B-7.....	do.....	Bored, 7-inch.	74	74	250	31	do.....	do.....	Irrigation; stock	do.....
97	D. W. Imbler.....	do.....	A-7.....	1902.....	do.....	80	80	257	36	do.....	355.00	Irrigation.....	50
98	S. J. Hull.....	do.....	A-7.....	1900.....	do.....	78	78	247	33	do.....	500.00	do.....	75
99	J. Schaefer.....	do.....	B-7.....	1888.....	do.....	73	73	320	36	do.....	500.00	Irrigation; do- mestic.	do.....
100	S. Stockwell.....	do.....	C-7.....	1885.....	do.....	81	81	144	41	do.....	700.00	do.....	20
101	G. F. Howe.....	do.....	D, E-8.....	1900.....	do.....	65	65	167	30	Hand.....	do.....	Domestic.	do.....
102	J. B. Proctor.....	do.....	D-8.....	do.....	Bored, 4-inch.	70	70	145	29	Hand, artesian.	do.....	do.....	do.....
103	C. Wright.....	do.....	D-8.....	do.....	Bored, 8-inch.	72	72	do.....	29	Artesian.....	do.....	do.....	do.....
104	Los Angeles County.....	do.....	D-8.....	1900.....	Hydraulic, 3-inch.	73	73	208	36	do.....	150.00	Roads.....	do.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
105	E. M. James.....	San Pedro.....	C-8.....	1902	Driven, 2½-inch.....	71	71	117	35	Wind.....	\$75.00	\$25.00	Domestic.....	.....
106	A. J. Morrison & Co.....	do.....	C-7.....	1893	Bored, 8½-inch.....	74	74	388	32	Artesian.....	1,000.00	.....	Irrigation.....	±50
107	do.....	do.....	C-8.....	1902	Bored, 7-inch.....	69	69	130	44	Gas, artesian.....	175.00	800.00	do.....	±110
108	L. A. Leavitt.....	do.....	C-8.....	1895	Bored, 4-inch.....	67	67	250	36	Artesian.....	250.00	.....	Domestic.....	.....
109	R. H. Dinsmore.....	do.....	C-8.....	1901	Bored, 3-inch.....	69	69	268	36	do.....	225.00	.....	do.....	5
110	T. F. Shields.....	do.....	C-8.....	1896	Bored, 2-inch.....	72	72	133	41	Gas, artesian.....	175.00	300.00	Irrigation; domestic.....	Small.
111	F. Colten.....	do.....	C-8.....	1880	Bored, 7-inch.....	72	72	140	41	Wind, artesian.....	250.00	150.00	Domestic.....	.....
112	J. W. Duff.....	do.....	C-7.....	1897	Hydraulic, 2-inch.....	80	80	305	39	Artesian.....	200.00	.....	do.....	.....
113	M. L. McIntosh.....	do.....	C-7.....	1877	Bored, 7-inch.....	78	78	330	38	do.....	500.00	.....	do.....	7
114	Mrs. S. Kriem.....	do.....	C-7.....	1896	do.....	71	71	535	29	do.....	500.00	.....	do.....	25
115	R. B. Easley.....	do.....	C-7.....	1902	Bored, 10-inch.....	79	79	150	36	Gas, artesian.....	250.00	800.00	Irrigation.....	±100
116	H. Williams.....	do.....	C-7.....	1898	Bored, 12-inch.....	82	82	425	35	Artesian.....	800.00	.....	do.....	±80
117	G. Palmer.....	do.....	C-7.....	1896	Bored, 7-inch.....	76	76	135	40	do.....	150.00	.....	Domestic; irrigation.....	.....
118	F. Vennass.....	do.....	B-7.....	1875	Bored, 5-inch.....	75	75	145	40	do.....	150.00	.....	Domestic; stock.....	.....
119	L. Abbott.....	do.....	B-7.....	1896	Bored, 7-inch.....	78	78	145	39	do.....	150.00	.....	Irrigation; domestic.....	.....
120	H. C. Carson.....	do.....	.....	1873	do.....	73	73	264	31	do.....	.....	.....	Domestic; irrigation.....	.....
121	F. E. Stockwell.....	San Antonio.....	C-7.....	1893	do.....	83	83	148	33	do.....	150.00	.....	Irrigation; domestic.....	.....
122	E. H. Kincald.....	do.....	C-7.....	1900	Bored, 9-inch.....	86	86	220	30	do.....	600.00	.....	do.....	8
123	C. J. Williams & Co.....	do.....	C-6.....	1899	Bored, 10-inch.....	86	86	385	36	do.....	1,200.00	.....	Irrigation.....	30
124	J. Gapper.....	do.....	C-6.....	1895	Bored, 7-inch.....	86	86	146	31	Wind, artesian.....	150.00	145.00	Domestic.....	.....

125	J. O. Waite.....	do.	D-7.....	1900	Bored, 9½-inch.....	83	475	30	Artesian.....	900.00	Irrigation.....	75
126	S. S. Mills.....	do.	D-7.....	1897	Bored, 7-inch.....	84	170	36	Wind, artesian.....	70.00	Domestic.....	
127	P. E. Hoag.....	do.	D-7.....	1885	do.	88	150	32	Wind.....		do.	
128	W. W. Young.....	do.	D-6.....	1902	Bored, 10-inch.....	86	176	38	Gas, artesian.....	319.65	Irrigation; domestic.....	
129	W. C. Lee.....	San Pedro.....	D-7.....	1888	Bored, 7-inch.....	77	150	37	Artesian.....	200.00	Domestic.....	15
130	do.	do.	D-7.....	1900	Bored, 10-inch.....	78	390	30	do.	800.00	Irrigation.....	75
131	C. Venzla.....	do.	D-7.....	1896	Bored, 7-inch.....	79	136	35	Wind, hand.....		Domestic.....	
132	W. E. Boster.....	do.	D-7.....	1880	do.	81	283	36	Hand.....	550.00	do.	
133	Mrs. McCarty.....	San Antonio.....	D-7.....	1895	Bored, 3-inch.....	60	180	37	Hand, artesian.....	250.00	do.	
134	T. H. Abbott.....	do.	D-6.....	1889	Bored, 7-inch.....	89	165	34	Wind, artesian.....	100.00	do.	Small.
135	B. T. Rozelle.....	do.	E-6.....	1880	do.	89	130	35	do.	300.00	do.	Small.
136	do.	do.	D-6.....	1896	Bored, 10-inch.....	89	762	19	Gas, artesian.....	2,500.00	Irrigation.....	75
137	C. H. Watts.....	do.	D-6.....	1899	do.	91	800	22	Artesian.....	2,800.00	do.	485
138	W. B. Finch.....	do.	C-6.....	1895	Bored, 7-inch.....	89	360	35	do.		Irrigation; domestic.....	75
139	Elmer E. Moore.....	do.	C-6.....	1895	Bored, 10-inch.....	95	467	25	do.	1,150.00	Irrigation.....	475
140	do.	do.	C-6.....		Bored, 7-inch.....	98	150	26	Gas, artesian.....	700.00	do.	75
141	do.	do.	C-6.....		do.	93	150	36	Wind, artesian.....	150.00	Domestic.....	Small.
142	A. W. Andrews.....	do.	C-6.....	1895	do.	92	180	35	do.	35.00	Domestic; irrigation.....	
143	Mr. Carres.....	do.	D-6.....	1903	Bored, 12-inch.....	91	652	33	Artesian.....	1,500.00	Irrigation.....	100
144	E. W. Lewis.....	do.	C-6.....	1899	do.	92	385	36	do.	1,000.00+	do.	200
145	C. H. Sessions.....	do.	B-7.....		Bored, 7-inch.....	82	140?	37	Hand, artesian.....	10.00	Domestic.....	2
146	do.	do.	C-5.....	1898	Bored, 12-inch.....	97	375	37	Artesian.....	600.00	Stock; irrigation.....	100
147	L. Snodgrass.....	do.	B-5.....	1883?	Bored, 7-inch.....	96	80	46	do.	150.00	Domestic.....	15
148	do.	do.	B-5.....	1883?	do.	106	80	44	do.	150.00	Stock; irrigation.....	
149	Omri Bullis.....	do.	B-5.....	1901	do.	92	80?	39	do.	100.00	Irrigation.....	20
150	do.	do.	B-6.....	1890?	do.	92	335	31	Hand, artesian.....	1,000.00	Irrigation; domestic.....	
151	F. Hoppe.....	do.	B-5.....	1903	Bored, 10-inch.....	99	385	37	Artesian.....	1,000.00	Irrigation.....	30
152	J. Tweedy.....	do.	B-5.....	1893	Bored, 4-inch.....	111	72	48	Hand, artesian.....	75.00	Domestic.....	
153	Mr. Gilky.....	do.	C-5.....	1880	Bored, 8-inch.....	101	135	37	Artesian.....	300.00	Domestic; irrigation.....	30
154	J. Abola.....	do.	B-5.....		Bored, 7-inch.....	102	135?	45	do.		Stock; irrigation.....	15
155	B. R. Kratzer.....	do.	C-5.....	1890?	do.	102	160	36	Wind, artesian.....	50.00	Domestic.....	
156	K. Swantek.....	do.	C-5.....	1903	Bored, 10-inch.....	104	156	35		250.00	Not used.....	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
157	Mrs. E. Bryson	San Antonio	C-5	1900	Bored, 2-inch.	105	130?	36	Wind.	.....	\$70.00?	\$40.00	Domestic.	.....
158	J. N. Sherman	do.	C-5	1897?	do.	106	106	120?	Wind, artesian	.....	.....	128.20	do.	.....
159	D. B. Dodson	do.	D-5	1902	Bored, 7-inch.	106	101	142	Wind.	.....	188.00	100.00	Domestic; stock-irrigation.	.....
160	H. P. King	do.	D-5	.....	do.	105	96	140	33	Hand.	.....	.....	Domestic.	.....
161	M. T. King	do.	D-5	1899	Hydraulic, 2-inch.	105	102	110	30	Wind.	.....	108.00	Stock; domestic	.....
162	J. M. Shaw	do.	D-5	1889	Bored, 4-inch.	103	95	155	31	Hapd.	.....	175.00	Domestic.	.....
163	R. Wallace	do.	D-5	1898?	Bored, 10-inch.	100	100	600+	29	Artesian.	.....	.....	Irrigation.	60
164	W. H. Corbin	San Pedro.	B-8	.....	Bored, 4-inch.	62	62	425?	33	do.	.....	.....	Domestic.	.....
165	W. A. Hall	do.	B-8	1901	Bored, 6-inch.	62	62	263	36	do.	.....	400.00	Irrigation	11
166	James Davidson	do.	B-8	.....	Driven, 2-inch.	62	62	.....	33	do.	.....	.....	Domestic; stock	.....
167	Dr. J. A. Monk	do.	B-8	1900	Bored, 12-inch.	59	59	811	30	do.	.....	3,000.00	Irrigation	90
168	L. Gully	do.	B-8	1899?	Bored, 10-inch.	63	63	460	35	do.	.....	.....	do.	62
169	W. S. Peck	do.	C-8	1884	Bored, 8-inch.	63	63	320	35	do.	.....	400.00	do.	.....
170	W. L. Peck	do.	C-8	1897	Bored, 3-inch.	60	60	300	34	do.	.....	.....	Domestic; irrigation.	.....
171	J. G. Hawthorn & Son	do.	C-8	1873?	Bored, 7-inch.	60	60	237	38	Wind, artesian	.....	500.00	Domestic.	Small.
172	do.	do.	C-8	1900	Bored, 10-inch.	62	.....	130	.....	Gas.	.....	800.00	Irrigation.	100
173	James Legg	do.	C-8	1891	Bored, 7-inch.	69	69	130	35	Wind, artesian	.....	200.00	Domestic; irrigation.	.....
174	H. B. Rice	do.	C-8	1899	Bored, 10-inch.	62	55	132	30	Gas.	.....	200.00	Irrigation	90
175	F. K. Day	do.	C-8	1902	Bored, 7-inch.	65	61	130	38	do.	.....	95.00	do.	50
176	D. R. Meyers	do.	D-8	1878?	do.	69	.....	500	.....	do.	.....	1,600.00	do.	70
177	R. B. Harris	do.	C-8	1899	Bored, 9½-inch.	63	63	400	36	Artesian.	.....	600.00	do.	135

178	.....do.....	do.....	C-8.....	1883	Bored, 7-inch.....	63	.....	400	.....	Gas.....	.....	700.00	.....do.....	.....	195
179	John Gains.....	do.....	D-8.....	.....	Bored, 8-inch.....	69	69	400	.....	Hand.....	35	.....	Domestic.....	.....	.....
180	H. W. Marden.....	do.....	E-8.....	1901	Hydraulic, 2-inch.....	63	63	457	.....	Artesian.....	33	202.00	do.....	.....	.....
181	do.....	Los Cerritos.....	E-8.....	1903?	Bored, 10-inch.....	65	65	111	.....	.....	33	188.77	Not used.....	.....	.....
182	Wm. Sneath.....	do.....	E-8.....	.....	Bored, 2-inch.....	67	67	540	.....	Artesian.....	29	.....	Domestic; irrigation.....	.....	.....
183	T. J. Lucecock.....	do.....	E-8.....	1891	Bored, 4-inch.....	68	65	150	.....	Hand.....	30	150.00	Domestic.....	.....	.....
184	Mrs. Swanson.....	do.....	E-8.....	1902	Hydraulic, 2-inch.....	68	68	550	.....	Artesian.....	28	150.00	do.....	.....	13
185	H. A. Daris.....	do.....	E-9.....	1899	do.....	63	63	576	.....	do.....	28	175.00	do.....	.....	Small.
186	J. S. Mansfield.....	do.....	E-8.....	1899	do.....	64	64	600	.....	do.....	.....	200.00	Domestic; irrigation.....	.....	15
187	T. H. Samers.....	do.....	E-9.....	1889	Bored, 3-inch.....	60	60	100	.....	do.....	34	60.00	Domestic.....	.....	Small.
188	R. H. Parker.....	do.....	E-9.....	1899	Hydraulic, 2-inch.....	61	61	376	.....	do.....	32	150.00	Irrigation.....	.....	.....
189	A. E. Matson.....	do.....	E-9.....	1889	Driven, 3-inch.....	60	60	100	.....	do.....	30	75.00	Domestic; irrigation.....	.....	.....
190	G. W. Callonette.....	do.....	E-9.....	1889	Bored, 6-inch.....	61	61	160	.....	do.....	31	150.00	Domestic; stock.....	.....	Small.
191	F. E. Green.....	do.....	E-10.....	1901	Hydraulic, 2-inch.....	56	56	398	.....	do.....	33	160.00	Irrigation.....	.....	.....
192	J. E. Cook.....	do.....	E-10.....	1900	do.....	58	58	430	.....	do.....	.....	.....	Stock.....	.....	.....
193	Robert Syrett.....	do.....	E-10.....	1898	Bored, 2-inch.....	54	54	356	.....	do.....	30	106.50	Domestic; stock.....	.....	1
194	W. S. McKenzie.....	do.....	D-10.....	1898	Bored, 8-inch.....	53	53	350	.....	do.....	32	.....	Irrigation.....	.....	.....
195	W. H. Brown.....	do.....	E-10.....	1897	Hydraulic, 2-inch.....	54	54	337	.....	do.....	31	175.00	do.....	.....	.....
196	G. Klippel.....	do.....	D-9.....	1899	Bored, 2-inch.....	50	50	381	.....	do.....	34	125.00	do.....	.....	.....
197	S. O. Houghton.....	do.....	D-10.....	1901	Bored, 12-inch.....	50	50	348	.....	do.....	31	1,000.00	do.....	.....	40
198	F. M. Vandiver.....	do.....	E-9.....	.....	Bored, 7-inch.....	56	56	600	.....	do.....	32	.....	do.....	.....	.....
199	James Keer.....	do.....	D-9.....	1902	Bored, 10-inch.....	57	57	508	.....	do.....	32	800.00	do.....	.....	30
200	J. Clabour.....	do.....	E-8, 9.....	1902	Bored, 12-inch.....	60	60	550	.....	do.....	32	1,275.00	do.....	.....	185
201	L. A. Clark.....	San Pedro.....	D-8.....	1888	Bored, 4-inch.....	60	60	400	.....	Wind, artesian.....	.....	.....	Domestic.....	.....	.....
202	R. Barber.....	do.....	D-8.....	1873?	Bored, 7-inch.....	62	62	100	.....	Hand, artesian.....	33	.....	do.....	.....	.....
203	A. Dionvard.....	do.....	D-8, 9.....	1897	Hydraulic, 2-inch.....	60	60	392	.....	Artesian.....	29	165.00	do.....	.....	.....
204	do.....	do.....	D-8.....	1900	Bored, 10-inch.....	62	58	115	.....	Gas.....	.....	200.00	Irrigation.....	.....	.....
205	J. H. Orr.....	do.....	D-9.....	1901	Bored, 12-inch.....	55	55	550	.....	Artesian.....	33	1,460.00	do.....	.....	47
206	J. Mulheron.....	do.....	C-9.....	1898	Bored, 2-inch.....	55	55	315	.....	do.....	.....	120.00	Domestic; stock.....	.....	6
207	Chester Robertson.....	do.....	D-9.....	1901	Bored, 7-inch.....	55	55	766	.....	do.....	35	.....	Irrigation.....	.....	50
208	Talkington Bros.....	do.....	C-9.....	1878	do.....	54	54	280	.....	do.....	33	700.00	Domestic.....	.....	.....
209	Mrs. Carson.....	do.....	C-9.....	1899	Bored, 8-inch.....	51	51	750	.....	do.....	33	1,700.00	Irrigation.....	.....	125
210	James Taylor.....	do.....	C-9.....	1883	Bored, 7-inch.....	55	45	426	.....	Gas.....	.....	600.00	do.....	.....	.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well	Elevation of sur- face.		Elevation of water.		Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						Feet.	Feet.	Feet.	Feet.							<i>Miner's tiches.</i>
211	J. L. Shepard	San Pedro	C-9	1901	Bored, 7-inch	55	50	100	36	Wind			\$45.00		Domestic	
212	J. M. Spencer	do	C-9	1900	Bored, 9½-inch	52	52	570	32	Artesian			1,500.00		Irrigation	
213	J. J. Harshman	do	B-8	1900	Bored, 12-inch	65	65	480		do			850.00		Irrigation	Small.
214	John Hight	do	C-9	1902	Bored, 10-inch	54	50	135		Gas			170.00		do	80
215	J. M. Shepard	do	C-9	1900	do	60	55	140		do			\$1,000.00		do	115
216	Chas. A. Heath	do	C-9	1895	Bored, 2-inch	55	53	94		Hand			50.00		Stock	
217	H. A. Wittich	do	C-9	1883?	Bored, 7-inch	50	50	545	30	Artesian			2,000.00	120.00	Domestic	
218	J. M. Hart	do	B-9	1902	Bored, 12-inch	57	57	655	34	do			2,000.00		Irrigation	54
219	J. J. Harshman	do	B-8	1897	Bored, 2-inch	65	65	350	34	do					Domestic, irriga- tion.	
220	John Gries	do	B-8	1897	do	70	70	252	34	do			152.00		Stock	
221	W. J. Higgins	do	A-8	1898	Bored, 7-inch	78	68	114	33	Wind					Domestic, irriga- tion.	
222	A. M. Peck	do	C-8	1878?	do	62	57	130	42	do			200.00		Domestic, stock.	
223	H. B. Rice	do	C-8	1873	do	62	57	130	38	do			200.00	100.00	Domestic	
224	John Hight	do	D-8	1898	Bored, 3-inch	61	56	70	41	Hand			35.00		do	
225	W. P. Anderson	do	C-8	1883?	Bored, 7-inch	64	64	380	38	Artesian			2,000.00		Domestic, stock.	
226	F. K. Day	do	D-8	1901	Bored, 2-inch	64	64	105	36	Hand			45.00		Domestic	
227	D. R. Meyers	do	D-8	1888?	Bored, 4-inch	66	60	130	35	Wind					do	
228	R. B. Harris	do	D-8	1873?	Bored, 7-inch	63	58	100	35	do			100.00		do	
229	do	Los Cerritos	E-9	1891	Bored, 3-inch	63	58	100	35	Hand			50.00		do	
230	E. R. Collingridge	San Pedro	D-8	1885	Bored, 7-inch	67	66	132		Not raised			250.00		Not used	
231	do	do	D-8	1894	do	66	66	566	32	Artesian			1,500.00		Irrigation	42
232	A. Anderson	do	D-8	1898	Bored, 2-inch	65	65		35	Wind					Stock	

233	W. H. Craig	do.	D-8	Bored, 7-inch	67	62	125	36	Hand	Domestic.	.....
234	F. Voigt	do.	D-9	Bored, 2-inch	57	52	170?	37	do.	do.	.....
235	Chester Robertson	do.	D-9	do.	55	55	200	34	Wind	do.	.....
236	Mr. Keley	do.	D-9	do.	57	52	.....	39	Hand	do.	.....
237	Mrs. S. Buckham	do.	D-9	Bored, 4-inch	55	50	100?	37	do.	do.	.....
238	J. H. Orr	do.	D-9	Hydraulic, 2-inch	55	55	550	31	Artesian	do.	.....
239	do.	do.	D-9	Hydraulic, 4-inch	55	55	400	31	Hand	do.	.....
240	do.	do.	D-9	Bored, 7-inch	51	51	360	32	Artesian	Irrigation	.....
241	do.	do.	D-9	Hydraulic, 3-inch	51	51	360	28	do.	do.	.....
242	J. M. Shepard	do.	C-9	Driven, 2-inch	56	51	110	51	Wind	Domestic	.....
243	Nelson Ward	do.	C-9	Bored, 7-inch	53	47	175	35	do.	Domestic; stock	.....
244	James Taylor	do.	C-9	Bored, 5-inch	54	46	130	38	do.	Domestic	.....
245	Chas. A. Heath	do.	C-9	Hydraulic, 2-inch	54	53	104	38	Hand	do.	.....
246	J. J. Harshman	do.	B-8	Bored, 3-inch	65	61	90	40	Not raised	Not used	.....
247	John Gries	do.	B-8	.....	74	66	100	67	Wind	Domestic	.....
248	Mrs. E. Loughrey	do.	A-8	Dug, 4 by 4 foot	88	64	26	77	Hand	Stock	.....
249	Geo. Clark	do.	A-8	Bored, 9½-inch	88	68	369	29	Wind	Domestic; irrigation	.....
250	Sisters of Charity	do.	A-8	Bored, 7-inch	88	64	134	39	Hand	Not used	.....
251	Wm. Duff	do.	A-8	Dug, 3 by 3 foot	92	65	30	53	Wind	Domestic	.....
252	do.	do.	A-8	Bored, 12-inch	90	67	340+	.....	Artesian	.....	.....
253	Compton Rural Cemetery	do.	A-9	Driven, 4-inch	75	65	70	36	Wind	Irrigation	.....
254	J. K. Morrison	do.	A-9	Dug, 3-foot diameter	95	66	35	44	do.	Domestic	.....
255	I. W. Hellman	do.	A-9	Bored, 7-inch	99	65	174	31	do.	Stock	.....
256	J. Francis	do.	A-11	Dug, 3 by 3 foot	75	23	55	105	do.	do.	.....
257	G. Delano	do.	A-11	Bored, 7-inch	50	32	200+	36	do.	Domestic; stock	.....
258	Mrs. Carson	do.	B-10	Bored, 6-inch	75	250	40	.....	Wind, gas	Domestic; irrigation	.....
259	do.	do.	B-10	Dug, 3-foot diameter	75	55	30	62	Wind	Irrigation	.....
260	W. A. Hall	do.	B-8	Bored, 7-inch	62	165	.....	35	Hand	Domestic	.....
261	David Gates	do.	B-8	.....	66	66	110	33	Artesian	do.	Small.
262	do.	do.	B-8	do.	68	68	450	.....	do.	Not used	.....
263	do.	do.	B-9	do.	68	68	150	33	do.	Stock	.....
264	Los Angeles Bank	do.	B-8	do.	65	65	120	34	Gas	Irrigation	.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Mine's inches.</i>
265	Los Angeles Bank	San Pedro	B-8, 9	1878?	Bored, 7-inch	65	65	300	35	Artesian			Irrigation	
266	Mrs. M. Wilson	do.	B-9	1873?	Dug, 8-foot diameter.	75	65	13	42	Wind		\$75.00	Domestic; stock	
267	J. M. Hart	do.	B-8		Driven, 3-inch	57	57	518	29	Artesian			Domestic; irrigation.	Small.
268	do.	do.	B-9		Bored, 3-inch	57	57	316	31	do.			Stock	
269	Pac. Electric R. R. Co.	do.	B-10		Dug, 6 by 8 foot.	52	50	15?		Electric motor.			Domestic	
271	Mrs. Geo. Carson	do.	C-10	1898	Driven, 2-inch	51	51	350	33	Artesian			do.	Small.
272	J. Francis	do.	C-10	1894	Bored, 2-inch	50		85	37	Wind	\$35.00	100.00	Domestic; stock	
273	do.	do.	C-10	1903	Bored, 10-inch	50		125		Not installed			Irrigation	
274	Miss Dominguez	do.	B-10		Driven, 2-inch	50		90	37	Hand	35.00		Domestic	
275	J. M. Spencer	do.	C-9	1876?	Bored, 7-inch	52	52	250	32	Artesian, and wind.	1,400.00	50.00	Domestic; stock	Small.
277	T. W. Edwards	do.	C-8	1896	Driven, 2-inch	69	69	700	31	Artesian			Irrigation	
278	do.	do.	C-8	1897	do.	69	69	700	31	do.			Irrigation; stock	
279	J. S. Martin	do.	C-8	1902	Bored, 7-inch	69	66	132	39	Gas	100.00	1,200.00	Irrigation	†100
280	do.	do.	C-8	1899	Bored, 2-inch	69	69	376	32	Artesian	122.50		Domestic; irrigation.	†9
281	H. W. Marden	Los Cerritos	E-8	1901	do.	65	65	100	33	do.			Not used	
282	J. G. Bilen	do.	D-8		do.	61	61	320?	33	do.			Stock	†4
283	L. A. Clark	do.	D-8	1901	Bored, 2½-inch	61	61	128		do.	64.00		Irrigation	Small.
284	do.	do.	D-9	1898	Bored, 2-inch	61	61	310	32	do.	160.00		do.	3
285	H. P. Epperson	do.	E-8	1902	do.	60	60	159	29	do.	64.00		Stock	
286	James Kerr	do.	D-9	1902	do.	57	57	400	34	do.	180.00		Domestic	Small.
287	J. Clabour	do.	E-8, 9	1891	Driven, 2-inch	60	60	285	32	do.			Irrigation	



*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>					<i>Miner's inches.</i>
319	A. E. Matson.....	Los Cerritos.....	E-9.....	1890	Bored, 3-inch.....	61	61	400	Artesian.....	\$200.00		Irrigation.....	
320	do.....	do.....	E-9.....	1889	Bored, 2-inch.....	61	61	380	do.....	125.00		Domestic, stock.....	
321	Mr. Hamilton.....	do.....	E-9.....		do.....	60	60	90	do.....			Stock.....	4
322	do.....	do.....	E-9.....		Bored, 4-inch.....	60	60	103	do.....			Irrigation.....	Small.
323	do.....	do.....	E-9.....		Bored, 6-inch.....	60	60	200	do.....			Stock; irrigation.....	
324	Z. Lent.....	do.....	E-9.....	1897	Bored, 2-inch.....	55	55	350?	do.....			Irrigation; stock.....	
325	do.....	do.....	E-9.....	1897	do.....	55	55	100+	do.....	200.00		Irrigation.....	4
326	R. H. Parker.....	do.....	E-9.....	1899	do.....	57	57	567	do.....			Stock.....	
327	Lydia Withers.....	do.....	E-9.....	1899	Bored, 4-inch.....	61	56	30	Wind.....	45.45		Irrigation.....	
328	H. A. Davis.....	do.....	E-9.....	1895	Bored, 2-inch.....	63	63	151	Artesian.....	300.00		do.....	
329	H. P. Epperson.....	do.....	E-9.....	1897	do.....	63	63	1	do.....	250.00		do.....	1
330	John MacIlmoil.....	do.....	E-8.....	1898	do.....	66	66	610	do.....			Irrigation; do- mestic.....	1
331	do.....	do.....	E-8.....	1898	do.....	66	66	210	do.....	100.00	\$200.00		
332	M. C. Isom.....	do.....	E-8.....	1895	do.....	70	70	158	Wind, artesian.....	100.00	100.00	Domestic.....	
333	E. Mason.....	do.....	E-8.....	1890	Bored, 5-inch.....	69	69	140	Hand.....	150.00		Stock; domestic.....	
334	do.....	do.....	E-8.....	1890	Bored, 4-inch.....	69	69	165	do.....	130.00		Domestic, stock.....	
335	F. O. Sward.....	do.....	E-8.....	1899	Bored, 2-inch.....	70	70	180	Wind.....			Domestic.....	
336	do.....	do.....	E-8.....	1903	do.....	69	69	169	Artesian.....	75.00?		Irrigation.....	
337	M. J. Luccock.....	do.....	E-8.....	1890	Bored, 4-inch.....	73	73	280	Hand.....	200.00+		Domestic.....	
338	Chas. Roberts.....	do.....	E-8.....	1892	Bored, 2-inch.....	72	71	114	do.....	15.00	30.00	do.....	
339	do.....	do.....	E-8.....	1901	Bored, 3-inch.....	72	72	140	Wind, gas.....	93.00	200.00	Irrigation.....	
340	Clearwater Coopera- tive Creamery.	do.....	E-8.....	1902	Bored, 2-inch.....	76	76?	160	Gas, artesian.....	50.00		Domestic.....	

341	E. A. Rodgers.....	do.....	E-8.....	1893?	do.....	75	125	26	Artesian.....	50.00	Stock.....
342	S. N. Jennings.....	do.....	E-7.....	1889	Bored, 7-inch.....	74	130	26	Wind.....	.....	Domestic.....
343	do.....	do.....	E-7.....	1900	Bored, 10-inch.....	77	77	155	25	Hand, artesian.....	Irrigation; stock.....
344	do.....	do.....	E-8.....	1891	Bored, 7-inch.....	70	70	351	26	Artesian.....	Stock.....
345	J. V. Stewart.....	do.....	E-7.....	1897	Bored, 2-inch.....	77	77	150	25	do.....	Stock; domestic.....
346	do.....	do.....	E-7.....	1897	Bored, 3-inch.....	79	79	150	25	do.....	Stock; irrigation.....
347	C. Hardue.....	do.....	E-7.....	1898	Bored, 7-inch.....	75	75	163	Gas, artesian.....	.....	Irrigation.....
348	do.....	do.....	E-7.....	1895	Bored, 7-inch.....	77	77	150	25	Artesian.....	Not used.....
349	L. Stiner.....	do.....	E-7.....	1901	do.....	75	75	150	26	Hand, artesian.....	Domestic; irrigation.....
350	do.....	do.....	E-7.....	1899	Bored, 2-inch.....	75	75	150	25	Artesian.....	Stock.....
351	Henry Carson.....	do.....	E-7.....	1897?	Bored, 4-inch.....	75	75	140	26	do.....	Domestic.....
352	do.....	do.....	E-7.....	1897?	Bored, 6-inch.....	75	75	140	27	do.....	Not used.....
353	R. A. McCurdy.....	do.....	E-7.....	1897	Bored, 7-inch.....	80	80	150	27	do.....	Domestic; stock.....
354	Geo. Hinman.....	do.....	E-7.....	1891	Bored, 4-inch.....	80	80	156	26	do.....	Domestic.....
355	H. J. Kent.....	do.....	E-7.....	1898?	Bored, 7-inch.....	79	79	150	27	do.....	do.....
356	J. M. Williams.....	do.....	E-7.....	1902	Bored, 2-inch.....	81	81	128	26	do.....	do.....
357	Geo. A. Williams.....	do.....	E-6, 7.....	1899	do.....	81	81	117	26	do.....	do.....
358	P. Gunn.....	do.....	E-7.....	.....	do.....	81	81	130	26	do.....	do.....
359	Orr & Orr.....	San Antonio.....	D-8.....	1894	Bored, 7-inch.....	71	71	180	do.....	do.....	do.....
360	do.....	do.....	D-8.....	1894	Bored, 9½-inch.....	71	71	390	33	do.....	Irrigation.....
361	Carpenter estate.....	San Pedro.....	D-7.....	1897?	Bored, 10-inch.....	77	77	230	35	Gas, artesian.....	do.....
362	do.....	do.....	D-7.....	1897?	do.....	74	74	230	26	do.....	do.....
363	do.....	do.....	E-7.....	.....	Bored, 8-inch.....	76	77	161	.....	.....	Not used.....
364	do.....	do.....	D-8.....	.....	Bored, 10-inch.....	73	73	.....	32	Hand.....	Domestic; stock.....
365	Chas. F. Williams.....	do.....	D-8.....	1890	Bored, 7-inch.....	65	62	147	33	do.....	Domestic.....
366	J. H. Williams.....	do.....	D-8.....	1888	do.....	72	71	186	.....	Artesian.....	do.....
367	Compton City school district.....	do.....	D-8.....	1891	Hydraulic, 3-inch.....	72	150	33	Hand.....	400.00	do.....
368	John Morton.....	do.....	D-8.....	1902	Bored, 7-inch.....	74	73	133	.....	Gas.....	Irrigation.....
369	H. H. Taylor.....	do.....	C-8.....	1890	Bored, 2-inch.....	71	71	250	34	Artesian.....	Domestic.....
370	J. J. Morton.....	do.....	C-7.....	1876	Bored, 7-inch.....	75	70	360	.....	Gas.....	Irrigation.....
371	do.....	do.....	C-7.....	1896	Hydraulic, 2-inch.....	72	72	133	32	Artesian.....	Domestic.....
372	do.....	do.....	C-8.....	1883	Hydraulic, 3-inch.....	72	69	130	33	Gas.....	Irrigation; domestic.....
373	Mrs. A. Mayo.....	do.....	C-8.....	1875	Bored, 6-inch.....	72	68	150	33	do.....	Domestic.....

## Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>					<i>Miner's inches.</i>
374	Mrs. A. Mayo.....	San Pedro.....	C-7.....	1883	Bored, 7-inch.....	75	70	150	Gas.....	\$200.00	.....	Irrigation.....	475
375	J. A. Howle.....	do.....	C-7.....	.....	do.....	72	69	125	Wind.....	200.00	\$100.00	Stock; domestic.....	.....
376	G. W. Neece.....	do.....	C-8.....	1891	do.....	75	75	150	Gas.....	250.00	800.00	Irrigation.....	125
377	do.....	do.....	C-7.....	1890	do.....	72	68	150	Wind.....	250.00	150.00	Domestic.....	.....
378	Mr. Marlowe.....	do.....	D-7.....	1877	do.....	80	77	150	Hand.....	.....	.....	do.....	.....
379	Sherman estate.....	do.....	D-7.....	1892	Bored, 5-inch.....	80	76	150	do.....	.....	.....	do.....	.....
380	M. A. Rozelle.....	do.....	D-7.....	.....	Bored, 2-inch.....	81	.....	117	do.....	35.00	.....	do.....	.....
381	Chas. Tibbetts.....	San Antonio.....	D-7.....	1902	Bored, 10-inch.....	82	81	162	Gas.....	275.00	800.00	Irrigation.....	75
382	do.....	do.....	D-7.....	1883?	Bored, 5-inch.....	82	77	150?	Hand.....	.....	.....	Domestic.....	.....
383	Geo. W. Phelan.....	do.....	E-6, 7.....	1897?	Bored, 9-inch.....	82	82	680	Gas.....	.....	.....	Irrigation.....	} +150
384	do.....	do.....	E-7.....	1897?	Bored, 7-inch.....	82	81	300+	do.....	.....	.....	do.....	
385	do.....	do.....	E-7.....	1897	Bored, 2-inch.....	82	.....	160	Artesian.....	.....	.....	Not used.....	.....
386	do.....	do.....	E-7, 8.....	1897	Bored, 8-inch.....	82	81	300	Hand.....	300	.....	do.....	.....
387	do.....	do.....	E-7.....	.....	Bored, 7-inch.....	80	.....	250	Hand.....	.....	.....	Stock.....	.....
388	do.....	do.....	D-7.....	.....	Bored, 2-inch.....	80	.....	160	Artesian.....	.....	.....	Not used.....	.....
389	E. E. Beazley.....	do.....	D-7.....	.....	do.....	80	80	160	do.....	.....	.....	.....	.....
390	F. C. Carroll.....	do.....	D-7.....	1883	Bored, 7-inch.....	84	81	180	Gas.....	.....	600.00	Irrigation.....	75
391	V. H. Stillwell.....	do.....	D-6.....	1902	Bored, 10-inch.....	88	88	176	do.....	260.00	800.00	do.....	100
392	T. H. Abbott.....	do.....	D-6.....	1900	do.....	90	88	169	do.....	300.00	825.00	do.....	.....
393	B. T. Rozelle.....	do.....	D-6.....	1895	Bored, 12-inch.....	87	86	169	do.....	350.00	.....	do.....	200
394	C. H. Watts.....	do.....	E-6.....	1891	Bored, 4-inch.....	87	83	140	Wind.....	150.00	.....	Domestic.....	.....
395	do.....	do.....	D-6.....	1893	Bored, 7-inch.....	87	87	300	.....	.....	.....	Not used.....	.....
396	Dr. Davis.....	do.....	E-5.....	1891	Bored, 4-inch.....	96	88	150	Hand.....	40.00	.....	Domestic.....	.....

397	Alexander Gunn.	E-5.	1903	Bored, 12-inch.	100	100	625	23	Artesian.	1,600.00	Irrigation.	54
398	do.	E-5.	1889	Bored, 4-inch.	100	100	556		do.		Not used.	
399	do.	D-5.	1890	Bored, 6-inch.	85?	85	550?	31	do.		Stock.	
400	R. Gilhousen.	E-5.	1902	Bored, 10-inch.	98	91	154	27	Gas.	350.00	Irrigation.	85
401	do.	E-5.	1898	Bored, 2-inch.	98	91	128	27	Wind.		Domestic.	
402	D. Lane.	E-6.	1899	Bored, 12-inch.	90	90	757	25	Artesian.	2,000.00	Irrigation.	61
403	J. B. Norton.	D-5.	1880?	Bored, 7-inch.	100		200?	41	Wind.		Domestic.	
404	L. Snodgrass.	C-5.	1897	Bored, 12-inch.	103	103	800	34	Artesian.	4,000.00	Irrigation.	35
405	do.	D-5.	1895	Bored, 10-inch.	103	99	150	36	Gas.		do.	130
406	do.	D-5.	1890	Bored, 8-inch.	103	94	150	38	Wind.		Domestic.	
407	A. W. Miller.	D-5.	1902	Bored, 10-inch.	104	99	176	39	Gas.	350.00	Irrigation.	125
408	H. Lewis.	D-5.	1883	Bored, 7-inch.	104	99	140	37	Hand.		Domestic.	
409	G. W. Tweedy.	D-5.	1899	Bored, 4-inch.	105	100	155	33	Wind.	300.00	do.	
410	L. D. Tweedy.	D-4.	1900	Bored, 12-inch.	118	110	698		Gas.	*4,500.00	Irrigation.	200
411	do.	E-5.	1884?	Bored, 10-inch.	104	103	250?	38	Wind.		Domestic.	
412	do.	D-5.	1903	Bored, 5-inch.	109	101	145		Hand.	145.00	do.	
413	H. W. Wythe.	D-4.	1901	Bored, 10-inch.	105	99	174		Wind, gas.	300.00	Domestic; irrigation.	50
414	Mrs. Wilbur Woods.	D-4.	1897	Bored, 4-inch.	104	99	83		Hand.		Not used.	
415	C. O. Humphreys.	D-4.		Bored, 2-inch.	111		85?	39	Wind.		Domestic; irrigation.	
416	Mr. White.	D-4.	1901	Bored, 12-inch.	112	107	530	31	Hand.	1,600.00	Domestic.	
417	do.	D-4.		Bored, 2-inch.	112		85?		do.		Not used.	
418	Samuel Martin.	C-5.		Bored, 7-inch.	105	105	160	39	Artesian, gas.		do.	
419	do.	C-5.		do.	105	105	160		Artesian.		do.	
420	K. Swantek.	C-5.	1890?	Bored, 4-inch.	105	105	150?		do.		Domestic.	
421	Samuel Martin.	C-5.	1880	Bored, 7-inch.	100	100	160	38	Wind.	300.00	do.	
422	do.	C-5.	1880	do.	98	98	160	41	Artesian.	300.00	Irrigation.	60
423	do.	C-5.	1895?	do.	98	98	160	40	do.		do.	
424	William Lynch.	C-6.	1876	Bored, 6-inch.	97	97	172	37	do.	275.00	Domestic.	6
425	Mr. Kincaid.	C-6.	1896	Bored, 4-inch.	93	90?	180	37	Hand.		do.	
426	Fred Niel.	D-6.	1895?	Bored, 7-inch.	91	180			Gas.	200.00	Irrigation.	
427	Mr. Carres.	D-6.		do.	90	84	180	38	Hand.		Stock.	
428	Frank Beck.	D-6.	1895?	Bored, 2-inch.	93		170		do.		Domestic.	
429	H. W. Lewis.	C-6.	1895	Bored, 7-inch.	91	91	130	37	Hand, artesian.	150.00	Irrigation; domestic.	25

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
430	Chas. Bates.....	San Antonio.	C-6.....	1902	Bored, 2-inch.....	91	91	130	37	Hand.....	\$55.00		Domestic.....	
431	Lugo school district.....	do.	C-6.....	1898	do.....	92	92	130	37	Artesian.....	55.00		do.....	
432	B. Eberly.....	do.	C-6.....	1902	do.....	92	92	130	36	Hand.....	60.00		do.....	
433	E. W. Lewis.....	do.	C-6.....	1875	Bored, 7-inch.....	91	91	130	38	Artesian.....	130.00		Domestic; irrigation.	12
434	do.....	do.	C-6.....	1885	do.....	90	93	130		do.....	130.00		Irrigation.....	19
435	Joseph Hohn.....	do.	C-6.....	1894?	do.....	90	90	130	41	do.....			Domestic.....	Small.
436	G. F. Daetweiler.....	do.	C-6.....	1894	do.....	90	90	133	41	do.....			Domestic; irrigation.	Small.
437	do.....	do.	C-6.....		do.....	90	90	130		do.....			Irrigation.....	Small.
438	John Eichholzer.....	do.	B-6.....	1897?	Bored, 4-inch.....	91	91	133	44	do.....			Stock.....	
439	G. F. Daetweiler.....	do.	B-6.....	1898?	do.....	91	91	133	46	do.....			do.....	
440	C. H. Sessions.....	do.	B-5.....		Bored, 7-inch.....	98	98	160		do.....			Irrigation.....	Small.
441	do.....	do.	B-5.....	1898?	Bored, 10-inch.....	99	99	160	51	do.....			do.....	2
442	do.....	do.	B-5.....	1898?	do.....	99	99	160	51	do.....			do.....	2
443	do.....	do.	C-5.....		Bored, 12-inch.....	95	95	380		do.....			Domestic.....	
444	do.....	do.	B-6.....	1900?	do.....	88	88	380	36	do.....			Irrigation.....	
445	do.....	do.	B-6.....	1900?	do.....	88	88	380	35	do.....			do.....	40
446	do.....	do.	B-6.....		Bored, 6-inch.....	85	85	140		do.....			Not used.....	
447	John Sinn.....	do.	B-6.....	1901	Bored, 7-inch.....	88	88	325	32	do.....	590.00		Domestic; irrigation.	7
448	Frank Wall.....	do.	C-6.....	1901	Bored, 2-inch.....	88	88	130	39	do.....	50.00		Domestic.....	4
449	James Nichols.....	do.	C-6.....	1883?	Bored, 6-inch.....	92	92	350	36	Artesian, wind.....	\$125.00		do.....	
450	E. Fickewirth.....	do.	C-6.....	1883	Bored, 2-inch.....	91	91	130	38	Artesian, hand.....			do.....	

451	W. B. Finch.	do.	C-6	do.	90	37	Hand.	1,200.00	do.	do.	do.
452	Chas. Tibbetts.	do.	C-6	Bored, 4-inch.	87	87	do.	do.	do.	do.	do.
453	H. Catey.	do.	C-6	Bored, 12-inch.	88	382	Artesian.	1,200.00	Irrigation.	do.	do.
454	do.	do.	C-6	Bored, 7-inch.	88	140	do.	do.	Not used.	do.	do.
455	Chas. Tibbetts.	do.	C-6	do.	87	140	do.	do.	do.	do.	do.
456	H. Musselman.	do.	C-7	do.	85	145	Wind.	200.00	175.00	Domestic.	do.
457	O. J. Williams.	do.	C-7	Bored, 9-inch.	85	140	Hand.	do.	do.	do.	do.
458	J. L. Winger.	do.	C-6	Bored, 7-inch.	87	84	do.	do.	do.	do.	do.
459	Fred Daetweiler.	do.	C-7	Bored, 2-inch.	84	380	Artesian.	150.00	do.	do.	do.
460	F. M. Kineaid.	do.	D-7	do.	83	140	Hand.	75.00	do.	do.	do.
461	J. O. Waite.	do.	D-7	Bored, 7-inch.	83	450	Artesian.	do.	do.	do.	do.
462	John T. Daetweiler.	do.	C-6	do.	87	135	do.	240.00	Irrigation.	do.	do.
463	do.	do.	C-6	do.	87	135	do.	300.00	do.	do.	do.
464	G. Yeoman.	do.	C-7	do.	87	200	Wind.	do.	125.00	Stock; domestic.	do.
465	do.	do.	C-7	Bored, 10-inch.	87	325	Artesian.	600.00	Irrigation.	do.	do.
466	Eureka Cooperative Creamery.	do.	C-7	Bored, 4-inch.	85	130	do.	do.	Domestic.	do.	do.
467	M. P. McDonald.	do.	C-7	Bored, 7-inch.	84	130	Artesian.	do.	do.	do.	do.
468	do.	do.	C-7	do.	84	335	do.	540.00	Irrigation.	do.	do.
469	H. M. Williams.	San Pedro.	C-7	Bored, 3-inch.	82	140	do.	do.	Domestic.	do.	do.
470	S. Stockwell.	San Antonio.	C-7	Bored, 7-inch.	80	145	do.	do.	Not used.	do.	do.
471	Mrs. Hastings.	San Pedro.	C-7	do.	78	330	do.	750.00	Irrigation.	do.	do.
472	do.	do.	C-7	do.	71	135	do.	500.00	Domestic.	do.	do.
473	do.	do.	C-7	do.	71	135	do.	500.00	Not used.	do.	do.
474	M. Eifman.	do.	C-7	Bored, 2-inch.	77	250	do.	150.00	Domestic; stock.	do.	do.
475	N. L. McIntosh.	do.	C-7	Bored, 7-inch.	77	315	do.	500.00	Not used.	do.	do.
476	Mrs. A. A. Williams.	do.	C-7	Bored, 2-inch.	78	350	do.	555.00?	Domestic.	do.	do.
477	R. B. Easley.	do.	C-7	Bored, 10-inch.	79	150	Wind.	250.00	do.	do.	do.
478	J. H. Easley.	do.	C-7	Bored, 3-inch.	81	320	Artesian.	do.	Not used.	do.	do.
479	A. W. Miller.	do.	C-7	Bored, 8-inch.	77	150	do.	do.	Irrigation.	do.	do.
480	J. L. Johnson.	do.	C-8	Bored, 9½-inch.	71	400	Artesian.	800.00	do.	do.	do.
481	do.	do.	C-7	Bored, 2-inch.	78	80	Hand.	40.00	Domestic.	do.	do.
482	A. R. McIntosh.	do.	C-7	Bored, 7-inch.	75	150	Gas.	185.00	Irrigation.	do.	do.
483	F. Vennass.	do.	C-7	do.	74	150	do.	150.00	do.	do.	do.
484	do.	do.	C-7	do.	75	150	Artesian.	150.00	do.	do.	do.
485	do.	do.	B-7	do.	75	150	do.	do.	do.	do.	do.

Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
486	F. Walton.....	San Pedro.....	C-7.....	1899	Bored, 7-inch.....	74	74	150	39	Artesian.....	\$150.00		Irrigation.....	19
487	F. E. Stockwell.....	San Antonio.....	C-7.....	1883	do.....	83	83	148	41	do.....	250.00		do.....	160
488	do.....	do.....	C-6.....	1891	do.....	83	83	158	40	do.....	180.00		do.....	160
489	do.....	do.....	C-7.....	1881	do.....	82	82	147	40	do.....	250.00		do.....	
490	H. C. Carson.....	San Pedro.....	C-7.....	1888	Bored, 6-inch.....	77	77	163	39	Hand, artesian.....	200.00		Irrigation; stock.....	
491	L. Abbott.....	do.....	C-7.....	1885?	Bored, 7-inch.....	80	80	150?	42	Artesian.....	200.00		do.....	
492	E. Miller.....	do.....	C-7.....	1875?	do.....	75	75	136	43	do.....	136.00		Domestic.....	Small.
493	Wm. McDivitt.....	do.....	B-7.....	1890	do.....	80	80	145		do.....	150.00		Irrigation.....	25
494	do.....	do.....	B-7.....	1901	Bored, 10-inch.....	80	80	150	41	do.....	500.00		do.....	125
495	do.....	do.....	B-7.....	1901	do.....	78	78	150	41	do.....	500.00		do.....	25
496	do.....	do.....	B-7.....	1888	Bored, 2-inch.....	78	78	150	39	Artesian, hand.....	60.00		Stock; domestic.....	Small.
497	J. R. Hann.....	do.....	B-7.....	1902	do.....	77	77	223	39	Artesian.....	104.50		Domestic; irrigation.....	2
498	J. S. Palmer.....	do.....	B-7.....	1883?	Bored, 7-inch.....	76	76	260	33	do.....			Domestic.....	
499	G. Palmer.....	do.....	B-8.....	1893	Bored, 2-inch.....	67	67	228		do.....	100.00		Domestic; stock.....	Small.
500	J. A. McMillan.....	do.....	B-7.....	1901	do.....	75	75	220	34	do.....	100.00		Domestic; irrigation.....	
501	R. H. Dinsmore.....	do.....	C-8.....	1881	Bored, 7-inch.....	71	71	130	42	Hand.....			Domestic.....	
502	C. E. Wood.....	do.....	C-8.....	1899	Bored, 2-inch.....	73	73	310	34	Artesian.....	135.00		Domestic; irrigation.....	6
503	A. Sloane.....	do.....	C-7.....	1900	Bored, 9½-inch.....	73	73	339	33	do.....	600.00		Irrigation.....	150
504	do.....	do.....	C-8.....	1898	Bored, 3-inch.....	70	70	275	33	do.....	135.00		Domestic.....	12
505	L. A. Leavitt & Co.....	do.....	C-8.....	1894	Bored, 7-inch.....	68	68	280	35	do.....	300.00		Irrigation.....	
506	H. J. Mayo.....	do.....	B-8.....	1900	do.....	67	67	280	33	do.....	700.00		do.....	20
507	do.....	do.....	B-8.....	1900	Bored, 2-inch.....	68	68	280	33	do.....	300.00		Domestic.....	Small.

508	W. G. Legg	do.	B-8	1899	Bored, 4-inch.	70	280	34	do.	200.00	do.	do.
509	Mrs. J. Spencer	do.	B-8	1896	Bored, 2-inch.	70	160	37	do.	100.00	do.	do.
510	C. J. Clark	do.	B-8		do.	69	200	35	do.		Domestic; stock.	Small.
511	do.	do.	B-8		Bored, 3-inch.	70	200	35	do.		Irrigation.	†10
512	do.	do.	B-8		Bored, 7-inch.	70	71	34	do.		Not used.	
513	J. F. Norton	do.	B-8	1895	Bored, 3-inch.	69	230	35	do.		Domestic.	Small.
514	L. Gully	do.	B-8		Bored, 2-inch.	60	60	34	do.		do.	Small.
515	Chas. Wright	do.	B-8	1897	Bored, 6-inch.	67	67	35	do.		Irrigation; domestic.	†30
516	L. Gully	do.	B-8		Bored, 4-inch.	63	63	35	do.		Irrigation.	
517	Southern Pacific Co.	do.	B-8	1897	Bored, 7-inch.	66	400	33	do.		Domestic.	Small.
518	do.	do.	B-8	1888?	Bored, 2-inch.	67	67	180	33		do.	3
519	R. H. Wilson	do.	B-8	1893	Bored, 7-inch.	66	225	33	Artesian, wind.	500.00	do.	†1
522	J. Malcom	do.	B-8	1897	do.	70	310	35	Artesian.	375.00	Irrigation.	106
523	Michael Rufner	do.	B-8	1895	Bored, 2-inch.	67	133	33	do.	100.00	Domestic.	Small.
524	do.	do.	B-8	1898?	Bored, 6-inch.	67	67	216	33	do.	do.	35
525	do.	do.	B-8	1892?	do.	66	230	35	do.	900.00	Domestic; stock.	18
529	S. M. Bise	do.	B-8	1899	Hydraulic, 2-inch.	68	223	33	do.	110.00	Stock	
531	Sarah I. Wigginton	do.	B-8	1885?	Bored, 7-inch.	67	250	32	Gas	500.00	Domestic.	1
532	J. D. McNiel	do.	B-8	1898	Bored, 2-inch.	70	258	34	Artesian.	230.00	Domestic; irrigation	
533	Wm. Shamrak	do.	B-8	1891	Bored, 3-inch.	70	205	35	Artesian, wind.	205.00	Domestic.	Small.
534	B. Walton	do.	B-8		Bored, 2-inch.	70	70	35	Wind	125.00	do.	
535	Methodist Episcopal parsonage.	do.	B-8	1878?	Bored, 7-inch.	70	100	34	Artesian.		do.	
536	E. D. Morden	do.	B-8	1897	Hydraulic, 2-inch.	68	210	35	do.	87.50	do.	Small.
538	Compton City school district.	do.	B-8	1893	Bored, 2-inch.	70	200?	34	do.	100.00	do.	
539	Robert Shear	do.	B-8	1895	do.		255	33	do.	125.00	do.	
540	G. W. Rodgers	do.	B-8	1894	do.		225?	35	do.	100.00	do.	
541	J. D. Gill	do.	B-8	1900	do.	67	67	200?	35	do.	do.	
542	E. M. Yankee	do.	B-8		do.	69	210?	33	do.	105.00	Domestic; irrigation.	
543	John Boyer	do.	B-8	1903	do.	70	381	34	do.	202.50	Stock; domestic.	
544	H. M. Dillon	do.	B-8	1895	do.	69	200	33	do.	110.00	Domestic.	
545	Thos. J. Peachey	do.	B-8	1897	do.	69	160	33	do.		do.	Small.
546	G. D. Barron	do.	B-8		Bored, 7-inch.	71	71	32	Hand		do.	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
547	Robert Shear.....	San Pedro.....	A-7.....	1887	Bored, 7-inch.....	76	76	255	...	Artesian.....	...	...	Irrigation.....	...
548	do.....	do.....	A-7.....	1895	do.....	75	75	255	33	do.....	\$250.00	...	do.....	† 60
549	B. F. Laaswell.....	do.....	A-8.....	1895	Bored, 2-inch.....	75	75	175	34	Artesian, hand.....	75.00	...	Domestic.....	Small.
550	John Stevens.....	do.....	A-8.....	1885	Bored, 7-inch.....	79	74	440	31	Wind.....	1,000.00	...	do.....	...
551	O. S. Long.....	do.....	A-8.....	...	do.....	80	77	175	35	Hand.....	...	...	do.....	...
552	A. C. Bird.....	do.....	A-8.....	...	do.....	77	75	175	41	Wind.....	...	...	do.....	...
553	Mrs. Minnie Stuart.....	do.....	A-8.....	1885	do.....	81	76	160	33	do.....	...	...	do.....	...
554	A. C. Bird.....	do.....	A-7.....	1898?	Bored, 2-inch.....	76	76	175	35	Artesian, hand.....	...	...	do.....	...
555	Chas. E. Marble.....	do.....	A-8.....	1870?	Bored, 7-inch.....	84	78	160?	34	Wind.....	...	...	do.....	...
556	C. A. Conklin.....	do.....	A-8.....	1873?	Bored, 6-inch.....	87	70	160	36	do.....	...	...	do.....	...
557	H. C. Kelsea.....	do.....	A-7.....	1878	Bored, 7-inch.....	93	69	200	33	Gas.....	200.00	\$1,000.00	Irrigation.....	49
558	Sam Flick.....	do.....	A-7.....	1887	do.....	93	68	200	34	Wind.....	200.00	...	Domestic.....	...
559	P. Commeree.....	San Antonio.....	A-7.....	1899	Bored, 10-inch.....	92	72	240	33	Gas.....	*1,000.00	...	Irrigation.....	† 40
560	O. Dehetre.....	San Pedro.....	A-7.....	1883	Bored, 7-inch.....	84	74	200	35	Wind.....	...	125.00	Domestic.....	...
561	do.....	do.....	A-7.....	1888	do.....	84	71	200	...	...	...	...	Not used.....	...
562	T. H. Cressey.....	San Antonio.....	A-7.....	1886	do.....	84	...	150	38	Wind.....	250.00	...	Domestic; Irrigation.....	...
563	Benj. Lee.....	San Pedro.....	A-7.....	1899	Hydraulic, 10-inch.....	85	85	260	35	Artesian.....	425.00	...	Irrigation.....	Small.
564	do.....	do.....	A-7.....	1890?	Bored, 6-inch.....	82	79	100	40	Wind.....	...	...	Domestic.....	...
565	M. C. Matthesen.....	do.....	A-7.....	1895	Bored, 2-inch.....	80	80	167	32	Artesian.....	67.00	...	Domestic; stock.....	Small.
566	S. W. Imbler.....	do.....	A-7.....	1895	do.....	79	79	180	33	do.....	90.00	...	Domestic.....	...
567	S. J. Hull.....	do.....	A-7.....	1878	Bored, 7-inch.....	79	79	160	34	do.....	...	...	do.....	...
568	D. M. Crum.....	do.....	B-7.....	1885	do.....	78	78	209	34	do.....	...	...	do.....	† 7
569	Mrs. Mary Harrison.....	do.....	B-7.....	1898	Bored 12-inch.....	78	78	254	33	do.....	500.00	...	Irrigation.....	22

570	Isaac Walton.....	do.	B-7.	1890?	Bored, 7-inch.....	77	77	225?	33	do.	.....	do.	Irrigation; do-	2
571	Mrs. M. Salsstrom.....	do.	B-7.	.....	Bored 2-inch.....	72	72	.....	35	do.	.....	do.	mestic.	Small.
572	J. Dimler.....	do.	B-7.	1902	do.	69	69	253	35	do.	100.00	do.	Domestic.	Small.
573	C. Mealey.....	do.	B-7.	1888	Bored, 4-inch.....	75	75	.....	100 37	Hard.	100.00	do.	do.	.....
574	J. Kelso.....	do.	B-7.	1902	Bored, 2-inch.....	67	67	237	35	Artesian.	115.00	do.	do.	.....
575	John Flood.....	do.	B-7.	.....	Bored, 4-inch.....	68	68	250	37	Hard.	.....	do.	do.	.....
576	L. F. Stockwell.....	San Antonio.	B-6.	1878	Bored, 7-inch.....	78	78	525	33	Artesian.	.....	Irrigation.	.....	† 3
577	do.	do.	A-6.	1896	do.	79	79	500	.....	do.	1,200.00	do.	do.	† 5
578	Dr. A. M. McCulloh.....	do.	B-7.	1902	Bored, 10-inch.....	79	79	269	33	do.	500.00	do.	do.	† 55
579	do.	do.	B-7.	1890?	Driven, 2-inch.....	73	73	75	.....	do.	35.00	do.	Not used.	.....
580	Mrs. Banning.....	do.	B-6.	.....	Bored, 7-inch.....	81	81	.....	38	do.	.....	Domestic; irriga-	tion.	.....
581	C. H. Sessions.....	do.	B-6.	.....	do.	81	81	150?	.....	do.	.....	Stock.	.....	.....
582	E. Northcote.....	do.	B-6.	1892?	Bored, 2-inch.....	86	86	.....	41	do.	.....	Domestic.	.....	.....
583	Mr. Brown.....	do.	B-6.	.....	Bored, 4-inch.....	89	89	.....	41	do.	.....	do.	.....	.....
584	E. E. Galbreth.....	do.	B-5.	.....	Bored, 7-inch.....	93	93	64	47	do.	.....	do.	do.	Small.
585	Omri Bullis.....	do.	B-6.	1902	Bored, 2-inch.....	91	91	40	51	do.	42.00	do.	Domestic; irriga-	tion.
586	do.	do.	B-5.	1883	Bored, 7-inch.....	93	93	82	47	do.	80.00	do.	Stock.	Small.
587	E. E. Galbreth.....	do.	B-5.	.....	do.	94	94	72	45	do.	.....	Domestic.	.....	Small.
588	L. Snodgrass.....	do.	B-5.	1897	Bored, 8-inch.....	98	98	400?	42	Artesian, gas.	500.00	do.	Irrigation.	.....
589	F. Hoppe.....	do.	B-5.	1883	Bored, 6-inch.....	99	99	85	49	Artesian.	.....	Stock.	.....	Small.
590	do.	do.	B-5.	1883	Bored, 5-inch.....	105	105	85	47	do.	.....	do.	do.	2
591	A. Gunn.....	do.	B-5.	.....	Bored, 6-inch.....	97	97	96	51	do.	.....	Domestic.	.....	† 6
592	Sessions & Collins.....	do.	B-5.	.....	Bored, 7-inch.....	100	100	100?	.....	do.	.....	Stock.	.....	2
593	do.	do.	B-5.	.....	Bored, 5-inch.....	100	100	130?	49	do.	.....	do.	do.	Small.
594	Unknown.....	do.	B-5.	1880	Bored, 7-inch.....	103	103	135	40	do.	300.00	do.	do.	Small.
595	Mr. Gilky.....	do.	C-5.	1901	do.	100	100	150	35	do.	200.00	do.	Irrigation.	12
596	Robert Tweedy.....	do.	B-5.	1896	Bored, 4-inch.....	107	107	90	48	Wind.	75.00	do.	Domestic.	.....
597	James Tweedy.....	do.	B-4.	1902	do.	116	116	105	40	do.	81.00	do.	Stock.	.....
598	Mrs. M. Tweedy.....	do.	C-4.	1893	Bored, 6-inch.....	116	116	130	38	Artesian, wind.	150.00	do.	do.	Small.
599	Thos. Tweedy.....	do.	B-4.	1902	Bored, 4-inch.....	118	118	106	40	Hard.	81.00	do.	do.	.....
600	Robert Tweedy.....	do.	C-4.	1902	do.	114	114	105	38	Wind.	81.00	do.	Domestic; stock.	.....
601	J. E. Tweedy.....	do.	C-4.	1893	Bored, 7-inch.....	119	119	125	38	Artesian, hand.	100.00	do.	Stock; domestic.	.....
602	C. Snodgrass.....	do.	B-4.	1901	Bored, 10-inch.....	113	110	125	40	Gas.	200.00	do.	Irrigation.	† 60

## Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.		Elevation of water.		Depth of well.	Solids per 100,000.		Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						Feet.	Fath.	Feet.	Fath.								Miner's inches.
603	C. Snodgrass.....	San Antonio.....	B-4.....	1880.....	Bored, 6-inch.....	112	112	112	90	42			Artesian.....	\$100.00		Domestic.....	Small.
604	do.....	do.....	A-4.....	1883.....	Bored, 7-inch.....	111	111	111	96				do.....	100.00		Irrigation.....	
605	Phil. M. Crockett.....	do.....	B-4.....	1883.....	Bored, 4-inch.....	120	116	116	79	52			Wind.....		\$200.00	Domestic; irrigation.	
606	do.....	do.....	A-4.....	1893.....	Bored, 7-inch.....	113	112	112	200	38			Artesian.....			Irrigation.....	
607	Mrs. Antoni.....	do.....	B-4.....	1893.....	do.....	120	119	119	113	41			do.....			Domestic; irrigation.	
608	do.....	do.....	A-4.....	1895.....	Bored, 10-inch.....	116	115	115	104	40			do.....				
609	T. A. Tweedy.....	do.....	B-4.....	1888.....	Bored, 6-inch.....	123	118	118	140	45			Wind.....		200.00	Domestic.....	
610	C. F. Wood.....	do.....	A-7.....	1891.....	Bored, 7-inch.....	82	82	82	238	35			do.....			Irrigation; domestic.	
611	F. L. Walton.....	do.....	A-7.....	1900.....	Bored, 10-inch.....	85	83	83	240	37				500.00		Irrigation.....	
612	Mrs. Botyear.....	do.....	A-7.....	1890?.....	Bored, 6-inch.....	85	85	85	225	37			Artesian, hand.			Domestic; irrigation.	
613	W. C. Walton.....	do.....	A-6.....	1885.....	Bored, 2-inch.....	87	86	86	228	37			Wind.....	110.00	150.00	Domestic.....	
614	J. E. Lodge.....	do.....	A-6.....		Bored, 7-inch.....	88	87	87	225? 32							Not used.....	
615	D. H. Drinkerhoff.....	do.....	A-6.....	1900.....	do.....	91	90	90	243				Gas.....	300.00	750.00	Irrigation.....	100
616	Mrs. Mary Banning.....	do.....	A-6.....	1883.....	do.....	90	90	90	252 34				Wind.....	300.00		Domestic.....	
617	E. S. Gunby.....	do.....	A-6.....	1888.....	do.....	94	94	94	250				Gas.....	500.00	600.00	Irrigation.....	60
618	do.....	do.....	A-6.....	1890?.....	do.....	93	93	93	325? 35							Not used.....	
619	Mrs. Western.....	do.....	A-6.....	1878.....	do.....	92	92	100	45				Wind.....	100.00	150.00	Domestic; stock.	
620	do.....	do.....	A-6.....	1878.....	do.....	93	93	93	500	33				1,000.00			
621	do.....	do.....	A-6.....	1878.....	do.....	92	92	92	100				Artesian.....	100.00		Stock.....	Small.
622	Wm. Stahl.....	do.....	A-6.....		Bored, 6-inch.....	93	93	93	250	35						Domestic; irrigation.	

623	W. F. Ruoff	do.	A-6	1887	Bored, 7-inch.	94	100	48	Hand			Domestic.	
624	J. C. Reece	do.	A-5	1890?	do.	94	225	40	do.			Domestic; irriga- tion.	
625	M. MacFarland	do.	A-5, 6		Bored, 4-inch.	98	90	44	Wind	50.00	150.00	Domestic.	
626	Mrs. J. M. Avila	do.	A-5	1883	Bored, 7-inch.	96	85	45	Artesian			do.	
627	Jesus Leon	do.	A-5	1891	Bored, 6-inch.	97	85	45	do.	85.00		Domestic; irriga- tion.	Small.
628	C. W. Rice	do.	A-5	1892	Bored, 7-inch.	97	80	46	do.	80.00		Irrigation.	2
629	Mrs. F. Talamantos	do.	A-5		do.	100	80	41	Hand	75.00		Domestic.	
630	Strong & Nicklson	do.	A-5		do.	102	94	72	do.	70.00		Domestic.	
631	do.	do.	A-5	1897	Bored, 10-inch.	102	103	400	Artesian			Not used	
632	do.	do.	A-5	1890?	Bored, 4-inch.	100	101	75	49	do.	75.00	Stock.	Small.
633	do.	do.	A-5	1897	Bored 10-inch.	100	101	400	25	do.		do.	Small.
634	do.	do.	A-5	1897	Bored, 7-inch.	100	101	400	25	do.		do.	Small.
635	J. G. Belieu	do.	A-5	1882	do.	100	100	73	49	do.	100.00	Stock; irrigation.	8
636	do.	do.	A-5	1900	do.	98	98	75	50	do.	100.00	Irrigation.	17
637	do.	do.	A-5	1898	do.	99	99	75	49	do.	100.00	do.	12
638	Isaac Walton	do.	A-5	1899	Bored, 4-inch.	100	100	75	49	do.	50.00	Domestic.	Small.
639	G. W. Kennedy	do.	A-5	1888	Bored, 7-inch.	101	101	80	51	do.	100.00	do.	Small.
640	Mr. Wood	do.	A-5		Bored, 4-inch.	102	102	75	52	do.		do.	
641	Alfred Bellew	do.	A-5		Bored, 7-inch.	105	105	75	52	do.		do.	
642	Mr. Isaac Walton	do.	A-5		do.	105	105	75	52	do.	100.00	do.	Small.
643	do.	do.	A-5	1895?	do.	105	105	80	52	do.	100.00	Irrigation.	+10
644	do.	do.	A-5	1895?	do.	105	105	80	53	do.	100.00	do.	+10
645	do.	do.	A-5	1895?	do.	104	104	80	52	do.	100.00	do.	+10
646	Mr. Forthman	do.	A-5		Bored, 8-inch.	107	107	80	52	Artesian, wind.		Domestic.	Small.
647	do.	do.	A-5		Bored, 7-inch.	109	109	85	52	Artesian.		Irrigation.	
648	do.	do.	A-4, 5		Bored, 9½-inch.	109	109	85	51	do.		do.	
649	do.	do.	A-4, 5		do.	108	108	82	52	do.		do.	
650	do.	do.	A-4, 5		do.	107	107	80	48	do.		do.	
651	Philip Valenzude	do.	A-4	1887	do.	110	107	85	50	Hand	100.00	Domestic.	
652	Tajantachool district	do.	A-4	1888?	Bored, 7-inch.	113	113	85	49	Artesian	100.00	do.	Small.
653	F. M. Anderson	do.	A-4	1890	do.	113	113	84	51	Wind	100.00	do.	
654	do.	do.	A-4	1891	do.	113	110	450	33			Irrigation.	
655	do.	do.	A-4	1890	do.	116	114	84	45				

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
656	Thos. Duggan.	San Antonio.	A-4.	1890?	Bored, 4-inch.	<i>Feet.</i> 115	<i>Feet.</i> 115	84	50	Wind.			Domestic; irrigation.	<i>Miner's inches.</i>
657	C. D. Barkley.	do.	A-5.		do.	111	110	80	44	Wind.			Domestic.	
658	Pacific Electric R. R. Co.	do.	A-4.		Bored, 7-inch.	112	112	85	51	Wind, electricity.			do.	
659	Geo. J. Ley.	do.	A-4.	1902	Hydraulic, 2-inch.	113	112	90	51	Hand.	\$49.00		do.	
660	do.	do.	A-4.	1883	Bored, 5-inch.	115	113	74	51	do.			do.	
661	do.	do.	A-4.	1883	Bored, 6-inch.	115	113	74		do.			Stock; irrigation.	
662	Mrs. Lena Diller.	do.	A-5.	1897	Bored, 7-inch.	109	109	72	51	Gas.			Irrigation.	
663	Mr. Mackley.	do.	A-4, 5.	1895?	Bored, 5-inch.	112	111	85	51	Hand.			Domestic.	
664	F. E. Ramsaur.	do.	A-5.	1887	Bored, 7-inch.	106	106	72	48	Artesian.			Stock.	
665	do.	do.	A-5.	1900	Bored, 10-inch.	106	106	69	43	do.			do.	Small.
666	do.	do.	A-4.	1883?	Bored, 7-inch.	117	115	78	51	Hand.			Domestic.	
667	W. F. Ruoff.	do.	A-4.	1887	do.	118	116	84	47	Wind.	110.00	\$75.00	Irrigation; domestic.	
668	do.	do.	A-4.	1893	do.	117	117	72	51	Artesian.	85.00		Irrigation.	Small.
669	Chas. Lash.	do.	A-4.	1888	do.	116	114	150	51	Wind.		100.00	Not used.	
670	do.	do.	A-4.	1882	do.	115	114	86	50				do.	
671	David Elcoat.	do.	A-4.	1896	do.	122	117	90	49		100.00		Irrigation.	
672	Jacob Bosshard.	do.	A-4.	1888	do.	127	121	160			200.00		Not used.	
673	Mrs. E. Crane.	do.	A-4.	1889	Bored, 4-inch.	127	120	105		Hand.			Domestic.	
674	Mr. Stege.	do.	A-4.		Bored, 7-inch.	125	119	90	49	do.	100.00		do.	
675	J. F. Donohue.	do.	A-4.	1884	do.	124	118	100	49	Wind.			do.	
676	S. H. Minor.	do.	A-4.	1890	Bored, 3-inch.	125	120	95	46	do.	50.00	150.00	Irrigation; domestic.	

677	do.	do.	A-4	1890	Bored, 7-inch.	127	122	105	53	Hand	125.00	Stock.	Domestic; irriga-	70
678	H. F. Starks.	do.	A-4	1898	do.	122	117	123	49	Wind	130.00	225.00	Domestic; irriga-	70
679	do.	do.	A-4	1898	Bored, 10-inch.	123	118	118	49	do.	150.00	Not used.	Stock	70
680	do.	do.	A-4	1888	Bored, 7-inch.	121	117	100	49	do.	150.00	Not used.	Stock	70
681	do.	do.	A-4	1888	do.	118	115	100	49	do.	150.00	Not used.	Stock	70
682	Mr. Gilmore.	do.	A-4	1887	do.	125	120	105	52	Hand	140.00	Domestic.	Domestic.	70
683	H. D. Merrill.	do.	A-4	1883	do.	130	121	130	52	do.	100.00	do.	do.	70
684	do.	do.	A-4	1903	do.	129	120	70	45	Compressed air.	200.00	1,000.00	Irrigation; do-	70
685	A. E. Putney	do.	A-3, 4	1887	do.	132	122	135	46	Gas.	175.00	1,000.00	Irrigation; do-	70
686	J. W. Kent.	do.	A-4	do.	do.	131	121	120	53	do.	1,000.00	1,000.00	Irrigation; do-	70
687	Mrs. Emma Crane.	do.	A-4	1888	do.	130	121	120	75	do.	60.00	Not used.	Stock	70
688	Mr. Joseph Burkhardt.	do.	A-3	do.	Bored, 10-inch.	134	121	165	33	do.	Not used.	Stock	Stock	70
689	do.	do.	A-3	do.	Bored, 7-inch.	133	121	52	52	Wind	Not used.	Stock	Stock	70
690	do.	do.	A-3	do.	do.	131	122	85	28	do.	Not used.	Stock	Stock	70
691	do.	do.	A-3	do.	do.	129	121	73	73	do.	Not used.	Stock	Stock	70
692	do.	do.	A-3	do.	do.	131	121	120	25	do.	Not used.	Stock	Stock	70
693	F. X. Eberle.	do.	A-4	1885	do.	126	120	130	51	Hand	100.00	Domestic.	Domestic.	70
694	L. M. Russell	do.	A-3	1882	do.	137	127	109	53	do.	120.00	Domestic; irriga-	Domestic; irriga-	70
695	M. Ing'lis	do.	A-3	1902	Bored, 6-inch.	138	124	106	106	Wind	233.00	Domestic; irriga-	Domestic; irriga-	70
696	A. Inglis.	do.	A-3	1882	Bored, 7-inch.	139	124	109	54	do.	125.00	Domestic.	Domestic.	70
697	G. A. Nadeau.	do.	A-3	1873	do.	139	122	150	52	do.	200.00	Not used.	Stock	70
698	do.	do.	A-3	1875	do.	138	132	150	52	Wind	200.00	Stock	Stock	70
699	do.	do.	A-3	1875	do.	144	125	155	155	do.	200.00	Not used.	Stock	70
700	Mrs. G. Rutan.	do.	A-3	1902	do.	145	126	160	53	Wind	200.00	Domestic.	Domestic.	70
701	Southern Pacific Co.	do.	A-3	1885	Bored, 6-inch.	142	124	149	52	Gas	150.00	Engines	Engines	70
702	Mrs. E. A. Stout.	do.	A-3	do.	Bored, 7-inch.	141	124	127	49	Hand	105.00	Domestic.	Domestic.	70
703	Fred Shores	do.	A-3	1903	do.	138	124	85	39	do.	45.00	Irrigation; do-	Irrigation; do-	70
704	S. F. Estell.	do.	A-3	1891	Bored, 2-inch.	141	125	90	51	do.	200.00	Domestic.	Domestic.	70
705	Robert Thaxter.	do.	A-3	1897	Bored, 7-inch.	147	125	95	63	Wind	125.00	Domestic.	Domestic.	70
706	A. Aymore.	do.	A-2	1897	do.	154	128	103	61	do.	200.00	Not used.	Stock	70
707	E. F. Smith & Co.	do.	A-2	1898	Bored, 2-inch.	153	128	98	68	do.	5.00	Domestic.	Domestic.	70
708	G. A. Blakeslee.	do.	A-2	1885	Bored, 7-inch.	158	128	98	68	Hand	120.00	Domestic.	Domestic.	70

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
													<i>Miner's inches.</i>
709	Z. L. Parmlee.....	San Antonio....	A-2.....	.....	Bored, 7-inch....	161	133	75	Wind.....	.....	\$200.00	Domestic.	.....
710	I. H. Bryson.....	do.....	A-2.....	1897	do.....	167	130	92	do.....	\$125.00	200.00	do.	.....
711	Z. S. Spalding.....	do.....	A-2.....	1899	Bored, 10-inch....	162	131	100	do.....	125.00	200.00	do.	.....
712	Joe Dutcher.....	do.....	A-2.....	.....	Bored, 2-inch....	165	132?	75	do.....	40.00	200.00	do.	.....
713	Mr. C. Dutcher.....	do.....	A-2.....	1902	Bored, 7-inch....	167	132	100	do.....	120.00	200.00	do.	.....
714	do.....	do.....	A-2.....	1888	do.....	168	.....	60	do.....	60.00	200.00	Stock.	.....
715	Chas. Porter.....	do.....	A-2.....	1888	do.....	169	136	61	Hand.....	60.00	.....	Domestic.	.....
716	Ed Trapp.....	do.....	A-2.....	1901	do.....	170	.....	75	Wind.....	70.00	350.00	do.	.....
717	F. Ahrens.....	do.....	A-2.....	1902	Bored, 1½-inch....	173	133	60	do.....	20.00	180.00	do.	.....
718	do.....	do.....	A-1.....	1900	Bored, 2-inch....	175	.....	63	Hand.....	20.00	.....	do.	.....
719	Nadeau Town Site Improvement Co.	Los Angeles city	A-1.....	.....	Bored, 7-inch....	179	.....	100	Wind.....	.....	225.00	do.	.....
720	Los Angeles Land Co.	do.....	B-7.....	.....	do.....	185	136	100?	Hand.....	.....	.....	do.	.....
721	Mrs. Thompson.....	do.....	A-1.....	1890?	do.....	175	.....	70	Wind.....	.....	250.00	do.	.....
722	H. Cornelson.....	do.....	A-1.....	1900	Driven, 2-inch....	181	151?	70	Hand.....	40.00	.....	do.	.....
723	Andrew Daneri.....	do.....	A-1.....	1889	Bored, 7-inch....	188	143	75	Wind.....	75.00	200.00	do.	.....
724	J. Gibbs.....	do.....	A-1.....	1891	do.....	190	142	66	Hand.....	90.00	.....	do.	.....
725	R. S. Smith.....	do.....	A-1.....	.....	Bored, 6-inch....	188	140	63	Wind.....	75.00	225.00	do.	.....
726	I. Gibbs.....	do.....	A-1.....	1881	Bored, 7-inch....	191	142?	65	do.....	80.00	250.00	do.	.....
727	J. T. Gitchell.....	do.....	A-1.....	1892	do.....	194	140	63	do.....	85.00	145.00	do.	.....
728	P. W. Sams.....	do.....	A-1.....	1888	Bored, 6-inch....	196	137	65	Wind, horse-power.	80.00	200.00	do.	.....
729	J. W. Simpson.....	do.....	A-1.....	1902	Bored, 7-inch....	195	130	85	Wind.....	200.00	.....	Domestic; irrigation.	.....

730	H. A. Moore.....	do.....	A-1.....	1884.....	do.....	192.....	135.....	68.....	52.....	do.....	.....	Domestic.....
731	John W. Mills.....	do.....	A-1.....	1900.....	do.....	193.....	.....	70.....	50.....	Gas.....	25.00.....	Domestic; irriga- tion.....
732	Mrs. M. J. Brewster.....	do.....	A-1.....	1899.....	do.....	196.....	154.....	68.....	52.....	Hand.....	75.00.....	Domestic.....
733	Mrs. J. L. Adams.....	do.....	A-1.....	1901.....	do.....	196.....	.....	53.....	.....	Wind.....	150.00.....	do.....
734	S. S. Harper.....	do.....	A-1.....	1903.....	do.....	191.....	136.....	91.....	48.....	Gas.....	110.00.....	do.....
735	Pacific Electric R. R. Co.....	do.....	A-1.....	1893.....	do.....	194.....	136.....	90.....	52.....	Wind.....	110.00.....	do.....
736	Mr. Carasosa.....	do.....	A-1.....	.....	Bored, 3-inch.....	189.....	.....	51.....	.....	do.....	.....	do.....
737	Chas. M. More.....	do.....	A-1.....	1899.....	Bored, 9-inch.....	193.....	141.....	192.....	47.....	Compressed air.....	700.00.....	Not used.....
738	Moore Bros.....	do.....	B-1.....	1900.....	Bored, 12-inch.....	193.....	138.....	226.....	33.....	do.....	700.00.....	Irrigation..... 55
739	do.....	San Antonio.....	B-1.....	1901.....	do.....	193.....	138.....	226.....	33.....	do.....	700.00.....	do..... 55
740	Mr. Anderson.....	Los Angeles city.....	A-1.....	1898?	Bored, 7-inch.....	189.....	136.....	75.....	46.....	Wind.....	150.00.....	Domestic.....
741	Moore Bros.....	San Antonio.....	B-1.....	1902.....	do.....	186.....	135.....	74.....	41.....	Hand.....	75.00.....	do.....
742	Maria Alvaris.....	do.....	B-1.....	1891.....	do.....	192.....	137.....	62.....	43.....	do.....	80.00.....	do.....
743	E. O. McClure.....	Los Angeles city.....	A-1.....	1898.....	Bored, 10-inch.....	192.....	143.....	440.....	41.....	Wind.....	960.00.....	do.....
744	John Moore.....	do.....	A-1.....	1901.....	Bored, 7-inch.....	191.....	140.....	78.....	44.....	Gas.....	315.00.....	Stock; domestic..... 1
745	J. Furlong.....	do.....	A-1.....	1900.....	Bored, 6-inch.....	183.....	133.....	60.....	41.....	Hand.....	200.00.....	Domestic.....
746	do.....	do.....	A-1.....	1899.....	Bored, 7-inch.....	183.....	133.....	70.....	45.....	do.....	75.00.....	Not used.....
747	Furlong Bros.....	do.....	A-1.....	1901.....	do.....	186.....	126?	68.....	45.....	Wind.....	80.00.....	Domestic.....
748	E. P. Merritt.....	do.....	A-1.....	1885?	do.....	186.....	134.....	70.....	40.....	do.....	200.00.....	do.....
749	J. G. White.....	do.....	A-1.....	1883.....	do.....	182.....	132?	70.....	45.....	do.....	75.00.....	do.....
750	N. J. White.....	do.....	A-1.....	1902.....	do.....	182.....	133.....	62.....	42.....	Hand, gas.....	120.00.....	Domestic; irriga- tion.....
751	Pacific Electric R. R. Co.....	do.....	A-1.....	1892.....	do.....	182.....	133.....	65.....	42.....	Wind.....	75.00.....	Domestic.....
752	E. M. Landon.....	San Antonio.....	A-2.....	1888?	do.....	179.....	.....	90.....	.....	do.....	100.00.....	do.....
753	Mr. Peralta.....	do.....	A-1.....	1901.....	do.....	180.....	135.....	64.....	41.....	Hand.....	80.00.....	do.....
754	Cayetano C. Quijada.....	do.....	A-1.....	1901.....	do.....	180.....	135.....	74.....	42.....	Wind.....	100.00.....	do.....
755	Nellie E. Prescott.....	do.....	A-2.....	1901.....	do.....	178.....	135.....	83.....	40.....	do.....	85.00.....	do.....
756	Mrs. D. L. Page.....	do.....	A-1.....	1900.....	do.....	179.....	133.....	85.....	36.....	do.....	235.00.....	Domestic; irriga- tion.....
757	John T. Holly.....	do.....	A-2.....	1893.....	Bored, 4-inch.....	178.....	.....	86.....	41.....	Hand.....	100.00.....	Domestic.....
758	Mr. Reed.....	do.....	A-2.....	1895.....	Bored, 7-inch.....	178.....	.....	75?	40.....	do.....	80.00.....	do.....
759	J. C. Higgins.....	do.....	A-2.....	1899.....	do.....	177.....	.....	80.....	43.....	Wind.....	100.00.....	do.....
760	Amer. Agr. Chem. Co.....	do.....	A-2.....	1898.....	Bored, 10-inch.....	176.....	134.....	90.....	35.....	Steam.....	.....	Factory.....
761	E. G. Underher.....	do.....	A-2.....	1893.....	Bored, 7-inch.....	173.....	133.....	85?	53.....	Hand.....	.....	Domestic.....

## Wells in the Dorney quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						Feet.	Feet.	Feet.	Solids per 100,000.				Miner's inches.
762	John B. Morrison.	San Antonio.	A-2.	1886	Bored, 7-inch.	173	135	89	Wind.	\$75.00		Domestic.	
763	Mrs. E. S. Morrison.	do.	A-2.	1884	do.	171	134	88	do.	80.00	\$125.00	do.	
764	Mrs. Parls.	do.	A-2.	1897	do.	169	134	90	do.	90.00		do.	
765	Geo. Jones.	do.	A-2.	1884	do.	166	131	120	do.	125.00	150.00	do.	
766	John Booth.	do.	A-2.	1891	do.	165	130	60?	do.			do.	
767	Mrs. O. J. Nichols.	do.	A-2.	1887	do.	166	132	60	Hand.	70.00	2.50	do.	
768	Miss B. Morrison.	do.	A-2.	1884	do.	165	132	109	42	Wind.	140.00	do.	
769	Mr. Ingalls.	do.	A-2.	1888?	do.	162	127	63	42	Hand.		do.	
770	M. J. Innes.	do.	A-2.	1900	do.	159	128	100	41	Wind.	180.00	Domestic; irrigation.	
771	Mrs. Marie Kramer.	do.	A-2.	1890?	do.	158	128	83	42	do.		Domestic.	
772	H. B. Blakeley.	do.		1883	do.	159	129	69	42	do.	*315.00	do.	
773	H. M. Vance.	do.	A-2.	1883	Bored, 4-inch.	158	128	69	47	do.	65.00	Domestic; irrigation.	
774	do.	do.	A-2.	1897	Bored, 7-inch.	159	128	68	46	do.	70.00	Irrigation.	
775	Methodist Episcopal parsonage.	do.	A-2.	1885	do.	159	128	70	105	Hand.		Domestic.	
776	J. F. Ahlstrom.	do.	A-2.	1888	do.	160	127	70?	53	Wind.		do.	
777	Mrs. Blakeley.	do.	A-2.		do.	157	128	75?		Hand.		do.	
778	Florence school district.	do.	A-2.	1883	do.	157	127	75	53	Wind.	75.00	do.	
779	F. E. Cleland.	do.	A-2.	1883	do.	157	127	78	56	do.	200.00	do.	
780	Alfred Lane.	do.	A-2.	1903	do.	157	127	84	47	Gas.		Domestic; irrigation.	35
781	Mrs. Clark.	do.	A-2.	1900	do.	157	127	85?	42	Wind.	150.00	Domestic.	

782	Oliver Foster.	do.	A-2.	1888?	do.	160	129	80	42	do.	80.00	200.00	do.
783	Mrs. B. A. Clark.	do.	B-2.	1903	do.	160	129	95	38	do.	95.00	70.00	Domestic; irrigation.
784	J. Cosgrove.	do.	A-2.	1902	Bored, 5-inch.	157	122?	76	43	Gas.	65.00		Domestic.
785	Mr. Bixby.	do.	A-3.	1888?	Bored, 7-inch.	153	128	52	52	Wind.			do.
786	Edward Alvares.	do.	A-3.	1902	do.	149	127	85		do.	85.00	70.00	do.
787	E. Reiman.	do.	A-3.		Driven, 2-inch.	148	126	80		do.			do.
788	R. Nadeau.	do.	A-2.	1900	Bored, 10-inch.	155	124	87		Gas.	310.00	1,500.00	Irrigation.
789	do.	do.	A-2.	1883	Bored, 7-inch.	155	116	80	49	Wind.	85.00		Domestic.
790	Mrs. R. B. Durfee.	do.	A-3.	1885	do.	147	129	500	33	do.			do.
791	Mrs. A. A. Lipsey.	do.	A-3.	1894	Bored, 2-inch.	144	128	92	47	do.	45.00	125.00	do.
792	Mrs. Cox.	do.	A-2.		do.	145		60	65	Hand.	30.00		Stock.
793	W. S. Barlowe.	do.	B-3.	1902	Bored, 5-inch.	143	126	30		do.			do.
794	Mrs. F. Winters.	do.	B-3.	1901	Bored, 7-inch.	143	129	81	49	do.	85.00		Domestic.
796	A. Huston.	do.	B-3.	1902	Bored, 5-inch.	143	130	25	70	do.	25.00		do.
797	J. Marsh.	do.		1899	Bored, 2-inch.	144		75	48	do.			do.
798	S. C. Darby.	do.	B-3.	1891	Driven, 2-inch.	142		90	52	do.	45.00		do.
799	F. M. Fulston.	do.	B-2.	1900	Bored, 7-inch.	167		90	39	Wind.		200.00	Domestic; irrigation.
800	W. M. Patterson.	do.	A, B-2.	1897	do.	168	133	90	39	do.	100.00	200.00	do.
801	Michael Cudahy.	do.	B-2.	1899	Bored, 12-inch.	156	122	391	35	Compressed air.	1,000.00	2,000.00	Irrigation.
802	do.	do.	B-2.	1899	do.	156	122	407	35	do.	1,000.00	2,000.00	do.
803	do.	do.	B-2.	1899	do.	156	122	431	42	do.	1,000.00	2,000.00	do.
804	do.	do.	B-2.	1900	do.	155	121	376	40	do.	1,000.00	2,000.00	do.
805	do.	do.	B-2.	1900	do.	155	121	116		do.	1,000.00	2,000.00	do.
806	do.	do.	B-2.	1900	do.	155	121	379	40	do.	1,000.00	2,000.00	do.
807	do.	do.	B-2.	1900	do.	155	121	376	42	do.	1,000.00	2,000.00	do.
808	do.	do.	B, C-4.		Bored, 4-inch.	131	131	80	40	Wind.	1,000.00	2,000.00	do.
809	do.	do.	C-3.	1901	Bored, 8-inch.	132	117	165		do.	231.00		Stock.
810	do.	do.	D-4.	1883?	do.	124	114	150	35	do.			do.
811	do.	do.	D-3.	1883	Bored, 7-inch.	131	120	60	36	do.			Domestic.
812	do.	do.	D-3, 4.	1883	do.	123	114	90	36	do.			Stock.
813	do.	do.	D-3.	1883	do.	129		60	31	do.			Domestic.
814	do.	do.	E-3.		do.	128	122	80	32	do.			Stock.
815	do.	do.	C-3.		do.	159	130	80	38	do.			do.
816	D. Cunningham.	do.	B-2.		do.	158	129	75	35	do.	75.00		Domestic.

## Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
817	Michael Cudahy	San Antonio	B-2	1899	Bored			115	38	Compressed air.	\$250.00		Boilers.	
818	D. Cunningham	do.	B-2	1902	Bored, 12-inch	160	133	190	35	do.	500.00		Irrigation	50
819	H. W. Benson	do.	C-2	1884	Bored, 2-inch	156			72	Hand.		\$2.50	Domestic.	
820	A. F. Fishring	do.	B-2	1903	Bored, 7-inch	175	130	89		do.	108.00		do.	
821	Mr. Nutt	do.	B-2	1897	Bored, 11-inch	170	130	280		Gas.			Irrigation	†120
822	G. H. Stevens	do.	B-2	1902	Bored, 7-inch	177	132	85	33	Wind.	90.00	250.00	Domestic.	
823	E. V. Baker	do.	B-1		do.			58					Not used.	
824	Mrs. Baker	do.	C-1	1902	do.	173	150	60	53	Hand.	60.00		Domestic.	
825	G. W. Brooks	do.	C-1	1902	do.	177	147	60	73	Wind.	60.00	150.00	do.	
826	Marian Dodson	do.	B-1	1899	do.	175	145?	95	52	Hand.	100.00		do.	
827	Mr. Buchanan	do.	B-1	1900	Bored, 4-inch	176		120		Wind.			do.	
828	W. W. Shea	do.	B, C-1		Bored, 7-inch	182	133			do.			do.	
829	Alfred Lemon	do.	B-1	1894	do.	182	141	77	54	do.	75.00	200.00	do.	
830	J. H. Chapman	do.	B-1	1895	do.	178	128	115	41	do.	115.00		do.	
831	J. W. Batcheller	do.	C-1	1883	do.	184	138	95	37	do.	100.00		do.	
832	San Antonio school district.	do.	C-1	1899	do.			225	35	Hand.			do.	
833	F. P. Walker	do.	C-1	1878	do.	185	139	90		Wind.	90.00		do.	
834	E. J. Polknhorn	do.	C-1	1902	do.	181	139	105	39	do.	110.00	200.00	do.	
835	Mr. Russell	do.	C-1	1880	do.	179	139	80		do.			Domestic; stock	
836	Wm. Angel	do.	C-1	1901	do.	180	140	74	39	Hand.			Domestic.	
837	W. J. Barr	do.	C-1	1902	do.	183	143?	108	45	do.	160.00		do.	
838	J. F. Francis	San Pedro	A-11		Dug, 3 by 3 foot	50	41	14		Wind.			Stock.	
839	Jesus Cruz	do.	B-11	1903	Bored, 10-inch	49	42	143	31	do.		75.00	Domestic.	

840	Mr. Chertotto.	do.	B-12.	1903	do.	33	26	160	Gas?	300.00	Irrigation.	35
841	Mr. Shurota.	do.	B-12.	1883?	Bored, 6-inch.	33	26	150?	Hand	50.00	Domestic.	
842	M. Mindrup.	do.	B-11.	1900	Bored, 12-inch.	44	101		do.	200.00	Not used.	
843	G. Delamo.	do.	C-11.	1899	Bored, 2-inch.	43	43	940	25 Artesian.	50.00	Irrigation.	
844	do.	do.	B-11.	1900	Bored, 2-inch.	43	33?	94	37 Wind.	150.00	Domestic.	
845	R. M. Bobst.	do.	B-11.	1901	do.	41	106	51	Hand	50.00	do.	
846	J. Malcom.	do.	B-11.		Bored, 7-inch.	42	34	185	37 Wind.	do.	do.	
847	Mrs. Carson.	do.	A-12.		Driven, 2-inch.	30	24	95	37 Hand.	do.	do.	
848	S. Todd.	do.	A-13.		Bored, 7-inch.	25	20	275	37 do.	50.00	do.	
849	Mr. Bangel.	do.	B-13.	1899	Driven, 2-inch.	31	26	96	do.		do.	
850	Mrs. Chas. Guyer.	do.	B-13.	1898	do.	32	26	80	41 Wind.		Domestic; stock.	
851	Mrs. Carson.	do.	C-12.	1898	Bored, 10-inch.	32	27	140	35 Hand.		Domestic.	
852	do.	do.	C-12.	1898	do.	33	27	140	39 Gas.		Not used.	
853	Miss Y. Dominguez.	do.	B, C-12.	1898	do.	35	26	140	37 do.		do.	
854	J. F. Francis.	do.	C-11, 12.	1900	Driven, 2-inch.	35	26	80	38 Wind.		Domestic.	
855	G. Dominguez.	do.	B-11.	1903	Bored, 2-inch.	32	25	106	40 Hand.		do.	
856	J. F. Francis.	do.	C-11.	1898	Bored, 10-inch.	36	28	140	Gas.		Not used.	
857	Schoolhouse.	do.	B-12.	1895	Bored, 2-inch.	32	24	90	Hand.		Domestic.	
858	O. E. Elftman.	do.	B-12.	1902	Bored, 12-inch.	33	25	535	37 Gas.	1,100.00	Irrigation.	120
859	do.	do.	B-12.	1895	Bored, 10-inch.	33	25	143	41 Wind.	275.00	do.	
860	Geo. Silvera.	do.	B-11, 12.	1902	Bored, 2-inch.	32	25	106	47 Hand.	53.00	do.	
861	O. E. Elftman.	do.	B-12.	1902	Bored, 12-inch.	31	24	150	39 Gas.	275.00	Irrigation.	120
862	do.	do.	B-12.	1895	Bored, 2-inch.	31	24	100	40 Hand.	50.00	Stock.	
863	M. E. Toile.	do.	C-13.	1890	Bored, 4-inch.	25		86	44		Domestic.	
864	G. H. Bixby.	Los Cerritos.	C-13.	1901	Bored, 7-inch.	50	13	400	27 Gas.	150.00	Domestic; stock.	
865	J. M. Carson.	San Pedro.	C-12.	1900	Bored, 2-inch.	28	19	137	do.	70.00	Domestic.	
866	do.	do.	B-13.	1897	do.	25		140	37 Wind.	150.00	Stock.	
867	do.	do.	B-13.	1900	Bored, 10-inch.	25	18	225	35 Gas.	500.00	Irrigation.	100
868	L. E. Torrey.	do.	B-13.	1901	Bored, 2-inch.	25	15?	140	37 Wind.	70.00	Domestic.	
869	S. D. Wilson.	do.	B-13.	1899	do.	25	19	100	do.	50.00	do.	
870	Milton Brown.	do.	C-13.	1888	Dug, 3 by 3 foot.	22?	16	18	73 Hand.		do.	
871	W. True Molton.	do.	C-13.		Bored, 7-inch.	24	16	108	57 do.		do.	
872	Mr. Mayberry.	do.	C-13.		do.	23	16	100	59 Wind.		do.	
873	A. J. Green.	do.	C-13, 14.	1883	do.	23	16	90	do.		do.	
874	Mr. Kincaid.	do.	C-13.	1883?	do.	23	16	110	200+		do.	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Soils per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
875	A. Allison.....	San Pedro.....	C-13.....	1888	Dug, 3 by 3 foot.	22	17	8	200+	Hand.....			Domestic.....	
876	Mrs. Francis MacDon- ald.....	do.....	C-14.....	1885	do.....			11		do.....			do.....	
877	B. A. Mathewson.....	do.....	D-14.....	1902	do.....			9	200+	do.....			do.....	
878	P. J. Watson.....	do.....	B-14.....	1897	Bored, 4-inch.....	25	20	340	49	Wind.....	\$300.00		Stock.....	
879	do.....	do.....	A-13.....	1900	Bored, 2-inch.....	23		459	20	Artesian.....			do.....	Small.
880	do.....	do.....	A-13.....	1894	Bored, 7-inch.....	25	3	154	29	Wind.....	250.00		Domestic; irriga- tion.	
881	San Pedro Lumber Co.....	do.....	A-16.....	1903	Dug, 3 by 3 foot.	23	12	15	55				Sawmill.....	
882	San Pedro Salt Co.....	do.....	B-16.....	1902	Bored, 7-inch.....	4	7	158	56	Artesian.....	200.00		Boiler.....	
883	G. H. Bixby.....	do.....	B-15.....		do.....	15	12	86	37	Wind.....			Stock; domestic.....	
884	L. Byrnes.....	do.....	B-15.....	1893	Bored, 4-inch.....	11	10	98	37	Artesian, wind.....			Stock.....	Small.
885	John Ena.....	do.....	B-15.....	1898	Bored, 12-inch.....	11	13	784	32	Artesian.....			do.....	Small.
886	John Scott.....	do.....	B-15.....		Bored, 7-inch.....	11	10	180		do.....	200.00		do.....	
887	John Ena.....	do.....	C-15.....	1885?	do.....	15	14		39	do.....			do.....	Small.
888	Geo. Cordell.....	do.....	C-15.....	1890	do.....	11		100	38	Hand.....	100.00		Domestic.....	
889	Geo. Loper.....	do.....	B-15.....	1901	Bored, 4-inch.....	14		100	38	do.....	75.00		do.....	
890	Ira Roberts.....	do.....	B-14.....		Driven, 2-inch.....	15	12	85		do.....	\$2.50		do.....	
891	W. Martin.....	do.....	B-14.....	1888	Bored, 4-inch.....	16	13	100	38	Wind.....	85.00		do.....	
892	F. W. Gilson.....	do.....	B-14.....	1888?	Bored, 7-inch.....	16	11	100	31	Hand.....	100.00		do.....	
893	W. H. Westover.....	do.....	B-14.....	1888	Bored, 6-inch.....	15	11	100		Wind.....			do.....	
894	E. Loper.....	do.....	B-14.....	1893	Bored, 4-inch.....	17	12	100	37	do.....	75.00	135.00	do.....	
895	M. Pike.....	do.....	B-14.....	1888?	Bored, 7-inch.....	18	12	95	35	do.....	95.00		do.....	
896	Fred Maskew.....	do.....	B-14.....	1896	Bored, 2-inch.....	18	12	96	37	Hand.....	35.00		do.....	

887	Mrs. E. M. Wiley	do.	B-14	1887	Bored, 4-inch.	18	12	85	37	Wind	70.00	150.00	do.	.....
888	P. J. Watson	do.	A-14	1885	Dug, 4 by 4 foot.	25	12	21	70	do.	.....	.....	do.	.....
889	Mrs. Lily Watson	do.	A-14	.....	Bored, 2-inch.	28	9	162	30	do.	.....	.....	do.	.....
890	Mrs. Emery	do.	B-14	1886	Bored, 7-inch.	18	11	85	.....	Hand	.....	.....	do.	.....
891	Mrs. Guyer	do.	B-12	1889	Bored, 10-inch.	31	24	149	.....	Gas	200.00	.....	Irrigation	125
892	G. N. Wines	do.	B-13	.....	Bored, 2-inch.	20	19?	170	33	Wind	.....	.....	Domestic	.....
893	R. H. Martin	do.	B, C-14	1892	Bored, 6-inch.	17	11	116	.....	do.	115.00	.....	do.	.....
894	Cerritos school district	do.	C-14	1883	Bored, 2-inch.	17	11	90	.....	Hand	45.00	.....	do.	.....
895	S. O. Davis	do.	C-14	1880	Bored, 6-inch.	17	12	120	62	Wind	.....	.....	do.	.....
896	do.	do.	C-14	1887	do.	14	9	110	.....	.....	.....	.....	Not used	.....
897	Mrs. Graydon	do.	C-14	1891	Bored, 4-inch.	14	9	100	.....	Wind	.....	.....	Domestic	.....
898	John Leuer	do.	C-15	1885	do.	13	12	92	.....	Hand	.....	.....	do.	.....
899	E. S. Rosenberg	do.	C-15	1885	Bored, 6-inch.	15	11	105	39	Wind	.....	.....	Domestic; irriga- tion.	.....
910	C. A. Westgate	do.	C-14	1885	Bored, 7-inch.	14	12	100	60	do.	.....	.....	Domestic	.....
911	Henry Schief	do.	C-14	1898	Bored, 2-inch.	13	11	94	60	Hand	35.00	.....	do.	.....
912	Geo. Cordell	do.	C-15	1888	Bored, 7-inch.	13	12	125	.....	Wind	.....	.....	do.	.....
913	Mrs. B. F. Browers	Los Cerritos	D-15	.....	.....	23	11	70	200+	do.	.....	.....	do.	.....
914	Frank Pit	do.	C-15	.....	Bored, 2-inch.	20	.....	80?	70	do.	.....	.....	do.	.....
915	H. F. Mallernee	do.	E-10	1897	do.	53	51	317	.....	.....	125.00	.....	Not used	.....
916	Geo. H. Bixby	do.	E-11	1898	Bored, 10-inch.	51	51	672	20	Artesian	.....	.....	Irrigation	190
917	do.	do.	E-11	.....	Bored, 2-inch.	52	52	350?	20	do.	300.00	.....	Domestic; stock	.....
918	do.	do.	E-11	.....	Bored, 7-inch.	52	52	350	23	do.	.....	.....	Stock	.....
919	do.	do.	D-11	1897	Bored, 10-inch.	48	.....	500+	23	do.	.....	.....	do.	1
920	do.	do.	D-11	.....	Bored, 7-inch.	45	45	310?	23	do.	.....	.....	do.	2
921	do.	do.	D-11	.....	do.	45	.....	350?	25	do.	.....	.....	Irrigation	4
922	do.	do.	D-12	1869	do.	80	48	350?	22	Wind	.....	.....	Domestic	.....
923	do.	do.	D-12	1898	Bored, 10-inch.	105	50	500	22	Gas	.....	.....	do.	.....
924	do.	do.	D-13	.....	Bored, 4-inch.	100	.....	400?	22	Wind	.....	.....	do.	.....
925	R. F. De Garmo	do.	D-15	1890?	Dug, 3 by 3 foot.	25	11	21	161	do.	.....	.....	do.	.....
926	G. W. Olsen	do.	D-14	1903	do.	24	11	15	172	Hand	.....	.....	do.	.....
927	R. W. Patterson	do.	D-14	1894	Bored, 7-inch.	59	4	425?	37	Wind	1,000.00	.....	Domestic; irriga- tion.	.....
928	A. M. Neece	do.	D-14	1891	do.	50	10	240	39	do.	500.00	.....	Domestic	.....
929	J. Andrews	do.	D-14	1890	do.	45	31	120	80	do.	*503.00	.....	Domestic; irriga- tion.	.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
930	J. B. Rain.	Los Cerritos.	E-14.	1888	Bored, 4-inch.	73	21	204					Not used.	
931	Mr. Wardlowe.	do.	E-14.		Bored, 7-inch.	63	21		36	Wind.			Domestic; irrigation.	
932	Z. T. Nelson.	do.	E-14.		do.	100	9	155		do.			do.	
933	G. A. Lindsay.	do.	D-16.	1897	Bored, 4-inch.	37	12	72	27	do.			Irrigation.	
934	Seaside Water Co.	do.	E-12.		Bored, 14-inch.	61	61	730	21	Artesian.			Domestic.	
935	do.	do.	E-12.		Bored, 14, 12-inch.	61	61	700		do.				
936	do.	do.	E-12.	1900	Bored, 12-inch.	61	61	767		do.			Domestic.	
937	do.	do.	E-12.		Bored, 10-inch.	71	71	400	19	do.			Not used.	
938	do.	do.	E-12.		Bored, 7-inch.	61	61	400					Irrigation.	
939	do.	do.	E-13.	1901	Bored, 14-inch.	62	62	684	19	Artesian.			Domestic.	†100
940	do.	do.	E-13.	1899	Bored, 8-inch.	57	57	707	19	do.			do.	
941	Geo. H. Bixby.	do.	E-13.	1888	Bored, 7-inch.	62	62	250	21	do.			Not used.	
942	do.	do.	E-13.	1902	Bored, 2-inch.	62		450	22	do.			Domestic.	Small.
943	Seaside Water Co.	do.	E-13.		do.		60	350	21	do.			Not used.	
944	J. Ross Clark.	do.	E-12.	1900	Bored, 12-inch.	61	61	838	23	do.	\$2,500.00		Irrigation.	†95
945	W. A. & J. R. Clark.	do.	E-12.	1893	Bored, 10-inch.	69	69	350					Domestic.	
946	do.	do.	E-12.	1893	Bored, 8-inch.	69	69	350		Artesian.			Stock.	
947	do.	do.	F-12.	1901	Bored, 4-inch.	57	57	400	177	do.	280.00		Domestic.	12
948	do.	do.	F-12.	1901	do.	52	52	400		do.	280.00		Stock.	17
949	do.	do.	F-12.	1901	do.	60	60	400	177	do.	280.00		do.	12
950	Seaside Water Co.	do.	E-13.		Bored, 2-inch.	53	53			do.			do.	3
951	do.	do.	E-13.		do.	53	53			do.			Not used.	
952	G. R. Wilson.	do.	E-10.	1899	do.	58	58	420		do.			Irrigation; stock.	

953	...do	...do	E-10	1899	...do	57	410	25	...do	250.00	Domestic	.....
954	W. H. McKelvey	...do	F-10	1899	...do	57	410	23	...do		Stock	...‡
955	Geo. H. Bixby	...do	F-10	1902	...do	57	400?	22	...do		Not used	.....
956	D. B. Gemmill	...do	F-10	1900	Bored, 7-inch	56	54	100?	35	Gas	Irrigation	.....
957	...do	...do	F-10	1900	Bored, 2-inch	56	54?	100	25	Hand	Domestic	.....
958	G. F. Sparks	...do	G-11	1876?	Bored, 4-inch	52	52	400?	25	Artesian	Domestic; stock	...5
959	J. R. Clark	...do	H-11	1902	...do	51	51	373	...	...do	Irrigation	...15
960	...do	...do	H-11	1897	Bored, 2-inch	51	51	400	23	...do	Domestic	.....
961	J. Ross Clark	...do	H-11	1902	Hydraulic, 4-inch	52	52	403	23	...do	Irrigation	...15
962	...do	...do	G-11	1902	Bored, 4-inch	52	52	420	...	...do	do	...27
963	...do	...do	H-11	1902	...do	51	51	398	23	...do	do	.....
964	...do	...do	H-11	1900	Bored, 10-inch	47	47	700	22	...do	do	...39
965	...do	...do	I-1	1891	Bored, 2-inch	43	43	400?	23	...do	Domestic	Small
966	...do	...do	I-12	1895	...do	35	35	130	30	...do	do	Small
967	...do	...do	I-12	1890?	...do	33	33	140	28	...do	do	.....
968	C. W. Coseboon	...do	E-14	1885	Bored, 7-inch	150	98	180	25	Wind	\$70.00	do
969	Citizens' Water, Light and Power Co.	Los Alamitos	F-14	1903	Bored, 12-inch	43	43	420	19	Artesian	1,000.00	do
970	...do	...do	F-14	1903	...do	41	41	460	...	...do	1,200.00	Not used
971	...do	...do	F-14	...	...do	46	46	713	...	...do	do	...‡150
972	Geo. H. Bixby	...do	F-14	1883	Bored, 7-inch	46	46	450?	19	...do	do	...‡5
973	Bixby Land Co.	...do	F-14	1901	Bored, 12-inch	45	45	619	...	...do	Irrigation	...61
974	...do	...do	F-14	1902	...do	46	46	400?	20	...do	Domestic	.....
975	...do	...do	F-13	1902	Bored 9½-inch	36	36	427	20	...do	Irrigation	...160
976	J. Ross Clark	Los Cerritos	G-12, 13	1890	Bored, 4-inch	28	28	412?	19	Artesian, hand	280.00	Domestic
977	...do	...do	G-12	1902	Bored, 2-inch	38	38	74	21	Artesian	35.00	do
978	...do	...do	G-12	1897	Bored, 7-inch	38	38	400?	21	...do	do	do
979	G. R. Clark	...do	H-12	1898	Bored, 2-inch	...	325	19	...	...do	do	do
980	...do	...do	H-12	1901	Bored, 4-inch	...	350	19	...do	250.00	Irrigation	.....
981	...do	...do	H-12	1901	...do	34	34	350	19	250.00	do	...5
982	...do	...do	H-12	1901	...do	34	34	350	19	250.00	do	...8
983	...do	...do	H-12	1901	...do	34	34	350	19	250.00	do	...8
984	...do	...do	H-13	1903	...do	25	25	336	21	252.00	Domestic; irrigation	...20
985	...do	...do	H-13	1901	...do	25	25	311	...	224.20	Irrigation	.....
986	...do	...do	H-13	1902	...do	23	23	320	...	240.00	do	.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
987	Bixby Land Co.	Los Alamitos.	H-14.	1895	Bored, 2-inch.	23	23	260	19	Artesian.	\$150.00		Domestic.	
988	do.	do.	H-14.	1899	Hydraulic, 4-inch.	23	23	268	19	do.	200.00		Irrigation.	39
989	do.	do.	H-14.	1900	do.	23	23	268	19	do.	200.00		do.	35
990	do.	do.	H-14.		Bored, 2-inch.	21	21	260		do.			Not used.	
991	Fred Bixby.	do.	H-14.	1903	Bored, 12-inch.	21	21	848	17	do.	2,500.00		Irrigation.	306
992	do.	do.	G-14.	1901	Bored, 8-inch.	27	27	189	19	do.			Domestic.	14
993	Alamitos Beach Water Co.	do.	F-14.	1901	Bored, 12-inch.	38	38	725	19	do.	2,000.00		Domestic; irrigation.	137
994	do.	do.	F-14.	1902	do.	38	38	270	19	do.			Irrigation; domestic.	61
995	do.	do.	F-14.	1903?	do.	40	40			do.				
996	Mrs. M. Nelson.	Los Cerritos.	D-16.	1892?	Bored, 4-inch.	39	39	70	96	Wind.			Domestic.	
997	John Shrodes.	do.	D-16.	1898	do.	30	30	50?	200+	do.			Stock.	
998	People's Ice Plant.	do.	D-16.	1903	Bored, 3-inch.	42	12	70	200+	do.	35.00		Factory.	
999	M. E. Swingel.	Los Alamitos.	E-15.	1900	Bored, 8-inch.	41	15	60		Wind.			Not used.	
1000	W. A. Peck.	do.	E-16.	1897	Bored, 7-inch.	50	5	70		do.			Irrigation.	
1001	D. S. Shaw.	do.	E-16.	1898	Bored, 8-inch.	48	15	920	200+	do.	3,500.00		do.	
1002	Alamitos Beach Water Co.	do.	G-16.	1887	do.	45	45	360	21	do.			Not used.	
1003	do.	do.	D-16.	1895	Hydraulic, 2-inch.	45	45	114	19	do.	50.00		do.	
1004	Fred H. Bixby.	do.	H-16.	1893	Bored, 2-inch.	45	45	250	29	Artesian.	150.00		Domestic.	Small.
1005	do.	do.	H-16.	1893	do.	45	45	250	19	do.	150.00		Irrigation.	2
1006	do.	do.	I-16.	1897	do.	12	12	110	23	do.	60.00		Domestic; stock.	Small.
1007	do.	do.	I-14.	1902	Bored, 4-inch.	13	13	375	31	do.	350.00		Irrigation.	31



*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1040	I. W. Hellman.	Los Alamitos	K-17	1897?	Hydraulic, 4-inch.	12	12	150		Artesian.			Stock	18
1041	do.	do.	L-17	1895	Bored, 7-inch.	16	16	151		do.			do.	19
1042	do.	do.	L-16	1902	Bored, 2-inch.	17	17	280		do.	\$140.00		Irrigation.	8
1043	do.	do.	K-16	1899	Bored, 4-inch.	14	14	120	25	do.	40.00		do.	25
1044	do.	do.	K-17	1899	Bored, 2-inch.	19	19	120		do.			Not used.	
1045	do.	do.	L-16	1900	do.	14	14	180		do.	65.00		Irrigation.	7
1046	do.	do.	K-16	1899	do.	15	15	185	25	do.	65.00		Domestic.	
1047	do.	do.	K-16	1900	Bored, 4-inch.	15	15	125	25	do.			Irrigation.	1
1048	do.	do.	K-16	1901	Bored, 2-inch.	16	16	265	26	Artesian	75.00		do.	2
1049	do.	do.	K-16	1897	do.			190	26	do.			do.	3
1050	do.	do.	L-16	1901	do.	16	16	130	25	do.	75.00		do.	4
1051	do.	do.	K-16	1900	Bored, 4-inch.	17	17	250	25	do.	180.00		do.	1
1052	do.	do.	M-17	1901	do.	23	23	340		do.			Irrigation; domestic.	22
1053	David Rodgers	do.	M-17	1901	do.	19	19	269	29	do.	162.00		Stock.	
1054	do.	Las Bolsas	M-17	1901	Bored, 3-inch.	19	19	274	28	do.	150.00		do.	8
1055	do.	do.	M-17	1899	Bored, 2-inch.	19	19	285	27	do.	140.00		Domestic; stock.	5
1056	J. R. Robinson	do.	M-17	1902	Bored, 4-inch.	21	21	270	26	do.	175.00		Irrigation.	8
1057	David Rodgers	do.	M-17	1897	Bored, 2-inch.	23	23	330	28	do.			Domestic.	
1058	J. R. Robinson	do.	M-17	1893	do.	22	22	250?	26	do.			Irrigation.	4
1059	do.	do.	M-17	1893	do.	22	22	250?		do.			do.	4
1060	D. A. Schaffer.	do.	M-17	1900	do.	23	23	250	28	do.	125.00		Irrigation; domestic.	4
1061	do.	do.	M-17	1900	do.	22	22	250?	22	do.	125.00		Irrigation.	4

1062	do.	do.	1900	do.	M-17	22	22	250?	25	do.	125.00	do.	4
1063	T. Willets.	do.	1897	do.	M-17	23	23	190	26	do.	100.00	Domestic.	5
1064	do.	do.	1897	do.	M-17	23	23	195	24	do.	100.00	Irrigation	8
1065	Geo. Berenstein.	do.	1899	do.	M-17	21	21	190	28	do.	100.00	Domestic.	2
1066	do.	do.	1899	do.	M-17	22	21	190	27	do.	100.00	Irrigation	3
1067	do.	do.	1893	Bored, 7-inch.	M-17	22	22	90	27	do.	100.00	Stock.	Small.
1068	do.	do.	1890	do.	M-17	23	23	150?	26	do.		do.	7
1069	Mr. Sharp.	do.	1892?	Bored, 2-inch.	M-17	23	23	200?	27	do.		Domestic; irriga- tion.	3
1070	H. C. Woodward & Co	do.	1886	Bored, 7-inch.	M-17	23	23	333	29	do.		Domestic.	42
1071	Mr. E. B. Finley.	do.	1888	do.	N-17	26	26	150	27	do.	130.00	do.	Small.
1072	do.	do.	1898	Bored, 2-inch.	N-17	25	25	300	26	do.	90.00	Irrigation	6
1073	O. J. Buck.	do.	1878	Bored, 7-inch.	N-17	25	25	80	25	do.	120.00	Domestic.	4
1074	J. H. Edwards.	do.	1898	Bored, 2-inch.	N-17	27	27	380	26	do.		do.	4
1075	do.	do.	1880?	Bored, 7-inch.	N-17	27	27	370?	26	do.		Not used.	
1076	do.	do.	1899	Bored, 3-inch.	N-17	27	27	360	26	do.		Irrigation	11
1077	do.	do.	1898	Bored, 2-inch.	N-17	28	28	360	27	do.		do.	
1078	do.	do.	1895	Bored, 7-inch.	N-17	28	28	370	26	do.	530.00	do.	29
1079	do.	do.	1880?	do.	N-17	28	28			do.		Not used.	
1080	W. G. Alford.	do.	1880	do.	N-17	27	27	300	28	do.		Domestic	41
1081	Sampson Edwards.	do.	1897	Bored, 2-inch.	N-17	27	27	300?	28	do.		Not used.	
1082	Mrs. Clark.	do.	1888	Bored, 7-inch.	N-17	29	29		33	do.		Domestic.	41
1083	Miss Beckworth.	do.	1888?	Bored, 2-inch.	N-17	89	89	100?	29	do.		do.	Small.
1084	F. Wright.	do.	1901	Bored, 6-inch.	N-17	31	31	100	34	do.		Domestic; irriga- tion.	2
1085	L. Hosking.	do.	1883?	Bored, 4-inch.	N-17	32	32	100	33	do.		Domestic.	17
1086	Mrs. Stewart.	do.	1890?	Bored, 2-inch.	N-17	31	31	100?	34	do.		do.	Small.
1087	J. Caldwell.	do.	1899	do.	N-17	33	33	90	32	do.		do.	
1088	Mrs Harper.	do.		Bored, 3-inch.	N-17	31	31	100?	27	do.		do.	
1089	Robert McClintock.	do.	1899	Bored, 2-inch.	N-17	31	31		31	do.		Domestic; stock.	41
1090	E. E. Buck.	do.	1900	do.	N-17	31	31	100	29	do.		Domestic.	
1091	J. F. Patterson.	do.	1894	do.	N-17	33	33	111	27	do.	42.00	do.	4
1092	Presbyterian parson- age.	do.	1902	do.	N-17	33	33	110	27	do.	50.00	do.	6
1093	H. Flowers.	do.	1890?	Bored, 4-inch.	N-17	33	33	85	31	do.		do.	
1094	F. F. Skelley.	do.	1895	Bored, 2-inch.	N-17	33	33	142	29	do.	70.00	do.	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1095	F. F. Skelley.	Las Bolsas	N-17	1903	Bored, 2-inch	33	33	112	28	Artesian	\$60.00		Domestic; irrigation.	
1096	W. E. Lossing.	do.	N-17	1880	Driven, 2-inch	33	33	75	32	do.			Domestic	
1097	do.	do.	N-17	1892	Bored, 2-inch	31	31	80	33	do.	60.00		do.	
1098	P. E. Niles.	do.	N-17	1902	do.	32	32	335	24	Wind, artesian	140.00		do.	
1099	R. T. Harris.	do.	N-17	1883	Bored, 4-inch	32	32	165	26	Artesian			do.	
1100	C. W. Baker.	do.	N-17	1895	Bored, 2-inch	32	32	80	32	do.	21.00		do.	
1101	John Reed.	do.	N-17	1899	do.	31	31	110	26	do.			do.	
1102	Methodist Episcopal parsonage.	do.	N-17	1902	do.	31	31	70		Artesian, hand	60.00		do.	
1103	Wm. James.	do.	N-17	1901	do.	31	31		27	Artesian			Irrigation.	Small.
1104	Mr. Kiehaber.	do.	N-17	1891	Bored, 7-inch	31	31	375	27	do.	500.00		Domestic; irrigation.	9
1105	Westminster Cheese and Butter Co.	do.	N-17	1895	Bored, 2-inch	30	30	80		do.	40.00		Not used	
1106	J. R. Davis.	do.	N-17	1902	Bored, 3-inch	30	30	366	29	do.	180.00		Irrigation.	9
1107	J. B. Lowising.	do.	N-17	1897	Bored, 2-inch	29	29	366	28	do.	150.00		Domestic.	
1108	C. W. Baker.	do.	N-17	1897	do.	36	36	187		do.	60.00		do.	
1109	C. C. Violetti.	do.	N-17	1899	do.	35	35	125	31	do.			do.	
1110	C. E. Hammond.	do.	N-17	1899	do.	34	34	106	28	do.	50.00		do.	
1111	R. Ward.	do.	N-17	1897	do.	30	30	80	33	do.	35.00		Domestic; irrigation.	† 4
1112	Wm. Harvey.	do.	N-17	1899	do.	28	28	395	29	do.	60.00		do.	2
1113	do.	do.	N-17	1874?	Bored, 7-inch	28	28	96	29	do.			Stock.	Small.
1114	do.	do.	N-17	1875	do.	28	28	96	29	do.			Irrigation.	1
1115	Sam Waters.	do.	N-17	1894	Bored, 3-inch	30	30	80	28	do.	30.00		do.	Small.

1116	.....do.	.....do.	N-17	1873	Bored, 4-inch.	30	83	28	.....do.	50.00	Domestic; irrigation.	Small.
1117	J. R. Cavanah.	.....do.	N-17	1878	Bored, 7-inch.	29	100+	28	.....do.		Not used.	.....
1118	.....do.	.....do.	N-17	1889	Bored 4-inch.	29	100+	28	Hand, artesian.		Domestic.	Small.
1119	.....do.	.....do.	N-17	1898	Bored, 2-inch.	31	31	325	.....do.		Irrigation; domestic.	Small.
1120	.....do.	.....do.	N-17	1899	Bored, 4-inch.	29	325	28	.....do.		Irrigation.	5
1121	R. Naukervis.	.....do.	N-17	1900	Bored, 2-inch.	27	27		Artesian.	30.00	Domestic; irrigation.	.....
1122	John White.	.....do.	M-17	1883?	Bored, 7-inch.	29	29		.....do.		Domestic.	Small.
1123	R. Naukervis.	.....do.	M-17	1888	.....do.	27	27	250	.....do.	200.00	.....do.	Small.
1124	Wm. Yeo.	.....do.	N-17	1895	Bored 2-inch.	31	31	80	.....do.	35.00	.....do.	Small.
1125	.....do.	.....do.	N-17	1898	Bored 3-inch.	33	33	400	.....do.	150.00	Stock	2
1126	Geo. Phillips.	.....do.	N-16		Bored, 7-inch.	38	38	250	.....do.		Not used.	.....
1127	.....do.	.....do.	N-16	1891	Bored, 4-inch.	42	24	250	.....do.		Domestic; irrigation.	5
1128	.....do.	.....do.	N-16	1888?	Bored, 7-inch.	41	41	250	.....do.		Stock	Small.
1129	C. A. Phelps.	.....do.	N-16		Bored, 2-inch.	45	45		.....do.		Domestic.	.....
1130	G. K. Lien.	.....do.	N-16	1901	Bored, 4-inch.	38	38	275	.....do.	300.00	Domestic; irrigation.	.....
1131	.....do.	.....do.	N-16		Bored 8-inch.	38	38	200+	.....do.		Stock	.....
1132	C. W. Dickey.	.....do.	N-16	1883	Bored, 7-inch.	41	41	230	.....do.		Domestic; stock.	Small.
1133	.....do.	.....do.	N-16	1897	Bored 3-inch.	41	41	211	.....do.	75.00	Irrigation	5
1134	.....do.	.....do.	N-16	1897	Bored, 7-inch.	41	41	230	.....do.	288.00	.....do.	Small.
1135	Geo. Abbott.	.....do.	N-16	1890?	.....do.	40	40	78	Wind, artesian		Not used.	.....
1136	Mrs. Lucy Roberts.	.....do.	N-16		Bored, 2-inch.	41	41	100+	Artesian.		Domestic; irrigation.	Small.
1137	E. D. Barton.	.....do.	N-16	1890?	Bored, 7-inch.	42	42	230	.....do.	500.00	Domestic.	.....
1138	.....do.	Los Alamitos.	N-16	1889	.....do.	43	43	230	.....do.	400.00	Stock	Small.
1139	I. W. Hellman.	.....do.	N-15	1888?	.....do.	39	39		.....do.		.....do.	Small.
1140	G. D. Nell.	Los Coyotes.	N-14	1896	Bored, 2-inch.	48	48	150	.....do.	60.00	Domestic; irrigation.	Small.
1141	.....do.	.....do.	N-14	1899	.....do.	53	53	150	.....do.	70.00	Irrigation; stock.	Small.
1142	J. Klemm.	.....do.	N-14	1897	.....do.	58	58	287	Artesian, wind.	150.00	Domestic.	.....
1143	John Wolf.	.....do.	N-13	1898	.....do.	58		149	Hand	70.00	.....do.	.....
1144	F. Jabs.	.....do.	N-13	1898	.....do.	58	58	165	Artesian.		Stock; domestic.	Small.
1145	A. Dargetz.	.....do.	N-13	1898	.....do.	58	58	181	.....do.	60.00	Domestic.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Fed.</i>	<i>Fed.</i>	<i>Fed.</i>						<i>Miner's inches.</i> Small. ‡ 30 ‡ 18
1146	J. Jabs.....	Los Coyotes.....	N-13.....	1896	Bored, 2-inch.....	60	60	300+	26	Artesian.....	\$105.00		Domestic; stock.....	
1147	W. J. Cole.....	do.....	N-13.....	1892	Bored, 7-inch.....	60	58	189	26	Wind; gas.....	235.00		Domestic; irrigation.....	
1148	do.....	do.....	N-13.....	1901	do.....	53	51	189	27	Wind.....	190.00		Stock; irrigation.....	
1149	J. Seaman.....	do.....	N-13.....	1902	Bored, 4-inch.....	59	52	106	27	do.....	90.00		Domestic.....	
1150	H. Hansen.....	do.....	N-12.....	1900	Bored, 6-inch.....	59	54	156	26	Gas.....	140.00	\$318.00	Domestic; irrigation.....	
1151	do.....	do.....	N-12.....	1896	Bored, 2-inch.....	59		274	26	do.....	97.00		do.....	
1152	S. Huff.....	do.....	N-12.....	1901	Bored, 7-inch.....	62	56	170	25	Wind.....		125.00	do.....	
1153	do.....	do.....	N-12.....	1890	Bored, 2-inch.....	62		170	25	Hand.....			Domestic.....	
1154	Mr. Kruger.....	do.....	N-12.....	1900?	Bored, 14-inch.....	63			31	do.....			do.....	
1155	Bixby Land Co.	Los Alamitos.....	M-14.....	1902	Bored 4-inch.....	38	38	474	27	Artesian.....	385.20		Irrigation.....	22
1156	do.....	do.....	M-14.....	1901	do.....	36	36	380	24	do.....	220.00		do.....	27
1157	do.....	do.....	M-14.....	1901	do.....	36	36	365	25	do.....	220.00		do.....	27
1158	do.....	do.....	M-14.....	1901	do.....	36	36	359	25	do.....	225.00		do.....	24
1159	do.....	do.....	M-14.....	1901	do.....	33	33	396	28	do.....	250.00		do.....	30
1160	do.....	do.....	M-14.....	1901	do.....	33	33	368	26	do.....	225.00		do.....	26
1161	do.....	do.....	M-14.....	1901	do.....	33	33	358	25	do.....	225.00		do.....	24
1162	do.....	do.....	M-14.....	1901	do.....	32	32	362	25	do.....	225.00		do.....	21
1163	do.....	do.....	M-14.....	1901	do.....	32	32	358	25	do.....	225.00		do.....	17
1164	do.....	do.....	L-15.....	1902	do.....	24	24	466	28	do.....	400.00		do.....	38
1165	do.....	do.....	K-14.....	1901	do.....	23	23	418	26	do.....	350.00		do.....	31
1166	do.....	do.....	K-14.....	1902	do.....	18	18	316	28	do.....	200.00		Domestic.....	21
1167	do.....	do.....	K-14.....	1900	Bored, 2-inch.....	19	19	358	28	do.....	150.00		do.....	6

1168	do.	do.	K-14.	1897	do.	19	360	do.	do.	6
1169	do.	do.	J-14.	1901	do.	15	350	do.	do.	9
1170	do.	do.	M-14.	1888	do.	37	150	Artesian	do.	Small.
1171	Mr. Stump.	Los Coyotes.	M-14.	1900	Bored 4-inch.	42	375?	Irrigation.	Irrigation.	26
1172	Bixby Land Co.	Los Alamitos.	M-14.	1890?	Bored, 2-inch.	36	36	do.	Domestic.	do.
1173	Fred Bixby.	do.	J-14, 15.	1899	do.	14	117	do.	Irrigation; domestic.	do.
1174	Southern Pacific Co.	do.	K-14.	1896	Bored, 8-inch.	20	20	Wind.	Engines.	do.
1175	Los Alamitos Sugar Co.	do.	K-14.	1896	Bored, 2-inch.	20	708	do.	Not used.	do.
1176	do.	do.	J-14.	1897	Bored, 10-inch.	20	560	Artesian	Irrigation; factory.	do.
1177	do.	do.	J-14.	1897	do.	20	473	Artesian; compressed air.	Factory.	† 20
1178	do.	do.	J-14.	1897	do.	19	439	do.	do.	† 15
1179	do.	do.	K-14.	1897	do.	19	443	Artesian	Not used.	do.
1180	do.	do.	K-14.	1897	do.	19	469	Artesian; compressed air.	Factory.	† 15
1181	do.	do.	K-13, 14.	1901	Bored, 12-inch.	19	560	Artesian	do.	† 15
1182	do.	do.	K-13, 14.	1901	do.	19	696	do.	do.	† 15
1183	do.	do.	K-13, 14.	1901	do.	19	576	Artesian; compressed air.	do.	† 15
1184	do.	do.	K-14.	1903	Bored, 2-inch.	21	412	Artesian	Stock.	† 4
1185	P. G. Labourdette.	do.	J-13, 14.	1892	do.	18	300?	do.	Domestic.	do.
1186	Bixby Land Co.	do.	J-13.	1900	Bored, 4-inch.	21	410	do.	Irrigation; domestic.	14
1187	do.	do.	J-13.	1903	do.	22	385	do.	Domestic.	do.
1188	H. H. Bartlett.	do.	K-13.	1893	Bored, 3-inch.	20	250	do.	Domestic; irrigation.	† 1
1189	L. Dyke.	do.	K-13.	1895?	Bored 2-inch.	20	350?	do.	Domestic.	do.
1190	E. H. Dyer.	do.	K-13.	1897	do.	23	512	do.	Stock; irrigation.	Small.
1191	do.	do.	K-13.	1902	Bored, 3-inch.	23	505	do.	Irrigation.	† 9
1192	D. R. Proffer.	Los Coyotes.	K-13.	1897	Bored, 2-inch.	23	306	Wind.	Domestic.	Small.
1193	do.	Los Alamitos.	K-13.	1897	do.	22	416	Artesian	Irrigation.	Small.
1194	H. J. Proffer.	Los Coyotes.	K-13.	1898	do.	23	332	do.	Domestic.	Small.
1195	Bixby Land Co.	Los Alamitos.	J-12.	1896	do.	23	90	do.	Stock.	Small.
1196	do.	do.	J-13.	1896	do.	25	160	do.	Domestic.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of sur- face.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1197	Los Alamitos Sugar Co.	Los Alamitos	K-13	1896	Bored, 3-inch	26	26	375?	28	Artesian			Domestic	
1198	Theo. D. Hewitt	do	L-13	1898	do	34	34	300	26	do			do	
1199	do	Los Coyotes	M-13	1900	Bored, 4-inch	42	42	480	27	do			Irrigation	15
1200	J. W. Swope	do	M-13	1868?	Bored, 6-inch	42	42	100		do			Domestic	
1201	Bixby Land Co.	Los Alamitos	L-14	1865?	Bored, 9½-inch	37	37	100	25	do			Not used	
1202	Gus Hansen	Los Coyotes	M-13	1883	Bored, 7-inch	44	44	270	26	do			Irrigation	12
1203	do	do	M-13		Bored, 2-inch	43	43			do			do	Small
1204	do	do	M-13	1902	Bored, 12-inch	42	42	567	32	do	\$1,500.00		do	47
1205	Geo. Burrows	do	N-14	1898	Bored, 2-inch	48	48		25	do			Domestic	
1206	A. Kratzer	do	N-13	1898	Bored, 3-inch	52	52	144	26	do	57.00		do	3
1207	Mrs. S. R. Edgerly	do	N-13	1895	Bored, 2-inch	52	52	175	27	Artesian, hand			do	Small.
1208	do	do	N-13		Bored, 7-inch	52	52	420	28	Artesian			Stock	Small.
1209	F. Gruenkey	do	N-13	1890?	Bored, 3-inch	49	49	300	26	Artesian, hand			Domestic	Small.
1210	do	do	N-13	1893	Bored 2-inch	48	48	190	27	Artesian			Irrigation	Small.
1211	H. Krueger	do	N-13	1883	Bored, 10-inch	48	48	200	27	do	250.00		Domestic	1
1212	do	do	M-13	1899	Bored, 3-inch	48	48	160		do	70.00		Irrigation	Small.
1213	W. H. Musser	do	M-13	1896	Bored, 2-inch	50	50	560	26	do			do	
1214	Wm. Elliott	do	M-13	1898	do	37	37	300	23	do			Not used	
1215	W. T. Sparks	do	L-13	1895	do	27	27	437		do			Domestic	3
1216	Wm. Elliott	do	M-13	1898	do	38	38	300		do			Not used	
1217	Cypress school district	do	L-13	1896	do	27	27	336	28	do	125.00		Domestic	
1218	C. L. Damron	do	L-13	1896	do	31	31	300	28	do	150.00		Domestic, irriga- tion.	

1219	F Thompson	do	L-13	1898	do	32	560	do	225.00	do	1
1220	L. Deuni	do	L-13	1896	do	31	577	do	216.37	Irrigation	1
1221	A. J. Dameron	do	L-12	1896	do	32	530	do	170.00	do	Small.
1222	do	do	L-12	1894	do	32	330	do	110.00	Domestic; irrigation	Small.
1223	do	do	L-12	1897	do	35	536	do	170.00	Irrigation	5
1224	do	do	M-12	1897	do	39	500	do	150.00	Irrigation; stock	2
1225	do	do	M-13	1896	do	39	300	do	110.00	Stock	Small.
1226	J. C. & J. S. Tucker	do	M-13	1890?	do	44	400?	do		Domestic; irrigation	Small.
1227	J. P. Street	do	M-12	1895	do	44	325	do	130.00	Irrigation	Small.
1228	do	do	M-12	1899	do	44	525	do	175.00	Irrigation; domestic	4
1229	J. A. Hollingsworth	do	M-13	1902	Bored, 3-inch	45	580	do		Irrigation	2
1230	do	do	M-13	1900	Bored, 2-inch	45	580	do		Irrigation; domestic	
1231	B. F. La Rue	do	M-13	1897	do	50	270	do		do	1½
1232	do	do	M-13	1897	Bored, 7-inch	50	270	do	500.00	Irrigation	Small.
1233	Chas. Burrows	do	M-12	1895	Bored 2-inch	52	500	do	175.00	Domestic	4
1234	D. L. Whitney	do	N-12	1895	do	53	500	do	175.00	do	Small.
1235	O. P. Bunyard	do	N-13	1897	do	53	527	do		do	Small.
1236	E. P. Wright	do	N-13	1883	Bored, 4-inch	50	200	Hand		do	
1237	L. Seaman	do	N-12	1902	Bored, 3-inch	58	100	do		do	
1238	Geo. Burrows	do	N-12	1898	Bored 2-inch	53	500	Artesian	150.00	do	Small.
1239	G. B. Hemphill	do	N-12	1899	do	54	530		350.00	Domestic	
1240	do	do	N-12	1894	do	54	190	Hand			
1241	J. W. Miller	do	K-12	1888?	Bored, 4-inch	25	200?	Artesian		do	Small.
1242	do	do	K-12		Bored, 2-inch	25	200?	do		Stock	Small.
1243	Chas. Thornton	do	K-12	1896	do	24	560	do	205.00	Domestic; stock	Small.
1244	do	do	K-12	1900	do	24	560	do	225.00	Irrigation	5
1245	L. Deuni	do	K-13	1892	do	24	375	do	210.00	Domestic	Small.
1246	Louis Deuni	do	K-13	1895	do	23	566	do	212.30	Irrigation	
1247	L. H. Harling	do	K-13	1892	Bored, 7-inch	24	300?	do		Domestic	Small.
1248	do	do	K-13	1898	Bored, 2-inch	26	540	do	200.00	Irrigation	41
1249	Mrs. J. D. Carter	do	K-12	1900	do	27	500?	do	300.00	Domestic	Small.
1250	do	do	L-13	1902	Bored, 4-inch	26	575	do		Irrigation	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>					<i>Miner's inches.</i>
1251	Mrs. E. R. Miller	Los Coyotes	L-12	1897	Bored, 2-inch	27	27	340	Artesian	\$125.00		Domestic	Small.
1252	do.	do.	L-12	1900	do.	28	28	590	do.	300.00		Irrigation	3
1253	do.	do.	L-12	1897	do.	28	28	340	do.	125.00		do.	Small.
1254	J. G. Hannah	do.	L-12	1895	do.	28	28	333	do.	150.00		do.	Small.
1255	do.	do.	L-12	1897	do.	28	28	555	do.	250.00		do.	
1256	Geo. Nelson	do.	K-12	1899	do.	25	25	548	do.			Domestic; irrigation.	
1257	W. R. Miller	do.	K-12	1894	do.	27	27	550	do.			Stock	Small.
1258	C. C. Neff	do.	K-12	1895	do.	30	30	326	do.	175.00		Domestic	
1259	Mr. Miller	do.	K-12	1891	Bored, 4-inch	25	25	330	do.	210.00		do.	Small.
1260	James Bradle	do.	L-12	1899	Bored, 3-inch	31	31	550	do.	250.00		Irrigation	9
1261	J. H. Jackson	do.	L-12	1894	do.	31	31	330	do.	170.00		do.	
1262	W. R. Burnett	do.	L-12	1895	Bored, 2-inch	32	32	326	do.	150.00		Domestic; irrigation.	Small.
1263	Mrs. Sebastian	do.	L-12	1895	do.	35	35	330	do.			Not used	
1264	L. Flippen	do.	L-12	1898	do.	30	30	500	do.			Stock	Small.
1265	J. J. Feagan	do.	L-12	1898	do.	36	36	540	do.	300.00		Domestic; stock	3
1266	do.	do.	L-12	1892	Bored, 7-inch	36	36	575	do.	1,800.00		Irrigation	Small.
1267	do.	do.	L-12	1902	Bored, 12-inch	38	38	585	do.	1,650.00		do.	4
1268	do.	do.	L-12	1897	Bored, 2-inch	38	38	540	do.			Irrigation; stock	Small.
1269	do.	do.	L-12	1897	do.	39	39	596	do.	300.00		Domestic	Small.
1270	J. C. Cawthon	do.	M-12	1897?	do.	33	33	500	do.			do.	Small.
1271	J. N. Stockton	do.	L-12	1902	do.	41	41	184	Hand			do.	Small.
1272	do.	do.	L-12	1898	do.	42	42	400?	Artesian			Stock	Small.

1273	Mrs. R. J. Reeves	do.	M-12	1894	do.	45	300	Artesian, wind.	Domestic.	Small.
1274	C. R. Clausen	do.	M-12	1900	do.	46	540	29 Artesian.	Irrigation.	Small.
1275	do.	do.	M-12	1897	do.	48	540	29 do.	do.	Small.
1276	do.	do.	M-12	1897	do.	48	540	29 do.	do.	Small.
1277	do.	do.	M-12	1899	do.	48	540	26 Wind	Domestic	Small.
1278	Mr. A. R. Iuedkey	do.	M-12	1897	do.	49	540	Artesian.	Irrigation.	Small.
1279	W. T. Preston	do.	M-12	1898	do.	52	52	500 28 do.	Irrigation; do- mestic.	Small.
1280	J. L. Preston	do.	M-12	1898	do.	53	53	500 29 do.	do.	Small.
1281	Wm. Pechstein	do.	M-12	1893	do.	53	53	250 do.	Domestic.	Small.
1282	C. O. Walker	do.	N-12	1896	Bored, 5-inch.	55	55	280+ Gas.	Irrigation	†50
1283	E. R. Holman	do.	N-12	1893	Bored, 2-inch.	60	59	500 27 Wind.	Domestic.	do.
1284	Wm. Alphanalp	do.	N-12	1892	do.	60	58	507 Horsepower	do.	do.
1285	Mrs. Harrison	do.	N-12	1893	do.	59	59	100? 27 Hand.	do.	do.
1286	P. Mongofsky	do.	N-12	1901	Bored, 3-inch.	60	51	113 30 Wind	do.	do.
1287	Walter Bowen	do.	N-12	1891?	Bored, 2-inch.	67	58	180 do.	Not used.	do.
1288	Mrs. Laura Harrison	do.	N-11	1892	do.	68	60	256 28 Wind	Domestic.	do.
1289	Geo. N. Frentz	do.	N-11	1873	Bored, 7-inch.	66	64	280 29 Rotary pump	do.	do.
1291	J. L. Overton	do.	N-11	1888	Bored, 2-inch.	62	62	500+ 28 Artesian.	Domestic; irri- gation.	Small.
1292	do.	do.	N-11	1893	do.	63	63	280 do.	Irrigation	do.
1293	A. W. Brooks	do.	N-12	1893	Bored, 7-inch.	60	80	27 Wind	Domestic.	do.
1294	John O. Peterson	do.	N-12	1901	Bored, 2-inch.	60	52	80 27 Hand	do.	do.
1295	do.	do.	N-12	1899	Bored, 3-inch.	61	57	300 Wind	Irrigation	do.
1296	W. B. Pechstein	do.	N-12	1903	do.	57	51	152 27 do.	Domestic.	do.
1297	Centralia school dis- trict.	do.	N-11	1897	Bored, 2-inch.	60	60	486 30 Artesian.	do.	Small.
1298	John Terry	do.	N-11	1900	Bored, 7-inch, 270 feet; 3-inch, 200 feet.	59	59	470 28 do.	Irrigation	2
1299	do.	do.	N-11	1900	Bored, 3-inch.	59	59	475 28 do.	do.	†3
1300	do.	do.	N-11	1900	Bored, 2-inch.	59	59	475 28 do.	Domestic.	do.
1301	Mr. Cordiss	do.	N-12	1897	do.	57	57	290 do.	Irrigation	Small.
1302	J. C. Roller	do.	M-11	1896	do.	53	53	200? 28 do.	do.	Small.
1303	do.	do.	M-11	1896	do.	27	27	27 do.	Stock	Small.
1304	do.	do.	M-11	1896	do.	28	28	27 do.	Irrigation	Small.
1305	D. Holder	do.	M-11	1899	Hydraulic, 2-inch.	54	54	510 28 do.	Domestic.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1306	J. Siems.....	Los Coyotes.....	N-12.....	1900	Bored, 2-inch.....	58	58	517	28	Artesian.....	\$200.00		Stock.....	Small.
1307	do.....	do.....	N-12.....	1895	do.....	58	58	300		do.....			Irrigation.....	Small.
1308	C. Weber.....	do.....	M-12.....	1899	Bored, 7-inch.....	54	477	104		Hand.....	80.00		Domestic.....	
1309	do.....	do.....	M-12.....	1897	Bored, 3-inch.....	54	54	515	28	Artesian.....	175.00		Stock.....	Small.
1310	do.....	do.....	M-12.....	1897	Bored, 2-inch.....	54	54	530	28	do.....	180.00		Irrigation.....	Small.
1311	do.....	do.....	M-12.....	1893	Bored, 7-inch.....	54	54	343	28		500.00		Not used.....	
1312	C. E. Carner.....	do.....	N-12.....	1898	Bored, 2-inch.....	58	58	520	27	Artesian.....	300.00		do.....	
1313	T. M. Layman.....	do.....	M-11.....	1897	do.....	50	50	449	27	do.....	157.15		Irrigation; domestic.....	13
1314	do.....	do.....	M-11.....	1897	do.....	51	51	515	28	do.....	180.25		Domestic.....	Small.
1315	S. O. Walker.....	do.....	M-11.....	1897	do.....	48	48	292	29	Hand.....	120.00		do.....	
1316	do.....	do.....	M-12.....	1897	do.....	50	50	500?	31	Artesian.....	230.00		Irrigation.....	Small.
1317	do.....	do.....	M-12.....	1897	do.....	50	50	500		do.....	205.00		do.....	Small.
1318	do.....	do.....	M-12.....	1900	Bored, 3-inch.....	50	50	700	27	do.....	450.00		do.....	3
1319	W. D. Gilmore.....	do.....	M-12.....	1899	Bored, 2-inch.....	48	48	590	28	Artesian, wind.....	200.00		Stock.....	Small.
1320	do.....	do.....	M-12.....	1903	do.....	47	47	100	28	Wind.....	50.00		Domestic.....	
1321	Geo. D. Miller.....	do.....	M-12.....	1902	Bored, 10-inch.....	47	47	632	29	Artesian.....	1,700.00		Irrigation.....	1
1322	do.....	do.....	M-12.....	1890	Bored, 2-inch.....	47	47	286	27	do.....			Domestic; irrigation.....	
1323	do.....	do.....	M-11.....	1896	do.....	47	47	596	27	do.....			Irrigation.....	
1324	G. Dewey.....	do.....	M-11.....		Bored, 7-inch.....	47	47		28	do.....	1,700.00		Not used.....	
1325	A. Larrecq.....	do.....	M-12.....	1902	Bored, 2-inch.....	42	40	135		Hand.....	65.00		Domestic.....	
1326	B. Moullet.....	do.....	L-12.....	1899	do.....	39	39	569	28	Artesian.....	175.00		Irrigation.....	Small.
1327	do.....	do.....	L-12.....	1897	do.....	38	38	542	28	do.....	160.00		do.....	Small.

1328	do.	do.	L-12	1897	do.	37	37	531	28	do.	160.00	Domestic; irrigation.	Small.
1329	do.	do.	L-12	1898	do.	33	33	596	28	do.	175.00	Irrigation	2
1330	E. J. Behnke.	do.	L-11	1892	Bored, 7-inch.	37	37	316	28	land	600.00	Stock	
1331	do.	do.	L-11	1898	Bored, 2-inch.	38	38	563	34	Artesian	180.00	Not used.	
1332	H. H. Corell.	do.	L-11	1892	Bored, 7-inch.	51	51	284		do.	420.00	Irrigation.	
1333	do.	do.	L-11	1897	Bored, 2-inch.	37	37	554	28	do.	305.00	do.	Small.
1334	do.	do.	L-11	1900	Bored, 3-inch.	37	37	568	30	do.	300.00	do.	+9
1335	J. P. Moody.	do.	M-11	1900	do.	35	35	541	28	do.	300.00	do.	5
1336	do.	do.	L-11	1885?	Bored, 7-inch.	33	33	200	28	do.		Domestic; irrigation.	Small.
1337	do.	do.	L-11	1898	Bored, 3-inch.	33	33	440		do.	200.00	Irrigation.	Small.
1338	do.	do.	L-11	1901	do.	33	33	300	28	do.	175.00	do.	2
1339	J. F. Sheldon.	do.	L-12	1899	Bored, 2-inch.	32	32	550?	27	do.		do.	Small.
1340	do.	do.	L-12	1899	Bored, 3-inch.	32	32	550?	28	do.		do.	1 1/2
1341	do.	do.	L-12	1893	Bored, 4-inch.	31	31	300	27	do.		Not used.	
1342	Mr. Ermston.	do.	L-11	1894	Bored, 7-inch.	29	29		25	do.		Domestic; irrigation.	Small.
1343	O. Bell.	do.	K-11	1900	Bored, 3-inch.	29	29	220	28	do.		Irrigation	9
1344	B. F. Draper.	do.	K-11	1901	Bored, 2-inch.	29	29	315		do.	100.00	Domestic; irrigation.	+4
1345	Mrs. M. A. Geoddel.	do.	K-12	1897	Bored, 3-inch.	25	25	541	28	do.	190.00	Domestic.	9
1346	do.	do.	K-12	1870?	Bored, 7-inch.	25	25	122	27	do.	600.00	Irrigation.	Small.
1347	do.	do.	K-12	1870?	do.	26	26	132	27	do.	600.00	Domestic.	Small.
1348	Bloomfield district.	do.	K-12	1889	Bored, 2-inch.	26	26	240	28	do.		Domestic.	Small.
1349	B. J. Jones.	do.	K-12	1886	Bored, 7-inch.	28	28	156	28	do.	150.00	Domestic; irrigation.	
1350	do.	do.	K-12	1888	do.	28	28	224	28	do.	250.00	Irrigation.	Small.
1351	do.	do.	K-12	1901	Bored, 3-inch.	28	28	555	28	do.	315.00	do.	+12
1352	J. Swagard.	do.	K-12	1893	do.	28	28	500?		do.	300.00	Not used.	
1353	do.	do.	K-12	1898	do.	28	28	500	27	do.	300.00	Irrigation.	
1354	W. S. Grant.	do.	K-12	1888	Bored, 7-inch.	26	26	150	27	do.	150.00	Domestic.	
1355	do.	do.	K-12	1901	Bored, 3-inch.	26	26	550	28	do.	300.00	Irrigation.	+8
1356	H. Whipple.	do.	K-12	1897?	Bored, 2-inch.	25	25	350+	27	do.		Domestic.	
1357	do.	do.	K-12	1898	Bored, 3-inch.	25	25	550	28	do.		Irrigation.	2
1358	Fred Smith.	do.	J-12	1896	Bored, 2-inch.	25	25	165	26	do.	50.00	Domestic.	
1359	do.	do.	J-12	1898	Bored, 3-inch.	25	25	201	28	do.	92.00	Irrigation.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1360	Fred Smith.....	Los Coyotes.....	J-12.....	1900.....	Bored, 3-inch.....	25.....	25.....	312.....	27.....	Artesian.....	\$180.00.....	.....	Irrigation.....	† 11.....
1361	Columbus Jackson....	do.....	J-12.....	1898.....	Bored, 2-inch.....	28.....	28.....	173.....	25.....	do.....	52.00.....	.....	Domestic; irrigation.	.....
1362	B. F. Draper.....	do.....	J-12.....	1898.....	do.....	28.....	28.....	300.....	27.....	do.....	.....	.....	Irrigation.....	.....
1363	do.....	do.....	J-12.....	1899.....	do.....	27.....	27.....	300.....	28.....	do.....	.....	.....	Stock.....	† 1.....
1364	do.....	do.....	J-12.....	1902.....	do.....	27.....	27.....	300.....	28.....	do.....	.....	.....	.....	Small.....
1365	L. A. Goodrich.....	do.....	J-12.....	1900.....	Bored, 3-inch.....	25.....	25.....	230.....	24.....	do.....	.....	.....	Domestic; irrigation.	.....
1366	Anson Woodon.....	do.....	J-12.....	1898.....	Bored, 2-inch.....	28.....	28.....	300.....	24.....	do.....	150.00.....	.....	Domestic; stock.	.....
1367	H. L. Gordon.....	do.....	J-12.....	.....	do.....	27.....	27.....	.....	24.....	do.....	.....	.....	Domestic.....	.....
1368	do.....	do.....	J-12.....	.....	Bored, 7-inch.....	27.....	27.....	.....	.....	do.....	.....	.....	Stock.....	Small.....
1369	do.....	Los Cerritos.....	I-12.....	.....	Bored, 4-inch.....	27.....	27.....	.....	24.....	do.....	.....	.....	Irrigation.....	† 1.....
1370	do.....	do.....	I-12.....	.....	Bored, 10-inch.....	28.....	28.....	.....	25.....	do.....	.....	.....	do.....	Small.....
1371	do.....	do.....	I-12.....	.....	Bored, 4-inch.....	28.....	28.....	.....	27.....	do.....	.....	.....	do.....	† 1.....
1372	do.....	do.....	I-12.....	.....	do.....	28.....	28.....	.....	27.....	do.....	.....	.....	do.....	† 1.....
1373	do.....	do.....	I-12.....	.....	do.....	28.....	28.....	.....	26.....	do.....	.....	.....	do.....	† 1.....
1374	do.....	do.....	I-12.....	.....	Bored, 2-inch.....	29.....	29.....	.....	21.....	do.....	.....	.....	do.....	Small.....
1375	do.....	do.....	I-12.....	.....	Bored, 4-inch.....	29.....	29.....	.....	21.....	do.....	.....	.....	do.....	† 1.....
1376	do.....	do.....	I-12.....	.....	do.....	29.....	29.....	.....	21.....	do.....	.....	.....	do.....	† 1.....
1377	do.....	do.....	I-12.....	.....	do.....	29.....	29.....	.....	21.....	do.....	.....	.....	do.....	† 1.....
1378	do.....	do.....	I-12.....	.....	do.....	27.....	27.....	.....	26.....	do.....	.....	.....	do.....	† 2.....
1379	do.....	do.....	J-12.....	.....	do.....	26.....	26.....	.....	24.....	do.....	.....	.....	do.....	4.....
1380	do.....	do.....	J-12.....	.....	do.....	26.....	26.....	.....	28.....	do.....	.....	.....	do.....	4.....
1381	do.....	do.....	J-12.....	.....	do.....	26.....	26.....	.....	26.....	do.....	.....	.....	do.....	4.....

1382	W. J. Woodin.....	Los Coyotes.....	J-11.....	1894	Bored, 2-inch.....	31	31	240	22	do.....	135.00	Domestic.....	Small.
1383	do.....	do.....	J-11.....	1886	Bored, 7-inch.....	31	31	240	26	do.....	300.00	Stock.....	Small.
1384	S. L. Leighton.....	do.....	J-11.....	1885	do.....	31	31	243	25	do.....		Domestic.....	Small.
1385	W. Donnelley.....	do.....	J-11.....	1897	Bored, 2-inch.....	31	31	180	25	do.....	64.75	do.....	Small.
1386	B. H. Norton.....	do.....	J-11.....	1897	Bored, 3-inch.....	31	31	185	24	do.....	200.00	Irrigation.....	11
1387	C. Dorety.....	Los Cerritos.....	I-11.....	1900	Bored, 4-inch.....	32	32	300		do.....	70.00	do.....	4
1388	do.....	do.....	I-11.....	1900	Bored, 2-inch.....	32	32	180		do.....		Domestic.....	76
1389	W. M. Delano.....	Los Coyotes.....	K-11.....	1899	do.....	30	30	250		do.....		Domestic; irrigation.....	
1390	J. T. McCann.....	do.....	J-11.....	1899	do.....	29	29	180	27	do.....		Irrigation.....	Small.
1391	do.....	do.....	J-11.....	1899	do.....	29	29	180	29	do.....		Irrigation; domestic.....	4
1392	J. S. McDonald.....	do.....	K-12.....	1899	do.....	28	28	550	27	do.....		Stock.....	Small.
1393	A. Von Gruinegen.....	do.....	K-12.....	1885	Bored, 7-inch.....	28	28		26	do.....		Irrigation.....	8
1394	do.....	do.....	K-12.....	1898	Bored, 3-inch.....	28	28	550?	26	do.....		do.....	1
1395	do.....	do.....	K-12.....	1893?	Bored, 7-inch.....	28	28			do.....		Stock.....	Small.
1396	R. M. Foote.....	do.....	K-11.....	1876	do.....	28	28	236	27	do.....		Domestic.....	Small.
1397	do.....	do.....	K-11.....	1885?	do.....	28	28	219	27	do.....		Irrigation.....	3
1398	do.....	do.....	K-11.....	1899	Bored, 3-inch.....	28	28	591		do.....		do.....	
1399	Francis Pearce.....	do.....	K-11.....	1876	Bored, 7-inch.....	30	30	275	28	Horsepower.....	240.00	do.....	
1400	do.....	do.....	K-11.....	1880	Bored, 4-inch.....	30	30	164		Artesian.....		Domestic.....	Small.
1401	M. Stanfield.....	do.....	K-11.....	1896	Bored, 2-inch.....	31	31	80	26	do.....		Stock.....	Small.
1402	do.....	do.....	K-11.....	1896	do.....	31	31	300		do.....		Domestic.....	Small.
1403	B. Chubbie.....	do.....	K-11.....	1885	Bored, 7-inch.....	32	32	200	26	do.....		Stock.....	Small.
1404	F. E. Green.....	do.....	J-11.....	1898	Bored, 3-inch.....	34	34	175		do.....	70.00	Domestic; irrigation.....	Small.
1405	R. G. Ravenscroft.....	do.....	J-11.....	1892	Bored, 7-inch.....	33	33	130	25	Artesian, wind.....		Irrigation.....	3
1406	do.....	do.....	K-11.....	1897	Bored, 3-inch.....	31	31	190		Artesian.....		do.....	2
1407	do.....	do.....	K-11.....	1897	Bored, 2-inch.....	31	31	190		do.....		do.....	2
1408	F. Hancock.....	do.....	J-11.....	1901	Bored, 3-inch.....	31	31	200		do.....	247.50	Domestic.....	
1409	J. H. Crittenden.....	do.....	J-11.....	1897	Bored, 2-inch.....	33	33	550	29	do.....		do.....	Small.
1410	Jim Mushrust.....	do.....	K-11.....	1893	Bored, 7-inch.....	33	33	180	24	do.....		Irrigation.....	Small.
1411	do.....	do.....	K-11.....	1899	Bored, 2-inch.....	35	35	350?	28	do.....		do.....	1
1412	Benj. Chubbie.....	do.....	K-11.....	1897	Bored, 3-inch.....	32	32	330	28	do.....	160.00	do.....	Small.
1413	Mrs. M. E. Frankie.....	do.....	K-11.....	1898	Bored, 2-inch, 30 feet; 3-inch, 270 feet.....	32	32	300		do.....		do.....	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Mines' inches.</i>
1414	Thos. Moyle	Los Coyotes	K-11	1895	Bored, 2-inch	33	33	181	24	Artesian	\$100.00		Domestic; irrigation.	2
1415	R. W. Bingham	do	K-11	1899	do	34	34	190	27	do	100.00		Domestic	7
1416	do	do	K-11	1892	Bored, 7-inch	34	34	237	22	do	575.00		Irrigation	7
1417	do	do	K-11	1899	Bored, 2½-inch	34	34	200		do	125.00		do	
1418	do	do	K-11	1899	do	34	34	200	27	do	125.00		do	Small.
1419	do	do	K-11	1900	Bored, 7-inch	34	34	295		do	675.00		do	7
1420	Judge Willis	do	K-11	1900	Bored, 2-inch	33	33	100?	27	do			Domestic	
1421	Geo. Apgar	do	K-11	1881	Bored, 7-inch	31	31	200	27	do	300.00		Stock	+1
1422	do	do	K-11	1897	Bored, 3-inch	32	32	165	27	do	85.00		Irrigation	9
1423	do	do	K-11	1897	Bored, 2-inch	32	32	235	27	do	125.00		do	3
1424	do	do	K-11	1894	Bored, 7-inch	34	34	316	26	do	435.00		do	1
1425	Perry Moore	do	L-11	1901	Bored, 3-inch	35	35	550	26	do			do	8
1426	Mrs. Hollister	do	L-11	1901	do	38	38	318	25	do	225.00		do	8
1427	M. Williams	do	L-11	1893	Bored, 7-inch	38	38	210	25	do	274.25		Domestic	Small.
1428	do	do	L-11	1900	Bored, 3-inch	38	38	318	26	do	225.00		do	8
1429	do	do	L-11	1900	do	37	37	320	26	do	225.00		Irrigation	5
1430	C. L. Chamberlain	do	L-11	1901	do	39	39	520		do	289.00		Stock	Small.
1431	O. J. Chamberlain	do	L-11	1903	Bored, 4-inch	41	41	286		do	268.00		Irrigation	25
1432	G. S. Chamberlain	do	L-11	1902	do	42	42	266	26	do	265.00		do	8
1433	E. A. Gotterba	do	L-11	1896	Bored, 2-inch	37	37	200+	27	do			Stock	Small.
1434	R. B. Luther	do	L-11	1902	do	38	38	87	28	do	75.00		Domestic; irrigation.	1
1435	C. Salisbury	do	M-11	1897	do	39	39	150	27	do			do	1

1436	W. Tripiett.	do.	M-11.	1897	Bored, 3-inch.	45	45	600	26	do.	Stock.	Small.
1437	do.	do.	M-11.	1897	do.	45	45	200	27	do.	do.	Small.
1438	do.	do.	M-11.	1891	Bored, 7-inch.	45	45	200	27	do.	do.	Small.
1439	J. A. Campbell.	do.	M-11.	1891	Bored, 4-inch.	50	50	96	27	do.	Not used.	do.
1440	do.	do.	M-11.	1900	Bored, 3-inch.	50	50	250	25	do.	Irrigation.	do.
1441	do.	do.	M-11.	1900	Bored, 2-inch.	50	50	464	25	do.	Domestic, irrigation.	do.
1442	J. W. Mann.	do.	M-11.	1902	Bored, 4-inch.	53	53	108	27	do.	Irrigation.	14
1443	Arch Stoddard.	do.	M-11.	1902	Bored.	54	54	240	28	do.	do.	2
1444	Mr. G. M. Hoard.	do.	N-11.	1896	Bored, 2-inch.	66	66	550	20	do.	Stock.	Small.
1445	Wm. McCarthy.	do.	N-11.	1893	Driven, 1-inch.	68	60?	100	25	Wind.	\$100.00	do.
1446	W. Gusel.	do.	N-11.	1902	Bored, 2-inch.	67	57	82	26	Hand.	do.	do.
1447	J. Mitchell.	do.	N-11.	1895	Bored, 7-inch.	67	61	450	27	Gas.	1,000.00	Irrigation.
1448	do.	do.	N-11.	1897	do.	67	61	250	27	do.	do.	do.
1449	Lyman & Niger.	do.	N-10, 11.	1888?	do.	65	61	250	26	do.	do.	do.
1450	do.	do.	N-10, 11.	1902	Bored, 12-inch, 230 feet; 10-inch, 230 feet.	65	61	400	27	do.	do.	†150
1451	do.	do.	N-10.	1901	Bored, 10-inch.	65	61	100	27	do.	do.	do.
1452	do.	do.	N-10.	1900	Bored, 7-inch.	68	61	278	27	Wind.	166.00	Domestic.
1453	E. A. Niger.	do.	N-10.	1895?	Bored, 2-inch.	70	67	300+	27	Hand.	do.	do.
1454	Mr. Shoemaker.	do.	N-10.	1890?	Bored, 7-inch.	69	67	200	27	do.	Not used.	do.
1455	J. W. McKenny.	do.	N-10.	1891	Bored, 4-inch.	66	66	320	26	Artesian.	Stock; irrigation.	Small.
1456	R. C. Archibald.	do.	N-10.	1901	do.	65	65	120	26	Wind.	Domestic.	do.
1457	do.	do.	N-10.	1895	Bored, 2-inch.	64	65	202	26	Artesian.	135.00	do.
1458	J. W. McKenny.	do.	N-10.	1886	Bored, 7-inch.	65	65	407	26	Artesian, hand.	Not used.	Small.
1459	do.	do.	N-10.	1897	Bored, 4-inch.	65	65	407	26	Artesian	Irrigation.	†1
1460	do.	do.	N-10.	1903	Bored, 12-inch.	65	65	400	27	do.	do.	do.
1461	do.	do.	N-10.	1897	Bored, 2-inch.	68	68	403	27	do.	do.	Small.
1462	Geo. E. Dutton.	do.	N-11.	1891	Bored, 4-inch.	62	58	275	25	Wind.	Domestic.	do.
1463	J. M. Robertson.	do.	N-10.	1890	Bored, 7-inch.	59	54	308	26	Hand.	do.	do.
1464	R. E. Ibbetson.	do.	N-10.	1902	Bored, 10-inch.	61	61	460	27	Gas.	700.00	†80
1465	do.	do.	N-10.	1895	Bored, 2-inch.	61	61	400	28	Artesian.	do.	do.
1466	do.	do.	N-11.	1895	do.	56	56	56	28	do.	Stock.	Small.
1467	Mr. Stone.	do.	N-11.	1895	Bored, 3-inch.	57	57	57	26	do.	do.	Small.
1468	Isner & McCloud.	do.	N-10.	1885	Bored, 7-inch.	58	58	58	26	do.	Domestic.	do.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1469	Penelope Calder.	Los Coyotes.	N-10.	1898	Bored, 3-inch.	57	57	420	26	Artesian.	\$200.00		Stock.	Small.
1470	do.	do.	N-10.	1896	do.	57	57	420		do.	200.00		Not used.	
1471	do.	do.	M-10.	1898	do.	53	53	420	29	do.	200.00		Domestic.	
1472	Dr. Jas. Calder.	do.	M-10.	1898	do.	52	25	420	28	do.	200.00		do.	
1473	do.	do.	N-10.	1898	do.	56	56	420		do.	200.00		Not used.	
1474	do.	do.	N-10.	1898	do.	51	51	420	29	do.			do.	
1475	Rev. J. Cameron	do.	M-10.		do.	51	51	400?	32	do.			Stock.	Small.
1476	R. Lortff.	do.	M-10.	1895	Bored, 2-inch.	52	52	300—	27	Wind.			Domestic, stock.	
1477	J. A. McDonald.	do.	M-10.	1883	Bored, 7-inch.	49	49	180	29	Artesian.			Domestic.	Small.
1478	do.	do.	M-10.	1883?	do.	51	51	200?		do.			Stock.	Small.
1479	do.	do.	M-10.	1896	Bored, 3-inch.	49	49	407	29	do.	225.00		do.	Small.
1480	do.	do.	M-10.	1893	do.	50	50	450	29	do.	240.00		do.	Small.
1481	do.	do.	M-10.	1883	Bored, 7-inch.	50	50			do.			Not used.	
1482	do.	do.	M-9.	1902	Hydraulic, 3-inch.	51	51	197		do.	100.00		Irrigation.	3
1483	do.	do.	M-10.	1902	do.	50	50	237		do.	125.00		do.	2
1484	do.	do.	M-10.	1902	Bored, 4-inch.	50	50	230	30	do.	150.00		do.	1
1485	do.	do.	M-9.	1883	Bored, 7-inch.	56	56	250		do.			Stock.	1
1486	W. H. Hall.	do.	M-10.	1902	Bored, 12-inch.	45	45	286		Gas.	550.00	\$900.00	Irrigation.	50
1487	do.	do.	M-10.	1900	Bored, 7-inch.	46	46	286		Artesian.	250.00		Not used.	
1488	do.	do.	L-10.	1900	do.	45	45	135	27	do.	190.00		Domestic, irrigation.	6
1489	W. H. Forbes.	do.	L-11.	1902	Hydraulic, 3-inch.	42	42	575	27	do.	300.00		Irrigation.	Small.
1490	do.	do.	L-11.	1900	do.	42	42	900	27	do.	350.00		do.	Small.
1491	do.	do.	L-11.	1903	Hydraulic, 2-inch.	42	42	280	27	do.	125.00		Domestic.	1

1492	G. S. McWilliams	L-11	1898	Hydraulic, 3-inch.	42	393	28	do	210.00	Irrigation	3
1493	do	L-11	1898	do	43	280		do	128.00	do	2
1494	do	L-11	1896	Bored, 2-inch	43	280	27	do	125.00	Domestic	
1495	do	L-11	1897	Hydraulic, 3-inch.	43	378	27	do	208.00	Domestic; irrigation	2
1496	do	L-11	1903	Bored, 4-inch	43	282	27	do	170.00	Irrigation	2
1497	M. C. Chase	L-11	1898	do	42	615	30	do	300.00	do	
1498	do	L-11	1902	Hydraulic, 3-inch.	42	280		do	168.00	do	3
1499	do	L-11	1903	Bored, 4-inch	42	280		do	196.00	do	4
1500	Mr. Haskell	L-10		Bored, 3-inch	44	44	26	do		do	Small.
1501	Mr. Sineck	L-10		Bored, 7-inch	43		29	do		Domestic; irrigation	
1502	do	L-10		Hydraulic, 2-inch.	43			do		Not used	
1503	E. Heimerte	L-10	1883	Bored, 6-inch	39	280	26	do	500.00	Domestic	Small.
1504	Mr. Omstead	L-10	1883	Bored, 7-inch	41	250	27	do		do	Small.
1505	J. W. Alexander	K-10	1892	Hydraulic, 2-inch.	41	235	23	do	150.00	Domestic; irrigation	1
1506	do	K-10	1895	do	41	230	24	do	150.00	Domestic	Small.
1507	J. F. Thompson	K-10	1897	do	41	500	36	do		Domestic; irrigation	2
1508	do	K-10	1898	do	41	500	32	do		Irrigation	3
1509	W. Hancock	K-10	1888?	Bored, 7-inch	41	40	23	Hand		Domestic	
1510	A. J. Wells	K-11	1888?	do	37	200	25	Artesian		do	Small.
1511	Carey & McKinley	K-11	1897	Hydraulic, 2-inch.	37	200	32	do		do	Small.
1512	do	K-11	1896	Bored, 7-inch	37	200	30	do		Irrigation	1
1513	do	K-11	1898	Hydraulic, 2-inch.	37	500	31	do		do	2
1514	do	K-11	1898	do	37	200		do		Not used	
1515	L. Thornton	J-11	1896	do	38	200		do	66.00	Domestic	
1516	do	J-11	1901	Bored, 5-inch	38	200		do	175.00	Irrigation	9
1517	do	K-11	1901	do	39	200	23	do		do	9
1518	A. S. Manefee	J-11	1893	Bored, 4-inch	38	200		Gas, artesian	430.00	Domestic; irrigation	3
1519	John Severs	J-11	1885	Bored, 7-inch	38	189	22	Artesian	237.50	Domestic	12
1520	F. T. Morse	J-11	1892	do	37	243	23	do		Irrigation	19
1521	W. L. Campbell	J-11	1893	Hydraulic, 3-inch.	35	156	55	do		Domestic	
1522	do	J-11	1903	Bored, 7-inch	35	303	22	do	500.00	Irrigation	12
1523	W. A. Campbell	J-11	1875	do	39	203	22	do	650.00	Domestic	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1524	W. A. Campbell	Los Coyotes	J-11.	1874	Bored, 7-inch.	40	40	262	22	Artesian	\$850.00		Domestic	Small.
1525	J. E. Courtney	do.	I-11.	1875?	do.	42	42	180+	23	Wind, artesian.			do.	Small.
1526	John Keir	Los Cerritos	I-11.	1883	do.	40	40	228	23	Artesian			do.	†1
1527	Mrs. M. Butler	do.	I-11.	1897	Hydraulic, 2-inch.	41	41	185		do.			do.	
1528	Mr. Gordon	Los Coyotes	I-11.		do.	43	43		23	do.			Stock	Small.
1529	J. C. Smith	do.	K-10.	1897?	do.	42	42		23	do.			Domestic	Small.
1530	N. D. Robinson	do.	K-10.	1892	do.	40	40	195	22	do.	100.00		Stock	4
1531	do.	do.	K-10.	1877	Bored, 7-inch.	40	40	127	23	Hand, artesian.	150.00		Domestic	†2
1532	do.	do.	K-10.	1894	Hydraulic, 3-inch.	39	39	185		Artesian	100.00		Irrigation; stock	5
1533	Mr. Doley	do.	K-10.	1897?	Hydraulic, 2-inch.	44	44	175	25	do.			Not used	
1534	F. H. Purdy	do.	K-10.	1888?	Bored, 7-inch.	42	42	180	23	do.			Domestic, irrigation.	Small.
1535	do.	do.	K-10.	1899	Hydraulic, 3-inch.	41	41	140		do.			Irrigation.	
1536	Mr. Hurley	do.	K-10.	1898	Hydraulic, 2-inch.	43	43	140	22	do.			Domestic	
1537	C. Dohn	do.	J-10.	1888	Bored, 7-inch.	42	42	200		do.	300.00		do.	
1538	do.	do.	K-10.	1898	Hydraulic, 2-inch.	40	40	175	25	do.	51.00		Irrigation.	†2
1539	do.	do.	J-10.	1897	do.	42	42	175		do.	51.00		Not used	
1540	B. A. Epperly	do.	J-10.	1897	Bored, 7-inch.	44	44	200	22	do.			Irrigation.	
1541	do.	do.	J-10.	1897	Hydraulic, 2-inch.	44	44	200	22	do.			do.	1
1542	Epperly estate	do.	J-10.	1895	do.	42	42	560		do.			Domestic, irrigation.	1
1543	do.	do.	J-10.	1893?	Bored, 7-inch.	42	42	300	22	do.			Irrigation.	Small.
1544	do.	do.	J-10.	1896	Hydraulic, 2-inch.	40	40	250	22	do.			Not used	
1545	do.	do.	J-10.	1896	do.	40	40	560	30	do.			do.	

1546	S. A. Frampton.	do.	J-10.	1875	Bored, 7-inch.	42	40	200+	22	do.	Domestic.	12
1547	do.	do.	J-10.	1881	do.	43	40	200+	22	do.	Irrigation.	2
1548	L. Carse.	do.	J-10.	1877	do.	43	43	252	25	525.00	Stock.	Small.
1549	do.	do.	J-10.	1887	Hydraulic, 2-inch.	43	43	142	25	50.00	Domestic.	Small.
1550	F. T. Morse.	do.	J-10, 11.	1882	Bored, 7-inch.	41	41	197	23	do.	Domestic; irrigation.	Small.
1551	E. P. Morrison.	do.	J-10.	1887	Hydraulic, 2-inch.	44	44	176	23	55.00	Domestic.	Small.
1552	Crown Creamery Co.	do.	J-10.	1900	do.	45	45	176	22	do.	do.	Small.
1553	N. Gregory.	do.	I-10.	do.	Bored, 7-inch.	46	46	464	22	do.	do.	Small.
1554	do.	do.	I-10.	do.	Hydraulic, 2½-inch.	45	45	170	23	do.	Irrigation.	Small.
1555	Mr. Russell.	do.	I-10.	do.	Hydraulic, 2-inch.	42	42	22	22	do.	Domestic.	Small.
1556	C. M. Buck.	do.	I-10.	1889	Bored, 7-inch.	45	45	180	22	do.	do.	Small.
1557	J. E. Stones.	do.	I-10.	1902	Hydraulic, 3-inch.	46	46	21	21	do.	Domestic; irrigation.	4
1558	Mr. White.	do.	I-10.	1892?	Hydraulic, 2-inch.	44	44	24	24	do.	Stock.	Small.
1559	L. C. Butler.	do.	I-10.	1890	do.	46	46	113	25	do.	Domestic.	Small.
1560	W. A. Sackett.	Los Cerritos.	I-10.	1891	do.	45	45	180	25	do.	Domestic; irrigation.	2
1561	J. W. Hansard.	do.	H-1.	1897	do.	42	42	180	26	do.	Stock.	Small.
1562	Mrs. Richardson.	do.	H-11.	do.	do.	43	43	180	25	Hand, artesian.	Domestic.	Small.
1563	Alexander Watson.	do.	H-10.	1895	do.	45	45	160	26	do.	Domestic; irrigation.	Small.
1564	Mr. Burger.	do.	H-10.	1897	do.	47	47	250	22	Artesian.	Domestic.	Small.
1565	N. Jish.	do.	H-10.	1899	do.	47	47	633	22	do.	Irrigation.	Small.
1566	J. A. Goodlin.	do.	H-10.	1895	do.	47	47	131	28	do.	Domestic; irrigation.	Small.
1567	S. E. Garber.	do.	H-10.	1896	Bored, 7-inch.	50	50	600+	27	Wind, artesian.	Irrigation.	Small.
1568	do.	do.	H-10.	1902	Bored, 12-inch.	50	46	130	27	Not raised.	Not used.	Small.
1569	S. T. Carum.	do.	H-10.	1895	Hydraulic, 2-inch.	50	50	180	25	Wind, artesian.	Domestic.	Small.
1570	H. W. Carum.	do.	I-10.	1880	Bored, 7-inch.	48	46	190	25	Hand.	Stock.	Small.
1571	do.	do.	I-10.	1900	Bored, 3½-inch.	48	47	135	25	do.	Domestic.	Small.
1572	do.	do.	I-10.	1900	do.	48	47	135	25	Not raised.	Not used.	Small.
1573	W. L. Campbell.	Los Coyotes.	I-10.	1886	Bored, 4-inch.	49	49	160	27	Artesian.	Stock.	Small.
1574	do.	do.	I-10.	1895	Bored, 7-inch.	49	49	150	27	do.	do.	Small.
1575	do.	do.	I-10.	1893	Hydraulic, 2-inch.	50	50	150	22	do.	Domestic.	Small.
1576	do.	do.	I-10.	1893	do.	50	50	150	26	do.	Stock.	Small.
1577	do.	do.	I-9, 10.	1895	Bored, 7-inch.	51	51	160	26	do.	do.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>					<i>Miner's fathoms.</i>
1578	L. E. Dean.....	Los Coyotes.....	I-10.....	.....	Bored, 7-inch.....	51	51	215	Hand, artesian.....	.....	.....	Domestic.....	.....
1579	J. B. Ashby.....	do.....	I-10.....	1898	do.....	51	51	278	Artesian.....	.....	.....	Domestic, irrigation.....	1
1580	I. L. de Clereq.....	do.....	I-10.....	1900	Hydraulic, 2-inch.....	50	50	78	do.....	\$35.00	.....	Domestic.....	Small.
1581	John Paull.....	do.....	I-10.....	1879	Bored, 7-inch.....	49	49	300	Hand, artesian.....	.....	.....	do.....	Small.
1582	D. C. Ewing.....	do.....	I-10.....	.....	do.....	48	48	.....	do.....	.....	.....	do.....	.....
1583	P. T. Ward.....	do.....	I-10.....	1890?	do.....	47	47	300	Artesian.....	.....	.....	do.....	Small.
1584	E. P. Meggs.....	do.....	I-10.....	1901?	Driven, 1½-inch.....	47	47	70	Hand.....	.....	.....	do.....	.....
1585	C. C. Wright.....	do.....	I-10.....	1893	Hydraulic, 3-inch.....	53	53	330	Artesian.....	.....	.....	do.....	Small.
1586	John Brooker.....	do.....	I-10.....	1895	Hydraulic, 2-inch.....	52	52	100	Hand, artesian.....	.....	.....	do.....	.....
1587	S. R. Tibbotson.....	do.....	J-10.....	1894	do.....	52	52	176	Artesian.....	100.00	.....	do.....	.....
1588	Artesian school district.	do.....	J-10.....	1886	Bored, 4-inch.....	47	47	200	do.....	.....	.....	do.....	.....
1589	Artesian Christian Church.	do.....	J-10.....	1893	Hydraulic, 2-inch.....	48	48	127	do.....	.....	.....	do.....	Small.
1590	Wm. Gamble.....	do.....	J-10.....	1900	do.....	52	52	85	do.....	.....	.....	do.....	Small.
1591	do.....	do.....	J-10.....	1893?	Bored, 6-inch.....	51	51	300	do.....	.....	.....	Irrigation.....	.....
1592	M. E. Ruvance.....	do.....	J-10.....	1888?	Bored, 4-inch.....	50	50	125	do.....	.....	.....	Domestic.....	Small.
1593	Methodist Episcopal parsonage.	do.....	J-10.....	.....	Hydraulic, 2-inch.....	47	47	.....	do.....	.....	.....	Domestic, irrigation.....	1
1594	C. B. Scott.....	do.....	J-10.....	1893?	Bored, 7-inch.....	46	46	333	do.....	.....	.....	Domestic.....	.....
1595	G. R. Frampton.....	do.....	J-10.....	1883	do.....	45	45	.....	do.....	.....	.....	do.....	.....
1596	W. H. Smith.....	do.....	J-10.....	1896	Hydraulic, 2-inch.....	45	45	212	do.....	.....	.....	Not used.....	.....
1597	L. J. Stone.....	do.....	J-10.....	1893	do.....	45	45	181	Hand, artesian.....	125.75	.....	Domestic.....	Small.
1598	Mr. Morris.....	do.....	J-10.....	1883?	Bored, 8-inch.....	44	44	300	Artesian.....	.....	.....	do.....	Small.

1599	I. Nicholls.	do.	J-10.	1888?	Bored, 7-inch.	43	43	225	do.	Stock.	Small.
1600	do.	do.	J-10.	1900	Hydraulic, 3-inch.	43	43	531	do.	Irrigation; domestic.	Small.
1601	G. R. Frampton.	do.	J-10.	1900	Hydraulic, 2-inch.	47	47	267	do.	Domestic.	Small.
1602	C. A. Lange.	do.	J-10.	1894?	Bored, 7-inch.	48	48	248	do.	do.	Small.
1603	James Gillespie.	do.	J-10.	1892	Bored, 7-inch.	48	48	220	do.	do.	Small.
1604	do.	do.	K-10.	1900	Hydraulic, 2-inch.	58	58	190	do.	do.	Small.
1605	do.	do.	J-9.	1895	Hydraulic, 3-inch.	44	44	268	Hand, artesian.	do.	Small.
1606	Mrs. J. Purdy.	do.	J-10.	1895	Hydraulic, 2-inch.	49	49	140	Artesian.	do.	Small.
1607	do.	do.	J-10.	1896	do.	49	49	150	do.	do.	Small.
1608	H. D. Andrews.	do.	J-10.	1897	do.	50	50	130	do.	do.	Small.
1609	T. H. Johnson.	do.	J-9.	1896	do.	50	50	240	do.	do.	Small.
1610	do.	do.	J-9.	1896	Hydraulic, 3-inch.	50	50	190	do.	Irrigation.	Small.
1611	R. Carter.	do.	J-10.	1896	Hydraulic, 2-inch.	50	50	150	do.	Domestic.	Small.
1612	Mrs. M. Turner.	do.	J-10.	1895	do.	51	51	150	Wind, artesian.	do.	Small.
1614	D. S. Drisbach.	do.	J-10.	1894	do.	47	47	190	Gas, artesian.	Irrigation.	10
1615	T. P. Patterson.	do.	J-10.	1896	do.	48	48	150	Artesian.	Domestic.	Small.
1616	do.	do.	J-10.	1899	Bored, 4-inch.	48	48	130	do.	Not used.	Small.
1617	J. B. Hollingsworth.	do.	J-10.	1898	Hydraulic, 2-inch.	47	47	150	do.	Domestic.	Small.
1618	S. G. Woodward.	do.	J-10.	1895	Bored, 7-inch.	46	46	300	do.	Irrigation.	Small.
1619	do.	do.	K-10.	1899	Hydraulic, 3-inch.	47	47	151	Wind, artesian.	Domestic; irrigation.	Small.
1620	Mr. Gould.	do.	K-10.	1898	Hydraulic, 2-inch.	46	46	600	Artesian.	Not used.	Small.
1621	D. Thatcher.	do.	K-10.	1893	Bored, 2-inch.	48	48	154	do.	Domestic.	Small.
1622	Mrs. Meador.	do.	K-10.	1890?	Bored, 7-inch.	47	47	500+	do.	do.	Small.
1623	Mrs. M. E. Thomas.	do.	K-10.	1890?	do.	47	47	200+	Hand.	do.	Small.
1624	Mrs. Ella Pierce.	do.	K-10.	1885?	do.	44	44	260?	Artesian, hand.	do.	Small.
1625	J. F. Smith.	do.	K-10.	1893	do.	47	47	125	Artesian.	Domestic; irrigation.	Small.
1626	A. M. Costner.	do.	K-10.	1899	Bored, 2-inch.	47	47	217	do.	Domestic.	Small.
1627	J. A. Smith.	do.	L-10.	1893	Bored, 6-inch.	48	48	170	do.	Irrigation.	8
1628	J. B. Alexander.	do.	L-10.	1885	Bored, 7-inch.	50	50	336	do.	Domestic.	1
1629	Mr. Johnson.	do.	K-10.	1893	Bored, 2-inch.	43	43	32	do.	Irrigation.	1
1630	do.	do.	K-10.	1893	do.	42	42	36	do.	do.	Small.
1631	H. D. Andrews.	do.	K-10.	1901	Bored, 3-inch.	42	42	30	do.	do.	Small.
1632	J. A. Smith.	do.	L-10.	1883	Bored, 4-inch.	47	47	124	do.	Stock.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1633	J. A. Smith.	Los Coyotes.....	L-10....	1893	Bored, 6-inch.....	48	48	200	.....	Artesian.....	\$300.00	.....	Irrigation.....	4
1634	Sullivan estate.	do.....	L-10....	1895	Bored, 3-inch.....	48	48	300	28	do.....	.....	.....	Not used.....	.....
1635	do.....	do.....	L-10....	1901	do.....	47	47	280	45	do.....	100.00	.....	Irrigation.....	12
1636	J. B. Monroe.	do.....	L-10....	1898	do.....	.....	.....	137	27	do.....	.....	.....	do.....	3
1637	do.....	do.....	L-10....	1898	do.....	47	47	145	27	do.....	79.75	.....	do.....	1
1638	do.....	do.....	L-9....	1885	Bored, 7-inch.....	52	52	145	27	do.....	150.00	.....	Domestic.....	Small.
1639	Mr. Pug Rhodes.	do.....	L-10....	1891?	Bored, 4-inch.....	48	48	140	26	do.....	.....	.....	do.....	Small.
1640	J. B. Teel.	do.....	L-10....	1897	Bored, 2-inch.....	48	48	200	27	do.....	60.00	.....	Domestic; irrigation.	.....
1641	do.....	do.....	L-10....	1893	do.....	48	48	140	28	do.....	.....	.....	Stock.....	Small.
1642	do.....	do.....	L-10....	1895	Bored, 3-inch.....	46	46	600	35	do.....	.....	.....	Irrigation.....	Small.
1643	Mr. Zeus.	do.....	M-10....	1895?	Bored, 2-inch.....	49	49	170	28	do.....	.....	.....	do.....	4
1644	R. G. French.	do.....	L-10....	1897	do.....	49	49	140	27	do.....	37.50	.....	Domestic.....	Small.
1645	do.....	do.....	L-10....	1888	Bored, 4-inch.....	49	49	140	26	do.....	100.00	.....	Irrigation.....	1
1646	do.....	do.....	L-10....	1897	Bored, 2-inch.....	49	49	140	27	do.....	37.50	.....	Domestic.....	Small.
1647	W. E. Dorety.	do.....	L-9....	1878	Bored, 7-inch.....	.....	.....	150	28	do.....	.....	.....	do.....	Small.
1648	J. R. Mitchell.	do.....	M-9....	1901	Bored, 3-inch.....	52	52	.....	27	do.....	.....	.....	Irrigation.....	6
1649	do.....	do.....	M-10....	.....	Bored, 2-inch.....	51	51	.....	.....	do.....	.....	.....	do.....	4
1650	C. A. Hudgins.	do.....	L-9....	1891	do.....	58	58	90?	.....	Hand, artesian.	.....	.....	Domestic.....	.....
1651	do.....	do.....	L-9....	1897?	do.....	57	57	335	51	Artesian.....	.....	.....	Stock.....	2
1652	Dr. Crandall.	do.....	L-9....	1888	Bored, 7-inch.....	56	56	130	27	do.....	.....	.....	do.....	Small.
1653	T. M. Dillman.	do.....	L-9....	1893	Bored, 2-inch.....	54	54	108	25	do.....	65.00	.....	Domestic.....	.....
1654	John Baker.	do.....	L-9....	1888?	Bored, 7-inch.....	56	56	114	.....	Hand.....	.....	.....	Stock.....	Small.
1655	A. L. Smith.	do.....	L-9....	1899	Bored, 2-inch.....	57	57	103	25	do.....	50.00	.....	Domestic; stock.	.....

1656	G. H. Lillard.....	L-9.....	1884	Bored, 7-inch.....	45	150	30	Artesian, hand.....	Domestic.....	Small.
1657	.....do.....	L-9.....	1894?	Bored, 2-inch.....	45	605	24	Artesian.....	Irrigation.....	4
1658	Mrs. M. E. Robbins.....	L-10.....	1883?	Bored, 4-inch.....	51	330?	26	.....do.....	Domestic.....	Small.
1659	D. H. Lillard.....	L-9.....	1893	Bored, 2-inch.....	57	496	21	.....do.....	Domestic; irrigation.....	4
1660	.....do.....	L-9.....	1883	Bored, 7-inch.....	59	385	52	.....do.....	Stock.....	Small.
1661	J. L. Dougherty.....	L-10.....	1891	Bored, 2-inch.....	51	485	.....	.....do.....	Irrigation.....	4
1662	.....do.....	L-9, 10.....	1891	.....do.....	52	485	40	.....do.....	Domestic.....	Small.
1663	.....do.....	L-9.....	1903	.....do.....	54	125	.....	.....do.....	Stock.....	Small.
1664	C. W. Clauton.....	L-9.....	1888	Bored, 7-inch.....	60	180	22	.....do.....	Domestic.....	Small.
1665	.....do.....	L-9.....	1897	Bored, 2-inch.....	67	365	39	.....do.....	Stock.....	Small.
1666	P. H. Vedder.....	K-9.....	1897	.....do.....	60	130	22	.....do.....	Domestic.....	2
1667	James A. Smith.....	K-9.....	1877	Bored, 7-inch.....	53	293	23	.....do.....	Domestic; irrigation.....	1
1668	John Masten.....	K-9.....	1888	.....do.....	59	160	22	.....do.....	Domestic.....	Small.
1669	.....do.....	K-9.....	1895	Bored, 2-inch.....	59	415	32	.....do.....	Irrigation.....	Small.
1670	.....do.....	K-9.....	1895	.....do.....	60	420	33	.....do.....	.....do.....	1
1671	Chas. Grimm.....	K-9.....	1898	.....do.....	58	467	19	.....do.....	.....do.....	5
1672	J. A. Smith.....	K-9.....	1876	Bored, 7-inch.....	53	350	22	.....do.....	Domestic.....	Small.
1673	.....do.....	K-9.....	1891	.....do.....	53	558	22	.....do.....	Stock.....	Small.
1674	M. E. Purdy.....	K-9.....	1896	.....do.....	51	.....	26	.....do.....	.....do.....	Small.
1675	Mr. M. H. Meyers.....	K-10.....	1894	Bored, 2-inch.....	48	135	27	Hand, artesian.....	Domestic.....	Small.
1676	J. Swagard.....	K-9.....	1898	.....do.....	53	140	27	Artesian.....	.....do.....	Small.
1677	L. C. Mison.....	K-9.....	1893	.....do.....	54	185	25	Artesian, hand.....	Domestic; irrigation.....	Small.
1678	F. M. McCreary.....	K-9.....	1893?	.....do.....	54	145	23	Artesian.....	Domestic.....	Small.
1679	.....do.....	K-9.....	1903	Bored, 4-inch.....	53	145	.....	Gas, artesian.....	Irrigation.....	+ 35
1680	C. A. Abbott.....	J-9.....	1902	Bored, 2-inch.....	51	70	22	Artesian.....	Domestic.....	Small.
1681	M. C. Porter.....	J, K-9.....	1897	Bored, 3-inch.....	50	130	.....	.....do.....	Domestic.....	Small.
1682	J. W. Bell.....	J-9.....	1895	Bored, 2-inch.....	52	550	23	.....do.....	Stock.....	Small.
1683	.....do.....	J-9.....	1895	.....do.....	53	500?	20	.....do.....	.....do.....	Small.
1684	J. B. Benham.....	J-9.....	1897	.....do.....	54	600?	22	.....do.....	Domestic.....	Small.
1685	G. H. Clark.....	J-9.....	1899	.....do.....	54	600	.....	.....do.....	Irrigation.....	Small.
1686	.....do.....	J-9.....	1888?	Bored, 7-inch.....	54	200	23	.....do.....	Domestic.....	Small.
1687	John Gillispie.....	J-9.....	1897	Bored, 2-inch.....	53	140+	.....	.....do.....	.....do.....	.....
1688	Mrs. Matthews.....	J-9.....	1897?	.....do.....	56	.....	24	.....do.....	.....do.....	.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
1689	F. M. Schnabel.....	Los Coyotes.....	J-9.....	1900?	Bored, 2-inch.....	58	58	130	24	Artesian.....	\$75.00		Domestic; irrigation.	<i>Miner's</i> inches.
1690	Mr. Holingsworth.....	do.....	I-9.....		do.....	58	58		21	do.....			Not used.	
1691	R. E. Dolley.....	do.....	I-9.....	1888?	Bored, 7-inch.....	57	57	230?	25	do.....	500.00		Domestic.	Small.
1692	do.....	do.....	I-9.....		Bored, 2-inch.....	56	56	570	24	do.....			Irrigation.	Small.
1693	M. L. Black.....	do.....	J-9.....		do.....	53	53		23	do.....			Domestic.	Small.
1694	E. J. Collins.....	do.....	I-10.....	1873?	Bored, 7-inch.....				25	Hand.....			do.....	
1695	Frank Seppi.....	do.....	I-9.....		Bored, 2-inch.....	58	58		26	Artesian.....			do.....	Small.
1696	L. M. Moore.....	do.....	I-9.....	1897	do.....	58	57	156	26	Hand.....			do.....	
1697	do.....	do.....	I-9.....	1899	do.....	57	57	588		Artesian.....			Irrigation.	Small.
1698	Frank Seppi.....	do.....	I-9.....	1898	Bored, 4-inch.....	64	64	495		do.....			do.....	
1699	A. W. Ellis.....	do.....	I-9.....	1891	Bored, 2-inch.....	57	56	220	23	Hand.....			Domestic.	
1700	Artesia graveyard.....	do.....	I-9.....	1880?	Bored, 7-inch.....	56	53	190	25	Wind.....			Irrigation.	
1701	S. T. Corum.....	do.....	I-9.....	1880	Bored, 2-inch.....	54	54	200	28	Artesian.....			Domestic.	Small.
1702	J. Hay.....	do.....	I-9.....		Bored, 7-inch.....	53	53			do.....			Stock.	Small.
1703	C. D. Thompson.....	do.....	I-9.....	1884?	do.....	56	56	121	28	Artesian, hand.....			Domestic.	Small.
1704	Mr. McFarland.....	do.....	H-10.....	1888?	Bored, 4-inch.....	53	53	140	30	Hand.....			do.....	
1705	do.....	do.....	H-10.....	1901	Bored, 3-inch.....	53	53	600	23	Artesian.....			Irrigation.	3 Small.
1706	John Zinn.....	Los Carrizos.....	H-10.....		Bored, 4-inch.....	52	52	144		do.....			Stock.	
1707	G. A. Brown.....	do.....	H-9.....	1895	Bored, 2-inch.....	56	56	128	30	Wind.....			Domestic.	
1708	Jacob P. Thompson.....	do.....	H-9.....	1878?	Bored, 7-inch.....	55	55	130	31	do.....	800.00		do.....	Small.
1709	do.....	do.....	H-9.....	1884	Bored, 4-inch.....	55	55	128		do.....	108.00		Not used.	
1710	W. T. Gann.....	do.....	H-9.....	1898	Bored, 2-inch.....			608	23	Artesian.....	350.00		Domestic.	Small.



Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						Feet.	Feet.	Feet.						Miner's inches. Small.
1743	J. W. Donovan.	Los Coyotes.	J-8.	1895?	Bored, 2-inch.	72	70	140?		Artesian.			Stock.	Small.
1744	McKinney & Searight.	do.	J-8.	1885	Bored, 7-inch.	70	70	150	23	Hand.			Domestic.	
1745	Mrs. A. M. Sproule.	do.	I, J-8.	1878	do.	70		130	24	Artesian.			Irrigation.	Small.
1746	do.	do.	J-8.	1889	Bored, 3-inch.	67	67			do.			do.	3
1747	do.	do.	I-8.	1896	Bored, 2-inch.	69	69	137	32	do.	\$48.00		Domestic.	Small.
1748	W. L. Coward.	do.	J-9.	1899	Bored, 3-inch.			190	24	do.			Irrigation.	8
1749	H. Gotterba.	do.	I-8.	1896	Bored, 2-inch.	68	68	240	33	Artesian, hand.	80.00		Domestic.	Small.
1750	W. C. Sproul.	do.	I-8.	1873	Bored, 7-inch.	69	69	200?	31	Hand, artesian.			do.	
1751	do.	do.	I-8.	1893	Bored, 2-inch.	70	70	450	23	Artesian.	120.00		Domestic; irriga- tion.	Small.
1752	C. G. Bremond.	do.	I-8.	1889	Bored, 4-inch.	70	70	133	33	Hand, artesian.	110.00		do.	
1753	D. J. Buehn.	do.	I-8.	1876	Bored, 7-inch.	68	68	185		Wind, artesian.	700.00	\$650.00	Domestic.	
1754	Perris Moore.	do.	I-8.	1903	Bored, 3-inch.			172	31	Hand.			do.	
1755	J. S. Elloit.	do.	I-8.	1893	Bored, 2-inch.	76	75	150	37	do.	90.00		do.	
1756	Newriter school dis- trict.	do.	I-7.	1898	do.	83	82	105	42	do.			do.	
1757	W. P. Tibbett.	do.	I-7.	1883?	Bored, 4-inch.	81	81	120		Hand, artesian.			do.	
1758	John McLawton.	do.	I-7.	1900	do.	80	80	120	37	Artesian.			stock.	Small.
1759	Mrs. Stienhart.	do.	I-8.	1878?	Bored, 6-inch.	51	51	120?	29	do.			do.	Small.
1760	Robert Sackett.	Los Cerritos.	H-8.	1902	Bored, 12-inch.	68	68	104		Gas.	165.00		Irrigation.	60
1761	do.	do.	H-8.	1900	Bored, 2-inch.	64	64	100		Hand, artesian.	80.00		Domestic.	
1762	M. H. Holland.	Los Coyotes.	I-8.	1884	Bored, 7-inch.	73	73	130		Steam, artesian.			Irrigation.	Small.
1763	W. B. Pendleton estate	Los Cerritos.	H-8.	1885	do.	63	63	150	31	Artesian.			Not used.	
1764	John McLawton.	Los Coyotes.	H-7.	1888	Bored, 4-inch.	77	77	120	41	Hand.			Domestic.	

1765	Steve Strong.	do.	I-8.	Bored, 2-inch.	77	76	107	Wind.	Stock	Small.
1766	do.	do.	I-7.	do.	82	81	110?	43	do.	Small.
1767	S. Washburn.	do.	I-7.	Bored, 4-inch.	83	81	100?	31	Gas.	125.00
1768	E. Clark.	do.	I-5.	Bored, 2-inch.	76	76	130?	32	Artesian.	Stock.
1769	Frank Coulon.	do.	I-7.	do.	83	82	100?		do.	do.
1770	do.	do.	I-7.	Bored, 3-inch.	85	83	100	34	Wind	Domestic.
1771	Mr. Thorn.	do.	I-7.	Bored, 7-inch.	88	85	175	Hand, gas.	Domestic; irriga- tion.	117.00
1772	Mrs. Strong.	do.	I-7.	Bored, 2-inch.	83	83		22	Artesian.	Stock; irrigation.
1773	David Bullis.	do.	I-7.	do.	86	110		Hand.	Domestic.	40.00
1774	Mrs. C. Burnmiller Hickey.	do.	I-8.	Bored, 7-inch.	81	81	435	21	Wind.	1,400.00
1775	Mr. Swagard.	do.	J-8.	Bored, 2-inch.	76		150	29	Hand.	do.
1776	Geo. Heberle.	do.	J-8.	Bored, 7-inch.	81	67	50?	42	do.	do.
1777	W. F. Williamson	do.	J-8.	do.	69	69	140?	27	Artesian.	do.
1778	do.	do.	J-8.	do.	70	70	127	29	do.	Stock
1779	C. Nottingham.	do.	J-8.	do.	68	68	200	25	do.	do.
1780	Mrs. M. Evans.	do.	J-8.	do.	67	67	180	26	do.	do.
1781	A. Nottingham.	do.	K-8.	Bored, 2-inch.	69	69	762		do.	350.00
1782	do.	do.	K-8.	do.	70	70	386	22	do.	125.00
1783	W. M. Allison.	do.	J-9.	Bored, 7-inch.	62	62	260	23	Wind, artesian.	Domestic
1784	do.	do.	J-9.	Bored, 3-inch.	62	62	416	22	Artesian.	Stock
1785	do.	do.	J-9.	Bored, 7-inch.	62	61	150		Not used.	Not used.
1786	Mrs. James.	do.	K-9.	do.	61	61	150	29	Hand.	Domestic.
1787	Mr. Porter.	do.	J-9.	do.	58	58	400?	29	Artesian, wind	Domestic; stock.
1788	H. F. Drake.	do.	J-9.	Bored, 2-inch.	60	60	629	20	Artesian.	Irrigation
1789	John Aultman.	do.	K-9.	do.	58	58	190		do.	Domestic
1790	Joe Clanton.	do.	K-9.	Bored, 7-inch.	57	57	190	36	do.	do.
1791	J. F. Weaver.	do.	K-9.	Bored, 2-inch.	58	58	612	20	do.	Irrigation; do- mestic.
1792	H. F. Drake.	do.	K-9.	Bored, 7-inch.	62	62	429	21	do.	Stock
1793	do.	do.	K-9.	do.	62	62	200	22	Artesian, wind.	Domestic
1794	Mr. McGentis.	do.	K-9.	do.	64	64	130	27	Hand	do.
1795	J. G. Denman.	do.	K-9.	do.	65	65	160	22	Wind, artesian.	250.00
1796	do.	do.	K-9.	Bored, 2-inch.	65	65	400	20	Artesian.	Stock
1797	do.	do.	K-9.	Bored, 7-inch.	68	67	312	24	Gas.	400.00

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>					<i>Miner's inches.</i>
1798	J. G. Denman.....	Los Coyotes.....	K-9.....	1899	Bored, 2-inch.....	68	68	408	Artesian.....	\$200.00+	.....	Irrigation.....	Small.
1799	do.....	do.....	K-9.....	1898	Bored, 3-inch.....	68	68	379	do.....	200.00+	.....	Irrigation; stock	Small.
1800	do.....	do.....	K-9.....	1888	Bored, 7-inch.....	67	67	130	Wind, artesian.....	140.00	.....	Stock.....	.....
1801	J. W. Clanton.....	do.....	K-9.....	1896	Bored, 2-inch.....	66	66	155	do.....	60.00	\$190.00	Domestic.....	Small.
1802	do.....	do.....	K-9.....	1896	do.....	66	66	365	Artesian.....	200.00	.....	Stock.....	Small.
1803	do.....	do.....	K-9.....	1896	do.....	66	66	385	do.....	200.00	.....	do.....	Small.
1804	J. W. Fowler.....	do.....	K-8.....	1894	do.....	67	67	400	do.....	225.00	.....	Domestic.....	Small.
1805	do.....	do.....	K-8.....	1895	Bored, 3-inch.....	67	67	385	do.....	300.00	.....	Not used.....	Small.
1806	Mr. Brooks.....	do.....	K-8.....	1883	Bored, 7-inch.....	68	68	175	Artesian, hand.....	.....	.....	Domestic; stock.	.....
1807	C. Nottingham.....	do.....	K-8.....	1878?	do.....	73	73	175	Wind.....	300.00	.....	Domestic.....	.....
1808	do.....	do.....	K-8.....	1897	Bored, 2-inch.....	71	71	719	Artesian.....	275.00	.....	Irrigation.....	5 Small
1809	do.....	do.....	K-8.....	1895	do.....	71	71	160	Wind, artesian.....	70.00	.....	Irrigation; stock	.....
1810	J. L. Davee.....	do.....	K-8.....	1883	Bored, 6-inch.....	73	70	200?	Hand.....	.....	.....	Domestic.....	.....
1811	Jeff. Elliott.....	do.....	K-8.....	.....	Bored, 2-inch.....	71	69	75	do.....	.....	.....	do.....	.....
1812	do.....	do.....	K-8.....	.....	do.....	72	72	580	do.....	.....	.....	Irrigation.....	Small.
1813	do.....	do.....	K-8.....	.....	do.....	72	72	580	do.....	.....	.....	do.....	4
1814	M. Noble.....	do.....	K-8.....	1899	do.....	77	77	691	do.....	271.00	.....	do.....	.....
1815	do.....	do.....	K-8.....	1893	Bored, 7-inch.....	77	77	490	do.....	1,100.00	.....	Domestic; stock.	+ 2
1816	do.....	do.....	K-8.....	1902	Bored, 2-inch.....	77	77	491	do.....	240.00	.....	Stock.....	+ 4
1817	J. T. Hallett.....	do.....	K-8.....	1884	do.....	73	73	300	do.....	300	.....	Domestic.....	Small.
1818	do.....	do.....	K-8.....	1885	Bored, 7-inch.....	73	.....	100	do.....	100.00	.....	do.....	.....
1819	Theo Gillette.....	do.....	L-8.....	1893?	Bored, 2-inch.....	70	70	300?	Artesian, hand.....	.....	.....	do.....	Small.
1820	J. A. Smith.....	do.....	K-8.....	1895	do.....	65	65	150	Artesian.....	.....	.....	do.....	Small.

1821	Augustus F. Sproul	K-9	1877	Bored, 7-inch	62	200	28	do	800.00	Domestic; irrigation.	2
1822	do	K-9	1897	Bored, 2-inch	64	385	21	do	225.00	Stock	Small.
1823	J. H. Gwin	K-9	1890?	do	64	150	23	do		Domestic	Small.
1824	C. Grimm	K-9	1900	do	62	422	27	do	127.00	do	Small.
1825	do	K-9	1901	do	62	75		do	55.00	Stock	Small.
1826	W. Ramp	K-9	1897	do	66	150		do		Domestic; irrigation.	Small.
1827	Simon Stiffler	K-9	1891	do	64	100	27	do		Domestic	Small.
1828	T. L. Hungerford	L-9	1894	Bored, 4-inch	65	100	27	do		Domestic; irrigation.	Small.
1829	do	L-9	1899	Bored, 2-inch	63	80	29	do		Stock	Small.
1830	do	L-9	1894	do	65	100?	26	do		Irrigation	Small.
1831	Mrs. Law	L-9	1885?	Bored, 4-inch	61	60		Hand		Domestic	Small.
1832	James Wilson	L-9	1898	Bored, 2-inch	62	362	48	Artesian	150.00	Domestic; irrigation.	Small.
1833	Carmenita School	L-9	1895	do	67	365	48	do	165.00	Domestic	Small.
1834	H. H. Hungerford	L-9	1891	Bored, 4-inch	67	104	29	Hand	78.00	do	
1835	John Aten	L-9	1899	Bored, 2-inch	65	300?	25	do	100.00	Domestic; irrigation.	
1836	Mr. Branscom	L-9		Bored, 3-inch	64	64	24	do		Irrigation	Small.
1837	do	L-9		Bored, 2-inch	64	64		Artesian		do	
1838	S. E. Samuel	L-8	1900	Bored, 3-inch	69	580	24	do	280.00 +	do	
1839	do	L-8	1895	Bored, 2-inch	70	200	40	Hand	140.00	Domestic	
1840	J. R. Mitchell	L-9	1897	do	65	265	47	Artesian		Domestic; irrigation.	Small.
1841	B. L. Hutchins	L-9	1897	Bored, 3-inch	61	400	31	do		do	Small.
1842	do	L-9	1889	Bored, 7-inch		80		do		Stock	Small.
1843	J. R. Morrell	L-9	1896	Bored, 2-inch	61	344	53	do	100.00 -	Domestic; stock.	Small.
1845	Wm. Marriott	F-10	1899	do	57	661	32	do	200.00	Domestic; irrigation.	2
1846	L. B. Bronson	F-10	1903	Bored, 4-inch	57	111	23	do	100.00	Domestic	Small.
1847	W. Willard	E-10	1903	Bored, 7-inch	59	100	23	Not installed	50.00	Not used	
1848	do	E-10	1903	Bored, 4-inch	59	77			65.45	do	
1849	do	E, F-10	1903	Bored, 2-inch	58	56	90	Hand		Domestic	
1850	F. A. Bronson	F-10	1902	do	59	60	135	Gas, artesian	*500.00	Irrigation	
1851	do	F-10	1897	do	59	341	28	Artesian	110.00	Domestic; irrigation.	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
1852	J. B. Bean.....	Los Coyotes.....	E-10.....	1888?	Bored, 4-inch.....	Feet. 60	Feet. 60	Feet. 640	...	Artesian.....	.....	.....	Domestic.....	Miner's inches. Small.
1853	H. W. McKelvy.....	do.....	E-9.....		Bored, 2-inch.....	60	60	400	24	do.....	.....	.....	do.....	4
1854	do.....	do.....	F-9, 10.....		do.....	60	60	400	27	do.....	.....	.....	Stock.....	Small.
1855	Mrs. Hale.....	do.....	E-9.....		do.....	60	60	400	29	do.....	.....	.....	Domestic.....	Small.
1856	Ed. German.....	do.....	E-9.....		do.....	61	61	400?	29	do.....	.....	.....	do.....	Small.
1857	do.....	do.....	E-9.....		Bored, 5-inch.....	61	61	400?	29	do.....	.....	.....	Irrigation.....	Small.
1858	do.....	do.....	E-9.....		Bored, 2-inch.....	61	61	400	27	do.....	.....	.....	do.....	4
1859	Frank Mott.....	do.....	F-9.....	1899	do.....	61	61	350	28	do.....	.....	.....	Domestic; irrigation.	.....
1860	do.....	do.....	F-9.....	1899	do.....	61	61	350	27	do.....	.....	.....	Irrigation.....	.....
1861	A. A. Lewis.....	do.....	F-9.....	1897	do.....	61	61	528	27	do.....	.....	.....	Domestic.....	.....
1862	do.....	do.....	F-9.....	1897	do.....	61	61	525	28	do.....	.....	.....	Stock.....	Small.
1863	do.....	do.....	F-9.....	1897	do.....	61	61	525	25	do.....	.....	.....	Stock; irrigation	.....
1864	do.....	do.....	F-9.....	1899	do.....	61	61	525	28	do.....	.....	.....	do.....	3
1865	J. D. Fredericks.....	do.....	F-9.....	1897	do.....	61	61	150	26	Wind.....	\$75.00	.....	Domestic.....	.....
1866	do.....	do.....	F-9.....	1897	do.....	61	61	150	25	Artesian.....	.....	.....	Stock.....	Small.
1867	E. F. Gaines.....	do.....	F-9.....	1900	do.....	61	61	250	25	do.....	150.00	.....	Domestic; stock	.....
1868	do.....	do.....	F-9.....	1900	do.....	61	61	250	24	do.....	150.00	.....	Domestic.....	.....
1869	do.....	do.....	F-9.....	1900	do.....	61	61	250	23	do.....	150.00	.....	Irrigation.....	2
1870	J. A. Wooley.....	do.....	F-9.....	1898	Bored, 2½-inch.....	61	61	240	25	Artesian, wind.....	60.00	.....	Domestic.....	.....
1871	do.....	do.....	F-9.....	1898	Bored, 2-inch.....	61	61	590	29	Artesian.....	.....	.....	Not used.....	+5
1872	W. F. Harding.....	do.....	F-9.....	1901?	do.....	60	60	250?	25	do.....	.....	.....	Domestic; irrigation.	Small.
1873	Mrs. Sweeney.....	do.....	F-9.....	1899?	do.....	57	57	64	25	do.....	25.00	.....	Stock.....	Small.

1874	L. S. Kirkpatrick	do.	F-9	1900	do.	57	64	24	Wind	25.00	Domestic; stock	Small.
1875	J. R. & W. A. Clark	do.	F-9	1902	Bored, 10-inch.	62	645	24	Artesian.	1,306.50	Irrigation.	65
1876	do.	do.	F-9	1897	Bored, 7-inch.	62	645	24	do.		Stock; irrigation	19
1877	do.	do.	G-10	1901	Bored, 12-inch.	61	802	24	do.	1,500.00+	Irrigation.	27
1878	do.	do.	G-10	1895	Bored, 2-inch.	61	640	24	do.		Domestic.	Small.
1879	do.	do.	G-8	1890?	Bored, 7-inch.	61	61	250?	do.		Stock.	Small.
1880	do.	do.	G-10	1890	do.	61	61	250?	do.		do.	Small.
1881	do.	do.	G-10	1899	Bored, 10-inch.	57	57	645	24	do.	Irrigation.	6
1882	do.	do.	G-10	1896	Bored, 2-inch.	56	56	250	25	do.	Domestic.	Small.
1883	do.	do.	G-10	1894	do.	52	52	250	24	82.50	do.	Small.
1884	R. T. Neeley	do.	G-9	1899	do.	62	62	25	do.		do.	2
1885	R. L. Andrews	do.	G-9	1899	do.	62	62	147	24	Wind, artesian.	50.00	Small.
1886	John Gessford	do.	G-9	1898	Bored, 4-inch.	63	63	450?	25	Artesian.	Irrigation.	75
1887	do.	do.	G-9	1901	Bored, 12-inch.	64	64	450		Gas.	\$500.00	Small.
1888	Jothan Bixby	do.	G-9	1894	Bored, 4-inch.	61	61	150	25	Artesian, hand	Domestic.	Small.
1889	do.	do.	G-9	1898	Bored, 10-inch.	60	60	640	25	Artesian.	Irrigation.	39
1890	do.	do.	G-9	1896	Bored, 7-inch.	61	61	680	25	do.	do.	42
1891	do.	do.	H-8	1900	Bored, 10-inch.	70	70	680	25	do.	do.	18
1892	do.	do.	G-9	1897	Bored, 2-inch.	61	61	600	24	do.	Domestic.	Small.
1893	do.	do.	H-8	1895	do.	66	66	150?	26	do.	Stock.	Small.
1894	do.	do.	H-8	1895	Bored, 7-inch.	62	62	150	34	do.	Domestic.	Small.
1895	J. W. Furnivall	do.	H-8	1900	Bored, 2-inch.	67	67	165	27	do.	65.00	Small.
1896	T. Gregory	do.	G-9	1873?	Bored, 7-inch.	65	65	140	25	do.	do.	
1897	do.	do.	G-9	1900	Bored, 2-inch.	65	65	150	25	do.	Domestic; stock.	
1898	W. A. Reeves	do.	G-9	1899	do.	66	66	135	24	do.	Domestic.	
1899	Mrs. Mary Dougherty	do.	G-9	1899	do.	67	67	160?	24	do.	do.	4
1900	A. Meissen	do.	G-9	1903	do.	71	71	146	23	do.	Stock.	Small.
1901	D. Henderson	do.	G-8	1899	do.	71	71	140	25	do.	do.	
1902	W. Walton	do.	G-8	1893	Bored, 7-inch.	70	70	160	25	do.	Not used.	
1903	do.	do.	G-8	1896	Bored, 2-inch.	71	71	140		do.	do.	
1904	do.	do.	G-8	1896	do.	71	71	150		do.	do.	
1905	D. Henderson	do.	G-8	1891	Bored, 7-inch.	70	70	170	25	Artesian, wind	Domestic; stock.	Small.
1906	do.	do.	G-8	1896	Bored, 2-inch.	69	69	209	25	Artesian.	Stock.	Small.
1907	Mrs. Peterson	do.	G-8	1896	do.	73	73	140	26	do.	do.	2
1908	Mr. Sharpe	do.	G-8	1895	do.	75	75	24	do.	do.	do.	Small.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
1909	Mr. Wright.	Los Cerritos.	G-8.	1900	Bored, 2-inch.	72	72	150	24	Artesian.			Stock.	Small.
1910	T. Gregory.	do.	G-9.	1894	do.	69	69	140	24	do.	\$50.00		Domestic; stock.	Small.
1911	do.	do.	G-9.	1897	do.	69	69	625		do.	200.00		Not used.	
1912	do.	do.	G-9.	1897	do.	69	69	685		do.	200.00		do.	
1913	W. D. Thorn.	do.	F-9.	1896	do.	69	69	150		do.			Stock.	Small.
1914	John Newton.	do.	G-8.	1899	do.	71	71	131		do.			Domestic; irrigation.	3
1915	A. Meissen.	do.	F-8.	1899	do.	71	71	118		do.	58.00		Domestic; stock.	3
1916	do.	do.	F-8.	1900	do.	71	71	165	25	do.	66.00		Domestic.	
1917	do.	do.	F-8.	1902	Bored, 7-inch.	72	72	128		do.	128.00		Irrigation.	
1918	Mr. Sudor.	do.	G-8.	1900	Bored, 2-inch.	72	72	135	25	do.	54.00		Stock.	2
1919	Doctor McBurney.	do.	G-8.	1899	do.	72	72	140	25	do.			do.	2
1920	do.	do.	G-8.	1899	do.	73	73			do.			do.	Small.
1921	T. Gregory.	do.	F-8.	1898	do.			140		do.	56.00		do.	Small.
1922	Mrs. L. H. Germain.	do.	F-8.	1899	do.	73	73	144	25	do.			do.	2
1923	do.	do.	F-8.	1898	do.	73	73	149	25	do.	59.60		do.	
1924	do.	do.	F-8.	1898	do.	73	73	152		Gas, artesian.	60.80		Domestic.	2
1925	Mrs. Stella Meissein.	do.	G-8.		do.	74	74		25	Artesian.			Not used.	
1926	E. A. Keller.	do.	F-8.	1895	do.	75	75	177	24	Artesian, hand.	80.00		Domestic.	
1927	Miss O'Connor.	do.	F-8.	1898	do.	76	76	250	23	do.	80.00		Irrigation.	Small.
1928	Mr. Peterson?	do.	G-8.		do.	76	76		24	do.			Stock.	Small.
1929	P. P. Donlay.	do.	G-8.	1887?	do.	78	78	160		Hand.			Domestic.	
1930	do.	do.	G-8.		Bored, 7-inch.	79	79	160		do.			do.	
1931	T. F. Downs.	do.	F-8.	1902	Bored 2-inch.	78	78	150?	22	Wind.	136.75	\$228.00	do.	

1932	do.	do.	F-8.	1901	do.	78	78	78	24	Artesian.	84.45	Stock.	Small.
1935	J. S. Davee.	Los Coyotes.	J-8.	1903	Dug. 34 by 34 foot.	73	66	9	63	Hand.		do.	
1936	C. Nottingham.	do.	J-8.	1903	Hydraulic, 2-inch.	72	72	100	37	Artesian.	50.00	do.	3
1937	M. Sproul.	do.	J-7.	1898	Bored, 2-inch.	92	98	48	Wind.			Domestic; stock.	1
1938	M. T. Wright.	do.	J-8.	1898	do.	90	90	650?	23	Artesian.		Domestic.	Small.
1939	do.	do.	J-8.	1895?	Bored, 14-inch.	89	89	903		do.		Irrigation.	16
1940	D. D. Johnston.	do.	K-7.	1900	Bored, 10-inch.	88	88	700	27	do.	2,500.00	do.	3
1941	do.	do.	K-8.	1877	Bored, 7-inch.	87	87	620	23	Wind.	1,200.00	Domestic.	
1942	S. J. Wicks.	do.	K-7, 8.	1898	Bored, 2-inch.	86	86	320	24	Artesian.	80.00	do.	1
1943	Mrs. Holmes.	do.	K-8.	1898	Hydraulic, 2-inch.	81	81	511	24	do.	125.00	do.	
1944	John Dolland.	do.	K-8.	1893	Bored, 7-inch.	82	82	550	25	do.	1,000.00	Stock.	106
1945	do.	do.	K-8.	1893	Bored, 2-inch.	82	82	500	24	do.	300.00	do.	1
1946	do.	do.	J-8.	1898	do.	80	80	150		do.	125.00	Stock.	
1947	T. S. Dunn.	do.	K-7.	1899	do.	91	91	450	26	do.	100.00	Domestic.	Small.
1948	R. Phillips.	do.	K-7.	1883	Bored, 4-inch.	94	82	100	45	Gas.	287.00	do.	
1949	M. A. Pendleton.	do.	K-7.	1883	do.	95	70	100	75	Wind.		do.	
1950	do.	do.	K-7.	1902	Bored, 7-inch.	95		100	30	Hand.		Stock.	
1951	M. Sproul.	do.	K-7.	1888	Hydraulic, 2-inch.	87	87	120	25	Artesian.	60.00	do.	
1952	M. Coulon.	do.	K-8.	1895	Bored, 2-inch.	78	78	370	23	do.	170.00	Domestic.	Small.
1953	Mr. Hunt.	do.	K-8.	1883	Bored, 7-inch.	77		120	32	Wind.	500.00	do.	†1
1954	do.	do.	K-8.	1883	do.	78	78	120		Artesian.	500.00	Stock.	Small.
1955	Edwin Cawston.	do.	K-8.	1896?	Bored, 2-inch.	76	76	498	23	do.		Domestic.	
1956	do.	do.	K-8.	1896	do.	76	76	320	22	do.		Stock.	
1957	E. A. Venable.	do.	K-7.	1896	do.	70	70	550	23	do.		Domestic; stock.	2
1958	do.	do.	L-8.	1896	Bored, 7-inch.	72	72	100	32	Hand.		Domestic.	
1959	B. Branson.	do.	L-8.	1897	Hydraulic, 2-inch.	73	73	500	25	Artesian.	185.00	Irrigation.	5
1960	J. M. Frazer.	do.	L-8.	1900	Bored, 2-inch.	77	77	565		do.	250.00	do.	13
1961	do.	do.	L-8.	1902	do.	76	76	555	24	do.	180.00	Domestic; irrigation.	†2
1962	C. H. Mettler.	do.	L-8.	1887	Bored, 7-inch.	77	72	80	37	Wind.		Domestic.	
1963	A. T. Wilkinson.	do.	L-8.		Bored, 2-inch.	75		90	38	do.		do.	
1964	Will Clanton.	do.	L-8.		Driven, 4-inch.	77		60	37	Hand.		do.	
1965	W. A. Thompson.	do.	L-8.	1883	Bored, 7-inch.	78	78	393	24	Artesian.		Domestic; stock.	Small.
1966	do.	do.	K-8.	1898	Bored, 2-inch.	80	80	500	29	do.	200.00	Irrigation.	Small.
1967	Wm. Newton.	do.	L-8.	1890	do.	83	83	717	28	do.	186.00	Stock.	7

*Wells in the Dorney quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
1968	Wm. Newton.....	Los Coyotes.....	L-8 .....	1891	Bored, 2-inch.....	Feed. 83	Feed. 83	724	24	Artesian.....	\$253.00	Domestic; irrigation.	Miner's inches. 1½
1969	J. M. Frazer.....	do.....	L-8 .....		do.....	81	81	830	31	do.....		Stock.....	1
1970	do.....	do.....	L-8 .....		Bored, 3-inch.....	81	81	550	40	do.....		do.....	Small.
1971	E. Thowson.....	do.....	L-7 .....		Bored, 4-inch.....	85	78	57	32	Hand.....		do.....	
1972	John Baker.....	do.....	L-7 .....	1898	Bored, 2-inch.....	87	115?	39	do.....			Domestic.....	
1973	J. Hualde.....	do.....	K, L-7.....	1891	Bored, 7-inch.....	92	92	114	Wind.....	120.00		Domestic; stock.	
1974	J. W. Inman.....	do.....	K-7 .....	1891	do.....	91	86	104	38	do.....	\$30.00	Stock; irrigation	
1975	do.....	do.....	K-7 .....	1897	Bored, 2-inch.....	95	95	675	Artesian.....	200.00		do.....	
1976	John Baker.....	do.....	K-7 .....	1897	Bored, 2-inch.....	88	86	70	45	Wind.....	25.00	Stock.....	
1977	A. W. Surbeck.....	do.....	K-7 .....	1890	Bored, 7-inch.....	88	82	84	57	do.....	85.00	Domestic.....	
1978	do.....	do.....	K-7 .....	1897	Bored, 2-inch.....	85	83	80	49	Hand.....	40.00	Stock.....	
1979	D. Mabry.....	do.....	K-7 .....	1895?	do.....	89	90	55	do.....	45.00		Domestic.....	
1980	L. M. McConnell.....	do.....	K-8 .....	1895	do.....	79	79	92	47	do.....	45.00	do.....	
1981	Geo. W. Wardell.....	do.....	K-8 .....	1902	do.....	79	79	476	25	Artesian.....	190.00	Irrigation.....	1
1982	do.....	do.....	K-8 .....	1900	do.....	79	75	76	37	Hand.....	37.50	Domestic.....	
1983	S. Wardell.....	do.....	L-8 .....		do.....	79	79	650	26	Artesian.....		Stock.....	1½
1984	W. H. Miller.....	do.....	K-8 .....	1903	do.....	80			Gas.....	230.00		Irrigation.....	
1985	H. E. Belfield.....	do.....	L-8 .....	1899	do.....	73	73	565	25	Artesian.....	200.00	Domestic.....	2
1986	do.....	do.....	L-8 .....	1896	do.....	72	72	300	25	do.....	175.00	do.....	1½
1987	do.....	do.....	L-8 .....		Bored, 4-inch.....	71	70	75	37	Wind.....		do.....	
1988	W. Hungerford.....	do.....	L-8, 9.....	1873?	Bored, 7-inch.....	70	70	400	32	Artesian.....		Domestic; stock.	1
1989	J. R. Mitchell.....	do.....	L-8 .....	1878	do.....	69	68	180	31	Hand.....		Stock.....	
1990	do.....	do.....	L-8, 9.....	1900	Bored, 3-inch.....	67	67	600		Artesian.....	275.00	Irrigation.....	3



Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Fed.</i>	<i>Fed.</i>	<i>Fed.</i>						<i>Miner's inches.</i>
2023	S. Forbes	Los Coyotes	M-8.	1898?	Bored, 2-inch.	72	72	600	31	Artesian.			Domestic; irrigation.	1
2024	J. W. Brown	do.	M-8.	1899	do.	73	71	90	45	Hand.	\$21.00		Domestic.	
2025	B. W. Hutchinson	do.	M-8.	1897	do.	73	63	92	36	do.	90.00		do.	
2026	do.	do.	M-8.	1899	Hydraulic, 2-inch.	74	74	526		Artesian.	225.00		Irrigation; stock	6
2027	J. W. Brown	do.	M-8.	1899	Bored, 2-inch.	72	67	61		Hand.	24.00		Stock.	
2028	J. S. Copeland	do.	M-7, 8.		do.	95	95	600?	44	Artesian.			Domestic.	
2029	do.	do.	M-7.	1894?	Bored, 10-inch.	93	93	750?	43	Gas.			Stock.	10
2030	Mr. McNally	do.	M-8.	1894	Bored, 8-inch.	97	97	441	35	Gas, artesian.	555.00+	\$1,300.00	Irrigation; domestic.	40
2031	do.	do.	M-7.	1894	Bored, 7-inch.	133		480			212.50+		Irrigation.	
2032	do.	do.	M-7.		Bored, 8-inch.			500		Gas.			Not used.	
2033	do.	do.	N-6.	1894?	Bored, 10-inch.			634					Irrigation.	
2034	do.	do.	M-7.	1895	do.	152	152	699		Gas, artesian.	1,200.00		Irrigation.	Small.
2035	do.	do.	M-7.	1900	do.	135	135	680	98	Artesian.			do.	†25
2036	C. Underwood	do.	M-6.		Bored, 7-inch.	125	125	198		do.			Domestic; stock.	
2037	do.	do.	M-6, 7.	1897	do.	125	125	450	56	do.	880.00		Domestic.	
2038	Geo. B. Reebe	do.	M-7.	1895?	Bored, 2-inch.	100	100	500?	45	Hand.				
2039	do.	do.	L-6, 7.	1900	Bored, 3-inch.	80	80	815	85	Artesian.			Irrigation.	
2040	do.	do.	L-6, 7.	1900	do.	80	80	818	78	do.			do.	
2041	H. B. Hawk	do.	M-7.		Bored, 2-inch.	125	125	400?		Wind.			do.	
2042	do.	do.	M-7.	1894	Bored, 7-inch.	125	108	415		do.	800.00		do.	
2043	do.	do.	M-7.		Bored, 10-inch.	105	104	400?	36	Gas.		1,000.00	Irrigation; domestic.	



*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2077	E. Wickman.....	Santa Gertrudis.....	K-5.....	1898	Dug, 3 by 4 foot.....			35		Wind.....			Domestic.....	
2078	Railroad station.....	do.....	K-5.....	1897	Bored, 4-inch.....	158	128	80	27	Hand.....	\$70.00		Domestic; stock.....	
2079	W. B. Ellis.....	do.....	K-5.....	1900	Driven, 3½-inch.....	164	130	37	47	do.....	45.00		Domestic.....	
2080	Mr. Hollenbeck.....	do.....	K-4.....	1900	Dug, 4-foot diameter.....	162	130	35	63	Wind.....	50.00	\$125.00	Domestic.....	
2081	C. H. Girdlestone, agent.....	do.....	K-5.....		Bored, 7-inch.....	157	127	190	29	do.....			do.....	
2082	Frank Groves.....	do.....	K-5.....		Dug, 4 by 4 foot.....	159	134	28		Hand.....			Domestic.....	
2083	C. H. Girdlestone, agent.....	do.....	K-5.....	1874	Bored, 7-inch.....	159		300	75	do.....			Domestic.....	
2084	do.....	do.....	K-5.....		do.....	159	142	300	81	Wind.....			do.....	
2085	J. W. Weaver.....	do.....	J, K-4.....	1902	Dug, 3½-foot diameter.....	159	132	30	53	Hand.....	40.00		do.....	
2086	C. C. Mason.....	do.....	K-5.....	1888	Bored, 7-inch.....	159	134	52	80	Wind.....	105.00	110.00	do.....	
2087	do.....	do.....	K-4.....	1888	do.....	159	134	85		do.....	170.00	115.00	Domestic; stock.....	
2088	Mrs. L. Hein.....	do.....	J-5.....	1903	Dug, 2-foot diameter.....	155	128	30	66	Hand.....	52.50		Domestic.....	
2089	J. M. Ellis.....	do.....	K-5.....	1893	Dug, 4-foot diameter.....	156	128	31	94	do.....	45.00		do.....	
2090	O. Blanchard.....	do.....	K-5.....		Dug, 2-foot diameter.....	168	136	36		Wind.....	50.00		do.....	
2091	C. W. Duncan.....	do.....	K-5.....	1891	Bored, 2-inch.....	168	138	127	41	do.....	140.00		do.....	
2092	J. S. Buckbee.....	do.....	K-5.....	1896	Dug, 3½ foot diameter.....	166	132	37	38	do.....	40.00	110.00	do.....	
2093	John S. Baker.....	do.....	K-5.....		Bored, 7-inch.....	150	118	108	39	Hand.....	125.00		do.....	
2094	C. Palm.....	do.....	K-5.....	1896	Bored, 2-inch.....	161	160	275	62	do.....			do.....	
2095	P. Bedler.....	do.....	J-5.....	1895?	do.....	140		105	31	do.....	50.00		do.....	

2096	J. C. Clark.....	J-5.....	do.....	130	187	51	do.....	55.00	150.00	Stock.....
2097	do.....	J-5.....	do.....	144	60?	52	Wind.....			Domestic.....
2098	John Paddison.....	J-7.....	Bored, 4-inch.....	152	110?	34	do.....			do.....
2099	J. W. Sharp.....	J-5.....	Bored, 7-inch.....	150	380					Not used.....
2100	do.....	J-5.....	1877? do.....	145	380	56	Wind.....			Domestic.....
2101	do.....	J-5.....	1902 Bored, 12-inch.....	130	94	39	Gas?			
2102	do.....	J-5.....	1903 do.....	130	94?		do.....			
2103	J. S. Brown.....	J-5.....	1890? Bored, 2-inch.....	135	385	60	Wind.....			Domestic.....
2104	do.....	J-5.....	Bored, 7-inch.....	133	385?		Hand.....			Not used.....
2105	J. H. Haddock.....	J-5.....	Bored, 4-inch.....	140	129	117	do.....	102.00		Domestic.....
2106	A. Loveall.....	J-5.....	1901 Bored, 5-inch.....	130	118	66	Wind.....	55.00		do.....
2107	Fred Humler.....	J-5.....	1889 Bored, 3-inch.....	130	105	80	do.....			do.....
2108	C. B. Woodhead.....	J-5.....	1890? Bored, 7-inch.....	127		45				Not used.....
2109	do.....	J-5.....	1898? Bored, 8-inch.....	125	702	62	Artesian.....			Stock..... 20
2110	do.....	J-5.....	Bored, 3-inch?	133	37		Wind.....			Domestic.....
2111	A. C. Ramirez.....	J-5.....	Bored, 4-inch.....	144	68	60	do.....			do.....
2112	John W. Rannalls.....	K-6.....	Bored, 4-inch.....	125	120	381		450.00		Not installed.....
2113	do.....	J-6.....	Bored, 5-inch.....	116	76	50	Hand.....	50.00		Domestic.....
2114	Mr. Obair.....	J-6.....	1893 do.....	117	112	730	Gas, wind.....	1,000.00		Domestic; Irriga- tion..... 80
			1903 Bored, 12-inch.....	117		24				
2115	John Paddison.....	J-6.....	1902 do.....	117	110	250	Gas.....	500.00	800.00	Irrigation..... †50
2116	do.....	J-6.....	1884 Bored, 4-inch.....	115	113	267	Wind.....		150.00	Domestic.....
2117	Norwalk Co. Cream- ery.....	J-7.....	Bored, 2-inch.....	112	450	22	Hand.....			do.....
2118	Mrs. A. M. Sproule.....	J-7.....	1900 do.....	102	150	34	do.....			Stock.....
2119	J. S. Bland.....	J-7.....	1902 do.....	100	100	50	Wind.....	52.00	88.00	Domestic.....
2120	Mrs. A. M. Sproule.....	J-7.....	1899 do.....	101	660			400.00		do.....
2121	F. Hawkins.....	J-7.....	Bored, 3-inch.....	98	110	39	Wind.....	60.00		do.....
2122	J. S. Elliot.....	J-7.....	Bored, 2-inch.....	99	95	490	do.....	375.00		do.....
2123	E. Stiffler.....	J-7.....	Bored, 4-inch.....	99	89	100?	do.....			do.....
2124	Mrs. F. A. Haddock.....	J-7.....	1901 do.....	100	88	90	do.....	55.00	125.00	do.....
2125	Norwalk Building As- sociation.....	J-7.....	1893 Bored, 7-inch.....	100	89	97	do.....	125.00	225.00	do.....
						51				
2126	R. A. Byron.....	J-7.....	1900 Bored, 8-inch.....	100	89	104	Gas.....	110.00	375.00	do.....
2127	J. Swagart.....	J-7.....	1886? do.....	100	104	64	Wind.....			do.....
2128	L. Langley.....	J-7.....	1891 Bored, 2-inch.....	103	40	53	Hand.....			do.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2129	J. Watson.....	Santa Gertrudis.....	J-6.....	.....	Bored, 2-inch.....	108.....	108.....	165	40	Hand.....	.....	.....	Domestic.....	.....
2130	W. W. McElhiney.....	do.....	J-6.....	1882?	Bored, 4-inch.....	109.....	101.....	312	25	Wind.....	.....	.....	do.....	.....
2131	W. W. Orr.....	do.....	J-6.....	1883	Bored, 7-inch.....	118.....	109.....	50	46	do.....	\$52.00	\$100.00	Stock.....	.....
2132	do.....	do.....	J-6.....	1898	do.....	117.....	107.....	50	62	do.....	50.00	.....	Domestic.....	.....
2133	C. E. O'Conner.....	do.....	J-6.....	.....	Bored, 2-inch.....	122.....	117.....	72	91	do.....	23.00	270.00	do.....	.....
2134	do.....	do.....	J-5.....	1900	Bored, 12-inch.....	122.....	114.....	109	.....	.....	170.00	.....	Not used.....	.....
2135	J. D. Crawford.....	do.....	J-5.....	1885?	Bored, 4-inch.....	124.....	116.....	62	102	Wind.....	.....	.....	Domestic.....	.....
2136	S. J. Lovell.....	do.....	J-5.....	1899	Dug, 4 by 4 foot.....	124.....	117.....	10	96	Hand.....	.....	.....	do.....	.....
2137	O. Newlan.....	do.....	I-5.....	.....	Bored, 4-inch.....	127.....	.....	35	80	do.....	.....	.....	do.....	.....
2138	R. H. Haddock.....	do.....	I-5.....	1903	Bored, 12-inch.....	129.....	118.....	96	59	Gas.....	180.00	600.00	Irrigation.....	.....
2139	D. E. Haddock.....	do.....	I-5.....	1883	Bored, 2-inch.....	131.....	118.....	57	61	Hand.....	.....	.....	Domestic.....	.....
2140	J. F. Moore.....	do.....	I-5.....	1902	Bored, 5-inch.....	130.....	118.....	44	52	do.....	38.00	.....	do.....	.....
2141	L. W. Houghton.....	do.....	I-4.....	1896	Bored, 2-inch.....	130.....	118.....	60	40	do.....	.....	.....	do.....	.....
2142	do.....	do.....	I-4.....	1899	Bored, 12-inch.....	129.....	.....	50	.....	Gas?.....	75.00	.....	Irrigation.....	.....
2143	do.....	do.....	I-4.....	1899	Bored, 10-inch.....	129.....	129.....	775	23	Gas, artesian.....	2,000.00	1,625.00	do.....	.....
2144	W. W. Orr.....	do.....	J-4.....	1896	Bored, 8-inch.....	141.....	132.....	36	50	Wind.....	35.00	200.00	Stock.....	.....
2145	Mrs. Carey.....	do.....	J-4.....	.....	do.....	141.....	131.....	44	51	do.....	.....	.....	Domestic.....	.....
2146	L. W. Houghton.....	do.....	I, J-4.....	.....	Dug, 4 by 4 foot.....	133.....	121.....	16	32	Hand.....	.....	.....	do.....	.....
2147	J. C. Dashiell.....	do.....	I-5.....	1896?	Bored, 2-inch.....	122.....	112.....	51	55	Wind.....	50.00	200.00	Stock, domestic.....	.....
2148	Mr. Schendoney.....	do.....	I-5.....	1903	Bored, 3-inch.....	120.....	.....	55	78	do.....	.....	.....	Domestic.....	.....
2149	L. W. Houghton.....	do.....	L-5.....	1903	Bored, 5-inch.....	119.....	107.....	57	39	Hand.....	51.30	.....	do.....	.....
2150	do.....	do.....	I-5.....	1900	Driven, 4-inch.....	116.....	104.....	34	40	Wind.....	210.00	.....	do.....	.....
2151	Mr. Glaselle.....	do.....	I-5.....	1882	Bored, 5-inch.....	114.....	104.....	63	57	do.....	.....	.....	do.....	.....

2152	L. W. Houghton.	do.	I-5.	1900	Bored, 4-inch.	116	104	54	57	do.	40.00	150.00	do.	do.
2153	B. M. Moore.	do.	I-5.	1903	do.	118	106	63	69	do.	56.70	do.	do.	do.
2154	Mrs. F. A. Haddock	do.	I-5.	1890?	Bored, 8-inch.	121	115	300?	28	do.	do.	do.	do.	do.
2155	J. N. Newlan	do.	I-5.	188-	Bored, 4-inch.	120	110	45?	75	do.	150.00	do.	do.	do.
2156	H. W. Beest.	do.	J-5.	188-	do.	122	111	50	42	Hand.	do.	do.	do.	do.
2157	J. N. Newlan	do.	I-5.	1880	Bored, 2-inch.	117	do.	50	do.	do.	do.	do.	do.	do.
2158	do.	do.	I-6.	1900	Dug, 3 by 3 foot.	117	97	13	do.	do.	do.	do.	Stock	do.
2159	Frank Irish.	do.	J-6.	1892	Bored, 8-inch.	107	99	64	54	Wind.	do.	do.	Domestic.	do.
2160	L. J. Bever.	do.	J-6.	1902	Bored, 5-inch.	105	97	50	73	do.	42.50	150.00	do.	do.
2161	R. W. Hill.	do.	I-6.	1899	Bored, 3-inch.	104	97	75	37	Hand.	do.	do.	Stock	do.
2162	J. A. Worthen.	do.	I-6.	1890	Bored, 2-inch.	105	98	80?	37	Wind.	do.	do.	Domestic.	do.
2163	W. W. Clemens	do.	I-6.	1890	Bored, 4-inch.	102	do.	62	47	do.	do.	do.	do.	do.
2164	E. J. Hill.	do.	I-6.	1888	do.	102	98	87	50	Hand.	40.00	do.	do.	do.
2165	do.	do.	I-6.	1902	Bored, 12-inch.	102	98	87	do.	Gas.	175.00	1,000.00	Irrigation	80
2166	Chas. Emery	do.	I-6.	1888	Driven, 2-inch.	101	do.	28?	do.	Hand.	do.	do.	Domestic.	do.
2167	Morton Bros.	do.	I-6.	do.	do.	102	do.	30	45	do.	do.	do.	do.	do.
2168	J. K. Bremizer.	do.	I-5.	1882	Bored, 4-inch.	110	100	63	52	do.	63.00	do.	do.	do.
2169	do.	do.	I-5.	1902	Dug, 4 by 4 foot.	110	100	14	200+	do.	do.	do.	Stock	do.
2170	Chas. Collins.	do.	I-6.	1903	Bored, 12-inch.	108	98	237	28	Gas.	474.00	2,120.00	Irrigation	1150
2171	do.	do.	I-6.	1903	do.	108	98	241	do.	do.	482.00	do.	do.	do.
2172	do.	do.	I-6.	1879?	Bored, 7-inch.	106	95	125	40	Wind.	do.	do.	Domestic.	do.
2173	A. Pilkington.	do.	I-5, 6.	1900	Bored, 4-inch.	108	98	70	50	Hand.	do.	do.	do.	do.
2174	H. D. Kinney	do.	I-5.	1889?	do.	108	do.	62	54	do.	do.	do.	do.	do.
2175	N. T. Cowan.	do.	I-6.	1900	do.	108	do.	64	47	do.	32.00	do.	do.	do.
2176	E. C. White.	do.	I-6.	1895?	Bored, 2-inch.	107	do.	42?	45	do.	do.	do.	do.	do.
2177	N. H. Hughes.	do.	I-6.	1895	Bored, 4-inch.	105	95	80	41	do.	65.00	do.	do.	do.
2178	M. Long.	do.	I-6.	do.	Driven, 2-inch.	do.	do.	20	56	do.	do.	do.	do.	do.
2179	do.	do.	I-6.	do.	Dug, 3 by 4 foot.	do.	do.	12	140	do.	do.	do.	Stock	do.
2180	Geo. A. Smith.	do.	I-6.	1902	Bored, 2-inch.	105	do.	68	67	do.	do.	do.	do.	do.
2181	J. P. Green	do.	I-6.	1883	Dug, 2 by 3 foot.	102	95	10	111	Hand.	do.	do.	Domestic.	do.
2182	do.	do.	I-6.	1900	do.	101	95	10	69	do.	do.	do.	Stock	do.
2183	M. A. Murphy.	do.	I-6.	1901	Bored, 2-inch.	98	do.	60?	47	do.	do.	do.	Domestic.	do.
2184	P. Benson.	do.	H-6.	do.	Bore 1. 4-inch.	97	93	79	48	do.	do.	do.	do.	do.
2185	G. M. Clark.	do.	I-6.	1902	Bored, 12-inch.	99	93	108	do.	Gas.	200.00	1,000.00	Irrigation	130
2186	do.	do.	I-6.	1880	Bored, 4-inch.	98	93	62	61	Wind.	40.00	do.	Domestic.	do.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2187	Chas. Rodger.....	Santa Gertrudis..	I-6.....	1884	Bored, 4-inch.....	96	96	299	28	Artesian.....	\$400.00		Stock; domestic.	Small.
2188	Theo. Foster.....	do.	I-7.....	1883	Bored, 7-inch.....	96	96	275	26	Artesian, hand	700.00		Domestic.	
2189	Mr. Isabel.....	do.	I-7.....	1903	Bored, 5-inch.....	92	87	98	56	Hand.....			Stock.	
2190	J. V. Dilley.....	Los Coyotes.....	I-7.....	1885	Bored, 7-inch.....	87	90	311	24	Artesian.....	400.00		Domestic; stock.	Small.
2191	do.....	do.	J-7.....	1883?	do.....	93	90	160			175.00		Stock.	
2192	do.....	do.	J-7.....	1875	do.....	96	96	280	27	Wind.....	800.00	\$113.00	Domestic.	
2193	do.....	do.	J-7.....	1902	Bored, 2-inch.....	94	94	240	26	Artesian.....	200.00		Stock.	Small.
2194	Mrs. E. Baker.....	Santa Gertrudis..	I-6.....	1895	do.....	100		90	61	Wind.....			Domestic.	
2195	S. Baker.....	do.	J-6.....	1888	Bored, 8-inch.....	100	100	350	28		1,050.00		do.	Small.
2196	Atwood Sproul.....	Los Coyotes.....	J-6.....	1875	Bored, 7-inch.....	99	99	457	26	Artesian.....	2,200.00		Boilers?	†3
2197	Union Oil Co.....	do.	J-7.....	1902	Bored, 4-inch.....	98	87	87	35				Stock.	
2198	A. Sproul.....	do.	J-7.....	1870?	Bored, 7-inch.....	97	86	250	37	Wind.....				
2199	Railroad station.....	do.	J-7.....	1903	Bored, 9½-inch.....	98	86	118	47	Not installed..	215.00			
2200	A. R. Sebastian.....	do.	J-7.....	1901	Bored, 2-inch.....	98	86	97	42	Wind.....	35.00	200.00	Domestic.	
2201	E. P. Pruitt.....	do.	J-7.....	1900	do.....	98	86	108	48	do.....	55.00	145.00	do.	
2202	Belle-Vernon Farms Co.	do.	J-7.....	1891	Bored, 4-inch.....	95		100	43	Hand.....	100.00		do.	
2203	H. G. Borroughs.....	do.	J-7.....	1901	Bored, 2-inch.....	95	84	110	42	Wind.....	55.00	125.00	do.	
2204	M. D. Fraser.....	do.	J-7.....	1902	Bored, 4-inch.....	95	83	104		do.....	82.00	250.00	do.	
2205	W. Waymayer.....	do.	J-7.....	1895?	Bored, 2-inch.....	94			22	do.....			do.	
2206	W. H. Smith.....	do.	J-7.....	1902	do.....	94		100	40	do.....	50.00	240.00	do.	
2207	J. Seabridge.....	do.	J-7.....	1901	do.....	93	81	100	40	do.....	55.00		do.	
2208	J. J. Blair.....	do.	J-7.....	1903	do.....	93	82	98	41	do.....	44.00	125.00	do.	
2209	J. Haddock.....	do.	J-7.....	1901	do.....	92	81	110	41	do.....	45.00		do.	

2210	G. W. Sales	do.	do.	J-7.	1898	do.	do.	92	640	26	Artesian.	do.	do.	Small.
2211	Public school	do.	do.	J-7.	1901	do.	do.	91	106	38	Wind.	do.	do.	
2212	E. A. Branson	Santa Gertrudis	do.	I-7.	1895	do.	do.	89	87	110	50	Hand.	do.	
2213	Geo. Branson	do.	do.	I-7.	1893	Bored, 4-inch.	do.	86	105	49	Wind.	do.	do.	
2214	C. A. Phillips	do.	do.	H-7.	1894?	Bored, 1 1/2-inch.	do.	83	82	120	do.	do.	Stock	
2215	J. T. Hall	do.	do.	I-7.	1891	Bored, 2-inch.	do.	89	55	40	Hand.	do.	Domestic	
2216	E. A. Branson	do.	do.	I-7.	1880	Bored, 4-inch.	do.	88	90	300+	25	Artesian.	Stock	Small.
2217	John Meeks	do.	do.	H-7.	1873	Bored, 7-inch.	do.	89	89	300	40	Hand.	do.	
2218	do.	do.	do.	H-6.	1874	do.	do.	90	90	408	25	Artesian.	Stock	1
2219	John Branson	do.	do.	H-1, 7.	1895	Bored, 4-inch.	do.	91	89	55	38	Hand.	Domestic	
2220	Mr. Jerome	do.	do.	H-6.	do.	do.	do.	91	88	56	45	do.	do.	
2221	A. M. Cox	do.	do.	H-6.	1902	Bored, 5-inch.	do.	100	62	49	do.	do.	do.	
2222	J. Moisa	do.	do.	H-6.	1902	Bored.	do.	102	72?	57	do.	do.	do.	
2223	T. W. Swain	do.	do.	H-6.	1897	Bored, 2-inch.	do.	102	56	60	do.	do.	do.	
2224	T. J. Sparks	do.	do.	H-6.	1901	do.	do.	104	99	70	51	do.	do.	
2225	T. G. Goltzer	do.	do.	H-6.	1879?	Bored, 4-inch.	do.	102	98	60	48	do.	do.	
2226	J. D. Evans	do.	do.	H-6.	1885?	do.	do.	99	100	325	27	Artesian, hand.	do.	1
2227	Thos. Fagan	do.	do.	H-6.	1902	Bored, 5-inch.	do.	96	93	62	47	Hand.	do.	
2228	G. A. White	do.	do.	H-6.	1895	Bored, 2-inch.	do.	98	91	43	do.	do.	do.	
2229	F. Bohring	do.	do.	H-6.	1892	Bored, 4-inch.	do.	97	95	64	43	do.	do.	
2230	Mr. Krug	do.	do.	H-6.	do.	do.	do.	96	66?	41	do.	do.	do.	
2231	E. E. Ball, jr.	do.	do.	H-6.	1899	do.	do.	97	150?	38	Wind.	do.	do.	
2232	do.	do.	do.	H-6.	1887?	do.	do.	97	95	98	33	do.	Domestic stock.	
2233	G. W. Williamson	do.	do.	H-6.	1885?	do.	do.	98	102?	37	do.	do.	Domestic	
2234	G. A. White	do.	do.	G-6.	1890	do.	do.	98	94	64	do.	do.	Not used	
2235	John Zinn	do.	do.	G-6.	1885?	do.	do.	97	94	31	Wind.	do.	106.00	
2236	B. Thomas	do.	do.	H-6.	1895	Bored, 2-inch.	do.	93	75	do.	Hand.	do.	do.	
2237	do.	do.	do.	H-6.	1884	Bored, 7-inch.	do.	92	92	240	do.	do.	Stock	
2238	F. M. Foster	do.	do.	G-7.	1885	do.	do.	92	89	250	24	Hand.	Domestic	
2239	O. C. Millett	do.	do.	G-6, 7.	1898	Bored, 10-inch.	do.	92	87	284	do.	Gas	Irrigation.	185
2240	do.	do.	do.	G-7.	1903	Bored, 4-inch.	do.	90	86	86	31	Hand.	Domestic	
2241	G. E. Foster	do.	do.	G-7.	1903	Bored, 5-inch.	do.	89	84	33	do.	do.	do.	
2242	do.	do.	do.	H-7.	1872	Bored, 7-inch.	do.	89	125	32	do.	do.	do.	
2243	Mr. Wilcox	do.	do.	H-7.	1903	Bored, 2-inch.	do.	88	86	108	39	do.	Stock	
2244	W. H. Andrews	do.	do.	H-7.	do.	do.	do.	86	81	96	40	do.	Domestic stock.	

Wells in the Downey quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Fed.</i>	<i>Fed.</i>	<i>Fed.</i>						<i>Miner's inches.</i>
2245	N. Davee	Santa Gertrudis	H-7	1893	Dug, 3 by 4 foot.	80	74	10	62	Hand			Domestic.	
2246	F. Fleming	do.	H-7	1902	Bored, 4-inch.	75	72	124	34	do.	\$104.00		do.	
2247	C. Blythe	Los Coyotes	H-8	1903	Bored, 2-inch.	74	73	104	34	do.	47.00		do.	
2248	do.	do.	H-8	1888	do.	73	73	103	32	Artesian.			Stock	Small.
2249	Wm. Gregory	do.	H-8	1894	do.	74	74	150	29	Wind	90.00		Domestic.	
2250	do.	do.	H-8	1898	Bored, 7-inch.	73	73	100		Gas?	150.00	\$85.00	Domestic; stock	
2251	Mr. Hess	Los Cerritos	G-8	1888?	Bored, 4-inch.	77	74	126	30	Hand			Stock	
2252	Moyse & Weaver	do.	G-7	1888	Bored, 5-inch.	81	81	120	29	Artesian.			Domestic.	
2253	James E. Hagar	do.	G-8	1887?	Bored, 4-inch.	81		80	21	Hand			Domestic.	
2254	do.	do.	G-7	1888	Bored, 7-inch.	82	77	210	26	Wind, gas.	200.00	640.00	Irrigation	
2255	Mrs. Wyes	Los Coyotes	G-7	1887?	Bored, 4-inch.	83		92	24	Wind			Domestic.	
2256	Moyse & Weaver	Los Cerritos	G-7	1901	Bored, 6-inch.	85		111	28	do.			do.	
2257	do.	do.	G-7	1902	Bored, 12-inch.	86	80	567	26	Artesian, gas.	1,556.00	1,356.00	Irrigation	+ 50
2258	P. O'Connor	do.	G-7	1901	Bored, 2-inch.	86	83	137	29	Wind	61.50		Domestic.	
2259	do.	do.	G-7	1897	Bored, 10-inch.	88	84	172		Gas	350.00	700.00	Irrigation.	40
2260	J. R. Cooke	do.	G-7	1876?	Bored, 7-inch.	85	82	456	25	Hand	1,500.00		Domestic; stock	
2261	R. Casey	do.	G-7	1901	Bored, 2-inch.	88		90	27	do.			Stock	
2262	H. T. Porter	Santa Gertrudis	G-7	1897?	do.	90		116	30	do.	52.00		Domestic.	
2263	W. T. Strawbridge	do.	G-7	1883?	Bored, 4-inch.	90		120	29	do.			do.	
2264	do.	do.	G-7	1898	Bored, 10-inch.	91	86	196		Gas			Irrigation	† 50
2265	W. S. Grey	do.	G-7	1896?	Bored, 2-inch.	91		85	27	Hand	35.00		Domestic.	
2266	do.	do.	G-7	1903	Bored, 4-inch.	91		94	27	Gas	85.00	200.00	Irrigation	
2267	W. Spalding	do.	G-7	1894?	Bored, 1½-inch.	91		85	29	Hand	35.00		Domestic.	

2268	Wm. Stooksberg.	G-7.	1891.	Bored, 4-inch.	93	66	30	.....do.	.....	.....do.	.....
2269	A. E. Brittle.	G-7.	1890?	Bored, 2-inch.	95	82	30	.....do.	.....	.....do.	.....
2270	W. H. Porter.	G-6.	1897	Bored, 4-inch.	96	85	30	.....do.	75.00	.....do.	.....
2271	E. E. Ball.	G-6.	1896	.....do.	97	320	21	Wind.	400.00	60.00	.....do.
2272	M. P. Snyder.	G-6.	1898	Bored, 2-inch.	97	75	31	Hand.	.....	.....do.	.....
2273	J. H. Cooke.	G-6.	1884	Bored, 4-inch.	100	56	30	Wind.	.....	Domestic; stock.	.....
2274	V. M. Hardy.	G-6.	1900	Dug, 3 by 3 foot.	103	93	13	44	Hand.	.....	Domestic.
2275	T. Bright.	G-6.	1898	Bored, 6-inch.	102	98	.....	.....do.	110.00	Not used.	.....
2276	James Bacon.	G-6.	.....	Bored, 4-inch.	105	90	30	.....do.	.....	Domestic.	.....
2277	Cochran & Williams, agents.	G-6.	.....	Dug, 4 by 4 foot.	103	98	16	66	.....do.	Stock	.....
2278	.....do.	H-6.	1885?	Bored, 4-inch.	103	100?	32	Wind.	.....	Domestic.	.....
2279	Sam. Franklin.	H-8.	1879?	Driven, 5-inch.	105	50?	35	Hand.	.....	.....do.	.....
2280	J. Y. Stephenson.	H-6.	1882?	Driven, 6-inch.	104	50?	42	.....do.	.....	.....do.	.....
2281	Mrs. B. Frankel.	H-6.	1895?	Driven, 4-inch.	108	80	48	.....do.	75.00	Domestic; stock.	.....
2282	N. Vanfleet.	H-5.	1883	Bored, 7-inch.	112	112	27	26	Wind, gas.	500.00	Domestic; irrigation.
2283	.....do.	H-5.	1880?	.....do.	112	106	325	.....	.....	Not used.	.....
2284	W. F. Hall.	H-5.	1903	Bored, 4-inch.	112	107	81	33	Hand.	75.00	Domestic; stock.
2285	W. H. Townsend.	H-6.	1888	.....do.	112	107	42	27	.....do.	40.00	Domestic.
2286	Mrs. Husk.	H-6.	1885	.....do.	113	108	64	29	.....do.	50.00	.....do.
2287	R. B. Carpenter.	G-5.	1902	Bored, 1½-inch.	114	32	29	.....do.	20.00	.....do.	.....
2288	J. R. Crowell.	G-5.	1898	Bored, 2-inch.	114	86	30	Wind.	42.00	Domestic; stock.	.....
2289	R. B. Carpenter.	G-5.	1900	Bored, 10-inch.	114	108	100	25	Gas.	250.00	Irrigation.
2290	.....do.	G-5.	1888?	Bored, 4-inch.	109	65	31	Wind.	52.00	Domestic; stock.	.....
2291	P. O. Rogers.	G-5.	1887	.....do.	110	104	70	33	.....do.	56.00	Domestic.
2292	J. E. Jannison.	G-6.	1887	.....do.	107	100	65	33	.....do.	52.50	Domestic; stock.
2293	J. H. Cooke.	G-6.	1885	.....do.	99	92	92	.....	60.00	Not used.	.....
2294	R. E. Briar.	G-6.	1879?	.....do.	97	91	60	25	Wind.	.....	Domestic; stock.
2295	Redfield Chatman.	F-6.	1880?	.....do.	103	91	100?	21	.....do.	.....do.	.....
2296	J. Quill.	F-6.	1884?	.....do.	100	117	22	Hand.	125.00	Domestic.	.....
2297	Mrs. Hewitt.	G-6.	1898	Bored, 2-inch.	99	90	.....	.....do.	90	.....do.	.....
2298	A. Horton.	G-6.	.....	.....do.	98	90?	26	.....do.	.....	.....do.	.....
2299	Joe Dismukes.	F-6.	.....	Driven, 2-inch.	.....	20?	.....	.....do.	.....	Stock	.....
2300	H. A. Anderson.	G-7.	.....	Bored, 4-inch.	93	85?	22	Wind.	.....	Domestic.	.....
2301	A. Curtain.	F-7.	1885	.....do.	95	114	24	.....do.	100.00	50.00	.....do.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2302	A. Curtain	Santa Gertrudis	F-6	1900	Bored, 12-inch	95	96	755	23	Artesian	\$2,360.00		Irrigation	Small
2303	Wm. McCormick	do	F-6	1903	Bored, 5-inch	96	86	125	28	Hand	120.00	\$27.00	Domestic	
2304	A. Curtain	do	F-6	1895	Bored, 2-inch	95	85	110	22	do	40.00		Stock	
2305	Downey Masons	do	G-7	1896?	Bored, 4-inch	93				Wind			Irrigation	
2306	T. S. Beatty	Los Corritos	G-7	1899	Bored, 10-inch	92	84	237		Gas	650.00	700.00	do	
2307	do	do	F-7	1883?	Bored, 12-inch	92		90?	26	Wind			Domestic	
2308	John Mullen	do	F-7	1898	Bored, 12-inch	89		190		Wind			Irrigation	
2309	do	do	F-7	1903	Bored, 5-inch	88		150?	26	Wind			Domestic	
2310	Mrs. Petterson	do	G-7	1892	Bored, 4-inch	84	80	118	24	do		700.00	do	
2311	G. Anderson	do	F-7	1898	Bored, 9½-inch	84	80	237		Gas	360.00		Irrigation	90
2312	do	do	F-7	1903	Bored, 10-inch	84	80	237		do	350.00			
2313	F. Caseres	do	F-7	1900	Bored, 2-inch	84	81	150	26	Hand	125.00		Domestic	
2314	G. Anderson	do	F-7	1891	Bored, 7-inch	84		233	25	Wind	300.00	120.00	Domestic; stock	
2315	Fred Lechner	do	F-7	1902	Bored, 2-inch	84	84	129		Wind, artesian	150.00		do	Small
2316	Chas. McCurdy	do	F-7	1898	Bored, 5-inch	83	83	155		Hand	62.00		Domestic	
2317	H. Bush	do	F-7	1893?	Bored, 4-inch	82	78	110	28	do	88.00		do	
2318	A. Convert	do	F-7	1895	Bored, 2-inch	82	82	137		Artesian	55.00		do	Small
2319	do	do	F-7	1898	do	82	82	142	25	do	60.00		Stock	1½
2320	do	do	F-7	1902	do	81	81	96	26	do	40.00		Domestic	Small
2321	D. O'Leary	do	F-7	1893	do	80	80	140	25	Artesian, hand	55.00		Domestic; stock	Small
2322	F. W. Curtis	do	F-7	1901	Bored, 5-inch	81		151	24	Hand	125.00		Domestic	
2323	Mr. Armstrong	do	F-8	1899	Bored, 2-inch	79	79	146	24	Artesian, hand	55.00		Stock; domestic	Small
2324	E. L. Lovel	do	F-8	1898	do	78	78	630	25	Artesian	224.00		Domestic; irrigation	2

2325	do.	F-8.	1899	do.	77	130	25	Artesian, hand.	48.00	Stock.	Small.
2326	L. Ofer.	F-8.	1893?	do.	77	140?	26	Artesian.		Domestic; stock.	
2327	L. Conant.	F-8.	1893?	do.	75	138	24	Artesian, wind.	50.00	Domestic.	Sma.
2328	Chris. Miller	F-8.	1900	do.	72	157	24	Artesian.	50.00	Stock; irrigation	-4
2329	do.	F-8.	1895	do.	72	150	24	do.	40.00	Domestic; stock.	
2330	Mr. Fitzpatrick.	F-8.	1901	do.	72	150?	24	do.	40.00	do.	1
2331	Axie Anderson.	F-8.	1899	Bored, 3-inch.	71	160	25	do.	38.00	Domestic; stock; irrigation.	1
2332	A. J. Staly.	F-8.	1894?	do.	70	144	24	do.	70.00	Domestic; stock.	
2333	do.	F-8.	1897?	do.	70	140		do.	75.00	Irrigation; stock	
2334	John Anderson.	F-9.	1900	Bored, 10-inch.	68	68	75	24	do.	1,400.00	Irrigation.
2335	M. N. Pousey.	F-9.	1896	Bored, 2-inch.	69	205	27	do.	83.00	Domestic.	Small.
2336	John Anderson.	F-9.	1894	do.	69	260		do.	110.00	Not used.	
2337	do.	F-9.	1895	do.	69	260	26	do.	110.00	Domestic.	Small.
2338	C. P. Eldridge.	F-9.	1896	Bored, 3-inch.	70	610	24	do.	150.00	do.	
2339	P. H. Clark.	F-9.	1891?	do.	71	248	24	Artesian, wind.		do.	Small.
2340	C. H. Kirby.	E-9.	1896?	Bored, 2-inch.	64	560	24	Artesian.	224.00	Domestic; stock.	Small.
2341	do.	E-9.	1898	do.	64	168	24	do.		Irrigation.	2
2342	do.	E-9.	1898	do.	64	178	26	do.	65.00	do.	+1
2343	do.	E-9.	1892?	Bored, 4-inch.	64	67	145?	25	do.	Stock.	Small.
2344	J. D. Fredericks.	F-9.	1898	Bored, 2-inch.	65	588	33	do.	235.00	Stock; domestic.	
2345	A. I. Stewart.	E-9.	1901	do.	65	190	24	Artesian, hand.	80.00	Domestic.	Small.
2346	do.	E-9.	1894?	Bored, 4-inch.	66	600?	24	Gas.	350.00	Irrigation.	
2347	J. H. Patterson.	F-9.	1899?	Bored, 3-inch.	66	760?	27	Artesian.		Domestic; irrigation.	
2348	A. McCalvey.	E-9.	1898	Bored, 2-inch.	68	226	25	Hand.	90.00	Domestic.	
2349	J. C. Caldwell, agent.	E-9.	1902	do.	69	554	24	Artesian.	250.00	do.	2
2350	Mrs. A. Blanc.	F-9.	1899	Bored, 4-inch.	69	630?	26	do.		Domestic; irrigation.	5
2351	Alex. Stewart.	F-9.	1897	Bored, 2-inch.	69	630	24	do.	120.00	do.	
2352	C. H. Longhery.	E-9.	1901	do.	70	182	24	Wind.	82.00	Domestic.	
2353	H. P. Epperson.	E-8, 9.	1895	do.	70	300	24	Artesian, wind.	300.00	do.	Small.
2354	do.	E-8.	1895	do.	70	616	23	Artesian.	300.00	do.	
2355	do.	E-8, 9.	1895	do.	70	615		do.	300.00	do.	
2356	T. F. Downs.	F-8.	1903	do.	70	140	21	Hand.	60.00	do.	
2357	John Clark.	F-8.	1898	do.	70	140	25	do.	60.00	do.	

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2358	Hynes Irrigation Co.	Los Cerritos.	E-8	1898	Bored, 12-inch.	71	71	233	22	Gas.		\$700.00	Irrigation.	† 100
2359	E. T. Thwing.	do.	E-8	1899	Bored, 2-inch.	72	72	615	25	Artesian.	\$180.00		Domestic.	
2360	M. A. Pilkey.	do.	E-8	1896?	do.	72	72	150	26	do.	65.00		do.	
2361	J. Jahnke.	do.	E-8	1903	do.	72	72	145		Hand.	65.00		do.	
2362	Mrs. Letner.	do.	E-8	1903	do.	72	72	147	25	Artesian.	67.00		do.	
2363	Chas. Harman.	do.	F-8	1897?	Dug, 3 by 3 foot.	73	67	8	53	Hand.			do.	
2364	E. T. Fuller.	do.	F-8	1895	Dug, 2 by 3 foot.	73	67	7	56	do.			do.	
2365	H. L. Covell.	do.	F-8	1896?	Bored, 2-inch.	73	73	150		Artesian, hand.	65.00		do.	
2366	do.	do.	F-8	1898	do.	73	73	150	24	Hand, artesian.	65.00		do.	
2367	F. F. Howard.	do.	F-8	1893	Bored, 4-inch.	73	73	150	25	do.	150.00		Domestic; stock.	Small.
2368	Mrs. Chas. Wilds.	do.	F-8	1899	Bored, 2-inch.	74	74	150	24	Artesian.	65.00		do.	2
2369	John Steneman.	do.	F-8	1897	do.	73	73	150	22	Hand, artesian.	50.00		Domestic; irrigation.	Small.
2370	Mrs. Thompson.	do.	F-8	1890?	do.	73	73	135	23	Artesian.			Domestic.	
2371	G. W. Williams.	do.	F-8	1895	do.	73	73	148	24	Artesian, hand.	60.00		do.	1
2372	J. F. King.	do.	E-8	1897	do.	73	73	146	25	Artesian.	55.00		Domestic; stock.	2
2373	Mrs. G. Geryalva.	do.	F-8	1901	Dug, 3 by 3 foot.	74	68	8		Hand.			Domestic.	
2374	Chas. Wilder.	do.	F-8	1901	Bored, 2-inch.	74	74	152	25	Artesian.			Domestic; stock.	† 1
2375	G. E. Robdin.	do.	F-8	1897	do.	75	75	160	24	do.	63.50		Domestic.	Small.
2376	School.	do.	F-8	1893	do.	75	75	152	22	Wind.	65.00	125.00	do.	
2377	W. M. Squires.	do.	F-8	1895?	do.	75	75	168	24	Artesian.	70.00		do.	† 1
2378	J. Q. Hall.	do.	F-8	1897	do.	74	74	160	25	Hand.	64.00		do.	
2379	Mrs. Gaines.	do.	F-8	1895?	do.	74	74	154	24	Artesian, hand.	60.00		do.	Small.
2380	Tom Gregory.	do.	E-8	1908	do.	73	73	155	22	Artesian.			Domestic; stock.	

2381	J. B. Smith.	do.	E-8.	1901	Dug, 2½ by 2½ foot.	72	68	6	65	Hand.				Stock	
2382	A. L. Austin.	do.	E-8.	1896	Bored, 1½-inch.	73	73	157	27	Artesian, hand.	60.00			Domestic.	
2383	T. F. Stansberry	do.	E-8.	1897?	Bored, 2-inch.	74	74	385	24	Artesian.	230.00			Irrigation;	Small.
2384	do.	do.	E-8.	1894?	Bored, 7-inch.	74	74	287	24	Wind, artesian	390.00	75.00		Irrigation; domestic.	Small.
2385	A. E. Chapman.	do.	E-8.	1893?	Bored, 3-inch.	74	73	160	24	Hand.				Domestic.	
2386	W. T. Carter.	do.	E-8.	1895	Bored, 2-inch.	74	73	217	24	do.	90.00			do.	
2387	do.	do.	E-8.	1895	do.	74	74	165	23	Hand, artesian.	65.00			do.	Small.
2388	A. Perkins.	do.	E-8.	1903	do.	74	74	159	25	Hand.	65.00			do.	
2389	James Hill.	do.	E-8.	1901	do.	75	75	168	23	Wind.	65.00			do.	
2390	Mrs. Kingston.	do.	F-8.	1889	Driven, 1½-inch.	75		14	46	Hand.				do.	
2391	E. A. Rogers.	do.	E-8.	1896?	Bored, 7-inch.	77	76	190	24	Wind.	380.00	75.00		do.	
2392	do.	do.	E-8.	1898	Bored, 2-inch.	77	77	176	23	Artesian.	80.00			Irrigation	2
2393	W. C. Thomas	do.	E-8.	1901	do.	75	75	153	25	do.	65.00			Domestic.	Small.
2394	Mr. Patterson	do.	E-8.	1899?	do.	75		140?	25	Wind.	55.00			do.	
2395	D. R. Bell.	do.	E-8.	1903	do.	75	75	156	26	Hand.	65.00			do.	
2396	W. Malcom.	do.	E, F-8.	do.	do.	75		90?		do.				do.	
2397	Geo. Spafford.	do.	E, F-8.	1902	do.	75	75	177	33	Artesian, hand.	70.00	10.00		do.	Small.
2398	Geo. H. Meissen.	do.	F-8.	1903	Bored, 7-inch.	76	76	142	27	Artesian.	284.00			Irrigation	5
2399	do.	do.	F-8.	1902	Bored, 2-inch.	76	76	168	25	do.	75.00			Domestic.	1
2400	I. A. Sharp.	do.	F-8.	1893	do.	77	77	135	25	Artesian, hand.	60.00			Domestic; stock.	Small.
2401	do.	do.	F-8.	1900	Bored, 4-inch.	77	77	140	22	Artesian.	110.00			Irrigation	+3
2402	Theo. Ice.	do.	F-8.	1899	Bored, 2-inch.	77	77	144	22	do.	45.00			Stock	1½
2403	do.	do.	F-8.	1900	do.	77	77	171		do.	51.00			do.	+2
2404	do.	do.	F-8.	1892?	Bored, 7-inch.	78	78	163	24	Hand.				Domestic; stock.	Small.
2405	R. R. Briggs.	do.	F-7.	1890?	Bored, 4-inch.	80	80	150?	25	Wind.				do.	
2406	I. Mitchler.	do.	E-7.	1897	Bored, 2-inch.	79	79	144	26	Artesian, hand.	60.00			Domestic.	+2
2407	Robert A. King.	do.	E-7.	1896	do.	82	82	156	24	W ind. artesian.	60.00			do.	Small.
2408	F. Ealey.	do.	E-7.	1897	do.	82	82	144	27	Hand, artesian	50.00			do.	
2409	Mr. McClure.	do.	E-7.	1888	Bored, 6-inch.	83	83	160	25	Wind.				Domestic; stock.	
2410	P. Bohn.	do.	E, F-7.	1890?	Bored, 2-inch.	84	84	140	26	Hand.	55.00			Domestic.	
2411	do.	do.	F-7.	1901	Bored, 12-inch.	87	87	158	25	Gas, artesian	450.00	775.00		Irrigation	+60
2412	D. Gemmill.	do.	F-7.	1894	Bored, 2-inch.	88	88	134	26	Hand.	60.00			Domestic.	
2413	do.	do.	F-7.	1896	do.	88	88	150		do.	50.00			Stock	
2414	do.	do.	F-7.	1896	do.	88	88	150	25	Artesian.	50.00			do.	Small.

*Wells in the Downey quadrangle—Continued.*

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						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2415	Mr. Bacon.....	Santa Gertrudis..	F-6.....	1883	Bored, 7-inch....	95	95	300?	27	Wind.....			Stock.....	
2416	do.....	do.....	F-6.....	1883?	do.....	96	94	109	26	Hand.....			do.....	
2417	D. Lane.....	do.....	F-6.....	1869	Bored, 2-inch....	97	92	140	29	Wind.....	\$100.00		Domestic; stock.	
2418	G. W. Holcomb....	do.....	F-6.....	1895?	Bored, 4-inch....	100	92	110	28	do.....	55.00		Domestic.	
2419	J. W. Venable....	do.....	F-6.....	1876	do.....	100	92	68	29	do.....	33.00	\$50.00	do.....	
2420	M. McCurdy.....	do.....	F-6.....	1898?	Driven, 1½-inch...	101		16	36	Hand.....			do.....	
2421	C. Brown.....	do.....	F-6.....	1887	Bored, 7-inch....	102	94	100	27	Wind.....	40.00		do.....	
2422	Thos. Grider.....	do.....	F-6.....	1898	Driven, 1½-inch...	102		85	30	Hand.....			do.....	
2423	do.....	do.....	F-6.....	1880	Dug, 2½ by 2½ foot.	102	92	14	53	do.....			Stock.....	
2424	J. W. Brown.....	do.....	F-6.....	1889	Bored, 4-inch....	103		112	30	Wind.....	112.00	50.00	do.....	
2425	James Quill.....	do.....	F-6.....	1883	do.....	103		125	28	do.....			Domestic.	
2426	do.....	do.....	F-5.....	1883	do.....	103		85	29	Hand.....			Stock.....	
2427	do.....	do.....	F-6.....	1883	do.....	104	91	98	23				Not used.	
2428	B. L. Barnett.....	do.....	F-6.....	1893	do.....	104	91	160?	29	Wind.....			Domestic.	
2429	C. B. Reddick....	do.....	F-5.....	1893?	Driven, 1½-inch...	106		60?	43	Hand.....			do.....	
2430	Mrs. Clayton....	do.....	F-6.....	1888	Bored, 4-inch....	105	91	85?	32	Wind.....			do.....	
2431	J. H. Cooke.....	do.....	F-6.....	1884	do.....	105	92	86	28	do.....	60.00		do.....	
2432	Mrs. Briggs.....	do.....	F-6.....	1896?	Bored, 5-inch....	105	94	98	26	do.....			do.....	
2433	J. De Plaa.....	do.....	F-5.....		Dug, 2 by 3 foot..	106	96	12		Hand.....			do.....	
2434	L. L. Easterly....	do.....	F-6.....		Driven, 1½-inch...	106		35?	32	do.....			do.....	
2435	J. H. Aids.....	do.....	F-5.....	1891?	Bored, 4-inch....	107		90	30	Wind.....			do.....	
2436	Chas. Butler.....	do.....	F-6.....		do.....	106	95	75	26	Hand.....			do.....	
2437	Mr. Cookingham..	do.....	G-6.....	1896	Bored, 2-inch....	107		97		Wind.....	48.00	60.00	do.....	

2438	J. Ullery.....do.....	G-6.....	1888	Bored, 4-inch.....	107	96	105	28	.....do.....	70.00	65.00	.....do.....
2439	Mrs. T. J. Kearns....do.....	G-6.....	1882	.....do.....	106	96	86	46	.....do.....	70.00	.....do.....	.....do.....
2440	Mrs. J. Butler.....do.....	G-6.....	1882	.....do.....	107	.....	88	29	Hand.....	70.00	.....do.....	.....do.....
2441	F. Bohn.....do.....	G-6.....	1901	.....do.....	103	.....	100	27	Wind.....	73.00	150.00	.....do.....
2442	.....do.....do.....	G-6.....	1882	.....do.....	103	.....	90	27	.....do.....	.....	.....	Stock.....
2443	Alameda School.....do.....	G-6.....	1869	.....do.....	104	.....	86	26	Hand.....	.....	.....	Domestic.....
2444	B. P. Patten.....do.....	G-5.....	1886	Dug, 2-foot diam.....	110	.....	82	28	.....do.....	40.00	.....	.....do.....
2445	F. Stout.....do.....	G-5.....	1885?	Driven, 2-inch.....	111	.....	76	.....	.....do.....	.....	.....	.....do.....
2446	B. P. Patten.....do.....	G-5.....	1885?	Bored, 4-inch.....	112	.....	86	28	.....do.....	65.00	.....	.....do.....
2447	R. B. Alexander.....do.....	G-5.....	1897	Hydraulic, 2-inch.....	112	.....	78	33	Wind.....	27.00	.....	.....do.....
2448	A. Buhler.....do.....	G-5.....	1875?	Bored, 6-inch.....	112	98	108	29	.....do.....	.....	.....	.....do.....
2449	F. Smith.....do.....	G-5.....	1898?	Bored, 2-inch.....	113	.....	82	32	Hand.....	.....	.....	.....do.....
2450	W. W. Walk.....do.....	G-5.....	1893	Driven, 1½-inch.....	114	.....	87	33	.....do.....	40.00	.....	.....do.....
2451	G. W. Snyder.....do.....	G-5.....	1889	Bored, 4-inch.....	114	104	86	30	Wind.....	40.00	.....	.....do.....
2452	Erven Gillies.....do.....	G-5.....	1889	.....do.....	114	.....	86	30	Hand.....	70.00	.....	.....do.....
2453	L. F. Jones.....do.....	G-5.....	1901	Bored, 2-inch.....	115	.....	87	27	.....do.....	65.00	.....	.....do.....
2454	O. P. Towne.....do.....	G-5.....	1880?	Dug, 2½ by 2½ foot.....	115	108	10	51	.....do.....	.....	.....	.....do.....
2455	.....do.....do.....	G-5.....	1880?	Dug, 2½ by 3 foot.....	116	108	11	200+	.....do.....	.....	.....	Stock.....
2456	M. E. Scummins.....do.....	G-5.....	1885	Bored, 2-inch.....	115	.....	76	34	.....do.....	.....	.....	Domestic.....
2457	A. B. Walk.....do.....	G-5.....	1901	Bored, 4-inch.....	115	.....	84	35	.....do.....	.....	.....	.....do.....
2458	Miss Knight.....do.....	G-5.....	1902?	.....do.....	114	104	80	28	.....do.....	.....	.....	.....do.....
2459	John McCommie.....do.....	G-5.....	.....	.....do.....	114	.....	80	28	.....do.....	60.00	.....	.....do.....
2460	Mr. Graham.....do.....	G-5.....	1887?	.....do.....	114	.....	83	31	.....do.....	84.00	.....	Domestic stock.....
2461	A. M. Thompson.....do.....	G-5.....	1902	.....do.....	115	105	96	30	Wind.....	62.00	40.00	Domestic.....
2462	Mrs. Weis.....do.....	G-5.....	1884	Bored, 7-inch.....	116	105	90	29	Steam.....	.....	.....	Winery.....
2463	.....do.....do.....	G-5.....	1887	.....do.....	115	105	90	29	Wind.....	.....	.....	Domestic.....
2464	John Stewart.....do.....	G-5.....	1888	Bored, 4-inch.....	117	.....	96	31	Hand.....	90.00	.....	.....do.....
2465	.....do.....do.....	G-5.....	1894?	Bored, 2-inch.....	115	.....	88	31	.....do.....	.....	.....	.....do.....
2466	J. H. Strine.....do.....	G-5.....	1883	Bored, 4-inch.....	115	105	90	28	.....do.....	70.00	.....	.....do.....
2467	W. J. Snyder.....do.....	G-5.....	1903	Bored, 5-inch.....	115	105	87	26	.....do.....	88.00	.....	.....do.....
2468	W. W. Bramlett.....do.....	G-5.....	1903	Bored, 7-inch.....	115	105	87	28	.....do.....	110.00	.....	.....do.....
2469	Mrs. Houston.....do.....	G-5.....	1888	Bored, 4-inch.....	114	.....	86	26	.....do.....	.....	.....	.....do.....
2470	A. J. Bramlett.....do.....	G-5.....	1891	Bored, 2-inch.....	114	.....	90	31	.....do.....	45.00	.....	.....do.....
2471	R. M. Moore.....do.....	G-5.....	1887	Bored, 4-inch.....	115	113	96	30	.....do.....	72.00	.....	.....do.....
2472	J. W. Woollscroft.....do.....	G-5.....	1898	.....do.....	113	103	91	28	Wind.....	70.00	.....	.....do.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>					<i>Miner's inches.</i>
2473	H. A. Scott.....	Santa Gertrudis.....	G-5.....	1888	Bored, 4-inch.....	111	100	96	Wind.....	\$73.00	\$75.00	Domestic.....	.....
2474	E. A. Brunson.....	do.....	G-5.....	1902	do.....	109	99	96	Hand.....	78.00	.....	do.....	.....
2475	do.....	do.....	G-5.....	1896	Hydraulic, 1½-inch.....	110	.....	109	do.....	50.00	.....	Stock.....	.....
2476	L. Ullery.....	do.....	G-5.....	1888	Driven, 1½-inch.....	189	.....	16	do.....	7.00	.....	Domestic.....	.....
2477	H. A. Mosher.....	do.....	G-5.....	1899	Bored, 4-inch.....	109	98	77	do.....	58.00	.....	do.....	.....
2478	M. L. Holcom.....	do.....	G-5.....	1899	Driven, 1½-inch.....	109	.....	29	do.....	.....	.....	do.....	.....
2479	J. C. Ullery.....	do.....	G-5.....	1900	Bored, 2-inch.....	108	.....	96	do.....	45.00	.....	do.....	.....
2480	S. A. Wayne.....	do.....	F-5.....	1888?	Bored, 4-inch.....	109	.....	90	Wind.....	70.00	.....	do.....	.....
2481	H. H. Felch.....	do.....	F-5.....	1883?	Bored, 5-inch.....	108	95	74	Hand.....	.....	.....	Domestic; stock.....	.....
2482	E. P. Dismukes.....	do.....	F-5.....	1902	Bored, 4-inch.....	107	97	84	do.....	68.00	.....	Stock.....	.....
2483	C. F. Mackley.....	do.....	F-5.....	1895	Bored, 2-inch.....	109	.....	90	do.....	45.00	.....	Domestic.....	.....
2484	T. F. Renfro.....	do.....	F, G-5.....	1888	Bored, 4-inch.....	110	100	19	Wind.....	16.00	.....	Stock.....	.....
2485	do.....	do.....	G-5.....	.....	Driven, 1½-inch.....	110	.....	20	Hand.....	.....	.....	Domestic.....	.....
2486	Dr. J. C. Kendrick.....	do.....	F-5.....	1888	do.....	111	.....	19	do.....	8.00	.....	do.....	.....
2487	do.....	do.....	F-5.....	1901	Dug, 3 by 6 foot.....	111	102	56	do.....	.....	.....	Stock.....	.....
2488	E. P. Dismukes.....	do.....	G-5.....	1900	Hydraulic, 2-inch.....	113	.....	96	Wind.....	45.00	.....	do.....	.....
2489	D. E. Darrow.....	do.....	G-5.....	1888	Bored, 4-inch.....	113	104	85	do.....	80.00	150.00	Domestic.....	.....
2490	P. F. Ryan.....	do.....	G-5.....	1898?	Driven, 1½-inch.....	113	.....	20	Hand.....	.....	.....	do.....	.....
2491	Wm. Bischoff.....	do.....	G-5.....	1902	Driven, 4-inch.....	114	107	16	do.....	18.00	.....	do.....	.....
2492	F. Dubio.....	do.....	G-5.....	1900	Bored, 4-inch.....	115	105	96	do.....	75.00	.....	Domestic; stock.....	.....
2493	O. E. Gunter.....	do.....	G-5.....	1894?	do.....	115	107	19	do.....	15.00	.....	Domestic.....	.....
2494	Mrs. Wilson.....	do.....	G-5.....	1900	do.....	116	.....	18	do.....	16.50	.....	do.....	.....
2495	do.....	do.....	G-5.....	1901	do.....	116	107	20	do.....	19.00	.....	Stock.....	.....

2496	L. N. Zahrt.	.....do.	G-5.	1901	.....do.	116	.....	92	39	.....do.	75.50	Domestic.
2497	.....do.	.....do.	G-5	1895?	Driven, 14-inch.	116	.....	60	41	.....do.	10.00	Stock.
2498	W. H. Mather	.....do.	G-5.	1901	Bored, 5-inch.	117	.....	96	33	.....do.	75.00	Domestic.
2499	Chas. E. Smith	.....do.	G-5	1888	Bored, 4-inch.	117	.....	92	30	Wind	60.00	do.
2500	H. D. Huggins estate.	.....do.	G-5.	1894?	.....do.	116	.....	94	29	Hand	80.00	do.
2501	O. Moores	.....do.	F-4	1897	Hydraulic, 2-inch.	114	.....	90?	29	.....do.	.....	do.
2502	H. Hood	.....do.	F-5.	1903	Bored, 5-inch.	114	.....	94	30	.....do.	85.00	do.
2503	T. R. Bagley	.....do.	F-5.	1903	.....do.	111	105	97	29	Wind	92.00	Domestic; stock.
2504	.....do.	.....do.	F-5.	1894	Driven, 14-inch.	111	.....	23	22	Hand	.....	Domestic.
2505	O. T. Stoube	.....do.	F-5	1899	Bored, 10-inch.	111	103	120	.....	Steam	210.00	Irrigation. † 80
2506	.....do.	.....do.	F-5.	1899	Hydraulic, 3-inch.	111	.....	88	28	Hand	55.00	Domestic.
2507	E. M. Allen	.....do.	F-5.	1890	Bored, 4-inch.	112	.....	87	30	.....do.	65.00	do.
2508	R. E. Taylor	.....do.	F-5.	1903	Bored, 5-inch.	110	.....	98	67	.....do.	95.00	do.
2509	J. R. Wright	.....do.	F-5	1885?	Bored, 4-inch.	110	.....	96	27	Wind	70.00	do.
2510	W. W. Wright	.....do.	F-5.	1898	.....do.	110	100	98	29	.....do.	75.00	do.
2511	J. E. Parker	.....do.	F-5	1896?	.....do.	108	.....	102	29	.....do.	72.00	Domestic; stock.
2512	E. P. Dismukes	.....do.	F-5.	1888	.....do.	108	99	98	28	.....do.	76.00	do.
2513	S. M. Adams	.....do.	F-5	1901	.....do.	107	97	98	47	Hand	75.00	Domestic.
2514	J. G. Slingerland	.....do.	F-5.	1894?	.....do.	106	97	93	.....	Wind	70.00	do.
2515	E. L. Vaughn	.....do.	F-5	1897	Bored, 2-inch.	112	.....	103	33	Hand	40.00	do.
2516	.....do.	.....do.	F-5.	1903	Dug, 3 by 3 foot.	109	104	12	91	.....do.	19.00	Stock.
2517	N. G. Thomas	.....do.	F-5	1891	Bored, 2-inch.	107	.....	97	32	.....do.	45.00	Domestic.
2518	Mrs. J. T. Saunders	.....do.	F-5.	1882?	Bored, 4-inch.	106	91	50	26	Wind	.....	Domestic; irrigation.
2519	Geo. Leieritz	.....do.	F-5	1902	.....do.	103	.....	98	26	Hand	78.00	Domestic.
2520	Mr. Janka	.....do.	F-5.	.....	Bored, 2-inch.	102	.....	101	26	Wind	.....	do.
2521	R. P. Young	.....do.	F-5.	1887?	Dug, 3 by 3 foot.	100	92	12	62	Hand	.....	do.
2522	County Farm.	.....do.	F-5.	.....	.....do.	98	92	8	47	.....do.	.....	Stock.
2523	P. Musschie	.....do.	F-5	1901	Bored, 4-inch.	99	93	87	25	.....do.	67.00	Domestic.
2524	W. M. Mansfield	.....do.	F-5.	1901	Bored, 2-inch.	99	.....	100	24	.....do.	45.00	do.
2525	A. Monteleone	.....do.	F-5.	1884	Bored, 4-inch.	98	92	100	24	.....do.	105.00	do.
2526	.....do.	.....do.	E, F-5.	1884	.....do.	97	.....	115	25	Wind	110.00	Domestic; stock.
2527	Old River School	.....do.	F-5.	1889?	.....do.	98	92	110	27	Hand	80.00	Domestic.
2528	Mrs. L. S. Clayton	.....do.	F-5	1898?	.....do.	102	94	92	29	Wind	.....	do.
2529	County Farm.	.....do.	F-6.	1896?	Bored, 12-inch.	101	92	178	28	Compressed air.	2,000.00	Irrigation. † 100

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2530	W. A. Horton.....	Santa Gertrudis.....	F-6.....	1891	Bored, 7-inch.....	98	90	126	27	Wind.....		\$45.00	Domestic.....	.....
2531	County Farm.....	do.....	E-6.....	1888?	do.....	93	89	135	29	Gas.....			Domestic; irrigation.	+4
2532	Geo. L. Rognon.....	do.....	E-5.....	1901	Bored, 4-inch.....	98	94	106	26	Hand.....	\$74.00	8.00	Domestic.....	.....
2533	Salt Lake terminal.....	do.....	E-5.....	1903	Bored, 2-inch.....	99		80		do.....			do.....	.....
2534	E. Gunn.....	do.....	E-5.....	1903	Bored, 12-inch.....	102	94	280	24	Gas.....			Irrigation.....	180
2535	do.....	do.....	E-5.....	1903	do.....	102	94	280		do.....			do.....	
2536	do.....	do.....	E-5.....	1903	do.....	102	94	280		do.....			do.....	
2537	Mrs. Wyatt.....	do.....	E-4.....	1896	Bored, 2-inch.....	112		140	35	Wind.....	60.00		Domestic.....	
2538	T. A. House.....	San Antonio.....	E-4.....	1880?	Bored, 4-inch.....	108	103	84	24	Hand.....	80.00		do.....	.....
2539	do.....	do.....	E-4, 5.....	1880?	Bored, 6-inch.....	108	105	280	27	do.....			Stock.....	.....
2540	S. P. Walser.....	do.....	F-4.....	1903	Bored, 5-inch.....	108	102	127	24	do.....	121.00		Domestic.....	.....
2541	H. H. Davis.....	do.....	E, F-4.....	1890?	Bored, 4-inch.....	112	105	76	27	Wind.....	60.00		do.....	.....
2542	John Grant.....	do.....	F-4.....	1885?	Bored, 3-inch.....	113		100	23	Hand.....			Domestic; stock.	.....
2543	J. A. Stewart.....	Santa Gertrudis.....	E, F-4.....	1884	Bored, 4-inch.....	108		92	28	Wind.....	75.00		Domestic.....	.....
2544	J. H. Fairbanks.....	do.....	F-5.....	1887	do.....	107	98	86	25	do.....	72.00		do.....	.....
2545	Robert Johnson.....	do.....	F-4.....	1888?	do.....	108	101	84	25	do.....	68.00		do.....	.....
2546	B. M. Curtis.....	do.....	F-4.....	1901	do.....	108	101	80	28	Hand.....	65.00		do.....	.....
2547	do.....	do.....	F-4.....	1883	Dug, 2½ by 2½ foot.	109	101	10		do.....			Stock.....	.....
2548	O. T. Stroube.....	do.....	F-4.....	1904	Bored, 12-inch.....	112		417	31	Artesian ?.....	800.00		Not used.....	.....
2549	Jim Wiley.....	do.....	F-4.....	1897	Hydraulic, 2-inch.....	111		100	33	Wind.....	45.00		Domestic; stock.	.....
2550	Mrs. Laubersheimer.....	do.....	F-4.....		Bored, 7-inch.....	114	108	46	32	Hand.....			Domestic.....	.....
2551	J. T. Barnett.....	do.....	F-4.....	1899	Bored, 4-inch.....	114		80	31	Wind.....	65.00	45.00	Stock; domestic.	.....
2552	J. C. Simmons.....	do.....	F-4.....	1903	do.....	115	108	95	29	Hand.....	75.00		Domestic.....	.....

2553	Ida Maulhart.	do.	F-4.	1897	do.	120	113	87	26	Wind.	68.00	do.	do.
2554	C. S. Williams.	do.	F, G-4.	1898	Bored, 2-inch.	122	122	68	27	do.	35.00	do.	do.
2555	Mrs. Jackson.	do.	G-4.	1899	Dug, 3 by 4 foot.	125	115	12	56	Hand.	do.	do.	do.
2556	Barnett Bros.	do.	G-3.	1897	Bored, 2-inch.	124	.....	90	28	do.	38.00	do.	do.
2557	H. H. Hunt.	do.	F, G-3.	1896	Hydraulic, 2-inch.	123	.....	75	30	Wind.	30.00	40.00	do.
2558	Fred Wells.	San Antonio.	F-3.	.....	Dug, 2½ by 2½ foot.	122	118	9	61	Hand.	do.	do.	do.
2559	Y. Rhodes.	do.	F-3.	1883	Dug.	122	117	7	34	do.	do.	do.	do.
2560	M. Paxton.	do.	F-3.	1893	Driven, 14-inch.	123	.....	17	37	do.	do.	do.	do.
2561	J. S. Perry.	do.	F-3.	1898	Bored, 2-inch.	122	.....	80	23	do.	40.00	Domestic; stock.	do.
2562	J. Solomon.	do.	F-3.	1888?	Bored, 4-inch.	122	.....	100	24	do.	do.	Domestic.	do.
2563	Wm. Harper.	do.	F-3.	1899	Bored, 12-inch.	120	114	130	.....	Gas.	250.00	800.00	Irrigation. .... † 75
2564	do.	do.	F-4.	1893?	Bored, 2-inch.	118	.....	106	24	Wind.	do.	Domestic.	do.
2565	R. B. Harper.	do.	F-4.	1899	Bored, 2-inch.	117	109	104	23	do.	90.00	Domestic; stock.	do.
2566	Grant Bros.	do.	E-4.	1895	Bored, 4-inch.	116	110	96	22	Hand.	do.	Domestic.	do.
2567	T. N. Ellis.	do.	E-3.	1878?	do.	120	.....	335	24	Wind.	do.	do.	do.
2568	N. E. Fay.	do.	E-3.	1873?	Bored, 7-inch.	122	.....	180	34	do.	do.	do.	do.
2569	do.	do.	E-3.	1903	Bored, 6-inch.	124	118	221	.....	Steam.	400.00	Irrigation. .... † 80	do.
2570	A. Leach.	do.	E-3.	1902	Bored, 10-inch.	122	116	101	29	Hand.	91.00	Domestic; stock.	do.
2571	San Antonio School.	do.	E-3, 4.	.....	Bored, 5-inch.	121	119	35	31	do.	do.	Domestic.	do.
2572	H. G. Hamilton.	do.	E-4.	1892?	Bored, 7-inch.	121	.....	285	34	do.	do.	do.	do.
2573	do.	do.	E-4.	1903	Bored, 2-inch.	121	.....	360	35	do.	do.	Not used.	do.
2574	J. Clements.	do.	E-4.	1888	Bored, 5-inch.	120	.....	100	37	Hand.	90.00	Domestic.	do.
2575	Lewis Gross.	do.	D-4.	1904	Bored, 12-inch.	118	112	185	71	Not installed.	370.00	Irrigation.	do.
2576	do.	do.	E-4.	1901	Bored, 2-inch.	118	.....	127	36	Hand.	55.00	Domestic.	do.
2577	K. Mosbacher.	do.	E-4.	1902	do.	116	.....	145	37	Wind.	74.00	35.00	do.
2578	D. Barberena.	do.	E-3.	1883	Bored, 4-inch.	121	114	44	46	Hand.	do.	do.	do.
2579	M. M. Shirley.	do.	F-3.	1880	do.	123	116	52	27	do.	68.00	do.	do.
2580	Z. B. Slater.	do.	F-3.	1880?	do.	124	.....	62	32	Wind.	do.	do.	do.
2581	T. H. Stafford.	do.	F-3.	1899	Bored, 7-inch.	124	116	64	26	do.	85.00	do.	do.
2582	Wm. Specht.	do.	F-2.	1893	do.	135	125	99	28	do.	100.00	150.00	do.
2583	do.	do.	F-2.	1893	Dug, 3 by 4 foot.	132	123	15	48	Hand.	do.	do.	do.
2584	do.	do.	E-2.	1899	Bored, 10-inch.	130	125	200	36	do.	250.00	Not used.	do.
2585	do.	do.	E-2.	1899	do.	130	128	860	38	Gas.	3,000.00	950.00	Irrigation. .... † 90
2586	H. T. Shirley.	do.	E-2.	1900	Bored, 2-inch.	133	.....	230	37	Wind.	110.00	40.00	Domestic; stock.
2587	L. A. Walker.	do.	E-2.	1902	Bored, 10-inch.	138	130	428	38	Gas.	1,000.00	Irrigation.	do. † 100

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2588	Robert Brown.....	San Antonio.....	D-2.....	1898?	Bored, 7-inch.....	142	.....	320	36	Wind.....	.....	.....	Domestic.....	.....
2589	W. Partridge.....	do.....	D, E-2.....	1898	Bored, 2-inch.....	139	.....	104	38	do.....	\$36.00	.....	do.....	.....
2590	Doctor Royer.....	do.....	D-3.....	1903	Bored, 10-inch.....	137	128	103	37	Gas.....	.....	.....	Irrigation.....	.....
2591	Mrs. Summers.....	do.....	D-2.....	1897?	Bored, 7-inch.....	143	134	27	...	Wind.....	.....	.....	Domestic.....	.....
2592	W. J. Jones.....	do.....	D-2.....	1885?	Dug, 3 by 4 foot.....	144	135	13	58	Hand.....	.....	.....	Stock.....	.....
2593	C. Rathole.....	do.....	D-3.....	1882?	Bored, 7-inch.....	139	.....	106	38	Wind.....	105.00	\$90.00	Domestic; stock.	.....
2594	Mrs. Baker.....	do.....	C-1.....	.....	Dug, 4 by 4 foot.....	176	158	19	56	Hand.....	.....	.....	Domestic.....	.....
2595	do.....	do.....	C-1.....	.....	Bored, 7-inch.....	178	.....	60	53	do.....	.....	.....	do.....	.....
2596	E. G. Greening.....	do.....	D-1.....	.....	Dug, 2½ by 2½ foot.....	175	157	19	86	do.....	.....	.....	Stock; domestic.	.....
2597	do.....	do.....	D-1.....	1899	Bored, 10-inch.....	163	153	181	39	Electricity.....	328.00	.....	Irrigation.....	.....
2598	do.....	do.....	D-1.....	1896	Bored, 4-inch.....	150	.....	60	44	Horsepower.....	.....	.....	Domestic; stock.	.....
2599	do.....	do.....	D-2.....	1890?	Dug, 4 by 4 foot.....	162	148	14	150	Hand.....	.....	.....	Domestic.....	.....
2600	do.....	do.....	D-2.....	1901	Bored, 4-inch.....	150	.....	71	42	do.....	28.00	.....	do.....	.....
2601	Mrs. Baker.....	do.....	D-2.....	1880?	Dug, 3 by 3 foot.....	149	138	12	31	do.....	.....	.....	do.....	.....
2602	Pacific Electric Co.....	do.....	F-2.....	1903	Bored, 4-inch.....	143	.....	90	28	do.....	.....	.....	do.....	.....
2603	Mrs. Baker.....	do.....	G-1, 2.....	1902	Dug, 4 by 4 foot.....	162	138	26	46	Wind.....	.....	.....	Domestic; stock.	.....
2604	do.....	do.....	F-1.....	1893	do.....	148	141	10	25	do.....	.....	.....	Domestic.....	.....
2605	do.....	do.....	F-1.....	1876?	Bored, 6-inch.....	146	142	510	52	.....	.....	.....	Stock.....	.....
2606	do.....	do.....	F-1.....	1900	Bored, 10-inch.....	149	142	600+	52	Gas.....	.....	.....	.....	.....
2607	Thomas Hodgins.....	do.....	G-2.....	1903	Bored, 7-inch.....	155	130	121	32	Wind.....	.....	.....	Domestic.....	.....
2608	H. T. Gage.....	do.....	G-3.....	1890?	do.....	141	.....	150	20	Gas.....	.....	.....	do.....	.....
2609	B. Mendia.....	do.....	F-2.....	1887	Dug, 4 by 4 foot.....	137	122	16	29	Wind.....	.....	.....	do.....	.....

2610	A. Ducos.....	do.....	F-2.....	1901	Bored, 8-inch.....	137	20	43	do.....	do.....	do.....
2611	C. S. Walton.....	do.....	F-2.....	1895	Bored, 4-inch.....	137	63	34	do.....	do.....	do.....
2612	P. Lugo.....	do.....	F-2.....	1897	Dug, 3 by 3 foot.....	127	138	11	Hand.....	do.....	do.....
2613	F. N. Lugo.....	do.....	F-2.....	1873?	Dug, 2 by 2 foot.....	136	124	13	do.....	do.....	do.....
2614	H. Reich.....	do.....	F-2.....	1864?	Dug, 2 by 4 foot.....	136	124	16	Wind.....	Domestic; stock.....	do.....
2615	Chas. Dochtermann.....	do.....	F-2.....	1898	Dug, 4 by 4 foot.....	135	125	12	Hand.....	do.....	do.....
2616	E. Peschkt.....	do.....	F, G-3.....	1893?	Bored, 7-inch.....	131	121	92	Wind.....	150.00	Domestic.....
2617	S. C. Foster.....	do.....	G-3.....	1887	Bored, 4-inch.....	130	119	105	do.....	110.00	do.....
2618	Mrs. S. Foster.....	do.....	G-3.....	1901	Driven, 1½-inch.....	130	120	18	Hand.....	do.....	do.....
2619	A. T. Foster.....	do.....	G-3.....	1888	Bored, 4-inch.....	129	120	26	do.....	do.....	do.....
2620	S. J. Arey.....	do.....	G-3.....	1891	Bored, 7-inch.....	130	119	139	Wind.....	do.....	do.....
2621	Geo. Tweedy.....	do.....	H-2.....	1883?	Bored, 4-inch.....	154	140	58	do.....	Domestic; stock.....	Domestic.....
2622	G. W. McCampbell.....	do.....	H-2, 3.....	1878	do.....	153	138	60	do.....	do.....	do.....
2623	A. A. Tweedy.....	do.....	H-2.....	1888?	Bored, 7-inch.....	157	138	73	do.....	do.....	do.....
2624	E. W. Reider.....	do.....	H-3.....	1901	Bored, 4-inch.....	155	140	29	do.....	do.....	do.....
2625	L. L. Bequett.....	do.....	H-2.....	1898	Driven, 1½-inch.....	157	140	25	Hand.....	100.00	Stock.....
2626	do.....	do.....	H-2, 3.....	1898	Bored, 4-inch.....	157	140	25	do.....	do.....	Domestic.....
2627	Mrs. McFarland.....	do.....	H-3.....	1899	do.....	152	140	26	Wind.....	do.....	do.....
2628	do.....	do.....	H-3.....	1902	Bored, 12-inch.....	152	135	484	do.....	Not used.....	do.....
2629	S. G. Reynolds.....	do.....	H-3.....	1883?	Bored, 4-inch.....	150	135	30	Wind.....	Domestic.....	do.....
2630	W. T. East.....	do.....	H-3.....	1890?	do.....	148	136	72	do.....	72.00	do.....
2631	Stanley & Tweedy.....	do.....	H-3.....	1880?	do.....	148	133	67	Hand.....	do.....	do.....
2632	A. D. Kellam.....	do.....	H-3.....	1902	do.....	150	134	78	do.....	38.00	do.....
2633	A. O. Kempher.....	do.....	H-3.....	1878?	Dug, 3 by 3 foot.....	149	137	13	do.....	do.....	do.....
2634	J. W. Cate.....	do.....	H-3.....	1903	Bored, 4-inch.....	147	134	72	Gas.....	48.00	Domestic; irrigation.....
2635	A. D. Kellam.....	do.....	H-3.....	1898	do.....	149	136	60	Wind.....	do.....	Domestic.....
2636	Mrs. E. Taylor.....	do.....	H-3.....	1901	Bored, 5-inch.....	150	136	55	do.....	35.00	do.....
2637	do.....	do.....	H-3.....	1885	Bored, 7-inch.....	148	136	150	do.....	do.....	do.....
2638	S. K. Stamps.....	do.....	H-3.....	1903	Bored, 5-inch.....	148	136	55	Hand.....	50.00	Stock.....
2639	E. S. Johnston.....	do.....	H-3.....	1902	do.....	147	136	57	do.....	50.00	Domestic.....
2640	S. C. Roney.....	do.....	H-3.....	1903	do.....	142	136	51	Wind.....	44.80	Domestic; stock.....
2641	M. L. Bangle.....	do.....	H-3.....	1895	Driven, 1½-inch.....	144	136	19	Hand.....	do.....	Domestic.....
2642	A. Keltz.....	do.....	H-3.....	1896	Bored, 3-inch.....	143	136	60	do.....	30.00	do.....
2643	do.....	do.....	H-3.....	1891	Driven, 1½-inch.....	143	136	17	do.....	do.....	Stock.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2644	E. Collins.....	Santa Gertrudis..	H-3.....	1879?	Bored, 4-inch.....	143	133	80	26	Wind.....	.....	.....	Domestic; stock.	.....
2645	J. P. Fleming.....	do.....	G, H-3.....	1887	do.....	142	131	73	35	do.....	.....	.....	Domestic.	.....
2646	Wm. Caruthers.....	do.....	G-3.....	1898	Bored, 2-inch.....	141	.....	73	32	Hand.....	.....	.....	do.	.....
2647	do.....	do.....	G-3.....	1898	do.....	140	.....	68	33	do.....	.....	.....	do.	.....
2648	D. Tweedy.....	do.....	G, H-3.....	1895?	Bored, 4-inch.....	140	131	52	30	Wind.....	.....	.....	do.	.....
2649	O. Stanley.....	do.....	G-3.....	1883	do.....	138	.....	70	29	do.....	.....	.....	do.	.....
2650	J. J. Tweedy.....	do.....	G-3.....	1888?	do.....	138	127	60	26	do.....	.....	.....	do.	.....
2651	A. L. Ball.....	do.....	G-3.....	1885	Bored, 7-inch.....	131	117	675	.....	.....	.....	.....	Not used.	.....
2652	do.....	do.....	G-3.....	1888	Bored, 4-inch.....	135	.....	85	27	Wind.....	.....	.....	Domestic.	.....
2653	J. P. Fleming.....	do.....	G-3.....	1898	Driven, 1½-inch.....	135	.....	14	48	.....	.....	.....	Domestic; stock.	.....
2654	A. W. Neighbors.....	do.....	G-4.....	1890?	Bored, 4-inch.....	132	.....	85	27	Wind.....	.....	.....	Domestic.	.....
2655	C. B. Miller.....	do.....	G-4.....	1885?	Driven, 1½-inch.....	131	.....	16	52	Hand.....	.....	.....	do.	.....
2656	J. W. Neighbors.....	do.....	G-4.....	1892	do.....	131	.....	17	39	do.....	.....	.....	do.	.....
2657	H. D. Talbert.....	do.....	G-4.....	1892?	Bored, 4-inch.....	130	.....	85	28	do.....	.....	.....	do.	.....
2658	E. H. Henry.....	do.....	G-4.....	1888?	do.....	128	118	20	42	do.....	.....	.....	do.	.....
2659	S. J. Williams.....	do.....	G-4.....	1896	Driven, 1½-inch.....	130	.....	16	62	do.....	.....	.....	do.	.....
2660	C. Corsen.....	do.....	G-4.....	1870?	Bored, 4-inch.....	128	118	20	47	do.....	.....	.....	do.	.....
2661	A. W. Neighbors.....	do.....	G-4.....	.....	do.....	128	119	73	28	do.....	.....	.....	do.	.....
2662	Mrs. A. Cole.....	do.....	G-3, 4.....	1887?	do.....	128	.....	93	33	Wind.....	.....	.....	do.	.....
2663	J. H. Burke.....	do.....	G-4.....	1875?	Bored, 7-inch.....	128	117	96	27	do.....	.....	.....	do.	.....
2664	M. Bohen.....	do.....	G-4.....	1903	Driven, 2-inch.....	125	.....	14	40	Hand.....	.....	.....	do.	.....
2665	Frank Burke.....	do.....	G-4.....	1891	Bored, 4-inch.....	119	.....	84	28	Wind.....	.....	.....	Domestic; stock.	.....
2666	J. D. Ardis.....	do.....	F, G-4.....	1901	Bored, 5-inch.....	117	106	85	28	Hand.....	.....	\$65.00	Domestic.	.....

2667	C. A. McKnight.	do.	G-4.	1887	Bored, 1½-inch.	117	15	34	do.	do.	do.
2668	Mr. Suggs.	do.	G-4.	1898	Hydraulic, 2-inch.	116	84	31	do.	do.	do.
2669	D. Bennett.	do.	G-5.	1893?	Bored, 4-inch.	117	93	30	Wind.	do.	do.
2670	J. Smith.	do.	G-4, 5.	1902	do.	118	108	30	Hand.	do.	do.
2671	J. C. Rives.	do.	G-4.	1901	Driven, 1½-inch.	119	15	34	do.	do.	do.
2672	H. M. Blair.	do.	G-4.	1899	do.	120	15	33	do.	do.	do.
2673	J. C. Rives.	do.	G-4.	1883?	Bored, 4-inch.	122	112	30	Wind.	do.	Stock.
2674	H. G. Harper.	do.	G-4.	1890?	do.	123	113	34	do.	do.	Domestic.
2675	G. F. Brownson.	do.	G-4.	1890?	do.	125	84	26	Hand.	do.	do.
2676	L. McLane.	do.	G-4.	1898	do.	127	83	37	do.	do.	do.
2677	J. C. Simmons.	do.	G-4.	1896?	do.	127	90	29	Wind.	do.	Domestic; stock.
2678	Ella L. Squire.	do.	G-4.	1898	Bored, 2-inch.	130	82	34	do.	do.	Domestic.
2679	Mr. Cohen.	do.	G-4.	1875	Bored, 4-inch.	131	104	23	do.	do.	Stock.
2680	A. S. Gray.	do.	H-4.	1880	do.	139	110	29	do.	do.	Domestic.
2681	A. Rubio.	do.	G-4.	1903	Bored, 9½-inch.	130	110	110	Not installed.	do.	110.00
2682	do.	do.	G-4.	do.	Bored, 4-inch.	130	80	31	Wind.	do.	Domestic.
2683	Sam Frankel.	do.	G-4.	1895	Bored, 2-inch.	130	48	30	Hand.	do.	do.
2684	C. Nimmo.	do.	H-4.	do.	Bored, 4-inch.	128	115	72	56	do.	do.
2685	W. B. French.	do.	H-4.	1901	do.	131	90	49	do.	do.	68.00
2686	James Brookshire.	do.	H-4.	1890	do.	130	118	71	39	Wind.	do.
2687	D. Woods.	do.	H-4.	1885?	do.	130	11	75	37	Hand.	do.
2688	C. C. Lower.	do.	H-4.	1890?	do.	127	115	85	34	Wind.	do.
2689	James W. Rugg.	do.	H-4.	1896	Bored, 2-inch.	127	78	29	do.	do.	do.
2690	A. L. Ball.	do.	H-4.	1886	Bored, 4-inch.	126	113	72	32	do.	do.
2691	J. B. Graham.	do.	G-4.	1883?	do.	127	84	31	do.	do.	do.
2693	A. Thompson.	do.	G-4.	do.	do.	123	85	32	do.	do.	do.
2694	Mrs. A. C. Smith.	do.	G-4.	1878	do.	123	111	75	32	do.	do.
2695	I. M. Cochran.	do.	G-4.	1890?	Bored, 7-inch.	123	110	98	29	do.	do.
2697	John Strine.	do.	G-4.	1903	Bored, 4-inch.	121	85	32	do.	do.	73.10
2698	Doctor Rowley.	do.	G-4, 5.	1873	Bored, 7-inch.	120	80	30	do.	do.	do.
2699	Christian Church.	do.	G-5.	1903	Bored, 4-inch.	119	97	31	Hand.	do.	73.00
2700	E. J. Easterly.	do.	G-5.	1889?	Bored, 5-inch.	118	100	31	Wind.	do.	do.
2701	Mrs. J. Harris.	do.	G-5.	1885	Bored, 4-inch.	119	88	41	do.	do.	do.
2702	Mrs. M. E. Frankel.	do.	G-5.	1903	Bored, 5-inch.	119	111	86	36	Hand.	80.00
2703	B. F. Witherspoon.	do.	G-5.	1887	Bored, 4-inch.	118	108	70	34	do.	60.00

*Wells in the Downey quadrangle—Continued.*

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						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2704	W. H. Steel.....	Santa Gertrudis.....	G-5.	1903	Bored, 4-inch.....	118	108	90	30	Hand.....	\$76.50		Domestic.....	
2705	Mrs. E. F. Scribner.....	do.....	G-5.	1893	do.....	118	108	68	33	do.....	55.00		do.....	
2706	H. A. Adams.....	do.....	G-5.	1902	Bored, 5-inch.....	118	108	83	32	do.....	72.25		do.....	
2707	W. E. White.....	do.....	G-5.		Bored, 7-inch.....	119	108	70	32	do.....			do.....	
2708	Mrs. J. M. Smith.....	do.....	G-5.	1901	Bored, 4-inch.....	119	108	91	34	do.....	75.00		do.....	
2709	Doctor Haygood.....	do.....	G-5.		do.....	120	109	85	32	Wind.....			do.....	
2710	S. K. Woodward.....	do.....	G-4.	1885?	do.....	121	111	75	30	do.....			do.....	
2711	Dr. J. H. Reed.....	do.....	G-4.	1898	do.....	122	110	84	29	do.....	70.00		do.....	
2712	S. Cohen.....	do.....	G-5.	1884	do.....	121	110	96	29	do.....	65.00		do.....	
2713	D. P. Smart.....	do.....	G-5.	1901	Bored, 5-inch.....	119		90	30	Gas.....	85.00		do.....	
2714	J. H. McCullough.....	do.....	G-5.	1903	do.....	120	110	90	30	do.....	80.00		Domestic; irrigation.	
2715	Mrs. R. Stearns.....	do.....	G-5.	1894	Bored, 4-inch.....	118		88	30	Wind.....	60.00		Domestic.....	
2716	D. P. Smart.....	do.....	G-5.	1903	Bored, 5-inch.....	118	108	80	39	do.....	75.00		do.....	
2717	Geo. Elliott.....	do.....	G-5.	1903	do.....	119	109	87	30	Hand.....	79.00		do.....	
2718	Mrs. M. E. Frankel.....	do.....	G-5.	1901	do.....	120	110	62	33	do.....	65.00		do.....	
2719	James Booker.....	do.....	G-5.	1885?	Bored, 7-inch.....	120	110	73	28	Wind.....			do.....	
2720	J. C. Stout.....	do.....	G-5.	1903	Bored, 5-inch.....	121	111	87		do.....	70.00	\$57.00	Domestic; stock	
2721	T. R. Crawford.....	do.....	G-5.	1896?	Bored, 10-inch.....	119	108	86	36	Gas, wind.....			Domestic; irrigation.	
2722	Joe Wegerer.....	do.....	G-5.	1880?	Bored, 7-inch.....	120	109	84	45	Wind, hand.....			Domestic.....	
2723	D. J. Marr.....	do.....	G-5.		Dug, 2 by 2 foot.....	119	114	9	49	Hand.....			do.....	
2724	do.....	do.....	G-5.	1903	Bored, 5-inch.....	119	110	72	40	do.....	65.00		Stock.....	
2725	Miss M. Kellar.....	do.....	G-5.	1880?	Bored, 4-inch.....	120	108	78	33	do.....			Domestic.....	

2726	L. Snafieldt.	do.	G-5.	1890?	do.	119	54	38	do.	do.	do.
2727	J. E. Jenison.	do.	H-5.	1903	do.	119	69	31	do.	45.00	do.
2728	T. F. Renfro.	do.	H-5.		do.	118	55	31	do.	do.	do.
2729	J. E. Jenison.	do.	H-5.	1899	do.	118	63	31	Wind.	40.00	do.
2730	do.	do.	H-5.	1890	do.	118	55	40	do.	30.00	do.
2731	A. Anderson.	do.	H-5.	1895	Hydraulic, 2-inch.	117	75	41	do.	35.00	do.
2732	R. T. Newcomb.	do.	H-5.	1903	do.	116	80	51	Hand.	36.00	do.
2733	do.	do.	H-5.	1870	Dug, 3 by 3 foot.	116	108	13	do.	do.	Domestic; stock.
2734	J. W. Pangborn.	do.	H-5.	1902	Bored, 5-inch.	113	106	52	do.	44.00	do.
2735	Chas. Harding.	do.	H-5.	1903	do.	112	105	55	do.	58.00	Domestic.
2736	Mrs. Clearwater.	do.	H-5, 6.	1902?	do.	111	102	68	do.	63.00	do.
2737	C. C. Francis.	do.	H-5.	1894?	Bored, 4-inch.	111	60	56	Wind.	do.	Domestic; stock.
2738	John W. Rudd.	do.	H-5.	1900	do.	115	56	28	do.	43.00	do.
2739	J. W. Ragland.	do.	H-5.	1888	Dug, 3 by 3 foot.	119	16	61	Hand.	do.	do.
2740	H. M. Conch.	do.	H-5.	1903	Bored, 5-inch.	120	110	58	do.	53.00	Domestic.
2741	Roy Jenison.	do.	H-5.	1897	Bored, 2-inch.	125	65	52	Wind.	do.	do.
2742	J. E. Jenison.	do.	H-5.	1873	Bored, 7-inch.	125	115	380	do.	do.	do.
2743	E. J. Standlee.	do.	H-5.	1870?	do.	128	114	71	do.	do.	Stock.
2744	do.	do.	H-4.	1900	Bored, 4-inch.	129	66	39	do.	60.00	Domestic.
2745	Frank Morrison.	do.	I-4, 5.	1897	do.	126	115	55	53	30.00	do.
2746	R. W. Wright.	do.	I-4, 5.	1899	do.	123	110	46	30	32.00	do.
2747	H. S. Redfield.	do.	I-4.	1901	do.	127	58	44	Wind.	50.00	Domestic; stock.
2748	Wm. Campbell.	do.	H, I-4	1903	Bored, 5-inch.	131	68	51	Hand.	62.50	Domestic.
2749	W. Morrison.	do.	H-4, 5.		Bored, 4-inch.	128	65	45	do.	do.	do.
2750	J. M. Mayes.	do.	H-4.	1898	do.	131	68	57	Wind.	45.00	do.
2751	W. D. Mansfield.	do.	H-4.	1893	Bored, 2-inch.	132	58	46	Hand.	35.00	do.
2752	S. A. Wilks.	do.	H-4.	1898	Bored, 4-inch.	133	122	56	53	do.	do.
2753	J. Edmondson.	do.	H-4.	1891?	Bored, 7-inch.	131	101	140	24	Wind.	do.
2754	J. A. Smith.	do.	H-4.	1903	Bored, 4-inch.	130	120	70	56	Hand.	60.00
2755	John Bartlett.	do.	H-4.	1891?	do.	130	72	42	do.	50.00	do.
2756	R. S. Mayes.	do.	H-4.	1880?	do.	131	120	70	37	Wind.	Domestic; stock.
2757	Wm. Sex.	do.	H-4.	1891	Driven, 1½-inch.	132	12		Hand.	do.	do.
2758	H. Griffith.	do.	H-4.	1890	Bored, 4-inch.	134	76	31	Wind.	65.00	Domestic.
2759	do.	do.	H-4.	1903	Bored, 5-inch.	134	128	60	34	do.	Domestic; stock.
2760	do.	do.	H-4.	1903	Bored, 12-inch.	137	180		Gas.	75.00	Irrigation

+100

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2761	Mr. Carnuthers.	Santa Gertrudis.	H-4.	1882?	Bored, 4-inch.	137	128	83	30	Hand.			Domestic.	
2762	Gallatin School.	do.	H-4.	1885	do.	138	do.	80	28	do.			do.	
2763	J. E. Walton.	do.	H-4.	1891?	do.	138	128	52	26	do.			do.	
2764	E. F. Trabant.	do.	H-4.	1890?	do.	142	128	56	42	do.			do.	
2765	Mrs. A. Hagan.	do.	H-3, 4.	1892?	do.	143	do.	62	35	Wind.			do.	
2766	Mr. Stephenson.	do.	H-4.		do.	140	do.	80	40	Hand.			do.	
2767	Wm. Morrow.	do.	H-4.	1895	do.	138	do.	78	49	do.			do.	
2768	John Nelson.	do.	H-4.	1897	do.	139	127	64	37	Wind.	\$40.00		do.	
2769	Wm. Sex.	do.	H-4.	1895	do.	137	do.	100		do.	70.00		do.	
2770	C. W. Nelson.	do.	H-4.	1895	Dug, 4 by 4 foot.	138	126	15	68	do.			Domestic; stock.	
2771	Walter Grace.	do.	H-4.	1901	Bored, 4-inch.	137	do.	70	69	do.	29.00+	\$40.00	Domestic.	
2772	D. F. Conant.	do.	I-4.		do.	133	do.	78	42	do.			do.	
2773	H. W. Kenney.	do.	I-4.	1887?	Bored, 2-inch.	132	do.	80	38	Hand.			do.	
2774	R. S. Davis.	do.	I-4.	1900	Bored, 4-inch.	129	do.	68	33	Wind.	51.00	35.00	do.	
2775	W. M. Ramp.	do.	I-4.	1887	do.	130	do.	56	27	do.	35.00		do.	
2776	Mrs. M. Van Deusen.	do.	I-4.	1885?	do.	132	124	49	53	Hand.	49.00		do.	
2777	T. Van Deusen.	do.	I-4.	1901	do.	133	do.	50	58	Gas, wind.	42.00	155.00	Domestic; irrigation.	
2778	J. S. Williams.	do.	I-4.	1884?	do.	134	do.	58	32	Wind.			Domestic.	
2779	Peter Ralph.	do.	I-4.	1893	Driven, 1½-inch.	135	do.	26	59	Hand.			do.	
2780	P. R. Ralph.	do.	I-4.	1890?	Bored, 4-inch.	136	do.	58	34	do.	35.00		do.	
2781	H. H. Mills.	do.	I-4.	1898?	do.	138	do.	58	42	Wind.			Domestic; stock.	
2782	L. R. Paxton.	do.	I-4.	1901	do.	140	do.	63	24	do.	50.00	35.00	Stock.	
2783	H. E. Jamieson.	do.	I-4.	1865?	Bored, 7-inch.	141	do.	31	35	Hand.			Domestic.	

2784	Mr. Crawford.	do.	I-4.	1900	Hydraulic, 2-inch.	140	...	65	30	do.	...	35.00	do.	...
2785	G. S. Beckwith.	do.	I-4.	1895	Dug, 4 by 4 foot.	140	124	18	77	do.	...	...	do.	...
2786	J. J. King.	do.	I-4.	1888?	Bored, 4-inch.	141	...	62	30	Wind.	...	...	do.	...
2787	C. Vulgamott.	do.	I-4.	1889?	Bored, 7-inch.	142	...	65	29	do.	...	...	do.	...
2788	James Stewart.	do.	I-3, 4.	1888	Bored, 4-inch.	142	126	70	34	do.	...	55.00	Domestic; stock.	...
2789	Wedemeyer estate.	do.	I-4.	1896?	Hydraulic, 2-inch.	138	...	53	35	Hand?	...	40.00	Stock; domestic.	...
2790	E. R. Wylie.	do.	I-4.	1888?	Bored, 4-inch.	144	...	69	34	Wind.	...	52.00	Domestic.	...
2791	E. Clay.	do.	H, I-3.	1890?	do.	145	136	49	31	Hand.	...	...	do.	...
2792	do.	do.	I-3.	...	Dug, 3 by 3 foot.	146	137	10	46	do.	...	...	do.	...
2793	D. Standlee	do.	H-3.	1903	Bored, 5-inch.	146	136	70	34	Wind.	...	60.00	do.	...
2794	O. Burke.	do.	I-3.	1889?	Bored, 7-inch.	145	...	80	33	do.	...	100.00	do.	...
2795	Dr. J. Allen Osmun.	do.	I-3.	1903	Bored, 5-inch.	150	135	62	...	Gas, wind.	...	250.00	Domestic; stock.	...
2796	do.	do.	I-3.	1903	Bored, 4-inch.	155	...	64	28	Wind, gas.	...	60.00	do.	...
2797	E. H. Root.	do.	I-3.	1903	Bored, 5-inch.	155	...	62	25	Hand.	...	46.00	Domestic.	...
2798	H. Sarasin.	do.	I-3.	1890	Bored, 4-inch.	151	136	69	31	Wind.	...	55.00	Domestic; stock.	...
2799	S. B. Root.	do.	I-3.	1901	do.	152	136	63	41	do.	...	47.50	Domestic.	...
2800	J. A. Shade.	do.	I-3.	1898	Bored, 7-inch.	152	...	78	33	do.	...	...	do.	...
2801	Mr. Wood.	do.	I-3.	1900	Bored, 5-inch.	152	137	56	33	do.	...	50.00	do.	...
2802	J. G. B. Haynes.	do.	I-3.	1891	Bored, 4-inch.	148	136	56	34	Hand.	...	75.00	do.	...
2803	do.	do.	I-3.	1897	Bored, 7-inch.	147	136	40	31	do.	...	65.00	do.	...
2804	F. E. Welsh.	do.	I-3.	1895	Bored, 2-inch.	145	...	40	24	Wind.	...	35.00	do.	...
2805	W. H. Davis.	do.	I-3.	1901	Bored, 4-inch.	146	...	60	36	do.	...	...	do.	...
2806	John Carden.	do.	I-3.	...	do.	143	130	41	33	Hand.	...	...	do.	...
2807	Miss H. Clark.	do.	I-3.	1889?	Bored, 7-inch.	144	129	34	36	do.	...	100.00	do.	...
2808	C. Leopold.	do.	I-3.	1898	Bored, 4-inch.	141	...	30	39	Wind.	...	...	do.	...
2809	E. & J. Cockrell.	do.	I-3, 4.	1897	do.	139	...	40	34	do.	...	...	do.	...
2810	W. Gould.	do.	I-3.	1882?	do.	141	119	50	22	Hand, wind.	...	...	do.	...
2811	F. C. Harvey.	do.	I-4.	1890?	do.	139	122	54	34	Wind.	...	40.00	do.	...
2812	J. H. Burke.	do.	I-3.	1897	do.	155	...	74	32	do.	...	55.00	do.	...
2813	do.	do.	I-3.	...	Bored, 7-inch.	155	...	84	32	do.	...	110.00	do.	...
2814	R. H. Reynolds.	do.	I-3.	1884	Bored, 7-inch.	155	...	18	57	do.	...	...	Domestic; stock.	...
2815	H. L. Montgomery.	do.	I-3.	1901	Driven, 1½-inch.	157	...	57	45	do.	...	38.00	Domestic.	...
2816	A. A. White.	do.	I-3.	1892?	Bored, 4-inch.	157	144	70	40	do.	...	45.00	do.	...
2817	Rivera School.	do.	I-3.	1893	do.	157	...	70	40	do.	...	...	do.	...
2818	do.	do.	I-3.	1895	do.	160	145	45	23	Hand.	...	...	do.	...
2819	J. A. Garrison.	do.	I-3.	1889	do.	159	146	70	33	Wind.	...	45.00	do.	...

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of sur- face.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2819	J. A. Garrison.	Santa Gertrudis.	I-3.	1899	Bored, 2-inch.	159	159	38	53	Wind.	\$20.00	\$37.00	Domestic.	
2820	D. H. Montgomery	do.	I-3.	1890?	Bored, 4-inch.	159	146	65	37	Hand.	40.00		do.	
2821	H. S. Welsh.	do.	I-3.	1902	do.	159	146	67	37	do.	56.00		do.	
2822	H. H. West.	do.	I-3.	1889?	do.	160	146	60	37	Wind.			do.	
2823	Mrs. Sidwell.	do.	I-3.	1900	do.	160		68	33	do.	52.00		do.	
2824	S. B. Guthrie.	do.	I-3.	1901	do.	161		62	32	do.	52.00		do.	
2825	S. W. Burke.	do.	I-3.	1888?	do.	160		64	31	Hand.	48.00		do.	
2826	J. L. Groton.	do.	I-3.	1899	do.	160	147	58	32	do.	48.00		do.	
2827	Pallett & Graham	do.	I-3.	1903	do.	161	148	63	42	Wind.	48.00		Domestic; stock.	
2828	F. Garrison.	do.	I-3.	1887?	Driven, 1½-inch.	160		19	51	do.	8.00		Domestic.	
2829	E. F. Bryant.	do.	I-2, 3.	1890?	Bored, 4-inch.	160	149	42		Hand.	48.00		Domestic; stock.	
2830	M. S. Smith.	do.	I-3.	1901	do.	162		63	37	do.	50.00		Domestic.	
2831	F. M. Odell.	do.	I-2.	1903	do.	163	151	63	35	do.	46.00		do.	
2832	C. B. Bullock.	do.	I-3.	1899?	do.	157		80	31	Wind.	60.00		do.	
2833	O. P. Passon.	do.	I-3.	1888?	Bored, 7-inch.	156	142	77		do.	100.00		do.	
2834	Geo. Bullock.	Paso de Bartolo	I-3.	1902	Bored, 5-inch.	157		57	32	do.	60.00		do.	
2835	J. A. Perkins.	do.	I-2, 3.	1899	Bored, 4-inch.	159	145	70	35	do.	55.00		do.	
2836	T. B. Chapman.	do.	I-2.	1892?	Bored, 7-inch.	161	148	71	31	do.	95.00		do.	
2837	T. R. Passons.	do.	I-2.	1888	Bored, 4-inch.	162		87	33	do.	68.00		do.	
2838	H. M. Moss.	do.	I-2.	1886?	do.	164		68	33	do.			do.	
2839	B. P. Passons.	do.	I-2.	1903	do.	163	153	57	39	do.	43.00	35.00	do.	
2840	C. S. Gilman.	do.	I-2.	1902	Driven, 1½-inch.	162		18	29	do.	7.00	35.00	do.	
2841	G. W. Scott.	do.	I-2.	1890	do.	161		18	47	do.			do.	

2842	W. L. Borden.....	do.	I-2.....	1899	.....do.	163	16	25	do.	30.00	.....do.
2843	V. H. Furnier.....	do.	I-2.....	1900	.....do.	166	20	22	Hand	.....	.....do.
2844	McDonald Bros.....	do.	I-2.....	1893	Bored, 4-inch.....	169	152	51	23	do.	Domestic; stock.
2845	W. Hadley.....	do.	I-2.....	1883?	Bored, 7-inch.....	168	152	22	33	do.	Domestic.
2846	.....do.	do.	I-2.....	1899?	Driven, 1½-inch.....	167	16	35	do.	.....do.	.....do.
2847	H. L. Montgomery.....	do.	I-1.....	1879?	Bored, 7-inch.....	166	49	37	Wind	Domestic; stock.	.....do.
2848	W. Hadley.....	do.	I-2.....	1899	Driven, 1½-inch.....	165	17	30	Hand	Domestic.	.....do.
2849	H. White.....	do.	I-2.....	1900	.....do.	171	19	44	.....do.	.....do.	.....do.
2850	H. S. White.....	do.	I-2.....	1900	Bored, 4-inch.....	171	156	40	26	Wind	.....do.
2851	T. L. Gooch.....	do.	I-2.....	1903	.....do.	171	48	29	Hand	42.00	.....do.
2852	Henry White.....	do.	I-2.....	1886	.....do.	173	30	26	do.	30.00	.....do.
2853	E. C. Coffman.....	do.	I-1.....	1898	Hydraulic, 2-inch.....	173	30	Gas?	.....	21.00	.....do.
2854	B. C. Coffman.....	do.	I-1.....	1885?	Bored, 4-inch.....	173	154	40	31	Wind	Domestic; stock.
2855	J. J. Nagle.....	do.	I-1.....	1890?	.....do.	176	158	63	30	do.	Domestic.
2856	J. Carden.....	do.	J-1.....	.....	Bored, 1½-inch.....	180	20	38	do.	.....do.	.....do.
2857	W. L. Witherow.....	do.	J-1.....	1879?	.....do.	181	20	33	do.	Domestic; stock.	.....do.
2858	J. Barlow.....	do.	I-1.....	1882	Bored, 7-inch.....	179	161	48	29	do.	Domestic.
2859	W. L. Sidwell.....	do.	J-1.....	1896	Bored, 4-inch.....	180	162	40	28	do.	.....do.
2860	J. L. Hooper.....	do.	J-1.....	1902	.....do.	185	167	60	26	do.	45.00
2861	J. P. McGill.....	do.	J-1.....	1897	Hydraulic, 2-inch.....	185	48	29	do.	30.00	.....do.
2862	Mr. Everett.....	do.	J-1.....	.....	Dug, 2 by 3 foot.....	188	173	16	41	Hand	Stock
2863	F. A. Coffman.....	do.	.....	1898	Hydraulic, 2-inch.....	188	29	24	Wind	21.00	Domestic.
2864	Fred Layman.....	do.	J-1.....	1902	Bored, 5-inch.....	188	52	24	do.	48.00	.....do.
2865	John M. Chassee.....	do.	J-1.....	1895	Dug, 2 by 3 foot.....	190	175	16	35	Hand	.....do.
2866	John T. Jones.....	do.	J-1.....	1896?	Bored, 4-inch.....	186	169	34	36	do.	.....do.
2867	E. Gurada.....	do.	J-1.....	.....	Bored, 7-inch.....	180	170	41	26	Wind	.....do.
2868	Ranchito School.....	do.	J-1.....	1876	Bored, 4-inch.....	182	50	29	do.	30.00	.....do.
2869	Albert Duffill.....	do.	J-1.....	1893	Bored, 7-inch.....	179	160	84	28	do.	Domestic; stock.
2870	B. M. Hotchkiss.....	do.	J-1.....	1890	Bored, 4-inch.....	180	163	87	31	do.	Domestic.
2871	J. L. Spencer.....	do.	J-1.....	1900	.....do.	179	45	33	do.	35.00	.....do.
2872	P. A. McCaugh.....	do.	J-1.....	1901	.....do.	178	161	35	31	do.	30.00
2873	J. Dunlap.....	do.	J-1.....	1879?	Bored, 7-inch.....	172	156	50	33	do.	.....do.
2874	P. G. McCaugh.....	do.	J-1.....	1890	Bored, 4-inch.....	174	157	35	40	Hand	30.00
2875	Theodore Johnson.....	do.	J-1.....	1888	.....do.	174	157	45	32	do.	.....do.
2876	.....do.	do.	J-1.....	1890?	.....do.	174	157	45	31	do.	Stock

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Soils per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2877	Tracy Abbott.	Paso de Bartolo.	J-1, 2.	1892?	Bored, 4-inch.	172		50	29	Wind.			Domestic.	
2878	W. P. Story.	do.	J-2.	1893	do.	172		49	37	do.	\$37.00		do.	
2879	T. E. Newlin.	do.	J-2.		do.	174	158	48?	31	do.			do.	
2880	T. L. Gooch.	do.	I-2.	1878	Bored, 7-inch.	172	156	48	40	do.	52.00		do.	
2881	Mrs. A. Lynch.	do.	I, J-2	1887	do.	169		58	33	do.	58.00		Domestic; stock.	
2882	R. Stroud.	do.	J-2.	1903	Bored, 5-inch.	165		51	31	do.	43.50		Domestic.	
2883	J. A. Montgomery.	do.	I-2.	1898	Bored, 4-inch.	168		60	30	do.	46.00		do.	
2884	T. L. Gooch.	do.	I-2.	1886	do.	167	153	62		do.	55.00		Stock.	
2885	T. P. McLane.	do.	I-2.	1903	Bored, 5-inch.	166		61	39	Hand.	57.70		Domestic.	
2886	J. O. Castell.	Santa Gertrudis.	I-3.	1902	Dug, 3 by 3 foot.	144	137	9	32	do.			do.	
2887	Frank Bonchard.	do.	J-3.	1902	Bored, 4-inch.	159	144	70	32	Wind.	52.00		Domestic; stock.	
2888	C. J. Gish.	Paso de Bartolo.	J-3.	1901	Bored, 5-inch.	157	147	44	35	Hand.	39.00		Domestic.	
2889	do.	do.	J-3.	1901	do.	158	147	68	33	do.	35.00		Stock.	
2890	F. Bonchard.	do.	J-3.	1897?	Bored, 2-inch.	158		68	31	Wind.	38.50		Domestic.	
2891	John Seppi.	do.	J-3.	1903	Bored, 5-inch.	159	146	58	34	do.	52.00		do.	
2892	J. A. Cover.	do.	J-3.	1896	Bored, 2-inch.	155		63	29	Hand.	31.00		do.	
2893	M. J. Brooks.	do.	J-3.	1896	do.	154		60	32	Wind.	26.00	\$45.00	do.	
2894	H. Miller.	do.	J-3.	1900	Bored, 4-inch.	151	143	51		do.			do.	
2895	Aaron Miller.	do.	J-3.	1901	Bored, 7-inch.	153	142	60	33	Wind.			Domestic; stock.	
2896	M. L. Kendal.	do.	J-3.	1895	Bored, 5-inch.	151	141	60	32	Hand.	48.00		do.	
2897	T. F. Stuckle.	do.	J-3.	1896	Bored, 4-inch.	150		78	33	do.	49.50		do.	
2898	E. Foyorane.	do.	J-3.	1895	Bored, 2-inch.	150		30	52	do.			Domestic.	
2899	J. M. McInnis.	do.	J-3.	1892?	Bored, 4-inch.	151	141	25	46	do.			do.	

2900	W. C. Moore.....	do.	J-3.....	1893	Bored, 2-inch.....	152	65	40	Wind.....	37.00	do.....
2901	A. P. Ramirez.....	do.	J-2.....	1897	Dug, 3 by 3 foot.....	155	9	45	do.....		do.....
2902	Mrs. M. Theland.....	do.	J-2.....	1894?	Bored, 4-inch.....	157	72	39	do.....		Domestic.....
2903	L. J. Lane.....	do.	J-2.....	1902	do.....	159	105	33	do.....		Domestic, stock.....
2904	James Graham.....	do.	J-2.....	1895	Bored, 2-inch.....	161	60	33	do.....		Stock.....
2905	do.....	do.	J-2.....	1896?	Bored, 7-inch.....	162	151	31	Hand.....		Domestic, stock.....
2906	John T. Jones.....	do.	J-2.....	1896?	Bored, 4-inch.....	164	154	35	do.....		Domestic, stock.....
2907	Mrs. M. Pheland.....	do.	J-2.....	1876	Bored, 7-inch.....	167	156	42	35 Wind.....		do.....
2908	J. O. Rogers.....	do.	J-2.....	1899	Bored, 2-inch.....	167	55	34	do.....		Domestic.....
2909	J. T. Isbell.....	do.	K-2.....	1887	Bored, 4-inch.....	170	74	31	do.....		Domestic, stock.....
2910	do.....	do.	K-2.....	1903	do.....	176	63	36	do.....	53.50	do.....
2911	Chas. Sanderson.....	do.	K-2.....	1895?	Bored, 7-inch.....	174	163	49	Hand.....		Domestic.....
2912	H. W. Judson.....	do.	K-2.....	1899	Hydraulic, 2-inch.....	174	70		Gas?.....	35.00	do.....
2913	do.....	do.	K-2.....	1897	Bored, 4-inch.....	174	68	30	Wind.....	70.00	Domestic, stock.....
2914	Pico School.....	do.	K-1, 2.....	1888?	do.....	177	68	28	Hand.....		Domestic.....
2915	M. Holbrook.....	do.	K-1.....	1897	do.....	179	65	27	Wind.....	55.00	Domestic, stock.....
2916	Whittier Water Co.....	do.	J, K-1.....	1898	Bored, 12-inch.....	195	178	152	Compressed air.....	380.00	Domestic.....
2917	do.....	do.	J, K-1.....	1898	do.....	195	178	150	do.....	375.00	do.....
2918	Dan Phelan.....	do.	K-1.....	1897	Bored, 4-inch.....	197	182	44	35 Hand.....		Domestic, stock.....
2919	Theodore Castillo.....	do.	K-1.....	1899	Dug 3 by 3 foot.....	200	179	23	30 do.....	33.00	Domestic.....
2920	H. W. R. Strong.....	do.	K-1.....	1870?	Bored, 7-inch.....	212	158	75	80 Wind.....		do.....
2921	do.....	do.	K-1.....	1902	Bored, 10-inch.....	210	166	500+			Not used.....
2922	R. McNeess.....	do.	K-2.....	1889?	Bored, 4-inch.....	208	164	90	61 Wind.....		Domestic.....
2923	Whittier State School.....	do.	L-2.....	1903	Bored, 12-inch.....	222	168	800	do.....		Domestic, stock.....
2924	J. Sorensen.....	do.	K-2.....	1878	Bored, 7-inch.....	203	400			1,200.00	Not used.....
2925	do.....	do.	K-2.....	1888	Dug, 3 by 3 foot.....	202	164	46	92 Wind.....		Domestic.....
2926	A. King.....	do.	K-2.....	1887	Bored, 4-inch.....	171	65	72	do.....		Domestic, stock.....
2927	J. King.....	do.	K-3.....	1888	do.....	167	157	52	68 Hand.....		Stock.....
2928	C. E. Archer.....	do.	K-3.....	1900	Bored, 7-inch.....	165	156	80	Gas.....	80.00	Irrigation.....
2929	do.....	do.	K-3.....	1900	Bored, 4-inch.....	163				35.00	Domestic.....
2930	J. W. See.....	do.	K-3.....	1898	do.....	165	156	51	63 Hand.....	48.00	do.....
2931	do.....	do.	K-3.....	1897?	do.....	160	155	25	90 do.....	48.00	Stock.....
2932	S. V. Gregg.....	do.	K-3.....	1899?	do.....	162	153	54	72 do.....		Domestic.....
2933	G. W. Cole.....	do.	K-3.....	1892?	Bored, 7-inch.....	164	153	75	98 Wind.....		do.....
2934	B. S. Cole.....	Santa Gertrudis.....	K-3.....	1897	do.....	161	152	72	91 do.....		Domestic, stock.....

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2835	E. R. King.....	Paso de Bartolo.....	K-3.....	1890?	Bored, 4-inch.....	165.....	.....	54	57	Wind.....	\$50.00	.....	Domestic.....	.....
2836	L. Terkelson.....	do.....	K-3.....	1901	do.....	162.....	153	49	47	Hand.....	.....	.....	do.....	.....
2837	Mrs. M. A. Nicholson.....	do.....	K-3.....	1902	Bored, 5-inch.....	162.....	156	75	57	do.....	66.00	.....	do.....	.....
2838	M. M. Burke.....	do.....	K-3.....	1903	do.....	166.....	.....	75	83	Wind.....	.....	.....	do.....	.....
2839	C. C. Smith.....	do.....	K-3.....	1889?	Bored, 4-inch.....	165.....	.....	75	47	do.....	.....	.....	do.....	.....
2940	E. Johnson.....	do.....	K-3.....	1900	do.....	164.....	156	59	42	Hand.....	50.00	.....	do.....	.....
2941	Mrs. M. J. King.....	do.....	K-3.....	1893?	do.....	161.....	.....	65	36	Wind.....	.....	.....	do.....	.....
2942	A. J. Nicholson.....	do.....	J, K-3.....	1903	do.....	158.....	149	59	42	Hand.....	50.00	.....	Domestic; stock.....	.....
2943	Mrs. M. Burghardt.....	do.....	J-3.....	1895	Bored, 2-inch.....	155.....	.....	65	37	do.....	.....	.....	Domestic.....	.....
2944	D. E. Poyorena.....	do.....	K-3.....	.....	Bored, 4-inch.....	155.....	146	49	41	do.....	.....	.....	do.....	.....
2945	P. T. Swaine.....	do.....	J, K-3.....	1893	Bored, 7-inch.....	155.....	143	64	40	Wind.....	.....	.....	do.....	.....
2946	A. B. Briswaller.....	do.....	K-3.....	1902	Bored, 4-inch.....	154.....	143	133	48	Hand.....	113.00	.....	do.....	.....
2947	J. T. King.....	Santa Gertrudis.....	K-3.....	1902	Bored, 6-inch.....	156.....	.....	70	59	Wind.....	.....	.....	Domestic; stock.....	.....
2948	Joe Hynes.....	do.....	K-3.....	1888	Bored, 4-inch.....	159.....	148	103	35	do.....	.....	.....	Domestic.....	.....
2949	Geo. Hatch.....	Paso de Bartolo.....	K-3.....	1897?	do.....	159.....	.....	70	37	do.....	.....	.....	Domestic; stock.....	.....
2950	John Lewis.....	Santa Gertrudis.....	J-3.....	1898	do.....	156.....	.....	75	40	do.....	.....	.....	Domestic.....	.....
2951	Los Nietos School.....	do.....	J, K-3.....	.....	Bored, 6-inch.....	156.....	.....	60	44	Hand.....	.....	.....	do.....	.....
2952	Los Nietos Packing House.....	do.....	J-4.....	1897	Bored, 4-inch.....	160.....	147	48	43	do.....	.....	.....	Packing.....	.....
2953	L. Duran.....	do., ..	J-4.....	1890?	Dug, 4 by 4 foot.....	160.....	138	25	48	do.....	.....	.....	Domestic.....	.....
2954	Mr. Grado.....	do.....	J-4.....	.....	Dug, 2 by 3 foot.....	162.....	137	27	41	do.....	.....	.....	do.....	.....
2955	Max Schwede.....	do.....	J-4.....	1901	Bored, 6-inch.....	160.....	.....	92	39	do.....	.....	.....	do.....	.....
2956	Lucy Grado.....	do.....	J-4.....	1901	Bored, 7-inch.....	159.....	.....	90	38	do.....	.....	.....	do.....	.....
2957	Central Oil Wells.....	do.....	K 1.....	1900	Bored, 4-inch.....	157.....	.....	86	23	do.....	.....	.....	do.....	.....

2958	Murphy Oil Co.	do.	K-4	1903	do.	157	117	32	do.	do.	do.	do.
2959	J. D. Rimrez	do.	K-4	1901	Bored, 7-inch.	161	85	29	Wind	do.	do.	do.
2960	J. D. Cartwright	do.	K-4	1901	Bored, 6-inch.	159	70	35	do.	do.	do.	do.
2961	E. W. Pitman	do.	K-4	1870	Bored, 7-inch.	157	103	30	do.	do.	do.	do.
2962	F. A. Sanchez	do.	K-4	1900	do.	159	130	36	do.	do.	do.	do.
2963	do.	do.	K-4	1901	Bored, 10-inch.	158	131	205	Compressed air.	270.00	\$1,700.00	Irrigation.
2964	T. L. Sanchez	do.	K-4	1898	Bored, 7-inch.	158	90	58	Wind.	81.00	Stock	40
2965	Sophia Elsalca	do.	K-4	1892	Dug, 5-foot diam-eter.	160	130	31	Hand.	Domestic	do.	do.
2966	Mrs. Linares	do.	K-4	1877	Dug, 5 by 5 foot.	157	130	28	do.	do.	do.	do.
2967	do.	do.	K-4	1887	Dug, 4 by 4 foot.	155	135	22	do.	do.	do.	do.
2968	V. D. Acost	do.	K-4	1888	do.	152	135	19	do.	do.	do.	do.
2969	G. Martinez	do.	K-4	1898	Dug, 2½ by 2½ foot.	145	137	11	do.	do.	do.	do.
2970	Fred Valla	do.	K-4	1903	Bored, 4-inch.	148	70	31	do.	do.	do.	do.
2971	do.	do.	L-3	1896	do.	145	54	73	Wind.	do.	do.	do.
2972	Geo. Quigley	do.	L-3	1900	Dug, 2 by 4 foot.	144	131	9	do.	do.	Domestic; stock.	do.
2973	C. E. Cole	do.	L-3	1899	Bored, 7-inch.	146	135	107	do.	do.	do.	do.
2974	B. Sharpless	do.	L-3	1887?	Bored, 4-inch.	140	120	47	do.	do.	Domestic	do.
2975	J. Cole	do.	L-3	1900	Bored, 7-inch.	162	65	89	do.	do.	do.	do.
2976	Evergreen Water Co.	do.	L-3	1900	Bored, 9½-inch.	187	155	150	Gas.	do.	{Irrigation.	125
2977	do.	do.	L-3	1900	Bored, 12-inch.	187	155	84	do.	do.	do.	do.
2978	J. Cole	do.	L-3	1894	Bored, 4-inch.	177	151	60	Wind.	do.	Domestic	do.
2979	C. A. Landreth	do.	L-3	1901	do.	191	160	78	102	Hand.	Domestic; stock.	do.
2980	Santa Gertrudis Irrigation Co.	do.	L-4	1899	Bored, 10-inch.	143	136	53	do.	do.	Not used.	do.
2981	do.	do.	L-4	1898	Bored, 7-inch.	143	136	54	88	Steam.	Irrigation.	†60
2982	do.	do.	L-4	1899	Bored, 12-inch.	143	136	32	do.	do.	do.	do.
2983	do.	do.	L-4	1899	Bored, 10-inch.	143	136	52	do.	do.	do.	do.
2984	do.	do.	L-4	1899	do.	143	44	44	do.	do.	Not used.	do.
2985	H. V. Vorce	do.	L-4	1894	Hydraulic, 2-inch.	144	50	81	Hand.	do.	Domestic	do.
2986	do.	do.	L-4	1897	Bored, 10-inch.	146	139	32	Gas.	75.00	Irrigation.	20
2987	P. M. Mowry	do.	L-4	1901	Driven, 1½-inch.	145	18	75	Hand.	do.	Domestic	do.
2988	Gunn Ranch	do.	L-4	1895?	Bored, 3-inch.	145	40	63	do.	do.	Domestic; stock.	do.
2989	C. L. Wheeler	do.	L-4	1900	Bored, 7-inch.	150	125	45	107	Gas.	Irrigation.	†10
2990	Jacob Chase	do.	L-4	1887?	Bored, 4-inch.	144	128	45	104	Wind.	Domestic	do.
2991	W. O. Graham	do.	L, M-4	1895	Driven, 1½-inch.	146	28	120	Hand.	do.	do.	do.

*Wells in the Downey quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>						<i>Miner's inches.</i>
2992	John Wood.	Santa Gertrudis.	M-4.	1898	Bored 10-inch.	148	122	660	80	Hand.			Stock.	110
2993	do.	do.	M-4.	1904	Bored, 7-inch.	150	127	46		Wind.	\$50.00		Domestic.	
2994	Colima Tract Water Co.	do.	L-4, 5.	1892	Bored, 10-inch.	133	118	152	83	Compressed air.	350.00		Irrigation.	
2995	do.	do.	L-4, 5.	1899	do.	135	118	154		do.	350.00		do.	
2996	V. Rais.	do.	L-5.	1887?	Bored, 4-inch.	145		35	63	Wind.			Domestic.	
2997	T. Resendes.	do.	M-4, 5.	1898	Dug, 3 by 3 foot.	146	130	19	120	Hand.			Domestic; stock.	
2998	J. Sanchez.	do.	M-4.	1901	Bored, 4-inch.	183	148	47	75	do.			do.	
2999	A. A. Gueirre.	do.	N-5.	1900	Dug, 4 by 4 foot.	209	178	33	89	do.			do.	
3000	M. Contreras.	do.	N-5.	1901	Dug, 3-foot diameter.	203	181	23	93	do.			Domestic.	
3001	R. S. Lambert.	do.	N-5.	1895	Dug, 3½-foot diameter.	227	192	37	61	do.			do.	
3002	G. W. Fulwider.	do.	N-4.	1902	Bored, 7-inch.	232	192	116	55	Wind.	120.00	\$55.00	Domestic; stock.	
3003	Sam Mendenhall.	do.	N-5.	1901	Bored, 10-inch.	195	174	28	62	do.			do.	
3004	H. L. Riggins.	do.	N-4.	1900	Bored, 6-inch.	255	185	190	57	do.	200.00		do.	
3005	Cyrus Baldwin.	do.	N-4.	1901	Bored, 7-inch.	278	190	165	48	do.			do.	
3006	Chas. Scott.	do.	N-5.	1897	Bored, 4-inch.	225		140		do.			Not used.	
3007	E. W. Cole.	do.	N-5.	1895?	Bored, 7-inch.	222	182	90	55	do.			Domestic; stock.	
3008	Walter Jackson.	do.	N-4.	1901	do.	253		106	38	Hand.			do.	
3009	Wm. K. Green.	do.	M, N-4.	1896	do.	270	180	227			500.00		Irrigation.	
3010	N. Thill.	do.	M-4.	1901	Bored, 5-inch.	175		62	120	Wind.			Domestic.	
3011	Mrs. Stoddard.	do.	M-4.	1897	Bored, 4-inch.	168		100	172	do.			do.	
3012	J. B. Willey.	do.	M-4.	1896	do.	157		58	130	do.			do.	

3013	Woodward & Graham.	do.	M-4.	1901	Bored, 10-inch.	173	140	82	106	Gas.	300.00	Irrigation.	†60
3014	T. H. Woodward.	do.	M-4.	1900	Bored, 7-inch.	173	130	65	106	Wind.		Domestic.	
3015	J. L. Gales.	do.	M-4.	1892	Bored, 4-inch.	188		130		Hand.		Not used.	
3016	E. W. Hazzard.	do.	M-4.	1890	do.	163		98	126	Wind.		Domestic.	
3017	W. T. Brookaw.	do.	L-4.	1897	Bored, 7-inch.	167		78	134	Hand.		do.	
3018	Geo. L. Hazzard.	do.	L, M-3.	1895	do.	215		165		Wind.		Not used.	
3019	H. C. Baldwin.	do.	M-3.	1892?	do.	280	155	154		do.			
3020	J. B. Willey.	do.	L, M-5.	1888?	do.	127	127	170	91	Artesian.			2
3021	C. M. Mayer.	do.	N-4.	1903	do.	265	173	163	32	Gas.	150.00	Irrigation.	†1

Wells in Las Bolsas quadrangle.

[\* Cost of well and equipment combined; † yield estimated or statement of owner taken; ? doubtful.]

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
1	M. J. Edwards.	La Bolsa Chica.	M-1.	1874	Bored, 7-inch.	Feet. 19	Feet. 19	Feet. 116	25	64	Artesian.			Irrigation.	Miners' inches. 29
2	Chico district school.	do.	M-1.	1894	Bored, 2-inch.	21	21	300	27	64	do.			Domestic.	4
3	W. J. Edwards.	do.	M-1.	1896	do.	20	20	125	26	64	do.	\$50.00		Irrigation; domestic.	4
4	do.	do.	M-2.	1899	Bored, 3-inch.	20	20	128	25	65	do.	60.00		Irrigation.	8
5	do.	do.	M-2.	1898	Bored, 3½-inch.	19	19	130	26	64	do.			do.	10
6	do.	do.	M-2.	1899	Bored, 2-inch.	19	19	114	26	64	do.	45.00		do.	†5
7	do.	do.	M-2.	1899	do.	18	18	165	26	64	do.	65.00		do.	4
8	do.	do.	N-2.	1901	Bored, 4-inch.	19	19	64	25	64	do.	35.00		do.	4
9	do.	do.	M-2.	1900	do.	19	19	170			do.			do.	†3
10	do.	do.	M-2.	1896	Bored, 2-inch.	19	19	72			do.	30.00		do.	†4

Wells in Las Bolsas quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>°F.</i>					<i>Miner's inches.</i>
11	W. J. Edwards.....	La Bolsa Chica...	N-2.....	1898	Bored, 3½-inch.....	19	19	74	26	65	Artesian.....	\$30.00		Irrigation.....	3
12	do.....	do.....	N-2.....	1898	do.....	19	19	75			do.....			do.....	4
13	do.....	do.....	M-2.....	1898	do.....	19	19	75	30	64				Not used.....	
14	do.....	do.....	M-1.....	1898	do.....	20	20	104	27	65	do.....			Irrigation; stock.	10
15	do.....	do.....	M-2.....	1897	Bored, 7-inch.....	20	20	160	26	65	do.....			Irrigation.....	1
16	do.....	do.....	N-1.....	1898	Bored, 2-inch.....	20	20	119			do.....	45.00		do.....	12
17	do.....	do.....	M-2.....	1899	Bored, 3-inch.....	18	18	120	26	65	do.....	65.00		do.....	13
18	Samson Edwards.....	do.....	M-1.....	1900	Bored, 2-inch.....	19	19	135	26	64	do.....	50.00		do.....	14
19	do.....	do.....	M-2.....	1900	Bored, 3-inch.....	19	19	135	26	64	do.....			do.....	10
20	do.....	do.....	M-1.....	1898	Bored, 3½-inch.....	19	19	135	27	64	do.....			do.....	8
21	do.....	do.....	M-2.....	1902	Bored, 6-inch.....	16	16	230			do.....			do.....	26
22	Frank Bohannon.....	do.....	M-2.....	1901	Bored, 2-inch.....	16	16	100	25	64	do.....	40.00		do.....	4
23	do.....	do.....	M-2.....	1902	Bored, 4-inch.....	15	15	214			do.....	100.00		do.....	4
24	W. J. Edwards.....	do.....	M-2.....	1901	do.....	15	15	100	27	64	do.....	35.00		do.....	4
25	do.....	do.....	M-2.....		Bored, 3½-inch.....	15	15				do.....			do.....	4
27	W. H. Johnson.....	do.....	M-2.....		Bored, 2-inch.....	21	21	127	25	64	do.....			do.....	2
28	do.....	do.....	M-2.....		do.....	15	15	130		65	do.....			do.....	2
28a	do.....	do.....	M-2.....		Bored, 7-inch.....	15	15	238	25	68	do.....			do.....	3
29	do.....	do.....	M-2.....		Bored, 2-inch.....	15	15	77			do.....			do.....	6
30	do.....	do.....	M-2.....		Bored, 4-inch.....	15	15	160	26	65	do.....			do.....	
31	Samson Edwards.....	do.....	M-2.....	1904	do.....	15	15	68	27	64	do.....			do.....	17
32	do.....	do.....	M-2.....	1900	do.....	15	15	70			do.....			do.....	14
33	do.....	do.....	M-3.....	1898	Bored, 2-inch.....	14	14	69			do.....			do.....	4



## Wells in Las Bolsas quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Fath.</i>	<i>°F.</i>						<i>Miner's inches.</i>
67	J. T. Shaffer.....	La Bolsa Chica.....	N-2.....	1899	Bored, 7-inch.....	17	17	128			Artesian.....			Irrigation.....	†81
68	T. J. Lewis.....	do.....	N-2.....	1899	do.....	16	16	90?			do.....	\$100.00		do.....	12
69	do.....	do.....	N-3.....	1901	do.....	15	15	65			do.....	90.00		do.....	†19
70	R. R. & I. J. Gerhart.....	do.....	N-3.....	1896	Bored, 4-inch.....	15	15	80	28	64	do.....			do.....	8
71	do.....	do.....	N-3.....	1900	Hydraulic, 3-inch.....	15	15	80?			do.....			do.....	3
72	Geo. Gerhart.....	do.....	N-3.....	1899	Bored, 4-inch.....	14	14	74	26	64	do.....			do.....	14
73	do.....	do.....	M, N-3.....	1900	do.....	13	13	76			do.....			do.....	†17
74	H. H. Bentley.....	do.....	N-3.....	1897	Bored, 2-inch.....	16	16	71	25	64	do.....	30.00		Stock; irrigation.....	†7
75	do.....	do.....	N-3.....	1901	Bored, 4-inch.....	16	16	72			do.....	40.00		Irrigation.....	†20
76	do.....	do.....	M-2, 3.....	1902	Bored, 2-inch.....	16	16	71			do.....	30.00		do.....	5
77	B. A. Farrer.....	do.....	N-3.....	1898	Bored, 4-inch.....	16	16	72	26	64	do.....			Domestic; irrigation.....	8
78	do.....	do.....	N-3.....	1901	do.....	14	14	78			do.....	40.00		Irrigation.....	†19
79	do.....	do.....	N-3.....	1904	do.....	15	15	78			do.....	40.00		do.....	†18
80	W. T. Clark.....	do.....	M-3.....	1903	do.....	13	13	76	26	64	do.....			do.....	17
81	do.....	do.....	M-3.....	1898	do.....	13	13	74		64	do.....	40.00		do.....	10
82	do.....	do.....	M-3.....	1898	Bored, 7-inch.....	13	13	73			do.....	100.00		do.....	7
83	W. H. McGirk.....	do.....	N-3.....	1901	Bored, 2-inch.....	13	13	70	25	66	do.....			Domestic; irrigation.....	†8
84	do.....	do.....	N-3.....	1900	do.....	12	12	68			do.....	30.00		Irrigation.....	†8
85	D. McGirk.....	do.....	N-3.....	1904	do.....	13	13	74			do.....	35.00		do.....	†9
86	do.....	do.....	N-3.....	1895	Bored, 4-inch.....	12	12	75	26	64	do.....			Domestic; irrigation.....	17
87	D. H. Thompson.....	do.....	N-3.....	1901	Bored, 2-inch.....	14	14	72			do.....	35.00		Irrigation.....	8

88	M. C. Cole	do.	N-3	1895	Bored, 3-inch	15	85	25	64	do.	45.00	Domestic; irrigation.	12
89	F. J. Mallett	do.	N-3	1897	Bored, 7-inch	17	17	120	27	65	do.	do.	7
90	do.	do.	N-3	1901	do.	16	16	140			90.00	Irrigation.	† 29
91	Joseph Walton	do.	N-3	1899	do.	16	16	100			125.00	do.	9
92	J. G. Blaylock	do.	N-3	1896	do.	16	16	90	26	63	75.00	Domestic	
93	J. M. Cain	do.	N-3	1900	Hydraulic, 3-inch	16	16	59			30.00	Irrigation.	10
94	do.	do.	N-3		Hydraulic, 2-inch	16	16	155			75.00	Domestic; irrigation.	
95	J. L. Worthy	do.	N-3	1900	Hydraulic, 3-inch	16	16	130			75.00	do.	
97	Henry Winters	do.	N-3	1895	Hydraulic, 2-inch	16	16	138	28	65	do.	do.	
98	do.	do.	N-3	1896	Bored, 4-inch	16	16	138				Irrigation.	† 20
99	Jacob Walton	do.	N-3	1896	Bored, 7-inch	17	17	136				do.	† 20
100	W. S. Burdick	do.	N-2	1896	do.	18	18	85?	27	63	75.00	Domestic; irrigation.	7
101	do.	do.	N-2	1899	Bored, 3-inch	18	18	90?	27	64	45.00	Irrigation.	† 8
102	D. Rogers	do.	N-2	1898	Bored, 2-inch	18	18	85			35.00	Domestic; irrigation.	4
103	do.	do.	N-2	1900	Bored, 7-inch	18	18	84				Irrigation.	2
104	do.	do.	N-2	1899	Bored, 2-inch	17	17	85			40.00	do.	4
105	A. J. Crane	do.	N-2	1895	Bored, 7-inch	17	17	79	25	64		Domestic; irrigation.	7
106	do.	do.	N-2	1900	do.	17	17	175	25	64	250.00	Irrigation.	7
107	Golden West Celery and Produce Co.	do.	N-2	1903	Bored, 4-inch	17	17	198	23	64		Domestic; irrigation.	16
108	do.	do.	N-2	1894	Bored 7-inch	18	18	100	27	64		Irrigation.	24
109	do.	do.	N-2	1893	do.	18	18	90			100.00	do.	1
111	do.	do.	N-2	1901	Bored, 3-inch	17	17	98	27	64	65.00	do.	8
112	do.	do.	N-2	1901	Bored, 7-inch	17	17	96				do.	7
113	do.	do.	N-2	1901	Bored, 2-inch	17	17	120			60.00	do.	4
114	do.	do.	N-2	1896	Bored, 7-inch	17	17	188	26	65		do.	2
115	do.	do.	N-2	1892	do.	17	17	97				do.	† 7
116	do.	do.	N-2	1901	Bored, 3-inch	17	17	120				do.	10
117	do.	do.	N-3	1901	do.	17	17	110				do.	9
118	do.	do.	N-2	1894	Bored, 4-inch	17	17	110	26	64		do.	8
119	do.	do.	N-3	1894	Hydraulic, 4-inch	17	17	108				do.	8
120	do.	do.	N-3	1898	Bored, 4-inch	17	17	140				do.	15

*Wells in Las Bolsas quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Miner's inches.	Quantity of water.
123	B. B. Townsend.....	La Bolsa Chica.....	N-2.....	1903	Bored, 4-inch.....	17	17	260	25	66	Artesian.....	\$200.00		Irrigation.....	+30	
124	do.....	do.....	N-2.....		Bored, 7-inch.....	17	17	160			do.....			do.....	+24	
125	J. O. Slaback.....	do.....	N-2.....	1901	Bored 4-inch.....	17	17	68	27	64	do.....	40.00		do.....	+21	
126	Wm. Kasemann.....	do.....	N-2.....	1900	Bored, 7-inch.....	18	18	367	24	64	do.....	400.00		Domestic; irriga- tion; stock.	8	
127	do.....	do.....	N-2.....	1901	Bored 3-inch.....	19	19	196			do.....	120.00		Irrigation.....	10	
128	do.....	do.....	N-2.....	1903	Bored, 3½-inch.....	18	18	194	28	64	do.....			do.....	8	
129	T. J. Lewis.....	do.....	N-2.....		Bored, 7-inch.....	18	18	86	29	64	do.....			Domestic; irriga- tion.	+7	
130	do.....	do.....	N-2.....	1904	Bored, 4½-inch.....	18	18	193	29	64	do.....			Irrigation.....	5	
131	Mr. Hazeltine.....	do.....	N-2.....	1901	Bored, 2-inch.....	19	19	128	27	65	do.....	60.00		Domestic; stock.	4	
132	do.....	do.....	N-2.....		Bored, 3-inch, in- side of 7-inch.	19	19	324	27	64	do.....			Irrigation.....	2	
133	W. T. Clark.....	do.....	N-2.....	1900	Bored, 2-inch.....	20	20	209			do.....	60.00		Domestic; irriga- tion; stock.	5	
134	do.....	do.....	N-2.....	1904	Hydraulic, 4-inch.	17	17	232	32	64	do.....			Irrigation.....	18	
135	do.....	do.....	N-1.....	1896	Bored, 7-inch.....	18	18	75			do.....	45.00		do.....	10	
136	do.....	do.....	N-1.....	1897	do.....	18	18	75	30	64	do.....			do.....	2	
137	do.....	do.....	N-2.....	1880	do.....	19	19	80	29	64	do.....	55.00		Irrigation; do- mestic.	4	
138	do.....	do.....	N-1.....	1896	do.....	22	22	82			do.....	55.90		Irrigation.....	4	
139	W. H. Edwards.....	do.....	N-1.....		do.....	22	22	120	33	64	do.....			do.....	24	
140	do.....	do.....	N-1.....	140	do.....	20	20	104	29	64	do.....			do.....	12	
141	do.....	Las Bolsas.....	N-1.....		Bored, 2-inch.....	20	20	97	30	64	do.....			do.....	6	

142	R. E. Larter.....	do.	1874	Bored, 7-inch.....	25	102	64	do.	Domestic; irriga- tion.	12
143	do.	do.	1904	Hydraulic, 3-inch.....	25	357	28	do.	Irrigation	9
144	Mr. Wayman.....	do.		Bored, 2-inch.....	22	80	33	do.	Irrigation; stock	11
145	R. E. Larter.....	do.		Bored, 7-inch.....	22	295	27	do.	do.	Small.
146	H. F. Penhall.....	do.	1904	Hydraulic, 3-inch.....	23	315	28	do.	do.	4
147	do.	do.	1884	Bored, 7-inch.....	23	80		do.	Irrigation; stock.	6
148	do.	do.	1902	Hydraulic, 2-inch.....	24	327		do.	Domestic; irriga- tion.	4
149	Mrs. M. J. Larter.....	do.		Bored, 7-inch.....	22	72	30	do.	do.	Small.
150	E. M. Keller.....	La Bolsa Chica.....		do.	20	141	26	do.	Irrigation.	10
151	do.	do.		Bored, 2-inch.....	19	100	26	do.	do.	Small.
152	do.	do.		do.	19	123	25	do.	Domestic; stock.	10
153	Mrs. H. Rogers.....	do.	1900	Bored, 3-inch.....	17	232	26	do.	Domestic.	Small.
154	do.	do.	1876	Bored, 7-inch.....	17	87		do.	Domestic; stock.	6
155	J. Peters.....	do.		do.	17	89	26	65	Irrigation.	10
156	Frank Wakham.....	do.		Bored, 3-inch.....	20	210	23	66	do.	9
157	J. H. Edwards.....	Las Bolsas.....		do.	22	90	30	64	Not used.	12
158	do.	do.		Bored, 7-inch.....	22	137		64	Irrigation.	Small.
159	do.	do.	1899	Bored, 3-inch.....	21	117	29	64	do.	10
160	Mr. Keifhaber.....	do.	1877	Bored, 7-inch.....	22	100	29	64	Irrigation; stock.	12
163	A. B. Bohnham.....	do.	1876?	do.	27	48	36	64	Domestic; stock.	Small.
164	C. N. Hickox.....	La Bolsa Chica.....	1902	Bored, 4-inch.....	20	136	27	63	Domestic; irriga- tion.	14
165	Chas. Waters.....	do.	1903	Bored, 2-inch.....	20	90		63	Irrigation.	2
166	do.	do.	1903	Hydraulic, 2-inch.....	20	51		do.	Irrigation; stock	2
167	do.	do.	1901	Bored, 4-inch.....	17	110	25	65	Irrigation.	2
168	A. D. Cleaver.....	do.	1901	do.	17	144	25	66	do.	2
169	J. J. Graham.....	do.	1901	Bored, 7-inch.....	30	302	25	70	Domestic; irriga- tion.	2
170	do.	do.	1901	do.	30	274		do.	Irrigation; stock	2
171	W. Shamrack.....	do.	1903	Bored, 2-inch.....	16	55	27	do.	Irrigation.	6
172	do.	do.	1903	do.	16	58		do.	do.	6
173	Ed. More.....	do.	1899?	Bored, 4-inch.....	17	70		do.	do.	4
174	do.	do.	1904	Bored, 3½-inch.....	25	70	24	64	do.	12
175	do.	do.	1904	do.	17	281	24	69	do.	15

Wells in Las Bolsas quadrangle—Continued.

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Soils per 100,000.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>°F.</i>					<i>Miner's inches.</i>
176	A. D. Cleaver.	La Bolsa Chico.	M-3.	1904	Bored, 3-inch.	17	17	84	24	64	Artesian.			Irrigation.	10
177	Wm. Metzger.	do.	M-3.		Bored, 2-inch.	16	16	100	25	64	do.			do.	
178	do.	do.	M-3.		Bored, 7-inch.	17	17	64			do.			do.	4
179	Mr. Robertson.	do.	M-3.		do.	16	16		26	64	do.			do.	
181	W. H. Bentley.	do.	M-3.	1897	Hydraulic, 2-inch.	17	17	135			do.			Stock.	5
182	J. B. Robertson.	do.	M-3.	1903	Bored, 2-inch.	16	16	70	27	64	do.			Irrigation.	
183	J. M. Waters.	do.	M-3.	1902	do.	16	16	65			do.			do.	7
184	do.	do.	M-3.	1902	do.	14	14	66	26	66	do.			Domestic; stock.	5
185	do.	do.	M-3.	1900	do.	14	14	66			do.			Irrigation.	4
186	do.	do.	M-4.	1898	Bored, 4-inch.	14	14	67			do.			do.	± 2
187	L. R. Metzger.	do.	M-3.		do.	15	15	80	25	66	do.			do.	± 26
188	do.	do.	M-3.		do.	15	15	60			do.			do.	4
191	Wm. Shamrack.	do.	L-3.	1898	Bored, 2-inch.	20	20	70 <sup>8</sup>	21		Wind.			Domestic; stock.	
192	do.	do.	L, M-3.	1904	Bored, 7-inch.	14	14	220	24	70	Artesian.			Irrigation.	7
193	John McDonald.	do.	M-3.	1894 <sup>7</sup>	Bored, 6-inch.	15	15	53	22	66	do.			do.	36
194	Las Bolsas Land Co.	do.	L-3.		Hydraulic, 2-inch.	12	12	48	21	66	do.			Duck pond.	4
195	do.	do.	L-3.		do.	14	14	55	22	65	do.			do.	6
196	do.	do.	L-3.		do.	13	13	48			do.			do.	6
197	Geo. Travoli.	do.	M-3.	1899	Hydraulic, 3-inch.	15	15	65	25	64	do.			Irrigation.	± 10
198	do.	do.	M-3.	1903	do.	15	15	100 <sup>7</sup>			do.			do.	± 6
199	do.	do.	M-3.	1899	Hydraulic, 2-inch.	15	15	70			do.			do.	5
200	do.	do.	M-3.	1902	do.	15	15	73			do.	\$35.00		Domestic; stock.	4
201	do.	do.	M-3.	1900	do.	15	15	68			do.	30.00		Irrigation.	5

202	do.	do.	M-4	1898	Bored, 2-inch.	15	15	66		do.												+1
203	do.	do.	M-4	1898	Hydraulic, 3-inch.	15	15	70	64	do.	40.00	4										4
204	do.	do.	M-4	1903	do.	15	15	66		do.	38.00											+12
205	do.	do.	N-4	1904	do.	14	14	75	33	65	do.	30.00	9									9
206	do.	do.	N-3	1899	Hydraulic, 2-inch.	14	14	67	27	64	do.	30.00	5									5
207	J. B. Robertson	do.	M-3	1900	Hydraulic, 4-inch.	15	15	70?		do.			15									15
208	do.	do.	M-3	1901	Hydraulic, 2-inch.	14	14	70		do.	32.00											
209	T. M. Robertson	do.	M-3	1903	Hydraulic, 4-inch.	15	15	85	25	64	do.	54.00	5									5
210	do.	do.	M-3	1901	Hydraulic, 2-inch.	14	14	70		do.			+5									
211	do.	do.	M-3	1902	Hydraulic, 4-inch.	15	15	70	27	65	do.	45.00	15									15
212	do.	do.	M-3	1902	do.	15	15	70	27	65	do.	45.00	15									15
214	W. L. Phillips	do.	N-4	1900	Hydraulic, 2-inch.	14	14	68	27	65	do.		+6									
215	do.	do.	M-4	1904	do.	14	14	67		do.			+7									
216	do.	do.	N-4	1901	do.	14	14	60?		do.			6									6
217	do.	do.	M-4	1900	do.	14	14		25	66	do.		+6									
218	D. F. Sharratt	do.	N-3	1904	Bored, 2-inch.	24	24	350	22	70	do.		6									6
219	do.	do.	N-3	1897	Bored, 3-inch.	23	23	148	27	64	do.		5									5
220	Mrs. M. M. Shaffer	do.	N-3	1902	Hydraulic, 3-inch.	24	24	107	26	66	do.	56.00	4									4
221	do.	do.	N-3	1903	Bored, 4-inch.	18	18	113		do.			16									
222	do.	do.	N-3	1900	do.	18	18	105		do.			+17									
223	C. J. & S. Buck	do.	M-4	1895	Bored, 3-inch.	14	14	75?	26	65	do.		9									9
224	do.	do.	M-4	1903	Bored, 4-inch.	14	14	70		do.	45.00		+20									
225	P. B. O'Reilley	do.	N-3	1902	Bored, 2-inch.	16	16	70	26	65	do.	30.00	6									
226	do.	do.	N-3	1902	do.	17	17	70		do.			+6									
227	A. F. Lintner	do.	N-3	1901	do.	15	15	68	27	65	do.	29.00	6									
228	do.	do.	N-3	1903	Hydraulic, 2-inch.	17	17	84		do.	40.00		5									
229	do.	do.	N-4	1899	Bored, 2-inch.	15	15	65	27	64	do.	30.00	4									
230	do.	do.	N-4	1898	do.	15	15	68		do.	30.00		4									
231	do.	do.	N-4	1899	do.	15	15	65	27	64	do.	30.00	4									
232	Dennis McGirk	do.	N-4	1901	do.	15	15	75		do.			4									
233	do.	do.	N-4	1902	do.	14	14	76	26	65	do.	33.00	4									
234	D. H. Thomas	do.	N-3	1899	Bored, 4-inch.	16	16	74		do.	50.00		+14									
235	M. C. Cole	do.	N-3	1900	Bored, 2-inch.	15	15			do.			6									6

*Wells in Las Bolsas quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000 water.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>°F.</i>					<i>Miner's inches.</i>
236	M. C. Cole.....	La Bolsa Chica.....	N-3.....	1900.....	Bored, 2-inch.....	16.....	16.....	60.....	.....	.....	Artesian.....	.....	.....	Irrigation.....	6.....
237	do.....	do.....	N-3.....	1895.....	Bored, 7-inch.....	17.....	17.....	130.....	.....	.....	do.....	.....	.....	do.....	2.....
238	do.....	do.....	N-3.....	1895.....	do.....	19.....	19.....	131.....	.....	.....	do.....	.....	.....	do.....	11.....
239	do.....	do.....	N-3.....	1904.....	Bored, 7-inch, 184 feet; 4-inch, 125 feet.	30.....	30.....	309.....	25.....	70.....	do.....	.....	.....	Irrigation; domestic.	12.....
240	do.....	do.....	N-3.....	.....	Bored, 7-inch.....	30.....	30.....	325.....	.....	.....	Wind.....	.....	.....	Stock.....	.....
241	Frank Lintner.....	do.....	N-3.....	1892.....	Bored, 4-inch.....	16.....	16.....	97.....	26.....	64.....	Artesian.....	\$60.00.....	.....	Domestic; Irrigation.	14.....
242	H. S. Brakebill.....	do.....	N-3.....	1899.....	do.....	16.....	16.....	69.....	26.....	65.....	do.....	45.00.....	.....	Irrigation.....	18.....
243	do.....	do.....	N-3.....	1896.....	Bored 7-inch.....	16.....	16.....	49.....	.....	.....	do.....	.....	.....	do.....	4.....
244	John Lawrence.....	do.....	N-3.....	1899.....	Bored, 3-inch.....	16.....	16.....	49.....	25.....	65.....	do.....	.....	.....	do.....	Small.
245	Frank Lintner.....	do.....	N-3.....	1902.....	Bored, 2-inch.....	15.....	15.....	72.....	.....	.....	do.....	32.00.....	.....	do.....	5.....
246	do.....	do.....	N-3.....	1899.....	Bored, 4-inch.....	16.....	16.....	97.....	.....	.....	do.....	60.00.....	.....	do.....	†14.....
247	do.....	do.....	N-3.....	1897.....	do.....	16.....	16.....	68.....	26.....	64.....	do.....	45.00.....	.....	do.....	4.....
248	B. F. Houser.....	do.....	N-3.....	.....	Bored, 3-inch.....	19.....	19.....	.....	.....	.....	do.....	.....	.....	do.....	Small.
249	do.....	do.....	N-3.....	.....	Bored, 4-inch.....	18.....	18.....	65.....	27.....	64.....	do.....	.....	.....	do.....	1.....
250	S. G. Huff.....	do.....	N-4.....	1898.....	Bored, 3-inch.....	15.....	15.....	46.....	.....	.....	do.....	28.00.....	.....	do.....	Small.
251	W. H. Hicks.....	do.....	N-4.....	1898.....	Hydraulic, 2-inch.	22.....	22.....	85.....	.....	.....	Hand.....	.....	.....	Domestic; stock.	.....
252	Huntington Beach Co.	Las Bolsas.....	N-5.....	1898.....	Bored, 7-inch.....	60.....	60.....	220.....	37.....	.....	Wind.....	.....	.....	Stock; irrigation.	.....
253	do.....	do.....	N-7.....	.....	Bored, 10-inch.....	30.....	30.....	200?.....	35.....	.....	Wind, gas.....	.....	.....	Domestic.....	.....
254	do.....	do.....	.....	.....	do.....	10.....	10.....	300.....	83.....	66.....	Artesian.....	.....	.....	do.....	Small.
255	Bolsa Land Co. (gun club).	do.....	L-3.....	.....	Bored, 2-inch.....	.....	.....	.....	.....	.....	.....	.....	.....	do.....	.....
256	Lometa Land Co.....	La Bolsa Chica.....	K-3.....	.....	Bored, 7-inch.....	30.....	30.....	130.....	20.....	.....	Wind.....	.....	.....	Domestic; stock.	.....



*Wells in Las Bolsas quadrangle—Continued.*

Number of well.	Owner.	Location.	Map location.	Year completed.	Class of well.	Elevation of surface.	Elevation of water.	Depth of well.	Solids per 100,000.	Temperature of water.	Method of lift.	Cost of well.	Cost of machinery.	Use of water.	Quantity of water.
						<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		<i>°F.</i>					<i>Miner's inches.</i>
292	Lometa Land and Water Co. (gun club).	La Bolsa Chica	L-2	1903	Hydraulic, 4-inch.	15	15	15			Artesian.			Duck pond	
293	do.	do.	L-2	1903	do.	15	15	15	26	66	do.			do.	
294	do.	do.	L-2	1903	do.	15	15	15	27	66	do.			do.	
295	do.	do.	L-2	1903	Hydraulic, 3-inch.	15	15	15			do.			do.	
296	do.	do.	L-2	1903	Hydraulic, 4-inch.	15	15	15			do.			do.	
297	F. Dimock	do.	K-1	1898	Bored, 2-inch.	20	20	124	26	66	do.			Domestic; irrigation.	6
298	do.	do.	K-1	1902	do.	22	22	152	31		do.			Irrigation.	7
299	do.	do.	L-2	1903	do.	22	22	190			do.			do.	
300	Los Alamitos	do.	J-1		Bored, 3-inch.	25	25	300+	19	76	do.			Stock	9
301	Anaheim Beach Co.	do.	I-1		Dug, 4½ by 4½ foot.	15	15	12	68	63	Hand			Domestic; stock.	
302	do.	do.	I-1		Bored, 7-inch.	15	15	100	200+	63				Not used.	

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