STATE OF MONTANA
Tim Babcock, *Governor*

BUREAU OF MINES AND GEOLOGY
E. G. Koch, *Director*

BULLETIN 37
February, 1964

BASIC WATER DATA REPORT NO. 1
MISSOULA VALLEY, MONTANA

by

Alex Brietkrietz

MONTANA BUREAU
of
MINES AND GEOLOGY
Butte, Montana

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ILLUSTRATIONS

TABLES

BASIC WATER DATA REPORT NO. 1, MISSOULA VALLEY, MONTANA

by

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This report contains water records collected and compiled by the U. S. Geological Survey during the course of an investigation of the geology and ground-water resources of the Missoula Valley. The report is intended to serve two purposes: (1) to make available to the public basic ground-water data useful in planning and studying water-resources development and (2) to supplement an interpretive report that will be published later. The interpretive report by R. G. McMurtrey, R. L. Konizeski, and Alex Brietkrietz will be published as a Montana Bureau of Mines and Geology Bulletin entitled "Geology and Ground-Water Resources of the Missoula Valley, Montana." The location of the Missoula Valley is shown on figure 1.

The well numbers in the tables indicate their location as shown on plate 1. The numbering system is based on the U. S. Bureau of Land Management system of land subdivision. The number shows the location of the well by quadrant, township, range, section, and position within the section. A graphical illustration of this method of well location is shown in figure 2. The capital letter at the beginning of the location number indicates the quadrant in which the well is located. Four quadrants are formed by the intersection of the base line and the principal meridian--A indicates the northeast quadrant, B the northwest quadrant, C the southwest quadrant, and D the southeast quadrant. The first numeral indicates the township, the second the range, and the third the section in which the well is located. Lowercase letters following the section number locate the well within the section. The first letter denotes the quarter section, and the second the quarter-quarter section. The letters are assigned within the section in

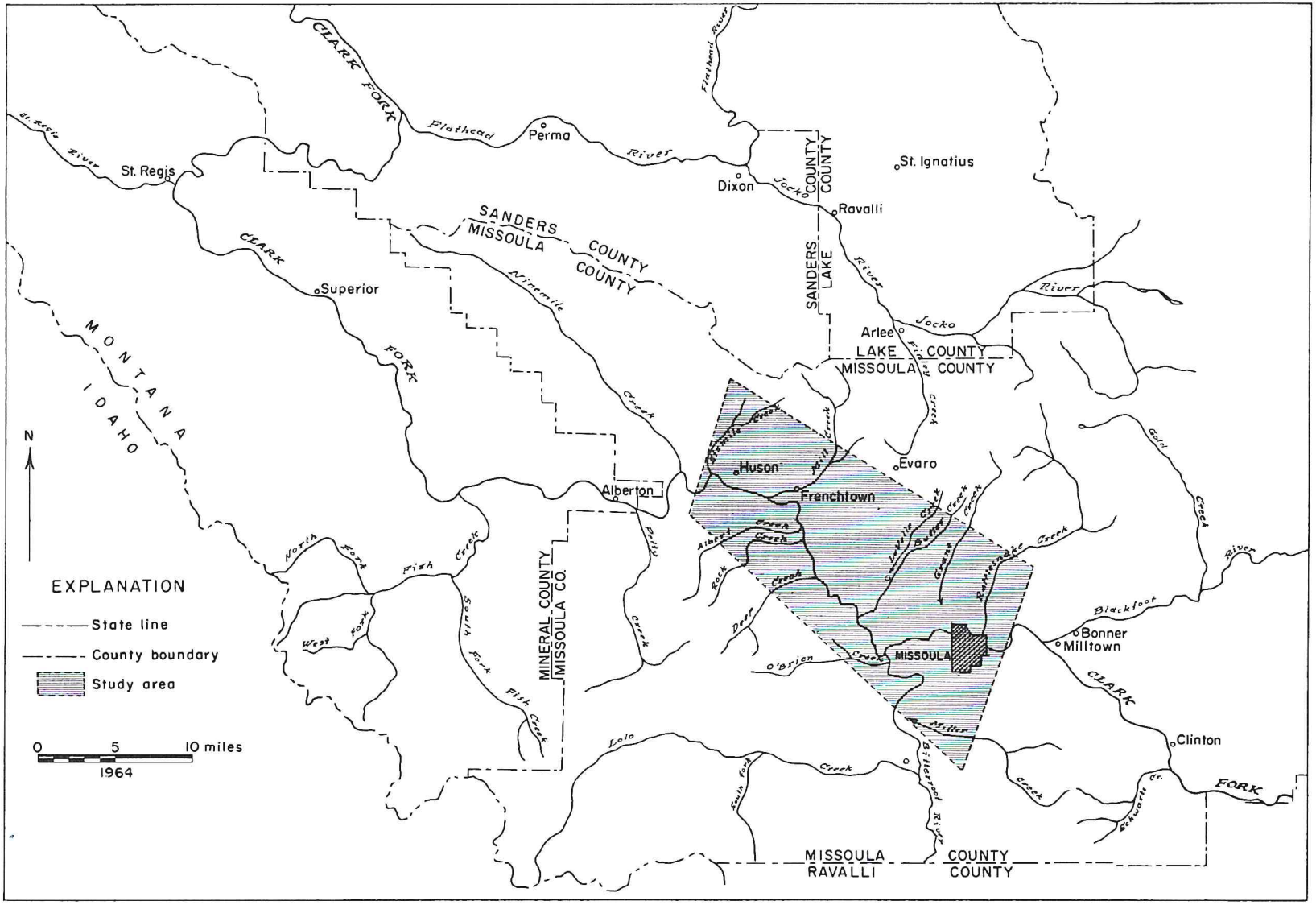

Figure 1.--Map of the Missoula, Montana, area showing outline of the study area and principal drainage features.

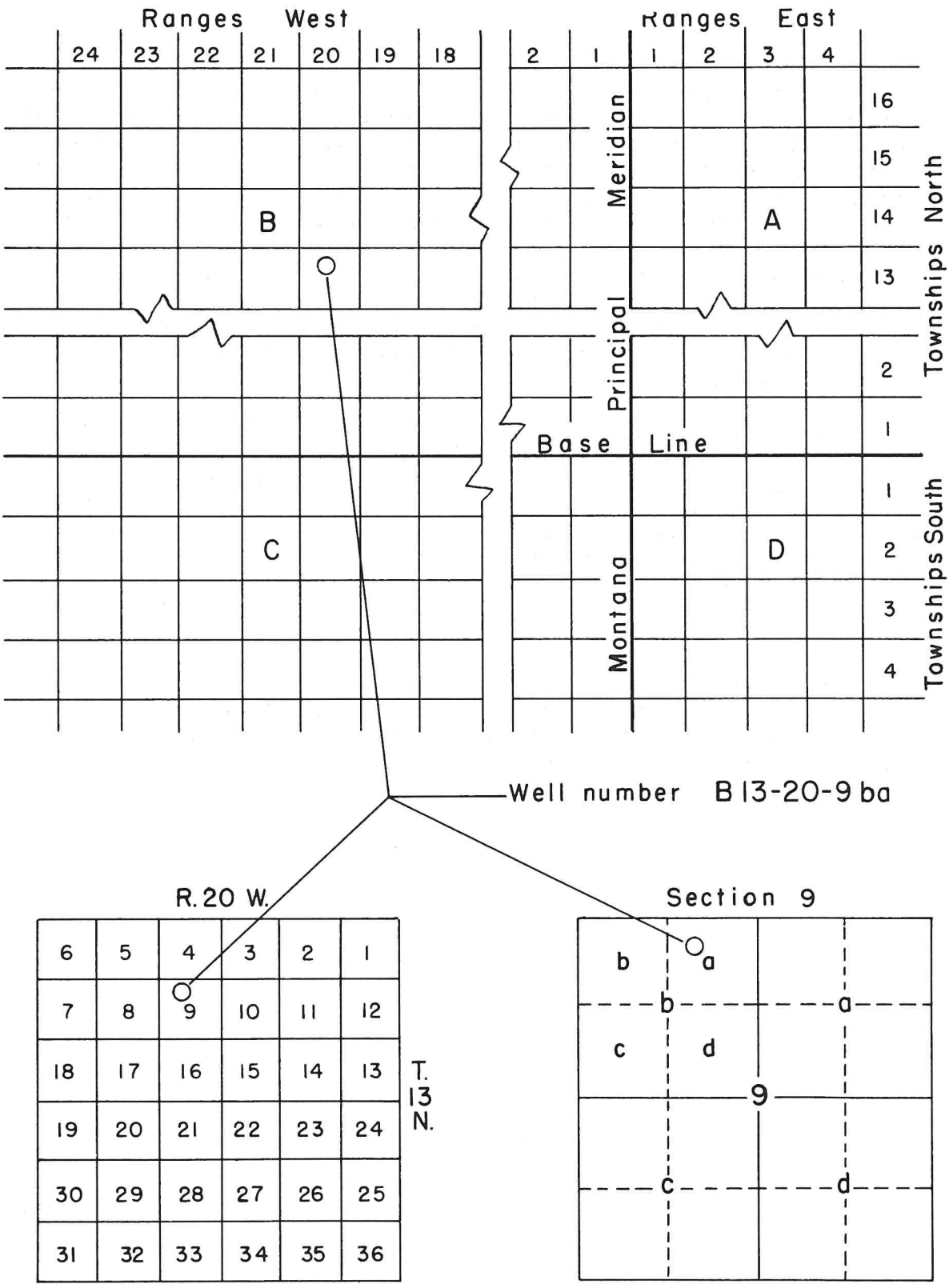

Figure 2.--Sketch showing system of numbering wells.

a counterclockwise direction, beginning with (a) in the northeast quarter of the section. The letters are assigned within each quarter section, and within each quarter-quarter section in the same manner. Where two or more wells are within the smallest subdivision, consecutive numbers beginning with 1 are added to the letters in the order in which the wells were inventoried. For example, B13-20-9ba3 indicates a well in the northeast quarter of the northwest quarter of sec. 9, T. 13 N., R. 20 W., and that it was the third well inventoried in that quarter-quarter section. The capital letter B indicates the township is north of the base line and the range is west of the principal meridian.

The report will be most useful in predicting conditions likely to be encountered in drilling a new well. The person considering a new well can locate the proposed well site on plate 1 and examine the records of nearby wells. From table 1 he can determine how successful wells close by have been. From table 2, he can determine the type of rock material likely to be found, and from table 3 can obtain some suggestion as to what the natural changes in depth to water might be through the year.

The report is also useful when repairing wells and in construction work where the type of material below the land surface and the position of the water table are significant. These and other uses of this report will be facilitated upon release of the interpretive report.

Table 1.--Records of wells in the Missoula Valley, Montana

Well number: For explanation of well-numbering system, see text, p.
Type of well: Dr, drilled; Du, dug; DD, dug and drilled; Dn, driven.
Depth of well: Depths expressed in feet and tenths are measured; those in whole feet are reported.
Type of casing: P, iron or steel pipe; C, concrete; R, rock; W, wood.
Type of pump: J, jet; C, centrifugal; S, submersible; Cy, cylinder; T, turbine; P, pitcher; N, none.
Type of power: E, electric; H, hand-operated; G, gas; N, none.
Use of water: D, domestic; S, stock; In, industrial; Ir, irrigation; P, public supply; O, observation of water levels (table 3); A, air conditioning; N, none.
Measuring point description: Tca, top of casing; Tco, top of cover; Ls, land surface; Tc, top of cap; Tpc, top of pit curb; Hc, hole in casing; A, airline; Bp, bottom of platform; Fs, floor surface.
Depth to water: Water levels expressed in feet and hundredths are measured; those expressed in whole feet are reported.
Remarks: L, log in table 2; Y, yield in gallons per minute (r, reported); D, drawdown in feet (r, reported).

Well number	Owner or tenant	Year completed	Type of well	Depth of well (feet)	Diameter of well (inches)	Type of casing	Type of pump	Type of power	Use of water	Measuring point: Description	Measuring point: Distance above or below (-) land surface (feet)	Measuring point: Altitude	Depth to water level below measuring point (feet)	Date of measurement	Remarks
B12-19- 6ac1	Hillside Manor, Inc.	1961	Dr	283	7	P	-	-	P	---	---	-----	92	-------	L; Y 12 r
6ac2	------do------	1961	Dr	134	7	P	-	-	P	---	---	-----	101	-------	L; Y 12 r
18bb1	Tom Greenfield	1961	Dr	344.2	6	P	N	N	O	Tca	3.0	3,578	291.91	3-28-61	L; Y 15 r;D 10 r
18bb2	Gene Polette	----	Dr	295.0	5	P	S	E	D	Tc	-5.0	3,539	239.63	3-28-61	
B12-20- 1aa	Atonement Lutheran Church	1961	Dr	87	4	P	J	E	D	Tca	-6.0	3,156	24.56	9-14-61	L; Y 40 r
1ab	Missoula Country Club	1950	Dr	96	6	P	J	E	D	Ls	0	3,155	35.65	4- 6-62	
1ac	Charles McPherson	----	Du	31.2	36	C	J	E	D	Tco	1.5	3,148	29.54	3-29-61	
1da1	R. J. Kitzan	----	Du	39.4	24	C	Cy	H	O	Tco	0	3,166	37.29	3-29-61	
1da2	------do------	1956	Dr	112	4	P	J	E	D	---	---	-----	-----	-------	L
1db	Charles McPherson	----	Du	28.3	--	C	N	N	N	Tpc	0.7	3,147	14.60	7-27-62	
1dc	William Burton	----	Dr	90.8	4	P	C	E	D	Tco	0.5	3,130	10.63	3-17-61	
2ca1	Gus Wonrath	----	Du	29.3	36	R	N	N	N	Tca	0	3,157	22.55	3-29-61	
2ca2	------do------	1959	Dr	197	6	P	J	E	D	Tc	-5.0	3,151	34.30	3-29-61	L; Y 11 r
2cb	J. L. Van Allen	1959	Dr	105	6	P	J	E	D	Tca	6.0	-----	63.60	3-20-59	Y 16 r; D 20 r
2cd1	Orville Harmon	----	Du	11.8	12	C	C	E	D	Tco	0	-----	9.95	3-28-61	
2cd2	Archie Remoir	1961	Dr	74.6	6	P	S	E	D,O	Tc	2.0	3,133	11.23	3-29-61	
2cd3	Arval Sanders	1958	Dr	22.5	5	P	J	E	D	Tco	1.0	3,133	13.39	3-29-61	Y 8 r
2dd	Dan Maloney	----	Du	16.3	48	R	N	N	O	Tco	1.0	3,135	15.83	3-16-61	
10aa	Ernest M. Smith	1961	Dr	92	6	P	--	-	D	Ls	0	-----	48	-------	L; Y 12 r
11ab	Robert Boggess	1962	Dr	96	5	P	S	E	D,S	Tc	-4.0	3,132	11.20	10- 1-62	L; Y 100 r; D 20 r
11ad	Clarence Jones	1960	Dr	206	6	P	S	E	D	Ls	0	-----	40	-------	L; Y 5 r; D 150 r
12ad	James L. Lee	1962	Dr	223	6	P	--	-	D	Ls	0	-----	166	-------	L; Y 20 r; D 5 r
12bb1	Glenn Camp	----	Dr	104	6	P	N	N	N	Tca	3.5	3,140	20.54	3-16-61	L; Y 55 r; D 2 r
12bb2	Cecil Meade	----	Dr	80	6	P	J	E	D	Tca	-4.7	3,153	33.10	3-17-61	
B13-19- 5bc	William Wheeler	----	Dr	40	--	-	T	G	Ir	Tca	1.0	-----	1.96	8- 9-61	
6ad	------do------	1945	Dr	78	6	P	J	E	D,S	Tca	-6.0	3,297	51.30	7-25-61	
6ba	------do------	1954	Dr	80	6	P	J	E	O,D,S	Tc	0	3,240	24.14	7-25-61	Y 20 r
7ac	John Dougherty	1947	Dr	107	12	P	T	E	Ir	---	---	-----	-----	-------	
7ad1	Patterson Sheep Co.	1947	Dr	80	6	P	T	E	D,S	Ls	0	-----	40	-------	
7ad2	Bud Lake Truck Stop	1960	Dr	65	6	P	-	-	P	Ls	0	-----	50	-------	Y 25 r; D 2 r
7bc	John Dougherty	1865	Du	36.2	60	R	Cy	H	O	Bp	0	3,161	16.16	7-27-61	
7cc	Hallgate School	----	Dr	-----	6	P	J	E	P,O	Tc	-6.5	3,157	18.16	8- 9-61	
7da1	El-Mar Trailer Court	----	Dr	135	6	P	J	E	P	---	---	-----	-----	-------	
7da2	------do------	1959	Dr	57	6	P	J	E	P	Ls	0	-----	35	-------	L; Y 50 r; D 20 r
7dd	Al D'Orazi	1957	Dr	70	6	P	N	N	N	Tca	-3.0	3,171	30.93	9-26-61	

Table 1.--Records of wells in the Missoula Valley, Montana, cont'd.

B13-19-	8ab	Ostergren & Son	----	Dr	110	6	P	J	E	D	Ls	0	-----	45	-------	
	8cb	Montana State Highway Dept.	1930	Dr	112.3	12	P	N	N	O	Tca	0	3,189	50.25	4-21-58	Y 500 r
	8cc	American Crystal Sugar Co.	1930	Dr	70.5	8	P	T	E	Ir	Tca	1.0	-----	44.31	4-22-58	
	8cd	John & Wm. Beely	1962	Dr	85	6	P	-	-	In	Ls	0	-----	39	-------	L;Y 60 r
	8dc	Van-Evan Co.	1960	Dr	107	10	P	T	E	In	Ls	0	-----	42	-------	L
	8dd	------do------	1960	Dr	145	10	P	T	E	In	Ls	0	-----	32	-------	L;Y 60 r;D 5 r
	11ba	Rendering Plant	1941	Dr	75	6	P	-	-	In	Ls	0	-----	60	-------	L;Y 30 r;D 5 r
	11db	Hail Dahlstrom	----	Dr	60	6	P	J	E	D	Tc	-4.0	-----	34.43	7-19-62	
	11dc	Earle J. Markiss	1961	Dr	64	6	P	J	E	D	Tc	-6.0	-----	16.80	7-19-62	L; Y 40 r
	15da	Montana Power Co.	1937	Dr	69	10	P	T	E	P	Ls	0	-----	35	-------	L;Y 300 r;D 25 r
	16ba	George Sandau	----	Dr	86	4	P	J	E	D	Tc	-4.5	3,181	40.17	10-10-61	L
	16bb	Arthur Sticht	1936	Dr	103	6	P	T	E	D	Ls	0	-----	45	-------	L
	17aa	Missoula Cemetery	1945	Dr	129	12	P	T	E	Ir	Ls	0	-----	30	-------	L; Y 100 r
	17ac1	Matelich Trailer Sales	1961	Dr	88	6	P	J	E	D	Tca	1.2	3,179	44.19	3-24-61	L;Y 20 r;D 19 r
	17ac2	Frontier Lounge	1958	Dr	94	8	P	-	-	P	---	---	-----	-----	-------	L; Y 50 r
	17bc	American Crystal Sugar Co.	1962	Dr	212	16	P	T	E	In	Tca	2.5	-----	33.59	10-10-62	L;Y 4,000 r; D 48 r
	17db	Northern Builders Supply	1958	Dr	112	6	P	-	-	D	---	---	-----	-----	-------	L
	17dc	Sam Marcer	----	Dr	47.6	4	P	Cy	H	D	Tca	0.7	3,167	23.85	9-22-61	
	17dd	Mike Campanello	----	Dr	39.5	3	P	Cy	H	N	Fs	0	-----	17.59	9-22-61	
	18aa1	Stockner Co.	----	Du	39.5	32	C	Cy	H	O	Tco	0.7	3,173	32.51	9-22-61	L
	18aa2	Stanley Berg	1947	Dr	70	4	P	J	E	D,S	---	---	-----	-----	-------	
	18ad1	------do------	----	Du	34.0	--	C	C	E	Ir	Tca	0	3,167	27.35	9-22-61	
	18ad2	Cyril Vandeberg	1961	Dr	62.7	6	P	J	E	D	Tc	1.6	3,164	35.43	3-30-61	L
	18ba1	American Crystal Sugar Co.	----	Dr	60	4	P	J	E	D,S	Ls	0	-----	30	-------	
	18ba2	Edna Denkenberger	----	DD	55	5	P	Cy	H	D,S	Bp	0	-----	22.26	9-12-42	
	18bc	Marie Halling	----	Du	19.5	10	C	J	E	D	Tpc	0	3,149	6.25	7-18-61	
	18cd	U.S. Geological Survey	1962	Du	7.5	3/4	P	N	N	N	Tca	0	3,140	3.17	9-20-62	
	18da	Harvey Clouse	1947	Dr	40	4	P	C	E	D	Ls	0	-----	6	-------	
	18dd	Kenneth McCulloch	1955	Dr	56	6	P	J	E	D,O	Tc	0	3,151	6.64	7-18-61	
	19ca1	Randal Lachman	1955	Du	70	4	P	J	E	D	Tca	-6.0	3,140	8.50	4-16-62	
	19ca2	George Stelling	1961	Du	58	4	P	J	E	D	Tco	1.0	-----	14.02	10-19-61	
	19cd	Hawthorne School	1953	Dr	82	8	P	-	-	P	---	---	-----	-----	-------	L
	20ac	Adolph Pahl	----	Du	29.7	8	C	C	E	D	Tpc	0.5	3,165	25.86	4-17-62	
	20bb	Wm. K. Burlingame	----	Dr	40	6	P	N	N	N	Tca	-6.0	3,148	11.84	4-17-62	
	20cb	H. C. Carnall	1949	Dr	50	4	P	J	E	D	Tc	-6.0	3,151	15.70	4-17-62	
	20da	Intermountain Lumber Co.	1959	Dr	111	14	P	T	E	In	Ls	0	-----	24	-------	L; Y 1,400 r
	21ab	Montana Power Co.	1941	Dr	123	12	P	T	E	P	Ls	0	-----	60	-------	L;Y 100 r;D 60 r
	21ac1	City of Missoula	1939	Dr	73	10	P	T	E	P	---	---	-----	-----	-------	L; Y 500 r
	21ac2	Intermountain Lumber Co.	1959	Dr	67	6	P	T	E	In	---	---	-----	-----	-------	L
	21ad1	Bon Ton Bakery	1941	Dr	83	6	P	-	-	In	Ls	0	-----	37	-------	L;Y 75 r;D 10 r
	21ad2	Western Montana Clinic	1941	Dr	108	6	P	-	-	A	Ls	0	-----	55	-------	L;Y 60 r;D 10 r
	21bd	Intermountain Lumber Co.	----	Dr	58	--	P	T	E	In	---	---	-----	-----	-------	
	21cd	Montana Power Co.	1936	Dr	120	12	P	T	E	P	A	1.5	3,195	51.55	10-10-62	Y 1,200 r;D 20 r
	21dc	Super Save Stores	1961	Dr	104	6	P	J	E	A	Tca	0	-----	48.17	8- 9-61	L; Y 90 r
	22bc1	Woolworth's	1939	Dr	84	6	P	N	N	O	Tca	-10.0	3,189	37.60	10-12-61	L
	22bc2	Palace Hotel	1939	Dr	105	6	P	T	E	A	Ls	0	-----	40	-------	L;Y 57 r;D 15 r
	22bc3	Motor Supply Co.	1936	Dr	90	6	P	-	-	N	Ls	0	-----	38	-------	L; Y 50 r
	22cb1	Florence Hotel	1940	Dr	116	10	P	T	E	A,P	Ls	0	-----	45	-------	L
	22cb2	KGVO Radio Station	1939	Dr	89	6	P	T	E	A	Ls	0	-----	42	-------	L;Y 75 r;D 5 r
	22db1	Missoula Cold Storage	1945	Dr	67	6	P	-	-	In	Ls	0	-----	24	-----	L
	22db2	------do------	----	Dr	83	10	P	T	E	N	Tc	0	3,186	31.90	4- 9-62	

Table 1.--Records of wells in the Missoula Valley, Montana, cont'd.

B13-19-27bc	Montana Power Co.	1957	Dr	148	12	P	T	E	P	Tc	1.0	3,212	66.10	10- 1-62	L; Y 1,200 r; D 20 r
28cc	Little Chief Gas Station	1959	Dr	120	6	P	-	-	In	Ls	0	-----	43	-------	L; Y 40 r
28dc	Montana Power Co.	1935	Dr	116	12	P	T	E	P	Ls	0	-----	54	-------	L; Y 1,200; D 36 r
29ac	------do------	1934	Dr	90	12	P	T	E	P	Ls	0	-----	45	-------	L; Y 1,150 r
29cd	------do------	1954	Dr	117	12	P	T	E	P	Ls	0	-----	50	-------	L; Y 1,200 r; D 40 r
29da1	Montana Power Co.	----	Dr	87	10	P	N	N	O	Tca	-7.0	3,176	34.93	9-18-58	
29da2	------do------	1958	Dr	110	14	P	T	E	P	Ls	0	-----	58	-------	L; Y 1,200 r; D 27 r
30aa	Ralph Jiefle	----	Du	42.8	--	C	J	E	D	Tco	-4.5	3,166	33.92	4-17-62	
30ac	State Forestry Nursery	----	Dr	120	12	P	TJ	E	D,Ir	Ls	0	-----	30	-------	
30ba1	Ralph Claric	----	Dr	46.5	4	P	N	N	N	Tca	-5.5	3,141	11.79	4-16-62	
30ba2	Arthur Rohrbach	----	Dr	75	4	P	S	E	D	Tc	-4.0	3,153	23.87	4-16-62	
30bd	State Forestry Nursery	----	Dr	121	12	P	T	E	Ir,O	Hc	0.2	3,158	31.42	3-23-61	L; Y 1,350 r; D 5 r
30cd	John Hartwig	----	Dr	90	6	P	-	-	D	Tco	1.0	3,160	32.84	4-16-62	
30dd1	Jake Ochsner	1961	Dr	58	5	P	-	-	D	Tca	-6.0	-----	22.15	9-14-61	L
30dd2	DeWayne Wadel	1961	Dr	40	4	P	J	E	D	Tc	-7.0	3,156	22.45	10- 2-62	
31cc1	Fort Missoula #1	1936	Dr	97	10	P	T	E	P	Ls	0	-----	34	-------	L; Y 1,000 r; D 10 r
31cc2	Fort Missoula #2	1936	Dr	100	10	P	T	E	P	Ls	0	-----	34	-------	L; Y 1,000 r; D 10 r
31cd	Missoula Country Club	1941	Dr	83	10	P	T	E	Ir	---	-3.5	3,149	29.64	4- 6-62	L; Y 1,000 r
31dc	------do------	1946	Dr	103	12	P	T	E	Ir	Ls	0	-----	26	-------	
32ad	Treasure State Bowling	1958	Dr	63	6	P	-	-	A	---	---	-----	-----	-------	L; Y 60 r
32bb	Grant Maclay	1962	Dr	97	8	P	-	-	D	Tca	1.5	3,170	31.44	8-16-62	L; Y 240 r; D 16 r
32bd	Leslie Bumbarner	----	Dr	---	4	P	J	E	D	Tc	-6.5	3,167	31.58	10-11-62	
32cb	Montana Power Co.	1954	Dr	132	12	P	T	E	P	Ls	0	-----	44	-------	L; Y 1,200 r; D 46 r
32cd	John Barnett	----	Dr	80	6	P	-	E	D	Tc	-5.5	3,159	23.80	7-24-62	
32da	Ed Hanson	1950	Dn	60	4	P	N	N	N	Tca	-3.0	3,173	35.90	10- 62	
32dd1	Vern Ochsner	1961	Dr	84	5	P	J	E	D	Tc	-6.0	-----	26.14	7-24-62	L
32dd2	Fred Fife	1962	Dr	75	5	P	J	E	D	Tc	-6.0	3,164	26.38	7-24-62	
33ad	Montana Power Co.	1957	Dr	117	12	P	T	E	P	---	---	-----	-----	-------	L; Y 1,200 r
33ba	Missoula County High School	1953	Dr	123	12	P	T	E	P,Ir	A	-6.0	3,183	43.50	10-10-62	L; Y 1,200 r; D 6 r
33bc	City of Missoula	1962	Dr	116	10	P	-	-	P,Ir	Ls	0	-----	45	-------	L; Y 400 r; D 20 r
34bb	Montana State University	1954	Dr	145	12	P	T	E	Ir	Tca	1.0	3,198	54.40	10- 1-62	L; Y 1,250 r; D 12 r
B13-20- 1bb	Missoula County Airport	----	Dr	215	10	P	T	E	P	Tca	1.0	3,202	78.70	10- 5-62	L; Y 800 r; D 9 r
4ba	G. W. Daschamps	----	Du	9.1	36	W	Cy	H	N	Tco	0.5	3,081	6.23	4-22-58	
4bc	------do------	----	Dn	16.5	1 1/2	P	P	H	N	Tca	4.0	3,086	13.88	4-14-61	
4cb	Edward Dussault	1957	Dr	94	6	P	J	E	D	Tc	1.0	3,087	7.53	7-27-61	
5ad	Dussault Bros.	----	Dr	102	6	P	C	E	D,S	Tc	0	3,080	0.95	7-27-61	
5ba1	Joe Sol	----	Du	13.2	6	C	Cy	H	D,O	Tca	0.3	3,079	12.62	5- 8-58	
5ba2	Grass Valley School	1945	Dr	132	4	P	-	-	P	Ls	0	-----	11	-------	L; Y 33 r; D 10 r
5bc	Joe Sol	----	Du	9.5	15	P	N	N	O	Tca	0	3,068	6.35	12-24-58	
6aa1	Wayne C. Rose	----	Du	16	5	P	Cy	E	S	Tca	0	-----	8.05	5-15-58	
6aa2	------do------	----	Du	12	24	P	C	E	D	Ls	0	-----	10	-------	
6aa3	------do------	1855	Du	5.5	---	W	N	N	N	Tco	0.5	3,066	1.94	10- 4-62	
6bb1	George Lavoie	----	Dn	26	---	P	-	-	D	---	---	-----	-----	-------	
6bb2	U.S. Geological Survey	1962	Dn	9.0	3/4	P	N	N	N	Tca	1.5	3,060	4.11	9-20-62	

Table 1.--Records of wells in the Missoula Valley, Montana, cont'd.

B13-20- 7ac	Gilbert Nelson	----	Du	16.4	42	R	N	N	N	Tco	0	-----	13.82	10-11-61	
8aa	Dussault Bros.	----	Dr	96	6	P	J	E	D	Tc	-3.8	3,077	3.80	7-27-61	Flows in summer
8da	Henry Miller	----	Dr	-----	6	P	J	E	D	Tca	0.5	3,093	7.76	9-13-61	
9ab	Arthur Daschamps	----	Du	10.8	36	C	Cy	H	O	Tco	0.3	3,090	9.76	4-22-58	
9ba1	------do------	----	Dr	105	6	P	J	E	D	---	---	-----	-----	-------	Flows in summer
9ba2	Emma Jette	----	Du	10.0	18	C	J	E	S	Tco	0	3,086	7.42	9-14-61	
9bb	Dussault Bros.	----	Dr	97	6	P	J	E	D	Tc	-4.40	3,085	0.68	10- 62	Flows in summer
9bd	Harry Stiegler	1958	Dn	30.3	4	P	J	E	D,O	Tca	0	3,087	7.18	9-13-61	
10dc	Gilbert Musgrove	----	Dr	154	4	P	J	E	D	Hc	-5.0	3,193	79.68	9-26-62	L
12bb1	Elder Violette	1878	Du	30	18	C	Cy	E	D,S	Tco	1.5	3,151	8.90	7-25-61	
12bb2	------do------	----	Dr	107	--	P	J	E	D	---	---	-----	-----	-------	
12dc	Flynn Ranch	1944	Dr	58	6	P	J	E	D,S	Ls	0	-----	30	-------	L; Y 30 r; D 3 r
13ac	Emmett Flynn	----	Dr	47	6	P	J	E	D	Tc	-4.0	-----	16.30	9-13-61	
13ad1	W. W. Hendricks	----	Du	11.5	12	C	P	H	O	Tco	1.2	3,140	8.42	5-15-58	
13ad2	------do------	----	Du	25	18	C	J	E	D	Ls	0	-----	15	-------	
13ad3	------do------	----	Du	15	18	C	Cy	E	S	Ls	0	-----	10	-------	
13ad4	Ralph Spurlock	1961	Dr	105	6	P	J	E	-	Tca	1.7	3,156	28.20	3-30-61	L; Y 50 r; D 20 r
13ad5	Charles Spurlock	1961	Dr	89.5	6	P	J	E	D	Tca	1.5	-----	27.37	3-17-61	L; Y 75 r
13bc	Charles Stahl	----	Dn	38	6	P	J	E	D,S	Tca	-4.5	3,148	13.60	10- 62	
13bd1	Roy Adams	----	Dr	55	6	P	J	E	D	Tca	-4.5	3,141	11.40	9-15-61	
13bd2	Henry E. Riggs	----	Dr	57.3	6	P	J	E	D	Tca	0	3,150	19.64	9-13-61	
13dc	U.S. Geological Survey	1962	Dn	7.3	3/4	P	N	N	N	Tca	1.1	3,136	5.84	9-20-62	
14ac	Bonneville Power Adm.	1959	Dr	35.5	6	P	N	N	O	Ls	0	3,145	19.60	4-21-59	L
14ad	G. W. Daschamp	1950	Dr	85.1	4	P	N	N	O	Tca	0	3,141	19.53	4-30-58	
14ba	R. E. Bair	----	Dn	72	6	P	J	E	D	Ls	0	-----	49	-------	
14bb1	Sunset Memorial Gardens	1954	Dr	233	10	P	T	E	Ir,O	Hc	0.5	3,204	85.53	6- 5-58	L; Y 420 r; D 5 r
14bb2	------do------	----	Dr	126	6	P	J	E	D	Tca	-6.0	3,165	46.34	10- 1-62	
14ca	Clifford Frey	----	Dr	96	4	P	J	E	D,S	---	---	-----	-----	-------	
14da	Albert Jovin	----	Dn	27	--	-	J	E	D	Tca	-7.0	3,134	7.04	9-19-61	
14db1	Ralph Hillstrom	----	Dr	96.0	4	P	N	N	D	Tca	1.3	-----	25.43	4-29-58	
14db2	Charles Stahl	----	Du	17.8	--	-	-	-	D	Tca	0.5	3,135	14.36	9-19-61	
17bb	Dirk Sol	----	Dr	90	--	P	C	E	D,S	---	---	-----	-----	-------	
21bb	Wood & Boone	----	Dr	54.2	6	P	J	E	D	Tca	-4.0	-----	19.37	10-11-61	
21da	Jay Cuskar	----	Du	16.5	48	W	N	N	Ir	Tca	0	3,100	13.20	9-13-61	
22bd	George Caras	----	Dr	-----	4	P	J	E	--	Tc	1.0	3,117	21.10	9-13-61	
23ab	U.S. Geological Survey	1962	Dn	9.8	3/4	P	N	N	N	Tca	1.8	3,120	4.93	9-20-62	
24cd	Peter Jacobsen	----	Du	12.3	18	R	Cy	G	Ir	Tco	0	3,130	9.60	10- 2-62	
24da	C. W. Petrie	----	Dn	40	4	P	J	E	D	Tca	-2.0	3,132	5.50	4-25-62	
25aa	Leroy Clark	1961	Dn	27	3	P	J	E	D	Tpc	0	3,138	13.24	4-16-62	Y 150 r
25cd	John R. Clemens	1962	Dn	60	4	P	J	E	D	Tc	-5.0	3,137	16.08	10- 2-62	
26aa	August Baier	----	Dr	42	6	P	-	-	D	Tpc	0	3,125	8.78	4-16-62	
26ab	Richardson Bros.	----	Dn	21.5	2	P	P	H	O	Tca	2.0	3,119	11.31	10-11-61	
26dc	Richard Bauer	1961	Dn	62	4	P	J	E	D	Tc	-6.0	3,121	14.86	4-17-62	
26dd	Edward Dwyer	1951	Dn	54	4	P	J	E	D	Tca	-5.3	3,131	19.00	4-17-62	
27dc	W. C. Maclay	1951	Dr	80	4	P	J	E	D	Tca	-8.0	-----	30.20	10-11-61	
35ac	Bob Rangitsch	1955	Dr	72	4	P	N	N	N	Tpc	0	3,128	23.55	4-17-62	
35ba	J. R. Kulstad	----	Dr	93	6	P	J	E	D	Tca	-5.5	3,123	19.60	4-17-62	
B14-19-35dd	Henry G. Rosenau	1959	Dr	84	6	P	J	E	D	Tc	-5.0	-----	47.70	7-18-62	L; Y 18 r; D 20 r
B14-20- 7db	Unknown	1961	Dr	438	8	P	N	N	N	Tca	1.0	3,228	164.57	9-14-61	
7dd	Fred Daschamps	1958	Dr	202	6	P	J	E	D	Tca	-6.0	3,209	91.20	8-22-61	
9dd	George Cates	----	Dr	-----	5	P	N	N	O	Tca	0.5	3,251	46.40	8-22-61	
10cc	Unknown	----	Dr	190	6	P	Cy	E	D	Tca	-6.0	-----	54.30	8-23-61	Strong taste of sulphur
19bd	Leo LaCasse	----	Du	47.9	16	C	Cy	N	N	Tco	0	3,090	43.30	4- 7-61	
19cb	------do------	1956	Dr	146	4	P	J	E	D	Tc	-4.5	3,070	30.70	4-11-61	
20bb	Bill Lucier	----	Dr	96	--	-	J	E	D	---	---	-----	-----	-------	
21bb	Arthur Bisson	----	Dr	81	7	P	J	E	D	Tca	0	3,143	4.07	8-17-61	
21bd	Fred Marceau	----	Dr	80.5	5	P	Cy	N	N	Tca	1.0	3,169	42.10	8-18-61	

Table 1.--Records of wells in the Missoula Valley, Montana, cont'd.

B14-20-26ab	P. A. Hanson	----	Dr	108	6		P	J	E	D,S	Tc	-2.5	3,343	59.55	8-16-61	
26cc1	------do------	----	Dr	116	6		P	N	N	N	Tca	-2.0	3,247	58.57	8-16-61	
26cc2	Walter Paschel	----	Dr	148	6		P	J	E	S	Tca	-5.0	-----	103.96	8-17-61	Y 40 r
28ab1	John LaFlesch	1941	Dr	259	4		P	J	E	D	Tca	0.5	3,271	157.79	8-18-61	
28ab2	Montana Highway Dept.	1939	Dr	239	6		P	J	E	D	---	---	-----	-----	-------	L; Y 15 r
28da	Thornton Lumber Co.	1919	Dr	180	6		P	J	E	D,S	Tca	0	3,185	71.84	8-17-61	
30cc	Eugene Jette	----	Du	21.1	12		C	C	E	D	Tco	0	3,067	19.30	4-14-61	
31aa	------do------	----	Dn	22.2	4		P	N	N	N	Tco	0.5	-----	7.95	9-15-61	
31bb	Armand J. Lucier	----	Dn	20	1		P	N	N	O	Tco	0	-----	11.16	6- 5-58	
31bd	William Kinney	----	Dr	23.5	4		P	N	N	N	Tco	0	3,066	6.80	9-15-61	
31da	Chicago, Milwaukee, St. Paul and Pacific R.R.	1950	Dr	166	8-6		P	-	-	D	Ls	0	-----	8	-------	L; Y 120 r; D 8 r
31db	William Kinney	----	Dr	43	4		P	C	E	D	Ls	0	-----	8	-------	
31dd	Leo Brester	1958	Dn	56	4		P	J	E	D	Tca	-4.0	3,065	1.26	9-18-61	
32bb	Richard Watkins	----	Du	16.8	3		P	-	-	N	Tca	1.5	3,072	5.78	4-14-61	
32cb1	John Sol	1960	Dr	30	6		P	J	E	D	Tca	-3.0	3,070	2.98	9-14-61	
32cb2	Leroy Holden	1962	Dr	28.5	6		P	J	E	D	Tca	0.5	3,072	7.90	4-25-62	
32dc	Louis Kinney	----	Du	9.3	10		C	Cy	H	N	Tco	0	3,079	8.57	4-18-61	
33cc	U.S. Geological Survey	1958	Dn	15.6	3/4		P	N	N	O	Tca	2.0	3,081	8.69	12-16-58	
34aa	Lloyd Leischner	----	Dr	135	6		P	J	E	D	Tca	-5.0	3,222	92.05	8-17-61	
34ab	Tim Hamel	1917	Dr	135	6		P	J	E	D	Ls	0	-----	70	-------	
34ad	L. B. Mobile Homes	----	Dr	130	6		P	J	E	P	Tc	1.0	3,206	85.75	10- 62	
35ab	Henry Keil	----	Dr	120	6		P	J	E	D	Tc	1.0	3,223	90.72	8-10-61	
35ac	Bert Thrasher, Sr.	1959	Dr	140	6		P	S	E	D	Tc	1.5	3,207	75.28	8-10-61	L; Y 40 r
35bb1	N. P. Railway	----	Dr	221.5	12		P	Cy	H	O	Tco	0	3,211	58.75	8-10-61	
35bb2	------do------	1961	Dr	101	6		P	--	-	D	Ls	0	-----	80	-------	L
35bc	DeSmet School	1942	Dr	99	4		P	-	-	P	Ls	0	-----	81	-------	L
35dc	U.S. Forest Service	1957	Dr	222	10		P	T	E	P	Hc	1.0	3,197	75.40	10- 5-62	L; Y 200 r
B14-21- 2aa	Fred Lucier	1955	Du	16.7	18		C	J	E	D	Tco	-5.0	3,038	5.80	9-18-61	
2dc	D. E. Lucier	1941	Dr	153	6		P	J	E	D,S	---	---	-----	-----	-------	
3aa	Ray Howell	1959	Dn	18	2		P	C	E	D	Ls	0	-----	5	-------	
11ba	Allen Marcure	1944	Dr	35.9	5		P	J	E	D,S	Tco	0.5	3,049	24.20	4-11-61	L
11ca	John Naidt	----	Dn	17	3		P	J	E	D	---	---	-----	-----	-------	
12bb	Allen Marcure	----	Du	40	36		P	C	E	D,S	---	---	-----	-----	-------	
12db	John Sol	1960	Dr	38.8	6		P	J	E	S	Tca	0.5	3,072	34.96	4-12-61	L; Y 15 r
13ab	Henry Miller	----	Du	27.4	12		P	Cy	H	O	Tca	1.2	3,063	26.28	4-7-61	
13bb1	Victor Loiselle	----	Du	25	40		C	N	N	O	Ls	0	-----	20.42	4-25-58	
13bb2	------do------	----	Dr	161	6		P	J	E	D,S	Tca	0.7	3,054	23.38	1- 4-62	
13cd	William Cardon	----	Dn	39.8	4		P	J	E	S,O	Tc	-3.7	3,056	15.42	10- 62	
13db	Fred Deschamps	1958	Dr	158	4		P	J	E	D,S	Tc	-6.0	3,056	23.90	4- 6-61	
13dc1	Jack Kramer	1958	Dr	146	5		P	J	E	D	Tc	-5.7	-----	28.24	4-12-61	
13dc2	Waldo Williams	----	Dr	153	4		P	J	E	D,O	Tc	-5.5	3,056	26.20	9-29-61	
14da	Waldorf-Hoerner	----	Dn	24.2	1	1/4	P	P	H	O	Tca	0.8	3,054	19.74	4- 6-61	
14db	------do------	----	--	-----	4		P	J	E	N	Tca	-6\7	-----	12.58	9-29-61	
23aa	------do------	----	Dr	-----	4		P	C	E	O	Tc	-6.0	3,049	14.38	4- 7-61	
24ac1	Stanley Davies	1953	Dr	132	6		P	J	E	D	---	---	-----	-----	-------	L; Y 30 r
24ac2	Waldorf-Hoerner	1962	Dn	-----	4		P	N	N	O	Ls	0	3,062	18.15	10- 62	
24ba1	------do------	1959	Dr	38.8	4		P	N	N	O	Tca	1.0	3,063	15.56	7- 9-59	
24ba2	------do------	1957	Dr	172	16		P	T	E	In	Ls	0	-----	23	-------	L; Y 1,500 r; D 29 r
24ba3	------do------	1957	Dr	172	16		P	T	E	In	Ls	0	3,064	22	-------	L; Y 1,500 r; D 26 r
24ba4	------do------	1957	Dr	175	16		P	T	E	In	Ls	0	-----	21	-------	L; Y 1,500 r; D 21 r
24ba5	------do------	1960	Dr	173	16		P	T	E	In	Ls	0	-----	29	-------	L
24ba6	------do------	1960	Dr	183	16		P	T	E	In	Ls	0	-----	21	-------	L; Y 1,200 r; D 14 r
24ba7	------do------	1961	Dr	164	16		P	T	E	In	Ls	0	-----	22	-------	L; Y 1,300 r; D 16 r
24da	Henry LaCasse	1951	Dr	35.2	4		P	J	E	D	Tc	-5.0	3,065	23.88	4-11-61	
24db	John Hartwig	----	DD	33.4	36	3/4	RP	Cy	H	O	Tco	0.9	3,066	20.59	5-26-58	

Table 1.--Records of wells in the Missoula Valley, Montana, cont'd.

B14-21-25ab	W. W. Danforth	----	Du	17.8	36		C	N	N	O	Tco	0.3	3,058	14.93	5- 8-58	
25ac	------do------	1958	Dn	40	4		P	C	E	D	Ls	0	-----	18	-------	
25da	Richard Watkins	----	Dr	105.5	5		P	N	N	O	Tca	1.5	3,061	15.38	4-14-61	
25dd	A. D. Nailson	----	Dr	125	--		-	-	-	D	Ls	0	-----	20	-------	
36bd1	Floyd Hemenway	----	Du	10.8	46		W	C	E	S	Tca	0	-----	8.28	9-18-61	
36bd2	------do------	----	Dr	22	6		P	J	E	D	Tca	0	3,057	9.23	9-18-61	
36dd	Wm. J. Sullivan	1952	Dr	27	4		P	J	E	D	---	---	-----	-----	-------	
B15-21-27bb	Arthur Donlan	1931	Dr	65	6		P	J	E	D	Tca	0.5	3,059	21.49	8-23-61	
27cd	Edward Hamel	----	Dr	27	4		P	-	E	D	Ls	0	-----	10	-------	
28bd	W. B. Winniford	----	Du	11.9	36		C	-	-	-	Tca	2.5	3,034	12.52	10-10-62	
28cc	Dighton Little	----	Du	19.8	36		C	-	-	D	Tca	1.0	3,032	16.73	9-19-61	
29da	Heylin H. Hewlett	1961	Dn	23	4		P	J	E	D	Tca	0.2	3,027	9.76	10-10-61	
29dd	Orral W. Lake	1960	Dr	38	6		P	-	-	D	Tc	-4.5	3,024	7.97	9-18-61	
30ca	Robert Touchet, Jr.	----	Du	20	36		C	C	E	D	Ls	0	-----	15	-------	
31ba	Phillip Cyr	1962	Dn	28	4		P	N	N	N	Tca	0	3,017	13.69	9-20-62	
31bd	U.S. Geological Survey	1962	Dn	7.8		3/4	P	N	N	N	Tca	0	3,003	4.15	9-20-62	
31db	U.S. Geological Survey	1962	Dn	6.6		3/4	P	N	N	N	Tca	0.5	3,003	2.00	9-20-62	
32da	------do------	1962	Du	6.5		3/4	P	N	N	N	Tca	3.8	3,014	6.60	9-20-62	
33ad	Joe Boyer	1951	Dr	176	6		P	J	E	D	Tc	1.5	3,037	11.05	9-19-61	
34ad	Edmond Hamel	1945	Du	18.5	12		C	N	N	N	Tco	0	3,038	12.88	7-12-61	
34bd1	Jess McDonald	----	Du	24.0	--		C	J	E	D	Tco	-6.0	3,032	12.52	9-18-61	
34bd2	H. A. McDonald	1949	Dr	188	6		P	J	E	D	Ls	0	-----	20	-------	L
34cb	E. S. Lauzier	----	Du	15.9	16		P	N	N	N	Tco	0	3,029	13.13	4-17-61	
34cd	U.S. Geological Survey	1962	Dn	3.7		3/4	P	N	N	N	Tca	1.0	3,018	1.22	10- 3-62	
34da1	N. P. Railway	----	Du	22.3	120		R	N	N	O	Tco	1.0	3,040	13.85	6-29-59	
34da2	H. C. Seibert	1954	Dr	165	5		P	C	E	D	Ls	0	-----	11	-------	L;Y 30 r;D 2 r
34da3	Edmond Hamel	1915	Du	24	36		C	Cy	H	D	Tco	0	3,039	18.57	7-12-61	
34db	Roy Erickson	----	Du	24.6	24		C	-	-	D	Tco	0	3,038	20.87	9-22-61	
35bd	George Borchers	1946	Dr	199	4		P	Cy	E	D	---	---	-----	-----	-------	
35cd1	R. E. Felstet	----	Du	17.3	18		C	C	E	D	Tca	-3.0	3,037	11.35	4-12-61	
35cd2	Melvin Nelson	1960	Dr	156	6		P	J	E	D	Tca	-5.5	3,035	3.07	9-22-61	
B15-22-25ac1	Mary Bishop	----	Du	18.2	12		C	-	-	D	Tca	0	-----	13.30	9-19-61	
25ac2	David Rose	----	Du	17.8	24		C	-	-	D	Tca	2.8	3,018	12.70	9-19-61	
25ad	Raymond Rose	1953	Dr	40	6		P	J	E	D	Tca	1.0	3,021	12.34	9-19-61	
25ca	Roscoe Peterson	----	Du	17.7	36		C	N	N	O	Tca	0	3,014	14.54	6-29-59	
25da	Tom Scheffer	----	Du	20	36		C	P	E	D	Tco	-4.5	3,011	6.43	10- 1-62	
26ab	J. A. Bondurant	----	Dr	-----	10		P	TJ	E	Ir,D	Hc	2.5	3,006	5.60	10- 4-62	L;Y 300 r;D 55 r
26ac	McCoy Rice	1949	Du	21	18		C	C	E	D	Tco	-6.0	3,001	11.50	7-26-62	
26ad	Charles F. Rose	----	Du	13.7	--		C	J	E	D	Tco	0	3,002	7.90	7-26-62	

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B12-19-6ac1.		
Soil, broken rock and gravel..	7	7
Gravel, cobblestones, and boulders imbedded in tan silt.....	107	114
Tan clay or silt.....	2	116
Gravel and cobblestones imbedded in tan clay.....	7	123
Tan clay.....	14	137
Silty sand and small gravel...	2	139
Sandy clay, tan to brown.....	8	147
Tan to brown sandy clay with some small gravel imbedded..	19	166
Blue clay with some small gravel imbedded.....	21	187
Silty sand and gravel.....	5	192
Blue clay.....	56	248
Blue clay and dark-gray clay in thin alternate layers; some small gravel and wood imbedded.....	14	262
Blue sand, very fine.....	8	270
Blue-green clay.....	4	274
Sand and gravel (water).....	9	283
Blue-gray clay.....		at 283
B12-19-6ac2.		
Fill.....	4	4
Gravel and cobblestones imbedded in tan silt.....	12	16
Gravel imbedded in tan clay...	31	47
Tan sandy clay, some scattered gravel imbedded.....	40	87
Gravel mixed in tan clay.....	25	112
Fine gravel (water seepage)...	2	114
Tan clay, some gravel imbedded	14	128
Sand and gravel (water).....	6	134
B12-19-18bb1.		
Top soil.....	1	1
Gray clay.....	18	19
Gravel with water (about 4 gpm)	3	22
Yellow clay.....	6	28
Gravel and clay.....	11	39
Gray clay with gravel.....	12	51
Green clay with gravel.....	108	159
Gravel and decomposed granite..	19	178
Green clay.....	16	194
Gravel and clay.....	4	198
Green clay.....	19	217
Sand, gravel and clay (2 gpm)..	8	225
Green clay and gravel.....	113	338
Yellow clay and gravel.....	5	343
Sandy brown clay with a little wood.....	2	345
Gravel (water).....	2	347
B12-20-1aa.		
Pit.....	6	6
Black to brown sandy clay.....	7	13
Gravel and cobblestones imbedded in clay.....	6	19
Tan sand and silt.....	30	49
Gravel imbedded in tan clay....	5	54
Tan clay.....	13	67
Gray sand.....	11	78
Sand and gravel.....	3	81
Gray sand.....	3	84
Clean coarse gravel (water)....	2	86
B12-20-1da2.		
Gravel and loose rock.....	5	5
Gray sand.....	15	20
Boulders and tan sand.....	12	32
Tan clay.....	6	38
Fine gravel (some water).....	5	43
Tan clay.....	5	48
Tan sand and clay in layers....	44	92
Blue-green clay.....	16	108
Gravel, sand and boulders (water).....	4	112

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B12-20-2ca2.		
Top soil	2	2
Clay and gravel	6	8
Boulders and clay	4	12
Sandy gray clay and gravel	14	26
Red clay and soft broken rock.	12	38
Red broken rock (about 1 gpm).	14	52
Red broken rock	108	160
Red broken rock with clay	18	178
Red clay	1	179
Red broken rock	29	208
Soft green rock (water)	7	215
B12-20-10aa.		
Broken rock and gravel imbedded in clay	28	28
Sandy clay some gravel imbedded	21	49
Sand, gravel and clay (water seepage)	2	51
Gray cemented gravel	4	55
Fine gray sand, some water	2	57
Broken red rock with pink clay in seams	14	71
Solid red rock	11	82
Broken red rock with some tan clay in seams (water)	7	89
Solid red to pink rock	3	92
B12-20-11ab.		
Pit	5	5
Old well	12	17
Sand, some gravel (water)	40	57
Sandy clay and gravel	6	63
Sand, some gravel (water)	31	94
Sand and gravel (water)	2	96
B12-20-11ad.		
Sand and small gravel	10	10
Clay and gravel	48	58
Clay and sand	32	90
Gravel (about 3 gpm)	1	91
Yellow clay and gravel	9	100
Brown clay and gravel	13	113
Blue clay and gravel	12	125
Tight clay and gravel	7	132
Green clay	16	148
Clay and gravel	47	195

	Thickness	Depth
B12-20-11ad.--continued		
Gravel and silt (3 gpm)	1	196
Clay and gravel	1	197
Clay and silt	2	199
Clay and gravel	4	203
Clay	3	206
Red sand, gravel and silt (about 5 gpm)	2	208
Gravel and clay	14	222
Clay and gravel	14	236
Sand and clay	20	256
Clay and gravel	45	301
Red sand and clay	10	311
Red boulder	2	313
Clay, gravel and boulders (makes about 2 gpm at the bottom)	30	343
B12-20-12ad.		
Top soil	0.6	0.6
Gravel and cobblestones imbedded in tan clay	62.5	63
Yellow-green clay with gravel imbedded	13	76
Tan sandy clay	16	92
Sand and gravel mixed in tan clay	84	176
Granitic sand and gravel, some water	4	180
Clean coarse sand and gravel (water)	2	182
Gravel imbedded in tan clay	7	189
Dirty sand and gravel (some water)	7	196
Gravel mixed in tan clay	2	198
Silty sand and gravel (dirty water)	20	218
Clean coarse sand and gravel (good water)	5	223
B12-20-12bb1.		
Sandy clay	16	16
Silty clay and gravel	2	18
Clay and gravel	28	46
Coarse gravel and sand	3	49
Sandy clay	4	53
Sand and gravel	5	58
Clay and hard gravel	6	64

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thick-ness	Depth
B12-20-12bb1.--continued		
Sand and gravel	2	66
Clay and gravel	1	67
Heaving sand (water)	15	82
Heaving sand and gravel	2	84
Silty clay	20	104
Gravel (water)	1	105
B13-19-8cd.		
Sand and gravel mixed in silty tan clay	5	5
Sand, gravel and cobblestones mixed in tan clay	9	14
Sand and gravel imbedded in tan clay	25	39
Silty sand and gravel (some water)	8	47
Gravel imbedded in tan clay	4	51
Silty sand and gravel	13	64
Tan sandy clay	10	74
Sand and gravel (some water)	8	82
Clean coarse sand and gravel (water)	3	85
B13-19-8dc.		
Pit	12	12
Gravel and boulders	12	24
Clay	18	42
Sandy clay	8	50
Pea gravel and sand with water (gravel too small to perforate)	19	69
Clay	5	74
Small gravel, sand and clay (some water)	13	87
Larger gravel and sand (some water)	2	89
Large gravel with some clay (water)	3	92
Big gravel with little sand (water)	12	104
Clay, no water (did not case 107 to 119)	15	119
B13-19-8dd.		
Top soil	3	3
Tight sand, gravel and clay	38	41
Sandy clay	6	47
Silty sand and gravel	6	53
Sand and gravel (water)	6	59
Clay and sand	8	67
Clay and gravel	7	74
Clay	9	83
Clay, gravel and sand	4	87
Silt, sand and clay	37	124
Gravel and clay (some water)	3	127
Good sand and gravel (water)	15	142
Large gravel with boulders (water)	3	145
B13-19-11ba.		
Cellar	5	5
Gravel and boulders	60	65
Clay and gravel mix	2	67
Coarse gravel and boulders (water)	8	75
B13-19-11dc.		
Pit	8	8
Clay, gravel, and a little sand and boulders	38	46
Sand and gravel (water)	18	64
B13-19-15da.		
Top soil	2	2
Gravel and boulders	16	18
Gravel, boulders, sand and clay	8	26
Gravel, boulders and clay	6	32
Gravel, boulders and clay	15	47
Gravel and boulders (some water)	15	62
Gravel and clay, very tight	7	69

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-19-16ba.		
Sand, gravel, boulders	28	28
Clay	30	58
Sand	2	60
Clay	5	65
Sand and gravel	8	73
Clay	5	78
Sand	4	82
Gravel (water)	4	86
B13-19-16bb.		
Dug well	33	33
"Quicksand"	4	37
Clay	23	60
"Quicksand"	2	62
Sandy gravel and thin layers of clay	4	66
Clay	4	70
Sand	1	71
Small gravel and sand	2	73
Sand	5	78
Clay	9	87
Sand and some clay	5	92
Sand	4	96
Small gravel and clay mix	3	99
Gravel (water)	4	103
B13-19-17aa.		
Dark soil	5	5
Gravel	10	15
Soft sandy clay	3	18
Gravel and clay (little water)	22	40
Layers of gravel and clay	8	48
Sandy clay	6	54
Some small gravels mixed with sandy clay	6	60
Clay	3	63
Gravel and some clay	29	92
Coarse gravel	1	93
Coarse gravel and small layers of clay; gravel from 4- to 6-inches in size.	15	108
Sticky clay	7	115
Gravel and sand (water)	6	121
Gravel 4-inches in size and some clay, either in chunks or small layers (water)	10	131
B13-19-17ac1.		
Tight pressed sand, gravel and boulders	36	36
Sand	22	58
Intermittent layers sand and gravel mix	24	82
Gravel (water)	6	88
B13-19-17ac2.		
Top soil	1	1
Gravel, boulders, and clay	40	41
Sandy clay and gravel (little water)	21	62
Sandy clay and gravel (a little water)	21	83
Heaving sand and gravel (water)	8	91
Gravel and sand (water)	2.6	93.6
B13-19-17bc.		
Sand, gravel, cobbles	36	36
Gravel mixed in tan clay	3	39
Sand and gravel (water)	25	64
Fine to coarse sand, few gravels in silt	15	79
Coarse gravel and cobbles in sand	4	83
Fine to coarse sand	5	88
Sand and gravel (mostly gravel) imbedded in tan silt; cobbles at 115 feet (water)	46	134
Fairly clean sand	2	136
Fine sand	3	139
Sand, gravel, and some clay balls and silt	8	147
Sand, gravel imbedded in brown silt (no water)	9	156
Tan clay, sticky	11	167
Green clay, sticky	24	191
Sand and gravel, gray (water).	17	208
Gray clay	4	212

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-19-17db.		
Clay, gravel and small boulders	40	40
Sand and small gravel (water)	10	50
Gravel and clay	26	76
Clay	9	85
Sand	9	94
Heaving sand and pea gravel	14	108
Layers of gravel and sand (water)	4	112
B13-19-18aa1.		
Sandy loam	5	5
Clay	2	7
Gravel	33	40
B13-19-18ad2.		
Sandy clay	5	5
Sand and gravel	3	8
Boulders and gravel	11	19
Clay and gravel (a little water)	11	30
Clay	5	35
Tight gravel in clay	2	37
Silty clay (a little water)	10	47
Small heaving gravel	6	53
Tight clay and gravel	4	57
Silty sand	3	60
Clean gravel (water)	4	64
B13-19-19cd.		
Pit	5	5
Gravel and small boulders	12	17
Small gravel (water)	11	28
Gravel and clay	5	33
Gravel (water)	27	60
Sand (water)	4	64
Fairly large gravel (water)	21	85

	Thickness	Depth
B13-19-20da.		
Top soil	2	2
Gravel, boulders, clay	27	29
Gravel and fine sand (some water)	11	40
Sandy clay, gravel	4	44
Gravel and clay	6	50
Gravel and clay	14	64
Gravel and sand (water)	9	73
Gravel and clay	7	80
Sand and gravel	5	85
Loose gravel and sand (water)	4	89
Loose small gravel with sand (water)	3	92
Sand (water)	5	97
Sand, gravel (water)	14	111
B13-19-21ab.		
Gravel and boulders	35	35
Gravel and clay	12	47
Gravel, boulders and clay mixed	13	60
Gravel, boulders, clay (water seepage)	5	65
Clay, sand, gravel	6	71
Gravel (water)	14	85
Sand, gravel and clay mixed (water)	27	112
Gravel, tight	6	118
Gravel, sand and clay, loose.. (water)	4	122
B13-19-21ac1.		
Sand, gravel and boulders	10	10
Large boulders and gravel	12	22
Clay and gravel	8	30
Gravel and boulders (water seepage)	5	35
Fine gravel and clay	12	47
Gravel, boulders and clay	2	49
Clay and some gravel	5	54
Gravel and sand (water)	19	73

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-19-21ac2.		
Top soil and gravel	6	6
Clay	9	15
Gravel and clay	14	29
Sand and gravel	9	38
Gravel and sand (about 10-15 gpm)	3	41
Gravel (water)	7	48
Tight gravel and sand	4	52
Gravel and clay	8	60
Boulders and gravel (water)	7	67
B13-19-21ad1.		
Fill	17	17
Gravel, boulders, little clay mix	28	45
Gravel, boulders (water)	18	63
Gravel, clay, boulders	3	66
Sand, gravel, boulders (water)	14	80
Gravel, boulders, little clay mix (water)	3	83
B13-19-21ad2.		
Cellar	7.5	7.5
Clay, gravel, boulders	54.5	62
Clean gravel (little water)	25	87
Clay with little gravel	2	89
Clean coarse gravel (water)	16	105
Clean gravel and sand (water).	3	108
B13-19-21dc.		
Fill	2	2
Gravel, cobbles and clay	21	23
Gravel and cobbles	11	34
Gravel, cobbles imbedded in clay	13	47
Sand and gravel (water-bearing)	12	59
Gravel and cobbles, imbedded in clay	22	81
Sand, gravel; some clay, sandy	12	93
Sand, gravel; very silty	4	97
Sand and gravel	4	101
Coarse clean gravel (water)	3	104
B13-19-22bc1.		
Gravel and boulders	35	35
Clay, sand, gravel	15	60
Clay	5	65
Sand and gravel (water)	5	70
Sand, fine gravel, clay	9	79
Gravel and very little sand (water)	5	84
B13-19-22bc2.		
Sidewalk to cellar	8	8
Gravel and boulders, some clay (blasted at 25 feet)	32	40
Gravel (water)	5	45
Mucky sand; gravel	18	63
Loose gravel (lots of water)	16	79
Gravel and clay	19	98
Soft red clay	2	100
Gravel, some red clay mixed	5	105
B13-19-22bc3.		
Surface, clean gravel and boulders	14	14
Clay and little gravel	3	17
Gravel, boulders and little clay	28	45
Clay and gravel	15	60
Gravel and boulders. With very little clay	15	75
Coarse sand and fine gravel (water)	2	77
Sand, little clay	3	80
Gravel and clay	5	85
Coarse gravel (water)	5	90
Sandy clay and very little gravel	1	91
B13-19-22cb1.		
Basement	10	10
Gravel, boulders, clay	10	20
Sand and gravel	15	35
Sand, clay and boulders	2	37
Boulders (water)	4	41
Clean gravel, very coarse	3	44
Gravel, little clay	6	50
Clay mixture	10	60

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-19-22cb1.--continued		
Yellow clay	8	68
Gravel and clay	19	87
Clean gravel, very loose (water)	25	112
Gravel and yellow clay mixture, very loose	4	116
Clay	1	117
B13-19-22cb2.		
Basement	8	8
Large boulders and gravel	42	50
Sand, gravel and clay	15	65
Gravel and sand (water)	22	87
Gravel (water)	10	97
B13-19-22db1.		
Gravel, sand, some clay, large boulders (dry)	20	20
Some clay, large boulders (no water)	20	40
Sand with some clay (some water)	16	56
Coarse gravel (water-bearing)	12	68
B13-19-27bc.		
Soil, gravel, sand (loose formation)	10	10
Clay, coarse gravel and sand, some small boulders with clay (tight formation)	50	60
Clay, medium to coarse gravel and sand	10	70
Fairly loose gravel, sand and some clay (first water at 77 feet)	7	77
Fine to medium gravel and sand	18	95
Thin layers of clay, sand and loose rock (water)	17	112
Small boulders, sand and some clay	11	123
Clay and boulders	7	130
Sand	2	132
Coarse gravel and sand (water)	15.75	147.75
B13-19-28cc.		
Crushed rock fill	4	4
Cobblestones and gravel imbedded in clay	38	42
Sand and clay	15	57
Gravel and cobblestones imbedded in clay	17	74
Gray sand	8	82
Cemented gravel	7	89
Brown sand	29	118
Gravel (water)	2	120
B13-19-28dc.		
Top soil, gravel, boulders and clay	30	30
Clay	2	32
Gravel, boulders and some clay	11	43
Gravel (water)	2	45
Gravel, boulders and very little clay	33	78
Gravel (water)	3	81
Gravel, sand, boulders, and some clay (water)	35	116
B13-19-29ac.		
Top soil and clay	2	2
Sand and some gravel	8	10
Sand, gravel, boulders	11	21
Clay, sand and boulders	14	35
Clay and gravel (some water)	20	55
Gravel (water)	7	62
Gravel, clay and boulders	6	68
Gravel	3	71
Clay and gravel	1	72
Loose sandy gravel with fine sediment, some clay	18	90
B13-19-29cd.		
Dirt	2	2
Gravel and some clay	40	42
Gravel, some water	9	51
Gravel and clay (lots of water)	43	94
Gravel and clay (little water)	6	100

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-19-29cd.--continued		
Sand and gravel (lots of water)	9	109
Gravel with clay	3	112
Gravel and sand (water)	5	117
B13-19-29da2.		
Top soil and boulders	5	5
Clay, gravel and boulders	53	58
Sand, gravel, cobblestones (water)	2	60
Clay, gravel (water)	19	79
Clay and gravel	1	80
Clay and big gravel (water)	14	94
Sand and gravel (water)	4	98
Sand and big gravel (lots of water)	12	110
B13-19-30bd.		
Top soil	2	2
Sand	6	8
Sand, gravel and clay	52	60
Gravel	61.5	121.5
B13-19-30dd1.		
Pit	7	7
Tight clay and gravel	18	25
Loose gravel, clay	17	42
Sand and gravel (water)	16	58
B13-19-31cc1.		
Sandy soil	4	4
Gravel, small boulders, sand	12	16
Sand and little clay	7	23
Boulders and gravel	1	24
Fine gravel and sand	4	28
Gravel, sand, little clay mix.	7	35
Gravel and sand	1	36
Sand and clay	2	38
Gravel and small boulders and little clay mix	27	65
Clay, sand and gravel	7	72
Sand and gravel	6	78
Gravel with very little sand (water)	18.6	96.6
B13-19-31cc2.		
Soil and gravel	4	4
Gravel, sand and little clay mix	18	22
Gravel and boulders	5	27
Sand, fine gravel and clay	28	55
Sand and gravel and small amount of clay	23	78
Sand, fine gravel and clay	2	80
Sand and gravel	20	100
B13-19-31cd.		
Gravel	25	25
Fine sand and gravel	10	35
Fine sand and gravel (water)	30	65
Fine sand (water)	8	73
Gravel and sand mix, little clay (water)	7	80
B13-19-32ad.		
Pit	7	7
Clay and gravel	43	50
Gravel with clay (some water).	6	56
Gravel and sand (water)	7	63
B13-19-32bb.		
Tan, clay, gravel, cobbles and sand	24	24
Sand and fine gravel mixed with tan clay	17	41
Sand, fine gravel; some silt and clay layers (some water)	11	52
Gravel imbedded in tan clay	4	56
Silty sand (some water)	12	68
Tan clay mixed with sand and gravel	2	70
Silty sand (some water)	14	84
Clean coarse sand and gravel (water)	12	96
B13-19-32cb.		
Gravel and clay	14	14
Sand	2	16
Gravel and clay	28	44

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-19-32cb.--continued		
Sand, gravel with clay (small amount of water)	30	74
Gravel with clay (some water).	4	78
Gravel with sand (some water).	10	88
Gravel and clay (some water)..	23	111
Sand and gravel (water).....	4	115
Clay, gravel, boulders (water).....	13	128
Gravel and boulders (water)...	4	132
B13-19-32dd1.		
Pit.....	6	6
Sand, gravel.....	4	10
Clay and gravel.....	4	14
Clay.....	5	19
Clay and gravel; a few boulders (little water).....	9	28
Boulders and clay.....	8	36
Sandy clay.....	3	39
Clay and gravel.....	24	63
Sand and gravel (little (water).....	2	65
Clay and gravel.....	7	72
Dirty sand and gravel.....	6	78
Silty sand and gravel.....	2	80
Clean sand and gravel.....	4	84
B13-19-33ad.		
Black muck and gravel.....	8	8
Yellow clay and gravel.....	46	54
Sand and small gravel (some water).....	2	56
Clay and gravel.....	21	77
Sand and small gravel (some water).....	9	86
Sand and large gravel (water)	29	115
Clay and gravel.....	2	117
B13-19-33ba.		
Soil and gravel.....	10	10
Clay and gravel.....	20	30
Some clay, some gravel.....	30	60
Loose gravel and silt (little water).....	15	75
B13-19-33ba.--continued		
Some clay and rocks, very tight formation (little water).....	15	90
Gravel, sand, with clay (water).....	10	100
Coarse sand and small gravel (more water).....	10	110
Coarse and large gravel, some sand, trace of clay.....	14	124
B13-19-33bc.		
Gravel and cobblestones imbedded in tan clay.....	44	44
Silty sand and gravel (some water).....	22	66
Tan clay, some gravel imbedded.....	3	69
Sand and gravel mixed in tan clay (some water).....	18	87
Tan clay, some gravel imbedded.....	2	89
Tan sandy silty clay.....	5	94
Tight sand and gravel (some water).....	4	98
Sand and gravel, water.....	6	104
Clean coarse sand and gravel (water).....	12	116
B13-19-34bb.		
Gravel boulders, clay.....	84	84
Sand and clay (little water)..	2	86
Gravel and clay (little water)	24	110
Coarse sand, gravel (more water).....	10	120
Very coarse gravel and sand (lots of water).....	25.5	145.5
B13-20-1bb.		
Gravel and asphalt.....	1.5	1.5
Tan clay.....	109.5	111
Brown sand.....	1.5	112.5
Brown clay with sand and gravel.....	10.5	123
Yellow to tan clay with sand and gravel.....	26	149

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B13-20-1bb.--continued		
Sand and gravel and broken rock mixed with tan and yellow silt	13	162
Brown clay	17	179
Sand and gravel and broken rock in yellow silt	8	187
Brown to tan sandy clay	9	196
Sand and gravel and broken rock in yellow silt	5	201
Sand and gravel (water)	12	213
Sand and gravel in yellow silt	1	214
Yellow silt		at 214
B13-20-5ba2.		
Soil	3	3
Sand and gravel (water)	20	23
Clay with some sand	51	74
Sand, clay, gravel	52	126
Gravel (water strata)	6	132
B13-20-10dc.		
Dirt	3	3
Tan clay	91	94
Fine gray sand (some water)	28	122
Tan sand	9	131
Tan clay	7	138
Fine gray sand (some water)	5	143
Sand, gravel, boulders (water)	12	155
B13-20-12dc.		
Dug well	39	39
Sand and layers of clay	15	54
Sand and fine gravel	2	56
Gravel, coarser at depth	2	58
Clay		at 58
B13-20-13ad4.		
Soil	3	3
Sand and gravel (dry)	36	39
Fine sand (water)	47	86
Clay, brown	3	89
Sand, heaving (water)	15	104
Gravel (water)		at 104
B13-20-13ad5.		
Soil	5	5
Sand and gravel (dry)	40	45
Fine sand (water-bearing)	40	85
Clay, brown	3	88
Gravel (water-bearing)	3	91
B13-20-14ac.		
Sandy clay	17	17
Clay with gravel	7	24
Sand (water)	9	33
Sand and gravel (water)	2	35
B13-20-14bb1.		
Clay	115	115
Sandy clay (water)	22	137
Sand	13	150
Gravel and sand	10	160
Clay	7	167
Clay and gravel	22	189
Gravel (water)	15	204
Clay and gravel	29	233
B14-19-35dd.		
Pit	5	5
Gravel	4	9
Boulders, gravel, clay	44	53
Gravel (little water)	1	54
Boulders and clay	11	65
Gravel, clay, boulders	8	73
Gravel, sand, some clay (water)	11	84
B14-20-28ab2.		
Fill	10	10
Clay, gravel, sand	26	36
Clay, sand, fine gravel	169	205
Gravel, sand and clay (little water)	30	235
Sand and gravel (water)	4	239
More clay	1	240

Table 2.--Drillers logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B14-20-31da.		
Top soil	5	5
Small gravel and fine sand (some water)	35	40
Clay, gravel, little sand	61	101
Broken shale rock	47	148
Hard shale rock with large cracks (water-bearing)	18	166
B14-20-35ac.		
Topsoil	3	3
Clay	52	55
Clay and gravel	31	86
Sand and gravel (water)	1	87
Sandy clay with gravel	29	116
Sand with clay and small gravel (some water)	5	121
Sandy clay and gravel	18	139
Gravel and sand (water)	1	140
B14-20-35bb2.		
Blue clay	11	11
Yellow clay and gravel	3	14
Yellow clay	25	39
Gravel	2	41
Yellow clay	23	64
Gravel and fine sand	3	67
Yellow clay	11	78
Yellow clay and sand	12	90
Fine sand and gravel	6	96
Gravel (water)	3	99
Large gravel (water)	2	101
B14-20-35bc.		
Clay	4	4
Clay and rocks	6	10
Clay	80	90
Gravel and sand (water)	8.5	98.5
B14-20-35dc.		
Clay	85	85
Sand (water)	7	92
Gravel	25	117
B14-20-35dc.--continued		
Clay and gravel	5	122
Clay, sand and gravel	26	148
Sand	64	212
Fine sand	5	217
Gravel	4	221
Sand and fine gravel	1	222
B14-21-11ba.		
Dug hole	25	25
"Quicksand" and clay	11	36
Sand and gravel, "quicksand" below	7	43
B14-21-12db.		
Soil and clay	13	13
Gravel embedded in clay	20	33
Sand and clay in thin alternate layers	3	36
Sand and gravel	3	39
Gravel	2	41
B14-21-24ac1.		
Dug hole	21	21
Sand with water (heaves up in hole)	108	129
Gravel (water)	3	132
B14-21-24ba2.		
Fill dirt and gravel	7	7
Gravel (water)	19	26
Sandy clay	69	95
Sand and very small gravel (water)	17	112
Yellow clay	6	118
Sandy clay	14	132
Small gravel, sand and some clay (water)	10	142
Sand and small gravel (water)	3	145
Yellow clay	1	146
Coarse gravel, sand (water)	22	168
Yellow clay and gravel	1	169
Clay, gravel and boulders	33	202

Table 2.--Drillers' logs of wells in the Missoula Valley, Montana--cont'd.
(Thicknesses and depths below land surface are given in feet.)
(Yield, where shown, is in gallons per minute (gpm).)

	Thickness	Depth
B14-21-24ba3.		
Top soil	7	7
Gravel and sand (some water at 25'-30')	23	30
Sandy clay with some gravel	50	80
Sandy clay	32	112
Clay	4	116
Sandy clay	26	142
Big gravel and sand (water)	27	169
Clay, gravel and boulders	5	174
B14-21-24ba4.		
Top soil	6	6
Gravel and sand (some water at 24'-27')	21	27
Sandy clay	85	112
Clay	4	116
Sandy clay	36	152
Good gravel and sand (water)	19	171
Clay, gravel and boulders	6	177
B14-21-24ba5.		
Gravel fill	7	7
Gravel and sand (some water at 25')	19	26
Sandy clay with some gravel	54	80
Sandy clay	32	112
Clay	8	120
Sandy clay	22	142
Clay and some boulders	6	148
Smaller gravel and sand (water)	5	153
Sand, coarser gravel (water)	17	170
Blue-green clay (no water)	4	174
B14-21-24ba6.		
Top soil	9	9
Sand and gravel	5	14
Gravel	6	20
Sand and gravel	7	27
Sandy clay	7	34
Heaving sand	19	53
Clay	4	57
Sand	27	84
Clay	6	90
Sand and fine gravel	45	135
Sand, gravel, and clay	13	148
B14-21-24ba6.--continued		
Gravel and sand (water)	20	168
Clay and loose gravel (water)	12	180
Sand, clay, and small gravel (water)	3	183
B14-21-24ba7.		
Pit	7	7
Clay	5	12
Sand and gravel	13	25
Sand	20	45
Sandy clay	56	101
Hard packed sand with some clay	44	145
Sand and gravel, some clay	9	154
Sand and gravel (water)	5	159
Tight gravel and sand	8	167
Loose gravel and sand (water)	2	169
Tight clay with gravel, some boulders (no water)	55	224
B15-21-34bd2.		
Gravel and sand	22	22
Sand and gravel	5	27
Clay, sand and gravel	30	57
Fine sand with little clay (water)	126	183
Coarse gravel (water)	5	188
B15-21-34da2.		
Sand and gravel	22	22
Clay hardpan	3	25
Sand	138	163
Hardpan	2	165
Gravel (water)		at 165
B15-22-26ab.		
Top soil	1	1
Gravel and sand	10	11
Sand (water)	24	35
Clay	24	59
Sandy clay	36	95
Sand	5	100
Clay	10	110
Sand and gravel (water)	9	119
Clay	3	122

Table 3.--Water levels in observation wells in Missoula Valley, Montana
(In feet below land-surface datum.)

Date	Water level
B12-19-18bb1.	
Mar. 28, 1961	288.91
July 3	288.64
Oct. 5	288.80
Nov. 6	289.19
Dec. 7	289.00
Jan. 3, 1962	288.90
Feb. 1	289.25
Mar. 1	289.24
Apr. 3	289.25
May 2	287.20
June 4	288.94
July 31	288.59
Aug. 28	288.66
Oct. 1	288.58
Nov. 5	288.90
Dec. 4	289.13
Jan. 2, 1963	288.84
Feb. 4	288.93
Feb. 27	289.03
Apr. 1	289.08
B12-20-1da1.	
Mar. 29, 1961	37.29
July 3	26.60
Aug. 3	27.10
Aug. 31	25.51
Oct. 5	30.88
Nov. 6	31.54
Dec. 7	34.23
Jan. 3, 1962	35.34
Feb. 1	36.24
Mar. 1	36.70
Apr. 3	36.94
May 2	37.20
June 4	30.05
July 31	26.49
Aug. 28	30.42
Oct. 1	30.54
Nov. 5	34.25
Dec. 4	35.33
Jan. 2, 1963	36.23
Feb. 4	36.96
Feb. 27	37.20
Apr. 1	37.30

Date	Water level
B12-20-2cd2.	
Mar. 29, 1961	9.23
July 3	8.92
Aug. 3	10.65
Aug. 31	10.32
Oct. 5	9.84
Nov. 6	9.63
Dec. 7	9.82
Jan. 3, 1962	9.97
Feb. 1	8.30
Mar. 1	9.38
Apr. 3	9.42
May 2	7.10
June 4	3.05
July 31	8.18
Aug. 28	8.57
Oct. 1	9.42
Nov. 5	8.72
Dec. 4	8.62
Jan. 2, 1963	9.26
Feb. 4	8.96
Feb. 27	8.42
Apr. 1	9.15
B12-20-2dd.	
Mar. 16, 1961	14.83
July 3	12.40
Aug. 3	14.68
Aug. 31	15.00
Oct. 5	14.62
Nov. 6	14.48
Dec. 7	14.73
Jan. 3, 1962	14.90
Feb. 1	13.68
Mar. 1	14.46
Apr. 3	14.59
May 2	12.52
June 4	10.82
July 31	13.30
Aug. 28	14.67
Oct. 1	14.74
Nov. 5	14.40
Dec. 4	14.22
Jan. 2, 1963	14.50
Feb. 4	14.55
Feb. 27	14.00
Apr. 1	14.47

Date	Water level
B13-19-6ba.	
July 25, 1961	24.14
Aug. 3	25.18
Oct. 5	35.02
Nov. 6	40.08
Dec. 7	42.28
Jan. 3, 1962	45.58
Feb. 1	47.50
Mar. 1	49.56
Apr. 3	51.27
May 2	53.07
June 4	37.05
July 31	17.30
Aug. 28	23.45
Oct. 1	29.86
Nov. 5	33.33
Dec. 4	37.08
Jan. 2, 1963	40.56
Feb. 27	46.00
Apr. 1	47.65
B13-19-7bc.	
July 27, 1961	16.16
Aug. 31	19.41
Oct. 5	22.51
Nov. 6	25.63
Dec. 7	27.85
Jan. 3, 1962	29.09
Feb. 1	30.18
Mar. 1	30.08
Apr. 3	30.30
May 2	23.80
June 4	10.98
July 31	15.28
Aug. 28	18.10
Oct. 1	21.71
Nov. 5	24.57
Dec. 4	26.64
Jan. 2, 1963	28.00
Feb. 27	29.00
Apr. 1	28.83

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-19-7cc.	
Aug. 9, 1961	24.66
Oct. 5	28.36
Nov. 6	30.03
Dec. 7	31.63
Jan. 3, 1962	32.75
Feb. 1	35.20
Mar. 1	33.77
Apr. 3	33.10
May 2	28.95
June 4	23.12
July 31	23.17
Aug. 28	25.30
Oct. 1	27.53
Nov. 5	29.63
Dec. 4	31.77
Jan. 2, 1963	31.27
Apr. 1	30.68
B13-19-8cb.	
July 1, 1958	31.60
7	33.64
14	35.70
21	37.11
28	38.34
Aug. 4	39.52
25	41.81
Sept. 1	42.46
8	43.03
15	43.31
22	43.65
29	44.40
Oct. 6	45.10
13	45.72
20	46.33
27	46.90
Nov. 3	47.41
10	47.83
17	48.11
24	48.39
Dec. 1	48.32
15	48.36
22	48.19
29	48.24
Jan. 5, 1959	48.39
12	48.71
19	49.05
25	49.35
B13-19-8cb.--Continued	
Feb. 2, 1959	49.23
9	49.29
16	49.49
23	49.70
Mar. 2	49.90
9	49.84
16	49.77
23	49.65
30	49.37
Apr. 6	48.71
13	46.70
20	45.38
27	44.60
May 4	43.88
11	43.01
18	41.32
25	39.28
June 1	37.05
8	33.00
15	29.15
22	25.46
29	24.95
July 20	31.62
27	32.26
Aug. 3	35.12
10	36.76
17	38.05
31	40.05
Sept. 7	41.10
14	41.90
21	42.64
28	43.37
Oct. 5	43.74
12	43.84
19	41.80
26	40.10
Nov. 2	39.43
9	39.70
16	40.66
23	42.16
30	42.47
Dec. 7	42.75
14	43.34
21	44.01
28	44.75
Jan. 4, 1960	45.52
11	46.31
B13-19-8cb.--Continued	
Feb. 1, 1960	47.97
8	48.36
15	48.73
22	49.08
29	49.43
Mar. 7	49.85
14	50.25
21	50.37
28	49.36
Apr. 4	47.60
11	46.24
18	45.00
25	44.58
May 2	44.43
9	44.22
16	42.35
23	41.35
30	40.87
June 6	37.93
13	34.32
20	32.86
27	33.08
July 4	34.24
11	35.77
18	37.13
25	38.40
Aug. 1	39.52
8	39.84
15	40.70
22	41.79
29	42.49
Sept. 5	43.15
12	43.74
19	44.20
26	44.62
Oct. 17	46.04
Nov. 14	48.20
21	48.67
28	49.13
Dec. 5	49.55
12	49.91
19	50.20
26	50.39
Jan. 2, 1961	50.61
Mar. 6	51.43
27	51.36

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-19-8cb.--Continued	
Apr. 3, 1961	51.26
10	50.81
17	50.03
May 1	49.25
8	47.99
15	45.18
22	42.48
June 5	31.45
12	30.12
19	29.14
25	30.24
July 3	33.08
10	34.95
17	36.54
24	37.85
Aug. 14	41.31
21	42.09
28	42.81
Sept. 2	43.03
18	44.35
25	44.91
Oct. 2	45.43
9	45.92
16	46.35
23	46.76
Nov. 6	47.44
13	47.76
20	48.23
27	48.78
Dec. 11	49.39
18	49.78
25	49.94
Jan. 3, 1962	50.13
8	50.28
15	50.51
22	50.67
31	50.84
Feb. 12	50.87
19	50.41
26	50.28
Mar. 5	50.41
12	50.51
19	50.51
24	50.40
Apr. 2	49.85
9	48.48
16	46.55
23	44.26

Date	Water level
B13-19-8cb.--Continued	
May 2, 1962	42.34
7	41.64
14	39.20
21	37.06
June 4	30.90
11	30.49
18	27.72
25	27.72
July 16	34.22
23	36.45
30	37.82
Aug. 6	38.69
13	39.32
20	40.16
28	41.08
Sept. 3	41.66
10	42.40
17	43.12
Oct. 8	45.13
15	45.76
22	46.26
29	46.59
Nov. 6	46.94
12	47.05
19	47.25
26	47.69
Dec. 4	48.14
10	48.37
17	48.62
24	48.72
31	48.76
B13-19-18aal.	
Sept. 22, 1961	31.81
Oct. 5	33.72
Nov. 6	34.64
Dec. 7	36.36
Jan. 3, 1962	37.56
Feb. 1	38.04
Mar. 1	37.77
Apr. 3	37.17
May 2	32.72
June 4	24.54
July 31	26.58
Aug. 28	28.83
Oct. 1	31.72
Nov. 5	34.23
Dec. 4	35.19

Date	Water level
B13-19-18aal.--Continued	
Jan. 2, 1963	36.07
Feb. 4	36.44
Feb. 27	35.78
Apr. 1	35.20
B13-19-18dd.	
July 18, 1961	6.64
Nov. 6	13.08
Dec. 7	15.15
Jan. 3, 1962	15.94
Feb. 1	16.27
Mar. 1	16.27
Apr. 3	14.87
May 2	11.43
June 4	6.40
July 31	7.42
Aug. 28	8.07
Oct. 1	10.63
Nov. 5	12.80
Dec. 4	14.32
Jan. 2, 1963	15.32
Feb. 4	14.50
Feb. 27	14.06
Apr. 1	14.78
B13-19-22bc1.	
Jan. 3, 1962	52.19
Feb. 1	52.12
Mar. 5	52.69
12	52.84
19	52.89
26	52.53
Apr. 4	51.15
9	49.63
16	49.35
23	46.90
30	45.09
May 7	44.81
14	43.15
21	41.33
28	38.77
June 3	38.07
11	38.71
July 16	39.41
23	40.04
30	40.26

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-19-22bc1.--Continued	
Aug. 6, 1962	40.51
13	41.21
20	41.61
27	42.13
Sept. 3	42.82
10	43.43
17	44.00
24	44,69
Oct. 8	45.75
15	46.18
22	46.72
29	47.36
Nov. 5	47.91
12	48.44
19	48.90
26	48.89
Dec. 3	48.94
10	49.02
17	49.16
24	49.34
B13-19-29dal.	
Sept. 18, 1958	41.93
22	42.12
29	42.65
Oct. 6	43.18
12	43.61
29	45.11
Nov. 3	45.57
10	46.20
17	46.66
24	47.11
Dec. 23	48.37
29	48.58
Jan. 5, 1959	48.83
12	49.11
19	49.30
26	49.44
Feb. 2	49.32
9	49.46
16	49.65
23	49.81
Mar. 2	49.93
9	49.76
16	49.71
23	49.65
30	49.44

Date	Water level
B13-19-29dal.--Continued	
Apr. 6, 1959	49.14
13	48.60
20	48.11
27	47.71
June 4	42.62
15	39.64
29	37.42
July 6	37.66
13	37.95
20	38.06
27	38.19
Aug. 3	38.45
10	38.80
17	39.34
24	39.68
31	40.14
Sept. 7	40.55
14	41.10
21	41.48
28	42.12
Oct. 5	42.60
12	43.24
19	43.58
26	43.88
Nov. 2	44.14
9	44.59
16	45.16
23	45.62
30	45.81
Dec. 7	46.05
14	46.36
21	46.69
28	46.98
Jan. 3, 1960	47.09
28	48.59
Feb. 11	49.15
18	49.42
25	49.38
Mar. 3	49.66
10	49.96
17	50.09
24	49.98
31	49.43
Apr. 7	49.03
12	48.44
18	47.73
25	47.40

Date	Water level
B13-19-29dal.--Continued	
May 2, 1960	47.30
9	47.15
16	46.52
23	45.40
28	44.64
June 16	40.58
20	39.99
27	39.52
July 4	39.23
11	39.42
18	39.59
25	39.76
Aug. 1	39.86
8	39.81
15	40.28
22	40.70
29	40.95
Sept. 5	41.50
12	42.16
19	42.66
26	43.16
Oct. 3	43.54
10	43.91
17	44.09
24	44.62
31	45.19
Nov. 7	45.78
14	46.43
21	47.09
Dec. 5	48.18
12	48.66
19	49.05
26	49.35
Jan. 2, 1961	49.67
9	50.06
16	50.26
23	50.46
30	50.77
Feb. 6	50.90
13	50.93
20	50.84
27	50.84
Mar. 6	50.88
13	50.95
20	50.94
27	50.88

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-19-29dal.--Continued	
Apr. 3, 1961	50.74
10	50.50
17	50.35
24	50.24
May 1	50.01
June 1	44.60
July 3	39.04
Aug. 3	40.20
31	41.04
Oct. 9	44.43
16	44.92
23	45.35
30	45.80
Nov. 6	46.12
13	46.65
20	47.18
27	47.70
Dec. 4	48.10
11	48.60
18	49.11
25	49.39
Jan. 1, 1962	49.63
8	49.85
15	50.13
22	50.31
29	50.38
Feb. 5	50.36
Mar. 1	49.76
Apr. 4	49.52
9	48.95
May 3	45.90
7	45.64
14	44.86
June 5	40.27
11	39.86
18	39.48
24	38.97
July 16	38.34
23	38.58
Aug. 2	38.90
16	39.27
28	39.87
Oct. 8	43.38
22	44.60
Nov. 5	45.60
16	46.20
23	46.60
30	46.80

Date	Water level
B13-19-29dal.--Continued	
Dec. 6, 1962	47.00
14	47.17
21	47.35
B13-19-30bd.	
Mar. 23, 1961	31.22
July 3	21.05
Aug. 3	22.10
Aug. 31	22.67
Oct. 5	26.95
Nov. 6	27.68
Dec. 7	29.53
Jan. 3, 1962	30.52
Feb. 1	30.80
Mar. 1	30.60
Apr. 3	30.32
May 2	27.45
June 4	22.86
July 31	21.07
Aug. 28	23.50
Oct. 1	25.42
Nov. 5	27.04
Dec. 4	28.76
Jan. 2, 1963	29.30
Feb. 4	29.80
Feb. 27	28.98
Apr. 1	28.86
B13-20-5bal.	
May 8, 1958	12.32
15	11.48
26	8.42
29	8.12
June 5	8.13
19	8.98
27	9.17
July 3	9.26
10	9.35
17	9.21
24	8.66
31	7.90
Aug. 7	7.49
14	7.22
21	7.57
28	7.67
Sept. 4	7.75
11	8.35
18	7.70

Date	Water level
B13-20-5bal.--Continued	
Sept. 24, 1958	8.14
Oct. 1	8.36
9	8.80
16	10.05
23	10.32
29	10.55
Nov. 6	10.91
13	11.18
28	11.71
Dec. 11	11.87
18	11.88
24	11.94
31	12.05
Jan. 8, 1959	12.19
15	12.22
22	12.30
29	11.80
Feb. 5	11.97
12	12.18
19	12.33
26	12.40
Mar. 5	12.20
12	11.87
19	10.79
26	10.87
Apr. 2	11.14
9	11.24
16	11.36
23	11.44
30	11.51
May 7	11.32
13	10.99
20	9.96
28	9.84
June 4	8.92
11	7.93
18	7.74
25	7.55
July 2	7.16
9	6.31
16	7.36
23	8.29
30	6.81
Aug. 6	6.82
13	7.02
20	7.34
27	8.52

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-5bal.--Continued	
Sept. 3, 1959	8.94
10	8.17
17	8.61
24	9.27
Oct. 1	9.72
9	10.23
15	10.33
22	10.55
29	10.79
Nov. 5	9.69
20	12.10
27	11.00
Dec. 10	11.33
17	11.55
24	11.82
31	11.99
Jan. 7, 1960	12.12
14	12.15
21	12.22
28	12.29
Feb. 4	12.29
11	12.31
18	12.38
25	12.42
Mar. 3	12.52
10	12.51
17	12.40
24	11.23
31	11.15
Apr. 7	11.32
14	11.20
21	11.32
28	11.43
May 5	11.53
12	11.53
21	11.07
26	10.80
June 2	9.38
9	8.37
16	7.36
23	6.34
30	5.95
July 7	7.48
14	8.37
28	7.06
Aug. 4	7.14
11	7.90
18	8.29
25	7.56

Date	Water level
B13-20-5bal.--Continued	
Sept. 8, 1960	8.63
15	9.49
29	7.93
Oct. 6	8.26
13	8.23
20	9.12
27	10.23
Nov. 9	11.19
17	11.57
Dec. 1	11.92
8	12.05
15	12.20
Feb. 2, 1961	12.60
Mar. 2	12.15
30	12.32
May 1	12.30
June 1	8.60
July 3	7.97
Aug. 3	7.68
31	7.66
Oct. 5	10.23
Nov. 6	11.16
Dec. 7	12.07
Jan. 3, 1962	12.32
Feb. 1	12.40
Mar. 1	11.86
Apr. 3	11.15
May 2	11.30
June 4	8.86
July 31	6.37
Aug. 28	7.57
Oct. 1	7.42
Nov. 5	10.90
Dec. 4	11.74
Jan. 2, 1963	12.12
Feb. 4	12.33
27	11.74
Apr. 1	11.77
B13-20-5bc.	
Dec. 24, 1958	6.35
31	6.38
Jan. 8, 1959	6.43
22	6.45
29	6.29
Feb. 5	6.37
12	6.44
19	6.48
26	6.51

Date	Water level
B13-20-5bc.--Continued	
Mar. 5, 1959	6.42
12	6.30
19	6.03
26	6.03
Apr. 2	6.12
9	6.05
16	6.08
23	6.09
30	6.09
May 7	5.95
13	5.75
28	5.34
June 4	4.49
11	3.59
18	3.27
25	4.27
July 2	4.58
16	5.05
23	5.17
30	4.82
Aug. 6	4.89
13	4.99
20	5.00
27	5.20
Sept. 3	5.44
10	5.44
17	5.51
24	5.63
Oct. 1	5.74
9	5.75
15	5.80
22	5.87
29	5.89
Nov. 5	5.99
27	6.02
Dec. 3	6.09
10	6.18
17	6.20
24	6.26
31	6.32
Jan. 7, 1960	6.35
14	6.40
21	6.43
28	6.41
Feb. 4	6.44
11	6.45
18	6.45
25	6.49

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-5bc.--Continued	
Mar. 3, 1960	6.53
10	6.52
17	6.47
24	6.02
31	6.00
Apr. 7	6.02
14	5.94
21	6.02
28	6.05
May 5	6.07
12	5.82
21	5.69
26	5.62
June 2	5.20
16	4.29
23	4.28
30	4.27
July 7	4.62
14	4.91
28	4.74
Aug. 4	4.58
11	4.69
18	4.80
25	4.77
Sept. 8	5.00
15	5.17
29	4.86
Oct. 6	4.90
13	4.95
20	5.20
27	5.46
Nov. 9	5.74
17	5.84
Dec. 1	5.93
8	5.98
15	6.02
Feb. 2, 1961	6.09
Mar. 2	5.98
30	5.98
May 1	5.93
June 1	5.68
July 3	4.72
Aug. 3	4.45
31	5.29
Oct. 5	5.33
Nov. 6	5.60
Dec. 7	5.80
Jan. 3, 1962	6.00
Feb. 1	6.00

Date	Water level
B13-20-5bc.--Continued	
Mar. 1, 1962	5.90
Apr. 3	5.63
May 2	5.51
June 4	4.40
July 31	4.35
Aug. 28	4.36
Oct. 1	4.66
Nov. 5	5.58
Dec. 4	5.80
Jan. 2, 1963	5.90
Feb. 27	5.77
Apr. 1	5.78
B13-20-9ab.	
Jan. 25, 1959	9.43
Feb. 2	9.47
9	9.66
16	9.79
20	9.82
Mar. 12	9.04
23	8.40
30	8.90
Apr. 6	9.18
16	9.33
20	9.35
24	9.37
May 7	9.31
June 8	6.65
15	6.79
22	6.63
29	6.35
July 6	6.41
13	7.16
20	7.33
27	6.44
Aug. 3	6.45
10	6.25
17	6.82
24	7.59
31	7.60
Sept. 7	7.96
14	7.85
Oct. 22	8.72
Nov. 9	8.90
16	9.05
23	9.10
30	8.91
Dec. 7	9.10
14	9.22

Date	Water level
B13-20-9ab.--Continued	
Dec. 21, 1959	9.30
28	9.39
Jan. 4, 1960	9.40
7	dry
Mar. 20	8.86
28	8.50
Apr. 4	8.94
11	9.10
18	9.16
25	9.22
May 2	9.27
9	9.28
16	9.16
23	8.90
30	8.03
June 6	7.24
13	6.34
20	6.16
27	6.39
July 4	6.84
11	7.24
18	8.39
24	7.41
Aug. 4	6.76
8	6.92
15	6.63
22	6.27
29	7.74
Sept. 5	8.23
12	8.36
19	7.94
26	8.26
Oct. 3	7.24
10	8.31
17	8.70
24	8.96
30	9.15
Nov. 9	9.36
14	9.43
21	9.51
28	9.54
Dec. 5	9.60
10	9.63

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-9bd.	
Nov. 6, 1961	8.43
Dec. 7	8.80
Jan. 3, 1962	9.00
Feb. 1	8.93
Mar. 1	8.47
Apr. 3	7.74
May 2	8.30
June 4	6.35
July 31	4.64
Aug. 28	4.65
Oct. 1	7.25
Nov. 5	8.42
Dec. 4	8.67
Jan. 2, 1963	8.83
Feb. 4	8.93
27	8.22
Apr. 1	8.33
B13-20-13adl.	
May 15, 1958	7.22
26	4.02
29	3.22
June 5	2.37
19	2.03
27	2.51
July 3	3.14
10	3.49
17	3.51
24	3.57
31	3.75
Aug. 7	3.28
14	3.64
21	4.23
28	4.47
Sept. 4	4.76
11	4.31
18	4.08
24	4.97
Oct. 1	5.96
9	6.31
16	6.72
23	7.02
29	7.30
Nov. 6	7.63
13	7.75
28	8.26
Dec. 11	8.57
18	8.64
24	8.78
31	8.97

Date	Water level
B13-20-13adl.--Continued	
Jan. 8, 1959	9.22
15	9.54
22	9.60
29	9.33
Feb. 5	9.52
12	9.69
19	9.80
26	9.90
Mar. 3	9.74
12	9.65
19	9.51
26	9.38
Apr. 2	9.32
9	8.78
16	8.51
23	8.24
30	7.93
May 7	7.37
13	7.16
20	6.44
28	5.89
June 4	5.14
11	2.62
18	1.57
25	1.31
July 2	1.59
9	1.94
16	2.21
23	1.67
30	2.26
Aug. 6	2.35
13	2.71
20	2.92
27	3.42
Sept. 3	4.22
10	4.56
17	4.79
24	5.04
Oct. 1	5.33
9	5.90
15	5.99
22	6.07
29	6.00
Nov. 5	6.14
20	6.74
27	6.63
Dec. 3	6.93
10	7.18

Date	Water level
B13-20-13adl.--Continued	
Dec. 17, 1959	7.44
24	7.65
31	7.91
Jan. 7, 1960	8.10
14	8.35
21	8.64
28	8.64
Feb. 4	8.63
11	9.50
18	9.40
25	9.50
Mar. 3	9.84
10	10.16
17	10.06
24	9.67
31	9.27
Apr. 7	8.78
14	8.12
21	7.84
28	7.83
May 5	7.78
12	7.50
21	6.66
26	6.58
June 2	6.18
19	3.53
23	3.12
30	3.00
July 7	3.34
14	3.52
28	2.84
Aug. 4	3.00
11	3.74
18	4.01
25	4.51
Sept. 8	5.33
15	5.30
29	5.76
Oct. 6	6.24
13	6.60
20	6.93
27	7.26
Nov. 9	7.80
17	8.12
Dec. 1	8.67
8	8.96
15	9.30

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-13ad1.--Continued	
Mar. 2, 1961	10.35
30	10.40
May 1	9.70
June 1	4.49
July 3	2.32
Aug. 3	3.36
31	4.20
Oct. 5	6.48
Nov. 6	7.77
Dec. 7	9.15
Jan. 3, 1962	9.70
Feb. 1	10.02
Mar. 1	10.02
Apr. 3	9.44
May 2	7.07
June 4	3.70
July 31	2.88
Aug. 28	4.37
Oct. 1	5.96
Nov. 5	7.57
Dec. 4	8.22
Jan. 2, 1963	8.84
Feb. 27	8.64
Apr. 1	8.50
B13-20-14ac.	
Apr. 21, 1959	19.60
27	19.72
May 4	19.42
11	18.88
20	17.72
25	18.09
June 1	16.82
8	14.42
15	11.60
22	9.00
29	8.74
July 6	8.81
13	9.27
20	9.08
27	9.40
Aug. 3	8.77
10	8.92
17	9.36
24	8.86
31	9.51

Date	Water level
B13-20-14ac.--Continued	
Sept. 7, 1959	10.52
14	11.03
21	11.09
28	11.18
Oct. 5	11.58
12	12.80
19	13.66
26	14.46
Nov. 2	14.79
9	15.12
16	15.52
23	15.99
30	16.07
Dec. 7	16.43
14	16.76
21	17.02
29	17.33
Jan. 4, 1960	17.54
11	17.77
18	18.01
25	18.22
Feb. 1	18.43
8	18.62
15	18.82
22	19.01
29	19.20
Mar. 7	19.40
14	19.57
21	19.13
28	19.13
Apr. 4	19.33
11	18.10
18	17.74
25	18.28
May 2	18.54
9	18.33
16	17.38
23	17.96
30	17.54
June 6	15.21
13	14.16
20	13.65
27	13.02
July 4	12.02
11	11.67
18	11.54
25	11.31

Date	Water level
B13-20-14ac.--Continued	
Aug. 1, 1960	10.66
8	10.04
15	10.44
22	10.33
29	10.06
Sept. 8	11.47
12	11.53
19	11.46
26	11.53
Oct. 3	11.26
10	12.35
17	13.25
21	13.87
Nov. 9	15.62
14	15.96
21	16.30
28	16.60
Dec. 5	16.98
11	17.40
19	17.89
26	18.22
Jan. 2, 1961	18.55
7	18.76
Feb. 6	19.79
13	19.50
20	19.75
27	19.96
Mar. 6	20.14
13	20.30
20	20.45
27	20.59
Apr. 3	20.71
10	20.83
17	20.92
24	21.02
May 1	21.14
8	21.19
15	21.22
22	21.22
29	19.36
June 5	16.80
12	13.59
19	13.41
26	12.39

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-14ac.--Continued	
July 3, 1961	11.65
10	11.42
17	11.18
24	11.05
31	10.58
Aug. 9	9.78
14	9.50
21	9.62
28	9.85
Sept. 4	9.65
11	9.68
18	10.17
Oct. 9	12.92
16	13.70
23	14.34
27	14.69
Nov. 6	15.27
13	15.85
Dec. 7	17.24
18	17.49
25	17.92
Jan. 1, 1962	18.31
8	18.65
15	18.94
31	19.50
Feb. 5	19.62
12	19.75
19	19.24
26	19.48
Mar. 5	19.72
12	19.86
19	19.87
26	19.29
Apr. 2	19.36
9	19.52
16	19.66
23	18.44
30	17.69
May 7	18.45
14	18.48
21	18.26
28	16.86
June 4	16.10
11	15.51
18	13.96
25	13.29

Date	Water level
B13-20-14ac.--Continued	
July 2, 1962	13.52
16	12.04
23	11.88
30	11.00
Aug. 6	10.35
13	9.76
20	9.98
27	10.83
Sept. 3	10.49
10	10.74
17	11.05
24	11.27
Oct. 3	12.13
Nov. 5	15.59
12	15.79
19	16.01
26	16.28
Dec. 3	16.76
10	16.98
17	17.28
24	17.67
31	17.99
Jan. 1, 1963	18.04
Feb. 4	19.23
Mar. 1	19.38
Apr. 1	19.83
B13-20-14ad.	
Apr. 30, 1958	19.53
May 8	19.11
15	18.13
26	17.40
29	16.18
June 5	15.89
19	15.69
27	15.90
July 3	16.10
10	16.32
17	16.38
24	16.39
31	16.42
Aug. 7	16.20
14	16.36
21	16.62
28	16.80

Date	Water level
B13-20-14ad.--Continued	
Sept. 4, 1958	16.89
11	16.81
18	16.72
24	16.95
Oct. 1	17.36
9	17.65
16	17.95
23	18.09
29	18.22
Nov. 6	18.35
13	18.40
28	18.76
Dec. 11	18.94
18	19.03
24	19.17
31	19.24
Jan. 8, 1959	19.41
15	19.44
22	19.68
29	19.47
Feb. 5	19.55
12	19.75
19	19.84
26	19.90
Mar. 5	19.74
12	19.70
19	19.51
26	19.46
Apr. 2	19.47
9	19.13
16	19.01
23	18.87
30	18.73
May 7	18.39
13	18.29
20	17.77
28	17.55
June 4	17.04
11	15.72
July 2	15.36
9	15.59
16	15.80
23	15.56
30	15.77
Aug. 6	15.77
13	15.93
20	15.91
27	16.18

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-14ad.--Continued	
Sept. 3, 1959	16.52
10	16.71
17	16.71
24	16.86
Oct. 1	17.00
9	17.23
15	17.29
22	17.41
29	17.38
Nov. 5	17.50
20	17.86
27	17.78
Dec. 3	17.99
10	18.19
17	18.31
24	18.46
31	18.62
Jan. 7, 1960	18.72
14	18.87
21	19.08
28	19.03
Feb. 4	19.17
11	19.26
18	19.40
25	19.55
Mar. 3	19.80
10	19.80
17	19.84
24	19.23
31	19.16
Apr. 7	18.97
14	18.59
21	18.57
28	18.61
May 5	18.55
12	18.29
21	17.99
26	18.00
June 2	17.70
16	16.39
23	16.32
30	16.33
July 7	15.85
14	16.46
28	16.20
Aug. 4	16.20
11	16.51
18	16.60
25	16.80

Date	Water level
B13-20-14ad.--Continued	
Sept. 8, 1960	17.16
15	17.14
29	17.30
Oct. 6	17.59
13	17.82
20	18.02
27	18.24
Nov. 9	18.57
17	18.75
Dec. 1	19.07
8	19.30
15	19.50
Feb. 2, 1961	20.27
Mar. 2	20.21
30	20.20
May 1	19.79
June 1	16.86
July 3	15.92
Aug. 3	16.32
31	16.55
Oct. 5	17.77
Nov. 6	18.56
Dec. 7	19.43
Jan. 3, 1962	19.69
Feb. 1	19.89
Mar. 1	20.05
Apr. 3	19.56
May 2	18.35
June 4	16.50
July 31	16.05
Aug. 28	16.67
Oct. 1	17.45
Nov. 5	18.44
Dec. 4	18.87
Jan. 2, 1963	19.28
Feb. 4	19.36
27	19.25
Apr. 1	19.20
B13-20-14bb1.	
June 5, 1958	85.03
19	84.77
27	84.92
July 3	85.81
10	85.31
17	86.06
24	86.17
31	85.40

Date	Water level
B13-20-14bb1.--Continued	
Aug. 7, 1958	85.83
14	85.34
21	86.26
28	86.57
Sept. 4	86.58
Oct. 1	86.75
9	86.95
16	87.23
23	87.37
29	87.49
Nov. 6	87.68
13	87.70
28	88.10
Dec. 11	88.27
18	88.38
24	88.52
31	88.61
Jan 8, 1959	88.74
15	88.73
22	89.01
29	88.79
Feb. 5	88.90
12	89.11
19	89.18
26	89.25
Mar. 5	89.10
12	89.07
19	88.82
26	88.82
Apr. 2	88.77
9	88.51
16	88.38
23	88.26
30	88.14
May 7	87.70
13	87.58
20	86.94
28	86.58
June 4	86.12
11	84.76
July 23	84.35
30	84.50
Aug. 13	84.70
20	84.45
27	85.27
Sept. 3	85.04
17	85.30
24	85.51

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B13-20-14bb1.--Continued	
Oct. 1, 1959	85.69
15	85.98
22	86.05
29	85.99
Nov. 5	86.19
20	86.46
Dec. 3	86.75
10	86.97
17	87.09
24	87.30
31	87.46
Jan. 7, 1960	87.50
14	87.66
21	87.91
28	87.86
Feb. 4	88.08
11	88.18
18	88.59
25	88.46
Mar. 3	88.67
10	88.66
17	88.72
24	88.10
31	88.05
Apr. 7	87.89
14	87.51
21	87.49
28	87.53
May 5	87.49
12	87.20
21	86.95
July 14	85.40
28	84.99
Aug. 11	85.30
Sept. 29	86.18
Oct. 6	86.50
13	86.75
20	87.00
27	87.23
Nov. 9	87.60
17	87.79
Dec. 1	88.14
8	88.37
15	88.57
Feb. 2, 1961	89.35
Mar. 2	89.38
30	89.38

Date	Water level
B13-20-14bb1.--Continued	
May 1, 1961	89.06
June 1	85.92
July 3	84.67
Aug. 3	85.16
31	85.41
Oct. 5	86.78
Nov. 6	87.64
Dec. 7	88.55
Jan. 3, 1962	88.79
Feb. 1	89.09
Mar. 1	89.20
Apr. 3	88.77
May 2	87.57
June 4	85.40
July 31	84.68
Aug. 28	85.33
Oct. 1	86.34
Nov. 5	87.43
Dec. 4	87.93
Jan. 2, 1963	88.39
Feb. 4	88.58
Feb. 27	88.50
Apr. 1	88.41
B13-20-26ab.	
Oct. 11, 1961	9.31
Nov. 6	9.62
Dec. 7	10.00
Jan. 3, 1962	10.50
Mar. 1	10.46
Apr. 3	9.93
May 2	8.03
June 4	5.95
July 31	8.10
Aug. 28	8.32
Oct. 1	9.05
Nov. 5	9.93
Dec. 4	10.03
Jan. 2, 1963	10.13
Feb. 4	10.05
27	9.68
Apr. 1	9.58
B14-20-9dd.	
Aug. 31, 1961	47.50
Oct. 5	54.30
Nov. 6	56.24

Date	Water level
B14-20-9dd.--Continued	
Jan. 3, 1962	63.45
Mar. 1	62.34
Apr. 3	58.30
May 2	38.35
June 4	35.40
July 31	42.27
Aug. 28	45.43
Oct. 1	50.00
B14-20-31bb.	
June 5, 1958	11.16
19	11.16
27	10.78
July 3	10.96
10	10.36
17	10.81
24	10.75
31	9.73
Aug. 7	10.17
14	10.34
21	10.47
28	10.34
Sept. 4	10.82
11	10.43
18	9.81
24	10.48
Oct. 1	11.34
9	11.24
16	11.54
23	11.73
29	11.89
Nov. 6	12.35
13	12.64
Dec. 31	13.36
B14-20-33cc.	
Dec. 18, 1958	6.58
24	6.59
31	6.70
Jan. 8, 1959	6.79
15	6.89
22	7.00
29	6.68
Feb. 5	6.65
12	6.86
19	7.01
26	7.12

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-20-33cc.--Continued	
Mar. 5, 1959	6.98
12	6.59
19	5.68
26	5.32
Apr. 2	5.62
9	5.95
16	6.18
23	6.30
30	6.53
May 7	6.59
13	6.55
20	6.13
28	5.89
June 4	5.64
11	5.02
18	4.00
25	2.64
July 2	1.51
9	0.68
16	1.48
23	2.72
30	2.07
Aug. 6	2.15
13	2.78
20	3.00
27	3.67
Sept. 3	3.88
10	3.82
17	3.86
24	4.04
Oct. 1	4.34
9	4.60
15	4.91
22	5.10
29	5.29
Nov. 5	5.77
20	6.08
27	6.10
Dec. 3	6.05
10	6.23
17	6.40
24	6.58
31	6.69
Jan. 7, 1960	6.81
14	6.98
21	7.08
28	7.12
B14-20-33cc.--Continued	
Feb. 4, 1960	7.18
11	7.20
18	7.27
25	7.29
Mar. 3	7.40
10	7.37
17	7.39
24	6.00
31	5.96
Apr. 7	6.17
14	6.24
21	6.39
28	6.52
May 5	6.65
12	6.72
21	6.55
26	6.38
June 2	5.01
16	2.60
23	1.65
30	1.25
July 7	2.04
14	3.36
28	3.18
Aug. 4	3.18
11	3.50
18	3.49
25	3.52
Sept. 8	4.22
15	4.76
29	3.73
Oct. 6	4.20
13	4.10
20	4.31
27	5.09
Nov. 9	5.95
17	6.31
Dec. 1	6.68
8	6.81
15	6.95
Feb. 2, 1961	7.52
Mar. 2	7.03
30	7.21
May 1	7.36
June 1	5.94
July 3	1.85
Aug. 3	1.90
31	2.85
B14-20-33cc.--Continued	
Oct. 5, 1961	5.04
Nov. 6	5.97
Dec. 7	6.78
Jan. 3, 1962	7.16
Feb. 1	7.40
Mar. 1	6.55
Apr. 3	5.50
May 2	6.50
June 4	5.42
July 31	2.36
Aug. 28	2.62
Oct. 1	3.67
Nov. 5	5.48
Dec. 4	6.50
Jan. 2, 1963	6.90
Feb. 27	6.86
Apr. 1	6.42
B14-20-35bb1.	
Aug. 8, 1961	58.75
Nov. 6	67.48
Dec. 7	68.64
Jan. 3, 1962	70.80
Feb. 1	69.58
Mar. 1	71.38
Apr. 3	70.05
May 2	65.55
June 4	58.38
July 31	56.73
Aug. 28	59.26
Oct. 1	61.14
Nov. 5	66.80
Dec. 4	68.37
Jan. 2, 1963	69.50
Feb. 27	71.24
Apr. 1	69.68
B14-21-13ab.	
Apr. 7, 1961	25.08
July 3	17.33
Aug. 3	14.46
31	14.07
Oct. 5	17.14
Nov. 6	19.43
Dec. 7	20.80
Jan. 3, 1962	23.56
Feb. 1	25.19
Mar. 1	26.10

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-21-13ab.--Continued	
Apr. 3, 1962	25.68
May 2	26.37
June 4	19.78
July 31	12.13
Aug. 28	9.75
Oct. 1	15.14
Nov. 5	19.00
Dec. 4	22.21
Jan. 2, 1963	23.53
Feb. 27	26.24
Apr. 1	dry
B14-21-13bb1.	
Apr. 28, 1958	20.44
May 5	20.54
12	20.58
19	20.47
26	19.42
June 2	17.42
9	15.83
16	14.57
23	14.43
30	14.23
July 7	13.74
14	12.82
21	12.43
28	12.20
Aug. 4	11.71
11	11.87
18	11.91
25	11.65
Sept. 1	11.25
8	11.79
15	11.90
22	11.83
29	12.52
Oct. 6	13.32
13	13.77
20	14.33
27	14.83
Nov. 3	15.37
10	15.78
17	16.13
24	16.42
Dec. 1	16.72
8	16.97
15	17.21
22	17.42
29	17.65

Date	Water level
B14-21-13bb1.--Continued	
Jan. 5, 1959	17.89
12	18.09
19	18.26
26	18.37
Feb. 2	18.45
9	18.60
16	18.79
23	18.97
Mar. 2	19.09
9	19.12
16	19.08
23	18.53
30	18.05
Apr. 6	18.05
13	18.05
20	18.08
27	18.12
May 4	18.12
11	18.10
18	18.07
25	17.95
June 1	17.86
8	17.63
15	17.10
22	15.82
29	14.21
July 6	13.01
13	12.55
20	12.37
27	11.82
Aug. 3	11.31
10	11.21
17	10.93
24	10.97
31	11.16
Sept. 7	10.96
14	10.79
21	11.05
28	11.67
Oct. 5	12.24
12	12.65
19	12.93
26	13.31
Nov. 2	13.66
9	13.98
16	14.33
23	14.71
30	14.92

Date	Water level
B14-21-13bb1.--Continued	
Dec. 7, 1959	15.17
14	15.50
21	15.79
28	16.16
Jan. 4, 1960	16.53
11	16.80
18	17.06
25	17.30
Feb. 1	17.45
8	17.65
15	17.85
22	18.02
29	18.24
Mar. 7	18.45
14	18.59
21	18.28
28	18.10
Apr. 4	18.11
11	18.14
18	18.16
25	18.21
May 5	18.34
9	18.36
16	18.35
23	18.25
30	17.93
June 6	17.42
13	16.13
20	14.49
27	13.29
July 7	12.15
Aug. 4	11.13
8	10.86
15	10.88
22	11.08
29	11.43
Sept. 5	11.90
12	12.27
19	12.25
26	12.41
Oct. 3	12.91
10	13.48
17	13.88
24	14.18
31	14.57
Nov. 7	14.97
14	15.41
21	15.82
28	16.18

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-21-13bb1.--Continued	
Dec. 5, 1960	16.53
12	16.87
19	17.23
26	17.49
Jan. 2, 1961	17.74
9	17.97
16	18.21
23	18.47
30	18.78
Feb. 6	18.99
13	18.73
20	18.93
27	19.12
Mar. 6	19.33
13	19.53
20	19.71
27	19.89
Apr. 3	20.07
10	20.18
17	20.29
24	20.47
May 1	20.62
8	20.74
15	20.79
22	19.60
29	19.17
June 5	18.03
12	16.26
19	14.91
July 3	13.53
10	12.98
17	12.93
24	13.11
31	12.38
Aug. 7	12.03
31	11.42
Oct. 5	15.10
9	15.66
16	16.02
23	16.35
30	16.60
Nov. 6	16.91
13	17.25
20	17.60
27	17.97
Dec. 4	18.31
11	18.69
18	19.04
25	19.31

Date	Water level
B14-21-13bb1.--Continued	
Jan. 1, 1962	19.52
8	19.80
15	20.06
22	20.31
29	20.52
Feb. 5	20.71
12	20.86
19	20.80
26	21.11
Mar. 5	21.27
12	21.28
19	21.28
26	20.54
Apr. 2	20.35
9	20.54
16	20.77
23	20.96
30	21.10
May 7	21.23
B14-21-13cd.	
Apr. 22, 1958	24.71
May 8	24.86
15	24.63
26	23.16
29	21.76
June 5	20.07
19	18.84
27	18.78
July 3	18.18
10	17.46
17	17.47
24	17.06
31	16.57
Aug. 7	15.64
14	14.83
21	14.47
28	14.86
Sept. 4	14.35
11	14.74
18	15.00
24	15.29
Oct. 1	15.80
9	16.33
16	16.77
23	17.37
29	17.87
Nov. 6	18.44
13	18.83
28	19.55

Date	Water level
B14-21-13cd.--Continued	
Dec. 11, 1958	20.09
18	20.35
24	20.56
31	20.77
Jan. 8, 1959	21.04
15	21.28
22	21.50
29	21.58
Feb. 5	21.66
12	21.82
19	22.00
26	22.22
Mar. 5	22.26
12	22.32
19	22.21
26	21.50
Apr. 2	21.25
9	21.19
16	21.13
23	21.11
30	21.22
May 7	21.17
13	21.20
20	21.03
28	20.88
June 4	20.70
11	18.78
25	15.43
July 2	14.00
9	14.37
16	13.09
23	12.68
30	10.93
Aug. 6	10.59
13	10.98
20	11.48
27	11.77
Sept. 3	11.99
10	12.48
17	12.57
24	12.94
Oct. 1	13.62
9	13.95
15	14.16
22	14.80
29	15.28

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-21-13cd.--Continued	
Nov. 5, 1959	15.61
27	17.25
Dec. 3	17.54
10	17.91
17	18.29
24	18.66
31	18.96
Jan. 7, 1960	19.41
14	19.62
21	20.27
28	20.18
Feb. 18	20.20
Mar. 3	21.44
Apr. 7	21.31
May 5	21.54
June 2	19.39
July 7	11.36
14	11.12
Aug. 4	10.07
Sept. 8	13.60
Oct. 6	16.43
Nov. 9	18.67
Dec. 1	19.88
Feb. 2, 1961	23.48
Mar. 2	24.37
30	25.79
May 1	26.59
June 1	21.80
July 3	19.20
Aug. 3	16.03
31	17.54
Oct. 5	20.15
Nov. 6	22.55
Dec. 7	26.17
Jan. 3, 1962	26.55
Feb. 1	28.43
Mar. 1	29.50
Apr. 3	29.98
May 2	30.20
June 4	27.12
July 31	17.16
Aug. 17	17.50
28	17.44
Oct. 1	19.12
Nov. 5	22.53
Dec. 4	24.68

Date	Water level
B14-21-13cd.--Continued	
Jan 2, 1963	26.10
Feb. 4	27.80
27	28.92
Apr. 1	29.88
B14-21-13dc2.	
Oct. 5, 1961	31.70
Nov. 6	38.08
Dec. 7	40.10
Jan. 3, 1962	39.48
Feb. 1	41.62
Mar. 1	41.27
Apr. 3	41.85
May 2	41.58
June 4	39.70
July 31	33.15
Aug. 17	32.89
28	33.15
Oct. 1	34.53
Nov. 5	36.53
Dec. 4	35.38
Jan. 2, 1963	39.67
Feb. 27	41.65
Apr. 1	41.50
B14-21-14da.	
Apr. 6, 1961	18.94
Oct. 5	16.03
Nov. 6	17.73
Dec. 7	18.67
Jan. 3, 1962	18.40
Feb. 1	19.26
Mar. 1	20.13
Apr. 3	19.82
May 2	20.42
June 4	19.02
July 31	15.75
Aug. 28	15.80
Oct. 1	15.87
Nov. 5	17.49
Dec. 4	18.50
Jan. 2, 1963	19.32
Apr. 1	20.87

Date	Water level
B14-21-23aa.	
Apr. 7, 1961	20.38
Oct. 5	19.65
Nov. 6	21.44
Dec. 7	23.38
Jan. 3, 1962	23.14
Feb. 1	24.07
Mar. 1	24.38
Apr. 3	23.93
May 2	23.14
June 4	21.43
July 31	19.36
Aug. 28	19.92
Oct. 1	20.26
Nov. 5	21.45
Dec. 4	21.40
Jan. 2, 1963	22.85
Feb. 4	22.23
27	23.90
Apr. 1	24.10
B14-21-24ac2.	
July 11, 1962	15.78
16	15.58
25	14.59
31	15.03
Aug. 7	15.25
13	15.26
20	15.70
27	16.23
Sept. 3	16.68
10	16.90
17	17.19
24	17.51
Oct. 4	18.15
8	18.46
15	18.91
22	19.43
29	19.96
Nov. 4	20.37
12	20.87
19	21.34
26	21.83
Dec. 3	22.27
10	22.67
17	23.05
24	23.45
31	23.72

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-21-24bal.	
July 9, 1959	14.56
16	14.26
23	13.85
Aug. 6	13.00
13	13.40
27	13.53
Sept. 3	13.44
10	13.69
17	14.00
24	14.40
Oct. 1	14.48
15	14.83
22	15.47
29	15.86
Nov. 5	16.01
30	18.53
Dec. 3	18.69
10	19.11
17	19.54
24	19.86
Jan. 7, 1960	20.55
14	20.91
21	21.30
28	21.35
Feb. 4	21.50
11	21.93
18	22.25
25	22.48
Mar. 3	22.79
10	22.97
17	23.22
24	22.93
31	22.61
Apr. 7	22.46
14	22.25
21	22.43
28	22.54
May 5	22.61
12	22.61
21	22.45
26	22.29
June 2	20.03
16	15.45
23	15.44
30	14.64
July 7	12.93
14	12.10
28	12.34

Date	Water level
B14-21-24bal.--Continued	
Aug. 4, 1960	12.42
11	13.22
18	14.30
Sept. 8	16.27
15	17.44
29	18.50
Oct. 6	18.33
13	19.86
20	20.24
27	20.31
Nov. 9	20.06
17	20.41
Dec. 1	21.13
8	21.53
15	22.42
Feb. 2, 1961	27.56
Mar. 2	dry
July 3	25.47
Aug. 3	19.67
31	22.05
Oct. 5	25.89
Nov. 6	dry
July 16, 1962	27.26
23	25.57
31	25.14
Aug. 7	24.97
17	24.50
28	25.97
Oct. 1	26.51
Nov. 5	31.97
Dec. 4	32.96
Jan. 2, 1963	34.93
Feb. 4	36.48
27	dry
B14-21-24db.	
May 26, 1958	19.69
29	17.43
June 5	15.94
19	13.37
27	15.68
July 3	16.08
10	16.24
17	16.60
24	15.22
31	13.60

Date	Water level
B14-21-24db.--Continued	
Aug. 7, 1958	12.27
14	12.62
21	13.88
28	14.33
Sept. 4	14.24
11	12.25
18	13.62
24	13.79
Oct. 1	14.84
9	15.08
16	16.18
23	17.12
29	17.94
Nov. 6	18.42
13	18.86
28	19.97
Dec. 11	20.39
18	20.65
24	20.88
31	21.11
Jan. 8, 1959	21.36
15	21.70
22	21.76
29	21.63
Feb. 5	21.52
12	21.73
19	21.96
26	22.20
Mar. 5	21.94
12	22.02
19	21.23
26	20.24
Apr. 2	19.50
9	20.31
16	20.42
23	20.49
30	20.63
May 7	20.28
13	20.41
20	19.15
28	19.64
June 4	19.35
11	17.86
18	12.47
25	10.59

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-21-24db.--Continued	
July 2, 1959	10.33
9	10.98
16	9.12
23	9.44
30	7.48
Aug. 6	9.84
13	10.66
20	10.33
27	10.54
Sept. 3	10.90
10	11.19
17	11.77
24	12.62
Oct. 1	12.95
9	11.82
15	13.57
22	14.33
29	14.82
Nov. 5	15.06
20	15.99
27	16.20
Dec. 3	17.32
10	17.63
17	18.00
24	18.36
31	18.83
Jan. 7, 1960	19.45
14	19.72
21	20.25
28	20.45
Feb. 4	20.76
11	21.22
18	21.36
25	21.60
Mar. 3	21.84
10	22.53
17	22.28
24	21.11
31	20.81
Apr. 7	20.87
14	21.02
21	20.92
28	21.11
May 5	21.30
12	21.40
21	21.03
26	20.31

Date	Water level
B14-21-24db.--Continued	
June 2, 1960	17.09
16	11.99
23	10.22
30	10.83
July 7	9.44
14	8.50
28	10.55
Aug. 4	10.62
11	10.62
18	11.61
25	12.61
Sept. 8	13.90
15	14.47
29	15.69
Oct. 6	16.26
13	16.90
20	17.43
27	17.94
Nov. 9	18.84
17	19.44
Dec. 1	20.34
8	20.67
15	21.07
Feb. 2, 1961	dry
Mar. 17	26.79
30	27.49
Apr. 20	27.68
May 1	28.29
June 1	26.16
July 3	19.30
Aug. 3	18.35
Aug. 31	18.78
Oct. 5	21.30
Nov. 6	24.48
Dec. 7	28.10
Jan. 3, 1962	28.48
Feb. 1	30.05
Mar. 1	30.24
Apr. 3	28.88
May 2	29.34
June 4	23.37
July 16	17.84
31	17.89
Aug. 7	17.24
17	17.30
28	18.61
Oct. 1	21.50

Date	Water level
B14-21-24db.--Continued	
Nov. 5, 1962	24.69
Dec. 4	26.37
Jan. 2, 1963	28.04
Feb. 4	29.02
27	30.02
Apr. 1	30.08
B14-21-25ab.	
May 8, 1958	14.63
15	13.68
26	10.96
29	10.41
June 5	9.78
19	9.25
27	9.42
July 3	9.55
10	9.70
17	9.94
24	9.97
31	9.51
Aug. 7	8.90
14	8.65
21	8.38
28	8.14
Sept. 4	8.05
11	8.05
18	8.49
24	8.93
Oct. 1	9.49
9	10.47
16	10.77
23	11.07
29	11.33
Nov. 6	11.95
13	12.27
28	13.02
Dec. 11	13.26
18	13.33
24	13.46
31	13.67
Jan. 8, 1959	13.92
15	13.92
22	14.11
29	13.16
Feb. 5	13.30
12	13.71
19	13.94
26	14.16

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B14-21-25ab.--Continued	
Mar. 5, 1959	13.82
12	13.20
19	11.92
26	10.89
Apr. 2	11.40
9	11.56
16	11.81
23	11.91
30	12.02
May 7	11.61
13	11.56
20	11.04
28	10.46
June 4	9.85
11	8.47
18	7.90
25	7.08
July 2	7.15
9	7.44
16	7.10
23	7.16
30	7.70
Aug. 6	7.95
13	8.10
20	7.84
27	8.34
Sept. 3	8.56
10	8.76
17	8.83
24	9.21
Oct. 1	9.55
9	9.96
15	9.71
22	9.99
29	9.76
Nov. 5	10.46
20	11.24
27	11.12
Dec. 3	11.48
10	11.89
17	12.24
24	12.52
31	12.81
Jan. 7, 1960	13.27
14	13.32
21	13.35
28	13.50
B14-21-25ab.--Continued	
Feb. 4, 1960	13.71
18	13.91
25	13.81
Mar. 3	14.28
10	14.43
17	14.84
24	11.75
31	11.64
Apr. 7	11.62
14	11.58
21	11.60
28	11.95
May 5	12.36
12	12.60
21	11.89
26	11.58
June 2	10.98
16	8.56
23	8.48
30	8.40
July 7	8.32
14	8.41
28	8.40
Aug. 4	8.16
11	8.08
18	8.57
25	9.22
Sept. 8	9.73
15	9.97
29	11.18
Oct. 6	11.62
13	11.78
20	12.05
27	12.22
Nov. 9	12.49
17	12.93
Dec. 1	13.36
8	13.56
15	13.92
Feb. 2, 1961	15.10
Mar. 2	14.35
30	15.07
May 1	15.28
June 1	12.50
July 3	9.89
Aug. 3	9.20
31	8.80
B14-21-25ab.--Continued	
Oct. 5, 1961	11.64
Nov. 6	13.28
Dec. 7	15.04
Jan. 3, 1962	15.67
Feb. 1	16.06
Mar. 1	14.92
Apr. 3	11.78
May 2	12.36
June 4	11.38
July 31	9.18
Aug. 28	9.94
Oct. 1	11.90
Nov. 5	12.50
Dec. 4	14.52
Jan. 2, 1963	15.22
Feb. 27	14.96
Apr. 1	14.64
B14-21-25da.	
Apr. 14, 1961	13.88
July 7	4.80
Aug. 3	4.29
31	4.70
Oct. 5	9.27
Nov. 6	11.57
Dec. 7	13.56
Jan. 3, 1962	14.08
Feb. 1	14.73
Mar. 1	12.72
Apr. 3	10.56
May 2	10.77
June 4	8.94
July 31	3.68
Aug. 28	5.18
Oct. 1	8.77
Nov. 5	11.73
Dec. 4	13.22
Jan. 2, 1963	13.95
Feb. 4	14.10
27	10.98
Apr. 1	13.28

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B15-21-34dal.	
June 29, 1959	12.85
July 2	12.80
9	12.59
16	12.32
23	11.82
Aug. 6	11.94
13	11.62
27	11.61
Sept. 3	11.89
10	12.11
17	12.33
24	12.69
Oct. 1	13.14
15	13.56
29	14.19
Dec. 3	14.81
10	14.98
17	15.16
24	15.34
31	15.45
Jan. 7, 1960	15.57
14	15.87
21	15.55
28	15.61
Feb. 4	15.84
11	15.92
18	15.97
25	16.02
Mar. 3	16.08
10	16.11
17	16.09
24	15.34
31	14.58
Apr. 7	13.75
14	14.59
21	15.33
28	14.82
May 5	14.53
12	14.11
21	14.35
26	14.75
June 2	14.93
16	14.17
23	13.72
30	13.65
July 7	13.26
14	12.79
28	12.16

Date	Water level
B15-21-34dal.--Continued	
Aug. 4, 1960	12.54
11	12.15
18	12.19
25	12.28
Sept. 8	12.28
15	12.60
29	13.23
Oct. 6	13.25
13	13.32
20	13.32
27	13.49
Nov. 9	14.59
17	14.96
Dec. 1	15.34
8	15.53
15	15.60
Feb. 2, 1961	16.24
Mar. 2	16.26
30	16.10
May 1	14.68
June 1	13.38
July 3	13.70
Aug. 3	13.08
31	12.17
Oct. 5	13.95
Nov. 6	15.29
Dec. 7	16.16
Jan. 3, 1962	16.22
Feb. 1	16.19
Mar. 1	19.46
Apr. 3	15.58
May 2	12.42
June 4	13.06
July 31	12.06
Aug. 28	12.13
Oct. 1	13.82
Nov. 5	15.20
Dec. 4	15.97
Jan. 2, 1963	16.28
Feb. 4	15.52
27	15.98
Apr. 1	15.55

Date	Water level
B15-22-25ca.	
June 29, 1959	14.54
July 2	14.31
9	13.97
16	13.88
23	14.10
Aug. 6	13.83
13	13.61
27	13.30
Sept. 3	13.50
10	14.00
17	14.20
24	14.41
Oct. 1	14.53
15	14.54
22	14.67
29	14.79
Nov. 5	14.89
Dec. 3	15.08
10	15.18
17	15.36
24	15.32
31	14.91
Jan. 7, 1960	15.53
14	15.60
21	15.66
28	15.73
Feb. 4	15.74
11	15.75
18	15.77
25	15.80
Mar. 3	15.83
10	15.86
17	15.87
24	15.21
31	14.99
Apr. 7	14.89
14	14.99
21	15.02
28	15.07
May 5	15.20
12	15.23
21	15.19
26	15.15
June 2	15.13
16	14.81
23	14.44
30	14.22

Table 3.--Water levels in observation wells in Missoula Valley, Montana, cont'd.
(In feet below land-surface datum.)

Date	Water level
B15-22-25ca.--Continued	
July 7, 1960	14.17
14	14.28
28	14.37
Aug. 4	14.40
11	14.38
18	14.43
25	14.42
Sept. 8	14.49
15	14.39
29	14.15
Oct. 6	14.00
13	14.06
20	14.04
27	14.16
Nov. 9	14.50
17	14.70
Dec. 1	14.91
8	15.12
15	15.25
Feb. 2, 1961	15.95
Mar. 2	15.70
30	15.87
May 1	16.02
June 1	15.29
July 3	14.87
Aug. 3	14.70
31	13.97
Oct. 5	14.37
Nov. 6	14.57
Dec. 7	14.97
Jan. 3, 1962	15.48
Feb. 1	15.73
Mar. 1	15.39
Apr. 3	14.67
May 2	15.12
June 4	14.90
July 31	13.94
Aug. 28	13.88
Oct. 1	14.40
Nov. 5	14.44
Dec. 4	15.22
Jan. 2, 1963	15.48
Feb. 27	15.45
Apr. 1	15.15

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FOR FURTHER INFORMATION, ADDRESS THE DIRECTOR, MONTANA BUREAU OF MINES AND GEOLOGY, MONTANA SCHOOL OF MINES, BUTTE.