UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SELECTED HYDROLOGIC DATA, KOLOB-ALTON-KAIPAROWITS COAL-FIELDS AREA, SOUTH-CENTRAL UTAH

By Gerald G. Plantz

U.S. GEOLOGICAL SURVEY

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ILLUSTRATIONS

[Plate is in pocket]

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CONVERSION FACTORS AND RELATED INFORMATION

Most values in this report are given in inch-pound units. For those readers who prefer to use metric units, the conversion factors for the terms used in this report are listed below.

Multiply	By	To obtain
acre	0.4047	square hectometer (hm^2)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
foot (ft)	0.3048	meter (m)
gallon per minute (gal/min)	0.06309	liter per second (L/s)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)
ton (T)	0.9072	metric ton (t)

Chemical concentration and water temperature are given in metric units. chemical concentration is given in milligrams per liter (mg/L) or micrograms per liter (µg/L). Milligrams per liter is a unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. For concentrations less than 7,000 milligrams per liter, the numerical value is about the same as for concentrations in parts per million.

Water temperature is given in degrees Celsius ($^{\circ}C$), which can be converted to degrees Fahrenheit ($^{\circ}F$) by the following equation: $^{\circ}F=1.8(^{\circ}C)+32$.

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order nets of both the United States and Canada. It was formerly called mean sea level in this series of reports. Altitudes given in this report are referenced to the National Geodetic Vertical Datum of 1929.

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INTRODUCTION

The Kolob-Alton-Kaiparowits coal-field area (pl. 1) includes about 4,500 square miles in parts of the Colorado River Basin and the Great Basin. The area varies in altitude from less than 4,000 to more than 10,000 feet, and is comprised chiefly of plateaus, benches, and terraces that are dissected by deep, narrow canyons. Principal streams draining the area are the Virgin, Sevier, Escalante, and Paria Rivers, and Coal, Kanab, and Wahweap Creeks.

Most of the data included in this report were collected by the U.S. Geological Survey from October 1980 to September 1982. They were collected as part of a hydrologic study in cooperation with the U.S. Bureau of Land Management to evaluate potential impacts of coal mining on the area's water resources. The results of that study are to be published in a separate report.

Several earlier coal-related hydrologic studies have been made in the Alton and Kolob coal-fields area. Hydrologic data collected during those studies may be found in the following reports: Goode (1964, 1966), Sandberg (1979), and Cordova (1981). Data collected at the streamflow-gaging stations shown on plate 1 are published separately in annual reports of the U.S. Geological Survey. Information about the availability of these data is given in table 8.

The writer extends thanks to Judy Steiger and Dave Darby (former employees of the U.S. Geological Survey) for their contribution to this report. Officials of the following companies and agencies also were helpful and cooperative in providing data: Utah Power & Light Co.; El Paso Natural Gas Co.; U.S. Bureau of Reclamation; and U.S. Bureau of Land Management.

DATA-SITE NUMBERING SYSTEM

The system of numbering wells, springs, and other hydrologic-data sites in Utah is based on the cadastral land-survey system of the U.S. Government. The number, in addition to designating the data site, describes its position in the land net. By the land-survey system, the State is divided into four quadrants by the Salt Lake base line and meridian, and these quadrants are designated by the letters A, B, C, and D, indicating the northeast, northwest, southwest, and southeast quadrants, respectively. Numbers designating the township and range (in that order) follow the quadrant letter, and all three are enclosed in parentheses. The number after the parentheses indicates the section, and is followed by three letters indicating the quarter section, the quarter-quarter section, and the quarter-quarter-quarter section--generally 10 acres[1]; the letters A, B, C, and D indicate, respectively, the northeast, northwest, southwest, and southeast quarters of each subdivision. The number after the letters is the serial number of a well or spring within the 10-acre tract; the letter "S" preceding the serial number denotes a spring. Surface-water sites have no serial number following the location designation. Thus (C-36-4)2DDD-1 designates the first well constructed or visited in the $SE\frac{1}{4}SE\frac{1}{4}SE\frac{1}{4}$ sec. 2, T. 36 S., R. 4 W., (C-38-5)6DCA-S1 designates a spring in the $NE\frac{1}{4}SW\frac{1}{4}SE\frac{1}{4}$ sec. 6, T. 38 S., R. 5 W., and (C-35-9)6CAB is a surface-water site in the $NW\frac{1}{4}NE\frac{1}{4}SW\frac{1}{4}$ sec. 6, T. 35 S., R. 9 W. The numbering system is illustrated in figure 1.

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[1]Although the basic land unit, the section, is theoretically 1 square mile, many sections are irregular. Such sections are subdivided into 10-acre tracts, generally beginning at the southeast corner, and the surplus or shortage is taken up in the tracts along the north and west sides of the section.

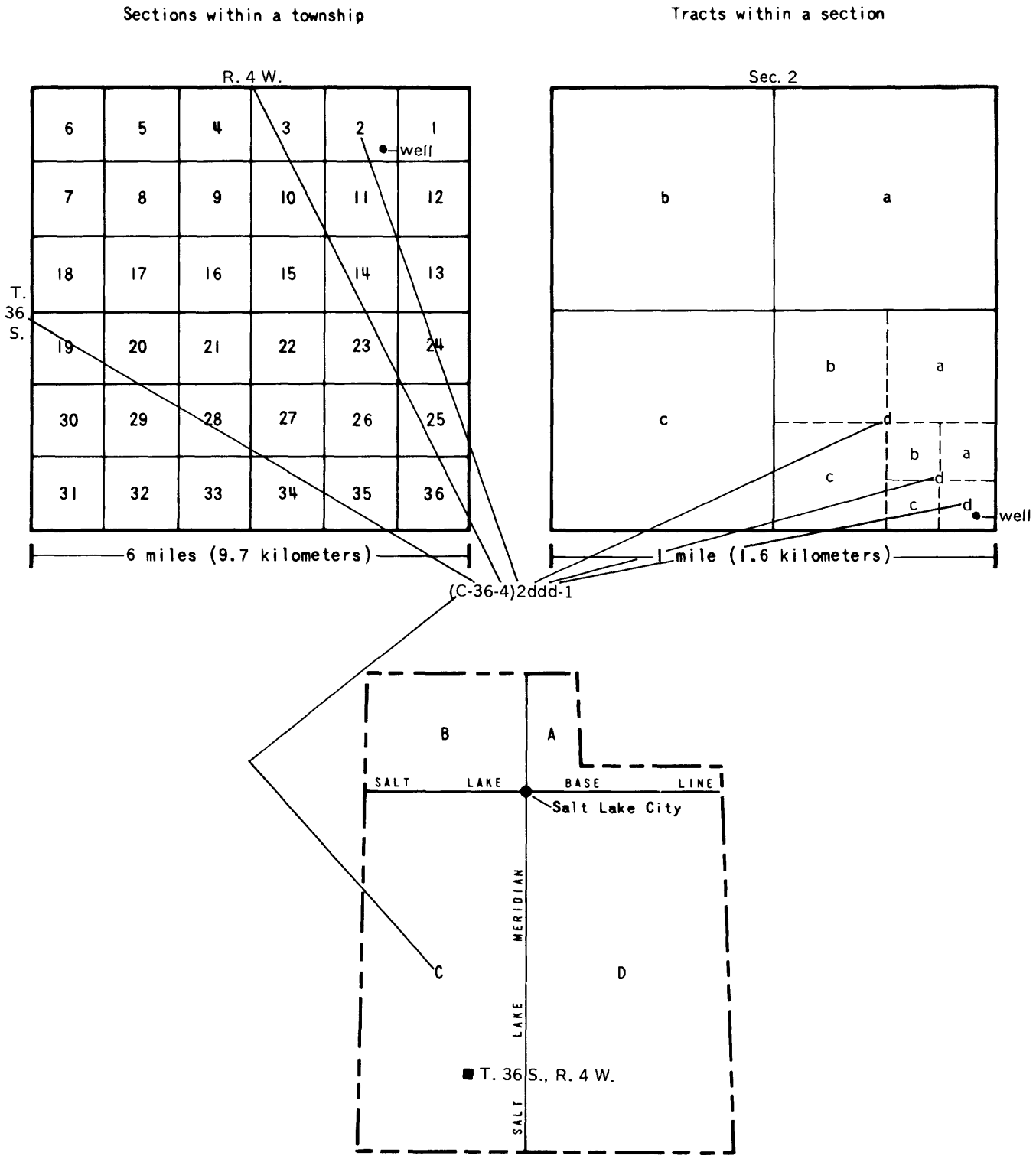

Figure 1.—Data-site numbering system used in Utah.

REFERENCES CITED

Cordova, R. M., 1981, Ground-water conditions in the upper Virgin River and Kanab Creek basins area, Utah, with emphasis on the Navajo Sandstone: Utah Department of Natural Resources Technical Publication No. 70, 87 p.

Goode, H. D., 1964, Reconnaissance of water resources of a part of western Kane County, Utah: Utah Geological and Mineralogical Survey Water Resources Bulletin 5, 63 p.

_____ 1966, Second reconnaissance of water resources in western Kane County, Utah: Utah Geological and Mineralogical Survey Water Resources Bulletin 8, 44 p.

Sandberg, G. W., 1979, Hydrologic evaluation of the Alton coal field, Utah: U.S. Geological Survey Open-File Report 79-346, 53 p.

U.S. Geological Survey, 1982, Water resources data for Utah, Water Year 1981: U.S. Geological Survey Water-Data Report Ut-81-1, 701 p.

TABLE 1.--RECORDS OF SELECTED WELLS

Number: See text for explanation of numbering system for hydrologic-data sites.
Altitude of land surface: Interpolated from U.S. Geological Survey topographic maps.
Principal aquifer: Principal aquifer is in the geologic unit specified; 111ALVM, Holocene Alluvium; 112SVRV, Sevier River Formation; 124WSTC, Wasatch Formation; 200SGCF, Straight Cliffs Sandstone; 211KPRS, Kaiparowits Formation; 211TRPC, Tropic Shale; 211WHWP, Wahweap Sandstone; 220NVJO, Navajo Sandstone.
Water level: Water levels are in feet below land surface. Measured by U.S. Geological Survey, except as indicated by R, reported; F, flowing.
Use of water: H, domestic; I, irrigation; P, public supply; S, stock; U, unused.
Other data available: C, chemical analysis in table 6; D, driller's logs in table 5; W, water-level measurements in table 3. Other logs available (in files of the U.S. Geological Survey, Salt Lake City, Utah): L, lithologic; J, gamma ray; T, temperature; U, gamma gamma.

NUMBER	OWNER	DATE COMPLETED	ALTITUDE OF LAND SURFACE (FT)	DEPTH OF WELL (FT)	CASING DIAM-ETER (IN.)	DEPTH CASED (FT)	DEPTH TO FIRST OPENING (FT)	PRINCIPAL AQUIFER	WATER LEVEL (FT)	DATE WATER LEVEL MEASURED	USE OF WATER	OTHER DATA AVAILABLE
(C-35- 4)34DCA- 1	Rich, Mayo	1933	7,690	14	48	14	--	111ALVM	6.25	6-14-81	U	W
34DCA- 2	do.	1952	7,690	170	6	10	10	124WSTC	15.00 6.98	7-17-61 6-14-81	U	L
34DCB- 1	do.	1974	7,690	150	6	150	15	124WSTC	7.63	7-25-81	H	C,L
(C-36- 3) 6DBA- 1	U.S. Federal Aviation Administration	1945	7,580	123	6	--	--	211KPRS	55.90	12-15-46	H	W
7BBC- 1	U.S. Bureau of Land Management	1952	7,610	230	6	230	46	211KPRS	48.00 21.19	9- -61 6-19-81	P	L
7BCA- 1	U.S. Federal Aviation Administration	1946	7,610	131	6	131	50	211KPRS	14.82	6-15-81	P	L
7DCD- 1	Syrett, Carl	1978	7,630	165	4	165	45	211KPRS	20.82	6-13-81	U	L,W
7DDC- 1	do.	1978	7,630	195	4	195	50	211KPRS	20.88 21.18 21.22	6-13-81 7-17-81 7-25-81	U	L
7DDD- 1	do.	1978	7,630	145	4	145	45	211KPRS	13.32 13.70 13.77	6-13-81 7-17-81 7-25-81	U	L
7DDD- 2	do.	1978	7,630	145	4	145	30	211KPRS	13.45 13.80 13.87	6-13-81 7-17-81 7-25-81	U	L
7DDD- 3	do.	1978	7,630	145	4	145	35	211KPRS	8.50 9.01 9.11	6-13-81 7-17-81 7-25-81	U	D
8BCB- 1	Hatch, Dorr	1976	7,600	103	8	103	65	111ALVM	5.25	7-25-81	U	L
8BCC- 1	Hatch, Norma	1972	7,620	138	6	138	40	211KPRS	38.00R	6-28-72	H	C,L
18ACD- 1	Syrett, Carl	1960	7,650	100	12	100	5	124WSTC	3.75 2.71	8-28-61 6-14-81	U	L
18CAA- 1	do.	1935	7,660	150	8	150	--	124WSTC	8.25	6-14-81	U	--
23CBB- 1	Fraizer, Warren	1971	6,580	105	6	65	59	200SGCF	33.04	6-16-81	U	L
23CDB- 1	do.	1971	6,500	90	6	90	--	111ALVM	33.72	6-16-81	U	--
23DCB- 1	Pollock, David	1977	6,480	100	8	100	55	111ALVM	45.00R	9-27-77	H,I,S	C,L
36CCD- 1	Shakespear, Franz	1978	6,230	80	6	80	30	111ALVM	27.53	6-13-81	H,I	C,L
(C-36- 4) 2DCA- 1	Ott, Robert	1950	7,620	310	6	66	66	211KPRS	13.69	6-14-81	U	D
2DCA- 2	Wintch, Dean	1978	7,620	216	6	78	68	211KPRS	14.62	6-14-81	U	L,W
2DCA- 3	Utah Department of Transportation	1969	7,620	125	8	125	100	211KPRS	14.22	6-14-81	P	L
2DDD- 1	Foster, Al	1970	7,620	125	8	65	65	211KPRS	22.00R	8-24-70	P	C,L
10BBD- 1	Ott, Layton	1956	7,670	136	6	136	--	211KPRS	56.99	6-14-81	U	J,L,W
12BAA- 1	Syrett, Carl	1978	7,640	153	6	114	94	111ALVM	42.42	6-15-81	P	L
12BAA- 2	do.	1978	7,640	114	8	114	94	111ALVM	42.45	6-15-81	P	L
12BAA- 3	do.	1978	7,640	140	6	122	110	211KPRS	42.02	6-15-81	P	L
13BDA- 1	Wintch, Dean	1978	7,690	50	4	50	30	111ALVM	6.95	6-15-81	U	L
15ADB- 1	U.S. Forest Service	1957	7,680	207	6	122	35	211KPRS	2.18	6-12-81	U	L
15CBC- 1	do.	1965	7,690	51	10	38	22	111ALVM	6.00R 5.80 6.25	6- 6-65 5-20-68 6-14-81	H	L
34BDA- 1	U.S. National Park Service	1955	7,770	80	12	30	12	111ALVM	--	--	P	L
34BDA- 2	do.	1956	7,780	30	12	30	6	111ALVM	4.00R	9- 4-56	U	L
34BDA- 3	do.	--	7,780	34	12	34	--	111ALVM	2.68	6-12-81	U	--
34BDA- 4	do.	1980	7,780	52	8	12	12	124WSTC	3.00R	5-31-80	P	L

TABLE 1.--RECORDS OF SELECTED WELLS--Continued

NUMBER	OWNER	DATE COMPLETED	ALTITUDE OF LAND SURFACE (FT)	DEPTH OF WELL (FT)	CASING DIAM-ETER (IN.)	DEPTH CASED (FT)	DEPTH TO FIRST OPENING (FT))	PRINCIPAL AQUIFER	WATER LEVEL (FT)	DATE WATER LEVEL MEASURED	USE OF WATER	OTHER DATA AVAILABLE
(C-36- 4)36ACC- 1	U.S. National Park Service	1948	7,920	80	48	30	30	124WSTC	26.74	6-12-81	U	L
(C-36- 5)29DCB- 1	Town of Hatch	1971	7,125	350	--	120	120	112SVRV	105.00	7-12-71	H	--
29DDC -1	do.	1975	6,910	175	6	173	40	112SVRV	24.00R 27.61	8- 6-75 5-27-81	P	L
(C-36- 5)31CBD- 1	Wilkinson, Lelwin F.	1971	7,090	100	8	30	30	124WSTC	28.00R 22.63	8- -71 5-27-81	I	D
(C-36-10)21CAA- 1	Cedar City Corp.	1965	6,480	200	16	161	70	111ALVM	33.82 29.28	10-10-73 7-23-81	U	D
21CAA- 2	do.	1934	6,480	213	16	159	42	111ALVM	29.02R	3-21-74	U	L
(C-37- 1) 4DAD- 1	Henrieville Water Co.	1972	6,650	253	10	253	40	211WHWP	12.64	6-16-81	U	D,W
(C-37- 2) 6ABA- 1	Shakespear, Obie	1977	6,220	127	8	127	75	111ALVM	52.77	6-13-81	H,S	D
26BAC- 1	Henrieville Irrigation Co.	1974	6,080	96	14	91	25	111ALVM	14.00R 13.31	12-16-74 6-16-81	S,U	L
(C-37- 3)32ADC- 1	Dalley, J. W.	1977	6,460	142	6	142	100	211TRPC	84.75	6-11-81	U	D
(C-37- 4)11DDD- 1	U.S. National Park Service	1960	8,030	2000	11	2000	313	211KPRS	650.00	8- 5-60	U	D
(C-37- 6)35CAB- 1	Swapp, Max	1973	7,200	201	8	201	40	124WSTC	79.13 30.00 44.00 31.73	9-29-77 8-24-78 8-28-78 5-27-81	H	L
(C-38- 5) 4DCB- 1	Stimpson, Orvil	1976	7,920	313	6	309	254	211KPRS	--	--	H,I	D
(C-38- 6)19CBB- 1	Coaler, Jerry	1970	7,800	200	8	30	30	111ALVM	3.40	9-18-81	H	D,W
(C-38- 7) 8CCC- 1	Color Country Subdivision	1973	8,640	1,010	6	1003	220	211KPRS	230.00R	10-22-73	P	L
20DCA- 1	Pine Meadow Estates	1972	8,140	540	12	50	50	124WSTC	200.00R	7- -72	U	L,W
27ACA- 1	Swains Creek Pines	1973	7,720	650	8	650	635	211KPRS	112.64 130.00	9-15-81 10-31-81	P	D
(C-39- 5)18BCD- 1	Nevada Power	1961	6,900	1,600	16	1,600	115	220NVJO	86.00R	10-21-61	U	L
30BDC- 1	do.	1961	6,850	1,449	16	1,140	--	220NVJO	449.24	6-21-77	U	L
(C-40- 4)8DCA- 1	U.S. Bureau of Reclamation	1974	6,650	235	2	235	--	211TRPC	186.65	7-22-81	U	D,W
18CBC-1	do.	1974	6,560	306	2	306	--	211TRPC	223.72R	7-22-81	U	L
(C-40- 5)13CBB- 1	do.	1974	6,510	206	2	206	--	211TRPC	146.02	7-12-81	U	D
(C-40- 7)14BAD- 1	Town of Glendale	1976	5,880	120	8	100	100	211WHWP	40.00R	6-28-76	P	D
(D-35- 1)34CCC- 1	Lyman, Mason	1977	6,860	280	8	185	185	211WHWP	1.20	9-17-81	U	D,W
(D-36- 3)30BDB- 1	--	--	6,365	302	--	--	--	--	150.00	7-26-81	U	L
(D-38- 1)35DDA- 1	Foster, Al	1962	6,015	1,294	10	792	--	211KPRS	--	--	U	L
(D-38- 3)14CBC- 1	U.S. Bureau of Land Management	1968	6,540	50	8	10	10	211WHWP	22.47	7-27-81	U	L
(D-38- 4)32CBC- 1	Utah Division of State Lands	1968	6,360	100	8	10	10	200SGCF	65.68	5-29-81	H,S	C,D,W
(D-39- 3)22DCB- 1	El Paso Energy Resources	1973	5,480	--	--	--	--	200SGCF	44.49	8-27-81	U	--
36CDA- 1	do.	--	5,280	--	--	--	--	200SGCF	--	--	U	--
(D-40- 3) 1BDC- 2	do.	1974	5,140	320	7	151	151	200SGCF	130.00 125.73	12- 3-74 5-29-81	U	--
1CBA- 1	do.	1974	5,130	500	7	365	365	200SGCF	40.00 37.39	12- 9-74 5-29-81	U	J,T,U
1CCC- 1	do.	1974	5,000	1,100	--	--	--	200SGCF	--	--	--	C
1DBC- 1	do.	1975	5,080	900	4.5	900	420	200SGCF	F	--	U	C
1DBC- 2	do.	1975	5,080	200	2.4	200	125	200SGCF	88.00	6- 1-75	U	--
28ADC- 1	Resources Co.	1975	5,440	970	--	--	--	200SGCF	87.42	5-29-81	--	C
28CDD- 1	do.	1975	5,310	965	--	--	--	200SGCF	800.00R	3-31-75	U	C
33CBB- 1	do.	1975	5,100	870	--	--	--	200SGCF	192.00R	3-31-75	U	C
33CCC- 1	do.	1975	5,100	849	--	--	--	200SGCF	300.00R	3-31-75	U	C
33CDD- 1	do.	1975	5,100	855	--	--	--	200SGCF	185.00R	2-19-75	U	C
33DDD- 1	do.	1975	5,200	810	--	--	--	200SGCF	680.00R	2-24-75	U	--

TABLE 1.--RECORDS OF SELECTED WELLS--Continued

NUMBER	OWNER	DATE COMPLETED	ALTITUDE OF LAND SURFACE (FT)	DEPTH OF WELL (FT)	CASING DIAM-ETER (IN.)	DEPTH CASED (FT)	DEPTH TO FIRST OPENING (FT)	PRINCIPAL AQUIFER	WATER LEVEL (FT)	DATE WATER LEVEL MEASURED	USE OF WATER	OTHER DATA AVAILABLE
(D-40- 4) 9CBD- 1	El Paso Energy Resources	1977	5,380	500	2	500	160	200SGCF	416.47 381.56	11- 9-77 8-27-81	U	--
16BDC- 1	do.	1977	5,330	528	2	528	508	200SGCF	455.54 454.17	11- 9-77 8-27-81	U	--
(D-40- 4)16CCC- 1	El Paso Energy Resources	1977	5,220	140	2	140	40	200SGCF	104.65 103.10	11- 9-77 8-27-81	U	--
16CDA- 1	do.	1977	5,280	660	2	660	526	200SGCF	--	--	U	--
(D-41- 3) 3BDD- 1	Resources Co.	1975	5,110	650	6	--	--	200SGCF	473.00R	2-19-75	U	C
4ACC- 1	do.	1975	5,000	699	--	--	--	200SGCF	293.00R	2-24-75	U	C
7ACC- 1	do.	1974	4,970	900	--	--	--	200SGCF	320.00R	10-22-74	U	C
8AAA- 1	do.	1974	5,000	818	--	--	--	200SGCF	290.00R	2-13-75	U	C
9AAA- 1	do.	1975	5,130	801	--	--	--	200SGCF	500.00R	2-19-75	U	C
10CCB- 1	do.	1975	4,950	660	--	--	--	200SGCF	510.00R	2-14-75	U	C
16BBB- 1	do.	1974	4,970	815	--	--	--	200SGCF	310.00R	10-30-74	U	C
17CBB- 1	do.	1974	4,880	665	--	--	--	200SGCF	200.00R	12- 9-74	U	C

TABLE 2.--RECORDS OF SELECTED SPRINGS

Number: See text for explanation of numbering system for hydrologic-data sites.
Altitude of land surface: Interpolated from U.S. Geological Survey topographic maps.
Principal aquifer: Principal aquifer is in the geologic unit specified; 111ALVM, Holocene Alluvium; 124WSTC, Wasatch Formation; 200SGCF, Straight Cliffs Sandstone; 210DKOT, Dakota Sandstone; 211KPRS, Kaiparowits Formation; 211TRPC, Tropic Shale; 211WHWP, Wahweap Sandstone.
Discharge: E, estimated.
Other data available: C, water-quality data in table 6; D, multiple measurements, discharge, water temperature, specific conductance, and pH in table 4.

NUMBER	NAME OF SPRING	ALTITUDE OF LAND SURFACE (FT)	PRINCIPAL AQUIFER	DATE	DISCHARGE (GAL/MIN)	WATER TEMPERATURE (°C)	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	PH (UNITS)	OTHER DATA AVAILABLE
(C-34- 1)24CCC-S1	--	8,080	111ALVM	11-13-81	53	8.0	580	7.3	C,D
28BCA-S1	--	8,440	124WSTC	11-13-81	18	6.0	590	7.6	C,D
29AAC-S1	--	8,380	124WSTC	11-13-81	1.5E	7.5	530	7.6	C
(C-35- 1)12ADA-S1	--	7,880	111ALVM	11-13-81	3.0	8.0	540	7.3	C
24DBC-S1	--	6,680	111ALVM	11-13-81	11	8.0	490	7.5	C
(C-35- 2)19AAC-S1	Dipping Vat Spring	7,780	124WSTC	10-21-81	3.0	7.5	440	7.7	C
(C-35- 4)25BDC-S1	--	7,480	124WSTC	11-15-81	7.0	8.0	540	7.6	C
(C-35- 5)24DDB-S1	--	6,815	111ALVM	10-15-81	--	9.0	470	7.9	C
(C-36- 1) 1DAD-S1	Garden Spring	7,725	111ALVM	10-21-81	16	8.5	590	7.4	C
(C-36- 3)21AAC-S1	Mossy Cave Spring	6,680	124WSTC	10-18-81	200E	10.5	470	7.7	C
22BDB-S1	Tropic City Springs	6,740	111ALVM	10-21-81	240	11.0	480	7.5	C
33BCA-S1	--	6,860	111ALVM	11-15-81	1.0E	14.0	410	7.5	C
(C-36- 9)25DCB-S1	Alpine Pond	10,560	124WSTC	8- 2-67	20	3.5	275	7.6	-
				7-14-81	16	3.0	255	7.8	C
36CDC-S1	Sunset View Spring	10,330	124WSTC	9- 3-70	2.4	3.5	410	--	-
				7-14-81	4.7	9.0	410	7.8	C
(C-36-10)35ABB-S1	--	7,800	210DKOT	10-21-81	--	7.5	320	8.3	C
36BDC-S1	--	7,480	211WHWP	9-21-81	11	13.0	390	7.7	C
(C-37- 1) 3CCB-S1	--	6,640	211WHWP	10-17-81	48	13.5	550	7.3	C,D
				6-10-82	39	13.5	550	7.4	C
8DDA-S1	Henrieville Spring	6,530	200SGCF	10-18-81	31	16.0	510	7.5	C,D
13BDD-S1	Mud Spring	7,420	211KPRS	10-18-81	.4	9.5	3,100	7.5	C,D
(C-37- 3) 1DCA-S1	Cannonville City Spring	6,105	111ALVM	10-18-81	345	11.0	820	7.5	C
1DCD-S1	John Allen Spring	6,100	211TRPC	10-18-81	4.8	11.5	1,240	7.2	C
9ECD-S1	Merrill Ranch Spring	6,980	111ALVM	10-21-81	5.6	11.5	560	7.4	C
(C-37- 4) 5CCC-S1	--	7,840	211KPRS	7-24-81	50	7.0	485	7.6	C
				9-23-81	33	7.5	530	7.5	-
				5-23-82	120	7.5	500	7.5	C
16DCE-S1	Trough Spring	8,340	124WSTC	10-22-81	.9	6.0	455	8.0	C
17BBD-S1	Tropic Spring	7,750	211KPRS	8-19-81	5.4	6.5	390	7.6	C
17CEC-S1	--	7,930	211KPRS	7-24-81	28	6.5	435	7.5	C
				5-23-82	60	7.0	475	7.6	C
31CBB-S1	--	8,020	211KPRS	7-24-81	34	5.5	445	7.8	C
				5-23-82	216	6.0	410	7.7	C
				9-23-81	48	6.0	335	7.3	-
(C-37- 5)32ABB-S1	--	7,440	124WSTC	7-25-81	76	8.5	430	7.6	C
				9-17-81	80	9.0	425	7.0	-
				5-25-82	84	8.0	475	7.3	C
(C-37- 9)20ACA-S1	Lundell Spring	9,400	211KPRS	7-14-81	3.5	7.0	425	7.3	C
20DAC-S1	--	9,180	211KPRS	6-11-82	3.7	4.5	465	7.2	C,D
(C-38- 4)31AAA-S1	Yovimpa Spring	8,320	124WSTC	10-22-81	1.0	7.5	430	7.9	C
(C-38- 5) 6DCA-S1	--	7,505	124WSTC	7-28-81	65	10.0	375	7.4	C
				5-25-82	80	8.0	415	7.5	C
11ABB-S1	--	8,140	211KPRS	7-27-81	12	8.5	860	6.9	C
11BAA-S1	George Spring	8,100	211WHWP	7-27-81	45	7.0	780	7.1	C
33CAA-S1	--	7,500	211WHWP	9-22-81	1.8	8.0	860	6.8	C
(C-38- 6)14CCD-S1	--	7,280	111ALVM	10-20-81	--	4.5	940	7.7	C
25CCC-S3	--	7,660	124WSTC	7-16-81	--	8.5	550	6.9	C
34CAB-S1	--	7,170	111ALVM	10-20-81	--	9.5	780	7.4	C
(C-38- 7)23BAD-S1	--	7,640	124WSTC	9-22-81	6.1	7.0	420	7.6	C
26CAA-S1	Harris Spring	7,820	124WSTC	9-21-81	1.0	6.5	425	7.4	C
(C-38- 8)18CBD-S1	--	8,480	211KPRS	7-15-81	128	6.0	300	7.2	C
				11-16-81	130	6.5	325	7.6	-
32CBB-S1	Steven Canyon Spring	7,250	211WHWP	7-15-81	2.1	14.0	440	7.7	C
(C-38- 9)12BDB-S1	--	9,120	211KPRS	7-15-81	34	4.0	355	7.2	C
(C-39- 4)19ADA-S1		7,350	111ALVM	7-28-81	37	8.5	720	7.1	C
	--			5-22-82	140	7.5	770	7.0	C
20CDD-S1	--	7,120	111ALVM	7-30-81	1.5	14.5	970	7.1	C
	--			5-24-82	1.9	10.0	1,000	7.0	C
33DAC-S1	--	6,710	111ALVM	7-30-81	4.5	9.5	630	7.3	C,D
				5- 6-82	11	14.5	600	7.6	C

TABLE 2.--RECORDS OF SELECTED SPRINGS--Continued

NUMBER	NAME OF SPRING	ALTITUDE OF LAND SURFACE (FT)	PRINCIPAL AQUIFER	DATE	DISCHARGE (GAL/MIN)	WATER TEMPERATURE (°C)	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	PH (UNITS)	OTHER DATA AVAILABLE
(C-39- 4)26DDB-S1	--	7,230	111ALVM	7-28-81	1.3	9.0	880	7.1	C
				8-17-82	2.5	9.0	1,100	7.2	C
(C-39- 5) 6ADA-S1	--	7,180	111ALVM	10-19-81	--	11.0	1,300	8.2	C
32BCD-S1	--	6,780	111ALVM	7-15-81	9.7	9.0	1,180	7.6	C,D
(C-39- 6) 9CCA-S1	--	6,950	111ALVM	7-17-81	332	10.5	440	7.1	C,D
13BBB-S1	--	6,880	111ALVM	10-19-81	--	9.5	3,500	7.6	C
				5-24-82	5.0E	9.0	4,000	7.4	C
16BBD-S1	McDonald Spring	6,940	111ALVM	7-16-81	30E	10.0	510	7.5	C
20ABC-S1	Varneys Spring	6,880	111ALVM	7-16-81	--	9.5	460	7.4	C
30ABA-S1	Jump-up Canyon Spring	6,770	111ALVM	8-28-81	--	10.0	500	7.4	C
(C-39- 7)13ABA-S1	--	6,840	111ALVM	7-30-81	6.3	8.0	530	7.2	C,D
				5- 7-82	2.7	6.0	480	7.8	C
26CDB-S1	--	6,480	211WHWP	8-28-81	15	8.5	690	7.1	C
26DDA-S1	--	6,320	211WHWP	7-30-81	5.6	13.5	260	8.1	C,D
				5- 7-82	5.5	10.0	305	7.5	C
(C-39- 8) 5ABD-S1	Big Spring	7,270	211WHWP	11-16-81	19	9.0	680	7.2	C
12CAC-S1	--	8,380	124WSTC	9-22-81	1.2	9.5	470	7.7	C
(C-40- 5) 6AAD-S1	Trough Spring	6,700	210DKOT	6-20-77	.7	13.0	920	[1]6.5	D
				7-15-81	.6	13.0	930	7.4	C
8DDA-S1	Spaniard Spring	6,820	210DKOT	6-20-77	--	--	650	--	C
				7-14-81	--	15.5	--	--	-
9AAD-S1	Fisher Spring	6,910	200SGCF	6-18-77	.9	11.0	2,600	[1]6.5	-
				7-14-81	1.7	16.5	2,660	8.0	C
				8-17-82	1.3	19.0	2,710	8.0	C
(C-40- 7) 3CCC-S1	--	6,200	211WHWP	8-29-81	1.1	15.0	1,340	7.2	C
14BAA-S1	--	5,880	111ALVM	10-17-81	--	13.5	340	7.7	C
(C-40- 8)29BCA-S1	--	7,000	200SGCF	8-28-81	8.3	9.0	1,080	7.0	C
				8-17-82	7.7	16.0	720	8.0	-
30BAD-S1	--	7,230	200SGCF	8-28-81	8.6	9.0	700	7.3	C
(C-40- 9)26CDA-S1	--	7,280	200SGCF	8-28-81	80	9.0	475	7.3	C
				6- 7-82	100E	10.0	510	7.4	C
26CDA-S2	--	7,280	111ALVM	8-28-81	4.6	12.0	600	7.1	C
	--			6- 7-82	4.7	9.5	610	7.3	C
26CDC-S1		7,280	200SGCF	8-28-81	6.0	10.0	510	7.3	C
	--			6- 7-82	5.8	10.5	530	7.6	C
35BAB-S1	--	7,270	200SGCF	8-28-81	2.9	10.0	520	7.3	C,D
				6- 7-82	3.6	11.0	520	7.4	C
36CCB-S1	--	7,140	200SGCF	8-28-81	2.2	10.5	520	7.3	C
				8-17-82	2.3	24.5	425	7.9	C
(D-35- 1)33DDA-S1	--	6,880	211KPRS	9-23-81	--	9.0	590	6.9	C
(D-35- 2)16ACD-S1	Escalante Falls Spring	6,075	200SGCF	8-15-67	50E	--	--	--	-
				10-16-81	50E	10.5	820	7.3	C
(D-36- 2)13AAD-S1	Oak Spring	6,400	200SGCF	10-20-81	.1E	7.0	670	7.4	C
(D-37- 1)10ACD-S1	Horse Spring	7,900	211KPRS	10-25-81	9.2	8.5	1,010	7.2	C
(D-37- 2)19ACC-S1	--	7,120	211WHWP	10-20-81	1.6	--	--	--	-
36CBC-S1	Camp Spring	6,200	211WHWP	10-19-81	1.0E	12.5	4,070	7.0	C
(D-37- 3) 6AAA-S1	Rock Spring	6,590	211WHWP	10-19-81	1.0E	11.5	1,540	8.1	C
(D-38- 1)27CCA-S1	Headquarters Springs	6,030	211KPRS	10-25-81	2.9	--	2,800	8.2	C
27CDB-S1	do.	6,030	211KPRS	5-29-74	--	13.0	2,610	8.2	C
(D-38- 3)11AAD-S1	Mud Spring	6,450	211WHWP	11-14-81	.10	11.0	980	8.1	C
14CBC-S1	Hardhead Water Spring	6,520	211WHWP	10-19-81	.5E	12.5	1,620	7.8	C
17BDA-S1	Relishen Spring	6,440	211WHWP	11-14-81	1.0E	8.5	680	8.0	C
(D-38- 4)35CCB-S1	Circle Spring	6,240	200SGCF	10-19-81	.8	10.0	1,520	7.3	C
(D-39- 2)19BBA-S1	Tommy Water Spring	5,640	211KPRS	10-18-81	--	11.0	1,100	7.1	C
(D-40- 7)34BDC-S1	--	7,360	200SGCF	10-24-81	8.7	9.5	590	7.5	C
(D-41- 8)20DBA-S1	--	6,910	200SGCF	10-24-81	--	11.5	960	8.0	C
(D-42- 2) 2ABB-S1	Nipple Spring	4,740	200SGCF	10-25-81	7.8	15.5	1,230	7.8	C

[1]Data reported by Cordova, 1981, p. 76.

TABLE 3.--WATER LEVELS IN SELECTED WELLS

See text for explanation of numbering system for hydrologic-data sites.
Altitude (Alt.) of land surface in feet above sea level.
Water-level measurements, in feet below land surface; measurements by U.S. Geological Survey, except R, reported by driller.

(C-35- 4)34DCA- 1 ALT. 7,690

OCT 05, 1938	7.20	OCT 8, 1941	7.01	MAR 19, 1946	6.47	DEC 8, 1951	9.57
DEC 19	7.39	DEC 03	6.16	DEC 15	7.92	DEC 06, 1952	8.04
APR 21, 1939	6.24	AUG 08, 1942	7.21	MAR 25, 1947	5.60	MAR 15, 1953	6.18
AUG 19	7.84	DEC 17	7.49	DEC 10	7.47	DEC 08	7.69
OCT 18	6.80	MAR 10, 1943	5.70	JUL 20, 1948	6.20	APR 13, 1954	6.42
DEC 07	6.85	DEC 14	7.59	DEC 10	7.12	DEC 02	9.70
MAR 25, 1940	6.20	MAR 18, 1944	7.20	DEC 09, 1949	6.36	DEC 03, 1955	12.15
SEP 16	9.60	DEC 03	7.74	MAR 28, 1950	6.12	MAR 19, 1956	10.51
DEC 07	8.71	APR 02, 1945	7.05	DEC 08	7.31	JUL 18, 1961	13.80
MAR 21, 1941	7.46	DEC 07	7.11	MAR 25, 1951	6.75	JUN 14, 1981	6.25

(C-36- 3) 6DBA- 1 ALT. 7,580

DEC 15, 1946	55.90	MAR 28, 1951	29.33	APR 27, 1953	28.50	JUL 31, 1963	50.60
MAR 25, 1947	62.70	APR 07	29.47	MAY 05	29.68	AUG 28	44.70
MAY 08	54.88	16	30.52	DEC 08	31.88	SEP 24	41.80
JUN 13	54.79	26	29.80	APR 13, 1954	33.48	APR 07, 1964	46.35
JUL 02	51.12	MAY 10	29.79	DEC 02	34.49	SEP 24	49.82
AUG 01	48.14	23	29.64	DEC 03, 1955	40.37	DEC 07	42.22
SEP 17	41.90	JUN 02	29.73	DEC 21, 1956	38.65	MAR 19, 1965	41.07
OCT 04	48.60	JUL 05	32.70	MAR 30, 1957	42.01	SEP 10	41.88
NOV 06	39.50	10	38.23	DEC 20	39.20	MAR 07, 1966	42.20
DEC 24	32.70	25	32.26	APR 03, 1958	37.18	OCT 04	39.52
JAN 23, 1948	30.30	31	30.81	DEC 23	45.56	MAR 03, 1967	39.03
FEB 29	36.30	AUG 05	34.00	APR 11, 1959	39.41	OCT 24	39.95
MAR 30	36.70	14	33.30	DEC 23	38.62	MAR 04, 1968	39.44
APR 20	33.00	SEP 06	31.90	APR 09, 1960	39.28	OCT 01	40.50
MAY 25	37.97	24	32.86	JAN 06, 1961	43.64	MAR 13, 1969	35.70
JUN 14	43.37	OCT 05	32.36	FEB 28	46.48	OCT 08	34.12
JUL 29	32.90	17	32.56	MAR 22	44.33	MAR 10, 1970	32.56
AUG 04	33.10	NOV 03	31.55	MAY 24	43.14	OCT 07	32.60
SEP 24	31.10	28	31.17	JUL 05	51.06	MAR 03, 1971	33.86
OCT 04	29.64	DEC 08	31.09	27	52.43	OCT 04	43.52
DEC 10	35.34	10	31.37	AUG 23	43.15	MAR 02, 1972	34.08
JAN 18, 1949	30.50	JAN 16, 1952	31.17	SEP 25	42.15	OCT 05	46.98
FEB 07	28.10	FEB 17	32.01	OCT 30	41.39	APR 05, 1973	45.02
MAR 15	26.60	MAR 03	33.30	NOV 28	41.20	OCT 03	44.20
APR 15	33.70	09	33.49	DEC 27	41.04	MAR 19, 1974	38.94
MAY 09	36.10	19	32.81	FEB 01, 1962	42.17	OCT 08	44.19
OCT 24	24.10	27	34.11	MAR 05	46.88	APR 01, 1975	46.10
NOV 08	22.20	APR 04	34.41	APR 02	43.13	OCT 03	46.23
DEC 09	22.93	06	33.21	30	41.82	MAR 12, 1976	46.08
JAN 27, 1950	28.30	29	31.70	MAY 28	43.14	OCT 12	45.27
MAR 28	26.95	JUN 18	32.59	JUL 06	55.62	MAR 01, 1977	45.67
AUG 16	25.95	AUG 04	32.30	31	54.41	OCT 03	55.19
SEP 05	27.07	NOV 06	30.30	AUG 29	50.24	MAR 20, 1978	39.10
DEC 08	26.36	DEC 06	29.58	SEP 25	45.90	OCT 02	44.39
JAN 09, 1951	27.30	12	29.17	OCT 30	45.03	MAR 22, 1979	32.42
20	28.39	JAN 16, 1953	29.27	DEC 04	42.71	MAR 04, 1980	23.58
FEB 05	28.27	MAR 13	29.70	27	41.33	OCT 03	23.88
11	28.17	15	29.30	JAN 31, 1963	45.40	MAR 03, 1981	22.83
21	28.71	20	29.60	FEB 28	42.10	OCT 01	33.32
MAR 03	28.83	27	31.80	MAR 25	42.90	MAR 01, 1982	29.96
08	28.54	APR 03	29.68	APR 25	42.10	SEP 21	33.92
21	29.31	13	29.50	MAY 28	44.10		
25	29.37	20	30.80	JUL 01	49.10		

TABLE 3.--WATER LEVELS IN SELECTED WELLS--Continued

(C-36- 3) 7DCD- 1 ALT. 7,630

JUN 13, 1981	20.82	OCT 15, 1981	21.59	FEB 09, 1982	22.17	JUN 06, 1982	21.77
JUL 17	21.13	NOV 11	21.72	MAR 02	22.16	JUL 22	22.01
25	21.19	DEC 07	21.93	APR 06	21.93	AUG 18	22.17
SEP 17	21.54	JAN 14, 1982	21.99	MAY 05	21.81	SEP 15	22.25

(C-36- 4) 2DCA- 2 ALT. 7,620

JUN 14, 1981	14.62	DEC 07, 1981	18.03	APR 06, 1982	19.35	JUL 22, 1982	20.89
SEP 17	22.15	JAN 14, 1982	19.11	MAY 05	17.90	AUG 17	23.21
OCT 15	24.19	FEB 09	21.13	JUN 06	18.08	SEP 15	25.60
NOV 11	24.57	MAR 02	21.07	JUL 09	20.04		

(C-36- 4)10BBD- 1 ALT. 7,670

JUN 14, 1981	56.99	DEC 07, 1981	56.45	APR 06, 1982	55.84	JUL 22, 1982	55.84
SEP 17	56.74	JAN 14, 1982	56.23	MAY 05	55.87	AUG 17	55.79
OCT 15	56.46	FEB 10	56.03	JUN 06	55.80	SEP 15	55.63
NOV 11	56.48	MAR 03	55.79	JUL 09	55.82		

(C-37- 1) 4DAD- 1 ALT. 6,650

JUL 26, 1979	13.96	SEP 17, 1981	12.32	FEB 09, 1982	12.13	JUL 10, 1982	12.17
AUG 29	13.92	OCT 15	12.22	MAR 02	12.05	JUL 22	12.26
SEP 27	13.87	NOV 11	12.22	APR 06	12.05	AUG 19	12.08
NOV 01	13.74	DEC 07	12.24	MAY 04	12.06	SEP 15	12.06
JUN 16, 1981	12.64	JAN 14, 1982	12.17	JUN 06	12.20		

(C-38- 6)19CBB- 1 ALT. 7,800

SEP 18, 1981	3.40	JAN 15, 1982	5.84	MAY 05, 1982	0.48	JUL 20, 1982	1.14
OCT 15	2.72	FEB 09	6.38	JUN 06	0.60	AUG 18	0.77
NOV 11	3.54	MAR 05	6.12	23	0.60	SEP 14	0.84
DEC 08	4.78	APR 06	0.82	JUL 07	0.73		

(C-38- 7)20DCA- 1 ALT. 8,140

JULY 1972	200.00R	NOV 11, 1981	63.72	APR 06, 1982	77.42	JUN 23, 1982	27.46
SEP 15, 1981	61.51	DEC 08	63.54	MAY 06	18.94	SEP 14	36.46
OCT 15	62.53	FEB 10	63.75	JUN 06	25.53		

(C-40- 4) 8DCA- 1 ALT. 6,650

JUL 22, 1981	186.65	NOV 11, 1981	186.59	MAY 05, 1982	185.75	AUG 18, 1982	186.63
SEP 15	186.71	DEC 08	186.69	JUN 06	186.04	SEP 15	186.76
16	186.69	MAR 04, 1982	185.69	JUL 09	186.42	22	186.87
OCT 15	186.55	APR 06	185.45	21	186.49		

(D-35- 1)34CCC- 1 ALT. 6,860

SEP 17, 1981	1.20	JAN 14, 1982	1.37	MAY 04, 1982	1.47	AUG 29, 1982	1.80
OCT 15	1.13	FEB 09	1.42	JUN 06	1.61	SEP 15	1.66
NOV 11	1.27	MAR 02	1.35	JUL 10	1.75		
DEC 07	1.41	APR 06	1.40	22	1.85		

(D-38- 4)32CBC- 1 ALT. 6,360

MAY 29, 1981	65.68	DEC 08, 1981	66.50	JUL 09, 1982	68.29	AUG 18, 1982	67.81
SEP 17	66.25	MAR 04, 1982	66.19	22	68.59	SEP 16	67.88
OCT 19	66.16						

TABLE 4.--FIELD MEASUREMENTS OF DISCHARGE, WATER TEMPERATURE, SPECIFIC CONDUCTANCE, AND PH AT SELECTED SPRINGS

Number: See text for explanation of numbering system for hydrologic-data sites.

NUMBER	DATE	DISCHARGE (GAL/MIN)	WATER TEMPERATURE (°C)	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	pH (UNITS)
(C-34- 1)24CCC-S1	11-13-81	53	8.0	580	7.3
	5- 5-82	53	16.0	600	7.8
	5-22-82	73	8.0	590	7.3
	6- 9-82	111	9.0	590	7.2
	6-24-82	165	8.0	670	7.1
	7- 9-82	216	8.0	550	7.2
	7-23-82	253	8.5	560	7.7
	8-20-82	110	9.0	520	8.1
	9-16-82	87	11.0	550	8.2
28BCA-S1	11-13-81	18	6.0	590	7.6
	5-21-82	36	5.5	600	7.3
	6- 9-82	43	5.0	600	7.3
	6-24-82	47	5.5	610	7.3
	7- 9-82	37	5.5	580	7.3
	7-23-82	34	5.5	550	7.1
	8-20-82	29	8.0	540	7.3
	9-16-82	26	6.5	590	7.4
(C-37- 1) 3CCB-S1	10-17-81	48	13.5	550	7.3
	3- 3-82	43	14.0	495	7.4
	5- 5-82	43	13.0	520	7.1
	5-22-82	40	13.5	500	7.4
	6-10-82	39	13.5	550	7.4
	6-24-82	37	14.0	580	7.2
	7-10-82	40	14.0	520	7.1
	7-22-82	43	13.5	530	7.1
	8-18-82	42	15.0	520	7.2
	9-15-82	42	14.0	520	7.5
8DDA-S1	10-18-81	31	16.0	510	7.5
	5- 5-82	29	15.5	475	7.2
	5-22-82	27	16.0	520	7.4
	6-10-82	26	16.0	520	7.2
	6-24-82	27	16.0	530	7.3
	7-10-82	27	16.0	470	7.1
	7-22-82	26	15.0	465	7.1
	8-18-82	27	18.0	485	7.2
	9-15-82	24	16.0	480	7.4

TABLE 4.--FIELD MEASUREMENTS OF DISCHARGE, WATER TEMPERATURE, SPECIFIC CONDUCTANCE, AND PH AT SELECTED SPRINGS--Continued

NUMBER	DATE	DISCHARGE (GAL/MIN)	WATER TEMPERATURE (°C)	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	pH (UNITS)
(C-37- 1)13BDD-S1	10-18-81	0.4	9.5	3,100	7.5
	5- 5-82	.5	9.0	2,970	7.4
	5-22-82	.5	11.5	3,040	7.4
	6-10-82	.4	12.5	3,030	7.4
	6-24-82	.4	15.0	2,910	7.3
	7-10-82	.2	16.0	3,000	7.5
	7-22-82	.1	20.0	3,260	7.2
	8-19-82	.1	20.0	3,210	7.3
	9-15-82	<.1	17.0	3,180	7.5
(C-37- 9)20DAC-S1	6-11-82	3.7	4.5	465	7.2
	6-22-82	3.6	5.0	540	7.3
	7- 8-82	3.3	5.5	460	7.1
	7-22-82	3.7	10.0	460	7.0
	8-18-82	5.5	9.0	440	7.1
	9-14-82	2.6	7.5	455	7.1
(C-39- 4)33DAC-S1	7-30-81	4.5	9.5	630	7.3
	9-16-81	5.2	9.5	630	6.9
	5- 6-82	11	14.5	600	7.6
	5-22-82	9.7	9.0	640	7.8
	6- 9-82	9.2	11.0	640	7.6
	6-23-82	8.8	14.0	640	7.8
	7- 9-82	9.3	14.0	630	7.7
	7-21-82	6.7	16.0	630	7.7
	8-18-82	8.4	14.5	600	7.4
	9-15-82	6.3	15.0	610	7.8
(C-39- 5)32BCD-S1	7-15-81	9.7	9.0	1,180	7.6
	9- 6-81	7.6	10.5	1,180	7.2
	5- 6-82	33	8.5	1,480	7.6
	5-24-82	33	8.5	1,510	7.6
	6- 9-82	30	9.0	1,510	7.6
	6-23-82	24	9.0	1,520	7.5
	7- 8-82	15	9.0	1,480	7.5
	7-21-82	17	13.0	1,480	7.5
	8-19-82	9.9	11.5	1,470	7.8
	9-15-82	8.5	13.0	1,480	7.9
(C-39- 6) 9CCA-S1	7-17-81	332	10.5	440	7.1
	10-16-81	322	11.0	445	7.9
	5- 4-82	480	16.0	480	7.4
	5-25-82	392	11.0	460	7.4
	6- 8-82	489	11.0	490	7.4
	6-23-82	464	11.0	540	7.4
	7- 7-82	478	11.0	470	7.3

TABLE 4.--FIELD MEASUREMENTS OF DISCHARGE, WATER TEMPERATURE, SPECIFIC CONDUCTANCE, AND PH AT SELECTED SPRINGS--Continued

NUMBER	DATE	DISCHARGE (GAL/MIN)	WATER TEMPERATURE (°C)	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	pH (UNITS)
(C-39- 6) 9CCA-S1	7-20-82	484	15.0	475	7.5
	8-19-82	392	16.0	580	7.7
	9-15-82	400	11.0	450	7.6
(C-39- 7)13ABA-S1	7-30-81	6.3	8.0	530	7.2
	9-16-81	10	9.0	540	7.2
	5- 7-82	2.7	6.0	480	7.8
	5-25-82	7.7	8.0	530	7.3
	6- 8-82	7.3	8.0	550	7.8
	6-23-82	7.1	8.0	540	7.3
	7- 8-82	7.0	8.0	520	7.2
	7-20-82	6.4	8.5	580	7.1
	8-18-82	7.5	8.5	520	7.3
	9-14-82	8.8	10.0	520	7.4
26DDA-S1	7-30-81	5.6	13.5	260	8.1
	9-16-81	5.6	14.0	265	7.5
	5- 7-82	5.5	10.0	305	7.5
	5-24-82	4.6	13.5	285	7.9
	6- 8-82	4.1	13.0	285	8.3
	6-23-82	4	14.0	295	7.8
	7- 8-82	4.3	14.0	275	7.8
	7-21-82	3.8	15.0	275	7.6
	8-18-82	3.8	13.0	290	7.8
	9-14-82	4.2	16.5	260	8.3
(C-40- 5) 6AAD-S1	6-20-77	.7	13.0	920	[1]6.5
	7-15-81	.6	13.0	930	7.4
	5- 6-82	1.0	9.5	1,000	7.5
	5-24-82	.9	10.5	1,000	7.4
	6- 9-82	.9	11.5	980	7.4
	6-23-82	.9	13.0	1,020	7.4
	7- 8-82	.8	12.5	960	7.3
	7-21-82	.7	16.0	940	7.2
	8-19-82	.6	16.0	840	7.3
	9-15-82	.8	16.5	830	7.4
(C-40- 9)35BAB-S1	8-28-81	2.9	10.0	520	7.3
	6- 7-82	3.6	11.0	520	7.4
	6-23-82	4.4	11.0	580	7.3
	7- 8-82	3.0	11.0	500	7.2
	7-21-82	3.8	11.0	500	7.2
	8-16-82	5.4	11.5	490	7.1
	9-14-82	3.9	8.5	445	7.3

[1] Data reported by Cordova, 1981, p. 76.

Table 5.—Drillers' logs of selected wells

[See text for explanation of numbering system for hydrologic-data sites. Altitude (Alt.) of land surface as listed in table 1.]

Thickness: in feet.
Depth: Depth to base of unit, in feet below land surface.

Material	Thickness	Depth
(C-36-3)7DDD-3. Log by S. Peterson. Alt. 7,630.		
Conglomerate	12	12
Clay	10	22
Hardpan, conglomerate	8	30
Conglomerate, sandstone; water	30	60
Clay, conglomerate, sandstone	32	92
Sandstone	8	100
Clay, conglomerate	16	116
Clay, sand, gravel, conglomerate; water	14	130
Clay	10	140
Limestone	5	145
(C-36-4)2DCA-1. Log by B. Gardner. Alt. 7,620.		
Clay	20	20
Sand, little water	15	35
Clay	25	60
Gravel, water	6	66
Shale, light gray	244	310
(C-36-5)31CBD-1. Log by Jim Ballard. Alt. 7,090.		
Clay	10	10
Limestone	90	100
(C-36-10)21CAA-1. Log by C. Stephenson. Alt. 6,480.		
Top soil	10	10
Gravel, boulders	30	40
Clay gravel, boulders	28	68
Gravel, boulders, good water	29	97
Clay, gravel, boulders	11	108
Clay, gravel, boulders, blue limestone	13	121
Gravel, boulders, limestone, sand	24	145
Shale, blue, no water	55	200
(C-37-1)4DAD-1. Log by Wm. Peck. Alt. 6,650.		
Silt sand and gravel	40	40
Sandstone yellow	15	55
Sandstone gray	35	90
Shale carbonaceous clay rock layers	150	240
Sandstone gray	13	253
(C-37-2)6ABA-1. Log by Wm. Peck. Alt. 6 220.		
Clay sand and cobbles	65	65
Clay and sand, yellow	5	70
Clay and sand, gray	17	97
Clay gravel	6	103
Clay	24	127
(C-37-3)32ADC-1. Log by Wm. Peck. Alt. 6,460.		
Silt, sand, gravel	85	85
Silt, sand, gravel, cobbles	15	100
Clay	4	104
Coal	10	114
Clay	28	142
(C-37-4)11DDD-1. Log by Perry Bros. Alt. 8,030.		
Top soil	10	10
Limestone, pink	10	20
Shale, red and yellow	10	30
Limestone, pink and gray	30	60
Limestone, yellow	10	70
Limestone, pink	50	120
Limestone, pink and yellow	60	180
Limestone, gray	80	260
Limestone, pink to brown	80	340
Shale, yellow and pink	50	390
Conglomerate, sandy, yellowish black	110	500
Shale, black	25	525
Limestone, gray	23	548
Shale, sandy, gray	52	600
Sandstone, brown	50	650
Sandstone, gray	80	730
Shale, sandy, blue, gray	40	770
Shale, red	30	800
Shale, sandy, blue, gray	40	840
Shale, blue	170	1,010
Shale, blue and wood	20	1,030
Shale, sandy, blue	745	1,775
Shale, blue; hard rock pebbles	37	1,812
Shale, blue	48	1,860
Shale, brown	20	1,880
Shale, blue, sandy	80	1,960
Shale, brown	10	1,970
Shale, blue	30	2,000
(C-38-5)4DCB-1. Log by Wm. Peck. Alt. 7,920.		
Clay, pink and brown	220	220
Clay, sand	12	232
Clay, mudstone	44	276
Clay, sand, and gravel	37	313
(C-38-6)19CBB-1. Log by D. Ballard. Alt. 7,800.		
Clay	10	10
Gravel	5	15
Clay	20	35
Limestone, white	115	150
Limestone, pink	50	200
(C-38-7)27ACA-1. Log by H. S. Peterson. Alt. 7,720.		
Clay	14	14
Gravel, water	1	15
Clay	21	36
Clay, rock, white color	62	98
Clay, rock, pink color	115	213
Conglomerate	49	262
Clay	53	315
Conglomerate	171	486
Clay	32	518
Conglomerate	72	590
Clay	25	615
Sand, gravel	35	650
(C-40-4½)8DCA-1. Log by U.S. Bureau of Reclamation. Alt. 6,650.		
Sand, gravel	81	81
Shale	106	187
Siltstone, sandstone	13	200
Coal	18	218
Mudstone, sandstone	17	235
(C-40-5)13CBB-1. Log by U.S. Bureau of Reclamation. Alt. 6,510.		
Sand, gravel	65	65
Shale	104	169
Coal	21	190
Siltstone, mudstone, sandstone	16	206
(C-40-7)14BAD-1. Log by Wayne Cox. Alt. 5,880.		
Clay, sand	30	30
Clay, sand, gravel	17	47
Sand	2	49
Clay, sand, gravel	19	68
Clay	2	70
Conglomerate	5	75
Sandstone	5	80
Clay, blue	5	85
Shale with coal	14	99
Sandstone	21	120
(D-35-1)34CCC-1. Log by Wm. Peck. Alt. 6,860.		
Silt	130	130
Gravel	14	144
Silt	32	176
Gravel	3	179
Sand, fine	6	185
Sandstone, gray	95	280
(D-38-4)32CBC-1. Log by F. Hastings. Alt. 6,360.		
Top soil, clay	10	10
Sandstone	22	32
Shale, brown	13	45
Sandstone	35	80
Shale, brown, with water	2	82
Clay	18	100

TABLE 6.--CHEMICAL ANALYSES OF

Number: See text for explanation of numbering system for hydrologic-data sites.

NUMBER	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	PH (UNITS)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM
(C-34- 1)24CCC-S1	11-13-81	580	7.3	320	--	69	36	5.3	3
28BCA-S1	11-13-81	590	7.6	330	--	59	44	3.7	2
29AAC-S1	11-13-81	530	7.6	290	--	50	41	5.5	4
(C-35- 1)12ADA-S1	11-13-81	540	7.3	310	--	62	37	3.0	2
24DBC-S1	11-13-81	490	7.5	270	--	50	35	2.2	2
(C-35- 2)19AAC-S1	10-21-81	440	7.7	230	--	39	31	7.2	6
(C-35- 4)34DCB- 1	7-25-81	840	7.5	370	--	73	45	11	6
(C-35- 4)25BDC-S1	11-15-81	540	7.6	290	--	45	44	4.4	3
(C-35- 5)24DDB-S1	10-15-81	470	7.9	270	--	50	35	8.6	6
(C-36- 1) 1DAD-S1	10-21-81	590	7.4	300	--	60	36	7.4	5
(C-36- 3) 8BCC- 1	7-25-81	305	7.8	160	--	45	11	2.6	3
21AAC-S1	10-18-81	470	7.7	250	--	44	35	4.3	4
22BDB-S1	10-21-81	480	7.5	240	--	43	33	4.6	4
23DCB- 1	7-28-81	700	7.4	420	--	44	75	33	15
33BCA-S1	11-15-81	410	7.5	210	--	46	23	2.0	2
36CCD- 1	7-28-81	3,460	7.0	1,300	--	230	170	400	40
(C-36- 4) 2DDD- 1	7-25-81	480	7.4	260	--	56	30	3.0	2
(C-36- 9)25DCB-S1	7-14-81	255	7.8	140	--	41	8.3	1.9	3
36CDC-S1	7-14-81	410	7.8	240	--	58	23	1.3	1
(C-36-10)35ABB-S1	10-21-81	320	8.3	200	--	56	14	4.6	5
36BDC-S1	9-21-81	390	7.7	160	--	30	20	5.0	6
(C-37- 1) 3CCB-S1	10-17-81	550	7.3	280	--	67	27	11	8
	6-10-82	550	7.4	270	14	67	26	11	8
8DDA-S1	10-18-81	510	7.5	250	--	59	25	15	11
13BDD-S1	10-18-81	3,100	7.5	560	--	58	100	520	67
(C-37- 3) 1DCA-S1	10-18-81	820	7.5	400	--	78	51	25	12
1DCD-S1	10-18-81	1,240	7.2	500	--	96	63	79	25
9BCB-S1	10-21-81	560	7.4	290	--	65	32	2.2	2
(C-37- 4) 5CCC-S1	7-24-81	485	7.6	270	--	35	45	--	3
	5-23-82	500	7.5	280	2	37	46	4.4	3
16DCB-S1	10-22-81	455	8.0	250	--	54	28	2.1	2
17BBD-S1	8-19-81	390	7.6	230	--	36	33	3.0	3
17CBC-S1	7-24-81	435	7.5	260	--	45	37	3.4	3
	5-23-82	475	7.6	250	4	44	35	3.2	3
31CBB-S1	7-24-81	445	7.8	220	--	40	28	2.2	2
	5-23-82	410	7.7	220	0	41	28	2.0	2
(C-37- 5)32ABB-S1	7-25-81	430	7.6	250	--	50	30	3.8	3
	5-25-82	475	7.3	250	7	51	29	3.7	3
(C-37- 9)20ACA-S1	7-14-81	425	7.3	250	--	77	14	1.5	1
20DAC-S1	6-11-82	465	7.2	240	2	84	7.7	1.3	1
(C-38- 4)31AAA-S1	10-22-81	430	7.9	230	--	48	27	2.0	2
(C-38- 5) 6DCA-S1	7-28-81	375	7.4	210	--	45	24	2.7	3
	5-25-82	415	7.5	220	3	48	25	2.4	2
11ABB-S1	7-27-81	860	6.9	520	--	100	66	3.5	1
11BAA-S1	7-27-81	780	7.1	500	--	106	56	2.2	1
33CAA-S1	9-22-81	860	6.8	390	--	44	68	3.4	2
(C-38- 6)14CCD-S1	10-20-81	940	7.7	480	--	94	60	2.2	1
25CCC-S3	7-16-81	550	6.9	310	--	71	33	6.9	5
34CAB-S1	10-20-81	780	7.4	420	--	87	50	9.0	4
(C-38- 7)23BAD-S1	9-22-81	420	7.6	160	--	28	22	6.1	8
26CCA-S1	9-21-81	425	7.4	190	--	38	23	1.0	1

WATER FROM SELECTED WELLS AND SPRINGS

SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
0.1	1.8	--	<5.0	3.5	0.3	15	338	<0.09	40	<10	<1
.1	2.3	--	<5.0	4.3	.3	8.5	319	<.09	50	<10	<1
.2	3.4	--	<5.0	4.3	.3	7.7	285	<.09	60	<10	<1
.1	1.3	--	<5.0	2.2	.2	9.0	285	<.09	30	<10	<1
.1	3.0	--	<5.0	1.8	.3	6.6	260	.17	50	<10	<1
.2	1.0	--	<5.0	6.7	.2	7.4	224	.19	10	<10	<1
.3	3.1	--	90	16	.4	9.3	422	.06	--	<10	2
.1	1.9	--	<5.0	5.6	.2	8.4	276	.19	20	<10	2
.3	2.7	--	7.0	7.2	.3	22	296	.22	20	<10	<1
.2	1.1	--	11	13	.3	8.7	300	<.09	30	<10	<1
.1	.6	--	1.0	1.9	.6	7.2	167	.26	--	29	2
.1	2.1	--	<5.0	6.0	.3	7.8	249	.39	20	17	<1
.1	2.1	--	8.0	6.4	.4	8.1	239	.22	30	<10	1
.8	1.8	--	1.0	26	.6	19	465	.03	--	<10	2
.1	3.6	--	16	2.1	.3	9.1	216	<.09	40	12	14
4.9	5.9	--	1,300	94	.4	10	2,560	.00	--	--	120
.1	1.3	--	1.0	4.0	.2	7.9	260	.00	--	100	52
.1	.5	--	<1.0	.8	.1	18	156	.23	--	20	10
.0	.5	--	<1.0	2.4	.1	19	249	.02	--	40	7
.2	.9	--	25	2.8	.1	19	227	.50	0	<10	5
.2	1.3	--	23	1.8	.1	13	179	.11	0	<10	<1
.3	2.5	--	38	3.9	.2	9.2	291	<.09	10	<10	12
.3	2.6	260	37	3.9	.4	9.0	314	<.10	--	450	12
.5	4.3	--	46	3.0	.3	10	295	<.09	90	19	28
9.6	2.4	--	860	80	.6	8.6	2,070	<.09	420	30	10
.6	4.1	--	130	10	.6	10	498	.53	100	12	<1
1.7	3.4	--	320	10	.6	11	790	.59	120	<10	1
.1	1.9	--	35	3.7	.4	7.7	292	<.09	10	<10	18
.1	1.1	--	<5.0	5.7	.2	6.8	297	.08	20	<10	<1
.1	.9	280	5.0	5.4	.3	6.7	271	.19	--	<9	<3
.1	.3	--	<5.0	2.4	.2	6.8	243	<.09	0	<10	<1
.1	.7	--	<5.0	3.7	.2	6.4	--	.07	0	<10	2
.1	.7	--	<5.0	3.7	.2	7.1	--	.09	10	21	4
.1	.6	250	5.0	6.5	.3	6.9	255	.10	--	11	<3
.1	.5	--	<5.0	2.5	.1	6.3	--	.09	10	10	3
.1	.5	220	5.0	2.6	.2	6.1	214	<.10	--	<9	<3
.1	1.0	--	<5.0	4.5	.1	12	--	.79	10	<10	<1
.1	.9	240	5.0	4.2	.2	12	252	.43	--	<9	5
.0	.4	--	<1.0	1.4	.1	6.0	251	.07	--	30	<1
.0	.8	240	<5.0	2.4	.2	6.4	--	.22	--	<3	<1
.1	.4	--	6.0	2.0	.2	6.3	212	<.09	0	<10	<1
.1	.4	--	<5.0	2.9	.1	9.5	--	.33	10	<10	1
.1	.5	220	5.0	3.4	.2	8.7	224	.63	--	<9	<3
.1	2.4	--	92	3.9	.2	15	488	.06	20	29	15
.0	1.7	--	58	2.9	.2	10	406	.12	10	<10	<1
.1	2.4	--	130	3.4	.2	8.0	422	.14	20	<10	<1
.0	1.2	--	<5.0	91	.3	14	516	<.09	20	<10	50
.2	.7	--	2.0	6.3	.1	22	329	.17	--	<10	1
.2	1.3	--	<5.0	11	.4	16	426	<.09	30	<10	20
.2	.3	--	<5.0	3.6	.1	6.4	174	.20	0	<10	<1
.0	.4	--	<5.0	1.5	.1	6.0	177	.15	0	<10	<1

TABLE 6.--CHEMICAL ANALYSES OF WATER

NUMBER	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	PH (UNITS)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM
(C-38- 8)18CBD-S1	7-15-81	300	7.2	170	--	50	10	1.4	2
32CBB-S1	7-15-81	440	7.7	250	--	60	24	2.1	2
(C-38- 9)12BDB-S1	7-15-81	355	7.2	210	--	63	13	1.2	1
(C-39- 4)19ADA-S1	7-28-81	720	7.1	410	--	90	46	3.8	2
	5-22-82	770	7.0	420	7	91	46	3.3	2
20CDD-S1	7-30-81	970	7.1	580	--	112	72	1.5	1
	5-24-82	1,000	7.0	530	71	104	66	14	5
33DAC-S1	7-30-81	630	7.3	330	--	68	39	26	15
	5- 6-82	600	7.6	290	0	62	34	19	12
(C-39- 4)26DDB-S1	7-28-81	880	7.1	450	--	93	54	1.3	1
	8-17-82	1,100	7.2	480	110	95	59	32	12
(C-39- 5) 6ADA-S1	10-19-81	1,300	8.2	720	--	92	120	32	9
32BCD-S1	7-15-81	1,180	7.6	620	--	52	120	46	14
(C-39- 6) 9CCA-S1	7-17-81	440	7.1	260	--	53	31	2.5	2
13BBB-S1	10-19-81	3,500	7.6	2,400	--	360	370	11	1
	5-24-82	4,000	7.4	2,500	2,000	340	400	170	13
16BBD-S1	7-16-81	510	7.5	290	--	60	33	4.2	3
20ABC-S1	7-16-81	460	7.4	270	--	54	32	3.2	3
30ABA-S1	8-28-81	500	7.4	280	--	60	32	2.3	2
(C-39- 7)13ABA-S1	7-30-81	530	7.2	310	--	60	38	6.3	4
	5- 7-82	480	7.8	280	13	54	36	1.8	1
26CDB-S1	8-28-81	690	7.1	420	--	87	48	3.0	2
26DDA-S1	7-30-81	260	8.1	150	--	36	14	1.4	2
	5- 7-82	305	7.5	150	4	37	15	1.6	2
(C-39- 8) 5ABD-S1	11-16-81	680	7.2	380	--	87	39	2.2	1
12CAC-S1	9-22-81	470	7.7	280	--	55	35	1.4	1
(C-40- 5) 6AAD-S1	7-15-81	930	7.4	260	--	49	34	130	52
8DDA-S1	6-20-77	650	--	270	0	24	50	49	27
9AAD-S1	7-14-81	2,660	8.0	1,800	--	270	280	32	4
	8-17-82	2,710	8.0	1,900	1,500	260	300	37	4
(C-40- 7) 3CCC-S1	8-29-81	1,340	7.2	810	--	126	120	1.1	0
14BAA-S1	10-17-81	340	7.7	140	--	35	13	13	16
(C-40- 8)29BCA-S1	8-28-81	1,080	7.0	480	--	108	52	9.5	4
30BAD-S1	8-28-81	700	7.3	310	--	82	26	2.3	2
(C-40- 9)26CDA-S1	8-28-81	475	7.3	350	--	93	28	3.7	2
	6- 7-82	510	7.4	270	17	74	20	1.9	2
26CDA-S2	8-28-81	600	7.1	270	--	75	20	2.0	2
	6- 7-82	610	7.3	330	47	88	26	3.2	2
26CDC-S1	8-28-81	510	7.3	270	--	72	23	3.0	2
	6- 7-82	530	7.6	270	25	72	23	2.8	2
35BAB-S1	8-28-81	520	7.3	280	--	74	23	3.2	2
	6- 7-82	520	7.4	280	15	74	22	2.9	2
36CCB-S1	8-28-81	520	7.3	300	--	81	24	2.1	2
	8-17-82	425	7.9	250	0	61	23	2.1	2
(D-35- 1)33DDA-S1	9-23-81	590	6.9	220	--	26	37	23	19
(D-35- 2)16ACD-S1	10-16-81	820	7.3	320	--	60	42	57	28
(D-36- 2)13AAD-S1	10-20-81	670	7.4	350	--	82	36	6.9	4
(D-37- 1)10ACD-S1	10-25-81	1,010	7.2	550	--	128	56	18	7
(D-37- 2)36CBC-S1	10-19-81	4,070	7.0	2,100	--	330	320	280	22
(D-37- 3) 6AAA-S1	10-19-81	1,540	8.1	880	--	140	130	17	4
(D-38- 1)27CCA-S1	10-25-81	2,800	8.2	320	--	57	43	470	76
27CDB-S1	5-29-74	2,610	8.2	330	0	58	45	490	76

FROM SELECTED WELLS AND SPRINGS--Continued

SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
0.0	0.4	--	<1.0	0.7	0.1	6.0	166	0.08	--	20	2
.1	1.1	--	12	1.2	.1	10	249	.02	--	20	6
.0	.4	--	<1.0	1.0	.1	5.4	205	.15	--	20	2
.1	1.7	--	29	3.5	.2	7.9	--	.05	20	43	5
.1	1.5	410	12	3.8	.3	7.6	385	.10	--	<9	<3
.0	3.1	--	130	5.7	.2	11	--	.03	80	<10	2
.3	2.7	460	120	6.1	.3	10	590	<.10	--	<9	<3
.7	1.0	--	<5.0	12	.1	12	--	.17	20	<10	4
.5	1.1	320	6.0	11	.2	10	318	.14	--	<9	<3
.0	15	--	200	5.0	.4	9.7	--	.00	180	790	150
.7	13	370	180	5.2	.5	10	593	<.10	--	<3	150
.6	6.4	--	220	11	.3	16	823	<.09	140	<10	100
.8	5.3	--	220	16	.3	18	774	.38	--	<10	1
.1	1.2	--	<1.0	3.8	.5	8.9	252	.20	--	10	7
.1	15	--	2,000	12	.4	16	3,080	1.2	420	60	20
1.5	18	520	2,200	33	.5	18	3,490	1.1	--	70	30
.1	2.0	--	<1.0	5.1	.2	8.6	284	.15	--	10	3
.1	1.0	--	<1.0	3.9	.3	8.0	254	.15	--	10	2
.1	.9	--	5.0	2.5	.1	8.0	219	--	10	10	1
.2	.9	--	<5.0	2.2	.1	7.7	--	.01	0	<10	<1
.1	1.1	270	5.0	2.6	.2	8.1	277	<.10	--	<9	<3
.1	1.6	--	53	4.3	.2	8.4	327	.00	10	720	140
.1	1.7	--	15	.6	.7	9.5	--	.01	0	17	13
.1	1.7	150	19	1.2	.7	8.8	169	<.10	--	10	10
.1	1.6	--	39	2.9	.3	9.0	380	.24	10	<10	5
.0	.6	--	5.0	2.8	.1	7.1	--	.16	0	<10	<1
3.5	3.0	--	140	13	.4	11	621	.01	--	350	70
1.3	17	270	16	80	.4	3.0	402	<.10	240	430	20
.3	11	--	1,500	38	.6	11	--	.02	--	50	70
.4	11	370	1,500	34	.6	11	2,320	<.10	--	40	90
.0	8.4	--	330	15	.4	12	--	.03	40	16	140
.5	3.7	--	<5.0	2.6	.8	11	186	<.09	20	<10	10
.2	3.4	--	180	5.4	.2	10	--	.03	40	<10	1
.1	2.1	--	38	10	.1	9.1	--	.09	20	<10	2
.1	1.4	--	62	3.3	.1	11	--	.03	20	<10	<1
.1	1.0	250	24	2.0	.2	7.9	268	.14	--	<3	<1
.1	.9	--	29	2.1	.1	8.2	--	.11	10	<10	<1
.1	1.2	280	58	3.5	.2	9.5	358	<.10	--	<3	<1
.1	1.5	--	38	2.6	.1	8.3	--	.03	10	<10	1
.1	1.6	250	36	2.8	.2	7.9	294	<.10	--	<3	<1
.1	1.7	--	37	2.7	.1	8.5	--	.04	10	<10	<1
.1	1.3	260	31	2.9	.2	8.0	291	<.10	--	<3	<1
.1	.9	--	24	5.4	.1	11	--	.01	10	<10	1
.1	1.2	260	21	2.0	.2	11	252	<.10	--	9	5
.8	1.5	--	12	4.9	.2	9.2	259	.16	40	<10	<1
1.6	2.8	--	110	9.4	.5	12	474	<.09	120	84	68
.2	1.9	--	98	10	.2	9.7	390	.14	10	<10	440
.4	2.0	--	170	6.9	.2	18	610	<.09	60	<10	<1
2.6	12	--	2,300	31	.1	9.2	3,530	<.09	630	920	80
.3	3.1	--	440	26	.3	11	1,020	.15	40	13	1
11	2.7	--	810	90	.5	10	1,770	<.09	340	30	10
12	1.4	404	840	92	.7	12	1780	.03	170	<10	<10

TABLE 6.--CHEMICAL ANALYSES OF WATER

NUMBER	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	PH (UNITS)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM
(D-38- 3)11AAD-S1	11-14-81	980	8.1	480	--	48	88	.1	0
14CBC-S1	10-19-81	1,620	7.8	790	--	120	120	51	12
17BDA-S1	11-14-81	680	8.0	360	--	69	45	8.2	5
(D-38- 4)32CBC- 1	7-27-81	1,380	7.5	750	--	177	74	46	12
35CCB-S1	10-19-81	1,520	7.3	710	--	120	100	69	17
(D-39- 2)19BBA-S1	10-18-81	1,100	7.1	530	--	129	50	32	12
(D-40- 3) 1CCC- 1	4-30-74	1,860	7.3	220	0	50	22	380	78
1DBC- 1	5-29-81	2,200	7.1	100	--	30	6.3	640	92
28ADC- 1	6-14-75	1,070	--	98	0	18	13	200	78
28CDD- 1	3-31-75	900	--	96	0	22	9.9	160	76
33CBB- 1	3-31-75	590	--	240	9	49	28	39	26
33CCC- 1	3-31-75	710	--	240	0	54	25	66	37
33CDD- 1	2-19-75	740	--	290	94	60	33	48	26
(D-40- 7)34BDC-S1	10-24-81	590	7.5	330	--	69	38	5.5	3
(D-41- 3) 3BDD- 1	2-19-75	1,680	--	69	0	14	8.2	400	91
4ACC- 1	2-24-75	2,500	--	86	0	8.0	16	610	92
7ACC- 1	10-22-74	7,850	--	440	0	120	33	1,800	90
8AAA- 1	2-13-75	680	--	250	12	54	29	51	30
9AAA- 1	2-19-75	1,980	--	110	0	15	17	460	89
10CCB- 1	2-14-75	3,310	--	110	0	13	19	850	93
16BBB- 1	10-30-74	760	--	240	0	58	22	70	38
17CBB- 1	12- 9-74	710	--	260	11	58	27	51	29
(D-41- 8)20DBA-S1	10-24-81	960	8.0	470	--	101	54	42	16
(D-42- 2) 2ABB-S1	10-25-81	1,230	7.8	430	--	96	47	100	33

FROM SELECTED WELLS AND SPRINGS--Continued

SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
0.0	2.2	--	120	52	0.4	12	566	0.90	50	<10	<1
.9	2.1	--	480	120	.5	12	1,080	2.1	100	<10	<1
.2	1.6	--	100	12	.3	8.9	389	<.09	20	<10	1
.8	3.5	--	450	63	.5	10	995	3.4	--	<10	4
1.3	4.8	--	320	91	.3	16	957	<.09	70	18	960
.7	2.3	--	230	11	.1	9.0	650	<.09	10	<10	110
11	15	970	97	22	--	11	1,180	.03	560	250	10
28	18	--	3.0	26	5.0	10	1,600	.00	--	--	50
8.8	19	267	240	14	2.0	7.9	676	.27	350	<10	<10
7.1	12	257	190	5.3	1.8	4.7	561	.06	270	20	<10
1.1	6.6	229	89	3.3	.4	8.8	362	.01	150	20	<10
1.9	7.3	266	110	3.8	.3	8.8	436	.12	140	50	<10
1.2	9.8	192	190	4.7	.6	4.4	466	.01	150	20	20
.1	2.0	--	71	3.2	.3	14	357	.89	30	<10	1
21	12	869	77	14	3.4	5.5	1,060	.05	1,000	<10	<10
29	26	1,110	140	55	1.8	5.0	1,530	.02	360	20	<10
38	11	590	3,500	88	.6	10	5,920	.00	--	20	130
1.4	7.1	242	120	4.9	.3	9.3	421	.01	130	60	<10
19	13	1,050	69	26	2.9	7.8	1,240	.18	1,000	<10	<10
35	17	1,570	110	200	2.6	7.6	2,160	.08	550	50	<10
2.0	9.8	240	140	3.6	.4	8.4	459	.01	160	20	50
1.4	8.5	245	120	3.5	.2	9.9	426	.03	100	<10	50
.9	1.5	--	210	48	.3	13	633	.22	40	<10	18
2.3	6.5	--	370	17	.3	12	775	<.09	100	<10	40

TABLE 7.--WATER-QUALITY DATA FOR

Number: See text for explanation of numbering system for hydrologic-data sites.

NUMBER	DATE OF SAMPLE	DISCHARGE (FT^3/S)	SPECIFIC CONDUCTANCE (UMHOS/CM AT 25°C)	WATER TEMPERATURE (°C)	PH (UNITS)	HARDNESS (MG/L AS CACO3)	SILICA, DISSOLVED (MG/L AS SIO2)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM ADSORPTION RATIO
(C-35-9) 6CAB[1]	4-23-81	12	385	5.5	8.6	200	16	55	16	0.2
	8-26-81	2.3	375	17.0	8.4	190	21	39	22	.3
	5-17-82	16	315	10.0	8.0	190	17	52	14	.2
(C-36- 4) 2DCA	4-21-81	34	440	9.5	8.5	250	6.1	49	30	.1
	3- 2-82	63	460	2.0	8.2	290	7.0	56	36	.1
(C-36-10)26BCD	4-23-81	48	400	3.5	8.6	200	8.3	51	18	.1
	9-18-81	10	390	15.5	8.3	210	11	45	24	.2
(C-37- 2)27CAA	4-21-81	1.5	870	14.5	8.6	240	8.0	54	25	3.1
	8-24-81	.01	960	20.0	8.2	330	13	61	42	3.3
	3- 2-82	.1	850	7.0	8.4	280	7.2	62	30	3.7
(C-37- 3)12DCD	4-21-81	9.4	1,260	15.5	8.3	580	6.8	120	68	1.3
	8-25-81	4.8	1,670	22.0	8.1	760	11	157	90	1.8
(C-37-10)22CAB	4-23-81	17	270	9.0	7.9	160	4.1	51	8.3	.1
	8-26-81	.04	520	17.0	8.0	290	8.5	84	19	.2
	8-16-82	.16	560	14.0	8.2	240	7.4	70	17	.1
(C-38- 4)26BAB	4-23-81	11	425	3.5	7.6	260	6.2	63	25	.1
	8-27-81	2.0	400	16.0	8.3	250	6.1	53	29	.0
	5-23-82	23	470	11.5	8.2	260	5.2	62	25	.0
(C-38- 5)26BCD	4-23-81	3.0	485	6.5	7.8	300	7.2	59	37	.1
	8-26-81	.29	435	17.0	8.0	270	7.4	49	35	.1
(C-39- 6)24ACA	4-23-81	1.1	1,530	15.0	8.0	1,100	9.1	130	190	.8
	8-27-81	.38	1,490	22.5	8.2	790	9.6	86	140	.6
29BCB	4-20-81	7.1	480	14.0	8.1	290	8.0	60	35	.1
	8-24-81	3.7	435	16.0	8.4	250	7.5	48	32	.1
(C-39- 7) 9BBA	4-21-81	2.4	475	11.0	8.1	260	5.5	66	24	.0
	8-27-81	.18	490	18.0	8.0	290	7.0	67	29	.0
	5- 4-82	14	460	6.0	7.9	280	5.5	70	26	.0
(C-39- 9)26CBA[2]	4-22-81	27	520	11.0	8.5	260	9.1	59	28	.2
	8-20-81	7.5	420	16.0	8.4	230	12	54	24	.3
	8-26-81	6.9	415	16.5	8.4	230	13	50	25	.2
	10- 8-81	7.3	435	14.5	8.5	240	12	55	26	.3
	5- 3-82	34	455	14.5	8.0	230	8.5	53	23	.2
	8-23-82	13	360	22.0	8.4	200	12	45	22	.2
(C-39-10) 3ACA	4-23-81	76	290	10.0	8.3	160	6.0	50	8.3	.1
	8-27-81	4.2	350	18.5	8.4	180	8.3	46	16	.2
	8-16-82	6.9	350	16.5	7.2	180	7.1	46	16	.1
11DDD	4-23-81	127	315	12.5	8.3	180	7.4	52	11	.1
	8-26-81	9.7	335	18.0	8.3	190	11	45	20	.2
	8-16-82	9.7	360	18.0	8.1	180	10	43	17	.2
(C-40- 4) 3BAD	4-22-81	.68	680	22.5	8.1	370	8.8	41	66	.2
(C-40- 4) 8DAC	4-22-81	.94	700	16.0	8.1	370	8.6	54	58	.3
	8-27-81	.44	770	17.0	8.3	380	8.8	51	62	.3
	3- 4-82	.67	730	4.0	8.1	380	7.1	65	52	.3
(C-41- 1) 9AAD	4-22-81	.26	980	20.5	7.7	390	11	100	34	1.4
	3- 4-82	.33	1,090	9.0	8.1	350	11	92	28	1.4
(C-41- 7) 8CDA	4-22-81	19	600	9.0	8.5	310	8.9	59	40	.2
	8-26-81	6.9	640	20.0	8.3	340	10	67	42	.3
(C-41- 8) 5CDA	4-22-81	.29	2,120	13.0	8.5	840	8.7	120	130	2.9
	8-26-81	.09	2,340	26.0	8.3	860	6.7	130	130	3.7
(C-42- 1)33DDC	4-22-81	17	1,730	12.0	7.7	630	10	120	79	3.0
	8-25-81	9.1	2,340	21.0	8.0	1,200	9.8	340	86	2.1
	3- 4-82	22	1,600	11.5	8.0	550	8.6	110	66	3.1
(D-34- 1)31ABA	4-20-81	1.4	330	10.0	8.5	160	18	36	18	.2
	8-25-81	1.1	280	18.0	8.7	160	18	29	21	.3
	5- 5-82	2.6	205	13.5	7.9	100	18	24	10	.2
(D-35- 2)16ADB	4-21-81	21	680	6.5	8.4	250	14	50	31	1.4
	8-25-81	14	470	19.5	8.4	190	17	40	21	.9
16CBB	4-20-81	2.6	465	20.5	8.6	240	13	47	29	.3
	8-25-81	1.8	435	24.5	8.5	220	15	39	30	.4
	5- 5-82	5.6	375	18.0	8.1	190	13	41	22	.2
36DCD	11-15-81	.10	1,230	3.5	8.2	690	11	139	84	.3
	3- 3-82	.12	1,070	14.0	8.4	620	8.6	125	74	.2
(D-36- 1) 9CBC	4-21-81	.73	1,400	9.5	8.5	360	11	63	48	4.4
	8-25-81	.36	1,140	27.5	8.6	280	14	34	47	4.9
	3- 3-82	1.6	980	9.5	8.5	390	9.0	62	57	4.0
(D-38- 4) 8DAC	3- 3-82	.27	3,490	11.0	8.1	2,300	8.2	300	370	1.1
(D-39- 1) 9DAA	4-22-81	.16	3,150	22.5	8.3	320	9.1	64	38	16
	3- 4-82	.68	3,010	5.0	8.3	260	5.4	62	25	17
(D-40- 4) 7CDC	4-21-81	.38	3,220	19.0	7.8	1,200	9.9	230	160	4.3
	8-25-81	.18	2,410	31.0	7.7	930	13	160	130	3.7
	3- 4-82	.42	2,800	8.0	7.9	1,200	8.0	210	160	3.9
(D-42- 2) 8DBB	4-21-81	2.3	2,120	17.0	8.0	380	7.8	85	41	9.4
	3- 4-82	2.4	2,760	10.5	8.1	520	7.6	110	60	9.9
(D-42- 4)28CBD	4-21-81	.04	7,160	26.0	8.0	1,600	13	410	150	15
	8-25-81	.01	7,170	31.0	8.2	1,700	19	430	160	14
(D-42- 5) 3CDC	4-21-81	.83	3,920	25.0	8.1	1,400	11	260	170	6.3
	8-25-81	.01	5,900	32.0	8.1	2,200	21	470	240	8.1
	3- 4-82	.67	3,550	6.0	8.1	1,200	8.0	230	150	6.2

[1] U.S. Geological Survey streamflow gaging station 10241600. (See also table 8.)
[2] U.S. Geological Survey streamflow gaging station 09405450. (See also table 8.)

SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	POTASSIUM, DISSOLVED (MG/L AS K)	CHLORIDE, DISSOLVED (MG/L AS CL)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	ALKALINITY LAB (MG/L AS CACO3)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
5.8	6	1.5	5.3	11	.2	20	10	2	190	--	2.4
8.0	8	2.1	17	25	.1	--	<10	2	140	218	.09
5.3	6	1.3	4.6	5.0	.1	10	23	<3	180	209	--
2.7	2	1	2.9	1.5	.2	10	20	9	--	--	7.8
2.5	2	1	3.7	6.0	.4	10	<3	8	--	--	212
4.2	4	1.5	3.8	32	.2	20	20	4	150	--	61
4.5	4	1.9	3.4	39	.2	10	<10	3	140	213	4.6
110	50	4.4	8.3	210	.3	250	50	20	230	--	20
120	44	5.9	19	370	.3	140	<10	6	160	728	<.01
130	50	3.5	13	290	.5	80	<3	15	220	--	39
73	21	5.2	16	430	.4	300	30	10	200	--	59
100	22	6.3	30	670	.4	240	14	13	160	1,160	8.8
2.6	3	1.8	1.6	2.0	.1	190	10	10	140	--	37
6.4	5	1.7	3.9	47	.1	20	<10	8	200	291	<.01
4.7	4	1.4	2.8	19	.1	30	9	8	--	--	--
2.0	2	.9	1.7	1.8	.2	10	20	40	--	--	1.9
1.6	1	.6	2.4	<5.0	.2	0	<10	6	--	--	.02
1.5	1	.4	1.9	5.0	.2	10	<9	17	220	237	7.6
1.6	2	1.3	2.2	26	.3	10	10	10	250	--	.25
1.8	1	2.2	3.2	7.0	.1	10	20	14	210	240	.03
59	10	6.7	19	780	.3	140	<10	20	290	--	1.7
33	8	5.4	19	500	.2	100	<10	4	330	992	<.01
4.6	3	1.4	6.2	.9	.4	30	30	20	--	--	3.1
2.7	2	1.2	5.0	<5.0	.3	20	<10	3	--	--	.06
1.8	1	.7	1.4	.8	.2	10	40	30	--	--	.34
1.6	1	.5	2.5	<5.0	.2	10	<10	10	230	--	.01
1.3	1	.6	1.3	5.0	.1	<10	32	7	270	272	--
7.5	6	1.4	2.3	59	.3	20	40	6	--	--	18
8.1	7	1.5	2.1	39	.1	20	--	--	180	250	--
7.7	7	1.6	8.0	40	.1	10	<10	4	180	254	1.2
8.6	7	1.4	3.5	44	.2	20	--	--	210	278	--
4.8	4	1.2	2.3	39	.2	20	--	--	190	246	--
5.4	5	1.5	2.0	27	.2	20	--	--	180	222	--
2.7	4	1.5	1.1	23	.2	10	30	8	140	--	--
4.6	5	1.5	1.8	29	.1	10	10	4	150	198	.16
3.5	4	1.4	1.8	28	.1	20	9	3	--	224	--
3.4	4	1.9	1.8	30	.2	20	30	10	160	--	187
6.6	7	1.7	33	31	.2	10	<10	3	140	233	1.2
5.8	7	1.6	2.7	36	.1	20	12	3	--	--	--
9.9	5	3.2	7.0	81	.3	60	10	5	240	--	.52
13	7	5.4	6.0	170	.4	60	10	4	180	--	.81
13	7	5.4	17	180	.3	70	<10	2	190	452	.01
12	6	4.4	4.7	130	.6	60	<3	3	220	--	--
63	26	3.7	18	310	.5	70	20	5	180	--	.66
54	25	3.1	13	250	.7	60	25	29	--	--	.29
6.7	4	2.5	5.8	59	.5	20	20	6	--	--	8.0
9.7	6	3.9	10	100	.4	50	30	2	--	--	24
190	33	8.4	18	920	.3	350	20	10	190	--	2.3
250	38	10	25	960	.2	290	40	70	190	1,630	<.01
170	37	6.8	30	760	.4	320	70	20	150	--	105
170	23	13	26	1,400	.5	240	30	10	170	2,150	1,410
150	37	5.4	22	660	.6	170	<3	20	--	--	172
6.6	8	1.7	3.7	2.7	.2	30	30	2	170	--	.20
6.4	8	1.9	3.7	<1.0	.2	30	<10	2	160	--	.05
4.7	9	1.4	2.5	6.0	.1	20	47	<3	110	133	1.3
50	30	2.1	8.1	95	.3	70	210	20	260	--	51
25	22	2.2	4.2	49	.2	50	<10	6	170	261	13
11	9	2	3.8	31	.3	50	<10	10	160	--	.78
11	10	1.9	18	28	.2	50	<10	4	180	251	.75
6.9	7	1.9	3.0	5.0	.4	60	<9	7	190	208	33
14	4	4.6	10	430	.3	170	<10	260	240	838	.01
12	4	4.3	12	370	.5	130	5	58	--	--	.17
190	53	3.7	23	280	.4	170	150	20	380	--	2.8
160	55	2.9	27	170	.3	190	<10	3	400	696	.29
160	47	3.3	13	290	.6	150	4	35	320	--	4.9
120	10	13	70	2,200	.5	350	60	30	110	--	.19
640	81	5.5	140	1,300	.5	320	50	10	300	--	2.3
640	84	3.6	180	1,100	.5	90	20	10	230	--	4.5
350	38	9.4	94	1,500	.4	310	60	350	120	--	.86
260	37	9	50	1,100	.3	360	50	230	200	1,840	<.01
310	36	6.9	72	1,400	.5	250	70	410	190	--	.31
420	70	6.7	160	950	.3	1,800	50	10	180	--	166
520	68	4.9	180	1,000	.6	120	<10	30	190	--	20
1,400	65	20	480	4,000	1.1	530	90	40	120	--	.20
1,300	62	23	350	3,700	1.2	820	80	150	100	6,040	.03
530	46	14	130	2,100	.6	580	80	120	120	--	.15
870	46	25	140	3,700	.6	900	70	490	100	5,530	<.01
490	47	13	70	1,900	.6	460	60	110	170	--	.01

Table 8.—Long-term U.S. Geological Survey streamflow-gaging stations within the boundary of the study area

[Data for the following stations are published annually. See U.S. Geological Survey (1982) and preceding reports in the same series.]

Station number: See U.S. Geological Survey (1982, p. 24) for explanation of the data-site numbering system.

Station number and name		Period of record
09337000	Pine Creek near Escalante	1957-82
09337500	Escalante River near Escalante	1971-82
09404450	East Fork Virgin River near Glendale	1966-82
09405420	North Fork Virgin River below Bulloch Canyon, near Glendale	1974-82
09405450	North Fork Virgin River above Zion Narrows, near Glendale	1978-82
10173450	Mammoth Creek above West Hatch Ditch, near Hatch	1964-82
10174500	Sevier River near Hatch	1939-82
10183900	East Fork Sevier River near Rubys Inn	1961-82
10241470	Center Creek above Parowan Creek, near Parowan	1964-82
10241600	Summit Creek near Summit	1964-82
10242000	Coal Creek near Cedar City	1938-82

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