DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, Secretary

UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Water-Supply Paper 468

RECORDS OF WATER LEVELS IN WELLS IN SOUTHERN CALIFORNIA

BY

F. C. EBERT

Prepared in cooperation with
THE DEPARTMENT OF ENGINEERING OF THE STATE OF CALIFORNIA

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

CONTENTS.

ILLUSTRATIONS.

RECORDS OF WATER LEVELS IN WELLS IN SOUTHERN CALIFORNIA.

By F. C. EBERT.

INTRODUCTION.

SCOPE AND PURPOSE OF INVESTIGATION.

The valley of southern California, as defined by W. C. Mendenhall,[1] is the lowland region that is limited on the north by the San Gabriel Range and is separated from the Mohave and Colorado deserts on the east by the San Bernardino and San Jacinto mountains. Toward the west it is open to the Pacific, and on the south its limits are irregular and to a certain degree indefinite, the lowlands gradually giving way to the highlands of San Diego County. The wells whose records of fluctuations of water level are given in this report are chiefly in this lowland region, which includes San Bernardino Valley, the foothill belt between San Bernardino Valley and Los Angeles, the coastal plain west and south of Los Angeles, and San Jacinto Valley and adjacent areas. (See Pl. I.) A few records are also given for wells in San Diego County (pp. 126–151).

The prosperity of this important region is very largely dependent upon its ground-water resources. Most of the water supplies, whether used for domestic purposes or irrigation, are obtained wholly or in part from ground water. In 1905 Mendenhall[2] estimated that two-thirds of the land at that time under irrigation in this region obtained its water from subterranean sources during the protracted period of low run-off then prevailing. Since that time much more land has been brought under irrigation, and the proportion of land supplied with ground water has probably been increased.

In 1900 the United States Geological Survey began a series of studies of the occurrence, amount, distribution, and use of the ground water in the region, and published reports on the ground-water resources of San Bernardino Valley,[3] the foothill belt,[4] and the coastal

[1] Mendenhall, W. C., Development of underground waters in the western coastal-plain region of southern California: U. S. Geol. Survey Water-Supply Paper 139, pp. 9–10, 1905.

[2] Mendenhall, W. C., Proceedings of second conference of engineers of the Reclamation Service with accompanying papers: U. S. Geol. Survey Water-Supply Paper 146, p. 119, 1905.

[3] Mendenhall, W. C., The hydrology of San Bernardino Valley, Calif.: U. S. Geol. Survey Water-Supply Paper 142, 1905.

[4] Mendenhall, W. C., Ground waters and irrigation enterprises in the foothill belt, southern California: U. S. Geol. Survey Water-Supply Paper 219, 1908.

plain.[5] A report on San Jacinto Valley and adjacent areas has recently been published.[6] For such studies, records of the fluctuations of the water table extending over long periods are very valuable, because they show the extent of the depletion of the subterranean supply during times of light precipitation and heavy pumping and the extent of replenishment of this supply during the times of relatively heavy precipitation.

When the work was begun it was found that records of water-level fluctuations were available for only a few widely separated wells. Typical wells, properly distributed over the region under investigation, were therefore selected for observation, and measurements of the depths to the water level in these wells were made from time to time. In recent years additional wells have been selected and at least two measurements are made every year in each of the observation wells—one measurement in the spring, when the water level is generally highest, and one in the fall, when it is generally lowest. The Gage Canal Co. has furnished a record of a large number of measurements of a well known as the Williams well, near San Bernardino (see p. 121 and Pl. II), and Mr. J. B. Neff has furnished a record of measurements of his well near Anaheim (see well No. 41, p. 44, and Pl. IV).

Most of the data collected prior to 1912 have already been published [7] in water-supply papers, but, for the convenience of those who wish to use the records, all the data are included in this report.

CAUSES OF FLUCTUATIONS OF WATER TABLE.

The supply of ground water in the valley of southern California is derived from the following sources:

1. The streams which rise in adjacent mountain regions and flow over the valley areas, where their water percolates into the underlying gravels. This is the source of most of the ground water, but, owing to the intensity of rainfall and the resulting rapid run-off in floods, much of the surface water escapes to the sea. Several methods of preventing this waste have been tried, the method most

[5] Mendenhall, W. C., Development of underground waters in the eastern coastal-plain region of southern California: U. S. Geol. Survey Water-Supply Paper 137, 1905; Development of underground waters in the central coastal-plain region of southern California: U. S. Geol. Survey Water-Supply Paper 138, 1905; Development of underground waters in the western coastal-plain region of southern California: U. S. Geol. Survey Water-Supply Paper 139, 1905.

[6] Waring, G. A., Ground water in San Jacinto and Temecula basins, Calif.: U. S. Geol. Survey Water-Supply Paper 429, 1919.

[7] Clapp, W. B., The surface water supply of California, 1906, with a section on ground-water levels in southern California (Great Basin and Pacific Ocean drainages in California and Lower Colorado River drainage): U. S. Geol. Survey Water-Snpply Paper 213, pp. 189–205, 1907.

Clapp, W. B., and Martin, W. F., Surface water supply of the United States, 1907–8, Part XI, California, prepared under the direction of M. O. Leighton: U. S. Geol. Survey Water-Supply Paper 251, pp. 338–348, 1910.

McGlashan, H. D., and Stevens, G. C., Surface water supply of the United States, 1912, Part X, Pacific coast basins in California: U. S. Geol. Survey Water-Supply Paper 331, pp. 425–434, 1914.

generally used being to increase the percolation area by spreading the flood waters over the débris cones where the streams enter the valley areas.

2. The rain which falls upon the valley areas. The amount of absorption from this source depends largely on the perviousness of the soil and underlying deposits.

3. The water applied in irrigation. During the irrigating season practically all surface water is conveyed through pipe lines or canals from the canyons to the points of application. After being applied to the land a considerable portion of the water sinks into the gravel and is added to the ground-water supply.

The supply of ground water is depleted by the following causes:

1. Pumping from wells for irrigation and domestic supply.
2. Discharge of springs and flowing wells.
3. Transpiration from vegetation.
4. Evaporation from sloughs and other low lands where the water table is near the surface.

A record of the fluctuations of the water table extending over a period of years will show the depletion and replenishment of the supply of ground water. Such a record, when studied in connection with records of precipitation and run-off, will show whether the supply, which has been depleted by superimposed draft due to increased use of ground water in addition to the natural depletion during dry years, is renewed during years of abundant rainfall. In a basin in which this does not take place either the replenishment must be increased by water spreading or other means, or else the withdrawals must be reduced by preventing waste or decreasing the pumpage. Otherwise the water table will be lowered to such a depth that it will no longer be profitable to pump the water.

GENERAL CONDITIONS SHOWN BY THE RECORDS.

To illustrate more plainly the favorable and unfavorable periods of replenishment and their effect on the ground-water level, graphs have been prepared showing precipitation, run-off, and fluctuation of the water table in the four principal areas—San Bernardino Valley, the foothill belt, the coastal plain, and San Jacinto Valley. The records of measurements during 1920 are given, but it has not been possible to bring the graphs up to date.

SAN BERNARDINO VALLEY.

San Bernardino Valley lies near the eastern end of the valley of southern California and consists of the lowlands in San Bernardino County, in the Redlands and San Bernardino quadrangles. (See Pl. I.) The hydrology of this region has been treated in Water-Supply Papers 60, 61, and 142. For this area there are several

fairly long records of water-level fluctuation, which are of interest in a study of ground-water conditions.

The principal source of ground-water replenishment is Santa Ana River and its tributaries. The Geological Survey has measured the flow of Santa Ana River near the mouth of its canyon since 1896. (See Pl. I and table below.) The longest record of precipitation in the valley is that at the city of San Bernardino, kept by the United States Weather Bureau since 1870. (See Pl. I.) The Gage Canal Co. has kept a record of the fluctuation of the water level in the Williams well, about 4½ miles east of San Bernardino, since 1892. (See Pl. I and p. 121.)

Plate II shows the departure from the average annual precipitation at San Bernardino, the annual discharge of Santa Ana River at the mouth of its canyon, and the fluctuation of the water surface in the Williams well from observations made by the Gage Canal Co.

Observation wells Nos. 64 to 68 and 86 to 135, inclusive, are located in San Bernardino Valley. (See Pl. I.)

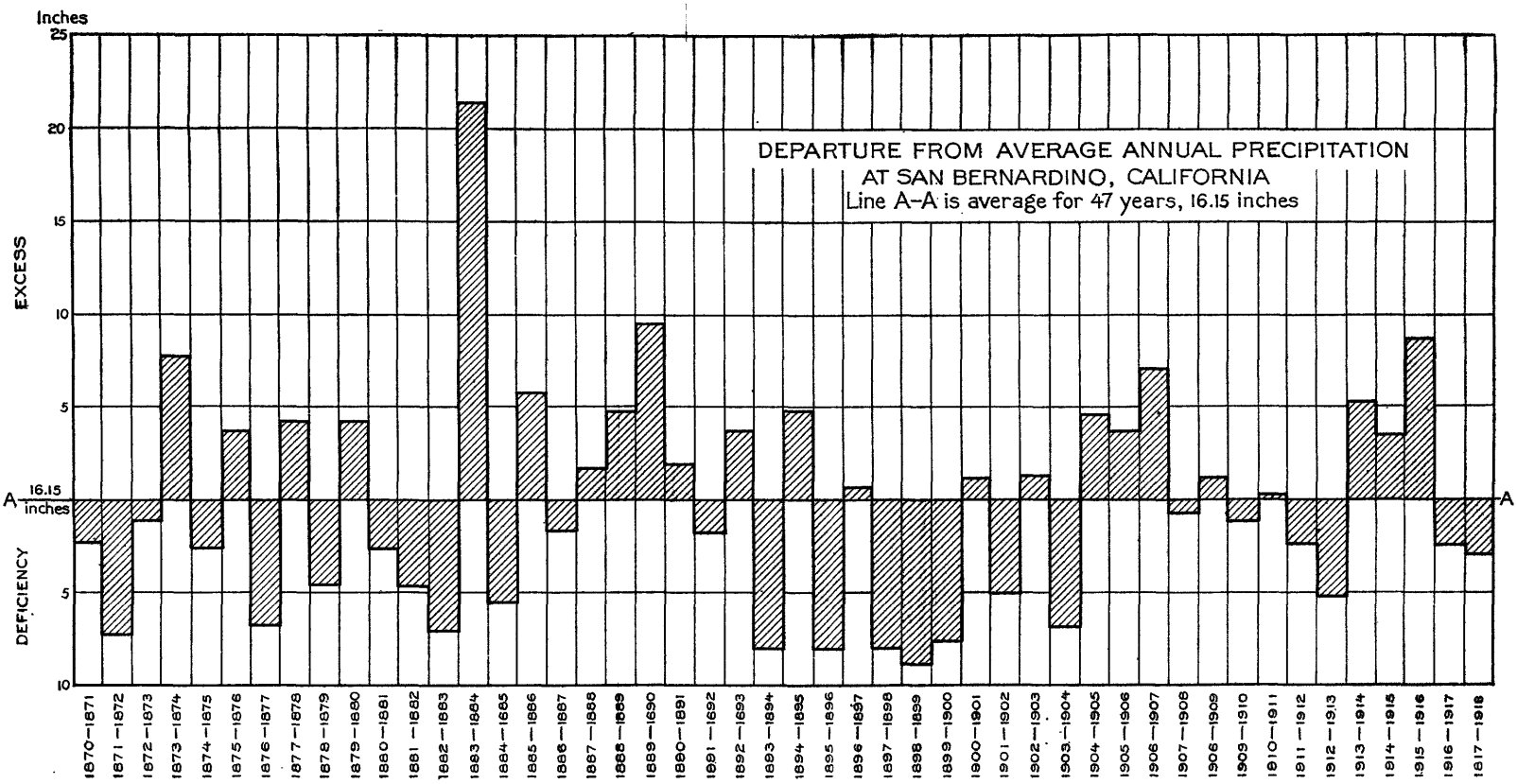
Discharge, in acre-feet, of Santa Ana River at mouth of canyon, entrance to San Bernardino Valley.

Year.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
1896–97.	4,753	4,353	4,124	4,372	2,148	2,435	4,179	10,282	7,637	8,899	4,690	4,723	62,60
1897–98.	5,077	4,628	3,968	3,347	2,678	2,040	2,987	2,688	2,448	2,333	3,727	2,840	38,80
1898–99.	2,625	2,653	2,223	1,571	1,285	1,364	1,593	1,516	1,949	1,458	1,365	1,315	20,90
1899–00.	1,371	782	690	1,015	1,268	1,427	1,414	1,222	1,414	1,488	3,505	1,309	16,90
1900–01.	1,168	676	714	861	6,367	1,722	4,796	10,774	4,181	2,559	2,582	2,202	38,60
1901–02.	2,337	3,074	2,916	2,951	1,547	1,476	1,476	2,110	4,858	3,035	2,214	1,964	30,00
1902–03.	1,599	1,537	1,428	2,398	1,428	1,353	2,029	2,666	9,100	20,945	5,657	3,808	53,90
1903–04.	3,136	3,382	3,094	2,890	1,785	1,660	1,599	1,898	3,935	3,154	2,521	2,618	31,70
1904–05.	2,767	2,828	2,975	2,951	1,190	1,230	2,251	5,420	7,993	5,385	10,580	4,624	50,20
1905–06.	3,867	4,107	4,064	3,025	2,827	2,362	2,880	3,500	32,600	16,300	15,100	10,200	101,00
1906–07.	7,320	4,950	3,810	4,390	3,590	6,820	14,700	16,200	41,900	32,800	14,500	10,200	161,00
1907–08.	8,300	5,550	4,360	5,180	7,080	3,710	5,050	7,760	7,690	5,880	4,690	3,670	68,90
1908–09.	3,950	3,920	3,500	3,550	2,550	2,670	7,380	13,200	11,300	12,400	9,720	5,790	79,90
1909–10.	4,240	3,950	3,680	3,560	3,150	8,360	[a] 3,090	6,220	6,330	6,250	5,220	4,130	58,20
1910–11.	4,000	3,840	3,870	3,780	2,800	2,730	7,870	10,900	27,900	12,700	7,990	6,190	94,60
1911–12.	5,470	3,970	3,920	3,730	3,000	2,850	2,740	2,340	5,760	6,010	5,320	3,750	48,90
1912–13.	3,730	3,700	3,520	3,370	2,330	2,250	2,100	2,480	3,340	3,650	3,590	3,420	37,50
1913–14.	4,080	3,600	3,430	3,310	1,990	1,770	10,500	15,300	8,550	7,440	8,730	6,840	75,50
1914–15.	5,370	4,370	3,800	3,630	2,850	3,030	4,700	15,900	11,100	14,400	18,900	14,000	102,00
1915–16.	9,840	6,150	4,840	4,390	4,020	3,880	[b] 5,500	[c] 27,400	47,200	23,700	15,600	10,900	163,00
1916–17.	8,610	6,640	6,430	6,700	5,300	4,970	5,260	5,530	6,330	7,200	8,050	5,050	76,10
1917–18.	5,680	6,520	6,010	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

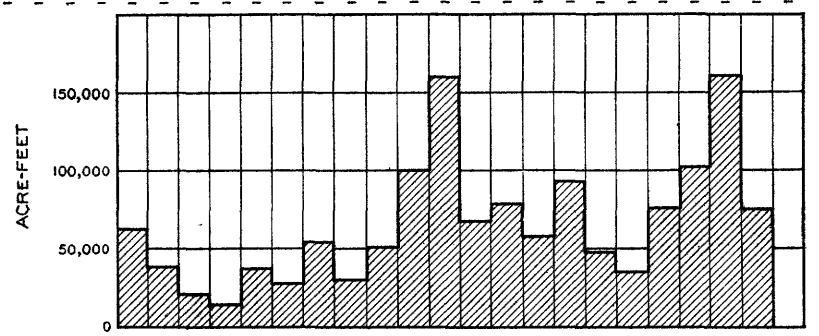
[a] Jan. 23–31. [b] Jan. 1–17. [c] Feb. 11–29.

FOOTHILL BELT.

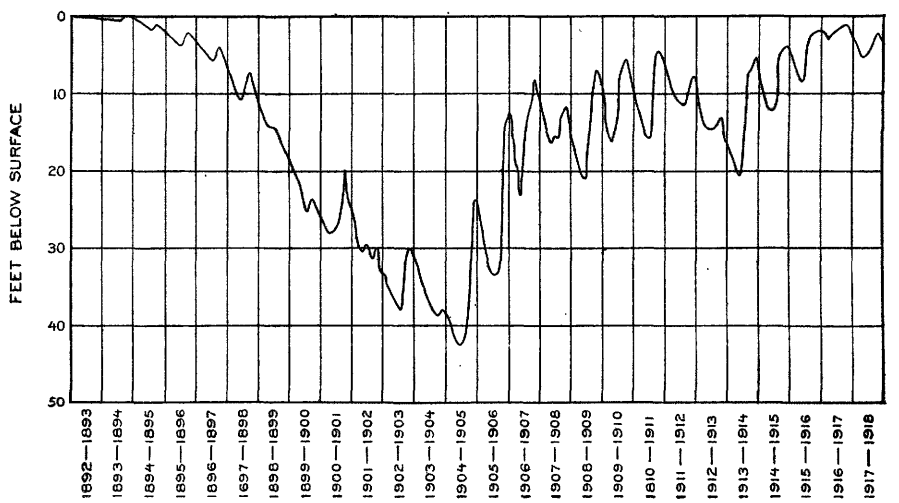
The foothill belt of the valley of southern California is the area eastward from the Arroyo Seco, near Pasadena, along the base of the San Gabriel Range, to the west rim of San Bernardino Valley. It includes the Cucamonga Plain and the San Gabriel Valley and the divide separating them. The Cucamonga Plain is the lowland west of San Bernardino Valley and above Santa Ana Canyon, where the river breaks through the Santa Ana Mountains. San Gabriel Valley is the area drained by San Gabriel River and its tributaries above



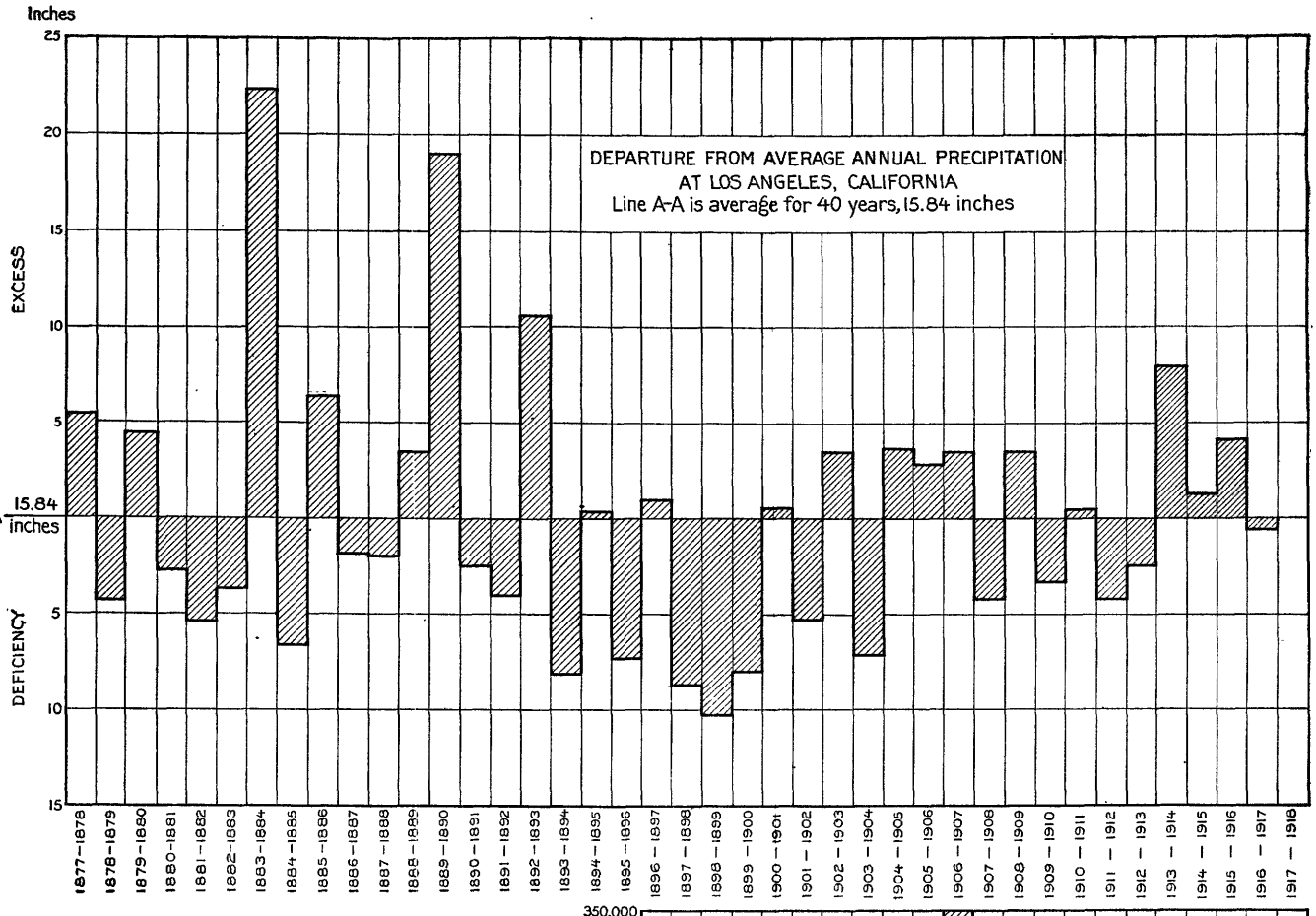
DISCHARGE OF SANTA ANA RIVER
AT ENTRANCE TO SAN BERNARDINO VALLEY
FROM 1896 TO 1917



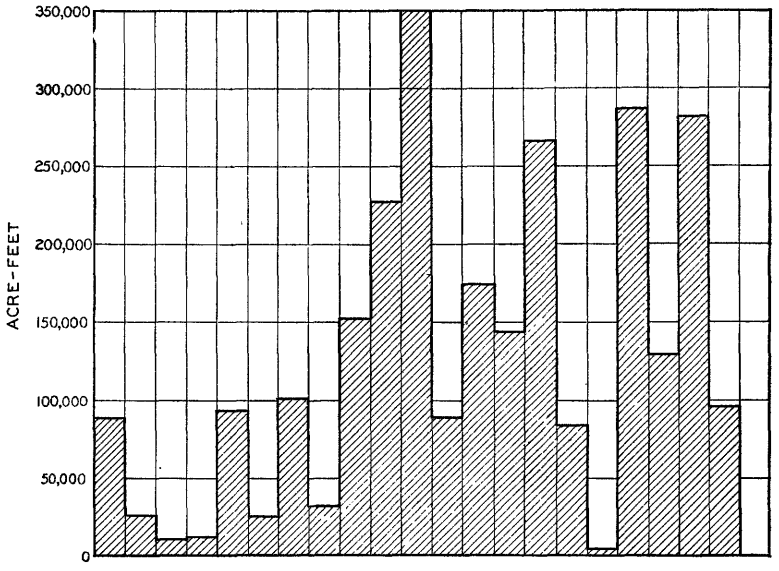
WATER LEVEL IN WILLIAMS WELL
IN SAN BERNARDINO VALLEY
Recorded by Gage Canal Co.



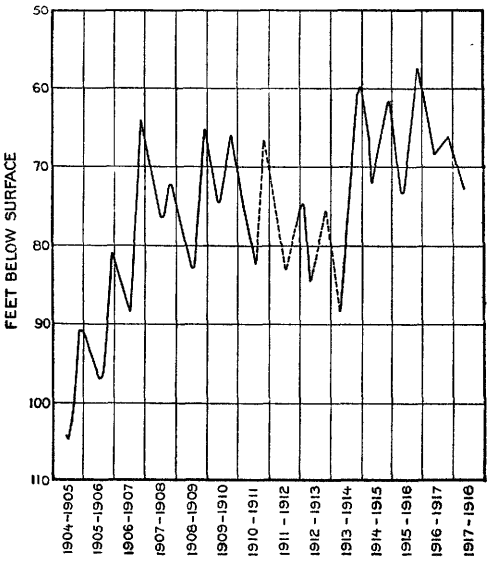
GRAPH SHOWING FLUCTUATION OF WATER LEVEL IN THE WILLIAMS WELL, IN SAN BERNARDINO VALLEY, CALIF., TOGETHER WITH PRECIPITATION AT SAN BERNARDINO AND DISCHARGE OF SANTA ANA RIVER.



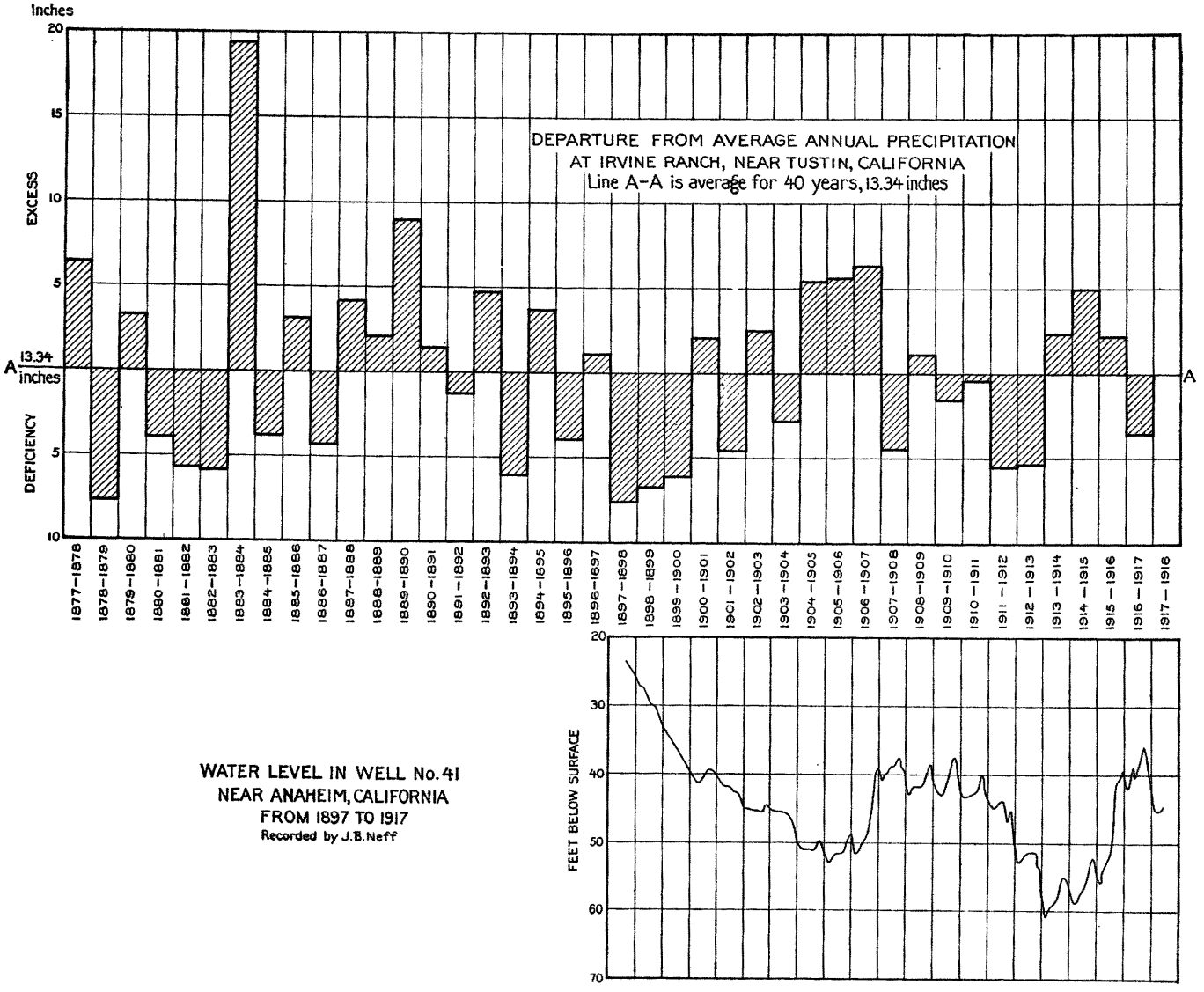
DISCHARGE FROM SAN GABRIEL RIVER
AT AZUSA, CALIFORNIA
FROM 1896 TO 1917



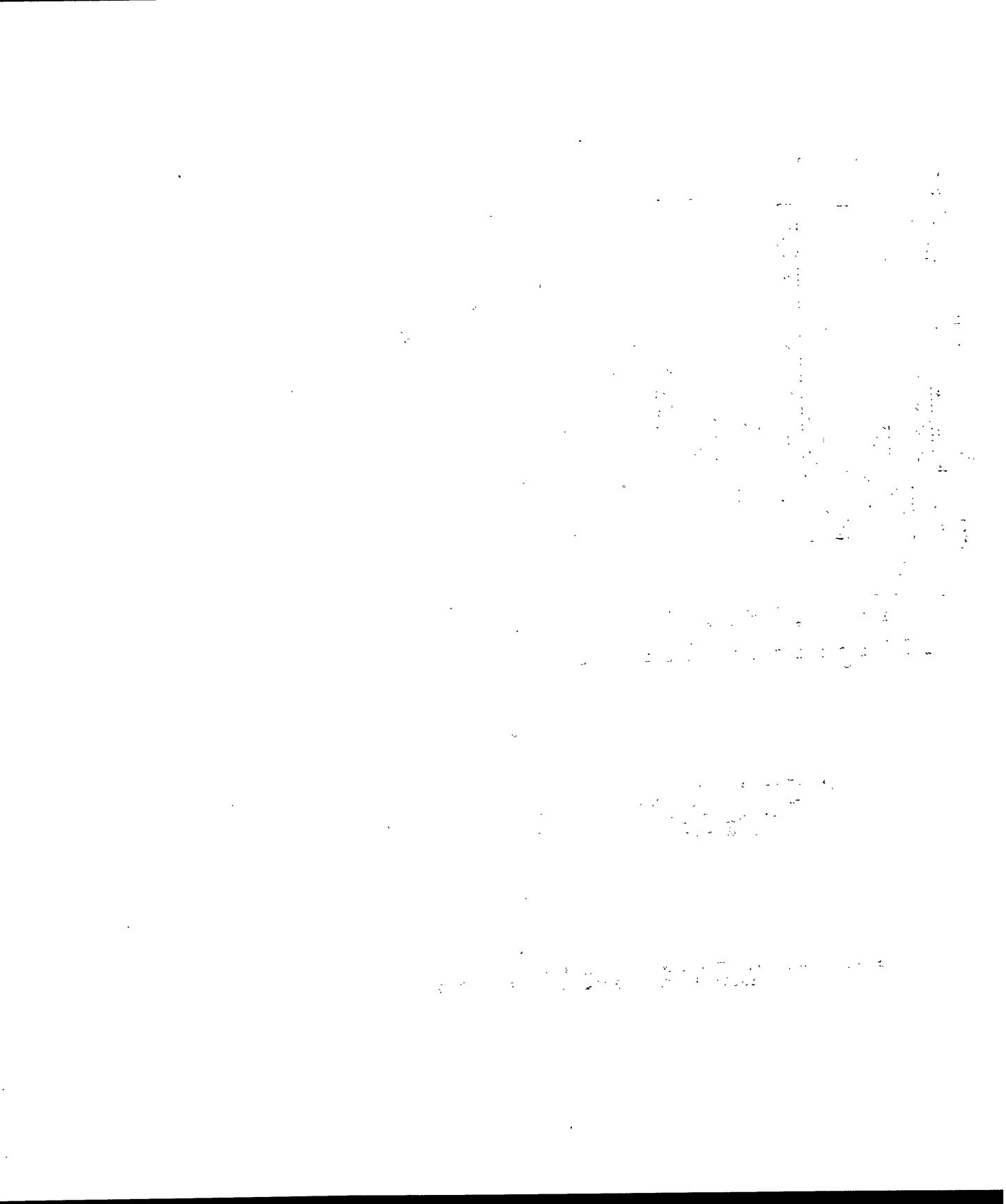
WATER LEVEL IN WELL No. 42
BALDWIN PARK, CALIFORNIA



GRAPH SHOWING FLUCTUATION OF WATER LEVEL IN WELL NO. 42, IN THE FOOTHILL BELT BETWEEN LOS ANGELES AND SAN BERNARDINO, CALIF., TOGETHER WITH PRECIPITATION AT LOS ANGELES AND DISCHARGE OF SAN GABRIEL RIVER.



GRAPH SHOWING FLUCTUATION OF WATER LEVEL IN WELL NO. 41 (NEFF WELL), IN THE COASTAL PLAIN OF SOUTHERN CALIFORNIA, TOGETHER WITH PRECIPITATION NEAR TUSTIN



Paso de Bartolo except Arroyo Seco. The foothill belt is shown on the maps of the Cucamonga, Pomona, and Pasadena quadrangles. (See Pl. I.)

The principal source of ground water is the upper San Gabriel drainage basin. Important secondary sources are San Antonio, San Dimas, and other streams draining southwest from the San Gabriel Mountains. The United States Geological Survey has maintained a gaging station at the mouth of San Gabriel River Canyon since 1896. (See Pl. I.) The resulting discharge data, given in the table below, and the record of precipitation for Los Angeles, which has been kept since 1877, show the favorable and unfavorable years for augmenting subterranean storage. Hence, a comparison of these two records with the fluctuation of the water level in well No. 42 (p. 47), at Baldwin Park, is of interest. (See Pl. III.)

Observation wells Nos. 23 to 33 and 42 to 63a, inclusive are located in the foothill belt. (See Pl. I.)

Discharge, in acre-feet, of San Gabriel River near Azusa, Calif.

Year.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
1896–97..	738	861	774	1,476	1,131	1,353	3,617	19,146	28,623	17,519	8,851	4,033	88,100
1897–98..	2,343	1,613	1,226	5,564	1,860	1,875	2,453	2,241	2,131	1,950	2,213	1,159	26,600
1898–99..	672	456	467	533	580	832	1,414	1,244	1,623	1,262	842	565	10,500
1899–1900	221	295	220	683	847	1,247	1,968	1,111	1,230	1,012	2,275	893	12,000
1900–01..	369	246	238	307	11,068	1,269	10,391	37,765	13,589	6,545	7,440	3,749	93,000
1901–02..	1,845	1 240	1,012	1,476	1,904	1,660	1,722	2,055	6,088	3,928	2,398	1,190	26,500
1902–03..	676	430	298	430	1,131	1,968	9,100	5,665	15,802	47,127	13,343	5,653	102,000
1903–04..	2,644	1,783	1,488	1,476	1,428	1,476	1,500	2,744	6,813	5,337	4,089	1,517	32,300
1904–05..	861	793	643	738	762	1,039	2,251	25,880	75,140	19,580	17,090	8,271	153,000
1905–06..	5,103	2,631	1,869	1,771	2,660	2,466	4,190	3,780	133,000	34,400	21,000	15,600	228,000
1906–07..	9,530	4,480	2,840	2,450	2,400	11,600	58,400	47,100	116,000	58,400	21,500	15,100	350,000
1907–08..	8,360	5,390	3,580	4,090	3,800	3,600	11,100	15,000	12,700	9,280	7,190	4,190	88,300
1908–09..	2,560	2,210	1,820	2,070	1,960	2,870	25,500	59,400	26,300	28,000	15,200	8,570	176,000
1909–10..	5,040	3,120	2,320	2,310	2,880	20,900	69,500	11,500	9,590	8,270	5,050	3,560	144,000
1910–11..	2,450	1,710	1,370	1,560	1,870	2,020	37,200	44,300	122,000	28,200	16,600	7,500	267,000
1911–12..	5,230	3,610	2,830	3,140	2,800	2,870	2,800	2,230	23,000	18,000	10,900	4,990	82,400
1912–13..	3,060	1,960	1,500	1,830	1,730	1,760	2,910	13,200	10,200	7,140	4,970	2,890	53,200
1913–14..	1,690	1,070	893	910	2,280	2,170	61,400	121,000	48,000	21,400	16,900	9,580	287,000
1914–15..	5,570	3,630	2,730	2,770	2,440	4,290	7,380	30,200	21,500	17,300	20,400	11,400	130,000
1915–16..	7,010	3,980	3,270	2,770	3,010	3,580	148,000	39,400	34,800	19,900	10,400	5,830	282,000
1916–17..	4,770	3,570	2,810	7,010	4,130	13,600	9,280	13,200	13,600	10,500	8,610	5,270	96,400
1917–18..	3,140	2,200	1,510	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

COASTAL PLAIN.

The coastal plain has an area of approximately 775 square miles. It consists of the lands between the Santa Monica Mountains and the San Joaquin Hills and extends from the Santa Ana Mountains and Puente Hills to the Pacific. The drainage consists of Santa Ana River below the lower Santa Ana Canyon, San Gabriel River below Paso de Bartolo, Los Angeles River, and Santiago Creek. The region is shown on the maps of the Santa Monica, Redondo, Downey, Las Bolsas, Santa Ana, and Anaheim quadrangles. (See Pl. I.)

The principal sources of ground water in this area are the flood waters of the streams that traverse the area. Plate IV shows the

fluctuation of the water level in well No. 41, based on a record kept by the owner, Mr. J. B. Neff (see p. 44), and the variation of the annual precipitation at the Irvine ranch, near Tustin. (See Pl. I.) No gaging stations are maintained within the area, but the run-off records of Santa Ana River and San Gabriel River (see Pl. I and pp. 8, 9) are applicable in comparing the causes of replenishment and depletion of ground-water supply as shown by the fluctuations of the water table.

Observation wells Nos. 1 to 22c and 34 to 41, inclusive, are in the Coastal Plain. (See Pl. I.)

SAN JACINTO VALLEY.

San Jacinto Valley is the lowland area in the San Jacinto River drainage basin above Railroad Canyon, which is a few miles southwest of Perris. The region is shown on the maps of the San Jacinto and Elsinore quadrangles. (See Pl. I.)

The replenishment of ground water in this valley is largely by percolation from San Jacinto River during periods of high water, but, owing to the low permeability of the soils, the percolation is slow.

That there is an overdraft in some portions of the valley is indicated by figure 1, which shows the fluctuation at well No. 72 (see p. 75), and the departure from the average annual precipitation at San Jacinto. (See Pl. I.) It will be noted that in spite of favorable precipitation in the past four years the water table has been constantly lowered.

Observation wells Nos. 69 to 85a, inclusive, are in San Jacinto Valley. (See Pl. I.)

EXPLANATION OF RECORDS.

In 1900 Lippincott made measurements of the depth to the water level in approximately 900 wells in San Bernardino Valley.[8] In 1904 Mendenhall measured the same wells.[9] A large number of these wells have never since been measured by the United States Geological Survey and are not considered herein. At a few wells, however, measurements have been made at irregular intervals, and these measurements are included in this report. In 1913 the wells still in existence and a few companion wells were given new numbers (Nos. 86 to 135, inclusive), and are designated by these new numbers in the following tables. Data collected prior to 1913 from the wells which had been destroyed or were inaccessible in 1913 are published in a separate table (p. 120) under the numbers by which they are designated in Water-Supply Paper 142.

[8] Lippincott, J. B., Development and application of water near San Bernardino, Colton, and Riverside, Calif., Part II: U. S. Geol. Survey Water-Supply Paper 60, pp. 97–141, 1902.

[9] Mendenhall, W. C., The hydrology of San Bernardino Valley, Calif.: U. S. Geol. Survey Water-Supply Paper 142, 124 pp. 12 pls., 1905.

In addition to these wells in San Bernardino Valley, Mendenhall, on the commencement of his studies of ground water in the valley of southern California in 1904, selected for observation a series of wells located in the coastal plain, foothill belt, and San Jacinto Valley. These wells, which are designated as wells Nos. 1 to 85, inclusive, were considered more or less typical for these important ground-water districts. The water levels in them were measured at irregular intervals prior to 1913 and have been measured more regularly since 1913.

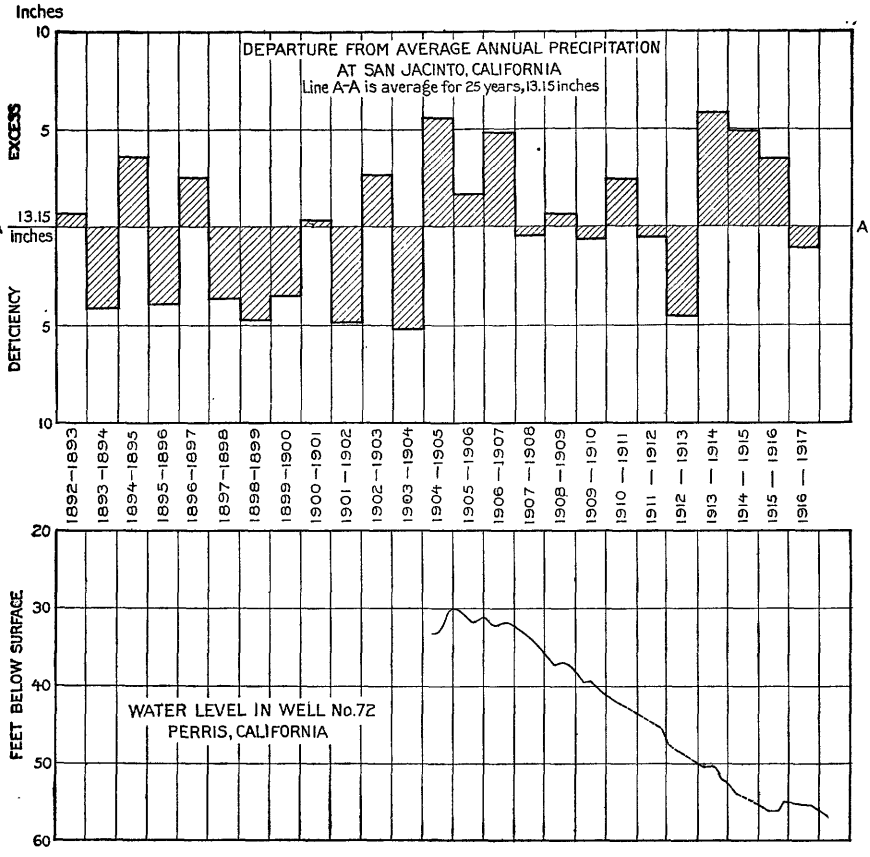


FIGURE 1.—Graphs showing fluctuation of water level in well No. 72, in San Jacinto Valley, Calif., together with precipitation at San Jacinto.

For each well in the series now under observation (Nos. 1 to 135, inclusive) is given the owner's name, the location, and other available information. The location of each well is shown on the map (Pl. I). For most of the wells is also given a description of the bench mark from which the distance to the water level is measured, The altitudes given for many of the wells from Nos. 1 to 85, inclusive, are the approximate altitudes of the surface of the ground at the wells; the

altitudes of bench marks of wells Nos. 86 to 135, inclusive, were determined by instrumental leveling and are believed to be accurate. For wells Nos. 86 to 135, inclusive, the bench marks described were not located until 1914, and all measurements prior to this date were made from the surface of the ground. Most of the wells have been described in earlier water-supply papers, and references to these papers are given under these wells.

In order to perpetuate the series, companion wells are being chosen, wherever possible, for wells in bad repair.

Observations of the pressure of a few flowing wells in San Bernardino Valley have also been started, and the data thus far obtained are given on pages 117–119.

THE RECORDS.

VALLEY OF SOUTHERN CALIFORNIA.

Records of water levels in the valley of southern California.

1. Richard Kidson, corner Forty-ninth and Main streets, Los Angeles, Redondo quadrangle.

[Bored well, 52 feet deep, 7 inches in diameter; sunk about 1874; elevation of surface, about 165 feet above sea level; method of lift, wind; use, domestic. Water contains 840 parts per million of dissolved solids. Bench mark from which measurements were made is not known. Well No. 848, Water-Supply Paper 139, p. 94.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1907.	*Ft.*	*in.*
Jan. 3	44	1	Feb. 5	46	3
Feb. 6	44	6	May 1	45	4
Mar. 14	44	4	Aug. 21	46	2
Apr. 10	44	1	Dec. 24	45	9
June 9	44	4	1908.		
July 10	44	9	Apr. 29	46	1
Aug. 8	45	3	June 26	46	4
Sept. 11	45	11	Oct. 20	47	5
Nov. 3	46	2	1909.		
Dec. 14	45	10	Mar. 30	46	6
1906.			July 7	47	5
Jan. 22	46	10	Oct. 7	48	8
Mar. 19	47	7½	1910.		
May 2	44	11	Jan. 27 (well destroyed)	.....	.....
June 21	47	10			
July 27	46	2			
Sept. 17	46	6½			
Dec. 14	46	8			

Records of water levels in the valley of southern California—Continued.

2. Chinese gardeners, half a mile southwest of Slauson, Redondo quadrangle.

[Bored well, 146 feet deep; sunk 1896; altitude of surface, about 145 feet above sea level; method of lift, wind; use, domestic and stock. Water contains 470 parts per million of dissolved solids. Bench mark from which measurements were made is not known. Well No. 800, Water-Supply Paper 139, p. 92.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1907.	
Sept. 1	25 2½	Feb. 5	23 8
Oct. 3	22 4½	May 1	22 ½
Nov. 4	22 7½	Aug. 21	24 10
Dec. 6	22 2	Dec. 24	23 1½
1905.		1908.	
Jan. 3	21 10	Apr. 29	23 3
Feb. 6	21 9	June 26	25 1
Mar. 14	21 1½	Oct. 20	24 10
Apr. 10	20 5	Dec. 17	24 8
May 3	20 5	1909.	
June 10	24 6	Mar. 30 (dry)	.....
July 10	23 0	July 7 (dry)	.....
Aug. 8	24 0	Oct. 7 (dry)	.....
Sept. 11	24 7	1910.	
Nov. 3	23 6	Jan. 27 (dry at depth of 21 feet)	.....
Dec. 14	23 ½	1912	
1906.		May 20 (well destroyed)	.....
Jan. 22	22 6		
Mar. 19	22 1		
June 21	23 6½		
May 2	23 1		
July 27	24 ½		
Sept. 17	25 3		
Dec. 14	23 8½		

3. Eliza Connelly, Seventy-ninth and Budlong streets, Los Angeles, Redondo quadrangle.

[Bored well, 108 feet deep, 7 inches in diameter; altitude of surface about 140 feet; method of lift, wind; use, domestic and stock. Water contains 450 parts per million of dissolved solids. Bench mark: Top of casing, level with surface. Well No. 733, Water-Supply Paper 139, p. 90.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1905.		1909.	
Jan. 3	22 5	Mar. 30	23 6
Feb. 6	22 6	July 7	25 11
Mar. 14	21 11	Oct. 7	26 0
Apr. 10	21 6	1910.	
May 3	21 5	Jan. 27	24 7
June 9	22 7½	Aug. 13	28 0
July 10	23 6	Dec. 20	27 0
Nov. 3	23 10	1912.	
Dec. 14	23 ½	May 20 (pumping slowly)	30 6
1906.		July 21	33 1
Mar. 19	22 6	Oct. 14	31 11
May 2	22 7½	1913.	
June 21	23 9½	Oct. 15	37 2½
Sept. 17	24 4½	1914.	
Dec. 14	23 7	Apr. 6	27 3½
1907.		June 3	28 11
Feb. 5	22 7	Aug. 15	29 2½
May 1	22 7	Nov. 18	29 3
Aug. 21	23 10	1915.	
1908.		May 28 (well filled)	.....
Apr. 29	23 5		
June 26	24 6		
Oct. 20	24 8		
Dec. 17	24 4		

Records of water levels in the valley of southern California—Continued.

4. Mrs. Bedell (former owners, Demmy Till and Mrs. Mary Vigus), Ninetieth Street and Vermont Avenue, Los Angeles, Redondo quadrangle.

[Bored well, 110 feet deep, 7 inches in diameter; altitude of surface, about 145 feet above sea level; method of lift, wind; use, domestic and stock. Water contains 680 parts per million of dissolved solids. Bench mark: Top of casing, 5 inches above surface. Well No. 713, Water-Supply Paper 139, p. 89. On July 21, 1912, found 2 feet of casing removed. Observations since that time have been corrected by adding 2 feet.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1909.	
Sept. 1	29 10	Mar. 30	30 11
Oct. 3	32 1½	July 7 (pumping)	.....
Dec. 6	31 11	Oct. 7	32 11
1905.		1910.	
Jan. 2	29 7	Jan. 27	32 3
Feb. 6	29 6	Aug. 13	34 0
Mar. 14	29 1	Dec. 30	34 2
Apr. 10	28 7		
May 3	28 8	1912.	
June 9	29 4	May 20	35 0
July 10	29 5	July 21	36 10
Aug. 8	30 1	Oct. 14	37 4
Sept. 11	30 6		
Nov. 3	30 6	1913.	
Dec. 14	30 6	Oct. 15	39 10
1906.		1914.	
Jan. 22	30 5	Apr. 6	37 7
Mar. 19	30 7½	June 3	38 2
May 2	30 9	Aug. 15	39 7
June 21	30 7	Nov. 18	39 11
July 27	31 0		
Sept. 17	32 8	1915.	
Dec. 14	31 4½	May 28	38 6
		Nov. 5	40 2
1907.			
Feb. 5	30 0	1916.	
May 1	29 4½	May 15	36 10
Aug. 21	30 10	Nov. 13 (well destroyed)	.....
Dec. 24	31 2		
1908.			
Apr. 29	31 2		
June 26	31 9		
Oct. 20	32 3		
Dec. 17	32 3		

4a. Fred W. Lofland, 1131 West Ninety-second Street, Los Angeles, Redondo quadrangle.

[Well, 85 feet deep, 8-inch casing; method of lift, wind; use, domestic. Companion well for No. 4. Bench mark: Top of casing, 2 feet 7 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 18	54 8	May 13	54 10
		Oct. 16	56 1
1915.			
May 28	55 5	1919.	
Nov. 5	55 8	May 8	54 11
		Oct. 20	56 5
1916.			
May 15 (pumping)	78 0	1920.	
Nov. 13	57 4	May 6 (well destroyed)	.....
1917.			
May 29	55 0		
Nov. 19	56 8		

Records of water levels in the valley of southern California—Continued.

5. J. B. Brockley, corner Vermont Avenue and Garfield Street, Los Angeles, Redondo quadrangle.

[Bored well, 120 feet deep, 7 inches in diameter; sunk in 1884; altitude of surface, about 185 feet above sea level; method of lift, wind; use, domestic and stock. Water contains 440 parts per million of dissolved solids. Bench mark: Top of casing, 10 inches above surface. Well No. 700, Water-Supply Paper 139, p. 88. Hand pump installed since description given in Water-Supply Paper 139.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1908.	*Ft.*	*in.*
Oct. 3	83	7	Apr. 29	84	8
Nov. 4	83	9	June 26	87	0
Dec. 6	83	9	Oct. 20	86	0
1905.			Dec. 17	86	10
Jan. 3	83	8	1909.		
Feb. 6	83	8	Mar. 30	85	2
Mar. 14	83	5	July 7	86	5
Apr. 10	83	5	Oct. 7	87	6
May 3	83	4	1910.		
June 9	83	8	Jan. 27	86	5
July 10	84	2	Aug. 13	89	7
Aug. 8	84	7½	Dec. 30	93	11
Sept. 11	84	11	1912.		
Nov. 3	85	1	May 20 (dry)	87	2
Dec. 14	84	9	July 21 (dry)	.....	
1906.			Oct. 14 (dry)	.....	
Jan. 22	84	4½	1913.		
Mar. 19	84	6½	Oct. 15 (dry)	87	2
May 2	83	4	1914.		
June 21	85	2½	Apr. 6 (dry)	87	2
July 27	85	1	Nov. 18 (dry)	87	2
Sept. 17	85	9	1915.		
Dec. 14	87	2	May 28 (dry)	87	2
1907.					
Feb. 5	86	10			
May 1	85	3			
Aug. 21	85	1			
Dec. 24	84	9			

5a. Mrs. Bates, one-eighth mile west of Vermont Avenue on Garfield Street, Los Angeles, Redondo quadrangle.

[Well, 104 feet deep, 6-inch casing; method of lift, wind; use, domestic. Companion well for No. 5. Bench mark: Top of pipe bracket, 10 inches above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1913.	*Ft.*	*in.*	1917.	*Ft.*	*in.*
Oct. 15	98	5	May 29	98	5
1914.			Nov. 19	102	6
Apr. 6	96	10	1918.		
June 3	97	0	May 13	99	4
Aug. 15	98	8	Oct. 16	100	10
Nov. 18	99	5	1919.		
1915.			May 8	99	7
May 28	97	8	Oct. 20	102	1
Nov. 5	100	5	1920.		
1916.			May 6	99	10
May 15	98	6	Nov. 18 (dry at 102 feet)	.....	
Nov. 13	100	4			

Records of water levels in the valley of southern California—Continued.

6. F. H. Carrel, 1½ miles southwest of Gardena, Redondo quadrangle.

[Bored well, 400 feet deep; sunk about 1900; altitude of surface, about 55 feet above sea level; water not used. Bench mark: Top of casing, level with surface. Well No. 1001, Water-Supply Paper 139, p. 99.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1910.	*Ft.*	*in.*
Dec. 6	27	1	Jan. 27	26	11½
1905.			Aug. 13	31	11
Jan. 3	26	5	Dec. 30	28	8
Feb. 6	25	7½	1912.		
Mar. 14	25	7	May 20	30	6
Apr. 12	25	8	July 21 (obstruction at 32 feet)	.....	
May 3	25	8	Oct. 14	31	5
June 9	26	4	1913.		
July 10	29	9	Oct. 15	34	7½
Aug. 8	29	10	1914.		
Sept. 11	29	7	June 3	32	11
Nov. 3	28	0	Aug. 16	34	6
Dec. 14	26	6½	Nov. 18	32	2½
1906.			1915.		
Jan. 22	26	2	May 28	31	1
Mar. 19	25	1	Nov. 5	31	11
May 2	26	8	1916.		
June 21	28	10	May 15	31	2
July 27	30	1	Nov. 13	31	11
Sept. 17	29	8	1917.		
Dec. 14	26	11	May 29	31	10
1907.			Nov. 19	32	0
Feb. 5	26	1½	1918.		
May 1	27	2	May 13	34	1
Aug. 21	30	5½	Oct. 16	35	4
Dec. 24	26	10½	1919.		
1908.			May 8	34	1
Apr. 29	29	½	Oct. 20	35	9
June 26	30	6	1920.		
Oct. 20	28	8	May 6	33	8
Dec. 17	27	4	Nov. 18	36	10
1909.					
May 30	26	11			
July 7	30	9			
Oct. 7 (obstruction at about 30 feet)	.....				

7. A. B. Caldwell, one-fourth mile south of Moneta, Redondo quadrangle.

[Bored well, 163 feet deep, 7 inches in diameter; sunk in 1897; altitude of surface, about 35 feet above sea level; method of lift, wind; use, domestic and stock. Water contains 360 parts per million of dissolved solids. Bench mark not known. Well No. 406, Water-Supply Paper 139, p. 76.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1905—Continued.	*Ft.*	*i*
Sept. 1	41	11	Aug. 8	32	6.
Oct. 3	32	6	Sept. 11	33	0
Nov. 4	38	11	Nov. 3	28	4
Dec. 6	25	7	Dec. 14	24	11
1905.			1906.		
Jan. 3	26	5	Jan. 22	24	6
Feb. 6	41	9	Mar. 19	23	8
Mar. 14	23	10	May 2	27	11
Apr. 10	48	2	June 21	32	3
May 3	42	10	July 27	32	6½
June 9	32	2	Sept. 17	30	8½
July 10	33	0	Dec. 14	25	0

Records of water levels in the valley of southern California—Continued.

7. A. B. Caldwell—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1907.	*Ft. in.*	1909.	*Ft. in.*
Feb. 5	24 4½	Mar. 30	25 0
May 1	27 7	July 7	33 6
Dec. 24	24 11½	Oct. 7	30 1
1908.		1910.	
Apr. 29	32 7	Jan. 27	25 4
June 26	33 6	Aug. 13	35 (?)
Oct. 20	27 6	Dec. 30 (well inaccessible)	.....
Dec. 17	25 7		

8. C. C. Jorgensen (formerly owned by H. J. Harris), half a mile north of Moneta, Redondo quadrangle.

[Bored well, 205 feet deep; sunk in 1902; altitude of surface, about 55 feet above sea level; method of lift, wind. Bench mark: Top of 1-inch cover over casing, a foot above surface. Well No. 295, Water-Supply Paper 139, p. 72.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in*	1910.	*Ft. in.*
Sept. 1	39 3	Jan. 27	26 9
Oct. 3	37 9	Aug. 13	36 8
Nov. 4	35 0	Dec. 30	28 10
Dec. 6	32 4	1912.	
1905.		July 21 (windmill running very slowly)	39 8
Jan. 3	26 5½	Oct. 14 (windmill running very slowly)	35 1
Feb. 6	25 11	1913	
Mar. 14	25 8½	Oct. 15	36 ½
Apr. 10	32 8	1914.	
May 3	28 3	Apr. 6	30 3½
June 9	35 2	June 3 (hive of bees in casing)	.....
July 10	33 9	Aug. 15 (pumping)	42 2½
Aug. 8	33 7	Nov. 18	31 11
Sept. 11	34 5	1915.	
Dec. 14	26 7	May 28 (pumping slowly)	38 10
1906.		Nov. 5	35 0
Jan. 22	26 0	1916.	
Mar. 19	23 7	May 15 (pumping strong)	.....
May 2	28 0	Nov. 13 (sealed)	.....
June 21	28 6	1917.	
July 27	34 0	May 29 (sealed)	.....
Sept. 17	34 0	Nov. 19 (sealed)	.....
Dec. 14	26 2	1918.	
1907.		May 13	33 6
Feb. 5	25 6½	Oct. 16	33 9
May 1	29 1	1919.	
Aug. 21	34 0	May 8 (pumping)	.....
Dec. 24	34 8	Oct. 20 (pumping)	.....
1908.		1920.	
Apr. 29	33 0	May 6 (pumping)	.....
June 26	34 7	Nov. 18	14 2
Oct. 20	33 6		
Dec. 17	27 3		
1909.			
Mar. 30	26 3		
July 7	37 3		
Oct. 7	31 10		

Records of water levels in the valley of southern California—Continued.

8a. Ben Long, five-eighths mile northwest of Moneta, Redondo quadrangle.

[Companion well for Nos. 8 and 9a; 185 feet deep, 8-inch casing; method of lift, wind; use, domestic. Bench mark: Top of casing, 2 feet above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1914.	*Ft.*	*in.*	1918.	*Ft.*	*in.*
Nov. 18	37	7	May 13 (pumping)		
1915.			Oct. 16	42	8
May 28	41	10	1919.		
Nov. 5	37	6	May 8	43	7
1916.			Oct. 20	42	0
May 15 (pumping)	39	8	1920.		
Nov. 13	36	5	May 6	43	8
1917.			Nov. 18	41	2
May 29	41	8			
Nov. 19	38	2			

9. Ben Long (formerly owned by Stanley Bates), three-fourths mile northwest of Moneta, Redondo quadrangle.

[Bored well, 10 inches in diameter; sunk in 1903; altitude of surface, about 62 feet above sea level. Water contains 1,040 parts per million of dissolved solids. Bench mark not known. Well No. 284, Water-Supply Paper 139, p. 71.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1907—Continued.	*Ft.*	*in.*
Dec. 6	36	4	Aug. 21	40	2
1905.			Dec. 24	36	6
Jan. 3	36	1	1908.		
Feb. 6	35	5	Apr. 29	40	1
Mar. 14	35	3	June 26	43	½
Apr. 10	35	1	Oct. 20	38	11½
May 3	35	3	Dec. 17	39	6
June 9	36	0	1909.		
July 10	36	8½	Mar. 30	38	11
Aug. 8	37	1½	July 7 (pumping plant across road in operation)	87	6
Sept. 11	37	4	Oct. 7 (pumping plant across road in operation)	74	0
Nov. 3	37	0	1910.		
Dec. 14	36	3½	Jan. 27	63	0
1906.			Aug. 13 (pumping plant across road in operation	47	3
Jan. 22	36	0	Dec. 30 (pumping plant across road in operation)	53	10
Mar. 19	34	0	Abandoned		
May 2	33	4½			
June 21	32	3			
July 27	39	2			
Sept. 17	39	2			
Dec. 14	36	3			
1907.					
Feb. 5	35	6			
May 1	36	8			

Records of water levels in the valley of southern California—Continued.

9a. W. G. Summers, five-eighths of a mile northwest of Moneta, Redondo quadrangle.

[Bored well, 171 feet deep, 7 inches in diameter; sunk in 1893; altitude of surface, about 60 feet above sea level; method of lift, wind; use, domestic. Water contains 600 parts per million of dissolved solids. Bench mark: Top of casing 1½ feet above surface. Well No. 285, Water-Supply Paper 139, p. 72. Companion well for No. 9.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1905.		1912.	
Nov. 3	33 4	May 20 (pumping)	40 8
Dec. 14	33 5	July 22 (pumping)	42 0
1906.		Oct. 14 (pumping)	38 11
Jan. 22	33 0	1913.	
Mar. 19	32 5	Oct. 15	38 ½
May 2	33 7	1914.	
June 21	34 9	Apr. 6 (pumping)	40 6
July 27	37 11	June 3 (pumping three-fourths of an hour)	37 8
Sept. 17 (pumping)	38 0	Aug. 15 (pumping hard)	.....
Dec. 14	33 0	Nov. 18	38 8
1907.		1915.	
May 1	35 6	May 28	45 0
Aug. 21 (pumping)	38 0	Nov. 5	36 7
Dec. 24 (pumping)	35 7	1916.	
1908.		May 15 (pumping hard)	.....
Apr. 29 (pumping)	39 5	Nov. 13	37 6
June 26	38 11	1917.	
Oct. 20	36 0	May 29	40 6
Dec. 17	34 3	Nov. 19	39 4
1909.		1918.	
Mar. 30	33 6	May 13	42 8
July 7	39 8	Oct. 16	42 3
Oct. 7	36 8	1919.	
1910.		May 8	44 10
Jan. 27	33 10	Oct. 20 (pumping strong)	.....
Aug. 13 (pumping)	40 11	1920.	
Dec. 30 (pumping)	35 6	May 6	42 5
		Nov. 18	41 8

10. A. P. Johnson (formerly owned by Post & Lockhart), 2 miles west of Howard Summit, Redondo quadrangle.

[Bored well, 200 feet deep, 7 inches in diameter; sunk in 1895; altitude of surface, about 62 feet above sea level; method of lift, wind; use, domestic. Water contains 430 parts per million of dissolved solids. Bench mark: Top of blocks resting over casing, 1 foot above surface. Well No. 255, Water-Supply Paper 139, p. 70.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.	1906—Continued.	*Ft. in.*
1904.		June 21	38 2
Dec. 6	35 7½	July 27	37 10
1905.		Sept. 17	37 10½
Jan. 3	36 9	Dec. 14	37 1½
Feb. 6	38 6	1907.	
Mar. 14	37 4	May 1	38 4½
Apr. 10	35 8	Aug. 21	30 10½
May 3	35 9	Dec. 24	30 9
July 10	38 6	1908.	
Aug. 8	40 3	Apr. 29 (pumping)	.....
Sept. 11	47 4	June 26	37 8
Dec. 14	39 3	Oct. 20 (pumping)	.....
1906.		Dec. 17	36 9
Jan. 22	36 0		
Mar. 19	34 3		
May 2	33 4½		

Records of water levels in the valley of southern California—Continued.

10. A. P. Johnson—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1909.		1915.	
Mar. 30	36 3	May 28	54 4
July 3	38 4	Nov. 5	41 10
Oct. 7	39 4	1916.	
1910.		May 15	41 5
Jan. 27	36 10	Nov. 13	41 8
Aug. 13	43 1	1917.	
Dec. 30	49 0	May 29	41 10
1912.		Nov. 19	41 4
May 20	38 6	1918.	
1913.		May 13	42 6
Oct. 15 (pumping)	53 8	Oct. 16	42 9
1914.		1919.	
Apr. 6	42 3½	May 8	43 0
June 3 (probably had been pumping)	54 0	Oct. 20	43 6
Aug. 15 (pumping)	.....	1920.	
Nov. 18	42 3½	May 6	43 3
		Nov. 18	44 3

11. E. L. Doheny (formerly owned by William Bayley), 10 Chester Place, Los Angeles, Santa Monica quadrangle.

[Bored well, 88 feet deep, 7 inches in diameter; altitude of surface, about 205 feet above sea level; water not used. Bench mark: Top of casing, 1.0 foot above surface. Well No. 962, Water-Supply Paper 139, p. 59.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. In.		*Ft. in.*
1904.		**1909.**	
Dec. 9	69 0	Mar. 29	72 1
1905.		July 8	72 2
Jan. 6	69 2½	Oct. 8	72 7
Feb. 10	69 5	1910.	
Mar. 18	69 9	Jan. 28	72 10
Apr. 10	69 8	Aug. 12	72 8
May 6	69 8	Dec. 31	74 8
June 10	69 8	1912.	
July 11	69 10	May 21	77 7
Aug. 9	70 0	Oct. 12	83 8
Sept. 12	70 1½	1913.	
Nov. 4	70 4	Oct. 24	87 7
Dec. 15	70 5½	1914.	
1906.		June 3	82 8½
Jan. 23	70 6½	Aug. 15	82 7
Mar. 20	70 4	Nov. 18 (dry, well filled in)	82 9½
May 3	70 6½	1915.	
June 23	70 7	May 29	82 7
July 28	70 7	Nov. 5 (wet sand)	82 9½
Sept. 18	70 9	1916.	
Dec. 15	71 0	May 15	81 6
1907.		Nov. 13	81 4
Feb. 6	71 ½	1917.	
May 2	70 6	May 29	79 8
Aug. 22	70 1	Nov. 19	81 0
Dec. 23	70 2½	1918.	
1908.		May 13	80 5
Apr. 30	70 6	Oct. 16	80 7
June 27	70 10	1919.	
Oct. 21	71 7	May 8	79 4
Dec. 18	71 11	Oct. 20	79 1
		1920.	
		May 6	78 11

Records of water levels in the valley of southern California—Continued.

12. Tony Bright, northwest corner Jefferson Street and Vermont Avenue, Los Angeles, Santa Monica quadrangle.

[Bored well, 135 feet deep, 7 inches in diameter; sunk in 1894; altitude of surface, about 184 feet above sea level; method of lift, wind; use, domestic. Water contains 640 parts per million of dissolved solids. Bench mark not known. Well No. 186, Water-Supply Paper 139, p. 29.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1906.	*Ft.*	*in.*
Dec. 9	48	6	Jan. 23	49	8
1905.			Mar. 20	49	4
Jan. 6	48	8	May 3	49	4
Feb. 10	48	10	June 22	49	6½
Mar. 18	48	8½	July 28	49	10
Apr. 10	48	4	Sept. 18	50	1
May 6	48	1	Dec. 15	50	0
June 10	48	6	1907.		
July 11	48	10½	May 2	49	3½
Aug. 9	49	1½	Aug. 22	49	8½
Sept. 12	49	4½	1908.		
Nov. 4	49	6			
Dec. 15	49	8½	Well filled; measurements discontinued		

13. Mrs. Showers (formerly Mrs. Emelie Hertel), 1870 West Jefferson Street, Los Angeles, Santa Monica quadrangle.

[Bored well, 60 feet deep, 7 inches in diameter; sunk in 1897; altitude of surface, about 157 feet above sea level; method of lift, wind; use, domestic. Water contains 410 parts per million of dissolved solids. Bench mark not known. Well No. 198, Water-Supply Paper 139, p. 29.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1906.	*Ft.*	*in.*
Oct. 3	33	8	Jan. 23	34	1
Nov. 7	33	9	Mar. 20	33	3
Dec. 9	33	6	May 3	33	6
1905.			June 22	33	11
Jan. 6	33	6	July 28	34	7½
Feb. 10	33	0	Sept. 18	35	3
Mar. 18	32	2½	Dec. 15	34	9
Apr. 12	32	1	1907.		
May 6	32	9	Feb. 6	34	2½
June 10	33	0	May 2	33	6
July 11	33	9	Aug. 22	34	9
Aug. 9	34	4	1908.		
Sept. 12	34	7			
Nov. 4	34	9			
Dec. 15	34	3	Well filled; measurements discontinued		

Records of water levels in the valley of southern California—Continued.

14. Artesian Land & Water Co., Montclaire Street, three-fourths mile north of Cienega station, Santa Monica quadrangle.

[Bored well, 12 inches in diameter; altitude of surface, about 140 feet above sea level; method of lift, wind; use, domestic and stock. Water contains 520 parts per million of dissolved solids. Bench mark: Top of casing, 7 inches above surface. Well No. 46, Water-Supply Paper 139, p. 23.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1905.		1910.	
Feb. 10	6 11	Jan. 28	7 5
Mar. 17	5 8½	Aug. 12	9 2
Apr. 13	5 10	Dec. 31	9 2
May 6	6 1	1912.	
June 10	7 2	May 21	10 7
July 11	7 9	July 23	11 7
Aug. 9	8 4	Oct. 12	12 5
Sept. 12	8 9	1913.	
Dec. 15	8 1	Oct. 15 (windmill pumping)	17 1
1906.		1914.	
Jan. 23	7 1	Apr. 6	10 11
Mar. 20	7 10	June 3	11 11
May 3	7 3½	Aug. 15 (pumping hard)	.....
June 22	7 10	Nov. 18	17 0
July 28	9 0	1915.	
Sept. 18	9 6	May 28	12 2
Dec. 15	8 5½	Nov. 5	13 5
1907.		1916.	
Feb. 6	7 4½	May 15 (pumping)	18 2½
May 2	7 4	Nov. 13	11 4
Aug. 22	8 6½	1917.	
Dec. 23	9 7	May 29	15 5
1908.		Nov. 19	12 8
Apr. 30	7 0	1918.	
June 27	7 11	May 13	11 3
Oct. 21	9 0	Oct. 16	14 2
Dec. 18	8 6	1919.	
1909.		May 8	12 11
Mar. 29	7 3	Oct. 20	15 6
July 8	7 10	1920.	
Oct. 8	8 8	May 6	12 8
		Nov. 18	14 2

15. *County* well, Ivy station, Santa Monica quadrangle.

[Bored well, 47 feet deep, 7 inches in diameter; sunk in 1901; altitude of surface, about 102 feet above sea level; method of lift, wind; use, roads and stock. Water contains 770 parts per million of dissolved solids. Bench mark: Top of casing, 2 feet above surface. Well No. 606, Water-Supply Paper 139, p. 45.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1907.	
Dec. 9	13 11	Feb. 6	11 7½
1905.		May 2	11 2½
Jan. 6	13 0	Aug. 22	12 5
Mar. 18	12 1	Dec. 23	12 10
Apr. 13	12 0	1908.	
June 10	12 3	Apr. 30	12 4
July 11	12 7	June 27	12 8
Aug. 9	13 0	Oct. 21	13 4
Sept. 12	13 4½	Dec. 18	13 2
Nov. 4	13 3	1909.	
Dec. 15	13 3½	Mar. 29	11 7
1906.		July 8	12 4
Jan. 23	13 1	Oct. 8	13 0
Mar. 20	12 5	1910.	
May 3	12 2	Jan. 28	12 4
June 22	9 8½	Aug. 12	13 1
July 28	12 10	Dec. 31 (pumping)	.....
Sept. 18	13 3	Abandoned	.....
Dec. 15	13 3½		

Records of water levels in the valley of southern California—Continued.

16. M. P. Kane, Palms, Santa Monica quadrangle.

[Bored well, about 250 feet deep, 7 inches in diameter; sunk in 1901; altitude of surface, about 125 feet above sea level; method of lift, wind; use, domestic. Water contains 650 parts per million of dissolved solids. Bench mark not known. Well No. 820, Water-Supply Paper 139, p. 53.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1907.	*Ft. in.*
Sept. 1	50 8	Feb. 6	49 6½
Oct. 12	49 6	May 2	50 8
Nov. 7	49 6	Aug. 22	50 2
Dec. 9	50 2	Dec. 23	50 3
1905.		1909.	
Jan. 6	49 9	Mar. 29	50 10
Mar. 18	49 4	July 8	51 5
Apr. 13	49 4	Oct. 8	51 5
July 11	49 8	1910.	
Aug. 9	49 11	Jan. 28	51 2
Sept. 12	49 7	Aug. 12	53 6
Dec. 15	49 5½	Dec. 31	52 0
1906.		1912.	
Jan. 23	49 6	Well inaccessible	.....
Mar. 20	49 2½		
June 22	49 5		
July 28	49 5½		
Sept. 18	49 10		
Dec. 15	49 11		

17. E. P. Bojorquez, Palms, Santa Monica quadrangle.

[Bored well, 66 feet deep, 7 inches in diameter; sunk in 1891; altitude of surface, about 100 feet above sea level; method of lift, wind; use, domestic. Water contains 300 parts per million of dissolved solids. Bench mark: Top of casing, 1 foot 8 inches above surface. Well No. 833, Water-Supply Paper 139, p. 54.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1908.	*Ft. in.*
Oct. 13	42 2½	Apr. 30	46 2
Nov. 7	42 4	June 27	48 3
Dec. 9	45 5	Oct. 21	45 5
1905.		Dec. 18	45 7
Jan. 6	42 9½	1909.	
Mar. 18	43 3	Mar. 29	45 10
Apr. 13	43 4½	July 8	45 9
May 6	43 6	Oct. 8	46 0
June 10	43 6	1910.	
July 11	43 8	Jan. 28	46 0
Aug. 9	43 11	Aug. 12	48 8
Sept. 12	44 1	Dec. 31	47 9
Nov. 4	43 6	1912.	
Dec. 15	45 7	May 21 (pump off 15 minutes)	50 2
1906.		July 23	48 7
Jan. 23	44 5	Oct. 12	49 1
Mar. 20	44 2	1913.	
May 3	44 7	Oct. 15	49 7
June 22	46 7	1914.	
July 28	44 6½	Apr. 6	48 8
Sept. 18	44 6	June 3	48 2
Dec. 15	44 8	Nov. 17	48 0
1907.			
Feb. 6	44 1		
May 2	46 ½		
Dec. 23	44 7½		

Records of water levels in the valley of southern California—Continued.

17. E. P. Bojorquez—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1915.		1918.	
May 28 (pumping slowly)	50 7	May 13 (gasoline pump working)	.....
Nov. 5	48 9	Oct. 16	46 4
1916.		1919.	
May 15 (gas engine installed)	47 5	May 8	47 11
Nov. 13	46 7	Oct. 20	48 5
1917.		1920.	
May 29	48 0	May 6	48 8
Nov. 19	48 2	Nov. 18	48 0

18. G. A. Cortelyou (formerly owned by Jose Sesma), 1 mile north of Ivy station, Santa Monica quadrangle.

[Bored well, 50 feet deep, 7 inches in diameter; sunk in 1893; altitude of surface, about 160 feet above sea level; method of lift, wind; use, domestic. Water contains 790 parts per million of dissolved solids. Bench mark: Top of casing, 1 foot 4 inches above surface. Well No. 661, Water-Supply Paper 139, p. 47.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1912.	
Dec. 2	43 3	July 23	45 0
		Oct. 12	45 11
1905.		1913	
Jan. 6	43 4½	Oct. 15	45 8
Feb. 10	43 9		
Mar. 18	43 6	1914.	
Apr. 13	43 5	Apr. 6	46 0
June 10	43 6	June 3	45 7
July 11	43 7	Aug. 15	46 1
Aug. 9	43 8	Nov. 24	46 1
Sept. 12	43 10		
Nov. 4	42 9	1915.	
Dec. 15	43 11½	May 28	46 3
		Nov. 5	46 4
1906.			
May 3	44 1½	1916.	
June 22	45 2½	May 15	46 0
July 28	44 4	Nov. 13	46 4
Dec. 15	44 7		
		1917.	
1907.		May 29	45 11
Feb. 6	44 5	Nov. 13	45 11
May 2	44 2½		
Aug. 22	44 7½	1918.	
		May 13	48 2
1908.		Oct. 16	48 8
Apr. 30	44 9		
June 27	44 10	1919.	
Oct. 21	44 11	May 8	46 4
Dec. 18	45 0	Oct. 20	47 9
1909.		1920.	
Mar. 29	44 11	May 6	46 5
July 8	44 9	Nov. 18	47 2
Oct. 8	44 9		
1910.			
Jan. 28	44 9		
July 8	45 1		
Oct. 8 (pumping)	.....		

Records of water levels in the valley of southern California—Continued.

18a. H. R. Brinkerhoff (formerly owned by M. Arnez), 1 mile north of Ivy station, Santa Monica quadrangle.

[Bored well, 70 feet deep, 7 inches in diameter; altitude of surface, about 170 feet above sea level; method of lift, wind; use, domestic. Water contains 800 parts per million of dissolved solids. Bench mark: Top of casing, 1 foot 2 inches above surface. Well No. 662, Water-Supply Paper 139, p. 47. Companion well for No. 18.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1917.	
Nov. 24	65 10	May 29	66 10
		Nov. 19	66 10
1915.		1918.	
May 28	66 3	May 13	66 4
Nov. 5 (pumping)	.....	Oct. 16	66 7
1916.		1919.	
May 15	66 6	May 8	66 11
Nov. 13	67 8	Oct. 20	66 6
		1920.	
		Nov. 18 (pumping)	.....

19. J. H. Whitworth, 2 miles south of Sherman, Santa Monica quadrangle.

[Bored well, 61 feet deep, 6 inches in diameter; sunk in 1887; altitude of surface, about 125 feet above sea level; method of lift, wind; use, domestic. Water contains 800 parts per million of dissolved solids. Bench mark: Top of casing, 6 inches above surface. Well No. 514, Water-Supply Paper 139, p. 42.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1910.	
Dec. 9	10 9	Jan. 28	3 4
		Aug. 12	8 10½
1905.		Dec. 31	5 3
Jan. 6	10 6	1912.	
Feb. 10	9 9	July 23	19 5
Mar. 18	8 2	Oct. 12	9 8
Apr. 13	8 0	1913.	
May 6	8 4	Oct. 15 (not accessible)	.....
June 10	9 2	1914.	
July 11	9 0	Apr. 6 (not accessible)	.....
Aug. 9	8 8	June 3 (not accessible)	.....
Nov. 4	9 7½	Aug. 15 (not accessible)	.....
Dec. 15	9 4	Nov. 24	8 9
1906.		1915.	
Jan. 23	8 9	May 28	5 7
Mar. 20	8 8	Nov. 5	8 7
May 3	7 8½	1916.	
June 22	9 5½	May 15	1 6
July 28	9 8½	Nov. 13 (flowing slightly)	.....
Sept. 18	10 1	1917.	
Dec. 15	8 7	May 29 (flowing slightly)	.....
1907.		Nov. 19 (gas pump installed, pumping)	.....
Feb. 6	6 11	1918.	
May 2	7 0	May 13 (flowing slightly)	.....
Aug. 22	7 5½	Oct. 16 (flowing slightly)	.....
1908.		1919.	
Apr. 30	5 5	May 8	1 1
June 27	7 6	Oct. 20	9
Oct. 21	6 6	1920.	
Dec. 18	6 2	May 6	10
1909.		Nov. 18	5 0
Mar. 29	3 9		
July 8	5 2		
Oct. 8	4 10		

Records of water levels in the valley of southern California—Continued.

20. Hammel & Decker, 1 mile south of Sherman, Santa Monica quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1907.	
Dec. 9	13 6	Feb. 6	11 2
		May 2	10 ½
1905.		Aug. 22	11 ½
Jan. 6	13 6	Dec. 23	10 11
Feb. 10	12 11½		
Mar. 18	11 9	1908.	
Apr. 13	11 6	Apr. 30	10 8
May 6	11 7	June 27	11 2
June 10	11 10	Oct. 21	12 0
July 11	12 1	Dec. 18	29 1
Aug. 9	12 4		
Sept. 12	12 10	1909.	
Nov. 4	13 0	Mar. 29	24 9
Dec. 15	12 10	July 8 (not accessible)	.....
		Oct. 8 (not accessible)	.....
1906.			
Jan. 23	12 4½	1910.	
Mar. 20	12 1½	Jan. 28	12 6
May 3	11 9½	Aug. 12 (not accessible)	.....
June 22	12 1	Dec. 31 (not accessible)	.....
July 28	12 7½		
Sept. 18	12 10½		
Dec. 15	12 6		

21. William Niles, three-fourths mile south of Sherman, Santa Monica quadrangle.

[Bored well, 150 feet deep, 14 inches in diameter; altitude of surface, about 170 feet above sea level; method of lift, wind; use, domestic. Water contains 1,030 parts per million of dissolved solids. Bench mark: Top of board curbing, 2 feet 4 inches above surface. Well No. 518, Water-Supply Paper 139, p. 42.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1908.	
Oct. 14	9 0	Apr. 30	8 3
Nov. 7	9 2	June 27	9 0
Dec. 9	9 3	Oct. 21	8 3
		Dec. 18	7 1
1905.			
Jan. 6	7 6	1909.	
Feb. 10	6 2	Mar. 29	7 5
Mar. 18	4 3	July 8	8 5
Apr. 13	6 6	Oct. 8	7 10
May 6	6 8		
June 10	7 0	1910.	
July 11	8 2	Jan. 28	6 9
Aug. 9	8 10	Aug. 12	7 4
Sept. 12	9 5	Dec. 31	6 0
Dec. 15	7 6		
		1912.	
1906.		May 21	6 10
Jan. 23	7 3	July 23	7 11
Mar. 20	7 4	Oct. 13 (pumping slowly)	11 7
May 3	7 8		
June 22	8 5	1913.	
July 28	8 2½	Oct. 15	11 6
Sept. 18	9 6½		
Dec. 15	7 2½	1914.	
		Apr. 6	8 5
1907.		June 3	8 3
Feb. 6	5 3	Aug. 15	9 11
May 2	6 5½	Nov. 24	10 7
Aug. 22	7 4		
Dec. 23	7 ½		

Records of water levels in the valley of southern California—Continued.

21. William Niles—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1915.		1918.	
May 28	7 6	May 13	5 10
Nov. 5	9 4	Oct. 16	5 10
1916.		1919.	
May 15	6 8	May 8	4 10
Nov. 13	6 4	Oct. 20	5 2
1917.		1920.	
May 29	6 0	May 6	5 1
Nov. 19	5 2	Nov. 18	4 0

22. County well, 1 mile east of Sherman, Santa Monica quadrangle.

[Bored well, 102 feet deep, 7 inches in diameter; altitude of surface, about 295 feet above sea level; method of lift, wind; use, domestic. Water contains 530 parts per million of dissolved solids. Bench mark not known. Well No. 616, Water-Supply Paper 139, p. 45.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1906—Continued.	
Dec. 9	84 3½	June 22	86 8½
1905.		July 28	87 5½
Jan. 6	84 5½	Sept. 18	87 8½
Feb. 10	84 6	Dec. 15	88 1
Mar. 18	84 6	1907.	
Apr. 13	84 4	May 2	85 6½
May 6	84 3	Aug. 22	83 1½
June 10	84 6	Dec. 23	81 10
July 11	84 6	1908.	
Aug. 9	84 10	Apr. 30	86 2
Sept. 12	85 2	June 27	89 7
Nov. 4	86 0	Oct. 21	95 0
Dec. 15	86 9	Dec. 18 (dry)	.....
1906.		1909.	
Jan. 23	84 6	Well destroyed	.....
Mar. 20	86 3		
May 3	86 5		

Records of water levels in the valley of southern California—Continued.

22a. H. E. Lodge, 6010 Willoughby Avenue, Hollywood, Santa Monica quadrangle.

[Bored well, 52 feet deep; 7 inches in diameter; method of lift, wind; use, domestic. Bench mark: Top of casing, level with surface. Measured in conjunction with observation wells but record not published heretofore.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1905.			1912.		
Dec. 15 (pumping)	40	1	May 21	31	8
			July 23	28	6
1906.			Oct. 12	49	6
Jan. 23 (pumping)	44	6			
Mar. 20	43	3½	1913.		
May 3 (pumping)	43	8	Oct. 15 (pumping)	41	11
June 22 (pumping)	44	7½			
July 28 (pumping)	46	9	1914.		
Sept. 18 (pumping)	48	8½	Apr. 6	25	10
Dec. 15	50	3½	June 3	23	7
			Aug. 15	24	2
1907.			Nov. 24	25	0
Feb. 6	44	8½			
Aug. 22 (pumping)	46	2	1915.		
Dec. 23	31	6	May 28	23	10
			Nov. 5	26	0
1908.					
Apr. 30	29	5	1916.		
June 27	28	8	May 15	20	10
Oct. 21 (pumping)	.....		Nov. 13	19	7
Dec. 18	27	7			
			1917.		
1909.					
Mar. 29	26	0	May 29 (well filled)	.....	
July 8	25	2			
Oct. 8 (pumping)	.....		1918.		
1910.			May 13 (well filled)	.....	
Jan. 28	24	2			
Aug. 12	24	8			
Dec. 31	24	10			

22b. Mrs. Sesma, corner Willoughby Avenue and Seward Street, Hollywood, Santa Monica quadrangle.

[Companion well for No. 22a. Bench mark: Top of casing, 2 feet above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1914.			1917.		
Nov. 24	17	6	May 29	13	11
			Nov. 19	14	0
1915.					
May 28	16	11	1918.		
Nov. 5	18	7	May 13	14	9
			Oct. 16	14	2
1916.					
May 15	15	8	1919.		
Nov. 13	15	3	May 8 (well destroyed)	.....	

Records of water levels in the valley of southern California—Continued.

22c. H. A. Slack, 5310 Santa Monica Boulevard, Hollywood, Santa Monica quadrangle.

[Open well, 63 feet deep, 4 feet in diameter; method of lift, wind; use, domestic. Bench mark: Top of 4 by 6 across curb, 2 inches above surface. Has been measured in conjunction with observation wells but record not published heretofore.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1906.			1913.		
July 28	53	5	Oct. 15	43	7
Dec. 15	46	1	1914.		
1907.			Apr. 6	34	0
Feb. 6	44	6½	June 3	39	4
May 2	42	5	Aug. 15 (pumping hard)	.....	
Aug. 22 (pumping)	47	9½	Nov. 23	36	4
Dec. 23	42	10	1915.		
1908.			May 28	38	4
Apr. 30	42	0	Nov. 5	36	3
June 27	43	5	1916.		
Oct. 21	43	0	May 15	32	7
Dec. 18	42	11	Nov. 13	32	5
1909.			1917.		
Mar. 29	41	0	May 29 (well filled)	.....	
July 8	41	1	1918.		
Oct. 8	41	1	May 13 (well filled)	.....	
1910.					
Jan 28	40	11			
Aug. 12 (pumping)	45	0			
Dec. 31	40	11			
1912.					
May 21	38	1			
July 23	39	1			
Oct. 12	41	2			

23. F. E. Wilcox (formerly owned by Mr. Hurlbut), Orange Grove Avenue, Pasadena, Pasadena quadrangle.

[Bored well, 1,300 feet deep, 7 inches in diameter; altitude of surface, about 816 feet above sea level; water not used. Bench mark: Top of casing, level with surface. Well No. 56, Water-Supply Paper 219, p. 162.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1907.		
Sept. 2	73	3	Feb. 8	76	3½
Oct. 5	73	10	May 3	74	10½
Nov. 8	73	11	Aug. 24	74	9
Dec. 10	74	6	1908.		
1905.			Apr. 28	72	2½
Jan. 4	74	6	June 30	73	2
Feb. 9	74	4	Oct. 12	75	2
Apr. 12	73	8	Dec. 19	75	2
May 10	73	5	1909.		
June 13	73	5	Mar. 27	72	11
July 12	74	0	July 16	72	7
Aug. 10	74	5	Oct. 9	73	8
Sept. 13	75	0	1910.		
Nov. 7	75	0	Jan 29	72	0
Dec. 18	75	9	Aug. 15	72	9
1906.			Dec. 29	74	3
Mar. 22	74	6	1912.		
May 5	74	9	May 23	79	8
June 25	74	6	July 25	73	8
July 31	75	3½	Oct. 13	75	1
Sept. 20	76	1½			
Dec. 17	77	1			

Records of water levels in the valley of southern California—Continued.

23. F. E. Wilcox—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1913.		1917.	
Oct. 16	85 2	May 28	68 1
		Nov. 27	73 6
1914.		1918.	
Apr. 3	77 2	June 6	73 0
May 4	76 10	Oct. 5	75 2
June 2	76 8		
Sept. 3	77 10	1919.	
Nov. 23	77 11	May 8	74 10
		Oct. 21	79 6
1915.			
May 13	74 1	1920.	
Oct. 11	75 8	May 7	79 8
		Nov. 25	84 4
1916.			
May 19	73 0		
Nov. 18	73 3		

24. L. V. Harkness, southwest corner Colorado Street and Sierra Bonita Avenue, Pasadena, Pasadena quadrangle.

[Bored well, 272 feet deep, 12 inches in diameter; altitude of surface, about 787 feet above sea level; water not used. Bench mark not known. Well No. 17, Water-Supply Paper 219, p. 161.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1907.	
Sept. 2	122 4	Feb. 8	122 5
Oct. 5	122 2½	May 3	120 11
Nov. 8	122 7	Aug. 24	120 4
Dec. 10	122 6½	Dec. 28	118 1
1905.		1908.	
Feb. 9	122 2	Apr. 28	117 0
Mar. 17	122 2	June 30	119 1
Apr. 12	122 2	Oct. 12	118 6
May 10	122 1	Dec. 19	118 1
June 13	122 4		
July 12	123 3	1909.	
Aug. 10	123 5	Mar. 27	117 10
Sept. 13	124 0	July 16	119 7
Nov. 7	124 1	Oct. 9	118 6
Dec. 18	123 7		
		1910.	
1906.		Jan. 29	116 8
Jan. 24	123 3½	Aug. 15	119 5
Mar. 22	122 2½	Dec. 29	121 0
May 5	122 11	Well destroyed	.....
June 25	122 8		
July 31	123 6½		
Sept. 20	123 10		
Dec. 17	123 1½		

Records of water levels in the valley of southern California—Continued.

24a. Mr. Hislop (formerly owned by I. McCollum), southeast corner Colorado Street and Sierra Bonita Avenue, Pasadena, Pasadena quadrangle.

[Well, 151 feet deep; altitude of surface, about 785 feet above sea level; method of lift, wind; use, domestic and irrigation. Bench mark: Top of casing, 1 foot 3 inches above surface. Well No. 12, Water-Supply Paper 219, p. 161. Companion well for No. 24. Has been measured in conjunction with observation wells, but record not published heretofore.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1905.	*Ft. in.*	1912.	*Ft. in.*
Nov. 7	127 10	May 23	130 0
Dec. 18 (pumping)	129 9	July 25	121 4
1906.		Oct. 13	129 4
Jan. 24	127 3	1913.	
Mar. 22	127 10	Oct. 16	127 5
May 5	127 5	1914.	
June 25	127 6	Apr. 3	125 4
July 31	128 1	June 24	125 0
Sept. 20	128 5	Sept. 3	125 9
Dec. 17	127 1	Nov. 23	125 4
1907.		1915.	
Feb. 8	126 6	May 13	119 11
May 2	125 4	Oct. 11	121 4
Aug. 24	124 4	1916.	
Dec. 28	122 6	May 19	119 6
1908.		Nov. 18	119 8
Apr. 28	120 7	1917.	
June 30	121 0	May 28	117 5
Oct. 12	121 3	Nov. 26	122 1
Dec. 19	121 1	1918.	
1909.		June 6	121 6
Mar. 27	120 4	Oct. 5	127 11
July 16	120 2	1919.	
Oct. 9	120 4	May 9	127 6
1910.		Oct. 20	132 6
Jan. 29	119 5	1920.	
Aug. 15	122 0	Nov. 25	139 6
Dec. 29	121 4		

25. Titus ranch, Sunny Slope station, Pasadena quadrangle.

[Bored well, 132 feet deep, 7 inches in diameter; altitude of surface, about 620 feet above sea level; water not used. Bench mark not known. Well No. 475, Water-Supply Paper 219, p. 175.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1906.	*Ft. in.*
Dec. 10	13 6	Jan. 24	10 9
1905.		Mar. 22	10 0
Jan. 4	10 4½	May 5	8 4
Feb. 9	8 7	June 25	8 6
Mar. 17	8 6	July 31	18 3
Apr. 12	7 8	Sept. 20	16 9½
May 10	8 1	Dec. 17	14 2½
June 13	11 6	1907.	
July 12	16 1	Feb. 8	11 4½
Aug. 10	19 2	May 3	10 8
Sept. 13	16 2	Aug. 24	15 0
Nov. 7	12 10	Dec. 28 (destroyed)	.....
Dec. 18	10 7		

Records of water levels in the valley of southern California—Continued.

26. John McClain estate, 1 mile south of San Gabriel, Pasadena quadrangle.

[Bored well, 130 feet deep, 7 inches in diameter; sunk in 1896; altitude of surface, about 342 feet above sea level; method of lift, wind; use, domestic. Bench mark not known. Well No. 107, Water-Supply Paper 219, p. 163.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1906—Continued.		
Dec. 10	72	11	June 25	72	8
1905.			July 31	72	3½
Jan. 4	72	10	Sept. 20	72	1
Feb. 9	73	0	Dec. 17	71	4
Mar. 17	72	10	1907.		
Apr. 12	72	7	Feb. 8	70	6
June 13	73	4	May 3	68	11
July 12	73	3	Aug. 24	69	4
Aug. 10	74	1	Dec. 28	66	9½
Dec. 18	73	0	1909.		
1906.			Mar. 27	64	4
Mar. 22	72	8½	Not accessible	.....	
May 5	72	7½			

27. W. S. Torbert (formerly owned by F. E. Wilson), 2 miles south of San Gabriel, Pasadena quadrangle.

[Bored well, 36 feet deep, 6 inches in diameter; sunk in 1901; altitude of surface, about 287 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, originally 1 foot 8 inches above surface. Between Nov. 20, 1917, and May 11, 1918, 1 foot of casing was removed. Beginning with May 11, 1918, 1 foot has been added to the measurements to make them comparable with earlier measurements. Well No. 102, Water-Supply Paper 219, p. 163.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1910.		
Dec. 10	23	5½	Jan. 29	16	½
1905.			Aug. 15	17	4
Jan. 4	23	6	Dec. 29	18	4
Feb. 7	23	3	1912.		
Mar. 17	22	8½	May 23 (pumping slowly)	16	10
Apr. 12	21	0	July 25 (pumping slowly)	17	6
July 12	21	4	Oct. 13 (pumping slowly)	17	8
Aug. 10	22	6	1913.		
Sept. 13	22	3	Oct. 16	18	2
Nov. 17	22	8	1914.		
Dec. 18	22	11	Apr. 4	12	2
1906.			June 4	13	10
Jan. 24	22	3	Sept. 3	15	1
Mar. 22	23	0	Nov. 16	15	7
May 5	22	8	1915.		
June 25	21	8	May 13	12	7
July 31	21	4	Oct. 7	15	1
Dec. 17	21	11	1916.		
1907.			May 16	11	5
Feb. 8	21	9	Nov. 11	13	11
May 3	18	9	1917.		
Aug. 24	18	3	May 28	11	11
Dec. 28	19	6	Nov. 20 (gas pump installed; pumping)	.....	
1908.			1918.		
Apr. 28	18	6	May 11	11	10
June 30	19	3	Oct. 5	14	2
Oct. 12	19	3	1919.		
Dec. 19	19	7	May 9	13	1
1909.			Nov. 10	14	9
Mar. 27	16	6	1920.		
July 16	15	10	May 12	14	4
Oct. 9	16	6	Nov. 23	15	5

Records of water levels in the valley of southern California—Continued.

28. G. B. Renfro, three-fourths mile southwest of Savannah, Pasadena quadrangle.

[Bored well, 46 feet deep, 7 inches in diameter; altitude of surface, about 300 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, level with surface. Well No. 476, Water-Supply Paper 219, p. 175.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1910.	*Ft.*	*in.*
Dec. 9	19	6	Jan. 29	12	10
1905.			Aug. 15	13	11
Jan. 4	20	1½	Dec. 29	13	7
Feb. 9	20	0	1912.		
Mar. 17	19	3	May 23	13	1
Apr. 12	18	4	July 25	13	1
May 10	17	8	Oct. 13	13	0
June 13	18	7	1913.		
July 12	18	11	Oct. 16	14	0
Aug. 10	19	2	1914.		
Sept. 13	20	0	Apr. 4	9	3
Nov. 7	20	3	June 4	10	11
1906.			Sept. 3	12	6
Jan. 24	19	10	Nov. 17	12	1
Mar. 22	18	11	1915.		
May 5	18	1	May 25	10	5
June 25	18	4	Nov. 3	11	8
July 31	18	8	1916.		
Dec 17	18	8	May 16	9	5
1907.			Nov. 14	9	11
Feb. 8	16	11	1917.		
May 3	15	9½	May 25	9	5
Aug. 24	16	6	Nov. 21	10	8
Dec. 28	16	2	1918.		
1908.			May 11	9	3
Apr. 28	15	6	Oct. 5	10	11
June 30	15	8	1919.		
Oct. 12	16	0	May 9	10	8
Dec. 19	15	5	Nov. 10	13	0
1909.			1920.		
Mar. 27	13	0	May 12	12	2
July 16	14	11	Nov. 23 (destroyed)	.....	
Oct. 9	14	5			

28a. G. B. Renfro, three-fourths mile southwest of Savannah, Pasadena quadrangle.

[Dug well, 5 feet in diameter for 24 feet, then 12-inch bore for 63 feet. Method of lift, wind and gasoline engine; use, irrigation and domestic; situated 50 feet south of well No. 28. Bench mark: Originally bottom of a 10 by 10 inch timber across curb, 4 inches below surface. Between May 26, 1917, and May 11, 1918, the 10 by 10 inch timber was removed. A new bench mark was established as the top of the west side of the curb, about 1 foot 4 inches higher than the original bench mark. An addition of 1 foot 4 inches has been made to all measurements previous to May 11, 1918, to make them comparable with measurements from the present bench mark.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1914.	*Ft.*	*in.*	1917.	*Ft.*	*in.*
Apr. 4	11	8	May 26	9	11
June 4	10	2	1918.		
Sept. 3 (windmill pumping)	13	6	May 11	11	2
Nov. 17	12	5	1919.		
1915.			May 9	11	0
May 25	11	8	Nov. 10	13	4
Nov. 3	11	11	1920.		
1916.			May 12	12	5
May 16	10	0	Nov. 23	13	11
Nov. 14	10	6			

Records of water levels in the valley of southern California—Continued.

29. John McCoy (formerly owned by J. A. Law), half a mile east of El Monte, Pasadena quadrangle.

[Bored well, 50 feet deep, 7 inches in diameter; altitude of surface, about 282 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 9 inches above surface. Well No. 141, Water-Supply Paper 219, p. 164.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1910.		
Dec. 10	16	2	Jan. 29	7	8
			Aug. 15	10	5
1905.			Dec. 29	10	10
Jan. 4	16	1½			
Feb. 9	16	3	1912.		
Mar. 17	13	8	May 23	9	10
Apr. 12	13	2	July 25	10	11
July 12	13	1	Oct. 13	11	4
Aug. 10	13	5½			
Sept. 13	14	4	1913.		
Nov. 7	14	1	Oct. 16	17	10
Dec. 18	13	9			
			1914.		
1906.			Apr. 4	8	9
Jan. 24	13	8½	June 4	9	5
Mar. 22	12	6	Sept. 4	10	6
May 5	11	8	Nov. 17	10	4
June 25	11	5			
July 31	11	10½	1915.		
Sept. 20	12	2½	May 25	9	6
Dec. 17	11	9	Nov. 3 (pumping)	12	10
1907.			1916.		
Feb. 8	10	1½	May 16	10	1
May 3	8	5½	Nov. 14	9	1
Aug. 24	10	0			
Dec. 28	9	6	1917.		
			May 26	10	4
1908.			Nov. 21	10	4
Apr. 28	8	7			
June 30	10	3	1918.		
Oct. 12	10	3	May 11 (pumping)	.....	
Dec. 19	9	4	Oct. 5	11	1
1909.			1919.		
Mar. 27	5	11	May 9	10	7
July 16	8	11	Nov. 10	13	6
Oct. 9	9	2			
			1920.		
			May 12	12	0
			Nov. 23	13	2

29a. Mr. Ward (formerly owned by Mr. Beck), half a mile east of El Monte, Pasadena quadrangle.

[Bored well, 7 inches in diameter; altitude of surface, about 275 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 1.0 foot above surface. Well No. 477, Water-Supply Paper 219, p. 175. Has been measured in conjunction with observation wells but record not published heretofore.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1905.			1907.		
Nov. 7	14	11	Feb. 8	11	10½
Dec. 19 (pumping)	15	5	May 3	9	11
			Aug. 24	10	4
1906.			Dec. 28	10	7
Jan. 24	14	4			
Mar. 22	14	9½	1908.		
May 5	13	7			
June 25	13	8½	Apr. 28	9	10½
July 31	14	0	June 30	10	0
Sept. 20	14	2½	Oct. 12	10	11
Dec. 17	13	1½	Dec. 19	9	10

Records of water levels in the valley of southern California—Continued.

29a. Mr. Ward—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1909.		1914.	
Mar. 27	8 2	Apr. 4	13 3
July 10	9 7	June 4	13 8
Oct. 9	10 5	Sept. 4	14 7
1910.		Nov. 17	14 4
Jan. 29	9 11	1915.	
Aug. 15	12 3.	May 25	12 6
Dec. 29	14 10	Nov. 3	15 8
1912.		1916.	
May 23	13 7	May 15	13 9
July 23	15 0	Nov. 14	13 6
Oct. 13	12 0	1917.	
1913.		May 26 (well destroyed)	.....
Oct. 16	15 0		

30. M. Ritter, El Monte, Pasadena quadrangle.

[Bored well, 60 feet deep, 7 inches in diameter; altitude of surface, about 275 feet above sea level. Bench mark: Top of casing, 1 foot 3 inches above surface. Well No. 478, Water-Supply Paper 219, p. 175.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1910.	
Nov. 8	22 5	Jan. 29	9 5
Dec. 10	22 6½	Aug. 15	10 6
1905.		Dec. 29	13 4
Jan. 4	22 6	1912.	
Feb. 9	21 9	May 23	11 4
Mar. 17	20 1	July 25	12 5
Apr. 12	18 1	Oct. 13	13 7
May 10	16 8	1913.	
June 13	16 11	Oct. 16	16 6
July 12	17 5	1914.	
Aug. 10	16 8	Apr. 4	10 4
Sept. 13	17 5	June 4	9 8
Nov. 7	18 2	Sept. 3	11 0
Dec. 18	18 0	Nov. 17	11 6
1906.		1915.	
Jan. 24	18 9½	May 25	9 7
Mar. 22	17 3	Nov. 3	11 10
May 5	14 4	1916.	
June 25	12 9½	May 16	10 1
July 31	12 11½	Nov. 14	10 8
Sept. 20	14 1	1917.	
Dec. 17	14 7½	May 26	10 5
1907.		Nov. 21	12 10
Feb. 8	13 7	1918.	
May 3	10 0	May 11	10 11
Aug. 24	9 9	Oct. 5	13 7
Dec. 28	10 8	1919.	
1908.		May 9	14 5
Apr. 28	10 0	Nov. 10	17 7
June 30	10 2	1920.	
Oct. 12	12 5	May 12	16 10
Dec. 19	12 10	Nov. 23	18 4
1909.			
Mar. 27	8 3		
July 16	9 7		
Oct. 19	10 9		

Records of water levels in the valley of southern California—Continued.

30a. County well, 1 mile southeast of El Monte, Pasadena quadrangle.

[Bored well, 30 feet deep, 7 inches in diameter; altitude of surface, about 284 feet above sea level; method of lift, wind; use, stock. Bench mark: Top of 1-inch cover over casing, level with surface. Well No. 163, Water-Supply Paper 219, p. 165. Companion well for No. 30.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1918.	*Ft. in.*
Nov. 17	8 11	May 11 (pumping slowly)	9 10
1915.		Oct. 5	12 5
May 25	5 10	1919.	
Nov. 3	10 8	May 9	12 10
1916.		Nov. 10	16 11
May 16	7 7	1920.	
Nov. 14	8 3	May 12	14 6
1917.		Nov. 23	18 8
May 26	12 7		
Nov. 21	10 4		

31. C. H. Clark (formerly owned by Mrs. McClure), three-fourths mile south of El Monte, Pasadena quadrangle.

[Bored well, 61 feet deep, 7 inches in diameter; altitude of surface, about 265 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 10 inches above surface. Well No. 479, Water-Supply Paper 219, p. 175.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1905.	*Ft. in.*	1912.	*Ft. in.*
Jan. 4	16 6	May 23	9 4
Feb. 9	15 10	July 25	11 4
Mar. 17	14 2	Oct. 13	12 6
July 12	12 5	1913.	
Aug. 10	13 9	Oct. 16	12 5
Sept. 13	14 8	1914.	
Nov. 7	13 6	Apr. 4	8 5
Dec. 18	13 6	June 25	9 0
1906.		Sept. 4	9 4
Jan. 24	13 1	Nov. 17	9 5
Mar. 22	12 10′	1915.	
May 5	10 6	May 25	8 4
June 25	10 0	Nov. 3	9 9
July 31	10 4½	1916.	
Sept. 20	12 ½	May 16	9 5
Dec. 17	10 7	Nov. 14	8 10
1907.		1917.	
Feb. 8	8 1	May 26	9 6
May 3	7 0	Nov. 21	10 4
Aug. 24	8 6½	1918.	
Dec. 28	8 3	May 11	10 4
1908.		Oct. 5	10 8
Apr. 28	8 0	1919.	
June 30	9 2	May 9	10 11
Oct. 12	9 10	Nov. 10	13 3
Dec. 19	9 4	1920.	
1909.		May 12	12 1
Mar. 27	6 3	Nov. 23	13 8
July 16	8 0		
Oct. 9	8 8		
1910.			
Jan. 29	7 6		
Aug. 15	10 4		
Dec. 29	10 6		

Records of water levels in the valley of southern California—Continued.

31a. C. H. Clark, three-fourths mile south of El Monte, Pasadena quadrangle.

[Bench mark, bottom of 12 by 12 timber across curb, level with ground, marked with white paint. Companion well for No. 31, 175 feet northwest of No. 31. Engine and pump house.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1918.	*Ft. in.*	1920.	*Ft. in.*
Oct. 5	8 6	May 12	10 1
1919.		Nov. 23	11 11
May 9	8 10		
Nov. 10	11 4		

32. L. Bergstrom (formerly owned by T. D. Andrews), 1½ miles southeast of El Monte, Pasadena quadrangle.

[Bored well, 25 feet deep, 7 inches in diameter; altitude of surface, about 275 feet above sea level; method of lift, hand pump; use, domestic. Bench mark: Top of 2-inch cover over casing, 2 feet 5 inches above surface. Well No. 164, Water-Supply Paper 219, p. 165.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1910.	*Ft. in.*
Dec. 10	21 5½	Jan. 29	8 1
1905.		Aug. 15	11 7
Jan. 4	21 5	Dec. 29	12 4
Feb. 9	20 8	1912.	
Mar. 17	17 10	May 23	10 1
Apr. 12	15 10	July 25	11 7
May 10	14 8	Oct. 13	12 8
June 12	13 8	1913.	
July 12	13 9	Oct. 16	15 10
Aug. 10	15 9	1914.	
Sept. 13	16 10	Apr. 4	8 0
Nov. 7	17 3	June 4	8 6
Dec. 17	17 0	Sept. 3	9 11
1906.		Nov. 17	10 5½
Jan. 24	17 4	1915.	
Mar. 22	15 4	May 25	8 4
May 5	12 8	Nov. 3	11 9
June 25	11 9	1916.	
July 31	12 2	May 16	8 5
Sept. 20	13 5½	Nov. 14	9 2
Dec. 17	13 8	1917.	
1907.		May 26	9 11
Feb. 8	10 2½	Nov. 21	11 9
May 3	7 8½	1918.	
Aug. 24	9 9	May 11	9 7
Dec. 28	9 10½	Oct. 5	12 10
1908.		1919.	
Apr. 28	9 6	May 9	13 2
June 30	10 9	Nov. — (gas pump installed; can not measure)	.....
Oct. 12	12 2		
Dec. 19	11 10		
1909.			
Mar. 27	8 2		
July 16	9 2		
Oct. 9	10 6		

Records of water levels in the valley of southern California—Continued.

33. Jackson Freer, 2 miles southeast of El Monte, Pasadena quadrangle.

[Bored well, 7 inches in diameter; altitude of surface, about 290 feet above sea level; method of lift, wind; use, domestic. Bench mark not known. Well No. 173, Water-Supply Paper 219, p. 165.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1907—Continued.	*Ft.*	*in.*
Feb. 9	27	5	Aug. 24	15	9½
Mar. 17	23	4½	Dec. 28	16	1½
Apr. 12	20	2			
May 10	20	8	1908.		
June 13	18	6	Apr. 28	15	5
July 12	19	9	June 30	17	1
Aug. 10	21	0	Oct. 12	18	4
Sept. 13	22	4	Dec. 19	17	9
Nov. 7	23	3			
Dec. 18	22	9	1909.		
			Mar. 29	15	1
1906.			July 16	16	2
Jan. 24	19	10	Oct. 9	16	9
Mar. 22	22	11			
May 5	18	1½	1910.		
June 25	18	1½	Jan. 27	14	0
July 31	17	3	Aug. 15	16	0
Sept. 20	18	9	Dec. 29	16	6
Dec. 17	19	10			
			1912.		
1907.					
Feb. 8	15	6	No longer accessible		
May 3	13	1½			

33a. Jackson Freer, 2 miles southeast of El Monte, Pasadena quadrangle.

[Bored well, 7 inches in diameter. Situated 200 feet southwest of No. 33. Small gasoline pumping plant. Bench mark: Top of casing, 3 inches above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1913.	*Ft.*	*in.*	1917.	*Ft.*	*in.*
Oct. 16 (pumping slowly)	20	1	May 26	13	11
			Nov. 21	15	10
1914.					
Apr. 4	11	10	1918.		
June 4	12	1	May 11	14	3
Sept. 3	14	0	Oct. 5	17	2
Nov. 17	14	3			
			1919.		
1915.			May 9	15	5
May 25	11	4	Nov. 10	21	6
Nov. 3	14	6			
			1920.		
1916.			May 12	18	11
May 16	11	8	Nov. 23	22	3
Nov. 14	12	8			

Records of water levels in the valley of southern California—Continued.

33b. A. Elliot, half a mile southwest of well No. 33a, Pasadena quadrangle.

[Well bored 45 feet deep, 6 inches in diameter; method of lift, wind; use, domestic. Companion well for Nos. 32 and 33a. Bench mark: Top of casing, 1 foot 4 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1913.		1917.	
Oct. 16	12 7	May 26	11 0
		Nov. 21	10 11
1914.		1918.	
Apr. 4	8 10	May 11	9 5
June 4	9 1	Oct. 5	12 0
Sept. 3	10 0	1919.	
Nov. 17	9 11	May 9	11 7
1915.		Nov. 10	14 6
May 28	8 7	1920.	
Nov. 3	11 4	May 12	13 3
1916.		Nov. 23	15 3
May 16	9 11		
Nov. 14	9 0		

34. E. Gurado, 3 miles southwest of Whittier, Downey quadrangle.

[Bored well, 41 feet deep, 7 inches in diameter; altitude of surface, about 180 feet above sea level; method of lift, wind; use, domestic. Water contains 260 parts per million of dissolved solids. Bench mark not known. Well No. 2867, Water-Supply Paper 138, p. 143.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1907.	
Oct. 4	14 2	Feb. 9	8 3½
Nov. 8	13 4	May 4	8 1
Dec. 7	12 1	Aug. 22	8 10
1905.		Dec. 27	8 9
Jan. 5	11 6	1908.	
Feb. 7	11 2	Apr. 27	8 10
Mar. 15	10 3	June 27	9 0
Apr. 11	10 5½	Oct. 19	9 3
May 5	10 7½	Dec. 24	8 11
June 12	11 8	1909.	
July 14	12 ½	Mar. 31	7 2
Aug. 11	12 6	July 6	8 4
Sept. 14	13 0	Oct. 11	9 1
Nov. 6	11 10	1910.	
Dec. 16	11 3	Jan. 31	8 0
1906.		Aug. 12	9 2
Jan. 25	11 11	Dec. 28	9 3
Mar. 10	10 3½	1912.	
May 4	9 6½	Engine and pump installed; well not accessible	.....
June 23	11 3		
July 30	9 8½		
Sept. 19	10 0		
Dec. 18	9 9½		

Records of water levels in the valley of southern California—Continued.

35. Mrs. Mary Theland, 2 miles southwest of Whittier, Downey quadrangle.

[Bored well, 72 feet deep, 4 inches in diameter; sunk about 1874; altitude of surface, about 157 feet above sea level; method of lift, wind; water contains 390 parts per million of dissolved solids. Bench mark not known. Well No. 2902, Water-Supply Paper 138, p. 145.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1906—Continued.	
Nov 9	15 3	July 30	14 9
		Sept. 19	17 10
1905.		Dec. 18	12 6½
Jan. 5	14 11½		
Feb. 7	14 2½	1907.	
Mar. 15	13 4	Feb. 9	11 2
Apr. 10	13 2	May 4	11 1
May 5	13 4	Aug. 22	11 4
June 12	13 8½	Dec. 27	11 5½
July 14	14 5		
Aug. 11	15 0	1908.	
Sept. 14	15 8	Apr. 27	10 11
Nov. 6	14 5	June 29	11 5
Dec. 16	13 10	Oct. 19 (well closed)	.....
		Dec. 24 (well closed)	.....
1906.			
June 23	12 3		

36. J. C. Buckmaster (formerly owned by H. C. Baldwin), half a mile southeast of Whittier, Downe quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1906—Continued.	
Sept. 8	129 2	July 30	128 6
Oct. 4	128 4½	Sept. 19	128 6½
Nov. 8	128 5	Dec. 18	128 6
Dec. 7	128 7½		
		1907.	
1905.		Feb. 9	127 10½
Jan. 5	128 6	May 4	127 4
Feb. 7	128 7	Aug. 22	127 7
Mar. 15	128 8		
Apr. 11	128 4	1909.	
May 5	128 3	Mar. 31	64 0
June 12	128 4½	July 6	63 0
July 14	128 8	Oct. 11	63 0
Aug. 11	128 10		
Sept. 14	128 11	1910.	
Nov. 6	129 0		
Dec. 16	128 10	Jan 31 (well closed)	.....
1906.		1914.	
Jan. 20	128 8		
Mar. 10	128 8	Nov. 16 (well destroyed)	.....
May 4	127 5½		
June 23	128 6		

Records of water levels in the valley of southern California—Continued.

37. R. A. Wallace (formerly owned by C. A. Landreth), 1 mile south of Whittier, Downey quadrangle.

[Bored well, 78 feet deep, 4 inches in diameter; sunk in 1901; altitude of surface, about 191 feet above sea level; method of lift, hand pump; use, domestic and stock. Water contains 1,020 parts per million of dissolved solids. Bench mark: Top of hand pump base, 2 feet above surface. Well No. 2979, Water Supply Paper 138, p. 147.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1910.		
Sept. 6	33	5½	Jan. 31	26	11
Oct. 4	33	7½	Aug. 12	27	8
Nov. 9	33	5	Dec. 28	28	0
Dec. 7	33	5½	1912.		
1905.			May 22	26	6
Jan. 5	33	8	July 21	29	0
Feb. 7	33	3	Oct. 10	27	1
Mar. 15	32	6	1913.		
Apr. 11	31	10	Oct. 16	28	4
May 5	31	8	1914.		
June 12	31	7	Apr. 5	23	10½
July 14	32	4	June 3	25	1
Aug. 11	33	2	Sept. 3	26	9½
Sept. 14	33	4	Nov. 16	26	11½
Nov. 6	33	1	1915.		
Dec. 16	32	10	May 13	24	1
1906.			Oct. 7	26	6
Jan. 25	32	8	1916.		
Mar. 10	31	8	May 8	25	0
May 4	31	6½	Nov. 11	25	1
June 23	31	5½	1917.		
July 30	33	4	May 28	25	10
Sept. 19	32	6	Nov. 21	26	6
Dec. 18	32	½	1918.		
1907.			May 11	24	11
Feb. 9	30	1½	Oct. 15	24	10
May 4	28	7	1919.		
Aug. 23	30	8	May 9 (well destroyed)	.....	
Dec. 27	30	½			
1908.					
Apr. 27	29	3			
June 29	29	8			
Dec. 24	29	5			
1909.					
Mar. 31	26	5			
July 6	25	9			
Oct. 11	27	6			

Records of water levels in the valley of southern California—Continued.

38. L. A. Brunson (formerly owned by J. W. Sharp), Santa Fe Springs, Downey quadrangle.

[Bored well, 380 feet deep, 7 inches in diameter; sunk about 1877; altitude of surface, about 150 feet above sea level; water not used. Bench mark: Top of 8 by 8 timber over well curb, 10 inches above surface. Well No. 2099, Water-Supply Paper 138, p. 117.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1909.	
Sept. 6	27 3½	Mar. 31	22 7
Oct. 4	26 9½	July 6	23 4
Nov. 9	27 2	Oct. 11	23 11
Dec. 7	27 7		
1905.		1910.	
Jan. 5	27 0	Jan. 31	23 1
Feb. 7	26 2	Aug. 12 (not accessible)	.....
Mar. 15	25 7	Dec. 28	24 8
Apr. 11	25 0	1912.	
May 5	25 1½	May 22 (pumping slowly)	25 4
June 12	26 0	July 21 (pumping slowly)	27 11
July 14	26 8	Oct. 10 (pumping hard)	28 8
Aug. 11	27 2	1913.	
Sept. 14	27 4	Oct. 16	28 7
Nov. 6	27 3	1914.	
Dec. 16	26 1	Apr. 6	24 0
1906.		June 3	24 10
Jan. 25	25 4	Sept. 3	26 4
Mar. 10	24 6	Nov. 16	26 5
May 4	24 5½	1915.	
June 23	24 9	May 13	24 7
July 30	25 8	Oct. 7	26 11
Sept. 19	26 9	1916.	
Dec. 18	25 1	May 9	24 9
1907.		Nov. 11	25 10
Feb. 9	23 10	1917.	
May 4	23 2½	May 28	25 4
Aug. 23	24 0	Nov. 21 (building burned, well filled)	....
Dec. 27	23 8		
1908.			
Apr. 27	23 6		
June 29	24 2		
Oct. 19	24 9		
Dec. 24	24 1½		

38a. W. H. Kuntz, Santa Fe Springs, Downey quadrangle.

[Companion well for No. 38; 7-inch casing, method of lift, wind; use, domestic; situated about 300 feet northeast of No. 38. Bench mark: Top of casing, 5 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 16	26 ½	May 11	25 6
1915.		Oct. 15	27 11
May 13	24 4	1919.	
Oct. 7	26 10	May 9	27 5
1916.		1920.	
May 9	24 10	Nov. 11	31 4
Nov. 11 (sealed pumping)	.....		
1917.			
May 28	26 6		
Nov. 21	27 5		

Records of water levels in the valley of southern California—Continued.

39. John H. Borden, 1½ miles north of Norwalk, Downey quadrangle.

[Bored well, 38 feet deep, 5 inches in diameter; sunk in 1903; altitude of surface, about 125 feet above sea level; bench mark not known. Well No. 2112, Water-Supply Paper 138, p. 117.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1906—Continued.	*Ft.*	*in.*
Nov. 9	7	10	May 4	4	10½
Dec. 7	8	5	June 23	5	6½
1905.			July 30	7	3½
Jan. 5	7	11	Sept. 19	6	9½
Feb. 7	6	10	Dec. 18	5	10
Mar. 15	5	10½	1907.		
Apr. 11	5	4	Feb. 9	4	3½
May 5	5	1	May 4	3	6½
June 12	6	6	Aug. 23	4	1½
July 14	7	2	Dec. 27	3	2½
Aug. 11	8	0	1908.		
Sept. 14	8	8	Apr. 27	1	6
Nov. 6	8	7	June 29	5	1
Dec. 16	7	1	Oct. 19, Dec. 24 (casing cut off; datum destroyed)	.....	
1906.					
Jan. 25	6	7			
Mar. 10	6	8			

40. Norwalk Builders Association, Norwalk, Downey quadrangle.

[Bored well, 97 feet deep, 7 inches in diameter; sunk in 1893; altitude of surface, about 100 feet above sea level; method of lift, wind; use, domestic. Water contains 510 parts per million of dissolved solids. Bench mark: Top of casing, 1 foot 2 inches above surface. Well No. 2125, Water-Supply Paper 138, p. 117.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1909.	*Ft.*	*in.*
Sept. 6	19	5	Mar. 31	9	8
Oct. 4	15	8	July 6	15	2
Nov. 9	16	4	Oct. 11	16	11
Dec. 7	17	4	1910.		
1905.			Jan. 31	12	2
Jan. 5	15	3½	Aug. 12 (pumping)	43	3
Feb. 7	14	1½	Dec. 28	16	7
Mar. 15	13	4½	1912.		
May 5	13	7	May 22 (pumping very slowly)	26	7
June 12	14	6	July 21 (pumping before measurement)	34	1
July 14	15	10	Oct. 10	16	8
Aug. 11	16	11	1913.		
Sept. 14	17	9	Oct. 16	17	5
Nov. 6	15	4	1914.		
Dec. 16	14	7	June 3	14	2
1906.			Sept. 3	17	5
Jan. 25	13	8	Nov. 16	14	6
Mar. 10	16	11	1915.		
May 4	16	3	May 13 (pumping)	25	0
June 23	15	6½	Oct. 7	17	4
July 30	15	4½	1916.		
Dec. 18	15	0	May 9 (pumping slowly)	20	0
1907.			Nov. 11	13	1
Feb. 9	12	1	1917.		
May 4	14	1	May 28	15	0
Aug. 23	14	10	Nov. 21	14	4
Dec. 27	12	5	1918.		
1908.			May 11 (1 foot casing removed; correction made)	15	7
Apr. 27 (pumping)	.....		Oct. 15 (well destroyed)	.....	
June 29	14	3			
Oct. 19	13	4			
Dec. 24	12	11			

Records of water levels in the valley of southern California—Continued.

40a. Bank of Norwalk, Norwalk, Downey quadrangle.

[Companion well for No. 40. Four-inch casing; method of lift, wind; use, domestic; situated 50 feet southeast of No. 40. Bench mark: Top of casing, 1 foot 5 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1917.	*Ft. in.*
Nov. 16	14 11½	May 28 (pumping slowly)	17 2
1915.		Nov. 21	14 8
May 13	16 2	1918.	
Oct. 7 (casing obstructed)	.....	May 11	14 4
1916.		Oct. 15 (well destroyed)	.....
May 9	13 2		
Nov. 11	13 8		

40b. G. B. Banta, Norwalk (Rose Lawn), Downey quadrangle.

[Bench mark: Top of casing, 6 inches above surface of ground. Companion well to No. 40a; selected Oct. 15, 1918; formerly flowed; 397 feet deep; 20 feet of 4-inch casing, remainder 2-inch.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1918.	*Ft. in.*	1919.	*Ft. in.*
Oct. 15	8 11	May 9	10 10
		Nov. 11	12 2

41. J. B. Neff, 1½ miles south of Anaheim, Anaheim quadrangle.

[Bench mark: Top of curb, 50 feet 4 inches above top of casing. Records furnished by owner.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1898.	*Ft. in.*	1899—Continued.	*Ft. in.*
Feb. 22	23 4	July 30	33 5
May 26	25 0	Aug. 14	34 0
June 20	25 10	Aug. 20	34 1
July 1	26 2	Sept. 1	34 4
July 18	26 10	Sept. 13	34 5
Aug. 18	27 0	Oct. 2	34 9
Sept. 1	27 5	Oct. 29	35 1
Sept. 10	27 8	Nov. 30	35 6
Oct. 3	28 0	Dec. 28	35 10
Nov. 14	28 7	1900.	
Nov. 30	28 9	Jan. 11	36 0
Dec. 15	29 2	Jan. 30	36 3
Dec. 27	29 6	Feb. 26	36 9
1899.		Mar. 29	37 5
Jan. 14	29 10	Apr. 28	38 0
Feb. 7	30 0	May 29	38 5
Mar. 6	30 6	June 30	39 0
Mar. 31	31 0	July 31	39 8
Apr. 27	31 6	Aug. 31	40 1
May 13	31 11	Oct. 4	40 6
May 29	32 2	Nov. 4	41 0
June 28	32 11	Nov. 27	41 0
July 20	33 5	Dec. 12	41 0

Records of water levels in the valley of southern California—Continued.

41. J. B. Neff—Continued.

Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*
1901.		
Jan. 1	40	11
Jan. 18	40	9
Jan. 29	40	8
Feb. 6	40	6
Feb. 18	40	0
Feb. 25	39	9
Mar. 1	39	6
Mar. 13	39	3
Apr. 1	39	1
Apr. 19	39	3
Apr. 30	39	3
May 31	39	4
June 30	39	11
July 10	40	2
Aug. 1	40	8
Aug. 28	41	0
Sept. 28	41	3
Nov. 8	41	3
Dec. 2	41	4
1902.		
Jan. 3	41	9
Feb. 3	42	1
Mar. 2	42	4
Apr. 1	42	5
May 1	42	9
June 1	44	0
July 1	44	7
Aug. 1	44	8
Sept. 1	45	0
Oct. 1	45	0
Nov. 8	45	2
Dec. 1	45	2
1903.		
Jan. 1	45	4
Feb. 1	45	5
Mar. 1	45	6
Apr. 1	45	6
Apr. 18	44	11
Apr. 26	44	7
Apr. 30	44	6
May 19	44	0
June 3	44	2
July 4	44	11
Aug. 1	45	3
Sept. 1	45	5
Oct. 1	45	5
Nov. 8	45	4
Dec. 1	45	4
1904.		
Jan. 1	45	6
Feb. 6	46	0
Mar. 1	46	3
Apr. 1	46	6
May 1	47	0
June 1	48	4
June 15	49	0
July 1	49	6
July 31	50	3
Aug. 31	50	10
Oct. 1	50	8
Oct. 31	50	8
Dec. 1	50	9
1905.		
Jan. 1	51	0
Feb. 1	50	11
Mar. 1	50	7
Mar. 31	49	10
Apr. 30	49	6
May 18	49	7
May 31	50	2
July 1	51	4
July 31	51	7
1905—Continued.		
Aug. 31	52	7
Sept. 30	52	4
Nov. 1	51	10
Dec. 1	51	5
1906.		
Jan. 6	51	4
Mar. 3	51	2
Mar. 31	50	10
Apr. 30	49	5
May 19	49	2
June 1	49	0
June 9	48	10
June 18	48	10
July 1	49	7
July 16	50	2
July 30	50	6
Aug. 7	51	3
Aug. 16	51	2
Sept. 2	51	1
Sept. 27	50	9
Nov. 1	50	2
Nov. 30	49	5
1907.		
Jan. 1	49	1
Jan. 14	48	8
Feb. 1	47	8
Mar. 1	45	11
Apr. 1	42	9
May 1	39	11
May 14	39	4
May 25	39	2
May 31	39	5
June 16	38	10
June 30	39	1
July 27	40	5
Sept. 3	40	0
Oct. 1	39	7
Oct. 23	39	0
Nov. 7	38	10
Nov. 28	38	10
Dec. 31	38	6
1908.		
Jan. 21	38	10
Jan. 28	38	9
Feb. 12	38	1
Feb. 28	37	5
Apr. 1	37	4
May 1	38	4
June 1	39	10
July 31	42	7
Aug. 31	42	8
Oct. 6	41	7
Nov. 1	41	6
Nov. 28	41	7
1909.		
Jan. 1	41	7
Jan. 31	41	5
Feb. 27	40	2
Mar. 31	38	8
Apr. 17	38	1
Apr. 30	38	2
May 31	39	7
June 15	40	3
July 5	41	0
July 11	41	1
July 31	41	7
Sept. 6	42	2
Nov. 2	42	8
1910.		
Jan. 1	40	10
Jan. 28	38	11
Feb. 28	37	4

Records of water levels in the valley of southern California—Continued.

41. J. B. Neff—Continued.

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1910—Continued.	*Ft.*	*in.*	1916.	*Ft.*	*in.*
Mar. 31	37	1	Jan. 2	51	7
Apr. 22	37	6	Feb. 6	49	5
Apr. 30	38	11	Feb. 13	48	1
May 22	39	7	Feb. 21	47	0
July 28	43	1	Feb. 26	46	4
Aug. 28	43	0	Feb. 29	45	8
Oct. 28	42	10	Mar. 20	42	8
Dec. 24	42	6	Mar. 29	41	4
1911.			Apr. 29	40	10
Feb. 2	42	3	June 1	39	10
Mar. 29	40	4	July 3	41	4
Apr. 8	39	10	July 21	42	0
May 6	41	0	Aug. 1	42	0
July 25	44	0	Sept. 28	41	4
Sept. 13	44	9	Oct. 31	39	4
Dec. 25	43	7	Nov. 29	40	9
1912.			1917.		
Feb. 6	44	4	Jan. 1	39	0
Feb. 29	46	7	Feb. 7	37	5
Apr. 1	45	1	Mar. 4	36	4
Apr. 30	45	4	May 1	38	4
June 1	48	6	June 4	39	10
July 1	50	0	Aug. 3	44	10
Aug. 1	52	1	Sept. 7	45	2
Sept. 4	52	6	Oct. 1	45	3
Sept. 30	52	2	Nov. 1	45	3
Nov. 1	51	6	Dec. 1	44	9
Nov. 28	51	5	1918.		
1913.			Jan. 3	44	8
Jan. 2	51	5	Jan. 27	44	4
Mar. 3	51	2	Mar. 1	44	4
Apr. 1	51	8	Apr. 12	44	10
Apr. 18	53	1	May 16	46	4
Apr. 30	53	5	June 4	47	4
June 3	54	0	July 1	49	6
July 1	57	5	July 11	50	4
Aug. 1	59	5	Aug. 6	53	0
Sept. 1	60	10	Sept. 1	53	4
Oct. 5	60	5	Nov. 4	52	4
Nov. 1	59	5	Dec. 4	52	3
Dec. 1	58	7	Dec. 31	50	10
1914.			1919.		
Jan. 27	57	4	Feb. 9	50	11
Feb. 10	57	2	Mar. 8	50	5
Mar. 1	56	2	Apr. 1	51	4
Apr. 1	55	0	June 2	54	4
Apr. 27	55	0	July 10	62	4
May 30	55	10	Aug. 6	63	3
July 1	56	10	Sept. 6	62	7
Aug. 1	57	1	Oct. 31	62	2
Sept. 1	58	6	Dec. 1	58	4
Oct. 1	58	6	1920.		
Nov. 1	58	4	Jan. 6	57	6
Dec. 1	57	4	Feb. 27	57	10
1915.			Mar. 30	57	0
Jan. 1	56	6	Apr. 29	58	2
Feb. 1	56	1	May 30	59	9
Mar. 1	54	4	July 1	63	4
Apr. 1	52	6	Aug. 11	63	11
May 1	52	6	Sept. 17	64	7
June 1	52	10	Nov. 17	64	1
July 1	54	6	Dec. 9	63	2
Aug. 1	55	4			
Aug. 28	55	6			
Oct. 19	53	8			
Dec. 2	52	6			

Records of water levels in the valley of southern California—Continued.

42. Abandoned school, Baldwin Park (formerly called Vineland), Pomona quadrangle.

[Bored well, 140 feet deep, 7 inches in diameter; altitude of surface, about 382 feet above sea level; method of lift, wind; use, domestic. Water contains 270 parts per million of dissolved solids. Bench mark: Top of casing, 4 feet 1 inch above surface. Well No. 87, Water-Supply Paper 219, p. 155.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1911.		
Dec. 14	104	1	Jan. 4	82	1
1905.			1912.		
Jan. 12	104	6	May 24	77	7
Feb. 21	102	10	July 26	74	10
Mar. 10	98	9	Oct. 22 (several pumping plants running within a mile)	84	8
Apr. 15	93	11			
May 17	90	8	1913.		
June 22	90	11	Oct. 17	88	8
July 21	91	4			
Aug. 16	92	2	1914.		
Sept. 20	93	9	Apr. 5	60	11
Nov. 12	95	9	June 2	59	10
Dec. 21	96	7	Sept. 3 (pumping)	66	6
			Nov. 17	72	0
1906.					
Jan. 27	97	0	1915.		
Mar. 15	95	3	May 13 (pumping)	61	11
May 8	83	4	Oct. 11	72	6
June 7	81	½			
Aug. 1	82	11	1916.		
Sept. 25	85	11	May 19	57	5
Dec. 11	88	10	Nov. 17	68	7
1907.			1917.		
Feb. 12	78	10	May 26	66	2
May 16	64	0	Nov. 21	72	8
Aug. 26	70	0			
Dec. 30	76	5	1918.		
			May 11	65	5
1908.			Oct. 5	73	0
Apr. 21	72	4			
June 23	74	10	1919.		
Oct. 14	81	0	May 14	76	5
Dec. 27	83	1	Nov. 8 (pumping)	.....	
			Nov. 10	87	4
1909.					
Apr. 5	70	1	1920.		
July 10	67	2	May 13	83	4
Oct. 13	73	7	Nov. 23	92	5
1910.					
Feb. 2	70	2			
Aug. 9	75	7			

Records of water levels in the valley of southern California—Continued.

43. G. F. Chamberlain, 2 miles southwest of Covina, Pomona quadrangle.

[Dug well, 118 feet deep 3 by 3 feet in cross section; sunk in 1900; altitude of surface, about 422 feet above sea level; method of lift, wind; use, domestic. Water contains 220 parts per million of dissolved solids. Bench mark: Top of 2-inch cover over casing, 1 foot 5 inches above surface. Well No. 96, Water-Supply Paper 219, p. 155.]

Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*
1904.		
Oct. 8	119	0
Nov. 17	119	6
Dec. 14	120	9
1905.		
Jan. 12	120	11
Feb. 20	120	9
Mar. 11	120	1
Apr. 15	118	1
May 17	117	9
July 21	112	6
Aug. 16	111	6
Sept. 21	111	6
Nov. 12	112	6
Dec. 21	112	11
1906.		
Mar. 15	113	7
May 9	109	6
June 27	105	3½
Sept. 25	104	4½
Dec. 11	108	1
1907.		
Feb. 12	103	7
May 16	94	6
Aug. 26	89	6
Dec. 30	91	5
1908.		
Apr. 21	90	9
June 23	91	2½
Oct. 14	95	1
Dec. 27	96	9
1909.		
Apr. 5	93	7
July 10	86	10
Oct. 13	88	8
1910.		
Feb. 2	89	3
Aug. 9	89	6
1911.		
Jan. 4	94	4
1912.		
May 24 (pumping)	117	5
July 26 (pumping slowly)	112	1
Oct. 22	115	8
1913.		
Oct. 17	101	6
1914.		
Apr. 5	89	8
June 2	84	3
Sept. 3	87	5
Nov. 17	85	10
1915.		
May 13	81	5
Oct. 11	91	10
1916.		
May 18 (pumping)	89	10
Nov. 14	80	10
1917.		
May 28	78	4
Nov. 26	85	4
1918.		
May 11	86	8
Oct. 5	90	8
1919.		
May 14	94	10
Nov. 8 (pumping)	.....	
1920.		
May 13	102	0
Nov. 23	106	0

Records of water levels in the valley of southern California—Continued.

44. H. Heinze, Puente, Pomona quadrangle.

[Bored well, 127 feet deep, 7 inches in diameter; sunk in 1896; altitude of surface, about 323 feet above sea level; method of lift, wind; use, domestic. Water contains 590 parts per million of dissolved solids. Bench mark: Top of casing, originally 1 foot 7 inches above surface. Between Oct. 14, 1918, and May 10, 1919, 1 foot of casing was removed. Beginning with May 10, 1919, 1 foot has been added to the measurements to make them comparable with earlier measurements. Well No. 117, Water-Supply Paper 219, p. 155.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1911.		
Oct. 8	30	0	Jan. 4	21	5
Nov. 17	29	10			
Dec. 14	30	0	1912.		
			May 24 (pumping)	28	0
1905.			July 26	21	5
Feb. 21	29	2	Oct. 22 (pumping hard)	30	0
Mar. 11	28	4			
Apr. 15	25	7	1913.		
June 22	28	6	Oct. 19	23	1
July 21	27	2			
Aug. 16	27	11	1914.		
Sept. 20	28	3	Apr. 4	14	1
Dec. 21	28	4½	June 4	16	4
			Sept. 4	18	8
1906.			Nov. 17 (pumping)	28	0
Mar. 15	23	9			
May 9	25	6	1915.		
June 27	23	7½	May 25	14	8
Sept. 25	26	4½	Nov. 3	18	0
1907.			1916.		
Feb. 12	19	2	May 15 (pumping)		
May 16	17	0	Nov. 14	16	6
Aug. 26	20	9			
Dec. 30	21	1	1917.		
			May 26	14	11
1908.			Nov. 26	16	4
Apr. 21	19	6			
June 23	20	8	1918.		
Oct. 14	22	1	May 11	13	5
Dec. 27	22	2	Oct. 14	18	0
1909.			1919.		
Apr. 5	26	8			
July 10	16	11	May 10 (windmill down)	18	9
Oct. 13	19	2	Nov. 7	20	5
1910.			1920.		
Feb. 2	14	9	May 12	19	6
Aug. 9	21	11	Nov. 24	22	8

Records of water levels in the valley of southern California—Continued.

44a. E. Fickewith, 2 miles northeast of Puente, Pomona quadrangle.

[Bored well, about 300 feet deep, 10 inches in diameter; altitude of surface, about 352 feet above sea level; method of lift, wind; use, domestic. Water contains 260 parts per million of dissolved solids. Bench mark: Top of casing, originally 1 foot 7 inches above surface. Between Nov. 26, 1917, and May 11, 1918, 1 foot of casing was cut off. Beginning with May 11, 1918, 1 foot has been added to the measurements to make them comparable with earlier ones. Well No. 98, Water-Supply Paper 219, p. 155. Has been measured in conjunction with observation wells, but record has not been published heretofore.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1905.		1912.	
Dec. 21	52 9	May 24 (pumping)	39 4
		July 26	36 6
1906.		Oct. 22	41 8
Jan. 27 (pumping)	53 3		
Mar. 15 (pumping)	53 11	1913.	
May 9	47 9	Oct. 19	44 6
June 27	45 6		
Aug. 2	46 7	1914.	
Sept. 25	46 ½	Apr. 4	31 6
Dec. 11	46 11	June 4	33 0
		Sept. 4	31 6
1907.		Nov. 17	32 7
Feb. 12	43 3		
May 16	34 2½	1915.	
Aug. 26	34 6	May 25	28 2
Dec. 30	36 4	Nov. 3	33 6
1908.		1916.	
Apr. 21	35 0	May 16	28 5
June 23	36 2	Nov. 14	28 2
Oct. 14	38 11		
Dec. 27 (pumping)	40 0	1917.	
		May 28	30 11
1909.		Nov. 26	32 0
Apr. 5 (pumping)	40 2		
July 10	31 7	1918.	
Oct. 13	34 7	May 11	32 2
		Oct. 14	34 4
1910.			
Feb. 2	32 6	1919.	
Aug. 9	35 5	May 10	39 2
		Nov. 7	42 11
1911.			
Jan. 4	38 4	1920.	
		May 12	45 0
		Nov. 24	46 5

44b. County well, half a mile west of Puente, Pomona quadrangle.

[Bored well, 58 feet deep, 7 inches in diameter; altitude of surface, about 320 feet above sea level; method of lift, wind; use, roads. Water contains 530 parts per million of dissolved solids. Bench mark: Top of casing, 1 foot 4 inches above surface. Well No. 107, Water-Supply Paper 219, p. 155. Companion well for No. 44.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 17	6 10	Oct. 14	7 6
1915.		1919.	
May 25	3 8	May 10	8 8
Nov. 3	7 0	Nov. 7 (casing filled to 5 feet 6 inches)	.....
1916.		1920.	
May 15	3 11		
Nov. 14	4 2	May 12 (filled above water surface)	.....
1917.			
May 26	3 9		
No reading in November.			

Records of water levels in the valley of southern California—Continued.

45. William Rowland, one-fourth mile south of Rowland, Pomona quadrangle.

[Bored well, 90 feet deep, 10 inches in diameter; sunk in 1902; altitude of surface, about 350 feet above sea level; method of lift, wind; use, domestic and stock. Bench mark: Top of casing, 1.0 foot above surface. Well No. 256, Water-Supply Paper 219, p. 160.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1912.	*Ft.*	*in.*
Oct. 8	27	0	July 26 (pumping plant across road in operation)	26	2
Nov. 17	26	10	Oct. 22	24	2
Dec. 14	25	7	1913.		
1905.			Oct. 19	26	4
Jan. 12	24	9	1914.		
Feb. 21	23	1	Apr. 4	20	3
Apr. 15	22	8	June 4 (pumping plant across road in operation)	24	7
June 22	23	9	Sept. 4 (pumping plant across road in operation)	28	0
July 21	24	8	Nov. 19	22	2
Aug. 16	24	10	1915.		
Sept. 20	26	0	May 25	20	10
Nov. 12	24	5	Nov. 3	22	8
Dec. 21	23	5	1916.		
1906.			May 18 (pumping plant across road in operation)	25	7
Jan. 27	23	5	Nov. 14	20	5
May 9	22	11½	1917.		
June 27	27	7	May 26	20	10
Aug. 2	25	4	Nov. 26	22	2
Sept. 25	27	0	1918.		
Dec. 11	23	8	May 11 (pumping plant across road in operation)	23	4
1907.			Oct. 14	25	8
Feb. 12	23	6	1919.		
May 16	24	2	May 10 (pumping plant 150 feet west in operation)	26	7
Aug. 26	25	2	Nov. 7	25	1
Dec. 30	21	11	1920.		
1908.			May 12 (new pump installed; could not get tape down)	.....	
Apr. 21	23	6			
June 23	25	4			
Oct. 14	23	5			
Dec. 27	22	6			
1909.					
Apr. 5	21	10			
July 10	25	5			
Oct. 13	21	10			
1910.					
Feb. 2	20	4			
Aug. 9	25	4			
1911.					
Jan. 4	22	3			

Records of water levels in the valley of southern California—Continued.

45a. William Rowland, one-fourth mile south of Rowland, Pomona quadrangle.

[Companion well for No. 45; 12-inch casing; abandoned. Situated across the road and about 100 feet west of No. 45. Bench mark: Top of casing, 4 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1917.	*Ft. in.*
Nov. 19	22 8	May 26	24 10
1915.		Nov. 26	22 6
May 25	21 4	1918.	
Nov. 3	23 3	May 11 (pumping plant adjoining in operation)	.....
1916.		Oct. 14 (destroyed)	.....
May 18 (dry at 33 feet; pumping plant 25 feet west in operation)	.....		
Nov. 14	20 10		

46. B. Yorba, 1½ miles east of Rowland, Pomona quadrangle.

[Bored well, 50 feet deep, 7 inches in diameter; altitude of surface, about 395 feet above sea level; method of lift, wind; use, domestic. Water contains 600 parts per million of dissolved solids. Bench mark: Top of casing, 1 foot 10 inches above surface. Well No. 135, Water-Supply Paper 219, p. 156.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1911.	*Ft. in.*
Oct. 8	35 6	Jan. 4	28 3
Nov. 17	35 10½	1912.	
Dec. 14	33 5	May 24 (had been pumping)	29 4
1905.		July 26	31 1
Jan. 12	30 8	Oct. 22 (pumping slowly)	34 10
Feb. 20	29 9	1913.	
Mar. 11	30 10	Oct. 19	35 6
Apr. 15	31 0	1914.	
June 22	32 11	Apr. 4	29 11
July 21	33 2	June 4	28 11
May 20	33 11	Sept. 4	31 11
Nov. 12	33 0	Nov. 19 (pumping hard)	37 8
Dec. 21	31 5	1915.	
1906.		May 25	28 8
Jan. 27	31 7	Nov. 3	32 3
Mar. 15	28 2½	1916.	
May 9	31 6	May 18	27 2
June 27	30 8	Nov. 14	28 0
Aug. 2	31 11	1917.	
Sept. 25	32 11	May 26 (pumping)	.....
1907.		Nov. 26	33 5
Feb. 12	28 2	1918.	
May 16	28 8½	May 11	31 4
Aug. 26	31 2	Oct. 14	33 9
Dec. 30	27 7	1919.	
1908.		May 10	31 1
Apr. 21	29 2	Nov. 7 (pumping strong)	.....
June 23	31 5	1920.	
Oct. 14	30 9	May 12	32 1
Dec. 27	29 5	Nov 24	32 5
1909.			
Apr. 5	27 8		
July 10	29 6		
Oct. 13	31 1		
1910.			
Feb. 2	28 3		
Aug. 9	31 4		

Records of water levels in the valley of southern California—Continued.

47. Mrs. Sadie G. Persons (formerly owned by F. Bowers), Walnut (formerly Lemon), Pomona quadrangle.

[Bored well, 40 feet deep, 7 inches in diameter; sunk in 1900; altitude of surface, about 525 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot above surface. Well No. 257, Water-Supply Paper 219, p. 160.]

Date of measurement.	Depth of water level to bench mark.		Date of measurement.	Depth of water level to bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1910.		
Oct. 8	27	10	Feb. 2	16	5
Nov. 16	25	4	Aug. 9	20	2
Dec. 14	25	5½	1911.		
1905.			Jan. 4	19	0
Jan. 12	24	4	1912.		
Feb. 20	23	10	May 24	18	8
Mar. 11	23	6	July 26	21	10
Apr. 15	20	5½	Oct. 22	17	10
June 22	23	5	1913.		
July 21	24	0	Oct. 19	21	4
Aug. 16	25	10	1914.		
Sept. 20	25	½	Apr. 4	14	10
Nov. 12	23	4	June 4	18	4
Dec. 21	22	0	Sept. 4	19	5
1906.			Nov. 19	19	1
Jan. 27	21	6	1915.		
Mar. 15	21	4	May 25	15	8
May 9	21	10	Nov. 3	19	11
June 27	24	8½	1916.		
Aug. 2	25	8	May 18	18	3
Sept. 25	25	4½	Nov. 14	15	9
1907.			1917.		
Feb. 12	17	0	May 26	17	8
May 16	18	4	Nov. 26	18	7
Aug. 26	21	7	1918.		
Dec. 30	19	9	May 11	19	10
1908.			Oct. 14	21	6
Apr. 21	19	8	1919.		
June 23	20	3	May 10	21	2
Oct. 14	23	1	Nov. 7	20	8
Dec. 27	20	6	1920.		
1909.			May 12	20	10
Apr. 5	18	10	Nov. 24	19	11
July 10	18	6			
Oct. 13	18	9			

Records of water levels in the valley of southern California—Continued.

48. S. E. Hicks, one-fourth mile west of Spadra, Pomona quadrangle.

[Bored well, 78 feet deep, 7 inches in diameter; altitude of surface, about 700 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 7 inches above surface. Well No. 258, Water-Supply Paper 219, p. 160.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1911.		
Oct. 8	33	8	Jan. 4	26	8
Nov. 17	32	9			
Dec. 14	32	9	1912.		
			May 24	24	1
1905.			July 26	26	5
Jan. 12	32	0	Oct. 22 (pumping plant one-fourth mile north in operation)	26	8
Feb. 21	31	8½			
Mar. 11	31	5½	1913.		
June 22	32	7	Oct. 19	30	8
July 21	34	2			
Aug. 16	35	2	1914.		
Sept. 20	36	6	Apr. 4	21	4
Nov. 12	36	2	June 4	22	10
Dec. 21	35	7	Sept. 4	27	2
			Nov. 19	24	8
1906.					
Mar. 15	35	5	1915.		
May 9	34	8			
June 27	34	8	May 25 (pumping hard)	.....	
Aug. 2	38	7½	Nov. 3 (pumping hard)	.....	
Sept. 25	40	2			
Dec. 11	39	3	1916.		
			May 18 (pumping)	.....	
1907.					
Feb. 12	34	10	1917.		
May 16	31	2½			
Aug. 26	34	6	May 26	17	8
Dec. 30	32	6	Nov. 26 (pumping)	.....	
1908.			1918.		
Apr. 21	31	11	May 11	18	7
June 23	36	7	Oct. 14	21	5
Oct. 14	36	8			
Dec. 27	36	10	1919.		
			May 10	22	5
1909.			Nov. 7	22	1
Apr. 5	30	5			
July 10	31	11	1920.		
Oct. 13	31	10	May 12	26	2
			Nov. 24	24	10
1910.					
Feb. 2	27	4			
Aug. 9	28	11			

Records of water levels in the valley of southern California—Continued.

48a. County well, Spadra, Pomona quadrangle.

[Bored well, 55 feet deep, 7 inches in diameter; altitude of surface, about 705 feet above sea level; method of lift, wind; use, roads. Bench mark: Top of casing, 5 inches below surface. Well No. 259, Water-Supply Paper 219, p. 160. Companion well for No. 48. Has been measured in conjunction with observation wells, but record has not been published heretofore.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1910.	*Ft.*	*in.*
Nov. 12 (pumping)	36	10	Feb. 2	27	2
Dec. 21	36	0	Aug. 9	28	8
1906.			1911.		
Jan. 27	36	10	Jan. 4	28	6
Mar. 15	36	7	1912.		
May 9 (pumping)	38	6	May 24	26	0
June 27	37	2	July 26	31	9
Aug. 2	39	3	Oct. 22	27	4
Sept. 25	40	5	1913.		
Dec. 11	39	9	Oct. 19	30	8
1907.			1914.		
Feb. 12 (pumping)	35	2½	Apr. 4	20	9
May 16 (pumping)	31	2	June 4	22	9
Aug. 26	35	2½	Sept. 4	29	0
Dec. 30	32	9	Nov. 23	26	3
1908.			1915.		
Apr. 21	32	0	May 25	20	5
June 23	36	11	Nov. 3	25	7
Oct. 14	37	1	1916.		
Dec. 27	34	10	May 18	18	9
1909.			Nov. 14	17	11
Apr. 5	37	6	1917.		
July 10	32	4	May 26	19	11
Oct. 13	32	0	Nov. 26 (well filled)	.....	

49. Sidney Deacon, 2 miles west of San Dimas, Pomona quadrangle.

[Bored well, 160 feet deep, 12 inches in diameter; altitude of surface, about 825 feet above sea level; method of lift, steam; water not used. Bench mark not known. Well No. 149, Water-Supply Paper 219, p. 156.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1907.	*Ft.*	*in.*
Oct. 7	124	3	Feb. 11	35	3½
Nov. 16	124	0	May 15	39	6
Dec. 13	124	0	Aug. 26	43	3
1905.			Dec. 30	46	9
Jan. 11	123	6	1908.		
Feb. 20	123	5	Apr. 20	47	11
Mar. 10	127	0	June 22	49	3
Apr. 14	125	0	Oct. 13	62	7
May 17	124	8	Dec. 26	67	5
June 22	125	1½	1909.		
July 21	125	5	Apr. 4	65	4
Aug. 16	125	5	July 9	71	9
Sept. 21	125	7	Oct. 12	75	0
Nov. 11	126	0	1910.		
1906.			Feb. 1	76	8
Jan. 27	124	6	Aug. 9	82	4
Mar. 15	124	3	1911.		
May 8	125	2	Jan. 3	86	4
June 27	124	6	1912.		
			May 25 (well destroyed)	.....	

Records of water levels in the valley of southern California—Continued.

50. William Terry, 1½ miles southwest of San Dimas, Pomona quadrangle.

[Bored well, 222 feet deep, 10 inches in diameter; sunk in 1900; altitude of surface, about 855 feet above sea level; water not used. Bench mark: Top of casing, 6 inches above surface. Well No. 144, Water-Supply Paper 219, p. 156.]

Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*
1904.		
Oct. 7	199	8
Nov. 16	199	10
Dec. 13	199	10½
1905.		
Jan. 11	199	9½
Feb. 21	199	8
Mar. 10	199	8½
Apr. 14	200	4
June 22	200	4½
July 23	200	6
Aug. 16	200	7
Sept. 21	200	7
Nov. 11	201	0
Dec. 20	201	0
1906.		
Jan. 27	201	3
Mar. 15	201	3
May 8	201	2
June 26	201	5½
Aug. 2	201	9
Sept. 24	201	7½
1907.		
Feb. 11	202	1
May 15	207	2
Aug. 26	202	4
Dec. 30	202	1
1908.		
Apr. 20	202	8
June 22	202	9
Oct. 13	203	0
Dec. 26	203	4
1909.		
Apr. 4	203	3
July 9	203	6
Oct. 12	203	7
1910.		
Feb. 1	203	4
Aug. 9	203	3
1911.		
Jan. 3	205	0
1912.		
May 25	211	5
Oct. 21	204	8
1913.		
Oct. 17	205	11
1914.		
Apr. 4	207	4
June 6	207	0
Aug. 14	205	8
Nov. 17	201	10
1915.		
May 13	201	7
Oct. 11	203	2
1916.		
May 16	203	8
Nov. 18	201	8
1917.		
May 27	200	10
Nov. 21	200	10
1918.		
May 10	200	11
Oct. 15	201	0
1919.		
May 14	200	11
Nov. 7	201	0
1920.		
May 12	200	6
Nov. 23	201	2

Records of water levels in the valley of southern California—Continued.

51. Azusa Irrigation Co., San Dimas Wash, Pomona quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1906—Continued.	*Ft. in.*
Oct. 7	97 2	May 8	93 2
Nov. 16	97 8	June 26	91 1½
Dec. 13	98 11	Aug. 1	92 4
1905.		Sept. 24	98 7½
Jan. 11	99 1	Dec. 10	100 11
Feb. 20	98 4	1907.	
Mar. 11	97 4	Feb. 11	93 1½
Apr. 14	95 6	1908.	
May 17	94 3	Apr. 20	52 0
June 22	94 1	June 27	53 7
July 20	95 4	Oct. 13	56 11
Aug. 16	96 4	Dec. 26	59 9
Sept. 21	97 4	1910.	
Nov. 11	98 6	Feb. 1	53 6
Dec. 20	99 0	Aug. 9 (well filled)	.....
1906.			
Jan. 27	97 10		
Mar. 15	97 2½		

52. J. R. Dennison (formerly owned by Emil Firth), San Dimas Wash, Pomona quadrangle.

[Method of lift, gasoline engine; use, domestic. Bench mark: Top of pump base, 2 feet 6 inches below surface. Well No. 246, Water-Supply Paper 219, p. 159.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1908.	*Ft. in.*
Sept. 7	110 6½	Apr. 20	86 9
Oct. 7	111 7	June 22	86 5
Nov. 16	113 2	Oct. 13	91 10
Dec. 13	113 11	Dec. 26	94 9
1905.		1913.	
		Oct. 17	126 11
Jan. 11	114 8½	1914.	
Feb. 20	113 11	Apr. 3	72 8
Mar. 11	113 7	May 7	64 6
Apr. 14	106 10	June 6 (pumping)	.....
May 17	104 9	June 25	77 0
June 22	104 4	Aug. 14 (pumping)	.....
July 20	105 6	Nov. 23	114 0
Aug. 16	105 10	1915.	
Sept. 21	106 7½	May 13	71 6
Nov. 11	108 1½	Oct. 11 (pumping)	.....
Dec. 20	108 1	1916.	
1906.		May 5	61 1
		Nov. 11	90 6
Jan. 27	107 6½	1917.	
Mar. 15	108 2	May 17	86 6
May 8	87 10	Nov. 23	105 3
June 26	92 11	1918.	
Sept. 24	97 4½	May 10	94 11
Dec. 10	96 11	Oct. 15	106 6
1907.		1919.	
		May 14	102 2
Feb. 11	80 6	Oct. 22	122 6
May 15	56 8	1920.	
Aug. 26	72 3	May 12	120 11
Dec. 30	82 6	Nov. 23	122 6

Records of water levels in the valley of southern California—Continued.

53. Charles Alley, 1 mile northwest of Lordsburg, Pomona quadrangle.

[Bored well, 175 feet deep, 10 inches in diameter; altitude of surface, about 1,120 feet above sea level; method of lift, wind; use, stock. Bench mark: Top of casing, 10 inches above surface. Well No. 250, Water-Supply Paper 219, p. 159.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1909.	
Oct. 7	145 4	Apr. 4	143 3
Nov. 16	146 10	July 9	143 4
Dec. 13	146 10	Oct. 12	144 10
1905.		1910.	
Jan. 11	146 9	Feb. 1	142 6
Feb. 20	147 5½	Aug. 9	144 8
Mar. 10	147 6½	1911.	
Apr. 14	147 7	Jan. 3	153 4
June 22	146 8	1912.	
July 20	150 8	May 25	142 2
Aug. 16	150 ½	July 27	143 1
Sept. 21	150 11	Oct. 21	168 8
Nov. 11	152 7	1913.	
Dec. 20	152 0	Oct. 17 (obstruction at 183 feet)	.....
1906.		1914.	
Jan. 27	151 5½	May 7	145 5
Mar. 15	149 2½	June 24	144 7
May 8	149 6	Sept. 4	145 6
June 26	149 ½	Nov. 23	164 11
Aug. 1	153 1½	1915.	
Sept. 24	154 4½	May 28	143 4
Dec. 10	154 7	Nov. 3	145 7
1907.		1916.	
Feb. 11	152 4	May 5	137 1
May 15	144 8	Nov. 18	135 5
Aug. 26	145 2	1917.	
Dec. 30	143 6	May 17	134 6
1908.		Nov. 23 (dry at about 140 feet)	.....
Apr. 20	140 5	1918.	
June 22	142 2	May 10 (dry)	.....
Oct. 13	153 6		
Dec. 26	147 7		

54. George Silvey (formerly owned by Mr. Massey), three-fourths mile northeast of Lordsburg, Pomona quadrangle.

[Bored well, 200+ feet deep, 10 inches in diameter; sunk in 1898; altitude of surface, about 1,165 feet above sea level; water not used. Bench mark: Top of casing, 1 foot 5 inches above surface. Well No. 67, Water-Supply Paper 219, p. 153.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1905—Continued.	
Oct. 7	207 2½	Aug. 16	199 9
Nov. 16	199 1	Sept. 21	200 0
Dec. 13	199 3	Nov. 11	202 10
1905.		Dec. 20	200 11
Jan. 11	199 11	1906.	
Feb. 20	199 10½	Jan. 27	201 1
Mar. 11	199 9	Mar. 15	200 2
Apr. 14	200 0	May 8	198 4½
May 17	199 11	June 26	197 6
June 22	199 4	Aug. 1	196 5½
July 20	200 2	Sept. 24	196 7½
		Dec. 10	197 3½

Records of water levels in the valley of southern California—Continued.

54. George Silvey—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1907.		1913.	
Feb. 11	196 3	Oct. 17	173 6
May 15	191 1		
Aug. 26	183 7	1914.	
Dec. 30	163 6	Apr. 3	169 3
		June 24 (pumping)	.....
1908.		Sept. 4	169 2
Apr. 20	147 1	Nov. 23	169 8
June 22	146 0		
Oct. 13	151 3	1915.	
Dec. 26	152 6	May 28	154 4
		Oct. 11	157 1
1909.			
Apr. 4	151 6	1916.	
July 9	153 0	May 5 (pumping)	.....
Oct. 12	155 3	Nov. 18	123 10
1910.		1917.	
Feb. 1 (pumping)	.....	May 17 (pumping)	.....
Aug. 9	149 4	Nov. 23	143 0
1911.		1918.	
Jan. 3	154 8	May 10	148 8
		Oct. 15	163 5
1912.			
May 25	147 0	1919.	
July 27	150 8	May 14	167 10
Oct. 21	155 10	Oct. 22	186 11
		1920.	
		May 14	188 5

55. Ontario Water Co., 1 mile north of Claremont, Cucamonga quadrangle.

[Bored well, 160 feet deep, 10 inches in diameter; sunk in 1900; altitude of surface, about 1,265 feet above sea level; method of lift, compressed air; use, irrigation. Bench mark: Top of casing, 1.0 foot above surface. Well No. 265, Water-Supply Paper 219, p. 150.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1908.	
Nov. 16	62 1	Apr. 20	55 10
Dec. 13	61 10	June 22	57 6
		Oct. 13 (pumping)	.....
1905.		Dec. 26	59 4
Jan. 11	62 2		
Feb. 20	62 1	1909.	
Mar. 10	61 10½	Apr. 4	52 5
Apr. 14	59 4	July 9	38 0
May 17	59 1½	Oct. 12	36 1
June 22	57 5		
July 20	57 0	1910.	
Aug. 16	59 7	Feb. 1	36 9
Sept. 21	58 6	Aug. 9 (pumping)	.....
Nov. 11	58 4½		
Dec. 20	57 3	1911.	
		Jan. 3	47 8
1906.			
Jan. 26	56 9½	1912.	
Mar. 14	53 2½	May 24 (company's record)	54 10
May 8	54 4	July 8 (not pumping)	61 0
June 26	53 3½	Oct. 3 (not pumping)	64 0
Aug. 1	54 1		
Sept. 24	53 3½	1913.	
Dec. 10	56 10	Oct. 16	68 1
1907.		1914.	
Feb. 11	56 2	Apr. 3 (well destroyed)	.....
May 15	52 1		
Dec. 30	54 7		

Records of water levels in the valley of southern California—Continued.

55a. Ontario Water Co., 1 mile north of Claremont, Cucamonga quadrangle.

[Bored well, 225 feet deep, 10 inches in diameter; sunk in 1900; altitude of surface, about 1,265 feet above sea level; method of lift, compressed air; use, irrigation. Bench mark: Top casing, 3 feet 3 inches below surface. Well No. 265a, Water-Supply Paper 219, p. 150. Companion well for No. 55. Has been measured in conjunction with observation wells, but record not published hitherto.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1905.	*Ft. in.*	1912.	*Ft. in.*
Nov. 11	36 3	May 14	34 1
Dec. 20	35 7	July 8	40 6
1906.		Sept. 6	54 11
Mar. 14	34 3	1913.	
May 8	32 6	Oct. 16	47 2
June 26	31 6½	1914.	
Aug. 1	31 11½	Apr. 3	40 1
Sept. 24	30 6½	June 24	31 11
Dec. 10	33 10½	Sept. 4	33 2
1907.		Nov. 23	31 4
Feb. 11	33 8½	1915.	
May 15	30 8	May 25	31 6
Aug. 26 (pumping)	.....	Nov. 3	34 5
Dec. 30	31 8	1916.	
1908.		May 18	17 8
Apr. 20	32 4	Nov. 18	24 11
June 22	34 8	1917.	
Oct. 13 (pumping)	.....	May 26	39 1
Dec. 26	37 0	Nov. 23	39 7
1909.		1918.	
Apr. 4	31 10	May 10	41 10
July 9	18 2	Oct. 14	47 1
Oct. 12	15 7	1919.	
1910.		May 14	44 8
Feb. 1	17 11	Oct. 22	54 7
Aug. 9 (pumping)	.....	1920.	
1911.		May 12	45 6
Jan. 3	27 5	Nov. 23	44 2

55b. Ontario Water Co., 1 mile north of Claremont, Cucamonga quadrangle.

[Bored well, 225 feet deep, 10 inches in diameter; sunk in 1900; altitude of surface, about 1,270 feet above sea level; method of lift, compressed air; use, irrigation. Bench mark: Top of casing, 1 foot 6 inches below surface. Well No. 265c, Water-Supply Paper 219, p. 150. Companion well for No. 55a.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1918.	*Ft. in.*
Nov. 23	44 5	May 10	56 2
1915.		Oct. 14	65 0
May 25	42 1	1919.	
Nov. 3	51 9	May 14	61 6
1916.		Oct. 22	70 1
May 18	31 4	1920.	
Nov. 18	34 6	May 12	58 6
1917.		Nov. 23	56 6
May 26 (pumping plants in vicinity in operation)	55 10		
Nov. 23 (pumping plants in vicinity in operation)	55 0		

Records of water levels in the valley of southern California—Continued.

56. Robert Bieley, Claremont, Cucamonga quadrangle.

[Bored well, 117 feet deep; 10 inches in diameter; sunk in 1900; altitude of surface, about 1,155 feet above sea level; method of lift, wind; use, domestic and stock. Bench mark: Top of casing, 1 foot 6 inches above surface. Well No. 250, Water-Supply Paper 219, p. 149.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1911.		
Oct. 8	97	4	Jan. 3	26	11
Nov. 16	97	6			
Dec. 13	98	1½	1912.		
			May 25	31	11
1905.			July 27	31	8
Jan. 11	97	0	Oct. 21	32	10
Feb. 20	92	5			
Mar. 10	91	2	1913.		
Apr. 14	89	9	Oct. 17	59	8
May 17	88	10			
June 22	92	0	1914.		
July 20	97	4	Apr. 3	50	1
Aug. 16	98	7	June 24	50	8
Sept. 21	99	9	Sept. 4	45	0
Dec. 20	93	8	Nov. 23	43	5
1906.			1915.		
Jan. 27	97	9½	May 25	37	2
Mar. 14	84	10	Nov. 3	42	9
May 8	82	4			
June 26	81	2	1916.		
Aug. 1	76	3	May 18	15	0
Sept. 24	65	5	Nov. 18	9	3
Dec. 10	49	9			
			1917.		
1907.			May 26	24	10
Feb. 11	40	4½	Nov. 26	43	2
May 15	23	5			
Aug. 26	7	2	1918.		
Dec. 30	7	10	May 10	50	5
			Oct. 14	62	3
1908.					
Apr. 20	14	3	1919.		
June 22	17	6	May 14	66	5
Oct. 13	27	4	Oct. 22	76	10
Dec. 26	26	½			
			1920.		
1909.			May 12	78	2
Apr. 4	28	1	Nov. 23	85	7
July 9	34	0			
Oct. 12	31	0			
1910.					
Feb. 1	23	7			
Aug. 8	27	8			

Records of water levels in the valley of southern California—Continued.

57. San Antonio Water Co., half a mile southwest of Claremont, Cucamonga quadrangle.

[Bored well, 558 feet deep, 12 inches in diameter; altitude of surface, about 1,121 feet above sea level; water not used. Bench mark not known. Well No. 242, Water-Supply Paper 219, p. 149.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1906.	*Ft.*	*in.*
Oct. 6	158	5	Jan. 26	149	6
Nov. 16	156	2	Mar. 14	144	3
Dec. 13	155	0	May 8	141	2
1905.			Aug. 1	146	8
Jan. 11	153	1½	Sept. 24	149	8½
Feb. 20	151	1	Dec. 10	149	8
Mar. 10	150	2	1907.		
Apr. 14	148	7	Feb. 11	143	8
May 17	147	1	May 15	102	7
June 22	148	7	Dec. 30	29	11½
July 20	150	10	1908.		
Aug. 16	150	8	Apr. 20 (filled)	.....	
Sept. 21	152	6½			
Nov. 11	152	1			
Dec. 20	149	1			

57a. J. W. Romick, half a mile southwest of Claremont, Cucamonga quadrangle.

[Well about 200 feet deep; altitude of surface, about 1,125 feet above sea level; method of lift, wind; use, irrigation. Bench mark: Top of casing, 3 inches above surface. Well No. 300, Water-Supply Paper 219, p. 151. Companion well for No. 57. Has been measured in conjunction with observation wells but record not published heretofore.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1912.	*Ft.*	*in.*
Nov. 11 (pumping)	156	8	May 31	68	8
1906.			June 27	90	10
Jan. 26	130	6	Oct. 21	85	6
Mar. 14	129	6	1913.		
June 26	122	3½	Oct. 17	102	3
Aug. 1 (pumping)	147	0	1914.		
Oct. 6	144	0	Apr. 3	89	4
1907.			June 24	101	3
May 15	101	7	Sept. 4	101	0
Aug. 26	100	6	Nov. 23	101	4
Dec. 30	57	10	1915.		
1908.			May 26	80	11
Apr. 20	47	2	Nov. 3	101	2
June 22	58	5	1916.		
Oct. 13	78	8	May 18	69	5
Dec. 26	66	9	Nov. 18	45	4
1909.			1917.		
Apr. 4	58	8	May 26	81	9
July 9	75	8	Nov. 26	101	6
Oct. 12	87	7	1918.		
1910.			May 10 (destroyed)	.....	
Feb. 1	59	1			
Aug. 8	75	7			
1911.					
Jan. 3	79	1			

Records of water levels in the valley of southern California—Continued.

57b. Bradley Bros., three-fourths mile southwest of Claremont, Cucamonga quadrangle.

[Bored well, 200 feet deep, 10 inches in diameter; sunk in 1899; altitude of surface, about 1,085 feet above sea level; method of lift, gasoline engine; use, irrigation. Water contains 210 parts per million of dissolved solids. Bench mark: Top casing, 5.0 feet below surface. Well No. 240, Water-Supply Paper 219, p. 149.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1917.	*Ft. in.*
June 24	104 10	May 26	81 8
Sept. 24	130 8	Nov. 26	92 0
Nov. 23	133 5	1918.	
1915.		May 10	111 6
May 25	62 0	Oct. 14	140 7
Nov. 3	111 11	1919.	
1916.		May 14, pump installed; can not measure	.....
May 18	63 9		
Nov. 18	33 4		

58. H. R. Hopkins (formerly owned by Dr. A. R. Reed), 1½ miles northeast of Pomona, Cucamonga quadrangle.

[Bored well, 200 feet deep, 9½ inches in diameter; sunk in 1900; altitude of surface, about 1,010 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing level with surface. Well No. 284, Water-Supply Paper 219, p. 151.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1908.	*Ft. in.*
Sept. 7	75 2	Apr. 20	10 7
Oct. 6	75 4½	June 22	10 9
Nov. 16	74 6	Oct. 13	14 10
Dec. 13	74 3	Dec. 26	11 2½
1905.		1909.	
Jan. 11	68 10½	Apr. 4	10 9
Feb. 20	66 1	July 9	13 1
Mar. 10	65 11	Oct. 12	17 0
Apr. 14	63 11	1910.	
May 17	62 11	Feb. 1 (flowing)	10 9
June 22	66 8	Aug. 11	13 9
July 20	70 10	1911.	
Aug. 16	71 11	Jan. 3	16 5
Sept. 21	73 5	1912.	
Nov. 11	70 4½	May 31 (flowing)	10 8
Dec. 20	67 0	July 27	17 8
1906.		Oct. 21 (quiet)	20 10
Jan. 26	64 9	1913.	
Mar. 14	62 10	Oct. 17	46 6
May 8	62 5	1914.	
June 26	64 5	Well covered with storm débris; could not be found.	.....
Aug. 1	67 0		
Sept. 24	67 ½		
Dec. 10	64 3½		
1907.			
Feb. 11	59 8½		
May 15	52 9		
Aug. 26	46 7½		
Dec. 30	19 5		

Records of water levels in the valley of southern California—Continued.

58a. Cathcart estate, 1½ miles northeast of Pomona, Cucamonga quadrangle.

[Bored well—one of a group of 5 wells—300 to 600 feet deep; 12 inches in diameter; sunk about 1886; altitude of surface, about 980 feet above sea level; water not used. Bench mark: Top of concrete casing, 9 inches above surface. Well No. 299, Water-Supply Paper 219, p. 151. Companion well for No. 58, 58b, and 58c. Has been measured in conjunction with observation wells, but record not published heretofore. About 8 or 9 feet below surface these wells flow into a common main leading to Chino.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in*		*Ft.*	*in*
1905.			1912.		
Nov. 11	71	5	May 31	9	8
Dec. 20	68	8	July 27	18	4
1906.			Oct. 21	21	5
Jan. 26	68	8	1913.		
Mar. 14	65	1	Oct. 17	47	8
May 8	62	½	1914.		
June 26	65	10	Apr. 3	34	1
Aug. 1	68	1	June 24	40	11
Sept. 24	68	3	Sept. 4	47	0
Dec. 10	65	8	Nov. 23	41	5
1907.			1915.		
Feb. 11	61	3	May 25	24	4
May 15	53	10½	Nov. 3	32	0
Aug. 26	48	9	1916.		
Dec. 30	19	10	May 18 (not flowing into main)	10	4
1908.			Nov. 18 (shut off from main)	6	3
Apr. 20 (flowing)	8	5	1917.		
June 22 (flowing)	8	11	May 27 (shut off from main)	5	2
Oct. 13	15	7	Nov. 26	12	10
Dec. 26	11	5	1918.		
1909.			May 10	24	0
Apr. 4	10	4	Oct. 14	40	6
July 9	14	2	1919.		
Oct. 12	17	11	May 14	43	7
1910.			Nov. 7	60	3
Feb. 1 (not flowing)	10	4	1920.		
Aug. 8	14	2	May 12	64	10
1911.			Nov. 24	77	2
Jan. 3	16	5			

Records of water levels in the valley of southern California—Continued.

58b. Cathcart estate, 1½ miles northeast of Pomona, Cucamonga quadrangle.

[Bored well—one of a group of 5 wells—300 to 600 feet deep; 12 inches, diameter; sunk about 1885; altitude of surface, about 980 feet above sea level; water not used. Bench mark: Top of concrete casing, 1 foot, 5 inches above surface. Wells No. 299, Water-Supply Paper 219, p. 151. Located 75 feet east of No. 58a. See remarks on No. 58a.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1905.			1912.		
Nov. 11	70	9	May 31 (flowing)	9	0
Dec. 20	67	6	July 27	24	9
			Oct. 21	27	1
1906.					
Jan. 26	65	5½	1913.		
Mar. 14	64	4	Oct. 17	49	11
May 8	61	0			
June 26	64	7	1914.		
Aug. 1	66	11	Apr. 3	37	10
Sept. 24	67	3	June 24	43	8
Dec. 10	64	6	Sept. 4	48	7
			Nov. 23	44	0
1907.					
Feb. 11	60	1	1915.		
May 15	52	10	May 25	22	9
Aug. 26	46	0	Nov. 3	30	4
Dec. 30	18	½			
			1916.		
1908.			May 18 (not flowing into main)	9	11
Apr. 20 (flowing)	8	0	Nov. 18 (not flowing into main)	10	5
June 22 (flowing)	8	8			
Oct. 13	13	4	1917.		
Dec. 26	9	7	May 27 (not flowing into main)	9	1
			Nov. 26	19	1
1909.					
Apr. 4 (flowing)	8	9	1918.		
July 9 (quiet)	11	5	May 10	29	6
Oct. 12	16	7	Oct. 14	43	8
1910.			1919.		
Feb. 1 (flowing)	8	11	May 14	45	11
Aug. 8 (quiet)	11	11	Nov. 7	59	4
1911.			1920.		
Jan. 3	14	10	May 12	62	1
			Nov. 24	73	4

Records of water levels in the valley of southern California—Continued.

58c. Cathcart estate, 1½ miles northeast of Pomona, Cucamonga quadrangle.

[Bored well, one of a group of five wells, 300 to 600 feet deep, 12 inches in diameter; altitude of surface, about 980 feet above sea level; water not used. Bench mark: Top of concrete casing 1 foot 3 inches above surface. Well No. 299, Water-Supply Paper 219, p. 151. Located 75 feet east of No. 58b. See remarks on No. 58a.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1912.	*Ft.*	*in.*
Nov. 11	72	0	May 31 (flowing)	10	8
Dec. 20	68	9	July 27	17	8
1906.			Oct. 21	20	9
Jan. 26	68	6	1913.		
Mar. 14	67	4	Oct. 17	45	7
May 8	62	5	1914.		
June 26	65	8	Apr. 3	36	5
Aug. 1	67	11	June 24	39	9
Sept. 24	68	2½	Sept. 4	45	8
Dec. 10	65	11	Nov. 23	40	10
1907.			1915.		
Feb. 11	61	6	May 25	23	4
May 15	53	10	Nov. 3	30	8
Aug. 26	46	9	1916.		
Dec. 30	18	5	May 18 (not flowing into main)	8	10
1908.			Nov. 18 (shut off from main)	5	3
Apr. 20 (flowing)	10	7	1917.		
June 22 (flowing)	10	9	May 27 (shut off from main)	3	8
Oct. 13	14	10	Nov. 26	11	7
Dec. 26	11	2½	1918.		
1909.			May 10	22	5
Apr. 4 (flowing)	10	9	Oct. 14	39	2
July 9	13	1	1919.		
Oct. 12	17	0	May 14	42	8
1910.			Nov. 7 (destroyed)	.....	
Feb. 1 (flowing)	10	9			
Aug. 8	13	9			
1911.					
Jan. 3	16	5			

59. B. Linastruth, Pomona, Pomona quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1906—Continued.	*Ft.*	*in.*
Dec. 14	90	6½	Aug. 2	95	6
1905.			Sept. 25	96	0
Jan. 12	90	9	Dec. 11	95	2
Feb. 21	91	1	1907.		
Apr. 15	91	5	Feb. 11	95	5
May 17	91	6½	May 15	93	7
June 22	92	0	Aug. 26	93	4
July 21	92	10½	Dec. 30	91	6
Sept. 20	93	6	1908.		
Nov. 12	93	4	Apr. 21	90	2
Dec. 21	93	6	June 23	91	0
1906.			Oct. 13 } well closed, engine installed	.....	
Mar. 15	92	6	Dec. 26 }		
June 27	93	6			

Records of water levels in the valley of southern California—Continued.

59a. Mrs. Meyers, Pomona, Pomona quadrangle.

[Bored well, 97 feet deep, 9½ inches in diameter; altitude of surface, about 950 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 6 inches above surface. Well No. 261, Water-Supply Paper 219, p. 160. Has been measured in conjunction with observation wells, but record not published heretofore.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1905.		1913.	
Dec. 20	37 3	Oct. 16	31 7
1906.		1914.	
Jan. 26	36 4	Apr. 3	22 8
Mar. 14	35 5½	June 24	27 11
May 8 (pumping)	39 6	Aug. 14 (pumping)	33 11
June 26	37 4	Sept. 4	28 0
Aug. 1	48 0	Nov. 23	23 0
Sept. 24 (pumping)	56 9	1915.	
Dec. 10	42 10½	May 25 (pumping)	.....
1907.		Nov. 3	11 10
Feb. 11	33 0	1916.	
May 15 (pumping)	35 10	May 5	6 11
Aug. 26	33 8½	Nov. 18 (flowing)	.....
Dec. 30	9 9	1917.	
1908.		May 26 (flowing)	.....
Apr. 20 (pumping)	9 2	Nov. 26	2 2
June 22 (pumping)	12 0	1918.	
Oct. 13	12 10	May 10	11 3
Dec. 26	6 8	Oct. 14	22 11
1909.		1919.	
Apr. 4 (pumping)	7 6	May 14	24 4
July 9	11 6	Nov. 6	43 7
Oct. 12	12 11	1920.	
1910.		May 12	44 0
Feb. 1 (pumping)	.....	Nov. 24	43 2
Aug. 8	9 6		
1911.			
Jan. 3	11 10		
1912.			
May 31	14 7		
July 27	19 4		
Oct. 21	13 5		

60. J. J. White, Pomona, Cucamonga quadrangle.

[Bored well, 67 feet deep, 7 inches in diameter; sunk in 1884; altitude of surface, about 830 feet above sea level; method of lift, wind; use, domestic. Bench mark not known. Well No. 201, Water-Supply Paper 219, p. 147.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1905—Continued.	
Oct. 6	58 9½	Aug. 16	61 6
Nov. 16	60 3	Sept. 20	61 10
Dec. 13	60 6½	Nov. 11	62 4
1905.		Dec. 20	62 5
Jan. 11	60 10	1906.	
Feb. 20	61 1½	Jan. 26	62 3½
Mar. 10	61 4½	Mar. 14	63 1
Apr. 14	60 8	May 8	63 1½
May 17	60 11	Aug. 1	63 5
June 22	61 1	Sept. 24	64 4½
		Dec. 10	64 11

Records of water levels in the valley of southern California—Continued.

60. J. J. White—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1907.	*Ft. in.*	1909.	*Ft. in.*
Feb. 11	63 5	Apr. 4	62 6
May 15	65 4	July 9	62 7
Aug. 26	63 5½	Oct. 12 (clogged)	.....
Dec. 30	63 0		
1908.			
Apr. 20	62 9		
June 22	62 9		
Oct. 13	63 2		
Dec. 26	62 9		

61. F. R. Allen (former owners, Mrs. Tieg, W. J. Huebsch), 1½ miles southeast of Pomona, Cucamonga quadrangle.

[Bored well, 341 feet deep, 10 inches in diameter; altitude of surface, about 835 feet above sea level; water not used. Bench mark: Top of 10 by 12 timber over curb, 1 foot 2 inches above surface. Well No. 177, Water-Supply Paper 219, p. 147.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1910.	*Ft. in.*
Sept. 8	89 0	Feb. 1	88 10
Oct. 6	88 10	Aug. 8	94 ½
Nov. 16	88 10½	1911.	
Dec. 13	88 10	Jan. 3	89 6
1905.		1912.	
Jan. 11	88 10	May 31	92 1
Feb. 20	89 0	July 27 (pumping)	125 0
Mar. 10	89 0	1913.	
Apr. 14	88 0	Oct. 17 (pumping)	.....
July 20	90 1½	1914.	
Aug. 16	90 5	Apr. 4 (pump house locked)	.....
Sept. 20	90 8½	June 26	97 2
Nov. 11	90 5	Nov. 19	94 4
Dec. 20	90 6	1915.	
1906.		May 25 (pumping)	.....
Jan. 26	89 6	Nov. 3	92 8
Mar. 14	90 6	1916.	
May 8	89 7	May 5 (pumping)	.....
Aug. 1	92 2	Nov. 14 (pump house locked)	.....
Sept. 24	92 2	1917.	
1907.		May 26 (pumping)	.....
Feb. 11	91 6½	Nov. 26 (pump house locked)	.....
May 15	90 3½	1918.	
Aug. 26	91 7	May 10 (pump house locked)	.....
Dec. 30	90 0	Oct. 14 (pump house locked)	.....
1908.		1919.	
Apr. 20	92 7	May 10 (pumping)	.....
June 22 (pumping)	.....	Nov. 7 (pump house locked)	.....
Oct. 13 (pumping)	.....		
Dec. 26	91 4		
1909.			
Apr. 4 (not accessible)	.....		
July 9 (pumping)	.....		
Oct. 12 (pumping)	.....		

Records of water levels in the valley of southern California—Continued.

62. Lee & Gilmore (former owners, R. Reimers, H. Arnold), 2½ miles southeast of Pomona, Cucamonga quadrangle.

[Bored well, 65 feet deep, 7 inches in diameter; sunk in 1894; altitude of surface, about 770 feet above sea level; method of lift, wind; use, domestic. Bench mark: Top of casing, 3 inches above surface. Well No. 181, Water-Supply Paper 219, p. 147.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1909.	
Sept. 8	34 6	Apr. 4	35 1
Oct. 6	36 6½	July 9	37 3
Nov. 16	34 10	Oct. 12	37 4
Dec. 13	34 10		
1905.		1910.	
Jan. 11	34 9½	Feb. 1	33 8
Feb. 20	34 7½	Aug. 8	37 ½
Apr. 14	32 10		
May 17	32 7	1911.	
June 22	33 6	Jan. 3	36 4
July 20	35 4		
Aug. 16	35 0	1912.	
Sept. 20	35 6	May 31	34 11
Nov. 11	35 8	July 27	37 2
Dec. 20	35 7½	Oct. 21	39 4
1906.		1913.	
Jan. 26	36 8½	Oct. 17	40 7
Mar. 14	35 8		
May 8	33 2½	1914.	
June 26	34 4½	Apr. 4	32 7
Aug. 1	35 5	June 4	33 1
Sept. 24	36 2½	Aug. 14	36 11
Dec. 10	36 2½	Nov. 19	37 10
1907.		1915.	
Feb. 11	35 4	May 25	31 10
May 5	33 4	Nov. 3 (sealed)	.....
Aug. 26	35 0		
Dec. 30	35 11	1919.	
		May 10 (sealed)	.....
1908.			
Apr. 20	34 10		
June 22	37 0		
Oct. 13	37 1		
Dec. 26	36 0		

62a. Lee & Gilmore, 2½ miles southeast of Pomona, Cucamonga quadrangle.

[Companion well about 500 feet north of No. 62. Bench mark: Top of 10 by 12 timber over pump pit, 1 foot 2 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 19	41 9	May 10	35 4
		Oct. 14	35 9
1915.			
May 25	40 6	1919.	
Nov. 13	41 3	May 10	36 6
		Nov. 7	34 7
1916.			
May 5 (pumping)	.....	1920.	
Nov. 14	35 6	May 12 (pumping)	.....
		Nov. 24	36 3
1917.			
May 26	36 8		
Nov. 26	34 1		

Records of water levels in the valley of southern California—Continued.

63. C. P. Brown, 2¾ miles southeast of Pomona, Cucamonga quadrangle.

[Bored well, 160 feet deep, 9½ inches in diameter; altitude of surface about 730 feet above sea level; water not used. Bench mark not known. Well No. 214, Water-Supply Paper 219, p. 148.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1908.	*Ft.*	*in.*
Sept. 7	8	9	Apr. 20	12	0
Oct. 6	6	6½	June 22	11	1
Nov. 16	3	10	Oct. 13	6	11
Dec. 13	3	3	Dec. 26	4	1
1905.			1909.		
Jan. 11	2	5	Apr. 4	2	6
Feb. 20	2	0	July 9	17	6
Mar. 10	2	½	Oct. 12	7	6
Apr. 14	1	5	1910.		
May 17	2	0	Feb. 1	2	4
June 22	7	5	Aug. 8	15	4
July 20	12	10	1911.		
Aug. 16	12	2	Jan. 3	3	7
Sept. 20	11	10½	1912.		
Nov. 11	4	7½	May 31 (pump near by in operation)	9	4
Dec. 20	4	1	July 27	19	10
1906.			Oct. 21	9	1
Jan. 26	4	3½	1913.		
Mar. 14	3	10	Oct. 16	18	0
May 8	4	4½	1914.		
June 26	13	10	Apr. 4 (inaccessible)	.....	
Aug. 1	15	8			
Sept. 24	13	6			
Dec. 10	4	10			
1907.					
Feb. 11	4	4			
Aug. 26	12	1			
Dec. 30	5	7			

63a. E. G. Nelson, Bellfleur ranch, 11 miles east of Chino, Cucamonga quadrangle.

[Companion well for No. 63. Four-inch well, 165 feet deep; method of lift, wind; use, domestic; generally flows during winter. Bench mark: Top of casing, 2.0 feet above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1914.	*Ft.*	*in.*	1918.	*Ft.*	*in.*
Nov. 19	5	2	May 10 (flowing)	.....	
1915.			Oct. 14		10
May 25 (pumping; flowing on May 24)	4	2	1919.		
Nov. 3	4	8	May 10 (flowing)	.....	
1916.			Nov. 7 (flowing)	.....	
May 18 (pumping)	10	0	1920.		
Nov. 14 (flowing about 1 miner's inch)	.....		May 12 (flowing)	.....	
1917.			Nov. 24 (flowing)	.....	
May 26 (flowing slightly)	.....				
Nov. 26 (flowing slightly)	.....				

Records of water levels in the valley of southern California—Continued.

64. Mr. Haley, one-fourth mile west of San Bernardino, San Bernardino quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1906.	*Ft. in.*
July 5	36 7	Jan. 1	33 8
Aug. 4	38 2	Feb. 1	33 0
Sept. 1	37 3	Mar. 1	32 0
Oct. 3	37 1	Apr. 1	31 4
Nov. 1	38 11	May 1	36 6
Dec. 1	39 10	June 1	35 8
		July 1	38 5
1905.		Oct. 22	30 5
Jan. 1	37 2		
Feb. 1	33 0	1907.	
Mar. 1	30 7	June 1	9 2
Apr. 1	29 9	November	14 3
May 1	30 1		
June 1	37 7		
July 1	39 0		
Oct. 1	40 6		
Nov. 1	36 10		
Dec. 1	33 8		

65. C. W. Rogers, 1 mile east of Colton, San Bernardino quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1905—Continued.	*Ft. in.*
July 1	15 8	Oct. 1	18 5
Aug. 4	18 1	Nov. 1	18 3
Sept. 1	19 8		
Oct. 3	21 0	1906.	
Nov. 1	20 2	Jan. 1	14 4
Dec. 1	21 10	Feb. 1	12 7
		Mar. 1	8 4
1905.		Apr. 1	5 5
Jan. 1	17 6	May 1	6 0
Feb. 1	12 5	June 1	5 11
Mar. 1	7 6	July 1	6 10
Apr. 1	5 5	Oct. 22	17 3
May 1	5 6		
June 1	6 5	1907.	
July 1	9 4	June 1	4 4
Aug. 1	12 9	November	11 4
Sept. 1	15 11		

Records of water levels in the valley of southern California—Continued.

66. Riverside Water Co., 2 miles east of Colton, San Bernardino quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1905—Continued.	*Ft. in.*
Aug. 1	3 8	Sept. 1	3 8
Sept. 1	4 5	Oct. 1	4 1
Oct. 3	5 2	Nov. 1	4 4
Nov. 1	4 5	Dec. 1 (capped)	.....
Dec. 1	5 2	1906.	
1905.		Jan. 1 (capped)	.....
Jan. 1	5 2	Feb. 1 (capped)	.....
Feb. 1 (capped)	.....	Mar. 1 (capped)	.....
Mar. 1 (capped)	.....	Apr. 1 (capped)	.....
Apr. 1 (capped)	.....	May 1 (capped)	.....
May 1	5 2	June 1 (capped)	.....
June 1	5 2	July 1 (capped)	.....
July 1	7 6	Oct. 22	4 7
Aug. 1	5 2		

67. Riverside Water Co., Third and Waterman streets, San Bernardino, San Bernardino quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1905.	*Ft. in.*
Aug. 1	121 6	Nov. 1 (capped)	.....
Sept. 1	121 6	Dec. 1 (capped)	.....
Oct. 3	112 6	1906.	
Nov. 1	116 0	Jan. 1 (capped)	.....
Dec. 1	116 4	Feb. 1 (capped)	.....
1905.		Mar. 1 (capped)	.....
Jan. 1	117 0	Apr. 1 (capped)	.....
Feb. 1 (capped)	.....	May 1 (capped)	.....
Mar. 1 (capped)	.....	June 1 (capped)	.....
Apr. 1 (capped)	.....	July 1	149 6
May 1 (capped)	.....	Oct. 22	104 11
June 1	117 0	1907.	
July 1	118 5	June 1 (capped)	.....
Aug. 1	116 8	November	140 10
Sept. 1	111 7		
Oct. 1	115 0		

Records of water levels in the valley of southern California—Continued.

68. N. B. Hinkley estate, three-fourths mile west of Bryn Mawr, Redlands quadrangle.

[Bench mark not known.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1905—Continued.	*Ft.*	*in.*
July 1	85	11	Oct. 1	79	4
Aug. 1	82	8	Nov. 1	81	0
Sept. 1	84	6	Dec. 1	79	6
Oct. 3	80	0	1906.		
Nov. 1	80	7	Jan. 1	79	5
Dec. 1	80	10	Feb. 1	78	6
1905.			Mar. 1	77	11
Jan. 1	81	0	Apr. 1	77	3
Feb. 1	80	10	May 1	74	8
Mar. 1	80	8	June 1	74	5
Apr. 1	79	0	July 1	74	2
May 1	78	6	Oct. 22	75	8
June 1	78	0	1907.		
July 1	78	5	June 1	67	1
Aug. 1	78	8	November	71	4
Sept. 1	79	2			

69. County well, 2½ miles south of Alessandro, Elsinore quadrangle.

[Bench mark: Top of casing, 2 feet above surface. Well No. 10, Water-Supply Paper 429, p. 53.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1909.	*Ft.*	*in.*
Oct. 18	52	4½	Apr. 3	51	11
Nov. 18	51	10	July 12	52	2
Dec. 15	51	7½	Oct. 15	52	6
1905.			1910.		
Jan. 13	51	8½	Feb. 4	51	7
Feb. 22	50	5	Aug. 11	51	8
Mar. 24	49	6	1911.		
Apr. 19	49	2	Jan. 6	51	1
May 19	49	1	1912.		
July 22	50	4	May 28 (pumping slowly)	54	7
Aug. 18	50	8	July 27	52	5
Sept. 22	50	11	Oct. 18	51	1
Nov. 9	51	½	1913.		
1906.			Oct. 18	52	11
May 11	51	9½	1914.		
June 29	52	4	Feb. 5	51	8
Aug. 3	52	9	Apr. 16	51	5
Sept. 26	52	8	May 8 (pumping)	59	3
1907.			June 25 (pumping)	57	8
Feb. 13	51	3	Aug. 13	51	11
May 17 (pumping)	61	8	Sept. 15	52	8
Aug. 30	52	0	Nov. 20	52	8
Dec. 31	52	1	1915.		
1908.			May 23 (well destroyed)	.....	
Apr. 22	52	0			
June 24	53	4			
Oct. 16	52	5			
Dec. 29	52	3			

Records of water levels in the valley of southern California—Continued.

69a. J. W. Lancaster, 2½ miles south of Alessandro, Elsinore quadrangle.

[Well, 93 feet deep, 12-inch casing; small gasoline pumping plant; use, irrigation and domestic; situated 250 feet southeast of No. 69. Bench mark: Top of casing, 1 foot 6 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1917.	*Ft. in.*
Apr. 16	46 8	May 20	47 7
May 8	46 10	Nov. 25	47 1
June 25	47 9	1918.	
Aug. 13	47 11	May 4 (pumping 4 hours)	58 6
Sept. 15	48 2	Oct. 13	46 1
Nov. 20	47 11	1919.	
1915.		May 10 (pumping)	.....
May 23 (pumping)	57 11	May 11 (pumping)	.....
Oct. 30 (pumping)	53 6	Oct. 12	45 10
Oct. 31	47 9	1920.	
1916.		May 18 (pumping 3 hours)	64 10
Feb. 25	46 5	Oct. 16	45 5
May 5	48 6		
Nov. 16	47 10		

70. Edward Poorman, 4 miles northeast of Perris, Elsinore quadrangle.

[Bench mark: Top of casing, 2.0 feet above surface. Well No. 12, Water-Supply Paper 429, p. 54.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1911.	*Ft. in.*
Dec. 16	32 5	Jan. 6	34 9½
1905.		1912.	
Jan. 14	32 0	May 28	37 2
Feb. 22	31 6	July 29	37 1
Sept. 22	28 5	Oct. 18	38 11
Nov. 9	29 0	1913.	
Dec. 23	29 4	Oct. 18	49 6
1906.		1914.	
Jan. 30	29 4	Feb. 5	50 1
Mar. 16	29 3	June 25	52 4
May 11	29 7½	Aug. 13 (pumping plant, one-eighth mile east, in operation)	55 7
Aug. 3	29 11½	Sept. 16	54 6
Sept. 26	30 ½	Nov. 20	55 2
Dec. 20	30 2½	1915.	
1907.		Oct. 30	56 0
Feb. 13	30 4	1917.	
May 17	30 4	Nov. 25	67 11
Aug. 30	30 7½	1918.	
Dec. 31	30 9	May 4	69 4
1908.		Oct. 13	74 7
Apr. 22	30 4	1919.	
June 24	31 2	May 10	75 4
Oct. 16	32 6	Oct. 12 (dry at 76 feet 8 inches)	.....
Dec. 29	31 7		
1909.			
Apr. 3	31 10		
July 12	32 3		
Oct. 15	32 7		
1910.			
Feb. 4	31 4		
Aug. 11	33 ½		

Records of water levels in the valley of southern California—Continued.

71. C. S. Phillips (formerly owned by C. Lossman), 2½ miles north of Perris, Elsinore quadrangle.

[Bench mark not known. Well No. 24, Water-Supply Paper 429, p. 55.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1909.	
Dec. 15	63 3½	Apr. 3 (pumping)	.....
		July 12	67 7
1905.		Oct. 15	69 6
Jan. 13	63 4½		
Feb. 22	63 0	1910.	
Mar. 26	62 6	Feb. 4	69 10
Apr. 19	62 3½	Aug. 11	72 11
May 19	62 0		
June 20	62 0	1911.	
July 22	62 2	Jan. 6	74 8
Aug. 19	62 2		
Sept. 22	62 3	1912.	
Nov. 9	62 5	May 28 (dry)	76 0
Dec. 23	62 5	July 29 (dry)	76 0
		Oct. 18 (dry)	76 0
1906.			
Mar. 16	62 4	1913.	
May 11	62 5	Oct. 18 (dry)	76 0
June 29	62 5		
Aug. 3	63 2	1914.	
Sept. 26	63 4	Dry	.....
Dec. 20	63 4½		
		1915.	
1907.		Dry	.....
Feb. 13	63 3½		
May 17	67 9		
Aug. 30	63 11		
Dec. 31	64 0		
1908.			
Apr. 22	64 1		
June 24 (pumping)	.....		
Oct. 16	65 2		
Dec. 29	66 0		

72. Santos Moro (formerly owned by Crawford Carter), Perris, Elsinore quadrangle.

[Bench mark: Top of casing, 2 feet 6 inches above surface. Well No. 30, Water-Supply Paper 429, p. 56.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1907.	
Oct. 18	33 4	Feb. 13	32 0
Nov. 18	33 3	May 18	32 2½
Dec. 15	33 4		
		1908.	
1905.		Apr. 22	34 11
Jan. 13	32 6	June 25	36 0
Feb. 22	31 9½	Oct. 15	37 5
Mar. 26	30 10	Dec. 28	37 3
Apr. 18	30 7		
May 19	30 2½	1909.	
June 20	30 1		
July 23	30 4	Apr. 2	37 3
Sept. 22	30 6	July 11	38 4
Nov. 9	30 11	Oct. 14	39 6
Dec. 22	31 4½		
		1910.	
1906.			
Jan. 29	31 8	Feb. 3	39 5
Mar. 16	31 8	Aug. 10	41 5
June 28	31 2½		
Aug. 3	31 9	1911.	
Sept. 26	32 4½		
Dec. 20	32 3	Jan. 5	42 1

Records of water levels in the valley of southern California—Continued.

72. Santos Moro—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1916.	
May 28	45 6	Feb. 25	55 10
July 29	47 2	May 6	54 9
Oct. 18 (pumping slowly for 3 hours)	55 2	Nov. 15	55 2
1913.		1917.	
Oct. 18	50 6	May 20	55 4
		Nov. 25	56 11
1914.		1918.	
Feb. 5	50 4	May 4	55 8
Apr. 17	51 7	Oct. 12	55 3
May 15	51 9		
June 25	52 3	1919.	
Aug. 14	53 0	May 11	55 4
Sept. 15	53 8	Oct. 12	55 0
Nov. 21 (pumping)	73 0		
		1920.	
1915.		May 18	57 4
May 21	63 10	Oct. 16	58 3
Oct. 31	55 6		

72a. Paul Moro, Perris, Elsinore quadrangle.

[Companion well for No. 72; 3 by 3 open curb, 55 feet deep; use, domestic; situated 300 feet north of No. 72. Bench mark: Top of curb, 0.9 foot above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 21	41 11	May 4	53 2
		Oct. 12	53 10
1915.			
May 21	50 10	1919.	
Oct. 31	53 4		
		May 11 (gas pump installed; pumping)	.....
1916.		Oct. 12	54 7
Feb. 25	52 11		
May 6	51 9	1920.	
Nov. 15	53 1		
		May 18	55 6
1917.		Oct. 16	56 6
May 20	53 2		
Nov. 25	53 10		

Records of water levels in the valley of southern California—Continued.

73. Mrs. L. R. Harford, 3½ miles east of Perris, Elsinore quadrangle.

[Bench mark not known. Well No. 34, Water-Supply Paper 429, p. 57.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1901.	*Ft.*	*in.*	1906—Continued.	*Ft.*	*in.*
May	28	11	Aug. 4	41	7
1902.			Sept. 27	42	5½
July	40	2	Dec. 21	43	6½
Oct. 25	41	7	1907.		
Dec. 15	42	9	Feb. 14	41	10½
1903.			May 18	40	4
Feb. 28	38	7	Aug. 31	40	9
Apr. 11	37	6	Dec. 31	43	1
May 14	38	2	1908.		
Sept. 15	43	4	Apr. 23	41	11
1904.			June 25	43	5
Jan. 31	43	4	Oct. 15	46	6
Feb. 28	41	11½	Dec. 28	46	8½
Mar. 3	41	9	1909.		
Mar. 29	40	11	Apr. 2	44	7
May 1	42	10	July 11	43	11
July 3	44	10	Oct. 14	46	11
Sept. 15	45	5	1910.		
1905.			Feb. 3	46	6
Sept. 23	44	9	Aug. 10	45	11
Dec. 22	43	0	1911.		
1906.			Jan. 5	49	11
Jan. 29	42	3	1917.		
Mar. 16	42	2	May 20	67	6
May 12	40	2½			
June 28	38	8½			

74. E. E. Waters, Ethanac, Elsinore quadrangle.

[Bench mark not known. Well No. 45, Water-Supply Paper 429, p. 59.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1907.	*Ft.*	*in.*
Jan. 29	44	2	Feb. 14	43	3
Feb. 27	41	4	Aug. 31	49	0
Mar. 27	40	5½	Dec. 31	47	11½
Mar. 27	43	4	1908.		
May 27	41	7½	Apr. 23	39	1
July 2	46	0	June 25	45	7
1905.			Oct. 15	46	3
Feb. 20	44	8	Dec. 28	45	4
Apr. 5	43	1½	1909.		
June 18	45	5½	Apr. 3	48	4
Aug. 5	46	11	July 11	53	5
Sept. 1	47	6	Oct. 14	55	2
Oct. 1	47	10	1910.		
Nov. 6	48	2	Feb. 3	50	7
Dec. 22	44	8	Aug. 10 (not accessible)	.....	
1906.			1911.		
Jan. 29	42	10	Jan. 5 (not accessible)	.....	
Feb. 4	42	4			
Mar. 16	42	8			
May 12	41	2			
June 28	44	10½			
Aug. 4	45	0			
Sept. 27	47	6½			
Dec. 21	45	3			

Records of water levels in the valley of southern California—Continued.

75. Temescal Water Co., 1½ miles west of Ethanac, Elsinore quadrangle.

[Bench mark: Top of casing, 2 feet above surface. Well No. 43, Water-Supply Paper 429, p. 59.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1908.	*Ft. in.*
Oct. 18	29 10	Apr. 23	31 7
Nov. 18	30 4	June 25	33 5
Dec. 15	30 7	Oct. 15	35 0
1905.		Dec. 28	35 3
Jan. 13	30 3½	1909.	
Feb. 22	26 10½	Apr. 2	33 9
Mar. 26	25 10	July 11	35 1
June 20	28 0	Oct. 14	36 3
July 23	28 9	1910.	
Aug. 19	29 5	Feb. 3	35 4
Sept. 23	29 8	Aug. 10	39 0
Nov. 10	30 3	1911.	
Dec. 22	29 8	Jan. 5	41 8
1906.		1912.	
Jan. 29	29 7½	May 29	47 2
Mar. 16	28 8½	July 30	48 0
May 12	27 9	Oct. 18	49 11
June 28	27 9	1913.	
Aug. 4	28 7	Oct. 18 (dry, filled in)	43 0
Sept. 27	30 1		
Dec. 21	30 2		
1907.			
Feb. 14	29 2½		
May 18	27 11		
Aug. 31	31 0		
Dec. 31	31 11		

76. Dr. Reese, 2¼ miles south of Perris, Elsinore quadrangle.

[Bench mark: Top of casing, level with surface. Well No. 42, Water-Supply Paper 429, p. 58.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1907.	*Ft. in.*
Oct. 18	21 10	Feb. 14	15 8½
Nov. 18	19 0	May 18	15 9
Dec. 15	18 9½	Dec. 31	16 7
1905.		1908.	
Jan. 13	18 5	Apr. 23	17 11
Feb. 22	10 9	June 25	16 9
Mar. 26	9 7½	Oct. 15	17 8
May 19	11 11	Dec. 28	18 0
June 20	13 4	1909.	
July 23	13 3	Apr. 2	17 11
Aug. 19	13 4	July 11	18 6
Sept. 23	15 6	Oct. 14	18 7
Nov. 10	15 8	1910.	
Dec. 22	15 10½	Feb. 3	18 3
1906.		Aug. 10	19 6
Jan. 29	15 9	1911.	
Mar. 16	15 7	Jan. 5	20 9
May 12	15 2		
June 28	15 5		
Sept. 27	16 2½		

Records of water levels in the valley of southern California—Continued.

76. Dr. Reese—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1912.	*Ft. in.*	1915.	*Ft. in.*
May 29 (pumping slowly)	27 8	May 21	31 10
July 30	25 1	Oct. 31	32 2
Oct. 18	26 4	1916.	
1913.		May 6	10 8
Oct. 18	30 4	Nov. 15	14 8
1914.		1917.	
Feb. 5	31 2	Nov. 25	20 5
May 15	31 5	1918.	
June 25	31 10	Oct. 12 (filled)	.....
Aug. 14	32 2		
Sept. 15	32 6		
Nov. 21	33 1		

77. William Newport, 4½ miles south of Perris, Elsinore quadrangle.

[Bench mark: Top of casing, 1.0 foot above surface. Well No. 51, Water-Supply Paper 429, p. 60.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1908.	*Ft. in.*
Oct. 18	37 3	Apr. 23	39 6
Nov. 18	37 10	June 25	40 6
Dec. 15	38 3	Oct. 15	42 8
1905.		Dec. 28	43 7
Jan. 13	38 8	1909.	
Feb. 22	38 0	Apr. 2	43 0
Mar. 26	37 ½	July 11	42 7
Apr. 18	36 7	Oct. 14	43 7
May 19	36 1½	1910.	
June 20	36 8½	Feb. 3	43 10
July 23	37 9	Aug. 10	45 5
Aug. 19	38 2	1911.	
Sept. 23	38 7½	Jan. 5	49 1
Nov. 10	39 5	1912.	
Dec. 22	39 4	May 29	53 2
1906.		July 30	56 1
Jan. 29	38 6	Oct. 18	57 8
Mar. 16	38 5½	1913.	
May 12	37 4½	Oct. 18	63 5
June 28	36 3	1914.	
Aug. 4	37 0	Feb. 5	64 4
Sept. 27	38 0	Apr. 17	63 0
Dec. 21	38 5½	June 25 (destroyed)	.....
1907.			
Feb. 14	38 9		
Aug. 31	38 10		
Dec. 31	40 5		

Records of water levels in the valley of southern California—Continued.

78. William Newport, Menifee Valley, Elsinore quadrangle.

[Bench mark: Top of casing, 6 inches above surface. Well No. 53, Water-Supply Paper 429, p. 66.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1904.	*Ft.*	*in.*	1910.	*Ft.*	*in.*
Oct. 18	28	2	Feb. 3	22	0
Nov. 18	28	3½	Aug. 10	22	11
Dec. 15	27	7	1911.		
1905.			Jan. 5	23	8
Jan. 13	27	3½	1912.		
Feb. 22	24	½	May 29	25	2
Mar. 26	21	7½	July 30	26	8
Apr. 18	21	9	Oct. 18	31	9
May 19	21	6	1913.		
June 20	21	9	Oct. 18	30	3
July 23	22	6	1914.		
Aug. 19	22	2	Feb. 5	31	11
Sept. 23	21	7	Apr. 17	31	6
Nov. 9	21	11	June 25	29	5
Dec. 22	22	11	Aug. 14	30	2
1906.			Sept. 15	30	11
Jan 29	22	11	Nov. 21	31	10
Mar. 16	21	9	1915.		
May 12	19	10½	May 21	26	9
June 28	19	10½	Oct. 31	28	10
Aug. 4	21	0	1916.		
Sept. 27	21	7	May 6	23	5
Dec. 21	21	10	Nov. 15	26	9
1907.			1917.		
Feb. 14	19	10½	May 19	27	11
May 18	18	3	Nov. 25	31	2
Aug. 30	19	8½	1918.		
Dec. 31	20	8	May 4	30	6
1908.			Oct. 12	32	2
Apr. 23	19	7	1919.		
June 25	20	5	May 11 (well destroyed)	.....	.....
Oct. 15	21	6	Oct. 12 (well destroyed)	.....	.....
Dec. 28	21	11			
1909.					
Apr. 2	21	6			
July 11	22	5			
Oct. 14	23	4			

78a. Menifee School, Menifee Valley, Elsinore quadrangle.

[Companion well for No. 78, situated about 300 feet south of No. 78. Bench mark: Top of casing, level with surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1914.	*Ft.*	*in.*	1917.	*Ft.*	*in.*
June 25	32	9	May 19	30	11
Aug. 14	33	2	Nov. 25	34	6
Nov. 21	33	2	1918.		
1915.			May 4	38	7
			Oct. 12	36	1
May 21 (had been pumping)	30	3	1919.		
Oct. 31	31	5	May 11	37	10
1916.			Oct. 12 (pumping)	41	2
			1920.		
May 6	27	6	May 18 (pumping strong)	41	5
Nov. 15	29	2	Oct. 16	40	4

Records of water levels in the valley of southern California—Continued.

79. Mr. Ainley (formerly owned by H. H. Lindenberger), 4 miles southwest of Winchester, Elsinore quadrangle.

[Bench mark: Top of casing, 2.0 feet above surface. Well No. 56, Water-Supply Paper 429, p. 67.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1911.	*Ft.*	*in.*
Feb. 22	23	4	Jan. 5	19	3
Mar. 25	22	5	1912.		
Apr. 18	20	3	May 29	20	9
May 19	19	0	July 30	21	4
July 23	19	0	Oct. 18	21	9
Sept. 23	18	7	1913.		
Nov. 10	18	6	Oct. 18	23	2
Dec. 22	18	3½	1914.		
1906.			Feb. 5	22	6
Jan. 29	18	0	Apr. 17	19	11
Mar. 16	18	3	June 25	19	7
May 12	16	9	Aug. 14	19	11
June 28	16	9	Sept. 15	20	0
Sept. 27	16	11½	Nov. 21	16	7
Dec. 21	16	10	1915.		
1907.			May 21	15	1
Feb. 14	13	6	Oct. 31	16	5
May 18	11	0	1916.		
Aug. 30	13	4	May 6	9	10
Dec. 31	14	2	Nov. 15	13	8
1908.			1917.		
Apr. 23 (pumping)			May 19	16	1
June 25	9	2	Nov. 25	17	2
Oct. 15	11	0	1918.		
Dec. 28 (pumping slowly)	10	11	May 4, new pump installed; can not get tape down		
1909.					
Apr. 2	16	4			
July 11	20	2			
Oct. 14	18	4			
1910.					
Feb. 3	17	9			
Aug. 10 (pumping)					

79a. W. M. Eason, 4 miles southwest of Winchester, Elsinore quadrangle.

[Companion well for No. 79, situated ¼ mile west of No. 79. Bench mark: Top of curb, 2 inches above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1914.	*Ft.*	*in.*	1917.	*Ft.*	*in.*
Feb. 5	13	10	May 19	11	0
Apr. 17	11	2	Nov. 25	12	9
June 25	11	11	1918.		
Aug. 14	12	5	May 4	11	3
Sept. 15	12	10	Oct. 12	13	8
Nov. 21	13	5	1919.		
1915.			May 11	15	3
May 21	8	8	Oct. 12	17	8
Oct. 31	11	3	1920.		
1916.			May 18, mud at	18	0
May 6	6	9	Oct. 16 (dry)		
Nov. 14	10	5			

Records of water levels in the valley of southern California—Continued.

80. Miss T. Patterson, Winchester, Elsinore quadrangle.

[Bench mark: Top of cover, 6 inches above surface. Well No. 64, Water-Supply Paper 429, p. 40.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1908—Continued.	
Oct. 18	24 3	Oct. 15	19 7
Nov. 18	23 5	Dec. 28	19 7
Dec. 15	22 6	1909.	
1905.		Apr. 2	19 9
Jan. 13	22 3½	July 11 (pumping)	.....
Feb. 22	21 5	Oct. 14	19 10
Apr. 18	20 2	1910.	
May 19	20 2	Feb. 3	19 6
July 23	19 7	Aug. 10	19 10
Aug. 19	19 8	1911.	
Sept. 23	19 10	Jan. 5	19 9
Nov. 9	20 1	1912.	
Dec. 22	20 4	May 29	20 8
1906.		Oct. 18	21 4
Jan. 29	19 3	1913.	
May 12	20 0	Oct. 18	22 3
Aug. 4	19 11½	1914.	
Sept. 27	20 1	Feb. 5	20 4
Dec. 21	20 2½	Apr. 17	21 8
1907.		June 25 (pumping)	.....
Feb. 14	19 8	Aug. 14 (pumping)	.....
May 18	18 10	Nov. 21 (inaccessible)	.....
Aug. 31	18 10	1915.	
Dec. 31	19 2	Well tightly closed	.....
1908.			
Apr. 23	18 8		
June 25	19 2		

80a. Milton Thomas, Winchester, Elsinore quadrangle.

[Companion well for Nos. 80 and 80b; situated one-eighth mile south of No. 80. Bench mark: Top of casing, 6 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Aug. 14	19 1	May 4	15 7
Sept. 15	19 4	Oct. 12	16 9
Nov. 21	20 2	1919.	
1915.		May 11	16 8
May 21	14 4	Oct. 12	18 1
Oct. 31	18 1	1920.	
1916.		May 18	17 0
May 6	13 8	Oct. 16	18 2
Nov. 15 (pumping hard)	21 7		
1917.			
May 19	15 6		
Nov. 25	16 9		

Records of water levels in the valley of southern California—Continued.

80b. W. S. Haslam, Winchester, Elsinore quadrangle.

[Has been measured in conjunction with observation wells, but record not published heretofore. Bench mark: Top of casing, 1 foot 1 inch above surface. Well No. 63, Water-Supply Paper 429, p. 39.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1905.			1912.		
Nov. 10	20	0	May 29	20	3
Dec. 22	20	5	July 30	20	8
1906.			Oct. 18	24	6
Jan. 29	20	2	1913.		
Mar. 16	19	6	Oct. 18	23	8
May 12	19	8	1914.		
June 28	20	5	Feb. 5	23	4
Aug. 4	19	7	Apr. 17	24	8
Sept. 27	19	6	June 25	21	1
Dec. 31	19	4½	Aug. 14	21	4
1907.			Nov. 21	22	5
Feb. 14	18	5½	1915.		
May 18	18	9	May 21 (had been pumped)	29	7
Aug. 30	18	0	Oct. 31	21	1
Dec. 31	18	4½	1916.		
1908.			May 6	16	7
Apr. 23	18	0	Nov. 15	17	11
June 25	18	6	1917.		
Oct. 15	19	5	May 19	18	0
Dec. 28	19	4	Nov. 25	21	9
1909.			1918.		
Apr. 2	18	6	May 4	19	1
July 11	19	3	Oct. 12	19	0
Oct. 14	20	1	1919.		
1910.			May 11	18	8
Feb. 3	19	0	Oct. 12	21	8
Aug. 10	27	11	1920.		
1911.			May 18	19	10
Jan. 5	29	0	Oct. 16	21	7

Records of water levels in the valley of southern California—Continued.

81. Mrs. Maud F. Walker, 3 miles southwest of Hemet, Elsinore quadrangle.

[Bench mark: Top of casing, 6 inches above surface. Well No. 73, Water-Supply Paper 429, p. 33.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1905.	*Ft.*	*in.*	1911.	*Ft.*	*in.*
Mar. 25	14	6	Jan. 5 (pumping)	38	1
Apr. 18	10	6	1912.		
May 19	10	10	May 28 (pumping)	16	5
June 20	10	6	July 20	9	11
July 23	10	6	Oct. 18 (pumping)	24	0
Aug. 19	10	7½	1913.		
Sept. 23	11	1	Oct. 18	12	11
Nov. 10	10	11	1914.		
Dec. 22	11	2½	Feb. 5	10	6
1906.			Apr. 17	10	3
Jan. 30	10	8	June 25	13	3
Mar. 16	10	7	Aug. 14	12	8
May 12	10	4	Sept. 15 (pumping)	28	9
June 28	9	7	Nov. 21	11	0
Aug. 4	10	4	1915.		
Sept. 27	10	7	May 21 (had been pumped)	16	8
Dec. 21	10	7	Oct. 31	11	5
1907.			1916.		
Feb. 14	9	3	May 6	10	1
Aug. 30	9	8½	Nov. 14	10	1
Dec. 31	9	8½	1917.		
1908.			May 19	14	2
Apr. 23	9	4	Nov. 25	13	8
June 25	9	6	1918.		
Oct. 15	20	6	May 4	16	10
Dec. 28 (not accessible)	.....		Oct. 12	17	0
1909.			1919.		
Apr. 2	9	7	May 11 (sealed; new pump installed)	.....	
July 11 (pumping)	.....		Oct. 12 (sealed)	.....	
Oct. 14 (pumping)	.....				
1910.					
Feb. 3	9	4			
Aug. 10	10	3			

81a. L. Wilhelm, 3 miles southwest of Hemet, Elsinore quadrangle.

[Companion well for No. 81; situated one-half mile northwest of No. 81, at abandoned ranch house. Bench mark: Top of casing, 2.0 feet above surface.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1914.	*Ft.*	*in.*	1918.	*Ft.*	*in.*
Aug. 14	10	3	May 4	8	9
Sept. 15	10	3	Oct. 12 (pumping)	.....	
Nov. 21	10	5	1919.		
1915.			May 11	11	8
Oct. 31	10	0	Oct. 12 (pumping)	22	4
1916.			1920.		
May 6	6	4	May 8	20	4
Nov. 15 (pumping hard)	20	6	Oct. 16	17	10
1917.					
May 19 (pumping)	.....				
Nov. 25	16	4			

Records of water levels in the valley of southern California—Continued.

82. J. E. Garrigan, 1 mile west of Hemet, San Jacinto quadrangle.

[Bench mark: Top of casing, 11 inches above surface. Well No. 114, Water-Supply Paper 429, p. 34.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1904.		1911.	
Dec. 15	33 3	Jan. 5	30 10
1905.		1912.	
Jan. 14	33 5	May 28	32 3
Feb. 23	33 3	July 30	30 6
Mar. 25	33 1½	Oct. 18	34 2
Apr. 18	33 1		
May 18	33 0	1913.	
June 20	33 2	Oct. 18	31 7
July 23	33 1		
Aug. 19	34 0	1914.	
Sept. 23	33 6	Feb. 2	30 7
Nov. 10	33 0	Apr. 17	30 8
		June 25	30 10
1906.		Aug. 14	31 1
Jan. 30	32 9	Nov. 21	30 11
Mar. 17	32 5		
May 12	32 10½	1915.	
June 29	32 6	May 21	31 2
Aug. 4	32 9	Oct. 31	31 0
Sept. 27	32 7½		
Dec. 20	32 6½	1916.	
		May 6	29 11
1907.		Nov. 15	29 10
Feb. 13	32 0		
May 18	32 6	1917.	
Aug. 31	32 6	May 19 (pumping)	.....
Dec. 31	31 10	Nov. 25	31 0
1908.		1918.	
Apr. 23	31 11	May 4 (pumping)	31 5
June 25	31 9	Oct. 12 (pumping slowly)	39 8
Oct. 15	31 1		
Dec. 28	31 8	1919.	
		May 11	30 1
1909.		Oct. 12	31 5
Apr. 2	31 7		
July 11	31 6	1920.	
Oct. 14	31 4	May 18	31 7
		Oct. 16	32 8
1910.			
Feb. 3	31 2		
Aug. 11	31 1		

82a. Mr. Smyres, seven-eighths mile west of Hemet, San Jacinto quadrangle.

[Companion well for No. 82, situated about 600 feet east of No. 82. Bench mark: Top of casing, 2.0 feet above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 21	38 1	May 4 (had been pumping)	39 5
		Oct. 12	43 4
1915.			
May 21	40 0	1919.	
Oct. 31	38 5	May 11	38 6
		Oct. 12	39 11
1916.			
May 6	37 5	1920.	
Nov. 15 (pumping slowly)	38 10	May 18	39 10
		Oct. 16	41 2
1917.			
May 19	36 11		
Nov. 25	37 5		

Records of water levels in the valley of southern California—Continued.

83. H. R. Kumler (formerly owned by Mrs. Ruby Hewitt), one-half mile east of Bowers, San Jacinto quadrangle.

[Bench mark not known. Well No. 126, Water-Supply Paper 429, p. 29.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1904.	*Ft. in.*	1906.	*Ft. in.*
Oct. 19	11 5	Jan. 30	6 5
Nov. 19	11 9	Mar. 17	5 6
Dec. 16	12 2	May 11 (flowing 5 miner's inches)	.....
1905.		June 29 (flowing)	.....
Jan. 14	12 4	Aug. 3 (flowing 7 miner's inches)	.....
Feb. 23	10 1	Sept. 26 (flowing)	.....
Mar. 26	5 5	1907.	
Apr. 19	2 1	Aug. 30 (flowing)	.....
May 19 (flowing a good stream)	.....	Dec. 31 (flowing)	.....
June 20 (flowing a good stream)	.....	1909.	
July 22	0 7	Apr. 3 (flowing)	.....
Aug. 18	1 8		
Sept. 22	3 2		
Nov. 10	4 7½		
Dec. 22	5 7½		

83a. J. A. Barger (formerly owned by W. D. Baisley), 1 mile northeast of Hemet, San Jacinto quadrangle.

[Has been measured in conjunction with observation wells, but record not published heretofore. Bench mark: Top of casing, 8 inches above surface. Well No. 118, Water-Supply Paper 429, p. 35.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1905.	*Ft. in.*	1912.	*Ft. in.*
Nov. 10	57 4	May 28	56 11
Dec. 22 (pumping)	60 2	July 29	56 0
1906.		Oct. 18	54 9
Jan. 30	58 0	1913.	
Mar. 17 (pumping)	56 11½	Oct. 18	57 4
May 11 (pumping)	64 9	1914.	
Aug. 3	68 2½	Feb. 5	55 6
Sept. 26	58 1½	Apr. 17	55 11
Dec. 20	57 11	June 25	56 6
1907.		Aug. 14	57 0
May 18	57 3	Nov. 21	56 6
Aug. 30	62 10	1915.	
Dec. 31	57 3	May 23	55 7
1908.		Oct. 31	56 5
Apr. 22	57 2	1916.	
June 24	57 3	May 5	55 5
Oct. 15	57 5	Nov. 15	56 0
Dec. 29	57 2	1917.	
1909.		May 20	55 6
Apr. 3	57 1	Nov. 25	55 7
July 11 (pumping)	58 0	1918.	
Oct. 14	57 0	May 4	56 8
1910.		Oct. 12	56 2
Feb. 3	56 4	1919.	
Aug. 11	55 11	May 11	57 2
1911.		Oct. 12	57 5
Jan. 5	55 10	1920.	
		May 18	57 1
		Oct. 13	57 11

Records of water levels in the valley of southern California—Continued.

84. C. A. Holmes (formerly owned by J. Carmichael), Bowers, San Jacinto quadrangle.

[Bench mark: Top of casing, originally 2 feet 2 inches above surface. Between Oct. 12, 1919, and May 18, 1920, a pumping motor was installed and 2 feet of casing removed. Two feet was added to the measurements made May 18 and Oct. 13, 1920, to make them comparable with previous measurements. Well No. 125, Water-Supply Paper 429, p. 28.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1904.		1911.	
Oct. 19	7 7½	Jan. 5 (not flowing)	.....
Nov. 19	7 10	1912.	
Dec. 16	8 0	May 28 (not flowing)	.....
1905.		1913.	
Jan. 14	8 1	Oct. 18	10 8
Feb. 22	6 8	1914.	
Mar. 26	4 3	Feb. 5	6 3
Apr. 18	2 4	Apr. 17	4 8
May 19 (flowing)	.....	June 25	5 8
June 21 (flowing)	.....	Aug. 14	13 10
July 22 (flowing)	.....	Nov. 21	5 8
Aug. 18	3 9	1915.	
Sept. 22	2 6	May 23 (flowing slightly)	.....
Nov. 10	2 9	Oct. 31	4 10
Dec. 22	3 1	1916.	
1906.		May 5 (flowing)	.....
Jan. 30	2 9	Nov. 16 (flowing slightly)	2 0
Mar. 17	2 8	1917.	
May 11 (flowing)	.....	May 20 (flowing)	.....
Aug. 3 (flowing)	.....	Nov. 25 (sealed)	.....
Sept. 26 (flowing)	.....	1918.	
Dec. 20 (flowing)	.....	May 4 (would flow; capped)	.....
1907.		Oct. 12	7 1
Feb. 13 (flowing)	.....	1919.	
May 18 (flowing)	.....	May 11	8 8
Aug. 30 (flowing 1 miner's inch)	.....	Oct. 12	13 2
Dec. 31 (flowing 1 miner's inch)	.....	1920.	
1909.		May 18	22 4
Apr. 3 (flowing)	.....	Oct. 13	11 1
July 11 (flowing about 1 miner's inch)	.....		
Oct. 14 (flowing)	.....		
1910.			
Feb. 3 (flowing)	.....		
Aug. 11 (not flowing)	.....		

84a. José G. Estudillo, Bowers, San Jacinto quadrangle.

[Companion well for No. 84, situated about 300 feet east of No. 84. Bench mark: Pump base, 1 foot 10 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1918.	
Nov. 21	8 8	May 4	4 7
1915.		Oct. 12, 1.8 feet of casing removed; correction made	10 2
Oct. 31	8 1	1919.	
1916.		May 11, well destroyed	.....
May 5	2 6		
Nov. 15	4 10		
1917.			
May 20	3 1		
Nov. 25	6 3		

Records of water levels in the valley of southern California—Continued.

85. Albert McDonald (formerly owned by K. D. Harger), Lakeview, Elsinore quadrangle.

[Bench mark: Top of casing; 6 inches above surface. Well No. 18, Water-Supply Paper 429, p. 44.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1904.			1911.		
Nov. 19	30	1	Jan. 6	28	8
Dec. 16	29	10			
			1912.		
1905.			May 28	28	7
Feb. 22	29	5	July 27	29	0
Mar. 26	29	2½	Oct. 18	29	4
Apr. 19	29	0			
May 19	28	11	1913.		
June 21	28	10	Oct. 18	30	0
July 22	28	11			
Aug. 18	29	1	1914.		
Sept. 22	29	3	Feb. 5	29	11
Nov. 9	29	5	Apr. 17	29	8
Dec. 23	29	7	June 25	29	11
			Aug. 13 (pumping slowly)	30	7
1906.			Sept. 16	30	5
Jan. 30	29	6	Nov. 20	30	5
May 11	29	2			
June 29	29	2	1915.		
Aug. 3	29	3½	May 23	29	7
Sept. 26	29	5½	Oct. 30	28	8
Dec. 20	29	8			
			1916.		
1907.			May 5	30	8
Feb. 13	29	4½	Nov. 16	30	11
May 17	28	9			
Aug. 30	29	1	1917.		
Dec. 31	29	4	May 20	31	4
			Nov. 25	35	9
1908.					
Apr. 22	28	10	1918.		
June 24	28	10	May 4	34	6
Oct. 16	29	1	Oct. 13	33	4
Dec. 29	29	½			
			1919.		
1909.			May 10	33	5
Apr. 3	28	8	Oct. 12	34	3
July 12	28	8			
Oct. 15	28	10	1920.		
			May 18	34	8
1910.			Oct. 12	35	6
Feb. 3	28	7			
Aug. 11	28	7			

Records of water levels in the valley of southern California—Continued.

85a. County well, Lakeview, Elsinore quadrangle.

[Has been measured in conjunction with observation wells, but record not published heretofore. Bench mark: Top of casing, 2 feet above surface. Well No. 19, Water-Supply Paper 429, p. 45. Companion well for No. 85.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1905.			1912.		
Nov. 9	34	10	May 28	33	5
Dec. 23	34	11	July 27	32	0
			Oct. 18	34	2
1906.					
Jan. 30	34	11	1913.		
Mar. 16	34	6	Oct. 18	34	9
May 11	34	7			
June 29	34	6	1914.		
Aug. 3	34	0	Feb. 5	34	9
Sept. 26	34	11	Apr. 17	34	5
Dec. 20	34	11	June 24	34	10
			Aug. 13	35	2
1907.			Sept. 16	35	2
Feb. 3	34	7	Nov. 20	35	1
May 17	34	2			
Aug. 30	34	9	1915.		
Dec. 31	34	4	May 23	34	4
			Oct. 30 (had been pumped)	35	8
1908.					
Apr. 22	34	0	1916.		
June 24	34	3	May 5	35	0
Oct. 16	34	4	Nov. 16	35	7
Dec. 29	34	3			
			1917.		
1909.			May 20	36	1
Apr. 3	33	11	Nov. 25	37	8
July 12	33	10			
Oct. 15	34	0	1918.		
			May 4	37	8
1910.			Oct. 13	38	0
Feb. 4	33	9			
Aug. 11	33	10	1919.		
			May 10	37	7
1911.			Oct. 12	39	2
Jan. 6	33	10			
			1920.		
			May 18	39	11
			Oct. 12	41	6

Records of water levels in the valley of southern California—Continued.

86. Mr. Woodbridge (formerly owned by A. W. Bemis), 2 miles west of San Bernardino, San Bernardino quadrangle.

[Well, 48 feet deep, 8-inch casing; sunk in 1890; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 7 inches above surface. Altitude of bench mark, 1,130.8 feet above sea level. Companion well for No. 441, Water-Supply Paper 142, p. 116, which was destroyed.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1915—Continued.	
October	17 0	Apr. 28	11 8
1904.		May 25	13 6
October	37 0	June 16	15 2
1909.		July 17	16 5
Oct. 15–17	13 0	Sept. 2	18 5
1912.		Sept. 24	19 2
Oct. 16	9 0	Oct. 15	19 10
		Nov. 2	22 4
	Depth of water level below bench mark.	1916.	
		Mar. 15	5 4
		June 7	8 11
	Ft. in.	Nov. 17	8 8
1914.		1917.	
Oct. 26	17 4	May 17	8 0
1915.		Nov. 23	8 7
Feb. 24	15 7	1918.	
Mar. 8	11 0	May 2	8 0
Mar. 15	10 9	Oct. 22	10 1
Apr. 15	12 9	1919.	
Apr. 20	11 11	May 13	10 5
		Nov. 5	13 7
		1920.	
		May 17	13 11
		Nov. 1	20 9

87. G. Renwick, 1¾ miles south of San Bernardino, San Bernardino quadrangle.

[Well, 186 feet deep, 6-inch casing; method of lift, wind; use, domestic. Bench mark: Top of casing, at surface. Altitude of bench mark, 1,100.85 feet above sea level. Well No. 277, Water-Supply Paper 142, p. 109.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1915—Continued.	
October	35 0	Mar. 15	23 5
1904.		Apr. 15	21 9
October	40 0	May 6	12 3
1909.		May 14	17 1
Oct. 15–17	22 10	May 25	39 2
1912.		May 29	41 7
Oct. 16–18	15 10	June 8	41 7
1914.		July 17 (dry)	41 6
Oct. 26 (wet sand at 43 feet 6 inches)	.....	Oct. 2 (dry)	41 6
1915.		Oct. 15 (dry)	41 6
Feb. 24	8 2	Nov. 2 (dry at 42 feet 6 inches)	.....
Mar. 8	8 7	1916.	
		Mar. 15	8 10
		June 8 (filled in to about 18 feet)	.....
		Nov. 17 (filled)	.....

Records of water levels in the valley of southern California—Continued.

88. S. A. Jackson (formerly owned by M. D. Reynolds), 1½ miles northwest of San Bernardino, San Bernardino quadrangle.

[Well, 40 feet deep, 7-inch casing; sunk in 1898; method of lift, wind use, domestic. Bench mark: Top of casing, 1 foot, 7 inches above surface. Well No. 450, Water-Supply Paper 142, p. 116.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	22	0	Oct. 26	19	10
1904.			1915.		
October	40	0	May 25	19	4
			Nov. 2	21	10
1906.					
October	50	6	1916.		
			June 8 (pumping slowly)	16	6
1907.			Nov. 17	14	5
Aug. 30	41	2			
			1917.		
1909.			May 18	11	1
Oct. 15–17	23	8	Nov. 23	10	10
1912.			1918.		
Oct. 16–18	16	0	May 2	8	11
			Oct. 11	9	10
			1919.		
			May 13	11	1
			Nov. 5	14	7
			1920.		
			May 14	15	9
			Aug. 24	19	5
			Nov. 1	20	11

89. Mrs. M. J. Bemis (formerly owned by Dexter Field), 1½ miles northwest of San Bernardino, San Bernardino quadrangle.

[Well, 45 feet deep, 6-inch casing; sunk in 1870; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot above surface. Altitude of bench mark, 1,155.47 above sea level. Well No. 375, Water-Supply Paper 142, p. 113.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	35	0	Oct. 26	31	7
1904.			1915.		
October	58	0	May 25	32	2
			May 26	32	1
1906.			May 29	32	1
			July 20	32	10
October (dry at 65 feet).			Sept. 2	33	3
			Sept. 23	33	6
1907.			Oct. 15	33	9
			Nov. 2	33	11
Aug. 30 (dry at 55 feet 2 inches).			Nov. 5	33	11
			Nov. 27	34	0
1909.			Dec. 24	33	10
Oct. 15–17	35	1			
			1916.		
1912.			Jan. 26	33	3
Oct. 16–18	24	0	Mar. 8	31	4
			Mar. 15	30	10
			June 8	28	0
			Nov. 17	26	4
			1917.		
			May 18	19	11
			Nov. 23 (well filled)	.....	

Records of water levels in the valley of southern California—Continued.

90. F. Alvarado, 2¼ miles northwest of San Bernardino, San Bernardino quadrangle.

[Well, 93 feet deep, 7-inch casing; sunk in 1900. Bench mark: Top of casing, 1 foot 2 inches above surface. Altitude of bench mark, 1,186.59 feet above sea level. Well No. 364, Water-Supply Paper 142, p. 112.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
1900.	*Ft. in.*	1915—Continued.	*Ft. in.*
October	53 0	Mar. 19	49 5
		Apr. 14	50 0
1904.		May 6	48 5
October	70 0	May 20	48 8
		May 25 (pumping)	55 4
1906.		June 8	48 9
October	78 2	July 31	51 10
		Sept. 18	54 9
1907.		Nov. 2 (pumping hard)	
Aug 30	54 10	Nov. 8	53 5
		Nov. 27	52 10
1909.		Dec. 24	51 10
Oct. 15–17	47 5		
		1916.	
1912.		Jan. 26	50 1
		Mar. 8	40 10
Oct. 16–18 (pumping)	42 0	Mar. 15	39 11
		June 8	37 7
	Depth of water level below bench mark.	Nov. 17	36 11
		1917.	
		May 18	30 0
		Nov. 23	33 3
		1918.	
		May 2	31 11
		Oct. 11	37 3
1914.	*Ft. in.*		
Oct. 26	52 4	1919.	
		May 13	39 2
1915.		Nov. 5	46 7
Jan. 22	51 4		
Feb. 4	51 3	1920.	
Feb. 26	48 8	May 14	47 4
Feb. 27	50 9	Aug. 21	55 5
Mar. 3	50 2	Nov. 1	57 11

91. S. W. Harmon (formerly owned by Mr. Orric), 2 miles northwest of San Bernardino, San Bernardino quadrangle.

[Well, 83 feet deep, 7-inch pipe; sunk in 1882; method of lift, wind; use, domestic and irrigation. Bench mark: Top of blocks, 3 feet 1 inch above surface. Well No. 393. Water-Supply Paper 142, p. 113.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
1912.	*Ft. in.*	1916.	*Ft. in.*
Oct. 16–18	38 1	June 8	42 8
		Nov. 17	39 6
	Depth of water level below bench mark.	1917.	
		May 18	30 5
		Nov. 23	30 4
		1918.	
		May 2	31 5
		Oct. 11	32 5
1914.		1919.	
Oct. 26	48 0	May 13	35 4
		Nov. 5	41 2
1915.			
May 25	48 1		
Nov. 2	49 2		

Records of water levels in the valley of southern California—Continued.

92. Mrs. Sarah Green (formerly owned by J. H. Lytle), 2 miles northwest of San Bernardino, San Bernardino quadrangle.

[Well, 79 feet deep, 7-inch casing; sunk in 1885; method of lift, wind; use, domestic and irrigation. Bench mark: Top of casing, at surface. Altitude of bench mark, 1,165.40 feet above sea level. Well No. 400, Water-Supply Paper 142, p. 114.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1915—Continued.	
October	31 0	May 8	34 0
1904.		May 25	33 6
October	80 0	May 28	33 5
1906.		July 20	33 4
October	73 7	Sept. 1	36 9
1907.		Sept. 23	36 2
Aug. 30	60 5	Oct. 15	36 4
1909.		Nov. 2	34 7
Oct. 15–17	40 10	Nov. 3	37 5
1912.		1916.	
Oct. 16–18	29 0	Mar. 16	31 11
1914.		June 8	28 3
Oct. 26	34 1	Nov. 17	22 11
1915.		1917.	
Apr. 5	34 5	May 18	17 4
Apr. 19	34 3	Nov. 23	18 2
		1918.	
		May 3 (well filled)	.....

93. N. M. Swarthout, 1¾ miles north of San Bernardino, San Bernardino quadrangle.

[Well, 75 feet deep, 7-inch casing; sunk in 1885; method of lift, wind; use, domestic. Bench mark: Top of blocks, 1 foot above surface. Well No. 398, Water-Supply Paper 142, p. 114.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	27 0	Oct. 26	21 3
1904.		1915.	
October	48 0	May 25	20 7
1906.		Nov. 2	22 1
October	55 7	1916.	
1907.		June 8	15 10
Aug. 30	46 10	Nov. 17	12 7
1909.		1917.	
Oct. 15–17	28 7	May 18	8 4
1912.		Nov. 23	8 3
		1918.	
Oct. 16–18 (pumping)	19 0	May 2	6 9
		Oct. 11	9 11
		1919.	
		May 13	11 1
		Nov. 5	15 3
		1920.	
		May 14	17 1
		Aug. 24	20 1
		Nov. 1	22 0

Records of water levels in the valley of southern California—Continued.

94. S. F. Kelly, 2 miles north of San Bernardino, San Bernardino quadrangle.

[Well, 115 feet deep, 7-inch casing; sunk in 1897; method of lift, wind; use, irrigation and domestic. Bench mark: Top of blocks, 2 feet 10 inches above surface. Altitude of bench mark, 1,171.03 feet above sea level. Well No. 354, Water-Supply Paper 142, p. 112.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1915—Continued.	
October	49 0	May 25	39 8
		May 28	40 9
1904.		July 27	40 5
October	75 0	Sept. 1	41 3
		Sept. 23	43 4
1906.		Oct. 18	42 3
October	77 8	Nov. 2 (pumping slowly)	42 9
		Nov. 3	42 8
1907.		Nov. 26	42 1
Aug. 30	62 10	Dec. 28	41 10
1909.		1916.	
Oct. 15–17	48 0	Jan. 30	41 7
		Mar. 8	38 0
1912.		Mar. 16	37 9
Oct. 16–18	36 0	June 8	33 3
		Nov. 17	29 4
	Depth of water level below bench mark.	1917.	
		May 18	25 1
		Nov. 23	26 9
		1918.	
		May 3	25 10
		Oct. 11	29 8
	Ft. in.	1919.	
1914.		May 13	31 3
Oct. 26	41 10	Nov. 5	36 11
1915.		1920.	
Mar. 8	43 3	May 14	36 11
Apr. 5	40 8	Aug. 24	41 6
Apr. 19	40 6	Nov. 1	43 6
May 8	40 3		

Records of water levels in the valley of southern California—Continued.

95. S. H. Johnson, 2¼ miles north of San Bernardino, San Bernardino quadrangle.

[Well, 84 feet deep, 7-inch casing; sunk in 1885; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 7 inches above surface. Altitude of bench mark, 1,182 feet above sea level. Well No. 357, Water-Supply Paper 142, p. 112.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	60	0	Oct. 26	53	9
1904.			1915.		
October	100	0	May 25	50	10
1906.			Nov. 2 (pumping)	.....	
October	89	4	1916.		
1907.			June 8	41	6
Aug. 30 (pumping)	.....		Nov. 17	40	9
1909.			1917.		
Oct. 15–17	60	6	May 18	36	11
1912.			Nov. 23	38	3
Oct. 16–18	49	0	1918.		
			May 2	37	2
			Oct. 11	41	11
			1919.		
			Nov. 5	49	5
			1920.		
			May 14	48	10
			Aug. 24	53	8
			Nov. 1	55	8

96. H. N. Stones, 2 miles northeast of San Bernardino, San Bernardino quadrangle.

[Well, 85 feet deep, 7-inch casing; sunk in 1884; method of lift, wind; use, domestic and stock. Bench mark: Top of casing, at surface. Altitude of bench mark, 1,151.84 feet above sea level. Well No. 341, Water-Supply Paper 142, p. 111.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below surface.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1915—Continued.		
October	54	0	Oct. 16	40	7
1904.			Nov. 2	40	1
October	63	0	Nov. 3	40	6
1906.			Nov. 26	39	7
October	70	6	Dec. 28	38	8
1907.			1916.		
Aug. 30	49	8	Jan. 30	36	8
1912.			Mar. 8	31	4
Oct. 16–18	40	4	Mar. 17	30	2
1914.			June 8	23	11
Oct. 26	40	5	Nov. 17	26	5
1915.			1917.		
Mar. 10	37	4	May 17	24	7
Apr. 5	35	8	Nov. 23	30	7
Apr. 14	35	7	1918.		
May 10	34	8	May 2	28	1
May 25	34	2	Oct. 11	35	0
June 3	34	3	1919.		
July 14	36	3	May 12	34	10
July 27	37	6	Nov. 2	39	10
Aug. 24	39	6	1920.		
Aug. 31	39	5	May 14	34	11
Sept. 22	39	11	Aug. 21	43	4
			Nov. 1	43	0

Records of water levels in the valley of southern California—Continued.

97. Albert Hart (formerly owned by James Dickson), 2¼ miles northeast of San Bernardino, San Bernardino quadrangle.

[Well, 44 feet deep, 10-inch casing; sunk in 1888; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 5 inches above surface. Well No. 319, Water-Supply Paper 142, p. 111.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1916.	
October	34 0	June 8	17 5
		Nov. 17	18 6
1904.			
October	48 0	1917.	
		May 18	16 11
1912.		Nov. 23	21 11
Oct. 16-18	30 3		
		1918.	
	Depth of water level below bench mark.	May 2	22 9
		Oct. 10	26 3
		1919.	
	Ft. in.	May 12	28 4
1914.		Nov. 2	28 2
Oct. 26	36 5		
		1920.	
1915.		May 14	23 7
May 25	23 5	Aug. 24	31 8
Nov. 2	28 7	Nov. 1	31 2

98. E. J. Stiles, 2½ miles northeast of San Bernardino, San Bernardino quadrangle.

[Well, 48 feet deep, 7-inch casing; sunk in 1898; method of lift, wind; use, domestic and stock. Bench mark: Top of casing at surface. Altitude of bench mark, 1,126.28 feet above sea level. Well No. 318, Water Supply Paper 142, p. 111.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1915—Continued.	
October	39 0	July 18	26 3
		July 27	26 10
1904.		Aug. 10	27 6
October	50 0	Aug. 31	28 8
		Sept. 22	29 1
1906.		Oct. 16	30 3
October	48 6	Nov. 2	29 6
		Nov. 3	29 6
1907.			
Aug. 30	35 10	1916.	
		Mar. 17	20 4
1912.		June 8	17 10
Oct. 16-18	32 8	Nov. 17	17 10
1914.		1917.	
Oct. 26	30 3	May 17	24 7
		Nov. 23	30 7
1915.			
Apr. 13	25 3	1918.	
May 10	24 1	May 2	19 1
May 25	23 11	Oct. 10	26 7
June 3	24 6		
June 27	25 1	1919.	
July 3	24 11	May 12	25 3
July 6	25 1	Nov. 2	29 7
July 7	25 3		
July 12	25 7	1920.	
July 14	27 5	May 14	25 0
July 15	26 0	Aug. 24	32 7
July 17	26 3	Nov. 1	32 0

Records of water levels in the valley of southern California—Continued.

99a. W. R. Severence, three-fourths mile northeast of Valencia, San Bernardino quadrangle.

[Bench mark: Top of cast-iron cap, at surface. Companion well for Nos. 99 and 99b.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
1912.	*Ft. in.*	1918.	*Ft. in.*
Oct. 16–18	147 6	May 2 (pumped May 1)	125 7
1914.		Oct. 11	136 2
Oct. 26	144 3	1919.	
1915.		May 12	136 5
May 25	132 11	Nov. 5	144 10
Nov. 2	144 0	1920.	
1916.		May 14 (pumping)	.....
June 8	113 6	Aug. 21	146 1
Nov. 17 (pumping)	.....	Nov. 1	148 4
1917.			
May 18	119 7		
Nov. 23 (pumping)	.....		

99b. M. S. Severence, half a mile northeast of Valencia, San Bernardino quadrangle.

[Altitude of bench mark, 1,251.3 feet above sea level. Companion well for Nos. 99 and 99a. Bench mark: Top of casing 1 foot 5 inches above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1916—Continued.	*Ft. in.*
Oct. 26	110 8	Apr. 5	80 7
1915.		June 7	82 11
Apr. 9	102 3	Nov. 17	90 8
May 10	100 8	1917.	
May 25	99 1	May 18	87 10
May 28	99 1	Nov. 23	96 8
July 27	105 4	1918.	
Aug. 31	108 1	May 2	93 7
Sept. 21	109 3	Oct. 11	102 7
Oct. 16	110 4	1919.	
Nov. 2	110 8	May 12	103 2
Nov. 3	110 7	1920.	
Nov. 26	110 1	May 14	101 6
Dec. 28	109 3	Aug. 21	118 0
1916.		Nov. 1	114 4
Jan. 30	103 0		
Mar. 8	87 1		
Mar. 17	84 3		

Records of water levels in the valley of southern California—Continued.

100. Geo. M. Cooley, 2 miles southwest of Patton, San Bernardino quadrangle.

[Well, 66 feet deep, 7-inch casing; sunk in 1892; method of lift, wind; use, irrigation and domestic. Bench mark: Top of blocks over casing, 1 foot 4 inches above surface. Altitude of bench mark, 145.36 feet above sea level. Well No. 316, Water-Supply Paper 142, p. 110.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1915—Continued.	
October	42 0	May 29	31 7
		July 27	31 11
1904.		Aug. 31	32 3
October	60 0	Sept. 21	32 3
		Oct. 16	32 8
1906.		Nov. 2	40 7
October	61 0	Nov. 3	32 9
1912.		1916.	
Oct. 16–18	40 3	Mar. 23	27 6
		June 8 (100a and 100b being pumped)	32 8
	Depth of water level below bench mark.	Nov. 17	33 4
		1917.	
		May 18 (pumping)	32 10
		Nov. 23	32 8
		1918.	
		May 2	32 0
		Oct. 10	34 7
	Ft. in.	1919.	
1914.		May 12	34 3
Oct. 26	42 0	Nov. 2	33 7
1915.		1920.	
Apr. 19	32 2	May 14	36 7
May 12	31 2	Aug. 24	38 11
May 25	37 10	Nov. 1	39 10

100a. Geo. M. Cooley, 2 miles southwest of Patton, San Bernardino quadrangle.

[Well, 80 feet deep, 11-inch casing; sunk in 1895; method of lift, gasoline engine; use, irrigation. Bench mark: Top of 8 by 8 blocks over casing, 1 foot above surface. Well No. 317, Water-Supply Paper 142, p. 110.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	42 0	Oct. 26 (pumping)	.....
1904.		1915.	
October	60 0	May 25 (pumping)	.....
		Nov. 2 (pumping)	.....
1906.		1916.	
October	61 0	Nov. 17	28 4
		1917.	
		May 18	26 4
		Nov. 23	31 8
		1918.	
		May 2 (pumping)	.....
		Oct. 10	33 8
		1919.	
		May 12 (pumping)	.....
		Nov. 2	37 7
		1920.	
		May 14	35 7
		Aug. 24	37 8
		Nov. 1	38 6

Records of water levels in the valley of southern California—Continued.

100b. George M. Cooley, 2 miles southwest of Patton, San Bernardino quadrangle.

[Well, 80 feet deep, 10-inch casing; sunk in 1895; method of lift, cylinder pumps; use, irrigation. Bench mark: Top of block over casing, 1 foot above surface. Well No. 317a, Water-Supply Paper 142, p. 110.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
1900.	*Ft. in.*	1914.	*Ft. in.*
October	42 0	Oct 26 (pumping)	.....
1904.		1915.	
October	60 0	May 25 (pumping)	.....
1906.		Nov. 2 (pumping)	.....
October	61 0	1916.	
		Nov. 17	27 10
		1917.	
		May 18	25 10
		Nov. 23	30 8
		1918.	
		May 2 (pumping)	.....
		Oct. 10	33 3
		1919.	
		May 12 (pumping)	.....
		Nov. 2	37 1
		1920.	
		May 14	35 4
		Aug. 24	37 2
		Nov. 1	38 1

101. Riverside Trust Co. (formerly owned by C. Cutting), three-fourths mile northwest of Idlewild, San Bernardino quadrangle.

[Bored well, 170 feet deep, 7 inches in diameter; sunk in 1894; method of lift, cylinder pump and gasoline engine; use, domestic and irrigation. Well No. 104, Water-Supply Paper 142, p. 92.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
1900.	*Ft. in.*	1915.	*Ft. in.*
October (flowing)	.....	May 27 (flowing)	.....
1904.		Nov. 3 (flowing)	.....
October	5 0	1916.	
1906.		June 8 (flowing)	.....
October	4 0	Nov. 17 (flowing)	.....
1909.		1917.	
Oct. 15–17 (flowing)	.....	May 18 (flowing)	.....
1912.		Nov. 23 (flowing)	.....
Oct. 16–18 (flowing)	.....	1918.	
1914.		Oct. 10 (flowing)	.....
Oct. 26 (flowing)	.....	1919.	
		May 12 (flowing)	.....
		1920.	
		May 17 (flowing)	.....

Records of water levels in the valley of southern California—Continued.

102. C. F. Crole (formerly owned by Jane C. Goodman), Harlem Springs, Redlands quadrangle.

[Bored well, 284 feet deep, 3 inches in diameter; sunk in 1894; method of lift, wind; use, irrigation and domestic. Bench mark: Top of blocks over casing, 1 foot 4 inches above surface. Well No. 350, Water-Supply Paper 142, p. 97.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1916.	
October	12 0	June 8 (two wells, 75 and 50 feet distant, were flowing)	2 0
1904.		Nov. 17 (two wells, 75 and 50 feet distant, were flowing)	2 1
October	32 0	1917.	
1906.		May 18	2 4
October	20 8	Nov. 23	7 2
1907.		1918.	
Aug. 30	16 6	May 2	4 11
1909.		Oct. 10	9 8
Oct. 15–17	16 0	1919.	
1912.		May 12 (pumping plant 50 feet south in operation)	7 11
Oct. 16–18	10 2	Nov. 2	9 6
	Depth of water level below bench mark.	1920.	
		May 15	6 4
		Aug. 24	15 3
		Oct. 29	12 5
	Ft. in.		
1914.			
Oct. 26	12 7		
1915.			
May 26 (a pump 40 feet south of this well was in operation)	7 0		
Nov. 2	10 0		

103. Haws & McKinley, Harlem Springs, Redlands quadrangle.

[Bored well, 425 feet deep, 10 inches in diameter; sunk in 1897; method of lift, centrifugal pump and electric motor; use, irrigation. Bench mark: Top of 8 by 10 inch timber over curb, at surface. Altitude of bench mark, 1,145.09 feet above sea level. Well No. 343, Water-Supply Paper 142, p. 97.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1904.		1917.	
October	10 0	May 18 (flowing about 30 miner's inches)	.....
1912.		Nov. 23 (flowing)	.....
Oct. 16–18	3 0	1918.	
1914.		May 2 (flowing)	.....
Oct. 26	2 8	Oct. 10 (flowing)	.....
1915.		1919.	
May 26 (flowing about 25 miner's inches)	.....	May 12 (flowing)	.....
Nov. 2 (flowing about 5 miner's inches)	.....	Nov. 2	2 2
1916.		1920.	
June 8 (flowing)	.....	May 15 (pumping; would have flowed if pump were not running)	9 0
Nov. 17 (flowing)	.....	Oct. 29	3 8

Records of water levels in the valley of southern California—Continued.

103a. Mrs. Haws, half a mile west of Harlem Springs, Redlands quadrangle.

[Bored well, 100 feet deep, 2 inches in diameter; sunk in 1898; method of lift, hand; use, domestic. Well No. 344, Water-Supply Paper 142, p. 97.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1904.		1917.	
October	10 0	May 18 (capped)	
		Nov. 23 (flowing)	
1906.			
October	4 0	1918.	
		May 2 (capped)	
1914.		Oct. 10 (flowing)	
Oct. 26 (flowing)			
		1919.	
1915.		May 12 (flowing)	
May 26 (flowing)		Nov. 2 (flowing)	
Nov. 2 (flowing)			
		1920.	
1916.		May 15 (flowing)	
June 8 (flowing)			
Nov. 17 (flowing)			

104. J. P. Scott, one-half mile southeast of Harlem Springs, Redlands quadrangle.

[Bench mark: Top of concrete, southeast side, 2.0 feet below ground level.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1916.	
Oct. 16–18	27 5	June 8	6 5
		Nov. 17	10 0
	Depth of water level below bench mark.	1917.	
		May 18	11 1
		Nov. 23	18 8
		1918.	
		May 2 (pumping)	.. ..
		Oct. 10	21 4
	Ft. in.	1919.	
1914.		May 12	17 1
Oct. 26	23 10	Nov. 2	24 10
1915.		1920.	
May 26	13 1	May 15	15 1
Nov. 2	19 3	Oct. 29	25 2

105. L. H. Williams, three-fourths mile southeast of Harlem Springs, Redlands quadrangle.

[Bench mark: Top of casing, 1.6 feet above surface.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1916.	
Oct. 26	22 0	June 8	7 3
		Nov. 17	11 2
1915.			
May 26	9 8	1917.	
Nov. 2	20 1	May 18	7 4
		Nov. 23 (well filled)	

Records of water levels in the valley of southern California—Continued.

106. B. T. Esler (formerly owned by W. B. Robertson and G. J. Fowler), three-fourths mile southeast of Harlem Springs, Redlands quadrangle.

[Dug well, 55 feet deep, 5 feet in diameter; sunk in 1899; method of lift, wind; use, domestic. Bench mark: Top of sill on curb, at surface. Well No. 291, Water-Supply Paper 142, p. 95.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1916.	
October	53 0	June 8	15 10
		Nov. 17	21 1
1904.			
October	70 0	1917.	
		May 18	16 8
1906.		Nov. 23	27 6
October	42 6		
		1918.	
1907.		May 2	20 6
Aug. 30	32 10	Oct. 10	30 10
1909.		1919.	
Oct. 15–17	38 2	May 12	25 0
		Nov. 2	36 2
1912.			
Oct. 16–18	37 6	1920.	
		May 15	21 11
1914.		Aug. 24	31 8
Oct. 26	35 2	Oct. 29	33 7
1915.			
May 26	20 7		
Nov. 2	30 11		

107. Pattee & Nye, 1 mile southeast of Harlem Springs, Redlands quadrangle.

[Dug, 6 by 8 feet, 50 feet; bored, 10-inch diameter, 100 feet; sunk in 1900; method of lift, rotary pump and electric motor; use, irrigation. Bench mark: Top of concrete curb, west side, 2.0 feet above surface. Altitude of bench mark, 1,198.41 feet above sea level. Well No. 290, Water-Supply Paper 142, p. 95.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.	1915—Continued.	*Ft. in.*
1900.		May 25 (pump house locked)	.....
October	50 0	May 27 (pump house locked)	.....
		June 9	31 7
1904.		Aug. 2	34 4
October	74 0	Aug. 25	36 1
		Sept. 14	36 5
1907.		Oct. 13 (pumping)	.....
Aug. 30	30 6	Oct. 21	38 0
		Nov. 2 (pump house locked)	.....
1909.			
Oct. 15–17	43 6	1916.	
		Mar. 24	25 1
1912.		June 8 (pump house locked)	.....
Oct. 16–18	43 2	Nov. 17 (pump house locked)	.....
	Depth of water level below bench mark.	1917.	
		May 18 (pump house locked)	.....
		Nov. 23 (pump house locked)	.....
		1918.	
		May 2	29 0
		Oct. 10	36 1
1914.	*Ft. in.*	1919.	
Oct. 26	41 8	May 12	32 11
		Nov. 2	41 5
1915.			
Mar. 10	35 6	1920.	
Mar. 23	34 7	May 15	32 1
Apr. 8	33 6	Aug 24	40 0
May 3	33 0	Oct. 29	41 ?

Records of water levels in the valley of southern California—Continued.

108. Mr. Slack, 1½ miles west of East Highlands, Redlands quadrangle.

[Bench mark: Top of casing, 2.0 feet above surface.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
1909.	*Ft. in.*	1914.	*Ft. in.*
Oct. 15–17	47 6	Oct. 27	45 0
1912.		1915.	
Oct. 16–18	46 2	May 26	25 10
		Nov. 2	39 6
		1916.	
		May 18	13 10
		Nov. 17	26 7
		1917.	
		May 17	20 1
		Nov. 23	34 0
		1918.	
		May 2	26 0
		October (destroyed)	.....

109. L. Lyons, 2½ miles northeast of Mentone, Redlands quadrangle.

[Dug well, 4 by 6 feet in cross section; sunk in 1900; method of lift, cylinder pump and gasoline engine; use, irrigation. Bench mark: Top of wooden curb, east side, at surface. Well No. 9, Water-Supply Paper 142, p. 88.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1900.	*Ft. in.*	1915.	*Ft. in.*
October	23 0	May 26	7 4
		Nov. 1	7 2
1904.		1916.	
October	13 0	June 7	6 3
		Nov. 16	6 0
1906.		1917.	
October	14 0	May 19	6 0
		Nov. 24	6 4
1909.		1918.	
Oct. 15–17	4 4	May 2 (wrecked)	.....
1912.		Oct. 10 (wrecked)	.....
Oct. 16–18 (a well 30 feet east was being pumped)	14 5	1919.	
1914.		May 11 (wrecked)	.....
Oct. 27	7 8		

Records of water levels in the valley of southern California—Continued.

110. R. P. McIntosh, 3 miles northeast of Mentone, Redlands quadrangle.

[Dug well, 27 feet deep, 4 by 4 feet in cross section; sunk in 1879; method of lift, wind; use, domestic. Bench mark: Top of wooden curb, west side, at surface. Well No. 5, Water-Supply Paper 142, p. 88.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1915.	
October	25 0	May 26 (could not get to well; Mill Creek too high)	.....
1904.		Oct. 31	8 1
October	17 0	1916.	
1912.		June 7 (January flood destroyed well)	.....
Oct. 16–18	21 0		
1914.			
Oct. 27	14 11		

110a. R. P. McIntosh, 3 miles northeast of Mentone, Redlands quadrangle.

[Companion well for No. 110. Situated 100 feet north of No. 110. Bench mark: Top of wooden curb, at surface.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1914.		1918.	
Oct. 27	11 6	May 2	5 6
		Oct. 10	9 8
1915.			
May 26 (could not get to well; Mill Creek too high)	.....	1919.	
Oct. 31	11 4	May 11 (small quantity of water flowing in Mill Creek)	12 8
		Nov. 6 (dry at 15 feet)	.....
1916.			
June 7	1 1	1920.	
Nov. 16	4 0	May 15	9 3
		Aug. 24	7 4
1917.		Oct. 29	9 6
May 19	4 3		
Nov. 24	14 4		

111. Ward, Mills & Co., 2 miles east of Mentone, Redlands quadrangle.

[Dug well, 125 feet deep, 4 by 6 feet in cross section; sunk in 1900; method of lift, gasoline engine. Bench mark: Top of well cover, south side, at surface. Well No. 2, Water-Supply Paper 142, p. 88.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1915.	
October	72 0	May 26	33 9
		Nov. 1	36 11
1904.			
October	50 0	1916.	
		June 7	27 4
1906.		Nov. 16	36 0
October	28 6		
		1917.	
1912.			
Oct. 16–18	46 7	May 19 (well caved in)	.....
1914.			
Oct. 27	35 3		

Records of water levels in the valley of southern California—Continued.

112. R. P. McIntosh, 1½ miles east of Mentone, Redlands quadrangle.

[Dug well, 103 feet deep, 4½ by 4½ feet in cross section; sunk in 1900; method of lift, cylinder pump and gasoline engine; use, irrigation. Bench mark: Top of curb, south side, at surface. Well No. 7, Water-Supply Paper 142, p. 88.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below surface.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1916.		
October	92	0	June 7	64	5
			Nov. 16	64	2
1904.					
October	78	0	1917.		
			May 19	68	5
1906.			Nov. 24 (dry at about 85 feet)	.....	
October	57	0			
			1918.		
1909.					
Oct. 15–17	66	4	May 2 (dry at 74 feet)	.....	
			Oct. 10 (dry at 74 feet)	.....	
1912.					
Oct. 16–18	71	6	1919.		
			May 11 (filled)	.....	
1914.			Nov. 6 (cleaned out)	77	6
Oct. 27	62	11			
			1920.		
1915.					
May 27	66	11	May 15 (wet sand)	79	0
Nov. 1	63	11	Aug. 25	71	10
			Oct. 29	69	9

113. Garland estate, 2 miles east of Redlands, Redlands quadrangle.

[Bored well, 10 inches in diameter; sunk in 1900; method of lift, cylinder pump and gasoline engine; use, irrigation. Bench mark: Top of casing, 1.0 foot below surface. Well No. 28, Water-Supply Paper 142, p. 89.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	176	0	Oct. 27	265	1
1909.			1915.		
Oct. 15–17	200	0	May 27	263	4
			Nov. 1 (well covered up)	.....	
1912.					
Oct. 16–18	249	8	1916.		
			June 7 (buried; could not be found)	.....	
			Nov. 16 (buried; could not be found)	.....	
			1918.		
			May 2 (buried; could not be found)	.....	

Records of water levels in the valley of southern California—Continued.

114. C. L. Hayes, Redlands, Redlands quadrangle.

[Bored well, 428 feet deep, 10 inches in diameter; sunk in 1899; method of lift, cylinder pump and gasoline engine; use, irrigation. Bench mark: Top of casing, 8.0 feet below surface. Well No. 42, Water-Supply Paper 142, p. 89.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	150 0	Oct. 27	129 5
1904.		1915.	
October (dry at 180 feet)	.....	May 27	127 1
		Nov. 1	122 0
1912.		1916.	
Oct. 16–18	129 4	June 7	114 0
		Nov. 16	107 1
		1917.	
		May 19	103 0
		Nov. 24	102 1
		1918.	
		May 2	103 11
		Oct. 11	106 2
		1919.	
		May 12 (pit covered)	.....

115. Willis Miller, 1 mile northeast of Redlands, Redlands quadrangle.

[Bored well, 123 feet deep, 7 inches in diameter; sunk in 1893; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 10 inches above surface. Altitude of bench mark 1,289.97 feet above sea level. Well No. 102, Water-Supply Paper 142, p. 91.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	87 0	Oct. 27 (windmill pumping slowly)	70 2
1904.		1915.	
October	103 0	May 27	65 7
		Nov. 1	65 2
1906.		1916.	
October	91 7	Nov. 15	49 11
1909.		1917.	
Oct. 15–17	77 8	May 19 (pumping)	.....
		Nov. 24 (sealed)	.....
1912.		1918.	
Oct. 16–18	69 4	May 3 (sealed)	.....
		Oct. 11 (sealed)	.....
		1919.	
		May 12 (sealed)	.....

Records of water levels in the valley of southern California—Continued.

116. J. F. Boyd, 2 miles northwest of Redlands, Redlands quadrangle.

[Two bored wells respectively 100 and 110 feet deep; 10 inches in diameter; sunk in 1896; not used. Bench mark: Top of casing, level with surface. Well No. 123, Water-Supply Paper 142, p. 93.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below surface.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1916.		
October	110	0	June 7	44	1
			Nov. 15	46	1
1904.					
October	110	0	1917.		
			May 19	44	8
1906.			Nov. 24 (dry)	.....	
October	90	0			
			1918.		
1909.			May 3	47	9
Oct. 15–17	77	6	Oct. 12 (dry)	.....	
1912.			1919.		
Oct. 16–18	70	0	May 12 (dry)	.....	
1914.			1920.		
	65	0	May 12 (dry)	.....	
Oct. 27 (dry; filled in with rocks)			Aug. 24 (dry)	.....	
			Oct. 29 (dry)	.....	
1915.					
May 27	57	11			
Nov. 1 (obstructed at 58 feet)	.....				

117. S. Ronzone, 2 miles northwest of Redlands, Redlands quadrangle.

[Bored well, 98 feet deep, 9 inches in diameter; sunk in 1899; method of lift, wind; use, domestic and irrigation. Bench mark: Top of casing, 2 feet 7 inches above surface. Altitude at bench mark, 1,255.71 feet above sea level. Well No. 117, Water-Supply Paper 142, p. 92.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	65	0	Oct. 27 (pumping plant 300 feet south was pumping 140 miner's inches).	58	6
1904.			1915.		
October	91	0	May 27	47	6
			Nov. 1	49	10
1906.					
October	74	0	1916.		
			June 7	38	7
1907.			Nov. 15	36	6
Aug. 30	64	0			
			1917.		
1909.			May 19	37	1
Oct. 15–17	62	10	Nov. 24	41	2
1912.			1918.		
Oct. 16–18	56	7	May 19	37	1
			Nov. 24	41	2
			1919.		
			May 12	45	0
			Nov. 6	45	11
			1920.		
			May 17	46	8
			Aug. 24	52	11
			Oct. 29	53	4

Records of water levels in the valley of southern California—Continued.

118. M. R. Gay, 2½ miles northwest of Redlands, Redlands quadrangle.

[Well, 200 feet deep, situated 600 feet south of well No. 120, Water-Supply Paper 142, p. 92. For measurements of No. 120 prior to October, 1912, see table on page 120. Bench mark: Top of casing cap, 1 foot 4 inches above surface.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1916.	
Oct. 16–18	54 10	June 7	34 5
		Nov. 15	34 10
	Depth of water level below bench mark.	1917.	
		May 19 (pumping)	
		Nov. 24	36 2
		1918.	
		May 3 (pumping)	
		Oct. 11	41 4
	Ft. in.	1919.	
1914.		May 12 (pumping; air lift)	
Oct. 27	52 10	Nov. 6	45 4
1915.		1920.	
May 27	39 8	May 17 (pumping)	
Nov. 1 (pumping with air lift)		Aug. 25 (pumping)	
		Oct. 29 (pumping)	

119. Emmet Martin (formerly owned by William Lindenberg), 2¼ miles northwest of Redlands, Redlands quadrangle.

[Bored well, 93 feet deep, 7 inches in diameter; sunk in 1893; method of lift, wind; use, irrigation and domestic. Bench mark: Top of casing, 1 foot 7 inches above surface. Altitude of bench mark, 1,205.50 feet above sea level. Well No. 124, Water-Supply Paper 142, p. 93.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	40 0	Oct. 27	33 8
1904.		1915.	
October	65 0	May 27	32 4
		Nov. 1	30 6
1906.		1916.	
October	57 0	June 7	25 11
1907		Nov. 15	22 8
Aug. 30	50 5	1917.	
1909.		May 19	20 6
Oct. 15–17	42 8	Nov. 24	18 6
1912.		1918.	
Oct. 16–18	34 2	May 3	25 5
		Oct. 11	21 6
		1919.	
		May 12	22 7
		Nov. 6	24 6
		1920.	
		May 17 (pumping slowly)	27 5
		Aug. 25	25 6
		Oct. 29	25 9

Records of water levels in the valley of southern California—Continued.

120. E. Norwood (formerly owned by A. Gregory), 1½ miles northwest of Redlands, Redlands quadrangle.

[Bored well, 100 feet deep, 7 inches in diameter; sunk in 1890; method of lift, wind; use, domestic. Bench mark: Top of casing, 3.0 feet above surface. Altitude of bench mark, 1,236.54 feet above sea level. Well No. 113, Water-Supply Paper 142, p. 92.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	51	0	Oct. 27 (windmill pumping slowly)	42	7
1904.			1915.		
October	70	0	May 27	40	5
1906.			Nov. 1	37	8
October	65	2	1916.		
1907.			June 7	30	4
Aug. 30	60	2	Nov. 15	27	9
1909.			1917.		
Oct. 15–17	51	0	May 19	25	3
1912.			Nov. 24	24	8
Oct. 16–18	38	0	1918.		
			May 3 (pumping slowly)	28	5
			Oct. 11 (2.7 feet of casing cut off; correction made)	25	4
			1919.		
			May 12 (gas pump installed; covers top of casing)	.....	
			Nov. 6 (gas pump installed; covers top of casing)	.....	

121. J. Champion (formerly owned by C. A. Shaw), 1½ miles northwest of Redlands, Redlands quadrangle.

[Bored well, 96 feet deep, 7 inches in diameter; sunk in 1893; method of lift, wind; use, domestic and irrigation. Bench mark: Top of casing, 10 inches above surface. Altitude of bench mark, 1,259.57 feet above sea level. Well No. 109, Water-Supply Paper 142, p. 92.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	50	0	Oct. 27 (windmill pumping slowly)	52	11
1904.			1915.		
October	82	0	May 27	44	10
1906.			Nov. 1	37	1
October	74	6	1916.		
1907.			June 7	26	1
Aug. 30	67	3	Nov. 15	21	11
1909.			1917.		
Oct. 15–17	58	6	May 19	21	11
1912.			Nov. 24	23	11
Oct. 16–18	41	1	1918.		
			May 3 (pumping)	37	0
			Oct. 11	28	10
			1919.		
			May 12	29	10
			Nov. 6 (measured twice)	35	9
			1920.		
			May 17	39	11
			Aug. 25	38	4
			Oct. 29	41	9

Records of water levels in the valley of southern California—Continued.

122. W. A. Nichols, 1½ miles west of Redlands, Redlands quadrangle.

[Bored well, 122 feet deep, 7 inches in diameter; sunk in 1891; method of lift, hand pump; use, domestic. Bench mark: Top of casing, 2.0 feet above surface. Well No. 94, Water-Supply Paper 142, p. 91.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	54 0	Oct. 27	42 3
1904.		1915.	
October	70 0	May 27	39 0
		Nov. 1	37 3
1906.		1916.	
October	54 0	June 7	31 8
		Nov. 16	27 2
1909.		1917.	
October	50 5	May 19	24 7
1912.		Nov. 24	23 9
Oct. 16–18	38 6	1918.	
		May 3	23 5
		Oct. 12	23 11
		1919.	
		May 12	26 0
		Nov. 6	28 7
		1920.	
		May 17	31 0
		Aug. 25	30 7
		Oct. 29	31 1

122a. W. A. Nichols, 1½ miles west of Redlands, Redlands quadrangle.

[Bored well, 284 feet deep, 10 inches in diameter; method of lift, cylinder pump and gasoline engine; use, irrigation. Bench mark: Top of metal casing, at surface. Well No. 95, Water-Supply Paper 142, p. 91. Companion well for No. 122. Record kept by owner; can be measured only when pump rods are pulled.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1899.		1906.	
Apr. 9	39 3	Feb. 2	66 6
		Oct. 21	54 0
1900.		1907.	
Feb. 6	48 9	July 12	44 6
June 19	52 9		
Aug. 15	54 9	1908.	
Aug. 20	56 2	May 6	41 10
1901.		1911.	
Nov. 6	60 6	August	27 6
		October	27 0
1902.		1912.	
Jan. 7	62 0	Nov. 14	29 6
Apr. 25	62 3		
Aug. 13	66 0	1913.	
		Aug. 30	36 6
1903.			
May 15	63 0	1914.	
Nov. 14	66 5	Mar. 10	33 6
1904.		1915.	
Jan. 26	68 5	July 10	24 10
Mar. 18	69 8		
Apr. 3	68 10		

Records of water levels in the valley of southern California—Continued.

123. Mrs. S. W. Sylvera, 1½ miles southwest of Redlands, Redlands quadrangle.

[Bored well, 90 feet deep, 7 inches in diameter; sunk in 1891; method of lift, wind; use, domestic. Bench mark: Top of blocks over casing, 1 foot above surface. Well No. 80, Water-Supply Paper 142, p. 91.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	30 0	Oct. 27	35 8
1904.		1915.	
October	63 0	May 27	32 10
1906.		Nov. 1	31 4
October	50 6	1916.	
1907.		June 7	26 2
Aug. 30	45½ 2	Nov. 16	22 0
1909.		1917.	
Oct. 15-17	44 2	May 19	19 2
1912.		Nov. 24	16 6
Oct. 16-18	39 0	1918.	
		May 3	17 7
		Oct. 12	18 2
		1919.	
		May 12	19 7
		Nov. 6	22 1
		1920.	
		May 17	23 9
		Aug. 25	23 5
		Oct. 29	23 11

124. O. J. Fisk (formerly owned by S. Mansfield), three-fourths mile northeast of Bryn Mawr, Redlands quadrangle.

[Bored well, 109 feet deep, 7 inches in diameter; sunk in 1890; method of lift, wind; use, domestic and irrigation. Bench mark: Top of casing, at surface. Well No. 83, Water-Supply Paper 142, p. 91.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1915.	
October	39 0	May 27	31 5
1904.		Oct. 31	26 10
October	50 0	1916.	
1906.		June 7	22 3
October	47 10	Nov. 16	19 7
1907.		1917.	
Aug. 30	43 10	May 19	16 6
1909.		Nov. 24	16 6
Oct. 15-17	40 5	1918.	
1912.		May 3	14 11
Oct. 16-18	31 8	Oct. 12	15 6
1914.		1919.	
		May 12	16 6
Oct. 27 (had been pumping slowly for 2 hours)	31 11	Nov. 6	18 6
		1920.	
		May 17	18 1
		Aug. 25	18 0
		Oct. 29	18 11

Records of water levels in the valley of southern California—Continued.

125. H. Bermudas, Bryn Mawr, Redlands quadrangle.

[Bored well, 112 feet deep, 7 inches in diameter; sunk in 1893; method of lift, windmill; use, domestic. Bench mark: Top of casing, 1 foot 10 inches above surface. Well No. 56, Water-Supply Paper 142, p. 90.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1916.	
October	54 0	June 7	46 2
		Nov. 16	45 3
1906.			
October	77 10	1917.	
		May 19	49 7
1909.		Nov. 24	41 9
October	65 7		
		1918.	
1912.		May 3 (pumping)	
October	57 0	Oct. 12	40 6
	Depth of water level below bench mark.	1919.	
		May 12	39 10
		Nov. 6	43 2
		1920.	
		May 17	43 4
		Aug. 25	43 9
		Oct. 29	44 1
	Ft. in.		
1914.			
Oct. 27	56 4		
1915.			
Nov. 1	51 2		

126. A. C. Fowler, Bryn Mawr, Redlands quadrangle.

[Bored well, 170 feet deep, 9 inches in diameter; sunk in 1898; method of lift, windmill; use, domestic. Bench mark: Top of casing, 6 inches above surface. Well No. 45, Water-Supply Paper 142, p. 89.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1916.	
October	110 0	June 7	101 1
		Nov. 16	99 1
1904.			
October (dry at 170 feet)		1917.	
		May 19	96 2
1906.		Nov. 24	97 2
October (sealed)			
		1918.	
1909.		May 3	95 6
Oct. 15–17	120 11	Oct. 12	95 1
1912.		1919.	
Oct. 16–18	96 5	May 12	95 0
		Nov. 6	97 11
	Depth of water level below bench mark.		
		1920.	
		May 17	100 10
		Aug. 25	99 11
		Oct. 29	99 6
	Ft. in.		
1914.			
Oct. 27 (pumping)			
1915.			
May 27 (pumping)			
Nov. 1 (pumping)			

Records of water levels in the valley of southern California—Continued.

127. Mrs. F. Morris, three-fourths mile northwest of Brookside, Redlands quadrangle.

[Bored well, 125 feet deep, 7 inches in diameter; sunk in 1890; method of lift, wind; use, irrigation and domestic. Bench mark: Top of casing, 1 foot 7 inches above surface. Well No. 155, Water-Supply Paper 142, p. 94.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	65	0	Oct. 27	75	7
1904.			1915.		
October	95	0	May 27	76	5
			Nov. 1	77	8
1906.			1916.		
October	96	4	June 7	65	8
			Nov. 16	63	8
1909.			1917.		
Oct. 15–17	84	1	May 19	60	10
			Nov. 24	61	8
1912.			1918.		
Oct. 16–18	76	1	May 3	62	5
			Oct. 12	65	7
			1919.		
			May 12	60	2
			Nov. 6	63	10
			1920.		
			May 17	63	0
			Aug. 25	65	8
			Oct. 29	65	3

128. Mrs. Parker (formerly owned by E. Vache), one-fourth mile north of Brookside, Redlands quadrangle.

[Bored well, 140 feet deep, 7 inches in diameter; sunk in 1885; method of lift, wind; use, domestic. Bench mark: Top of casing, 2.0 feet above surface. Altitude of bench mark, 1,260.00 feet above sea level. Well No. 48, Water-Supply Paper 142, p. 89.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	60	0	Oct. 27 (pumping)	70	2
1904.			1915.		
October	78	0	May 27	63	8
			Nov. 1	66	5
1906.			1916.		
October	78	3	June 7	62	7
			Nov. 16	65	7
1909.			1917.		
Oct. 15–17	81	9	May 19	69	1
			Nov. 24	63	4
1912.			1918.		
Oct. 16–18	67	4	May 3	62	11
			Oct. 12	65	0
			1919.		
			May 12	62	11
			Nov. 6	66	5
			1920.		
			May 17	63	0
			Aug. 25	65	6
			Oct. 29	66	2

Records of water levels in the valley of southern California—Continued.

129. T. P. Arnold, 1 mile southeast of Bryn Mawr, Redlands quadrangle.

[Dug well, 83 feet deep, 3 by 3 feet in cross section; sunk in 1898; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot 10 inches above surface. Well No. 46, Water Supply Paper 142, p. 89.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	80 0	Oct. 27 (dry at 80 feet)	.....
1904.		1915.	
October (dry at 90 feet)	.....	May 27	78 0
1906.		Nov. 1	78 2
October	116 8	1916.	
1912.		June 7	72 10
Oct. 16–18	62 10	Nov. 16	72 4
		1917.	
		May 19	76 5
		Nov. 24	70 5
		1918.	
		May 3	75 0
		Oct. 12 (not measured)	.....
		1919.	
		May 12	70 1
		Nov. 6	73 9
		1920.	
		May 17	71 11
		Aug. 25	74 1
		Oct. 29	74 8

130. O. J. Fisk (formerly owned by R. T. Curtis), Bryn Mawr, Redlands quadrangle.

[Bored well, 86 feet deep, 7 inches in diameter; sunk in 1895; method of lift, wind; use, domestic. Bench mark: Top of casing, 1 foot above surface. Altitude of bench mark, 1,188.50 feet above sea level. Well No. 60, Water-Supply Paper 142, p. 90.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	50 0	Oct. 27 (pumping slowly)	49 4
1904.		1915.	
October	68 0	May 27	42 7
1906.		Nov. 1	41 3
October	70 2	1916.	
1907.		June 7	39 1
Aug. 30	65 10	Nov. 16	36 1
1909.		1917.	
Oct. 15–17	57 2	May 19	33 4
1912.		Nov. 24	33 2
Oct. 16–18	49 1	1918.	
		May 3	32 9
		Oct. 12	31 8
		1919.	
		May 12	31 2
		Nov. 6	34 7
		1920.	
		May 17	32 9
		Aug. 25	33 11
		Oct. 29	34 4

Records of water levels in the valley of southern California—Continued.

131. Frink Bros. (formerly owned by Gansnor & Renwick), 1 mile southeast of Idlewild, Redlands quadrangle.

[Bored well, 200 feet deep, 7 inches in diameter; sunk in 1898; method of lift, wind; use, domestic and irrigation. Bench mark: Top of casing, 1 foot above surface. Well No. 66, Water-Supply Paper 142, p. 90.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	30 0	Oct. 27	34 10
1904.		1915.	
October	55 0	Nov. 1	35 0
1906.		1916.	
July 15	64 0	June 7	28 7
		Nov. 16	28 0
1909.		1917.	
Oct. 15–17	44 5	May 19	26 5
		Nov. 23	26 8
1912.		1918.	
Oct. 16–18	37 0	May 3	25 4
		Oct. 12	24 10
		1919.	
		May 12	25 5
		Nov. 6	27 8
		1920.	
		May 17	26 2
		Aug. 25 (pumping slowly)	28 6
		Oct. 29	27 4

132. F. Buehler (formerly owned by A. Lenanon), 2 miles west of Redlands, Redlands quadrangle.

[Bored well, 130 feet deep, 7 inches in diameter; sunk in 1895; method of lift, windmill; use, domestic. Bench mark: Top of casing, 1 foot above surface. Well No. 84, Water-Supply Paper 142 p. 91.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	30 0	Oct. 27	34 8
1904.		1915.	
October	55 0	May 27	31 8
		Nov. 1 (pumping)	46 6
1906.		1916.	
October	53 0	June 7 (had been pumping)	35 10
		Nov. 16	22 6
1907.		1917.	
Aug. 30	46 4	May 19 (had been pumping)	27 0
		Nov. 23	20 10
1909.		1918.	
Oct. 15–17	42 6	May 3 (pumping strong)	39 0
		May 4	20 8
1912.		Oct. 12	20 4
Oct. 16–18	34 7	1919.	
		May 12	20 4
		Nov. 6	23 0
		1920.	
		May 17	27 11
		Aug. 25	30 1
		Oct. 29	23 3

Records of water levels in the valley of southern California—Continued.

133. James Smith, one-fourth mile east of Drew, Redlands quadrangle.

[Bored well, 90 feet deep, 7 inches in diameter; sunk in 1892; method of lift, windmill; use, domestic. Bench mark: Top of casing, at surface. Well No. 126, Water-Supply Paper 142, p. 93.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below surface.
	Ft. in.		*Ft. in.*
1900.		1916.	
October	34 0	June 7	23 11
		Nov. 15	21 7
1904.			
October	51 0	1917.	
		May 19 (large pumping plant, one-fourth mile north, was in operation)	34 7
1909.		Nov. 21	24 6
Oct. 15–17	44 2		
		1918.	
1912.		May 3 (pumping)	.....
Oct. 16–18	33 8	May 4	22 5
		Oct. 11	28 4
1914.			
Oct. 27 (large pumping plant, one-fourth mile north, was in operation)	58 2	1919.	
		May 12	21 11
1915.		Nov. 6	23 10
May 27	27 10		
Nov. 1	31 5	1920.	
		May 17 (pumping plant, north of well, in operation)	39 0
		Aug. 25	27 0
		Oct. 29 (pumping plant, north of well, in operation)	50

134. H. H. Cole, three-fourths mile east of Idlewild, Redlands quadrangle.

[Bored well, 82 feet deep, 7 inches in diameter; sunk in 1888; method of lift, wind; use, irrigation and domestic. Bench mark: Top of casing, originally 4 inches above surface. Between May 12 and Nov. 6, 1919, the casing was raised 1 foot. Beginning with Nov. 6, 1919, 1 foot has been subtracted from the measurements to make them comparable with earlier measurements. Well No. 132, Water-Supply Paper 142, p. 93.]

Date of measurement.	Depth of water level below surface.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1900.		1914.	
October	32 0	Oct. 27	30 3
		1915.	
1904.		Nov. 1	25 5
October	45 0		
		1916.	
1906.		June 7	17 8
October	47 0	Nov. 16	17 2
		1917.	
1909.		May 19	15 10
Oct. 15–17	35 10	Nov. 24	18 1
		1918.	
1912.		May 4	17 7
Oct. 16–18	32 11	Oct. 11	15 8
		1919.	
		May 12	15 6
		Nov. 6	16 11
		1920.	
		May 17	15 10
		Aug. 25	17 6
		Oct. 24	16 6

Records of water levels in the valley of southern California—Continued.

135. E. F. Van Leuven, one-fourth mile south of Idlewild, Redlands quadrangle.

[Bored well, 48 feet deep, 7 inches in diameter; sunk in 1890; method of lift, gasoline engine; use, domestic. Bench mark: Top of casing, 1.0 foot above surface. Well No. 145, Water-Supply Paper 142, p. 93.]

Date of measurement.	Depth of water level below surface.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1900.			1914.		
October	20	0	Oct. 27	16	2
1904.			1915.		
October	33	0	May 27	14	0
1906.			1915.		
October	26	0	Nov. 1	14	1
1909.			1916.		
Oct. 15–17	20	7	June 7	9	2
1912.			Nov. 16	10	3
Oct. 16–18 (windmill pumping slowly)	25	8	1917.		
			May 19	9	3
			Nov. 24	11	2
			1918.		
			May 4	10	9
			Oct. 12	11	9
			1919.		
			May 12	9	8
			Nov. 6	12	6
			1920.		
			May 17	9	5
			Aug. 25	10	3
			Oct. 29	10	2

Records of pressure of water in flowing wells in San Bernardino Valley.

A. Mrs. Murray, 781 West Seventh Street, San Bernardino, San Bernardino quadrangle.

[Well 158 feet deep, 2 inches in diameter. Overflows part of time. Bench mark: Top of hexagonal, 1½-inch nut; 1.4 feet above surface. Altitude of bench mark, 1,081.63 feet above sea level. Well is fitted with pressure-gage fixtures.]

Date of measurement.	Pounds per square inch.	Date of measurement.	Pounds per square inch.
1915.		1917.	
July 3	5.68	May 18 (pressure gage did not register such a small amount; jet was about 6 inches high)	.....
July 6	5.67	Nov. 24 (pressure gage did not register such a small amount; jet was about 6 inches high)	.....
July 7	5.47		
July 9	5.58	1918.	
July 12	5.67	May 2 (pressure gage does not register such a small amount; jet about 6 inches high)	.....
July 15	6.08	Oct. 11 (pressure gage does not register such a small amount; jet about 6 inches high; began flowing Oct. 10)	.....
July 18	6.21		
July 21	6.55	1919.	
July 22	6.50	May 13 (3 inches below bench mark)	.....
July 31	6.41	Nov. 19 (2 feet 2 inches below reference point)	.....
Aug. 9	5.80		
Aug. 16	6.22	1920.	
Aug. 19	7.32	May 17 (2 feet 11 inches below bench mark)	.....
Sept. 11	7.98	Nov. 1 (6 feet 7 inches below bench mark)	.....
Sept. 15	6.58		
Nov. 4	6.97		
Nov. 27	4.48		
Dec. 27	3.73		
1916.			
Jan. 26	2.27		
Mar. 7 (plugged)	.....		
Mar. 25 (flowing)	.....		
June 6 (0.98 foot below bench mark)	.....		
Nov. 17 (water just flowed over gage cock; no pressure)	.00		

Records of pressure of water in flowing wells in San Bernardino Valley—Continued.

B. Mrs. Hows, 887 D Street, San Bernardino, San Bernardino quadrangle.

[Well is 370 feet deep. Altitude of surface, 1,078.47 feet above sea level.]

Date of measurement.	Pounds per square inch.	Date of measurement.	Pounds per square inch.
1915		1916—Continued.	
July 9	5.0	Mar. 25	8.0
July 12	5.1	June 6	5.6
July 14	5.1	Nov. 17	8.5
July 15	4.2	1917.	
July 18	3.0	May 18	8.7
July 22	2.8	Nov. 24	8.0
July 23	3.0	1918.	
July 31	3.7	May 2	8.6
Aug. 9	3.2	Oct. 11	6.5
Aug. 16	3.0	1919.	
Aug. 19	None.	May 13 (some leakage past valve stem)	6.2
Sept. 11	None.	Nov. 19	5.0
Sept. 15	2.0	1920.	
Nov. 4	4.6	May 15	6.0
Nov. 27	4.6	Nov. 1	3.6
Dec. 27	5.2		
1916.			
Jan. 26	5.6		
Mar. 7	8.6		

C. Riverside Water Co., Garner tract, fourth easterly well, 150 yards southwest of San Bernardino pumping plant; nearest well to car line, San Bernardino quadrangle.

[Altitude of surface, 1,047.37 feet above sea level.]

Date of measurement.	Pounds per square inch.	Date of measurement.	Pounds per square inch.
1915.		1915—Continued.	
Feb. 26	26.0	July 6	22.5
Mar. 2	24.0	July 7	22.3
Mar. 10	24.5	July 12	22.8
Mar. 15	23.0	July 15 (open)	.....
Mar. 29	24.5	July 18 (open)	.....
Apr. 20	30.0	Aug. 27	12.8
Apr. 27	31.0	Aug. 30	18.2
May 4	30.0		
May 11	30.8	1916.	
May 18	30.2	Mar. 31	35.0
May 25	28.7	June 6	31.0
June 1	28.6	Nov. 17	26.6
June 8	28.1		
June 11	26.0	1917.	
June 15	25.6	May 18	25.0
June 22	26.6	Nov. 24 (well wrecked; casing filled)	.....
June 27	25.6		
June 30	26.3	1918.	
July 2	26.3	May 2 (wells in tract flowing)	.....
July 3	26.7		

Records of pressure of water in flowing wells in San Bernardino Valley—Continued.

D. Riverside Water Co., McCrary tract, 150 feet southwest of barn, second southerly well, San Bernardino quadrangle.

Date of measurement.	Pounds per square inch.	Date of measurement.	Pounds per square inch.
1915.		1915—Continued.	
Feb. 26	15.0	Aug. 18	14.4
Mar. 8	15.0	Aug. 19	14.2
Mar. 16	12.5	Aug. 20	12.8
Apr. 20	18.0	Aug. 23	13.5
Apr. 21	20.0	Aug. 30	12.2
Apr. 27	20.5	Sept. 3	15.7
May 4	19.6	Sept. 17	16.0
May 11	20.4	Oct. 23	17.2
May 18	20.0		
May 25	19.2	1916.	
June 1	18.5	June 6	20.1
June 11	18.0	Nov. 17	21.6
June 22	18.0		
June 27	17.7	1917.	
July 3	17.4	May 18	21.4
July 6	13.2	Nov. 24	19.5
July 7	17.7		
July 12	17.9	1918.	
July 15	16.7	May 2	18.5
July 18	16.1	Oct. 10	13.0
July 31	14.0		
Aug. 4	15.2	1919.	
Aug. 5	15.2	May 12	18.0
Aug. 6	16.1	Nov. 2	12.5
Aug. 7–13 (open)	.....		
Aug. 14	14.7	1920.	
Aug. 16	15.1	May 15	18.3
Aug. 17	15.0	Nov. 27	17.7

E. Urbita Hot Springs Co., at road corner east of resort, San Bernardino quadrangle.

Date of measurement.	Pounds per square inch.	Date of measurement.	Pounds per square inch.
1916.		1919.	
June 8	5.1	May 13	5.8
Nov. 17	7.8	Nov. 19	6.3
1917.		1920.	
May 18	5.3	May 17	3.9
Nov. 24	7.0	Nov. 1	8.7
1918.			
May 2	5.9		
Oct. 11	5.9		

Records of water levels in wells in San Bernardino Valley that have not been available for measurement since 1913.

Redlands quadrangle.

No.[a]	Owner.	Location.	Depths of water level below surface.					
			October, 1900.	October, 1904.	October, 1906.	Aug. 30, 1906.	Oct. 15–17, 1909.	Oct. 16–18, 1912.
			Ft. in	Ft. in.	Ft. in.	Ft. in.	Ft. in.	
1	Doctor Meeker	Sec. 5, T. 1 S., R. 3 W.	278 0	[b]281 0	.....	.....	.....	.....
14	W. J. French	Sec. 19, T. 1 S., R. 2 W	160 0	164 0	139 0	.....	126 2	Inaccessible.
43	O. W. Harris	Sec. 34, T. 1 S., R. 3 W	200 0	[b]205 0	89 1	.....	218 10	Do.
120	M. R. Gay	Sec. 17, T. 1 S., R. 3 W	50 0	75 0	58 0	54 8	Sealed	[c]
125	H. S. Drew	Sec. 19, T. 1 S., R. 3 W.	34 0	30 0	.....	.....	36 0	Do.
139	H. R. Scott	do	12 0	[b]20 0	.....	.....	24 0	.....
289	N. Sutherland	Sec. 3, T. 1 S., R. 3 W.	67 0	93 0	Filled.	.....	.....	.....
292	R. F. Cunningham	Sec. 5, T. 1 S., R. 3 W.	40 0	55 0	.....	.....	Destroyed.	.....
386	California State Hospital.	do	32 0	46 0	.....	Filled.	Filled.	Filled.

San Bernardino quadrangle.

73	W. L. Zader	Sec. 29, T. 1 S., R. 4 W	50 0	60 0	61 2	.....	57 10	.....
76	Mrs. B. R. Atkins.	Sec. 30, T. 1 S., R. 4 W	42 0	57 0	57 0	.....	46 8	.....
78	W. D. Sores	do	4 0	12 0	12 5	.....	11 2	.....
178	G. W. Curtis	Sec. 24, T. 1 S., R. 4 W.	25 0	43 0	37 0	.....	30 8	.....
181	W. A. Thomas	do	2 0	10 0	31 4	.....	8 0	.....
189	E. M. Cooley	Sec. 27, T. 1 S., R. 4 W.	60 0	42 0	45 3	.....	47 5	.....
199	Washington School	do	77 0	82 0	77 6	.....	76 1	.....
201	Fred Pooles	Sec. 33, T. 1 S., R. 4 W	48 0	60 0	56 5	.....	56 0	.....
280	E. M. Emery	Sec. 20, T. 1 S., R. 4 W	55 0	62 0	Filled.	.....	.....	.....
282	C. H. Westmyer.	Sec. 8, T. 1 S., R. 4 W	7 0	21 0	Sealed	.....	Sealed	Sealed.
329	M. S. Severence	Sec. 23, T. 1 N., R. 4 W	145 0	173 0	do	Sealed	.....	.....
367	D. W. White	Sec. 4, T. 1 S., R. 4 W.	20 0	35 0	do	do	20 6	Sealed.
370	E. L. Holcomb	Sec. 33, T. 1 N., R. 4 W	28 0	50 0	[d]	[d]	34 0	Filled.
389	S. E. A. Palmer	do	52 0	77 0	85 6	70 5	46 11	Casing stopped up.
416	H. H. Ham	Sec. 34, T. 1 N., R. 4 W	31 0	46 0	55 1	46 3	Filled	Filled.
457	J. F. Cadd	Sec. 4, T. 1 S., R. 4 W.	11 0	16 0	26 2	16 5	do	Do.
458	H. E. Gardner	Sec. 5, T. 1 S., R. 4 W.	10 0	26 0	Sealed.	Sealed.	Sealed	Sealed.
470	Chas. Morris	Sec. 26, T. 1 S., R. 4 W	15 0	24 0	20 0	Filled.	Filled	Filled.

[a] These are the numbers by which the wells are designated in Water-Supply Paper 142. For further information regarding these wells see that paper.
[b] Dry at depths given.
[c] See well No. 118, p. 108.
[d] Dry at 43 feet.

Record of water levels in the Williams well, about 4½ miles east of San Bernardino.[a]

Date of measurement.	Depth of water level below top of original well.
1892.	*Feet.*
August	0.00
1893.	
April	.00
1894.	
November	1.25
1896.	
June	3.00
1898.	
June 17	10.80
Nov. 28	14.25
1899.	
Jan. 17	14.25
Mar. 4	15.11
Oct. 7	22.41
1900.	
January	25.66
June 22	25.00
Oct. 25	28.33
Dec. 10	27.31
1901.	
Feb. 19	25.30
Mar. 15	21.66
Mar. 28	19.60
Apr. 3	19.80
Apr. 13	20.35
May 4	22.21
May 29	23.21
July 8	25.21
Aug. 7	26.75
Aug. 10	26.92
Sept. 6	28.85
Oct. 12	29.42
Nov. 4	30.21
Nov. 19	30.78
Dec. 5	29.90
1902.	
Jan. 30	31.92
Jan. 31	32.10
June 11	32.92
July 26	33.50
Sept. 22	35.60
Dec. 9	36.70
1903.	
Feb. 5	37.95
Mar. 23	36.45
Apr. 13	33.40
Apr. 25	31.27
May 10	30.25
May 15	30.00
May 25	29.94
May 27	30.00
Sept. 8	32.46
Sept. 30	33.86
Oct. 23	34.50
Oct. 31	34.71
Nov. 9	35.15
Nov. 16	35.35
Nov. 28	35.98
Dec. 5	36.17
Dec. 12	36.42
Dec. 19	36.54
Dec. 26	36.83
Dec. 31	37.06
1904.	*Feet.*
Jan. 9	37.31
Jan. 16	37.56
Jan. 23	37.68
Feb. 1	37.79
Feb. 15	37.96
Feb. 29	38.23
Mar. 10	38.37
Mar. 30	38.56
Apr. 9	38.33
June 13	38.08
July 12	38.60
July 29	38.95
Aug. 5	39.12
Sept. 26	40.29
Oct. 3	40.59
Oct. 10	40.82
Oct. 17	40.96
Oct. 24	41.11
Nov. 7	41.44
Nov. 15	41.84
Nov. 21	42.01
Dec. 3	42.17
Dec. 10	42.37
Dec. 17	42.62
Dec. 24	42.66
1905.	
Jan. 2	42.78
Jan. 9	42.87
Jan. 13	42.20
Jan. 20	42.36
Jan. 27	42.44
Jan. 31	42.47
Feb. 4	42.47
Mar. 6	39.76
Mar. 16	39.04
Mar. 28	34.92
Apr. 3	34.18
Apr. 7	33.33
Apr. 12	32.56
Apr. 19	31.43
Apr. 25	30.20
May 3	29.12
May 10	27.96
May 17	26.19
May 24	24.50
May 31	23.82
June 7	23.40
June 14	23.21
June 21	23.21
June 27	23.28
July 7	23.43
July 18	24.01
July 26	24.68
Aug. 2	25.19
Aug. 11	25.00
Aug. 19	26.50
Aug. 26	27.12
Sept. 2	27.76
Sept. 9	28.42
Sept. 16	28.98
Sept. 23	29.47
Sept. 30	30.02
Oct. 7	30.50
Oct. 14	31.00
Oct. 21	31.43
Oct. 28	31.93
Nov. 4	32.72
Nov. 11	32.97
Nov. 18	33.02
Nov. 25	33.05
Dec. 2	33.07

[a] Record furnished by the Gage Canal Co.

Record of water levels in the Williams well, about 4½ miles east of San Bernardino—Contd.

Date of measurement.	Depth of water level below top of original well.
1905—Continued.	*Feet.*
Dec. 9	33.08
Dec. 16	33.06
Dec. 23	33.05
Dec. 30	33.08
1906.	
Jan. 3	33.30
Jan. 13	33.36
Jan. 20	33.47
Jan. 27	33.50
Feb. 3	33.32
Feb. 10	33.16
Feb. 17	32.94
Feb. 24	32.61
Mar. 3	32.16
Mar. 10	31.84
Mar. 19	29.07
Mar. 27	24.42
Mar. 31	21.37
Apr. 7	18.61
Apr. 14	16.79
Apr. 21	15.66
Apr. 28	14.83
May 5	14.18
May 12	13.97
May 19	13.98
May 26	13.87
June 2	13.44
June 9	12.58
June 16	12.28
June 23	12.22
June 30	12.23
July 7	12.47
July 14	12.69
July 21	12.97
July 28	13.43
Aug. 4	13.83
Aug. 11	14.27
Aug. 18	14.83
Aug. 25	15.37
Sept. 1	15.98
Sept. 8	16.27
Sept. 15	16.70
Sept. 22	17.15
Sept. 28	17.58
Oct. 6	18.18
Oct. 13	18.59
Oct. 20	19.09
Oct. 27	19.60
Nov. 3	19.92
Nov. 10	22.46
Nov. 17	23.12
Nov. 24	23.28
Dec. 1	23.41
Dec. 8	23.44
Dec. 15	23.45
Dec. 19	22.78
Dec. 22	22.50
Dec. 29	21.28
1907.	
Jan. 8	18.31
Jan. 12	17.43
Jan. 19	14.73
Jan. 26	13.75
Feb. 2	13.50
Feb. 9	13.06
Feb. 16	12.66
Feb. 23	12.33
Mar. 2	11.47
Mar. 9	10.97
Mar. 18	10.08
Mar. 23	9.73
Mar. 30	8.81
Apr. 6	8.10
Apr. 13	8.20
Apr. 20	8.57
Apr. 27	9.12
May 4	9.29
May 11	9.54
May 18	9.70
May 25	9.93
June 1	10.12
June 8	10.31
June 15	10.48
June 22	10.62
June 29	10.83
July 6	11.08
July 13	11.49
July 20	11.82
July 27	12.16
Aug. 3	12.43
Aug. 10	12.83
Aug. 17	13.18
Aug. 24	13.56
Aug. 31	13.98
Sept. 11	14.45
Sept. 16	14.73
Sept. 23	15.06
Sept. 30	15.42
Oct. 5	15.61
Oct. 12	15.88
Oct. 19	16.10
Oct. 26	16.16
Nov. 2	16.07
Nov. 9	15.79
Nov. 16	15.48
Nov. 23	15.21
Nov. 30	15.06
Dec. 7	15.09
Dec. 14	15.18
Dec. 21	15.25
Dec. 28	15.33
1908.	
Jan. 4	15.36
Jan. 11	15.45
Jan. 18	15.48
Jan. 27	15.51
Feb. 1	15.28
Feb. 8	14.60
Feb. 15	14.01
Feb. 22	13.55
Feb. 29	13.16
Mar. 7	12.93
Mar. 14	12.64
Mar. 21	12.52
Mar. 28	12.43
Apr. 7	12.00
Apr. 11	11.87
Apr. 18	11.80
Apr. 25	11.83
May 2	11.90
May 9	12.01
May 16	12.00
May 25	12.28
May 30	12.48
June 1	12.55
June 6	12.72
June 13	13.69
June 20	14.83
June 27	15.30
July 4	15.76
July 6	15.84
July 11	16.11
July 13	16.17
July 18	16.36
July 20	16.37
July 25	16.47
Aug. 1	16.78

Record of water levels in the Williams well, about 4½ miles east of San Bernardino—Contd.

Date of measurement.	Depth of water level below top of original well.
1908—Continued.	*Feet.*
Aug. 8	17.14
Aug. 15	17.31
Aug. 17	17.35
Aug. 22	17.84
Aug. 29	18.46
Sept. 5	18.74
Sept. 12	18.81
Sept. 19	18.94
Sept. 26	19.05
Oct. 3	19.17
Oct. 10	19.33
Oct. 17	19.84
Oct. 24	19.98
Oct. 31	20.17
Nov. 7	20.37
Nov. 14	20.48
Nov. 24	20.81
Nov. 28	20.83
Dec. 8	20.88
Dec. 12	20.93
Dec. 19	20.90
Dec. 26	20.90
1909.	
Jan. 2	20.93
Jan. 9	20.40
Jan. 16	19.15
Jan. 23	17.65
Jan. 30	15.88
Feb. 6	14.86
Feb. 13	12.96
Feb. 20	11.55
Feb. 27	10.57
Mar. 7	10.12
Mar. 13	9.92
Mar. 20	9.79
Mar. 27	9.04
Apr. 3	8.37
Apr. 10	7.93
Apr. 17	7.94
Apr. 24	7.72
May 1	7.58
May 8	7.50
May 15	7.50
May 22	7.51
May 29	7.54
June 5	7.83
June 12	8.37
June 19	9.07
June 26	9.50
July 3	10.02
July 10	10.57
July 17	11.08
July 24	11.62
July 31	12.09
Aug. 7	12.54
Aug. 14	12.99
Aug. 21	13.42
Aug. 28	13.87
Sept. 4	14.10
Sept. 11	14.37
Sept. 18	14.69
Sept. 25	15.33
Oct. 2	15.42
Oct. 9	15.72
Oct. 16	15.85
Oct. 23	16.00
Oct. 30	16.14
Nov. 6	16.35
Nov. 13	16.49
Nov. 20	16.28
Nov. 27	15.67
Dec. 4	15.34
Dec. 11	14.33
Dec. 18	10.61
Dec. 25	10.36

Date of measurement.	Depth of water level below top of original well.
1910.	*Feet.*
Jan. 8	8.00
Jan. 15	7.13
Jan. 22	6.67
Jan. 29	6.33
Feb. 5	6.13
Feb. 12	6.01
Feb. 14	5.99
Feb. 19	5.98
Feb. 26	6.02
Mar. 5	6.10
Mar. 12	6.27
Mar. 19	6.32
Mar. 26	6.39
Apr. 2	6.38
Apr. 5	6.32
Apr. 9	6.31
Apr. 16	6.25
Apr. 23	6.23
Apr. 30	6.90
May 7	7.46
May 14	7.78
May 21	8.04
May 28	8.32
June 4	8.75
June 11	9.25
June 18	9.58
June 25	9.96
July 7	10.95
July 9	11.15
July 16	11.76
July 23	12.01
July 30	12.30
Aug. 6	12.52
Aug. 13	12.86
Aug. 20	13.22
Aug. 27	13.56
Sept. 3	13.84
Sept. 10	14.14
Sept. 17	14.44
Sept. 24	14.71
Oct. 1	14.84
Oct. 8	15.11
Oct. 15	15.41
Oct. 22	15.47
Oct. 29	15.52
Nov. 5	15.62
Nov. 12	15.64
Nov. 19	15.68
Nov. 26	15.68
Dec. 3	15.70
Dec. 10	15.70
Dec. 17	15.70
Dec. 24	15.52
Dec. 31	15.43
1911.	
Jan. 7	15.49
Jan. 14	15.06
Jan. 21	14.19
Jan. 30	12.70
Feb. 4	9.79
Feb. 11	9.79
Feb. 18	7.61
Feb. 25	7.57
Mar. 4	6.54
Mar. 11	5.93
Mar. 18	5.37
Mar. 25	5.08
Apr. 1	4.91
Apr. 8	4.77
Apr. 15	4.75
Apr. 22	4.68
Apr. 30	4.66
May 6	4.61
May 13	4.78

Record of water levels in the Williams well, about 4½ miles east of San Bernardino—Contd.

Date of measurement.	Depth of water level below top of original well.
1911—Continued.	*Feet.*
May 20	5.00
May 27	5.16
June 3	5.32
June 10	5.70
June 17	6.10
June 24	6.44
July 1	6.76
July 8	7.13
July 15	7.31
July 22	7.49
July 29	7.69
Aug. 5	7.87
Aug. 12	8.00
Aug. 19	8.20
Aug. 26	8.39
Sept. 2	8.58
Sept. 9	8.82
Sept. 16	9.08
Sept. 23	9.31
Sept. 30	9.50
Oct. 7	9.67
Oct. 14	9.85
Oct. 21	9.99
Oct. 28	10.16
Nov. 4	10.27
Nov. 11	10.36
Nov. 18	10.46
Nov. 25	10.53
Dec. 2	10.67
Dec. 9	10.76
Dec. 16	10.83
Dec. 23	10.93
Dec. 30	10.99
1912.	
Jan. 6	11.08
Jan. 13	11.11
Jan. 20	11.15
Jan. 27	11.21
Feb. 3	11.27
Feb. 10	11.30
Feb. 17	11.35
Feb. 24	11.40
Mar. 2	11.49
Mar. 9	11.56
Mar. 16	11.55
Mar. 23	11.42
Mar. 30	10.51
Apr. 6	10.04
Apr. 13	9.61
Apr. 30 (?)	9.10
Apr. 27	8.67
May 4	8.26
May 11	8.10
May 18	7.87
May 25	7.84
June 1	7.83
June 8	7.93
June 15	8.04
June 22	8.21
June 29	8.37
July 6	8.80
July 13	9.10
July 20	9.23
July 23	9.79
Aug. 3	10.21
Aug. 10	10.68
Aug. 17	11.26
Aug. 24	12.05
Sept. 7	12.87
Sept. 14	13.05
Sept. 21	13.29
Sept. 28	13.52
Oct. 5	13.88
Oct. 12	13.90
Oct. 19	13.97
Oct. 26	14.02
Nov. 2	14.20
Nov. 9	14.23
Nov. 16	14.26
Nov. 23	14.34
Nov. 30	14.43
Dec. 7	14.53
Dec. 14	14.62
Dec. 21	14.68
Dec. 28	14.75
1913.	
Jan. 4	14.80
Jan. 11	14.85
Jan. 18	14.88
Jan. 25	14.88
Feb. 1	14.82
Feb. 8	14.80
Feb. 15	14.71
Feb. 22	14.55
Mar. 1	14.22
Mar. 8	14.03
Mar. 15	13.70
Mar. 22	13.39
Mar. 29	13.16
Apr. 5	13.07
Apr. 12	13.06
Apr. 19	13.08
Apr. 26	13.19
May 3	13.41
May 10	14.16
May 17	15.25
May 24	15.89
May 31	15.93
June 7	16.10
June 14	16.13
June 21	16.20
June 28	16.27
July 5	16.45
July 12	16.65
July 19	17.42
July 26	17.64
Aug. 2	17.80
Aug. 9	18.00
Aug. 16	18.22
Aug. 23	18.47
Aug. 30	18.64
Sept. 6	18.74
Sept. 13	18.90
Sept. 20	19.04
Sept. 27	19.19
Oct. 4	19.42
Oct. 11	19.60
Oct. 18	19.76
Oct. 25	19.90
Nov. 1	20.05
Nov. 8	20.51
Nov. 15	20.56
Nov. 22	20.57
Nov. 29	20.47
Dec. 6	20.32
Dec. 13	20.03
Dec. 20	19.93
Dec. 27	19.86
1914.	
Jan. 3	19.56
Jan. 10	19.33
Jan. 17	19.01
Jan. 24	18.17
Jan. 31	14.83
Feb. 7	14.04
Feb. 14	14.06
Feb. 21	11.06

Record of water levels in the Williams well, about 4½ miles east of San Bernardino—Contd.

Date of measurement.	Depth of water level below top of original well.
1914—Continued.	*Feet.*
Feb. 28	8.53
Mar. 7	7.60
Mar. 14	7.38
Mar. 21	7.30
Mar. 28	7.25
Apr. 4	7.06
Apr. 11	6.87
Apr. 18	6.83
Apr. 25	6.77
May 2	6.45
May 9	6.01
May 16	5.75
May 23	5.57
May 30	5.53
June 6	5.47
June 13	5.43
June 20	5.61
June 27	5.95
July 4	6.38
July 11	6.81
July 18	7.20
July 25	7.70
Aug. 1	8.04
Aug. 8	8.10
Aug. 15	8.87
Aug. 22	9.26
Aug. 29	9.65
Sept. 5	10.08
Sept. 12	10.39
Sept. 19	10.75
Sept. 26	11.11
Oct. 3	11.48
Oct. 10	11.74
Oct. 17	11.87
Oct. 24	12.03
Oct. 31	12.11
Nov. 7	12.17
Nov. 14	12.20
Nov. 21	12.32
Nov. 28	12.36
Dec. 5	12.44
Dec. 12	12.46
Dec. 19	12.45
Dec. 26	12.37
1915.	
Jan. 2	12.08
Jan. 9	11.89
Jan. 16	11.72
Jan. 23	11.53
Jan. 30	11.38
Feb. 6	10.33
Feb. 13	7.89
Feb. 20	6.43
Feb. 27	5.89
Mar. 6	5.44
Mar. 13	5.17
Mar. 20	5.00
Mar. 27	4.92
Apr. 3	4.77
Apr. 10	4.68
Apr. 17	4.61
Apr. 24	4.50
May 1	4.31
May 8	4.05
May 15	3.93
May 22	3.89
May 29	3.88
June 5	3.94
June 12	3.97
June 19	4.23
June 26	4.30
July 3	4.34
July 10	4.36
July 17	4.49
July 24	4.85
July 31	5.24
Aug. 7	5.51
Aug. 14	5.85
Aug. 21	6.16
Aug. 28	6.27
Sept. 4	6.69
Sept. 11	7.01
Sept. 18	7.30
Sept. 25	7.53
Oct. 1	7.84
Oct. 9	8.14
Oct. 16	8.37
Oct. 23	8.54
Oct. 30	8.69
Nov. 6	8.83
Nov. 13	8.84
Nov. 20	8.62
Nov. 27	8.55
Dec. 3	8.52
Dec. 11	8.33
Dec. 18	7.99
Dec. 25	7.72
1916.	
Jan. 1	7.42
Jan. 8	7.06
Jan. 15	6.63
Jan. 22	4.31
Jan. 29	3.39
Feb. 5	2.92
Feb. 12	2.61
Feb. 19	2.36
Feb. 26	2.20
Mar. 4	1.98
Mar. 11	1.81
Mar. 18	1.78
Mar. 25	1.68
Apr. 1	1.62
Apr. 8	1.62
Apr. 15	1.63
Apr. 22	1.63
Apr. 29	1.68
May 6	1.69
May 13	1.69
May 20	1.82
May 27	1.83
June 3	1.83
June 10	1.83
June 17	1.87
June 24	1.90
July 1	1.97
July 8	2.05
July 15	2.12
July 22	2.22
July 29	2.40
Aug. 5	2.52
Aug. 12	2.71
Aug. 19	2.86
Aug. 26	3.01
Sept. 2	3.02
Sept. 9	3.04
Sept. 16	3.06
Sept. 23	3.13
Sept. 30	3.18
Oct. 7	3.15
Oct. 14	2.98
Oct. 21	2.61
Oct. 28	2.46
Nov. 4	2.36
Nov. 11	2.33
Nov. 18	2.32
Nov. 25	2.33
Dec. 2	2.34
Dec. 9	2.34

Record of water levels in the Williams well, about 4½ miles east of San Bernardino—Contd.

Date of measurement.	Depth of water level below top of original well.
1916—Continued.	*Feet.*
Dec. 16	2.33
Dec. 23	2.30
Dec. 29	2.24
1917.	
Jan. 6	2.08
Jan. 13	1.93
Jan. 20	1.78
Jan. 27	1.61
Feb. 3	1.50
Feb. 10	1.35
Feb. 17	1.32
Feb. 24	1.26
Mar. 3	1.25
Mar. 10	1.22
Mar. 17	1.13
Mar. 24	1.07
Mar. 31	1.07
Apr. 7	1.12
Apr. 14	1.23
Apr. 21	1.34
Apr. 28	1.42
May 5	1.46
May 12	1.57
May 19	1.62
May 26	1.66
June 2	1.72
June 9	1.82
June 16	1.94
June 23	2.12
June 30	2.37
July 7	2.64
July 14	2.91
July 21	3.13
July 28	3.37
Aug. 4	3.51
Aug. 11	3.67
Aug. 18	3.88
Aug. 25	4.08
Sept. 1	4.23
Sept. 8	4.36
Sept. 15	4.52
Sept. 22	4.65
Sept. 29	4.81
Oct. 6	4.93
Oct. 13	5.08
Oct. 20	5.15
Oct. 27	5.20
Nov. 3	5.24
Nov. 10	5.23
Nov. 17	5.22
Nov. 24	5.16
Dec. 1	5.09
Dec. 8	5.01
Dec. 15	4.93
Dec. 22	4.87
Dec. 29	4.79
1918.	
Jan. 5	4.73
Jan. 13	4.67
Jan. 20	4.64
Jan. 26	4.63
Feb. 2	4.55
Feb. 9	4.47
Feb. 16	4.44
Feb. 23	4.42
Mar. 2	4.30
Mar. 9	4.04
Mar. 16	3.17
Mar. 30	2.50
Apr. 6	2.38
Apr. 13	2.32
Apr. 20	2.32
Apr. 27	2.37
May 4	2.47
May 11	2.63
May 18	2.74
May 25	2.87
June 1	2.93
June 8	2.97
June 15	3.07
June 22	3.25
June 29	3.51
July 6	3.65
July 13	3.85
July 20	4.00
July 27	4.17
Aug. 3	4.39
Aug. 10	4.58
Aug. 17	4.77
Aug. 24	4.98
Aug. 31	5.20
Sept. 7	5.38
Sept. 21	5.82
Sept. 28	5.95
Oct. 5	6.21
Oct. 12	6.20
Oct. 19	6.26
Oct. 26	6.31
Nov. 2	6.41
Nov. 9	6.56
Nov. 16	6.62
Nov. 23	6.62
Nov. 28	6.64
Dec. 7	6.63
Dec. 14	6.54
Dec. 21	6.33
Dec. 28	6.03

SAN DIEGO COUNTY.

In addition to the records of wells in the valley of southern California, records are given below for a few wells in the western part of San Diego County. Observations on the water levels in wells in that region were begun in 1912 by Arthur J. Ellis and Charles H. Lee. The data for many of these wells for the years 1912 to 1915 were published in Water-Supply Paper 446, in the form of diagrams showing graphically the fluctuations of the water table. Many wells that were measured during that period were destroyed by the floods in January, 1916. In the present report the basic data for all wells that are still being measured are given complete since 1912, and data for a few new wells are included. The numbers correspond to those in Water-Supply Paper 446.

Records of water levels in wells in San Diego County, California.

C7a. Well at Fairview Hotel, SW. ¼ sec. 20, T. 10 S., R. 3 W., Bonsall.

[Dug well, 3 feet in diameter, dry rock curb. Bench mark: Top of 2-inch cover over dry rock curb. Altitude of bench mark, 162.14 feet above sea level. Companion for C7 in Water-Supply Paper 446, Table 30, p. 126.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1917.	*Ft.*	*in.*	1919—Continued.	*Ft.*	*in.*
Feb. 11	8	10	Oct. 2	11	11
May 25	9	10	Nov. 5	11	8
Nov. 16 (cover removed, estimated)	9	8	Dec. 3	10	8
1918.			1920.		
May 5 (cover replaced)	9	3	Feb. 10	9	10
Aug. 26	10	6	Mar. 4	9	6
Oct. 31	10	4	Apr. 6	9	4
1919.			Apr. 21	9	5
			May 4	9	7
May 19	9	10	June 9	10	2
June 17 (pumping)	.....		July 15	10	9
July 16 (pumping)	.....		Sept. 14	10	11
Aug. 14	11	3	Oct. 7	12	0
			Nov. 16	11	1

Records of water levels in wells in San Diego County, California—Continued.

C9. Well at east end of Monseratte rancho.

[1¼-inch pipe 12 feet long driven on bank of San Luis Rey River. Bench mark: Top of pipe, 3.7 feet above surface, 268.72 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1913—Continued.	
Apr. 9	4 10	July 25 (pipe dry)	
Apr. 10	4 10	Aug. 30 (pipe dry)	
Apr. 12	4 1	Dec. 9	4 11
Apr. 19	4 3	1914.	
May 22	5 0	Jan. 23	4 11
June 25	5 2	Mar. 1	4 11
July 11	5 5	Apr. 25	5 3
July 20	7 5	May 9	5 6
Oct. 30	4 10	Aug. 19	7 3
Dec. 18	5 3	1915.	
1913.		Aug. 2	4 9
Jan. 2	4 10	Oct. 10	4 7
Jan. 19	4 11	1916.	
Feb. 20	4 11	Destroyed by January flood	
Apr. 18	5 0		
May 9	5 2		
June 13	7 7		
June 21 (pipe dry)			

C10. Well in SW. ¼ sec. 32, T. 9 S., R. 2 W., near Pala, locally known as Dal Higgins ranch.

[Dug well. Bench mark: 10-penny nail in top of 2 by 4 inch curb collar at northeast corner at surface, 313.06 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1914.	
Mar. 28	7 4	Jan. 23	6 5
Apr. 12	5 10	Mar. 1	5 6
Apr. 19	5 8	Apr. 25	5 8
May 22	6 5	May 9	6 7
June 25	6 10	July 29	7 7
July 11	6 11	Aug. 19	7 2
Sept. 20	6 11	Nov. 12	6 10
Oct. 30	6 8	Dec. 8	6 9
Nov. 26	6 10	Dec. 22	6 9
Dec. 18	6 10	1915.	
1913.		Jan. 9	6 8
Jan. 2	6 6	Jan. 23	6 8
Jan. 18	6 8	Feb. 5	5 3
Feb. 20	6 4	Feb. 24	4 10
Apr. 18	6 9	Mar. 12	5 5
May 9	6 10	Apr. 17	5 9
June 13	7 2	May 5	5 1
June 21	7 0	May 31	5 6
July 25	7 0	July 5	6 1
Aug. 30	7 1	Aug. 2	6 5
Oct. 6	6 6	Oct. 10	6 2
Dec. 9	6 9	1916.	
		Destroyed by flood	

Records of water levels in wells in San Diego County, California—Continued.

F3. County well in SW. ¼ sec. 18, T. 11 S., R. 4 W., San Luis Rey.

[Dug well, 12 feet 8 inches deep, 5 by 5 feet in cross section. Bench mark: Upper surface of cover, south west corner of wood curb 3 feet above surface, 35.10 feet above sea level. Water-Supply Paper 446 Table 31, p. 130.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1912.			1915—Continued.		
Mar. 28	7	2	May 31	7	4
Apr. 13 (pumping)	6	11	July 6	8	0
Apr. 18	6	7	Aug. 3	9	0
Apr. 19	6	5	Sept. 16 (pumping)	9	11
May 21	6	10	Sept. 17	9	7
June 15	7	11	Oct. 10	9	3
June 24	7	8			
July 10	8	2	1916.		
Sept. 22	8	5	Feb. 24	6	10
Oct. 31	8	6	June 9	8	2
Dec. 31	8	2	June 21	8	9
			Aug. 3	8	11
1913.			Sept. 17	9	7
Jan. 2	8	2	Nov. 24	8	7
Jan. 18	8	1			
Feb. 14	7	8	1917.		
Feb. 21	7	8	Feb. 12	7	8
Mar. 8	7	4	Apr. 11	8	0
Mar. 21 (pumping)	8	2	May 25	8	0
Apr. 8	7	2	June 9	8	3
May 8 (pumping)	7	8	Nov. 16	10	3
June 12	7	3			
June 21	7	7	1918.		
July 26	7	10	May 5	8	8
Aug. 19	8	5	Aug. 26	10	3
Sept. 29 (pumping)	11	1	Oct. 31	10	10
Oct. 1	8	8	Dec. 5	9	10
Dec. 9	8	3			
			1919.		
1914.			Feb. 3	9	3
Jan. 30	7	7	Mar. 20	8	10
Mar. 9	5	8	Apr. 23	9	1
Apr. 18	6	7	May 18	9	4
May 9	7	1	June 17	9	11
July 28 (pumping)	9	5	July 16	10	8
Aug. 19	8	5	Aug. 14	10	11
Nov. 14	8	5	Oct. 2	11	11
Nov. 25 (pumping)	8	7	Nov. 5	12	0
Dec. 9	8	3	Dec. 3	12	0
Dec. 14	8	7			
			1920.		
1915.			Feb. 2	11	2
Jan. 9	7	10	Mar. 4	10	0
Jan. 24	7	8	Apr. 21	8	11
Feb. 5	5	2	May 4	9	2
Feb. 24	5	0	June 9	10	0
Mar. 12	5	6	July 15	10	11
Apr. 18	6	8	Oct. 7 (wet sand at 12 ft. 4 in.)	.....	
Apr. 29	7	2	Nov. 19 (wet sand at 12 ft. 4 in.)	.....	
May 5	6	8			

Records of water levels in wells in San Diego County, California—Continued.

F13. Charles Forman, SW. ¼ sec. 18, T. 11 S., R. 4 W., San Luis Rey.

[Dug well, 10.3 feet deep, 3 by 3 feet in cross section. Bench mark: Two copper tacks in top of curb post at northwest corner of curb at surface, 27.87 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLII.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1912.			1915—Continued.		
Mar. 28	4	3	July 6	5	6
Apr. 13	3	3	Aug. 3	6	8
Apr. 18	3	10	Sept. 16	7	4
May 21	4	6	Oct. 10	7	5
June 15	6	1			
June 26	5	4	1916.		
July 10	5	5	Aug. 3	6	0
Sept. 22	6	6	Aug. 16	6	6
Oct. 31	6	3	Sept. 17	6	8
Dec. 5	5	11	Nov. 25	6	2
1913.			1917.		
Jan. 2	5	7	Feb. 11	4	4
Jan. 18	5	8	Apr. 11	5	2
Feb. 14	5	3	May 25	6	4
Feb. 21	5	3	June 9	6	6
Mar. 8	4	10			
Mar. 13	4	10	1918.		
Mar. 21	4	10	May 5 (pumping)	7	5
Apr. 8	4	8	Aug. 26	8	1
May 8	4	10	Oct. 31 (pumping)	10	4
June 12	4	10			
July 26	5	8	1919.		
Aug. 19	6	2	Feb. 3	6	9
Sept. 29	6	8	Mar. 20	6	4
Nov. 1	6	6	Apr. 23 (pumping)	6	9
Dec. 9	5	10	May 18 (pumping)	.....	
			June 17 (pumping)	.....	
1914.			July 16	9	0
Jan. 30	3	0	Aug. 14	9	5
Mar. 9	3	5	Oct. 2	9	10
Apr. 18	4	3	Nov. 5	9	9
May 9	4	7	Dec. 3	9	11
July 28	6	5			
Aug. 19	6	8	1920.		
Nov. 14	6	3	Feb. 10 (pumping)	.....	
Dec. 9	6	0	Mar. 4	7	6
Dec. 14	5	9	Apr. 6	7	5
			Apr. 21	7	0
1915.			May 4	7	1
Jan. 9	5	3	June 9 (pumping)	9	4
Mar. 18	4	0	Oct. 7	11	0
May 31	4	3	Nov. 19	11	5

Records of water levels in wells in San Diego County, California—Continued.

F17. Charles Forman, SW. ¼ sec. 8, T. 11 S., R. 4 W., San Luis Rey.

[Dug well, 14.8 feet deep, 7 feet in diameter. Bench mark: North side of cover of opening through wooden deck 4 feet above surface, 51.82 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLII.]

Date of measurement.	Depth of water level below bench mark.	
	Ft.	*in.*
1912.		
Mar. 28	10	4
Apr. 13	10	1
Apr. 19	9	8
May 21	9	8
June 24	9	11
July 10	10	3
Sept. 22	11	2
Oct. 31	11	4
Dec. 31	11	0
1913.		
Jan. 2	11	0
Jan. 18	11	1
Feb. 14	10	11
Feb. 21	10	9
Mar. 8	10	6
Mar. 21	10	5
Apr. 8	10	6
May 8	10	8
June 12	11	0
June 21	11	1
July 26	11	4
Aug. 19	11	7
Sept. 29	11	11
Nov. 1	11	5
Dec. 9	11	4
1914.		
Jan. 30	11	5
Feb. 28	8	10
Mar. 9	8	11
Apr. 18	9	5
May 9	10	0
Aug. 19	10	10
Nov. 13	11	1
Nov. 25	11	5
Dec. 9	11	0
Dec. 14	11	0
1915.		
Jan. 9	10	8
Jan. 24	10	7
Feb. 5	8	9
Feb. 24	7	8
Mar. 12 (pumping)	8	4
Apr. 18	8	9
May 5	8	2
May 31	9	1
1915—Continued.		
July 6	9	9
Aug. 3	10	3
Sept. 16	11	4
Oct. 10	11	2
1916.		
Jan. 12	10	6
Feb. 24	7	7
June 9	9	10
July 18	10	4
Aug. 19	10	9
Sept. 17	10	11
Nov. 24	10	11
1917.		
Feb. 12	9	6
Apr. 11	9	4
May 25	9	6
June 9	9	8
Nov. 16	11	2
1918.		
May 5	10	4
Aug. 26	11	3
Oct. 31	11	10
1919.		
Feb. 3	11	9
Mar. 20	11	9
Apr. 23	11	1
May 18	11	3
June 17	11	4
July 16	11	8
Aug. 14	11	11
Oct. 2	12	2
Nov. 5	12	5
Dec. 3	12	6
1920.		
Feb. 10	12	4
Mar. 4	12	2
Apr. 6	11	11
Apr. 21	11	9
May 4	11	8
June 9	11	3
July 15	11	3
Oct. 7	12	4
Nov. 19	12	8

Records of water levels in wells in San Diego County, California—Continued.

F20. Edm. E. Richmond, SE. ¼ sec. 5, T. 11 S., R. 4 W., San Luis Rey.

[Dug well, 12.3 feet deep. Bench mark: Tack in top of curb at northwest corner, under cover 1 foot above surface, 64.55 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLII.]

Date of measurement	Depth of water level below bench mark.		Date of measurement	Depth of water level below bench mark.	
	Ft.	*in.*		*Ft.*	*in.*
1912.			1915.		
Apr. 15	7	7	Jan. 9	10	6
Apr. 19	7	6	Jan. 24	10	7
May 21 (affected by irrigation)	5	7	Feb. 5	9	1
June 24	7	2	Feb. 24	6	6
July 10	7	8	Mar. 12	6	2
Sept. 21	9	3	Apr. 18	6	4
Oct. 31	9	10	May 5 (affected by irrigation)	4	9
Nov. 26	10	2	May 31	6	4
1913.			July 6 (affected by irrigation)	5	2
Jan. 2	10	7	Aug. 3	7	7
Jan. 18	10	11	Sept. 17	8	7
Feb. 14	10	5	Oct. 10	9	0
Mar. 8	9	1	1916.		
Mar. 21	8	4	Jan. 11	8	1
Apr. 8 (affected by irrigation)	4	3	June 9	8	7
May 8	7	5	June 28	7	8
June 12	8	4	July 1	7	10
June 21	8	11	Aug. 18	7	9
July 26	9	4	Sept. 17	8	8
Aug. 19	9	11	Nov. 25	8	10
Sept. 29	10	6	1917.		
Oct. 31	10	8	Feb. 12	8	5
Dec. 9	11	4	Apr. 11	8	6
1914.			May 25	8	9
Jan. 30	11	0	June 9	8	10
Mar. 9	7	4	Nov. 16	10	2
Apr. 18	6	8	1918.		
May 9 (affected by irrigation)	3	7	May 5	9	0
July 28	8	4	Aug. 26	10	0
Aug. 19	8	10	Oct. 31 (dry, filled in at 9 ft. 6 in.)	.....	
Nov. 13	10	1	1919.		
Nov. 25	10	2	Feb. 3	9	5
Dec. 9	10	5	Mar. 20	9	3
Dec. 14	10	5	Apr. 23	9	3
			May 18	9	2
			June 17 (filled with sand)	.....	

Records of water levels in wells in San Diego County, California—Continued.

F21. Escondido Mutual Water Co., SW. ¼ sec. 4, T. 11 S., R. 4 W., San Luis Rey.

[Dug well, 13.5 deep, 4 by 4 feet in cross section. Bench mark: Top of 3 by 4 inch timber under cover 2 feet above surface, 68.94 feet above sea level. Water-Supply Paper 446, Table 31, p. 130.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1916.	
Apr. 15	8 2	Jan. 11	8 8
Apr. 19	7 11	June 9	9 3
May 21 (affected by irrigation)	6 1	June 21 (affected by irrigation)	8 2
June 24	8 10	July 1 (affected by irrigation)	8 5
July 10	9 4	July 18	7 6
Sept. 21	11 3	Aug. 17	8 4
Oct. 31	12 0	Sept. 17	9 5
Nov. 26	12 5	Nov. 25	9 6
1913.		1917.	
Jan. 2	12 9	Feb. 12	9 0
Jan. 18	13 0	Apr. 12	9 2
Feb. 14	12 1	May 25	9 5
Mar. 8	9 6	June 9	9 5
Mar. 21	9 0	Nov. 16	11 11
Apr. 8 (affected by irrigation)	6 0	1918.	
May 8	9 1	May 5	9 7
June 12	10 2	Aug. 26	11 4
June 21	10 3	Oct. 31	12 4
July 26	10 5	Dec. 5	11 1
Aug. 19	12 0	1919.	
Sept. 29	12 9	Feb. 3	10 3
Oct. 31	13 1	Mar. 20	10 0
Dec. 9	13 6	Apr. 23	10 1
1914.		May 18	9 9
Jan. 30	11 9	June 17	10 5
Mar. 9	7 9	July 16	11 3
Apr. 18 (affected by irrigation)	6 4	Aug. 14	11 10
May 9 (affected by irrigation)	6 0	Oct. 2	12 8
July 28	9 10	Nov. 5	13 0
Aug. 19	10 5	Dec. 3	13 4
Nov. 13	12 0	1920.	
Nov. 25	12 2	Feb. 10	10 10
Dec. 9	12 4	Mar. 4	10 5
Dec. 14	12 5	Apr. 6	10 0
1915.		Apr. 21	10 0
Jan. 9	12 7	May 4	10 2
Jan. 24	12 6	June 9	10 7
Feb. 5	9 8	July 15	11 8
Feb. 24 (affected by irrigation)	6 11	Oct. 7	13 0
Mar. 12 (affected by irrigation)	7 0	Nov. 19	13 10
Apr. 18 (affected by irrigation)	7 0		
May 5 (affected by irrigation)	5 8		
May 31 (affected by irrigation)	7 0		
July 6 (affected by irrigation)	6 5		
Aug. 3	8 9		
Sept. 17	10 1		
Oct. 10	10 7		

Records of water levels in wells in San Diego County, California—Continued.

G37. Santa Fe ranch, San Dieguito land grant, San Dieguito Valley.

[Drilled well in bottom of shallow pit, casing 10 inches in diameter. Bench mark: Top of concrete at cast-iron cover over casing, 39.88 feet above sea level. Altitude of surface 43 feet above sea level in 1917. From Feb. 10, 1915, to Mar. 3, 1915, measurements made from surface. Water-Supply Paper 446, Table 33, p. 134, and Pl. XLI.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1913.		1915—Continued.	
Jan. 26	10 7	Feb. 24	2 3
Mar. 3	8 3	Feb. 25	1 3
May 18	10 4	Feb. 26	1 6
May 31	10 5	Feb. 27	1 5
June 15	11 8	Feb. 28	1 5
June 30	12 2	Mar. 1	1 1
July 15	12 6	Mar. 5	1 5
July 31	13 0	Mar. 6	1 4
Aug. 15	12 8	Mar. 7	1 6
Aug. 31	13 9	Mar. 8	1 6
Sept. 15	13 9	Mar. 10	1 6
Sept. 30	13 9	Mar. 11	1 10
Oct. 15	12 1	Mar. 12	1 10
Nov. 1	12 10	Mar. 13	1 10
Nov. 15	12 2	Mar. 14	1 10
Nov. 30	11 9	Mar. 18	1 10
Dec. 15	11 5	Mar. 21	2 2
Dec. 31	11 4	Mar. 22	2 2
		Mar. 31	2 2
1914.		Apr. 1	2 2
Jan. 15	11 3	1917.	
Jan. 31	5 0	May 15	6 0
Feb. 15	4 2	May 28	5 11
Mar. 15	3 3	June 6	5 11
Apr. 1	3 1	June 9	5 9
Apr. 15	3 3	June 10	5 6
Apr. 30	2 11	June 21	5 7
May 15	2 7	July 7	6 7
May 31	4 1	Aug. 1	6 10
June 15	5 7	Aug. 6	7 7
June 30	7 0	Aug. 13	7 11
July 15	8 0	Sept. 2	8 8
July 31	8 10	Sept. 12	8 8
Aug. 15	8 11	Sept. 16	8 10
Aug. 31	8 11	Sept. 24	9 1
Sept. 15	9 4	Oct. 6	8 8
Sept. 30	8 5	Oct. 13	8 7
Oct. 15	8 10	Oct. 20	8 6
Oct. 31	8 3	Oct. 28	8 8
Nov. 15	8 10	Nov. 3	8 8
Nov. 30	8 11	Nov. 10	8 8
Dec. 15	8 11	Nov. 17	8 10
Dec. 31	8 11	Nov. 24	9 0
		Dec. 1	9 4
1915.		Dec. 8	9 6
Jan. 15	9 1	Dec. 15	9 11
Jan. 31	2 2	Dec. 22	9 8
Feb. 1	3 8	Dec. 29	9 3
Feb. 2	2 0		
Feb. 3	6	1918.	
Feb. 4	1 6	Jan. 5	9 4
Feb. 5	1 11	Jan. 12	9 1
Feb. 6	2 1	Jan. 19	9 3
Feb. 7	2 2	Jan. 26	9 3
Feb. 8	4 0	Feb. 2	7 3
Feb. 9	2 2	Feb. 9	6 9
Feb. 10	5	Feb. 23	6 6
Feb. 11	0	Mar. 2	6 5
Feb. 12	4	Mar. 9	5 10
Feb. 13	5	Mar. 16	5 7
Feb. 14	1 1	Mar. 30	5 6
Feb. 15	2 11	Apr. 6	6 6
Feb. 16	1 3	Apr. 13	6 7
Feb. 17	1 3	Apr. 20	6 8
Feb. 18	1 4	Apr. 27	6 9
Feb. 19	1 5	May 4	7 3
Feb. 20	1 3	May 18	7 6
Feb. 21	10	May 25	7 9
Feb. 22	1 7	June 2	7 10
Feb. 23	1 9		

Records of water levels in wells in San Diego County, California—Continued.

G37. Santa Fe ranch—Continued.

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1918—Continued.	*Ft. in.*	1919—Continued.	*Ft. in.*
June 9	7 9	Jan. 25	7 10
June 16	8 1	Feb. 1	7 6
June 23	8 5	Feb. 8	7 9
June 30	8 5	Feb. 15	7 10
July 7	8 11	Feb. 22	8 0
July 14	9 1	Mar. 1	7 10
July 19	9 9	Mar. 8	7 9
July 27	10 3	Mar. 15	7 6
Aug. 4	10 5	Mar. 22	8 0
Aug. 11	10 4	Mar. 29	8 2
Aug. 18	10 1	Apr. 5	8 3
Aug. 25	10 0	Apr. 12	8 1
Sept. 1	10 0	Apr. 19	8 0
Sept. 7	10 4	Apr. 26	8 2
Sept. 15	9 11	May 3	8 0
Sept. 21	10 0	May 10	8 4
Sept. 30	10 1	May 17	8 6
Oct. 5	10 3	May 24	8 10
Oct. 12	10 6	May 31	9 0
Oct. 19	9 9	June 7	9 2
Oct. 26	8 8	June 14	9 4
Nov. 9	8 6	June 21	9 6
Nov. 16	8 4	June 28	9 10
Nov. 24	7 10	1920.	
Dec. 7	7 6	Feb. 10	10 4
Dec. 14	7 11	Mar. 9	10 6
Dec. 21	7 11	Apr. 10	10 10
Dec. 28	7 10	May 10	10 6
1919.		June 10	11 0
Jan. 4	7 11	July 10	10 10
Jan. 11	8 0	Sept. 16	11 0
Jan. 18	8 1	Nov. 19	11 4

J. H. Dinsmore, SE. ¼ SE. ¼ sec. 6, T. 14 S., R. 3 W., San Dieguito Valley.

[Driven pipe, 2 inches in diameter, 18 feet deep. Established by the San Dieguito Mutual Water Co. for observing the depth of water plane. Bench mark: Top of casing 3 feet 1 inch above surface, 20.98 feet above sea level.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1918.	*Ft. in.*	1919—Continued.	*Ft. in.*
Aug. 7	8 2	June 17	8 7
Aug. 24	8 4	July 9	8 11
Sept. 17	8 8	Aug. 5	9 3
Oct. 12	8 10	Aug. 14	9 4
Nov. 8	8 10	Aug. 26	9 4
Dec. 6	8 7	Oct. 1	9 7
1919.		Nov. 6	9 10
Feb. 3	8 1	Dec. 3	9 10
Apr. 23	7 11		

Records of water levels in wells in San Diego County, California—Continued.

H1. Roberts place, NE. ¼ SW. ¼ sec. 33, T. 12 S., R. 1 W., San Pasqual.

[Curbed well, 24 feet 6 inches deep, 4 by 4 feet in cross section; method of lift, gasoline engine and centrifugal pump. Bench mark: Top of 3 by 4 inch curb post at northwest corner, 3 feet 6 inches above surface, 382.73 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLI.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1912.	*Ft.*	*in.*	1914.	*Ft.*	*in.*
Apr. 22	4	10	Jan. 19	6	7
May 5	5	2	Jan. 30	5	4
May 15	5	0	Feb. 27	4	9
May 23	5	0	Mar. 6	5	0
June 22	5	10	Mar. 13	5	1
July 13	5	8	Mar. 27	4	7
Sept. 24	6	9	Apr. 3	4	10
Oct. 29	6	9	Apr. 11	4	9
Dec. 16	6	6	Apr. 25	5	0
1913.			May 8	5	2
Jan. 20	5	10	May 27	5	2
Feb. 14	5	6	July 14	5	4
Mar. 13	5	0	Oct. 1	7	0
Mar. 19	5	1	1915.		
Apr. 10	5	1	May	3	11
May 12	5	3	July 14	5	4
June 16	5	8	Aug. 2	5	1
June 24	5	10	Oct. 8	6	1
July 25	6	5	1916.		
Aug. 20	6	10	Destroyed by January floods	.....	
Oct. 29	7	5			
Dec. 5	7	1			
Dec. 22	7	1			

Records of water levels in wells in San Diego County, California—Continued.

H5. F. M. Judson, SW. ¼ sec. 35, T. 12 S., R. 1 W., San Pasqual.

[Dug well, 11.0 feet deep, 3 by 3 feet in cross section. Bench mark: Tack in top of 2 by 3 inch curb post at southwest corner, 4 inches above surface, 419.44 feet above sea level. Water-Supply Paper 446, Pl. XLI.]

Date of measurement.	Depth of water level below bench mark.		Date of measurement.	Depth of water level below bench mark.	
1912.	*Ft.*	*in.*	1916.	*Ft.*	*in.*
Apr. 22	3	5	June 10	2	6
May 5	4	2	Dec. 9	3	9
May 15	3	9			
May 23	4	5	1917.		
June 22	4	3	Jan. 12	3	10
July 13	5	0	Feb. 12	3	10
Sept. 24	6	3	Apr. 12	3	6
Oct. 29	5	10	May 21	3	7
Dec. 16 (pumping)	5	10	June 8	3	7
			Nov. 17	4	2
1913.			Dec. 25	3	1
Jan. 20	4	4			
Feb. 14	3	4	1918.		
Mar. 13	3	6	May 5	4	0
Apr. 10	3	3	Oct. 6	6	0
May 12	3	11	Oct. 31	6	3
June 16	4	10	Dec. 5	4	11
June 24	5	2			
July 28	6	1	1919.		
Aug. 20 (pumping)	7	4	Feb. 4	4	0
Sept. 30	6	5	Mar. 18	4	2
Oct. 29	6	11	May 2	3	10
Dec. 5	6	1	May 19	4	3
Dec. 15	6	1	June 17 (pumping)	.....	
			July 9	5	9
1914.			Aug. 26	6	1
Jan. 19	4	9	Oct. 1 (pumping)	.....	
Jan. 30	3	8	Nov. 6	6	3
Feb. 27	3	0	Dec. 4	6	0
Mar. 6	3	6			
Mar. 13	3	1	1920.		
Mar. 27	3	2	Jan. 20	4	7
Apr. 3	3	5	Feb. 12	3	7
Apr. 10	3	7	Mar. 5	3	10
Apr. 25	3	3	Mar. 29	3	8
May 8	3	2	Mar. 30	3	9
May 27	3	5	Apr. 6	4	2
Oct. 14	6	6	Apr. 22	4	5
			May 3 (pumping)	.....	
1915.			June 2	4	2
Jan. 25	3	9	June 24	4	6
Aug. 2	4	4	Aug. 9	5	11
Oct. 8	4	5	Sept. 27	6	3
			Nov. 9	5	8

Records of water levels in wells in San Diego County, California—Continued.

H31. H. S. Meyers, NE. ¼ SE. ¼ sec. 33, T. 12 S., R. 1 W., San Pasqual.

[Dug well, 4 by 4 feet in cross section, 7 feet deep, not used. Bench mark: Tack in top of 2 by 4 inch post at northwest corner of curb, 3 feet above surface, 384.97 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLI.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1912.		1914.	
Apr. 22	3 4	Jan. 19	4 0
May 5	3 5	Jan. 30	3 3
May 15	3 3	Feb. 27	2 11
May 23	3 6	Mar. 6	3 3
June 22	3 9	Mar. 13	3 5
July 13	4 1	Mar. 27	3 0
Sept. 24	4 11	Apr. 3	3 1
Dec. 16	4 7	Apr. 10	3 2
		Apr. 25	3 3
1913.		May 8	3 4
Jan. 20	4 1	May 27	3 7
Feb. 14	3 7	Oct. 14	4 11
Mar. 13	3 1		
Mar. 19	3 2	1915.	
Apr. 10	3 4	Jan. 25	3 6
May 13	3 8	May 4	3 2
June 16	3 11	Aug. 2	3 3
June 24	4 1	Oct. 8	4 3
July 25	4 8		
Aug. 20	5 0	1916.	
Oct. 29	5 5	Destroyed by January floods	.....
Dec. 5	5 2		
Dec. 22	5 2		

H31a. Well in NW. ¼ SW. ¼ sec. 33, T. 12 S., R. 1 W., one-fourth mile west of San Pasqual Creamery.

[Curbed well; method of lift, wind. Bench mark: Nail in top of 4 by 4 inch timber on north side of curb under cover, 2 inches above surface, 379.16 feet above sea level. Companion well for Nos. H31 and H1, Water-Supply Paper 446, Table 31, p. 130.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1917.		1919—Continued.	
Apr. 12	3 3	Aug. 26	8 0
June 8	3 5	Oct. 1	8 7
Nov. 17	6 2	Nov. 6	8 11
Dec. 25	5 7	Dec. 4	8 9
1918.		1920.	
May 5	4 8	Jan. 20	8 6
Oct. 6	7 4	Feb. 12	8 5
Oct. 31	7 7	Mar. 5	6 7
Dec. 5	7 4	Mar. 29	4 11
		Apr. 6	5 2
1919.		Apr. 22	5 2
Feb. 4	5 10	May 3	5 5
Mar. 18	5 7	June 2	4 4
May 2	4 2	June 24	5 1
May 19	4 6	Aug. 9	6 6
June 17	5 4	Sept. 27	8 1
July 9	6 4	Nov. 9	8 3

Records of water levels in wells in San Diego County, California—Continued.

H34a. San Diego County highway bridge over Santa Ysabel Creek in NE. ¼ NW. ¼ sec. 35, T. 12 S., R. 1 W., San Pasqual.

[Bench mark: Nail at V notch in upstream side of pile at northeast corner of bridge, 426.27 feet above sea level. Companion for well No. H34, Water-Supply Paper 446, Table 30, p. 126.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1917.	*Ft. in.*	1919—Continued.	*Ft. in.*
Feb. 12	2 8	Oct. 1	4 3
Apr. 12	2 10	Nov. 6	4 1
June 8	2 10	Dec. 4	4 1
Nov. 17	3 4	1920.	
Dec. 25	3 0	Jan. 20	3 5
1918.		Feb. 12	3 10
May 5 (estimated 5 second-inches in river)	3 5	Mar. 5	4 1
Dec. 5	3 7	Mar. 29	3 7
1919.		Apr. 6	3 6
Feb. 4	4 1	Apr. 22	3 6
Mar. 18	3 5	May 3	3 8
May 2	3 9	June 2	3 6
May 19	3 9	June 24	4 0
June 17	3 10	Aug. 9 (river flowing)	4 3
July 9	3 11	Sept. 27 (river flowing)	4 5
Aug. 26	4 0	Nov. 9 (river flowing)	4 4

H37. H. A. Miles, Valle de Pamo land grant, Ramona.

[Dug well, 32 feet deep, 5 feet in diameter. Bench mark: Top of concrete curb, at southwest side, 0.5 foot above surface, 1,438.50 feet above sea level. Water-Supply Paper 446, Table 30, p. 126, and Pl. XLVII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1918.	*Ft. in.*
Aug. 2	30 6	May 6	25 6
Oct. 1	27 9	Nov. 7	26 7
1916		1919.	
June 10	24 4	May 19	26 11
Dec. 9	25 1	1920.	
1917.		Jan. 31	28 4
May 21	24 6	Apr. 28 (pumping)	
Dec. 31	26 9	Sept. 22	28 6

Records of water levels in wells in San Diego County, California—Continued.

H38. Mark Kearney, Valle de Pamo land grant, Ramona.

[Dug well, 38 feet deep, 5 feet in diameter. Bench mark: Top of concrete curb, at southwest side, 2 inches below surface, 1,424.56 feet above sea level. Water-Supply Paper 446, Table 30, p. 126, and Pl. XLVII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1919.	*Ft. in.*
Aug. 2	10 1	May 19	11 3
Oct. 1	11 5	1920.	
1916.		Jan. 30	13 1
June 10	9 6	Apr. 28	8 11
Dec. 8	11 7	Sept. 21	12 8
1917.		Feb. 10	9 8
May 21	10 11	Mar. 4	9 9
Dec. 31	10 4	May 5	9 8
1918.		June 2	9 11
May 5	9 6	July 1	10 1
Nov. 7	12 6	Aug. 14	10 8
		Sept. 16	10 11
		Nov. 19	11 2

K31. L. H. Icovich, Ex Mission San Diego, Mission Valley.

[Dug well, 24.3 feet deep, 6 feet in diameter. Bench mark: Top of concrete curb, at east side, 1 foot 8 inches above surface, 95.70 feet above sea level. Water-Supply Paper 446, Table 30, p. 126.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1920.	*Ft. in.*
Aug. 1	16 9	Apr. 29	7 4
Oct. 1	21 5	Aug. 20	9 9
		Sept. 23	10 3

K33. G. S. Beach, Pueblo Lands of San Diego, Old Town.

[Dug well, 8 feet deep. Bench mark: Notch in 2 by 4 inch post at southwest corner of curb, 4 inches below surface, 10.89 feet above sea level. Water-Supply Paper 446, Table 30, p. 126.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1918.	*Ft. in.*
Aug. 1	6 2	May 8	3 11
Oct. 9	6 6	Oct. 31	6 0
1916.		1919.	
June 15	1 9	May 21	5 6
Dec. 23	5 5	1920.	
1917.		Feb. 2	6 2
May 25	2 11	Apr. 29	4 0
		Aug. 9	5 10
		Sept. 23	6 2

Records of water levels in wells in San Diego County, California—Continued.

K84a. George W. Johnson, Mission Valley, near county poor farm.

[Drilled well, 77 feet deep, 8-inch casing, sunk in April, 1916. Bench mark: Top of casing at surface. Companion well to K84. Water-Supply Paper 446, Table 30, p. 126.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1918.	*Ft. in.*	1920.	*Ft. in.*
Mar. 6	5 11	Feb. 2	7 6
May 8	14 8	Apr. 29	16 4
Oct. 31	16 11	June 2	17 2
1919.		Sept. 23	18 0
May 21	16 7		

L5. G. E. Philbrook, El Cajon land grant, Lakeside.

[Dug well, 7 feet in diameter. Bench mark: Tack in top of wood curb on west side, 1 foot 5 inches above surface, 413.40 feet above sea level. Water-Supply Paper 446, Table 30, p. 127.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1912.	*Ft. in.*	1916.	*Ft. in.*
Oct. 18	12 4	June 10 (pumping)	10 4
Nov. 17	11 3	Dec. 14	8 2
Dec. 27	11 0	1917.	
1913.		May 22	7 10
Apr. 12	9 3	Dec. 22	10 9
May 12	10 2	1918.	
June 17 (pumping)	15 9	May 8	8 3
Aug. 23 (pumping)	15 2	Oct. 31	13 6
Oct. 1 (pumping)	17 5	1919.	
Oct. 30	13 8	May 19	9 1
1914.		1920.	
Jan. 21	12 3	Feb. 3	11 9
Mar. 5	9 6	Apr. 24	7 10
Apr. 20	10 11	Sept. 20	12 7
July 12	10 2	Oct. 22	12 3
Oct. 13	13 2	Nov. 17	12 1
1915.			
Aug. 2	10 4		
Oct. 1 (pumping)	16 0		
Oct. 8	12 0		

Records of water levels in wells in San Diego County, California—Continued.

L7a. Cuyamaca Water Co., El Cajon land grant, Lakeside.

[Dug well. Bench mark: Three notches in top of curb arc, on east side, 3 feet below surface, 435.25 feet above sea level. Prior to October, 1914, measurements were made from top of curb cover, about 1 foot 1 inch higher than bench mark. Water-Supply Paper 446, Table 31, p. 130, and Pl. XL.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1912.	*Ft. in.*	1914.	*Ft. in.*
June 25	6 3	Jan. 20	8 8
July 22	6 11	Mar. 3	5 6
Aug. 15	7 8	Apr. 20	6 0
Sept. 10	8 0	May 13	5 9
Oct. 9	8 6	Aug. 21	8 10
Dec. 27	7 8	Sept. 3	9 1
		Sept. 10	9 4
1913.			
Jan. 22	7 1	1915.	
Feb. 17	6 9	Aug. 1	5 4
Mar. 15	5 11	Oct. 1	7 8
Apr. 12	5 11		
May 13	6 3	1916.	
June 19	6 11	Jan. (destroyed)	.....
Aug. 23	9 0		
Oct. 1	9 9		
Oct. 30	9 10		

L7e. Cuyamaca Water Co., El Cajon land grant, Lakeside.

[Drilled well. Bench mark: Top of casing 1 foot above surface, 436.57 feet above sea level. Companion well to L7a. Water-Supply Paper 446, Table 30, p. 127.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1919.	*Ft. in.*	1919—Continued.	*Ft. in.*
Aug. 21 (pumping)	8 7	Dec. 19	9 11
Aug. 28	7 0	Dec. 26	9 9
Sept. 3 (pumping)	8 9	Dec. 31	9 7
Sept. 8	8 1		
Sept. 19	8 0	1920.	
Sept. 26 (pumping)	12 6	Jan. 6	9 6
Oct. 3 (pumping)	14 0	Jan. 13	9 4
Oct. 10 (pumping)	15 1	Jan. 16	9 5
Oct. 17 (pumping)	15 11	Feb. 3	9 0
Oct. 24 (pumping)	15 6	Feb. 25	6 0
Oct. 30 (pumping)	15 6	Apr. 13	4 0
Nov. 4	13 0	Apr. 27	4 1
Nov. 11	11 10	May 18	4 2
Nov. 18	11 3	June 10	4 5
Nov. 25	11 0	July 10	4 10
Nov. 30	10 9	Sept. 1	6 8
Dec. 6	10 6	Sept. 20	7 1
Dec. 13	10 3	Nov. 12	7 2

Records of water levels in wells in San Diego County, California—Continued.

L11. James Ballantyne, El Cajon land grant, Santee.

[Dug well, 26 feet deep, 5 feet in diameter. Bench mark: Roofing tack in top of curb, on west side, 7 inches above surface, 354.61 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLVII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1913.	*Ft. in.*	1916.	*Ft. in.*
Jan. 28	17 6	June 12	12 8
Apr. 12	16 2	Dec. 19 (pumping)	.....
May 15	16 0	1917.	
June 20 (pumping)	18 0	May 23	13 4
Aug. 23 (pumping)	19 1	Dec. 31 (pumping by electric motor)	.....
Oct. 1 (pumping)	19 0	1918.	
Oct. 30	17 9	May 8	14 6
1914.		Oct. 31	17 5
Mar. 6	17 10	1919.	
Apr. 4	17 6	May 21 (pumping)	.....
Oct. 13 (pumping)	18 11	1920.	
1915.		Feb. 3	18 10
Aug. 1	15 0	Apr. 24	16 9
Oct. 1	16 5		

L63. Father Ummerman, El Cajon land grant, Foster.

[Drilled well, 70.0 feet deep, 12 inches in diameter. Bench mark: Top of casing in concrete pit, 3 feet 2 inches below surface, 425.09 feet above sea level. Water-Supply Paper 446, Table 30, p. 127, and Pl. XL.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1919.	*Ft. in.*
Aug. 2	2 10	May 19	6 4
Oct. 1	4 8	1920.	
1916.		Feb. 3	9 4
June 10 (January floods filled pit with débris)	.....	Feb. 25	9 2
		Mar. 16	8 10
1917.		Apr. 6	5 9
May 22	2 1	Apr. 24	4 5
Oct. 31	5 2	May 25	3 9
		July 14	5 0
1918.		Aug. 18	6 0
May 8	2 5	Sept. 20	6 6
Oct. 31	6 0	Oct. 22	6 10
		Nov. 17	7 1

Records of water levels in wells in San Diego County, California—Continued.

L63a. Sumner ranch, El Cajon land grant, Foster.

[Driven well, 2 inches in diameter, equipped with well point. Installed by Cuyamaca Water Co. for observing depth of water plane. Bench mark: Top of casing 3.5 feet above surface, 432.85 feet above sea level. Companion well to L63. Water-Supply Paper 446, Table 30, p. 127.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1919.	*Ft. in.*	1920—Continued.	*Ft. in.*
Oct. 21	14 11	Mar. 16	13 3
Nov. 4	14 9	Apr. 6	4 9
Nov. 21	14 4	Apr. 28	5 10
Dec. 20	14 0	May 25	7 8
1920.		July 14	9 2
Jan. 15	13 11	Aug. 18	10 9
Feb. 3	13 11	Sept. 20	11 0
Feb. 25	13 6	Oct. 22	11 4
		Nov. 17	11 7

L65. G. E. Philbrook, El Cajon land grant, Lakeside.

[Dug well, 7 feet in diameter. Bench mark: Top of curb on east side, 2 inches above surface, 412.20 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XL]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1912.	*Ft. in.*	1917.	*Ft. in.*
Oct. 18	11 11	May 22	7 4
Nov. 13	10 3	Dec. 22	10 7
Dec. 27	10 5	1918.	
1913.		May 8	8 2
Jan. 28	10 9	Oct. 31	11 4
Apr. 12	9 11	1919.	
May 12	12 0	May 19	9 4
June 17 (pumping)	16 7	Oct. 21	11 7
Aug. 23	12 4	Nov. 4	11 9
Oct. 1 (pumping)	.....	Nov. 21	11 11
Oct. 30	12 10	Dec. 20	11 8
1914.		1920.	
Jan. 21	12 1	Jan. 16	11 8
Apr. 20	10 7	Feb. 3	11 8
May 12	9 10	Feb. 25	10 8
Oct. 13	12 10	Mar. 16	9 2
Nov. 10	13 4	Apr. 6	7 6
1915.		Apr. 24	7 11
Mar. 11	6 11	May 25	8 6
Aug. 2	10 8	July 14	10 3
Oct. 1 (pumping)	.....	Aug. 18	11 4
Oct. 8	11 11	Sept. 20	12 1
1916.		Oct. 22	12 2
June 10	5 10	Nov. 17	12 1
Dec. 19	8 2		

Records of water levels in wells in San Diego County, California—Continued.

L65a. Barttell ranch, El Cajon land grant, Lakeside.

[Driven well, 2 inches in diameter, equipped with well point. Installed by Cuyamaca Water Co. for observing depth of water plane. Bench mark: Top of casing, 3 feet 7 inches above surface. Altitude of bench mark, 408.51 feet above sea level. Companion well to L65. Water-Supply Paper 446, Table 31, p. 130.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1919.	*Ft. in.*	1920—Continued.	*Ft. in.*
Oct. 21	8 5	Mar. 16	5 6
Nov. 4	8 2	Apr. 6	3 10
Nov. 21	8 3	Apr. 24	4 5
Dec. 20	8 1	May 25	5 0
1920.		July 14	6 11
Jan. 16	8 0	Aug. 18	7 11
Feb. 3	8 0	Sept. 20	8 5
Feb. 25	6 9	Oct. 22	8 7
		Nov. 17	8 6

L70. U. S. Geological Survey, El Cajon land grant, Lakeside.

[River gage. Zero of gage, 5 feet below surface; 405.00 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XL.]

Date of measurement.	Gage readings at water plane.	Date of measurement.	Gage readings at water plane.
1912.	*Ft. in.*	1915.	*Ft. in.*
June 25	2 8	Aug. 2	1 10
Aug. 17	1 8	Oct. 1	6
Nov. 13	1 3	1916.	
Dec. 27	1 8	Dec. 4 (estimated 10 second-feet in river)	4 6
1913.		1917.	
Jan. 28	2 4	May 23 (estimated 20 second-feet in river)	5 0
May 12 (0. 2 second-foot in river)	2 5	Dec. 22	1 10
June 19	1 10	1918.	
Aug. 24	5	May 8 (estimated 0.2 second-foot in river)	4 70
Oct. 1	0	Oct. 31	−1
Oct. 30	−5		
1914.			
Jan. 21	5		
Apr. 20	2 1		
Aug. 21	0		
Oct. 13	−5		

L70a. H. Thum, El Cajon land grant, Lakeside.

[Driven well, 2-inch pipe, equipped with well point. Installed by Cuyamaca Water Co. for observing depth of water plane. Bench mark: Top of casing, 3.5 feet above surface, 414. 85 feet above sea level. Companion well to L70. Water-Supply Paper 446, Table 31, p. 130.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1919.	*Ft. in.*	1920—Continued.	*Ft. in.*
Oct. 21	12 2	Apr. 13	6 6
Nov. 4	12 2	Apr. 24	6 6
Nov. 21	12 2	May 25	7 0
Dec. 20	12 2	July 10	10 2
1920.		Sept. 1	11 11
Jan. 15	12 3	Sept. 20	12 2
Feb. 3	12 3	Oct. 22	12 4
		Nov. 17	12 3

Records of water levels in wells in San Diego County, California—Continued.

L75. El Monte ranch, El Cajon land grant (Cape Horn), Lakeside.

[Drilled well, 20 feet deep, 6 inches in diameter. Bench mark: Top of casing at surface. Water-Supply Paper 446, Table 31, p. 130, and Pl. XL.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1913.		1915.	
Dec. 12	19 3	Jan. 16	18 5
		May 10	6 3
1914.		Aug. 1	8 6
July 1	9 3	Oct. 1	12 0
		1916.	
		June 12	8 7

L75a. Cuyamaca Water Co., El Cajon land grant (Cape Horn), Lakeside.

[Driven well, 3-inch pipe, equipped with well point. Installed by Cuyamaca Water Co. for observing depth of water plane. Bench mark: Top of casing, 4.5 feet above surface. Companion well to L75. Water-Supply Paper 446, Table 31, p. 130.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1919.		1920—Continued.	
Oct. 21	25 2	Apr. 13	11 4
Nov. 4	25 6	Apr. 27	11 4
Nov. 21	25 11	May 18	11 8
Dec. 19	22 11	June 10	13 5
		July 10	16 4
1920.		Sept. 1	20 9
Jan. 15	21 8	Sept. 20	21 8
Feb. 3	20 5	Nov. 12	24 5
Feb. 25	12 6		

L78. Gay estate, El Cajon land grant, Lakeside.

[Drilled well, 52.8 feet deep, 12 inches in diameter. Bench mark: Top of casing, 10 inches above surface, 401.66 feet above sea level. Water-Supply Paper 446, Table 30, p. 127, and Pl. XLIII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1915.		1919.	
Aug. 2	10 1	May 19	9 5
Oct. 1	13 4		
		1920.	
1916.		Feb. 3	11 1
June 12	6 2	Feb. 25	11 3
Dec. 14	7 3	Mar. 16	10 7
		Apr. 13	9 9
1917.		Apr. 24	9 8
Dec. 22	10 0	May 25	9 7
		July 10	10 6
1918.		Sept. 1	11 9
May 8	7 5	Sept. 20	12 1
Oct. 31	11 0	Oct. 22	12 6
		Nov. 17	12 6

Records of water levels in wells in San Diego County, California—Continued.

L83. San Francisco Savings Union, El Cajon land grant, Santee.

[Drilled well, 68 feet deep, 10 inches in diameter. Bench mark: Top of casing, 1.5 feet above surface, 364.48 feet above sea level. Water-Supply Paper 446, Table 30, p. 127, and Pl. XL.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1916.	*Ft. in.*
Aug. 1	6 8	Destroyed by January floods	
Oct. 1	8 6		

L83a. Cuyamaca Water Co., El Cajon land grant, Riverview.

[Driven well, 2-inch pipe, equipped with well point. Installed by Cuyamaca Water Co. for observing depth of water plane. Bench mark: Top of pipe, 4 feet above surface, 370.81 feet above sea level. Chosen for a companion for well L83. Water-Supply Paper 446, Table 30, p. 127.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1919.	*Ft. in.*	1920—Continued.	*Ft. in.*
Oct. 21	8 0	Feb. 25	6 7
Nov. 4	7 11	Apr. 13	6 5
Nov. 21	7 9	Apr. 27	6 7
Dec. 20	7 5	May 25	6 8
		July 12	7 10
1920.		Sept. 1	8 10
Jan. 15	7 3	Oct. 22	8 5
Feb. 3	7 3	Nov. 17	8 2

L85. William Thum, El Cajon land grant, Santee.

[Dug well, 22.8 feet deep, 10 feet in diameter. Bench mark: Top of curb on west side, at surface, 335.00 feet above sea level. Water-Supply Paper 446, Table 30, p. 127.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1919.	*Ft. in.*	1920—Continued.	*Ft. in.*
Oct. 21	12 5	Feb. 25	10 1
Nov. 4	12 5	Apr. 13	8 7
Nov. 21	12 8	Apr. 27	8 2
Dec. 20	12 3	May 25	8 3
		July 12	9 9
1920.		Sept. 1	10 9
Jan. 15	12 2	Nov. 17	11 1
Feb. 3	12 1		

Records of water levels in wells in San Diego County, California—Continued.

L96. El Cajon land grant, El Cajon.

[Dug well, 26 feet deep, 6 feet in diameter. Bench mark: Top of hexagonal wood curb on west side, 2 inches above surface, 441.80 feet above sea level. Water-Supply Paper 446, Table 31, p. 130, and Pl. XLVII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1919.	*Ft. in.*
Aug. 1	10 4	May 21	13 8
Oct. 8	12 1	1920.	
1916.		Feb. 2	15 4
June 12	8 4	July 7	15 4
Dec. 15	12 1	Sept. 17	16 3
1918.			
Jan. 1	12 11		
May 8	10 0		
Nov. 1	13 8		

O18. L. C. Kincaid, La Nacion land grant, Sunnyside.

[Dug well, 12 feet 8 inches deep, 8 feet in diameter. Bench mark: Top of concrete curb on northwest side, at surface, 89.48 feet above sea level. Water-Supply Paper 446, Table 30, p. 127, and Pl. XXXVII.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1916.	*Ft. in.*
Jan. 7	8 3	January (destroyed by floods)	.....
Feb. 19	5 4		
Aug. 1	6 11		
Oct. 5	7 10		
Oct. 9 (pumping)	11 3		

O18a. L. C. Kincaid, La Nacion land grant, Sunnyside.

[Drilled well. Bench mark: Top of casing, 2 feet below surface. Lift, gasoline engine and centrifugal pump. Companion well for O18. Water-Supply Paper 446, Table 30, p. 127. Well 200 feet northeast of O18, which was destroyed by floods of January, 1916.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1920.	*Ft. in.*	1920—Continued.	*Ft. in.*
Apr. 29	11 6	Oct. 24	12 11

Records of water levels in wells in San Diego County, California—Continued.

O29. F. M. Winship, La Nacion land grant, Chula Vista.

[Dug well 57.0 feet deep, 4 by 4 feet in cross section. Lift, windmill; use, domestic purposes. Bench mark: Top of wood curb on north side, 9 inches above surface, 62.14 feet above sea level. Water-Supply Paper 446, Table 30, p. 128.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1916.	
Dec. 5	51 3	June 16	49 10
		Dec. 17	50 9
1915.			
June 4	50 8	1917.	
Aug. 1	50 8	May 22	49 5
Oct. 9	51 2		
		1918.	
		Jan. 2	49 5
		May 8	49 7
		Oct. 31 (destroyed)	.....

O39. W. F. Clark, NW. ¼ sec. 23, T. 18 S., R. 2 W., Otay.

[Dug and drilled well, 90 feet deep. Bench mark: Top of concrete curb on east side, 1 foot above surface, 56.30 feet above sea level. Water-Supply Paper 446, Table 30, p. 128, and Pl. XLV.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1917.	
Oct. 2	36 5	May 24	29 10
Oct. 30	35 5		
		1918.	
1915.		Jan. 2	31 2
Mar. 3	32 8	May 8	31 7
Aug. 1	38 4	Oct. 31	31 7
Oct. 9 (pumping)	.....		
		1919.	
1916.		May 21	32 2
Jan. 27 (was overtopped 7 feet during flood caused by failure of Lower Otay dam)	.....	1920.	
		Feb. 2	32 10
June 14	30 9	Apr. 29	31 8
Dec. 17	30 6	Oct. 24	33 1

O83. San Diego Construction Co., La Nacion land grant, Chula Vista.

[Dug well, 63.0 feet deep. Bench mark: Top of timber on south side of wood curb, at surface, 57.60 feet above sea level. Water-Supply Paper 446, Table 30, p. 128.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
	Ft. in.		*Ft. in.*
1914.		1917.	
Dec. 5	50 1	May 24	49 1
1915.		1918.	
Aug. 1	49 9	Jan. 2	47 8
Oct. 9	50 2	May 8	47 11
		Oct. 31	48 11
1916.			
June 14	49 2	1919.	
Dec. 17	50 4		
		May 21 (destroyed)	.....

Records of water levels in wells in San Diego County, California—Continued.

O89a. J. Rhodeos, NE. ¼ sec. 24, T. 18 S., R. 2 W., Otay.

[Dug well, 33 feet deep, 3 by 3 feet in cross section. Lift, wind. Used for domestic purposes and irrigation. Bench mark: Top of 2-inch wood curb, 1 foot 5 inches above surface. Companion well to Nos. O88 and O89. Water-Supply Paper 446, Table 30, p. 128.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1916.	*Ft. in.*	1919.	*Ft. in.*
June 14	20 2	May 21	22 4
Dec. 17	19 10	1920.	
1917.		Feb. 2	22 10
May 24 (pumping)	.....	Apr. 29 (pumping slowly)	22 8
1918.		Oct. 24 (pumping)	30 4
Jan. 2	21 0		
May 8	20 8		
Nov. 1	21 6		

O104. Alfonso Fredericks, SW. ¼ sec. 28, T. 18 S., R. 2 W., Nestor.

[Drilled well, 70 feet 6 inches deep, 12 inches in diameter, not used. Bench mark: Top of casing between timbers, 1 foot above surface, 53.30 feet above sea level. Water-Supply Paper 446, Table 30, p. 129, and Pl. XLV.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1918.	*Ft. in.*
Nov. 5	49 8	Jan. 2	46 0
1915.		May 8	45 8
June 29	47 3	Nov. 1	47 2
Aug. 1	47 6	1919.	
Oct. 9	47 8	May 21	47 4
1916.		1920.	
June 14	45 1	Feb. 2	48 1
Dec. 17	45 8	Apr. 29	47 11
1917.		Oct. 24	49 8
May 24	44 10		

O118. Well in SW. ¼ sec. 33, T. 18 S., R. 2 W., Tia Juana Valley.

[Driven well, 16 feet 6 inches deep, 1½-inch pipe; not used. Bench mark: Top of flange at head of 1½-inch pipe, 1 foot 10 inches above surface, 26.80 feet above sea level. Water-Supply Paper 446, Table 30, p. 129, and Pl. XXXVI.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1914.	*Ft. in.*	1917.	*Ft. in.*
Oct. 30	17 2	May 24	6 8
1915.		1918.	
Apr. 10	7 2	Jan. 2	9 4
Aug. 1	9 4	May 8 (destroyed)	.....
Oct. 9	10 6		
1916.			
June 14	6 3		
Dec. 17	6 11		

Records of water levels in wells in San Diego County, California—Continued.

O118a. Well in SW. ¼ sec. 33, T. 18 S., R. 2 W., Tia Juana Valley.

[Dug well. Lift, gasoline engine and centrifugal pump. Bench mark: Top of 1-inch cover, at surface. Companion well to O118. Water-Supply Paper 446, Table 30, p. 129.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1918.	*Ft. in.*	1920.	*Ft. in.*
May 8	7 7	Feb. 2	10 11
Nov. 1	9 0	Apr. 29	7 8
1919.		Oct. 24	10 4
May 21 (pumping)	.....		

O140. Little Landers Colony, NW. ¼ sec. 1, T. 19 S., R. 2 W., Tia Juana Valley.

[Drilled well, 30 feet deep, 12 inches in diameter. Bench mark: Top of casing, 1 foot 2 inches below surface, 52.22 feet above sea level. Water-Supply Paper 446, Table 30, p. 129, and Pl. XXXVI.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement.	Depth of water level below bench mark.
1915.	*Ft. in.*	1916.	*Ft. in.*
Jan. 19	6 3	June 14	2 2
June 5	2 8	Dec. 17	2 5
Aug. 1	3 3	1917.	
Oct. 9	3 10	May 24 (covered up)	.....

O140a. Mrs. A. W. Jackson, near center of sec. 1, T. 19 S., R. 2 W., Tia Juana Valley.

[Drilled well, 18 feet deep; lift, gasoline engine and centrifugal pump; used for irrigation and domestic purposes. Bench mark: Top of board casing, 6 inches above surface. Companion well to O140. Water-Supply Paper 446, Table 30, p. 129.]

Date of measurement.	Depth of water level below bench mark.	Date of measurement	Depth of water level below bench mark.
1918.	*Ft. in.*	1920.	*Ft. in.*
Mar. 15	5 7	Feb. 2	8 6
Nov. 1	6 7	Apr. 29	5 6
1919.		Oct. 24	7 9
May 21	6 1		

INDEX.