WATER-QUANTITY AND WATER-QUALITY DATA FOR AN AREA LEASED TO BE SURFACE MINED FOR COAL IN NORTHWESTERN COLORADO

By Nancy E. Driver and Robert S. Williams, Jr.

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	*By*	*To obtain*
acre-foot	0.001233	cubic hectometer
cubic foot per second	0.02832	cubic meter per second
foot (ft)	0.3048	meter
inch (in.)	0.254	centimeter
mile (mi)	1.609	kilometer
square mile (mi^2)	2.590	square kilometer

Degree Fahrenheit (°F) may be converted to degree Celsius (°C) by using the following equation:

$$°C = 5/9\ (°F-32)$$

Degree Celsius (°C) may be converted to degree Fahrenheit (°F) by using the following equation:

$$°F = 9/5\ (°C) + 32$$

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

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ABSTRACT

Hydrologic data were collected and compiled for 27 bedrock wells, 13 alluvial wells, 1 streamflow-gaging station, and 2 precipitation gages in the Sage Creek drainage basin in northwestern Colorado. Water-quality data were collected and compiled for nine bedrock wells, three alluvial wells, and one streamflow-gaging station in the study area. The purpose of the data collection was to define the undisturbed hydrology and water quality of an area before surface coal mining begins. Hydrologic changes during and after surface coal mining then can be detected if monitoring is continued. Data collected include water-level measurements, streamflow measurements, water-quality samples from bedrock and alluvial wells, water-quality samples from Sage Creek, and total monthly precipitation. This report describes sampling-site locations, methods of data collection, quality assurance, and data compilation and lists the water-quantity and water-quality data collected during the study. Sampling began in July 1980 and continued through October 1983.

INTRODUCTION

The Sage Creek drainage basin in northwestern Colorado contains an undisturbed area that has been leased for potential surface mining of coal. The drainage basin presented a unique opportunity to monitor an area before, during, and after mining. Mining was to begin in the 1980's, and data were collected to describe the undisturbed hydrologic conditions. However, mining did not begin as planned, and the study done by the U.S. Geological Survey, in cooperation with the U.S. Bureau of Land Management, was discontinued before data quality assurance, data compilation, data analysis, and reports could be completed. Presently (1990), surface-coal-mining activities may begin in the basin during the 1990's. Consequently, interest is renewed in the data originally collected at the site. Those data collected can be used to describe premine hydrologic conditions.

Purpose and Scope

This report describes sampling-site locations, summarizes types of data collected, describes methods of data collection, quality assurance, and data completion and lists water-level data for bedrock and alluvial wells, discharge data, water-quality data for ground and surface water, and precipitation data. Data collected from July 1980 to October 1983 are presented for 27 bedrock wells, 13 alluvial wells, 1 streamflow-gaging station, and 2 precipitation gages. Included are intermittent and continuous water-level data for the bedrock and alluvial wells, daily mean discharge data for Sage Creek above Sage Creek Reservoir, near Hayden, and monthly precipitation values. Selected water-quality properties were measured, and water samples were collected from selected wells and Sage Creek for concentrations of ions, nutrients, and trace elements.

Acknowledgments

The authors greatly appreciate the cooperation of Leonard Yoast and his family, of Hayden, Colo., whose knowledge of the area was extremely helpful during the study. In addition, the staff of Peabody Coal provided equipment and expertise that are gratefully acknowledged.

DESCRIPTION OF STUDY AREA

The study area is 25 mi west and 8 mi south of Steamboat Springs, Colo., within the Sage Creek drainage basin and within an unnamed drainage basin (figs. 1 and 2). The Sage Creek drainage-basin area is approximately 4 mi^2 and ranges in altitude from 7,300 to 8,400 ft. The unnamed drainage-basin area is approximately 2 mi^2 and ranges in altitude from 6,700 to 7,600 ft. The area of potential surface coal mining (fig. 1) is approximately 2 mi^2, has a westerly aspect, and ranges in altitude from 7,300 to 7,900 ft. The vegetation in the area is typified by sage brush, oak brush, and aspen. This semi-arid area has an average yearly rainfall of 16 in., and the average monthly temperatures range from -14 °F to 68 °F (National Oceanic and Atmospheric Association, 1978). Sage Creek, the main drainage, flows to the north. Intermittent tributaries primarily enter Sage Creek from the east (fig. 2).

The study area is underlain by the Williams Fork Formation, which is part of the Upper Cretaceous Mesaverde Group (Bass and others, 1955). The general geology of the area is shown in figure 3. Structurally, the area lies between the Fish Creek anticline to the east and the Sage Creek anticline to the west. The bedding dips predominantly to the northwest. The Twentymile Sandstone Member (Williams Fork Formation) bounds the study area on the north, and the Trout Creek Sandstone Member, the uppermost unit in the Iles Formation, forms the east, south, and west boundaries. The two major coal seams lying stratigraphically between the above-mentioned sandstones are the Lennox and Wadge. The Wadge coal seam is the most commonly mined coal in the Williams Fork Formation.

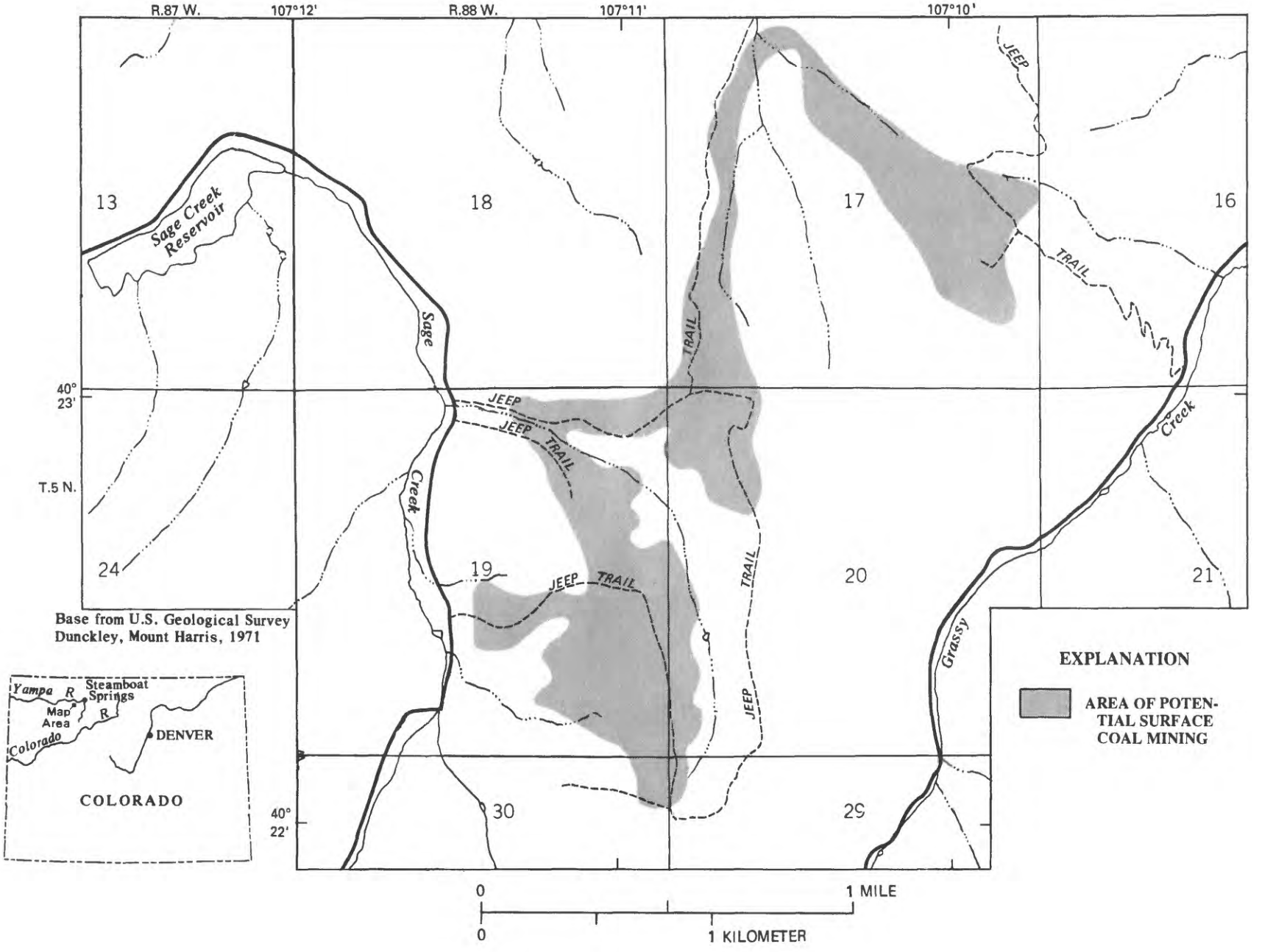

Figure 1.--Location of study area and area of potential surface coal mining.

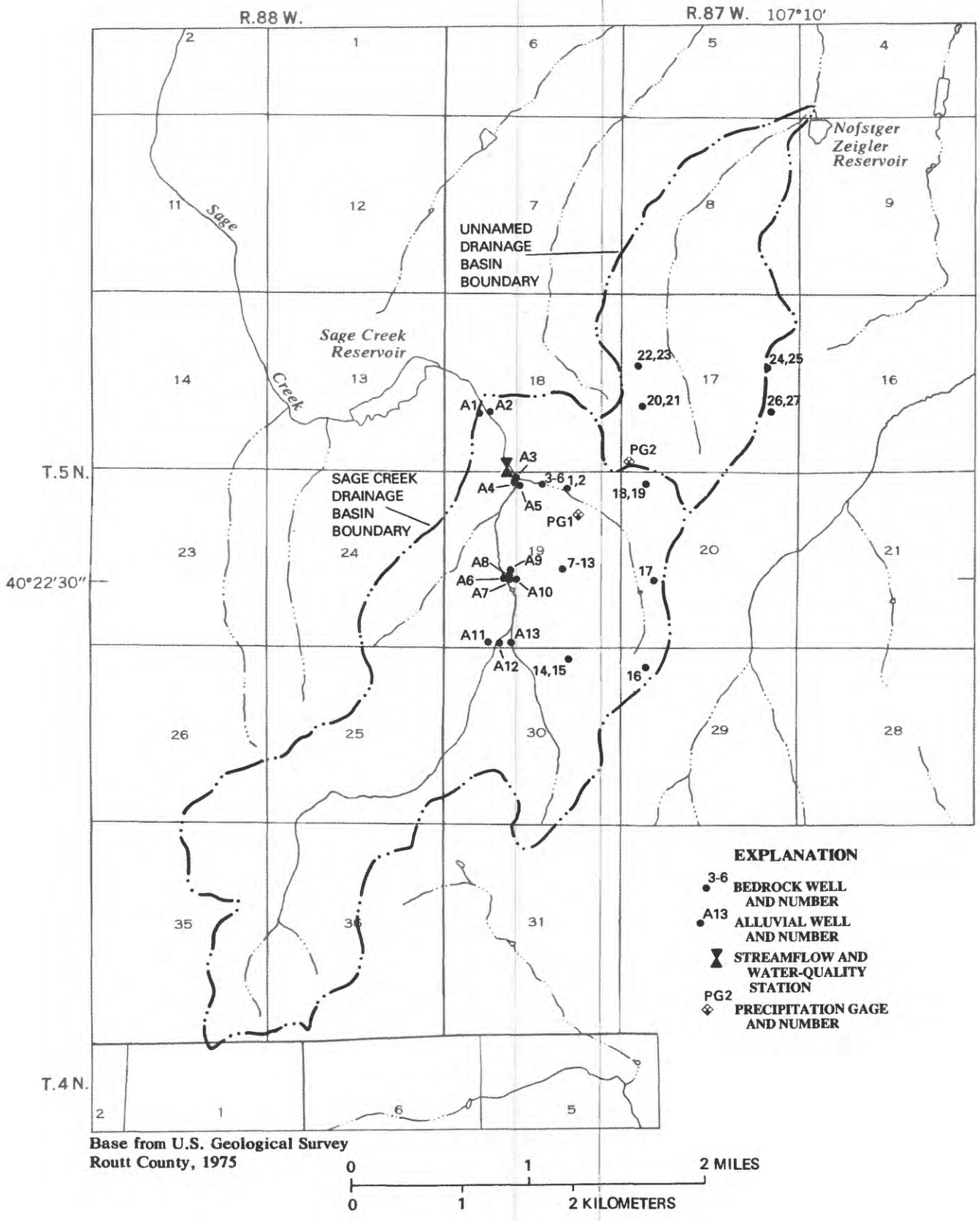

Figure 2.--Location of drainage basins and sites for collection of hydrologic data.

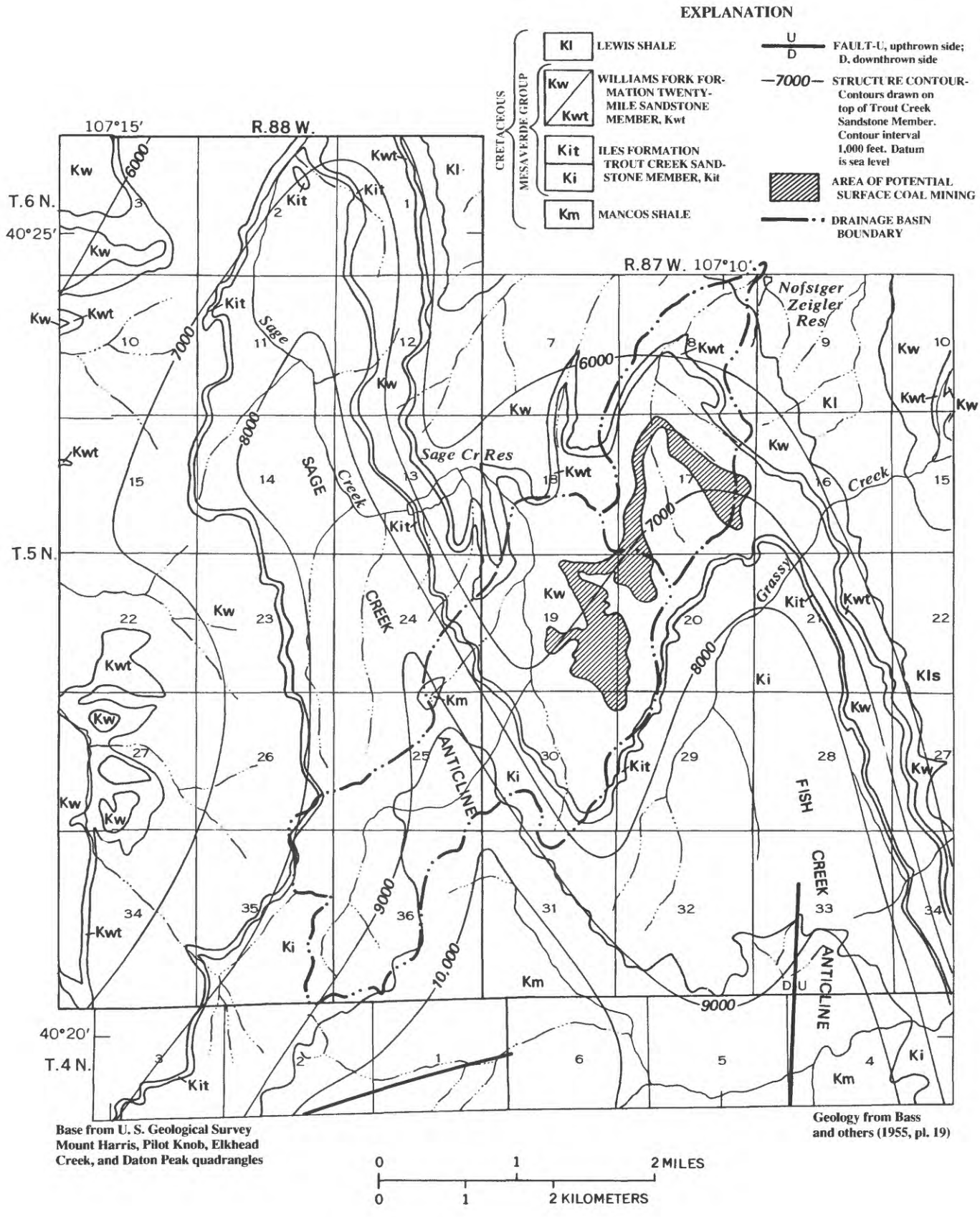

Figure 3.--Generalized geology of Sage Creek study area (modified from Williams and Driver, 1982).

SAMPLING-SITE LOCATIONS

Twenty-seven bedrock and 13 alluvial wells (fig. 2), which are located in and near the area of potential mining, were completed within the Sage Creek study area. The wells were completed in several stratigraphic zones--overburden of the Lennox coal seam (LO), Lennox coal seam (L), overburden of the Wadge coal seam (WO), Wadge coal seam (W), underburden of the Wadge coal seam (WU), and alluvium (AL) (tables 1 and 2). Summaries of geologic and geophysical logs and well-completion information for bedrock and alluvial wells are reported in Williams and Driver (1982).

Table 1.--*General information on bedrock wells*

[WO, overburden of the Wadge coal seam; W, Wadge coal seam; LO, overburden of the Lennox coal seam; L, Lennox coal seam; WU, underburden of the Wadge coal seam]

Well number	Latitude	Longitude	Zone of completion	Water-quality samples collected
1	40°22'57"	107°11'16"	WO	Yes
2	40°22'56"	107°11'14"	W	Yes
3	40°22'56"	107°11'18"	LO	No
4	40°22'56"	107°11'18"	LO	Yes
5	40°22'56"	107°11'18"	L	Yes
6	40°22'56"	107°11'18"	L	Yes
7	40°22'31"	107°11'16"	W	No
8	40°22'31"	107°11'16"	WO	No
9	40°22'31"	107°11'16"	WO	Yes
10	40°22'31"	107°11'16"	WO	No
11	40°22'31"	107°11'16"	W	No
12	40°22'31"	107°11'16"	W	No
13	40°22'31"	107°11'16"	WU	No
14	40°22'05"	107°11'11"	W	No
15	40°22'05"	107°11'11"	WO	No
16	40°22'03"	107°10'42"	WU	No
17	40°22'28"	107°10'40"	WU	No
18	40°22'57"	107°10'43"	W	Yes
19	40°22'57"	107°10'43"	WO	No
20	40°23'20"	107°10'45"	WO	No
21	40°23'20"	107°10'45"	W	No
22	40°23'33"	107°10'42"	WO	No
23	40°23'33"	107°10'42"	W	Yes
24	40°23'32"	107°09'57"	W	No
25	40°23'32"	107°09'57"	WO	Yes
26	40°23'19"	107°09'55"	W	No
27	40°23'19"	107°09'55"	WO	No

Table 2.--*General information on alluvial wells*

[AL, alluvium]

Well number	Latitude	Longitude	Zone of completion	Water quality sampled
A1	40°23'16"	107°11'43"	AL	Yes
A2	40°23'17"	107°11'41"	AL	No
A3	40°22'59"	107°11'32"	AL	No
A4	40°22'58"	107°11'32"	AL	No
A5	40°22'57"	107°11'31"	AL	No
A6	40°22'31"	107°11'37"	AL	No
A7	40°22'31"	107°11'35"	AL	No
A8	40°22'33"	107°11'35"	AL	Yes
A9	40°22'32"	107°11'35"	AL	No
A10	40°22'31"	107°11'33"	AL	No
A11	40°22'11"	107°11'41"	AL	No
A12	40°22'10"	107°11'40"	AL	Yes
A13	40°22'10"	107°11'38"	AL	No

A streamflow-gaging station (09244415, Sage Creek above Sage Creek Reservoir, near Hayden) was installed along Sage Creek near the outlet of the study drainage basin (fig. 2). At an altitude of 7,400 ft (fig. 2), near bedrock wells 1 and 2 and at an altitude of 7,700 ft near bedrock wells 18 and 19, rain gages were installed for monitoring of precipitation.

METHODS OF DATA COLLECTION, QUALITY ASSURANCE, AND COMPILATION

Most of the water levels in the wells were measured approximately monthly by using a steel tape. Stream stage was continuously monitored at the station. The recorded stream stage was used to obtain discharge by using a stage-discharge rating curve.

Specific conductance, pH, water temperature, and dissolved oxygen were recorded for each water-quality sample collected at the selected ground-water sampling sites and at the Sage Creek streamflow-gaging station. Three well-casing volumes of water were removed from the bedrock and alluvial wells before water-quality sampling. Water quality was sampled on an intermittent basis for six bedrock wells and once for three bedrock wells. Water quality was sampled on an intermittent basis for three alluvial wells. The water samples were analyzed for ions, nutrients, and trace elements. Water quality at the Sage Creek streamflow-gaging station was sampled for ions, nutrients, and trace elements. Water-quality samples collected at the streamflow-gaging station were depth-integrated when sufficient flow was available. The water-quality samples were analyzed at the U.S. Geological Survey laboratory in Arvada, Colo. Precipitation was monitored throughout the year by using weighing-bucket rain gages.

Standard water-quality assurance practices were performed on all data in the laboratory (Friedman and Erdmann, 1982). In addition, water-quantity, water-quality, and precipitation data were plotted to detect outliers. Data were analyzed to determine if outliers or trends were present. Cation-anion balances were checked for all water-quality data. The linear relation between specific conductance and dissolved solids was graphically and statistically verified. If obvious data-input errors were detected, if field notes implied a possible problem with the sample, or if laboratory results were questionable, the data were deleted.

RESULTS

The results of the data collected and compiled during this study are presented in the "Hydrologic Data" section at the back of this report. Hydrographs for selected bedrock and alluvial wells are shown in figures 4 and 5, and water-level data are listed in tables 3 and 4. Hydrographs for flowing or dry bedrock wells were not plotted. Discharge for streamflow-gaging station, Sage Creek above Sage Creek Reservoir, near Hayden, is reported as daily mean values in table 5, and a discharge hydrograph is shown in figure 6.

Water-quality data for selected bedrock and alluvial wells and for the Sage Creek streamflow-gaging station are listed in tables 6 through 8. Piper trilinear diagrams showing water type for the bedrock and alluvial wells and for Sage Creek are shown in figures 7 through 10. Monthly precipitation values from samples collected from the two weighing-bucket rain gages are listed in table 9.

REFERENCES CITED

Bass, N.W., Eby, J.B., and Campbell, M.R., 1955, Geology and mineral fuels of parts of Routt and Moffat Counties, Colorado: U.S. Geological Survey Bulletin 1027-D, p. 143-182.

Friedman, L.C., and Erdmann, D.E., 1982, Quality assurance practices for the chemical and biological analyses of water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, bk. 5, chap. A6, 181 p.

National Oceanic and Atmospheric Administration, 1978, Climatological data, annual summary, Colorado, 1978: U.S. Department of Commerce, Environmental Data and Information Service, v. 83, no. 13, 16 p.

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HYDROLOGIC DATA

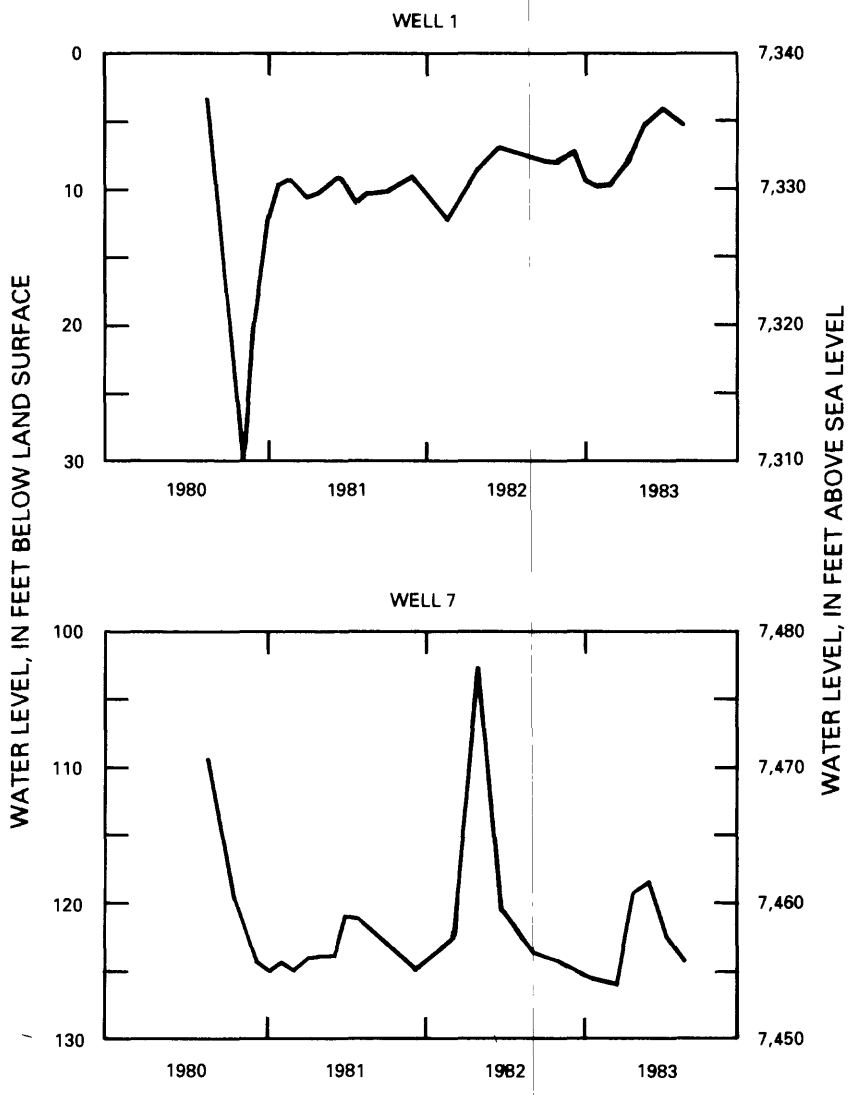


Figure 4.--Hydrographs of selected bedrock wells.

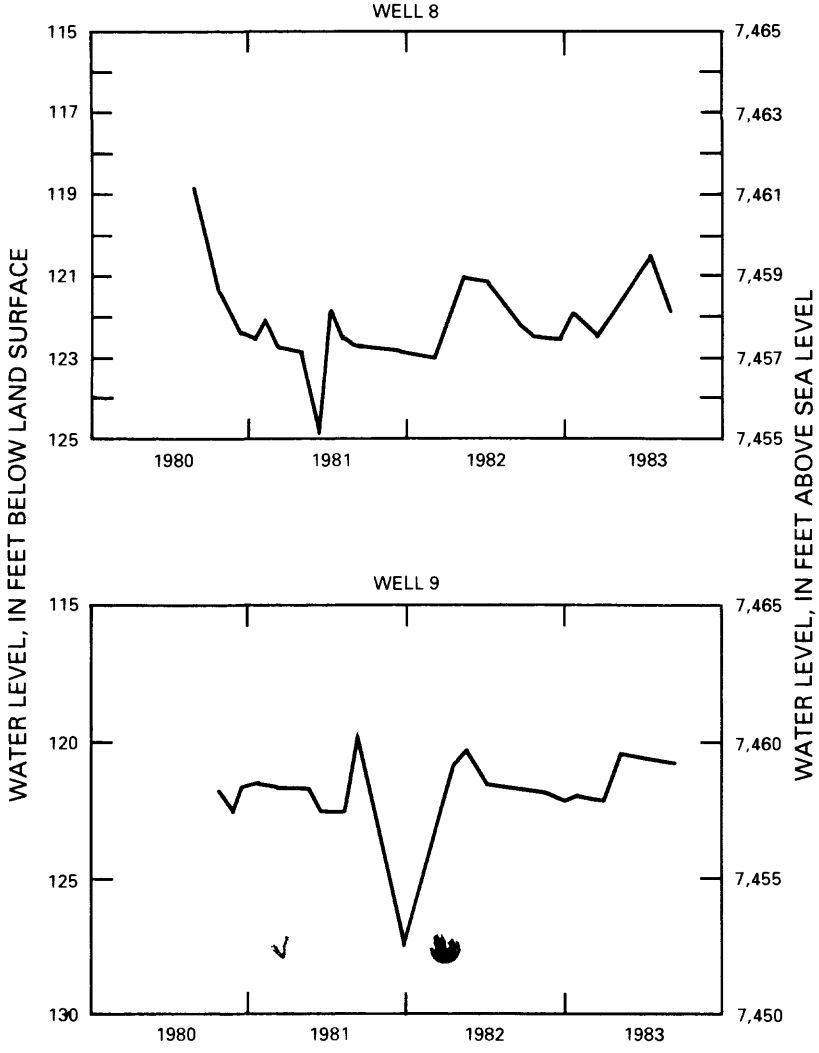


Figure 4.--Hydrographs of selected bedrock wells--Continued.

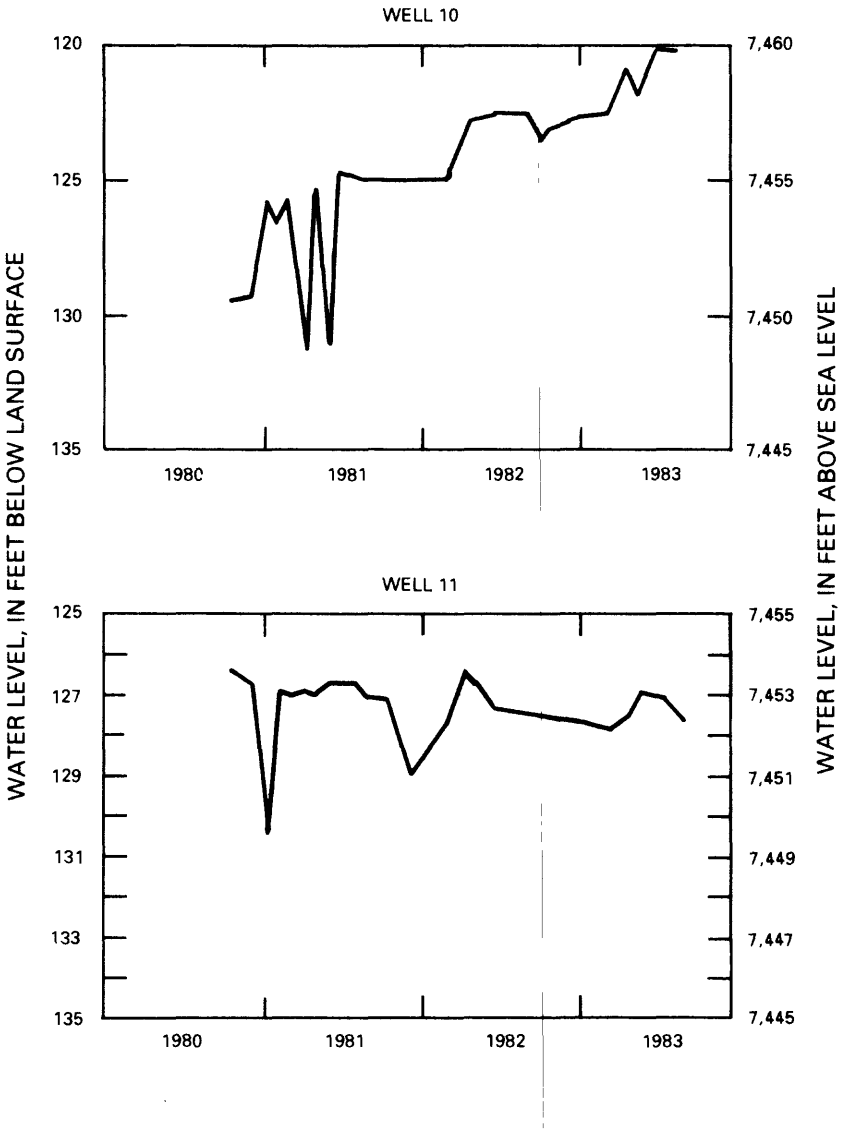


Figure 4.--Hydrographs of selected bedrock wells--Continued.

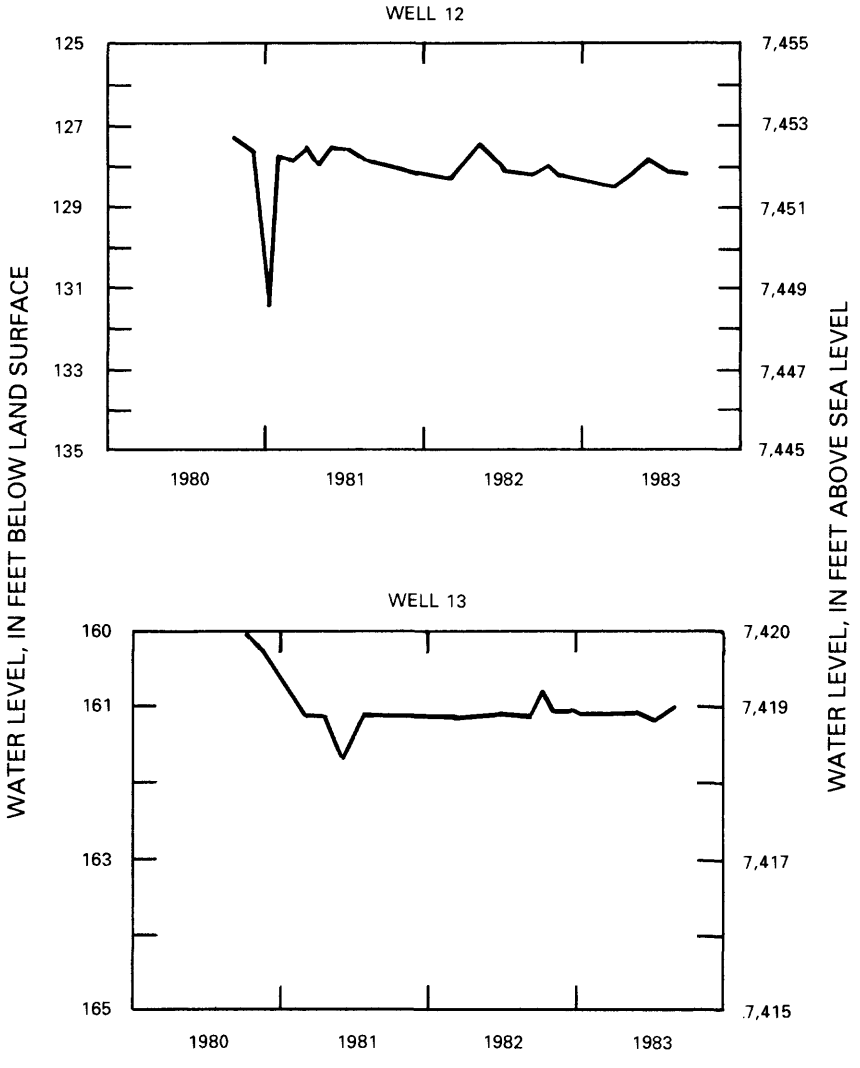


Figure 4.--Hydrographs of selected bedrock wells--Continued.

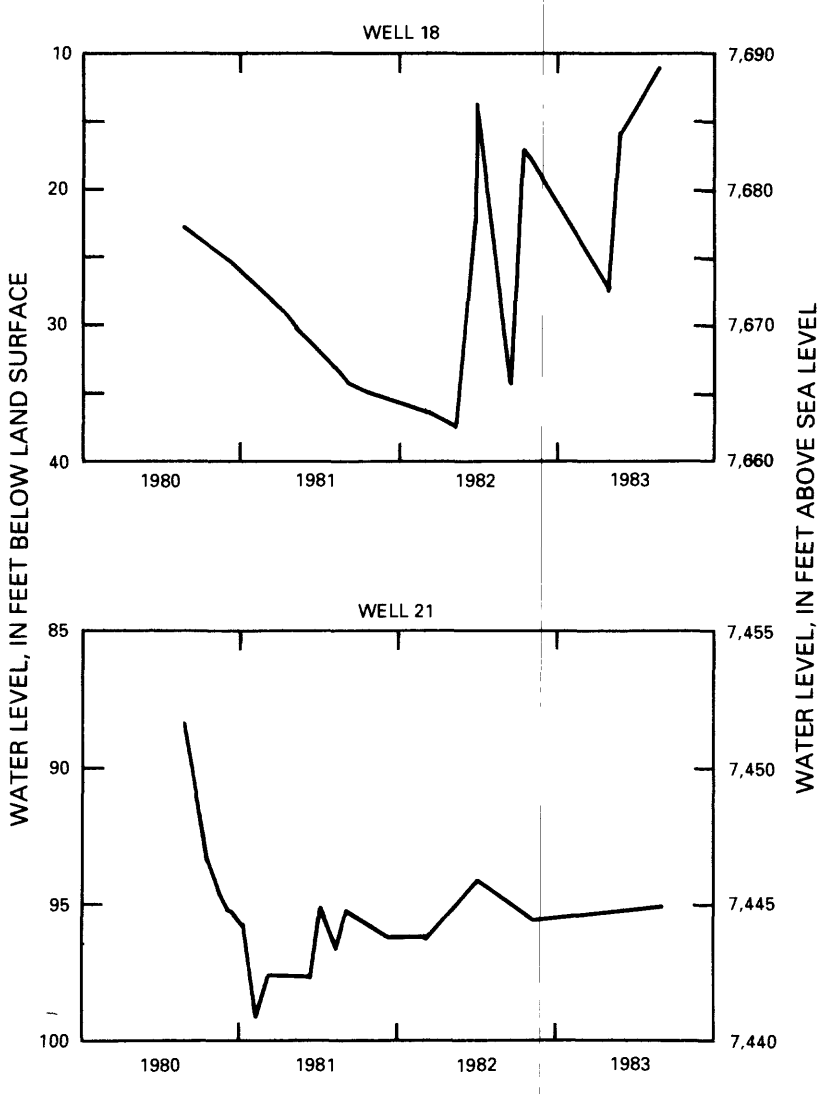


Figure 4.--Hydrographs of selected bedrock wells--Continued.

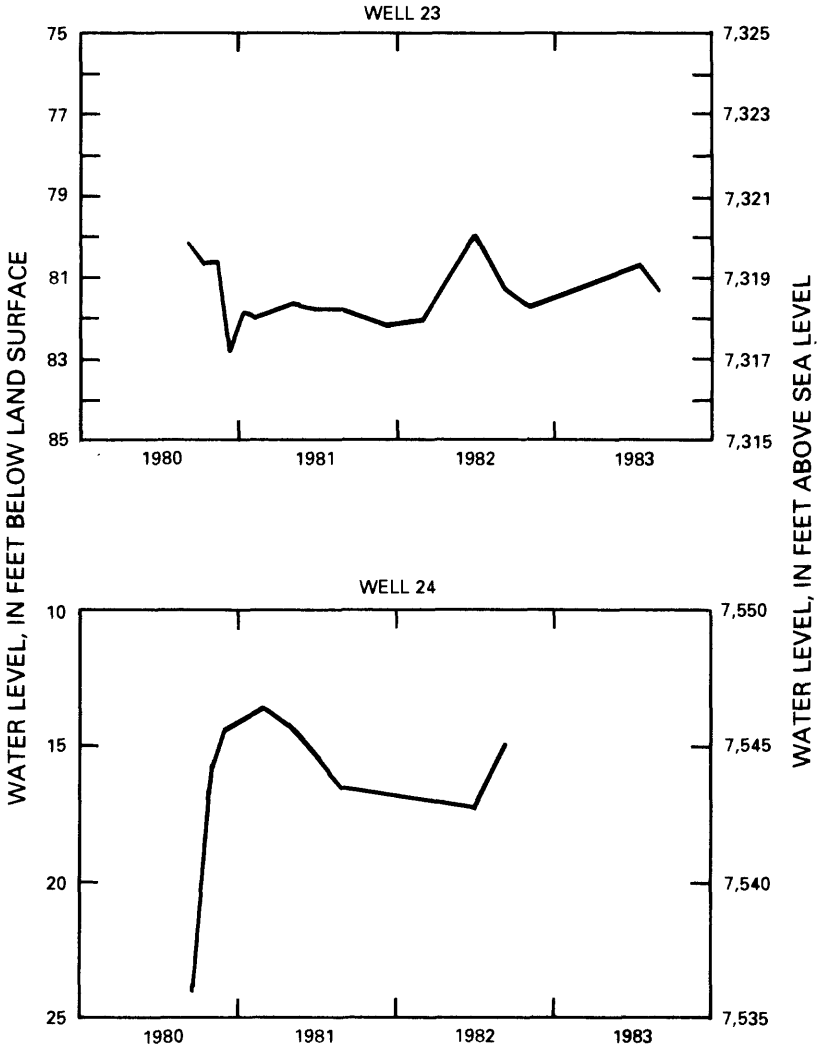


Figure 4.--Hydrographs of selected bedrock wells--Continued.

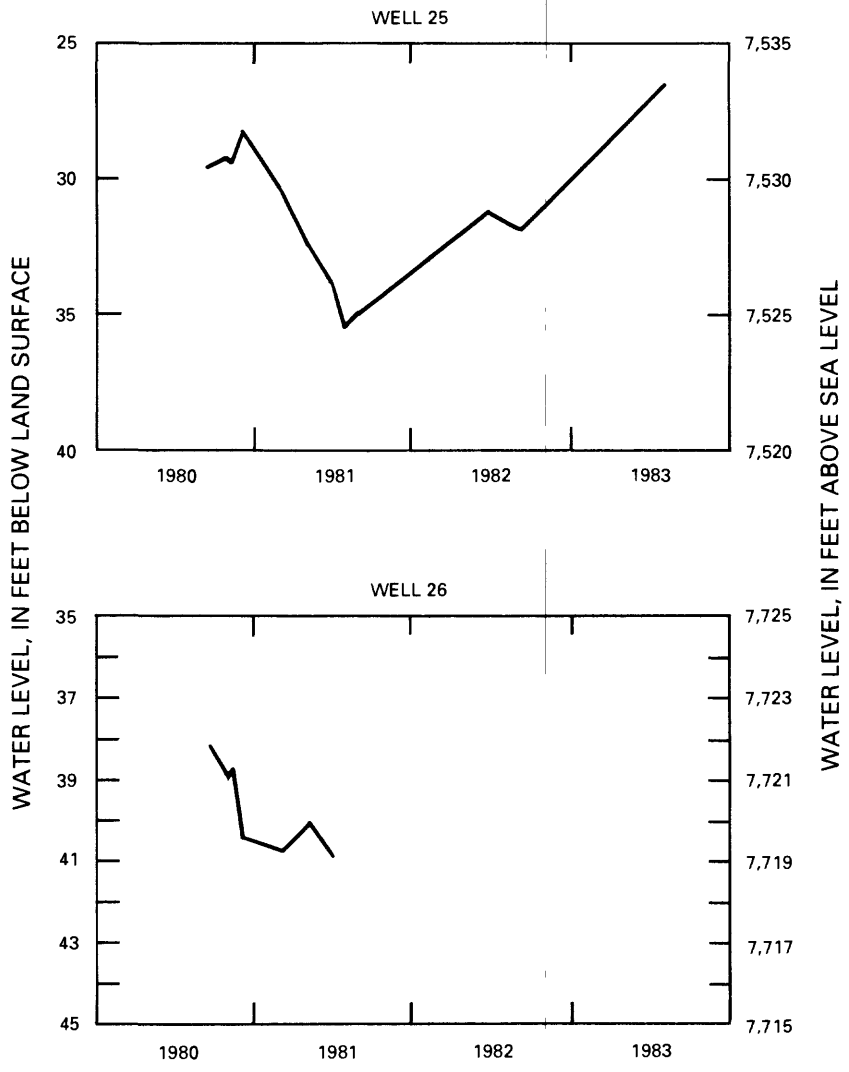


Figure 4.--Hydrographs of selected bedrock wells--Continued.

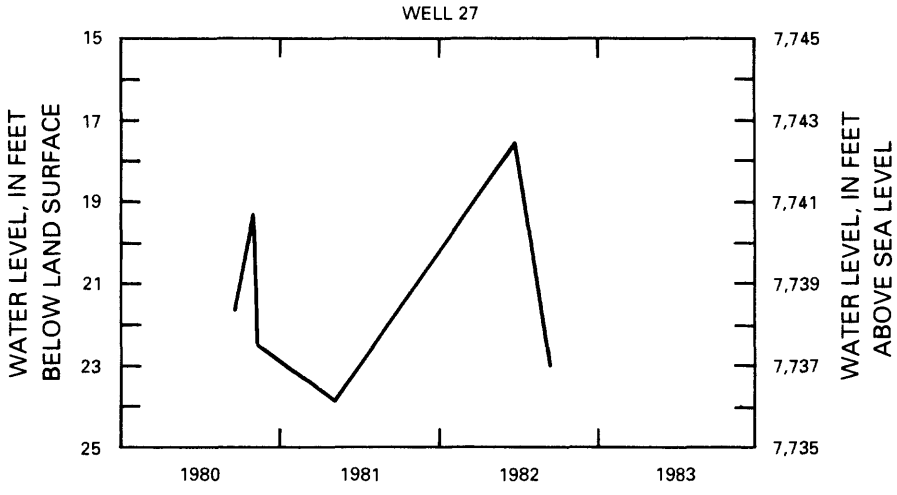


Figure 4.--Hydrographs of selected bedrock wells--Continued.

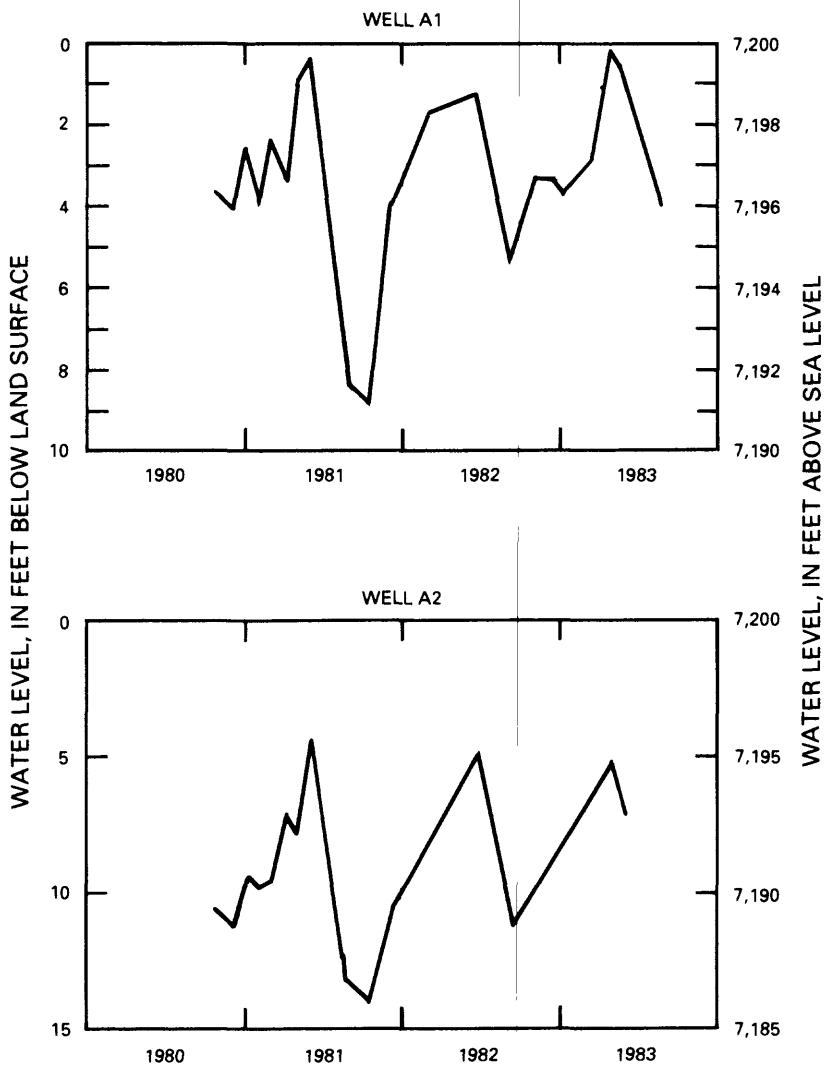


Figure 5.--Hydrographs of alluvial wells.

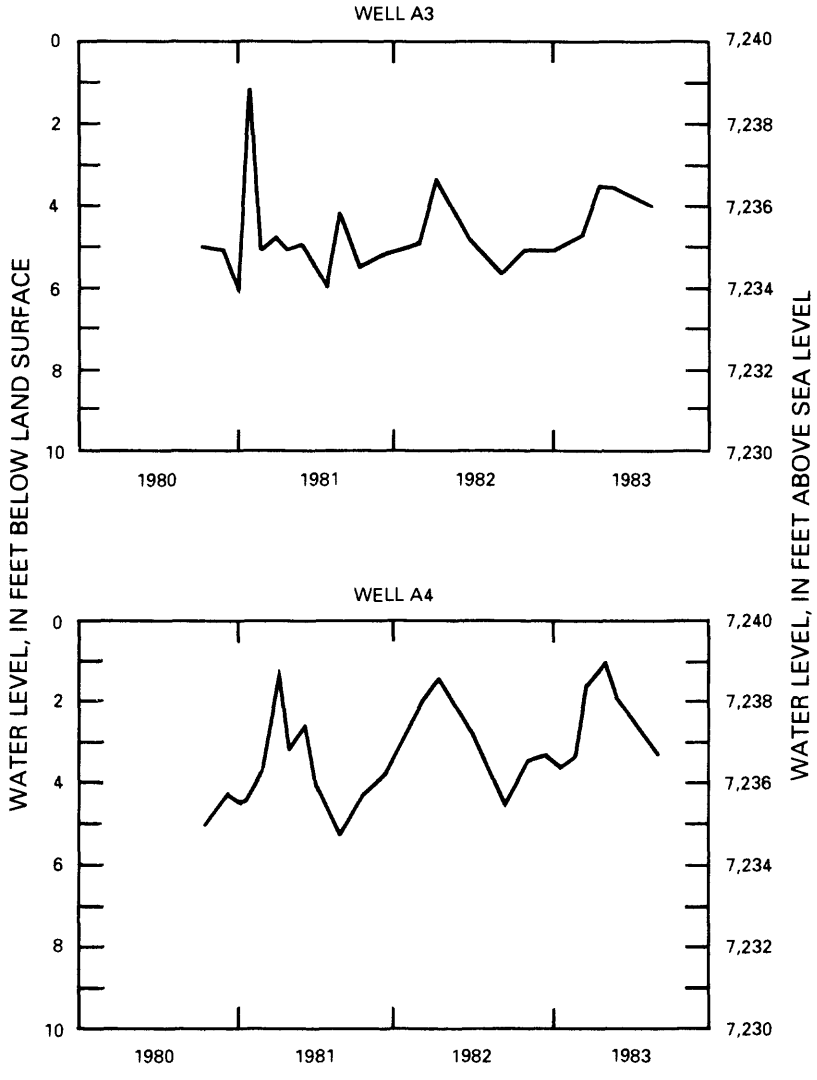


Figure 5.--Hydrographs of alluvial wells--Continued.

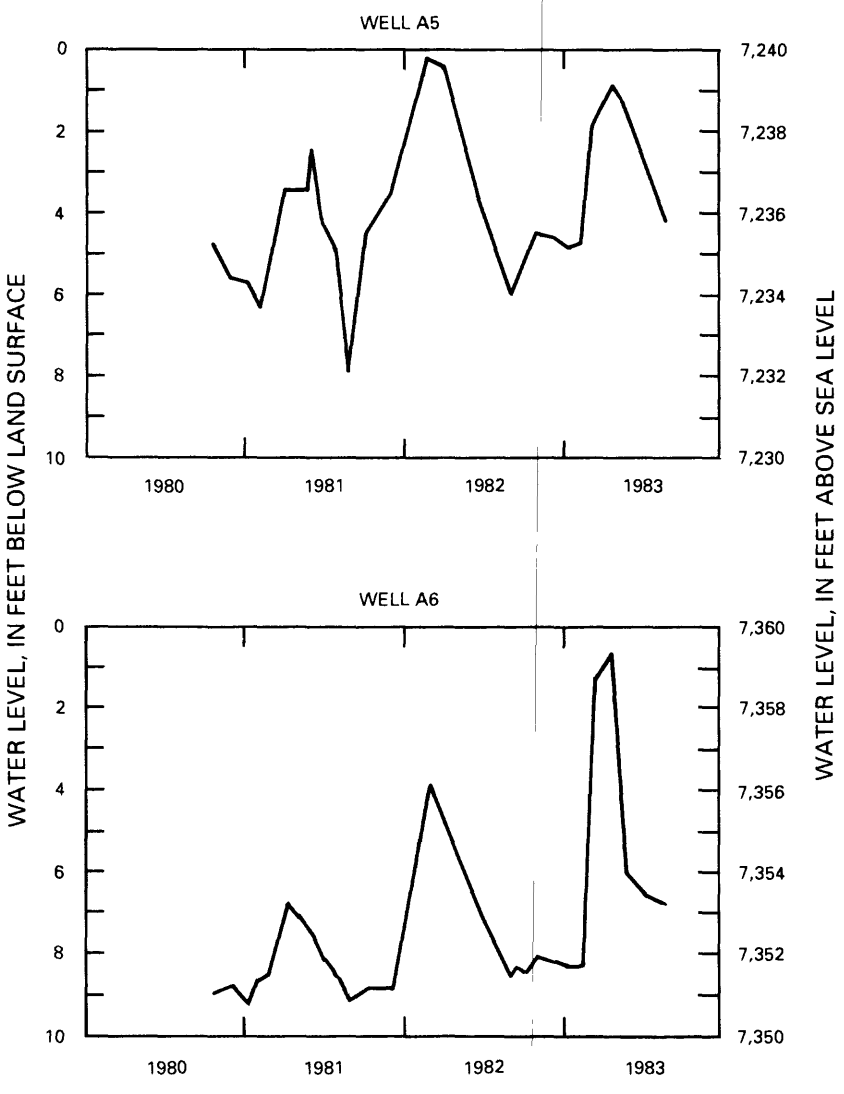


Figure 5.--Hydrographs of alluvial wells--Continued.

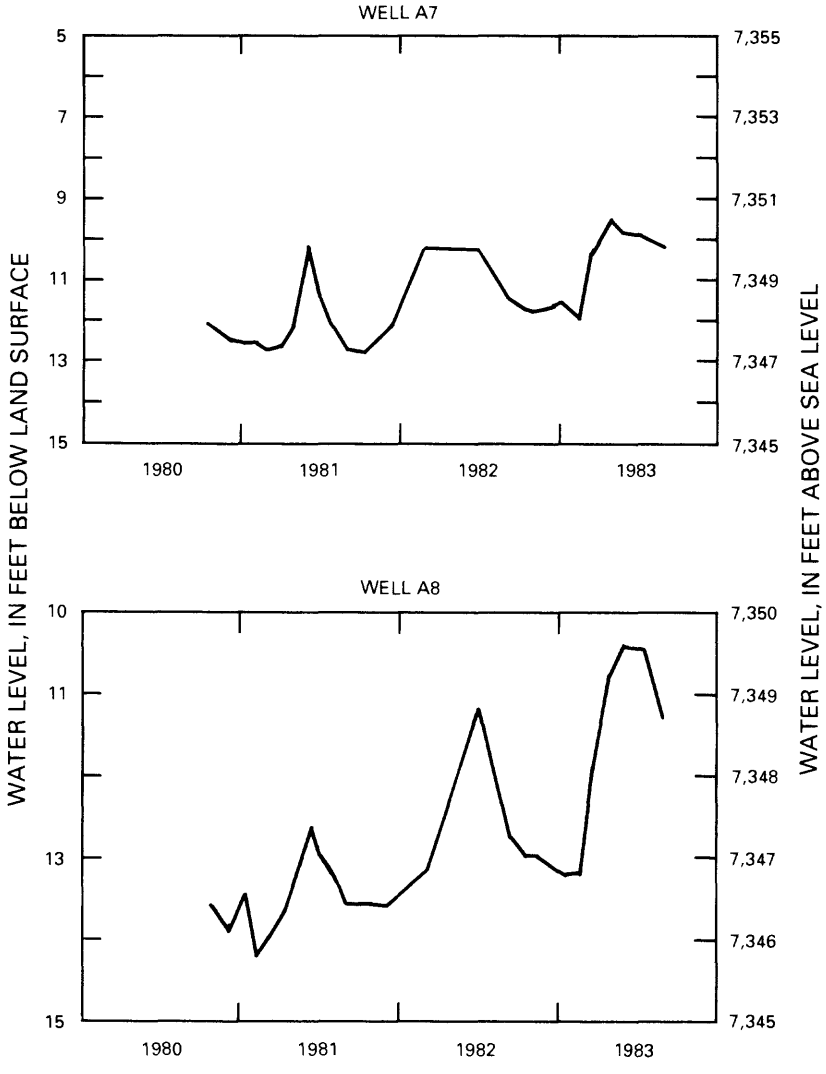
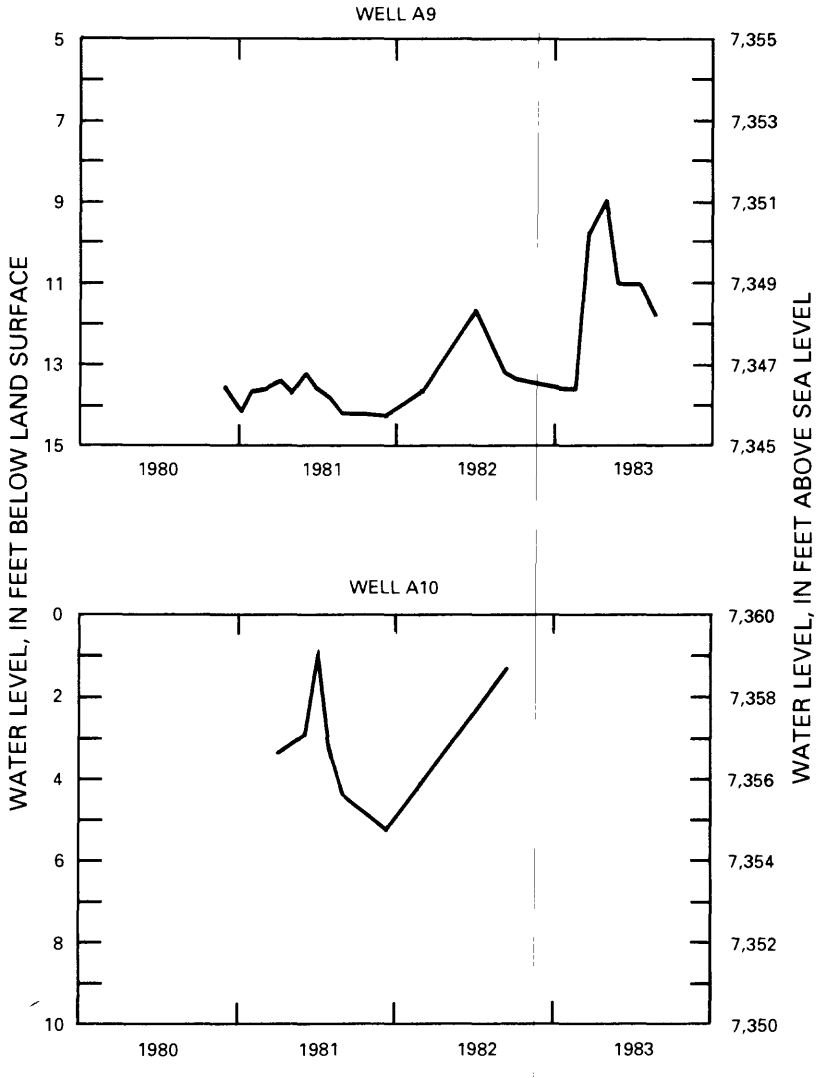


Figure 5.--Hydrographs of alluvial wells--Continued.



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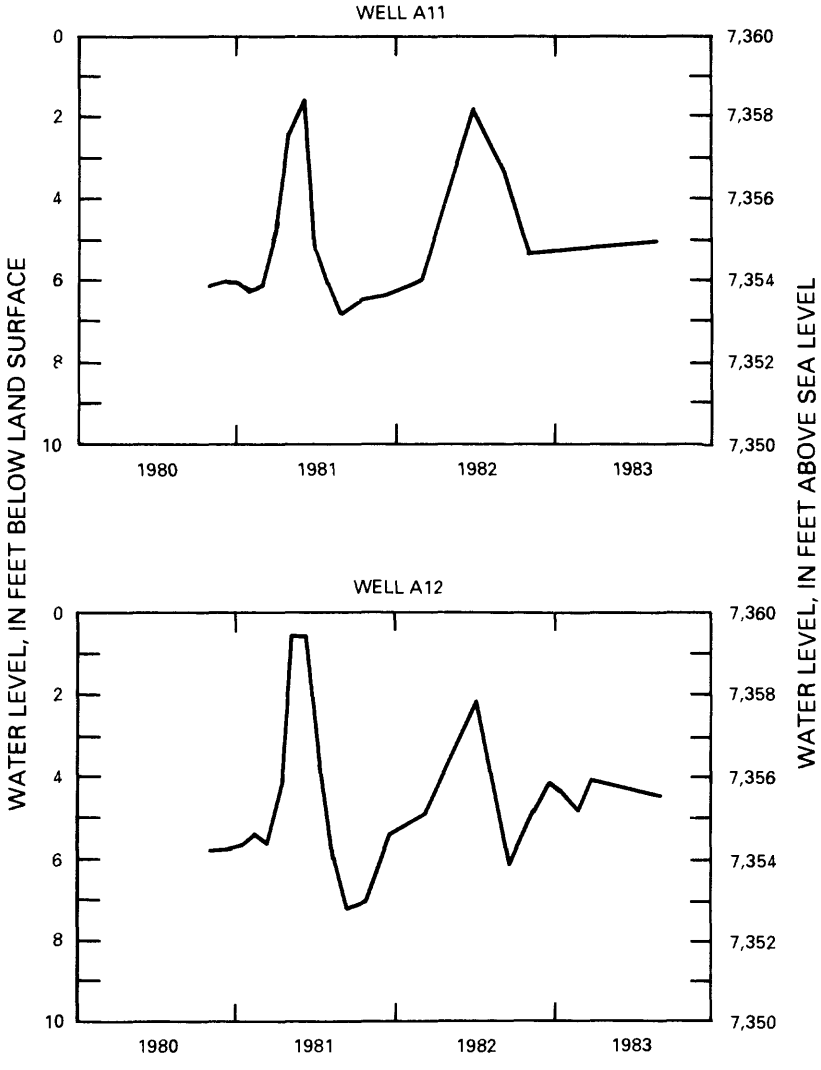

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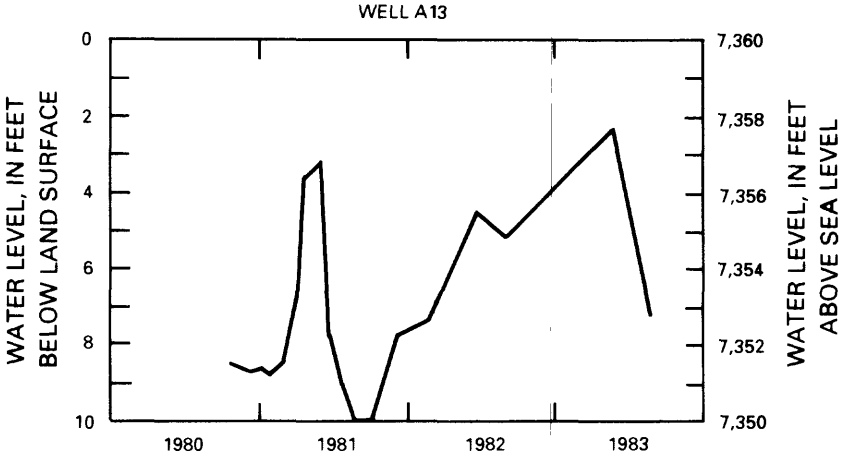

Figure 5.--Hydrographs of alluvial wells--Continued.

Table 3.--*Water-level data for bedrock wells*

[Well number corresponds to sites listed in table 1. G, flowing well is nearby; --, no water-level data; F, well is flowing; -, well is not flowing and no well is nearby; D, dry well]

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
1	08-21-80	3.44	G
	11-11-80	29.77	G
	12-04-80	20.26	G
	01-09-81	12.25	G
	02-03-81	9.78	G
	03-02-81	9.41	G
	04-08-81	10.72	G
	05-06-81	10.37	G
	06-03-81	9.43	G
	06-30-81	9.18	G
	07-30-81	11.15	G
	08-30-81	10.45	G
	10-15-81	10.29	G
	12-08-81	9.12	G
	03-02-82	12.50	G
	05-05-82	8.73	G
	06-25-82	6.99	G
	10-14-82	8.02	G
	11-03-82	8.08	G
	12-17-82	7.42	G
	01-11-83	9.67	G
	02-16-83	10.01	G
	03-14-83	9.86	G
	04-28-83	7.72	G
	05-27-83	5.49	G
	07-13-83	4.10	G
	08-25-83	5.42	G
2	08-21-80	--	F
	10-15-80	23.52	G
	12-04-80	--	F
	01-09-81	--	F
	02-03-81	--	F
	03-02-81	--	F
	04-08-81	--	F
	05-06-81	--	F
	06-03-81	--	F
	06-30-81	--	F

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
2--Continued	07-30-81	--	F
	08-30-81	--	F
	12-08-81	--	F
	03-03-82	--	F
	05-05-82	--	F
	06-25-82	--	F
	10-14-82	--	F
	11-03-82	--	F
	12-17-82	--	F
	01-11-83	--	F
	02-16-83	--	F
	03-14-83	--	F
	04-28-83	--	F
	05-27-83	--	F
	07-13-83		F
	08-25-83	--	F
3	10-15-80	--	F
	12-04-80	--	F
	01-09-81	--	F
	02-03-81	--	F
	03-05-81	--	F
	04-08-81	--	F
	05-06-81	--	F
	06-30-81	-3.20	F
	07-30-81	-3.20	F
4	10-15-80	--	F
	12-04-80	--	F
	01-09-81	--	F
	02-03-81	--	F
	03-05-81	--	F
	04-08-81	--	F
	05-06-81	--	F
	06-30-81	-2.95	F
	07-30-81	-2.95	F
5	10-15-80	--	F
	12-04-80	--	F
	01-09-81	--	F
	02-03-81	--	F
	03-05-81	--	F
	04-08-81	--	F
	05-06-81	--	F
	06-30-81	--	F
	07-30-81	-2.43	F

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
6	10-15-80	--	F
	12-04-80	--	F
	01-09-81	--	F
	02-03-81	--	F
	03-05-81	--	F
	04-08-81	--	F
	05-06-81	--	F
	06-30-81	--	F
	07-30-81	--	F
7	08-21-80	109.37	-
	10-15-80	119.41	-
	12-04-80	124.23	-
	01-09-81	124.96	-
	02-03-81	124.37	-
	03-05-81	125.01	-
	04-08-81	124.00	-
	04-30-81	123.86	-
	06-03-81	123.86	-
	06-30-81	121.02	-
	07-30-81	121.10	-
	08-30-81	122.10	-
	12-08-81	124.90	-
	03-04-82	122.60	-
	05-06-82	102.53	-
	06-25-82	120.52	-
	09-09-82	123.65	-
	11-03-82	124.30	-
	12-17-82	125.07	-
	01-12-83	125.47	-
	03-14-83	125.91	-
	04-28-83	119.16	-
	05-27-83	118.24	-
	07-13-83	122.40	-
	08-25-83	124.26	-
8	08-21-80	118.83	-
	10-15-80	121.40	-
	12-04-80	122.44	-
	01-09-81	122.60	-
	02-03-81	122.11	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
8--Continued	03-05-81	122.78	-
	04-08-81	122.85	-
	04-30-81	122.94	-
	06-03-81	124.88	-
	06-30-81	121.88	-
	07-30-81	122.55	-
	08-30-81	122.78	-
	12-08-81	122.96	-
	03-04-82	123.12	-
	05-06-82	121.12	-
	06-25-82	121.22	-
	09-09-82	122.26	-
	10-14-82	122.56	-
	11-03-82	122.60	-
	12-17-82	122.62	-
	01-12-83	121.95	-
	03-14-83	122.61	-
	07-13-83	120.55	-
	08-25-83	121.94	-
9	10-15-80	121.70	-
	11-12-80	122.56	-
	12-04-80	121.65	-
	01-09-81	121.52	-
	02-03-81	121.64	-
	03-05-81	121.70	-
	04-08-81	121.69	-
	05-07-81	121.69	-
	06-03-81	122.52	-
	06-30-81	122.55	-
	07-30-81	122.55	-
	08-30-81	119.72	-
	12-15-81	127.57	-
	03-04-82	122.84	-
	03-22-82	121.66	-
	04-08-82	120.80	-
	05-06-82	120.19	-
	06-25-82	121.54	-
	09-09-82	121.73	-
	10-14-82	121.77	-
	11-03-82	121.85	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
9--Continued	12-17-82	122.15	-
	01-12-83	121.98	-
	03-14-83	122.14	-
	04-28-83	120.38	-
	05-27-83	120.49	-
	08-25-83	120.78	-
10	10-15-80	129.53	-
	12-04-80	129.34	-
	01-09-81	125.76	-
	02-03-81	126.59	-
	03-05-81	125.73	-
	04-08-81	131.20	-
	05-07-81	125.43	-
	06-04-81	131.01	-
	06-30-81	124.81	-
	07-30-81	124.91	-
	08-30-81	125.04	-
	12-08-81	125.08	-
	03-04-82	125.08	-
	05-06-82	122.87	-
	06-25-82	122.65	-
	09-09-82	122.67	-
	10-14-82	123.64	-
	11-03-82	123.17	-
	12-17-82	122.91	-
	01-12-83	122.79	-
	03-14-83	122.71	-
	04-28-83	121.12	-
	05-27-83	122.10	-
	07-13-83	120.32	-
	08-25-83	120.41	-
11	10-15-80	126.47	-
	11-12-80	126.67	-
	12-04-80	126.79	-
	01-09-81	130.33	-
	02-03-81	126.91	-
	03-05-81	126.96	-
	04-08-81	126.88	-
	05-07-81	126.98	-
	06-04-81	126.71	-
	06-30-81	126.71	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
11--Continued	07-30-81	126.73	-
	08-30-81	127.07	-
	10-15-81	127.11	-
	12-08-81	128.98	-
	03-04-82	127.63	-
	04-08-82	126.51	-
	05-06-82	126.75	-
	06-25-82	127.36	-
	09-09-82	127.49	-
	11-03-82	127.55	-
	12-17-82	127.67	-
	01-12-83	127.67	-
	03-14-83	127.88	-
	04-28-83	127.45	-
	05-27-83	126.89	-
	07-13-83	127.00	-
	08-25-83	127.53	-
12	10-15-80	127.30	-
	12-04-80	127.62	-
	01-09-81	131.48	-
	02-03-81	127.78	-
	03-05-81	127.87	-
	04-08-81	127.58	-
	04-30-81	127.97	-
	06-04-81	127.60	-
	06-30-81	127.60	-
	07-30-81	127.78	-
	08-30-81	127.98	-
	12-08-81	128.22	-
	03-04-82	128.34	-
	05-06-82	127.54	-
	06-25-82	128.12	-
	09-09-82	128.21	-
	10-14-82	128.00	-
	11-03-82	128.28	-
	12-17-82	128.38	-
	01-12-83	128.46	-
	03-14-83	128.62	-
	04-28-83	128.21	-
	05-27-83	127.86	-
	07-13-83	128.18	-
	08-25-83	128.26	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
13	10-15-80	160.09	-
	11-12-80	160.22	-
	12-04-80	--	D
	01-09-81	--	D
	02-03-81	--	D
	03-05-81	161.15	-
	04-08-81	161.13	-
	04-30-81	161.15	-
	06-04-81	161.69	-
	06-30-81	--	D
	07-30-81	161.10	-
	08-30-81	161.12	-
	12-08-81	161.11	-
	03-04-82	161.12	-
	05-06-82	161.09	-
	06-25-82	161.05	-
	09-09-82	161.08	-
	10-14-82	160.78	-
	11-03-82	161.06	-
	12-17-82	161.05	-
	01-12-83	161.08	-
	03-14-83	161.09	-
	04-28-83	161.09	-
	05-27-83	161.08	-
	07-13-83	161.16	-
	08-25-83	161.05	-
14	08-21-80	--	D
	10-20-80	--	D
	12-04-80	--	D
	01-09-81	--	D
	04-30-81	--	D
	06-30-81	--	D
	07-30-81	--	D
	08-30-81	--	D
	06-25-82	24.98	-
	07-13-83	24.99	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
15	08-21-80	--	D
	10-20-80	--	D
	12-04-80	--	D
	01-09-81	--	D
	04-30-81	--	D
	06-30-81	--	D
	07-30-81	--	D
	08-30-81	--	D
	06-25-82	--	D
	07-13-83	--	D
16	08-21-80	63.94	-
	10-20-80	--	D
	12-04-80	--	D
	01-09-81	--	D
	04-30-81	--	D
	06-04-81	--	D
	06-30-81	--	D
	08-05-81	--	D
	08-30-81	--	D
	06-25-82	62.72	-
	07-13-83	62.72	-
17	08-21-80	--	D
	10-20-80	--	D
	12-04-80	--	D
	01-09-81	--	D
	04-30-81	47.87	-
	06-04-81	--	D
	06-30-81	--	D
	08-05-81	--	D
	08-30-81	--	D
	06-25-82	47.10	-
	07-13-83	47.67	-
18	08-21-80	23.08	-
	12-04-80	25.39	-
	01-09-81	26.32	-
	02-03-81	27.16	-
	03-03-81	28.07	-
	04-08-81	29.07	-
	04-30-81	30.06	-
	06-04-81	31.10	-
	06-30-81	32.03	-
	07-30-81	32.93	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
18--Continued	08-30-81	34.28	-
	10-14-81	34.96	-
	12-08-81	35.51	-
	03-02-82	36.30	-
	05-05-82	37.40	-
	06-25-82	22.34	-
	06-28-82	13.59	-
	09-11-82	34.17	-
	10-14-82	17.21	-
	11-03-82	17.92	-
	01-11-83	21.71	-
	02-16-83	23.57	-
	03-14-83	24.90	-
	04-28-83	27.49	-
	05-27-83	15.86	-
	08-25-83	11.09	-
19	08-21-80	26.23	-
	10-15-80	25.45	-
	11-11-80	--	D
	12-04-80	--	D
	01-09-81	--	D
	02-03-81	--	D
	03-05-81	--	D
	04-08-81	--	D
	04-30-81	--	D
	06-03-81	--	D
	06-30-81	--	D
	07-30-81	--	D
	08-30-81	--	D
	12-08-81	--	D
	03-02-82	--	D
	05-05-82	22.16	-
	06-25-82	25.43	-
	09-11-82	--	D
	10-14-82	26.71	-
	11-03-82	--	D
	01-11-83	--	D
	07-13-83	22.36	-
	08-25-83	--	D

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
20	08-21-80	84.48	-
	10-15-80	--	D
	11-11-80	--	D
	12-04-80	--	D
	01-09-81	--	D
	02-03-81	--	D
	03-03-81	--	D
	04-30-81	--	D
	06-03-81	--	D
	06-30-81	--	D
	08-05-81	--	D
	08-30-81	--	D
	12-08-81	--	D
	03-02-82	--	D
	06-25-82	--	D
	07-13-83	83.02	-
	08-25-83	84.19	-
21	08-21-80	88.33	-
	10-15-80	93.38	-
	11-11-80	94.58	-
	12-04-80	95.16	-
	01-09-81	95.68	-
	02-03-81	99.19	-
	03-03-81	97.56	-
	04-30-81	--	D
	06-03-81	97.65	-
	06-30-81	95.03	-
	08-05-81	96.62	-
	08-30-81	95.20	-
	12-08-81	96.16	-
	03-02-82	96.17	-
	06-25-82	94.02	-
	11-03-82	95.53	-
	07-13-83	--	D
	08-25-83	95.01	-
22	09-07-80	73.69	-
	10-15-80	--	D
	11-11-80	--	D
	12-04-80	--	D
	01-09-81	--	D

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
22--Continued	02-03-81	--	D
	03-03-81	--	D
	05-06-81	--	D
	06-03-81	--	D
	06-30-81	--	D
	07-30-81	--	D
	08-30-81	--	D
	12-08-81	--	D
	03-02-82	--	D
	06-25-82	--	D
	09-11-82	--	D
	11-03-82	--	D
	07-13-83	68.62	-
	08-25-83	74.40	-
23	09-07-80	80.16	-
	10-15-80	80.64	-
	11-11-80	80.64	-
	12-04-80	82.82	-
	01-09-81	81.90	-
	02-03-81	82.02	-
	03-03-81	81.88	-
	05-06-81	81.65	-
	06-03-81	81.74	-
	06-30-81	81.83	-
	07-30-81	81.83	-
	08-30-81	81.82	-
	12-08-81	82.20	-
	03-02-82	82.04	-
	06-25-82	79.98	-
	09-11-82	81.33	-
	11-03-82	81.75	-
	07-13-83	80.72	-
	08-25-83	81.40	-
24	09-18-80	23.93	-
	10-28-80	16.70	-
	11-10-80	15.55	-
	12-05-80	14.37	-
	03-05-81	13.62	-

Table 3.--*Water-level data for bedrock wells*--Continued

Well number	Date of measurement	Water level (feet above or below land surface)[1]	Additional well information
24--Continued	05-05-81	14.20	-
	06-30-81	15.17	-
	07-30-81	15.89	-
	08-30-81	16.55	-
	06-25-82	17.26	-
	09-11-82	15.05	-
25	09-18-80	29.49	-
	10-28-80	29.21	-
	11-10-80	29.41	-
	12-05-80	28.24	-
	03-05-81	30.31	-
	05-05-81	32.31	-
	06-30-81	33.72	-
	07-30-81	35.46	-
	08-30-81	34.94	-
	06-25-82	31.22	-
	09-11-82	31.83	-
	08-04-83	26.43	-
26	09-18-80	38.17	-
	10-28-80	38.87	-
	11-11-80	38.69	-
	12-05-80	40.41	-
	03-05-81	40.75	-
	05-05-81	40.00	-
	06-30-81	40.91	-
	07-30-81	--	D
	08-30-81	--	D
	06-25-82	--	D
	09-11-82	--	D
27	09-18-80	21.61	-
	10-28-80	19.33	-
	11-11-80	22.49	-
	12-05-80	22.64	-
	03-05-81	23.35	-
	05-05-81	23.81	-
	06-30-81	--	D
	07-30-81	--	D
	08-30-81	--	D
	06-25-82	17.57	-
	09-11-82	22.96	-

[1]Negative values indicate hydraulic head above land surface.

Table 4.--*Water-level data for alluvial wells*

[Well number corresponds to sites listed in table 2. -, well is not flowing and surface is not flooded; --, no water-level data; F, well is flowing; X, surface is flooded]

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A1	10-20-80	3.62	-
	12-04-80	4.11	-
	01-07-81	2.55	-
	02-03-81	3.95	-
	03-02-81	2.43	-
	04-07-81	3.30	-
	05-06-81	1.06	-
	06-03-81	.45	-
	06-30-81	2.76	-
	08-05-81	6.26	-
	08-30-81	8.29	-
	10-14-81	8.81	-
	12-07-81	3.89	-
	03-02-82	1.80	-
	06-26-82	1.24	-
	09-07-82	5.35	-
	11-04-82	3.31	-
	12-16-82	3.33	-
	01-11-83	3.77	-
	03-16-83	2.82	-
	04-28-83	.18	-
	05-27-83	.68	-
	08-25-83	4.01	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A2	10-20-80	10.72	-
	12-04-80	11.10	-
	01-07-81	9.47	-
	02-03-81	9.75	-
	03-02-81	9.50	-
	04-07-81	7.22	-
	04-30-81	7.85	-
	06-03-81	4.50	-
	06-30-81	7.64	-
	08-11-81	12.29	-
	08-30-81	13.27	-
	10-14-81	14.03	-
	12-07-81	10.49	-
	03-02-82	8.08	-
	06-26-82	4.73	-
	09-07-82	11.22	-
	04-28-83	5.22	-
	05-27-83	7.03	-
A3	10-20-80	4.95	-
	12-04-80	5.09	-
	01-07-81	6.11	-
	02-03-81	1.21	-
	03-02-81	5.12	-
	04-07-81	4.81	-
	04-30-81	5.05	-
	06-03-81	4.96	-
	06-30-81	5.37	-
	08-05-81	5.98	-
	08-30-81	4.22	-
	10-14-81	5.50	-
	12-07-81	5.19	-
	03-02-82	4.91	-
	04-08-82	3.36	-
	06-26-82	4.80	-
	09-07-82	5.67	-
	11-04-82	5.09	-
	12-16-82	5.14	-
	01-11-83	5.11	-
	03-16-83	4.71	-
	04-28-83	3.55	-
	05-27-83	3.62	-
	08-25-83	4.01	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A4	10-20-80	5.02	-
	12-04-80	4.24	-
	01-07-81	4.45	-
	02-03-81	4.43	-
	03-02-81	3.82	-
	04-07-81	1.26	-
	04-30-81	3.16	-
	06-03-81	2.64	-
	06-30-81	4.01	-
	08-05-81	4.76	-
	08-30-81	5.26	-
	10-14-81	4.44	-
	12-07-81	3.77	-
	03-02-82	2.01	-
	04-08-82	1.45	-
	06-26-82	2.69	-
	09-07-82	4.54	-
	11-04-82	3.44	-
	12-16-82	3.30	-
	01-11-83	3.54	-
	02-15-83	3.33	-
	03-16-83	1.63	-
	04-28-83	1.08	-
	05-27-83	1.91	-
	08-25-83	3.29	-
A5	10-20-80	4.75	-
	12-04-80	5.55	-
	01-07-81	5.67	-
	02-03-81	6.34	-
	03-02-81	5.13	-
	04-07-81	3.41	-
	05-30-81	3.41	-
	06-03-81	2.47	-
	06-30-81	4.23	-
	08-05-81	4.95	-
	08-30-81	7.97	-
	10-14-81	4.47	-
	12-07-81	3.56	-
	03-02-82	.21	-
	04-08-82	.47	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A5--Continued	06-26-82	3.61	-
	09-07-82	6.06	-
	11-04-82	4.47	-
	12-16-82	4.59	-
	01-11-83	4.83	-
	02-15-83	4.69	-
	03-16-83	1.94	-
	04-28-83	.88	-
	05-27-83	1.37	-
	08-25-83	4.17	-
A6	10-20-80	8.92	-
	12-04-80	8.75	-
	01-07-81	9.29	-
	02-03-81	8.70	-
	03-02-81	8.55	-
	04-07-81	6.88	-
	04-30-81	7.12	-
	06-03-81	7.58	-
	06-30-81	8.15	-
	07-29-81	8.52	-
	08-30-81	9.21	-
	10-14-81	8.86	-
	12-07-81	8.88	-
	03-02-82	3.82	-
	06-26-82	7.11	-
	09-07-82	8.63	-
	09-13-82	8.32	-
	10-14-82	8.46	-
	11-04-82	8.08	-
	12-16-82	8.18	-
	01-11-83	8.26	-
	02-15-83	8.27	-
	03-16-83	1.28	-
	04-28-83	.63	-
	05-27-83	5.92	-
	07-13-83	6.60	-
	08-25-83	6.73	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A7	10-20-80	12.09	-
	12-04-80	12.43	-
	01-07-81	12.57	-
	02-03-81	12.55	-
	03-02-81	12.76	-
	04-07-81	12.64	-
	04-30-81	12.14	-
	06-03-81	10.25	-
	06-30-81	11.43	-
	07-29-81	12.14	-
	08-30-81	12.71	-
	10-14-81	12.88	-
	12-07-81	12.19	-
	03-02-82	10.23	-
	06-26-82	10.30	-
	09-07-82	11.51	-
	10-14-82	11.73	-
	11-04-82	11.80	-
	12-16-82	11.67	-
	01-11-83	11.52	-
	02-15-83	12.00	-
	03-16-83	10.36	-
	04-28-83	9.57	-
	05-27-83	9.87	-
	07-13-83	9.98	-
	08-25-83	10.24	-
A8	10-20-80	13.58	-
	12-04-80	13.91	-
	01-07-81	13.48	-
	02-03-81	14.21	-
	03-02-81	13.98	-
	04-07-81	13.65	-
	06-03-81	12.66	-
	06-30-81	13.00	-
	07-29-81	13.20	-
	08-30-81	13.56	-
	10-14-81	13.58	-
	12-07-81	13.63	-
	03-02-82	13.14	-
	06-26-82	11.18	-
	09-07-82	12.77	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A8--Continued	10-14-82	12.98	-
	11-04-82	12.98	-
	12-16-82	13.16	-
	01-11-83	13.21	-
	02-15-83	13.18	-
	03-16-83	11.95	-
	04-28-83	10.78	-
	05-27-83	10.41	-
	07-13-83	10.46	-
	08-25-83	11.31	-
A9	10-20-80	13.36	-
	12-04-80	13.51	-
	01-07-81	14.16	-
	02-03-81	13.64	-
	03-02-81	13.58	-
	04-07-81	13.37	-
	04-30-81	13.66	-
	06-03-81	13.18	-
	06-30-81	13.60	-
	07-29-81	13.75	-
	08-30-81	14.14	-
	10-14-81	14.15	-
	12-07-81	14.20	-
	03-02-82	13.63	-
	06-26-82	11.69	-
	09-07-82	13.22	-
	10-14-82	13.32	-
	11-04-82	13.44	-
	12-16-82	13.56	-
	01-11-83	13.63	-
	02-15-83	13.62	-
	03-16-83	9.80	-
	04-28-83	8.97	-
	05-27-83	11.03	-
	07-13-83	11.00	-
	08-25-83	11.81	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A10	10-20-80	--	-
	12-04-80	--	F
	04-07-81	3.38	-
	06-03-81	2.84	-
	06-30-81	.84	-
	07-29-81	3.36	-
	08-30-81	4.40	-
	12-07-81	5.24	-
	03-02-82	--	F
	05-27-82	--	F
	06-26-82	--	F
	09-07-82	1.35	-
A11	10-20-80	6.13	-
	12-04-80	6.00	-
	01-07-81	6.08	-
	02-03-81	6.28	-
	03-02-81	6.09	-
	04-07-81	4.66	-
	04-30-81	2.41	-
	06-03-81	1.63	-
	06-30-81	5.32	-
	07-29-81	6.07	-
	08-30-81	6.86	-
	10-14-81	6.50	-
	12-07-81	6.38	-
	03-02-82	5.95	-
	06-26-82	1.82	-
	09-07-82	3.38	-
	11-04-82	5.40	-
	04-28-83	--	X
	05-27-83	--	X
	08-25-83	5.11	-
A12	10-20-80	5.81	-
	12-04-80	5.82	-
	01-07-81	5.70	-
	02-03-81	5.42	-
	03-02-81	5.62	-
	04-07-81	4.12	-
	05-06-81	.54	-
	06-03-81	.58	-
	06-30-81	3.75	-
	07-29-81	5.95	-

Table 4.--*Water-level data for alluvial wells*--Continued

Well number	Date of measurement	Water level (feet below land surface)	Additional well information
A12--Continued	08-30-81	7.26	-
	10-14-81	7.03	-
	12-07-81	5.44	-
	03-02-82	4.89	-
	06-26-82	2.18	-
	09-07-82	6.17	-
	11-04-82	4.90	-
	12-16-82	4.17	-
	01-11-83	4.33	-
	02-15-83	4.86	-
	03-16-83	4.10	-
	05-27-83	--	X
	08-25-83	4.52	-
A13	10-20-80	8.57	-
	12-04-80	8.72	-
	01-07-81	8.63	-
	02-03-81	8.84	-
	03-02-81	8.44	-
	04-07-81	6.72	-
	04-30-81	3.66	-
	06-03-81	3.20	-
	06-30-81	7.74	-
	07-29-81	9.06	-
	08-30-81	9.94	-
	10-15-81	9.92	-
	12-07-81	7.82	-
	03-02-82	7.33	-
	06-26-82	4.48	-
	09-07-82	5.13	-
	05-27-83	2.38	-
	08-25-83	7.18	-

Table 5.--*Daily mean discharge for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden, water years 1981-83*

[Discharge in cubic feet per second; "TOTAL" line, sum of daily values; "MEAN" line, average flow in cubic feet per second during the month; "MAX" line, daily maximum discharge; "MIN" line, daily minimum discharge; AC-FT, acre-feet; --, no data]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
						WATER YEAR 1981						
1	--	--	--	--	--	--	--	0.18	0.26	0.10	0.02	0.00
2	--	--	--	--	--	--	--	.21	.20	.12	.02	.00
3	--	--	--	--	--	--	--	.78	1.4	.12	.02	.00
4	--	--	--	--	--	--	--	.85	.83	.10	.02	.00
5	--	--	--	--	--	--	--	.49	1.2	.10	.02	.02
6	--	--	--	--	--	--	--	.72	.71	.07	.02	.00
7	--	--	--	--	--	--	--	.60	.42	.10	.00	.00
8	--	--	--	--	--	--	--	.49	.24	.10	.00	.00
9	--	--	--	--	--	--	--	.43	.17	.12	.00	.00
10	--	--	--	--	--	--	--	.37	.19	.14	.00	.00
11	--	--	--	--	--	--	--	.59	.19	.12	.00	.00
12	--	--	--	--	--	--	--	.48	.17	.24	.00	.00
13	--	--	--	--	--	--	--	.48	.14	.10	.00	.00
14	--	--	--	--	--	--	--	.42	.14	.07	.00	.00
15	--	--	--	--	--	--	--	.53	.14	.05	.00	.00
16	--	--	--	--	--	--	--	.53	.14	.05	.00	.00
17	--	--	--	--	--	--	--	1.5	.12	.07	.00	.00
18	--	--	--	--	--	--	--	.81	.12	.07	.00	.00
19	--	--	--	--	--	--	--	.63	.12	.05	.00	.00
20	--	--	--	--	--	--	--	.52	.12	.05	.00	.00
21	--	--	--	--	--	--	--	.51	.10	.02	.00	.00
22	--	--	--	--	--	--	0.30	.57	.12	.02	.00	.00
23	--	--	--	--	--	--	.24	1.0	.12	.02	.00	.00
24	--	--	--	--	--	--	.21	.28	.07	.02	.00	.00
25	--	--	--	--	--	--	.19	.18	.07	.02	.00	.00
26	--	--	--	--	--	--	.19	.21	.07	.02	.00	.00
27	--	--	--	--	--	--	.19	.33	.14	.02	.00	.00
28	--	--	--	--	--	--	.16	.33	.14	.02	.00	.00
29	--	--	--	--	--	--	.19	.32	.12	.02	.00	.00
30	--	--	--	--	--	--	.18	.27	.12	.05	.00	.00
31	--	--	--	--	--	--	--	.26	---	.05	.04	---
TOTAL	--	--	--	--	--	--	--	15.87	8.09	2.22	0.16	0.02
MEAN	--	--	--	--	--	--	--	.51	.27	.072	.005	.001
MAX	--	--	--	--	--	--	--	1.5	1.4	.24	.04	.02
MIN	--	--	--	--	--	--	--	.18	.07	.02	.00	.00
AC-FT	--	--	--	--	--	--	--	31	16	4.4	.3	.04

Table 5.--*Daily mean discharge for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden, water years 1981-83*--Continued

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
						WATER YEAR 1982						
1	0.00	0.03	0.07	0.01	0.01	0.01	0.10	5.5	1.8	0.42	0.13	0.00
2	.00	.02	.07	.01	.01	.02	.10	6.2	1.7	.37	.07	.00
3	.00	.02	.07	.01	.01	.02	.10	7.8	1.8	.37	.07	.00
4	.00	.02	.07	.01	.01	.01	.10	11	1.7	.33	.07	.00
5	.00	.01	.07	.01	.01	.01	.10	9.6	1.4	.33	.07	.00
6	.00	.01	.07	.01	.01	.01	.10	7.3	1.2	.42	.07	.02
7	.00	.01	.07	.01	.01	.01	.10	5.8	1.2	.33	.07	.01
8	.00	.01	.07	.01	.01	.02	.10	5.8	1.2	.33	.07	.01
9	.00	.02	.07	.01	.01	.01	.10	5.2	1.2	.33	.10	.01
10	.00	.02	.07	.01	.01	.02	1.0	5.7	1.1	.28	.13	.03
11	.00	.02	.07	.01	.01	.03	1.5	5.6	1.0	.24	.13	.07
12	.01	.02	.07	.01	.01	.02	1.4	5.2	.94	.24	.10	.07
13	.01	.01	.07	.01	.01	.02	1.3	7.0	.88	.24	.10	.04
14	.01	.01	.07	.01	.01	.02	2.4	5.3	.88	.20	.06	.04
15	.02	.01	.07	.01	.01	.02	2.3	4.5	.81	.16	.06	.07
16	.07	.01	.07	.01	.01	.03	.85	4.2	.75	.16	.06	.04
17	.04	.01	.07	.01	.01	.03	1.6	4.1	.75	.10	.05	.03
18	.02	.03	.07	.01	.01	.02	2.4	4.1	.70	.10	.05	.03
19	.01	.03	.05	.01	.01	.02	.94	4.1	.64	.10	.05	.03
20	.00	.04	.05	.01	.01	.02	.51	4.2	.59	.10	.04	.04
21	.00	.05	.04	.01	.01	.02	.67	3.6	.59	.10	.04	.03
22	.00	.02	.03	.01	.01	.04	2.2	3.3	.70	.10	.04	.04
23	.00	.02	.04	.01	.01	.10	3.7	3.1	.70	.10	.04	.04
24	.00	.04	.01	.01	.01	.10	4.6	2.9	.59	.10	.04	.03
25	.00	.05	.01	.01	.01	.10	5.1	2.7	.53	.10	.04	.01
26	.04	.05	.01	.01	.01	.10	4.7	2.5	.53	.10	.03	.04
27	.01	.07	.01	.01	.01	.10	5.3	2.4	.53	.10	.01	.04
28	.00	.07	.01	.01	.01	.20	5.1	2.2	.42	.16	.02	.04
29	.00	.07	.01	.01	--	.10	4.9	2.1	.37	.20	.03	.04
30	.02	.07	.01	.01	--	.10	5.1	2.1	.37	.13	.03	.04
31	.05	--	.01	.01	--	.10	--	2.1	--	.13	.01	--
TOTAL	0.31	0.87	1.55	0.31	0.28	1.43	58.47	147.2	27.57	6.47	1.88	0.89
MEAN	.010	.029	.050	.010	.010	.046	1.95	4.75	.92	.21	.061	.030
MAX	.07	.07	.07	.01	.01	.20	5.3	11	1.8	.42	.13	.07
MIN	.00	.01	.01	.01	.01	.01	.10	2.1	.37	.10	.01	.00
AC-FT	.6	1.7	3.1	.6	.6	2.8	116	292	55	13	3.7	1.8

Table 5.--*Daily mean discharge for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden, water years 1981-83*

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
						WATER YEAR 1983						
1	0.04	0.07	0.03	0.01	0.02	0.10	0.10	8.0	5.1	0.60	0.30	0.15
2	.03	.04	.02	.01	.02	.15	.10	7.8	4.6	.61	.30	.15
3	.01	.04	.02	.01	.02	.10	.09	7.5	3.8	.82	.26	.15
4	.03	.04	.02	.01	.01	.10	.09	8.0	3.5	.77	.26	.19
5	.03	.04	.02	.02	.02	.10	.08	8.5	3.3	.61	.22	.15
6	.03	.04	.02	.02	.02	.10	.08	8.0	3.4	.61	.18	.12
7	.03	.04	.02	.02	.02	.10	.06	8.0	3.2	.62	.18	.12
8	.04	.04	.02	.02	.02	.10	.07	8.0	2.9	.62	.18	.16
9	.04	.04	.02	.02	.02	.10	.10	8.5	2.6	.98	.19	.13
10	.04	.10	.02	.02	.02	.15	.15	8.5	2.4	.92	.19	.16
11	.04	.10	.02	.01	.03	.15	.15	8.0	2.4	.62	.19	.16
12	.04	.10	.01	.01	.03	.15	.10	7.5	2.6	.52	.19	.16
13	.03	.10	.01	.01	.03	.15	.10	7.0	2.5	.42	.19	.16
14	.03	.05	.01	.01	.04	.15	.15	7.0	2.4	.42	.19	.10
15	.03	.05	.01	.01	.03	.10	.15	7.0	1.8	.37	.20	.10
16	.03	.04	.01	.01	.03	.10	.25	7.0	1.7	.37	.20	.10
17	.03	.04	.01	.02	.03	.10	2.5	7.5	1.7	.32	.49	.10
18	.03	.04	.01	.02	.04	.10	4.0	7.4	1.4	.32	.49	.10
19	.03	.05	.01	.02	.04	.09	4.5	7.4	1.2	.43	.20	.10
20	.03	.04	.01	.02	.04	.08	5.0	7.0	1.2	.43	.34	.10
21	.03	.04	.01	.01	.05	.06	8.0	7.0	1.0	.38	.29	.10
22	.03	.03	.01	.02	.05	.05	9.0	7.0	1.0	.44	.25	.10
23	.03	.03	.01	.01	.05	.06	10	7.5	1.1	.60	.21	.10
24	.03	.02	.01	.01	.05	.05	15	7.4	1.2	.55	.17	.10
25	.03	.03	.01	.02	.06	.06	12	7.2	1.6	.44	.17	.10
26	.03	.02	.01	.02	.07	.06	9.5	7.2	1.2	.50	.17	.16
27	.03	.02	.01	.02	.07	.06	8.0	5.7	1.7	.55	.17	.13
28	.03	.01	.01	.02	.07	.06	7.0	4.8	1.6	.40	.14	.10
29	.03	.02	.01	.02	--	.05	8.5	4.4	1.0	.29	.14	.10
30	.04	.03	.01	.02	--	.04	9.0	4.2	.65	.25	.14	.13
31	.07	--	.01	.02	--	.10	--	3.8	--	.21	.15	--
TOTAL	1.02	1.35	.43	.49	1.00	2.92	113.82	219.8	65.75	15.99	6.94	3.78
MEAN	.033	.045	.014	.016	.036	.094	3.79	7.09	2.19	.52	.22	.13
MAX	.07	.10	.03	.02	.07	.15	.15	8.5	5.1	.98	.49	.19
MIN	.01	.01	.01	.01	.01	.04	.06	3.8	.65	.21	.14	.10
AC-FT	2.0	2.7	.9	1.0	2.0	5.8	226	436	130	32	14	7.5

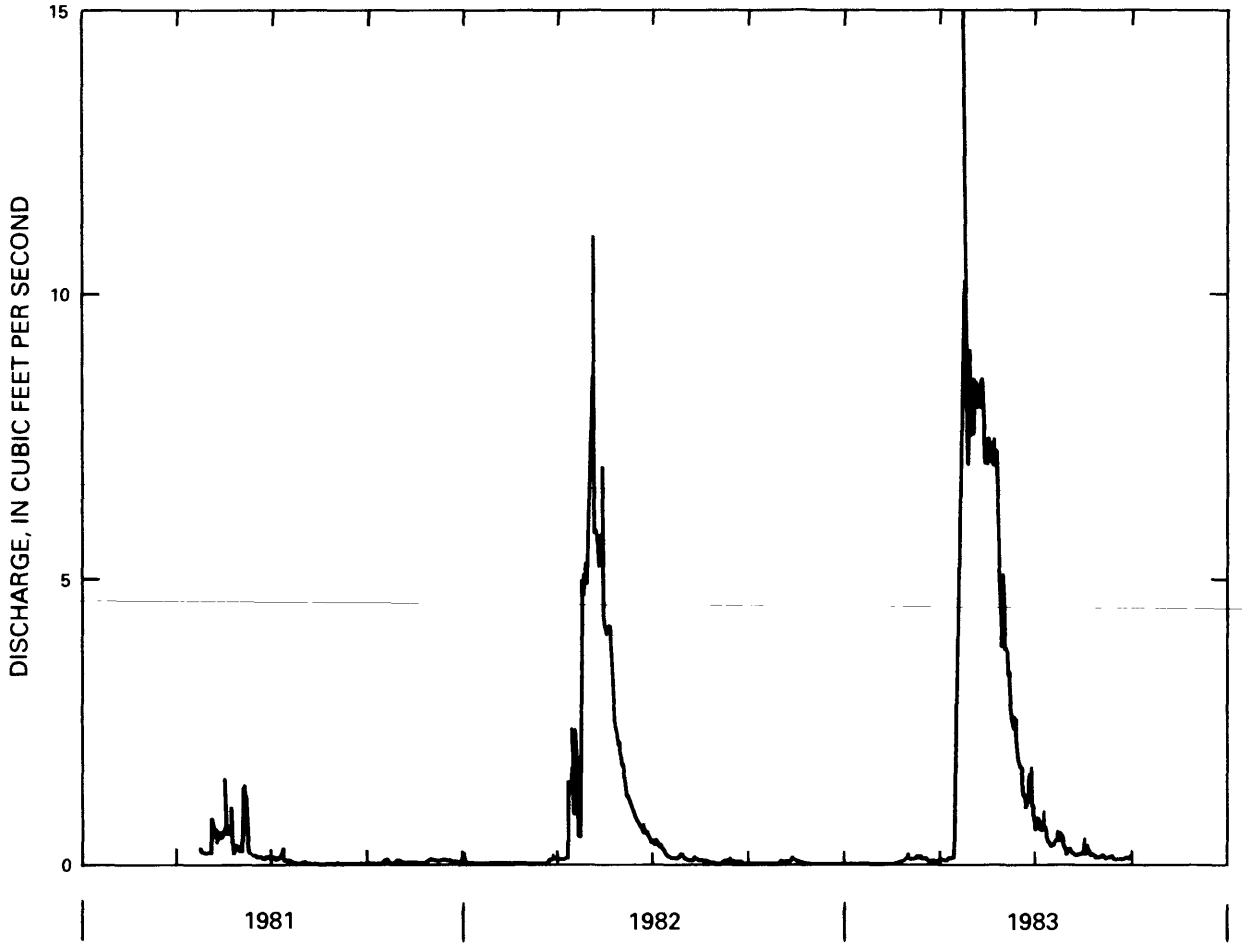

Figure 6.--Hydrograph of streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden.

Table 6.--*Water-quality data for selected bedrock wells*

[Well number corresponds to sites listed in table 1. µS/CM, microsiemens per centimeter at 25 degrees Celsius; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; NONCARB, noncarbonate; WH, whole; WAT, water; TOT, total; FLD, field; --, no data collected; IT, incremental titration; AC-FT, acre-feet; µG/L, micrograms per liter; <, less than; FET, fixed end-point titration]

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)
				WELL NO. 1					
AUG 1980									
26...	1430	2,300	--	6.80	10.5	0.3	1,200	460	230
NOV									
11...	1430	2,340	--	7.00	11.5	--	1,300	420	240
FEB 1981									
03...	1125	1,550	1,550	7.30	8.0	.9	850	330	160
JULY									
30...	1120	1,850	1,910	6.90	11.5	.5	1,100	580	210

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, IT-LAB (MG/L HCO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
AUG 1980									
26...	150	53	0.7	9	9.2	890	730	224	510
NOV									
11...	160	57	.7	9	10	1,020	840	163	490
FEB 1981									
03...	110	51	.8	11	3.4	634	520	50	440
JULY									
30...	150	41	.5	7	4.0	683	560	137	660

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. 1--Continued					
AUG 1980									
26...	17	0.40	20	1,450	1.94	0.390	0.00	--	0.0
NOV									
11...	27	.40	25	1,550	2.06	.120	--	0.00	.0
FEB 1981									
03...	8.0	.20	21	1,110	1.50	.240	--	.010	.03
JULY									
30...	10	.10	24	1,440	1.95	.130	--	.00	.0

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)	MANGANESE DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)
AUG 1980										
26...	1430	10	2	240	1	0	24,000	0	980	0.2
NOV										
11...	1430	0	3	190	0	1	39,000	0	920	0
FEB 1981										
03...	1125	8	1	120	<1	2	30	0	20	0
JULY										
30...	1120	0	1	90	<1	2	200	0	160	0

	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
AUG 1980					
26...	1	5	1	14	30
NOV					
11...	0	8	--	3	80
FEB 1981					
03...	<10	2	0	1	30
JULY					
30...	<10	3	0	4	20

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
					WELL NO. 2					
AUG 1980										
22...	1100	1,100	--	7.00	8.5	0.2	420	42	83	52
JULY 1981										
30...	1035	1,200	1,180	7.10	11.0	--	460	7	89	57
MAR 1982										
03...	1300	1,060	1,320	7.65	8.0	0	450	0	86	57
JUNE										
28...	1335	1,070	1,150	7.44	9.0	1.8	440	0	89	54
SEPT										
10...	1015	1,180	1,180	7.34	8.5	0	460	22	91	57
NOV										
03...	1100	1,160	1,180	7.23	8.5	0	450	15	88	57
MAR 1983										
16...	0930	1,100	1,140	7.20	11.0	--	410	0	77	53
JUNE										
09...	1000	1,300	1,260	7.30	9.0	--	430	96	83	54
AUG										
24...	1445	1,200	1,170	7.20	9.0	.2	460	0	92	56

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM (PERCENT)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICARBONATE, IT-LAB (MG/L HCO3)	ALKALINITY, WAT WH TOT FET FIELD MG/L AS CACO3	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
AUG 1980										
22...	86	2	30	6.4	--	463	--	380	74	170
JULY 1981										
30...	91	2	30	6.2	--	549	--	450	69	210
MAR 1982										
03...	150	3	42	6.6	--	573	--	470	20	260
JUNE										
28...	91	2	30	6.1	--	566	--	464	33	180
SEPT										
10...	86	2	29	5.8	540	564	440	463	39	200
NOV										
03...	99	2	32	5.8	540	589	440	483	51	200
MAR 1983										
16...	100	2	34	5.8	--	603	--	495	60	160
JUNE										
09...	100	2	33	6.0	--	407	--	334	32	350
AUG										
24...	110	2	34	6.2	--	584	--	479	59	200

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. 2--Continued					
AUG 1980									
22...	5.5	0.20	17	648	0.88	0.00	--	--	--
JULY 1981									
30...	4.8	.20	18	747	1.02	.050	--	0.00	0.0
MAR 1982									
03...	8.6	.40	12	863	1.17	.020	<0.010	--	--
JUNE									
28...	5.7	.20	17	722	.98	.011	.010	--	--
SEPT									
10...	5.1	.20	17	728	.99	.060	.070	--	--
NOV									
03...	5.6	.20	17	739	1.00	<.010	.020	--	--
MAR 1983									
16...	5.2	.30	17	715	.97	.024	.020	--	--
JUNE									
09...	6.8	.30	17	820	1.11	.513	.020	--	--
AUG									
24...	4.9	.20	17	774	1.05	.039	<.010	--	--

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
AUG 1980								
22...	1100	0	1	290	<1	0	60	3
JULY 1981								
30...	1035	10	1	210	<1	0	26	0
MAR 1982								
03...	1300	--	--	260	--	--	47	4
JUNE								
28...	1335	--	--	240	--	--	15	5
SEPT								
10...	1015	--	--	400	--	--	73	5
NOV								
03...	1100	--	--	230	--	--	110	1
MAR 1983								
16...	0930	--	250	--	--	97	<1	
JUNE								
09...	1000	--	--	260	--	--	29	<1
AUG								
24...	1445	--	--	240	--	--	110	<1

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
			WELL NO. 2--Continued				
AUG 1980							
22...	20	0	<10	1	0	3	4
JULY 1981							
30...	27	0	<10	0	0	2	4
MAR 1982							
03...	21	--	--	--	1	--	7
JUNE							
28...	21	--	--	--	<1	--	8
SEPT							
10...	25	--	--	--	<1	--	12
NOV							
03...	27	--	--	--	<1	--	18
MAR 1983							
16...	21	--	--	--	<1	--	13
JUNE							
09...	27	--	--	--	1	--	7
AUG							
24...	21	--	--	--	<1	1	6

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. 4					
JULY 1981									
30...	1015	2,450	2,640	6.90	10.0	1,400	810	210	210

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
JULY 1981									
30...	130	2	17	8.2	710	580	580	141	1,100

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
JULY 1981								
30...	12	0.30	14	2,030	2.76	0.120	0.00	0.0

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
JULY 1981								
30...	1015	0	0	50	1	1	30	0

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
JULY 1981							
30...	100	0	0	3	0	2	50

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. 5					
JULY 1981									
30...	0945	1,610	1,690	6.70	11.0	880	360	170	110

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	ALKALINITY, WAT WH TOT FET FIELD MG/L AS CACO3	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
JULY 1981									
30...	63	0.9	13	5.3	630	520	520	201	480

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
JULY 1981								
30...	33	0.20	22	1,200	1.63	0.080	0.00	0.0

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
JULY 1981								
30...	0945	20	0	210	<1	0	180	0

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
JULY 1981							
30...	240	0	<10	4	0	1	14

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. 6					
JULY 1981 30...	1001	1,570	1,570	7.00	11.0	850	320	160	110

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
JULY 1981 30...	57	0.9	13	4.1	650	530	530	103	440

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
JULY 1981 30...	8.1	0.20	22	1,120	1.52	0.060	0.00	0.0

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
JULY 1981 30...	1001	20	1	190	<1	3	110	0

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
JULY 1981 30...	150	0	16	2	0	2	63

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
					WELL NO. 9					
NOV 1980										
12...	1030	1,420	--	7.20	11.0	--	830	260	150	110
FEB 1981										
05...	1015	1,400	1,400	7.10	8.0	1.2	830	250	150	110
JULY										
30...	1151	1,300	--	7.70	12.5	--	750	180	140	97
JUNE 1982										
28...	1420	1,680	1,820	6.97	9.0	1.1	1,000	470	170	150
SEPT										
09...	1420	1,440	1,470	6.98	9.0	1.2	870	340	150	120
NOV										
03...	1407	1,350	1,410	7.28	8.5	--	800	260	140	110
MAR 1983										
14...	1517	1,270	1,350	7.30	8.0	--	730	160	130	98
JUNE										
09...	1220	3,000	2,950	7.10	10.0	--	1,900	1,300	230	320
AUG										
25...	0952	2,050	2,060	7.10	10.0	1.2	1,300	680	180	200

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM-PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICARBONATE, IT-LAB (MG/L HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
NOV 1980										
12...	27	0.4	7	6.7	--	695	--	570	70	200
FEB 1981										
05...	28	.4	7	4.1	--	707	--	580	89	210
JULY										
30...	20	.3	5	4.0	--	695	--	570	22	170
JUNE 1982										
28...	33	.5	6	4.0	--	700	--	574	119	500
SEPT										
09...	24	.4	6	4.0	670	709	530	582	111	280
NOV										
03...	22	.3	6	3.6	650	711	540	583	54	240
MAR 1983										
14...	21	.3	6	3.4	--	698	--	572	56	190
JUNE										
09...	72	.7	8	5.2	--	698	--	548	88	1,400
AUG										
25...	48	.6	8	4.5	--	723	--	593	91	780

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. 9--Continued					
NOV 1980									
12...	54	0.20	22	912	1.24	0.00	--	0.00	0.0
FEB 1981									
05...	52	.10	22	925	1.26	.00	--	.010	.03
JULY									
30...	17	.10	20	844	1.15	7.70	--	.00	
JUNE 1982									
28...	17	.20	24	1,240	1.69	.036	0.070	--	--
SEPT									
09...	26	.10	17	952	1.29	.150	<.010	--	--
NOV									
03...	14	.10	19	869	1.18	.012	<.010	--	--
MAR 1983									
14...	19	.10	18	823	1.12	.124	<.010	--	--
JUNE									
09...	22	.20	16	2,410	3.28	<2.00	.010	--	--
AUG									
25...	19	.20	17	1,600	2.18	>2.00	.020	--	--

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
NOV 1980								
12...	1030	0	2	200	1	--	120	2
FEB 1981								
05...	1015	40	3	140	<1	7	490	0
JULY								
30...	1151	0	1	160	<1	0	26	0
JUNE 1982								
28...	1420	--	--	150	--	--	14	15
SEPT								
09...	1420	--	--	250	--	--	<3	<1
NOV								
03...	1407	--	--	170	--	--	150	<1
MAR 1983								
14...	1517	--	--	170	--	--	7	<1
JUNE								
09...	1220	--	--	160	--	--	30	2
AUG								
25...	0952	--	--	160	--	--	90	<1

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
			WELL NO. 9--Continued				
NOV 1980							
12...	260	0	13	16	0	8	70
FEB 1981							
05...	210	0	<10	41	0	1	80
JULY							
30...	61	0	<10	2	0	4	23
JUNE 1982							
28...	94	--	--	--	<1	--	17
SEPT							
09...	92	--	--	--	1	--	7
NOV							
03...	87	--	--	--	<1	--	21
MAR 1983							
14...	48	--	--	--	<1	--	21
JUNE							
09...	130	--	--	--	8	--	30
AUG							
25...	130	--	--	--	1	1	40

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. 18						
NOV 1980										
11...	1330	340	385	9.90	14.5	--	130	0	26	17
FEB 1981										
03...	1300	540	543	9.20	7.0	3.5	330	50	23	66
JULY										
30...	1220	680	681	8.00	9.5	--	350	33	62	48
JUNE 1982										
28...	1237	862	931	7.14	6.5	2.8	470	0	94	57
SEPT										
10...	1025	944	939	7.19	7.0	0.6	540	59	110	64
NOV										
04...	0830	844	939	7.08	6.0	2.4	510	50	100	63
MAR 1983										
16...	1120	850	903	7.40	11.0	--	470	0	92	59
JUNE										
09...	1530	860	906	7.20	6.0	5.4	510	49	100	63
AUG										
25...	1123	900	909	7.20	9.5	.9	530	28	110	62

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SO-DIUM PER-CENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICAR-BONATE, IT-LAB (MG/L HCO3)	ALKA-LINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKA-LINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DIS-SOLVED (MG/L AS CO2)	SUL-FATE, DIS-SOLVED (MG/L AS SO4)
					WELL NO. 18--Continued					
NOV 1980										
11...	23	0.9	23	23	--	183	--	150	0.0	32
FEB 1981										
03...	18	.4	10	7.9	--	341	--	280	.3	45
JULY										
30...	18	.4	10	8.3	--	390	--	320	6.2	48
JUNE 1982										
28...	15	.3	6	4.7	--	587	--	481	68	35
SEPT										
10...	16	.3	6	2.9	590	631	480	518	61	41
NOV										
04...	15	.3	6	3.2	570	613	460	503	75	39
MAR 1983										
16...	15	.3	6	4.7	--	579	--	475	37	43
JUNE										
09...	15	.3	6	3.3	--	562	--	461	56	40
AUG										
25...	15	.3	6	2.5	--	613	--	503	61	39

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3, DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
NOV 1980									
11...	13	0.40	8.0	234	0.32	0.260	--	0.00	0.0
FEB 1981									
03...	6.3	.40	19	366	.50	2.80	--	.010	.03
JULY									
30...	5.5	.40	23	406	.55	.130	--	.00	.0
JUNE 1982									
28...	4.9	.50	18	519	.71	.181	<0.010	--	--
SEPT									
10...	5.2	.60	18	549	.75	.140	.010	--	--
NOV									
04...	5.3	.50	20	527	.72	<.010	.010	--	--
MAR 1983									
16...	5.4	.60	21	526	.71	.066	.010	--	--
JUNE									
09...	6.8	.50	20	526	.72	.203	.010	--	--
AUG									
25...	4.7	.50	19	555	.75	.124	.020	--	--

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
				WELL NO. 18--Continued				
NOV 1980								
11...	1330	10	1	150	<1	5	20	2
FEB 1981								
03...	1300	0	2	250	<1	0	30	0
JULY								
30...	1220	0	1	290	<1	1	<10	0
JUNE 1982								
28...	1237	--	--	310	--	--	<3	20
SEPT								
10...	1025	--	--	500	--	--	26	16
NOV								
04...	0830	--	--	370	--	--	16	3
MAR 1983								
16...	1120	--	--	380	--	--	5	<1
JUNE								
09...	1530	--	--	340	--	--	8	2
AUG								
25...	1123	--	--	320	--	--	51	1

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
NOV 1980							
11...	20	0	<10	10	0	0	10
FEB 1981							
03...	2	0	<10	2	0	5	<3
JULY							
30...	26	0	<10	2	0	3	<3
JUNE 1982							
28...	93	--	--	--	<1	--	15
SEPT							
10...	270	--	--	--	<1	--	6
NOV							
04...	240	--	--	--	<1	--	22
MAR 1983							
16...	190	--	--	--	<1	--	26
JUNE							
09...	120	--	--	--	1	--	22
AUG							
25...	280	--	--	--	<1	2	11

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. 23						
FEB 1981										
05...	1240	1,210	1,220	7.30	8.0	1.2	650	130	140	74
MAY										
06...	1237	1,200	1,200	6.80	8.0	--	620	270	130	71
JULY										
30...	1335	1,190	1,220	7.15	11.0	--	630	89	130	74
MAR 1982										
03...	1700	1,090	980	7.75	3.0	--	610	230	130	70
JUNE										
28...	1120	1,120	1,200	7.00	8.0	1.1	600	76	130	68
SEPT										
10...	0900	1,190	1,180	7.03	8.0	2.4	620	130	130	71

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICARBONATE, IT-LAB (MG/L HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
FEB 1981										
05...	41	0.7	12	5.2	--	646	--	530	51	180
MAY										
06...	35	.6	11	3.6	--	427	--	350	108	160
JULY										
30...	36	.6	11	4.4	--	659	--	540	74	160
MAR 1982										
03...	32	.6	10	4.4	--	463	--	380	13	170
JUNE										
28...	33	.6	11	3.5	--	645	--	529	102	140
SEPT										
10...	33	.6	10	3.4	600	573	490	470	89	160

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. 23--Continued					
FEB 1981									
05...	20	0.20	22	800	1.09	0.00	--	0.00	0.0
MAY									
06...	43	.20	20	673	.92	.040	--	.00	.0
JULY									
30...	9.4	.20	22	762	1.04	.240	--	.00	.0
MAR 1982									
03...	10	.20	22	668	.91	.211	<0.010	--	--
JUNE									
28...	8.4	.20	20	721	.98	.016	<0.010	--	--
SEPT									
10...	12	.20	20	726	.99	.120	0.010	--	--

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
FEB 1981								
05...	1240	8	2	170	<1	0	20	0
MAY								
06...	1237	10	1	200	2	1	<10	1
JULY								
30...	1335	10	0	200	<1	0	<10	0
MAR 1982								
03...	1700	--	--	150	--	--	26	4
JUNE								
28...	1120	--	--	210	--	--	<3	<1
SEPT								
10...	0900	--	--	380	--	--	33	7

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
FEB 1981							
05...	200	0	<10	3	0	2	10
MAY							
06...	190	.1	<10	1	0	1	10
JULY							
30...	230	0	11	3	0	2	21
MAR 1982							
03...	210	--	--	--	<1	--	22
JUNE							
28...	180	--	--	--	<1	--	12
SEPT							
10...	200	--	--	--	<1	--	14

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. 25						
NOV 1980										
10...	1430	980	--	7.20	10.0	--	500	68	110	54
MAY 1981										
05...	1338	1,000	1,030	7.00	9.0	0.5	560	70	130	57
JULY										
30...	1500	1,060	1,060	6.95	9.0	--	580	86	130	61
JUNE 1982										
28...	0845	991	1,060	6.95	8.0	1.6	570	78	130	60
SEPT										
10...	0845	1,030	1,040	6.84	7.5	0.8	570	240	130	60

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
NOV 1980									
10...	24	0.5	9	3.8	520	430	--	52	120
MAY 1981									
05...	19	.4	7	2.7	600	490	490	95	99
JULY									
30...	16	.3	6	2.6	600	490	490	107	110
JUNE 1982									
28...	18	.3	6	2.1	--	--	494	--	100
SEPT									
10...	15	.3	5	1.9	560	460	336	94	110

Table 6.--*Water-quality data for selected bedrock wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. 25--Continued					
NOV 1980									
10...	10	0.30	19	597	0.81	0.010	--	0.00	0.0
MAY 1981									
05...	7.1	.20	21	631	.86	.070	--	.020	.06
JULY									
30...	8.1	.20	25	648	.88	.020	--	.00	.0
JUNE 1982									
28...	5.9	.30	17	630	.86	<.500	0.010	--	--
SEPT									
10...	6.2	.20	24	549	.75	.050	.110	--	--

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
NOV 1980								
10...	1430	10	2	50	2	--	230	2
MAY 1981								
05...	1338	60	1	30	<1	1	430	0
JULY								
30...	1500	10	0	30	<1	0	680	1
JUNE 1982								
28...	0845	--	--	30	--	--	11	<1
SEPT								
10...	0845	--	--	140	--	--	280	4

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
NOV 1980							
10...	100	0	10	14	0	1	60
MAY 1981							
05...	150	0	<10	3	0	--	10
JULY							
30...	110	0	<10	3	0	2	21
JUNE 1982							
28...	120	--	--	--	2	--	19
SEPT							
10...	76	--	--	--	<1	--	14

Table 7.--*Water-quality data for selected alluvial wells*

[Well number corresponds to sites listed in table 2. µS/CM, microsiemens per centimeter at 25 degrees Celsius; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; NONCARB, noncarbonate; WH, whole; WAT, water; TOT, total; FLD, field; --, no data collected; FET, fixed end-point titration; IT, incremental titration; AC-FT, acre-feet; µG/L, micrograms per liter; <, less than.

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. A1						
AUG 1980										
19...	1430	1,090	--	6.90	14.0	2.7	550	210	120	60
NOV										
09...	1040	1,130	--	7.30	9.0	--	550	240	120	62
FEB 1981										
03...	1313	950	985	8.00	3.0	5.2	470	190	100	54
MAY										
06...	1050	1,000	1,010	7.30	5.0	1.6	500	230	110	55
JULY										
30...	1420	1,050	1,050	7.00	9.0	0.9	500	170	110	55
MAR 1982										
03...	1230	1,000	1,270	7.90	2.0	--	580	290	120	68
JUNE										
28...	1045	828	879	7.18	9.5	1.5	410	130	90	46
SEPT										
10...	1315	968	984	7.28	8.5	1.2	430	120	95	47
NOV										
04...	1112	853	966	7.20	8.0	2.0	440	160	94	50
MAR 1983										
16...	1300	850	897	7.20	9.5	--	440	190	94	50
JUNE										
09...	1050	580	639	7.20	8.0	1.7	300	130	66	34
AUG										
25...	1605	850	851	7.20	13.0	1.3	460	120	100	51

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	SO-DIUM PER-CENT	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICAR-BONATE, IT-LAB (MG/L HCO3)	ALKA-LINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKA-LIN-ITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DIS-SOLVED (MG/L AS CO2)	SUL-FATE, DIS-SOLVED (MG/L AS SO4)
					WELL NO. A1--Continued					
AUG 1980										
19...	36	0.7	12	4.8	--	415	--	340	83	240
NOV										
09...	46	.9	15	4.4	--	390	--	320	31	300
FEB 1981										
03...	43	.9	16	3.1	--	341	--	280	5.4	270
MAY										
06...	29	.6	11	3.3	--	329	--	270	26	290
JULY										
30...	48	1	17	4.5	--	403	--	330	64	250
MAR 1982										
03...	37	.7	12	4.8	--	354	--	290	7.1	340
JUNE										
28...	28	.6	13	3.9	--	348	--	285	37	190
SEPT										
10...	48	1	19	4.3	80	417	310	342	32	220
NOV										
04...	30	.6	13	3.6	350	366	280	300	35	230
MAR 1983										
16...	25	.5	11	3.0	--	309	--	254	31	220
JUNE										
09...	18	.5	11	3.0	--	209	--	238	21	120
AUG										
25...	30	.6	12	4.1	--	413	--	339	41	170

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. A1--Continued					
AUG 1980									
19...	9.0	0.20	10	684	0.93	0.00	--	--	--
NOV									
09...	13	.20	9.9	751	1.02	.160	--	0.770	2.4
FEB 1981									
03...	7.7	.10	7.1	658	.89	1.10	--	.030	.09
MAY									
06...	8.1	.20	6.8	665	.90	.170	--	.040	.12
JULY									
30...	8.6	.20	11	686	.93	.150	--	.00	.0
MAR 1982									
03...	8.3	.20	6.7	759	1.03	--	0.030	--	--
JUNE									
28...	5.0	.20	8.3	543	.74	.072	.010	--	--
SEPT									
10...	6.8	.30	10	621	.84	.480	.010	--	--
NOV									
04...	7.2	.20	9.3	597	.81	.140	.050	--	--
MAR 1983									
16...	7.2	.30	6.4	560	.76	.381	.060	--	--
JUNE									
09...	3.9	.20	7.4	356	.48	.119	.050	--	--
AUG									
25...	5.2	.20	10	574	.78	--	.060	--	--

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
				WELL NO. A1--Continued				
AUG 1980								
19...	1430	0	1	160	<1	2	30	3
NOV								
09...	1040	10	0	50	1	--	210	1
FEB 1981								
03...	1313	0	1	40	<1	4	10	0
MAY								
06...	1050	10	1	40	1	3	30	0
JULY								
30...	1420	10	1	80	<1	3	<10	0
MAR 1982								
03...	1230	--	--	40	--	--	<10	4
JUNE								
28...	1045	--	--	60	--	--	4	20
SEPT								
10...	1315	--	--	200	--	--	8	14
NOV								
04...	1112	--	--	70	--	--	19	1
MAR 1983								
16...	1300	--	--	40	--	--	14	2
JUNE								
09...	1050	--	--	50	--	--	16	2
AUG								
25...	1605	--	--	90	--	--	16	<1

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
			WELL NO. A1--Continued				
AUG 1980							
19...	9	0.1	<10	2	0	1	20
NOV							
09...	50	0	10	4	0	3	40
FEB 1981							
03...	7	0	<10	5	1	2	9
MAY							
06...	5	0	<10	1	0	1	10
JULY							
30...	91	0	<10	5	0	1	8
MAR 1982							
03...	11	--	--	--	<1	--	<3
JUNE							
28...	9	--	--	--	<1	--	4
SEPT							
10...	60	--	--	--	<1	--	31
NOV							
04...	32	--	--	--	<1	--	11
MAR 1983							
16...	4	--	--	--	1	--	31
JUNE							
09...	6	--	--	--	1	--	26
AUG							
25...	18	--	--	--	<1	2	13

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
					WELL NO. A8					
FEB 1981										
03...	1351	2,320	2,320	8.30	9.0	1.2	1,500	860	260	200
MAY										
06...	1510	2,200	2,430	7.30	8.5	0.3	1,400	1,100	250	190
JULY										
29...	1545	2,200	2,440	7.20	11.0	.5	1,400	840	250	200
MAR 1982										
03...	0930	2,500	2,950	7.50	7.5	1.4	1,500	1,100	270	210
JUNE										
28...	1350	2,410	2,480	7.14	7.5	1.4	1,500	880	240	210
SEPT										
10...	1400	2,330	2,330	7.18	10.0	3.8	1,500	940	240	210

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICARBONATE, IT-LAB (MG/L HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
FEB 1981										
03...	65	0.8	9	2.5	--	744	--	610	5.9	990
MAY										
06...	61	.7	9	2.8	--	415	--	340	33	960
JULY										
29...	66	.8	9	2.8	--	744	--	610	75	920
MAR 1982										
03...	78	.9	10	4.6	--	549	--	450	28	1,200
JUNE										
28...	68	.8	9	2.3	--	711	--	583	82	1,000
SEPT										
10...	69	.8	9	2.8	640	667	530	547	67	990

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. A8--Continued					
FEB 1981									
03...	6.3	0.30	14	1,910	2.59	0.120	--	0.010	0.03
MAY									
06...	6.8	.40	14	1,690	2.30	.340	--	0.110	.34
JULY									
29...	6.5	.30	14	1,830	2.48	.130	--	.040	.12
MAR 1982									
03...	9.6	.40	14	2,060	2.80	--	<0.010	--	--
JUNE									
28...	6.7	.30	13	1,890	2.57	.676	.010	--	--
SEPT									
10...	7.1	.40	13	1,850	2.51	--	<.010	--	--

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
FEB 1981								
03...	1351	20	2	360	0	0	410	0
MAY								
06...	1510	20	0	440	7	1	40	2
JULY								
29...	1545	0	1	320	0	1	50	3
MAR 1982								
03...	0930	--	--	290	--	--	110	6
JUNE								
28...	1350	--	--	330	--	--	80	15
SEPT								
10...	1400	--	--	500	--	--	60	3

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
FEB 1981							
03...	1,500	0	0	3	0	2	20
MAY							
06...	710	0	9	5	0	2	30
JULY							
29...	1,200	0	9	4	0	5	30
MAR 1982							
03...	390	--	--	--	6	--	50
JUNE							
28...	110	--	--	--	<1	--	20
SEPT							
10...	660	--	--	--	2	--	20

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
				WELL NO. A12						
AUG 1980										
21...	1100	940	--	6.90	14.5	2.8	400	120	100	37
NOV										
08...	1430	850	935	7.00	9.0	6.9	460	140	120	38
FEB 1981										
03...	1430	675	734	8.00	8.0	3.1	390	140	88	41
MAY										
06...	0940	680	676	6.70	7.5	1.4	350	180	79	37
JULY										
29...	1726	690	688	7.00	14.0	1.1	310	19	38	52
SEPT 1982										
10...	1115	635	633	7.63	9.5	0.8	340	85	77	37

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, WATER WH FET FIELD (MG/L AS HCO3)	BICARBONATE, IT-LAB (MG/L HCO3)	ALKALINITY, WAT WH TOT FET FIELD (MG/L AS CACO3)	ALKALINITY, LAB (MG/L AS CACO3)	CARBON DIOXIDE, DISSOLVED (MG/L AS CO2)	SULFATE, DISSOLVED (MG/L AS SO4)
AUG 1980										
21...	34	0.8	15	3.1	--	341	--	280	68	180
NOV										
08...	42	.9	17	3.4	--	390	--	320	62	240
FEB 1981										
03...	16	.4	8	2.1	--	305	--	250	4.8	150
MAY										
06...	10	.2	6	2.0	--	207	--	170	66	110
JULY										
29...	19	.5	12	2.4	--	354	--	290	56	72
SEPT 1982										
10...	13	.3	8	2.4	320	355	260	291	12	69

Table 7.--*Water-quality data for selected alluvial wells*--Continued

DATE	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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
				WELL NO. A12--Continued					
AUG 1980									
21...	8.2	0.20	10	541	0.73	0.010	--	--	--
NOV									
08...	5.3	.10	17	658	.89	.00	--	0.00	0.0
FEB 1981									
03...	13	.10	10	471	.64	.230	--	.00	.0
MAY									
06...	11	.10	11	363	.49	.220	--	.020	.06
JULY									
29...	7.1	.10	13	380	.52	.390	--	.030	.09
SEPT 1982									
10...	3.7	.10	13	373	.51	.150	<0.010	--	--

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)
AUG 1980								
21...	1100	0	2	140	1	1	460	3
NOV								
08...	1430	20	1	80	<1	2	420	0
FEB 1981								
03...	1430	20	2	20	<1	0	90	0
MAY								
06...	0940	10	1	40	2	4	70	0
JULY								
29...	1726	0	1	30	<1	1	28	1
SEPT 1982								
10...	1115	--	--	50	--	--	40	<1

DATE	MANGANESE, DISSOLVED (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MOLYBDENUM, DISSOLVED (µG/L AS MO)	NICKEL, DISSOLVED (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	VANADIUM, DISSOLVED (µG/L AS V)	ZINC, DISSOLVED (µG/L AS ZN)
AUG 1980							
21...	180	0	1	2	0	17	240
NOV							
08...	140	0	<10	4	0	4	20
FEB 1981							
03...	30	0	<10	3	0	0	30
MAY							
06...	8	0	<10	20	0	1	20
JULY							
29...	170	0	<10	2	0	1	12
SEPT 1982							
10...	120	--	--	--	<1	--	20

Table 8.--*Water-quality data for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden*

[µS/CM, microsiemens per centimeter; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; NONCARB, noncarbonate; WH, whole; WAT, water; TOT, total; FLD, field; --, no data collected; AC-FT, acre-feet; <, less than; µG/L, microgram per liter; RECOV., recoverable]

DATE	TIME	SPECIFIC CONDUCTANCE, FIELD (µS/CM)	SPECIFIC CONDUCTANCE, LAB (µS/CM)	PH, FIELD (STANDARD UNITS)	TEMPERATURE WATER (°C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS, TOTAL (MG/L AS CACO3)	HARDNESS, NONCARB, WH WAT TOT FLD (MG/L AS CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 1981												
28...	1150	905	905	8.00	0.0	10.6	470	190	100	53	23	0.5
MAR												
06...	1300	860	887	7.90	.0	10.3	450	210	91	54	26	.5
31...	1445	935	953	8.20	2.0	10.6	470	210	96	56	23	.5
APR												
15...	1336	660	675	7.90	10.5	--	320	140	65	38	17	.4
29...	1415	770	773	8.20	15.5	7.8	390	140	87	42	18	.4
29...	1445	--	--	--	--	--	--	0	--	--	--	--
MAY												
27...	1440	710	720	7.60	13.0	6.8	370	150	83	39	17	.4
JUNE												
24...	1300	700	690	8.20	19.0	3.5	330	120	81	31	13	.3
JULY												
23...	1110	760	759	8.20	14.5	7.6	400	130	89	43	16	.4
23...	1115	--	--	--	--	--	--	0	--	--	--	--
APR 1982												
13...	1520	450	--	--	2.0	--	--	0	--	--	--	--
14...	1520	320	290	7.50	.5	10.0	140	46	31	16	7.7	0.3
28...	1550	340	--	--	11.0	--	--	0	--	--	--	--
28...	1650	340	--	--	11.0	--	--	0	--	--	--	--
29...	1100	410	--	8.20	3.5	--	--	0	--	--	--	--
MAY												
04...	1345	360	--	--	10.0	--	--	0	--	--	--	--
18...	1400	430	430	8.50	12.0	8.7	210	41	48	22	7.2	.2
JUNE												
04...	1030	510	--	8.40	11.0	8.8	270	59	59	30	11	.3
JULY												
20...	1450	622	648	8.40	20.0	7.0	330	74	73	35	15	.4
SEPT												
29...	1555	1,000	983	8.40	8.0	8.3	540	220	110	65	24	.5
NOV												
17...	1440	870	886	8.20	.0	10.6	460	160	95	54	22	.5
DEC												
22...	1630	840	844	8.30	.5	10.2	450	160	92	53	20	.4
FEB 1983												
22...	1600	870	881	8.20	.5	10.4	430	180	86	53	22	.5
MAR												
29...	1245	855	849	8.00	1.0	10.6	440	160	88	53	22	.5
MAY												
02...	1525	356	376	8.10	10.0	8.3	190	58	43	20	8.0	.3
25...	1515	400	410	8.20	17.5	7.6	170	0	40	17	5.2	.2
JUNE												
08...	1410	505	506	8.30	16.0	7.6	260	48	57	28	9.3	.3
27...	1240	--	--	--	14.0	--	--	0	--	--	--	--
JULY												
27...	1240	675	662	8.20	14.0	7.5	350	69	75	40	14	.3
SEPT												
13...	1100	780	758	8.40	10.0	8.5	410	130	85	48	17	.4
OCT												
04...	1005	--	857	8.50	4.5	9.9	470	140	96	55	19	.4

Table 8.--*Water-quality data for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden*--Continued

DATE	SODIUM PERCENT	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY, LAB (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)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3, DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
JAN 1981												
28...	10	4.2	280	230	6.3	0.20	10	596	0.81	0.300	0.020	0.06
MAR												
06...	11	4.8	240	250	6.6	.20	8.5	587	.80	.250	.010	.03
31...	10	4.2	260	260	7.9	.20	8.8	614	.83	.290	.00	.0
APR												
15...	10	3.5	180	180	5.2	.20	7.9	427	.58	.530	.020	.06
29...	9	3.9	250	180	7.6	.20	9.1	499	.68	.140	.100	.31
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
27...	9	7.0	220	160	6.5	.20	8.2	455	.62	.400	.050	.15
JUNE												
24...	8	4.0	210	130	6.8	.10	11	403	.55	.090	.040	.12
JULY												
23...	8	5.0	270	130	7.5	.10	12	465	.63	.110	.050	.15
23...	--	--	--	--	--	--	--	--	--	--	--	--
APR 1982												
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	10	3.3	97	62	2.3	.20	7.1	190	.26	.450	.020	.06
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
04...	--	--	--	--	--	--	--	--	--	--	--	--
18...	7	2.3	170	42	3.0	.20	7.6	234	.32	<.100	<.010	--
JUNE												
04...	8	2.6	212	74	3.1	.20	9.3	317	.43	.120	.020	.06
JULY												
20...	9	3.9	253	110	3.9	.20	11	404	.55	.100	.040	.12
SEPT												
29...	9	10	320	250	10	.20	12	675	.92	.260	.030	.09
NOV												
17...	9	4.4	304	200	5.6	.20	11	575	.78	.190	<.010	--
DEC												
22...	9	4.0	288	200	5.6	.20	10	558	.76	.180	<.010	--
FEB 1983												
22...	10	3.9	258	210	5.9	.20	9.8	547	.74	.200	.020	.06
MAR												
29...	10	3.7	277	200	6.8	.20	8.7	550	.75	.320	.040	.12
MAY												
02...	8	2.7	132	63	2.7	.20	8.3	229	.31	.440	.050	.15
25...	6	1.8	173	45	2.6	.20	5.8	221	.30	<.140	.030	.09
JUNE												
08...	7	2.2	210	67	2.8	.20	9.4	302	.41	.110	.020	.06
27...	--	--	--	--	--	--	--	--	--	--	--	--
JULY												
27...	8	3.1	283	110	3.7	.20	11	428	.58	.220	.030	.09
SEPT												
13...	8	4.3	283	140	4.7	.20	13	483	.66	.230	.030	.09
OCT												
04...	8	6.9	324	200	6.2	.10	12	591	.80	.200	.020	.06

Table 8.--*Water-quality data for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden*--Continued

DATE	TIME	ALUMINUM, DISSOLVED (µG/L AS AL)	ARSENIC, DISSOLVED (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	COPPER, DISSOLVED (µG/L AS CU)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	IRON, SUSPENDED RECOVERABLE (µG/L AS FE)	IRON, DISSOLVED (µG/L AS FE)
JAN 1981									
28...	1150	--	--	40	--	--	3,100	3,100	10
MAR									
06...	1300	--	--	50	--	--	3,100	2,800	260
31...	1445	--	--	60	--	--	1,700	1,700	20
APR									
15...	1336	40	1	50	<1	2	19,000	19,000	40
29...	1415	--	--	50	--	--	1,700	1,700	20
29...	1445	--	--	--	--	--	--	--	--
MAY									
27...	1440	--	--	320	--	--	190,000	190,000	10
JUNE									
24...	1300	--	--	50	--	--	1,500	--	<10
JULY									
23...	1110	20	--	70	--	--	1,300	1,300	10
23...	1115	--	--	--	--	--	--	--	--
APR 1982									
13...	1520	--	--	--	--	--	17,000	--	--
14...	1520	170	1	20	<3	3	30,000	32,000	210
28...	1550	--	--	--	--	--	7,700	--	--
28...	1650	--	--	--	--	--	6,200	--	--
29...	1100	--	--	--	--	--	2,800	--	--
MAY									
04...	1345	--	--	--	--	--	4,200	--	--
18...	1400	20	1	20	<3	4	340	--	<9
JUNE									
04...	1030	--	--	40	--	--	870	840	29
JULY									
20...	1450	--	--	70	--	--	430	400	28
SEPT									
29...	1555	20	--	80	--	--	600	520	85
NOV									
17...	1440	10	1	60	<1	<1	280	250	28
DEC									
22...	1630	--	--	50	--	--	360	330	31
FEB 1983									
22...	1600	--	--	50	--	--	490	460	28
MAR									
29...	1245	20	--	40	--	--	310	270	38
MAY									
02...	1525	60	1	40	1	6	13,000	13,000	96
25...	1515	--	--	30	--	--	1,000	980	20
JUNE									
08...	1410	--	--	40	--	--	1,200	1,200	27
27...	1240	--	--	--	--	--	--	--	--
JULY									
27...	1240	--	--	70	--	--	1,500	1,500	34
SEPT									
13...	1100	20	--	80	--	--	610	590	22
OCT									
04...	1005	--	--	70	--	--	440	370	74

Table 8.--*Water-quality data for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden*--Continued

DATE	LEAD, DIS-SOLVED (µG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (µG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (µG/L AS MN)	MANGA-NESE, DIS-SOLVED (µG/L AS MN)	MERCURY, DIS-SOLVED (µG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (µG/L AS MO)	NICKEL, DIS-SOLVED (µG/L AS NI)	SELE-NIUM, DIS-SOLVED (µG/L AS SE)	ZINC, DIS-SOLVED (µG/L AS ZN)
JAN 1981									
28...	--	400	70	330	--	--	--	--	--
MAR									
06...	--	280	40	240	--	--	--	--	--
31...	--	250	50	200	--	--	--	--	--
APR									
15...	2	410	340	70	0	<10	0	0	<3
29...	--	160	60	100	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
MAY									
27...	--	4,100	4,100	40	--	--	--	--	--
JUNE									
24...	--	130	80	50	--	--	--	--	--
JULY									
23...	2	100	60	40	--	--	--	--	10
23...	--	--	--	--	--	--	--	--	--
APR 1982									
13...	--	400	--	--	--	--	--	--	--
14...	2	870	690	43	<0.1	1	4	<1	<12
28...	--	120	--	--	--	--	--	--	--
28...	--	120	--	--	--	--	--	--	--
29...	--	90	--	--	--	--	--	--	--
MAY									
04...	--	130	--	--	--	--	--	--	--
18...	<1	30	10	17	<0.1	<1	4	<1	<12
JUNE									
04...	--	90	50	43	--	--	--	--	--
JULY									
20...	--	40	10	27	--	--	--	--	--
SEPT									
29...	4	100	20	80	--	--	--	--	8
NOV									
17...	1	80	10	70	<0.1	<1	1	<1	10
DEC									
22...	--	70	10	60	--	--	--	--	--
FEB 1983									
22...	--	80	20	62	--	--	--	--	--
MAR									
29...	3	70	10	59	--	--	--	--	5
MAY									
02	1	180	160	22	<0.1	<1	9	1	32
25...	--	50	40	15	--	--	--	--	--
JUNE									
08...	--	90	50	38	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
JULY									
27...	--	140	100	45	--	--	--	--	--
SEPT									
13...	<1	90	50	37	--	--	--	--	8
OCT									
04...	--	90	10	76	--	--	--	--	--

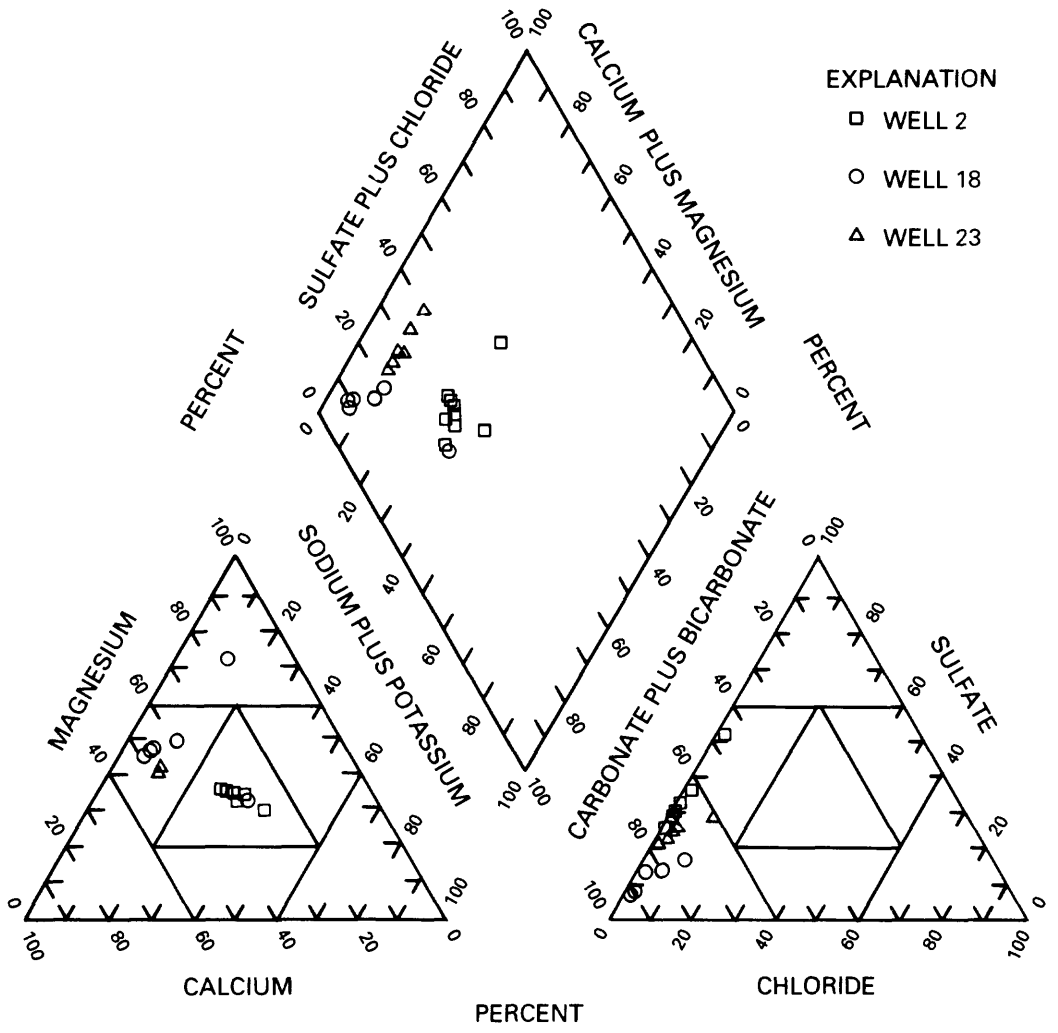

Figure 7.--Piper trilinear diagram of water type for selected wells completed in the Wadge coal seam.

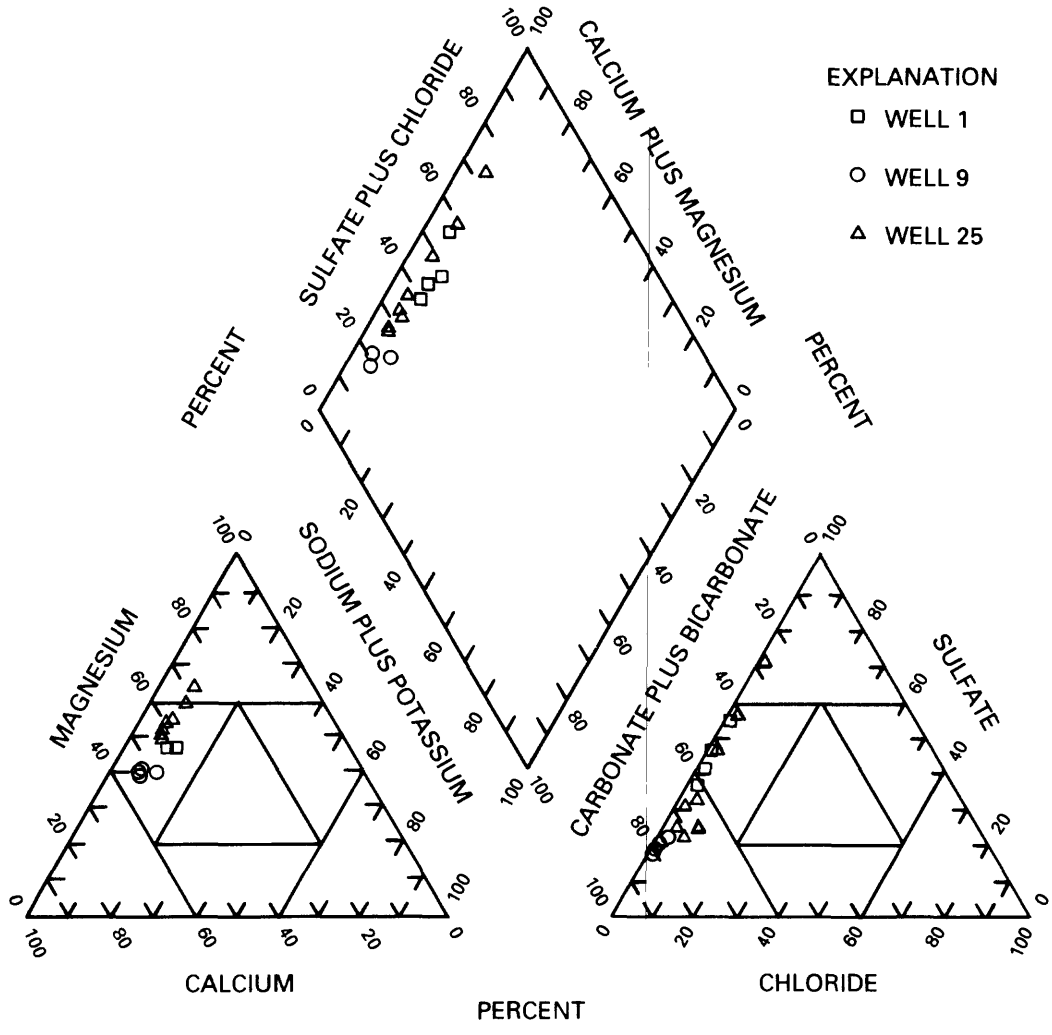

Figure 8.--Piper trilinear diagram of water type for selected wells completed in the overburden of the Wadge coal seam.

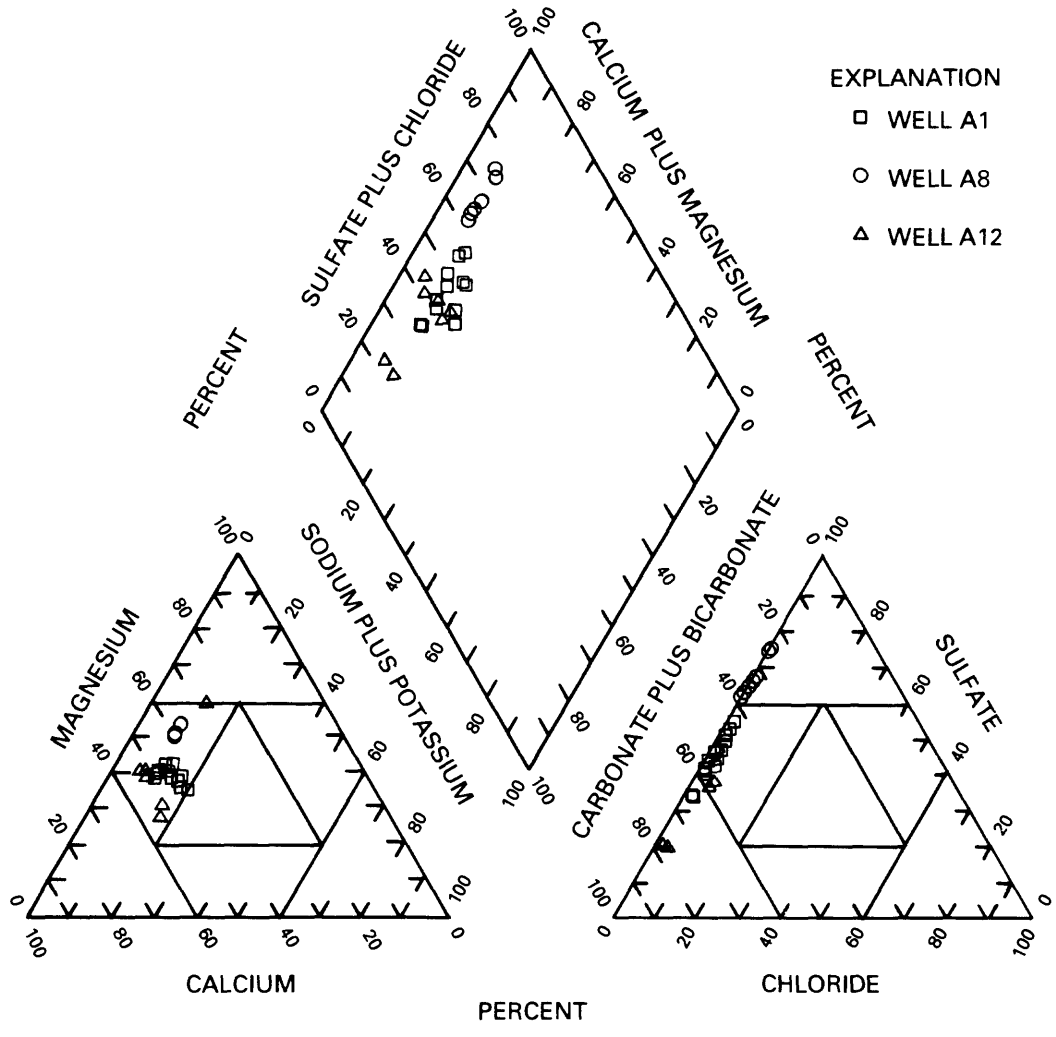

Figure 9.--Piper trilinear diagram of water type for selected wells completed in the alluvium.

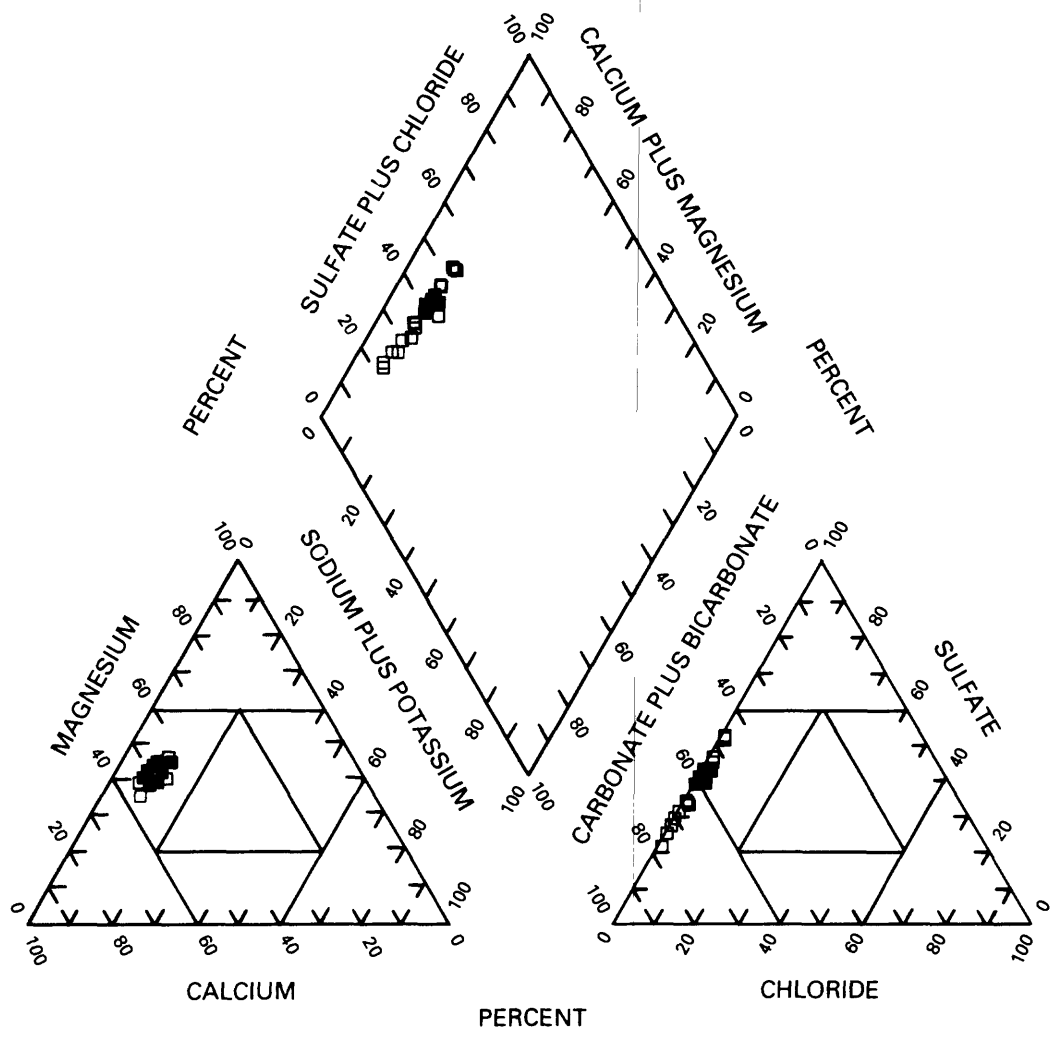

Figure 10.--Piper trilinear diagram of water type for streamflow-gaging station 09244415, Sage Creek above Sage Creek Reservoir, near Hayden.

Table 9.--*Monthly precipitation values*

[--, no record; m, some missing data during month]

Month	Precipitation (inches)			
	1980	1981	1982	1983
	Precipitation gage 1 (PG1)			
January	--	0.85	2.08m	1.14
February	--	.76	0.81	1.81
March	--	2.94	2.41	2.16
April	--	1.19	1.88	2.01
May	--	3.38	0.96	1.96
June	--	1.84	1.14	3.11
July	--	2.94	1.49	2.17
August	--	1.76	--	1.48
September	--	.99	3.01	1.04m
October	--	4.31	2.06	--
November	0.82	1.40	2.32	--
December	.67	3.19	1.39	--
	Precipitation gage 2 (PG2)			
January	--	0.77	--	0.87m
February	--	.70	--	.98m
March	--	2.80	1.79	1.30m
April	--	1.14	2.17	2.48
May	--	4.08	1.02	1.68
June	--	1.82	.48m	2.92
July	2.66	2.66	1.28m	--
August	.47	1.70	--	--
September	--	1.02	--	--
October	--	3.73	--	--
November	.77	1.38	--	--
December	.71	2.02	--	--

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