

UNITED STATES
Department of the Interior
GEOLOGICAL SURVEY

SELECTED COAL-RELATED GROUND-WATER DATA,
WASATCH PLATEAU-BOOK CLIFFS AREA, UTAH

By C. T. Sumsion

Open-File Report 79-915

Prepared in cooperation with the
U.S. Bureau of Land Management

Salt Lake City, Utah

1979

CONTENTS

	Page
Conversion factors: Inch-pound to metric	IV
Introduction.	1
Data-site numbering system.	1
Explanation of tables	2
References cited.	4

ILLUSTRATIONS

[Plate is in pocket]

Plate 1. Map of the Wasatch Plateau-Book Cliffs area showing location of selected test holes, wells, springs, and mine-discharge sampling sites.	
Figure 1. Diagram showing data-site numbering system used in Utah.	3

TABLES

Table 1. Generalized stratigraphic sections and hydrologic characteristics of rocks in the Wasatch Plateau-Book Cliffs area.	5
2. Records of selected test holes and water wells.	6
3. Logs of selected test holes and water wells	15
4. Water levels in selected wells.	19
5. Records of selected springs	20
6. Records of ground-water discharge from selected mines.	21
7. Chemical analyses of water from selected test holes, water wells, springs, and mines.	22

CONVERSION FACTORS: INCH-POUND TO METRIC

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

Unit (Multiply)	Inch-pound		Unit (to obtain)	Metric	
	Abbreviation	(by)		Abbreviation	
Acre		0.4047	Square hectometer	hm ²	
Foot	ft	.3048	Meter	m	
Gallon	gal	3.785	Liter	L	
Gallon per minute	gal/min	.06309	Liter per second	L/s	
Mile	mi	1.609	Kilometer	km	
Square mile	mi ²	2.590	Square kilometer	km ²	
Ton		.9072	Metric ton	t	

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

SELECTED COAL-RELATED GROUND-WATER DATA,
WASATCH PLATEAU-BOOK CLIFFS AREA, UTAH

by

C. T. Sumsion

INTRODUCTION

The Wasatch Plateau-Book Cliffs area as used in this report consists of about 8,000 square miles in east-central Utah. The major geographic features included in the area are the Wasatch Plateau, Book Cliffs, San Rafael Swell, Price River basin, and a small part of the Green River basin (pl. 1). The area is defined by approximate drainage-divide boundaries in the Wasatch Plateau and Book Cliffs, by an arbitrary boundary on the south, and by the Utah-Colorado State line on the east.

The Wasatch Plateau-Book Cliffs area includes all the operating coal mines in Utah in 1978. Annual coal production in the area is expected to increase from the current (1978) rate of about 8 million tons to as much as 30 million tons within the next 10 years (J. W. Moffitt, U.S. Geological Survey, oral commun., 1978). Ground water is an important source of water supply in the area. As mining increases and mining-related municipalities grow, many sources of ground-water supply may be subjected to increased demands and possibly degradation of chemical quality.

Waddell, Vickers, Upton, and Contratto (1978) reported some ground-water data after a reconnaissance of part of the area. The purpose of this report, which was prepared in cooperation with the U.S. Bureau of Land Management, is to present a more detailed compilation of ground-water-related data that were collected and compiled during October 1976 to March 1978. The report is designed to make the data available in an orderly and usable form for local and regional water managers and other users of water data.

DATA-SITE NUMBERING SYSTEM

The system of numbering data sites, such as wells and springs, 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 uppercase letters A, B, C, and D, indicating the north-east, 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. A 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. Thus, (D-13-9)23bab-1 designates the first well constructed or visited in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 13 S., R. 9 E., and (D-13-9)7acd-S1 designates a spring in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 13 S., R. 9 E. If a well or spring cannot be located within a 10-acre tract, one or two location letters are used and the serial number is omitted. Other sites where hydrologic data were collected are numbered in the same manner, but no serial number is used. The numbering system is illustrated in figure 1.

EXPLANATION OF TABLES

Table 1 lists the geologic units for sections in three parts of the area. The table also includes a generalized discussion of the lithology and hydrologic characteristics of the individual geologic units or of groups of units.

Table 2 contains records of selected test holes and water wells, with water-bearing geologic units, the intervals tested, their yield, and other data or information available.

Table 3 contains logs of selected test holes and water wells. The material penetrated, depth, thickness, and for some holes the depths of specific geologic units, are described or recorder by drillers or geologists.

Table 4 shows water levels in selected observation wells.

Table 5 contains records of selected springs, with geologic unit, yield, and field measurements of temperature, specific conductance and pH.

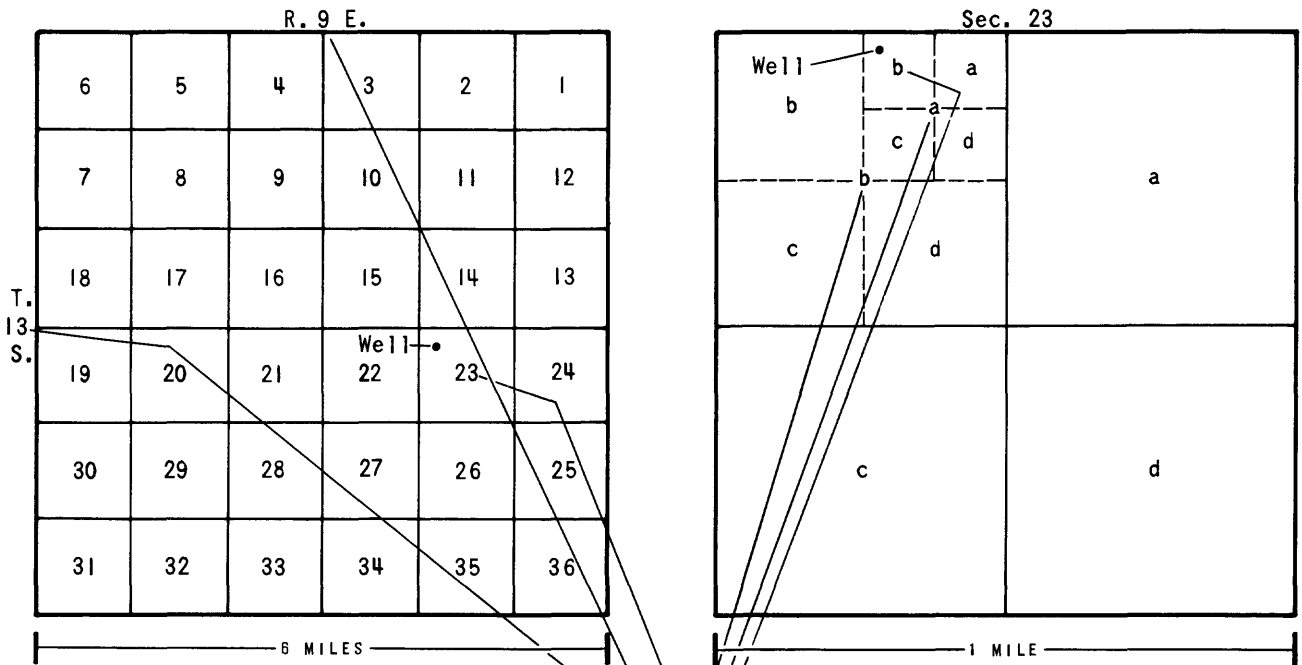
Table 6 contains records of ground-water discharge from selected mines.

Table 7 shows chemical analyses of ground water from selected test holes, water wells, springs, and mines. Some analyses include values for minor and trace elements as well as for the major inorganic dissolved constituents.

¹Although the basic land unit, the section, is theoretically 1 mi², 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.

Sections within a township

Tracts within a section



(D-13-9)23bab-1

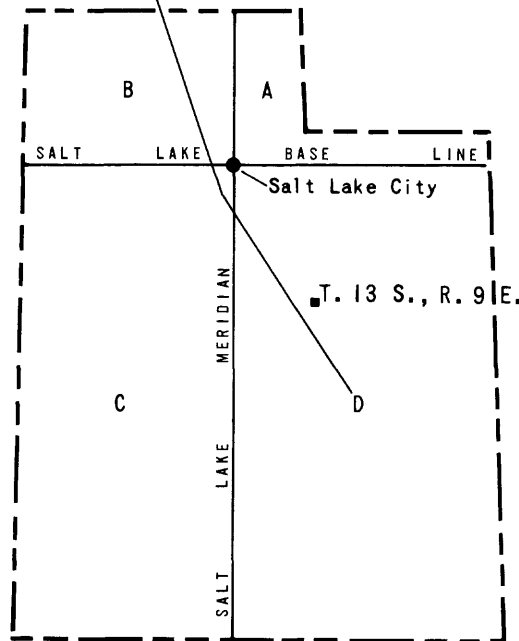


Figure 1.—Data-site numbering system used in Utah.

REFERENCES CITED

- Cashion, W. B., 1973, Geologic and structure map of the Grand Junction Quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-736.
- Fisher, D. J., Erdmann, C. E., and Reeside, J. B., Jr., 1960, Cretaceous and Tertiary formations of the Book Cliffs, Carbon, Emery, and Grand Counties, Utah, and Garfield and Mesa Counties, Colorado: U.S. Geological Survey Professional Paper 332.
- Fouch, T. D., 1976, Revision of the lower part of the Tertiary System in the central and western Uinta Basin, Utah: U.S. Geological Survey Bulletin 1405-C.
- Gill, J. R., and Hail, W. J., 1975, Stratigraphic sections across Upper Cretaceous Mancos Shale-Mesaverde Group boundary, eastern Utah and western Colorado: U.S. Geological Survey Oil and Gas Investigations Chart OC-68.
- Stokes, W. L. [ed.], 1964, Geologic map of Utah: University of Utah.
- Waddell, K. M., and Vickers, H. L., Upton, R. T., and Contratto, P. K., 1978, Selected hydrologic data, Wasatch Plateau-Book Cliffs coal-fields area, Utah: U.S. Geological Survey Open-File Report 78-121 (also duplicated as Utah Basic-Data Release 31).
- Williams, P. L., 1964, Geology, structure, and uranium deposits of the Moab Quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-360.
- Williams, P. L., and Hackman, R. J., 1971, Geology, structure, and uranium deposits of the Salina Quadrangle, Utah: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-591.
- Wright, J. C., and Dickey, D. D., 1963, Block diagram of the San Rafael Group and underlying strata in Utah and part of Colorado: U.S. Geological Survey Oil and Gas Investigations Chart OC-63.

Table 1.—Generalized stratigraphic sections and hydrologic characteristics of rocks in the Wasatch Plateau-Book Cliffs area
 [Adapted from Cashion (1973), Fisher, Erdmann, and Reeside (1960), Fouch (1976), Gill and Hale (1975), Stokes (1964), Williams (1964), Williams and Hackman (1971), and Wright and Dickey (1963)]

Time	Series	Geologic unit			Lithology	Hydrologic characteristics
		Wasatch Plateau	Western Book Cliffs	Eastern Book Cliffs		
Quaternary	Holocene and Pleistocene	Alluvium and colluvium	Alluvium and colluvium	Alluvium and colluvium	Clay, silt, sand, and gravel in talus, stream-channel, and fan deposits; till of ill-sorted clay to boulders in higher parts of Wasatch Plateau	Generally moderately permeable; yield useable water to springs and wells
		Glacial till				
Tertiary	Eocene		Green River Formation	Green River Formation	Green River Formation: marl, limestone, shale, and sandstone, mostly of lacustrine origin; Wasatch Formation: marl, shale, siltstone, and sandstone of fluvial and lacustrine origin; Colton Formation: siltstone and sandstone of fluvial origin; Flagstaff Limestone: marl, limestone, and shale of lacustrine origin; Flagstaff Member: lacustrine marl, claystone, and shale; North Horn Formation: limestone, shale, sandstone, and conglomerate of local lacustrine, paludal, and fluvial origin	Range from relatively impermeable to highly permeable; yield water to springs; the Flagstaff Limestone and North Horn Formation yield water to wells for municipal use at Price
		Flagstaff Limestone		Colton Formation		
	Paleocene		Flagstaff Member of Green River Formation			
		North Horn Formation	North Horn Formation	North Horn Formation		
Cretaceous	Upper Cretaceous	Mesaverde Group	Mesaverde Group	Tuscher Formation	Mesaverde Group: shale, siltstone, sandstone, conglomerate, and some major coal seams; generally grades upward from units of marine and marginal-marine origin to units of nonmarine paludal and fluvial origin; marine units such as the Buck Tongue of the Mancos Shale inter-tongue with fluvial and paludal units; marine-shale units become thinner or may pinch out from west to east; Blackhawk Formation: contains mineable seams of coal	Usually only slightly permeable; fracturing or jointing may impart moderate to high permeability; yield water to springs and underground-mine workings
				Farrer Formation		
				Neslen Formation		
				Sego Sandstone		
			Buck Tongue of Mancos Shale			
		Castlegate Sandstone	Castlegate Sandstone			
		Blackhawk Formation	Blackhawk Formation			
		Star Point Sandstone	Star Point Sandstone			
			Blackhawk Formation			
Upper Cretaceous	Mancos Shale	Mancos Shale	Mancos Shale	Masuk Member	Mancos Shale: a conspicuously uniform, soft, fissile marine shale with thin discontinuous beds of limestone and siltstone; fine-grained sandstone members of the Mancos thicken to the west and become thinner or may pinch out to the east; the sandstone members have thin irregular seams of carbonaceous shale and coal; Ferron Sandstone Member: has mineable coal seams near the southern part of the Wasatch Plateau area	Shales have very low permeability; sandstones yield water to oil and gas tests. In the southern part of the Wasatch Plateau area, the Ferron Sandstone Member yields potable water to the Emery municipal well and water to underground-mine workings
				Emery Sandstone Member		
				Blue Garley Canyon Sandstone Member		
				Ferron Sandstone Member		
				Tununk Member		
				Dakota Sandstone	Dakota Sandstone	Dakota Sandstone
				Dakota Sandstone	Dakota Sandstone	Coarse-grained fluvial sandstone, thin shale, and coal seams
				Dakota Sandstone	Dakota Sandstone	Slight permeability; yields water to test holes in some places
Lower Cretaceous				Cedar Mountain Formation	Cedar Mountain Formation	Burro Canyon Formation
				Cedar Mountain Formation	Cedar Mountain Formation	Shale and coarse fluvial conglomeratic sandstone
				Cedar Mountain Formation	Cedar Mountain Formation	Yields water to test holes in some places
Upper Jurassic				Morrison Formation	Morrison Formation	Morrison Formation
				Morrison Formation	Morrison Formation	Shale and fluvial sandstone
				Morrison Formation	Morrison Formation	Do.
Middle Jurassic	San Rafael Group	San Rafael Group	San Rafael Group	Summerville Formation	Summerville Formation: marginal-marine shale, mudstone, and gypsum; Curtis Formation: marine sandstone and siltstone	Slight permeability; yields water to small springs
				Curtis Formation		
				Entrada Sandstone		
				Carmel Formation		
Lower Jurassic	Glen Canyon Group	Glen Canyon Group	Glen Canyon Group	Navajo Sandstone	Navajo Sandstone	Eolian sandstone
				Navajo Sandstone		
Upper Triassic(?)				Kayenta Formation	Kayenta Formation	Kayenta Formation
				Kayenta Formation	Kayenta Formation	Limestone, shale, and fluvial siltstone
				Wingate Sandstone	Wingate Sandstone	Wingate Sandstone
				Wingate Sandstone	Wingate Sandstone	Eolian sandstone
				Wingate Sandstone	Wingate Sandstone	Yields water to test holes in some places
Upper Triassic				Chinle Formation	Chinle Formation	Chinle Formation
				Chinle Formation	Chinle Formation	Shale, siltstone, and fluvial sandstone and conglomerate
				Chinle Formation	Chinle Formation	Basal sandstones may yield water to test holes in some places
Middle(?) and Lower Triassic				Moenkopi Formation	Moenkopi Formation	Moenkopi Formation
				Moenkopi Formation	Moenkopi Formation	Shale, siltstone, sandstone, and some limestone
				Moenkopi Formation	Moenkopi Formation	Limestone may yield water to wells and test holes in some places
Lower Permian				Kaibab Limestone	Kaibab Limestone	Cutler Formation
				Cutler Formation ²		
				Cutler Formation ²	Cutler Formation ²	Kaibab Limestone: marine limestone with minor sandstone; Cutler Formation: eolian sandstone
				Cutler Formation ²	Cutler Formation ²	Kaibab Limestone yields water to test holes in some places. Cutler Formation yields water to test holes in some places

¹Includes some minor exposures of volcanic rocks and intrusive dikes which are not discussed further.

²Referred to in older reports as Coconino Sandstone.

Table 2.—Records of selected test holes and water wells

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available
								Rate	Date	
(D-10-8)16dab-1	O	Mountain Fuel Supply Co. (No. 1 Gremo Hill)	7,625	6,202	Green River Fm. Flagstaff Ls. Mbr.	0- 2,480 3,510- 4,810	546- 631 4,384- 4,392 4,630- 4,660	500F 90F 80F	1-13-70	G
(D-11-7)10aaa-1	O	Mountain Fuel Supply Co. (No. 1 Skyline Federal)	8,198	11,750	Blackhawk Fm. Ferron Ss. Mbr.	2,468- 10,453-11,023	3,017- 3,164 4,140- 4,165 10,750-10,795	2,021F 384F 513F	1-19-70	Fault displacement of Blackhawk Fm. results in apparent increased thickness. C,G,L.
(D-11-9)30dca-1	W	Utah Power & Light Co. (A-27488)	7,119	2,362	Flagstaff Ls. Mbr.	-	225- 326	F1	5- 3-77	Abandoned, flows less than 1 gal/min.
(D-12-5)36bdd-1	O	Sunray Mid-Continent Oil Co. (No. 1 Utah-Federal "C")	8,846	9,130	Ferron Ss. Mbr.	8,425- 9,100	8,520- 8,591 8,805- 9,072	90F 2,126F	2-15-61	Driller reported fresh water in both tests. G.
(D-12-7)22abb-1	O	Three States Natural Gas Co. (No. 1 Watsch Land & Cattle)	8,175	7,917	Emery Ss. Mbr. Ferron Ss. Mbr.	2,894- 5,992-	3,439- 3,527 6,210- 6,228 6,343- 6,350	1,840F - 1,100F	4-11-53	Driller reported fresh water in both tests of the Ferron Ss. Mbr. G.
(D-12-8)32cbd-1	C	U.S. Geological Survey (W-BC-5-C)	8,400	1,320	Alluvium Castlegate Ss. Blackhawk Fm. Star Point Ss.	0- 40 40- 180 180- 1,245 1,245-	27- 40 40- 180 180- 1,245 1,245- 1,310	- - - -	10- 9-76	Log indicated some water in all geologic units, water level 27 ft below land surface 10-9-76. G,L.
(D-12-12)28ccb-1	O, W	Paul T. Walton Oil & Gas Co. (No. 1 Iriart-Fee)	7,240	3,520	North Horn Fm. Price River Fm.	465- 1,795 1,795- 2,284	760- 775 1,000- 1,040 1,805- 1,830 1,980- 2,000 780F	7G 3.5G 24.5G 28G	8-23-67	Oil and gas test converted to water well, water level 11.37 ft below land surface 4-25-78, unused. L.
(D-13-6)16cac-1	O	Carter Oil Co. (No. 1 Unit)	8,805	8,107	Ferron Ss. Mbr.	6,910- 7,570	3,439- 7,275	760F	10-24-54	Driller reported salt water. G.
(D-13-7)11ccc-1	C	U.S. Geological Survey (W-BC-2-S)	9,150	1,296	Blackhawk Fm. Star Point Ss.	0- 1,260 1,260-	568- 1,296	-	9-22-76	Log indicated some water in both geologic units, water level 568 ft below land surface 9-22-76. G,L.
12dca-1	C	U.S. Geological Survey (W-BC-3-S)	8,525	900	Blackhawk Fm. Star Point Ss.	5- 864 864-	18- 900	-	9-14-76	Log indicated some water in both geologic units, water level 18 ft below land surface 9-14-76. G,L.
(D-13-8)4bbb-1	C, W	U.S. Geological Survey (W-BC-6-S)	8,160	160	Castlegate Ss.	10-	80- 120	50Gm,F1	9-17-76	Open hole. C.
8aba-1	C	U.S. Geological Survey (W-BC-4-S)	8,250	1,120	Castlegate Ss. Blackhawk Fm. Star Point Ss.	7- 62 62- 1,101 1,101-	31- 1,120	-	9-26-76	Log indicated some water in all geologic units except alluvium, water level 31 ft below surface 9-26-76. G,L.
8ddd-1	C	Cities Service Petroleum Co.	8,400	1,100	Blackhawk Fm.	-	150-	-	9-14-76	Water at 150 ft below land surface cascaded into hole, water level 177 2 ft below land surface 9-14-76, destroyed. C.
17edd-1	W	Coal City (ruin)	7,250	20	Alluvium	0- 20	10- 20	-	-	Municipal supply, destroyed. C.
(D-13-9)8ccc-1	W	Liberty Fuel Co.	6,845	60	Blackhawk Fm.	50-	50- 60	-	-	Destroyed. C.
23bab-1	W	J. Elegance	6,125	100	Masuk Mbr.	40-	90- 100	10G	12-21-56	R.
24aaa-1	W	City of Helper (C-11742)	5,824	26	Alluvium	0- 26	4- 26	250G	3- -35	Rock-curbed well, 11 ft diameter, water level 3.90 ft below land surface 10-18-47, unused.
24cda-1	W	G. Mangone (A-26782)	5,795	52	do	0- 52	14- 52	10G	11- 8-56	Driller reported water level at 14 ft below land surface 11-8-56. L.
36abb-1	W	H.E. Loudermilk Co.	5,725	110	Emery Ss. Mbr.	95-	95- 110	5G	11-15-56	R.
(D-13-12)2cbb-1	C	Pacific Gas & Electric Co.	7,850	2,800	Flagstaff Ls. Mbr.	100- 645	250- 350	25G	7- -77	L.
5dbc-1	C	do	7,120	1,832	Price River Fm.	715- 1,326	800-	-	10- -77	Driller reported water smelled of sulfur. L.
8abc-1	C	do	8,050	2,230	North Horn Fm.	310- 1,111	680-	-	9- -77	L.
9cdc-1	C	do	8,330	2,040	do Flagstaff Ls. Mbr.	0- - 940	295- 465- 520- 680 700- 880	1G 6G 15G 25G	11- -77	Driller reported water level 283 ft below land surface. L.
10abc-1	C	do	7,800	2,122	Flagstaff Ls. Mbr.	0- 247	32-	-	7- -77	L.
11daa-1	C	do	8,180	2,399	do	0- 365	50-	-	9- -77	L.
14ccb-1	C	do	8,140	1,310	do	0- 270	175-	-	7- -77	L.
15cab-1	C	do	8,460	1,820	do	137- 739	385-	-	8- -77	L.
16dcb-1	C	do	7,260	440	Blackhawk Fm.	739- 1,306	775-	-	9- -77	L.
22baa-1	C	do	8,230	1,220	do	0- 440 700- 1,220	46- 50 700- 1,220	5G -	11- -77	Small amounts of perched water throughout the interval, fluid level rose from 1,150 ft to 1,142 ft below land surface during geophysical logging. L.
(D-14-6)24daa-1	O	Phelps Dodge Corp. (No. 1 Kemmerer Coal)	8,284	4,603	Ferron Ss. Mbr.	4,117- 4,598	4,140- 4,327	938F	9-15-54	G.
(D-14-7)17bbb-1	O	Tenneco Oil Co. (No. 1 Clear Creek)	10,120	15,703	Emery Ss. Mbr.	1,918- 2,522	1,918- 2,522	2.8G	7-22-67	Driller reported "fresh" water. G.
25dad-1	O	Skelly Oil Co. (No. 2 R. Bryner)	7,850	12,293	do Dakota Ss.	4,493- 4,625	2,470- 2,545 4,495- 4,597	900F 2,690F	12- 5-56	G.
(D-14-8)8aba-1	O	Pacific Western Oil Co. (No. 4 Unit)	7,430	4,312	Ferron Ss. Mbr. Dakota Ss. and Morrison Fm.	3,473- 4,210-	3,705- 3,760 4,228- 4,312	903F 480F	7-28-53	G.
18bcc-1	O	Pacific Western Oil Co. (No. 2 Unit)	7,680	4,738	Dakota Ss.	4,520-	4,520- 4,617 4,619- 4,662	970F 660F	5- 2-52	Driller reported gassy water. G.
19bab-1	O	Pacific Western Oil Co. (No. 3 Unit)	7,550	4,358	Ferron Ss. Mbr. Dakota Ss.	3,418- 3,835 4,233- 4,358	3,516- 3,616 4,257- 4,272	775F 300F	10- 1-55	Driller reported gassy water. J.
(D-14-9)14aad-1	W	A. Michelog (A-20081)	5,700	65	Alluvium	0- 44	39- 43	6.5G	11-18-48	Driller reported water level 25 ft below land surface. L.
28aad-1	O	Davis Oil Co. (No. 1 Goodwin-Federal)	6,410	2,997	Ferron Ss. Mbr.	2,672- 2,940	2,672- 2,836 2,835- 2,856	2,242F 450F	3-10-73	Driller reported water resistivity 0.72 ohm-meters at 58°F (16,500 micromhos at 25°C) G.
29abd-1	O	Amerada Petroleum Co. (No. 1 USA-Abbott)	6,314	4,217	do	2,664- 3,023	2,756 2,806	F1 F1	1- 7-63	Flowline test. C,G
(D-14-10)27cdb-1	O	Mountain Fuel Supply Co. (No. 1 Wellington)	5,454	1,200	do	730- 958	748- 958	8.4G	9-16-68	Driller reported "slightly brackish" water. J.
(D-14-11)16abb-1	O	Mountain Fuel Supply Co. (No. 2 Wellington)	5,695	1,606	Blue Gate Mbr.	0- 1,263	55-	6.0G	9- 6-68	Driller reported fresh water. J.
(D-14-12)19cba-1	O	Pacific Trans. Supply Co. (No. 13-19 Deadman Unit-Federal)	5,800	1,636	Ferron Ss. Mbr. Dakota Ss. Cedar Mountain Fm.	411- 628 880- 925 925- 1,576	415- 625 880- 925 1,390- 1,575	- - -	10- 5-74	Driller reported saline water in all units. G.

Table 2.—Records of selected test holes and water wells--Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)		Interval tested (ft)	Yield		Remarks and other data available	
									Rate	Date		
(D-14-12)30caa-1	O	Cities Service Petroleum Co. (No. 12 Strat.)	5,705	340	Ferron Ss. Mbr.	116-	340	116-	130	70G,F1	11-30-62	Driller reported brackish water. G,L.
(D-15-6)20bdc-1	O	Three States Natural Gas Co. (No. 3 Joes Valley)	9,410	7,800	Dakota Ss.	7,642-		7,642-		.6G	9-11-56	G.
(D-15-7)11aac-1	O	Richfield Oil Corp. (No. 1-A Gentry Mtn. Unit)	9,550	6,366	Blackhawk Fm. Ferron Ss. Mbr.	300- 6,015-		1,185- 6,015-	1,497 6,366	28G	9-2-66	G.
(D-15-9)27cdb-1	O	Pacific Natural Gas Explor. Co. (No. 1 North Springs-Federal)	6,130	12,737	Cutler Fm	8,880-	9,927	8,884-	9,000	-	9-30-64	Driller reported saline water. G.
(D-15-10)6bac-1	O	Mountain Fuel Supply Co. (No. 1 Wellington)	5,689	2,000	Ferron Ss. Mbr.	1,730-	1,982	1,851-		17.5G	9-21-68	Driller reported fresh water. J.
	O	Associated Energy Corp. (No. 6 Miller Creek)	5,580	972	do	563-	684	563-		-	2-21-70	Driller reported saline water. L.
	O	Associated Energy Corp. (No. 5 A.E.C. -Marsing)	5,519	1,607	do	-	588	588-		-	2-16-70	Driller reported saline water.
	O	Associated Energy Corp. (No. 1 A.E.C. -Miller Creek)	5,538	880	Blue Gate Mbr.	0-	270	19-		8.8G	1-7-70	Driller reported saline water. J.
	O	Associated Energy Corp. (No. 4 A.E.C. -Miller Creek)	5,555	865	Ferron Ss. Mbr.	460-	590	460-		-	1-27-70	Driller reported saline water.
	O	Associated Energy Corp. (No. 3 A.E.C. -Miller Creek)	5,590	880	Blue Gate Mbr.	0-	650	5-		.7G	1-12-70	Do.
	O	Mountain Fuel Supply Co. (No. 3 Wellington)	5,658	1,500	Ferron Ss. Mbr.	911-	1,135	1,045-		-	9-10-68	Driller reported water level 1.300 ft below land surface G
	O	Associated Energy Corp. (No. 2 A.E.C. -Miller Creek)	5,555	1,020	do	575-	790	640-		-	1-23-70	Driller reported saline water.
(D-15-11)4cdd-1	W	A. Poloni (A-18127)	5,390	280	Mancos Sh.	14-		135-	280	-	9-15-47	Driller reported water level 135 ft below land surface L.
	W	Carbon Dioxide & Chemical Co. (No. 1, A-12339)	5,390	46	Alluvium	0-	43	15-	43	150G	7-7-36	Driller reported water level 12 ft below land surface with 8 ft of drawdown during pumping.
	W	Carbon Dioxide & Chemical Co. (No. 2, A-12339)	5,390	46	do	0-	43	15-	43	150G	7-13-36	Do.
	W	Carbon Dioxide & Chemical Co. (No. 3, A-25298)	5,390	46	do	0-	43	32-	43	-	10-24-53	Driller reported water level 12 5 ft below land surface. L.
	W	Carbon Dioxide & Chemical Co. (No. 4, A-25298)	5,390	45	do	0-	43	32-	43	-	10-29-53	Driller reported water level 13 ft below land surface.
	W	Knight Ideal Coal Co. (A-28516)	5,369	50	do	0-	36	25-	36	100G	1-25-57	Driller reported water level 12 ft below land surface. Well destroyed.
	W	do	5,369	40	do	0-	37	23-	37	30G	10-17-62	Driller reported water level 8 ft below land surface with 12 ft of drawdown after bailing 1 hour. L.
	W	do	5,370	48	do	0-	43	23-	43	100G	1-23-57	Driller reported water level 12 ft below land surface.
	O	Utah Oil Refining Co. (No. 1 Farnham Dome)	5,770	3,115	Entrada Ss. Navajo Ss.	1,095- 1,259-	1,248	1,100- 1,332-	1,145 1,392	.7G	1-8-24	Driller reported brackish water in Navajo Ss.
	O	Carbon Dioxide & Chemical Co. (No. 1 Farnham Dome)	5,740	3,114	Entrada Ss. Navajo Ss.	- -		1,155- 1,431-	1,170 1,439	- -	6-15-30	
	O	Carbon Dioxide & Chemical Co. (No. 1 Farnham Dome)	5,740	3,114	Entrada Ss. Navajo Ss.	- -		1,431- 1,500-	1,439 1,505	- -		
(D-15-12)15acc-1	W	A. Kotgos (A-20769)	5,750	61	Manco Sh.	26-		56-		.5G	6-17-49	Driller reported water level 35 ft below land surface, well destroyed. L
	W	M. Himonas (A-20430)	5,435	53	Alluvium	0-	32	21-	32	30G	5-27-49	Driller reported water level 18 ft below land surface with 6 ft of drawdown during bailing. Well destroyed. L.
(D-15-13)3dac-1	W	J.H. Peterson (A-19969)	6,100	90	do	0-	69	68-	69	25G	8-16-48	Driller reported water level 52 ft below land surface with 23 ft of drawdown during bailing. L.
	W	M. Himonas (A-20429)	5,750	150	Mancos Sh.	27-		139-		-	6-2-49	Driller reported water level 35 ft below land surface, water saline and gassy. L.
	W	G. Biggs (A-20770)	5,885		Alluvium	0-		28-		-	1949	Rock-curbed dug well R.
	W	E. Stevenson (A-20082)	6,135	200	Mancos Sh.	46-		185-		.3G	11-1-48	Driller reported water level 85 ft below land surface. L.
	W	R. Roberts (A-19945)	6,041	145	do	36-		133-		.5G	7-29-48	Do.
	W	A & H Service Co. (A-19829)	6,160	200	do	42-		74- 135-	79 137	1.0G	7-16-48	Driller reported water level 70 ft below land surface. L.
	O	Pan American Petroleum Co. (No. 1 USA-Cullen)	5,883	7,417	Navajo Ss. Cutler Fm.	3,790- 5,522-	3,990 6,184	3,788- 5,522-	3,812 5,670	180F 2,800F	5-17-59	Driller reported gassy water in Navajo Ss. and saline water in Cutler Fm G
	W	R. Wilcox (A-19958)	5,638	260	Mancos Sh.	21-		5,734- 138-	5,765 138-	2,634F .3G	8-18-48	Driller reported water level 75 ft below land surface. L.
(D-15-14)6cbd-1	W	East Carbon City	6,405	42	Alluvium	-		-	42	-	4-5-43	R.
(D-16-6)27dda-1	O	Three States Natural Gas Co. (No. 2 M.D. Kearns)	8,950	6,379	Castlegate Ss. Ferron Ss. Mbr.	0-	395	300- 5,899-	350 6,047	- 1G,F1	7-14-54 11-5-64	G, G.
(D-16-7)9dac-1	O	Three States Natural Gas Co. (No. 4 Unit)	7,162	5,454	Dakota Ss.	5,290-		5,298- 5,308-	5,308 5,318	440F 4,008F	5-12-54	Driller reported saline water. G.
(D-16-11)11cbb-1	O	Pan American Petroleum Co. (No. 1 Federal-Mounds)	5,355	9,425	Kaibab Ls. Cutler Fm.	4,725- 4,858-	4,858 5,855	4,801- 4,947		-	2-20-65	G.
(D-16-12)2bab-1	O	Skyline Oil Co. (No. 2-21 State)	5,500	4,145	Navajo Ss. and Kayenta Fm. Wingate Ss.	2,330- 2,800-	2,800	2,330- 2,800-	2,800	175G 70G	8-17-72	Driller reported brackish water in all geologic units. J.
	O	Cities Service Petroleum Co. (No. 1 Govt.-C)	5,341	4,322	Moenkopi Fm.	3,151- 4,173		3,735- 3,761		.4G	4-13-62	G.
	O	Equity Oil Co. (No. 1 State)	5,560	3,820	Cedar Mountain Fm. Navajo Ss. Moenkopi Fm.	0- 1,830- 2,977-	196 2,260	27- 1,904- 3,603-	28 1,906 3,605	- - -	11-14-61	Driller reported slightly saline sulfur water in lower test of Moenkopi Fm. J.
	O	Globe Minerals, Inc. (No. 1 Coon Springs)	5,700	3,610	Navajo Ss. Kayenta Fm. Wingate Ss.	1,722- 2,030- 2,140-	2,030 2,604	1,782- 2,604		1300F 140G	6-2-69	Driller reported fresh water. G.
(D-16-13)8dda-1	O, W	True Oil Co. (No. 44 -8 True Federal)	5,328	4,390	Dakota Ss. and Cedar Mountain Fm.	550-	710	550-	700	-	10-27-74	Test converted to water well by plug at 700 ft below land surface. unused G,L,R.

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available
								Rate	Date	
(D-16-14)9bba-1	W	Book Cliff Coal Co. (A-21157)	6,120	51	Alluvium	0- 51	35- 51	36G	11- 7-49	Driller reported water level at 35 ft below land surface with no drawdown during pumping, well destroyed. L.
12bdb-1	C	Kaiser Steel Corp.	7,300	2,095	Blackhawk Fm.	-	-	-	2-11-75	Driller reported water level 490 ft below land surface.
13dca-1	C	do	7,075	1,920	Alluvium	0- 15	15	-	1-27-75	Driller reported small yield of water in alluvium, not measured.
(D-16-15)3bdb-1	O	Chevron Oil Co. (No. 1 Nelson Unit)	6,720	8,752	Mesaverde Grp.	1,275- 4,313	3,692- 3,706	275F	10- 6-75	J.
30bdd-1	C	Kaiser Steel Corp.	7,000	1,600	Castlegate Ss.	-	647	-	12-22-74	
31bac-1	C	do	6,750	1,419	Alluvium	0- 38	38	-	4-22-75	Driller reported small yield of water in alluvium, not measured, fluid level 485 ft below land surface.
31dac-1	C	do	6,700	1,551	North Horn Fm.	0-	135	-	10-10-74	Driller reported water level 120 ft below land surface.
(D-16-24)13adb-1	O	Tidewater Oil Co. (No. 42-13 East Canyon unit)	6,810	6,050	Burro Canyon Fm.	5,850- 5,909	5,888- 5,899	-	10-22-63	C.G.
26cba-1	O	Shamrock Oil & Gas Co. (No. 3 East Canyon-Federal)	6,380	6,118	Tuscher Fm.	0-	225- 233	10.5G	8- 1-63	L.
(D-16-25)11cda-1	O	Sinclair Oil & Gas Co. (No. 174-1 Federal)	6,570	5,299	Castlegate Ss.	1,340- 1,400	1,340- 1,400	-	6-14-65	Driller reported small yield of water, not measured. G.
22bdd-1	O	Sinclair Oil & Gas Co. (No. 2 Unit)	7,640	6,835	Entrada Ss.	6,625-	6,700- 6,735	2,700F	5-28-56	Driller reported saline water. G.
23bdb-1	O	Sinclair Oil & Gas Co. (No. 3 Unit)	6,374	5,541	do	5,435-	5,488- 5,541	490F	6-24-56	Do.
(D-17-6)12acd-1	C	Utah Power & Light Co. (No. EM-4)	9,335	2,210	Alluvium	0- 30	30-	2G	10-15-56	C.L.
24cad-1	C	Utah Geological & Mineralogical Survey (No. U4)	7,600	150	Blackhawk Fm.	1,360- 2,145	1,400-	1G	6- 8-67	Driller reported water level 129 ft below land surface. C.
24dcb-1	C	Utah Power & Light Co. (No. EM-16)	7,510	223	do	0- 175	20-	2G	10- 5-77	L.
25abd-1	C	Peabody Coal Co. (No. 33)	7,360	151	do	0- 151	-	22G	6- 8-67	Driller reported water level 129 ft below land surface. C.
(D-17-7)4bac-1	C	Utah Power & Light Co. (No. EM-14)	9,305	2,040	Alluvium	0- 120	100- 120	50G	8-14-77	L.
8cbb-1	C	Utah Power & Light Co. (No. EM-9)	9,693	2,360	Blackhawk Fm.	1,410- 2,290	2,100-	15G	7-15-77	L.
18bad-1	C	Utah Power & Light Co. (No. EM-6)	8,929	1,630	North Horn Fm.	90- 500	138-	35G	7- 1-77	L.
18dbc-1	C	Utah Power & Light Co. (No. EM-9C)	9,317	2,040	Blackhawk Fm.	1,190- 1,950	1,200-	15G	8- 5-77	L.
20bdb-1	C	Utah Power & Light Co. (No. EM-1)	9,620	2,263	Price River Fm.	900- 1,200	1,120-	1.5G	9- 1-76	L.
29aba-1	C	Utah Power & Light Co. (No. EM-2)	9,642	2,270	North Horn Fm.	765- 1,100	784-	50G	6-20-77	L.
(D-17-8)8add-1	O	Mountain Fuel Supply Co. (No. 1 Huntington Canyon)	6,100	4,040	Alluvium	0- 20	20-	2G	10- 2-68	Driller reported fresh water from alluvium. J.
15bdc-1	O	Phillips Petroleum Co. (No. 1 Unit)	6,120	11,250	do	1,892- 2,174	1,881- 1,891	-	3-26-53	Driller reported water in core of Ferron Ss. Mbr. J.
21dab-1	O	Atlantic Richfield Co. (No. 21-1 Calco Federal)	6,145	2,391	Blue Gate Mbr.	0- 2,040	40-	-	1-22-64	Driller reported small yields of water, not measured. G.
(D-17-9)12cba-1	W	L. McMullin (A-50571)	5,790	200	do	10-	-	-	12- 1-77	Driller reported not enough water, well destroyed. L.
(D-17-10)18bca-1	W	A. Marvadiakis (A-50272)	5,701	180	do	37-	41- 77- 178-	20G	11-28-77	Driller reported water level 20 ft below land surface, total yield from all intervals 20 gal/min, and drawdown of 130 ft after 2 hours of air-lift test. L.
(D-17-11)27ccd-1	W	M.D. Mills (A-31963)	5,758	72	Morrison Fm.	2-	14-	22G	4- -61	Driller reported water level 20 ft below land surface, and drawdown of 20 ft after pumping 2 hours with 2.5 hp pump 50 ft below land surface, well destroyed. L.
(D-17-13)30ddd-1	O	True Oil Co. (No. 44-30 True-Federal)	5,147	2,706	Navajo Ss.	353- 722	- 540	-	11-29-74	Oil test converted to water well by plug at 540 ft, unused. G.
(D-17-14)29acc-1	O	Placid Oil Co. (No. 1 Unit)	4,751	8,507	do	2,610- 2,870	2,743- 2,746	-	1- 7-65	Driller reported fresh water. G.
(D-17-15)5bcc-1	C	Kaiser Steel Corp.	6,700	1,430	North Horn Fm.	0-	95-	-	12- 3-74	
8cdc-1	C	do	6,400	1,245	Price River Fm.	-	300-	-	9- 9-74	
(D-17-16)27bda-1	O	Pacific Natural Gas Exploration Co. (No. 1-27 Range Crk)	4,760	8,480	Castlegate Ss.	-	375- 400	-	-	
(D-17-21)10dca-1	O	Oil, Inc. (No. C-9-10 Westwater)	7,140	6,876	Price River Fm.	0-	195- 220	-	11- 8-62	Driller reported fresh water in Price River Fm. and sulfur water in Castlegate Ss. G.
13abc-1	O	Oil, Inc. (No. C-10 Federal)	6,720	1,973	Castlegate Ss.	528- 2,632	820- 832	-	5-29-65	Driller reported saline water at all intervals. C.
(D-17-24)4dcd-1	O	Willard Pease Drilling Co. (No. 1 Jones-Federal)	7,005	6,516	Entrada Ss.	6,496-	2,278- 2,300	-	-	
8bcb-1	O	Bookcliffs Oil & Gas Co. (No. 1 Govt. 'A')	6,120	5,865	do	5,840-	2,623- 2,631	-	2-22-66	Do.
9bcd-1	O	Trend Oil Co. (No. 1 Castlegate)	7,110	2,200	do	-	450- 490	-	-	
9cbd-1	O	Trend Oil Co. (No. 7-A Bryson Canyon Unit)	6,740	5,512	Sego Ss.	-	1,050- 1,080	3.3G	1- 2-66	Driller reported brackish water. G.
10bdd-1	O	Trend Oil Co. (No. 2 Unit)	5,825	5,242	Mesaverde Grp.	-	1,330- 1,350	.2G	12-22-63	Do.
10dbb-1	O	Trend Oil Co. (No. 9 Bryson Canyon Unit)	6,075	5,033	Morrison Fm.	4,684- 5,229	1,415- 1,435	-	10-28-60	Driller reported saline water at all intervals. G.
14bbd-1	O	Trend Oil Co. (No. 4 Bryson Canyon Unit)	6,480	5,706	Entrada Ss.	5,690-	1,530- 1,540	-	8-17-62	G.

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available	
								Rate	Date		
(D-17-24)29dda-1	0	Willard Pease Drilling Co. (No. 2 Book Cliffs)	5,280	4,774	Castlegate Ss. Morrison Fm. and Entrada Ss.	351- 400 4,146-	351- 480 4,750- 4,774	-	1-25-63	J.	
(D-17-25)3ddd-1	0	Burton W. Hancock Co. (No. 1 Federal)	5,439	4,133	Morrison Fm. Curtis Fm. Entrada Ss.	3,440- 4,046 4,046- 4,110 4,110-	4,043- 4,133	210F	9-25-56	Driller reported saline water. G.	
12ddd-1	0	Frontier Refining Co. (No. 1 E.V. Crittenden)	5,250	4,493	Kayenta Ss. Wingate Ss.	3,780- 3,972 3,972- 4,348	3,971- 4,012 4,046- 4,096	330F 225F	8-28-48	Driller reported saline water. J	
(D-17-26)5bcc-1	0	Burton W. Hancock Co. (No. 5 Govt.)	5,305	3,607	Morrison Fm.	3,500-	3,570- 3,600	-	10-16-60	G.	
32dac-1	0	Gelco Oil Co. (No. 1 State)	4,950	1,464	Dakota Ss.	1,036- 1,171	1,110- 1,115	1G	1- 4-73	Driller reported saline water. J.	
(D-18-7)19bda-1	C	U.S. Geological Survey (W-NH-5-CD)	8,350	970	Blackhawk Fm. Star Point Ss.	345- 937 937-	701- 970	-	10- 9-76	Fluid level 701 ft below land surface; from geophysical log. G.L.	
20baa-1	C	U.S. Geological Survey (W-NH-7-CD)	8,625	1,100	do	895-	1,060- 1,100	-	10-13-76	Fluid level 1,060 ft below land surface; from geophysical log. G.L.	
28bcc-1	C	U.S. Geological Survey (W-NH-3-CD)	8,650	1,130	Castlegate Ss. Blackhawk Fm. Star Point Ss.	54- 333 333- 985 985-	318- 1,130	-	10-11-76	Fluid level 318 ft below land surface; from geophysical log. G.L.	
30bad-1	C	U.S. Geological Survey (W-NH-4-CD)	8,300	860	Price River Fm. Castlegate Ss. Blackhawk Fm.	10- 92 92- 400 400-	42- 860	-	10- 4-76	Fluid level 42 ft below land surface; from geophysical log. G.L.	
32abc-1	C	U.S. Geological Survey (W-NH-2A-CD)	8,600	1,030	Castlegate Ss. Blackhawk Fm.	180- 394 394-	315- 1,030	-	10-13-76	Fluid level 315 ft below land surface; from geophysical log. G.L.	
(D-18-8)12bdc-1	0	J.A. Minton Co. (No. 1-X Wilberg)	5,696	2,015	Dakota Ss.	1,526- 1,582	1,530- 1,580	-	5-11-62	Driller reported saline water and gas. J.	
(D-18-9)31dda-1	0	Kralik Oil Co. (No. 1 Unit)	5,845	3,600	do	850- 900	850- 900	-	1- -48	Driller reported saline water.	
(D-18-11)27aca-1	0	Austral Oil Co. (No. 1-27 Federal)	7,082	6,861	Entrada Ss. Navajo Ss. Wingate Ss.	- 1,682- 1,900 2,300- 2,400	1,394- 1,428 1,682- 1,900 2,300- 2,400	4.2G	9-27-66	Driller reported fresh water in Entrada Ss. G.	
(D-18-12)12ada-1	0	El Paso Natural Gas Co. (No. 1 Pack Saddle)	5,302	6,801	Kaibab Ls. Cutler Fm.	2,280- 2,330 2,330- 2,859	2,309- 2,342	95F	1-24-53	G.	
(D-18-14)8ccd-1	0	Lemm-Mahtico Co. (No. 1 Woodside-Govt.)	4,805	7,920	Entrada Ss. Navajo Ss. Wingate Ss. Cutler Fm.	1,307- 1,486 1,785- 1,960 2,091- 2,732 4,217-	1,310- 1,480 1,785- 1,960 2,095- 2,730 4,220- 4,585	- - - -	4- 7-60	Driller reported fresh water in Entrada Ss. G.	
9dcd-1	W	Geysier Gas Station	4,630	30	Alluvium	0-	-	-	8- 8-58	Timber-curbed dug well. C.	
30cca-1	0	Humble Oil & Refining Co. (No. 2 Woodside Unit)	5,075	7,083	Entrada Ss. Glen Canyon Grp. Cutler Fm.	635- 995 1,294- 2,246 3,710- 4,949	635- 990 1,295- 2,245 3,710- 4,150	- - -	12-22-62	Driller reported fresh water in Entrada Ss. G.	
(D-18-15)19abd-1	0	Shamrock Oil & Gas Co. (No. 1 Witter-Federal)	4,570	9,896	Mancos Sh.	0- 2,925	325- 330	1.4G	8- 4-66	Driller reported fresh to brackish water. G.L.	
(D-18-16)8bad-1	0	Gulf Oil Corp. (No. 1 Norris-Federal)	6,250	13,463	Entrada Ss.	6,980- 7,655	7,276- 7,305	1,666F	6-14-74	Driller reported brackish water. G.	
(D-18-22)34dba-1	0	Gulf Oil Corp. (No. 4 Book Cliffs Unit-Federal)	5,646	5,436	Mesaverde Grp. Mancos Sh.	0- 1,760 1,760- 5,400	1,377- 1,390 5,185- 5,205	- -	12-21-63	G.	
(D-18-23)10ada-1	0	Willard Pease Drilling Co. (No. 2 Federal)	6,220	5,860	Mesaverde Grp.	0-	0- 2,100	7.0G	11-17-64	Driller reported brackish water. G.	
(D-18-24)10ddd-1	0	Great Western Drilling Co. (No. 2 Book Cliffs)	4,850	3,056	Entrada Ss.	3,025-	3,026- 3,056	185F	10- 9-59	Driller reported fresh water. G.	
11bdc-1	0	Beehive Uranium Co. (No. 1 Govt.)	4,963	2,646	Dakota Ss.	2,470- 2,600	2,470- 2,500	950F	4-10-69	Driller reported saline water. G.	
21acd-1	0	Big Horn-Powder River Corp. (No. A-1 Federal)	5,020	2,890	Morrison Fm.	2,844-	2,886- 2,890	F1	4-19-65	Driller reported saline water and artesian head 110 ft above land surface. G.	
(D-18-25)12ccc-1	0	Skelly Oil Co. (No. 1 Massa)	4,779	2,055	Dakota Ss. Entrada Ss.	1,240- 2,030 260- 390	1,240- 2,055 380- 410	F1	12- 9-61	No measurements. G.	
18ddd-1	0	A. Lansdale Co. (No. 18 A. Lansdale)	4,895	1,155	Dakota Ss. Morrison Fm. Entrada Ss.	260- 390 390- 1,112 1,112- 1,155	- - -	1.4G	12- -68	Driller reported brackish water from upper interval. J.	
20cbb-1	0	Thunderbird Oil & Gas Co. (No. 20-1A Larsen Federal)	5,060	1,999	Morrison Fm. Entrada Ss.	- -	1,112- 1,124 1,172- 1,184 1,316- 1,330 1,354- 1,364 1,950- 1,990	- - - - -	140G	12- -68	Driller reported brackish and saline water. G.
26ccc-1	0	A. Lansdale Co. (No. 17 Govt.)	4,778	1,470	Dakota Ss. Entrada Ss.	370- 670 1,375-	460- 480 1,400- 1,470	3.5G 4.0G	9-26-68	Driller reported brackish water. G.	
27dbc-1	0	Texota Oil Co. (No. 1-E Federal)	4,850	1,540	Dakota Ss. Entrada Ss.	511- 612 1,380-	511- 612 1,380- 1,540	2.8G 3.5G	5- 8-56	Driller reported sulfur water in Dakota Ss. and fresh water in Entrada Ss. G.	
29cac-1	0	A. Lansdale Co. (No. 3 Lansdale-Govt.)	4,774	1,392	do	1,240-	1,360- 1,392	14G	7- 1-67	Driller reported saline water. G.	
29cbb-1	0	Texota Oil Co. (No. 1-B Federal)	4,800	1,534	Dakota Ss. Burro Canyon Fm. Morrison Fm.	527- 726 726- 1,370	598- 606 702- 712 1,065- 1,090 1,105- 1,155 1,370- 1,534	.7G - - - -	11-21-55	G.L.	
33dcd-1	0	A. Lansdale Co. (No. 1 Lansdale-Govt.)	4,885	944	Entrada Ss. Morrison Fm. Entrada Ss.	1,370- 1,132 836-	836 212- 228 900- 944	.7G - .7G	12-18-67	Driller reported brackish water in Morrison Fm. and saline water in Entrada Ss. G.	
(D-18-26)8cac-1	0	A. Lansdale Co. (No. 19 Lansdale)	4,834	1,715	Dakota Ss. Morrison Fm.	720- 860 860- 1,540	720- 725 1,230- 1,250	1.4G .7G	1-17-69	Driller reported brackish water in Dakota Ss. and saline water in Morrison Fm. J.	
(D-19-6)1caa-1	C	U.S. Geological Survey (No. W-NH-1-CD)	8,400	1,180	Blackhawk Fm. Star Point Ss.	378- 1,123 1,123-	1,048- 1,180	-	9-20-76	Water level 1,048 ft below land surface; from geophysical log. G.L.	
(D-19-7)29aad-1	0	Northwest Production Corp. (No. 1 Federal)	6,535	2,845	Ferron Ss. Mbr.	2,775-	2,841- 2,845	-	6-23-58	Driller reported saline water. G.	
(D-19-10)15bac-1	W	U.S. Bureau of Land Management (A-16947 Buckhorn Flat Well)	5,615	476	Carmel Fm.	310-	445- 465	20G	10-21-76	Driller reported water level 185 ft below land surface; drawdown 28 ft. C.L.	
(D-19-12)9dbc-1	0	Modern Minerals Corp. (No. 1 Skyline State)	6,060	2,376	Chinle Fm.	1,126- 1,432	1,340- 1,410	1.5G	6-21-69	Driller reported fresh water. J	
14bbb-1	W	U.S. Bureau of Land Management (A-16948)	5,740	51	Carmel Fm.	0-	- 51	-	4-26-78	Well dry on this date.	
(D-19-13)12ddd-1	0	Holly Resources Corp. (No. 44-12 Federal)	5,490	3,800	Kaibab Ls. Cutler Fm.	3,322- 3,440 3,440-	3,341- 3,373 3,671- 3,702	- 2.8G	9-19-69	C.G.	
(D-19-14)11dcb-1	0	California-Time Petroleum Co. (No. 1 Barrier Bank)	5,005	8,795	Wingate Ss.	4,180- 4,770	4,440- 4,575	1,340F	7-30-68	G.	
(D-19-21)29ddd-1	0	Anschutz Corp. (No. 2 Federal-773)	6,240	4,755	Entrada Ss.	4,596-	4,655- 4,755	-	4- -72	Driller reported fresh(?) water. G.	
34dcd-1	0	Belco Petroleum Co. (No. 1 Govt.)	5,850	3,950	Morrison Fm.	3,200- 3,855	3,536- 3,576	900F	1-22-60	Driller reported saline water. G.	

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available
								Rate	Date	
(D-19-22)4dbb-1	0	Gulf Oil Corp. (No. 2 Book Cliffs Unit)	5,740	5,215	Dakota Ss.	5,010- 5,200	5,068- 5,080 5,190- 5,200	1,000F 3,700F	9-23-61	Driller reported saline water. G. L.
12cda-1	0	Pacific Coast Gas Co. (No. 1 Sun-Govt.)	5,320	4,650	Entrada Ss.	4,553-	4,560- 4,590	3,690F	10-28-57	Driller reported fresh water. G.
12cdd-1	W	Colorado-Utah Livestock Co. (A-36483)	5,330	340	Castlegate Ss.	325-	325- 340	3G	7- -65	Well destroyed. L.
(D-19-23)7cac-1	0	Anschutz Corp. (No. 1 Federal-262)	5,280	4,680	Morrison Fm. Entrada Ss.	4,002- 4,502 4,568-	4,250- 4,260 4,568- 4,680	520F 2,745F	4- -72	Driller reported saline water. G.
(D-19-24)14adc-1	0	Texota Oil Co. (No. 1-D Federal)	4,660	2,605	Dakota Ss. Burro Canyon Fm.	1,716- 1,764 1,764- 1,880	1,716- 1,764 1,805- 1,831	1,300F -	12-16-55	Driller reported brackish water in Dakota Ss. G. L.
30ddc-1	0	Agate Oil Co. (No. 3 Wildcat)	4,680	2,466	Morrison Fm. Entrada Ss. Alluvium Dakota Ss.	1,880- 2,510 2,547- 0- 75 2,039- 2,140	1,904- 1,950 2,547- 2,605 17- 75 2,039- 2,050	520F - - -	1-21-56	No measurements reported. G.
31bdd-1	0	Agate Oil Co. (No. 4 Wildcat)	4,761	2,555	do	2,095-	2,545- 2,555	-	4-24-56	G.
31cba-1	0	Agate Oil Co. (No. 2 Wildcat)	4,705	2,490	do	2,020-	2,445- 2,460	-	10- 4-55	G.
32dac-1	0	Stava Oil Co. (No. 32-1 State)	4,630	1,945	Alluvium Dakota Ss.	0- 52 1,639- 1,727	50- 52 1,684- 1,690	-	10-30-67	Driller reported brackish water in alluvium and saline water in Dakota Ss. J.
35cdd-1	0	Carter Oil Co. (No. 2 Henroid-Federal)	4,580	1,600	do	1,208- 1,318	1,270- 1,294	-	10- 2-55	G.
35dbc-1	0	Promontory Oil Co. (No. 3 Seiber Nose-Federal)	4,590	1,580	Morrison Fm. Dakota Ss.	1,318- 1,215- 1,310	1,424- 1,452 1,220- 1,284	- F1	9-14-64	Driller reported saline water with artesian head 3 ft above land surface. G.
36bad-1	0	Gunnison Drilling Co. (No. 1 Husky-State)	4,647	1,523	do	1,068- 1,235	1,130- 1,170	17.5G	10-15-68	Driller reported saline water. J.
(D-19-25)4ada-1	0	Home Oil Co. (No. 2 NE)	4,946	1,675	Morrison Fm. Entrada Ss.	490- 1,090 1,140- 1,350	670- 760 1,140- 1,350	1.5G, F1	6- 6-31	C.
29abb-1	0	E.J. Anderson Co. (No. 47-29 Federal)	4,472	927	Burro Canyon Fm. Entrada Ss.	390- 525 919-	505- 520 919- 925	-	1- 8-56	Driller reported saline water. G. L.
30bcc-1	0	Texota Oil Co. (No. 1-C Federal)	4,590	1,958	Dakota Ss. Burro Canyon Fm. Entrada Ss.	1,046- 1,172 1,172- 1,354 1,869-	1,046- 1,066 1,344- 1,354 1,869- 1,958	- 375F -	12- 4-55	Do.
(D-20-4)20abc-1	0	California Oil Co. (No. 1 Unit)	10,038	8,952	Ferron Ss. Mbr.	8,590-	8,670- 8,764	123F	10-26-61	Driller reported brackish water. G.
(D-20-7)2cca-1	0	Pan American Petroleum Co. (No. 4 Ferron Unit 14-2)	5,948	7,401	Kaibab Ls.	7,221-	8,830- 8,890 7,244- 7,294	1,445F 5.6G	8- 9-65	J.
14aaa-1	0	American Petrofina Co. (No. 1-14 Fee)	5,830	922	Blue Gate Mbr. Ferron Ss. Mbr.	0- 700 700-	665- 794	155F	6-10-58	
14acd-1	0	Pacific Natural Gas Exploration Co. (No. 1-14 Ferron Unit Fee)	5,790	923	do	702-	738- 766	-	3-15-58	
14caa-1	0	Pacific Natural Gas Exploration Co. (No. 23-14 Singleton Fee)	5,813	835	do	628-	674- 692	-	5-12-65	Driller reported saline water.
21dbb-1	0	Tenneco Oil Co. (No. 5 Ferron Unit)	5,962	7,485	Kaibab Ls.	7,312- 7,450	7,315- 7,421	300F	12-16-66	Driller reported sulfur water
27cac-1	0	Pacific Natural Gas Exploration Co. (No. 23-27 Thompson-Ralphs)	5,942	983	Ferron Ss. Mbr.	790- 951	868- 951	-	10-23-65	Driller reported saline water, resistivity 0.342 ohm-meters at 68°F. (32,200 micromhos at 25°C).
28aaa-1	0	Pacific Natural Gas Exploration Co. (No. 41-28 Ferron Unit-State)	5,960	985	do	842-	847- 849	.4G, F1	10-20-65	Driller reported saline water. J.
34baa-1	0	American Petrofina Co. (No. 1-34 Federal)	6,130	1,268	do	1,020- 1,268	1,200- 1,268	-	1-16-58	Driller reported saline water. G.
(D-20-14)11cba-1	W	U.S. Bureau of Land Management (A-27000, Rio Grande Well)	4,499	1,335	do Dakota Ss. Cedar Mountain Fm.	5- 68 290- 320 320- 350	63- 68 290- 296 320- 332	- - -	8- -03	Driller reported artesian head 74 ft above land surface, flow at land surface 11 gal/min; well destroyed, but water seeps to surface at well site, 5-5-77. L.
31cbd-1	W	L.G. Smith (A-28101)	4,560	150	Morrison Fm. Carmel Fm.	0- 320	0- 150	20G, F1	4-26-78	Unused flowing well. C.
33bac-1	0	Toledo Mining Co. (No. 1 Toledo)	4,550	7,558	Morrison Fm. Entrada Ss.	0- 430 865- 1,180	230- 240 865- 880 960- 990	- - -	2-24-69	Driller reported fresh water from these units. G.
(D-20-16)17dab-1	W	H. Hastings	4,110	30	Wingate Ss. Alluvium	2,005- 2,450 0- 30	2,130- 2,200 -	1,400G -	8- 8-58	C.
(D-20-21)24cba-1	0	Crystal Carbon Co. (No. 4 Cisco)	5,107	2,032	Dakota Ss.	2,022-	2,022- 2,032	-	8-21-27	L.
(D-20-22)18dba-1	0	Cabeen Exploration Corp. (No. V-1 Union-Govt.)	5,085	2,528	do Morrison Fm.	2,297- 2,380 2,380-	2,297- 2,380 2,405- 2,490	- -	6- 1-58	G.
30bdc-1	0	Cabeen Exploration Corp. (No. 1-1 Union-Govt.)	5,050	2,527	do	2,064-	2,388- 2,456	480F	8-22-57	G.
(D-20-23)9aaa-1	0	Tejas Gas Corp. (No. 3-355 Federal)	4,842	2,060	Dakota Ss.	1,733-	1,740- 1,760	.5G	12-14-72	Driller reported saline water. G.
9add-1	0	Tejas Gas Corp. (No. 1-355 Federal)	4,818	2,505	Entrada Ss.	2,450-	2,450- 2,460	-	11-26-72	Do.
9cdd-1	0	W.H.H. Cranmer Co. (No. 1 Cisco Springs-Moss)	4,728	2,030	Dakota Ss.	1,998-	2,010- 2,012	-	9- 6-30	L.
11cad-1	0	C. N. Larsen Co. (No. 1 Govt-Larsen)	4,748	2,380	do Morrison Fm. Entrada Ss.	1,575- 1,640 - 2,353-	1,590- 1,600 2,055- 2,065 2,360- 2,380	- - -	9-30-63	Driller reported saline water. G.
11ccb-1	0	Tres Oil Co. (No. 1 Federal)	4,751	1,596	Dakota Ss.	1,508-	1,593- 1,596	-	3-22-56	Driller reported saline water. G. L.
15aaa-1	0	Three States Natural Gas Co. (No. 1 Cullen-Govt.)	4,746	2,589	do Morrison Fm. Entrada Ss.	1,465- 1,565 1,565- 2,252 2,252-	1,496- 1,510 1,925- 1,940 2,255- 2,589	.1G, F1 - -	9- 2-55	Driller reported saline water. G.
(D-20-24)2abc-1	0	D.A. Cook Co. (No. 1 Duchess)	4,605	1,311	Entrada Ss.	980- 1,116	1,000- 1,005	-	10-27-70	Driller reported saline water. J.
2abc-2	0	D.A. Cook Co. (No. 1-A Duchess)	4,605	1,338	Burro Canyon Fm.	1,134-	1,234- 1,244	-	11- 7-70	Do.
2acc-1	0	D.A. Cook Co. (No. 2 Duchess)	4,555	1,300	Mancos Sh.	0- 830	780-	9G	11- 6-70	Driller reported non-saline water
2ada-1	0	D.A. Cook Co.	4,598	1,300	Dakota Ss.	770- 840	836- 840	-	5- -73	Driller reported large volume of saline water. J.

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available
								Rate	Date	
(D-20-24)2baa-1	0	Promontory Oil Co. (No. 1 Seiber Nose State)	4,600	1,500	Dakota Ss.	1,122- 1,230	1,186- 1,210	-	12-16-74	Driller reported brackish water. J.
5ddb-1	0	W.D. Broadhead Co. (No. 3 Keas-Federal)	4,595	1,455	do	1,350-	1,445- 1,455	-	4-29-65	Driller reported saline water. G.
5ddb-2	0	W.D. Broadhead Co. (No. 3-A Keas-Federal)	4,595	1,712	do	1,350- 1,488	1,460- 1,470	-	9-24-65	Do.
8bbb-1	0	W.G. Bush Co. (No. 8-1 Capansky)	4,650	1,853	do	1,540- 1,626	1,540- 1,562	-	1- 8-65	Driller reported saline water.
8daa-1	0	Raphael Pumpelly Co. (No. 6 Eppie-C)	4,595	1,565	Burro Canyon Fm. Dakota Ss.	1,626- 1,254-	1,780- 1,793	-	12-18-64	Do.
9bac-1	0	W.G. Bush Co. (No. 9 USA-U-T)	4,585	1,505	do	1,125- 1,230	1,125- 1,160	-	11-22-64	Driller reported saline water. G
9bcb-1	0	W.G. Bush Co. (No. 9-2 Bush-Federal)	4,590	1,632	do	1,229- 1,309	1,236- 1,298	-	12-16-63	Do.
9bcc-1	0	W.G. Bush Co. (No. 1 Bush-Federal)	4,596	1,540	Dakota Ss. Burro Canyon Fm.	1,185- 1,270	1,185- 1,222	20G	11-16-63	Do.
14bca-1	0	W.D. Broadhead Co. (No. 1 Broadhead)	4,500	700	Dakota Ss.	1,270- 39--	1,504- 1,531	20G	11- 1-66	Do.
16ccd-1	0	U-Tex Oil Co. (No. 7)	4,600	1,610	do	900- 986	900- 920	-	12- 5-63	Driller reported saline water; water level 583 ft below land surface. C.
18cbc-1	0	R.A. Ward Co. (No. 6 E-C)	4,624	1,720	Morrison Fm. Burro Canyon Fm.	1,125- 1,290-	1,583- 1,610	-	2-29-64	Driller reported saline water.
19dca-1	0	B.J. Green Co. (No. 1 Green-Federal)	4,530	1,058	Mancos Sh. Dakota Ss. Burro Canyon Fm. Morrison Fm.	0- 770	230- 770	2.1G	1-24-68	Driller reported saline water. G.
19dca-2	0	B.J. Green Co. (No. 2 Green-Federal)	4,530	1,497	do	770- 882	770- 1,021	7.0G		
20aaa-1	0	Pumpelly-Stava Co. (No. 30-81 State)	4,580	1,058	Dakota Ss.	1,021- 1,491	1,021- 1,046	1.4G		
21cca-1	0	U-Tex Oil Co. (No. 10 Federal)	4,545	968	do	1,021- 1,491	1,183- 1,270	-	2-12-68	Driller reported saline water in Morrison Fm., fresh water in Entrada Ss., and water level 100 ft below land surface G.
30dab-1	0	Pumpelly-Stava Co. (No. 30-75 Federal)	4,475	815	Dakota Ss.	626- 722	696- 722	-	2-13-64	Driller reported saline water. J
30dad-1	0	Pumpelly-Stava Co. (No. 30-86 Fed-Swanson)	4,478	760	Burro Canyon Fm.	330- 400	330- 400	-	11-27-64	Driller reported saline water. G
31aaa-1	0	Pumpelly-Stava Co. (No. 31-81 Fed-UT1)	4,550	1,210	Entrada Ss.	400- 600	565- 600	-	2- 8-67	Do.
32bbb-1	0	Thunderbird Drilling Co. (No. 32-1)	4,540	1,150	Dakota Ss.	412- 491	465- 490	-	11-26-63	Driller reported sulfur water. G
32bbb-2	0	Thunderbird Drilling Co. (No. 32-5)	4,543	1,140	do	295- 422	295- 422	-	6-14-64	Driller reported saline water. G
(D-20-25)6bda-1	0	Viking Oil Co. (No. 2 Federal)	4,508	980	Dakota Ss.	647- 1,050	805- 816	2.9G	9-13-70	Driller reported sulfur water in Dakota Ss. and saline water in Morrison Fm. J.
6bcb-1	0	Viking Oil Co. (No. 8 South Seiber Nose)	4,530	1,309	do	627- 1,038	806- 826	8.8C	9-20-70	Driller reported saline water J
6dbb-1	0	Ute Royalty Corp. (No. 1 Larsen-Federal)	4,560	1,302	Entrada Ss.	376- 526	376- 526	42G	10-25-68	Driller reported saline water G
(D-21-5)9ada-1	C	U.S. Geological Survey (W-TP-6-FP)	8,350	1,000	Blackhawk Fm. Star Point Ss.	476- 626	476- 626	49G	7-25-68	Do.
16dda-1	C	U.S. Geological Survey (W-TP-5-EW)	8,350	975	do	1,140-	1,143- 1,160	860F	9-23-55	Driller reported fresh water. G.
20bda-1	C	U.S. Geological Survey (W-TP-1-AL)	8,300	1,020	Blackhawk Fm. Star Point Ss.	248- 996	732- 1,000	-	11-10-76	Fluid level 732 ft below land surface, from geophysical log. C.L.
23daa-1	C	U.S. Geological Survey (W-TP-3-EW)	8,650	1,030	Blackhawk Fm. Star Point Ss.	11- 192	95- 975	-	11- 7-76	Fluid level 95 ft below land surface, from geophysical log. C.L.
28abb-1	C	U.S. Geological Survey (W-TP-2-EW)	8,480	1,193	Blackhawk Fm. Star Point Ss.	939- 980	857- 1,020	-	11- 5-76	Fluid level 857 ft below land surface, from geophysical log. C.L.
(D-21-6)8dca-1	0	Waggoner & Zeller Oil Co. (No. 1 Tiarco)	6,640	2,871	Emery Ss. Mbr.	267- 942	680- 1,030	-	10- 1-76	Fluid level 680 ft below land surface; from geophysical log. C.L.
16caa-1	0	Mountain Fuel Supply Co. (No. 1 Muddy Creek-Jacobsen)	6,540	4,960	do	270- 1,006	569- 1,193	-	10- 1-76	Fluid level 569 ft below land surface; from geophysical log. C.L.
(D-21-7)3ccb-1	0	Pacific Natural Gas Exploration Co. (No. 12-3 Ferron Unit)	6,200	1,145	Ferron Ss. Mbr.	481-	481-	-	1-11-66	Driller reported fresh water. G
9aac-1	0	Pacific Natural Gas Exploration Co. (No. 41-9 M.A. Ralphs)	6,198	1,150	do	900- 1,560	900- 1,560	52C	11-20-67	Driller reported sulfur water in Emery Ss. Mbr. and saline water in Dakota Ss. J
9adb-1	0	Pacific Natural Gas Exploration Co. (No. 42-9 Sorenson)	6,215	3,500	do	3,603- 4,390	4,386- 4,434	1,350F		
9cab-1	0	Pacific Natural Gas Exploration Co. (No. 23-9 Hilgard)	6,280	1,299	do	4,390- 4,585				
(D-21-13)1dbb-1	0	Wainoco Inc. (No. 33-1 Skyline-Federal)	4,490	4,064	Cutler Fm.	940-	1,018- 1,080	-	11- 1-65	Driller reported saline water. G.
(D-21-14)5aad-1	0	Dentson Mines Ltd. (No. 5-1)	4,570	6,000	do	860-	1,040- 1,050	-	5-28-65	Driller reported saline water. J.
(D-21-16)9aac-1	W	E. C. Gerhart	4,050	12	Alluvium	930- 1,270	1,060-	.7G	10-29-63	Driller reported fresh water. J
33bac-1	0	Skyline Oil Co. (No. 1 Green River Unit)	4,275	9,621	Glen Canyon Crp. Cutler Fm.	1,042- 1,299	1,042- 1,299	-	11- 5-65	Driller reported saline water. J
(D-21-20)17bcc-1	0	Premium Oil Co. (No. 1 Walvin Govt.)	5,195	2,896	Mancos Sh. Dakota Ss.	0- 2,888	225- 229	-	2-16-67	Driller reported saline water in Mancos Sh., fresh water in Dakota Ss., and water level 2,360 ft below land surface G.
35bdb-1	0	Texaco Inc. (No. T-1 Govt.)	5,050	5,203	Entrada Ss. Carmel Fm.	2,554- 3,040	2,590- 3,046	-	2- 9-70	Other water-bearing intervals not reported. G.
(D-21-21)31bcc-1	0	Promontory Oil Co. (No. 31-1 South Cisco)	4,890	1,270	Dakota Ss. Entrada Ss.	386- 406	386- 406	-	12-23-64	Driller reported saline water in Dakota Ss. and brackish water in Entrada Ss.
33cba-1	0	Equity Oil Co. (No. 1 Unit)	4,781	13,766	Dakota Ss.	1,127-	1,127- 1,212	0.1G, F1	8-25-49	Driller reported fresh water

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Owner or operator	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available
								Rate	Date	
(D-21-22)6aba-1	0	Cabeen Exploration Co. (No. 1 Govt.-Robertson)	4,920	3,106	Dakota Ss. Morrison Fm.	2,339- 2,406 2,406- 3,098	2,339- 2,352 2,716- 2,726 2,781- 2,803	- - -	4-12-56	Driller reported 1,300 mg/L sodium chloride (NaCl) in water from Entrada Ss G.
16aaa-1	0	Walton-Kearns Oil Co. (No. 1 Callister State)	4,785	2,890	Entrada Ss. Morrison Fm.	3,098- 2,570-	3,098- 3,106 2,887- 2,890	- -	4-13-67	Driller reported fresh water; water level 2,537 ft below land surface. J.
(D-21-23)2abd-1	0	Promontory Oil Co. (No. 2 North Cisco)	4,530	1,470	Dakota Ss.	973- 1,083	973- 1,073	-	6-27-64	Driller reported saline water; water level 700 ft below land surface
6bbd-1	0	Tex-Am Oil Co. (No. 1 Govt.)	4,622	1,867	do Morrison Fm. Entrada Ss. Morrison Fm.	1,404- 1,475 1,475- 1,852 1,852- 1,122-	1,404- 1,475 1,530- 1,852 1,852- 1,867 1,289- 1,292 1,360- 1,363	- - - -	8-12-55	G.
10acd-1	0	A. Lansdale Co. (No. 2 USA)	4,440	1,745	do	1,121-	1,288- 1,304	-	10-29-63	G.
10acd-2	0	A. Lansdale (No. 6 USA)	4,450	1,305	do	1,121-	1,288- 1,304	-	2-24-65	Driller reported saline water. G.
15bdd-1	0	B. Cockburn Co. (No. 1 Govt.)	4,350	955	do	-	900- 955	0.1G, F1	6-17-59	C,G.
20cba-1	0	Equity Oil Co. (No. 1 Govt.)	4,520	3,810	Dakota Ss. Morrison Fm.	1,490- 1,543 1,543- 2,146	1,512- 1,565	900F	9-30-50	Driller reported saline water. G.
24daa-1	0	W & T Oil Co. (No. 5 Whyte-State)	4,390	734	do	430-	693- 718	.5G	10- 1-62	J.
35cdd-1	0	(Unknown)	4,410	-	-	-	-	-	-	Oil test by unknown operator, destroyed R.
36aac-1	0	W.G. Bush Co. (No. 36-3 Fee)	4,520	770	Dakota Ss.	406- 512	406- 420	0.5G, F1	1-30-65	Driller reported saline water. L.
(D-21-24)18dbc-1	0	Vanco Oil Co. (No. 14-18 State)	4,350	825	do	463- 570	470- 480	F1	11-16-65	Driller reported saline water, artesian head 120 ft above land surface. J.
(D-22-4)12cca-1	0	Condor Petroleum Co. (No. 1 Pierce)	7,300	3,973	Blue Gate Mbr. Ferron Ss. Mbr.	2,030- 3,470 3,470- 3,972	3,408- 3,430 3,505- 3,524 3,546- 3,576	220F - 430F	1- 5-53	G.
14dbb-1	C	U.S. Geological Survey (W-OWP-6-AL)	8,290	818	Castlegate Ss. Blackhawk Fm. Star Point Ss.	76- 162 162- 781 781-	81- 818	-	10-29-76	Fluid level 81 ft below land surface, from geophysical log. G,L
22dcb-1	C	U.S. Geological Survey (W-OWP-5-AL)	8,220	1,086	Castlegate Ss. Blackhawk Fm. Star Point Ss.	52- 243 243- 887 887-	167- 1,086	-	10-25-76	Fluid level 167 ft below land surface, from geophysical log. G,L
34aca-1	C	U.S. Geological Survey (W-OWP-4-OWP)	8,310	930	Castlegate Ss. Blackhawk Fm. Star Point Ss.	53- 251 251-	129- 930	-	10-30-76	Fluid level 129 ft below land surface, from geophysical log. G,L.
(D-22-5)1aaa-1	0	Mountain Fuel Supply Co. (No. 1 Emery)	6,920	3,050	Bluegate Mbr. Ferron Ss. Mbr.	755- 2,294 2,294- 2,782	1,045- 1,070 2,440-	5G,F1 2G,F1	3-20-68	Driller reported fresh water G.
23aca-1	0	K.D. Owen Co. (No. 1 Govt.)	6,240	3,810	do	1,237- 1,760	1,305- 1,319 1,395- 1,408 1,423- 1,436 1,521- 1,530 1,605- 1,650	F1 20,7G,F1 750F 1,260F 7.5G, F1	1-19-53 1-22-53 1-24-53 1-28-53	C,G.
(D-22-6)31dab-1	W	E.B. Bryant (A-39733)	6,030	406	do	365-	365- 405	30G,F1	7- 1-72	Driller reported artesian head 2 ft above land surface. C,L,R.
(D-22-8)10ccb-1	0	True Oil Co. (No. 14-10)	6,057	3,690	Entrada Ss. Carmel Fm. Navajo Ss. Moenkopi Fm. Kaibab Ls. Cutler Fm.	0- 685 685- 1,185 1,185- 1,885 2,670- 3,627 3,627- 3,657 3,657-	75- 150 1,100- 1,200 - 2,750- 2,850 3,400- 3,690	- - - -	2- 1-75	G.
11ccb-1	0	Utah Plateau Uranium Co. (No. 1-X Federal, Sid and Charley Well)	5,940	2,247	Carmel Fm. Kayenta Fm. Wingate Ss. Chinle Fm. Moenkopi Fm. Wingate Fm.	120- 735 1,300- 1,550 1,550- 1,924 1,924- 2,195 2,195-	550- 558 1,420- 1,466 1,400- 2,246 -	- - -	10-12-61	Driller reported water level 185 ft below land surface at interval 1,400-2,246 ft. C,G.
(D-22-10)23bcb-1	W	Utah State Road Commission	7,038	86	Wingate Fm.	0-	33- 86	-	12-27-71	Well destroyed in 1978. G,R.
30aca-1	0	Cities Service Oil Co.	6,760	1,200	Moenkopi Fm.	-	554- 704 680- 1,080 580- 1,200	- - -	6-15-66 6-17-66 6-27-66	Driller reported water level 580 ft below land surface at completion C
(D-22-13)24aaa-1	0	Amex Petroleum Co. (No. 2401 Green River Desert Unit)	4,730	6,799	Entrada Ss. Navajo Ss. Wingate Ss. Cutler Fm.	480- 933 1,187- 1,678 1,971- 2,260 3,389- 4,800	480- 900 1,190- 1,670 1,980- 2,260 3,390- 4,000	- - -	10- 3-64	Driller reported saline water. G
(D-22-15)5ddc-1	0	California Utah Oil Co. (No. 1 Unit)	4,390	1,400	Morrison Fm. Entrada Ss.	- -	- -	- -	5- -02	Driller reported water in sandstone units, water level 15 ft below land surface.
9acc-1	0	Amex Petroleum Co. (No. 9-7 Green River Desert Unit)	4,440	8,991	Morrison Fm. Entrada Ss. Navajo Ss. Wingate Ss. Cutler Fm.	510- 1,146 1,537- 1,873 2,063- 2,796 2,664- 3,667 4,092- 5,688	805- 840 1,540- 1,870 2,065- 2,490 2,665- 3,065 4,095- 4,345	- - - -	1- 7-64	Driller reported saline water G
(D-22-16)25bbb-1	0	Mountain Fuel Supply Co. (No. 1-25 Skyline Geyser)	4,240	9,280	do	2,550- 3,963	2,585- 2,605	70G,F1	3-21-73	C,G.
(D-22-19)10cbb-1	W	U.S. Bureau of Land Management (A-13068)	4,740	100	Mancos Sh.	5-	27- 34 165- 172	20G	2- 8-36	Driller reported well backfilled from total depth of 235 ft to 100 ft, water in second interval saline, water level 25 ft below land surface; well destroyed. C,L.
26bcd-1	W	Coates Construction and Drilling Co. (No. 1 Test)	4,680	230	Dakota Ss.	220-	225- 230	-	11-19-73	Driller reported saline water, water level 45 ft below land surface, well destroyed. L.
27aba-1	W	Coates Construction and Drilling Co. (No. 4 Test)	4,640	160	Morrison Fm.	0-	40- 55	75G	11-17-73	Driller reported saline water, water level 65 ft below land surface; well destroyed. L.
27dab-1	W	F. Paxton	4,630	75	do	60-	60 75	-	-39	Destroyed, 1960. L,R.
(D-22-21)28cda-1	W	U.S. Bureau of Land Management (No. 9-15, Salt Wash Well, A-13068)	4,633	445	do	145-	430- 432	5G	5-21-37	Driller reported water level 60 ft below land surface. L.
(D-22-22)19bbc-1	W	U.S. Bureau of Land Management (No. 9-24, Monument Wash Well, A-13068)	4,690	170	Burro Canyon Fm.	45- 165	145- 165	6G	6- 7-37	Driller reported water level 50 ft below land surface. L.
(D-23-4)10abb-1	C	U.S. Geological Survey (W-OWP-3-OWP)	8,170	858	Blackhawk Fm. Star Point Ss.	107- 818 818-	107- 858	-	10-26-76	Fluid level 107 ft below land surface; from geophysical log G,L
16cbd-1	C	U.S. Geological Survey (W-OWP-23-OWP)	8,140	1,000	Blackhawk Fm. Star Point Ss.	120- 940 940-	595- 1,000	-	10-17-77	Fluid level 595 ft below land surface; from geophysical log G,L.
27bac-1	C	U.S. Geological Survey (W-OWP-1-OWP)	8,086	740	Blackhawk Fm. Star Point Ss.	9- 574 574-	319- 740	-	10-19-76	Fluid level 319 ft below land surface, from geophysical log G,L.

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available	
								Rate	Date		
(D-23-6)6b-I	C	Consolidation Coal Co.	-	-	Ferron Ss. Mbr.	-	-	4.5G, F1	6-13-74	C.	
23ddb-I	C	Consolidation Coal Co. (No. FC 402)	6,300	400	do	0-	180- 200	-	-76	Water level 107 ft below land surface	
32bdd-I	W	Western States Coal Corp.	6,358	293	do	0-	253- 293	22G	7- 5-55	Driller reported water level 200 ft C.L.	
(D-23-9)2ccb-1	W	W.R. Snow (A-36361)	7,030	690	Cutler Fm.	560-	576- 690	-	1- 5-66	C.G.	
(D-23-10)12ddd-I	W	U.S. Bureau of Land Management (George's Draw Well)	6,920	217	Moenkopi Fm.	0-	199- 214	16.8G	7-26-36	C.L.	
(D-23-16)3bca-I	O	Mobil Oil Co. (No. 12-3 Jakeys Ridge)	4,060	9,450	Cutler Fm.	2,805- 4,250	2,910- 2,920 2,990- 3,000 3,123-	- 280G -	8-16-61	Driller reported saline water. G	
15dca-I	O	Mobil Oil Co. (No. 34-15 Jakeys Ridge)	4,050	8,440	Navajo Ss.	539- 948	800-	-	10- 7-61	Driller reported fresh water. G.	
(D-23-19)12dbc-I	W	Mineral Hill Uranium Exploration Co.	4,720	103	Burro Canyon Fm.	8-	83-	103	20G	10-12-56	Driller reported water level 45 ft below land surface L.
13ccb-1	W	American Telephone & Telegraph Co.	4,760	458	Dakota Ss.	355- 390	355- 376	5G	12- 7-64	Driller reported water level 216.5 ft below land surface. L.	
18ddd	W	U.S. Bureau of Land Management (A-13068 Queens Well)	4,358	920	Burro Canyon Fm.	410-	425- 600- 870-	25G	3-20-36	Driller reported saline water in Burro Canyon and Morrison Fms. C.	
(D-23-21)2ddd-I	O	Union Oil Co. of California (No. 1-P-2 State ML-23591)	4,605	3,988	Entrada Ss. Navajo Ss. and Kayenta Fm. Wingate Ss. Chinle Fm. Moenkopi Fm. Cutler Fm.	0- 303 303- 913 913- 1,470 1,470- 1,895 1,895- 2,233 2,233- 3,243 3,243-	0- 240 240- 913 913- 1,817 1,817- 1,997 1,997- 3,988	3.3G 33.3G 133G 210G 10.5G	11-22-70	Driller reported fresh water from 913 ft to 1,895 ft below land surface other intervals tested reported saline. J	
31aba-I	W	U.S. Bureau of Land Management (Salt Valley Test Well)	4,875	858	-	-	850-	858	12G	12-11-36	Driller reported salt-saturated water. water level 550 ft below land surface and well destroyed at completion. L.
(D-24-5)1ccb-I	C	U.S. Geological Survey (W-LCC-22-WS)	6,470	480	Ferron Ss. Mbr.	56- 480	345- 480	-	6-30-77	Driller reported water level 185 ft below land surface. C.	
9ccc-I	C	U.S. Geological Survey (W-LCC-15-WS)	7,130	1,240	do	880-	950- 1,240	-	7-15-77	Driller reported water at 950 ft, water level 585 ft below land surface C.	
10acc-1	C	U.S. Geological Survey (W-LCC-21-WS)	6,475	720	do	186-	190- 720	20G	7- 6-77	Driller reported water at 190 ft and 520 ft; water level 189 ft below land surface; from geophysical log. G.	
11bda-1	C	U.S. Geological Survey (W-LCC-16-WS)	6,500	700	do	70-	300- 700	20G	6-20-77	Driller reported water at 300 ft, water level 181 ft below land surface. G	
15adb-1	C	U.S. Geological Survey (W-LCC-17-WS)	6,525	760	do	170-	490- 760	-	6-19-77	Driller reported water at 490 ft to 500 ft, water level 40 ft below land surface. G.	
22aac-I	C	U.S. Geological Survey (W-LCC-18-WS)	6,625	780	do	170-	480- 780	-	6-22-77	Driller reported water at 480 ft, water level 90 ft below land surface. G	
28abc-I	C	U.S. Geological Survey (W-LCC-20-WS)	7,485	1,480	do	1,018-	1,020- 1,480	-	7-15-77	Driller reported water at 1,020 ft, water level 617 ft below land surface G	
28cdc-1	C	U.S. Geological Survey (W-LCC-19-WS)	7,700	1,295	Alluvium	0- 91	90- 91	1G	7- 7-77	G.	
29bac-1	C	U.S. Geological Survey (W-LCC-9-JP)	7,780	1,335	Ferron Ss. Mbr.	1,135-	1,140- 1,335	-	7-10-77	Driller reported water at 1,140 ft G.	
(D-24-9)7dab-1	O	Amerada Petroleum Co. (No. 1-362 Strat)	5,638	1,835	Cutler Fm.	142- 1,242	170- 188	-	7- 4-61	Driller reported test developed as water well, open hole 170-188 ft, backfilled and completed at 188 ft. G.	
(D-24-13)3dbb-1	O	Security Oil & Gas Co. (No. 1 Iron Wash-Federal)	4,500	3,800	Navajo Ss. Wingate Ss. Cutler Fm.	88- 500 680- 1,080 2,070- 3,180	300- 500 680- 1,080 2,070- 2,720	- - -	12-14-70	Driller reported saline water in Cutler Fm. G.	
11adb-1	O	Texas Gas Exploration Co. (No. II-24-13 Federal)	4,738	4,224	Navajo Ss. Kayenta Fm. Wingate Ss. Chinle Fm. Moenkopi Fm. Cutler Fm.	486- 922 922- 1,232 1,232- 1,525 1,525- 1,852 1,852- 2,444 2,444- 3,566	490- 756 756- 800 800- 1,427 1,427- 1,694 1,694- 2,160 2,160- 2,583	49G 49G 88G 105G 140G 175G	1-30-74	Driller reported fresh water in Navajo and Wingate Ss., test backfilled to 1,400 ft, used as water well by U.S. Bureau of Land Management. G.	
(D-24-14)10aaa-I	O	Union Texas Petroleum Co. (No. 1 Federal-Armstrong)	4,310	7,284	Glen Canyon Grp. Cutler Fm.	280- 1,383 2,431- 3,912	280- 1,380 2,435- 3,180	- -	10- 9-72	G.	
(D-24-15)5caa-1	O	General Petroleum Corp. (No. 45-5-G)	4,240	7,161	Navajo Ss. Wingate Ss. Cutler Fm.	320- 890 1,100- 1,445 2,465- 3,240	320- 890 1,100- 1,445 2,465- 3,040	- - -	4- 8-51	G.	
(D-24-16)15acb-I	O	Roy Pledger Co. (No. 1 Federal)	4,270	5,365	Cutler Fm. (?)	2,050- 2,777(?)	2,050- 2,625(?)	2G, F1	6-19-66	G.	
(D-24-18)25acb-1	O	Pumpelly-Stava Co. (No. 1 King)	5,320	1,060	Navajo Ss.	230-	590- 1,060	5G	3- 9-64	Driller reported test backfilled to 1,052 ft, developed as water well for U.S. Bureau of Land Management.	
25dba-I	W	U.S. Bureau of Land Management (A-13608 Dubinky Well)	5,300	604	do	220-	575- 604	5G	2- 5-37	Driller reported water level 555 ft below land surface. L.	
(D-25-4)8daa-1	O	Pacific Natural Gas Co.	9,000	4,032	Ferron Ss. Mbr. Dakota Ss.	2,245- 3,015 3,835- 3,970	2,646- 2,686 3,830- 3,960	780F 1,650F	7-30-63	G.	
15ccd-1	C	U.S. Geological Survey (W-LCC-2-JP)	8,265	484	Emery Ss. Mbr.	240- 484	240- 484	-	7-28-77	Driller reported water level 38 ft below land surface. G.	
(D-25-5)14dbb-1	O	Mountain Fuel Supply Co. (No. 1 Desert Wash Unit)	5,970	2,733	Carmel Fm.	332- 1,466	602-	126G	8-13-66	Driller reported saline water. G.	
14dbb-2	O	Mountain Fuel Supply Co. (No. 1-A Desert Wash Unit)	5,970	4,590	Navajo Ss. Wingate Ss. Moenkopi Fm. Cutler Fm.	1,466- 2,415 2,610- 2,945 3,180- 4,400 4,562-	1,470- 2,415 2,610- 2,940 3,990- 4,090 4,565- 4,590	- - 3,000F -	11-11-66	G.	
(D-25-12)24bba-I	O	Pan American Petroleum Co. (No. 1 USA-Brown)	5,030	5,929	Navajo Ss. Wingate Ss. Cutler Fm.	319- 926 1,110- 1,462 2,395- 3,896	420- 925 1,110- 1,460 2,395- 2,650	- - -	1- 9-59	G.	
(D-25-13)11bbe-1	O	Union Oil Co. of California (No. 998 -A-I Temple Wash-Govt.)	4,740	5,175	Navajo Ss. Wingate Ss. Cutler Fm.	85- 563 784- 1,107 1,971- 3,320	450- 560 785- 1,100 1,975- 2,670	- -	6-13-67	Driller reported brackish water in Navajo and Wingate Ss. and saline water in Cutler Fm. G.	
14bbe-I	O	Texaco Inc. (No. 1 Unit)	4,885	7,314	Chinle Fm. Moenkopi Fm. Cutler Fm.	1,250- 1,592 1,592- 2,176 2,176- 3,622	1,550- 1,649 2,174- 2,224	540F 1,365F	1-29-60	Driller reported saline or sulfur water G.	
(D-25-14)21bdd-I	O	Reynolds & Carver Co. (No. 1 Federal)	4,750	5,144	Glen Canyon Grp. Cutler Fm.	90- 1,188 2,158- 3,575	90- 1,185 2,158- 2,765	28G 70G	12-12-69	Driller reported brackish water in Glen Canyon Grp. and saline water in Cutler Fm. G.	
22ddd-I	O	Texaco Inc. (No. 2 Unit)	4,765	7,010	Moenkopi Fm. Cutler Fm.	1,474- 2,042 2,042- 3,654	1,842- 1,860 2,025- 2,050	7G 90F	2-22-61	Driller reported brackish water. G	
(D-25-15)15abc-1	O	Superior Oil Co. (No. 31-15 North Spring Wash)	4,955	6,470	Navajo Ss. Wingate Ss. Cutler Fm.	353- 764 986- 1,416 2,471- 4,018	455- 760 990- 1,410 2,475- 2,855	- -	8-11-63	G.	
22aca-I	O	Continental Oil Co. (No. 2 Unit)	4,845	6,396	Glen Canyon Grp. Cutler Fm.	320- 1,393 2,443- 3,283	350- 1,390 2,445- 2,805	- -	7- 4-58	Driller reported saline water in Cutler Fm. G.	

Table 2.—Records of selected test holes and water wells—Continued

Location	Source	Operator or owner	Altitude of land-surface datum (ft)	Depth (ft)	Water-bearing geologic unit	Depth to top and bottom of unit (ft)	Interval tested (ft)	Yield		Remarks and other data available
								Rate	Date	
(D-25-16)10bac-1	0	Shell Oil Co. (No. 2 Gruvers Mesa)	4,730	7,393	Cutler Fm.	2,160- 4,006	2,160- 2,370	-	3-10-59	Driller reported saline water. G.
(D-25-17½)20daa-1	0	Superior Oil Co. (No. 43-20 Unit)	4,611	7,225	do	1,364- 2,738	1,365- 1,515	-	2-15-61	Do.
(D-25-18)10ccc-1	0	McRae Oil & Gas Co. (No. 1 McRae-Federal)	5,246	8,778	do	1,608- 2,840	1,670- 1,820	-	12-16-57	G.

Table 3.—Logs of selected test holes and water wells

Location: See explanation of data-site numbering system in text and plate 1.
 Altitudes are for land surface at well or test hole in feet above mean sea level.
 Thickness, in feet.
 Depth to base of unit, in feet below land surface.

Material	Thickness	Depth	Material	Thickness	Depth	Material	Thickness	Depth
<u>(D-11-7)10aaa-1.</u> Log by Mountain Fuel Supply Co. Alt. 8,198.			<u>(D-13-12)9cdc-1.</u> Log by P. Anderson. Alt. 8,330.			<u>(D-15-11)8bca-2.</u> Log by E. Comer. Alt. 5,369.		
North Horn Formation	1,170	1,170	Sandstone, mudstone, marl, and limestone; water at 295 ft (1 gal/min), at 465 ft (15 gal/min), at 520-680 ft (15 gal/min), and at 700-880 ft (25 gal/min); fluid level 283 ft below land surface; Flagstaff Member of Green River Formation and North Horn Formation	940	940	Clay, tan	23	23
Price River Formation	1,049	2,219	Sandstone, siltstone, and mudstone; Price River Formation and Castlegate Sandstone	530	1,470	Sand and gravel; water (30 gal/min)	14	37
Castlegate Sandstone	249	2,468	Sandstone, siltstone, mudstone, and coal; Blackhawk Formation	570	2,040	Shale, black; Mancos Shale	13	50
Blackhawk Formation and Star Point Sandstone; water at 3,017-3,164 and 4,140-4,165 ft.	6,029	8,497				Well completed at 40 ft.		
Mancos Shale (Masuk, Emery Sandstone, and Blue Gate Members)	1,956	10,453	<u>(D-13-12)10abc-1.</u> Log by P. Anderson. Alt. 7,800.			<u>(D-15-11)7aac-3.</u> Log by E. Comer. Alt. 5,390.		
Ferron Sandstone Member; water at 10,750-10,795 ft.	570	11,023	Mudstone, sandstone, marlstone, and limestone, interbedded; water at 32 ft; Flagstaff Member of Green River Formation	247	247	Clay	20	20
Tununk Member	273	11,296	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	795	1,042	Clay and fine sand	12	32
Dakota Sandstone	139	11,435	Sandstone with some interbedded siltstone and mudstone; Price River Formation	610	1,652	Sand and gravel; water at 32 ft.	11	43
Morrison Formation (incomplete)	315	11,750	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	470	2,122	Clay, blue; Mancos Shale	3	46
<u>(D-12-3)32cbd-1.</u> Lithology and geology from geophysical log. Alt. 8,400.			<u>(D-13-12)10abc-1.</u> Log by P. Anderson. Alt. 7,800.			<u>(D-15-12)15acc-1.</u> Log by B. B. Gardner. Alt. 5,750.		
Alluvium; water level at 27 ft	40	40	Mudstone, sandstone, marlstone, and limestone, interbedded; water at 50 ft; Flagstaff Member of Green River Formation	365	365	Clay, brown	26	26
Castlegate Sandstone; sandstone and siltstone; water	140	180	Sandstone, mudstone, and marlstone, interbedded; water at 790 ft; North Horn Formation	825	1,190	Shale, blue; water at 56 ft (0.5 gal/min)	35	61
Blackhawk Formation; sandstone, siltstone, shale, and coal; water	1,065	1,245	Sandstone with some interbedded siltstone and mudstone; Price River Formation	630	1,820			
Star Point Sandstone; sandstone and siltstone	65	1,320	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	579	2,399	<u>(D-15-12)27bad-1.</u> Log by B. B. Gardner. Alt. 5,435.		
<u>(D-12-12)28ccb-1.</u> Log by P. T. Walton. Alt. 7,240.			<u>(D-13-12)11daa-1.</u> Log by P. Anderson. Alt. 8,180.			Clay, brown		
Colton Formation	200	200	Mudstone, sandstone, marlstone, and limestone, interbedded; water at 50 ft; Flagstaff Member of Green River Formation	365	365	Sand and gravel; water at 21 ft (30 gal/min)	21	21
Flagstaff Member (Green River Formation)	265	465	Sandstone, mudstone, and marlstone, interbedded; water at 790 ft; North Horn Formation	825	1,190	Shale, blue; Mancos Shale	11	32
North Horn Formation; water at 760-775 ft (7 gal/min) and at 1,000-1,040 ft (3.5 gal/min)	1,330	1,795	Sandstone with some interbedded siltstone and mudstone; Price River Formation	630	1,820	Shale, blue; Mancos Shale	21	53
Price River Formation; water at 1,805-1,830 ft (24.5 gal/min) and at 1,980-2,000 ft (28 gal/min)	489	2,284	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	579	2,399	<u>(D-15-13)3dac-1.</u> Log by C. W. Anderson. Alt. 6,100.		
Castlegate Sandstone	286	2,570	Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	137	137	Sand, gravel, and boulders	68	68
Blackhawk Formation	760	3,330	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	602	739	Sand and gravel; water at 68 ft (25 gal/min)	1	69
Star Point Sandstone	80	3,410	Sandstone with some interbedded siltstone and mudstone; Price River Formation	567	1,306	Shale, blue; Mancos Shale	21	90
Mancos Shale (incomplete)	110	3,520	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	514	1,820	<u>(D-15-13)6bbc-1.</u> Log by L. W. Dalton. Alt. 5,750.		
<u>(D-13-7)11ccc-1.</u> Lithology and geology from geophysical log. Alt. 9,150.			<u>(D-13-12)15cab-1.</u> Log by P. Anderson. Alt. 8,460.			Clay, blue, soft		
Blackhawk Formation; sandstone, siltstone, shale, and coal; water level at 568 ft	1,260	1,260	Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	137	137	Clay, blue, sandy; water, cased off.	4	27
Star Point Sandstone; sandstone; water	35	1,290	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	602	739	Shale, blue, hard; Mancos Shale	105	132
No log	16	1,296	Sandstone with some interbedded siltstone and mudstone; water at 775 ft; Price River Formation	567	1,306	Lime, hard; natural gas and salt water under lime; water level rose within 35 ft of land surface	7	139
<u>(D-13-7)12dca-1.</u> Lithology and geology from geophysical log. Alt. 8,525.			<u>(D-13-12)16dcb-1.</u> Log by P. Anderson. Alt. 7,260.			Shale, brown		
Alluvium	5	5	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	440	440	Shale, brown	11	150
Blackhawk Formation; sandstone, siltstone, shale, and coal; water level at 18 ft	859	864	Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	137	137	<u>(D-15-13)10aad-1.</u> Log by C. W. Anderson. Alt. 6,135.		
Star Point Sandstone; sandstone	36	900	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	602	739	Soil, sand, and boulders	46	46
<u>(D-13-8)8aba-1.</u> Lithology and geology from geophysical log. Alt. 8,250.			<u>(D-13-12)22baa-1.</u> Log by P. Anderson. Alt. 8,230.			Shale, blue; water at 85 ft (0.3 gal/min); Mancos Shale		
Alluvium	7	7	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	567	1,306			
Castlegate Sandstone; sandstone; water level at 31 ft	55	62	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	514	1,820	<u>(D-15-13)10caa-1.</u> Log by C. W. Anderson. Alt. 6,041.		
Blackhawk Formation; sandstone, siltstone, shale, and coal; water	1,039	1,101	Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	137	137	Sand, gravel, and boulders	36	36
Star Point Sandstone; sandstone and siltstone; water	19	1,120	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	602	739	Shale, blue; water at 133 ft (0.5 gal/min); Mancos Shale	109	145
<u>(D-13-9)24cda-1.</u> Log by Uintah Basin Drilling Co. Alt. 5,795.			<u>(D-13-12)16dcb-1.</u> Log by P. Anderson. Alt. 7,260.			<u>(D-15-13)11bab-1.</u> Log by C. W. Anderson. Alt. 6,160.		
Gravel and sand; water at 14 ft	52	52	Sandstone, siltstone, mudstone, and coal, interbedded; water at 46-50 ft (5 gal/min); Blackhawk Formation	440	440	Top soil	1	1
<u>(D-13-12)2ccb-1.</u> Log by P. Anderson. Alt. 7,850.			<u>(D-13-12)22baa-1.</u> Log by P. Anderson. Alt. 8,230.			Boulders		
Mudstone, red, with some interbedded sandstone; Colton Formation	100	100	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	567	1,306	Gravel	12	19
Mudstone, sandstone, marlstone, and limestone, interbedded; water at 250 ft (4 gal/min) and at 350 ft (25 gal/min); Flagstaff Member of Green River Formation	545	645	Sandstone with some interbedded siltstone and mudstone; Price River Formation	640	2,270	Boulders	13	32
Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	985	1,630	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	530	2,800	Clay, brown	9	41
Sandstone with some interbedded siltstone and mudstone; Price River Formation	640	2,270	Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	137	137	Clay, blue, and gravel	2	43
Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	530	2,800	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	602	739	Shale, blue; water at 74-79 ft; Mancos Shale	93	136
<u>(D-13-12)5dbc-S1.</u> Log by P. Anderson. Alt. 7,120.			<u>(D-13-12)22baa-1.</u> Log by P. Anderson. Alt. 8,230.			Shale, hard; water at 135-137 ft		
Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	715	715	Sandstone, mudstone, and marlstone, interbedded; North Horn Formation	567	1,306	Shale, blue, brittle	11	147
Sandstone with some interbedded siltstone and mudstone; water at 800 ft, driller estimated 800 gal/min, odor of sulfur; Price River Formation	611	1,326	Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	514	1,820	Shale, blue, soft	28	175
Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	506	1,832	Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	137	137			
<u>(D-13-12)8abc-1.</u> Log by P. Anderson. Alt. 8,050.			<u>(D-14-12)19cba-1.</u> Log by Pacific Trans. Supply. Alt. 5,800.			Shale, blue, soft		
Mudstone, sandstone, marlstone, and limestone, interbedded; Flagstaff Member of Green River Formation	310	310	Mancos Shale, upper member	411	411	<u>(D-15-13)15adc-1.</u> Log by C. W. Anderson. Alt. 5,638.		
Sandstone, mudstone, and marlstone, interbedded; water at 680 ft; North Horn Formation	801	1,111	Ferron Sandstone Member; water	217	628	Sand, gravel, and boulders	21	21
Sandstone with some interbedded siltstone and mudstone; Price River Formation	611	1,722	Mancos Shale, lower member	252	880	Shale, blue; water at 138 ft (0.3 gal/min); Mancos Shale	239	260
Sandstone, siltstone, mudstone, and coal, interbedded; Blackhawk Formation	508	2,230	Dakota Sandstone; water	45	925			
<u>(D-13-10)22cbd-1.</u> Log by Assoc. Energy Corp. Alt. 5,580.			<u>(D-14-12)30caa-1.</u> Log by Cities Service Petroleum Co. Alt. 5,705.			<u>(D-16-13)8dda-1.</u> Log by True Oil. Alt. 5,328.		
Mancos Shale	563	563	Mancos Shale, upper member	116	116	Mancos Shale	550	550
Blue Gate Member	121	684	Ferron Sandstone Member; water at 116 ft, flowed 60-80 gal/min.	224	340	Dakota Sandstone and Cedar Mountain Formation; water	160	710
Ferron Sandstone Member; water "salty"	188	972				Morrison Formation	620	1,330
Tununk Member (incomplete)	188	972	<u>(D-15-11)4cdd-1.</u> Log by H. R. Phillips. Alt. 5,390.			Summerville Formation		
<u>(D-15-11)4cdd-1.</u> Log by H. R. Phillips. Alt. 5,390.			Surface (alluvium); water at 11 ft			Curtis Formation		
Shale, brown; water at 135 ft; Mancos Shale	164	178	Shale, brown; water at 135 ft; Mancos Shale	164	178	Entrada Sandstone	367	1,985
Shale, grav.	5	183	Shale, brown	97	280	Carmel Formation	240	2,225
Shale, brown	97	280	<u>(D-16-14)9bba-1.</u> Log by C. W. Anderson. Alt. 6,120.			Navajo Sandstone		
<u>(D-17-6)12acd-1.</u> Log by J. Vaninetti. Alt. 9,535.			Alluvium; water at 30 ft (2-3 gal/min)			Kayenta Formation		
Alluvium; water at 30 ft (2-3 gal/min)	30	30	Shale, sandy; North Horn Formation	40	70	Wingate Sandstone	462	3,070
Shale, sandy; North Horn Formation	40	70	Sandstone	10	80	Chinle Formation	485	3,355
Sandstone	10	80	Shale	5	183	Moenkopi Formation	957	4,312
Shale	80	160	<u>(D-16-24)26cba-1.</u> Log by W. Pease. Alt. 6,380.			Kaibab Limestone (incomplete)		
<u>(D-16-24)26cba-1.</u> Log by W. Pease. Alt. 6,380.			Sand and shale; water at 225-233 ft.			78		
Sand and shale; water at 225-233 ft.	1,600	1,600	Shale, black; Buck Tongue (Mancos Shale)	290	1,890			
Shale, black; Buck Tongue (Mancos Shale)	290	1,890	Sand; Castlegate Sandstone	77	1,967			
Sand; Castlegate Sandstone	77	1,967	Shale, black	3,503	5,470			
Shale, black	3,503	5,470	Shale, silt, and coal	67	5,537			
Shale, silt, and coal	67	5,537	Shale and sand; slight show of gas	243	5,780			
Shale and sand; slight show of gas	243	5,780	Shale, brown, with sandy streaks	338	6,118			
Shale, brown, with sandy streaks	338	6,118						

Table 3.—Logs of selected test holes and water wells—Continued

Material	Thickness	Depth	Material	Thickness	Depth	Material	Thickness	Depth
<u>(D-17-9)12cba-1.</u> Log by D. L. Campbell. Alt. 5,790.			<u>(D-19-6)1caa-1.</u> Lithology and geology from geophysical log. Alt. 8,400.			<u>(D-19-25)29abb-1--Continued</u>		
Clay	10	10	Alluvium	9	9	Limestone	4	704
Shale; Blue Gate Member (Mancos Shale)	98	108	Price River Formation; sandstone, siltstone, and shale	77	86	Shale, red	32	736
Rock (dry)	4	112	Castlegate Sandstone; sandstone and siltstone	292	378	Limestone, brown, sandy	8	744
Shale	88	200	Blackhawk Formation; sandstone, siltstone, shale, and coal	745	1,123	Shale, gray	26	770
<u>(D-17-10)18bca-1.</u> Log by D. L. Campbell. Alt. 5,701.			<u>(D-19-10)15bac-1.</u> Log by Conway Bros. Alt. 5,615.			Shale, red		
Clay	37	37	Soil, brown	8	8	Limestone, gray, sandy and hard	5	800
Shale; Blue Gate Member (Mancos Shale)	3	40	Sand, medium, red, muddy; Entrada Sandstone	32	40	Shale, gray	35	835
Rock; water at 41 ft.	2	42	Shale, red, sandy	258	298	Limestone, gray, hard	10	845
Shale	34	76	Sand, hard	7	305	Shale, gray	30	875
Rock; water at 77 ft.	2	78	Sand, medium, brown	5	310	Shale, red	20	895
Shale	99	177	Shale, limy; Carmel Formation	30	340	Shale, gray	10	905
Rock; water at 178 ft.	3	180	Limestone, light-gray, hard	10	350	Shale, red	3	917
<u>(D-17-11)27ccd-1.</u> Log by M. D. Mills. Alt. 5,758.			<u>(D-19-22)4dab-1.</u> Log by Arapahoe Drilling Co. Alt. 5,740.			<u>(D-19-25)30bcc-1.</u> R. J. Rutherford. Alt. 4,590.		
Sand, dry	2	2	Sand with shale interbeds	1,258	1,258	Shale, with sand streaks	150	150
Sandstone, soft; Morrison Formation	7	9	Shale, silty and sandy	253	1,511	Shale, with limy shale streaks	896	1,046
Shale, blue, hard; water at 14 ft	23	32	Sand, gray, fine	21	1,532	Sand; water; Dakota Sandstone	20	1,066
Conglomerate, hard	8	40	Shale, gray, silty, with sand streaks	3,364	4,896	Shale	58	1,124
Clay, white, hard	6	46	Shale, silty, and siltstone	114	5,010	Conglomerate	16	1,140
Sandstone, porous	12	58	Sandstone, white, quartzitic; low porosity	18	5,028	Shale	6	1,146
Sand and gravel, coarse	14	72	Shale, gray, silty	40	5,068	Sand, conglomeratic	8	1,154
<u>(D-18-7)19bda-1.</u> Lithology and geology from geophysical log. Alt. 8,350.			<u>(D-19-22)4dcb-1.</u> Log by Arapahoe Drilling Co. Alt. 5,740.			Shale		
Price River Formation; sandstone, siltstone, and shale	97	97	Sand, white, quartzitic	10	5,078	Shale, conglomeratic	4	1,158
Castlegate Sandstone; sandstone and siltstone	248	345	Shale, green, gray, and red, silty and sandy	108	5,186	Shale, conglomeratic	14	1,172
Blackhawk Formation; sandstone, siltstone, shale, and coal	592	937	Sandstone, red; water	14	5,200	Shale and sandy shale; Burro Canyon Formation	172	1,344
Star Point Sandstone; sandstone	29	970	Shale, green	15	5,215	Conglomerate; water	10	1,354
<u>(D-18-7)20baa-1.</u> Lithology and geology from geophysical log. Alt. 8,625.			<u>(D-19-22)12cdd-1.</u> Log by J. W. Moore. Alt. 5,330.			Shale and limy shale; Morrison Formation		
Alluvium	4	4	Shale, gray; Buck Tongue (Mancos Shale)	325	325	Sand, limy	214	1,713
Price River Formation; sandstone, siltstone, and shale	74	78	Sandstone, gray, hard; water (3 gal/min); Castlegate Sandstone	15	340	Shale, limy	6	1,724
Castlegate Sandstone; sandstone and siltstone	302	380	<u>(D-19-24)14adc-1.</u> Log by R. J. Rutherford. Alt. 4,660.			Sand; water; Entrada Sandstone		
Blackhawk Formation; sandstone, siltstone, shale, and coal	515	895	Clay and shale	100	100	Shale	165	1,869
Star Point Sandstone; sandstone, siltstone, and coal	197	1,092	Shale, with interbedded calcite streaks	530	630	Sand; water	89	1,958
No log	8	1,100	Shale, sandy	30	660	<u>(D-20-14)11lcb-1.</u> W. F. Burns. Alt. 4,499.		
<u>(D-18-7)28bbc-1.</u> Lithology and geology from geophysical log. Alt. 8,650.			<u>(D-19-24)14adb-1.</u> Log by R. J. Rutherford. Alt. 4,660.			Sand, gray		
Alluvium	4	4	Shale, dark-gray to black	140	800	Conglomerate; water	58	63
Price River Formation; sandstone, siltstone, and shale	50	54	Siltstone, dark-gray	40	840	Slate, blue	187	250
Castlegate Sandstone; sandstone	279	333	Shale, gray, with siltstone stringers at base	700	1,540	Talc	40	290
Blackhawk Formation; sandstone, siltstone, shale, and coal	652	985	Siltstone, light-gray with gray shale streaks	85	1,625	Sand, white; water	6	296
Star Point Sandstone; sandstone and siltstone	145	1,130	Sandstone, no porosity	10	1,635	Slate, blue	10	306
<u>(D-18-7)30bad-1.</u> Lithology and geology from geophysical log. Alt. 8,300.			<u>(D-19-24)14adc-1.</u> Log by R. J. Rutherford. Alt. 4,660.			Rock, red		
Alluvium	10	10	Shale and siltstone, glauconitic	52	1,687	Rock, red	14	320
Price River Formation; sandstone, siltstone, and shale	82	92	Shale, gray, silty and calcareous	29	1,716	Sand, white; water	2	322
Castlegate Sandstone; sandstone and siltstone	308	400	Sand, white-to-gray; good porosity; water	48	1,764	Slate	18	340
Blackhawk Formation; sandstone, siltstone, and shale	450	850	Shale, gray	16	1,780	Sand, white; water	5	345
No log	10	860	Shale, light-gray, bentonitic, and siltstone	25	1,805	Conglomerate	5	350
<u>(D-18-7)32abc-1.</u> Lithology and geology from geophysical log. Alt. 8,600.			<u>(D-19-24)14adb-1.</u> Log by R. J. Rutherford. Alt. 4,660.			Slate, green		
Alluvium	58	58	Sand, white; fair porosity; water	26	1,831	Sand, gray	10	360
Price River Formation; sandstone, siltstone, and shale	122	180	Bentonite	6	1,837	Sand, gray	10	370
Castlegate Sandstone; sandstone and siltstone	214	394	Sand; variable porosity	15	1,852	Slate, green	12	382
Blackhawk Formation; sandstone, siltstone, shale, and coal	632	1,026	Shale, bentonitic	3	1,855	Sand, green; water	45	427
No log	4	1,030	Conglomerate; good porosity; water	25	1,880	Rock, red	8	435
<u>(D-18-15)19abd-1.</u> Log by Loffland Bros. Alt. 4,570.			<u>(D-19-24)14adb-1.</u> Log by R. J. Rutherford. Alt. 4,660.			Sand, gray		
Shale, black; water at 325-330 ft	2,700	2,700	Shale and shaly sand	30	1,910	Rock, red	10	500
Shale, silt, and sandstone	470	3,170	Sand; variable porosity; water	10	1,920	Sand, gray	90	590
Shale, limestone, and conglomerate	770	3,940	Conglomerate	15	1,935	Gypsum	18	608
Shale, red-green, sand, and gypsum	3,270	7,210	Shale and fine sand	30	1,965	Slate, white	10	618
Dolomite and sandstone	610	7,820	Sand; fair porosity	20	1,985	Sand, red	85	703
Dolomite	330	8,150	Shale, with siltstone streaks	95	2,180	Slate, red	5	708
Limestone and sandstone	550	8,700	Sand; fair porosity	15	2,195	Sand, gray; slight show of water	162	870
Limestone, shale, and siltstone	760	9,460	Shale, with dense sand streaks	75	2,270	Sand, white; slight show of oil	10	880
Salt	170	9,630	Shale	10	2,280	Sand, gray, hard; water	5	885
Siltstone, dolomite, and shale	266	9,896	Siltstone, with dense lime streaks	30	2,310	Sand, gray, soft; water	20	905
<u>(D-18-25)29cbb-1.</u> Log by J. W. Vaters, Jr. Alt. 4,800.			<u>(D-19-25)29abb-1.</u> Log by B. Wilson. Alt. 4,472.			Sand, white, soft; water (flowing)		
Shale, with sand streaks	200	200	Sand, white; poor porosity	20	2,330	Sand, gray, hard	35	1,070
Shale and limy shale	398	598	Shale	80	2,410	Rock or shale, red	15	1,085
Sand; water (0.7 gal/min)	42	640	Sand, hard, dense	10	2,420	Sand, white; water (increased flow)	5	1,090
Shale	21	661	Shale	70	2,490	Sand, red, hard	43	1,133
Lime	4	665	Sand, fine, calcareous	37	2,547	Rock, red	12	1,145
Shale	37	702	Shale, silty	58	2,605	Sand, white, soft	10	1,155
Shale, limy; water	10	712	<u>(D-19-25)29abb-1.</u> Log by B. Wilson. Alt. 4,472.			Sand, white, hard		
Shale	48	760	Shale, brown	20	20	Sand, black, sharp	10	1,295
Lime	15	775	Shale, black	235	255	Sand, black, sharp	8	1,303
Shale and limy shale	73	848	Shale, blue	92	347	Alabaster (mylonite?)	4	1,307
Sand, broken; water	8	856	Sand, gray; Dakota Sandstone	23	370	Sand, red, hard	8	1,315
Shale	78	934	Shale, black	20	390	Sand, red, soft	10	1,325
Lime, shaly	13	947	Shale, blue; Burro Canyon Formation	65	455	Shale, purple, dry strata	10	1,335
Shale	118	1,065	Shale, gray, sandy	5	460	<u>(D-20-21)24cba-1.</u> Log by W. H. R. Cranmer. Alt. 5,107.		
Sand; water	25	1,090	Sand, pink, coarse	45	505	Gravel	40	40
Shale	15	1,105	Sand, white, fine; water	15	520	Shale; Mancos Shale	710	750
Sand, broken; water	51	1,156	Shale, blue, sticky; Morrison Formation	10	530	Shale, hard, with shells	250	1,000
Shale and limy shale	94	1,250	Sand, white, hard	5	535	Shale	850	1,850
Lime, shaly	15	1,265	Shale, sandy	5	540	Gypsum, white	25	1,875
Shale	20	1,285	Shale, bentonitic	15	555	Shale	5	1,880
Sand, shaly	13	1,298	Shale, blue	5	560	Sand	13	2,018
Shale	70	1,368	Siltstone, red	5	565	Slate	4	2,022
Sand; water (Entrada Sandstone)	166	1,534	Shale, gray, sandy and hard	5	570	Sand; gas and water; Dakota Sandstone	10	2,032
			<u>(D-19-25)29abb-1.</u> Log by B. Wilson. Alt. 4,472.			<u>(D-20-23)9cdd-1.</u> Log by W. H. R. Cranmer. Alt. 4,728.		
			Shale, red and green			Shale, black		
			Shale, green and blue			Shale, black, sandy		
			Shale, gray, bentonitic			Shale, blue		
						Shale, black		
						Shale, black, sandy; show of gas		
						Shale, blue		
						Shale, bentonitic		
						Shale, black, sandy		
						Sandstone, white; Dakota Sandstone		
						Sandstone and bentonitic shale		
						Shale, sandstone, and coal		
						Sandstone, white, coarse; water		
						Sandstone, black, hard and dense		
						Sandstone and gray shale		
						Sandstone, white		
						Shale, green		

Table 3.—Logs of selected test holes and water wells—Continued

Material	Thickness	Depth	Material	Thickness	Depth	Material	Thickness	Depth
<u>(D-20-23)11ccb-1.</u> Log by C. B. Christie, Jr. Alt. 4,751.			<u>(D-22-4)34aca-1.</u> Lithology and geology from geophysical log. Alt. 8,310.			<u>(D-23-4)27bac-1.</u> Lithology and geology from geophysical log. Alt. 8,080.		
Shale; Mancos Shale	1,360	1,360	Alluvium	8	8	Alluvium	9	9
Shale and sand	148	1,508	Price River Formation; sandstone, siltstone, and shale.	45	53	Blackhawk Formation; sandstone, siltstone, shale, and coal.	565	574
Sand; Dakota Sandstone	29	1,537	Castlegate Sandstone; sandstone, siltstone, and shale.	198	251	Star Point Sandstone; sandstone and siltstone	124	698
Sand; gas	2	1,539	Blackhawk Formation; sandstone, siltstone, and shale.	516	767	No log	42	740
Sand, brown, shaly	25	1,564	No log	163	930	<u>(D-23-6)32bdd-1.</u> Log by W. E. Haggard, Jr. Alt. 6,358.		
Sand; gas	6	1,570	<u>(D-22-6)31dab-1.</u> Log by R. Beeman. Alt. 6,030.			Clay	25	25
Sand	8	1,578	Top soil	4	4	Silt	5	30
Shale	12	1,590	Shale, black and brown; Blue Gate Member	361	365	Clay	65	95
Sand; oil	7	1,592	Sandstone; water; Ferron Sandstone Member	40	405	Sand	10	105
Sand	1	1,593	Shale, red	1	406	Clay	4	109
Sand; water	3	1,596	<u>(D-22-19)10ccb-1.</u> Log by O. R. Anderson. Alt. 4,740.			Sand	11	120
<u>(D-21-5)9ada-1.</u> Lithology and geology from geophysical log. Alt. 8,350.			Soil, sandy	5	5	Coal	10	130
Alluvium	12	12	Shale, blue	21	27	Sand	5	135
Price River Formation; sandstone, siltstone, and shale.	35	47	Gravel, coarse; water.	7	34	Clay	5	140
Castlegate Sandstone; sandstone and siltstone	201	248	Shale, blue	33	67	Clay and sand.	15	155
Blackhawk Formation; sandstone, siltstone, shale, and trace of coal	678	926	Shale, blue, with lime shells.	37	104	Sand	50	205
Star Point Sandstone; sandstone and siltstone	70	996	Shale, blue	61	165	Coal	5	210
No log	4	1,000	Sandstone, coarse; salty water	7	172	Sand	25	235
<u>(D-21-5)16dda-1.</u> Lithology and geology from geophysical log. Alt. 8,350.			Shale, blue	13	185	Silt and sand; water at 244 ft (22 gal/min)	30	265
Alluvium	11	11	Shale, blue, with hard lime shells. Well completed at 100 ft.	50	235	Sand	5	270
Castlegate Sandstone; sandstone and siltstone	181	192	<u>(D-22-19)26bcd-1.</u> Log by J. Coates. Alt. 4,680.			Clay and sand.	23	293
Blackhawk Formation; sandstone, siltstone, shale, and coal.	747	939	Mancos Shale; clay	220	220	<u>(D-23-10)12ddd-1.</u> Log by H. F. Davies. Alt. 6,920.		
Star Point Sandstone; sandstone and siltstone	36	975	Dakota Sandstone; sand and conglomerate, white; salty water at 225 ft	10	230	Siltstone and mudstone, red; Moenkopi Formation	40	40
<u>(D-21-5)20bda-1.</u> Lithology and geology from geophysical log. Alt. 8,300.			<u>(D-22-19)27aba-1.</u> Log by J. Coates. Alt. 4,640.			Limestone and shale, red	25	65
Alluvium	7	7	Clay, brown and green.	40	40	Shale, gray, limy	25	90
Price River Formation; sandstone and siltstone	48	55	Sand, white; salty water (75 gal/min).	15	55	Shale, brown, limy	10	100
Castlegate Sandstone; sandstone and siltstone	193	248	Shale and sand, brown.	65	120	Shale, gray, limy	75	175
Blackhawk Formation; sandstone, siltstone, shale, and coal.	732	980	Sand, white and tan.	10	130	Shale, brown	20	195
Star Point Sandstone; sandstone.	30	1,010	Clay and sand, brown	30	160	Sand, fine, gray; water (16.8 gal/min)	19	214
No log	10	1,020	<u>(D-22-19)27dab-1.</u> Log by H. Steele. Alt. 4,630.			Shale, gray.	3	217
<u>(D-21-5)23daa-1.</u> Lithology and geology from geophysical log. Alt. 8,650.			Alluvium	60	60	<u>(D-23-19)12dbc-1.</u> Log by C. E. Harrison. Alt. 4,720.		
Alluvium	9	9	Sandstone; water	15	75	Soil and rock.	8	8
Price River Formation; sandstone and siltstone	47	56	<u>(D-22-21)28cda-1.</u> Log by C. M. Conway. Alt. 4,633.			Rock; Burro Canyon Formation	3	11
Castlegate Sandstone; sandstone and siltstone	211	267	Conglomerate, medium; Dakota Sandstone	30	30	Shale, blue and gray	72	83
Blackhawk Formation; sandstone, siltstone, shale, and coal.	675	942	Shale, gray, sandy	30	60	Sandstone; water at 83 ft.	20	103
No log	88	1,030	Limestone, dark-gray, hard; Burro Canyon Formation.	5	65	<u>(D-23-19)13bcb-1.</u> Log by C. R. Larson. Alt. 4,760.		
<u>(D-21-5)28abb-1.</u> Lithology and geology from geophysical log. Alt. 8,480.			Shale, gray, sandy	45	110	Shale and rock; Mancos Shale	6	6
Alluvium	12	12	Bentonite, gray, sandy	25	135	Shale, black	349	355
Price River Formation; sandstone and siltstone	58	70	Shale, pink, sandy	25	135	Sandstone; water; Dakota Sandstone	21	376
Castlegate Sandstone; sandstone and siltstone	200	270	Limestone, dark-gray, hard	10	145	Shale, black	14	390
Blackhawk Formation; sandstone, siltstone, shale, and coal.	736	1,006	Shale, gray, sandy; Morrison Formation.	90	235	Shale, green; Burro Canyon Formation.	28	418
Star Point Sandstone; sandstone and siltstone	187	1,193	Shale, brown	30	265	Sandstone; water	33	451
<u>(D-21-23)36aac-1.</u> Log by W. G. Bush. Alt. 4,520.			Sand, gray, hard	15	280	Limestone.	4	455
Mancos Shale; shale, gray and black, mixed	406	406	Shale and bentonite, gray.	100	380	Shale, green; Morrison Formation	3	458
Dakota Sandstone; sandstone, fine- and medium-grained, with shale streaks; salty water (0.5 gal/min).	106	512	Sand, gray, hard	25	405	Shale, black, and limestone.	87	545
Morrison Formation; shales, variegated, with siltstone and sandstone sections.	258	770	Shale, brown	20	425	Shale, red, and limestone.	35	580
<u>(D-22-4)14ddb-1.</u> Lithology and geology from geophysical log. Alt. 8,290.			Sand, brown, hard.	5	430	<u>(D-23-21)31aba-1.</u> Log by C. M. Conway. Alt. 4,875.		
Alluvium	12	12	Sand, soft; water.	2	432	Soil, dark-brown	42	42
Price River Formation; sandstone, siltstone, and shale.	64	76	Limestone, blue, hard.	3	435	Shale, brown	128	170
Castlegate Sandstone; sandstone and siltstone	86	162	Shale, red	10	445	Slate, brown, hard	75	245
Blackhawk Formation; sandstone, siltstone, shale, and thin coal seams	619	781	<u>(D-22-22)19bbc-1.</u> Log by C. M. Conway. Alt. 4,690.			Shale, gray.	55	290
Star Point Sandstone; sandstone.	37	818	Shale, gray; Dakota Sandstone.	45	45	Slate, dark-gray, hard	55	345
<u>(D-22-4)22dcb-1.</u> Lithology and geology from geophysical log. Alt. 8,220.			Limestone, gray, hard; Burro Canyon Formation	3	48	Potash	80	425
Alluvium	9	9	Sandstone, gray, medium-grained; water	22	70	Limestone, light-gray, hard.	105	530
Price River Formation; sandstone, siltstone, and shale.	43	52	Shale, gray	25	95	Slate, dark-gray, hard	135	665
Castlegate Sandstone; sandstone and siltstone	191	243	Shale, pink, sandy	10	105	Shale, gray	25	690
Blackhawk Formation; sandstone, siltstone, shale, and coal.	644	887	Limestone, gray	30	145	Slate, dark-gray	60	750
Star Point Sandstone; sandstone and siltstone	199	1,086	Sandstone, gray; water (6 gal/min)	20	165	Limestone, gray, hard.	100	850
<u>(D-22-4)22dcb-1.</u> Lithology and geology from geophysical log. Alt. 8,220.			Shale, brown, Morrison Formation	5	170	Sand, dark-gray, soft; salty water	8	858
Alluvium	9	9	<u>(D-23-4)10abb-1.</u> Lithology and geology from geophysical log. Alt. 8,370.			<u>(D-24-18)25dab-1.</u> Log by C. M. Conway. Alt. 5,300.		
Price River Formation; sandstone, siltstone, and shale.	43	52	Alluvium	13	13	Soil, brown, soft.	19	19
Castlegate Sandstone; sandstone and siltstone	191	243	Price River Formation; sandstone and siltstone	94	107	Sandstone, brown; Entrada Sandstone	156	175
Blackhawk Formation; sandstone, siltstone, shale, and coal.	644	887	Blackhawk Formation; sandstone, siltstone, shale, and coal.	711	818	Shale, brown	5	180
Star Point Sandstone; sandstone and siltstone	199	1,086	Star Point Sandstone; sandstone and siltstone	14	832	Sandstone; trace of water; Navajo Sandstone	40	220
<u>(D-22-4)22dcb-1.</u> Lithology and geology from geophysical log. Alt. 8,220.			No log	26	858	Sandstone, brown	355	575
Alluvium	9	9	<u>(D-23-4)16cbd-1.</u> Lithology and geology from geophysical log. Alt. 8,140.			Sandstone; good water.	20	595
Price River Formation; sandstone, siltstone, and shale.	43	52	Alluvium	5	5	Sandstone, brown	9	604
Castlegate Sandstone; sandstone and siltstone	191	243	Castlegate Sandstone; sandstone, fine- to coarse-grained, conglomeratic lenses; some siltstone layers.	115	120	<u>(D-23-4)10abb-1.</u> Lithology and geology from geophysical log. Alt. 8,370.		
Blackhawk Formation; sandstone, siltstone, shale, and coal.	644	887	Blackhawk Formation; sandstone, siltstone, shale, and thin coal seams	820	940	Alluvium	13	13
Star Point Sandstone; sandstone and siltstone	199	1,086	Star Point Sandstone; sandstone, fine- to medium-grained	60	1,000	Price River Formation; sandstone and siltstone	94	107

Table 4.—Water levels in selected wells

Location: See explanation of data-site numbering system in text and plate 1.
Water levels are in feet above(+) or below land-surface datum.

<u>(D-13-9)23bab-1</u>							<u>(D-22-10)23cbc-1</u>										
Nov. 11, 1976	51.16	July 15, 1977	51.14	Nov. 8, 1977	51.28	Sept. 22, 1977	34.72	Nov. 8, 1977	35.24	Apr. 25, 1978	32.84	Oct. 21	34.52				
Feb. 2, 1977	51.49	Sept. 8	51.29	Apr. 23, 1978	50.62	Oct. 21											
Mar. 28	50.64	Oct. 21	51.39	June 2	51.03												
May 3	50.71																
<u>(D-13-9)36abb-1</u>							<u>(D-22-19)27dab-1</u>										
Nov. 11, 1976	12.31	July 15, 1977	12.67	Nov. 8, 1977	12.77	Nov. 4, 1942	41.20	Oct. 8, 1949	44.40	Nov. 27, 1951	44.57	Nov. 26, 1943	43.08	Nov. 3	44.44	Dec. 29	47.96
Feb. 14, 1977	12.59	Sept. 8	12.69	Apr. 24, 1978	12.64	Oct. 21, 1946	44.90	Dec. 5	44.33	Feb. 3, 1952	44.34	Oct. 21, 1947	45.43	Jan. 4, 1950	44.26	Mar. 28	43.95
May 3	12.78	Oct. 21	12.72	June 2	12.42	Mar. 31, 1947	45.10	Jan. 4, 1950	44.26	Mar. 31	42.01	Oct. 15	45.10	Mar. 31	44.26	Mar. 31	42.01
						June 3, 1948	42.91	Mar. 9	44.09	Apr. 27	42.16	June 3, 1948	42.91	Mar. 9	44.09	Apr. 27	42.16
						Aug. 30	43.21	May 30	44.03	June 2	43.18	Aug. 30	43.21	May 30	44.03	June 2	43.18
						Sept. 13	43.80	June 29	44.30	July 7	42.35	Sept. 13	43.80	June 29	44.30	July 7	42.35
						Oct. 9	44.29	July 28	44.37	Aug. 31	44.00	Oct. 9	44.29	July 28	44.37	Aug. 31	44.00
						Nov. 1	43.43	Aug. 20	44.92	Dec. 30	44.20	Nov. 1	43.43	Aug. 20	44.92	Dec. 30	44.20
						Dec. 1	44.33	Oct. 1	44.65	Jan. 26, 1953	42.90	Dec. 1	44.33	Oct. 1	44.65	Jan. 26, 1953	42.90
						Jan. 3, 1949	44.26	Nov. 3	44.67	Feb. 21	42.50	Jan. 3, 1949	44.26	Nov. 3	44.67	Feb. 21	42.50
						Feb. 28	42.15	Dec. 28	44.42	May 31	43.20	Feb. 28	42.15	Dec. 28	44.42	May 31	43.20
						Mar. 31	43.98	Feb. 7, 1951	44.34	June 23	43.31	Mar. 31	43.98	Feb. 7, 1951	44.34	June 23	43.31
						Apr. 10	43.89	Apr. 1	44.34	Oct. 29	43.86	Apr. 10	43.89	Apr. 1	44.34	Oct. 29	43.86
						May 31	45.94	May 2	44.33	Jan. 12, 1954	41.38	May 31	45.94	May 2	44.33	Jan. 12, 1954	41.38
						June 30	43.70	Oct. 3	44.68	Jan. 11, 1956	43.17	June 30	43.70	Oct. 3	44.68	Jan. 11, 1956	43.17
						Aug. 1	44.03	Nov. 11	44.55	Oct. 19	44.06	Aug. 1	44.03	Nov. 11	44.55	Oct. 19	44.06
						Sept. 30	44.44	Nov. 1	44.67	Oct. 23, 1957	43.23	Sept. 30	44.44	Nov. 1	44.67	Oct. 23, 1957	43.23
										Oct. 10, 1958	43.65						
										Oct. 23, 1959	43.26						
<u>(D-21-23)35cdd-1</u>							<u>(D-22-6)31dab-1</u>										
Oct. 21, 1959	59.20	Oct. 5, 1960	55.22	Mar. 28, 1961	54.45	Oct. 7, 1976	+3.5	July 13, 1977	+3.3	Nov. 8, 1977	+3.8	Oct. 7, 1976	+3.5	July 13, 1977	+3.3	Nov. 8, 1977	+3.8
Apr. 6, 1960	56.81					May 6, 1977	+3.8	Sept. 21	+3.8	Apr. 25, 1978	+3.8	Apr. 6, 1960	+3.5	Sept. 21	+3.8	Apr. 25, 1978	+3.8
						June 2	+3.5	Oct. 21	+3.7	June 2	+3.8	June 2	+3.5	Oct. 21	+3.7	June 2	+3.8
						23	+3.5					23	+3.5				

Table 5.—Records of selected springs

Location: See explanation of data-site numbering system in text and plate 1.

Altitude: Altitude of land surface at spring orifice above mean sea level; interpolated from U.S. Geological Survey topographic maps.

Geologic unit: See table 1 for stratigraphic position of unit. Queried, (?), where questionable.

Yield: E, estimated.

Date: Date of measurement of yield, temperature, specific conductance, and pH.

Permanence: I, intermittent discharge (ceases during latter part of summer and may cease due to freezing during midwinter); P, perennial discharge.

Remarks and other data available: C, chemical analysis in table 7. D, see Waddell and others 1976.

Location	Altitude (ft)	Geologic unit	Improvements	Yield (gal/min)	Temperature (°C)	Specific conductance (rho/cm at 25°C)	pH	Date	Permanence	Remarks and other data available
(D-11-7)29aaa-S1	7,950	Alluvium	None	2.2	10.0	460	7.3	8-15-77	P	D.
36bdb-S1	8,300	do	None	Drv	-	-	-	8-15-77	I	Discharging 10-21-76 D
(D-12-7)33bbb-S1	7,700	Blackhawk Fm.	None	200E	14.0	600	7.3	5- 3-77	P	Sulfur spring, discharges near fault.
				100E	14.0	700	7.4	8-15-77	P	
(D-12-9)1ccc-S1	7,310	Alluvium	None	Dry	-	-	-	8-15-77	I	Discharging 8-6-76. D.
(D-12-10)34aad-S1	8,120	do	None	Drv	-	-	-	8-15-77	I	Discharging 8-4-76. D.
35dbc-S1	8,070	do	None	Dry	-	-	-	8-15-77	I	Do.
(D-12-11)20aaa-S1-2	7,710	do	Trough	Drv	-	-	-	8-15-77	I	Do.
(D-12-12)30dce-S1	7,720	Flagstaff Ls. Mbr.	None	Drv	-	-	-	8-18-77	I	Discharging 7-28-76. D.
(D-13-7)17aaa-S1	7,950	Blackhawk Fm.	None	.3	9.5	600	7.2	8-15-77	P	Sulfur spring.
17cdd-S1	7,950	Star Point Ss.	None	45.0	9.0	620	7.4	8-15-77	P	D
(D-13-9)7acd-S1	7,010	do	Trough	.1	6.0	2,600	-	5- 3-77	P	D
				0.2	7.5	2,950	7.4	8-16-77	P	D
(D-13-12)5cbcc-S1	6,930	Price River Fm.	None	2.6	9.0	1,090	7.6	8-18-77	P	D.
11acd-S1	7,990	Flagstaff Ls. Mbr.	None	Drv	-	-	-	8-18-77	I	Discharging 7-15-76. D.
(D-13-13)18bac-S1	8,200	North Horn Fm.	None	Dry	-	-	-	8-18-77	I	Discharging 7-20-76. D.
(D-14-6)2dcd-S1	8,810	Blackhawk Fm.	None	5.8	.5	350	7.1	11-10-77	P	C.
17adc-S1	9,405	North Horn Fm.	Piped	.9	4.0	440	7.1	10- 6-77	P	C.
23bcd-S1	9,003	Price River Fm.	None	.3	4.5	280	6.9	10-13-77	P	C.
25bca-S1	9,696	Blackhawk Fm.	Piped	.4	3.5	+10	7.1	10-11-77	P	C.
26caa-S1	9,200	Price River Fm.	None	5.4	5.0	360	7.7	8-16-77	P	D
26ccc-S1	9,139	do	Piped	5.1	3.5	390	7.5	10-13-77	P	D
35bda-S1	9,138	Blackhawk Fm.	None	1.2	6.0	130	6.9	10-13-77	P	C
(D-14-7)7bce-S1	10,175	do	Piped	5.3	5.0	520	7.6	10-13-77	P	C
15bcd-S1	9,395	Price River Fm.	Piped	1.2	6.0	380	7.2	8-16-77	P	D
				2.6	7.5	160	7.2	8-16-77	P	C
22bdd-S1	9,355	do	Piped	1.2	5.5	160	6.6	10- 6-77	P	C.
22bba-S1	9,136	Blackhawk Fm.	Piped	2.5	6.5	100	6.5	10- 6-77	P	C.
30bac-S1	8,234	Masuk Mbr. (?)	None	2.0	4.0	230	6.9	10- 6-77	P	C.
30caa-S1	8,322	do	None	14.4	11.5	540	7.3	8-16-77	P	D.
31dab-S1	8,365	Blackhawk Fm.	None	3.6	11.0	600	7.2	10- 3-77	P	Sulfur spring
33aac-S1	9,400	Price River Fm.	None	.3	3.0	500	7.5	10- 4-77	P	D.
(D-15-6)1bcc-S1	9,482	Blackhawk Fm.	None	10.0	4.0	330	7.0	10- 6-77	P	C.
				6.1	3.0	380	7.4	10-13-77	P	C.
11aab-S1	8,820	do	None	6.3	.5	420	7.2	11-10-77	P	D.
11bab-S1	8,459	Alluvium	None	18.8	4.5	460	7.5	11-10-77	P	C.
(D-15-7)6dbd-S1	8,528	Blackhawk Fm.	None	7.4	3.5	350	7.2	11- 4-77	P	C.
8dbce-S1	8,252	Castlegate Ss.	Piped	5.4	4.0	540	6.9	10-11-77	P	Water supply, Stuart Ranger Station. C.
12dba-S1	9,650	North Horn Fm.	Piped	.1	11.5	320	7.4	8-16-77	P	D.
15abd-S1	9,625	do	None	1.1	12.0	430	7.4	8-16-77	P	D.
16bce-S1	8,036	Star Point Ss.	None	8.5	4.5	600	7.2	10- 4-77	P	C.
20cdd-S1	7,745	do	Piped	3.1	5.0	500	7.1	10- 5-77	P	Campground water supply. C
30abc-S1	7,944	Blackhawk Fm.	None	11.9	4.0	500	7.3	10- 5-77	P	C.
34hab-S1	9,200	Flagstaff Ls.	None	.1	9.0	450	7.5	8-16-77	I	D.
35bde-S1	8,504	Castlegate Ss.	None	1.7	5.5	420	7.1	11- 7-77	P	Discharges at fault. C.
35bce-S1	8,010	Blackhawk Fm.	Piped	90	9.0	560	7.1	10- 5-77	P	Discharges near fault. C
(D-15-10)12aaa-S1	5,395	Alluvium	None	-	18.0	2,590	7.1	6- 9-52	P	Alluvium over Mancos Sh. C.
(D-15-11)13dd-S1	6,240	do	Piped	28.2	17.0	2,100	8.2	8-18-77	P	D
13caa-S1	5,700	do	Piped	4.0	14.0	1,600	7.7	8-18-77	P	D
(D-16-6)17bda-S1	8,299	Blackhawk Fm.	None	7.2	3.5	560	7.3	10-17-77	P	C.
1caa-S1	8,338	do	None	2.8	4.0	500	7.3	10-17-77	P	C.
13aab-S1	8,788	do	None	11.2	5.0	550	7.6	8-16-77	P	C.
				5E	4.5	500	7.1	10- 4-77	P	C.
15cab-S1	8,640	Alluvium	Diverted by ditch	8.8	5.6	520	7.3	11-11-77	P	C.
22cda-S1	9,002	Castlegate Ss.	None	3.8	5.0	600	7.2	10-14-77	I	C.
27aca-S1	9,165	do	Piped	.3	5.0	560	7.3	11-11-77	P	C.
4dda-S1	8,769	do	None	3.8	6.5	560	7.4	10-14-77	P	C.
(D-16-7)7acb-S1	9,625	Flagstaff Ls.	None	3.2	6.0	400	7.6	8-16-77	P	D.
9cbd-S1	7,694	Star Point Ss.	Piped, gallery	2.0	8.0	530	7.4	5- 7-53	P	Part of municipal water supply, Huntington C
				29.2	9.0	590	7.6	8-16-77	P	
				25.7	7.5	600	6.8	10- 3-77	P	
21bbb-S1	7,484	do	None at source	7.1	5.5	650	7.2	10- 4-77	P	Piped to tank from small dam below source. C.
26adc-S1	7,370	do	Piped, gallery	75E	9.0	530	7.6	8-17-77	P	Part of municipal water supply, Huntington C
				75E	9.5	530	6.8	10- 3-77	P	
29dbb-S1	7,608	do	Piped	45.0	5.5	700	7.0	10- 4-77	P	C.
(D-17-6)3adb-S1	8,719	Castlegate Ss.	None	26.2	7.0	540	7.3	10-14-77	P	C.
34dc-S1	8,832	do	None	4.7	6.5	600	7.5	11- 9-77	P	C.
23aaa-S1	7,766	Blackhawk Fm.	None	40E	9.5	600	7.3	6- 2-77	P	C.
				39.6	6.0	600	7.4	10-14-77	P	C.
24dab-S1	8,056	Castlegate Ss.	None	.8	5.0	800	7.7	10-14-77	I	D.
(D-18-4)22bdb-S1	10,120	Flagstaff Ls.	Diverted by ditch	12.1	6.0	380	7.3	8-12-77	P	D.
(D-18-3)35dda-S1	9,000	Alluvium	None	.1	8.5	540	7.6	8-12-77	I	D.
(D-18-6)3bac-S1	6,930	do	None	1.2	2.0	1,180	7.6	11- 9-77	I	D.
4bab-S1	7,125	Castlegate Ss.	None	6.7	2.0	660	7.4	11- 9-77	I	C.
31dca-S1	8,200	Flagstaff Ls.	Piped	.8	11.0	1,100	7.6	8-12-77	I	C.
				1.8	8.0	1,290	7.4	6-14-78	P	C.
(D-19-4)26aaa-S1	9,360	do	None	.1	5.0	540	7.4	8-11-77	I	D.
33bca-S1	9,960	do	None	4.9	10.0	430	7.4	8-10-77	P	D.
(D-19-5)10dde-S1	9,540	do	None	90	10.0	530	7.3	8-11-77	P	D.
(D-19-6)6aad-S1	8,030	Alluvium	None	.1	5.5	1,200	7.6	8-11-77	I	D.
20dba-S1	6,880	North Horn Fm.	Trough	1.7	15.3	850	7.9	8-11-77	I	D.
(D-19-9)26cab-S1	5,995	Summerville Fm.	None	1.0	15.5	5,240	8.1	9-11-75	I	C.
(D-20-5)4dac-S1	9,480	Flagstaff Ls.	None	22.9	7.0	470	7.5	8-10-77	P	D.
11add-S1	9,530	North Horn Fm.	Piped	18.0	5.0	540	7.5	8-10-77	P	D.
31abd-S1	8,460	Alluvium	None	.2	9.0	800	7.3	8-10-77	I	D.
(D-20-2)11bce-S1	5,900	Farrer Fm.	Piped, gallery	20.2	10.0	1,060	8.0	3-29-77	P	Municipal supply, Thompson C
				16.4	16.5	1,400	7.9	7-21-77	P	C.
(D-20-23)4cd-S1	4,800	Alluvium	None	-	-	3,880	-	1927	I	C.
5ccc-S1	4,800	do	None	-	-	3,270	-	1927	I	C.
(D-21-4)34bcd-S1	8,200	Price River Fm.	Piped	2.0	9.0	1,200	7.6	8- 9-77	I	D.
(D-22-4)16dcd-S1	8,080	Alluvium	Piped	.1	9.0	1,300	7.4	8- 9-77	I	D.
24bac-S1	8,320	do	Piped	.1	12.0	250	7.1	8- 9-77	I	D.
32dab-S1	8,450	do	Piped	.1	10.0	750	7.3	8- 9-77	I	D.
(D-22-14)6bbe-S1	4,500	Navajo Ss.	None	10E	7.0	607	8.3	10-28-58	P	C.
(D-22-16)25cda-S1	4,120	Morrison Fm. (?)	None	-	-	33,700	-	9-17-72	P	Dens (tv 1.016, discharges from north-east side of graben, no other data
(D-23-1)16bab-S1	8,080	Castlegate Ss.	Piped	.3	9.0	400	7.1	8- 9-77	I	D.
21add-S1	8,160	do	Piped	3	10.0	350	7.1	8- 9-77	I	D.
29bad-S1	7,820	Price River Fm.	Piped	3	9.0	900	7.3	8- 8-77	I	D.
(D-24-5)13bcd-S1	6,205	Ferron Ss. Mbr.	None	15E	17.0	1,250	7.3	9-29-76	P	D.
				10.2	18.0	1,300	7.6	6-21-77	P	D.
				10.1	19.0	1,320	7.7	8- 8-77	P	D.
(D-24-10)3bba-S1	6,750	Moenkopi Fm.	None	5E	-	2,460	-	10-27-44	P	C.

Table 6.—Records of ground-water discharge from selected mines

Location: See explanation of data-site numbering system in text and plate 1.
 Altitude of land-surface datum: Above mean sea level; interpolated from U.S. Geological Survey topographic maps.

Location	Mine	Altitude of land- surface datum (ft)	Discharge (gal/min)	Date of discharge measurement and sample collection (chemical analysis in table 7)
(D-13-8)1cda	Mutual	7,410	-	10-10-46
12aba	Uta-Carbon	7,320	5.0	10-19-76
(D-13-9)8abc	Spring Canyon	7,280	-	7-17-53
(D-13-10)16cab	Kenilworth	6,920	-	4- 6-41
(D-14-14)32dbb	Sunnyside No. 1	6,760	-	3-18-53
(D-15-8)17aaa	Star Point No. 1	8,580	-	4-26-54
			-	2-13-56
(D-16-8)8dad	King No. 2	7,720	240	10-12-77
(D-17-7)10daa	Deer Creek	7,440	93	6- 2-77
			138	6-29-77
27abb	Wilberg	7,800	60	3-30-77
			9.0	5- 4-77
			-	11- 1-77
(D-18-6)11aab	Oliphant	6,580	.2	6- 1-77
(D-21-14)4cbd	Four Corners	4,500	-	7-14-56
(D-22-6)29ddd	Browning	5,960	150	2-16-77
			125	9- 8-77

Table 7—Chemical analyses of water from selected
[Constituents are in milligrams per

Location: See explanation of data-site numbering system in text and plate 1.
Source of water: M, mine drainage; S, spring; T, coal, oil, or gas test; W, water well.
Date: Collection or analysis of sample.
Geologic unit: See table 1.
Analysis by: U.S. Geological Survey unless noted DH, Utah Division of Health; CL, ChemLab Co.; CO, Core Laboratories, Inc.; HD, Halliburton Div. Lab.

Location	Source of water	Date	Geologic unit	Interval sampled (ft)	Temperature (°C)	Dissolved silica (SiO ₂)	Dissolved iron (Fe) (µg/L)	Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Dissolved sodium (Na)	Dissolved potassium (K)	Dissolved sodium (Na) + potassium (K)	Bicarbonate (HCO ₃)	Carbonate (CO ₃)	Dissolved sulfate (SO ₄)
(D-11-7)10aaa-1	T	1-19-70	Blackhawk Fm. Ferron Ss. Mbr.	4,140-4,165 10,750-10,795	-	-	-	14 25	4 6	1,520 2,549	18 25	-	2,794 1,964	168	92 155
(D-13-8)1cda	M	10-10-46	Blackhawk Fm.	-	-	5.2	0	57	32	-	-	264	600	-	106
4bbb-1	T	9-17-76	Castlegate Ss.	80-120	6.0	7.3	10	82	15	3.9	3.6	-	237	0	79
12aba	M	10-19-76	Blackhawk Fm.	-	6.0	8.5	30	130	77	29	7.8	-	495	0	260
17.dd-1	W	7-18-55	Alluvium	-	-	44.0	1,080	102	62	-	-	38	393	-	272
(D-13-9)8abc	M	7-17-53	Blackhawk Fm.	-	-	4.4	50	8	5.5	-	-	689	1,527	29	128
8ccc-1	W	3-19-41	do.	-	-	12.4	0	147	139	-	-	64	425	-	559
(D-13-10)16cab	M	4-6-41	do.	-	-	7.0	100	120	252	-	-	422	525	-	1,507
(D-14-6)2dcd-S1	S	11-10-77	do.	-	0.5	5.4	-	41	23	2.8	.9	-	220	0	7.5
17adc-S1	S	10-6-77	North Horn Fm.	-	4.0	5.1	-	63	11	1.6	.5	-	230	0	5.5
26ccc-S1	S	10-13-77	Price River Fm.	-	6.0	6.8	-	20	1.8	1.6	.6	-	56	0	5.9
35bda-S1	S	10-13-77	Blackhawk Fm.	-	5.0	6.9	-	68	21	2.5	.6	-	300	0	8.1
(D-14-7)15bcd-S1	S	10-6-77	Price River Fm.	-	8.0	7.5	-	22	7.0	2.1	.8	-	83	0	11
22bbd-S1	S	10-6-77	do.	-	6.5	7.7	-	12	2.9	2.1	.6	-	39	0	3.7
27bba-S1	S	10-6-77	Blackhawk Fm.	-	4.0	4.1	-	36	7.7	2.7	1.0	-	140	0	6.4
33aac-S1	S	10-6-77	Price River Fm.	-	4.0	5.9	-	62	8.7	1.8	.7	-	220	0	4.1
(D-14-9)29abd-1	T	1-7-63	Ferron Ss. Mbr. do. Tununk Mbr. do.	2,756 2,806 3,054 3,325	-	-	0	320 280 120 80	24 24 24 24	19,978 14,975 6,537 7,549	-	-	488 3,514 1,220 1,464	144 240 336 96	40 40 40 40
(D-14-14)32ddb	M	3-18-53	Blackhawk Fm.	-	-	14.3	870	61	67	-	-	47	384	-	186
(D-15-6)1bcc-S1	S	10-13-77	do.	-	3.0	5.7	-	50	17	2.2	.5	-	240	0	7.8
11bab-S1	S	11-10-77	Alluvium	-	4.5	6.6	-	63	20	2.8	.7	-	280	0	6.5
(D-15-7)6dbd-S1	S	10-4-77	Blackhawk Fm.	-	3.5	3.5	-	48	22	2.9	1.0	-	240	0	14
8dbc-S1	S	10-11-77	Castlegate Ss.	-	4.0	6.4	-	54	36	3.9	1.6	-	310	0	25
16cbc-S1	S	10-4-77	Star Point Ss.	-	4.5	7.9	-	69	50	6.8	2.6	-	360	0	71
20cdd-S1	S	10-5-77	do.	-	5.0	6.7	-	69	37	3.9	1.4	-	340	0	21
30abc-S1	S	10-5-77	Blackhawk Fm.	-	4.0	7.3	-	56	38	5.3	1.6	-	340	0	20
35bdc-S1	S	11-7-77	Castlegate Ss.	-	5.5	7.1	-	47	29	4.9	1.6	-	260	0	24
35cbc-S1	S	10-5-77	Blackhawk Fm.	-	9.0	6.6	-	80	31	3.5	1.6	-	320	0	36
(D-15-8)17aaa	M	4-26-54	do.	-	-	-	308	-	-	-	-	-	466	-	-
		2-13-56	do.	-	41	90	-	154	93	-	-	198	937	-	378
(D-15-10)12aaa-S1	S	6-9-52	Alluvium	-	-	31	860	215	19	-	-	238	562	-	755
(D-16-6)1caa-S1	S	10-17-77	Blackhawk Fm.	-	4.0	5.6	-	62	25	4.2	1.1	-	270	0	27
13aab-S1	S	10-4-77	do.	-	4.5	5.7	-	70	31	6.5	1.2	-	300	0	39
15cab-S1	S	11-11-77	Alluvium	-	9.0	5.4	-	79	30	9.4	.9	-	330	0	52
22cda-S1	S	10-14-77	Castlegate Ss.	-	5.0	7.7	-	64	27	4.8	1.0	-	310	0	15
27aca-S1	S	11-11-77	do.	-	5.0	7.1	-	82	23	4.6	1.1	-	340	0	10
27dda-1	T	11-5-64	Ferron Ss. Mbr.	5,902-6,047	21.0	-	-	230	499	-	-	8,900	640	0	13
34dda-S1	S	10-14-77	Castlegate Ss.	-	6.5	7.5	-	44	29	4.8	1.6	-	210	0	18
(D-16-7)9cbd-S1	S	5-7-53	Star Point Ss.	-	-	5.3	50	71	35	-	-	10.5	338	-	56
21bbb-S1	S	10-4-77	do.	-	5.5	7.7	-	78	49	13	2.3	-	400	0	65
26adc-S1	S	10-3-77	do.	-	9.5	6.6	-	78	30	4.1	1.1	-	310	0	26
29ddb-S1	S	10-4-77	do.	-	5.5	7.5	-	70	45	11	1.8	-	390	0	48
(D-16-8)8dad	M	10-12-77	Blackhawk Fm.	-	6.0	9.3	30	130	59	6.5	4.8	-	440	0	210
(D-16-24)13adb-1	T	12-14-61	Burro Canyon Fm.	5,888-5,899	-	-	-	2,577	429	-	-	-	461	0	42
(D-17-6)3adb-S1	S	10-14-77	Castlegate Ss.	-	7.0	7.0	-	63	27	5.2	.9	-	300	0	13
3ddc-S1	S	11-10-77	do.	-	6.5	7.2	-	79	32	6.6	1.2	-	370	0	29
23aaa-S1	S	10-14-77	Blackhawk Fm.	-	6.0	6.8	-	43	37	11	1.6	-	290	0	39
74cad-1	T	6-8-67	do.	150	-	9.7	-	52	36	38	3.2	-	314	0	48
75abd-1	T	6-8-67	do.	150	-	-	-	44	37	47	3.9	-	314	0	24
(D-17-7)10daa	M	6-2-77	do.	-	13.0	-	-	-	-	-	-	-	-	-	-
		6-29-77	do.	-	14.0	-	-	-	-	-	-	-	-	-	-
27abb	M	3-30-77	do.	-	5.0	8.6	10	71	49	22	3.3	-	301	0	120
		5-4-77	Star Point Ss.	-	12.5	7.9	10	110	52	19	3.1	-	400	0	170
		11-1-77	Blackhawk Fm.	-	6.0	9.0	30	70	52	22	3.5	-	310	0	160
(D-18-6)4bab-S1	S	11-9-77	Castlegate Ss.	-	2.0	6.0	-	50	41	23	2.4	-	280	0	110
11aab	M	4-27-78	Blackhawk Fm.	-	5.6	-	-	-	-	-	-	-	-	-	-
31cda-S1	S	6-14-78	Flagstaff Ls.	-	8.0	6.0	50	57	59	110	1.1	-	510	-	100
(D-18-14)9dcd-1	W	8-8-58	Alluvium	-	-	16	-	563	235	-	-	449	408	0	2,640
(D-18-9)2cab-S1	S	9-11-75	Summerville Fm.	-	15.5	6.8	150	150	170	710	5.7	710	332	0	1,600
(D-19-10)15bac-1	W	10-21-76	Carmel Fm.	445-465	14.0	13	60	510	270	210	10	-	105	0	2,200
(D-19-13)12ddd-1	T	10-5-69	Kaibab Ls.	3,341-3,373	-	-	-	1,684	437	12,464	1,400	-	3,867	-	2,983
(D-19-25)4ada-1	T	6-6-31	Morrison Fm.	670-760	-	-	-	879	251	11,960	-	-	302	-	749
(D-20-14)31cbd-1	W	4-26-78	Carmel Fm.	150	15.0	-	-	-	-	-	-	-	-	-	-
(D-20-9)2cab-S1	S	6-8-58	Alluvium	-	-	18	-	147	60	-	-	234	670	0	450
(D-20-16)17dab-1	W	8-8-58	Alluvium	-	17.0	19	0	36	66	150	2.1	-	561	0	230
(D-20-20)21bcc-S1	S	3-29-77	Farrer Fm.	-	10.0	-	-	-	-	-	-	-	-	-	-
		7-21-77	-	-	13.5	-	-	-	-	-	-	-	-	-	-

test holes, water wells, springs, and mines
liter unless noted otherwise]

Dissolved chloride (Cl)	Dissolved fluoride (F)	Dissolved nitrate (NO3)	Dissolved nitrate + nitrite (N)	Phosphate (PO4)	Dissolved phosphorus (P)	Dissolved boron (B) (µg/L)	Dissolved arsenic (As) (µg/L)	Dissolved chromium (Cr) (µg/L)	Dissolved lead (Pb) (µg/L)	Dissolved lithium (Li) (µg/L)	Dissolved mercury (Hg) (µg/L)	Dissolved selenium (Se) (µg/L)	Dissolved strontium (Sr) (µg/L)	Dissolved zinc (Zn) (µg/L)	Dissolved solids		Hardness (Ca, Mg)	Noncarbonate hardness as CaCO3	Specific conductance (µmho/cm at 25°C)	Sodium-adsorption ratio	pH	Analysis by
															Residue at 180°C	Sum of constituents						
490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,682	-	-	4,780	-	8.3	CL	
2,760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,462	-	-	10,200	-	8.2	CL	
98	0.9	0	-	-	-	-	-	-	-	-	-	-	-	-	922	270	-	1,400	-	8.0		
6.6	.4	-	0.03	-	0.00	30	0	0	0	20	0.0	0	340	0	315	270	73	540	0.1	7.1		
37	.4	-	.17	-	.00	120	0	0	0	30	.0	0	680	10	796	640	240	1,000	.5	7.5		
18	.5	0	-	-	-	-	-	-	-	-	-	-	-	-	736	560	-	1,100	-	7.7		
122	2.25	.85	-	-	-	-	-	-	-	-	-	-	-	-	1,721	43	-	2,600	-	8.6		
50	.55	5.4	-	-	-	-	-	-	-	-	-	-	-	-	1,492	933	-	2,260	-	7.5		
116	1.6	0	-	-	-	-	-	-	-	-	-	-	-	-	3,083	1,337	-	4,670	-	8.1		
3.2	.1	-	-	-	-	9	-	-	-	0	-	-	90	-	192	200	17	350	.1	7.1		
1.6	.1	-	-	-	-	10	-	-	-	2	-	-	110	-	202	200	14	440	.0	7.1		
1.9	.1	-	-	-	-	20	-	-	-	4	-	-	50	-	66	57	11	130	.1	6.9		
2.5	.1	-	-	-	-	20	-	-	-	2	-	-	80	-	258	260	10	520	.1	7.6		
2.0	.1	-	-	-	-	9	-	-	-	4	-	-	40	-	93	84	16	160	.1	6.6		
1.5	.1	-	-	-	-	20	-	-	-	2	-	-	50	-	50	42	10	100	.1	6.5		
2.6	.1	-	-	-	-	30	-	-	-	0	-	-	-	-	130	120	7	230	.1	6.9		
1.9	.1	-	-	-	-	20	-	-	-	2	-	-	110	-	194	190	10	330	.1	7.0		
30,956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51,950	-	-	76,600	-	7.0	CO	
21,300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37,860	-	-	59,700	-	8.0	CO	
2,840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11,117	-	-	18,000	-	8.0	CO	
2,840	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,093	-	-	20,600	-	8.0	CO	
14.7	.1	.20	-	-	-	-	-	-	-	-	-	-	-	-	601	429	-	910	-	7.8		
2.5	.1	-	-	-	-	10	-	-	-	4	-	-	70	-	204	200	0	380	.1	7.4		
3.0	.1	-	-	-	-	10	-	-	-	0	-	-	130	-	241	240	10	460	.1	7.5		
3.0	.1	-	-	-	-	20	-	-	-	4	-	-	120	-	213	210	14	350	.1	7.2		
4.2	.1	-	-	-	-	30	-	-	-	10	-	-	150	-	284	280	29	540	.1	6.9		
7.2	.1	-	-	-	-	30	-	-	-	10	-	-	350	-	392	380	83	600	.2	7.2		
4.1	.1	-	-	-	-	20	-	-	0	26	-	-	70	-	311	320	46	500	.1	7.1		
5.6	.1	-	-	-	-	30	-	-	-	8	-	-	100	-	302	300	18	500	.1	7.3		
4.7	.1	-	-	-	-	30	-	-	-	10	-	-	340	-	247	240	24	420	.1	7.1		
3.5	.1	-	-	-	-	20	-	-	-	6	-	-	260	-	320	330	65	560	.1	7.1		
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,862	1,376	-	2,820	-	-		
24	.4	2.8	-	-	-	-	-	-	-	-	-	-	-	-	942	770	-	1,430	-	7.4		
43	.4	.54	-	-	-	-	-	-	-	-	-	-	-	-	1,708	739	-	2,590	-	7.1		
2.9	.1	-	-	-	-	20	-	-	-	2	-	-	210	-	261	260	37	500	.1	7.3		
3.5	.1	-	-	-	-	20	-	-	-	6	-	-	290	-	305	300	57	500	.2	7.1		
4.7	.1	-	-	-	-	20	-	-	-	0	-	-	370	-	345	320	51	520	.2	7.3		
4.8	.2	-	-	-	-	10	-	-	-	3	-	-	230	-	278	270	17	600	.1	7.2		
5.0	.1	-	-	-	-	10	-	-	-	0	-	-	190	-	301	300	21	560	.1	7.3		
15,200	-	22	-	-	-	-	-	-	-	-	-	-	-	-	28,400	25,200	2,630	2,100	33,300	76	7.8	
4.4	.1	-	-	-	-	20	-	-	-	3	-	-	180	-	299	260	0	560	.1	7.4		
6.2	.2	.26	-	-	-	-	-	-	-	-	-	-	-	-	349	322	-	530	-	-		
9.4	.1	-	-	-	-	30	-	-	-	20	-	-	450	-	422	400	69	650	.3	7.2		
4.0	.1	-	-	-	-	20	-	-	-	10	-	-	280	-	303	320	64	550	.1	6.8		
5.1	.1	-	-	-	-	30	-	-	-	10	-	-	350	-	381	360	41	700	.3	7.0		
4.3	.2	-	-	-	.01	100	1	8	0	30	0	0	990	20	642	570	210	1,150	.1	6.9		
33,197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	HD	
4.6	.1	-	-	-	-	30	-	-	-	2	-	-	240	-	269	270	23	540	.1	7.3		
5.9	.2	-	-	-	-	30	-	-	-	6	-	-	260	-	344	330	26	600	.2	7.5		
7.3	.1	-	-	-	-	20	-	-	-	8	-	-	340	-	289	260	22	600	.3	7.4		
38	.3	.4	-	-	-	-	-	-	-	-	-	-	-	-	408	380	276	19	673	1.0	7.5	
62	.3	.8	-	-	-	-	-	-	-	-	-	-	-	-	404	373	264	7	682	1.3	7.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	495	-	-	750	-	7.7		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	594	-	-	900	-	7.8		
11	.1	-	-	-	-	130	1	2	2	20	0	0	470	20	434	380	130	600	.5	7.2		
12	.2	-	.06	-	.01	40	0	0	2	20	0	0	500	20	572	490	160	1,050	.4	7.5		
10	.1	-	-	-	.02	100	1	0	0	20	0	0	520	10	481	390	140	750	.5	7.0		
14	.1	-	-	-	-	40	-	-	-	20	-	-	360	-	385	290	64	660	.6	7.4		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	402	-	-	610	-	7.6		
62	.3	-	1.9	-	-	90	-	-	-	-	-	-	-	-	655	390	0	1,290	2.4	7.4		
185	.0	3.2	-	-	-	-	-	-	-	-	-	-	-	-	4,660	4,290	2,370	2,040	4,620	-	7.1	
470	.5	-	.06	-	.00	600	2	-	11	240	-	10	-	20	-	3,280	1,100	800	5,240	9.4	8.1	
270	.4	-	.17	-	.00	1,000	0	0	2	70	.0	0	11,000	240	-	3,550	2,400	2,300	4,060	1.9	7.1	
20,300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41,172	-	-	55,000	-	7.4	CL	
20,010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29,930	34,000	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	530	-	-	800	-	7.3	
72	.2	.7	-	-	-	-	-	-	-	-	-	-	-	-	1,310	612	63	1,870	-	7.7		
11	.2	-	1.4	-	.00	40	1	0	0	10	.2	1	660	0	798	360	0	1,150	3.4	8.5		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	735	-	-	1,060	-	8.0		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	971	-	-	1,400	-	7.9		

Table 7.—Chemical analyses of water from selected

Location	Source of water	Date	Geologic unit	Interval sampled (ft)	Temperature (°C)	Dissolved silica (SiO ₂)	Dissolved iron (Fe) (µg/L)	Dissolved calcium (Ca)	Dissolved magnesium (Mg)	Dissolved sodium (Na)	Dissolved potassium (K)	Dissolved sodium (Na) + potassium (K)	Bicarbonate (HCO ₃)	Carbonate (CO ₃)	Dissolved sulfate (SO ₄)
(D-20-23)4cccd-S1	S	1927	Alluvium	-	-	-	-	240	-	-	-	450	496	0	1,500
5ccc-S1	S	1927	do.	-	-	-	-	100	-	-	-	387	514	0	1,200
(D-21-14)4cbd	M	8-14-56	Carmel Fm.	-	-	-	-	-	-	-	-	1,000	700	0	1,530
(D-21-16)9aac-1	W	9-21-60	Alluvium	8-12	-	14	-	377	150	-	-	472	561	0	1,910
(D-21-23)15bdd-1	T	6-17-59	Morrison Fm.	900-955	-	18	-	860	129	-	-	13,100	364	0	8.3
(D-2-5)23aca-1	T	1-19-53	Ferron Ss. Mbr.	1,305-1,319	-	-	-	110	32	-	-	2,333	398	-	4,172
		1-22-53		1,395-1,408	-	-	-	223	48	-	-	2,414	455	-	4,455
		1-24-53		1,423-1,436	-	-	-	210	40	-	-	2,509	440	-	4,607
		1-28-53		1,521-1,530	-	-	-	224	62	-	-	2,092	861	-	3,489
(D-22-6)29ddd	M	2-16-77	do.	-	12.0	-	-	-	-	-	-	-	-	-	-
		9- 8-77		-	13.5	-	-	-	-	-	-	-	-	-	-
31dab-1	W	10- 7-76	do.	360-402	13.0	14	170	33	18	360	3.7	-	299	0	600
		6-23-77			13.0	-	-	-	-	-	-	-	-	-	-
		7-13-77			13.5	-	-	-	-	-	-	-	-	-	-
		9-21-77			13.0	-	-	-	-	-	-	-	-	-	-
		6- 2-78			13.5	-	-	-	-	-	-	-	-	-	-
(D-22-8)11ceb-1	T	6- -61	-	1,400-2,246	-	-	-	-	-	-	-	-	-	-	-
(D-22-10)23cbe-1	W	12-27-71	Wingate Ss.	83	-	7.0	0	68	31	11	18	-	295	.73	73
30aca-1	T	6-15-66	Moenkopi Fm.	554-704	-	13	-	40	215	-	-	215	572	0	1,040
		6-17-66		680-1,080	-	9.4	-	12	137	-	-	247	700	0	472
		6-27-66		580-1,200	-	7.2	-	112	126	-	-	316	506	0	934
(D-22-14)6bbe-S1	S	10-28-58	Navajo Ss.	-	7.0	7.1	-	76	33	-	-	16	267	6	112
(D-22-16)25bbb-1	T	3-21-73	Cutler Fm.	2,585-2,605	-	-	-	515	120	5,704	170	-	1,842	-	1,550
25caa-S1	S	9- -52	Morrison Fm.	-	-	-	-	-	-	-	-	-	-	-	-
(D-22-19)10cbb-1	W	2- 9-36	Mancos Sh.	27-34	-	-	-	139	218	108	-	-	-	-	3,505
(D-23-6)6b-1	T	6-13-74	Ferron Ss. Mbr.	-	-	14	-	9.1	5.8	250	3.2	-	424	7	220
37add-1	W	9-29-76	do.	253-293	17.0	8.3	70	5.4	4.4	290	1.3	-	413	5	300
(D-23-9)2cct-1	W	8-12-71	Cutler Fm.	576-690	-	9.0	250	216	112	10	8.0	-	700	.55	412
(D-23-10)12ddd-1	W	10-31-58	Moenkopi Fm.	199-214	11.0	4.6	-	238	400	-	-	204	465	0	2,100
(D-23-19)18ddd-1	W	3-20-36	Dakota Ss., Burro Canyon Fm., and Morrison Fm.	410-920	-	-	-	35	19	152	-	-	-	-	470
(D-24-5)13bcd-S1	S	9-29-76	Ferron Ss. Mbr.	-	17.0	-	-	-	-	-	-	-	-	-	-
		6-21-77		-	18.0	-	-	-	-	-	-	-	-	-	-
		8- 8-77		-	19.0	-	-	-	-	-	-	-	-	-	-
(D-24-10)3bba-S1	S	10-27-44	Moenkopi Fm.	-	-	-	-	232	216	-	-	70	262	0	1,310
(D-24-16)15ach-1	T	6-19-66	Cutler Fm. (?)	-	-	11	-	473	114	-	-	37	228	0	1,420

test holes, water wells, springs, and mines--Continued

	Dissolved chloride (Cl)	Dissolved fluoride (F)	Dissolved nitrate (NO ₃)	Dissolved nitrate + nitrite (N)	Phosphate (PO ₄)	Dissolved phosphorus (P)	Dissolved boron (B) (µg/L)	Dissolved arsenic (As) (µg/L)	Dissolved chromium (Cr) (µg/L)	Dissolved lead (Pb) (µg/L)	Dissolved lithium (Li) (µg/L)	Dissolved mercury (Hg) (µg/L)	Dissolved selenium (Se) (µg/L)	Dissolved strontium (Sr) (µg/L)	Dissolved zinc (Zn) (µg/L)	Dissolved solids		Hardness (Ca, Mg)	Noncarbonate hardness as CaCO ₃	Specific conductance (µmho/cm at 25°C)	Sodium-adsorption ratio	pH	Analysis by	
																Residue at 180°C	Sum of constituents							
29	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	2,560	1,030	-	3,880	-	-	-	-	
30	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	2,160	871	-	3,270	-	-	-	-	
215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,950	120	0	4,470	-	-	8.2	-	
95	-	-	.7	-	-	-	-	-	-	-	-	-	-	-	-	3,290	1,560	1,100	3,840	-	-	7.2	-	
21,700	-	-	36	-	-	-	-	-	-	-	-	-	-	-	-	36,000	2,680	2,370	53,200	-	-	7.4	-	
579	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,456	7,421	-	-	11,200	-	-	-	
708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,153	8,071	-	-	12,200	-	-	-	
707	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,304	8,291	-	-	12,600	-	-	-	
712	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,985	6,944	-	-	10,500	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,530	-	-	5,500	-	-	8.1	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,940	-	-	6,000	-	-	8.3	
45	0.8	-	-	0.06	-	0.00	280	0	10	0	50	0.0	0	2,300	10	-	1,230	160	0	1,800	13	7.9	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,300	-	-	1,900	-	-	7.9	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,160	-	-	1,700	-	-	7.8	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,200	-	-	1,750	-	-	7.8	
935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,240	-	-	1,820	-	-	7.9	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,876	-	-	6,460	-	-	-	
8	.42	.5	-	-	0.1	-	680	0	-	0	-	-	0	-	0	360	-	296	-	645	-	7.7	DH	
45	-	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	1,970	1,930	982	513	2,420	4.0	7.4	-	
45	-	.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1,260	1,270	592	18	1,750	4.4	7.4	-	
70	-	.5	-	-	-	-	-	-	-	-	-	-	-	-	-	1,950	1,820	800	385	2,460	4.9	7.8	-	
8.0	.1	.9	-	-	-	-	-	-	-	-	-	-	-	-	-	388	390	324	95	607	-	8.3	-	
8,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,966	-	-	24,400	-	-	7.5	CL
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22,200	-	-	33,700	-	-	-	-
158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,964	-	-	10,600	-	-	-	DH
18	1.2	-	.09	-	2.3	290	-	-	-	-	-	-	-	-	-	-	745	47	0	1,180	16	8.5	-	
13	.6	-	.39	-	.00	210	1	10	0	30	.0	0	310	10	-	-	834	32	0	1,250	22	8.4	-	
14	.09	.1	-	.0	-	150	.00	-	.00	-	-	.00	-	.00	-	-	1,214	1,000	-	1,650	-	7.2	DH	
81	1.0	.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,570	3,260	2,240	1,860	3,650	1.9	8.2	-
235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,850	-	-	2,800	-	-	-	DH
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	825	-	-	1,250	-	7.3	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	858	-	-	1,300	-	7.6	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	871	-	-	1,320	-	7.7	-
28	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,990	1,470	-	2,460	-	-	-	-
45	-	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,310	2,210	1,650	1,460	2,430	.4	7.7	-