HYDROLOGIC AND WATER-QUALITY DATA FOR SELECTED SITES, GRAND TETON NATIONAL PARK, WYOMING, SEPTEMBER 1988 THROUGH SEPTEMBER 1990

By H.W. Young, D.J. Parliman, M.L. Jones, and M.A.J. Stone

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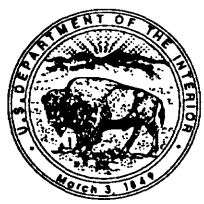

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CONVERSION FACTORS

For readers who prefer to use metric (International System) units, conversion factors for inch-pound units used in this report are listed below. Constituent concentrations are given in mg/L (milligrams per liter) or µg/L (micrograms per liter), which are equal to parts per million or parts per billion, respectively. Specific conductance is expressed as µS/cm (microsiemens per centimeter) at 25 degrees Celsius.

Multiply inch-pound unit	By	To obtain metric unit
acre	4,047	square meter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer

Temperature in °C (degrees Celsius) can be converted to °F (degrees Fahrenheit) as follows:

$$°F = (1.8)(°C) + 32$$

Water temperatures are reported to the nearest 0.5 °C.

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ABSTRACT

This report presents data collected from 13 observation and 10 production wells in and near Grand Teton National Park, Wyoming, from September 1988 through September 1990. The data include measurements of depth of well, depth to water, and analyses of selected water-quality characteristics. These data were collected as part of a continuing monitoring program being conducted in cooperation with the National Park Service.

INTRODUCTION

The purpose of this report is to present hydrologic and water-quality data collected from 13 observation and 10 production wells in and near Grand Teton National Park, Wyo. These data were collected during the period September 1988 through September 1990. Limited pre-1988 water-quality data from U.S. Geological Survey files also are included. Hydrologic and selected water-quality data collected during September 1988 were released in a report by Parliman and Young (1989).

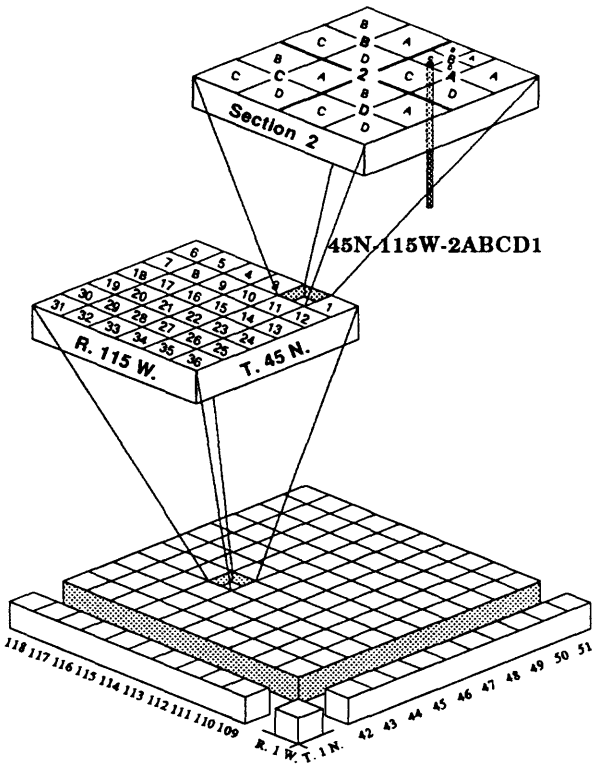
Observation wells are located near sewage-disposal ponds at Flagg Ranch, Colter Bay Village, and Signal Mountain and near a sewage drain field at Moose Village. Production wells are located near Flagg Ranch, Leeks Marina, Pilgrim Creek, Moran Junction, Jenny Lake, and Taggart Creek. Data collected at each well include depth of well, depth to water, specific conductance, pH, water temperature, and concentrations of total alkalinity, dissolved chloride, and dissolved nitrite plus nitrate as nitrogen. Water samples were collected from selected sites and were analyzed for common cations, anions, nutrients, and trace elements by the National Water Quality Laboratory in Arvada, Colo. Data presented in this report are the result of a cooperative effort by the U.S. Geological Survey and the National Park Service.

Locations of all inventoried wells are shown in figure 1. Locations of wells near sewage-disposal sites at Flagg Ranch, Colter Bay Village, Signal Mountain, and Moose Village are shown in figures 2, 4, 6, and 8, respectively. Depth to water and selected water-quality characteristics for observation wells at Flagg Ranch, Colter Bay Village, Signal Mountain, and Moose Village are shown in figures 3, 5, 7, and 9, respectively. All hydrologic measurements and water-quality data for inventoried wells are shown in table 1 (back of report).

WELL-NUMBERING SYSTEM

The well-numbering system used by the U.S. Geological Survey in Wyoming indicates the location of wells within the official rectangular subdivision of public land, with reference to the sixth Principal base line and Meridian. The first two segments of the number designate the township (north or south) and range (east or west). The third segment gives the section number; four letters, which indicate the $^1/_4$ section (160-acre tract), $^1/_4$-$^1/_4$ section (40-acre tract), $^1/_4$-$^1/_4$-$^1/_4$ section (10-acre tract), and $^1/_4$-$^1/_4$-$^1/_4$-$^1/_4$ section ($2^1/_2$-acre tract); and serial number of the well within the tract.

Quarter sections are designated by the letters A, B, C, and D in counterclockwise order from the northeast quarter of each section. Forty-acre, 10-acre, and $2^1/_2$-acre tracts within each quarter section are lettered in the same manner. Well 45N-115W-2ABCD1 (example below) is in the $SE^1/_4SW^1/_4NW^1/_4NE^1/_4$ sec. 2, T. 45 N., R. 115 W., and was the first well inventoried in that tract.



REFERENCE

Parliman, D.J., and Young, H.W., 1989, Ground-water data from selected sites, Grand Teton National Park, Wyoming: U.S. Geological Survey Open-File Report 89-51, compiled from maps of various scales.

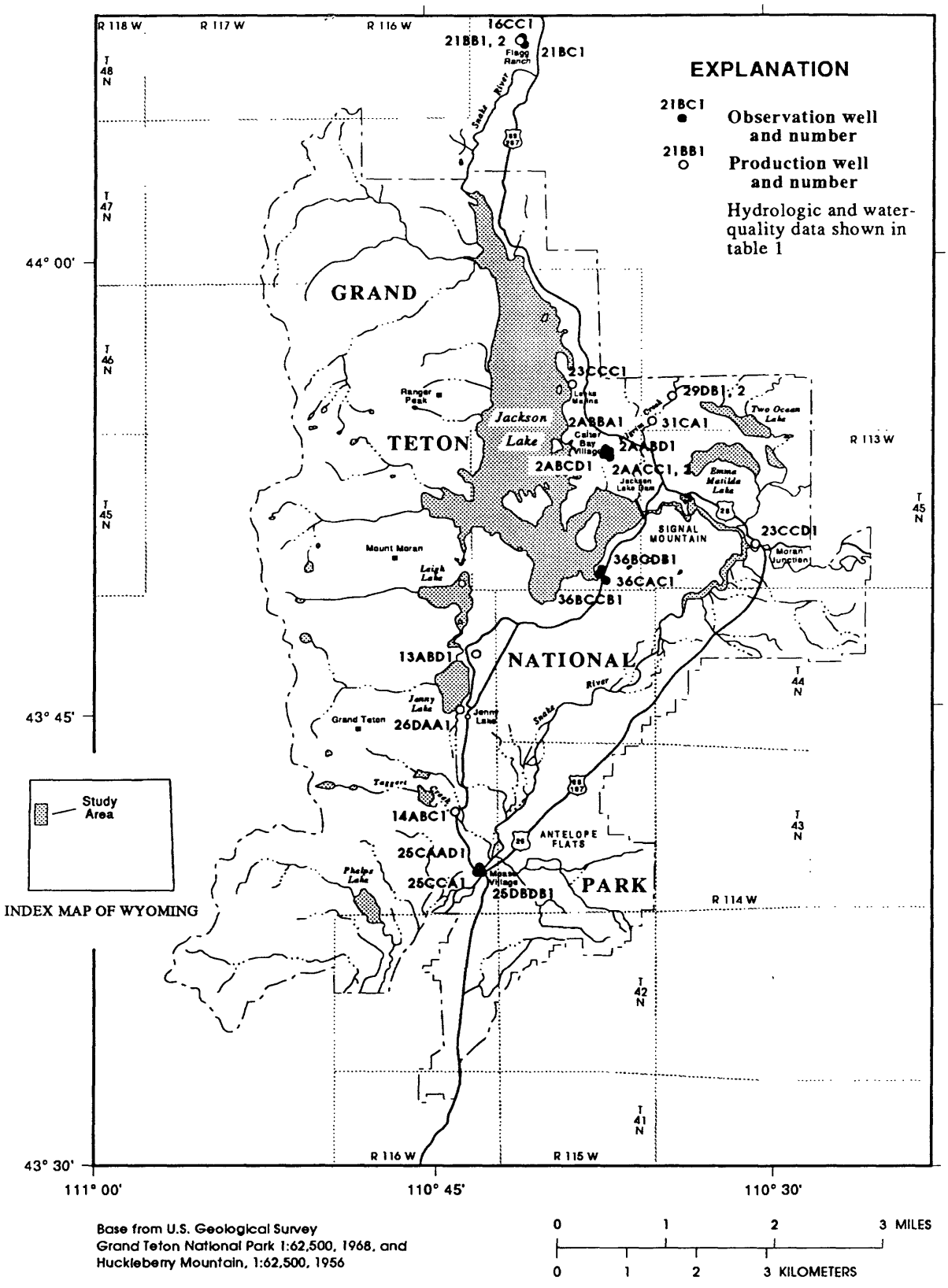


Figure 1.—Study area and locations of inventoried wells.

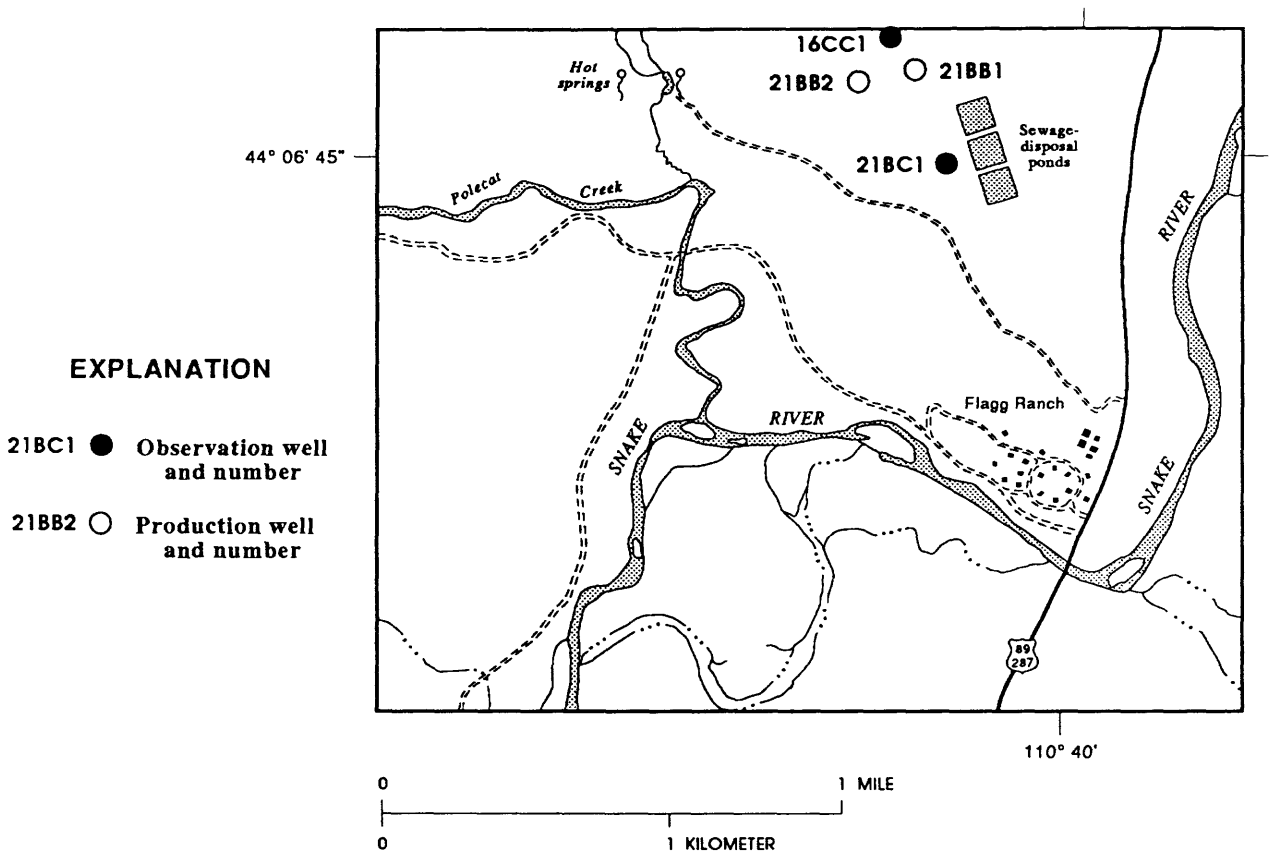


Figure 2.—Locations of observation and production wells at Flagg Ranch.

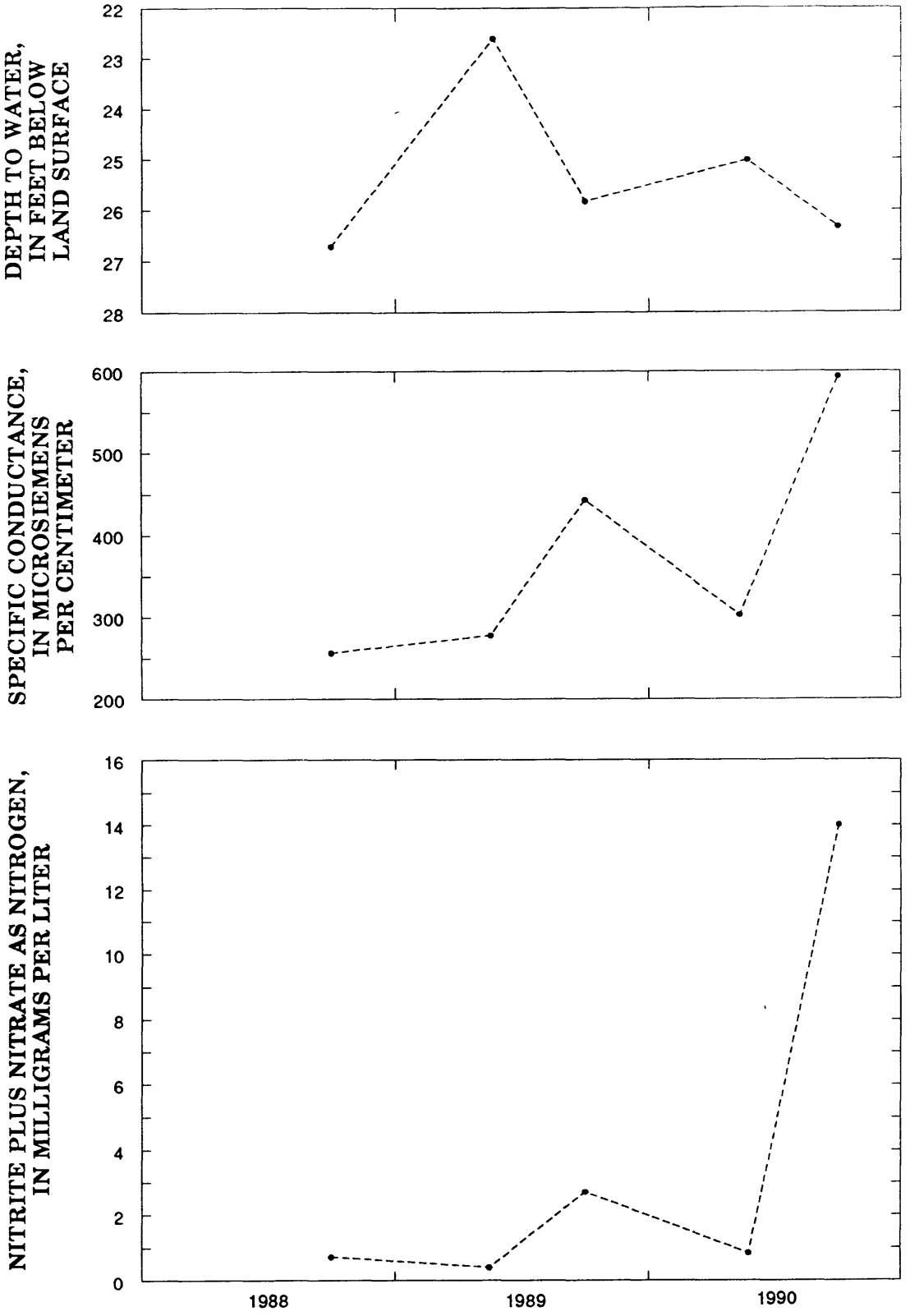


Figure 3.—Depth to water, specific conductance, and nitrite plus nitrate as nitrogen concentrations for well 48N-115W-21BC1.

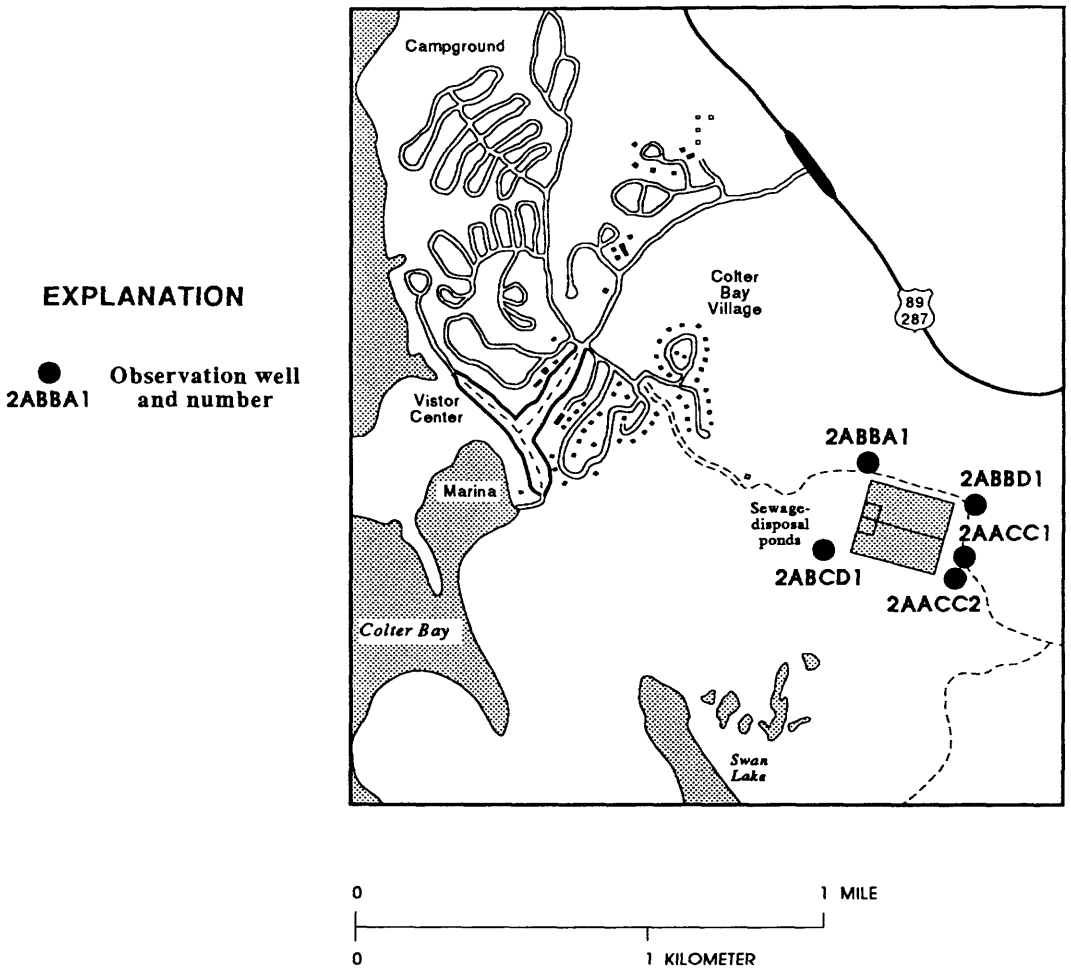


Figure 4.—Locations of observation wells at Colter Bay Village.

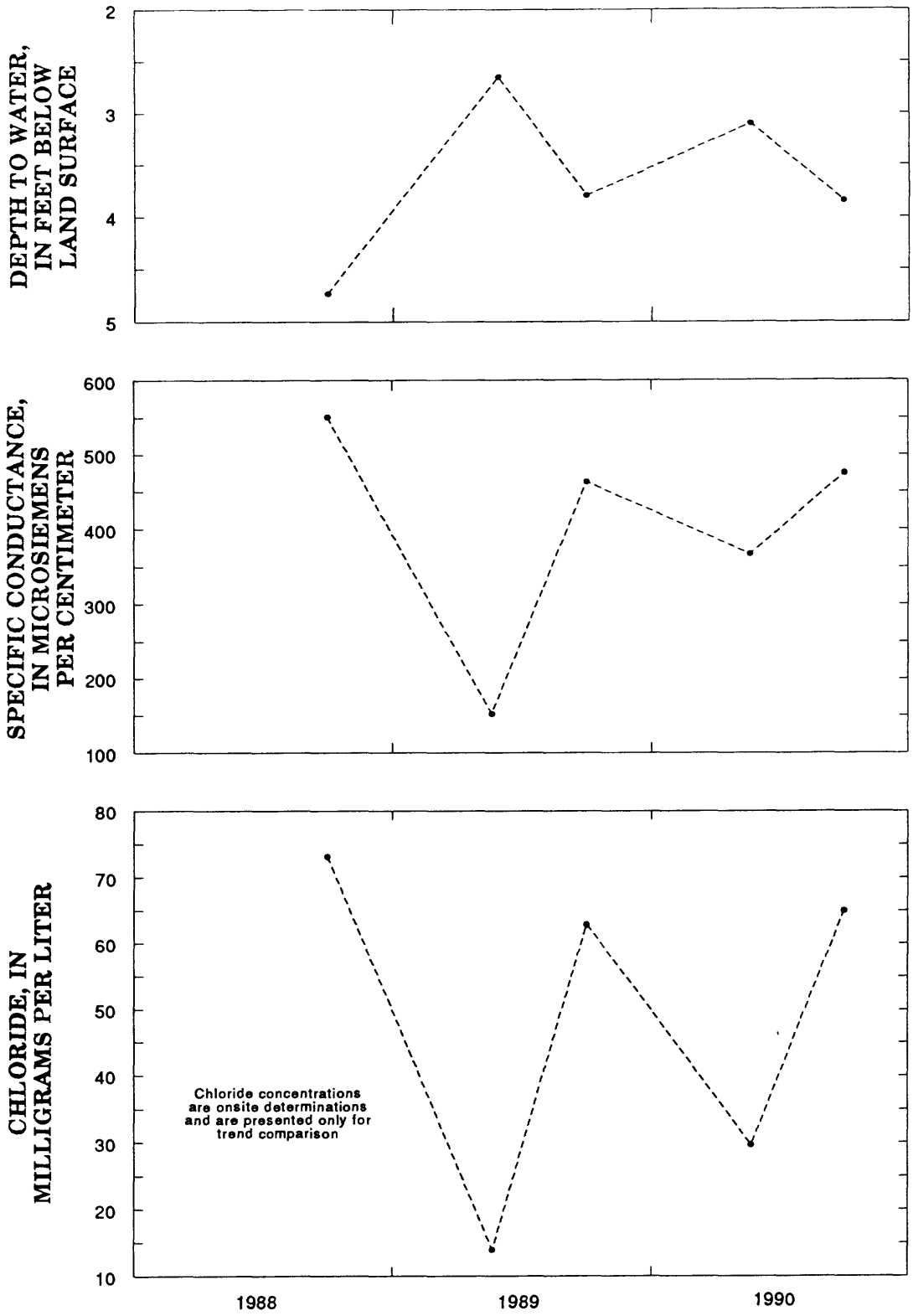


Figure 5.—Depth to water, specific conductance, and chloride concentrations for well 45N-115W-2ABCD1.

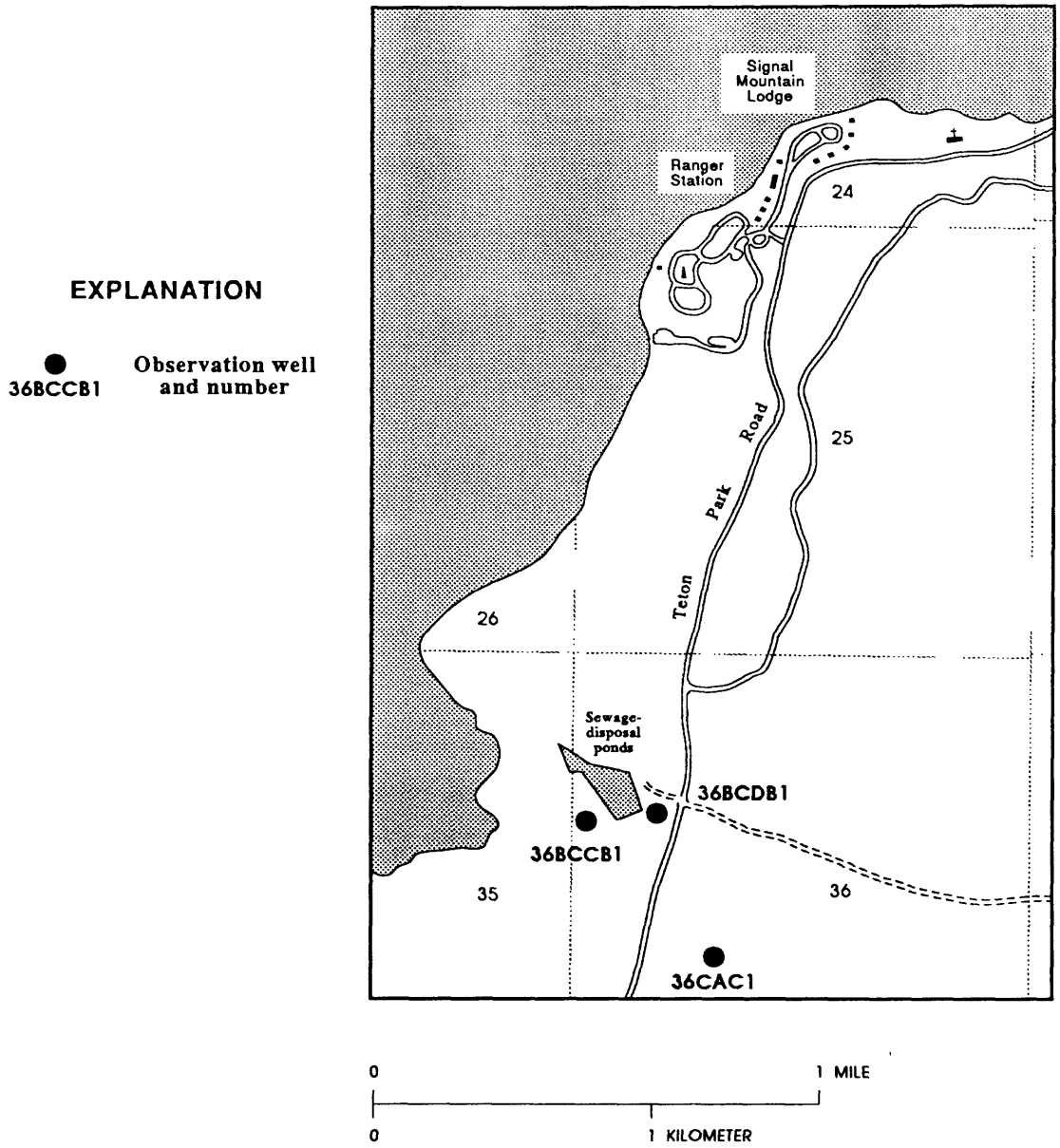


Figure 6.—Locations of observation wells at Signal Mountain.

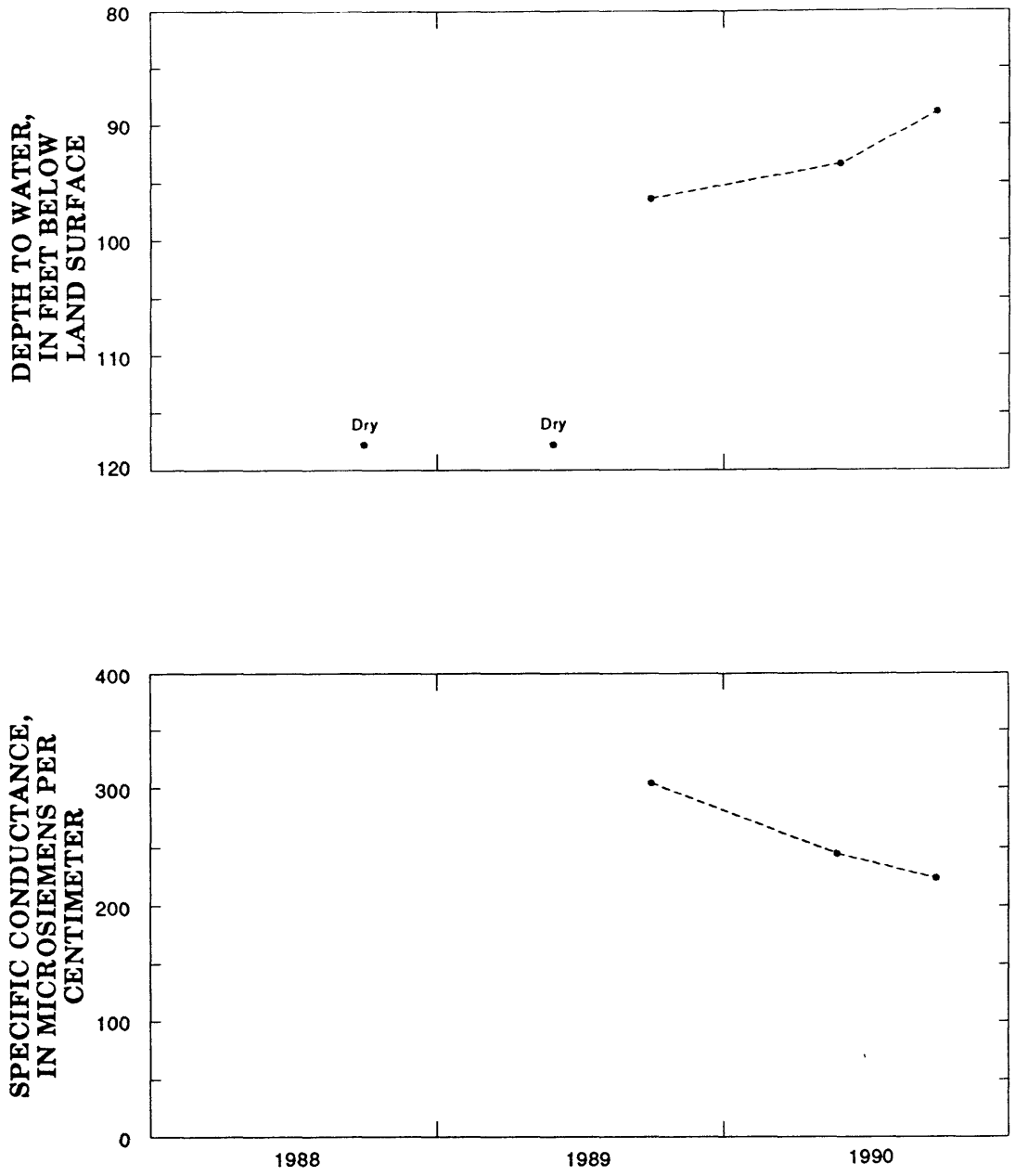


Figure 7.—Depth to water and specific conductance for well 45N-115W-36BCCB1.

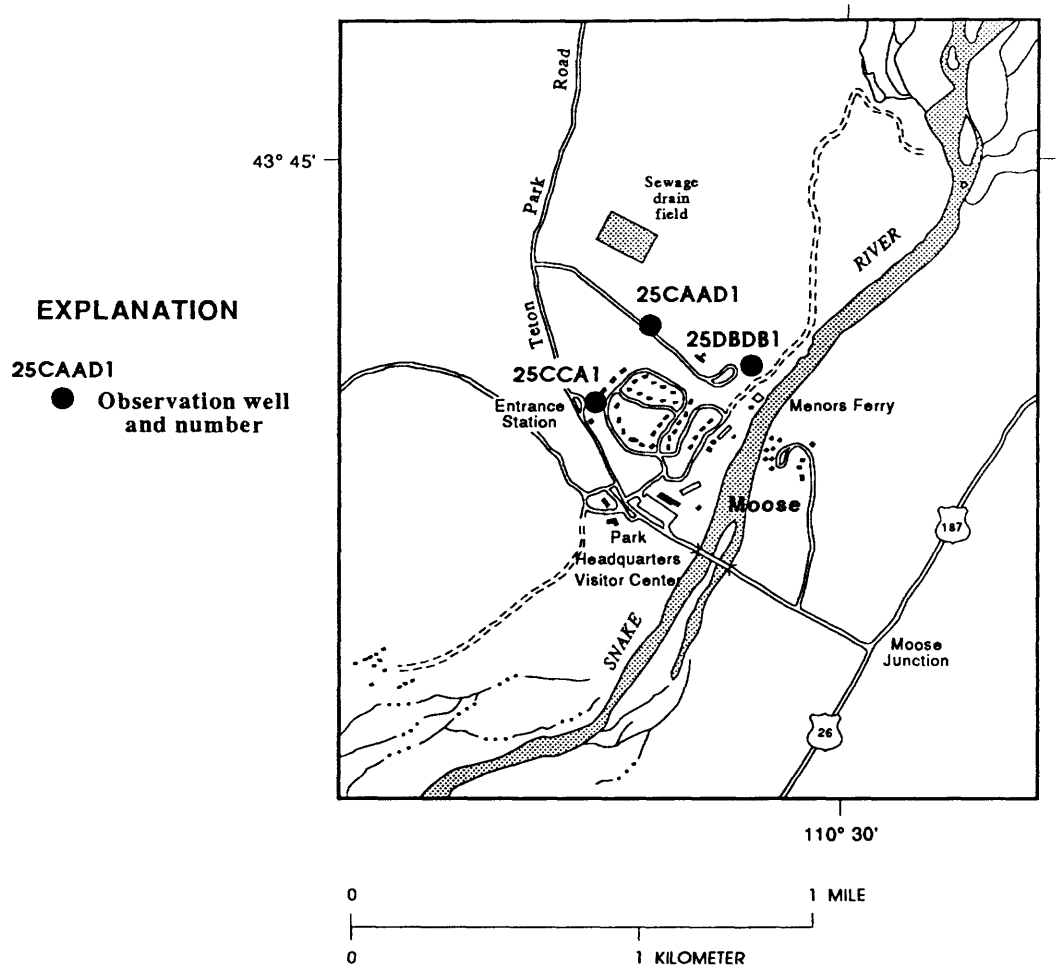


Figure 8.—Locations of observation wells at Moose Village.

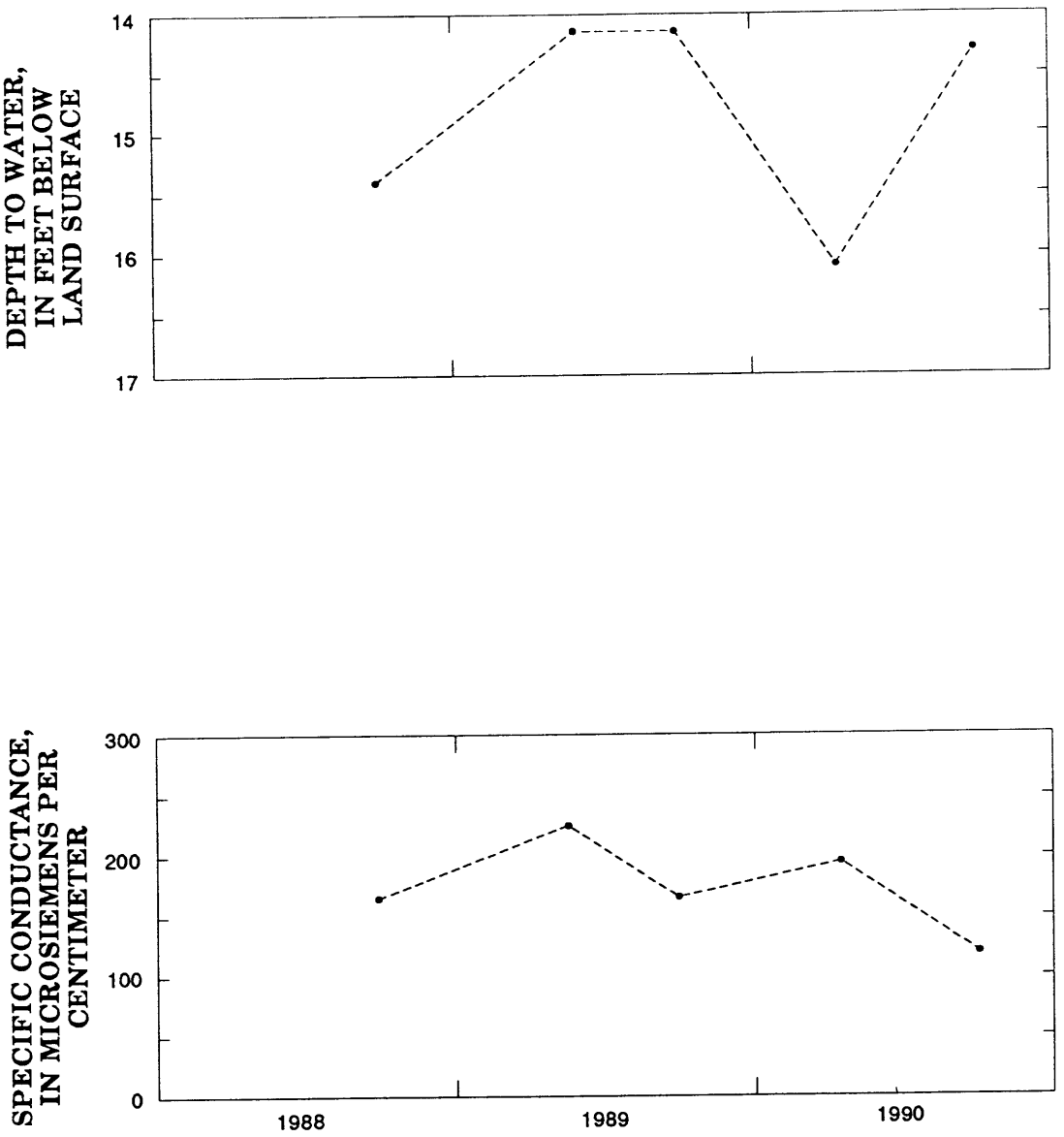


Figure 9.—Depth to water and specific conductance for well 43N-116W-25DBDB1.

Table 1.—*Hydrologic and water-quality data for inventoried wells*

[°C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; —, no data available; *, production well; P, pumping; a, chlorinated sample from storage tank; b, bailed sample; c, chlorinated sample; <, less than; µg/L, micrograms per liter]

Well No.	Date sampled	Total depth of well (feet)	Water level (feet below land surface)	Water temperature (°C)	Specific conductance (µS/cm)	pH (standard units)	Alkalinity, total (mg/L as $CaCO_3$)	Solids, sum of constituents, dissolved (mg/L)	Hardness, total (mg/L as $CaCO_3$)	Hardness, noncarbonate, total field (mg/L as $CaCO_3$)
48N-115W-16CC1	6- 2-89	27.15	21.50	11.0	299	7.6	156	—	—	—
16CC1	9- 8-89	27.15	22.58	—	—	—	—	—	—	—
16CC1	6- 2-90	27.15	24.13	—	—	—	—	—	—	—
16CC1	9- 5-90	27.15	24.06	—	—	—	—	—	—	—
21BB1*	6- 2-89	—	6.81 P	15.0	468	7.9	—	—	—	—
21BB1	9- 8-89	—	8.11	—	—	—	—	—	—	—
21BB1	6- 2-90	—	30.72	16.0	401	7.8	177	—	—	—
21BB1	9- 6-90	—	9.20	18.0	470	7.8	200	—	—	—
21BB2*	6- 2-89	—	3.28	—	—	—	—	—	—	—
21BB2	9- 8-89	—	4.93	—	—	—	—	—	—	—
21BB2	6- 2-90	—	6.61	—	—	—	—	—	—	—
21BB2	9- 6-90	—	6.84	—	—	—	—	—	—	—
21BC1	9- 7-88	37.35	26.70	7.0	259	7.7	131	—	—	—
21BC1	6- 2-89	37.35	—	7.0	277	7.8	140	—	—	—
21BC1	9- 8-89	37.35	25.84	7.0	445	7.6	188	266	220	—
21BC1	6- 2-90	37.35	24.95	7.5	304	7.9	157	—	—	—
21BC1	9- 5-90	37.35	26.05	7.5	593	7.3	202	358	270	—
46N-115W-23CCC1*	6- 2-89	—	71.09	6.0	63	6.4	27	—	—	—
23CCC1	9- 8-89	—	67.94	6.5	126	6.5	51	—	—	—
23CCC1	6- 1-90	—	63.30	6.5	154	6.7	62	—	—	—
23CCC1	9- 6-90	—	66.98	7.0	127	6.5	51	—	—	—
46N-114W-29DB1*	6- 2-89	200.00	13.83	—	—	—	—	—	—	—
29DB1	9- 7-89	200.00	29.91	—	—	—	—	—	—	—
29DB1	6- 1-90	200.00	21.00	—	—	—	—	—	—	—
29DB1	9- 6-90	200.00	46.01	—	—	—	—	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Total depth of well (feet)	Water level (feet below land surface)	Water temperature (°C)	Specific conductance (µS/cm)	pH (standard units)	Alkalinity, total (mg/L as $CaCO_3$)	Solids, sum of constituents, dissolved (mg/L)	Hardness, total (mg/L as $CaCO_3$)	Hardness, noncarbonate, total field (mg/L as $CaCO_3$)
46N-114W-29DB2*	6- 2-89	250.00	19.72	—	—	—	—	—	—	—
29DB2	9- 7-89	250.00	37.89	—	—	—	—	—	—	—
29DB2	6- 1-90	250.00	30.64	9.0	215	8.1	112	—	—	—
29DB2	9- 6-90	250.00	60.36	7.0	206	8.0	105	—	—	—
31CA1*	6- 2-89	175.00	3.98	6.0	166	7.1	84	—	—	—
31CA1	9- 7-89	175.00	27.30	6.0	163	7.1	83	—	—	—
31CA1	6- 2-90	175.00	15.08	6.0	169	7.1	87	—	—	—
31CA1	9- 6-90	175.00	28.84	—	—	—	—	—	—	—
45N-115W- 2AABD1	7-15-75	32.45	—	6.0	110	—	48	67	40	0
2AABD1	9-15-76	32.45	—	9.0	90	6.3	39	65	41	2
2AABD1	9- 7-88	32.45	11.37	8.5	90	6.8	40	—	—	—
2AABD1	6- 1-89	32.45	6.45	5.5	103	6.9	41	—	—	—
2AABD1	9- 7-89	32.45	10.57	8.5	91	6.9	45	—	—	—
2AABD1	5-30-90	32.45	8.25	5.5	76	6.8	37	—	—	—
2AABD1	9- 5-90	32.45	10.62	9.5	97	6.9	52	—	—	—
2AACC1	7-15-75	32.85	—	5.0	90	—	33	48	27	0
2AACC1	8-13-75	32.85	—	7.5	85	4.8	34	56	32	0
2AACC1	9- 7-88	32.85	6.33	8.5	77	6.6	36	—	—	—
2AACC1	6- 1-89	32.85	2.77	5.0	39	6.8	16	—	—	—
2AACC1	9- 7-89	32.85	5.62	8.5	68	6.7	33	—	—	—
2AACC1	5-30-90	32.85	3.78	5.0	77	6.8	40	—	—	—
2AACC1	9- 5-90	32.85	5.60	9.5	88	6.6	47	—	—	—
2AACC2	8-13-75	38.05	—	8.5	110	8.0	43	65	42	0
2AACC2	9-16-76	38.05	—	7.5	95	6.3	45	68	42	0
2AACC2	9- 7-88	38.05	6.95	8.5	80	6.5	36	—	—	—
2AACC2	6- 1-89	38.05	2.52	4.5	62	6.6	23	—	—	—
2AACC2	9- 7-89	38.05	5.24	8.0	68	6.7	32	—	—	—
2AACC2	5-30-90	38.05	3.38	5.0	81	6.8	40	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Total depth of well (feet)	Water level (feet below land surface)	Water temperature (°C)	Specific conductance (µS/cm)	pH (standard units)	Alkalinity, total (mg/L as $CaCO_3$)	Solids, sum of constituents, dissolved (mg/L)	Hardness, total (mg/L as $CaCO_3$)	Hardness, noncarbonate, total field (mg/L as $CaCO_3$)
45N-115W- 2AACC2	9- 5-90	38.05	5.21	9.0	96	6.6	43	—	—	—
2ABBA1	7-15-75	36.35	—	5.5	70	5.3	27	51	28	1
2ABBA1	9-15-76	36.35	—	6.5	70	5.8	26	52	26	0
2ABBA1	9- 7-88	36.35	11.43	6.5	67	6.3	30	—	—	—
2ABBA1	6- 1-89	36.35	5.97	5.0	53	6.5	16	—	—	—
2ABBA1	9- 7-89	36.35	10.67	6.5	67	6.3	30	—	—	—
2ABBA1	5-30-90	36.35	8.23	5.0	69	6.7	38	—	—	—
2ABBA1	9- 5-90	36.35	10.88	6.5	75	6.7	38	—	—	—
2ABCD1	9-10-75	38.35	—	11.5	155	5.5	65	91	48	0
2ABCD1	9-16-76	38.35	—	10.5	320	6.1	64	161	93	29
2ABCD1	9- 8-88 b	38.35	4.72	11.5	551	6.6	162	—	—	—
2ABCD1	6- 1-89	38.35	2.67	6.5	145	6.8	51	—	—	—
2ABCD1	9- 7-89	38.35	3.80	11.0	461	6.5	135	241	92	—
2ABCD1	5-30-90	38.35	3.12	6.5	272	6.8	76	—	—	—
2ABCD1	9- 5-90	38.35	3.86	11.0	463	6.5	130	—	—	—
36BCCB1	9- 8-89	117.60	96.67	7.0	305	7.6	134	—	—	—
36BCCB1	5-31-90	117.60	93.55	7.0	235	8.0	107	—	—	—
36BCCB1	9- 4-90	117.60	89.07	8.0	223	8.0	95	—	—	—
36BCDB1	9- 8-88	118.83	112.15	8.5	203	7.7	93	—	—	—
36BCDB1	5-31-89	118.83	114.36	8.0	166	7.8	66	—	—	—
36BCDB1	9- 8-89	118.83	116.07	—	—	—	—	—	—	—
36BCDB1	5-31-90	118.83	116.74	—	—	—	—	—	—	—
36BCDB1	9- 4-90	118.83	117.12	—	—	—	—	—	—	—
36CAC1	9- 4-90	117.50	114.05	—	—	—	—	—	—	—
36CAC1	9- 5-90	117.50	—	8.0	266	8.0	126	175	130	—
45N-114W-23CCD1*	6- 3-89	—	16.95	6.0	273	7.8	134	—	—	—
23CCD1	9- 9-89	—	11.30	9.5	224	7.6	101	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Total depth of well (feet)	Water level, (feet below land surface)	Water temperature (°C)	Specific conductance (µS/cm)	pH (standard units)	Alkalinity, total (mg/L as $CaCO_3$)	Solids, sum of constituents, dissolved (mg/L)	Hardness, total (mg/L as $CaCO_3$)	Hardness, noncarbonate, total field (mg/L as $CaCO_3$)
45N-114W-23CCD1	6- 1-90	—	11.27	5.5	199	7.6	90	—	—	—
23CCD1	9- 7-90	—	10.93	12.0	205	7.6	90	—	—	—
44N-116W-13ABD1*	6- 3-89	—	—	8.5	131	8.6	62	—	—	—
13ABD1	9- 9-89	—	222.35	11.0	145	8.6	70	—	—	—
13ABD1	6- 1-90	—	218.10	8.5	228	8.6	86	—	—	—
13ABD1	9- 6-90	—	209.84	12.0	176	8.5	88	—	—	—
26DAA1*	6- 3-89	—	—	8.0	80	9.2	38	—	—	—
26DAA1	9- 6-89	—	107.58	9.5	79	9.0	38	—	—	—
26DAA1	6- 2-90	—	133.25	8.0	78	9.1	39	—	—	—
26DAA1	9- 6-90	—	122.33	9.0	78	8.8	40	—	—	—
43N-116W-14ABC1*	6- 3-89	—	38.98	7.5	59	6.6	28	—	—	—
14ABC1	9- 6-89	—	37.71	8.0	53	6.9	27	—	—	—
14ABC1	6- 2-90	—	61.50	7.5	60	6.8	30	—	—	—
14ABC1	9- 6-90	—	42.48	9.5	57	6.8	28	—	—	—
25DBDB1	6-28-76	48.65	—	10.0	220	7.7	107	117	100	0
25DBDB1	8-22-76	48.65	—	10.0	200	7.8	90	103	96	5
25DBDB1	9- 8-88	48.65	15.39	10.0	165	8.2	84	—	—	—
25DBDB1	5-31-89	48.65	14.14	9.5	220	8.2	113	—	—	—
25DBDB1	9- 6-89	48.65	14.13	11.0	171	8.3	90	—	—	—
25DBDB1	5-31-90	48.65	15.98	9.5	198	8.3	99	—	—	—
25DBDB1	9- 4-90	48.65	14.28	11.0	122	9.0	76	—	—	—
25CAAD1	9- 8-88	42.85	14.84	8.0	139	8.1	68	—	—	—
25CAAD1	5-31-89	42.85	13.40	8.0	127	7.7	56	—	—	—
25CAAD1	9- 6-89	42.85	13.62	10.5	141	7.8	72	—	—	—
25CAAD1	5-31-90	42.85	14.47	8.0	135	7.9	71	—	—	—
25CAAD1	9- 4-90	42.85	12.79	10.5	135	7.8	74	—	—	—
25CCA1	5-31-89	49.00	9.87	8.0	95	8.8	47	—	—	—
25CCA1	9- 6-89	49.00	10.19	9.5	95	8.9	49	—	—	—
25CCA1	5-31-90	49.00	10.17	8.0	91	9.0	49	—	—	—
25CCA1	9- 4-90	49.00	10.34	11.0	62	9.3	35	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved, total field (mg/L as Cl)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)
48N-115W-16CC1	6- 2-89	—	—	—	—	—	2	—	—
16CC1	9- 8-89	—	—	—	—	—	—	—	—
16CC1	6- 2-90	—	—	—	—	—	—	—	—
16CC1	9- 5-90	—	—	—	—	—	—	—	—
21BB1*	6- 2-89	—	—	—	—	—	33 a	—	—
21BB1	9- 8-89	—	—	—	—	—	—	—	—
21BB1	6- 2-90	—	—	—	—	—	22	—	—
21BB1	9- 6-90	—	—	—	—	—	33 a	—	—
21BB2*	6- 2-89	—	—	—	—	—	—	—	—
21BB2	9- 8-89	—	—	—	—	—	—	—	—
21BB2	6- 2-90	—	—	—	—	—	—	—	—
21BB2	9- 6-90	—	—	—	—	—	—	—	—
21BC1	9- 7-88	—	—	—	—	—	1	—	—
21BC1	6- 2-89	—	—	—	—	—	2	—	—
21BC1	9- 8-89	65	14	6.9	2.1	9.0	24	20	0.40
21BC1	6- 2-90	—	—	—	—	—	2	—	—
21BC1	9- 5-90	80	17	14	2.7	7.5	30	28	.30
46N-115W-23CCC1*	6- 2-89	—	—	—	—	—	3	—	—
23CCC1	9- 8-89	—	—	—	—	—	4	—	—
23CCC1	6- 1-90	—	—	—	—	—	4	—	—
23CCC1	9- 6-90	—	—	—	—	—	4	—	—
46N-114W-29DB1*	6- 2-89	—	—	—	—	—	—	—	—
29DB1	9- 7-89	—	—	—	—	—	—	—	—
29DB1	6- 1-90	—	—	—	—	—	—	—	—
29DB1	9- 6-90	—	—	—	—	—	—	—	—
29DB2*	6- 2-89	—	—	—	—	—	—	—	—
29DB2	9- 7-89	—	—	—	—	—	—	—	—
29DB2	6- 1-90	—	—	—	—	—	1	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved, total field (mg/L as Cl)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)
46N-114W-29DB2	9- 6-90	—	—	—	—	—	2	—	—
31CA1*	6- 2-89	—	—	—	—	—	2	—	—
31CA1	9- 7-89	—	—	—	—	—	2	—	—
31CA1	6- 2-90	—	—	—	—	—	2	—	—
31CA1	9- 6-90	—	—	—	—	—	—	—	—
45N-115W- 2AABD1	7-15-75	13	1.8	2.1	0.90	2.3	—	0.50	0.10
2AABD1	9-15-76	12	2.6	2.3	.80	4.7	—	.80	.10
2AABD1	9- 7-88	—	—	—	—	—	3	—	—
2AABD1	6- 1-89	—	—	—	—	—	1	—	—
2AABD1	9- 7-89	—	—	—	—	—	3	—	—
2AABD1	5-30-90	—	—	—	—	—	2	—	—
2AABD1	9- 5-90	—	—	—	—	—	2	—	—
2AACC1	7-15-75	8.6	1.3	1.8	.90	2.4	—	.70	.10
2AACC1	8-13-75	9.7	2.0	1.8	.80	2.8	—	.90	.10
2AACC1	9- 7-88	—	—	—	—	—	2	—	—
2AACC1	6- 1-89	—	—	—	—	—	1	—	—
2AACC1	9- 7-89	—	—	—	—	—	2	—	—
2AACC1	5-30-90	—	—	—	—	—	3	—	—
2AACC1	9- 5-90	—	—	—	—	—	2	—	—
2AACC2	8-13-75	13	2.3	2.2	.90	2.6	—	.50	.10
2AACC2	9-16-76	12	2.9	2.0	.80	5.1	—	.50	.10
2AACC2	9- 7-88	—	—	—	—	—	2	—	—
2AACC2	6- 1-89	—	—	—	—	—	2	—	—
2AACC2	9- 7-89	—	—	—	—	—	3	—	—
2AACC2	5-30-90	—	—	—	—	—	2	—	—
2AACC2	9- 5-90	—	—	—	—	—	2	—	—
2ABBA1	7-15-75	8.5	1.7	2.2	.70	2.8	—	.50	.10
2ABBA1	9-15-76	7.3	2.0	2.4	.70	5.7	—	.80	.10
2ABBA1	9- 7-88	—	—	—	—	—	1	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved, total field (mg/L as Cl)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)
45N-115W- 2ABBA1	6- 1-89	—	—	—	—	—	1	—	—
2ABBA1	9- 7-89	—	—	—	—	—	1	—	—
2ABBA1	5-30-90	—	—	—	—	—	1	—	—
2ABBA1	9- 5-90	—	—	—	—	—	1	—	—
2ABCD1	9-10-75	14	3.2	12	1.5	3.0	—	5.9	0.10
2ABCD1	9-16-76	27	6.2	19	2.1	7.7	—	48	.10
2ABCD1	9- 8-88 b	—	—	—	—	—	73	—	—
2ABCD1	6- 1-89	—	—	—	—	—	14	—	—
2ABCD1	9- 7-89	27	6.0	42	6.5	6.0	63	59	.20
2ABCD1	5-30-90	—	—	—	—	—	30	—	—
2ABCD1	9- 5-90	—	—	—	—	—	65	—	—
36BCCB1	9- 8-89	—	—	—	—	—	11	—	—
36BCCB1	5-31-90	—	—	—	—	—	7	—	—
36BCCB1	9- 4-90	—	—	—	—	—	7	—	—
36BCDB1	9- 8-88	—	—	—	—	—	1	—	—
36BCDB1	5-31-89	—	—	—	—	—	2	—	—
36BCDB1	9- 8-89	—	—	—	—	—	—	—	—
36BCDB1	5-31-90	—	—	—	—	—	—	—	—
36BCDB1	9- 4-90	—	—	—	—	—	—	—	—
36CAC1	9- 4-90	—	—	—	—	—	—	—	—
36CAC1	9- 5-90	37	8.1	2.9	2.6	4.1	2	1.6	<.10
45N-114W-23CCD1*	6- 3-89	—	—	—	—	—	3 c	—	—
23CCD1	9- 9-89	—	—	—	—	—	4 c	—	—
23CCD1	6- 1-90	—	—	—	—	—	4 c	—	—
23CCD1	9- 7-90	—	—	—	—	—	8 c	—	—
44N-116W-13ABD1*	6- 3-89	—	—	—	—	—	2	—	—
13ABD1	9- 9-89	—	—	—	—	—	2	—	—
13ABD1	6- 1-90	—	—	—	—	—	2	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Sulfate, dissolved (mg/L as SO_4)	Chloride, dissolved, total field (mg/L as Cl)	Chloride, dissolved (mg/L as Cl)	Fluoride, dissolved (mg/L as F)
44N-116W-13ABD1	9- 6-90	—	—	—	—	—	3	—	—
26DAA1*	6- 3-89	—	—	—	—	—	2	—	—
26DAA1	9- 6-89	—	—	—	—	—	2 c	—	—
26DAA1	6- 2-90	—	—	—	—	—	2 c	—	—
26DAA1	9- 6-90	—	—	—	—	—	3 c	—	—
43N-116W-14ABC1*	6- 3-89	—	—	—	—	—	2	—	—
14ABC1	9- 6-89	—	—	—	—	—	1	—	—
14ABC1	6- 2-90	—	—	—	—	—	2 c	—	—
14ABC1	9- 6-90	—	—	—	—	—	2 c	—	—
25DBDB1	6-28-76	32	5.7	1.1	1.1	3.9	—	1.2	0.10
25DBDB1	8-22-76	30	5.0	1.4	1.3	2.0	—	.60	.20
25DBDB1	9- 8-88	—	—	—	—	—	1	—	—
25DBDB1	5-31-89	—	—	—	—	—	2	—	—
25DBDB1	9- 6-89	—	—	—	—	—	2	—	—
25DBDB1	5-31-90	—	—	—	—	—	2	—	—
25DBDB1	9- 4-90	—	—	—	—	—	2	—	—
25CAAD1	9- 8-88	—	—	—	—	—	1	—	—
25CAAD1	5-31-89	—	—	—	—	—	2	—	—
25CAAD1	9- 6-89	—	—	—	—	—	1	—	—
25CAAD1	5-31-90	—	—	—	—	—	1	—	—
25CAAD1	9- 4-90	—	—	—	—	—	1	—	—
25CCA1	5-31-89	—	—	—	—	—	2	—	—
25CCA1	9- 6-89	—	—	—	—	—	2	—	—
25CCA1	5-31-90	—	—	—	—	—	2	—	—
25CCA1	9- 4-90	—	—	—	—	—	2	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Nitrogen, ammonia, dissolved (mg/L as N)	Nitrogen, ammonia + organic, dissolved (mg/L as N)	Nitrogen, ammonia + organic, total (mg/L as N)	Nitrogen, $NO_2 + NO_3$ field (mg/L as N)	Nitrogen, $NO_2 + NO_3$ dissolved (mg/L as N)	Phosphorus, dissolved (mg/L as P)	Silica, dissolved (mg/L as SiO_2)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)
48N-115W-16CC1	6- 2-89	—	<0.20	—	0.7	0.88	—	—	—	—
16CC1	9- 8-89	—	—	—	—	—	—	—	—	—
16CC1	6- 2-90	—	—	—	—	—	—	—	—	—
16CC1	9- 5-90	—	—	—	—	—	—	—	—	—
21BB1*	6- 2-89	—	—	—	.3	—	—	—	—	—
21BB1	9- 8-89	—	—	—	—	—	—	—	—	—
21BB1	6- 2-90	—	—	—	.8	—	—	—	—	—
21BB1	9- 6-90	—	—	—	1.3	—	—	—	—	—
21BB2*	6- 2-89	—	—	—	—	—	—	—	—	—
21BB2	9- 8-89	—	—	—	—	—	—	—	—	—
21BB2	6- 2-90	—	—	—	—	—	—	—	—	—
21BB2	9- 6-90	—	—	—	—	—	—	—	—	—
21BC1	9- 7-88	—	—	—	.7	—	—	—	—	—
21BC1	6- 2-89	—	<.20	—	.5	.44	—	—	—	—
21BC1	9- 8-89	<0.01	.30	—	1.2	2.80	0.02	23	5	4
21BC1	6- 2-90	<.01	.40	—	1.0	.80	—	—	—	—
21BC1	9- 5-90	.03	.90	—	11	14.0	.02	25	—	—
46N-115W-23CCC1*	6- 2-89	—	.20	—	.5	.50	—	—	—	—
23CCC1	9- 8-89	—	—	—	.8	.67	—	—	—	—
23CCC1	6- 1-90	—	—	—	.5	—	—	—	—	—
23CCC1	9- 6-90	—	—	—	1.3	—	—	—	—	—
46N-114W-29DB1*	6- 2-89	—	—	—	—	—	—	—	—	—
29DB1	9- 7-89	—	—	—	—	—	—	—	—	—
29DB1	6- 1-90	—	—	—	—	—	—	—	—	—
29DB1	9- 6-90	—	—	—	—	—	—	—	—	—
29DB2*	6- 2-89	—	—	—	—	—	—	—	—	—
29DB2	9- 7-89	—	—	—	—	—	—	—	—	—
29DB2	6- 1-90	—	—	—	.5	—	—	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Nitrogen, ammonia, dissolved (mg/L as N)	Nitrogen, ammonia + organic, dissolved (mg/L as N)	Nitrogen, ammonia + organic, total (mg/L as N)	Nitrogen, $NO_2 + NO_3$ field (mg/L as N)	Nitrogen, $NO_2 + NO_3$ dissolved (mg/L as N)	Phosphorus, dissolved (mg/L as P)	Silica, dissolved (mg/L as SiO_2)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)
46N-114W-29DB2	9- 6-90	—	—	—	0.3	—	—	—	—	—
31CA1*	6- 2-89	—	<0.20	—	.3	0.16	—	—	—	—
31CA1	9- 7-89	—	—	—	.3	.17	—	—	—	—
31CA1	6- 2-90	—	—	—	.4	—	—	—	—	—
31CA1	9- 6-90	—	—	—	—	—	—	—	—	—
45N-115W- 2AABD1	7-15-75	—	—	0.12	—	.15	—	16	700	—
2AABD1	9-15-76	—	—	<.10	—	.27	0.04	17	40	—
2AABD1	9- 7-88	—	—	—	.6	—	—	—	—	—
2AABD1	6- 1-89	—	—	—	.5	.21	—	—	—	—
2AABD1	9- 7-89	0.01	.20	—	.4	.25	—	—	—	—
2AABD1	5-30-90	.04	.80	—	.4	.10	—	—	—	—
2AABD1	9- 5-90	.03	<.20	—	.4	.20	—	—	—	—
2AACC1	7-15-75	—	—	.34	—	.04	—	8.8	3,600	—
2AACC1	8-13-75	—	—	.07	—	.09	.03	13	3,600	—
2AACC1	9- 7-88	—	—	—	.4	—	—	—	—	—
2AACC1	6- 1-89	—	—	—	.8	.78	—	—	—	—
2AACC1	9- 7-89	.03	2.0	—	.3	.34	—	—	—	—
2AACC1	5-30-90	<.01	<.20	—	.2	.30	—	—	—	—
2AACC1	9- 5-90	.07	.40	—	.3	.10	—	—	—	—
2AACC2	8-13-75	—	—	.04	—	.15	.20	16	510	—
2AACC2	9-16-76	—	—	<.10	—	.13	.19	17	90	—
2AACC2	9- 7-88	—	—	—	.3	—	—	—	—	—
2AACC2	6- 1-89	—	—	—	.7	.84	—	—	—	—
2AACC2	9- 7-89	.02	.70	—	.3	.34	—	—	—	—
2AACC2	5-30-90	<.01	.30	—	0	.20	—	—	—	—
2AACC2	9- 5-90	.02	<.20	—	.4	.30	—	—	—	—
2ABBA1	7-15-75	—	—	.30	0	.11	.13	17	510	—
2ABBA1	9-15-76	—	—	<.10	—	.17	.06	16	130	—
2ABBA1	9- 7-88	—	—	—	.7	—	—	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Nitrogen, ammonia, dissolved (mg/L as N)	Nitrogen, ammonia + organic, dissolved (mg/L as N)	Nitrogen, ammonia + organic, total (mg/L as N)	Nitrogen, $NO_2 + NO_3$ field (mg/L as N)	Nitrogen, $NO_2 + NO_3$ dissolved (mg/L as N)	Phosphorus, dissolved (mg/L as P)	Silica, dissolved (mg/L as SiO_2)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)
45N-115W- 2ABBA1	6- 1-89	—	<0.20	—	0.3	<0.10	—	—	—	—
2ABBA1	9- 7-89	0.03	.40	—	.4	.14	—	—	—	—
2ABBA1	5-30-90	<.01	.40	—	.4	.10	—	—	—	—
2ABBA1	9- 5-90	.06	<.20	—	.6	<.10	—	—	—	—
2ABCD1	9-10-75	—	—	0.81	—	.08	0.15	12	220	—
2ABCD1	9-16-76	—	—	.63	—	.01	.03	12	890	—
2ABCD1	9- 8-88 b	—	—	—	1.2	—	—	—	—	—
2ABCD1	6- 1-89	—	1.5	—	.3	<.10	—	—	—	—
2ABCD1	9- 7-89	3.40	3.8	—	.4	<.10	.05	23	3,800	5,500
2ABCD1	5-30-90	1.80	2.3	—	.3	<.10	—	—	—	—
2ABCD1	9- 5-90	2.60	3.0	—	.6	<.10	—	—	—	—
36BCCB1	9- 8-89	.03	.60	—	1.4	1.40	—	—	—	—
36BCCB1	5-31-90	<.01	.20	—	.6	.30	—	—	—	—
36BCCB1	9- 4-90	.02	<.20	—	.8	.10	—	—	—	—
36BCDB1	9- 8-88	—	—	—	1.4	—	—	—	—	—
36BCDB1	5-31-89	—	.30	—	.6	.69	—	—	—	—
36BCDB1	9- 8-89	—	—	—	—	—	—	—	—	—
36BCDB1	5-31-90	—	—	—	—	—	—	—	—	—
36BCDB1	9- 4-90	—	—	—	—	—	—	—	—	—
36CAC1	9- 4-90	—	—	—	—	—	—	—	—	—
36CAC1	9- 5-90	.03	.30	—	3.1	3.00	.02	30	—	—
45N-114W-23CCD1*	6- 3-89	—	.20	—	.4	.21	—	—	—	—
23CCD1	9- 9-89	—	—	—	.3	.12	—	—	—	—
23CCD1	6- 1-90	—	—	—	.5	—	—	—	—	—
23CCD1	9- 7-90	—	—	—	.4	—	—	—	—	—
44N-116W-13ABD1*	6- 3-89	—	<.20	—	.3	<.10	—	—	—	—
13ABD1	9- 9-89	—	—	—	.2	.11	—	—	—	—
13ABD1	6- 1-90	—	—	—	0.4	—	—	—	—	—

Table 1.—*Hydrologic and water-quality data for inventoried wells*—Continued

Well No.	Date sampled	Nitrogen, ammonia, dissolved (mg/L as N)	Nitrogen, ammonia + organic, dissolved (mg/L as N)	Nitrogen, ammonia + organic, total (mg/L as N)	Nitrogen, $NO_2 + NO_3$ field (mg/L as N)	Nitrogen, $NO_2 + NO_3$ dissolved (mg/L as N)	Phosphorus, dissolved (mg/L as P)	Silica, dissolved (mg/L as SiO_2)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)
44N-116W-13ABD1	9- 6-90	—	—	—	0.6	—	—	—	—	—
26DAA1*	6- 3-89	—	—	—	.3	0.15	—	—	—	—
26DAA1	9- 6-89	—	—	—	.3	.15	—	—	—	—
26DAA1	6- 2-90	—	—	—	.4	—	—	—	—	—
26DAA1	9- 6-90	—	—	—	.3	—	—	—	—	—
43N-116W-14ABC1*	6- 3-89	—	—	—	.3	.14	—	—	—	—
14ABC1	9- 6-89	—	—	—	.3	.18	—	—	—	—
14ABC1	6- 2-90	—	—	—	.4	—	—	—	—	—
14ABC1	9- 6-90	—	—	—	.4	—	—	—	—	—
25DBDB1	6-28-76	—	—	0.05	—	—	0.03	7.8	<10	—
25DBDB1	8-22-76	—	—	.40	—	.16	<.01	7.3	30	—
25DBDB1	9- 8-88	—	—	—	.4	—	—	—	—	—
25DBDB1	5-31-89	—	—	—	.4	.34	—	—	—	—
25DBDB1	9- 6-89	—	—	—	.3	<.10	—	—	—	—
25DBDB1	5-31-90	<0.01	<0.20	—	.5	.20	—	—	—	—
25DBDB1	9- 4-90	.02	<.20	—	.3	<.10	—	—	—	—
25CAAD1	9- 8-88	—	—	—	.8	—	—	—	—	—
25CAAD1	5-31-89	—	—	—	.5	.21	—	—	—	—
25CAAD1	9- 6-89	—	—	—	.3	.14	—	—	—	—
25CAAD1	5-31-90	<.01	.80	—	.4	.20	—	—	—	—
25CAAD1	9- 4-90	.03	<.20	—	.4	<.10	—	—	—	—
25CCA1	5-31-89	—	.20	—	.4	.27	—	—	—	—
25CCA1	9- 6-89	—	—	—	.3	.23	—	—	—	—
25CCA1	5-31-90	<.01	<.20	—	.4	.20	—	—	—	—
25CCA1	9- 4-90	.02	<.20	—	.1	.10	—	—	—	—