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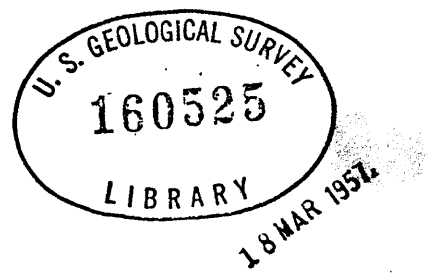
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Ground Water Branch

DATA ON WATER WELLS IN LUCERNE, JOHNSON, FRY, AND MEANS VALLEYS, SAN BERNARDINO COUNTY, CALIFORNIA.

By

F. S. Riley



Prepared in cooperation with the
California Division of Water Resources

Open-file report
Not reviewed for conformance with stratigraphic nomenclature and editorial standards of the Geological Survey

Long Beach, California
1956

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DATA ON WATER WELLS IN LUCERNE, JOHNSON, FRY, AND MEANS VALLEYS, SAN BERNARDINO COUNTY, CALIFORNIA

By F. S. Riley

PURPOSE AND SCOPE OF THE WORK AND REPORT

The data presented in this tabulation were collected by the United States Geological Survey in connection with an investigation of water wells and general hydrologic conditions throughout much of the desert region of southern California, which was begun in July 1953. The study has been financed in part by Federal funds for Arid Regions studies and in part by cooperation with the California Division of Water Resources.

The desert regions of California are characteristically regions of barren mountain ranges and isolated hills surrounding broad valleys or basins which are floored with alluvial debris derived from the surrounding highlands. These basins of unconsolidated alluvial materials generally contain ground water which has a wide range in chemical quality and which can be and has been developed for beneficial use.

The general objective of the investigation is to gather together and to tabulate, by areas, available hydrologic data for the desert basins in order to provide public agencies and the general public a basis for planning water utilization and development, and to furnish critical data for any subsequent ground-water investigation that might be undertaken.

Accordingly, the scope of the work carried on by the Geological Survey in each area has included: (1) very brief reconnaissance mapping of major geologic features to define the extent and general characteristics of the deposits that contain the ground-water bodies; (2) visiting and examining virtually all the water wells in the area, determining and recording their location in relation to geographic and cultural features and, wherever possible, to the public land net, and recording well depths and sizes, types and capacities of installed equipment, uses of the water, and other pertinent information available at the well site; (3) measuring the depth to the water surface below an established and described measuring point at or near the land surface; (4) selecting representative wells to be measured periodically in order to detect and record changes of water levels; (5) collecting and assembling available well records, including well logs, water-level measurements, and chemical analyses; and (6) presenting the collected data without evaluation or revision in tables 1A to 3A which identify the source from which the data were obtained.

Field work for the Lucerne, Johnson, Means, and Fry Valleys was carried on intermittently from February 1954 to April 1955.

The work has been carried on by the Geological Survey, United States Department of the Interior, under the general supervision of J. F. Poland, district geologist in charge of ground-water investigations in California, and under the immediate supervision of G. F. Worts, Jr., geologist in charge of the Long Beach area office.

ACKNOWLEDGMENTS

The writer wishes to express his appreciation for the cooperation given by the many ranchers, well owners, drillers, and other persons visited during the investigation, and for the assistance and information provided by several public agencies. Particular thanks are due Julian S. Gobar and Francis D. McDougal, well drillers in Lucerne Valley, who furnished many well logs and water-level data, devoted considerable time to assisting in the location and identification of wells, and provided much additional information. M. Copley, C. C. Moore, and F. M. Van Norman of Lucerne Valley, M. R. Peck of Gardena, and J. M. Scoggin of Adelanto also provided well logs and other information.

The California Division of Water Resources and the San Bernardino County Flood Control District provided access to all the pertinent information in their files, including numerous well logs, water-level records, and chemical analyses. The United States Department of Agriculture and the United States Bureau of Reclamation also provided some chemical analyses, water-level records, and other miscellaneous data. The cooperation and assistance given by these people and agencies contributed materially to the completeness of the data presented in this tabulation, and are most gratefully acknowledged.

LOCATION AND GENERAL FEATURES OF THE VALLEYS

Lucerne, Johnson, Fry, and Means Valleys occupy approximately 180 square miles along the north flank of the San Bernardino Mountains in the southwest part of San Bernardino County, Calif. (pl. 1). Access to the valleys is provided by a paved road leading east from U. S. Highways 91 and 66 near Hesperia, by State Highway 18 leading northeast from Victorville and southwest from Big Bear Lake, and by a paved road leading south from Barstow. Also, an improved dirt road from the Twentynine Palms area provides access to the valleys from the southeast. Although Lucerne Valley contains numerous paved roads, most of Johnson, Means, and Fry Valleys are accessible only by means of poorly graded dirt roads.

The entire area is divided topographically into four closed depressions or basins, namely: Lucerne, Johnson, Fry, and Means Valleys. Reconnaissance geologic mapping and the altitudes of water levels in wells suggest that Lucerne, Johnson and Fry, and Means Valleys make up three distinct structural and hydrologic units.

Plate 1 shows the four ground-water basins, the reconnaissance geology, and the locations of wells. One of the inset sketch maps on plate 1 shows the position of the area with respect to county and State boundaries and the other shows the area covered by plate 1 with respect to the available topographic maps. The general features of these valleys also were described by Thompson (1929).

Lucerne Valley

Lucerne Valley covers about 150 square miles and is the only one of the four valleys investigated that has been highly developed through irrigation well water from wells. Lucerne Lake (altitude about 2,849 feet) is a hard dry playa about 6 square miles in extent and is about 3 miles north of the town of Lucerne Valley, Calif. On the south, large coalescing alluvial fans extend northward from the San Bernardino Mountains, whereas around the remainder of the valley relatively small fans extend away from the Granite, Ord, and unnamed mountains. The sediments composing the fans are derived from the basement complex, which consists principally of granite, gneiss, schist, and recrystallized limestone and dolomite, and which forms the mountains. Several miles east of the town of Lucerne Valley, several distinct landslides form prominent features, extending out into the valley several miles (pl. 1).

A total of 459 wells, of which 85 are irrigation wells, were canvassed and are described in table 1A, part 1. Of the wells described 12 flowed or had a static water level above land-surface datum during 1954. All the flowing wells are southwest of the Helendale fault, which forms a barrier to the northward movement of ground water in this part of the valley. Water levels in other wells ranged from 4 to 285 feet below the land surface, the deeper levels in general being in wells higher up the alluvial slopes.

Water-level measurements made in wells indicate that the lowest water-level altitudes are in the area about 2 miles south of Lucerne Lake in the area of large withdrawals. Also, in this area of heavy pumping there are at least two water bodies, shallow and deep, the shallow body having a higher head than a deep body.

Most of the wells range in depth from about 100 to 300 feet and obtain their supplies largely from the central-valley alluvium, the extent of which is shown on plate 1. The logs of 95 wells, tapping these deposits and others shown on plate 1, are given in table 3A, part 1, and show the character of the materials penetrated. Yields of irrigation wells range from 800 to 2,000 gpm (gallons per minute) and have specific capacities ranging from 30 to 40 gpm per foot of drawdown.

Chemical analyses of waters from 76 wells in Lucerne Valley are shown in table 4A, part 1. In the areas south and northwest of Lucerne Lake the quality of the ground water is good for most purposes. The dissolved solids range from 200 to 500 ppm. However, in the area northeast of Lucerne Lake the water is of marginal to very poor quality. The dissolved solids range from 2,000 to 5,000 ppm, and the predominant constituents are sodium and chloride.

Johnson and Fry Valleys

Johnson and Fry Valleys, which are separated by the low alluvial fans coalescing from the north and south, lie in the same structural basin and contain approximately 20 square miles. The lowest point in Johnson Valley is Melville Lake, altitude about 2,700 feet, which covers about 2 square miles, and the lowest part of Fry Valley is Soggy Lake, altitude about 2,870 feet, which covers about half a square mile (pl. 1). These dry lakes or playas are accessible by means of relatively poor sandy desert roads.

A total of 14 wells, of which only well 4N/4E-19E1 is used for irrigation, of about 40 acres, were canvassed in the two valleys and are described in table 1A, part 2. The depths to water range from about 8 feet below land surface in well 4N/5E-5X1 on Melville Lake, where discharge of ground water occurs by evaporation, to 234.48 feet in well 3N/2E-2N1. In general ground water moves east from Fry Valley and north from the San Bernardino Mountains across the several faults, which act as ground-water barriers, to Melville Lake. Some ground water is discharged by transpiration of Mesquite on the west side of the lake.

The logs of 3 wells, given in table 3A, part 2, show the general character of the materials tapped by wells.

Analyses of waters from four wells in Johnson and Fry Valleys are shown in table 4A, part 2, and indicate that the quality ranges from fairly good to fairly poor. The dissolved solids range from 527 ppm in well 4N/4E-19C1 to more than 1,300 ppm in well 4N/4E-19E3. Among the cations no single one predominates, but among the anions sulfate is predominant, ranging from 253 to 672 ppm. The water from well 4N/4E-5X1, on Melville Lake, although not analyzed, tasted brackish.

Means Valley

Means Valley is the easternmost of the areas here considered and contains about 8 square miles. The lowest part of Means Valley is Means Lake, altitude about 2,590 feet, which covers an area of about 1 square mile. No reliable topographic maps are available for the area east of 116° 30' west longitude, so that part of the valley is not shown on plate 1. The valley is accessible by several poor roads, one of which leads in from the north (pl. 1).

Only two adjacent wells, for which there are no logs, were canvassed in Means Valley, and these are at the northwest edge of the playa (pl. 1). The water levels in these wells are 16 to 21 feet below the land surface. Discharge of ground water appears to occur by transpiration from a sparse growth of salt grass around the margin of the lake and possibly by evaporation from the playa. Underground discharge from Means Valley appears unlikely, but there may be some underground recharge from Johnson Valley from the southwest.

The quality of water from well 4N/4E-24X1 is poor, as might be expected around the margin of the discharging playa. The dissolved solids, as shown by the analysis in table 4A, part 2, were 1,410 ppm, of which sodium, bicarbonate, and chloride were predominant. Water of better quality might be found south of Means Lake in the direction of the probable principal source of recharge.

WELL-NUMBERING SYSTEM

The well-numbering system used in Lucerne, Johnson, Means, and Fry Valleys conforms to that used by the Geological Survey in California since 1940. It has been adopted as official by the California Division of Water Resources and by the California Water Pollution Control Board for use throughout the State.

Wells are assigned numbers according to their location in the rectangular system for the subdivision of public land. For example, in the number 4N/1W-2G2, which was assigned to the irrigation well of the Vita Food Corporation in Lucerne Valley, the part of the number preceding the bar indicates the township (T. 4 N.), the part between the bar and the hyphen is the range (R. 1 W.), the number between the hyphen and the letter indicates the section (sec. 2), and the letter indicates the 40-acre subdivision of the section as shown in the accompanying diagram.

D	C	B	A
E	F	G	H
	2		
M	L	K	J
N	P	Q	R

Within the 40-acre tract the wells are numbered serially as indicated by the final digit. Thus, well 4N/1W-2G2 is the second well to be listed in the $SW\frac{1}{4}NE\frac{1}{4}$ sec. 2. The area lies in the northeast and northwest quadrants of the San Bernardino base and meridian lines.

For some wells the letter following the section number is designated X in place of one of the 16 letters designating the 40-acre tract. This symbol indicates that the well has been field located and is accurately plotted with respect to its position on the map, but that the control for the public land net is too poor to warrant assigning a more accurate location number.

For well numbers where a dash has been substituted for the letter designating the 40-acre tract, the dash indicates that the well is plotted from unverified location descriptions or from general locations to the nearest quarter section reported by Thompson (1929); the indicated sites of such wells were visited but no evidence of a well could be found.

REFERENCE CITED

Thompson, D. G., 1929, The Mojave Desert region, California: U. S. Geol. Survey Water-Supply Paper 578, p. 610-630 and 632.

Table 1A.- Descriptions of water wells in Lucerne, Johnson, Fry, and Means Valleys, San Bernardino County, California

Source of data: The source of the data on each line is indicated by the following symbols: GS observations and measurements made by the Geological Survey on the dates indicated during the present investigation, as well as current or undated information reported by owners, drillers, or others; SB San Bernardino County Flood Control District; WR State of California, Department of Public Works, Division of Water Resources; BR U. S. Bureau of Reclamation; DA U. S. Department of Agriculture; CEP data from owner's or driller's copy of report on pumping-plant test conducted by California Electric Power Company. No data were obtained from the files of the power company. O well owner or user; D well driller. A number in this column indicates that the data are from U. S. Geological Survey Water-Supply Paper 578, p. 619. The number is the well number used in that report.

Date of observation: Data for each well are presented in reverse chronological order, with the most recent information summarized on the top line, opposite the well number. Where only an approximate date is known the season is indicated by the abbreviations spr, sum, aut, win.

Year completed: Where successive dates appear the well was deepened, enlarged, or recased at the later date.

Altitude: The altitude given is the land-surface altitude at the well. Altitudes given to the nearest 5 feet were interpolated in the field from U. S. Geological Survey topographic maps having 40- or 50-foot contour intervals. Altitudes given to the nearest foot were determined by hand-leveling.

Depth: Depths of wells given in whole feet were reported by owners, drillers, or others; depths given in feet and tenths were measured below land surface by the Geological Survey.

Type well and diameter: Type of well construction is indicated by the following symbols: B bored, C cable tool, D dug, G gravel packed, R rotary. Well diameter is given in inches. For dug wells the largest surface dimension is given, except that for a dug well containing a casing that extends to land surface, the diameter of the casing is given.

Pump data: The type of pump is indicated as follows: C centrifugal, J jet, L lift or cylinder, N none, S submersible turbine, T turbine. The type of power is indicated as follows: D diesel engine, E electric motor of undetermined horsepower, G gasoline engine, H hand-operated, N none, W windmill; where a number appears in this column it indicates the rated horsepower of an electric motor. The yield or output of the pump, in gallons per minute, is usually based on tests performed by the California Electric Power Company and reported by the well owner or driller. Yield figures in parentheses are approximate measurements by the Geological Survey, using the trajectory method.

Use of well: Dm domestic, Ds destroyed or dry, I irrigation, In industrial, P poultry raising, PS public supply, S stock, T test hole, Un unused.

Measuring point: The point from which water-level measurements by the Geological Survey are made is described as follows: Bcl bottom of clamp, Bhc bottom of hole in casing, Bop bottom of overflow or discharge pipe, Bnc bottom of notch in casing, Bpb bottom edge of pump base, Hcc hole in casing cover, Hpb hole in pump base, Hph hole in lift-pump head, Ls land surface, Tap top of access pipe, Tbc top of board cover at crack or hole, Tc top of casing, Tcc top of casing cover, Tcl top of pipe clamp, Tcr top of curbing, Tcs top of concrete slab, Tph top of lift-pump head, Tt top of timber or steel beam under pump. The suffix letters N, S, E, or W indicate the side, north, south, east, or west, where measured. The distance of the measuring point above or below (-) land-surface datum is given in feet and tenths. All measurements by the Geological Survey are from the same measuring point unless otherwise indicated. Measurements by the San Bernardino County Flood Control District are also from the same measuring point unless otherwise indicated. In general, the measuring points used by the California Electric Power Company, drillers, and others are not known.

Water level: The water level is given in feet below or above (+) land-surface datum. Measured depths to water level are given in feet, tenths, and usually hundredths; reported or approximate depths to water level are given in whole feet. For flowing wells the indicated measuring point is the point of flow, and its height above land-surface datum thus is the minimum head. Water-level measurements by the California Electric Power Company, drillers, owners, and others, for which the measuring points are not known, are assumed to have been corrected to land surface and are given exactly as reported.

Specific capacity: The specific capacity of a well is its rate of yield per unit of drawdown of the water level in the well. It is determined by dividing the figure in the Yield column by the drawdown resulting from sustained pumping at that rate; the result is expressed in terms of gallons per minute per foot of drawdown. The yield and drawdown data are principally from tests performed by the California Electric Power Company and reported by well owners and drillers.

Other data: C chemical analysis of water is given in table 4A, L driller's log of well is given in table 3A, W records of water levels are given in table 2A, B well reported to have penetrated bedrock (basement complex) at bottom, M well yields mineralized water that contains more than 1,000 ppm of dissolved solids as determined by analysis, or has a perceptibly brackish taste.

Part 1. Lucerne Valley

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temperature °F	Specific capacity	Other data
			Township 3 N., Range 1 E.													
3F1	O	3-18-54	T. Meehleis	1948?	3850±	47	C 10?	J			Dm		17	68		C
			Township 4 N., Range 1 E.													
1E1	GS O	3-26-54 1935±	F. Keating	1934±	2980	148	C 8	L	W		Dm	TcE 0.7	135.53 123			B,M
1N1	GS GS	3-14-55 3-26-54	Hemphill		2955		C 12	L	G		Dm	TcNE 0.0	110.38 110.15			
1R1	GS	3-26-54	H. Reichardt	1948	3070	280	C 8	N	N		Ds					
1R2	GS	5- 9-54	H. Reichardt		3070	286	C 10?	L	W		Dm		230	77		C
2A1	GS D	3-27-54 8-14-26	F. Laswell J. C. Donovan	1926	2913	100	C 12	L	W		Dm		 68			C,L
2J1	GS D	3-26-54 12- 1-47	Bryant R. R. Menke	1947	2950	110	C 8	L	G		Dm,P	TcE 0.6	97.97 97			B
2P1	GS GS	11-19-54 3-26-54			2930	92.7	C 14	L	W		Un	TcN 1.0	85.15 85.08			

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1E.--Continued														
3F1	GS	3-27-54	Riding	1927	2905	514.4	C 12	N	N		Un	TcE	0.3	75.90			
	D	1927	L. Risler			695		T		1100	I						
3L1	GS	4-16-54	T. Risler	1950	2910	150	C 12	L	W	145	Dm	HccE	1.4	83.25			
	D	1950												72			
3P1	GS	3-14-55	Dedrick	1930±	2932	112.5	C 12	N	N		Un	TcN	0.7	98.99			
	GS	11-19-54												98.62			
	GS	9-23-54												100.40			
	GS	4- 2-54												97.75			
3Q1	GS	4- 2-54	A. Sieswerda	1920±	2930	135±	DC 48	T	5	90	Dm				69		C
	SB	3-17-52				220											
	D	2- ?-35												87			
	O	1920±	Weber			110								87			
3-1	25	1916	Keyes			531								70			
4E1	GS	4-21-54	Dr. Roth?	1913	2905	238.3	C 12	N	N		Un	TcS	-1.0	90.54			B
4N1	GS	11-18-54	G. W. Prince	1952	2920	212	C 10	T	15	400	I	TapW	0.5	96.99		29	L
	GS	4- 3-54												91.96			
	D	7-17-52												88			

Part 1. Lucerne Valley--Continued

SGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued														
5B1	GS	4-22-54	R. F. Stites		2885	177	C 8	T	7½	135	Dm			66			
5G1	GS	4-22-54	R. F. Stites	1920‡	2885	296	C 12	T	30		I				70		
	CEP	7-14-53								731							
	CEP	4-21-47								851				a71.4			
	CEP	4-10-46								965				56.8		64	
5G2	GS	4-22-54	R. F. Stites	1947	2895	303	C 12	T	30		I				70		L
	CEP	8- 5-53								735				a100.2			
	CEP	7-27-50								767				a92.4			
	D	6- ?-47				303								68			
	CEP	4-28-47						T	G	587				69.5		30	
	D	12- ?-46		1946		207	C 12							64			
5H1	GS	3-15-55	R. F. Stites	1947	2905		C 12	N	N		Un	TcE	0.5	91.34			L,B
	GS	11-18-54												96.87			
	GS	4-21-54				221.5								b89.25			
	CEP	7-23-47						T	30	238				78.0		7.1	
	D	6- ?-47				277								72			
5H2	GS	4-22-54	R. F. Stites		2905	195	C 16	N	N		Un	Ls		88.8			L
	CEP	4- 3-47						T	G	262				73.8		4.9	

a. Pumping.

b. Nearby well being pumped.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued														
5N1	GS	4-21-54	A. Barnett	1954	2902	140	C 12	N	N		Un	TcN	1.0	87.02			
	GS	4- 6-54												86.85			
5Q1	GS	4-21-54	Midway School		2910		C 8	L	1½		Dm	BpbN	1.0	96.59			C
5Q2	GS	4- 3-54	Crawford	1915±	2915	300	DC 12	T	G	720	I	TcN	-0.2	93.36			
	O	spr 1949												80			
	O	1915±	Fratt			414											
5Q3	GS	4- 3-54	Crawford		2915	94	C 4	L	W		Dm						
6C1	GS	4- 7-54	W. E. Stringer	1953	2870	300	C 12	T	25	1320?	Dm,I	TcE	0.6	63.16		44	C
6F1	GS	3-14-55			2880		C	T	10		Dm,I	Hpb	0.4	69.61			
	GS	11-18-54												67.88			
	GS	4-20-54												75.10			
6H1	GS	11-16-54	S. Chaffee	1952	2885	360	C 14	T	30		Dm,I	TapE	1.0	80.01			C,L
	GS	4-22-54												78.34			
	GS	4-21-54								675				c96.97	71	36	
	O	sum 1953								740				c93		37	
	D	6- 1-52												62			

c. Pumped recently.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
6L1	GS	11-18-54 4- 7-54	M. B. Burke		2885			T	25		I	Tap	0.5	75.70 74.05	68	
6N1	GS	4- 6-54	Choquette		2885	135±	12	T	10	270	Dm,I	TcW	0.0	63.12		
6N2	GS D	4- 6-54 4-15-52	McKee?	1952	2885	249? 120	C 10	T	10+	270	I	BhcW	-0.7	67.02 59		L
6P1	GS O	4- 6-54 1936	C. Torres		2890	70.8	C 8	L	W		Un Dm	TcW	0.3	70.10 52		
6P2	GS O	4- 6-54 1939±	C. Torres	1939±	2888	100	C 10?	L	2	55	Dm,P	TcNE	0.8	67.93 48		
6Q1	GS O	3-17-54 1911	J. Koehly	1911	2895	295 345	DC 12	C C	D D	1125	Un I			50		
6R1	GS O	3-17-54 1926±	H. Oeller J. Koehly	1953 1926±	2895	120 96	C 10	L,S	W,3/4		Dm	Hcc	0.4	75.27	65	C,W

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
7B1	GS O CEP 33	3-17-54 6- ?-53 2-12-53 1916	R. E. Koehly J. Koehly	1909	2896		DC 12	T	7½ 243		Dm	HpbN	0.2	77.07 74 c116.0 50		C
7C1	GS	11-22-54	C. F. Wilson	1954	2892	100	C 8	L	E		Dm	TcE	1.7	75.74		
7D1	GS	4- 6-54	K. C. Elmore	1950	2900	319	C 12	T	40	900	I	BpbW	0.5	83.55	18	
7D2	GS O	4- 6-54 aut 1950	K. C. Elmore	1950	2885	100	C 6?	J	2		Dm			55±		
7E1	GS O	4- 6-54 1952	K. C. Elmore	1952 1912±	2915±	150 90	C 24 C 24	N	N		Un					
7E2	GS	4- 6-54	K. C. Elmore	1953	2915±	349	C 12	T	15	270	I	TupS	0.5	81.49	5	
7G1	GS O	11-22-54 5- ?-54	H. Blackwell	1950	2915	155	C 12	T	5	100±	Dm,I	HpbW	0.5	89.55 85	5	
7K1	GS	11-22-54	Mormon Church		2925		C 10	N	N		Un	TcW	0.6	94.44		

c. Pumped recently.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
7L1	GS	3-14-55	R. W. Root	1954	2935	148	C 12	N	N		Un	TapE	1.4	100.50		
	GS	11-22-54												100.59		
7M1	GS	3-14-55			2930		10?	T	G		Un	HpbE	2.4	96.53		
	GS	11-18-54												96.63		
	GS	9-23-54												95.54		
	GS	4- 6-54												93.04		
7N1	GS	11-22-54	O. V. Ferguson	1949	2950	150	C	L	W,E		Dm					
	O	9- ?-51												103.5		
7P1	GS	3-17-54	J. D. Burnett	1946	2955	127	C 12	J	1½		Dm	TcE	0.4	109.17		
7P2	GS	3-17-54		1953?	2950		6½	N	N		Un	TcE	1.5	106.77		
7P3	GS	3-17-54	Taggart	1950±	2955	150	C 8	L	E		Dm			101		
7R1	GS	3-15-55			2945	145	10±	N	N		Un	HpbW	0.7	94.15		W
	SB	5-15-52										HpbW	0.7	90.43		
8C1	GS	4- 3-54	M.A. Chickering		2910	135	C 10	L	W		Dm					
	D	9- ?-24	C. S. Williams	1924		99	C 10							64.5		L

Part 1. Lucerne Valley--Continued

SGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
8C2	GS O	4- 3-54 spr 1953	H. M. Evans	1948	2915	135	C 12	L	W		Dm	TcsS	0.0 90	96.51		
8C3	GS O	4- 3-54 4- ?-53	H. M. Evans	1953	2915	135	C 12	L	W		P	TcE	0.0 90	97.63		
8D1	GS BR O	11-18-54 11- ?-50 1912±	A. Barnett Jones	1912±	2903	130 150	DC 12	J	E		Dm	TbcS TbcS	0.5 0.5	91.75 79.5		W
8L1	GS O	4- 3-54 5- ?-48	B. F. More	1948	2935	150	C 10	L	W		Dm	TcS	1.0 97	106.07		
8M1	GS D	4-16-54 4- ?-46	J. Vesper	1946	2935	140	C 8	N	N		Un		 90			L
8P1	GS	3-19-54	N. A. DeRush	1946	2950	144	C 8	L	G		Dm	BpbN	0.5	106.32		L
8P2	GS	4- 3-54	R. Stott	1948	2950	150	C 6	T	3	30	Dm	TcNE	1.0	110.12	1±	

Part 1. Lucerne Valley--Continued

SGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
8P3	GS	3-14-55	R. E. Foell	1952	2845	164	C 12	T	7½	100±	Dm,I	Tap 0.7	106.60	69	5±	L
	GS	11-18-54											106.40			
	GS	4- 3-54											105.12			
	D	5- ?-53											101			
8-1	35	12- 6-17			2960±	117							109.8			
9A1	GS	3-15-55	H. C. Block	1954	2935	227	C 14	L	½	5	Dm,P	TccE 0.3	104.01			C
	WR	3-10-55												68		
	GS	11-19-54											103.81			
	GS	5- 9-54												69		
	GS	4- 2-54											102.28			
9B1	GS	4- 2-54	A. Barnett		2945	152	C	L	W,1½		Dm	TbcE 0.5	110.44			
	D	6- ?-52											105			
9D1	GS	4- 3-54	G. W. Sweet	1930±	2930			T	3		Dm					
9D2	GS	4- 3-54	C. M. Gibson	1933±	2930	150	C 10±	L	E		Dm					
	O	1933±											80			
9D3	GS	4- 3-54	G. W. Prince	1947	2935	205	C 12	T	15	380	I	HpbN 0.5	103.79			

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued														
9H1	GS	4- 3-54		1953	2950	149	C 8	N	N		Un	BhcW	0.4	111.10			
9N1	GS	11-18-54	L. E. Miller	1953	2970	368	C 12	T	15	350	Dm,I	TapW	0.5	138.50		49	C,L
	GS	3-19-54												136.09			
	O	11- 1-53						T		780				141		49	
10C1	GS	4- 2-54	J. S. Shrouf		2940	163	DC 14	L	W,½		Dm,P						
	D	6- ?-51												123			
10G1	GS	4- 2-54	J. A. Barr	1938?	2960	273	C 12	T	25	470	I	HpbN	0.8	124.76			
	CEP	4-14-53								470				122		13	
10G2	GS	4- 2-54	J. A. Barr	1930	2960	275	C 12	T	3		Dm	TccW	0.0	125.72			L
	D	8-22-30	J. VonBreton			564											
	D	6-12-30				609											
10Q1	GS	3-14-55	J. A. Barr	1918	2988	279.5	C 14	N	N		Un	TcN	-2.0	153.91			
	GS	11-18-54												154.08			
	GS	3-20-54												151.60			
	O	spr 1953						T		400						20±	
	D	1918				420		T		630				135			
	37	1918	C. H. VonBreton											136			

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
Township 4 N., Range 1 E.--Continued																
11C1	GS D	3-26-54 6-12-23	Lenichek Franklin	1923	2935	112	C 14	L	E		Dm	TcE	1.0	89.74 84		L
11D1	GS D	3-27-54	U. Range C. W. Rosenau	1930	2942	126	C 12	L	W		Dm	TclW	0.5	101.26 95		L
11G1	GS	3-26-54	F. A. Wiemholt	1936?	2945	150	C 30	L	G		Dm	TbcS	0.7	95.62		
11Q1	GS	3-25-54	G. Stewart	1927±	2970			L	W,G		Dm	HccS	0.0	120.20		
11Q2	GS	3-25-54	G. Stewart		2970	154.3	C 12	N	N		Un	Tc	0.5	117.17		
11Q3	GS	3-14-55	G. Stewart	1954	2970	212	C 10	T	10		Un	TapW	0.5	115.84		
12B1	GS	3-26-54			2985±	163.0	C 14	N	N		Un	Ls	0.0	146.6		
12C1	GS	3-26-54	T. Williams		2990±		12?	L	G		Dm					
12D1	GS	3-26-54	Stern		2945			L	G		Dm					
12N1	GS	3-25-54			2969		D 48	N	N		Ds			dry		

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USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
12P1	GS	11-19-54	M. Coster		2971	180	C 10	L	N		Un	HpbE	0.4 b124.12			W
	GS	3-25-54											123.39			
	BR	11- ?-50						L	W		Dm	TcE	0.0 122.2			
12P2	GS	3-25-54	M. Coster	1945±	2971	180	C 8?	T	G	100	Dm	BpbW	0.7 122.7			C
12P3	GS	3-25-54	R. W. Irwin		2970	175	C 12±	L	W		Dm	LsE	0.0 122.32			
12P4	GS	3-25-54	M. Coster		2970	180	C	N	N		Un					
13G1	GS	3-25-54	C. H. Hinkley		2995	225?	C 12	L	W		Dm	TcN	0.3 146.02			
13J1	GS	3-20-54	J. Landau	1930?	3025		C 8	L	W		Dm	TbcW	0.5 172.29			
13J2	GS	3-25-54	J. Corrigan	1949	3015	196	C 10	L	H		Dm	TbcE	0.7 162.81			
13J3	GS	3-25-54	R. Christison	1950±	3020	195	C 8	L	G,W		Dm	TcS	0.3 166.75			
13M1	GS	3-14-55	E. A. Taylor		3020	270	C 12±	T	5		Dm	HpbN	0.4 171.05			
	GS	11-19-54											171.00			
	GS	3-20-54						T	G				170.70			
	O	1- ?-53											170			

b. Nearby well being pumped.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
13R1	GS	3-20-54	C. M. Donaldson		3060	250	C 10	L	G		Dm	HpbN 1.3	205.38			
13-1	39	1916	P. E. Weigle										120			
17D1	GS	3-19-54			2950	88.0	D 36	N	N		Ds		dry			
17K1	GS	3-15-55	Roybal		2990	142.4	12	N	N		Un	Hcc 0.0	131.85			
	GS	11-18-54											129.83			
	GS	3-19-54											129.66			
17M1	GS	4-16-54		1926	2975	130	C 12	N	N		Un	TcE 1.7	115.88			L
	D	5- 5-26	C. Jackley										109			
17Q1	GS	3-19-54	Leonard	1954	3020		R 4	N	N		Un	Tc 1.0	126.27			
17Q2	GS	3-19-54	Burke	1954	3015	265	R 4	L	N		Un	TapS 0.5	123.13			
18C1	GS	3-17-54	C.S. Knowlton	1916±	2965	160	C 12	T	5		Dm	TcE 0.0	113.49			
	34	1916	A. C. Stevens										104			
18G1	GS	3-17-54		1924	2990	130.0	C 12	N	N		Ds		dry			L
	D	6- ?-24	J. Lucia			160		L					125			

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
							Township 4 N., Range 1 E.--Continued										
18L1	GS	3-17-54			3005	142.8	C 12	N	N		Ds			dry			L
	D	7-28-23	Mathews	1923		160								137			
21D1	GS	3-19-54	J. H. Russel		3038	355	C 10	T	3	35	Dm	TapE	0.5	142.00		1.5	C
23C1	GS	3-20-54			3060						Ds						L
	D	4-26-35	M. L. Waller	1935		250	C 6							212			
23E1	GS	4- 6-54	C. Torres	1923	3135	315	DC 70	N	N		Ds?						
	O	1923	W. Terry											280			
23Q1	GS	3-18-54	Murray	1948	3205	420	C 8	L	W		Dm	TcSE	0.1	383.80			
24D1	GS	11-19-54	R. Foote	1950?	3075	265	C 10	S	2		Dm						
	GS	3-20-54						L	N		Un	TcW	0.3	222.93			
24D2	GS	3-20-54			3070		C	L	W		Dm						
27R1	GS	3-18-54			3375	149	C 8±	J	G		Dm	TcSE	0.8	124.27			
32H1	GS	3-18-54	L. G. Clark	1949	3475±	200	C 12	T	5	90	Dm	HpbE	1.0	64.89			L,B
	D	11-24-49	Pike			180								1			

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 E.--Continued													
33L1	GS	3-18-54			3450±		C 8	L	W		Dm	Tc	1.0	105±		
35M1	GS	3-18-54	J. H. Preston		3500	260	C 10?	L	N	35	Un	Hcc	1.0	190.69		L
			Township 4 N., Range 2 E.													
1Q1	GS	3-31-54				63.0	D 36	N	N		Ds			dry		
7M1	GS	3-25-54	Wm. Woods	1946	2985	160	C	L	W		Dm	HphS	0.7	131.41		B
7N1	GS	3-25-54	J. Fricker		2980	150	C 12	L	G		Dm	TcE	0.3	126.69		
7N2	GS	5-19-55	J. J. Corrigan	1930		150	C 12	L	W		Dm	Tc	0	130.29		
	WR	3-10-55												130.2	68	C
8H1	GS	3-30-55	Thomas Moffitt	1947	3145	356	C 8	L	G		Dm	TcN	0.6	284.97		
8P1	GS	3-25-54	L. Fergison		3025	190	C	L	W		Dm	TclE	1.0	173.79		
9M1	GS	6-16-55	A. J. Deacon	1940	3100	250	C 8	L	W		Dm	TcE	0.4	201.8		
9N1	GS	3-26-54	L. C. Mayfield	1938	3045	149.5	C 12	C	W		Dm	TcN	0.6	140.38		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 2 E.--Continued														
10M1	GS	6-16-55	J. Robinson	1955	3130	300	C 8	C	W		Dm	TcW	0.5	235.34			
10P1	GS	5-19-55					C 10	N	N		Ds			dry			
17B1	GS	5-19-55	R. S. Fuller	1954	3115	200	C 8	C	G		Dm	TcN	1.0	162.93			
17H1	GS	5- 9-54	H. M. Randall	1924	3025	181	C 8	C	G		Dm	Ls	0	126	68		C
18-1	42	1916	Enoch Hayes											180			
20B1	GS	3-25-54					C 10				Ds			dry			
			Township 4 N., Range 1 W.														
1A1	GS	11-17-54	O. P. Wells		2865		C 8	J	G		S	BncW	0.3	45.06			
	GS	4-17-54												42.14			
1E1	GS	4-17-54	J. E. Perkins	1951	2865	60	C 8	L	G		Dm,P	HphS	1.8	36.93	60		C,L
	GS	2-19-54												35.73			
	D	1- 5-51												27			

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
1F1	GS	11-17-54	O. P. Wells	1953	2865		RG 16	T	D		I	TapW	1.0	57.15		
	GS	4-17-54												c74.61		
1H1	GS	4-17-54	O. P. Wells	1951	2870	404	C 12	T	25		Dm,I	TapW	1.3	c84.75	60	C,L
	D	1-12-51	E. Bichlmeier					T	G	1240				47	39	
1J1	GS	11-18-54	O. P. Wells	1951	2875	388	C 12	T	50		I	TapE	0.5	64.9		
	GS	4-17-54												c80.29		
	D	1- ?-51	A. M. Peterson					T	?	1280				42.5	35	L

c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued														
1K1	GS	4-17-54	O. P. Wells		2875		C 12?	T	30		I	HpbN	0.4	c76.15			
1M1	GS	3-14-55	P. Messer	1952	2865	474	C 14	T	30		I	TapW	0.7	65.6			L
	GS	11-18-54												60.1			
	GS	4-19-54												b81.9			
	GS	4-17-54												74			
	O	9- ?-53												83			
	D	5- ?-52						T	?	900				34		18	
1P1	GS	11-17-54	P. Messer	1930	2875	450	C 12	T	15+	540	I	HpbS	0.4	60.9			
	GS	4-19-54												62.20	74		
	D	2- ?-30												32			
1P2	GS	3-15-55	P. Messer	1926	2875	59	C 8	L	W		Dm	TcN	0.3	49.80	65		C, M
	GS	11-17-54												49.83			
	GS	9-23-54												50.1			
	GS	4-19-54												48.05			
	GS	4-15-54												b47.93			
	D	5-14-26	A. Winford											31			

b. Nearby well being pumped.
c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
1P3	GS D	4-15-54 5-28-52	P. Messer	1952	2875	77	C 8	J	½		Dm		46	66		L,M
1R1	GS	11-18-54 4-17-54	O. P. Wells		2883		C	T	10		Dm,I	BpbW 0.0	59.6 60.18			
1R2	GS D	4-17-54 4- 1-26	O. P. Wells		2883	 55	C 10	N L	N W		Ds Dm		dry 35			
2A1	GS	4-17-54	Vita Food Corp.		2860		C 16	T	E		I	TcS 1.5	66.0			
2B1	GS	4-17-54	Vita Food Corp.		2860	100	C 12	N	N		T	Tc 0.0	31.27			
2E1	GS	3- 9-54	M. H. Lewis		2855	28	C 10?	L	W		Un	TclW 0.5	23.92			
2F1	GS	4-17-54	Vita Food Corp.	1917	2855	400	C 12?	T	5		I					
2F2	GS	4-17-54	Vita Food Corp.		2855		C	L	W		Dm	HccE' 0.4	c31.70			
2F3	GS GS	11-18-54 4-17-54	Vita Food Corp.		2855	100	C 12	N	N		T	Tc 0.0	28.99 31.44			

c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
2G1	GS	11-18-54	Vita Food Corp.				C 12?	T	5		Un	TtE	0.0	42.60			
	GS	4-17-54												b46.32			
2G2	GS	11-18-54	Vita Food Corp.	1952	2860	450	C 16	T	30		I	TapW	0.0	52.43			L
	GS	4-17-54								(520)				a83.2	68		
	D	8- ?-52				450		T	?	900				36		17.5	
	D	1947		1947		104								18			
2H1	GS	4-17-54	Vita Food Corp.	1913	2865	778	DC 12	T	15		Dm,I	BncW	1.4	73.85	65		C,L,B
	D	1- ?-54												46			
	DA	6-22-32	J. S. Gobar					T	?	790				28	73		
	6	1916	T. F. Porter											20			
2K1	GS	4-15-54	J. P. Martin	1932	2865	486	C 14	T	25		I						L
	D	4- ?-53												66			
	D	5-14-32	G. G. Williams											22.5			
2P1	GS	3-14-55	J. P. Martin		2868	410	RG 14	T	15		I	TapN	0.5	59.7			
	GS	11-18-54												60.3			
	D	4- 9-53												53			

a. Pumping.
b. Nearby well being pumped.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
2Q1	GS	4-15-54	J. P. Martin		2870		C 12	N	N		Un	TcE	0.3	39.53		
2R1	GS	11-18-54	J. P. Martin		2870	403	C 14?	T	25		I	TcE	0.0	b66.2		
	GS	4-16-54												c83.29		
	D	4- ?-53												64		
2R2	GS	4-15-54	J. P. Martin		2870		C 12	J	3/4		Dm	TcS	1.0	44.32		
2R3	GS	4-15-54	J. P. Martin		2870	31.1	C 6	N	N		Un	Tc	0.0	29.22		C
2R4	GS	4-15-54	J. P. Martin		2870	497	C 14	T	10+		I				68	
	D	4- 6-53												55		
3A1	GS	11-18-54	Williams		2852	149.5	12	N	N		T	Tc	1.1	12.87		
	GS	3-10-54												12.57		
3D1	GS	3-10-54			2850	170.0	C 12	N	N		Un	TcE	0.6	9.24		
3D2	GS	3-10-54			2870±	28.9	C 12	N	N		Un	Tc	0.4	24.54		

b. Nearby well being pumped.
c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
3D3	GS D	3-10-54 12- ?-38	C. Williams R. K. Gobar	1938	2985±	64	CG 6	L	W		Un	TcE	0.0	41.79 42		M
3F1	GS	3-10-54			2851	27.5	C 14	L	H		Un	TcW	0.3	10.95		
3F2	GS	3-10-54	Cunningham		2875±	90±	C 8?	L	W		Dm					M
3H1	GS	4-14-54 3-10-54			2855	96.5	C 14	N	N		T	Tc	0.3	16.13 16.12		
3J1	GS	4-14-54 3-10-54			2855	97.5	C 14	N	N		T	TcS	1.0	17.05 17.18		
3N1	GS D	2- 3-54 7-27-27	Bostwick W. Reed	1927	3030	138	C 10	L	W		Dm	Hcc	0.0	116.93 110		L
4R1	GS	2- 3-54		1953	3090		C 8	L	W		Dm	TcN	0.5	175.77		
4R2	GS	2- 3-54	Wagner		3055	168		L	G		Dm			d142		

d. Reported water level, date unknown.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
9Q1	GS	2- 5-54	E. Ruehle		2975	65?	C 6	J	1	35	Dm	TcS	0.8	41.43		
	SB	11-10-53	A. D. Nolan			63								46.86		
9Q2	GS	2- 5-54	N. Wilson		2995±	93		J	E		Dm					
9Q3	GS	2-16-54	L. Haussinger	1950	2975	93	C 8	J	1		Dm			d43		C
	D	4-22-50												48		
9R1	GS	2- 5-54	A. Z. French		2975	78	C 12	L	W		Dm					C,L,W
	D	10-17-49												43		
9R2	GS	2- 5-54	J. Taylor	1946	2980	63	C 10	L	W,G		Dm	TcE	0.5	c43.15		
9R3	GS	3-15-55	J. Taylor	1949	2982	73	C 12	N	N		Un	TcE	0.8	45.49		
	GS	11-23-54												47.26		
	GS	2- 5-54												45.69		
10A1	GS	4-14-54	J. P. Martin	1951±	2907	568.0	RG 14	N	N		Un	TcW	0.5	4.38		
10C1	GS	2- 9-54		1953?	2940		C 8	N	N		Un	TcW	0.0	29.75		

c. Pumped recently.
d. Reported water level, date unknown.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued														
10D1	GS	2- 3-54	C. W. Reed		3010	150	C 12	L	W		Dm	BpbW	0.6	102.67			
10D2	GS	2- 3-54	Gambrell	1943	2980	120	C 12	S	3/4		Dm,P			d70			C
10E1	GS	2- 9-54	Ellis and Stern	1950	2980	97	C 8	J	3/4	35	Dm	Tcc	0.5	62.16			L
	D	6-28-50												58			
10E2	GS	2- 9-54	F. Crawford	1950	2960	78	C 6	L	W		Un	Hcc	1.0	39.16			L
	D	7- 6-50												39			
10G1	GS	2-9-54	A. Moorhouse	1949	2915	102	C 10	L	W		Dm			d10			
10H1	GS	11-23-54			2910		C 10	L	W		Dm	TcNW	0.8	8.82			
	GS	4-14-54												7.28			
	GS	2- 9-54												7.74			
10H2	GS	2- 9-54		1935	2910	168.0	C 8	N	N		Un	TcsE	0.0	7.66			L
	D	9-27-35	W. G. Reed			250	10							8			

d. Reported water level, date unknown.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
							Township 4 N., Range 1 W.--Continued										
10J1	GS	2-10-54			2925		10	T	7½		Dm	BncE	0.6	4.54			
10M1	GS	2- 9-54	H. W. Winford	1928	2965	110	C	T	10	330	Un						L,B
10N1	GS	2- 9-54	V. H. Clemens	1926	2960	150	C 12	T	5	170	I	HpbW	0.0	27.19			L
10Q1	GS	2-10-54	J. Uhlenkott		2945	125	C 8	J	1		Dm	TcE	0.2	9.20			
	0	1949												9			
10R1	GS	2- 9-54	J. W. Ellis	1948	2935	250	C 8	J,L	½,W		Dm	TcNW	0.3	3.60			L
	D	11-17-47	J. Ewing	1947		80											
10R2	GS	3-14-55	H. Leedy	1951	2930	250.0	C 8	L	H		Un	TcW	0.5	+0.26			L
	GS	11-23-54												0.77			
	GS	9-23-54												2.50			
	GS	2-10-54												0.16			
10R3	GS	2-11-54	P. M. LeBeuf	1929	2940	300	C 12	T	5		Dm			d6			L
10R4	GS	2-11-54	L. Thompson	1946	2935	245	C 7	T	2		Dm	Tc	0.0	flowing			L

d. Reported water level, date unknown.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
11A1	GS	2-19-54	Woman's Club	1928	2885	60	C 10	J	1		Dm					L
	D	3-19-28											42			
11B1	GS	11-18-54	Kellison	1952	2885	376	C 8	T	5		Un					
	GS	9-23-54						N	N			TcW	0.6	47.65		
	GS	4-14-54												45.29		
	D	1952												46		
11B2	GS	4-14-54	K. L. Chase	1935*	2870	205	C 12	L	W		Dm	TclN	1.0	38.59		
11B3	GS	4-14-54	G. H. Leonard		2875	265	C	T	3		Dm,P	HpbS	1.3	40.36		
	O	1- ?-47												35		
11B4	GS	4-14-54	J. R. Hutson	1953	2870	194	C 10	T	E		Dm,P					L
	D	6-22-53												37.5		
	D	8- ?-50				140								31		
	D	?	Wagner			63		L	1					25		
11G1	GS	4-14-54	J. H. Staggers		2900	250	C 8	J	E		Dm					C
	SB	5-16-52												42		
11J1	GS	4-14-54	Lucerne Valley Union School	1953	2925	300	C 12	N	N		Un	TcN	1.4	52.60		L
	D	4- 4-53												52.5		

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
11N1	GS	2-19-54	R. Greenland	?	2935	234	C 10	J	½	2.2	Dm	Tc	0.5	flowing		L
	D	9- 3-27	Sigrist	1927		44	C 8							9		
11N2	GS	2-19-54	R. Delperdang	1950	2935	247	C 8	J	1	20	Dm,P	Bop	0.6	flowing	0.5	C,L
	D	8- 2-50		?		96	C 8							8		
11Q1	GS	3-15-55	F. Baker		2933	85	C 8	J	½		Dm	TcW	0.6	51.29		C,W
	BR	11-13-50												53.6		
11Q2	GS	9-23-54	Robinson	1912	2935	200	C 12?	T	10?		Dm	Bop	3.0	flowing	73	C
	27	1916	J. Goulding											flowing		
11Q3	GS	2-10-54	Boyd		2925	250	C 6±	J	1		Dm	Tc	0.0	flowing		
11Q4	GS	6-15-55	Robinson	1914±	2935	200?	C	N	N		Un	Ls	0.0	5.4		C
	DA	6-22-32	Goulding			600	8	N	N	10				flowing		
12B1	GS	4-15-54	C. Chamberlin	1949	2880	100	C 8	J	½		Dm,P	TcN	0.6	50.16		
	O	sum 1953												55		
	O	sum 1949												45		
12D1	GS	11-17-54	K. Smith	1935	2890	521	C 16	T	25	(660)	Dm,I	HpbN	1.5	82.22	73	31 C,L,W
	D	5- 7-35	C. S. Williams											45.3		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
12F1	GS	11-17-54	K. Smith	1953	2915	542	RG 16	T	60	(1100)	I	HpbE	0.5	102.6		C,L
	CEP	7-30-54												143.0	38	
	GS	4-20-54												122.4		
12G1	GS	4-14-54		1953?	2915		8	L	H		Dm	TcW	0.6	73.54		
12G2	GS	11-18-54		1953?	2910	146.0	8	L	W		Dm					
	GS	4-14-54						N	N		Un	BhcN	0.0	67.50		
12H1	GS	11-18-54	W. J. Peters	1950	2900	309	C 14	T	50	800	I	BhcN	0.0	82.25	21	L
	O	7- ?-54												107		
	GS	4- 6-54												81.85		
	D	12-22-50	G. Weedon											62		
12H2	GS	4- 6-54	W. J. Peters	1951	2910	180?	C 8	J	1½		Dm,P					
12L1	GS	3-24-54			2930		C 8	N	N		Un					
12L2	GS	4-14-54	A. J. Deacon	1951±	2935	125	C 8	T	3		Dm,P					
	O	1951±												55		
12L3	GS	4-13-54	Foster	1952	2920	125	C 8	L	G		Dm	TcE	0.2	71.86		
	O	1952												65		

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
12M1	GS	3-15-55			2930	86.0	C 8	N	N		Un	TcW	0.4	70.69		W
12M2	GS	4-13-54	J. Waldorf	1953	2915	93	C 8	J	3/4	1.2	Dm,P	BpbE	0.8	57.7		
12N1	GS	3-18-54	O. C. Ball	1950	2950	129	C 8?	T	1½		Dm	BpbW	0.3	72.43		
12N2	GS	3-13-54	F. L. Allen		2930	127	C 8	T	2		Dm,P					
12N3	GS 26	11- 8-54 1916	J. C. Hostler J. S. Miller	1915±	2945	495 491	C 12	S	3		Dm	Tc	2.0	66.05 70		
12P1	GS	3-18-54	Michells		2950	135±	C 8±	L	3/4,W		Dm	Tcl	0.4	85.87		
12P2	GS	3-18-54	Eide	1953	2950	150	C 8	S	E		Dm	Tc	0.3	95.07		
12P3	GS	3-17-54	Osborne	1954	2955	150	C 10?	J	5							
12P4	GS	4-14-54	J. H. Johnson	1949	2940	132	C 8	J	2		Dm	Tcl	0.9	88.76		
12R1	GS D	3-18-54 win 1949	Goodwin	1949	2955	168	C 8	L	E		Dm			114		

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued														
13C1	GS	3-17-54	San Bernardino	1949	2860	154	C 12	T	5		Dm	HpbW	0.3	101.83			L
	D	5- ?-49	County					T	?	105				97		3.8	
13H1	GS	6-15-55	Vista Tract	1955	2985	525	CG 10	T	G	270	Un			171		8.7	
13K1	GS	6-15-55	Vista Tract	1955	3010	400	CG 10	N	N		Un	TcW	1.5	154.09			
	D	5- ?-55						T	G	150				a230		2.0	
13M1	GS	11-23-54	L. Horn	1946	3015		C 8	L	E		Dm,P	TcW	0.5	112.21			
14A1	GS	2- 3-54		1936	2965		R 9	N	N		T	Hcc	-3.5	83.52			
14A2	GS	2- 3-54	Resser?	1936	2965	140	G 8	L	N		Un	Hpb	0.3	74.24			L
14A3	GS	2- 3-54	E. L. Moe	1946	2950	127	C 10	J	1½		Dm			66			L
14B1	GS	3-15-55	J. Goulding	1951	2945	201	C 10	S	1		Dm	BopW	0.37	flowing			L
	GS	11-23-54										HccW	0.9	+0.19			
	GS	9-23-54												1.85			
	GS	2- 3-54												+0.36			

a. Pumping.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
14B2	GS	2- 2-54	C. Inslee		2940	100±	C 8	J	E		Dm	Tc	0.8	9.78		
14C1	GS	2-19-54			2935		C 8	J	1½		Dm			flowing		C
14C2	GS	2-19-54	E. B. Hill	1950	2950	105	C 10	C	¼		Dm	Bcl	0.6	1.50		L
14C3	GS 43	2- 3-54 1917	C. Lindsey W. Mulholland		2830	160 250		N	N		Dm			flowing		C
14D1	GS	2-19-54	E. Sandy	1936	2950	267	C 14	T	5		Dm	Hpb	0.4	3.83		C,L
14F1	GS	2-12-54	H. Carrier	1930±	2965	200±	C 12	T	5	200±	Dm	BpbW	1.5	4.70		
14G1	GS	2-11-54	Church		2955		8?	J	3/4		Dm					
14H1	GS	2-16-54			2980	44.5	D 60	N	N		Un	Ls	0.0	44.0		
14H2	GS D	10-28-54 6- 7-27	V. Chute	1927	2965	100	C 8	N	N		Un	TcS	1.4	78.77 83		L
14K1	GS	2-12-54	R. Clark	1928±	2990	185	C 12	T	5	250	Dm,I	Tc	1.0	flowing	4.5	

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
14K2	GS	9-23-54	G. W. Jenkins		2990	219	C 12	T	7½		Dm,I	Tc	1.2	flowing		C
	GS	2-16-54												flowing		
14M1	GS	2-12-54	J. A. Hodgson	1948	2985	230	C 14	T	G	300	Dm,I	Hpb	0.2	18.70		L
	CEP	?								426					9.7	
14N1	GS	2-16-54	Roy Cliff	1950	3020	120	C 12	L	W		Dm	Hcc	0.8	45.64		L
	GS	2-11-54												a47.68		
14P1	GS	3-15-55	A. Harris	1953	3025	146	C 8	N	N		Un	TcW	0.5	25.01		
		11-23-54												25.35		
		9-23-54												25.69		
		2-16-54												25.27		
14Q1	GS	2-16-54	E. Tarter	1952	2990	160	R 6	J	½		Dm	Tcs	0.0	+7.5		
14Q2	GS	2-17-54	H. R. Taylor	1952	3035	84	C 8	T	2	25	Dm	BhcE	0.3	37.12		C
14Q3	GS	2-16-54	C. C. Holler	1949	3025	214	C 10	T	5	80	Dm	BpbN	0.0	c17.59	3.2	L
	D	3-15-49				214								12		
	D	9-26-47		1947		102								37		

a. Pumping.
c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
14Q4	GS D	2-17-54 9-17-47	E. Windschantz	1947	3030	129.4 147	C 7	L	W		Dm	TcS	0.2	17.58 13		C,L
14Q5	GS	2-16-54	R. O. Williams	1937	3005	156	C 12	L	W,1½		Dm	TcS	0.8	5.40		L
15A1	GS D	2-11-54 7-12-47	G. Lyndon	1947	2945	120	C 12	L,J	W,E		Dm	TcE	0.5	12.36 14		L
15A2	GS	6-16-55	H. Reed	1950	2950	257	C 10	N	N		Un	Tc	0.8	14.37		L
15B1	GS	2-11-54	H. Woosley		2950	80?	10	L	W		Dm	Hcc	2.4	15.26		
15B2	GS D	2-19-54 7-12-49	L. Cowan	1949	2953	100	C 8	J	E	26 45	Dm	TcN	-4.0	13.11 14	1.1	L
15B3	GS	2-19-54			2965		10	L	W		Dm	Hcc	1.0	21.51		
15C1	GS	2- 5-54	B. Ellis		2960	103	C 8	J	3/4		Dm	Tcc	0.0	23.00		
15C2	GS	2-10-54	J. Picotte		2955	34.8	10	L	G		Dm	TcNW	0.3	18.43		
15C3	GS	2-10-54	A. G. Smith	1953	2955	100	C 8	L	G		Dm	TcE	0.5	18.55		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued														
15D1	GS	2- 9-54	L. Francis		2970		12	L	H		Dm	TcN	0.5	32.58			
15D2	GS	2-18-54	J. Closman	1946	2965	132	C 14	T	1½		Dm	TcW	0.8	26.25			
15D3	GS D	2-18-54 8-23-50	C. Wickware	1950	2965	125	C 8	N	N		Un	TcN	0.4	24.96 23			L
15E1	GS	2- 9-54	E. B. Long		2995	90		L,J	W,½		Dm			d60			
15F1	GS	2-10-54	L. Thomas		2990		10±	L	W		Dm	Tcc	0.2	43.38			
15F2	GS	11-23-54	H. Huffman	1953	2985	160	C 12	T	5	90	Un	HpbS	0.7	38.94		1.6	L
15G1	GS	2-11-54	L. Bogut	1952	2965	68	C 10	J	½		Dm	TcE	0.7	c27.09			
15H1	GS	2-11-54	N. Martin		2955	265	C 12	T	5	90	Dm			13		2.4	
15H2	GS	2-11-54	W. Kriley	1920±	2975	65	C 8	J	2	18	Dm	Tcs	1.0	25.77			
15H3	GS 28	6-16-55 1917	N. Martin C. Thatcher		2955	65 205	C 8	L,J	W,1		Dm			7			

c. Pumped recently.
d. Reported water level, date unknown.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
15L1	GS	2-10-54	F. Van Norman	1948	3005	100	C 8	J	½		Dm	TcN	1.0	c59.5		L
	D	4- ?-48												60		
15L2	GS	2-10-54	F. H. Jones	1950	3030	110	C 12	J	1		Dm	BncS	1.0	72.39		
	O	11- ?-50												67		
15L3	GS	2-10-55	H. Marz		3000	71	12	J	½		Dm	Tcs	0.0	59.72		
	O	5-31-51												59.7		
15M1	GS	2- 5-54	J. Foster	1949?	3035	90?	10?	L	2		Dm	TcSW	0.0	78.16		
15R1	GS	2-11-54	M. L. Bantz		3045	120		J	1		Dm			d65		
15R2	GS	2-12-54	E. G. Piatt	1950	3010	121	C 8	J	E		Dm					L
	D	1-23-50		1950		121	8							35		
	D	5- 6-49				65	6							45.4		
21E1	GS	2- 5-54	R. Hitchcock	1953	3083	324	C 10	S	1		Dm	Hcc	1.0	136.57		C,L
21E2	GS	2- 5-54	R. Hitchcock		3090	200?	8	N	N		Un	TcW	0.4	143.90		

c. Pumped recently.
d. Reported water level, date unknown.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
21J1	GS	11-23-54	D. Sweeney and Geo. Rayle	1952	3140	403	C 12	T	30		Un	TapW	0.5	171.99		L
22B1	GS	11-23-54	A. Oberlin		3080		8	L	W		Un	Tcl	1.0	109.27		
	GS	2-10-54												108.99		
	30	1917												100		
22C1	GS	2- 5-54	H. Nash	1951	3100	173	C 12	L	G		Dm	TcE	0.2	131.65		
22D1	GS	3-15-55	C. Dillon	1950	3066	384	C 12	T	E		Un	TapW	0.5	106.38		L
	GS	2- 5-54												106.34		
	D	6- 5-50						T	G	255					7.0	
23A1	GS	2-17-54	R. Hollock		3080	68.9	D 60	L	W		Dm	Tcc	1.0	62.55		
23A2	GS	2-17-54			3040		10	J	1		Dm	Tcc	0.6	38.07		
23B1	GS	2-17-54	C. Battelle		3035	100+	C 8	J	E		Dm,P					
23B2	GS	2-17-54	P. H. Porter	1954	3070	120	C 9	S	3/4	7½	Dm	TcS	0.5	69.38		
23B3	GS	2-17-54	R. V. Ely	1951	3040	122.0	C 8	N	N		Un	TcW	0.5	33.18		

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
23B4	GS	2-18-54			3080		12?	L	W		Dm					
23B5	GS	2-18-54	J. B. Roland		3045	117	8±	J	1		Dm	TcE	53.60			
23C1	GS	2-17-54	E. Linsey		3065	112	C 8	J	1		Dm	Hpb	69.64			
23C2	GS	2-18-54	R. Ramsey	1947	3070	133	C 12	J	1		Dm	Hpb	75.72			
23C3	GS	2-17-54	L. B. Clark	1949	3050	128	C 8	J	1½		Dm					
23D1	GS	2-16-54	G. V. Wyatt	1948	3050	85	C 10	L	W		Dm	TcE	65.37			
23D2	GS	2-16-54	F. M. Bazl	1948	3050	159	C 8	J	1½		Dm					C,L
	D	3-13-48											60			
23F1	GS	2-18-54	J. January		3095	130	12?	L	G		Dm	TcE	89.63			
23G1	GS	2-18-54	H. W. Gross		3100		8	S,L	E,W		Dm	TcNE	c78.18			
23K1	GS	2-17-54	C. Battelle	1946	3160	160	C 12	T	5	35	PS	TcS	126.14		3.5	L

c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 1 W.--Continued													
24E1	GS	2-18-54	C. Wickware	1946	3100	152	C 8	L	1	11.5	Dm	Hcc	0.9	57.80		L
	D	10- ?-46												58		
26C1	GS	3-15-55	E. E. Sharp		3305	400?	12	T	10	70	Dm,P	HpbS	1.0	219.62		
	GS	2-17-54												c234.0		
26-1	32	1917	P. P. Painter											215		
			Township 5 N., Range 1 E.													
6C1	GS	6-15-55	D. Huffman		2970		12	S,L	1,N		Dm,P	TcW	1.3	150.01		W
	SB	4-13-53	Voll			280								143.90		
6D1	GS	11-30-54		1954	2940	149.4	10	N	N		Un	TcN	0.6	117.79		
6G1	GS	6-15-55			2975		8	L	N		Un			149+		
6N1	GS	11-10-54	J. Medici	1915±	2920	158	C 12	T	5	125	Dm,P	BpbN	0.0	97.24	12	W
	SB	2-17-53												90.08		
	1	1917	W. R. Collom			150								72		

c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
							Township 5 N., Range 1 E.--Continued									
6R1	GS	11-10-54	E. Peach	1952	2920	130?	C 8	L	1/3		Dm	TcW	0.5	108.0		
7A1	GS	11- 9-54	A. Busick	1924±	2900	220	C 12	L	W		Dm	Tbc	0.5	88.45		
	0	1926												54		
7C1	GS	11- 9-54	G. Gilliland		2890			L	G		Dm					
	D	4-15-54												54		
	3	1917				100								30[?]		
7C2	GS	11- 9-54	G. Gilliland	1952	2893	172	C 12	T	25	720	I	TapN	1.0	78.65	55	C,L
	D	9- 5-52												71		
7J1	GS	11-10-54			2890			T	N		Un					
7M1	GS	11- 8-54		1918		11.0		N	N		Ds			dry		
7-1	2	1917												45		
8C1	GS	3-14-55	T. Patchell	1929	2935	153	C 12	N	N		Un	TcS	1.0	112.27		L,M
	GS	12- 4-54												111.94		
	GS	11- 9-54												111.70		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
							Township 5 N., Range 1 E.--Continued									
8N1	GS	5- 9-54	F. R. Clarke	1940	2877	120	C 10	L	W		Dm		d54			C,M
8N2	GS O	12- 4-54 1943	F. R. Clarke	1943	2890	120	C 12	L	N	100	Un	TphS	1.2 76.69 56		20	M
10H1	GS GS	3-14-55 5- 9-54			3034		8	L	W		Un	Hcc	0.3 200.1 200.1			M
10H2	GS	11-24-54			3032			L	N		Un	HpbN	1.2 198.26			M
11R1	GS	11-23-54			3070	172.2	10	N	N		Ds		dry			
13B1	GS	4-23-54			3070	196.2	12				Ds		dry			
14C1	GS	11-24-54			3038		6	L	W		Dm?	Hcc	0.5 194.0			M
14E1	GS	11-23-54			2980	135.5	12	N	N		Ds		dry			
15K1	GS D	11-23-54 10-16-51	R. K. Tate		2955	212	C 12	L	W		Dm		115			
15N1	GS	11-23-54			2920			L	G		Dm	HccS	0.0 84.93			

d. Reported water level, date unknown.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
16C1	GS	3-14-55			2932		C 12				Un	TcE	1.0	97.94		M
		11-24-54												97.65		
17C1	GS	11-24-54	F. Giovanolli		2885	100	C 12	L	W		Dm	TcN	0.6	74.00		C,W,M
17C2	GS	11-24-54	F. Giovanolli	1952	2885	154	C 12	T	25		I	BpbE	1.0	73.55		C,M
17D1	GS	3-14-55	F. Giovanolli	1954	2880	265	RG 14	N	N		Un	TcN	1.2	65.90		C,M
	GS	11-24-54				265								67.23		
	GS	4-22-54				480								62.27		
17M1	GS	11-24-54			2860		12	T	G		I	BpbW	1.0	51.08		M
17Q1	GS	11-24-54	P. Carr	1954	2870		R 12	T	15		I	TcS	0.0	55.50		M
	D	6-24-52		1952		151	C 12							44		L
18B1	GS	5- 9-54	S. Bentford	1944	2868	68	C 12	L	W,G		Dm	BncE	0.5	53.02		
	O	1944												32		
18C1	GS	5- 9-54			2860			T	5		Dm	HpbN	1.5	48.24		
18D1	GS	11-24-54	S. E. Tomlin		2860		8	N	N		Un	TcW	1.0	48.38		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
18D2	GS	11-24-54	S. E. Tomlin	1953	2860	170		T	15	540	Dm,I				49	C
	O	1953											36			
18H1	GS	12- 4-54	A. Penn	1953	2860	150	C 12	L	W		Dm	TcS	0.5	50.88		M
	O	sum 1953		1949		50								dry		
18L1	GS	10-29-54		1954?	2851		C 8	L	W		Un					
18M1	GS	10-29-54	H. Kellison	1950	2852	168	C 12	T	G	550	I					C,M
	O	spr 1951												31		
19C1	GS	10-29-54			2851		C 6	N	N		Un	TcN	1.3	48.00		
19F1	GS	10-29-54	R. Whetley	1949	2851	60	C 8	L	W		Dm	TclE	0.7	9.06		M
	O	1949		1934		30	B							25		
	O	1934												25		
19P1	GS	5- 8-54	E. E. Allen	1934	2853	229	C 12	T	30	1000	Dm,I	BpbS	0.3	48.50	68	50± C,L,M
	D	12- 5-34	M. McIntire											20		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued														
19P2	GS	5- 8-54	E. E. Allen	1951	2853	140	C 12	T	E	200	I						L,M
	D	6- ?-51					C 7							19			
	D	12- 5-34	M. McIntire	?		210	C 7							20			-
19-1	7	1916	W. F. Lee											17			
20E1	GS	10-29-54	H. Laschanzky	1951	2855	77	C 8	L	W		Dm	TcN	1.0	50.42			C,L,W
	SB	12-15-52												35.70			
20F1	GS	3-14-55	H. Laschanzky	1948	2860	272	C 12	T	D	800	I	HpbN	0.3	48.96		22±	L,M
	GS	11-19-54												51.15			
	GS	10-29-54												52.75			
	D	6-10-48												34			
20N1	GS	5- 8-54	S. T. Rich	1953	2857	320	C 14	T	30	900	I	Hpb	0.5	50.82		27±	C,L,M
	D	9-25-53												50			
20N2	GS	5- 8-54	S. T. Rich		2856	20					Ds						C,M
	9	1917	F. H. Fewell											17			
20R1	GS	4-20-54			2867	47.0	DC 10	L	W		Ds			dry			

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
							Township 5 N., Range 1 E.--Continued									
20R2	GS	4-20-54			2865		8	L	W		Un					
20-1	8	1916				282							25			C,M
21R1	GS	3-14-55	J. R. Baker	1952	2905	324	C 12	T	30		I	TapE	1.1	79.53	71	C,L,M
	GS	11-19-54												78.84		
	GS	5- 9-54												77.75		
22F1	GS	5- 9-54	Wittenberg		2935		12	N	N		Un	Tc	0.4	96.83		M
22N1	GS	3-14-55			2920	194.0	12	N	N		Un	TcE	0.0	81.58		
		11-23-54												81.40		
22Q1	GS	11-19-54	H. Baumchen	1952	2930	297	C 12	T	G		Dm	HpbS	0.0	94.65		M
	GS	5- 9-54												94.44		
	D	3-31-50		1950		163	C 12							92		L
23C1	GS	5- 9-54	L. J. Towers	1953	2980	200	C 8	L	W		Dm,P			d148	72	C,M
23C2	GS	11-24-54	C. Stuart		2995	185	C 8?	L	½		Dm			d55		M

d. Reported water level, date unknown.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
26B1	GS	11-24-54	Giardina		2975		C 8	L	½		Dm,P	Tcc	0.3	127.68		M
27D1	GS	12- 1-54	L. A. Tannar	1950	2908	195	C 12	N	N		Un	Hcc	0.0	80.86		L,M
	GS	11-23-54												80.83		
	D	6-28-50												77		
27H1	GS	3-14-55	Lethbridge		2930		10	L	W		Un	TccE	1.2	92.77		M
	GS	4- 2-54												92.25		
27M1	GS	11-19-54	Malo	1953	2888	150	C 12	T	G	400	I	BncE	1.0	64.45		M
	GS	4- 2-54												63.08		
27M2	GS	4- 2-54			2890		8	N	N		Ds			dry		
28A1	GS	6-15-55	I. Peterson	1925	2900	300	12	T	20	450	Dm,P	TcS	0.3	76.92		M
29H1	GS	4-20-54	H. Priester		2870	314	C	T	E		Un				67	M
	19	1916												30		
29H2	GS	3-14-55	W. B. Richards		2870	72.3	14	N	N		Un	TcE	0.0	60.68		
	GS	11-19-54	H. Priester											63.98		
	GS	4-20-54												58.15		

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
29K1	GS	6-15-55	R. Walton	1950	2865	102	C 9	L	N		Un					L
	D	11-16-50	W. Beesemyer										52			
29N1	GS	4-23-54	R. C. Klaus	1950	2865	300	C	T	20	765[?]	I	Hpb	0.4 a	77.87		C
29N2	GS	4-23-54	R. C. Klaus	1951?	2862	120		J	½		Dm	TapW	0.2	62.35		
	O	2- ?-54												56		
	O	7- ?-53												63		
	O	1951?												47		
29P1	GS	4-22-54	T. P. Owen	1913	2868	291	C 12	T	25		I	BpbS	0.8 a	77.56		
	CEP	7- ?-53								815				51.5	39	
	O	1913	L. Garrett							1475				40.5		
29Q1	GS	4-22-54	T. P. Owen	1913	2868	90	DC 12	T	2		Dm	BhcS	-5.4 c	65.3		
	O	1913												19?		
29R1	GS	11-18-54	W. Beesemyer	1951?	2875	301	C 12?	T	D	1350	I	BpbS	0.8	67.8	35±	C
	GS	4-22-54												62.5	70	
30B1	GS	5- 8-54			2853			L	W		Dm	TbcE	0.0	47.89		

a. Pumping.
c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
30H1	GS	11-19-54	Fooshe	1933	2857	298	C 12	T	25	990	I	BpbW 0.5	55.65			C,L,M
	GS	4-23-54											c55.67	70		
30R1	GS	11-18-54	Whittier		2860		30	T,J	10,1		Dm	TtNE 1.4	59.13			
	GS	9-23-54											63.74			
	GS	4-23-54											b62.09			
	D	1950											47			
	18	1916				262							34			
30R2	GS	4-23-54	Whittier		2860			T	10		I			70		
30-1	17a	1916	F. H. Lee										17			
31A1	GS	4-23-54	Miller		2858		12	T	40	850	I	BhcE 0.5	a100	70		
31A2	GS	4-23-54	Miller		2860		12	T	5		Dm	TcNE 0.0	c63.88			
31F1	GS	11-18-54	W. Van Sickle	1949	2860	267	C 12	T	20	810	Dm,I	TapW 1.0	55.49			C,L
	GS	4- 7-54											51.50			

a. Pumping.
b. Nearby well being pumped.
c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued														
31F2	GS	4- 7-54	W. Van Sickle	1927	2860			N	N		Ds						
	D	5-23-27	L. A. Glynn			40	C 12							21			L
31L1	GS	4- 7-54	Miller		2865		12	T	15		I	BhcW	0.0	54.46			C
31P1	GS	4- 7-54	A. L. McCall	1949±	2867	295	C 12	T	15	620	Dm,I	TcW	0.6	57.70			
31Q1	GS	11-16-54	O. P. Wells		2870		12	T	20	650±	I	TapN	0.8	65.75		45±	
	GS	9-23-54												75.67			
	GS	4-21-54												a80.68	70		
	GS	4-20-54												66.78			
31R1	GS	4-20-54	S. Marich	1930±	2871	125	C 12	T	15	650	Dm,I	HpbN	0.5	67.46		22	
	CEP	sum 1953												60			
31-1	22	1916	J. M. Ross											24			
32B1	GS	4-22-54	H. Kellog	1914	2869	436	DC	T	10		Dm,I						C
	20	1916												25			

a. Pumping.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued														
32C1	GS	3-14-55	H. Blonstein		2869	346	C 12	T	30		I	TapE	1.5	61.59			
	GS	11-18-54												66.54			
	GS	9-23-54												71.96			
	GS	4-23-54												64.56			
32F1	GS	4-22-54	R. Duzich		2875	215±	C	T	10		Dm						
32G1	GS	4-22-54	H. Kellog		2875	290											C
32J1	GS	4-23-54	O. Steele		2880		8	L	W		Dm	TcN	0.0	63.92			
	GS	3-27-54												61.13			
32K1	GS	4-23-54	M. H. Hitchcock	1949	2875	65	C 8?	L	W		Dm						L
	D	3- ?-49												44			
32L1	GS	4-23-54	H. L. Adams	1946	2875	200+	C 12	T	10		Dm	TcW	0.8	67.17			
32N1	GS	11-16-54	G.E. Smitman		2875	360	C 12?	T	15		Dm,I	HpbE	0.8	74.45			
	GS	4-21-54												a77.68	70		
	GS	4-21-54												70.90			

a. Pumping.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
32P1	GS	3-14-55	Hoge	1915±	2880	300	C 12	S	1		Dm	Hcc	1.0	71.31		C
	GS	11-18-54												77.39		
	GS	9-23-54												81.87		
	0	1942						T	20		I			42		
	10	1916	B. Pocker			300								36		
32R1	GS	4-21-54	D. Boom	1914±	2885	457	C 12	T	25	300	Dm,I				70	C,L
	CEP	8-22-50								463				a92.2		
	CEP	2-24-49								549				58.5	25	
	CEP	7-29-48								479				a87.8		
	CEP	11- 7-46								511				a83.2		
	23	1916				457								42		
32R2	GS	4-21-54	D. Boom		2885	90	C	L	W		Un					
33B1	GS	3-27-54	H. Eckhardt	1951	2880	100	C 12	N	N		Un	TcN	0.6	62.06		
	0	1951												49		
33F1	GS	3-27-54	J. Sherman	1932	2885	260	C 12	L	W		Dm			62		
	0	1932												44		
33F2	GS	3-14-55	J. Sherman	1950	2885	108	C 16	L	W		I	HccN	0.8	67.90		W
	SB	4-13-53												60.39		

a. Pumping.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
33G1	GS D	3-27-54 1950	H. Eckhardt	1950	2885	200	C 14	T	25	700	I	TapW 1.5	c66.74 61		21	C
33G2	GS D	3-27-54 1929	H. Eckhardt		2885	100	C 12	L	W,E		Dm		67 44			
33H1	GS	3-27-54	W. Bellinger	1954	2885	178	C 12	T	15			HpbN 1.0	63.53			
33H2	GS GS D	11-19-54 3-27-54 1948	N. J. Komer	1948	2885	272	C 12	T	G	1285	Un	HpbS 1.4	68.72 64.15 55		32	
33H3	GS	3-27-54	N. J. Komer	1947	2885	106	C 12	L	W		Un	TccS 0.5	63.73			
33N1	GS	4-21-54			2885	41.3	8	N	N		Ds		dry			
34E1	GS GS D	11-19-54 3-27-54 1930±		1927	2885	220	12	N T	N 	 820	Un I	TcN 0.5	68.05 65.89			
34Q1	GS	3-27-54			2901			N	N		Ds					
34-1	21	1916				242							42			

c. Pumped recently.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 E.--Continued													
35E1	GS	3-27-54	F. V. Gillum	1935±	2923	125	C 10	L	W		Dm	TccS	1.0	89.79		
35F1	GS O	3-27-54 1950	N. Metcalf	1950	2960	150	C 8	L	W		Dm,P	TclS	0.8	111.02 107		L
35R1	GS	3-27-54			2990	126.9	12	N	N		Ds			dry		
35R2	GS	3-27-54			2990		D 48	N	N		Ds			dry		
			Township 5 N., Range 1 W.													
1E1	GS	11-30-54	Cole		2915	135	RG 12?	T	50	600±	I	BpbE	0.7	94.84		C
1F1	GS SB	11-30-54 4-13-53	Cole		2920	150	12	T	50		I	TcW	0.5	97.77 91.80		C,W
1G1	GS SB SB	11-30-54 11-17-54 2-17-53	H. J. Nieman	1951	2920	158	C 12	T	40		I	TcNE	0.4	96.28 90.8? 93.40		
1J1	GS	11-30-54	C. Wilson	1948	2915		C 12	T	G		Dm					

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 W.--Continued														
1L1	GS	11-10-54	J. D. Morse	1949	2905	134	12	T	20		Dm,I	Tap	0.5	85.53			C,W
	CEP	6- 8-54								503				a104.0			
	CEP	8- 8-53								455				a98.9		41	
	CEP	2- 5-53								494				a91.9		38	
	CEP	7-11-51								553				a93.6			
	CEP	11- 6-50								718				a96.2		34	
1N1	GS	3-14-55	R. Betz	1953	2900	134	C 12	N	N		Un	TcW	0.0	79.56			B
	GS	11-30-54												79.77			
	GS	11-10-54												80.45			
1N2	GS	11-10-54	R. Betz	1953	2900	134	C 12	T	15		I						
	CEP	8-30-54								300				83.0		28	
1Q1	GS	11-10-54	S. Phillips	1953	2895	110	C 12	J	E		Dm,P	TcW	0.3	76.79			
1R1	GS	11-10-54	P. Campbell	1945	2905	102.0	C 12	N	N		Un	TcW	0.7	84.12			
1R2	GS	11-10-54	P. Campbell	1953	2900	120	C 10	S	½		Dm,P	TcN	1.0	80.72			
	O	1953												75			

a. Pumping.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 W.--Continued													
1R3	GS	3-14-55	Hards	1954	2890	165	12	J	E		Un	TcW	0.6	76.95		
	GS	11- 8-54												75.9		
2H1	GS	11-30-54			2925		?	N	N		Un	Hcc	0.0	98.00		
2J1	GS	11-30-54	R. Betz	1933+	2920	95.7	16	N	N		Un	TcN	0.4	91.91		
2J2	GS	11-30-54	R. Betz	1953	2920	125	C 12	T	7½		Dm, I	TcE	0.0	93.45		B
	CEP	8-30-54								168				95.0	12	
2J3	GS	11-30-54	R. Betz	1954	2920	125	C 12	T	15		I	HpbW	0.0	92.40		B
	CEP	8-30-54								320					32	
3H1	GS	12- 2-54			2988		?	N	N		Un	TbcE	1.0	142.97		
12A1	GS	11- 8-54	P. Chambers	1919	2990	102	C 12	J	E		Dm	Tbc	0.5	72.02		
	O	1945						T		350	I			54	32	
	O	1919	Taylor			130										
12A2	GS	11- 8-54	P. Chambers	1954	2990	142	C 10	T	15		I	TcE	1.0	71.26		
12B1	GS	11- 8-54		1952	2890	100	C 12	N	N		Un	BhcW	1.0	71.78		W
	SB	1-15-53						T	E	300	I			65.16		

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
							Township 5 N., Range 1 W.--Continued										
12C1	GS	11- 9-54	D. L. Friend	1951	2890	100	C 8	J	E		Dm	BpbN	0.5	71.79			
12C2	GS	11- 9-54	N. W. Baker	1952	2890	100	C 8	J	2		Dm,P						
	O	spr 1952												49?			
12G1	GS	11- 8-54	E. Gross	1946±	2880	120	C 12	T	20	375	Dm,I	BhcW	0.8	67.54			C
	O	1947												48			
12J1	GS	11- 8-54			2875	27.0	D 72	N	N		Ds			dry			
	5	1916	L. E. Hookes			75								31			
12M1	GS	10-28-54			2865	30.5	14	N	N		Ds			dry			
12-1	e4	1916	W. F. Taylor			150								42			
13A1	GS	6-15-55			2862		C 8	T	5		Dm	BpbW	0.4	51.56			
	GS	3-14-55												47.14			
	GS	10-29-54												51.64			
13A2	GS	6-15-55			2858		C 12	T	30		Un	TcW	1.0	47.38			

e. Reported to have been located near existing well 12C1.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 W.--Continued														
14D1	GS	10-28-54		1929	2855	8.5	C 10	N	N		Ds			dry			
	D	9- ?-29	Harry Blanch			50								25			L
15L1	GS	10-28-54			2890	61.5	10	N	N		Ds			dry			
22B1	GS	3-14-55		1913	2850		14	N	N		Un	TcE	0.0	41.11			
	GS	10-28-54												44.96			
	D	1913	B. F. Porter											14			
22F1	GS	10-28-54		1914±	2850	217	C 12?	N	N		Un	Tcr	1.0	43.57			M
	D	1914±	J. H. Hanna											11			
22M1	GS	12- 1-54		1919	2850	190	C 12	N	N		Un	TcS	1.0	36.62			L
	GS	10-28-54												36.48			
	D	6- ?-19	W. Snyder											18±			
25G1	GS	3-14-55	Guthro	1951	2850	202	C 16	T	N	450	Un	TcSW	0.8	41.70			L
	GS	11-18-54												42.51			
	GS	9-23-54												53.44			
	GS	5- 8-54												49.03			
	O	7-18-52												44			
	D	11- ?-51	M. R. Peck											21			

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 W.--Continued														
25H1	GS D	5- 8-54 10-17-51	W. Schildmeyer	1951	2851	208	C 16	T	B	900	I	BpbW	0.2	c59.8 21		39	C,L
27-1	12	1916												10			
28-1	11	1916	C. Gribben											20			
33D1	GS	2- 3-54		1953?	2890		12?	L	W		Un	Hcc	0.0	36.74			
33M1	GS	2- 3-54			2905	20.0	10	N	N		Ds			dry			
34Q1	GS	3- 9-54			2851	60.0	12	J	G		Dm	TcE	0.6	11.45			
34-1	13	1916	U. A. Porter											16			
35P1	GS	3- 9-54	D. G. Maltby	1947±	2853	310	C 12	T	25	900	I	BhcW	0.0	34.66			
35P2	GS	4-17-54	D. G. Maltby		2855	310	C 14	T	10		Dm,I	HpbS	1.0	c54.49			
35Q1	GS GS	3-14-55 3- 9-54		1947±	2855	300	C 12?	T	25		I	HpbN	1.0	34.99 34.13			

c. Pumped recently.

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 5 N., Range 1 W.--Continued													
35-1	14	1916											14			
35-2	f15	1916	G. R. Hodges			220+							16			
36P1	GS	4-17-54	O. P. Wells	1953	2860	468	RG 16	T	D		I	TapW	0.8	c64.7		C,L
	D	6- ?-53								2500				30	50	
36R1	GS	3-14-55	O. P. Wells	1953	2863	468	RG 16	T	D		I	TapW	0.5	b67.49		C,L
	GS	11-17-54												64.0		
	GS	9-23-54												84.5		
	GS	4-17-54												c68.15		
	D									1500					150	
			Township 6 N., Range 1 E.													
31N1	GS	11-10-54			2965	134.5	D 60	L	N		Ds			dry		

b. Nearby well being pumped.
c. Pumped recently.
f. Reported to have been located about 100 feet west of existing well 35 P2.

Part 1. Lucerne Valley--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 6 N., Range 1 E.--Continued													
31Q1	GS	12- 4-54	J. L. Huff	1941	3030	234	C 8	L	W,G		Dm					L
	SB	11-17-54										Bhc	0.0	204.30		
	SB	5-12-54												207.00		
	SB	11-10-53												211.58		
	SB	2-17-53												182.38		
			Township 6 N., Range 1 W.													
22G1	GS	12- 4-54		1948?	3070		12	L	W		Dm	TbcN	0.3	161.3		
22P1	GS	12- 2-54			3059	350	12	L	W		S	TcN	2.4	154.82		C,W
26B1	GS	12- 4-54			3032	141.2	12	N	N		Ds			dry		
26L1	GS	12- 4-54	Osborne	1931	3000	350	C 12	L	W		S					
27B1	GS	3-14-55		1954	3040	288.0	12	J	G		Dm	TcS	0.7	150.75		
	GS	12- 2-54												151.13		
35A1	GS	3-14-55	Osborne	1954	2970	270.0	RG 14	T	D		I	TcS	0.3	145.33		
	GS	12- 2-54						N	N		Un			144.58		

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 6 N., Range 1 W.--Continued														
35L1	GS	10-28-54	Osborne	1954	2995	250±	RG 14	T	D		Un	BhcN	0.0	168.45			
36K1	GS	6-15-55	L. P. Miller		2933		12?	T	15		Dm,I						C
	SB	11-17-54										BpbE	0.5	114.4			
	SB	11-10-53												112.70			
	SB	2-17-53												115.80			
36K2	GS	11-30-54	L. P. Miller		2940		14	T	30		I				73		C
	SB	11-17-54										BhcS	0.0	112.9			
	SB	11-10-53												112.10			
	SB	4-13-53												114.34			
	SB	2-17-53												110.75			

Part 2. Johnson and Fry Valleys

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point	Water level: (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 3 N., Range 2 E.														
2N1	GS	3-15-55	Silver Reef Mine	1935	3650	300	C 12	L	G		In	TcE	0.5	234.48			L
	D	7-11-35												210			
			Township 4 N., Range 3 E.														
16D1	GS	6-16-55	G. Stewart	1955	2895	200	C 10	N	N		Un	Tc	0.8	101.65			
	D	spr 1955						T	G	160					2.5		
22E1	GS	5- 6-54			2898		D ?	N	N		Un	Tbc	0.0	114.80			
23G1	GS	5- 7-54	M. A. Donohue	1950	2850	154	C 10	L	W		Dm						C,L
	D	10-14-50												71.8			
23N1	GS	5- 6-54			2885	244.0	12	N	N		Un	TcW	1.0	102.89			
26K1	GS	5- 6-54			2900		D 36	N	N		Ds			dry			
24Q1	GS	3-15-55			2833	241.8	12	N	N		Un	TcE	1.0	54.67			
	GS	5- 6-54												54.60			

Part 2. Johnson and Fry Valleys--Continued

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
			Township 4 N., Range 4 E.													
5X1	GS	3-15-55			2709		4	L	H		S	TcW	0.3	16.04		
19C1	GS	3-15-55	C. Roath	1952	2775	86	C 8	L	W		Dm	TcE	0.4	44.58		C,L
	GS	5- 7-54												44.80		
19E1	GS	3-15-55	W. Shehorne	1951	2793	252	G 12	T		390	I	BpbS	0.0	60.17	12	C
19E2	GS	5- 7-54	W. Shehorne	1948	2790	213	12	N	N		Un	Tbc	1.0	59.67		
19E3	GS	5- 7-54	W. Shehorne		2787	90	DC 6				Dm			55		C
19H1	GS	5- 7-54			2770	45	6	L	W		Un	TcW	3.0	40.00		
	(g)	2-22-18									S			40.8		
19N1	GS	3-15-55	Kettering		2800		12?	L	W		S	Tcl	0.3	28.65	70	

g. U. S. Geological Survey Water Supply Paper 578, p. 628. No well number assigned.

Part 3. Means Valley

USGS well No.	Source of data	Date of observation	Owner or user	Year completed	Altitude (feet)	Depth (ft)	Type well and diameter (in)	Pump data: Type	Pump data: Power	Pump data: Yield (gpm)	Use of well	Water level: Measuring point (feet)	Water level: Depth below land-surface datum (feet)	Temp °F	Spec cap	Other data
Township 4 N., Range 4 E.																
24X1	GS	12- 3-54			2568	21.5	D 48	L	N		Un	TcrW	1.2	16.48		C
24X2	GS	12- 3-54			2568	18.2	16	N	N		Un	TcS	0.8	17.37		

Table 2A.--Records of water levels in wells in Lucerne Valley, California.

(Measurements are by the San Bernardino County Flood Control District, except where otherwise indicated.)

Water levels are in feet below land-surface datum.

4N/1E-6R1. Herman Oeller. Depth 120 feet; 93 feet before July 1953. Altitude about 2,895 feet.

Date	Water level	Date	Water level	Date	Water level
July 1, 1951	68.0	Apr. 13, 1953	72.48	Nov. 17, 1954	79.45
Dec. 14, 1952	71.25	Nov. 10	76.00	Apr. 13, 1955	82.27
Feb. 16, 1953	71.93	Mar. 17, 1954	c d75.27		
Mar. 16	71.30	Apr. 12,	77.6		

4N/1E-7R1. Depth 145 feet. Altitude about 2,945 feet.

May 15, 1952	90.43	Apr. 13, 1953	92.08	Nov. 17, 1954	93.80
Dec. 15	92.25	Nov. 10	95.70	Nov. 18	d93.97
Jan. 15, 1953	92.20	Mar. 19, 1954	93.13	Mar. 15, 1955	d94.15
Feb. 16	92.96	May 12	d94.10	Apr. 13	98.31
Mar. 16	92.20				

4N/1E-8D1. Alice Barnett. Depth 130 feet. Altitude 2,903 feet.

Nov. 13, 1950	e79.5	May 12, 1954	93.58	Nov. 18, 1954	d91.75
Nov. 10, 1953	79.5	Nov. 17	98.95	Apr. 13, 1955	103.00
Apr. 16, 1954	d88.67				

4N/1E-12P1. Mary Coster. Depth 180 feet. Altitude 2,971 feet.

Nov. 13, 1950	e122.2	Mar. 16, 1953	123.40	May 12, 1954	119.00
May 15, 1952	123.15	Apr. 13	120.67	Nov. 17	123.60
Dec. 15	123.00	Nov. 10	122.90	Nov. 19	c d124.12
Feb. 16, 1953	123.29	Mar. 25, 1954	d123.39	Apr. 13, 1955	129.40

c. Nearby well being pumped.
d. Measurement by United States Geological Survey.
e. Measurement by United States Bureau of Reclamation.

4N/1W-9R1. A. Z. French. Depth 78 feet. Altitude about 2,975 feet.

Date	Water level	Date	Water level	Date	Water level
May 15, 1952	42.59	Feb. 16, 1953	40.38	Nov. 10, 1953	42.81
Dec. 15	41.30	Mar. 16	39.3	Apr. 13, 1955	41.39
Jan. 15, 1953	40.50	Apr. 13	a41.51		

4N/1W-11Q1. Frank Baker. Depth 85 feet. Altitude 2,933 feet.

Nov. 13, 1950	e53.6	Feb. 17, 1953	51.93	May 12, 1954	50.60
May 15, 1952	50.47	Mar. 16	51.20	Sept. 23	b d52.81
Oct. 10,	52.90	Apr. 13	51.10	Nov. 17	52.65
Dec. 15	53.00	Nov. 10	53.30	Mar. 15, 1955	d51.29
Jan. 15, 1953	52.40	Feb. 4, 1954	b d51.77	Apr. 13	51.33

4N/1W-12D1. Dr. Kenneth Smith. Depth 521 feet. Altitude about 2,890 feet.

May 7, 1935	f45.3	Apr. 10, 1948	g58.5	Apr. 7, 1954	d84.67
Oct. 2, 1947	74.7	Aug. 15, 1949	g82.5	July 30	g117.4
Dec. 6, 1947	g66.4	Oct. 23, 1952	g92.0	Nov. 17	d82.22

4N/1W-12M1. Depth 86.0 feet. Altitude about 2,930 feet.

Feb. 19, 1954	d69.57	Sept. 23, 1954	d70.24	Nov. 18, 1954	d70.46
Apr. 13	d69.71	Oct. 29	d70.47	Mar. 15, 1955	d70.69

5N/1E-6C1. D. R. Huffman. Depth 280(?) feet. Altitude about 2,970 feet.

Jan. 15, 1953	144.75	Nov. 10, 1953	152.75	Apr. 13, 1955	151.90
Feb. 17	144.45	May 12, 1954	157.70	June 15	d150.01
Apr. 13	143.90	Nov. 17	150.50		

a. Pumping.
b. Pumped recently.
d. Measurement by United States Geological Survey.
f. Measurement by driller.
g. Measurement by California Electric Power Company.

5N/1E-6N1. John Medici. Depth 158 feet. Altitude about 2,920 feet.

Date	Water level	Date	Water level	Date	Water level
Nov. 15, 1952	90.43	Apr. 13, 1953	90.42	Nov. 10, 1954	d97.24
Feb. 17, 1953	90.08	Nov. 10	93.70	Nov. 17	97.30
Mar. 16	91.50	May 12, 1954	94.30	Apr. 13, 1955	97.60

5N/1E-17C1. F. E. Giovanolli. Depth 100 feet. Altitude about 2,885 feet.

May 12, 1952	63.34	Apr. 13, 1953	a66.10	Nov. 17, 1954	75.70
Dec. 15	65.20	Nov. 10	77.15	Nov. 24	d74.00
Feb. 16, 1953	(a)	May 12, 1954	74.30	Apr. 13, 1955	82.10
Mar. 16	a64.90				

5N/1E-20E1. Harvey Laschansky. Depth 77 feet. Altitude about 2,855 feet.

May 15, 1952	38.05	Mar. 16, 1953	a37.50	Oct. 29, 1954	a50.42
Oct. 23	41.0	Apr. 13	a37.22	Nov. 17	49.00
Dec. 15	35.70	Nov. 10	a38.70	Apr. 13, 1955	55.83
Feb. 16, 1953	a37.38	May 12, 1954	46.87		

5N/1E-33F2. James Sherman. Depth 108 feet. Altitude about 2,885 feet.

May 15, 1952	59.70	Apr. 13, 1953	60.39	Nov. 16, 1954	75.00
Dec. 13	61.80	Nov. 10	66.60	Nov. 19	d70.91
Feb. 16, 1953	60.81	Mar. 27, 1954	d64.18	Mar. 14, 1955	d67.90
Mar. 16	60.50	May 12	67.20	Apr. 13	69.19

5N/1W-1F1. Cole. Depth 150 feet. Altitude about 2,920 feet.

Jan. 15, 1953	93.30	Apr. 13, 1953	a115.47	Nov. 30, 1954	d97.77
Feb. 17	94.17	Nov. 10	98.30	Apr. 13, 1955	103.10
Mar. 16	92.90	Nov. 17, 1954	96.75		
Apr. 13	91.80				

a. Pumping
d. Measurement by United States Geological Survey.

5N/1W-11A1. J. D. Morse. Depth 134 feet. Altitude about 2,905 feet.

Date	Water level	Date	Water level	Date	Water level
Nov. 6, 1950	g74.9	Apr. 13, 1953	80.35	Nov. 10, 1954	d85.53
Jan. 15, 1953	79.05	Aug. 8	g88.0	Nov. 17	85.35
Feb. 5	g79.0	Nov. 10	82.80	Apr. 13, 1955	86.15

5N/1W-12B1. Depth 100 feet. Altitude about 2,890 feet.

Jan. 15, 1953	65.16	Apr. 13, 1953	65.57	Nov. 8, 1954	d71.78
Feb. 16	65.17	Nov. 10	76.25	Nov. 17	73.95
Mar. 16	65.22	May 12, 1954	70.95	Apr. 13, 1955	76.48

5N/1W-35Q1. Depth 300 feet. Altitude about 2,855 feet.

Mar. 9, 1954	d34.13	Nov. 8, 1954	d42.25	Nov. 30, 1954	c d35.58
Apr. 17	d43.10	Nov. 18	d36.71	Mar. 14, 1955	d34.99
Sept. 23	d48.29				

6N/1W-22P1. Depth 350 feet. Altitude about 3,059 feet.

Jan. 15, 1953	167.1	Nov. 10, 1953	155.60	Dec. 2, 1954	d154.82
Feb. 17	173.52	May 12, 1954	156.75	Apr. 13, 1955	a178.8
Mar. 16	162.60	Nov. 17	155.8		

a. Pumping.
c. Nearby well being pumped.
d. Measurement by United States Geological Survey.
g. Measurement by California Electric Power Company.

Table 3A.-Drillers' logs of water wells

Note: The term kaolin (also spelled "koalin," "kaoline," "kalein," "kalene," etc.) is used by most drillers in Lucerne Valley to describe a hard, white, clayey lime, commonly containing worm-like solution channels that may cause the material to be moderately water bearing.

Part 1.- Lucerne Valley

4N/1E-2E1. Frank Laswell. Altitude about 2,913 feet. Drilled by J. S. Gobar in August 1926. 12-inch uncased hole.

Material	Thickness (feet)	Depth (feet)
Kaolin and clay	68	68
Sandstone	32	100

4N/1E-4N1. George W. Prince, Jr. Altitude about 2,920 feet. Drilled by C. Steele in July 1952. 10-inch casing 0 to 140 feet, perforated 96-140 feet, uncased hole 140-212 feet.

Sandy top soil	1	1
Hard kaolin	3	4
Hard light-colored clay	14	18
Sand and gravel	3	21
Hard packed brown clay	75	96
Cemented clay, gravel and coarse sand	5	101
Water-bearing granulated kaolin and gravel	3	104
Rock-like ledge of gypsum, talc or kaolin (very white and would not mix with water.)	12	116
Light gray adobe clay	12	128
Cemented sand, gravel and some clay	13	141
Clay carrying some sand and gravel	19	160
Sandstone, very hard and abrasive	12	172
Soft clay, reddish brown gravel and sand, some water	3	175
Hard gray sandstone	21	196
Coarse sand and gravel, some large gravel, water-bearing (Water level rose from 101 feet to 88 feet in this stratum).	16	212

4N/1E-5G2. R. F. Stites. Altitude about 2,895 feet. Drilled by C. Steele (0-207 feet) in December 1946 and J. Harmon (205-303 feet) in June 1947. 12-inch casing 0-227 feet, 8-inch casing 227-303 feet, perforated 80-232 and 242-295 feet.

Material	Thickness (feet)	Depth (feet)
Soil	22	22
Kaliene and sub-soil	4	26
Adobe and clay	14	40
Hard kaliene	7	47
Adobe clay	28	75
Water-bearing kaliene and gravel	15	90
Adobe clay	14	104
Water-bearing kaliene and gravel	13	117
Adobe clay	19	136
Water-bearing kaliene and gravel	16	152
Adobe clay	18	170
Water-bearing gravel	10	180
Cement rock	14	194
Water-bearing gravel and sand	6	200
Cement rock	7	207
Water sand and gravel	19	226
Clay	29	255
Water sand and gravel, big rock	37	292
Hard kaline	11	303

4N/1E-5H1. R. F. Stites. Altitude about 2,905 feet. Drilled by J. J. Harmon in June 1947. 12-inch casing 0-253 feet, perforated 80-110 and 145-253 feet.

Top soil	1½	1½
White kaline	4½	6
Dry sand	76	82
Water sand	9	91
Streaks of shale, kaline, and sand	91	182
Red and black rock and shale	53	235
Rock, indication of water	15	250
Decomposed granite (dioritic gneiss bedrock)	27	277

4N/1E-5H2. R. F. Stites. Altitude about 2,905 feet. Drilled by F. Tucker. Uncased 16-inch hole.

Material	Thickness (feet)	Depth (feet)
Soil	5	5
Hard white kalien	3	8
Clay	37	45
Water sand, dry	27	72
Red bed, wet	20	92
Sand, with water	10	102
Red bed and rock	20	122
Water sand	10	132
Red bed, wet	20	152
White granite	5	157
Big rock and water	15	172
Water sand	23	195

4N/1E-6H1. Stuart Chaffee. Altitude about 2,885 feet. Drilled by J. S. Gobar in July 1952. 14-inch casing, perforated 70-336 feet.

Top soil	2	2
Gray clay and kaolin	33	35
Cement	2	37
Kaolin	15	52
Sandstone	80	132
Brown clay	56	188
Gravel with cement	157	345
Clay	5	350
Gravel and sand, too fine to perforate	6	356
Clay	4	360

4N/1E-6N2. McKee. Altitude about 2,885 feet. Drilled for K. C. Elmore by C. Steele in April 1952. 10-inch casing, perforated 59-120 feet.

Sandy top soil	2½	2½
Hard pan or kaoline	1½	4
Adobe clay	38	42
White sticky clay	17	59
Water-bearing sand and gravel	6	65
Brown clay	20	85
Water-bearing coarse sand and gravel	3	88
Brown clay	13	101
Cemented formation carrying sand and gravel, very hard	19	120

4N/1E-8C1. M. A. Chickering. Altitude about 2,9[illegible]. Drilled by J. S. Gobar in September 1924. 10-inch casing, perfor[illegible] -95 feet.

Material	[illegible]ss	Depth (feet)
Cement, kaolin		84
Sandy gravel		99

4N/1E-8M1. J. Vesper. Altitude about 2,935 feet. [illegible]led by F. D. McDougall in April 1946. 8-inch casing.

Sandy formation	3
Intermittent layers of kaline and sand	9
Coarse sand	28
Dry gravel	30
Coarse sand	45
Clay	47
Sandy clay	98
Water gravel	115
Quicksand	117
Water sand	140

4N/1E-8P1. N. A. DeRush. Altitude about 2,950 fe[illegible] [illegible]rilled by F. D. McDougall in May 1946. 8-inch casing.

Sand	3
Kaline and sand	9
Coarse sand	27
Strata of gravel	32
Coarse sand	49
Clay	51
Water gravel	101
Fine sand	103
Water gravel	142
Clay	144

4N/1E-8P3. Robert E. Foell. Altitude about 2,845 feet. Drilled by C. Steele in May 1952. 12-inch casing 0-138 feet, perforated 108-138 feet, uncased hole 138-164 feet.

Material	Thickness (feet)	Depth (feet)
Sandy soil	3	3
Hard clay	7	10
Coarse sand, gravel and cobblestones	9	19
Hard brown clay	53	72
Large granite ledge	4	76
Light gray clay	28	104
Water-bearing sand and gravel	5	109
Brown clay, some sand	42	151
Granulated kaolin, water-bearing coarse sand and gravel	7	158
Hard clay	6	164

4N/1E-9N1. Lecil E. Miller. Altitude about 2,970 feet. Drilled by F. D. McDougall in October 1953. 12-inch casing, perforated 140-149, 185-191, 207-220, 227-243, 245-249, 252-257, 316-320, 336-349 feet.

Soil	18	18
Brown sandy clay with hard clay ribs	26	44
Layer of dry gravel	3	47
Sticky gray clay	6	53
Sandy brown clay with hard clay ribs	11	64
Sandy gray clay	18	82
Rocky brown clay	11	93
Dry gravel	2	95
Brown sandy clay	11	106
Light brown sandy clay	12	118
Cement reef	1	119
Brpwn clay	21	140
Cement reefs, bearing water	9	149
Water sand	5	154
Sticky brown clay	2	156
Sandy brown clay and brown shale	10	166
Kaoline and white clay	4	170
Brown sandy clay	10	180
Kaoline and white clay	4	184
Water sand	6	190
Sandy brown clay	10	200
Sticky brown clay with brown shale ribs	8	208
Water sand, gravel	13	221
Fine brown sand	5	226
Brown sandy clay	2	228
Hard brown sand with some 1-inch gravel, seemed to bear water	18	246
Water sand and gravel up to 3½ inches	4	250

4N/1E-9N1.- continued

Material	Thickness (feet)	Depth (feet)
Sticky brown clay	3	253
Water sand and gravel up to 3 inches	5	258
Sticky brown clay	34	292
Hard brown shale	1	293
Sticky brown clay	24	317
Water sand and gravel to ½ inch	4	321
Sticky brown clay	16	337
Water sand and gravel to 3 inches	11	348
Sandy clay with brown sandstone reefs	20	368

4N/1E-10G2. J. A. Barr. Altitude about 2,960 feet. Drilled by J. S. Gobar in June 1938. 12-inch casing 0-423 feet, uncased hole 423-609 feet.

Sandy loam	12	12
Gray cement	29	41
Hard cement	9	50
Sandy clay	17	67
Cement	6	73
Sandy clay	9	82
Cement	9	91
Sandy clay	6	97
Cement	5	102
Sandy clay	18	120
Cement	10	130
Kaolin	17	147
Cement	24	171
Sandstone	12	183
Hard clay	89	272
Gravel	2	274
Sandy clay	18	292
Hard clay	5	297
Sandy clay	23	320
Hard sandy clay	6	326
Sandy clay	14	340
Clay	2	342
Hard cement	7	349
Sandy clay	21	370
Clay, tough and hard	11	381
Sandy clay, kind of a red decomposed granite soil	228	609

4N/1E-11C1. Lenichek. Altitude about 2,935 feet. Drilled by J. S. Gobar in June 1923. 14-inch casing 0-9 feet, uncased hole 9-112 feet.

Material	Thickness (feet)	Depth (feet)
Kaolin	84	84
Cemented gravel and sand	28	112

4N/1E-11D1. U. Range. Altitude about 2,942 feet. Drilled by J. S. Gobar in November 1930. 12-inch casing 0-24 feet, uncased hole 24-126 feet.

Sandy loam	3	3
Kaolin and cement	92	95
Sandstone	31	126

4N/1E-17M1. Altitude about 2,975 feet. Drilled by J. S. Gobar for Carl Jackley in May 1926. 12-inch casing 0-10 feet, uncased hole 10-130 feet.

White clay with cement	128	128
Gravel	2	130

4N/1E-18G1. Jesse Lucia. Altitude about 2,990 feet. Drilled by J. S. Gobar in June 1924. 12-inch uncased hole.

Loose gravel	15	15
Cement gravel	110	125
Kaolin with fine gravel	35	160

4N/1E-18L1. Altitude about 3,005 feet. Drilled by J. S. Gobar for Mathews in July 1923. 12-inch casing 0-8 feet, uncased hole 8-160 feet.

Gravel and sand	20	20
Hard sandy clay	20	40
White cement	55	95
Sandstone or cement	42	137
White gravelly clay	23	160

4N/1E-23C1. Altitude about 3,060 feet. Drilled by J. S. Gobar for M. L. Waller in April 1935. 6-inch uncased hole.

Material	Thickness (feet)	Depth (feet)
Gravel and sand	10	10
Kaolin	32	42
Cement	6	48
Kaolin	54	102
Cemented gravel	20	122
Sandstone	56	178
Cement	6	184
Sandstone	66	250

4N/1E-32H1. L. G. Clark. Altitude about 3475 feet. Drilled by J. S. Gobar in November 1949. 12-inch casing, perforated 24-165 feet.

Top soil	3	3
Rock ledges	55	58
Rotten rock and ledge rock	87	145
Gray granite	5	150
Rotten rock, seamy ledges of granite	20	170
Black rock	10	180

4N/1E-35M1. J. H. Preston. Altitude about 3500 feet. Drilled by J. H. Preston.

Rocks and sand, cemented below 80 feet	110	110
Silt and sand, caliche	40	150
Blue clay	20	170
White clay and caliche	5	175
Yellow clay	5	180
Fine sand, white, first water	5	185
White clay and caliche	25	210
Cavern, tools dropped 6 feet	6	216
White clay and caliche	44	260

4N/1W-1E1. J. E. Perkins. Altitude about 2,865 feet. Drilled by J. S. Gobar in January 1951. 8-inch casing 0-10 feet, uncased hole 10-60 feet.

Top soil, silt	2	2
Hard tough clay	2	4
Kaolin	6	10
Brown clay	13	23
Kaolin	5	28
Sandstone	17	45
Kaolin	15	60

Table 3A

4N/1W-2H1. Vita Food Corporation. Altitude about 2,865 feet. Drilled by J. S. Gobar in 1913. 12-inch casing.

Material	Thickness (feet)	Depth (feet)
White clay	65	65
White clay with hard cement layers	22	87
White clay with gravel	12	99
Hard clay	21	120
Hard clay and packed sand	12	132
Cemented sand	17	149
Hard clay	8	157
Brown sticky clay with a little gravel	73	230
Clay	22	252
Gravel, sand, and clay	26	278
Sand and clay	16	294
Gravel	8	302
Sand and clay	16	318
Gravel (stones 3 inches in diameter at 344 feet)	60	378
Sand and gravel	54	432
Gravel and boulders	19	451
Clay	4	455
Gravel	12	467
Clay	5	472
Gravel	23	495
Cement	11	506
Cemented clay, gravel, and sand	46	552
Gravel	5	557
Clay	16	573
Gravel and boulders	17	590
Cement	10	600
Hard clay	12	612
Boulders	4	616
Gravel in clay	11	627
Clay	13	640
Gravel	8	648
Clay	3	651
Sand and gravel	11	662
Clay	10	672
Sand and clay	13	685
Clay	20	705
Sand	7	712
Clay	15	727
Red hard clay	43	770
Cemented sand	6	776
Granite, probably bedrock	2	778

Table 3A

4N/1W-1P1. O. P. Wells. Altitude about 2,870 feet. Drilled by J. S. Gobar in December 1950. 12-inch casing, perforated 250-390 feet.

Material	Thickness (feet)	Depth (feet)
Silt top soil	3	3
Clay	2	5
Kaolin	18	23
Brown clay	7	30
Cement	14	44
Kaolin	7	51
Cement	9	60
Sticky brown clay	6	66
Sandstone	4	70
Kaolin	5	75
White clay	7	82
Kaolin	4	86
Sandstone	8	94
Tough gray clay	4	98
Light brown clay	22	120
Tough green clay	55	175
Brown clay with small rocks in it	19	194
Hard brown clay with some sand in it	38	232
Sandy brown clay	32	264
Brown water gravel	24	288
Clay	20	308
Gravel	10	318
Decomposed granite, sand, some water	12	330
Gravel	18	348
Decomposed granite, sand	6	354
Gravel	6	360
Hard cement	12	372
Gravel	10	382
Clay	12	394
Cemented gravel	10	404

4N/1W-1J1. O. P. Wells. Altitude about 2,875 feet. Drilled by J. S. Gobar in Januray 1951. Casing perforated 67-382 feet.

Silt	2	2
Loam	2	4
Kaolin	32	36
Sandstone	27	63
Brown sandy clay	57	120
White clay	6	126
Sandstone	4	130
Brown clay, some sand	24	154
Cement	2	156
White clay	3	159
Tough gray clay	29	188
Sandy brown clay	32	220

4N/1W-1J1.- continued

Material	Thickness (feet)	Depth (feet)
Decomposed granitic clay with cement reefs	60	280
Gravel	4	284
Cement	18	302
Gravel, cemented	28	330
Decomposed granitic rocks	20	350
Gravel	5	355
Cement	13	368
Gravel, good	10	378
Decomposed granite, sand	10	388

4N/1W-1M1. Paul Messer. Altitude about 2,865 feet. Drilled by J. S. Gobar in May 1952. 14-inch casing, perforated 36-466 feet.

Top soil	2	2
Tough brown clay	2	4
Kaolin	21	25
Gray clay	2	27
Light brown clay with sandstone	63	90
Sandy brown clay	9	99
Tough brown clay	11	110
Brown sandy clay	14	124
Brown sandstone	12	136
Brown sandy clay	16	152
Gray clay	8	160
Brown sticky clay	8	168
Kaolin	4	172
Brown sticky clay	4	176
White clay	6	182
Green clay	4	186
Brown sticky clay	24	210
Brown sandy clay	8	218
Decomposed granitic sand and clay	40	258
Cement and gravel	6	264
Decomposed granitic sand and clay	30	294
Coarse decomposed granitic sand	6	300
Sandy clay	20	320
Gray gravel	4	324
Decomposed granitic sand and clay	26	350
Gray gravel	6	356
Decomposed granitic sand	20	376
Gray gravel	8	384
Decomposed granitic sand	28	412
Good gravel	4	416
Decomposed granitic sand	14	430
Sandy clay	12	442
Gravel	5	447
Sandy clay	5	452
Gravel	16	468
Clay	6	474

4N/1W-1P3. Paul Messer. Altitude about 2,875 feet. Drilled by J. S. Gobar in May 1952. 8-inch casing, perforated 50-75 feet.

Material	Thickness (feet)	Depth (feet)
Top soil, silt	8	8
Kaolin	12	20
Cement	4	24
Kaolin	11	35
Sandstone	42	77

4N/1W-2G2. Vita Food Corporation. Altitude about 2,860 feet. Drilled by J. S. Gobar in 1947 to 247 feet, deepened to 450 feet in August 1952. 16-inch casing 0-104 feet, 12-inch casing 104-450 feet, perforated 110-445 feet.

Top soil, silt	3	3
Kaolin and clay	57	60
Kaolin	24	84
Gray clay	58	142
Cement	5	147
Brown clay	57	204
Very sticky clay	12	216
Very sticky gray clay	10	226
Gray clay with grit	12	238
Mixed clay, caving	9	247
Brown clay	9	256
Cemented sand	9	265
Brown sandy clay	24	289
Cemented gravel	4	293
Brown sandy clay	27	320
Gravel, egg-size	8	328
Sandy brown clay	8	336
Cemented gravel	6	342
Gravel	4	346
Brown clay and rocks	30	376
Hard cement	2	378
Clay and rocks	22	400
Sandy clay	20	420
Cement	10	430
Gravel, large	15	445
Rocks and clay	5	450

4N/1W-2K1. J. P. Martin. Altitude about 2,865 feet. Drilled by J. S. Gobar in May 1932. 14-inch casing, perforated 38-480 feet.

Material	Thickness (feet)	Depth (feet)
Soil	3	3
Kaolin	42	45
Gray clay, hard	40	85
Kaolin	10	95
Light brown clay, sticky	25	120
Sandy gray clay	40	160
White clay	2	162
Brown sticky clay	18	180
Sandy clay	10	190
Reddish sandy clay	12	202
Red sticky clay	20	222
Kaolin	4	226
Brown clay	21	247
Sandy clay	9	256
Yellow clay	14	270
Hard cement	15	285
Sandy clay	25	310
Decomposed granitic sand	39	349
Clay	8	357
Gravel, dirty	11	368
Decomposed granitic soil and gravel	12	380
Rocks in granitic soil and gravel	5	385
Dirty gravel	30	415
Sandy clay	11	426
Dirty gravel	9	435
Cement	3	438
Dirty gravel	48	486

4N/1W-3N1. Bostwick. Altitude about 3,030 feet. Drilled by J. S. Gobar in July 1927. 10-inch casing 0-7 feet, uncased hole 7-138 feet.

Decomposed granite	6	6
Gypsum with kaolin	3	9
Decomposed granite, some gypsum, hard drilling	101	110
Decomposed granite	28	138

4N/1W-9R1. Amos Z. French. Altitude about 2,975 feet. Reamed and deepened from 44 to 78 feet by J. S. Gobar in October 1949. 12-inch casing.

Material	Thickness (feet)	Depth (feet)
(Old 8-inch diameter well. No data.)	44	44
Hard rock in clay	20	64
Decomposed granitic sand, water-bearing	4	68
Clay	2	70
Gravel	8	78

4N/1W-10E1. Lulu H. Stern and Berniece P. Ellis. Altitude about 2,980 feet. Drilled by F. D. McDougall in June 1950. 8-inch casing, perforated 54-94 feet.

Loose gravelly soil	2	2
Hard rocky clay	5	7
Light brown sandy clay	42	49
Hard dry clay with some small rocks	2	51
Light brown sandy clay	10	61
Water-bearing gravel	11	72
Decomposed granite with clay ribs	15	87
Loose sand, gravel, water-bearing	7	94
Decomposed granite with clay ribs	3	97

4N/1W-10E2. F. A. Crawford. Altitude about 2,960 feet. Drilled by J. S. Gobar in July 1950. 6-inch casing, perforated 40-75 feet.

Top decomposed granitic sand	2	2
Hard decomposed granitic soil	8	10
Decomposed granitic sand	24	34
Cemented decomposed granitic sand	5	39
Water in decomposed granitic sand	8	47
Cemented decomposed granitic sand	7	54
Water in decomposed granitic sand	8	62
Cemented decomposed granitic sand	6	68
Water in decomposed granitic sand	10	78

4N/1W-10H2. Altitude about 2,910 feet. Drilled by J. S. Gobar for William G. Reed in September 1935. 10-inch casing 0-20 feet, uncased hole 20-250 feet.

Material	Thickness (feet)	Depth (feet)
Top soil	2	2
Kaolin	10	12
Muck	8	20
Sand	28	48
Kaolin	62	110
White cement	2	112
White clay	13	125
Clay	4	129
Brown clay	21	150
Clay	10	160
Kaolin	6	166
Clay	10	176
Sandstone	4	180
Clay	26	206
Green clay	9	215
Brown clay	17	232
Blue clay	18	250

4N/1W-10M1. Mrs. H. W. Winford. Altitude about 2,965 feet. Drilled by J. S. Gobar in November 1928.

Decomposed granitic sand	15	15
Kaolin	11	26
Gravel	7	33
Cemented clay	10	43
Gravel	8	51
Decomposed granitic sand	12	63
Kaolin and gravel	7	70
Granite boulders	14	84
Granite	26	110

4N/1W-10N1. V. H. Clemens, Sr. Altitude about 2,960 feet. Drilled by J. S. Gobar in July 1926. 12-inch casing, perforated 66-72 and 128-236 feet.

Sand	2	2
Kaolin	21	23
Sandy muck	12	35
Sandy clay	31	66
Granitic gravel	6	72
Cement	3	75
Clay	18	93
Cement	19	112
Gravel and clay	16	128
Gravel	7	135
Rock	15	150

Table 3A

4N/1W-10R1. J. W. Ellis. Altitude about 2,935 feet. Drilled by J. S. Gobar in November 1947. 8-inch casing, perforated 30-80 feet.

Material	Thickness (feet)	Depth (feet)
Sand	1	1
Hard red clay	1	2
Kaolin	6	8
Quicksand	6	14
Kaolin with grit	20	34
Brown gravelly clay	6	40
Cement	2	42
Brown gravelly clay	12	54
Kaolin	26	80
Note: Owner reports well deepened to 250 feet in 1948. Log from memory is as follows:		
Kaolin	169	249
Sand and gravel	1	250

4N/1W-10R2. Howard Leedy. Altitude about 2,930 feet. Drilled by C. Steele in June 1951. 8-inch casing 0-80 feet, uncased hole 80-250 feet; casing not perforated.

Top soil, sandy	4	4
Hard rock-like kaoline	4	8
Granulated kaoline, coarse sand and gravel, water-bearing	3	11
Adobe clay	15	26
Sand and gravel, water-bearing	4	30
Adobe clay	32	62
Sand, gravel, and kaoline, water-bearing	7	69
Hard, dark brown clay	27	96
White clay	64	160
Brown clay	22	182
Coarse sand and gravel, water-bearing	12	194
Brown clay	36	230
White clay	6	236
Coarse sand and gravel, water-bearing	6	242
Dark brown clay	8	250

4N/1W-10R3. Paul M. LeBeuf. Altitude about 2,940 feet. Drilled by J. S. Gobar in February 1929. 12-inch casing 0-239 feet, perforated 20-236 feet, uncased hole filled with rocks 239-300 feet.

Material	Thickness (feet)	Depth (feet)
Soil	3	3
Hard kaolin	3	6
Kaolin	4	10
Quicksand	13	23
Cement	4	27
Quicksand, red	18	45
Kaolin	31	76
White clay	11	87
Hard cement	3	90
Brown clay	24	114
White clay	6	120
Brown clay	8	128
White clay	7	135
Brown clay	35	170
White clay	20	190
Brown clay	21	211
Hard cement	9	220
Sand	7	227
Cement	3	230
White clay	70	300

4N/1W-10R4. Lester Thompson. Altitude about 2,935 feet. Drilled by J. S. Gobar in January 1946.

Sand	5	5
Kaolin	5	10
Sandy muck	22	32
Sandstone	10	42
Sandy clay	15	57
Kaolin and clay, smooth rocks in the clay at 170 feet	153	210
Hard kaolin	20	230
Packed gray sand, cemented	15	245

4N/1W-11A1. Woman's Club. Altitude about 2,885 feet. Drilled by J. S. Gobar in March 1928. 10-inch casing 0-7 feet, uncased hole 7-60 feet.

Sandy loam	12	12
Kaolin	18	30
Cemented gravel	12	42
Kaolin	18	60

4N/1W-11B4. John R. Hutson. Altitude about 2,870 feet. Deepened by J. S. Gobar 63-140 feet (date unknown) and 140-194 feet in June 1953. 10-inch casing, perforated 50-182 feet.

Material	Thickness (feet)	Depth (feet)
(Old well; no data available)	63	63
Kaolin	14	77
Cement	1	78
Gray clay	2	80
White clay	2	82
Brown clay	24	106
Kaolin	9	115
Brown sandy clay	25	140
Sticky gray clay	7	147
Kaolin	10	157
Sandstone	8	165
Sticky gray clay	7	172
Cement and kaolin	6	178
Sticky gray clay	6	184
Sandstone	10	194

4N/1W-11J1. Lucerne Valley Union School District. Altitude about 2,925 feet. Drilled by F. D. McDougall in March 1953. 12-inch casing, perforated 63-114, 222-238, 248-268 and 270-286 feet.

Top soil	1.5	1.5
Fine sandy clay	3.5	5
Coarse gravel	1	6
Fine sandy clay	14	20
Cemented rock, kaolen	4	24
Rocky white clay	10	34
Hard white clay	2	36
Loose sandy clay	12	48
Hard brown clay	4	52
Sticky white clay	5	57
Kaolin reef	6	63
Cemented rock and gravel, water bearing	7	70
Sticky white clay	6	76
Hard brown clay	11	87
Cemented rock and gravel, water-bearing	19	106
Solid rock reef	2	108
Loose cemented rock	4	112
Sandy brown clay	36	148
Tough white clay and rock	10	158
Sandy white clay	32	190
Fine water sand	3	193
Sandy brown clay	9	202
Sticky gray clay	2	204

4N/1W-11J1.- continued

Material	Thickness (feet)	Depth (feet)
Fine water sand	2	206
Sticky gray clay	19	225
Fine brown sand	5	230
Koalin	1	231
Koalin intermixed with white clay	6	237
Sandy brown clay	7	244
Sticky gray clay	6	250
Sandy brown clay	14	264
Hard brown shale	2	266
Small water gravel	2	268
Brown sandy clay	2	270
Small water gravel	2	272
Layers of brown shale and sticky brown clay	12	284
Sticky brown clay	10	294
Sandy brown clay	6	300

4N/1W-11N1. Robert Greenland. Altitude about 2,935 feet. Drilled 0-44 feet in September 1927 by J. S. Gobar, later deepened. 10-inch casing 0-120 feet, perforated 28-40 feet, uncased hole 120-234 feet.

Soil	8	8
Quicksand	20	28
Kaolin and clay	72	100
Yellow clay	20	120
Gravel	(?)	234

4N/1W-11N2. Robert Delperdang. Altitude about 2,935 feet. Deepened from 96 to 247 feet by J. S. Gobar in August 1950. 8-inch casing 0-121 feet, perforated 91-121 feet, uncased hole 121-247 feet.

(Old well; no data available.)	96	96
Sandstone	4	100
Brown clay	6	106
Kaolin	6	112
Brown clay	26	138
Sandstone	12	150
Brown clay	5	155
Kaolin	10	165
Brown clay	5	170
Kaolin (very white)	6	176
Brown clay	4	180
Sandstone	50	230
Kaolin	7	237
Sandstone	5	242
Brown clay	5	247

4N/1W-12D1. Dr. Kenneth Smith. Altitude about 2,890 feet. Drilled by J. S. Gober in May 1935. 16-inch casing, perforated 60-497 feet.

Material	Thickness (feet)	Depth (feet)
Top soil and sandy loam	12	12
Kaolin	33	45
Sandy kaolin	20	65
Light brown clay	20	85
Sandstone	20	105
Soft clay	13	118
Sandstone	19	137
Clay	8	145
Sandstone	20	165
Sticky clay, brown and yellow	79	244
Greasy clay	3	247
Light brown clay	17	264
Sandy clay	33	297
Red sandy clay	7	304
Cement	7	311
Sandy clay	21	332
Cement	18	350
Sandy clay	11	361
Cement	13	374
Decomposed red granitic sand, water-bearing	34	408
Clay	15	423
Dirty gravel	15	438
Decomposed granitic sand	22	460
Very good gravel	5	465
Decomposed granitic sand and clay	8	473
Excellent gravel	22	495
Rocks in clay and decomposed granite	26	521

4N/1W-12F1. Dr. Kenneth Smith. Altitude about 2,915 feet. Drilled by J. Scoggin in June 1953. 16-inch casing 0-494 feet and 14-inch casing 494-542 feet, perforated 300-542 feet. Gravel-packed.

Sand	90	90
Brown shale and boulders	210	300
Water sand with shale streaks	100	400
Shale	30	430
Water gravel	100	530
Hard shale	12	542

4N/1W-12H1. Walter J. Peters. Altitude about 2,900 feet, Drilled by C. Steele in December 1950. 14-inch casing 0-300 feet, perforated 78-294 feet, uncased hole 300-309 feet.

Material	Thickness (feet)	Depth (feet)
Blow sand and top soil	2.5	2.5
Hard rock-like koalin	4.5	7
Light adobe clay	51	58
Brown clay carrying sand and gravel	7	65
White granulated koalin, water-bearing	7	72
Hard brown clay	56	128
White granulated koalin, gravel, and sand, water-bearing	8	136
Cemented sand and gravel	19	155
White clay with some gravel	10	165
Large granite boulder	7	172
Soft white clay	18	190
Green sticky clay	14	204
Red clay	6	210
Fine sand, bits of koalin and gravel	6	216
Green sticky clay	14	230
Green sandstone	32	262
Brown clay	18	280
Coarse sand and pea gravel, water-bearing	11	291
Brown clay	18	309

4N/1W-13C1. San Bernardino County. Altitude about 2,860 feet. Drilled by C. Steele in May 1949. 12-inch casing.

Sandy soil	3	3
Hard Kalein	3.5	6.5
Adobe clay	28.5	35
Cemented sand and gravel	7	42
Adobe clay	45	87
Hard clay	8	95
Porous white kalein, water-bearing	15	110
Clay	35	145
Water-bearing kalein	6	151
Clay	3	154

4N/1W-14A2. Altitude about 2,965 feet. Drilled by J. S. Gobar in April 1936. 8-inch casing.

Material	Thickness (feet)	Depth (feet)
Sand with rocks	20	20
Cemented gravel	5	25
Cement and sand	52	77
Very hard cement	1	78
Gravel, water-bearing	8	86
Kaolin	17	103
Gravel	37	140

4N/1W-14A3. E. L. Moe. Altitude about 2,950 feet. Drilled by J. S. Gobar in October 1946. 10-inch casing.

Gravel and rocks	8	8
Kaolin and cement	49	57
Cement	11	68
Sandstone	14	82
Cement	10	92
Sandstone with gravel	24	116
Sandy clay	11	127

4N/1W-14B1. James Goulding. Altitude about 2,945 feet. Drilled by F. D. McDougall in February 1951. 10-inch casing, perforated 140-148 feet.

Sandy soil	20	20
Koalene	3	23
Koalene and water sand	12	35
Light gray clay and Koaline	2	37
Hard reefs of koalene	5	42
Light gray clay and koalene reefs	19	61
Light brown sandy clay	3	64
Hard koalene reef	1	65
Koalene and sand	2	67
Brown sandy clay	25	92
Coarse sand and small gravel	5	97
Brown sandy clay	4	101
Light gray clay	3	104
Light brown sandy clay	37	141
Coarse sand and gravel	5	146
Light brown sandy clay	15	161
Hard clay	2	163
Coarse sandy brown clay	8	171
Coarse sand and light gray clay	15	186
Light gray clay	15	201

Note: Water level rose from 23 feet to land surface after casing was perforated.

4N/1W-14C2. E. B. Hill. Altitude about 2,950 feet. Drilled by F. D. McDougall in March 1950. 10-inch casing 0-30 feet, uncased hole 30-105 feet.

Material	Thickness (feet)	Depth (feet)
Light gray clay	2	2
Light brown sandy clay	16	18
Light gray clay	3	21
Coarse water sand	3	24
Koaline and white clay	2	26
Light brown clay	8	34
White clay	13	47
Light gray clay	4	51
Water gravel and koaline	25	76
Light gray clay	29	105

4N/1W-14D1. Edmund E. Sandy. Altitude about 2,950 feet. Drilled by J. S. Gobar in February 1936. 14-inch casing.

Soil	12	12
Sandy muck	10	22
Kaolin	14	36
Sandy muck	9	45
Sandstone	15	60
Kaolin	20	80
Brown clay and kaolin mixed	17	97
Gray clay	9	106
Brown clay	9	115
Capping cement	1	116
Sandstone (flowing stratum)	17	133
Kaolin and cement	13	146
Sandstone	26	172
Cement	3	175
Kaolin with grit	17	192
Brown clay	26	218
Sandy clay	7	225
Kaolin	9	234
Brown clay	4	238
Cement	6	244
Water sand	15	259
Clay	8	267

4N/1W-14H2. Altitude about 2,965 feet. Drilled by J. S. Gobar for Verne Chute in June 1927. 8-inch casing.

Material	Thickness (feet)	Depth (feet)
Soil	4	4
Sand and rock	12	16
Kaolin	8	24
Sandy clay	6	30
Cement	13	43
Sandstone	27	70
Kaolin	11	81
Soft sandstone	19	100

4N/1W-14M1. J. A. Hodgson. Altitude about 2,985 feet. Drilled by F. D. McDougall in 1948. 14-inch casing 0-167 feet, 12-inch casing 167-230 feet, perforated 62-82 and 160-170 feet.

Sandy loam	1.5	1.5
Dry hard clay	6.5	8
Brown sandy gravel	2	10
Light sandy gravel	28	38
Water sand and gravel	14	52
Brown clay	8	60
Light clay	7	67
Kalene	1.5	68.5
Water gravel and sand	11.5	80
Clay	26	106
Kalene	2	108
Water gravel and sand	16	124
Clay	34	158
Gravel	12	170
Light clay, rock	27	197
Brown clay	11	208
Rock, gravel	16	224
Light clay	6	230

4N/1W-14N1. Roy Cliff. Altitude about 3,020 feet. Drilled by E. Moss in December 1950. 12-inch casing 0-114 feet, uncased hole 114-120 feet.

Material	Thickness (feet)	Depth (feet)
Top soil	4	4
Hardpan	5	9
Clay	24	33
Gravel	6	39
Clay-bearing medium sand in streaks	28	67
Fine water sand	4	71
Shale	8	79
Water gravel	9	88
Clay-bearing medium, sand in streaks	21	109
Water gravel, 1/4-inch to 1½-inch diameter	6	115
Sticky shale	5	120

4N/1W-14Q3. Carl C. Holler. Altitude about 3,025 feet. Drilled 0-102 feet in September 1947 by F. D. McDougall and deepened from 102 to 214 feet in March 1949. 10-inch casing 0-148 feet, perforated 113-143 feet, uncased hole 148-214 feet.

Brown sandy clay	8	8
Dark sandy soil	7	15
Soft slime	4	19
Light sandy clay	35	54
Water gravel	4	58
Brown clay	34	92
Water gravel	5	97
Brown clay	5	102
Light clay	25	127
Water sand	3	130
Clay	2	132
Water gravel	12	144
Light gray clay	1	145
Brown clay	59	204
Water gravel and coarse sand	6	210
Light clay	4	214

4N/1W-14Q4. E. C. Windschantz. Altitude about 3,030 feet. Drilled by J. S. Gobar in September 1947. 7-inch casing, perforated 67-147 feet.

Material	Thickness (feet)	Depth (feet)
Soil	30	30
Kaolin	8	38
Cement	4	42
Decomposed granite	8	50
Black gravelly clay	2	52
Cement	4	56
Sandy clay	12	68
Cement	4	72
Gravelly clay	7	79
Kaolin	11	90
Gray clay	5	95
Decomposed granitic sand	13	108
Cement	5	113
Clay	10	123
Cemented gravel	6	129
Gravelly clay	18	147

4N/1W-14Q5. R. O. Williams. Altitude about 3,005 feet. Drilled by J. S. Gobar in October 1937. 12-inch casing, perforated 127-140 feet.

Top soil	2	2
Gravel	2	4
Kaolin	20	24
Brown sandy clay	7	31
Light clay	5	36
Dirty gravel	12	48
Kaolin	10	58
Gravel	4	62
Clay	47	109
Water sand	9	118
Clay	9	127
Gravel	13	140
Clay	12	152
Cement	2	154
Clay	2	156

4N/1W-15A1. George Lyndon. Altitude about 2,945 feet. Drilled by J. S. Gobar in July 1947. 12-inch casing, perforated 50-115 feet.

Top soil	4	4
Kaolin	12	16
Quicksand	8	24
Cement	10	34

4N/1W-15A1.-continued

Material	Thickness (feet)	Depth (feet)
Kaolin	12	46
Brown sandy clay	14	60
Cement, water-bearing	6	66
Dark gray clay	8	74
Kaolin	23	97
Cemented sand	7	104
Kaolin	16	120

4N/1W-15A2. Harold Reed. Altitude about 2,950 feet. Drilled by J. S. Gober in April 1950. 10-inch casing 0-67 feet, uncased hole 67-257 feet.

Top sand	2	2
Kaolin	2	4
Red kaolin	1	5
Gray kaolin	12	17
Sandy muck	9	26
Kaolin and sand, tends to cave in	14	40
Hard brown clay	3	43
Kaolin	10	53
Brown clay	9	62
Cement	6	68
Kaolin	7	75
Brown clay	7	82
Cement	4	86
Kaolin	8	94
Brown clay	13	107
Kaolin	8	115
Brown clay	7	122
Cement	13	135
Kaolin	9	144
Brown clay	46	190
White clay	19	209
Sandstone	5	214
Kaolin	8	222
Hard cement	8	230
Sandstone	5	235
Sticky clay	22	257

4N/1W-15B2. Low Cowan. Altitude about 2,953 feet. Drilled by F. D. McDougall in July 1949. 8-inch casing, perforated 16-27, 41-49, and 83-99 feet.

Material	Thickness (feet)	Depth (feet)
Brown clay	3	3
Light gray clay	13	16
Kalene, bearing some water	11	27
Brown sandy clay	10	37
Light gray clay	4	41
Kalene and water-bearing sand	8	49
Light brown clay	34	83
Kalene and water-bearing sand	14	97
Brown clay	3	100

4N/1W-15D3. C. V. Wickware. Altitude about 2,965 feet. Drilled by F. D. McDougall in August 1950. 8-inch casing, perforated 80-120 feet.

Sandy loam	2	2
Caliche	13	15
Light brown sandy clay	8	23
Koalene	10	33
Koalene, bearing small amount of water	8	41
Light brown sandy clay	12	53
Water sand and small gravel	8	61
Light brown clay	31	92
Koalene and water sand	11	103
Layers of koalene, sand and clay	19	122
Light brown sandy clay	3	125

4N/1W-15F2. H. Huffman. Altitude about 2,985 feet. Drilled by J. S. Gobar in November 1953. 12-inch casing, perforated 45-155 feet.

Top soil	2	2
Kaolin	1	3
Hard kaolin	5	8
Sandstone	27	35
Kaolin	5	40
Sandstone	10	50
Sand	5	55
Cemented gravel	10	65
Gray clay	3	68
Cement	17	85
Sandstone	9	94
Cement	2	96
Gray clay	4	100

4N/1W-15F2.-continued

Material	Thickness (feet)	Depth (feet)
Sandstone	5	105
Brown clay	15	120
Sandstone	15	135
Brown clay	7	142
Cement	7	149
Sandy clay	6	155
Kaolin	5	160

4N/1W-15L1. F. M. VanNorman. Altitude about 3,005 feet. Drilled by F. D. McDougall in April 1948. 8-inch casing 0-96 feet, perforated 72-96 feet.

Soil	5	5
Sandy clay with layers of kaoline	71	76
Water gravel	5	81
Clay	14	95
Gravel	2	97
Clay	3	100

4N/1W-15R2. Earl G. Piatt. Altitude about 3,010 feet. Deepened from 65 to 121 feet by J. S. Gobar in January 1950. 8-inch casing 65-121 feet, perforated 65-117 feet.

Old well; no data available	65	65
Dirty gravel	15	80
Brown clay	10	90
Sandstone	15	105
Clay	3	108
Sandstone	7	115
White clay	6	121

4N/1W-21E1. R. W. Hitchcock. Altitude about 3,083 feet. Drilled by J. S. Gober in July 1953. 10-inch casing, perforated 145-314 feet.

Material	Thickness (feet)	Depth (feet)
Decomposed granitic soil	10	10
Gravelly soil and rocks	120	130
Clay and sand	14	144
Cement	14	158
Cemented gravel, fine	24	182
Decomposed granitic sand and clay	48	230
Cement	20	250
Sandstone	26	276
Cemented gravel, hard	5	281
Clay	5	286
Sandstone	12	298
Clay	4	302
Sandstone	14	316
Clay	8	324

4N/1W-21J1. Dale Sweeney and George Rayle. Altitude about 3,140 feet. Drilled by F. D. McDougall in August 1952. 12-inch casing 0-330 feet, perforated 188-208, 216-224, 284-296, and 315-325 feet.

Top soil	4	4
Rocky sandy soil	30	34
Loose rocks, coarse sand with clay	38	72
Water sand, bearing very little water	3	75
Clay	2	77
Coarse sand	7	84
Light sandy clay	24	108
Coarse dry gravel in clay	8	116
Light sandy clay	14	130
Coarse sand and gravel in brown clay	58	188
Fine water sand	3	191
Coarse water sand and small gravel	14	205
Sandy clay	7	212
Hard brown sandstone	7	219
Water sand and gravel	3	222
Rocky sandy clay	5	227
Cemented rock reefs	16	243
Gray sandy clay	11	254
Cemented rocks in loose sandy clay	25	279
Light brown sticky clay	10	289
Water gravel	5	294
Sticky brown clay	21	315
Coarse gravel	10	325
Rocky brown sandy clay with thin rocky ribs	43	368
Coarse gravel	6	374
Brown sandy clay	29	403

4N/1W-22D1. Clarence Dillon. Altitude about 3,066 feet. Drilled by F. D. McDougall in May 1950. 12-inch casing 0-238 feet, perforated 112-122, 140-160, 185-198, and 202-206 feet.

Material	Thickness (feet)	Depth (feet)
Sandy loam	3	3
Dry gravel and brown sandy clay	21	24
Kaline and rocky formation	14	38
Fine sandy clay	11	49
Dark brown clay and gravel	12	61
Hard dry clay, few rocks	5	66
Soft rocky brown clay	21	87
Hard rocky clay	7	94
Light gray sandy clay	18	112
Light brown clay, few rocks	2	114
Fine water sand, bearing some water	2	116
Brown clay	5	121
Cement reef	1	122
Gray clay	8	130
Brown sandy clay	10	140
Brown clay with thin cement reefs	10	150
Brown sandy clay	21	171
Cemented sandstone, float of several colors	2	173
Brown sandy clay	17	190
Water gravel and coarse sand with thin, tight ribs	6	196
Brown sandy clay	6	202
Light gray clay with a few rocks	6	208
Light brown clay	24	232
Cemented rocks and gravel	2	234
Hard brown clay	7	241
Soft brown clay	53	294
Rocky brown clay	6	300
Brown sandy clay with thin rocky ribs	84	384

4N/1W-23D2. F. M. Bazl. Altitude about 3,050 feet. Drilled by J. S. Gobar in March 1948. 8-inch casing, perforated 75-155 feet.

Top soil	4	4
Kaolin	12	16
Decomposed granitic sand and rocks	14	30
Sandy clay	22	52
Cemented rocks and gravel	16	68
Gravel	14	82
Clay with gravel	13	95
Light clay	22	117
Gravel	9	126
Sandy clay	7	133
Kaolin	2	135
Sandy clay	9	144

4N/1W-23D2.-continued

Material	Thickness (feet)	Depth (feet)
Hard kaolin	2	146
Sandy clay	4	150
Kaolin	5	155
Sandy clay	4	159

4N/1W-23K1. C. Clarke Battelle. Altitude about 3,160 feet. Drilled by F. D. McDougall in November 1946. 12-inch casing, perforated 123-160 feet.

Coarse sand	55	55
Hard rock shell	1.5	56.5
Coarse brown sand	13.5	70
Boulders and soft sandstone	4	74
Sandy clay	59	133
Water gravel	4	137
Clay	2	139
Water gravel	19	158
Clay	2	160

4N/1W-24E1. C. V. Wickware. Altitude about 3,100 feet. Drilled by F. D. McDougall in October 1946. 8-inch casing, perforated 69-76, 104-109, 124-127, and 147-152 feet.

Coarse sand	35	35
Gray sand	34	69
Water gravel	6	75
Sandy clay	29	104
Water gravel	4	108
Clay	16	124
Gravel	2	126
"Talc". (?)	22	148
Brown sand	4	152

5N/1E-7C2. Guy Gilliland. Altitude about 2,893 feet. Drilled by J. S. Gobar in August 1952. 12-inch casing, perforated 74-84, 90-102, 124-130, and 150-166 feet.

Large good gravel; decomposed granitic soil	71	71
Broken rock, water-bearing	13	84
Sandy clay	6	90
Broken rock, water-bearing	12	102
Sand	22	124

5N/1E-7C2.-continued

Material	Thickness (feet)	Depth (feet)
Rocks	6	130
Sandy clay	4	134
Cemented gravel	10	144
Sandy clay	6	150
Boulders, water gravel	16	166
Decomposed granitic rocks	6	172

5N/1E-8C1. Tony Patchell. Altitude about 2,935 feet. Drilled by J. S. Gobar in May 1929. 12-inch casing, perforated 93-120 feet.

Decomposed granitic sand with large gravel	88	88
Cement	5	93
Gravel, coarse and water-bearing	27	120
Dirty gravel and clay with boulders	33	153

5N/1E-17Q1. Paul C. Carr. Altitude about 2,870 feet. Drilled by F. D. McDougall in June 1952. 12-inch casing, perforated 102-148 feet.

Top soil	1.5	1.5
Gray sandy clay	16.5	18
Brown sandy clay	12	30
Rocky brown clay	2	32
Brown sandy clay	20	52
Water gravel, coarse sand and small gravel	5	57
Coarse sandy gravel	3	60
Brown clay	4	64
Water gravel and coarse sandy gravel	10	74
Coarse brown gravelly clay	20	94
Brown sandy clay	21	115
Layers of water sand and brown sandy clay	31	146
Light brown sticky clay	5	151

5N/1E-19P1. E. E. Allen. Altitude about 2,853 feet, Drilled by J. S. Gobar in December 1934. 12-inch casing, perforated 154-209 feet.

Material	Thickness (feet)	Depth (feet)
Top soil	3	3
Gray clay	57	60
Brown clay	40	100
Dirty gravel	20	120
Clay	10	130
Dirty gravel	36	166
Gravel	17	183
Dirty gravel	7	190
Good gravel	23	213
Dirty gravel	16	229

5N/1E-19P2. E. E. Allen. Altitude about 2,853 feet. Redrilled by J. S. Gobar in June 1951. 12-inch casing 0-80 feet, 7-inch casing 76-140 feet, perforated 40-80 feet.

Top soil	3	3
Clay	97	100
Decomposed granitic sand and gravel	5	105
Clay	35	140

5N/1E-20E1. Harvey Laschansky. Altitude about 2,855 feet. Drilled by J. S. Gobar in October 1951. 8-inch casing 0-51 feet, uncased hole 51-77 feet.

Top soil	3	3
Clay	3	6
Kaolin	10	16
Brown clay	20	36
Gray clay	16	52
Gray sandstone	8	60
Brown cemented sand	17	77

5N/1E-20F1. Harvey Laschanzky. Altitude about 2,860 feet. Drilled by J. S. Gobar in June 1948. 12-inch casing, perforated 240-244, 248-264, and 266-268 feet.

Material	Thickness (feet)	Depth (feet)
Top soil	4	4
Kaolin	4	8
Gray clay	10	18
Brown clay	8	26
Gray clay	4	30
Sandy clay	10	40
Cemented sand	18	58
Clay and rocks	22	80
Cemented decomposed granitic sand	120	200
Good gravel	16	216
Brown sandy clay	16	232
Gravel	4	236
Sandy clay	4	240
Gravel	4	244
Sandy clay	4	248
Gravel	16	264
Cement	2	266
Gravel	2	268
Sand, clay and cement	4	272

5N/1E-20N1. Dr. Sigmund T. Rich. Altitude about 2,857 feet. Drilled by J. S. Gobar in September 1953. 14-inch casing, perforated 190-306 feet.

Kaolin	12	12
Light brown clay	5	17
Dark brown clay	9	26
Kaolin	14	40
Brown clay	22	62
Sandstone	36	98
Black rocks	4	102
Decomposed granitic sand	8	110
Brown clay	64	174
Gravel	21	195
Gravel, 2-inch, water-bearing	10	205
Decomposed granitic sand	17	222
Cement	2	224
Gravel	32	256
Cement	12	268
Gravel, egg-size	8	276
Very good gravel, base-ball size	30	306
Gravel	6	312
Rocks in clay	8	320

5N/1E-21R1. J. R. Baker. Altitude about 2,905 feet. Drilled by C. Steele in September 1952. 12-inch casing 0-298 feet, 10-inch casing 298-324 feet, perforated 80-324 feet.

Material	Thickness (feet)	Depth (feet)
Top soil	6	6
Hard packed sand, gravel, clay	35	41
Ledge of hard clay	6	47
Soft sticky clay	34	81
Granulated kaolin, sand and water gravel	9	90
Hard packed clay, sand and gravel	38	128
Hard clay	5	133
Water and loose gravel, coarse sand	4	137
Hard packed clay, sand and gravel, cemented formation	35	172
Soft loose sand and gravel, some cobblestones, water-bearing	16	188
Hard ledge of gray clay	4	192
Fine sand, some pea gravel, water-bearing	18	210
Hard reddish clay	4	214
Cemented formation, as hard as concrete	18	232
Hard gray clay carrying sand and gravel	48	280
Cemented gray formation	4	284
Red clay carrying sand and gravel	24	308
Loose sand and gravel carrying water; sand brown and very fine	12	320
Cemented formation, very hard	4	324

5N/1E-22Q1. Herbert J. Baumchen. Altitude about 2,930 feet. Drilled by F. D. McDougall in March 1950. 12-inch casing, perforated 110-163 feet.

Loose sandy clay and top soil	9	9
Hard dry rib of sandy clay	2	11
Hard and soft ribs of brown sandy clay	66	77
Very hard formation of rocky clay	13	90
Fine water sand	6	96
Light brown clay	1	97
Cement reef of different kinds of rock	2	99
Light brown clay	11	110
Fine water sand	6	116
Coarse water sand, small gravel and rock	7	123
Brown sandy clay	4	127
Ribs of brown sand and water sand	8	135
Brown sandy clay	28	163

5N/1E-27D1. Leonard A. Tannar. Altitude about 2,908 feet. Drilled by F. D. McDougall in June 1950. 12-inch casing, perforated 72.5-90.5, 110.8-137.2, 168.2-193.0 feet.

Material	Thickness (feet)	Depth (feet)
Top soil	3	3
Light brown sandy clay	75	78
Coarse sand, small gravel	18	96
Tight clay	6	102
Sand and gravel	8	110
Small gravel	10	120
Clay and cement reefs	26	146
Sand and gravel	6	152
Brown sandy clay	2	154
Sand and gravel	7.5	161.5
Sand and gravel with clay ribs	26.5	188
Brown clay	7	195

5N/1E-29K1. R. R. Walton. Altitude about 2,865 feet. Drilled by J. S. Gobar in November 1950. 9-inch casing 0-5 feet, uncased hole 5-102 feet.

Blow sand	2	2
Silt	6	8
White kaolin	15	23
Light blue kaolin	3	26
Brown clay	18	44
Sandstone	12	56
Gray clay	11	67
Sandstone	15	82
Brown clay	10	92
Sandstone	10	102

5N/1E-30H1. Fooshe. Altitude about 2,857 feet. Deepened by J. S. Gobar, 54-298 in June 1953. 12-inch casing, perforated 82-298 feet.

Old well, no data available	54	54
Gray clay	3	57
Brown clay, very sticky	29	86
Sandy clay	6	92
Rocky, sandy clay with black rocks	15	107
Hard red clay with rocks	9	116
Decomposed granitic sand	66	182
Sandstone	18	200
Gravel	6	206
Decomposed granitic sand	20	226
Brown clay with gravel	44	270
Gravel	6	276

5N/1E-30H1.-continued

Material	Thickness (feet)	Depth (feet)
irty sand	5	281
ard cement	6	287
ecomposed granitic soil	3	290
ood gravel	8	298

5N/1E-31F1. Wallace VanSickle. Altitude about 2,860 feet. Drilled by . S. Gobar in November 1949. 12-inch casing.

op soil	2	2
lay	20	22
aolin	24	46
rown clay	35	81
hite clay	13	94
ray clay	13	107
ticky brown clay	8	115
andy brown clay	8	123
ight brown gritty clay	15	138
rown cement	6	144
ecomposed granitic sand	20	164
oarse decomposed granitic sand	4	168
ecomposed granitic sand	20	188
and, water gravel	23	211
ecomposed granitic sand	3	214
ravel	3	217
ecomposed granite	50	267

5N/1E-31F2. Wallace VanSickle. Altitude about 2,860 feet. Drilled by . S. Gobar in May 1927. 12-inch casing 0-3 feet, uncased hole 3-40 feet.

oil	2	2
aolin	29	31
rown sandstone and clay	9	40

5N/1E-32K1. Mark H. Hitchcock. Altitude about 2,875 feet. Drilled by F. D. McDougall in March 1949. 8-inch casing(?), perforated 48-65 feet.

Material	Thickness (feet)	Depth (feet)
Light gray sand	18	18
Light brown sandy clay	18	36
Light gray clay	21	57
Water sand and gravel	6	63
Light brown sandy clay	2	65

5N/1E-32R1. Dan Boom. Altitude about 2,885 feet. 12-inch casing 0-396 feet.

Clay	46	46
Fine gravel	1	47
Clay	87	134
Cemented sand	5	139
Gravel	5	144
Clay, red	86	230
Clay, white	1	231
Clay, red	9	240
Clay and gravel	5	245
Fine gravel	5	250
Clay, red	31	281
Sand and gravel	7	288
Sand and gravel with clay	7	295
Clay, red	42	337
Rock and clay	2	339
Clay	11	350
Cemented clay	15	365
Rock and clay	2	367
Cemented rock	29	396
Lime rock	19	415
Decomposed granite	12	427
Granite	30	457

5N/1E-35F1. Norman Metcalf. Altitude about 2,960 feet. Drilled by F. D. McDougall in July 1950. 8-inch casing 0-141 feet, perforated 104-136 feet.

Soil	3	3
Kaolin	8	11
Sandy clay with hard clay ribs	81	92
Loose dry sand	6	98
Sandy clay	14	112
Water sand	4	116
Sand with clay ribs	24	140
Hard dry clay	10	150

5N/1W-14D1. Harry Blanch. Altitude about 2,855 feet. Drilled by J. S. Gobar in September 1929. 10-inch casing 0-7 feet.

Material	Thickness (feet)	Depth (feet)
Decomposed granitic sand	50	50

5N/1W-22M1. William Snyder. Altitude about 2,850 feet. Drilled by J. S. Gobar in June 1919. 12-inch uncased hole.

Top soil	4	4
Kaolin and clay	38	42
White clay	5	47
Cement	5	52
Gray clay	28	80
White clay	4	84
Cement	26	110
Hard clay	48	158
Cement	8	166
Clay	10	176
Cement	7	183
Sandy clay	7	190

5N/1W-25G1. Guthro. Altitude about 2,850 feet. Drilled by M. R. Peck in November 1951. 16-inch casing, perforated 164-200 feet.

Top soil	8	8
Brown clay	12	20
Brown clay and scattered lime	80	100
Yellow clay	28	128
Yellow and green clay	24	152
Yellow clay and scattered gravel	8	160
Brown gravel, 1/2-inch to 3-inches	42	202

5N/1W-25H1. W. M. Schildmeyer. Altitude about 2,851 feet. Drilled by M. R. Peck in October 1951. 16-inch casing, perforated 166-204 feet.

Top soil	8	8
Brown clay	12	20
Brown clay and scattered lime	80	100
Yellow clay	28	128
Yellow and green clay	22	150
Brown gravel, 1/2-inch to 1-inch	58	208

5N/1W-36P1. O. P. Wells. Altitude about 2,860 feet. Drilled by J. M. Scoggin in June 1953. 16-inch casing, perforated 156-468 feet. Gravel packed.

Material	Thickness (feet)	Depth (feet)
Top soil	5	5
White sand	45	50
White shale	50	100
Brown shale	40	140
Brown sandy shale	100	240
Water sand with streaks of shale	120	360
Brown shale	40	400
Brown sandy shale	20	420
Water gravel and white shale	48	468

5N/1W-36R1. O. P. Wells. Altitude about 2,863 feet. Drilled by J. M. Scoggin in July 1953. 16-inch casing, perforated 148-468 feet. Gravel packed.

Adobe shale	20	20
Brown shale	40	60
Water sand	10	70
Brown shale and boulders	130	200
Water gravel	200	400
Rock set in shale	68	468

6N/1E-31Q1. Jess L. Huff. Altitude about 3,030 feet. Deepened 200-234 feet by J. S. Gobar in Novemeber 1953. 8-inch casing 0-234 feet, perforated 195-234.

Old well, no data	200	200
Sand	6	206
Rocks, gravel and sand, very hard, water-bearing	28	234

Part 2.- Fry and Johnson Valleys

3N/2E-2N1. Silver Reef Mine. Altitude about 3,650 feet. Drilled by J. S. Gobar in July 1935. 12-inch casing at surface, uncased 8-inch hole to 300 feet. Small rocks placed in bottom of hole.

Material	Thickness (feet)	Depth (feet)
Top soil	2	2
Rocks and kaolin	23	25
Rocks and hard green cement	20	45
Rocks with cement	25	70
Kaolin	4	74
Cemented rocks	10	84
Cement	5	89
Cemented rocks	9	98
Sandy formation	15	113
Cement	7	120
Conglomerate sand	86	206
Cement gravel	6	212
Sand and muck	14	226
Light brown clay	19	245
Brown sand in clay	43	288
Cement	12	300

4N/3E-23G1. Maurice A. Donahue. Altitude about 2,850 feet. Drilled by C. Steele in October 1950. 10-inch casing, perforated 76-150 feet.

Sandy loam, top soil	1.5	1.5
Hard adobe clay	3.5	5
Dune sand	18	23
Hard brown clay	49	72
Hard rock-like koalin	6	78
Granulated gravel and coarse sand, water-bearing	4	82
Red cemented formation, coarse gravel, sand, very little clay	22	104
Loose coarse gravel, coarse sand, water-bearing	3	107
Red cemented coarse gravel and sand, a little clay	41	148
Water-bearing pea gravel, coarse sand	3	151
Brown hard clay	3	154

4N/4E-19C 1. Clarence Roath. Altitude about 2,775 feet. Drilled by C. Steele in September 1952. 8-inch casing, perforated 44-56 and 81-85 feet.

Material	Thickness (feet)	Depth (feet)
Sandy top soil	2.5	2.5
Clay	4.5	7
Blow sand, very fine	13	20
Clay	9	29
Coarse sand, some gravel and cobblestones	6	35
Very hard adobe clay	12	47
Water-bearing coarse sand and pea gravel	4	51
Gray clay	3	54
Very hard greenish clay, carrying coarse sand and gravel	7	61
Very hard sandstone	21	82
Water-bearing coarse sand and gravel	3	85
Very hard clay	1	86

Table 4A.- Chemical analyses of water from wells

Constituents: Where the value for sodium is preceded by the letter a it indicates sodium and potassium expressed as sodium. The value for dissolved solids is the analytically determined value reported by the laboratory. The sum of determined constituents is the sum of the tabulated constituents minus 50.8 percent of the bicarbonate. Because all of the commonly occurring major constituents (except silica in many of the analyses) were analytically determined, the values for dissolved solids and sum of determined constituents should be approximately the same. Where there is a pronounced difference in the values an error in the analytical determination of dissolved solids is indicated. All values have been rounded where necessary to conform to the standards of the Geological Survey, Quality of Water Branch.

Point of collection: B, bailed from well; D, collected from discharge pipe while well was flowing or being pumped; S, collected from storage facility at an active well which was not necessarily being pumped at the time sample was collected.

Analyzing laboratory: CAH, C. A. Hoag Testing Laboratory; DA, U. S. Department of Agriculture, Rubidoux Laboratory, Riverside, California; DWR, State of California, Department of Public Works, Division of Water Resources; GS, U. S. Geological Survey (from Water-Supply Paper 578); SBC, San Bernardino County Flood Control District.

Table 4A

Part 1.- Lucerne Valley

Well number	3N/1E-3F1	4N/1E-1R2
Constituents (parts per million)		
Silica (SiO_2)	-	-
Iron (Fe)	-	-
Calcium (Ca)	43	29
Magnesium (Mg)	21	2.2
Sodium (Na)	18	202
Potassium (K)	1.7	4.9
Carbonate (CO_3)	0	0
Bicarbonate (HCO_3)	234	131
Sulfate (SO_4)	21	240
Chloride (Cl)	7	100
Nitrate (NO_3)	4.5	2.5
Fluoride (F)	.8	4.0
Boron (B)	.02	1.2
Dissolved solids (Dis. sol.)	245	695
Sum of determined constituents (Sum)	232	651
Hardness calculated as $CaCO_3$ (Hardness)	194	82
Percent sodium (% Na)	17	84
Specific conductance (Sp C) ($K \times 10^6$ at 25°C)	398	1,120
pH	7.6	7.6
Temperature of water when sampled (°F)	68	77
Point of collection (P C)	D	D
Date collected (Date)	3-10-55	5-9-54
Analyzing laboratory (Lab.)	DWR	DWR
Laboratory number (Lab. No.)	5422	P-659
Depth of well, in feet (Depth)	47	286

Part 1.- Lucerne Valley--Continued

Well number	4N/1E-1R2	4N/1E-2E1	4N/1E-3Q1	4N/1E-5Q1
Constituents (parts per million)				
SiO_2	-	14	16	15
Fe	-	0	-	0
Ca	27	48	110	35
Mg	3	26	39	13
Na	200	60	65	31
K	4.8	-	-	-
CO_3	0	0	0	0
HCO_3	124	132	98	166
SO_4	224	85	295	48
Cl	115	119	127	17
NO_3	4.5	1.0	5.5	0.5
F	5.0	.5	.5	.5
B	.64	.06	0	0
Dis. sol.	682	502	857	249
Sum	646	419	706	242
Hardness	80	226	436	142
% Na	84	36	24	32
Sp C	1,130	690	1,010	364
pH	8.1	7.8	7.8	7.9
°F	-	-	-	-
P C	S	D	-	D
Date	3-10-55	2-28-52	3-17-52	2-28-52
Lab.	DWR	SBC	SBC	SBC
Lab. No.	5438	2024	2042	2023
Depth	286	100	135±	-

Table 4A

Part 1.- Lucerne Valley—Continued

Well number	4N/1E-6C1	4N/1E-6H1	4N/1E-6R1	4N/1E-7B1	4N/1E-9A1
Constituents (parts per million)					
SiO_2	-	-	-	30	-
Fe	-	-	-	Trace	-
Ca	48	46	44	48	52
Mg	31	18	19	24	19
Na	31	33	32	a42	33
K	3.3	1.4	1.6	-	1.5
CO_3	0	0	0	-	0
HCO_3	156	193	193	210	113
SO_4	101	182	77	104	152
Cl	47	18	14	20	27
NO_3	14	1.2	2.0	Trace	3.1
F	.5	.2	.7	-	0
B	.06	0	0	-	.10
Dis. sol.	409	370	305	367	418
Sum	353	395	285	371	344
Hardness	248	189	188	218	208
% Na	21	27	27	-	24
Sp C	623	503	461	-	528
pH	8.3	7.4	7.7	-	7.4
°F	-	70	65	-	69
P C	-	D	D	-	D
Date	9-17-53	5-9-54	3-9-55	8-12-16	5-9-54
Lab.	SBC	DWR	DWR	GS	DWR
Lab. No.	2825	P-662	5423	-	P-661
Depth	300	360	120	-	227

Part 1.- Lucerne Valley--Continued

Well number	4N/1E-9A1	4N/1E-9N1	4N/1E-12P2	4N/1E-12P2	4N/1E-21D1
Constituents (parts per million)					
SiO_2	-	-	-	-	0
Fe	-	-	-	-	-
Ca	45	56	49	47	50
Mg	27	15	41	36	13
Na	30	40	a64	56	40
K	1.6	1.8	-	3.8	6
CO_3	0	0	-	0	0
HCO_3	127	183	128	117	196
SO_4	149	112	150	142	67
Cl	22	16	117	99	29
NO_3	2.5	4.5	6.3	3.5	4
F	.5	.4	.6	.7	-
B	.02	.13	.12	.03	.10
Dis. sol.	410	380	576	473	405
Sum	341	337	491	446	306
Hardness	224	200	291	266	179
% Na	22	30	31	31	-
Sp C	554	541	880	723	-
pH	7.4	7.4	7.7	7.8	7.8
°F	69	-	-	-	-
P C	D	-	-	S	-
Date	3-10-55	2-16-54	10-9-52	3-10-55	6-16-50
Lab.	DWR	SBC	DWR	DWR	CAH
Lab. No.	5432	3068	2445	5439	-
Depth	227	368	180	180	355

Part 1.- Lucerne Valley--Continued

Well number	4N/2E-7N2	4N/2E-17H1	4N/2E-17H1	4N/1W-1E1	4N/1W-1E1
Constituents (parts per million)					
SiO_2	-	-	-	-	-
Fe	-	-	-	-	-
Ca	80	39	34	52	48
Mg	42	15	17	79	54
Na	95	63	65	56	57
K	6.2	3.7	4.3	2.5	3.4
CO_3	0	0	0	0	2
HCO_3	90	126	120	288	283
SO_4	269	122	134	169	149
Cl	160	46	39	90	64
NO_3	2.0	6.8	5.0	1.5	2.0
F	.9	.9	1.0	.6	.6
B	.12	.14	.10	.03	.10
Dis. sol.	768	392	350	657	545
Sum	700	359	359	593	520
Hardness	373	159	155	465	342
% Na	35	46	47	21	26
Sp C	1,205	607	616	889	800
pH	7.6	7.6	7.8	7.8	8.5
°F	68	68	-	60	-
P C	D	S	S	D	S
Date	3-10-55	5-9-54	3-10-55	4-7-52	3-9-55
Lab.	DWR	DWR	DWR	DWR	DWR
Lab. No.	5440	P-663	5441	1714	R-572
Depth	150	181	181	60	60

Part 1.- Lucerne Valley--Continued

Well number	4N/1W-1H1	4N/1W-1H1	4N/1W-1H1	4N/1W-1P2	4N/1W-2H1
Constituents (parts per million)					
SiO_2	-	-	-	-	-
Fe	-	-	-	-	-
Ca	42	45	42	115	28
Mg	18	22	20	65	17
Na	40	34	35	276	72
K	2.5	1.8	2.0	4.4	-
CO_3	0	0	12	0	-
HCO_3	205	205	171	492	207
SO_4	82	84	71	556	81
Cl	18	14	18	132	35
NO_3	2	0	6.4	14	1.9
F	.5	.6	.7	.1	-
B	.05	.03	.02	.60	.19
Dis. sol.	329	323	255	1,480	-
Sum	306	302	280	1,410	337
Hardness	179	203	187	555	140
% Na	32	26	29	52	57
Sp C	330	500	515	2,520	574
pH	7.9	7.8	8.3	7.9	8.2
°F	60	80	72	65	73
P C	D	b	D	D	bD
Date	4-7-52	8-13-54	3-9-55	5-9-54	6-22-32
Lab.	DWR	DWR	DWR	DWR	DA
Lab. No.	1715	4597	5532	P-697	6393
Depth	404	404	404	59	778

b. Pumped for many hours before sampling.

Part 1.- Lucerne Valley--Continued

Well number	4N/1W-2H1	4N/1W-2R3	4N/1W-9Q3	4N/1W-9R1	4N/1W-10D2
Constituents (parts per million)					
SiO_2	38	-	18	-	20
Fe	0	-	0	-	-
Ca	64	37	45	50	40
Mg	91	26	6.5	7	9
Na	90	24	30	31	29
K	-	-	-	.8	-
CO_3	0	-	0	-	5
HCO_3	285	241	190	195	174
SO_4	217	42	38	41	40
Cl	188	7.1	10	7	11
NO_3	4.0	3.7	2.5	1.0	1.1
F	.6	-	.6	.5	1.9
B	.06	.07	0	.04	.1
Dis. sol.	959	-	264	252	248
Sum	834	259	245	234	207
Hardness	299	200	140	154	136
% Na	27	21	32	30	-
Sp C	1,250	443	357	368	-
pH	7.5	8.2	7.9	7.7	7.5
°F	65	-	-	69	-
P C	cD	D	S	D	-
Date	2-28-52	6-22-32	2-28-52	3-9-55	-
Lab.	SBC	DA	SBC	DWR	-
Lab. No.	2025	6394	2013	R-570	-
Depth	778	-	93	78	120

c. Pumped for 5 minutes before sampling.

Part 1.- Lucerne Valley--Continued

Well number	4N/1W-11G1	4N/1W-11N2	4N/1W-11Q1	4N/1W-11Q2	4N/1W-11Q4
Constituents (parts per million)					
SiO_2	-	-	-	-	-
Fe	-	-	-	-	-
Ca	42	34	76	36	33
Mg	7.6	20	39	24	24
Na	76	20	58	21	21
K	-	2.7	1.3	-	-
CO_3	0	-	-	-	-
HCO_3	203	214	445	214	214
SO_4	54	24	102	40	36
Cl	53	5	14	7.1	5.3
NO_3	1.5	3.8	2.5	6.8	3.7
F	.8	0	.1	-	-
B	.13	0	.09	.02	.04
Dis. sol.	372	131	514	-	-
Sum	334	214	512	240	228
Hardness	135	167	351	189	181
% Na	54	20	26	19	20
Sp C	510	360	769	408	403
pH	7.9	7.9	7.3	7.9	7.8
°F	-	-	-	-	-
P C	-	S	S	D	D
Date	5-16-52	3-9-55	3-9-55	6-22-32	6-22-32
Lab.	SBC	DWR	DWR	DA	DA
Lab. No.	2162	R-574	R-571	6390	6391
Depth	250	247	85	200	600

Part 1.- Lucerne Valley--Continued

Well number	4N/1W-12D1	4N/1W-12F1	4N/1W-14C1	4N/1W-14C3	4N/1W-14D1
Constituents (parts per million)					
SiO_2	-	-	-	27	-
Fe	-	-	-	.33	-
Ca	26	29	38	36	35
Mg	23	20	22	24	20
Na	23	26	17	a33	20
K	1.9	2	2	-	2.7
CO_3	0	0	0	-	10
HCO_3	202	202	224	222	195
SO_4	25	33	30	40	24
Cl	6	4	7	7.4	6
NO_3	4.4	4.5	4	-	8.4
F	.9	.4	.2	-	.2
B	.03	.26	.01	-	.04
Dis. sol.	221	238	254	250	160
Sum	210	220	230	277	223
Hardness	160	155	186	188	170
% Na	24	26	16	-	20
Sp C	393	383	370	-	395
pH	8.0	8.3	7.9	-	8.1
°F	-	-	60	-	72
P C	bD	D	D	-	D
Date	7-31-53	1-29-54	4-8-52	1-13-09	3-9-55
Lab.	SBC	SBC	DWR	GS	DWR
Lab. No.	2781	3007	1717	-	5533
Depth	521	542	-	160	267

b. Pumped for many hours before sampling.

Part 1.- Lucerne Valley--Continued

Well number	4N/1W-14K2	4N/1W-14Q2	4N/1W-14Q4	4N/1W-21E1	4N/1W-23D2
Constituents (parts per million)					
SiO_2	15	-	-	-	-
Fe	0	-	-	-	-
Ca	44	38	46	26	40
Mg	22	19	22	10	15
Na	14	a17	14	64	a25
K	-	-	2	2.8	-
CO_3	0	-	-	0	-
HCO_3	239	244	238	120	214
SO_4	26	47	28	104	42
Cl	10	5	5	28	11
NO_3	3.5	2.4	3.4	5.5	4.4
F	.4	.1	.6	.4	.2
B	.03	.06	.07	.19	1.0
Dis. sol.	258	243	155	310	254
Sum	253	249	238	300	244
Hardness	202	173	206	104	162
% Na	13	17	13	58	25
Sp C	370	400	391	359	400
pH	7.7	7.7	8.0	7.9	7.8
°F	-	70	-	-	68
P C	-	-	S	-	-
Date	3-28-52	10-23-52	3-9-55	12-10-53	10-23-52
Lab.	SBC	DWR	DWR	SBC	DWR
Lab. No.	2070	2446	R-573	2939	2447
Depth	219	84	129.4	324	159

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-7C2	5N/1E-8N1	5N/1E-8N1	5N/1E-17C1	5N/1E-17C2
Constituents (parts per million)					
SiO_2	-	-	-	27	-
Fe	-	-	-	0	-
Ca	59	77	62	209	310
Mg	24	33	32	31	19
Na	75	271	240	435	a1,380
K	4.7	3.4	3.1	7.6	-
CO_3	0	0	0	0	-
HCO_3	144	161	166	98	140
SO_4	130	286	236	547	626
Cl	96	334	298	731	2,230
NO_3	24	25	25	3.0	-
F	1.1	1.8	2.0	1.5	1.6
B	.24	1.3	1.1	1.1	5.8
Dis. sol.	534	1,200	1,060	2,180	4,940
Sum	485	1,110	981	2,040	4,640
Hardness	245	328	287	649	853
% Na	39	64	64	59	78
Sp C	821	2,220	1,740	3,020	7,930
pH	8.0	8.0	7.6	7.6	7.25
°F	-	-	-	-	-
P C	-	D	D	D	dB
Date	5-3-54	5-9-54	3-10-55	2-28-52	9-4-52
Lab.	SBC	DWR	DWR	SBC	DWR
Lab. No.	3129	P-696	5430	2018	2443
Depth	172	120	120	154	?

d. Sampled from bailer during drilling.

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-17C2	5N/1E-17D1	5N/1E-18D2	5N/1E-18M1	5N/1E-19P1
Constituents (parts per million)					
SiO_2	-	-	-		24
Fe	-	-	-	-	0
Ca	392	341	58	474	271
Mg	45	106	23	125	73
Na	840	810	68	336	115
K	16	11	3.1	9.5	4.6
CO_3	0	0	2	0	0
HCO_3	85	96	129	122	112
SO_4	633	604	121	270	237
Cl	1,660	1,690	99	1,440	692
NO_3	0	0	25	16	1.0
F	2.4	.9	1.0	.5	.3
B	3.4	3.0	.24	.06	0
Dis. sol.	4,140	4,630	510	3,380	2,090
Sum	3,600	3,610	464	2,740	1,470
Hardness	1,165	1,290	238	1,700	976
% Na	61	57	38	30	20
Sp C	5,880	6,280	833	4,900	2,320
pH	7.5	7.4	8.1	7.6	7.6
°F	-	-	-	-	69
P C	-	D	cD	-	-
Date	9-22-53	4-2-54	3-15-55	1-22-55	2-28-52
Lab.	SBC	DWR	SBC	SBC	SBC
Lab. No.	2826	P-665	3484	3415	2019
Depth	154	480	170	168	229

c. Pumped for 5 minutes before sampling.

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-19P1	5N/1E-19P1	5N/1E-20E1	5N/1E-20E1	5N/1E-20E1
Constituents (parts per million)					
SiO_2	-	-	25	-	-
Fe	-	-	0	-	-
Ca	299	258	327	158	149
Mg	88	91	64	31	29
Na	156	148	638	a653	500
K	4.7	4.6	16	-	13
CO_3	0	0	0	-	0
HCO_3	99	102	73	85	68
SO_4	306	280	295	237	216
Cl	730	688	1,550	1,170	930
NO_3	3.7	2.5	0	4.8	2.0
F	4.5	.6	.8	1.0	1.0
B	.10	.04	.55	.86	.54
Dis. sol.	2,790	2,040	3,680	2,650	2,030
Sum	1,640	1,520	2,950	2,300	1,870
Hardness	1,110	1,020	1,079	523	492
% Na	23	24	56	73	68
Sp C	2,930	2,700	4,690	4,230	3,120
pH	7.2	7.5	7.6	7.4	7.6
oF	68	68	-	70	66
P C	D	D	D	-	D
Date	5-8-54	3-10-55	2-28-52	10-23-52	3-10-55
Lab.	DWR	DWR	SBC	DWR	DWR
Lab. No.	P-660	5434	2020	2449	5435
Depth	229	229	77	77	77

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-20N1	5N/1E-20N2	5N/1E-20-1	5N/1E-21R1	5N/1E-21R1
Constituents (parts per million)					
SiO_2	-	24	43	-	-
Fe	-	.3	.1	-	-
Ca	422	241	267	166	162
Mg	124	113	31	11	15
Na	637	a545	a1,660	690	672
K	9.3	-	-	20	13
CO_3	0	-	-	0	0
HCO_3	83	105	139	88	77
SO_4	499	396	862	502	518
Cl	1,670	1,240	2,410	975	993
NO_3	0	10	0	0	1.2
F	.15	-	-	4.0	3.6
B	1.5	-	-	3.7	3.7
Dis. sol.	3,710	2,900	5,510	2,480	2,470
Sum	3,400	2,620	5,340	2,420	2,420
Hardness	1,566	1,070	795	462	467
% Na	47	-	-	76	75
Sp C	5,630	-	-	3,860	3,920
pH	7.7	-	-	7.9	7.8
°F	-	-	-	-	71
P C	-	-	-	-	D
Date	12-1-53	8-14-16	8-14-16	4-5-54	5-9-54
Lab.	SBC	GS	GS	SBC	DWR
Lab. No.	2937	-	-	3138	P-695
Depth	320	20	282	324	324

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-23C1	5N/1E-23C1	5N/1E-29N1	5N/11E-29R1	5N/1E-30H1
Constituents (parts per million)					
SiO_2	-	-	-	-	-
Fe	-	-	-	-	-
Ca	214	201	42	65	295
Mg	20	22	15	30	87
Na	1,280	1,366	40	46	165
K	14	15	2.3	2.7	3.9
CO_3	0	0	2	0	0
HCO_3	91	56	151	117	93
SO_4	540	507	96	136	268
Cl	1,960	2,140	17	97	788
NO_3	4.3	2.0	4.0	4.0	4.3
F	4.0	4.0	.6	.9	.1
B	5.0	4.0	.08	.13	.1
Dis. sol	4,310	4,290	319	497	1,890
Sum	4,090	4,290	294	440	1,660
Hardness	617	593	168	286	1,096
% Na	81	83	34	26	25
Sp C	7,250	6,667	474	755	3,090
pH	7.5	7.3	8.1	7.7	7.4
°F	72	-	-	-	70
P C	D	S	-	a	D
Date	5-9-54	3-10-55	4-5-54	7-31-53	5-9-54
Lab.	DWR	DWR	SBC	SBC	DWR
Lab. No.	P-684	5420	3136	2782	P-682
Depth	200	200	300	301	298

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-31F1	5N/1E-31F1	5N/1E-31L1	5N/1E-32B1	5N/1E-32B1
Constituents (parts per million)					
SiO_2	-	-	17	20	-
Fe	-	-	-	0	-
Ca	41	68	44	56	54
Mg	19	30	17	22	21
Na	a46	40	33	50	54
K	-	2.5	-	-	2
CO_3	-	0	0	0	0
HCO_3	189	163	193	144	139
SO_4	91	120	75	100	112
Cl	18	86	18	83	71
NO_3	2.7	2.5	.5	.5	.48
F	.3	.4	.3	.5	.6
B	.06	0	.03	.04	.10
Dis. sol.	332	490	309	450	422
Sum	311	429	300	403	383
Hardness	181	294	185	230	220
% Na	39	23	28	32	34
Sp C	510	758	430	636	598
pH	8.0	7.9	7.6	7.7	8.0
°F	70	-	-	-	-
P C	-	S	b	S	b
Date	10-23-51	3-10-55	4-18-52	2-28-52	7-8-52
Lab.	DWR	DWR	SBC	SBC	SBC
Lab. No.	2441	5429	2076	2021	2221
Depth	267	267	-	436	436

b. Pumped for many hours before sampling.

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-32G1	5N/1E-32P1	5N/1E-32P1	5N/1E-32R1	5N/1E-32R1
Constituents (Parts per million)					
SiO_2	-	-	-	24	-
Fe	-	-	-	0	-
Ca	44	127	128	147	73
Mg	24	51	49	53	31
Na	34	103	82	113	60
K	1.8	2.0	2.3	-	2.1
CO_3	0	0	0	0	0
HCO_3	139	317	273	293	153
SO_4	115	372	358	381	214
Cl	40	83	77	158	73
NO_3	.72	10	8.4	7.4	7.4
F	.5	.1	.4	.4	.2
B	.06	.3	.18	.26	.12
Dis. sol.	360	1,080	897	1,120	680
Sum	328	904	839	1,030	535
Hardness	208	528	522	585	310
% Na	26	30	25	30	29
Sp C	506	1,365	1,333	1,450	800
pH	8.2	7.4	7.4	7.1	7.5
°F	-	-	-	68	70
P C	c	S	S	cD	bD
Date	7-8-52	5-9-54	3-10-55	2-28-52	5-9-54
Lab.	SBC	DWR	DWR	SBC	DWR
Lab. No.	2220	P-677	5431	2022	P-664
Depth	290	300	300	457	457

b. Pumped for many hours before sampling.

c. Pumped for 5 minutes before sampling.

Part 1.- Lucerne Valley--Continued

Well number	5N/1E-33G1	5N/1E-33G1	5N/1E-33G1	5N/1W-1E1	5N/1W-1F1
Constituents (parts per million)					
SiO_2	-	-	-	29	32
Fe	-	-	-	0	0
Ca	32	41	38	41	45
Mg	12	17	20	11	15
Na	43	42	41	41	49
K	2.0	1.5	1.6	-	2.5
CO_3	0	0	0	0	0
HCO_3	119	122	120	117	122
SO_4	85	112	115	51	81
Cl	29	29	30	52	67
NO_3	6.1	5.5	4.9	17	17
F	.4	.5	.5	1.5	1.0
B	-.10	0	.02	0	.08
Dis. sol.	288	325	335	330	395
Sum	269	309	310	302	370
Hardness	129	172	177	148	174
% Na	41	34	33	37	37
Sp C	457	485	494	456	550
pH	7.6	8.3	7.9	7.8	7.7
°F	-	-	68	72	72
P C	D	-	D	cD	cD
Date	5-9-54	7-8-54	3-10-55	2-28-52	2-28-52
Lab.	DWR	SBC	DWR	SBC	SBC
Lab. No.	P-679	3199	5433	2016	2017
Depth	200	200	200	135	150

c. Pumped for 5 minutes before sampling.

Part 1.- Lucerne Valley--Continued

Well number	6N/1W-22P1	6N/1W-36K1	6N/1W-36K2
Constituents (parts per million)			
SiO_2	15	-	-
Fe	0	-	-
Ca	33	59	51
Mg	9.7	20	20
Na	42	63	65
K	1.9	-	-
CO_3	0	0	0
HCO_3	105	134	132
SO_4	69	109	117
Cl	46	89	79
NO_3	4.5	30	22
F	.9	1.0	1.2
B	0	.13	.06
Dis. sol.	292	539	488
Sum	274	437	420
Hardness	123	230	211
% Na	42	37	40
Sp C	429	690	647
pH	7.9	7.9	8.3
°F	-	-	-
P C	D	-	-
Date	2-28-52	4-17-52	4-17-52
Lab.	SBC	SBC	SBC
Lab. No.	2015	2148	2149
Depth	350	-	-

Part 2.- Johnson and Means Valleys--Continued

Well number	4N/4E-19C1	4N/4E-19E1	4N/4E-19E3	4N/4E-19E3	4N/4E-24X1[a/]
Constituents (parts per million)					
SiO_2	-	-	-	-	-
Fe	-	-	-	-	-
Ca	61	80	109	135	47
Mg	38	60	81	101	14
Na	8.2	155	140	155	440
K	5.0	6.7	5.6	8.6	20
CO_3	-	0	0	5	0
HCO_3	153	156	176	181	649
SO_4	253	372	478	672	102
Cl	82	178	200	157	355
NO_3	2.9	4.0	3.0	7.5	92
F	1.0	.8	1.2	1.1	4.5
B	.11	.41	.22	.24	1.4
Dis. sol.	641	998	1,190	1,440	1,270
Sum	527	934	1,100	1,330	1,410
Hardness	309	447	606	753	175
% Na	36	43	33	31	79
Sp C	870	1,480	1,720	1,860	2,340
pH	8.1	7.5	7.6	8.1	7.8
°F	-	-	-	-	-
P C	S	-	D	-	B
Date	3-10-55	6-10-53	3-10-55	4-6-54	3-11-55
Lab.	DWR	SBC	DWR	SBC	DWR
Lab. No.	R-569	2702	5445	3137	5436
Depth	86	252	90	90	21.5

e. NH_3=14ppm

U. S. GEOLOGICAL SURVEY

56-100

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LIBRARY

PLATE I

EXPLANATION

Qf | Qal | Qp

Unconsolidated alluvial deposits

Alluvial-fan deposits
Poorly sorted conglomerate and unsorted mudflow breccia, consisting of boulders, gravel, sand, and silt, underlie fans, aprons, and fill in small reentrant valleys, where saturated poorly to moderately water yielding

Central-valley alluvium
Poorly to moderately well sorted gravel, sand, silt, and clay. Generally yields moderate to large quantities of water to wells

Playa deposits
Well sorted clay and silt underlying the playa surfaces, minor sand lenses may yield small quantities of water to wells, where saturated

Qof

Older fan deposits
Poorly sorted, crudely stratified conglomerate and mudflow breccia, consisting of boulders, gravel, sand, and silt, locally partly consolidated, moderately to extensively dissected, where saturated probably poorly water yielding

Qls

Landslide breccia
Unsorted, partly consolidated limestone breccia derived by landslides or debris flows from brecciated limestone in Blackhawk Canyon and nearby areas; if saturated probably poorly water yielding

Qc

Continental deposits
Predominantly fine grained, earthy, unconsolidated continental deposits, comprising weathered, silty fine sand, sandy silt, clay, and a few gravel stringers, possibly tapped by some deep wells, but not readily recognizable in well logs, probably poorly water yielding

Qb

Basalt
Basalt dikes and flows, scoria, and local deposits of scoriaceous tuff, not tapped by wells, but yields water freely at Old Woman Spring

QUATERNARY

bc

Basement complex
Igneous rocks, principally quartz monzonite and granite, and metamorphic rocks, principally gneiss, schist, quartzite, and recrystallized limestone and dolomite, exposed in the mountains of the area and underlies the unconsolidated deposits in the valleys. Generally non-water-bearing, but locally yields small to moderate quantities of water to springs and a few wells

PRE-TERTIARY

Geologic contact

Fault, dashed where approximately located, dotted where concealed, questioned where doubtful
Faults that have broken the alluvial deposits usually act as partial barriers to ground-water movement
U, upthrown side, D, downthrown side

Domestic, stock, or unused well

Flowing artesian well (1954)

Irrigation well

Destroyed or dry well

Open-file release. Not reviewed for conformance with the editorial standards and stratigraphic nomenclature of the Geological Survey

Base from U. S. Geological Survey topographic maps.
Sections lines dashed where approximate

Geology and field location of wells by

MAP OF LUCERNE, JOHNSON, FRY, AND MEANS VALLEYS, CALIFORNIA

SHOWING RECONNAISSANCE GEOLOGY AND LOCATIONS OF WELLS

SCALE 1 0 1/2 0 1 2 3 4 MILES

INDEX TO TOPOGRAPHIC MAPS

AZTEC SPRING | MITCHELL MINE
LUCERNE VALLEY | OLD WOMAN SPRINGS

CALIFORNIA

ORD MOUNTAINS
GRANITE MOUNTAINS
LUCERNE VALLEY
BESSEMER VALLEY
FRY MOUNTAIN
FRY VALLEY
JOHNSON VALLEY
MEANS VALLEY
SAN BERNARDINO MOUNTAINS
Soggy Lake
Melville Lake
Means Lake
Blackhawk Canyon
Lucerne Valley Fault
Old Woman Springs Road
Cottonwood Spring
Old Woman Springs

R1W R1E R1E R2E R2E R3E R3E R4E
T6N T5N T4N T3N
117°00' 116°45' 116°30'
34°40' 34°30' 34°20'