

Well-Numbering System

Wells are numbered according to their location in the rectangular system for subdivision of public lands in California. For example, in well number 26S/39E-24K1, the number and letter preceding the slash indicate the township (T. 26 S.); the number and letter following the slash indicate the range (R. 39 E.); the number following the hyphen indicates the section (sec. 24); the letter (K) following the section number indicates the 40-acre subdivision. Within the 40-acre subdivision, wells are sequentially numbered in the order they are inventoried (1). The area covered by this report lies entirely in the southeast quadrant of the Mount Diablo base line and meridian.

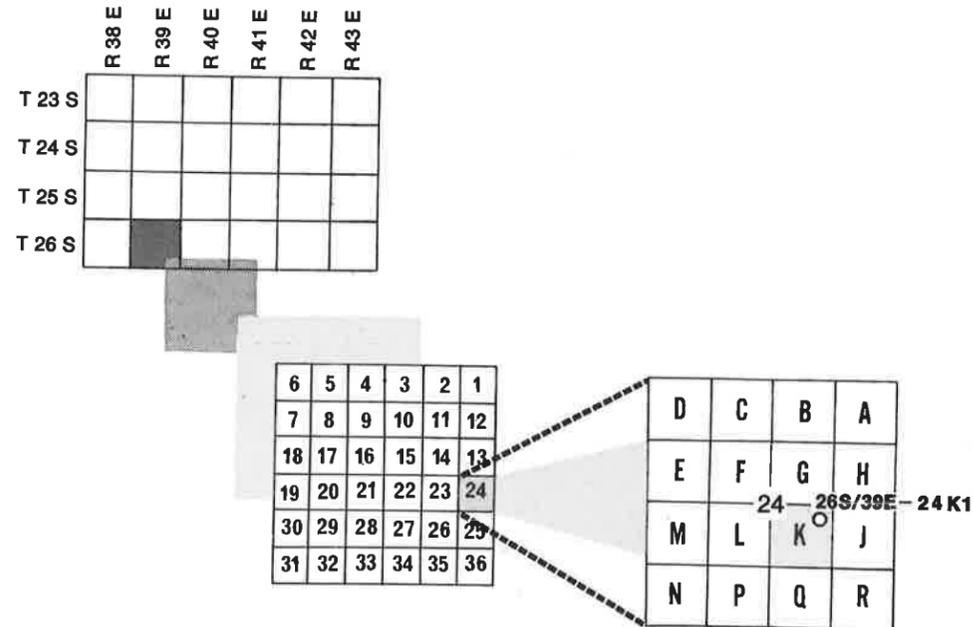


TABLE 3.--Chemical analyses of water from selected wells, 1977-84--Continued

Well	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Nickel, dissolved (µg/L as Ni)	Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, dissolved (µg/L as Zn)	Phenols, total (µg/L)	Methylene blue active substance (mg/L)
26S/40E-15E2	78-06-20	--	--	--	--	--	--	--	--	--	--	--
	79-05-31	--	--	--	--	--	--	--	--	--	--	--
	80-05-22	--	--	--	--	--	--	--	--	--	--	--
26S/40E-15N1	78-06-21	--	--	--	--	--	--	--	--	--	--	--
	79-05-31	--	--	--	--	--	--	--	--	--	--	--
	80-04-15	1	--	--	--	0.3	0	--	--	6	1	--
	80-05-22	--	--	--	--	--	--	--	--	--	--	--
26S/40E-15N2	82-06-14	--	--	--	13	--	--	--	--	--	--	--
	84-08-11	--	--	--	--	--	--	--	--	--	--	--
26S/40E-17J1	84-08-07	<10	30	--	50	--	--	310	<6	20	--	--
26S/40E-17R1	84-08-07	--	--	--	30	--	--	--	--	--	--	--
26S/40E-19P1	80-03-29	--	--	1	--	--	--	--	--	--	--	0.05
26S/40E-21A1	84-08-08	--	--	--	22	--	--	--	--	--	--	--
26S/40E-21E1	84-08-07	--	--	--	16	--	--	--	--	--	--	--
26S/40E-22B1	84-08-09	<30	920	--	130	--	--	5000	<18	200	--	--
26S/40E-22H1	78-06-19	--	--	--	--	--	--	--	--	--	--	--
	79-05-15	--	--	--	--	--	--	--	--	--	--	--
	80-04-15	0	--	--	--	.4	0	--	--	400	2	--
	80-05-20	--	--	--	--	--	--	--	--	--	--	--
	82-06-08	--	--	--	180	--	--	--	--	--	--	--
	84-08-08	<30	1100	--	120	--	--	8400	36	62	--	--
26S/40E-22H2	78-06-19	--	--	--	--	--	--	--	--	--	--	--
	79-05-15	--	--	--	--	--	--	--	--	--	--	--
	80-05-20	--	--	--	--	--	--	--	--	--	--	--
	82-06-08	--	--	--	330	--	--	--	--	--	--	--
	83-10-31	--	--	--	--	--	--	--	--	--	--	--
26S/40E-22H3	78-06-19	--	--	--	--	--	--	--	--	--	--	--
	79-05-15	--	--	--	--	--	--	--	--	--	--	--
	80-05-20	--	--	--	--	--	--	--	--	--	--	--
	82-06-08	--	--	--	490	--	--	--	--	--	--	--
	84-08-07	<30	970	--	190	--	--	4100	<18	96	--	--
	84-08-09	<30	--	--	230	--	--	--	--	42	--	--
26S/40E-22J1	83-10-31	--	--	--	--	--	--	--	--	--	--	--
	84-08-08	<30	--	--	190	--	--	--	--	--	--	--
26S/40E-22K1	83-10-31	--	--	--	--	--	--	--	--	--	--	--
	84-08-08	<10	--	--	240	--	--	--	--	60	--	--
26S/40E-22N1	78-06-20	--	--	--	--	--	--	--	--	--	--	--
	79-05-31	--	--	--	--	--	--	--	--	--	--	--
	80-04-15	0	--	--	--	.5	0	--	--	40	1	--
	80-05-23	--	--	--	--	--	--	--	--	--	--	--
26S/40E-22P1	78-06-22	--	--	--	--	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--	--
	80-05-28	--	--	--	--	--	--	--	--	--	--	--
26S/40E-22P2	83-10-31	--	--	--	--	--	--	--	--	--	--	--
	84-08-08	<10	340	--	96	--	--	2400	<6	49	--	--
26S/40E-22P3	84-08-08	<30	180	--	5	--	--	340	<18	<9	--	--
26S/40E-22P4	84-08-09	<10	--	--	25	--	--	--	--	18	--	--
26S/40E-23A1	78-06-19	--	--	--	--	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--	--
	80-04-15	0	--	--	--	3.0	0	--	--	40	1	--
	80-05-21	--	--	--	--	--	--	--	--	--	--	--
	82-06-10	--	--	--	80	--	--	--	--	--	--	--
26S/40E-23A2	78-06-19	--	--	--	--	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--	--
	80-05-21	--	--	--	--	--	--	--	--	--	--	--
	82-06-10	--	--	--	<10	--	--	--	--	--	--	--

TABLE 3.--Chemical analyses of water from selected wells, 1977-84--Continued

Well	Date	Time	Depth of well, Total (ft)	Specific conductance (µS/cm)	pH (standard units)	Temperature (°C)	Hardness (mg/L as CaCO ₃)	Hardness, noncarbonate (mg/L as CaCO ₃)	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)
26S/40E-23D1	83-10-31	--	--	--	--	--	8	0	1.8	0.9	560
26S/40E-23D2	83-10-31	--	--	--	--	--	340	130	36	60	1500
26S/40E-23G1	84-08-07	--	57	9140	7.8	22.0	670	240	110	94	2200
26S/40E-23J1	84-08-09	--	60	--	--	--	240	160	69	15	78
26S/40E-24C1	78-06-23	0900	46	3500	6.0	21.5	160	160	41	13	540
	80-05-21	1345	46	2400	6.7	20.0	41	0	10	4.0	550
	82-06-10	0930	46	3070	6.1	19.5	77	0	24	4.1	580
26S/40E-26F1	82-06-14	1730	77	1840	7.5	24.5	380	200	97	33	270
26S/40E-28J1	78-06-29	1250	--	520	8.0	27.5	73	0	22	4.3	64
	79-06-01	0800	--	580	7.9	24.0	120	27	35	7.5	69
	80-05-27	1200	--	580	8.1	21.0	100	12	30	6.4	82
	82-06-11	1130	--	760	7.9	25.0	180	96	54	11	93
	84-08-10	--	--	904	7.8	24.0	240	150	69	15	78
26S/40E-30K1	77-03-23	--	730	335	9.0	--	45	0	8.0	6.1	76
	78-11-13	--	730	350	9.1	--	42	0	8.0	5.4	69
26S/40E-30K2	77-02-08	--	760	395	9.1	--	320	190	48	49	--
	77-02-28	--	760	395	9.1	--	32	0	4.8	4.9	100
	78-11-09	--	760	370	8.8	--	61	0	16	5.1	68
26S/40E-30K3	77-03-23	--	250	470	9.2	--	10	0	<.1	2.4	120
	78-11-09	--	250	470	9.1	--	30	0	8.0	2.4	120
26S/40E-32K1	77-11-12	--	520	600	8.8	--	19	0	6.0	1.0	120
	77-12-01	--	520	540	9.1	--	22	0	2.8	3.7	180
	78-11-09	--	520	335	8.3	--	58	0	13	6.3	60
26S/40E-33P4	77-03-23	--	290	435	8.8	--	30	0	4.0	4.9	110
	78-11-13	--	290	458	8.6	--	45	0	8.4	5.9	99
26S/40E-34N1	78-07-31	--	181	650	7.7	--	170	82	45	14	63
	80-03-29	--	181	700	8.3	--	170	90	45	13	73
26S/40E-36A1	78-06-29	1610	260	1210	7.8	25.5	180	85	61	6.1	200
	79-06-06	0930	260	1200	8.0	23.0	130	45	41	7.9	210
	80-05-27	1430	260	1120	8.2	22.5	140	61	41	9.3	220
	82-06-14	1800	260	1570	7.9	22.0	230	150	71	14	250
26S/41E-7D1	78-06-29	0750	--	25900	6.1	20.5	460	--	170	7.9	5000
	79-05-17	1100	--	24300	6.7	25.5	190	190	70	3.6	5300
	80-05-21	0900	--	22800	6.9	21.5	73	36	26	2.0	5300
26S/41E-7E1	78-06-29	1035	36	7720	8.4	22.0	24	0	6.8	1.7	1700
	79-05-17	0925	36	7700	8.5	22.0	26	0	7.6	1.8	1800
	80-05-20	1030	36	7370	8.4	21.5	45	0	13	3.0	1600
	82-06-10	1400	36	7640	8.7	22.0	32	0	6.5	3.8	2100
26S/41E-7G1	78-06-29	0945	32	7100	8.6	21.0	6	0	2.0	.3	2800
	79-05-17	1020	32	11500	8.7	22.0	21	0	7.3	.7	2800
27S/40E-2J1	78-06-28	1700	--	2150	7.3	25.0	260	100	81	14	320
	79-06-01	0840	--	1820	7.4	23.0	260	99	79	15	310
	80-05-23	0805	--	1700	7.3	19.5	250	95	79	14	310
27S/40E-3R1	78-06-29	1700	--	1210	7.7	30.0	130	3	37	9.9	190
	79-06-06	1135	--	1290	7.8	24.0	170	27	42	15	220
	80-05-27	1530	--	1410	7.9	23.5	110	0	38	4.0	250
	82-06-15	0900	--	1420	7.6	25.5	190	0	50	17	260
27S/40E-4C2	77-03-23	--	280	840	8.2	--	130	33	36	9.3	140
	78-11-13	--	280	960	7.9	--	160	73	39	16	130
	78-12-27	--	280	990	8.1	--	180	95	46	15	140
27S/40E-4L1	78-11-09	--	252	1020	8.1	--	94	0	21	10	180
27S/40E-10R1	78-06-28	1810	--	6000	6.0	26.0	610	--	220	14	850
	79-06-06	1345	--	4600	6.2	28.0	440	440	160	10	800
	80-05-28	1130	--	4150	6.5	27.5	440	390	160	11	850

INTRODUCTION

Purpose and Scope

Ground water is the sole source of water in Indian Wells Valley. U.S. Geological Survey studies indicate that since 1966, mean annual pumpage has exceeded mean annual recharge, resulting in a condition of overdraft in the ground-water basin (Dutcher and Moyle, 1973). Demand for ground water is expected to continue to increase because it has been predicted that population in the valley, relative to 1977 figures, will double by 1998 and triple by 2020 (Lipinski and Knochenmus, 1981).

The U.S. Geological Survey in 1981 developed a 10-year plan to study the aquifer system of Indian Wells Valley (Lipinski and Knochenmus, 1981). The first work item of the 10-year plan is to design and implement a ground-water monitoring network that could be used in evaluating future water-management alternatives for the valley. Before the network can be designed, however, it is necessary to compile and evaluate existing water-level and water-quality data.

The purpose of this report is to present water-level and water-quality data collected during 1977-84. The last comprehensive tabulation of data prior to this report was done by Lamb and Downing (1978) for the period 1974-76. This present report, in addition to tabulated data, includes water-level hydrographs of selected wells to show water-level trends in the valley, and comparison of results of water-quality analyses to U.S. Environmental Protection Agency drinking-water regulations.

Description of the Study Area

Indian Wells Valley (fig. 1) is in the western part of the Mojave Desert in southern California, about 125 miles north of Los Angeles. The valley is bounded on the west by the Sierra Nevada, on the north by a low ridge of volcanic rocks and the Coso Range (20 miles north of fig. 1), on the east by the Argus Range, and on the south by the El Paso Mountains. The valley floor, most of which is between 2,175 and 2,400 feet in altitude¹, is about 300 mi² in size.

Indian Wells Valley has an arid climate; average rainfall on the valley floor is 4 to 6 inches. Most of the precipitation occurs during the period October-March; some occurs as rainfall from infrequent summer thunderstorms.

The valley drains internally into China Lake, a large playa in the east-central part of the report area. There is no perennial surface flow on the valley floor; current water needs in the valley are met through development of ground-water resources.

¹Altitude, as used in this report, refers to distance above sea level.