

CONVERSION FACTORS

For readers who prefer to use metric units, conversion factors for inch-pound units used in this report are listed below. Constituent concentrations are given in mg/L (milligrams per liter), which is equal to parts per million. Specific conductance is expressed as $\mu\text{S}/\text{cm}$ (microsiemens per centimeter at 25 degrees Celsius).

Multiply	By	To obtain
acre	0.047	square meter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer

Temperature in $^{\circ}\text{C}$ (degrees Celsius) can be converted to $^{\circ}\text{F}$ (degrees Fahrenheit) as follows:

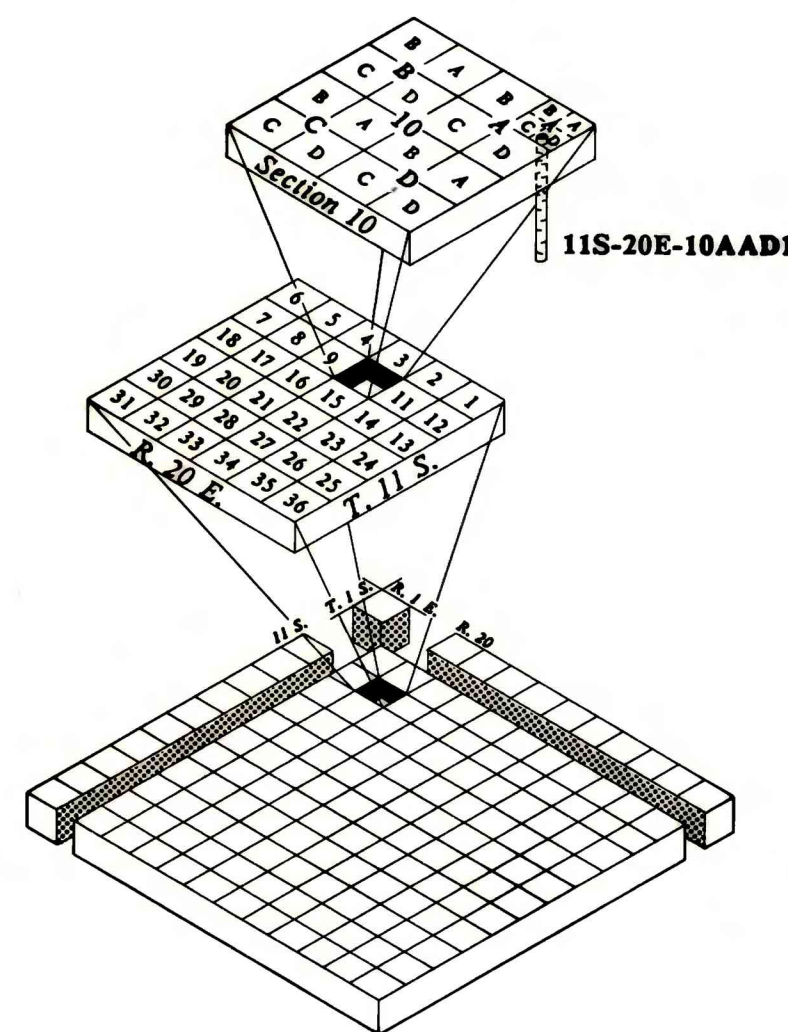
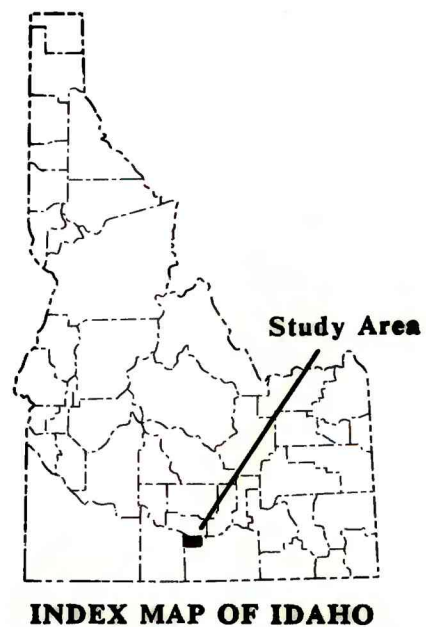
$$^{\circ}\text{F} = (1.8(^{\circ}\text{C}) + 32)$$

All water temperatures are reported to the nearest one-half $^{\circ}\text{C}$.

WELL-NUMBERING SYSTEM

The well-numbering system used by the U.S. Geological Survey in Idaho indicates the location of wells within the official rectangular subdivision of public lands, with reference to the Boise 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; three letters, which indicate the $\frac{1}{4}$ section (160-acre tract), $\frac{1}{2}$ - $\frac{1}{4}$ section (40-acre tract), and $\frac{1}{4}$ - $\frac{1}{4}$ section (10-acre tract); and serial number of the well within the tract.

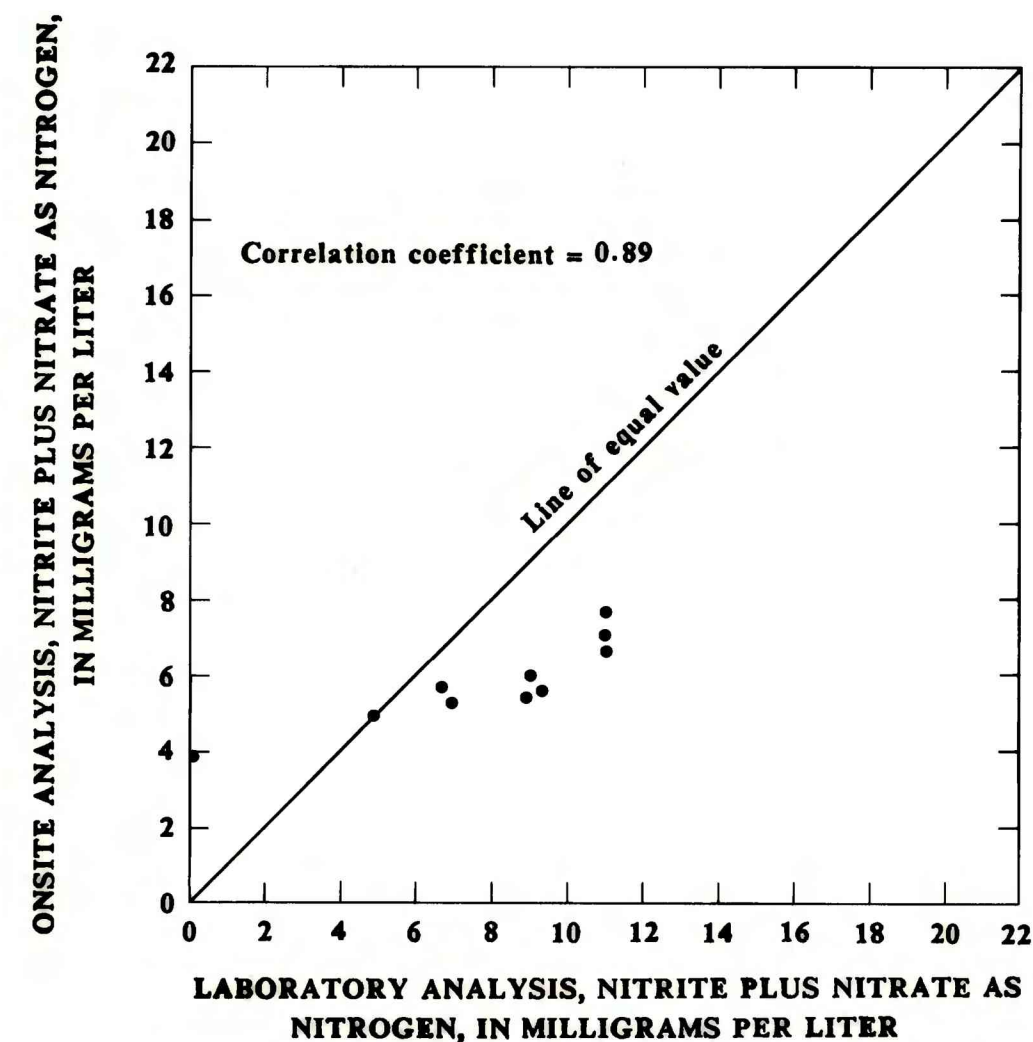
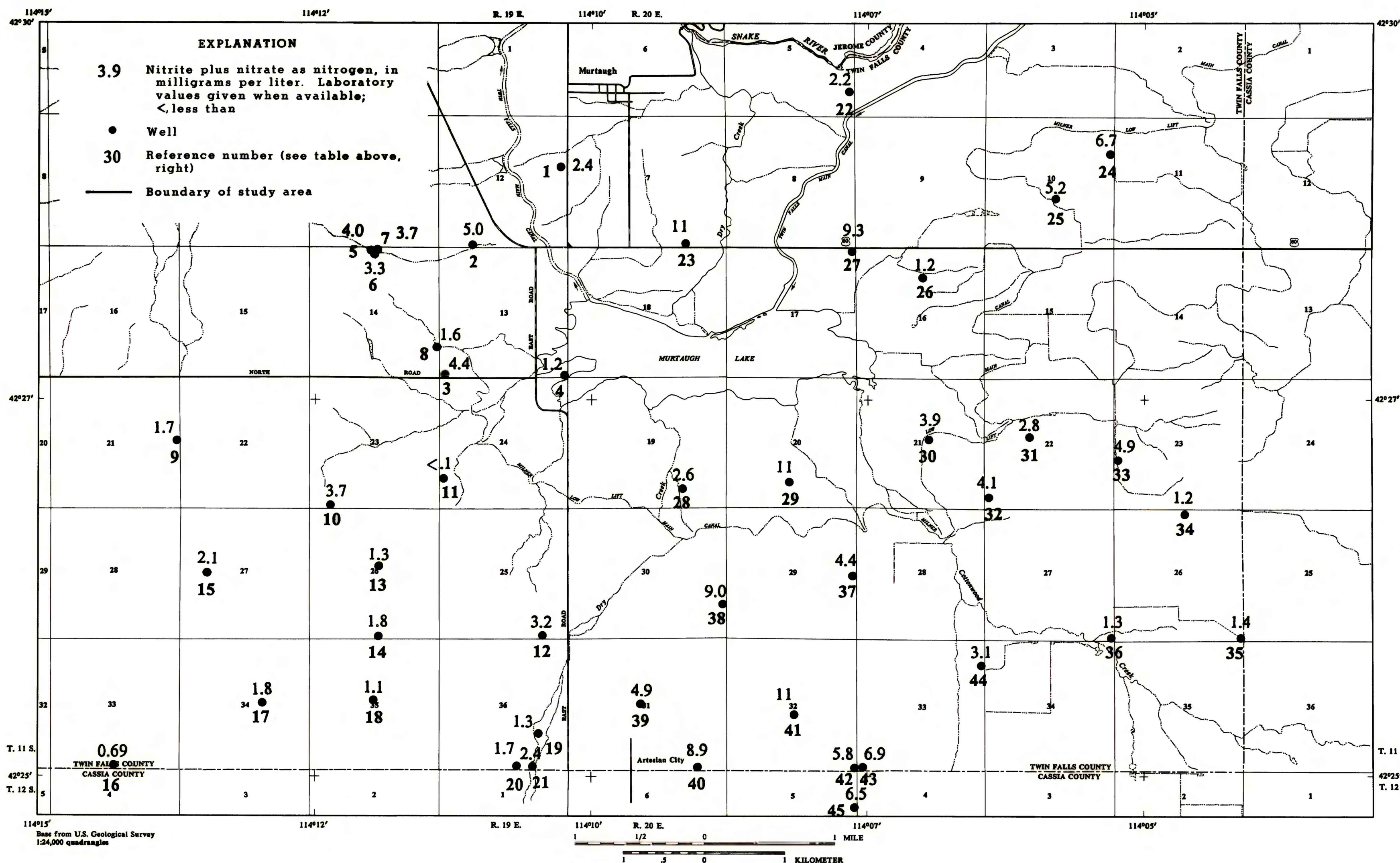
Quarter sections are designated by the letters A, B, C, and D in counterclockwise order from the northeast quarter of each section. Within the quarter sections, 40-acre and 10-acre tracts are lettered in the same manner. Well 11S-20E-10AAd1 (example at right) is in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 11 S., R. 20 E., and is the first well inventoried in that tract.



WATER-QUALITY AND SELECTED WELL-INVENTORY DATA

										Onsite										Laboratory				
Ref. number	Well location	Total depth (feet)	Date water level measured	Water level below surface (feet)	Date sampled	Specific conductance (µm/cm)	pH (standard units)	Temperature (°C)	Bicarbonate, total (mg/L as HCO ₃)	Alkalinity, total (mg/L as CaCO ₃)	Chloride, dissolved (mg/L as Cl)	Nitrogen, NO ₃ -N, dissolved (mg/L as N)	Nitrogen, NO ₂ -N, dissolved (mg/L as N)	Nitrogen, NO ₃ -N, dissolved (mg/L as N)	Nitrogen, ammonia + organic, dissolved (mg/L as N)									
1	11S-18E-12A002	115	4-5-84	50.66	6-10-87	580	7.5	13.5	260	210	24	2.4	-	-	-									
2	13C0C1	400	3-26-84	103.20	6-10-87	1,550	7.7	14.0	420	340	160	5.0	-	-	-									
3	13C0C1	400	3-15-80	161.60	6-10-87	1,050	7.6	13.5	340	280	94	4.4	-	-	-									
4	13D0D1	250	6-9-87	6.28	6-9-87	639	7.5	13.0	320	260	25	1.2	-	-	-									
5	14A8B1	250	6-11-87	1,190	6-11-87	1,190	7.6	17.5	280	230	120	4.0	-	-	-									
6	14A8B2	833	3-27-84	224.05	6-11-87	926	7.7	20.0	230	180	100	3.3	-	-	-									
7	14A8B3	592	6-11-87	1,220	6-11-87	1,220	7.6	14.5	340	280	120	3.7	-	-	-									
8	14A8D1	820	3-27-84	166.60	6-9-87	475	7.9	20.5	180	130	40	1.6	-	-	-									
9	21DA1	535	11-3-51	156.13	6-9-87	430	7.5	26.0	100	86	54	1.7	-	-	-									
10	23C0C1	596	6-10-87	1,200	6-10-87	1,200	7.7	18.0	150	120	190	3.7	-	-	-									
11	24C0C1	703	3-26-84	154.80	6-9-87	2,000	7.2	13.5	280	210	320	3.9	<0.1	-	-									
12	25C0C1	257	3-26-84	111.90	6-9-87	609	6.9	13.0	260	210	37	3.2	-	-	-									
13	26A0C1	835	6-9-87	380	6-9-87	380	7.7	27.0	130	110	34	1.3	-	-	-									
14	26C0C3	747	6-9-87	518	6-9-87	518	7.4	19.0	120	96	70	1.8	-	-	-									
15	27C0C1	685	3-26-84	223.70	6-9-87	502	7.5	24.0	130	110	60	2.1	-	-	-									
16	33C0D1	1,025	6-11-87	248	6-11-87	248	8.0	32.0	100	82	23	-	-	-	-									
17	34B0A1	840	4-5-84	260.55	6-9-87	372	7.4	25.5	110	94	58	1.8	-	-	-									
18	35B0D5	720	6-11-87	248	6-11-87	248	7.6	25.0	120	98	28	-	-	-	-									
19	36C0C1	585	6-9-87	452	6-9-87	452	7.5	23.0	160	130	46	1.3	-	-	-									
20	36C0C1	757	3-3-84	312.30	6-9-87	372	7.3	24.5	130	110	34	1.7	-	-	-									
21	36C0C1	757	6-11-87	233.27	6-11-87	902	7.1	15.5	180	150	140	2.4	-	-	-									
22	11S-20E-30DA1	138	4-5-84	115.28	6-10-87	582	7.8	15.5	250	200	41	2.2	-	-	-									
23	7C0C1	35	4-5-84	25.05	6-10-87	786	7.6	13.5	340	280	33	7.7	11	1.5	-									
24	10A0D1	300	6-10-87	239.23	6-10-87	931	7.6	15.5	380	310	52	5.7	6.7	0.50	-									
25	10B0C3	205	3-26-87	163.35	5-30-86	877	7.7	14.0	380	310	30	-	-	-	-									
26	18A0D1	240	6-11-87	128.94	6-11-87	645	7.8	14.0	200	160	71	1.2	-	-	-									
27	17A0A1	175	6-11-87	101.79	6-11-87	854	7.7	13.5	420	340	28	5.6	9.3	0.40	-									
28	18C0A1	50	6-11-87	43.13	6-11-87	787	7.2	12.0	370	300	41	2.6	-	-	-									
29	29DA1	50	6-11-87	12.0	6-10-87	1,030	7.4	12.0	430	350	52	7.1	11	1.9	-									
30	21A0C1	175	3-26-84	89.92	6-5-87	1,110	7.5	14.0	350	280	97	3.8	-	-	-									
31	22B0C1	198	3-27-84	136.14	6-5-87	1,350	7.4	15.0	340	280	160	2.8	-	-	-									
32	22C0C1	180	3-27-84	60.81	7-10-85	2,070	7.7	14.5	350	280	280	-	-	-	-									
33	23C0C1	727	3-26-84	161.28	6-10-87	1,170	7.5	13.5	180	160	200	4.9	-	-	-									
34	28A0A1	600	3-27-84	191.39	7-10-85	591	7.7	17.5	160	140	86	-	-	-	-									
35	28D0D1	350	3-26-84	256.04	6-9-87	440	7.9	16.0	160	130	52	1.4	-	-	-									
36	27D0D1	350	6-11-87	193.85	6-11-87	369	7.8	15.5	180	130	27	1.3	-	-	-									
37	28DA1	293	6-5-87	1,020	6-5-87	1,020	7.3	13.0	420	350	70	4.4	-	-	-									
38	30DA1	256	3-30-84	81.81	6-10-87	1,630	7.8	12.0	380	310	230	8.0	-	-	-									
39	31B0C1	135	4-2-84	117.15	6-11-87	1,010	7.4	14.5	340	280	100	4.9	-	-	-									
40	31D0C1	385	3-30-84	137.50	6-5-87	1,240	7.3	16.0	370	300	140	5.4	8.9	1.8	-									
41	32C0D1	354	6-10-87	1,770	6-10-87	1,770	7.3	14.5	340	280	280	6.6	11	1.4	-									
42	32D0D1	405	4-2-84	150.70	4-15-87	1,400	7.4	17.0	400	330	280	5.8	-	-	-									
43	32C0C1	405	4-2-84	154.18	6-5-87	1,260	7.4	17.0	400	330	280	5.3	8.9	1.4	-									
44	33A0D1	1,020	6-9-87	1,280	6-9-87	1,280	7.5	22.5	220	180	220	3.1	-	-	-									
45	12S-20E-48C0A1	---	---	---	4-13-87	1,560	---	---	---	---	---	---	---	---	---									

Notations: --, no data available; <, less than



The purpose of this study was to determine concentrations of nitrogen compounds in ground water in the Murtaugh Lake area. The Murtaugh Lake area is about 2 mi south of the Snake River and about 18 mi west of Burley. The scope of the study was limited to inventorying 45 wells. Water-level measurements were made only at wells where previous water-level data were not available. Onsite determinations were made of specific conductance, pH, water temperature, and concentrations of alkalinity, dissolved chloride, and dissolved nitrite plus nitrate (as nitrogen). When onsite nitrite plus nitrate concentrations exceeded about 6 mg/L nitrogen, ground-water samples were collected for nitrite plus nitrate (as nitrogen) and ammonia plus organic nitrogen (as nitrogen) analyses at the U.S. Geological Survey National Water Quality Laboratory.

Locations of wells and concentrations of nitrite plus nitrate (as nitrogen) are shown on the map at left. Water-quality and selected well-inventory data for 40 wells sampled during 1987 and 5 wells sampled during the period 1981-86 are shown in the table above. A statistical summary of selected water-quality data is shown in the table below, and onsite versus laboratory measurements of nitrite plus nitrate (as nitrogen) concentrations are shown in the graph at left.

STATISTICAL SUMMARY OF SELECTED WATER-QUALITY DATA

[*, onsite analysis; **, laboratory analysis; \geq , greater than or equal to]

Water-quality constituent	Number of samples	Median (50 percent)	Mean	Range	Number of samples with concentrations exceeding national drinking-water limits
*Specific conductance ($\mu\text{S}/\text{cm}$)	45	802	930	246	2,070
*pH (standard units)	43	7.5	7.5	6.9	8.0
*Temperature ($^{\circ}\text{C}$)	43	15.0	17.0	12.0	32.0
*Bicarbonate (mg/L as CaCO_3)	43	260	280	100	420
*Alkalinity (mg/L as CaCO_3)	43	210	210	82	350
*Chloride, dissolved (mg/L as Cl)	45	70	110	23	380
*Nitrogen, nitrite + nitrate, dissolved (mg/L as N)	40	3.5	3.8	1.2	7.7
**Nitrogen, nitrite + nitrate, dissolved (mg/L as N)	15	6.7	6.1	<1	11
**Nitrogen, ammonia + organic, dissolved (mg/L as N)	9	1.4	1.4	0.40	2.8

U.S. Environmental Protection Agency, 1982a, Secondary maximum contaminant levels (section 143.3 of part 143, National secondary drinking-water regulations); U.S. Code of Federal Regulations, Title 40, parts 100 to 149, revised as of July 1, 1982, p. 374.

U.S. Environmental Protection Agency, 1982b, Maximum contaminant levels (subpart B of part 141, National primary drinking-water regulations); U.S. Code of Federal Regulations, Title 40, parts 100-149, revised as of July 1, 1982, p. 315-318.

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SELECTED WATER-QUALITY DATA FOR THE MURTAUGH LAKE AREA, SOUTH-CENTRAL IDAHO, JUNE 1987

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