

HYDROLOGIC DATA FOR THE WELDON SPRING CHEMICAL PLANT SITE AND VICINITY PROPERTY, ST. CHARLES COUNTY, MISSOURI--1986-89

By Michael J. Kleeschulte and Pierce W. Cross

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CONVERSION FACTORS AND VERTICAL DATUM

<u>Multiply</u>	<u>By</u>	<u>To obtain</u>
acre	0.4047	hectare
mile	1.609	kilometer
foot	0.3048	meter
inch	25.4	millimeter
cubic foot	0.02832	cubic meter
cubic foot per second	0.02832	cubic meter per second
square mile	259.0	hectare
gallon	3.785	liter
acre-foot	1,233	cubic meter

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

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

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

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ABSTRACT

This report contains hydrologic data collected during an investigation of the Weldon Spring chemical plant site and vicinity property in St. Charles County, Missouri, from May 1986 through September 1989. The data consist of water-quality analyses of samples collected from 10 locations at the Weldon Spring chemical plant site. These sites were selected because they typically have increased concentrations of uranium. Water-quality analyses from 57 wells, 19 springs, and 17 surface-water sites also are included. This report also includes daily mean specific conductance values from July 1987 through September 1989 for Burgermeister spring, Frog pond outflow, and Ash pond outflow; daily mean discharges for Burgermeister spring from May 1986 through September 1989 and for the unnamed tributary containing Burgermeister spring at Twin Island Lake and for Schote Creek at U.S. Highways 40 and 61 from August 1987 through September 1989; daily values of total precipitation from June 1987 through September 1989; well-construction data; and water-level measurements from May 1987 through August 1989.

INTRODUCTION

A uranium processing plant was operated at the site of a former U.S. Army chemical plant near Weldon Spring in St. Charles County, Missouri, for the U.S. Atomic Energy Commission from 1957 to 1966. Uranium ore concentrate and recycled scrap were converted to pure uranium trioxide, uranium tetrafluoride, and uranium metal (Weidner and Boback, 1982). Some thorium residues also were processed. Low-level radioactive wastes from the operation were pumped as a slurry to four raffinate pits near the plant that were excavated in glacial till between 1958 and 1964 (Lenhard and others, 1967). The wastes are presently (1990) being stored in these four pits, which have a combined surface area of about 26 acres. For the purpose of this report, the Weldon Spring chemical plant site refers to about 220 acres that contain the abandoned chemical plant and the raffinate pits area (fig. 1).

The U.S. Geological Survey began an initial Phase I study in 1983 to determine the extent and magnitude of surface- and ground-water contamination caused by the radioactive and associated wastes stored at the chemical plant. Data collected during this study confirmed that seepage from the raffinate pits had entered the ground-water system near the pits (Kleeschulte and Emmett, 1987). No contamination associated with the chemical plant or raffinate pits was detected in wells offsite; however, water from Burgermeister spring located 1.5 miles north of the site on the August A. Busch Memorial Wildlife Area contained concentrations of lithium, nitrate, and uranium that indicated that the spring receives recharge from sources possibly as far away as the Weldon Spring chemical plant site. The full extent of the areal and vertical contamination from the site was not completely determined at the end of the initial study.

During 1987, the U.S. Geological Survey started work on a Phase II study in the Weldon Spring area in cooperation with the U.S. Department of Energy. The primary objective of this study was to better define the extent and magnitude of contamination of the water resources in the vicinity of the

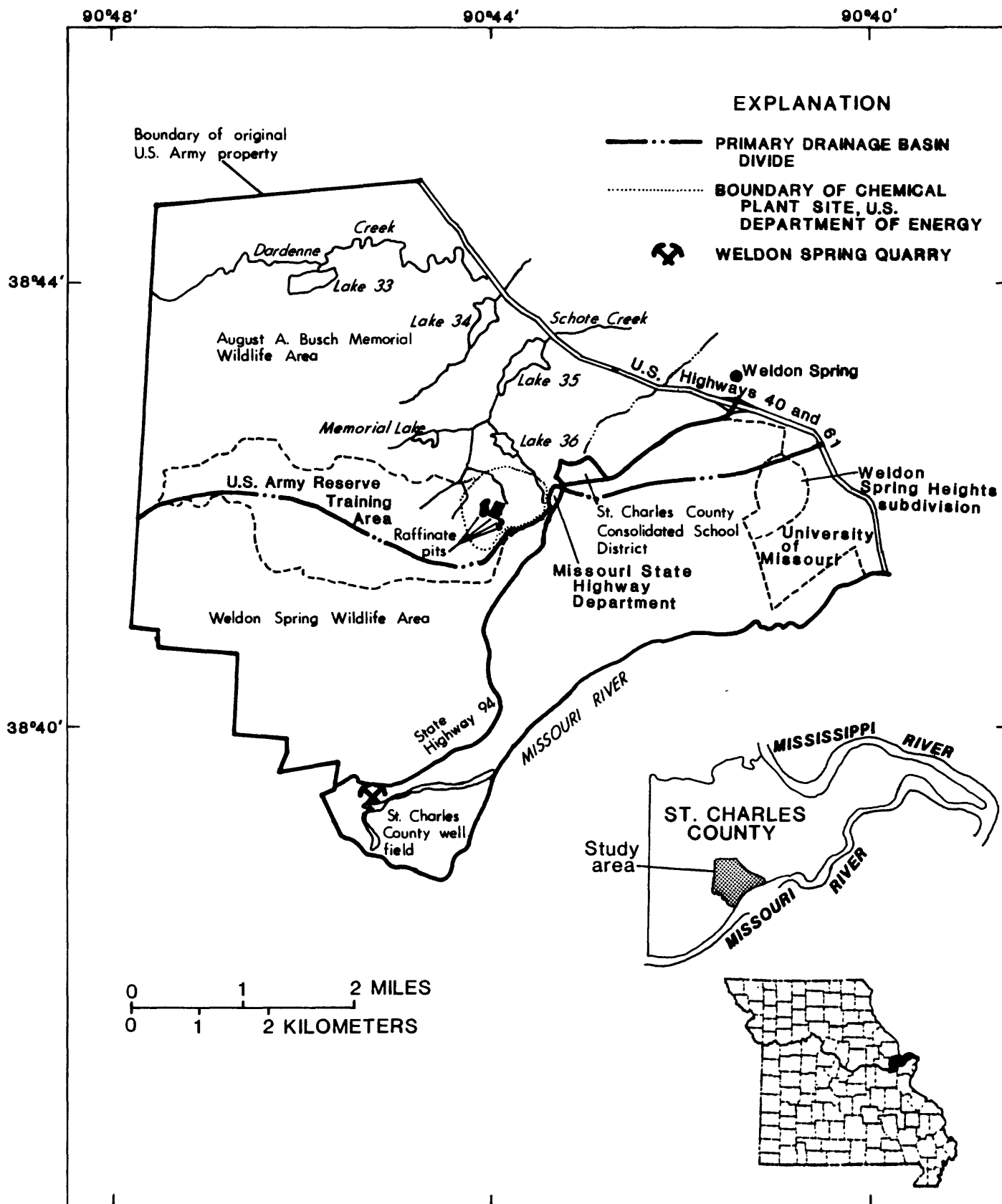


Figure 1.--Location of the original U.S. Army property near Weldon Spring, Missouri.

Weldon Spring chemical plant site. Other objectives included determination of effects of climatic condition on surface- and ground-water systems and preparation of a ground-water flow model that included most of St. Charles County.

This report contains hydrologic data collected from May 1, 1986, through September 30, 1989, that will be used for the Phase II study. The report includes water-quality data from selected locations on the Weldon Spring chemical plant site, wells, springs, and surface-water bodies, such as streams and lakes; surface-water discharge data for Burgermeister spring, the unnamed tributary at Twin Island Lake, and Schote Creek at U.S. Highways 40 and 61; precipitation data; and water-level data for monitoring wells at the Weldon Spring chemical plant site and vicinity property.

STUDY AREA

The study area consists of about 280 square miles in St. Charles County in eastern Missouri; however, the area of more intensive data collection is on 17,232 acres near Weldon Spring, Missouri. This property was owned by the U.S. Department of the Army during World War II when it was the site of the Weldon Spring Ordnance Works. After the land was declared surplus in 1946, the ownership of all but 1,858 acres was transferred to other owners. Currently (1990) the U.S. Department of Energy owns 228 acres consisting of the abandoned chemical plant, raffinate pits, and the Weldon Spring quarry (Nelson, 1987). In this report, land on the original U.S. Army property that currently is not owned by the U.S. Department of Energy and not located at the chemical plant or raffinate pits areas is referred to as vicinity property.

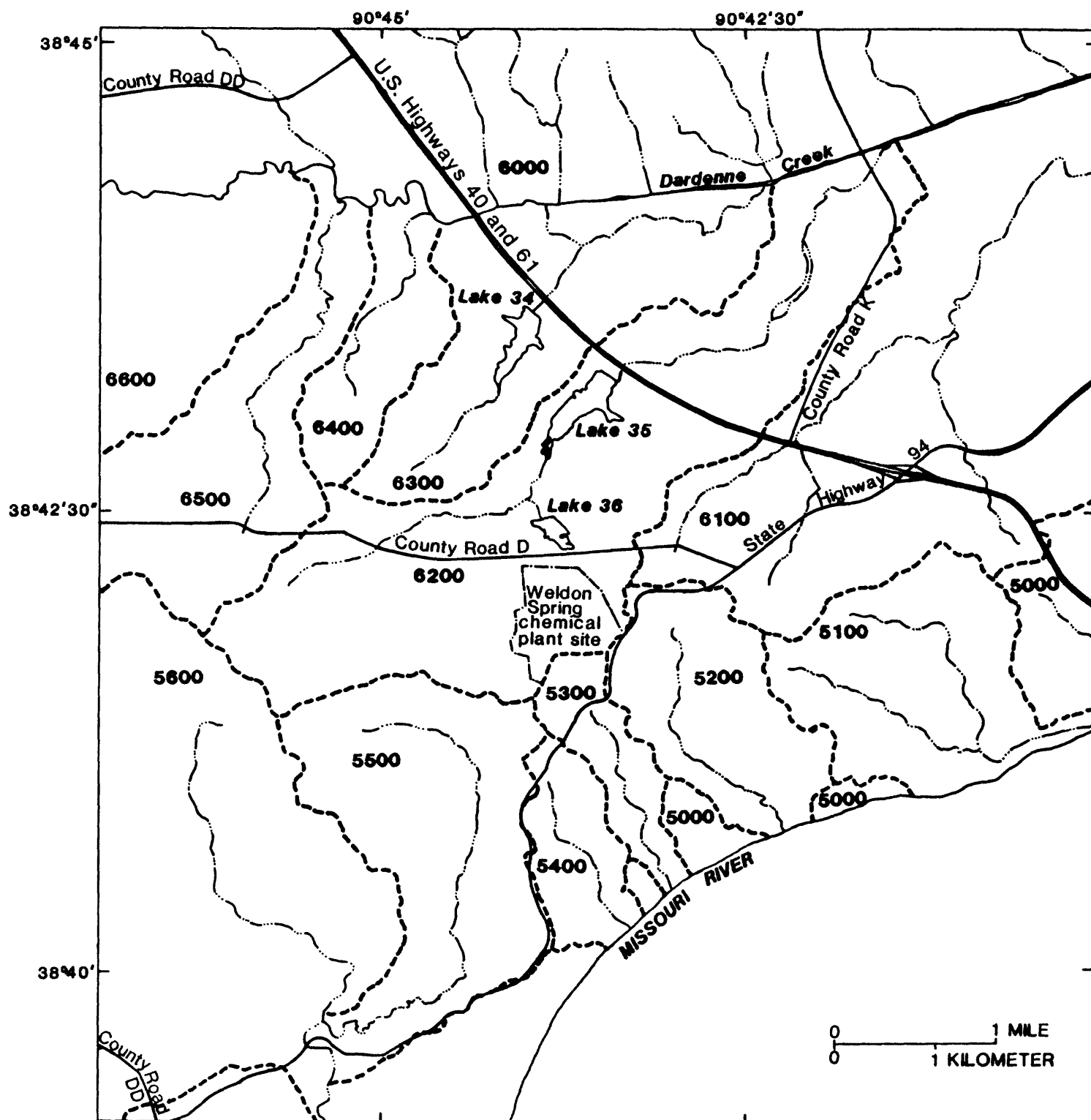
The Weldon Spring chemical plant site is located on a ridge that is a surface-water divide for the Missouri and Mississippi River basins. The surface water draining north off the site flows into tributaries of Schote Creek, onto the August A. Busch Wildlife Area, then eventually into Dardenne Creek, which drains into the Mississippi River. The surface water draining to the south of the site flows into steep-gradient streams that drain directly into the Missouri River about 1.5 miles away.

The chemical-plant area is underlain by typically thin overburden deposits ranging from 0 to 55 feet thick. These deposits overlie a residuum layer ranging from 0 to 26 feet onsite; this residuum is characterized by cobbles and boulders of limestone and chert in a silty, sandy, clay matrix. These unconsolidated materials overlie the Keokuk and Burlington Limestones, which are cherty limestones that locally are fractured and contain solution channels. Springs, losing streams, solution cavities, and fractures exist both north and south of the Weldon Spring chemical plant site.

SITE-LOCATION NUMBERING SYSTEM

The site-location numbering system was developed by U.S. Department of Energy contractors and Missouri Department of Natural Resources personnel. This system uses a two-letter prefix to identify the type of feature. This is followed by four numbers that provide a unique location identifier. The prefixes are MW for monitoring wells, SP for springs, ST for streams, and SH for swallow holes. The first digit of the four-number unique location identifier, Xnnn, represents a general location. The 2000 - 4000 series are numbers reserved for monitoring wells. The 2000 series wells are located in the chemical plant area, the 3000 series wells are located in the raffinate pits area, and the 4000 series wells are located on vicinity property. The 5000 - 6000 series are used for non-monitoring well hydrologic features. The 5000 series indicates a location in the Missouri River basin to the south of the Weldon Spring chemical plant site and the 6000 series indicates a location in the Mississippi River basin to the north.

The second digit of the four-digit identifying number, nXnn, represents a drainage basin. The numbering begins with the drainage basin at the east end of the original U.S. Army property and increases to the west (fig. 2). The zero hundreds series, n0nn, represents drainage basins out of the



Modified from Missouri Department of Natural Resources, 1989

EXPLANATION

----- DRAINAGE-BASIN BOUNDARY

5600 DRAINAGE-BASIN IDENTIFICATION NUMBER

Figure 2.--Drainage-basin numbering system.

area of interest. The last two digits, nnXX, of the identifier are a sequential number assigned to the feature. This provides a unique identification label for each feature (Missouri Department of Natural Resources, 1989).

Two other well series are discussed in this report. The USGS wells were contracted by the U.S. Geological Survey and are on the August A. Busch Memorial Wildlife Area. The MWGS-series wells consist of two well clusters contracted by the U.S. Department of Energy for the U.S. Geological Survey and are on the vicinity property.

WATER-QUALITY DATA

Water-quality samples were collected from 10 selected surface-water locations at the Weldon Spring chemical plant site (fig. 3). These sites were selected because they typically have increased concentrations of uranium. Water-quality analyses from 57 wells, 19 springs, and 17 surface-water sites, including 3 surface-water impoundments, also are included. The purpose of this sampling was to determine locations where possible water contamination associated with the Weldon Spring chemical plant site has occurred. The offsite-sampling locations enclose the chemical plant site on all sides with the notable exception of the west side along the ridge where there are no springs and, until the summer of 1989, there were no wells. The sampled sites extend northward to Dardenne Creek and to the south to the Missouri River. The location of the sampled sites is shown in figures 3 to 7.

Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site are listed in table 1, at the back of this report. Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property are listed in table 2, at the back of this report. Discharge and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site are listed in table 3, at the back of this report. Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring site are listed in table 4, at the back of this report. The water-quality data include major inorganic constituents, nutrients, trace elements, organic compounds, and radiochemical analyses. More complete water-quality analyses were made for the sites listed in table 5, at the back of this report.

The water-quality samples collected from the USGS- and MWGS-series wells were obtained by using a submersible pump with a garden hose for a discharge line. The smaller diameter MW-series monitoring wells at the Weldon Spring chemical plant site were sampled using a 1 3/4-inch diameter pneumatic pump. The water samples were collected after a minimum of one-pipe volume of water was removed from the well. Springs were sampled as near to the orifice as possible. Streams were sampled on or near shoals near the centroid of the flowing section. Water samples from impoundments were collected by submerging the sample bottles at a point about 5 feet from the bank.

All samples were analyzed by laboratories of the U.S. Geological Survey. Samples were analyzed for inorganic constituents according to methods described by Fishman and Friedman (1989), organic compounds according to methods described by Wershaw and others (1983), and radiochemical substances according to methods described by Thatcher and others (1977). Chemical constituents referred to as "dissolved" were determined from samples that were filtered at the time of sampling through 0.45-micrometer membrane filters located between lucite plates, using a peristaltic pump as the pressure source.

Specific conductance, pH, water temperature, alkalinity, oxidation-reduction potentials, dissolved-oxygen concentrations, and ferrous-iron concentrations were determined onsite. Several specific conductance, pH, and alkalinity values are reported as laboratory values on various tables. When equipment problems occurred onsite making it difficult to get field measurements, or when anion-cation balances using the field alkalinity differed by more than 10 percent, the laboratory alkalinity value was used. On these occasions it is speculated problems with the pH meter occurred because of a defective probe, causing drifting of the measured pH value in the field. Specific

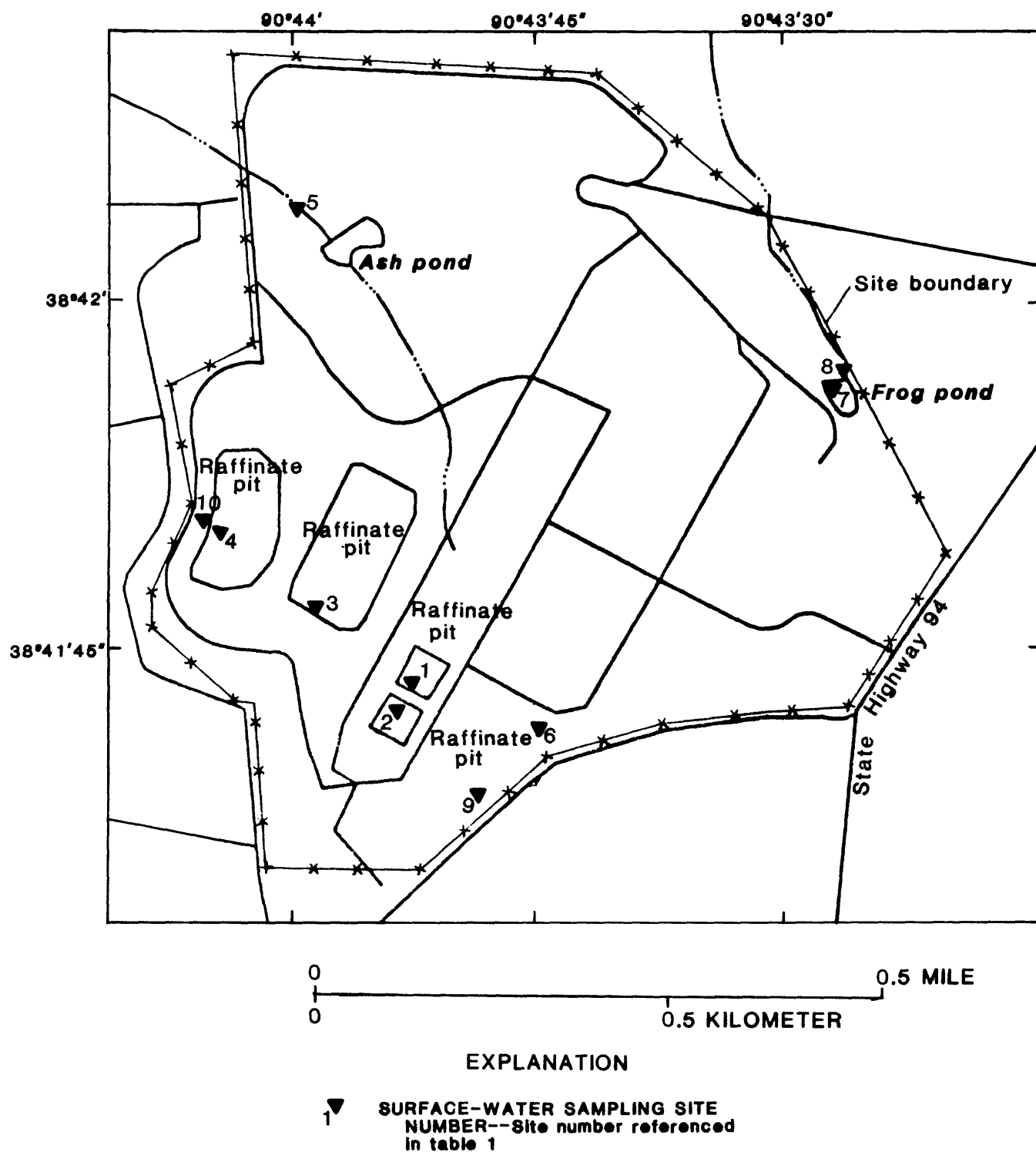


Figure 3.--Location of selected surface-water sites sampled at the Weldon Spring chemical plant site.

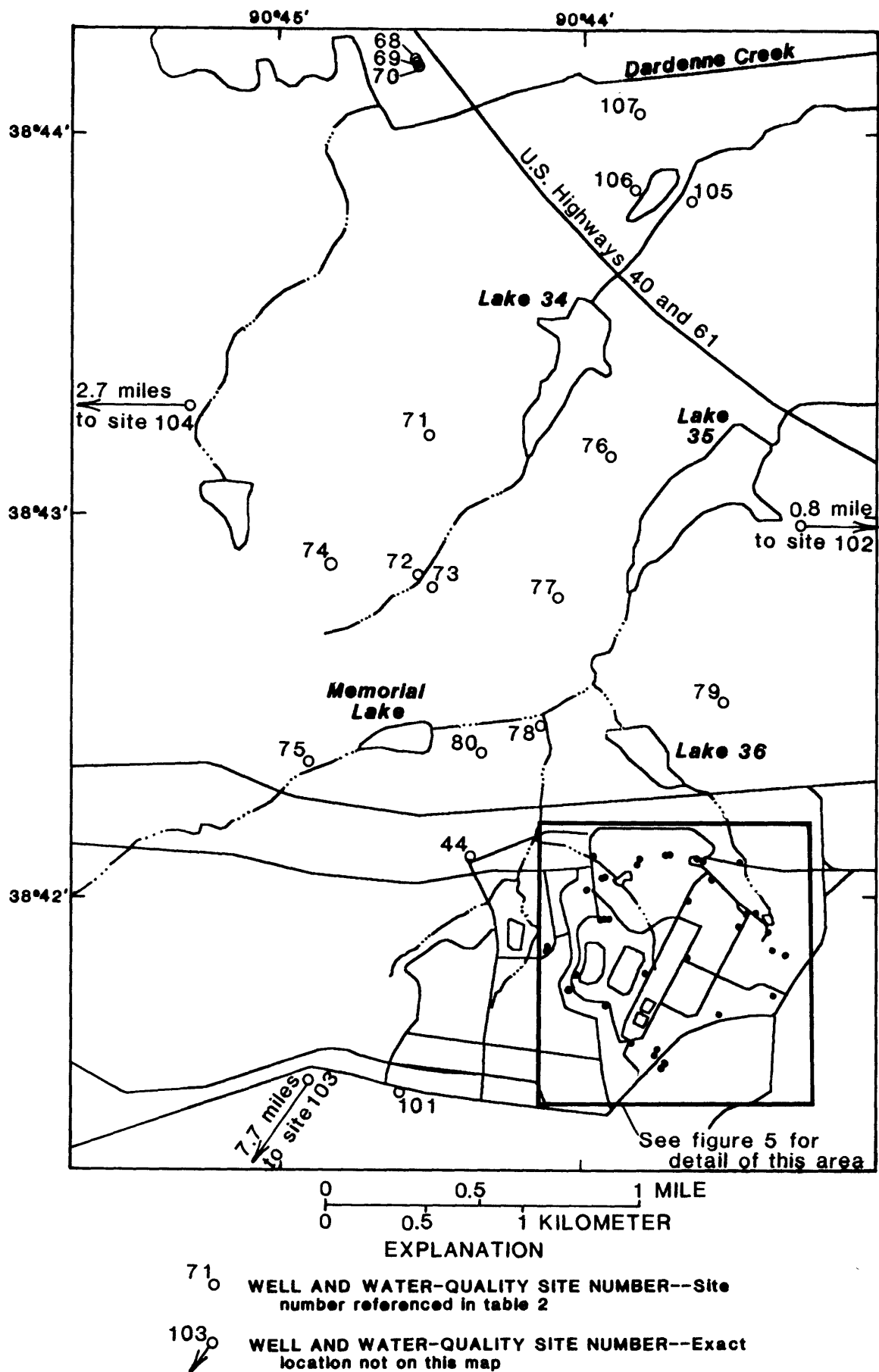


Figure 4.--Location of wells sampled at the Weldon Spring chemical plant site and vicinity property.

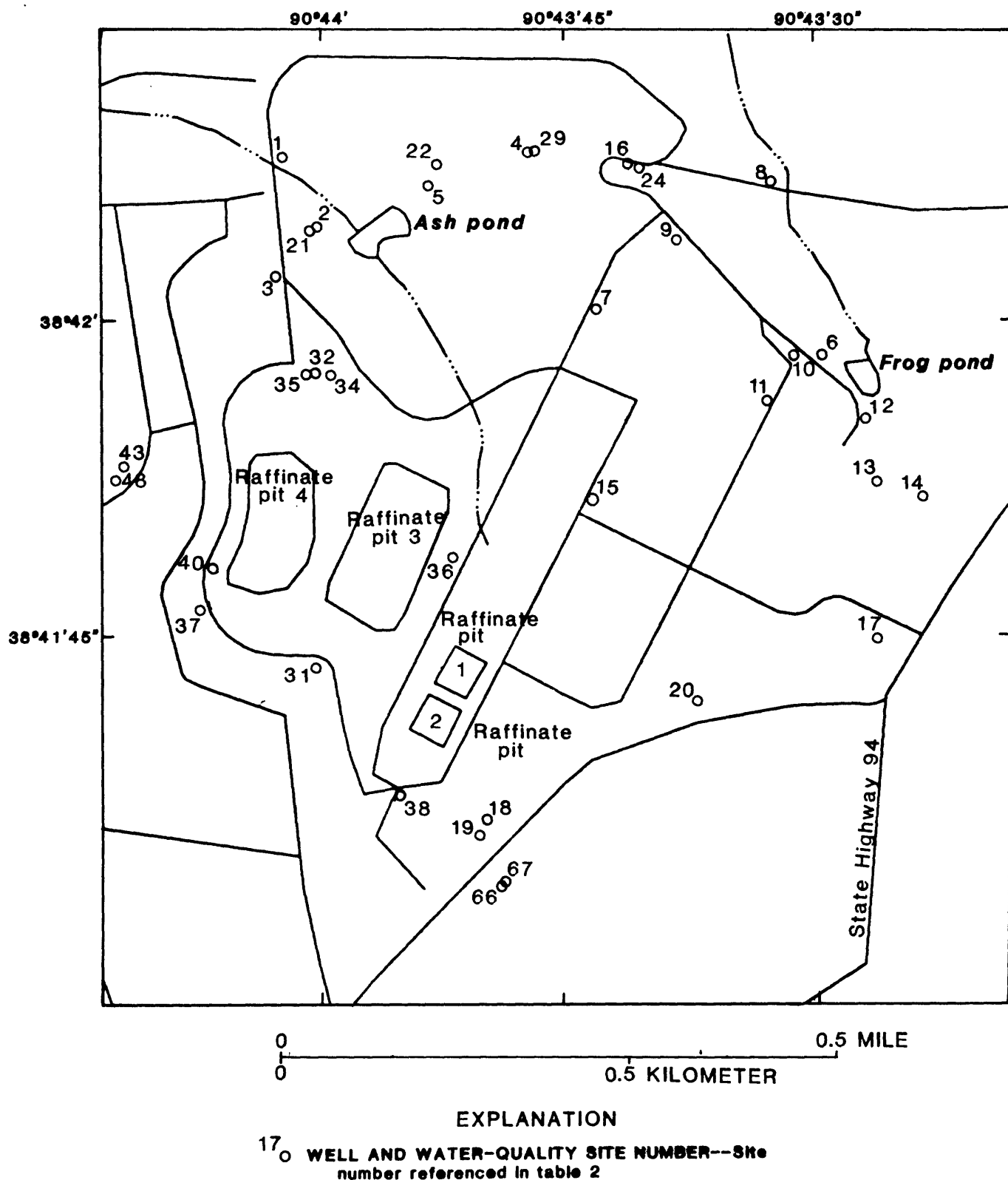
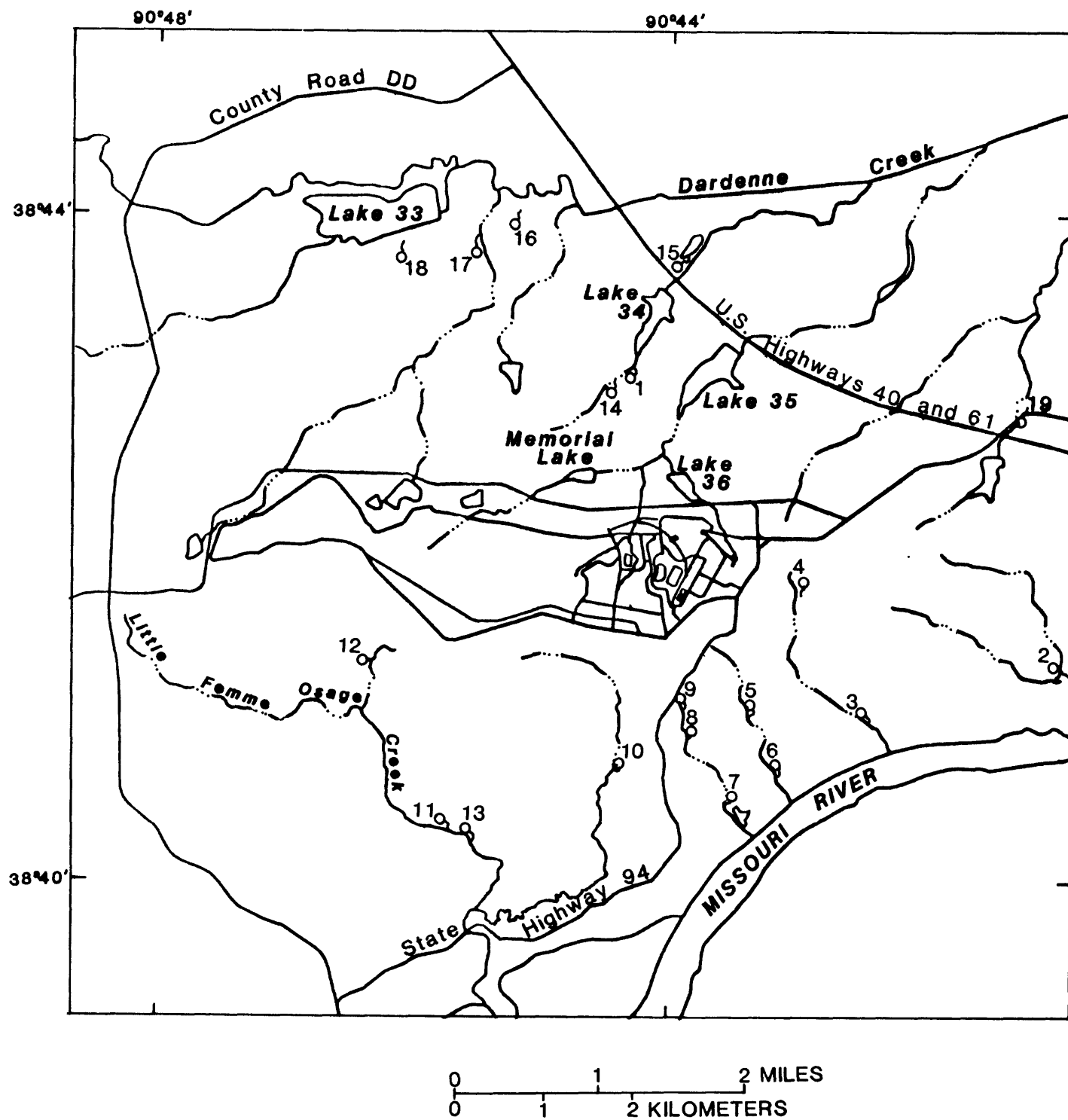


Figure 5.--Location of wells sampled at the Weldon Spring chemical plant site and vicinity property.



EXPLANATION

○₁ SPRING AND WATER-QUALITY SITE NUMBER--Site number referenced in table 3

Figure 6.-- Location of springs sampled on vicinity property near the Weldon Spring chemical plant site.

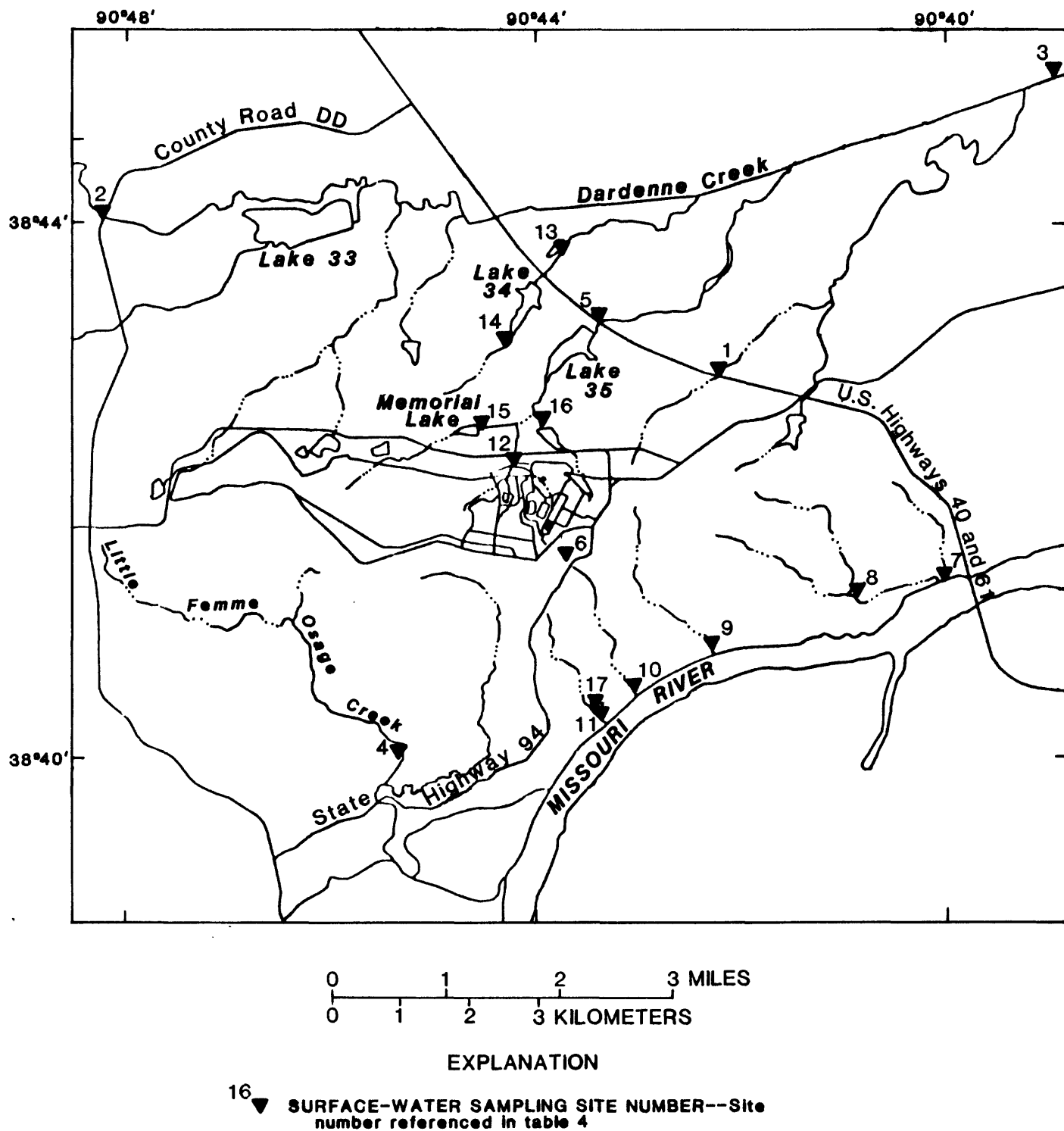


Figure 7.--Location of surface-water sites sampled on vicinity property near the Weldon Spring chemical plant site.

conductance values were measured using a portable conductivity meter with temperature compensation designed to express readings in microsiemens per centimeter at 25 degrees Celsius. The potentiometric method was used to measure both the pH value and alkalinity. Water temperature was measured with a mercury thermometer to the nearest 0.5 degree Celsius. Alkalinity was determined by incremental titration with 0.1600 normal sulfuric acid past the inflection point. Oxidation-reduction potentials were determined by measuring the voltage developed at the surface of a platinum electrode immersed in the water sample. Dissolved-oxygen concentrations were measured using a portable temperature compensated meter. Ferrous-iron concentrations were determined using the phenanthroline method. Values were measured by a portable spectrophotometer calibrated and set to the 510-nanometer wavelength.

MINIMONITOR DATA

In July 1987, minimonitors were installed at the orifice of Burgermeister spring, the outflow of Frog pond, and the outflow of Ash pond. These minimonitors recorded the specific conductance of the water continually at 30-minute intervals. Specific conductance measures the ability of a water to conduct an electrical current. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids concentration of the water. The daily mean specific conductance values for Burgermeister spring are listed in table 6, at the back of this report, and are shown in figure 8. The daily mean specific conductance values for Frog pond outflow are listed in table 7 (at the back of this report) and are shown in figure 9. The daily mean specific conductance values for Ash pond outflow are listed in table 8 (at the back of this report) and are shown in figure 10. Specific conductance was measured to make gross estimates of the water-quality variation over time and during different climatic conditions at these three sites.

SPRING AND SURFACE-WATER DISCHARGE DATA

Daily mean discharge data collected at Burgermeister spring, the unnamed tributary at Twin Island Lake, and Schote Creek at U.S. Highways 40 and 61 are presented in tables 9-11 (at the back of this report) and the hydrographs for these sites are shown in figures 11 to 13. Water from Burgermeister spring flows into an unnamed tributary of Dardenne Creek that is gaged at Twin Island Lake. Surface runoff from the chemical plant site that drains to the north flows into tributaries of Schote Creek. This discharge was gaged on the main stem of Schote Creek at U.S. Highways 40 and 61.

Water levels (stage) were continually recorded by digital recorders every 15 minutes at Burgermeister spring and Schote Creek. Stage was recorded every 5 minutes at the Twin Island Lake site because of the rapid response of this tributary to precipitation. A 90-degree sharp-crested V-notch weir was constructed across the Burgermeister spring branch channel. The stage-discharge relation for the spring was defined by the weir formula (Anderson, 1971):

$$Q = 2.4381 H^{5/2}$$

where Q is discharge of water, in cubic feet per second; and H is head of water above the base of the notch, in feet. This stage-discharge relation was verified by occasional discharge measurements.

The stage-discharge relation for the Twin Island Lake and Schote Creek sites was developed by current-meter measurements made at varying stages; however, because of the rapid response of the unnamed tributary at Twin Island Lake and short duration of peak flow during storms, a gage height of 2.27 was the maximum stage at which a discharge measurement was made. During the period of record, 19 days had some part of the record exceeding the maximum measured discharge stage. The daily mean discharge for these days was computed by correlating the daily mean gage height with the corresponding discharge. On six of these days the daily mean discharge exceeded the maximum measured discharge stage. The known stage-discharge relation was extended linearly on a log-log

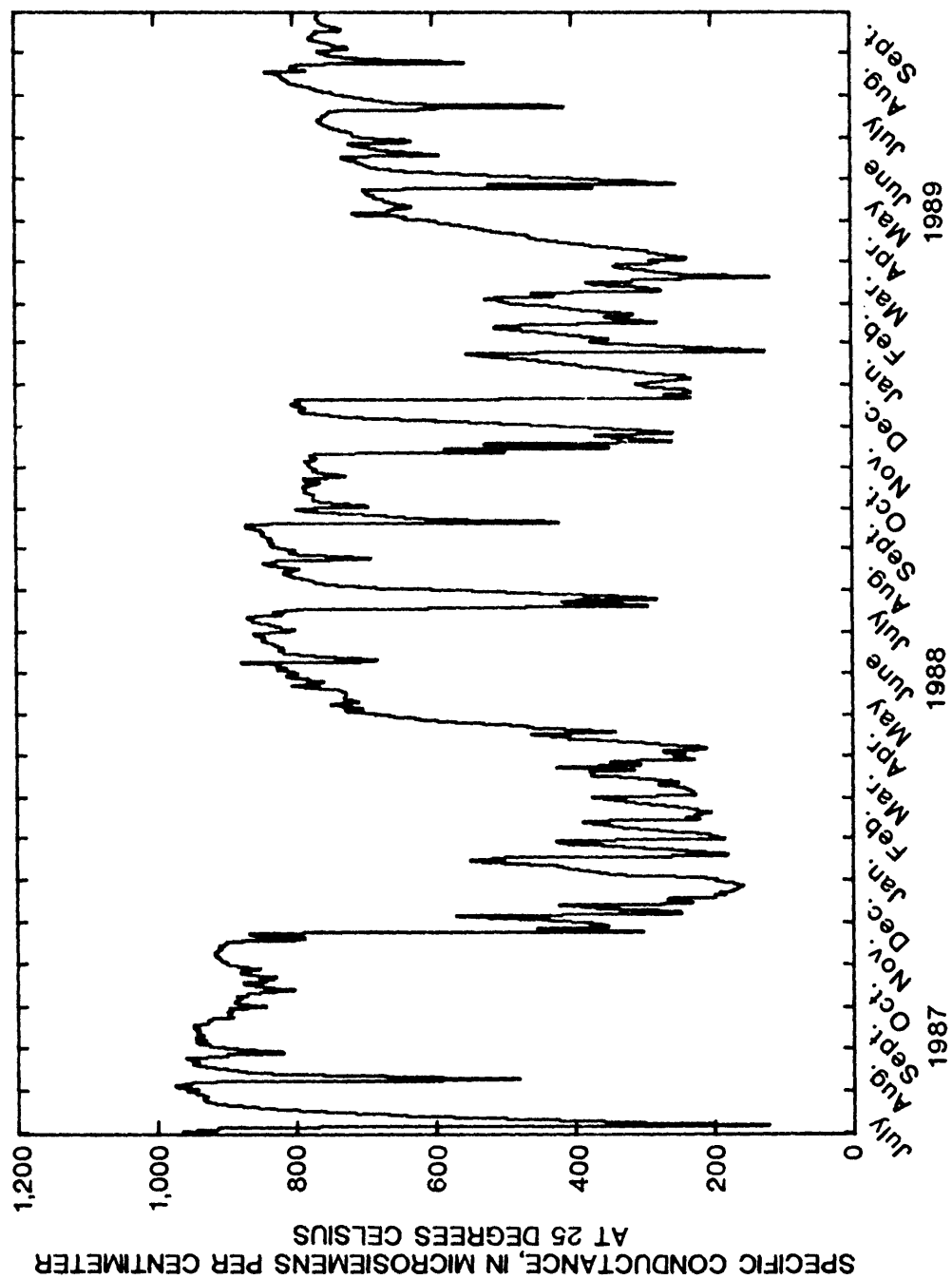


Figure 8.--Daily mean specific conductance values for Burgermeister spring, July 2, 1987, through September 30, 1989.

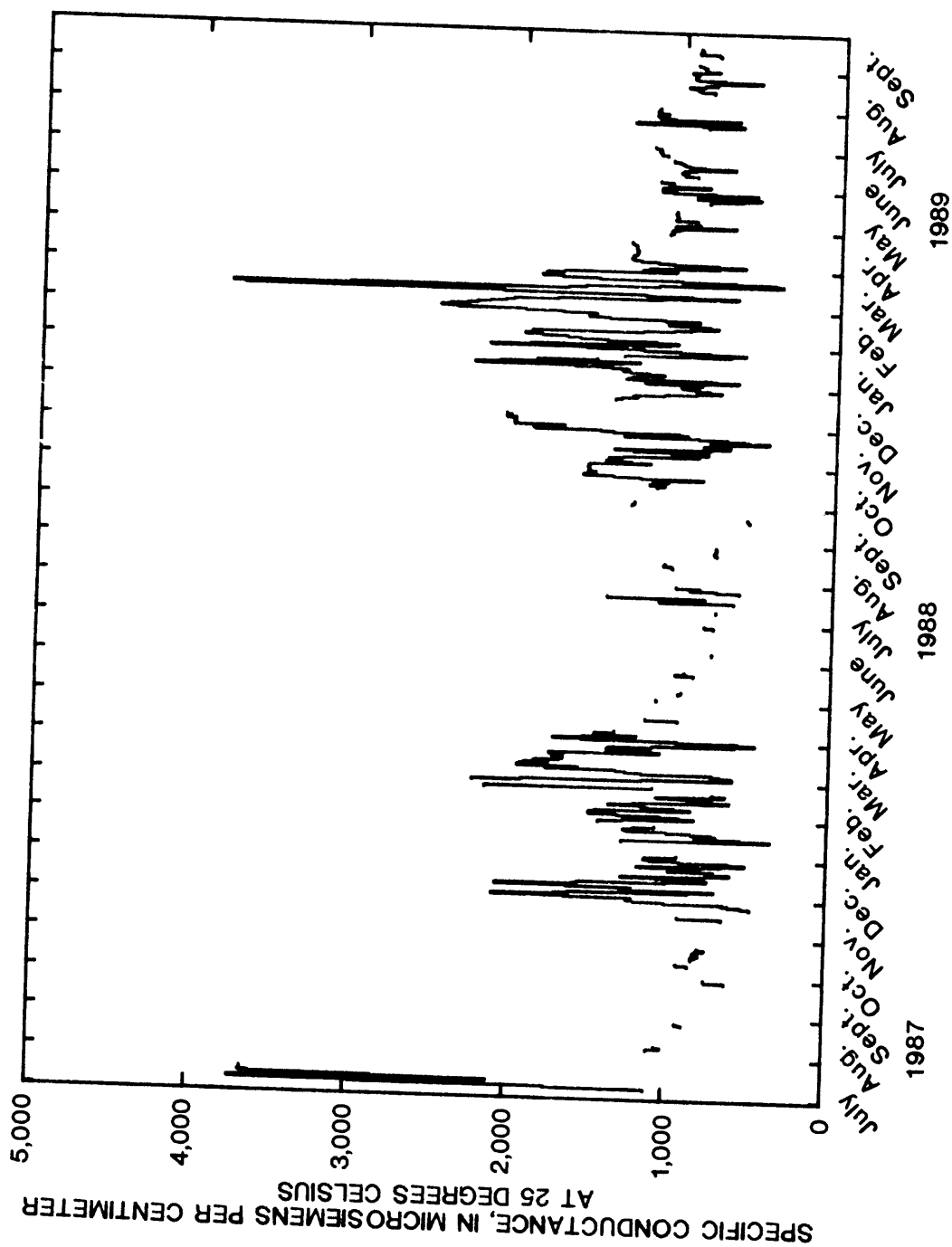


Figure 9.--Daily mean specific conductance values for Frog pond outflow, July 8, 1987, through September 30, 1989.

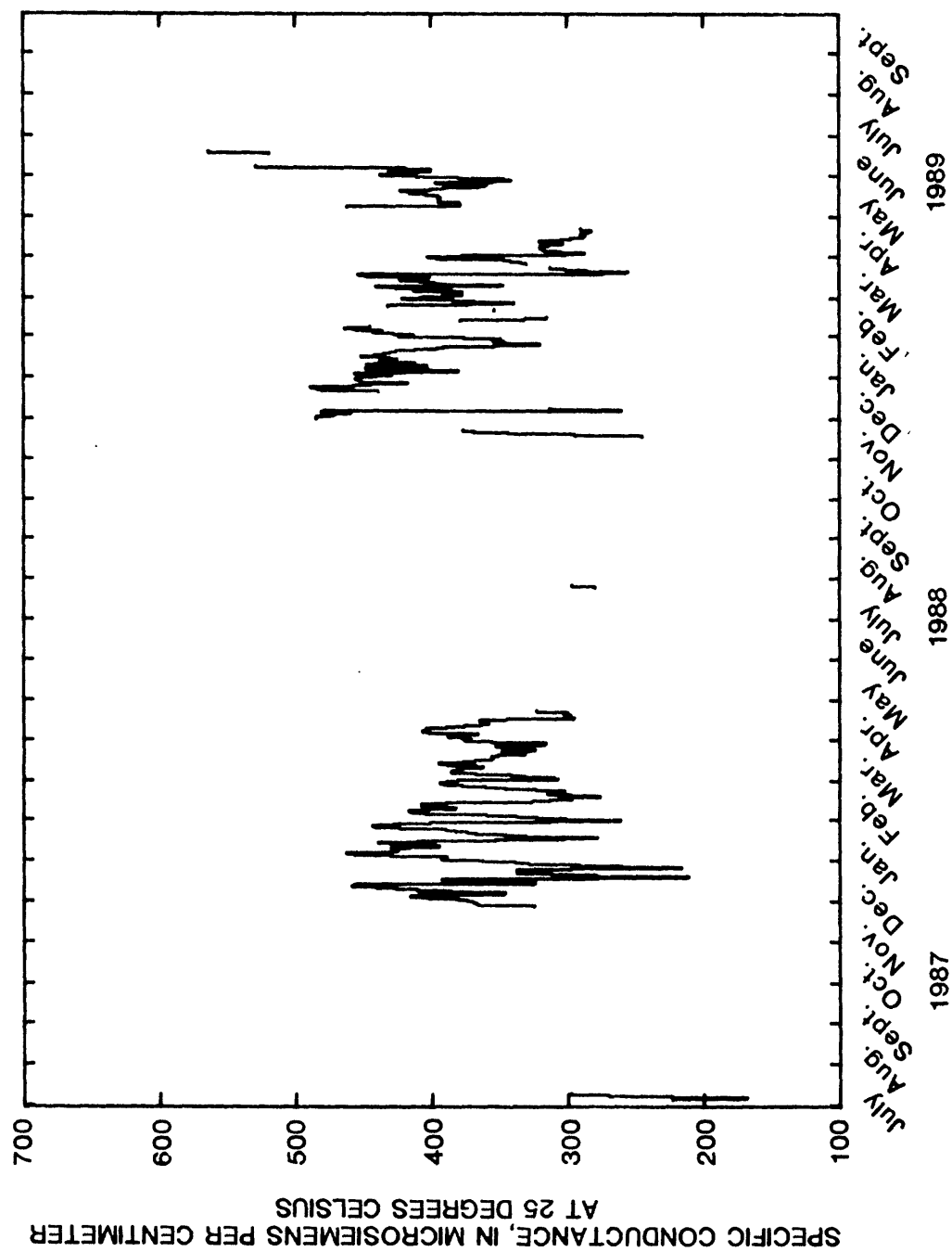


Figure 10.--Daily mean specific conductance values for Ash pond outflow, July 6, 1987, through September 30, 1989.

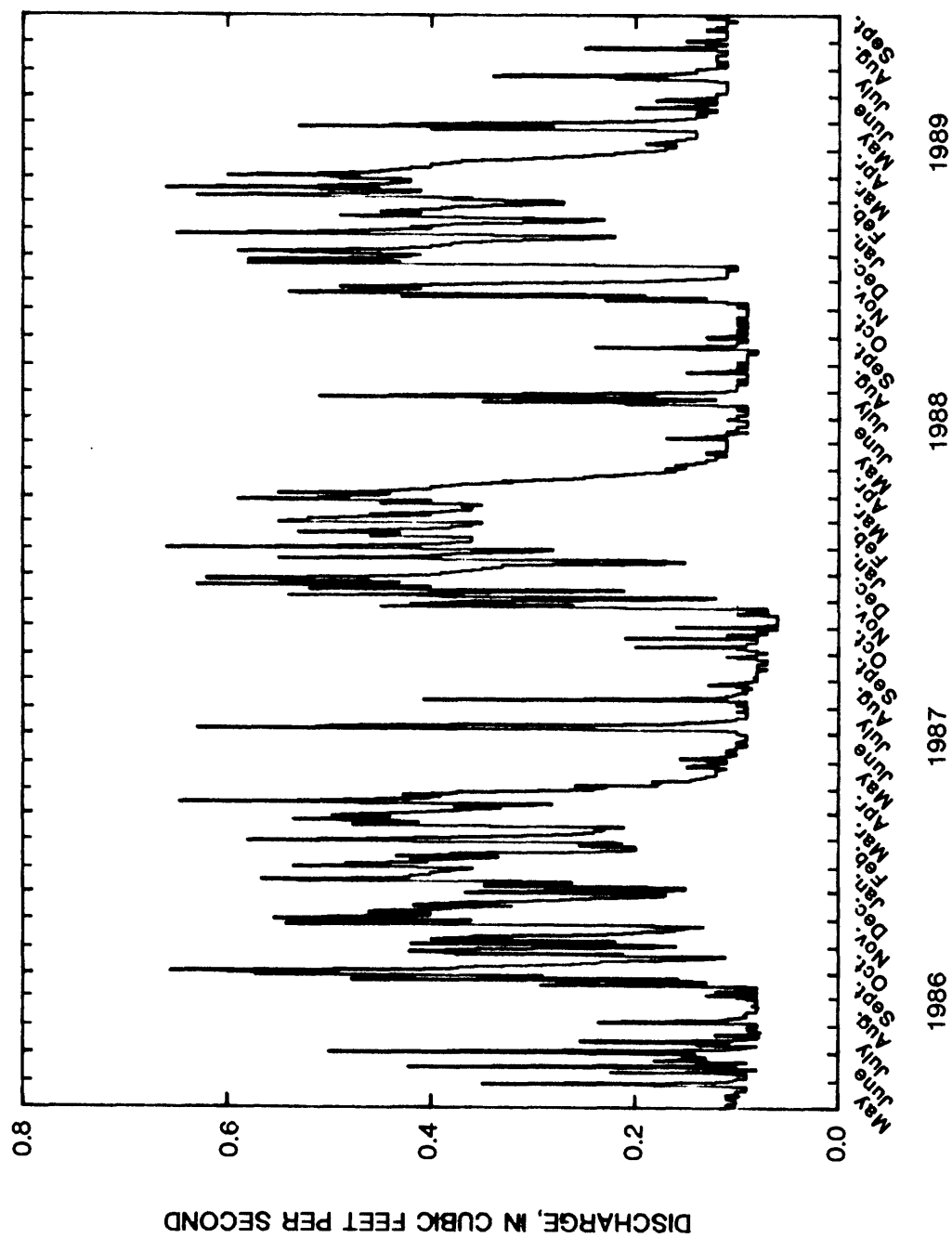


Figure 11.--Daily mean discharge at Burgermeister spring, May 1, 1986, through September 30, 1989.

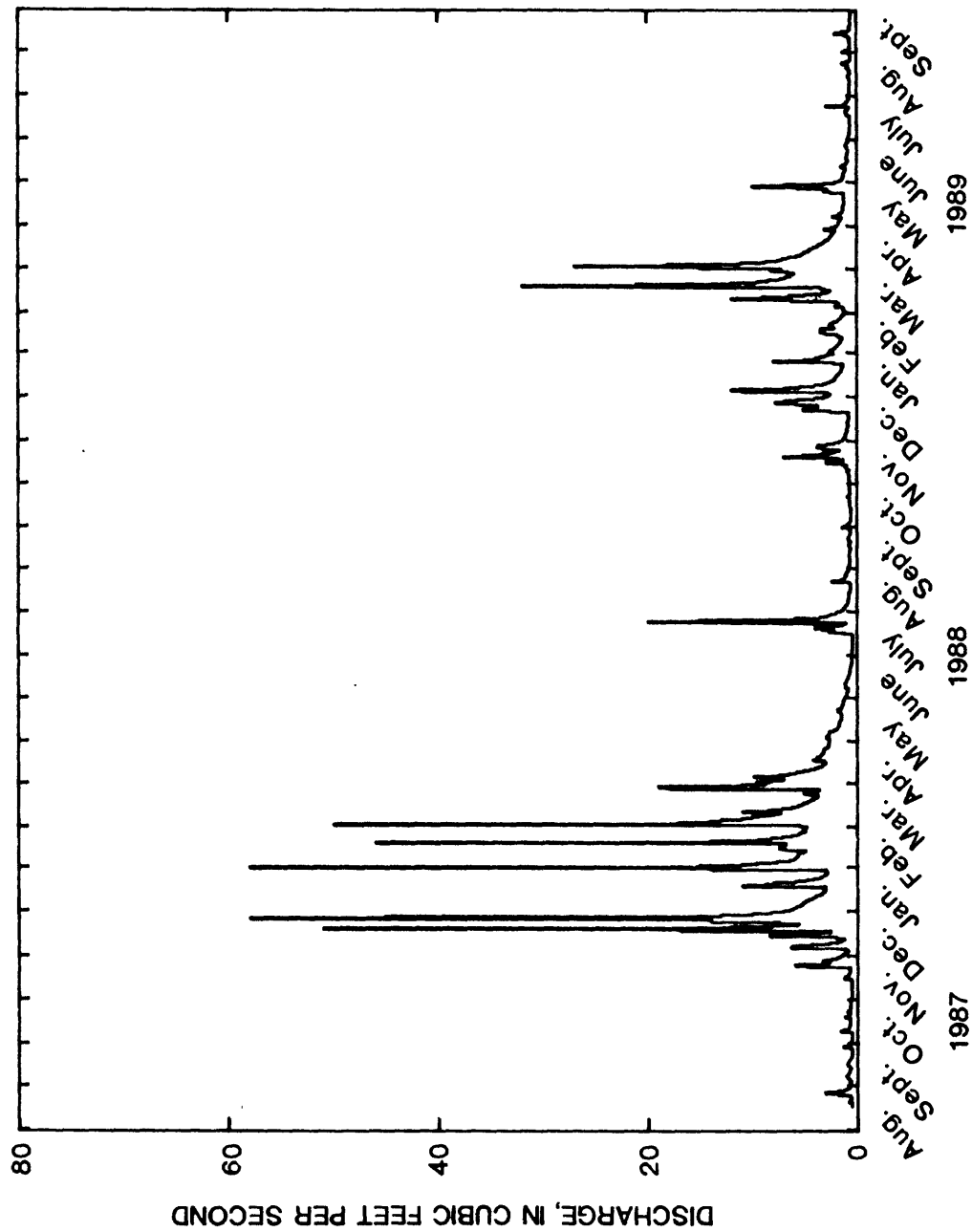


Figure 12.--Daily mean discharge at unnamed tributary at Twin Island Lake, August 18, 1987, through September 30, 1989.

scale to obtain a daily discharge on these days. Schote Creek had a maximum measured discharge for a gage height of 0.99 foot. This gage height was exceeded on 19 days during the period of record and the daily mean gage height was greater than 0.99 foot on 13 of these days. The daily discharge on these days was computed using the same method as described for the unnamed tributary at Twin Island Lake.

When the stage-discharge relation changed because of a change in the physical features that form the control or changed temporarily because of aquatic growth or debris on the control, the daily mean discharge was computed by the shifting-control method. Using this method, correction factors based on individual discharge measurements were applied to the gage heights.

The accuracy of streamflow data depends on the stability of the stage-discharge relation, the frequency and distribution of discharge measurements throughout the rating curve, and the accuracy of observations of stage, measurements of discharge, and interpretations of records. The degree of accuracy of these records are defined as follows: "excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair", within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy. The record for Burgermeister spring is rated good. The record for Twin Island Lake site is rated fair except for the periods of record January 26-30, 1989; May 18-30, 1989; July 29 to August 15, 1989; and September 21-30, 1989, which are rated poor because of stream aggradation burying the intake of the gaging station and causing loss of gage height record. The daily discharge record on December 20, 1987; February 1 and 19, 1988; March 3, 1988; March 20, 1989; and April 3, 1989, is rated poor because the daily mean gage height exceeded the maximum measured gage height. The record for Schote Creek is rated fair except for the periods December 27-29, 1987; February 2, 1988; March 4-6, 1988; March 30-31, 1988; March 21-22, 1989; and April 4-5, 1989, which are rated poor because the daily mean gage height exceeded the maximum measured gage height.

PRECIPITATION DATA

In June 1987, 19 total-catch rain gages were installed in approximately a 4.6-square-mile area that included the drainage basins of the unnamed tributary on which Burgermeister spring is located and Schote Creek. These two basins were combined because the Weldon Spring chemical plant site is located in Schote Creek basin, but interbasin transfer of water occurs from Schote Creek to the unnamed tributary basin containing Burgermeister spring (Kleeschulte and Emmett, 1987). Because these two basins are hydrologically connected, they were considered together. Daily total precipitation for the 4.6-square-mile area was calculated using the isohyetal method; these values are reported in table 12, at the back of this report. As the study progressed, in October 1988 the decision was made that the number of rain gages could be decreased with minimal loss of accuracy and the number of gages was decreased to nine.

The gages were visited as needed after rainfall and total precipitation values were recorded. Daily precipitation values were calculated by prorating the calculated precipitation totals from the rain gages for a specific period of time with the daily precipitation values reported in Missouri Climatological Data monthly reports (National Oceanic and Atmospheric Administration, 1987-1989) for surrounding areas.

WATER-LEVEL DATA

Construction data for wells at the Weldon Spring chemical plant site and vicinity property are listed in table 13, at the back of this report. Altitude of land surface or height of measuring point elevations that are reported to the nearest foot were determined from topographic maps. The source of the reported data is listed as a footnote after the well name. However, if data for one well were obtained from more than one source, the second source is noted after the corresponding item. The U.S. Department of Army had installed several well clusters to the west of the Weldon Spring chemical

plant (fig. 14). For the purpose of this report all the wells in each well cluster were given the same site number because they are all close to each other. The wells that are closely spaced on and in the vicinity of the Weldon Spring chemical plant site are shown in more detail in figure 15.

Quarterly water-level measurements were made during May 1987 through August 1989 (table 14, at the back of this report). The reported values were measured in feet below the measuring point, which was usually the top of casing. In wells where water was less than 100 feet below the measuring point, a steel tape was lowered into the wells and the depth to water was read to the nearest 0.01 foot. In wells where water was more than 100 feet below land surface, an electric tape was used and water-level measurements were read to the nearest 0.1 foot. As more wells were installed, it became difficult to measure the water levels in all the wells in one day. The day listed in table 14 is the day the water-level measurements were begun. As the wells were being measured, occasionally the water level in a well would be much lower than it had been in previous measurements. It is believed in these instances the wells had recently been sampled and had not fully recovered after being pumped, or the well had not been completely developed at the time of the questionable water-level measurement.

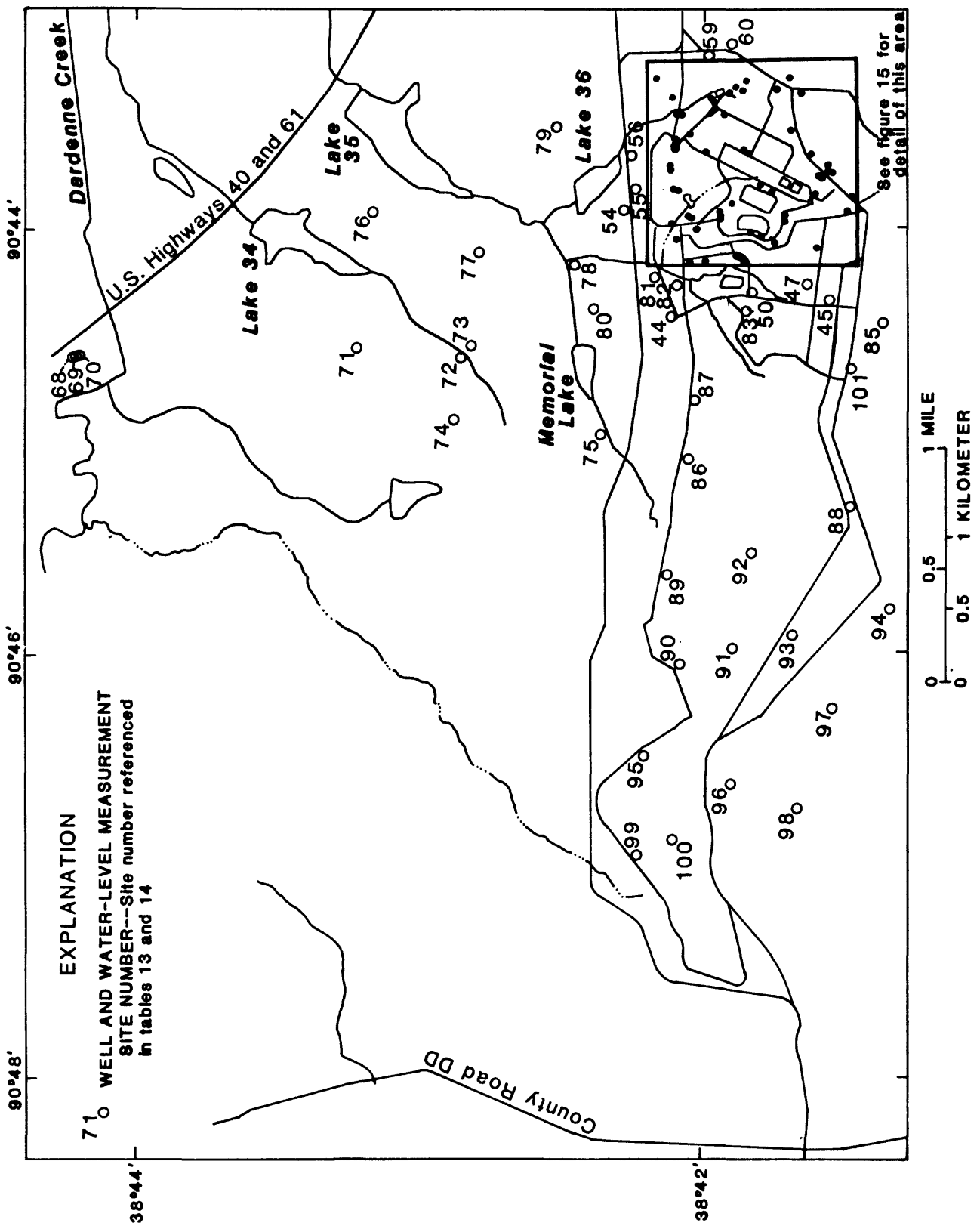
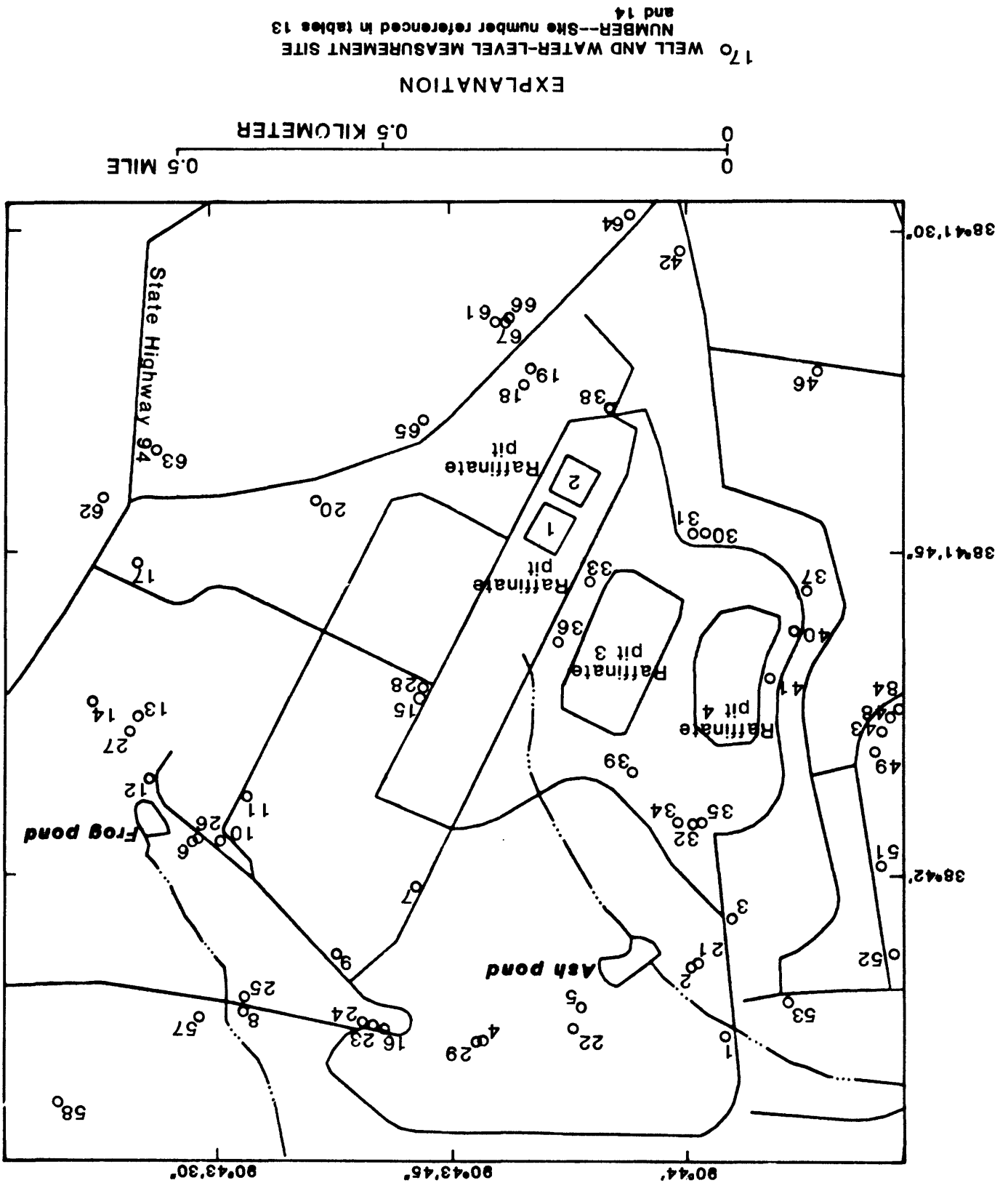


Figure 14.--Location of wells used as water-level measurement sites at the Weldon Spring chemical plant

Figure 15.--Location of wells used as water-level measurement sites at the Weldon Spring chemical plant site and vicinity property.]



REFERENCES CITED

- Anderson, K.E., 1971, Water well handbook: Missouri Water Well and Pump Contractors Assn., Inc., 3rd ed., 281 p.
- Bechtel National, Inc., 1987, Hydrogeological characterization report for Weldon Spring chemical plant: Oak Ridge, Tenn., U.S. Department of Energy, 98 p., with appendices.
- Fishman, M.J., and Friedman, L.C., 1989, Methods for determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A1, 545 p.
- IT Corporation, 1989, Draft remedial investigation report Weldon Spring Training Area, Weldon Spring, Missouri: U.S. Army, Corps of Engineers, Kansas City District, Kansas City, Missouri, v. II, appendix D.
- Kleeschulte, M.J., and Emmett, L.F., 1987, Hydrology and water quality at the Weldon Spring radioactive waste-disposal sites, St. Charles County, Missouri: U.S. Geological Survey Water-Resources Investigations Report 87-4169, 65 p.
- Lenhard, L.A., Belcher, F.H., and Holt, J.N., 1967, Weldon Spring raffinate pits and quarry task force report: Oak Ridge, Tenn., U.S. Department of Energy, 21p.
- Missouri Department of Natural Resources, 1989, First annual report on the shallow ground water investigations at Weldon Spring, Missouri: Rolla, Missouri Division of Geology and Land Survey, 28 p. and 11 plates.
- MK-Ferguson Company, 1987, Phase I--Water-quality assessment: Oak Ridge, Tenn., U.S. Department of Energy, 122 p., with appendix.
- Nelson, R.A., 1987, Weldon Spring site remedial action project--Environmental setting briefing: MK-Ferguson Company, meeting handout, 25 p.
- National Oceanic and Atmospheric Administration, 1987-1989, Climatological data monthly summary, Missouri: Asheville, North Carolina, National Climatic Center, v. 91, no. 6-12; v. 92, no. 1-12; and v. 93, no. 1-9.
- Thatcher, L.L., Janzer, V.J., and Edwards, K.W., 1977, Methods for determination of radioactive substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A5, 95 p.
- Weidner, R.B., and Boback, M.W., 1982, Weldon Spring storage site environmental monitoring report for 1979 and 1980: Cincinnati, National Lead Company of Ohio, Inc., Feed Materials Production Center, 54p.
- Wershaw, R.L., Fishman, M.J., Grabbe, R.R. and Lowe, L.E., 1983, Methods for the determination of organic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A3, 80 p.

ABBREVIATIONS USED IN TABLES 1-5

Latitude	Latitude in degrees, minutes, and seconds	Eh	Oxidation-reduction potential converted to standard hydrogen electrode, in millivolts
Longitude	Longitude in degrees, minutes, and seconds	DO	Dissolved oxygen, in milligrams per liter
Alt	Altitude of land surface datum, in feet above sea level	NO ₂ total	Total nitrite as nitrogen, in milligrams per liter
Q	Instantaneous discharge, in cubic feet per second	NO ₂ + NO ₃ total	Total nitrite plus nitrate as nitrogen, in milligrams per liter
Cond	Specific conductance, in microsiemens per centimeter at 25 degrees Celsius	NH ₃	Dissolved ammonia as nitrogen, in milligrams per liter
pH	In standard units	NH ₃ total	Total ammonia as nitrogen, in milligrams per liter
Temp	Water temperature, in degrees Celsius	P	Dissolved phosphorous, in milligrams per liter
Ca	Dissolved calcium, in milligrams per liter	P total	Total phosphorous, in milligrams per liter
Mg	Dissolved magnesium, in milligrams per liter	P ortho	Dissolved orthophosphate as phosphorus, in milligrams per liter
Na	Dissolved sodium, in milligrams per liter	C	Dissolved organic carbon, in milligrams per liter
K	Dissolved potassium, in milligrams per liter	Br	Dissolved bromide, in micrograms per liter
HCO ₃	Bicarbonate, in milligrams per liter	Al	Dissolved aluminum, in micrograms per liter
CO ₃	Carbonate, in milligrams per liter	As	Dissolved arsenic, in micrograms per liter
Alk	Alkalinity as calcium carbonate, in milligrams per liter	Ba	Dissolved barium, in micrograms per liter
SO ₄	Dissolved sulfate, in milligrams per liter	Be	Dissolved beryllium, in micrograms per liter
Cl	Dissolved chloride, in milligrams per liter	Cd	Dissolved cadmium, in micrograms per liter
F	Dissolved fluoride, in milligrams per liter	Cr	Dissolved chromium, in micrograms per liter
SiO ₂	Dissolved silica, in milligrams per liter	Co	Dissolved cobalt, in micrograms per liter
DS	Dissolved solids, residue at 180 degrees Celsius, in milligrams per liter	Cu	Dissolved copper, in micrograms per liter
NO ₂	Dissolved nitrite as nitrogen, in milligrams per liter	Fe	Dissolved iron, in micrograms per liter
NO ₂ + NO ₃	Dissolved nitrite plus nitrate as nitrogen, in milligrams per liter	Fe++	Dissolved ferrous iron, in micrograms per liter
B	Dissolved boron, in micrograms per liter	Pb	Dissolved lead, in micrograms per liter
Li	Dissolved lithium, in micrograms per liter	Mn	Dissolved manganese, in micrograms per liter
Sr	Dissolved strontium, in micrograms per liter	Mo	Dissolved molybdenum, in micrograms per liter
TOC	Total organic carbon, in milligrams per liter	Ni	Dissolved nickel, in micrograms per liter
U	Dissolved natural uranium, in micrograms per liter	Se	Dissolved selenium, in micrograms per liter
U total	Total natural uranium, in micrograms per liter	Ag	Dissolved silver, in micrograms per liter
Ra-226	Dissolved radium 226, in micrograms per liter	V	Dissolved vanadium, in micrograms per liter
TD	Total depth of well, in feet	Zn	Dissolved zinc, in micrograms per liter
Trit	Total tritium, in picocuries per liter	Ra-228	Dissolved radium, in picocuries per liter
		Hg	Dissolved mercury, in micrograms per liter
		..	No data available

Table 1.--Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site

[N, north; W, west]

Site number (fig. 3)	Name	Latitude	Longitude	Alt	Date	Q	Cond	pH	Temp
1	Raffinate pit 1	38 41 43 N	090 43 52 W	640	12-02-87 04-04-88 06-16-88 09-07-88 12-07-88	-- -- -- -- --	4,000 3,450 4,600 4,810 2,920	7.5 8.3 8.1 8.9 8.0	5.0 16.0 28.5 20.5 6.0
2	Raffinate pit 2	38 41 42 N	090 43 53 W	640	12-02-87 04-04-88 06-16-88 09-07-88 12-07-88	-- -- -- -- --	1,380 1,250 1,780 2,160 1,420	7.9 8.5 8.8 9.4 8.8	5.5 17.0 29.0 22.0 7.0
3	Raffinate pit 3	38 41 48 N	090 43 56 W	650	12-02-87 12-09-87 04-04-88 06-16-88 09-07-88	-- -- -- -- --	9,250 -- 8,200 9,900 9,400	7.2 -- 8.2 8.6 9.6	5.0 -- 16.0 28.0 20.5
4	Raffinate pit 4	38 41 49 N	090 44 03 W	645	12-07-88 03-14-89 05-30-89 06-08-89 12-03-87 04-04-88 06-16-88 09-07-88 12-02-88	-- -- -- -- -- -- -- -- --	12,000 11,000 10,600 12,000 955 1,040 1,130 1,120 1,050	8.2 7.5 8.5 8.5 9.2 9.2 9.3 10.0 9.9	8.0 16.0 31.5 25.5 7.5 15.5 29.0 24.5 6.5
5	Ash pond outflow	38 42 05 N	090 43 59 W	605	03-14-89 12-01-87 04-04-88 12-02-88 03-14-89	-- 0.08 .07 .10 --	1,120 372 391 484 407	8.9 7.8 8.1 8.0 8.0	11.0 5.0 18.5 3.5 13.5

Table 1.--Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site--Continued

Site number (fig. 3)	Name	Latitude	Longitude	Alt	Date	Q	Cond	pH	Temp
6	Drainage ditch near building 301	38 41 40 N	090 43 50 W	653	12-02-87 12-07-88	0.01 .01	395 606	7.4 8.1	6.5 7.0
7	Frog pond	38 41 57 N	090 43 28 W	618	06-16-88 09-07-88	-- --	857 765	9.0 9.3	30.0 25.5
8	Frog pond outflow	38 41 58 N	090 43 28 W	--	12-01-87 04-04-88 12-02-88 04-12-89 06-06-89	1.0 .02 .03 .05 --	1,290 1,780 1,940 1,310 1,090	8.0 9.0 7.8 9.0 8.9	3.5 21.5 4.0 9.0 30.0
9	Seep upstream from U.S. Department of Energy sewage treatment facility	38 41 39 N	090 43 48 W	643	12-02-87 04-04-88 12-01-88 03-15-89	.01 .02 .03 .01	755 765 990 1,070	7.6 8.4 8.5 7.7	7.0 20.0 6.5 9.0
10	Seepage west levee pit 4	38 41 53 N	090 44 04 W	627	12-03-87 04-04-88 09-07-88 11-30-88 04-11-89 06-08-89	.01 .02 .01 .04 .07 --	955 782 1,020 950 785 713	7.6 8.0 7.6 8.3 7.2 7.6	9.5 15.0 18.0 6.5 7.0 20.5

Table 1.--Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site--Continued

Site number (fig. 3)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
1	12-02-87	390	18	560	22	58	0	47	310	16	2.4	6.1
	04-04-88	280	14	390	23	59	0	48	240	51	1.6	1.2
	06-16-88	360	20	1,000	29	57	0	46	340	15	2.6	4.9
	09-07-88	340	29	700	40	80	24	104	370	17	3.7	7.1
	12-07-88	130	32	430	32	60	0	49	240	13	3.8	4.7
2	12-02-87	140	65	140	22	105	0	86	800	5.2	2.9	4.2
	04-04-88	99	45	100	12	66	14	78	540	2.8	2.0	.4
	06-16-88	--	--	--	--	--	12	47	--	--	--	--
	09-07-88	190	90	220	19	46	11	56	1,200	6.5	3.4	6.4
	12-07-88	38	49	180	19	210	6	183	470	6.1	4.6	5.8
3	12-02-87	550	370	1,400	120	42	0	35	650	21	7.2	1.1
	12-09-87	--	--	--	--	--	--	--	--	--	--	--
	04-04-88	410	260	910	63	59	0	48	400	12	5.2	.3
	06-16-88	490	340	3,300	75	31	7	37	600	19	7.4	2.0
	09-07-88	820	600	1,800	90	31	2	29	830	27	8.3	1.2
4	12-07-88	540	440	1,500	110	39	0	32	710	24	6.4	<.5
	03-14-89	490	360	1,100	85	58	0	48	570	19	5.6	.4
	05-30-89	--	--	--	--	27	8	35	--	--	--	--
	06-08-89	490	370	1,300	87	30	12	42	630	23	6.9	1.1
	12-03-87	9.5	43	190	20	479	--	392	120	7.6	1.9	3.0
5	04-04-88	12	39	170	13	327	50	352	110	6.3	7.2	1.2
	06-16-88	16	42	180	11	300	91	402	130	6.9	6.3	.6
	09-07-88	7.7	43	190	11	150	208	469	120	6.9	9.5	2.6
	12-02-88	8.5	39	190	15	300	125	454	120	6.8	7.2	2.5
	03-14-89	11	37	190	13	400	64	432	110	6.5	6.0	1.4
	12-01-87	40	10	14	6.8	108	0	88	84	6.5	.7	19
	04-04-88	48	11	17	3.8	166	0	136	47	3.0	.8	8.0
	12-02-88	59	14	16	7.1	180	0	144	68	5.7	.5	24
	03-14-89	48	10	19	3.5	130	0	109	40	5.0	.4	9.1

Table 1.--Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site--Continued

Site number (fig. 3)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
6	12-02-87	70	17	21	2.7	204	0	167	79	5.6	2.1	6.5
	12-07-88	75	19	24	2.8	270	0	220	94	3.2	1.6	5.8
7	06-16-88	--	--	--	--	63	14	76	--	--	--	--
	09-07-88	28	11	110	3.7	88	8	86	51	160	.1	.2
8	12-01-87	61	12	160	3.2	133	0	109	59	300	.5	5.0
	04-04-88	53	11	270	2.5	105	17	114	41	450	.3	2.2
	12-02-88	71	17	300	3.6	157	0	129	64	500	.3	4.8
	04-12-89	52	12	190	3.2	131	10	123	54	310	.3	1.3
	06-06-89	40	9.0	160	3.8	68	17	84	46	260	.3	3.9
9	12-02-87	140	24	39	3.0	222	0	182	110	4.9	.7	8.1
	04-04-88	99	19	35	2.7	229	5	196	84	7.6	.5	3.9
	12-01-88	140	25	34	2.6	260	3	218	120	4.6	.5	7.5
	03-15-89	140	25	51	2.7	260	0	210	130	4.7	.6	6.5
10	12-03-87	180	66	18	1.3	138	0	113	560	2.8	.7	6.5
	04-04-88	110	31	16	1.3	183	0	150	270	3.1	.4	9.5
	09-07-88	140	52	17	1.3	200	0	162	440	2.5	.5	7.5
	11-30-88	130	49	13	1.3	200	0	161	380	2.1	.5	6.2
	04-11-89	110	39	12	1.0	190	0	154	270	1.9	.5	4.4
	06-08-89	97	36	9.1	.60	150	0	124	250	3.1	.5	6.7

Table 1.--Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site--Continued

Site number (fig. 3)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226
1	12-02-87	3,730	3.4	130	--	20	230	--	43	--	170
	04-04-88	2,740	1.0	370	--	20	830	6.3	34	--	95
	06-16-88	3,880	6.2	550	--	10	1,200	7.1	45	--	180
	09-07-88	3,950	8.2	560	20	150	400	12	--	1,100	160
	12-07-88	2,370	1.5	330	20	300	630	10	--	1,400	100
2	12-02-87	1,290	.06	2.2	--	24	370	--	1,200	--	18
	04-04-88	911	.17	13	--	20	260	6.7	550	--	28
	06-16-88	--	.21	21	--	--	--	9.9	530	--	59
	09-07-88	1,760	<.01	.26	490	20	110	51	--	800	150
	12-07-88	978	.08	27	210	280	170	19	--	2,500	32
3	12-02-87	10,000	--	--	--	3,700	2,300	--	280	--	^a 86
	12-09-87	--	1.3	1,500	--	--	--	--	--	--	--
	04-04-88	6,690	1.0	990	--	2,400	1,400	4.9	170	--	57
	06-16-88	9,600	5.5	1,400	--	3,300	1,900	6.3	190	--	98
	09-07-88	12,800	7.1	2,000	80	4,200	760	5.1	--	170	150
4	12-07-88	11,100	.73	1,700	70	380	2,500	5.9	--	190	93
	03-14-89	8,890	.91	1,400	70	3,000	200	3.1	320	--	47
	05-30-89	--	--	--	--	--	--	--	--	--	--
	06-08-89	7,630	1.1	1,500	100	3,600	2,100	5.4	320	--	--
	12-03-87	772	.77	27	--	570	150	--	4,000	--	^a 6.0
5	04-04-88	728	.33	29	--	490	140	8.5	3,300	--	4.0
	06-16-88	787	.86	63	--	560	160	13	3,000	--	4.5
	09-07-88	706	.91	22	50	570	160	16	--	3,300	10
	12-02-88	697	.67	5.0	50	540	140	11	--	5,400	9.1
	03-14-89	651	<.01	7.4	40	520	140	11	2,800	--	4.9
5	12-01-87	241	.03	.96	--	15	110	--	590	--	^a .09
	04-04-88	252	--	--	--	20	150	6.5	3,500	--	<.4
	12-02-88	422	.06	6.0	270	20	170	11	--	5,100	<.4
	03-14-89	255	.25	12	110	6	140	8.3	1,300	--	.1

Table 1.--Streamflow and water-quality data for selected surface-water sites at the Weldon Spring chemical plant site--Continued

Site number (fig. 3)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226
6	12-02-87	334	<.01	<.10	--	5	150	--	5,400	--	<.4
	12-07-88	400	.02	5.2	20	6	160	3.5	--	7,600	<.4
7	06-16-88	--	--	--	--	--	--	17.	280	--	.4
	09-07-88	408	<.01	.75	50	16	140	8.5	--	420	.6
8	12-01-87	660	.02	.44	--	6	210	--	410	--	^a .10
	04-04-88	951	--	--	--	20	250	7.3	310	--	<.4
	12-02-88	1,080	<.01	.10	50	6	290	7.3	--	340	<.4
	04-12-89	725	<.01	<.10	70	13	240	6.9	--	310	<.4
	06-06-89	573	<.01	.25	70	11	200	8.0	200	--	--
9	12-02-87	732	<.01	61	--	21	310	--	2,400	--	<.4
	04-04-88	512	.04	30	--	20	260	5.5	1,400	--	<.4
	12-01-88	687	.02	54	30	24	310	4.8	--	2,300	<.4
	03-15-89	723	.03	59	30	24	330	5.9	1,900	--	.1
10	12-03-87	1,020	<.01	.90	--	18	390	--	--	--	--
	04-04-88	540	<.01	.35	--	13	250	2.9	6.7	--	<.4
	09-07-88	766	<.01	.27	60	12	360	1.9	--	19	<.4
	11-30-88	717	<.01	1.0	50	9	300	1.7	--	14	--
	04-11-89	568	<.01	.48	40	8	250	1.7	--	9.2	<.4
	06-08-89	487	<.01	1.2	30	8	190	2.6	13	--	--

^a Analyses done using the Radon method instead of Planchet count.

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property

[N, north; W, west]

Site number (figs. 4 and 5)	Name	Latitude	Longitude	TD	Alt	Date	Cond	pH	Temp
1	MW 2001	38 42 07 N	090 44 02 W	58.3	612	12-03-87 06-05-89	575 778	7.1 7.2	13.0 13.5
2	MW 2002	38 42 05 N	090 44 00 W	58.2	624	08-02-89	2,620	7.2	15.0
3	MW 2003	38 42 02 N	090 44 02 W	58.3	637	12-03-87 03-13-89 06-06-89	4,100 4,500 5,460	6.8 6.8 6.2	14.0 13.5 14.5
4	MW 2004	38 42 08 N	090 43 49 W	75.7	643	12-03-87 08-02-89	645 671	7.2 7.2	13.5 13.5
5	MW 2005	38 42 05 N	090 43 56 W	75.6	636	12-03-87 05-11-89 06-06-89	670 889 815	7.2 7.3 6.9	14.0 14.5 14.0
6	MW 2006	38 41 58 N	090 43 29 W	65.5	634	12-02-87 03-14-89 06-06-89	700 1,460 1,470	7.0 6.6 6.7	14.5 14.5 15.0
7	MW 2007	38 42 00 N	090 43 43 W	93.0	652	12-11-87	592	7.3	14.0
8	MW 2008	38 42 06 N	090 43 35 W	55.0	623	12-04-87	702	7.0	13.0
9	MW 2009	38 42 02 N	090 43 38 W	57.6	636	12-11-87	990	6.8	14.0
10	MW 2010	38 41 58 N	090 43 33 W	58.0	643	12-02-87	695	7.0	13.5
11	MW 2011	38 41 56 N	090 43 34 W	72.8	653	12-02-87	510	7.3	13.0
12	MW 2012	38 41 55 N	090 43 27 W	58.0	635	12-02-87	725	6.9	14.0
13	MW 2013	38 41 52 N	090 43 28 W	68.0	645	12-01-87	1,030	7.1	13.5
14	MW 2014	38 41 49 N	090 43 25 W	58.0	647	12-01-87	1,010	7.3	13.5
15	MW 2015	38 41 51 N	090 43 44 W	77.5	657	12-04-87	895	7.0	14.0
16	MW 2016	38 42 06 N	090 43 41 W	150.5	635	12-16-87	600	6.6	9.0

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Name	Latitude	Longitude	TD	Alt	Date	Cond	pH	Temp
17	MW 2017	38 41 45 N	090 43 26 W	63.0	658	12-07-87	1,670	7.2	15.0
18	MW 2018	38 41 36 N	090 43 51 W	63.0	662	12-07-87	759	7.2	13.5
19	MW 2019	38 41 36 N	090 43 51 W	116.0	662	12-08-87	514	7.5	13.5
20	MW 2020	38 41 42 N	090 43 37 W	119.6	656	12-09-87	1,250	6.9	14.5
21	MW 2021	38 42 05 N	090 44 00 W	111.0	625	08-01-89	747	6.7	16.5
22	MW 2022	38 42 06 N	090 43 56 W	126.0	636	08-03-89	620	7.1	15.5
24	MW 2024	38 42 06 N	090 43 41 W	150.0	635	10-26-88	--	--	--
29	MW 2029	38 42 08 N	090 43 46 W	101.4	643	08-03-89	611	7.2	14.0
31	MW 3002	38 41 43 N	090 44 00 W	147.5	665	10-31-88	--	--	--
32	MW3003	38 41 58 N	090 44 00 W	89.2	644	05-10-89	3,850	6.8	14.0
34	MW 3006	38 41 58 N	090 43 59 W	135.0	646	10-27-88	--	--	--
						05-10-89	461	7.3	15.5
35	MW 3007	38 41 58 N	090 43 59 W	99.1	646	12-17-87	7,000	7.0	12.0
36	MW 3008	38 41 49 N	090 43 52 W	101.0	645	12-10-87	8,250	6.6	13.5
						03-15-89	5,700	6.7	13.0
						06-06-89	8,100	6.2	15.0
37	MW 3009	38 41 47 N	090 44 07 W	99.4	644	12-10-87	723	7.6	14.0
						03-15-89	1,020	7.3	13.5
						06-08-89	658	7.5	15.0
38	MW 3010	38 41 38 N	090 43 57 W	90.7	665	12-07-87	652	7.3	14.0
40	MW 3013	38 41 50 N	090 44 05 W	22.2	640	12-08-87	1,360	7.8	10.0
43	MW 4001	38 41 53 N	090 44 12 W	40.0	621	12-08-87	710	7.4	14.5
44	MW 4002	38 42 07 N	090 44 26 W	84.7	633	12-09-87	443	7.0	13.5
48	MW 4006	38 41 53 N	090 44 13 W	28.50	622	12-08-87	429	7.6	14.0
66	MWGS 01	38 41 33 N	090 43 50 W	320.0	645	01-10-89	484	8.2	13.5
						04-11-89	491	8.2	14.5
67	MWGS 02	38 41 33 N	090 43 50 W	661	645	01-05-89	530	7.6	14.5
						04-05-89	478	7.5	15.5

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Name	Latitude	Longitude	TD	Alt	Date	Cond	pH	Temp
68	MWGS 03	38 44 13 N	090 44 33 W	98.5	494	12-08-88 04-06-89	558 540	7.5 8.0	12.0 13.0
69	MWGS 04	38 44 13 N	090 44 33 W	310.0	494	12-15-88 04-11-89	478 476	7.7 8.0	12.5 14.5
70	MWGS 05	38 44 13 N	090 44 33 W	638.0	494	01-06-89 04-06-89	586 579	7.7 8.0	15.0 15.5
71	USGS well 1	38 43 14 N	090 44 33 W	107.0	589	03-23-88 06-15-88 08-19-88 01-04-89 03-28-89	635 625 633 612 618	7.3 -- 7.6 7.5 7.4	14.0 14.5 14.0 14.5 15.0
72	USGS well 2	38 42 51 N	090 44 35 W	50.0	554	03-23-88 06-15-88 08-19-88 01-04-89 03-16-89	515 518 520 498 545	7.5 -- 7.5 8.1 7.0	13.0 13.5 13.0 13.5 14.0
73	USGS well 2A	38 42 51 N	090 44 34 W	107.0	560	03-23-88 06-15-88 08-19-88 01-05-89 03-28-89	535 535 532 514 520	7.6 ^a 7.8 7.7 7.5 7.2	13.0 13.5 13.5 13.5 14.0
74	USGS well 3	38 42 54 N	090 44 54 W	80.0	585	03-23-88 06-15-88 08-18-88 01-05-89 03-28-89	615 598 598 588 595	7.2 ^a 7.6 7.4 7.5 7.0	13.5 14.5 14.0 13.5 14.0

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Name	Latitude	Longitude	TD	Alt	Date	Cond	pH	Temp
75	USGS well 4	38 42 23 N	090 44 58 W	107.0	601	03-22-88 06-15-88 08-18-88 12-14-88 03-27-89	505 507 523 498 528	7.6 7.3 7.9 7.6 8.2	14.0 14.0 14.5 13.5 14.0
76	USGS well 5	38 43 09 N	090 43 57 W	87.0	580	03-23-88 06-14-88 08-19-88 12-14-88 03-28-89	645 638 661 639 623	7.4 7.8 7.0 7.2 7.4	15.5 16.0 14.0 13.5 14.5
77	USGS well 6	38 42 48 N	090 44 08 W	107.0	590	03-23-88 06-14-88 08-19-88 12-14-88 03-28-89	542 535 535 503 515	7.4 8.0 7.4 7.4 7.5	14.0 15.5 14.0 13.5 14.0
78	USGS well 7	38 42 28 N	090 44 11 W	107.0	570	03-22-88 06-15-88 08-18-88 12-09-88 03-27-89	478 470 498 462 460	7.6 a7.8 7.6 8.0 8.5	14.0 14.0 13.5 13.0 14.0
79	USGS well 8	38 42 32 N	090 43 37 W	107.0	625	03-22-88 06-14-88 08-18-88 12-09-88 03-28-89	624 640 645 575 660	7.4 8.0 7.7 8.0 7.4	19.0 16.0 13.5 11.0 14.5
80	USGS well 9	38 42 24 N	090 44 24 W	90.0	590	03-22-88 06-15-88 08-22-88 12-09-88 03-27-89	502 460 493 462 468	7.7 a7.8 7.8 7.9 8.4	15.0 15.0 14.5 12.0 15.5

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Name	Latitude	Longitude	TD	Alt	Date	Cond	pH	Temp
101	Army well	38 41 30 N	90 44 34 W	235.0	670	03-24-88 06-16-88 08-22-88 01-06-89 03-29-89	595 580 573 568 555	7.5 7.4 7.4 7.5 7.6	14.5 15.0 14.5 14.5 14.5
102	Binder well	38 42 53 N	090 42 21 W	215.00	570	04-06-88 06-16-88 09-08-88 03-29-89	690 655 554 648	7.3 6.9 7.2 7.5	14.5 15.0 15.0 15.0
103	Daniel Boone Gun Club well	38 35 25 N	090 48 28 W	--	468	05-02-89	--	--	--
104	Owen well	38 43 19 N	090 48 16 W	105.00	612	03-29-89	472	7.3	14.5
105	Twin Island Lake well 111	38 43 52 N	090 43 51 W	111.00	525	04-06-88 06-16-88 09-08-88 12-13-88	543 562 550 542	7.4 7.6 7.1 7.4	14.0 16.0 17.0 13.0
106	Twin Island Lake well 230	38 43 50 N	090 43 40 W	230.00	560	04-06-88 06-16-88 09-08-88 12-13-88	537 560 598 600	7.5 7.7 7.2 7.2	14.0 14.0 13.5 13.5
107	Twin Island Lake well 630	38 44 04 N	090 43 50 W	630.00	485	04-06-88 06-16-88 09-08-88	527 545 541	7.3 6.9 7.2	14.0 15.0 19.0

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
1	12-03-87	80	39	8.8	1.5	415	0	340	4.8	4.1	0.3	9.1
	06-05-89	84	40	9.0	1.6	420	0	346	7.0	7.5	.1	8.7
2	08-02-89	260	85	110	--	350	0	284	100	--	--	15
3	12-03-87	430	150	210	15	316	0	259	150	16	.3	11
	03-13-89	470	150	220	11	340	0	276	210	15	.1	11
	06-06-89	560	190	240	12	300	0	248	220	21	.1	11
4	12-03-87	68	42	12	1.1	475	0	390	2.0	1.6	.4	10
	08-02-89	63	40	10	1.1	430	0	349	2.0	1.2	.2	9.4
5	12-03-87	79	44	12	1.8	355	0	291	2.7	1.7	.3	11
	05-11-89	81	45	17	2.3	360	0	292	9.0	1.9	.2	9.4
	06-06-89	86	45	17	1.8	360	0	294	7.0	2.5	.1	9.7
6	12-02-87	120	53	64	6.8	379	0	311	35	200	.3	9.7
	03-14-89	120	55	77	7.0	390	0	320	32	200	.1	9.6
	06-06-89	130	56	81	7.0	390	0	324	32	250	.1	9.7
7	12-11-87	65	46	6.2	.7	451	0	370	16	1.4	.2	9.3
8	12-04-87	110	38	9.7	2.0	387	0	317	33	57	.3	11
9	12-11-87	160	16	39	2.7	535	0	438	83	21	.2	13
10	12-02-87	110	26	50	3.4	429	0	352	33	81	.3	13
11	12-02-87	69	34	8.8	1.4	347	0	284	12	6.8	.3	10
12	12-02-87	130	10	86	2.4	403	0	330	56	110	.3	15
13	12-01-87	150	26	87	5.8	813	0	667	29	11	.3	15
14	12-01-87	120	41	32	3.9	626	0	513	37	29	.3	12
15	12-04-87	83	67	28	1.2	543	0	445	85	2.2	.4	12
16	12-16-87	61	46	5.1	.4	406	0	333	30	2.3	.3	8.2

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
17	12-07-87	170	140	37	2.9	510	0	418	660	17	0.2	13
18	12-07-87	81	38	46	.9	531	0	435	13	8.0	.3	11
19	12-08-87	39	48	9.9	.5	377	0	309	12	1.9	.4	8.2
20	12-09-87	150	70	50	1.5	592	0	485	270	8.8	.2	10
21	08-01-89	63	51	10	1.2	450	0	366	13	1.1	.1	8.6
22	08-03-89	57	47	6.3	1.1	420	0	346	14	.8	.1	8.5
24	10-26-88	--	--	--	--	--	--	--	--	--	--	--
29	08-03-89	57	46	7.6	1.1	420	0	343	18	1.6	.2	10
31	10-31-88	--	--	--	--	--	--	--	--	--	--	--
32	05-10-89	320	140	230	10	340	0	280	200	13	.2	10
34	10-27-88	--	--	--	--	--	--	--	--	--	--	--
	05-10-89	22	16	37	35	240	0	198	71	1.3	.3	.18
35	12-17-87	670	250	340	15	267	0	219	270	24	.1	7.4
36	12-10-87	920	240	300	3.1	299	0	245	9.8	20	.1	12
	03-15-89	640	180	220	2.3	330	0	274	41	13	.2	12
	06-06-89	900	240	260	2.6	300	0	245	43	20	.1	12
37	12-10-87	66	42	11	.8	192	0	158	55	3.2	.2	8.4
	03-15-89	94	55	20	1.0	190	0	156	46	3.4	.2	8.8
	06-08-89	57	39	10	.5	200	0	164	65	1.8	.2	8.4
38	12-07-87	47	54	25	1.0	475	0	390	8.5	2.2	.3	9.4
40	12-08-87	190	73	17	6.7	90	0	74	700	2.0	.9	3.9
43	12-08-87	92	33	25	1.2	277	0	227	69	4.1	.2	11
44	12-09-87	46	32	5.9	.6	297	0	243	18	2.3	.2	8.7
48	12-08-87	53	23	8.4	.6	221	0	181	36	3.2	.2	9.3
66	01-10-89	39	32	12	11	170	0	^a 238	19	6.2	1.6	6.0
	04-11-89	42	32	12	8.3	190	0	^a 243	16	6.0	1.8	6.1

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
67	01-05-89	50	32	18	10	320	0	263	34	2.8	1.1	6.6
	04-05-89	47	31	18	10	320	0	260	30	3.1	1.1	6.0
68	12-08-88	59	41	7.6	1.2	360	0	298	23	1.9	1.0	7.9
	04-06-89	60	41	7.4	1.2	370	0	304	17	2.0	1.0	7.8
69	12-15-88	51	32	5.9	2.6	330	0	268	19	1.9	.6	7.2
	04-11-89	46	34	5.9	3.5	250	0	^a 249	15	1.9	.6	3.3
70	01-06-89	58	33	25	8.0	360	0	293	36	3.9	.9	7.1
	04-06-89	64	33	25	7.0	370	0	300	36	4.1	1.0	8.0
71	03-23-88	82	19	30	5.1	405	0	332	25	3.9	.2	13
	06-15-88	--	--	--	--	--	--	^a 315	--	--	--	--
	08-19-88	82	22	29	1.0	405	0	332	20	3.9	.1	13
	01-04-89	82	20	31	1.2	400	0	332	27	4.1	.2	13
	03-28-89	83	19	32	1.9	400	0	330	21	3.7	.2	13
72	03-23-88	60	24	18	1.8	351	0	288	4.7	.8	.3	12
	06-15-88	--	--	--	--	--	--	^a 281	--	--	--	--
	08-19-88	60	25	19	.6	346	0	283	4.8	.9	.2	12
	01-04-89	59	25	19	1.2	340	0	278	5.2	1.3	.3	12
	03-16-89	61	25	20	.8	350	0	290	4.7	1.0	.3	13
73	03-23-88	61	33	6.2	1.4	371	0	304	9.2	.8	.3	8.0
	06-15-88	61	35	6.4	.6	--	--	^a 265	9.3	1.1	.3	8.1
	08-19-88	60	37	5.7	.5	366	0	300	9.6	1.0	.2	8.1
	01-05-89	58	35	6.1	.7	350	0	284	9.6	1.1	.3	8.0
	03-28-89	59	36	5.8	.6	360	0	293	9.9	1.0	.3	7.9
74	03-23-88	78	29	13	1.5	390	0	320	19	2.3	.3	14
	06-15-88	75	30	13	1.2	--	--	^a 306	18	2.7	.3	14
	08-18-88	76	31	13	1.1	379	0	311	18	2.5	.2	14
	01-05-89	76	31	13	.8	400	0	328	19	1.8	.3	14
	03-28-89	78	31	14	.7	400	0	328	19	1.8	.3	13

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
75	03-22-88	55	30	7.1	0.5	337	0	276	14	1.9	0.2	8.3
	06-15-88	56	32	7.4	1.3	322	0	264	14	2.1	.2	8.4
	08-18-88	59	33	7.4	1.6	331	0	271	14	2.4	.1	8.8
	12-14-88	61	32	7.2	1.1	320	0	266	16	2.2	.1	8.7
	03-27-89	59	32	7.1	1.1	330	0	273	17	2.1	.1	8.3
76	03-23-88	79	40	7.5	4.1	454	0	372	14	1.1	.2	8.9
	06-14-88	76	40	7.4	.5	431	0	353	12	1.2	.2	9.0
	08-19-88	82	41	7.9	1.2	507	0	415	11	1.4	.2	9.2
	12-14-88	86	41	8.0	.4	470	0	385	11	1.3	.1	9.3
	03-28-89	77	40	7.7	.4	440	0	364	11	.9	.2	8.9
77	03-23-88	61	32	7.9	23	351	0	288	17	1.5	.5	12
	06-14-88	61	33	8.0	.7	348	0	285	16	1.6	.5	12
	08-19-88	63	34	8.2	.5	351	0	288	14	1.7	.5	13
	12-14-88	63	32	8.1	.5	340	0	281	19	1.6	.4	13
	03-28-89	61	33	8.2	.6	340	0	276	16	1.5	.5	12
78	03-22-88	44	38	5.3	.8	310	0	254	22	2.1	.4	8.0
	06-15-88	45	39	5.1	.6	--	--	^a 251	22	1.5	.4	7.9
	08-18-88	45	40	5.2	.7	321	0	263	21	1.6	.3	7.9
	12-09-88	41	37	5.0	.8	310	0	254	22	1.3	.3	7.5
	03-27-89	44	38	5.2	.7	280	12	251	22	1.3	.3	8.0
79	03-22-88	77	37	9.8	3.8	390	0	320	22	2.7	.2	8.5
	06-14-88	76	37	10	2.2	408	0	334	24	3.7	.4	8.4
	08-18-88	74	38	13	3.3	408	0	334	15	7.0	.1	8.6
	12-09-88	67	35	9.8	2.5	380	0	313	14	2.8	.1	8.0
	03-28-89	73	37	9.8	2.3	390	0	321	15	2.6	.1	8.4
80	03-22-88	57	25	9.4	1.0	293	0	240	21	4.0	.2	9.2
	06-15-88	59	25	9.7	1.7	--	--	^a 227	21	4.1	.2	9.3
	08-22-88	60	25	10	1.8	293	0	240	20	4.3	.1	9.5
	12-09-88	56	24	9.9	2.1	280	0	231	22	4.1	.1	9.2
	03-27-89	58	24	9.8	2.0	260	6	228	21	4.1	.1	9.4

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
101	03-24-88	67	34	9.2	3.6	344	0	282	35	10	0.2	9.1
	06-16-88	--	--	--	--	340	0	276	--	--	--	--
	08-22-88	65	36	9.4	1.2	336	0	275	31	8.4	.1	9.0
	01-06-89	65	35	9.5	1.6	330	0	274	34	9.0	.1	9.1
	03-29-89	66	34	9.7	1.5	330	0	272	33	8.3	.1	9.1
102	04-06-88	96	17	31	.8	378	0	310	31	18	.2	16
	06-16-88	--	--	--	--	370	0	302	--	--	--	--
	09-08-88	71	29	12	.7	380	0	315	13	4.1	.1	8.9
	03-29-89	94	19	29	.8	370	0	306	29	16	.1	14
	05-02-89	--	--	--	--	--	--	--	--	--	--	--
103	03-29-89	81	12	9.1	.6	300	0	250	9.6	5.9	.1	18
105	04-06-88	69	26	16	.6	356	0	292	13	4.3	.4	13
	06-16-88	--	--	--	--	360	0	293	--	--	--	--
	09-08-88	66	36	8.0	1.0	390	0	321	15	2.4	1.4	8.3
	12-13-88	68	29	13	.7	350	0	291	15	3.5	.7	11
106	04-06-88	62	35	7.0	1.3	361	0	296	17	3.2	1.6	7.9
	06-16-88	62	36	6.6	.87	350	0	290	24	2.5	1.5	7.9
	09-08-88	75	36	8.8	.6	400	0	325	17	6.0	.3	8.1
	12-13-88	77	36	8.9	.9	370	0	306	25	6.8	.4	7.9
	04-06-88	59	25	17	1.5	342	0	280	18	8.6	.9	11
107	06-16-88	--	--	--	--	330	0	267	--	--	--	--
	09-08-88	63	37	7.2	1.0	370	0	306	15	2.0	1.4	8.2
	12-13-88	59	31	8.8	1.5	330	0	273	18	3.1	.9	9.5

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	DS	NO ₂ + NO ₃				Sr	TOC	U			Trit
			NO ₂	NO ₃	B	Li			U	total	Ra-226	
1	12-03-87	362	<.01	5.2	--	7	100	--	2.4	--	<.4	--
	06-05-89	406	.03	12	<10	7	100	0.9	1.2	--	--	--
2	08-02-89	--	<.01	220	10	450	360	.5	--	--	--	--
3	12-03-87	3,610	.01	560	--	850	910	--	2.5	--	<.4	--
	03-13-89	3,610	.01	560	20	910	1,000	.8	3.3	--	.3	61
	06-06-89	4,410	<.01	680	10	1,000	1,100	1.6	2.8	--	--	76
4	12-03-87	339	<.01	.93	--	10	160	--	1.7	--	<.4	--
	08-02-89	337	<.01	.68	<10	9	150	.4	--	--	--	--
5	12-03-87	421	<.01	32	--	20	120	--	1.3	--	<.4	--
	05-11-89	438	<.01	26	10	39	120	.1	--	--	--	--
	06-06-89	466	<.01	36	20	39	120	.9	1.2	--	--	9.0
6	12-02-87	830	<.01	7.5	--	15	190	--	1.3	--	<.4	--
	03-14-89	846	.01	13	10	14	200	4.9	1.6	--	.1	45
	06-06-89	881	<.01	6.4	<10	14	210	6.1	1.1	--	--	55
7	12-11-87	338	<.01	<.10	--	5	160	.2	5.2	--	<.4	--
8	12-04-87	467	<.01	3.8	--	12	110	--	1.2	--	<.4	--
9	12-11-87	624	<.01	1.6	--	8	150	.9	2.6	--	<.4	--
10	12-02-87	521	<.01	1.0	--	12	140	--	2.4	--	<.4	--
11	12-02-87	315	<.01	4.5	--	8	100	--	.7	--	<.4	--
12	12-02-87	602	<.01	.15	--	10	180	--	.8	--	<.4	--
13	12-01-87	712	.04	.50	--	14	190	--	1.3	--	<.4	--
14	12-01-87	565	<.01	1.9	--	13	150	--	1.4	--	<.4	--
15	12-04-87	531	<.01	.36	--	18	250	--	2.7	--	<.4	--
16	12-16-87	339	<.01	<.10	--	21	150	<.1	.7	--	<.4	--

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)		Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226	Trit
17	12-07-87	1,330	<.01	1.0	--	39	440	440	0.6	9.5	--	<.4	--
18	12-07-87	393	<.01	.50	--	18	290	290	.2	2.3	--	<.4	--
19	12-08-87	310	<.01	.10	--	9	180	180	.6	2.2	--	<.4	--
20	12-09-87	766	<.01	.25	--	34	270	270	1.0	35	--	<.4	--
21	08-01-89	372	<.01	<.10	20	10	130	130	.4	--	--	--	--
22	08-03-89	332	<.01	.11	10	9	150	150	.3	--	--	--	--
24	10-26-88	--	--	--	--	--	--	--	--	--	--	--	--
29	08-03-89	340	<.01	<.10	<10	9	190	190	.3	--	--	--	--
31	10-31-88	--	--	--	--	--	--	--	--	--	--	--	<5.7
32	05-10-89	2,670	.19	440	50	740	830	830	--	--	--	--	--
34	10-27-88	--	--	--	--	--	--	--	--	--	--	--	33
	05-10-89	395	<.01	.31	20	45	30	30	.3	--	--	--	--
35	12-17-87	5,820	.04	940	--	1,600	1,500	1,500	1.0	5.1	--	b.32	--
36	12-10-87	6,950	<.01	970	--	170	3,200	3,200	.6	1.0	--	b.31	--
	03-15-89	4,360	.01	680	20	150	2,000	2,000	.5	3.8	--	.1	22
	06-06-89	5,930	<.01	1,100	20	170	2,900	2,900	1.4	6.7	--	--	22
37	12-10-87	426	.01	40	--	6	130	130	.3	94	--	b.57	--
	03-15-89	554	.02	84	<10	16	200	200	.3	57	--	.7	<5.7
	06-08-89	360	.02	24	<10	8	110	110	1.2	110	--	--	<5.7
38	12-07-87	356	<.01	.95	--	11	210	210	.2	2.0	--	<.4	--
40	12-08-87	1,130	<.01	2.4	--	22	1,200	1,200	2.1	2.1	--	<.4	--
43	12-08-87	500	<.01	31	--	9	90	90	8.4	.90	--	<.4	--
44	12-09-87	268	<.01	1.6	--	<4	80	80	1.0	.70	--	<.4	--
48	12-08-87	266	<.01	4.1	--	4	80	80	8.6	.60	--	<.4	--
66	01-10-89	259	<.01	<.10	300	26	1,400	1,400	1.9	--	<1.0	1.6	<5.7
	04-11-89	260	<.01	<.10	330	23	1,600	1,600	.3	--	<1.0	2.1	--
67	01-05-89	289	<.01	<.10	430	34	1,100	1,100	.6	--	<1.0	1.1	<5.7
	04-05-89	293	<.01	<.10	430	32	1,000	1,000	.4	--	<1.0	.8	--

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	DS	NO ₂	NO ₂ + NO ₃		B	Li	Sr	TOC	U	U		Ra-226	Trit
											total	U		
68	12-08-88	320	<.01	0.47	20	6	210		0.2	--	<1.0	--	<0.4	<5.7
	04-06-89	305	<.01	<.10	20	9	220		<.1	--	<1.0	--	<.4	--
69	12-15-88	261	.01	<.10	60	11	350		.8	--	<1.0	--	3.7	<5.7
	04-11-89	252	<.01	<.10	70	9	320		.5	--	<1.0	--	1.9	--
70	01-06-89	324	<.01	<.10	460	27	720		.6	--	<1.0	--	.9	<5.7
	04-06-89	341	<.01	<.10	470	27	820		.1	--	<1.0	--	1.1	--
71	03-23-88	364	<.01	1.1	--	16	140		3.5	1.3	--	--	<.4	--
	06-15-88	--	<.01	1.2	--	--	--		3.0	1.5	--	--	<.4	--
	08-19-88	334	<.01	1.2	--	8	140		3.2	--	1.8	--	<.4	--
	01-04-89	362	<.01	1.2	<10	5	140		3.9	--	1.5	--	--	--
	03-28-89	359	<.01	1.2	<10	11	180		3.1	--	1.7	--	<.4	--
72	03-23-88	271	<.01	<.10	--	9	190		<.1	.50	--	--	<.4	--
	06-15-88	--	<.01	<.10	--	--	--		.3	.60	--	--	<.4	--
	08-19-88	267	<.01	<.10	--	6	190		1.0	--	1.1	--	.6	--
	01-04-89	280	<.01	<.10	<10	<4	200		.7	--	<1.0	--	--	--
	03-16-89	263	.01	.36	<10	6	200		.6	<1.0	--	--	.4	<5.7
73	03-23-88	281	<.01	<.10	--	10	160		.1	.07	--	--	<.4	--
	06-15-88	290	<.01	<.10	--	5	160		.5	<.40	--	--	<.4	--
	08-19-88	288	<.01	<.10	--	5	150		.8	--	<1.0	--	<.4	--
	01-05-89	276	<.01	<.10	<10	5	150		1.3	--	<1.0	--	--	--
	03-28-89	273	<.01	<.10	10	<4	150		.2	--	<1.0	--	<.4	--
74	03-23-88	343	<.01	.59	--	16	210		1.4	1.2	--	--	<.4	--
	06-15-88	332	<.01	.68	--	10	220		1.8	1.3	--	--	<.4	--
	08-18-88	299	<.01	.61	--	12	220		2.9	--	1.7	--	<.4	--
	01-05-89	341	<.01	.64	<10	7	220		1.4	--	1.3	--	--	--
	03-28-89	336	<.01	.66	<10	<4	230		1.3	--	2.1	--	<.4	--

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U			Trit
									U	total	Ra-226	
75	03-22-88	272	0.04	0.87	--	13	120	1.9	1.1	--	<0.4	--
	06-15-88	241	.05	.95	--	11	170	1.2	1.8	--	<.4	--
	08-18-88	233	.04	1.2	--	10	200	1.4	--	1.5	<.4	--
	12-14-88	281	.03	1.4	<10	12	170	.9	--	1.8	--	--
	03-27-89	284	.02	1.2	10	<4	130	.8	--	<1.0	<.4	--
76	03-23-88	363	<.01	<.10	--	15	180	1.0	4.0	--	<.4	--
	06-14-88	292	<.01	.12	--	10	170	1.9	4.2	--	<.4	--
	08-19-88	362	<.01	.14	--	12	170	2.1	--	3.1	.5	--
	12-14-88	364	<.01	.17	<10	11	170	2.2	--	1.8	--	--
	03-28-89	345	<.01	.15	<10	<4	170	1.0	--	2.4	<.4	--
77	03-23-88	307	--	--	--	10	170	<.1	2.0	--	<.4	--
	06-14-88	291	<.01	.53	--	7	170	.4	2.5	--	<.4	--
	08-19-88	288	<.01	.45	--	6	170	.2	--	3.0	.4	--
	12-14-88	285	<.01	.45	<10	8	170	<.1	--	5.5	--	--
	03-28-89	282	<.01	.48	20	<4	180	.1	--	<1.0	<.4	--
78	03-22-88	268	<.01	<.10	--	9	140	1.1	<.40	--	<.4	--
	06-15-88	245	<.01	<.10	--	6	150	.2	<.40	--	<.4	--
	08-18-88	253	<.01	<.10	--	5	140	.3	--	<1.0	<.4	--
	12-09-88	259	<.01	.12	10	<4	140	.8	--	1.6	--	--
	03-27-89	246	<.01	<.10	10	<4	150	1.9	--	<1.0	<.4	--
79	03-22-88	356	<.01	9.8	--	10	80	2.8	1.0	--	<.4	--
	06-14-88	345	<.01	3.2	--	9	110	1.7	1.1	--	<.4	--
	08-18-88	364	<.01	3.1	--	5	80	3.0	--	1.0	<.4	--
	12-09-88	351	.02	3.2	<10	<4	80	2.8	--	2.0	--	--
	03-28-89	337	<.01	3.2	<10	<4	80	1.3	--	<1.0	<.4	--
80	03-22-88	271	<.01	2.7	--	8	70	1.3	.57	--	<.4	--
	06-15-88	274	<.01	3.0	--	5	70	.8	<.40	--	<.4	--
	08-22-88	273	<.01	3.1	--	<4	70	.9	--	<1.0	<.4	--
	12-09-88	256	.01	3.3	10	4	70	1.2	--	<1.0	--	--
	03-27-89	273	<.01	3.2	20	<4	80	1.0	--	<1.0	<.4	--

Table 2.--Well and water-quality data for ground-water sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 4 and 5)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U			Trit
									U	total	Ra-226	
101	03-24-88	328	< 0.01	1.6	--	12	100	<0.1	1.1	--	<0.4	--
	06-16-88	--	<0.01	1.3	--	--	--	.2	1.5	--	<.4	--
	08-22-88	312	<0.01	1.4	--	8	100	1.0	--	1.6	<.4	--
	01-06-89	318	<0.01	1.6	20	7	110	.7	--	1.5	--	--
	03-29-89	316	<0.01	1.4	20	<4	110	.3	--	1.4	<.4	--
102	04-06-88	405	<0.01	3.9	--	8	110	.3	.70	--	.4	--
	06-16-88	--	<0.01	2.5	--	--	--	.4	.60	--	<.4	--
	09-08-88	222	<0.01	<10	<10	8	130	.3	--	.9	.4	--
	03-29-89	386	<0.01	3.3	<10	<4	120	.4	--	1.2	<.4	--
	05-02-89	--	--	--	--	--	--	--	11	--	--	--
104	03-29-89	274	<0.01	2.0	<10	<4	90	.3	--	<1.0	<.4	--
105	04-06-88	311	<0.01	.49	--	17	130	.8	1.4	--	<.4	--
	06-16-88	--	<0.01	.55	--	--	--	1.3	1.3	--	<.4	--
	09-08-88	300	<0.01	<10	10	9	160	.9	--	2.1	<.4	--
	12-13-88	305	<0.01	.39	10	10	140	1.2	--	<1.0	--	--
	04-06-88	306	<0.01	.28	--	8	180	1.7	.50	--	.4	--
106	06-16-88	838	<0.01	.40	--	9	150	1.0	<.40	--	.6	--
	09-08-88	268	<0.01	1.3	<10	7	90	.8	--	<1.0	.9	--
	12-13-88	339	.15	1.3	<10	10	100	1.1	--	<1.0	--	--
	04-06-88	306	<0.01	<10	--	7	220	.8	<.40	--	.6	--
	06-16-88	--	<0.01	<10	--	--	--	1.7	<.40	--	<.4	--
107	09-08-88	192	<0.01	<10	20	9	170	.4	--	1.2	<.4	--
	12-13-88	283	<0.01	<10	50	11	280	.8	--	<1.0	--	--

^a Laboratory value used instead of field measurement.

^b Analyses done using the Radon method instead of Planchet count.

Table 3.--Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site

[N, north; W, west]

Site number (fig. 6)	Name	Latitude	Longitude	Date	Time	Q	Cond	pH	Temp
1	Burgermeister spring (Spring 6301)	38 43 04 N	090 44 18 W	12-17-87 04-05-88 05-25-88 09-08-88 11-29-88 03-16-89 06-07-89 08-02-89	0830 0845 0915 0830 1610 1100 0945 0815	0.42 .44 .12 .09 .40 .41 .15 .13	255 287 771 820 308 372 663 749	6.7 6.8 7.2 6.6 5.9 6.5 6.8 6.3	8.5 11.0 11.0 12.0 11.0 8.5 11.0 10.5
2	Spring 5101	38 41 13 N	090 40 57 W	05-24-88 08-23-88 11-30-88	1645 1730 1315	.20 -- .20	670 660 405	7.8 7.3 7.5	11.0 11.5 12.0
3	Spring 5201	38 41 18 N	090 42 54 W	05-24-88 08-23-88 11-30-88 04-06-89	1350 1430 1200 1415	.15 .10 .10 .80	581 630 522 338	8.1 7.5 8.2 7.4	9.0 12.0 12.0 8.5
4	Spring 5202	38 41 48 N	090 43 01 W	05-25-88 12-01-88 03-29-89	1015 1115 1500	.01 .01 .10	590 728 338	9.1 8.5 7.6	11.0 9.5 10.0
5	Spring 5303	38 41 01 N	090 43 22 W	12-08-87 05-24-88 11-30-88 04-06-89	1520 1330 1100 1145	.15 -- .10 .80	350 585 465 366	7.2 8.9 7.9 7.2	10.0 11.0 11.5 9.0
6	Spring 5304	38 40 39 N	090 43 09 W	12-09-87 05-24-88 08-23-88	1230 1120 1200	.25 .05 .30	393 571 520	7.0 7.6 7.3	12.0 9.0 12.5

Table 3--- *Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued*

Site number (fig. 6)	Name	Latitude	Longitude	Date	Time	Q	Cond	pH	Temp
7	Spring 5401	38 40 29 N	090 43 32 W	12-10-87	1415	<.01	421	7.4	12.0
				05-24-88	1000	.05	530	8.0	14.5
				08-23-88	0945	--	355	7.8	24.5
				11-30-88	0900	.02	402	8.4	5.5
				04-06-89	1050	.03	356	7.6	9.5
8	Spring 5402	38 40 55 N	090 43 52 W	12-10-87	1600	.03	363	7.4	11.5
				05-24-88	0900	.05	580	8.3	11.5
9	Spring 5406	38 41 04 N	090 43 55 W	12-11-87	0800	.05	352	6.8	12.5
10	Spring 5501	38 40 39 N	090 44 23 W	12-16-87	1430	.15	291	7.0	12.0
				05-23-88	1530	.20	555	7.6	12.0
				09-08-88	1000	.05	531	6.8	12.5
				12-01-88	1000	.15	420	7.4	12.0
				04-05-89	1320	--	282	7.0	11.0
11	Spring 5601	38 40 19 N	090 45 47 W	05-23-88	1430	.60	494	7.5	11.0
				08-24-88	0915	.07	510	7.2	11.5
				12-01-88	0900	1.5	382	7.6	9.5
				04-05-89	1200	.40	346	7.1	9.5
12	Spring 5602	38 41 17 N	090 46 19 W	05-23-88	1400	.07	565	7.8	12.5
				08-24-88	0830	.01	669	7.6	12.5
				12-01-88	0830	.05	384	8.1	12.0
				04-05-89	1120	.15	331	6.9	10.5
13	Spring 5603	38 40 14 N	090 45 33 W	05-23-88	1340	.90	491	8.0	13.0
				08-24-88	0945	.10	453	7.9	20.0
				04-05-89	1230	.70	361	7.2	11.0
14	Spring 6303	38 42 59 N	090 44 27 W	04-05-88	0815	.10	278	6.9	12.0
				05-23-88	1130	.08	585	7.2	12.5
				09-08-88	0750	.02	615	6.7	13.0
				03-29-89	1540	.20	292	6.6	11.5

Table 3.-- Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
1	12-17-87	33	6.6	7.0	3.0	88	0	72	28	6.9	0.3	7.5
	04-05-88	37	7.7	8.9	2.3	115	0	94	31	7.0	.2	9.9
	05-25-88	89	24	35	2.5	250	0	206	52	28	.3	11
	09-08-88	95	27	41	2.7	250	0	208	53	33	.1	12
	11-29-88	40	8.8	10	2.8	120	0	98	29	7.9	.2	8.5
	03-16-89	43	9.6	13	2.4	110	0	94	34	10	.2	9.2
2	06-07-89	73	18	29	2.8	190	0	155	45	11	.2	11
	08-02-89	75	20	33	3.0	210	0	176	57	23	.2	12
	05-24-88	100	25	11	1.5	400	0	325	45	9.5	.3	14
	08-23-88	93	26	17	2.3	370	0	305	31	14	.2	14
	11-30-88	64	13	6.6	2.5	220	0	180	31	6.2	.1	14
	05-24-88	79	22	14	1.5	300	0	244	54	12	.3	13
3	08-23-88	87	25	18	2.0	326	0	267	58	12	.2	15
	11-30-88	70	17	18	2.3	230	0	190	52	23	.1	12
	04-06-89	50	9.4	9.0	1.7	160	0	132	31	10	.1	12
	05-25-88	78	32	7.3	1.6	360	12	318	24	5.0	.3	13
4	12-01-88	62	17	60	3.4	130	7	116	68	120	.1	9.5
	03-29-89	44	14	7.8	1.8	170	0	139	30	7.9	.1	14
	12-08-87	48	10	11	2.8	152	0	125	47	6.6	.4	11
	05-24-88	76	21	20	2.3	230	43	264	59	9.4	.4	12
5	11-30-88	72	13	13	2.3	230	0	190	45	6.0	.3	12
	04-06-89	63	9.0	6.7	1.4	200	0	162	31	3.9	.2	12
6	12-09-87	59	10	12	2.5	195	0	160	44	6.6	.3	12
	05-24-88	89	16	10	1.7	320	0	262	41	4.7	.4	12
	08-23-88	77	16	13	2.5	272	0	223	41	4.6	.3	14
	12-10-87	67	11	5.5	1.3	229	0	188	31	9.4	.2	13
7	05-24-88	86	17	5.5	.7	310	0	254	37	4.7	.3	11
	08-23-88	46	14	4.6	3.1	197	0	162	18	7.6	.1	17
	11-30-88	67	12	5.1	1.0	220	3	186	30	7.7	.1	12
	04-06-89	63	10	2.9	.7	210	0	172	26	2.6	.1	13

Table 3.--Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Name	Latitude	Longitude	Date	Time	Q	Cond	pH	Temp
15	Spring 6306	38 43 44 N	090 43 51 W	12-07-87	1450	1.0	351	7.3	11.0
				04-05-88	1430	.50	274	7.2	13.0
				05-25-88	1145	.60	338	8.0	14.0
				09-01-88	1200	.40	360	7.4	17.0
				12-01-88	1300	1.0	350	7.3	16.0
16	Spring 6501	38 43 59 N	090 45 11 W	12-16-87	1615	.80	220	6.7	11.5
				04-05-88	1015	.40	271	6.8	10.5
				05-23-88	1115	.15	405	7.4	11.5
				08-22-88	1730	.05	408	7.4	12.0
				11-29-88	1450	--	280	6.8	12.0
				03-29-89	1630	.50	275	6.9	10.5
17	Spring 6502	38 43 44 N	090 45 22 W	04-05-88	1040	.10	256	6.7	11.0
				05-23-88	1215	.10	430	7.8	12.5
				09-02-88	1100	.04	445	7.0	13.0
				03-30-89	0830	.05	290	7.1	10.5
18	Spring 6601	38 43 46 N	090 46 05 W	04-05-88	1115	.30	317	6.7	11.5
				05-23-88	1200	.20	455	7.2	12.5
				11-29-88	1530	.25	351	6.3	12.0
				03-30-89	0915	.50	332	6.9	11.5
19	Weldon Spring (Spring 6101)	38 42 47 N	090 41 15 W	04-05-88	1545	.30	257	*7.1	11.0
				05-25-88	1115	.20	315	7.5	12.5
				09-01-88	1445	.30	372	7.1	13.5
				12-01-88	1550	.15	409	7.2	13.0

Table 3.--Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
8	12-10-87	61	9.5	8.0	1.8	191	0	156	26	12	0.2	13
	05-24-88	92	22	6.8	.7	350	0	286	29	10	.3	13
9	12-11-87	60	8.3	7.3	2.0	204	0	167	25	13	.2	13
10	12-16-87	44	8.1	7.1	3.0	149	0	122	34	5.5	.2	12
	05-23-88	85	19	11	1.2	310	0	256	50	5.7	.3	14
	09-08-88	69	20	17	1.9	260	0	215	59	10	.2	15
	12-01-88	62	13	11	2.0	210	0	174	47	6.2	.1	14
	04-05-89	47	7.4	5.2	1.5	140	0	117	32	2.6	.1	15
11	05-23-88	77	16	5.1	1.0	280	0	230	33	3.6	.3	12
	08-24-88	88	18	5.9	1.1	320	0	264	29	3.6	.1	13
	12-01-88	63	12	4.1	1.2	210	0	176	31	4.0	.1	11
	04-05-89	57	11	2.7	1.0	200	0	166	26	2.4	.1	11
12	05-23-88	90	13	11	1.3	320	0	260	38	4.4	.3	13
	08-24-88	120	16	14	.6	400	0	326	54	6.5	.1	14
	12-01-88	65	9.1	7.6	2.2	200	0	166	54	3.2	.1	13
	04-05-89	57	7.1	4.4	2.4	170	0	142	39	2.1	.1	13
13	05-23-88	77	16	5.1	1.0	283	0	232	33	3.6	.3	11
	08-24-88	75	16	5.2	1.5	270	0	223	28	3.3	.1	10
	04-05-89	61	12	2.7	.9	220	0	180	27	2.3	.1	11
	04-05-88	33	8.2	7.6	2.3	112	0	92	33	4.5	.2	11
14	05-23-88	72	22	18	2.0	250	0	203	36	7.0	.3	11
	09-08-88	76	25	19	2.1	280	0	227	39	7.5	.1	12
	03-29-89	38	9.3	9.0	1.8	120	0	96	37	4.7	.1	11
	12-07-87	40	9.5	14	2.8	190	0	156	14	18	.3	9.1
15	04-05-88	31	6.3	9.4	2.2	115	0	94	19	11	.2	6.7
	05-25-88	35	8.7	11	2.0	180	0	150	10	13	.4	9.9
	09-01-88	37	9.2	12	2.4	--	--	^a 149	5.1	12	.3	12
	12-01-88	37	9.5	12	2.3	200	0	163	8.7	13	.3	11

Table 3.--Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
16	12-16-87	32	5.5	5.1	2.5	110	0	90	18	9.3	0.2	10
	04-05-88	39	6.8	5.0	1.7	127	0	104	25	4.6	.2	12
	05-23-88	60	12	8.1	1.6	220	0	183	15	5.9	.3	12
	08-22-88	61	12	9.4	1.7	248	0	203	11	6.5	.1	12
	11-29-88	40	7.4	5.9	2.2	140	0	113	29	4.5	.1	13
17	03-29-89	42	7.4	5.7	1.8	130	0	110	25	4.5	.1	11
	04-05-88	36	6.1	5.1	1.9	112	0	92	26	4.7	.2	12
	05-23-88	67	14	6.4	1.7	270	0	222	25	3.6	.3	12
	09-02-88	72	16	6.6	1.9	290	0	236	19	3.1	.1	11
	03-30-89	44	7.9	6.3	1.8	140	0	117	29	6.2	.1	13
18	04-05-88	49	7.1	5.8	1.5	164	0	134	22	4.8	.2	12
	05-23-88	73	13	7.6	1.3	270	0	222	14	2.9	.3	12
	11-29-88	55	9.4	5.8	2.0	200	0	163	17	3.4	.1	11
	03-30-89	54	8.4	7.1	1.6	180	0	146	22	6.8	.1	11
19	04-05-88	30	6.5	8.9	2.5	107	0	88	17	12	.2	8.2
	05-25-88	41	8.9	11	2.3	160	0	132	14	11	.3	9.8
	09-01-88	49	10	12	2.0	200	0	166	8.5	10	.1	11
	12-01-88	54	12	20	2.4	210	0	174	12	22	.2	12

Table 3.--Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Date	DS	NO ₂	NO ₂ +		B	Li	Sr	TOC	U		Ra-226	Trit
				NO ₃	NO ₃					U	total		
1	12-17-87	157	<.01	2.3		--	6	80	7.3	77	--	b0.13	--
	04-05-88	192	--	--		--	8	90	4.3	110	--	<.4	--
	05-25-88	500	<.01	28		--	44	180	1.7	170	--	<.4	--
	09-08-88	530	<.01	35		50	46	190	1.7	--	99	<.4	--
	11-29-88	190	<.01	4.8		40	7	100	6.1	--	110	<.4	--
	03-16-89	200	<.01	8.2		30	10	110	3.6	180	--	<.1	38
2	06-07-89	356	<.01	20		40	28	160	2.2	150	--	--	--
	08-02-89	435	<.01	21		80	35	170	1.6	--	--	--	--
	05-24-88	393	<.01	.40		--	10	140	.8	1.0	--	<.4	--
	08-23-88	377	<.01	1.1		--	8	150	1.7	--	<1.0	<.4	--
3	11-30-88	250	<.01	.21		40	<4	110	4.8	--	1.2	--	--
	05-24-88	332	<.01	.11		--	9	120	3.0	1.3	--	<.4	--
	08-23-88	371	<.01	.19		--	8	140	6.8	--	1.3	<.4	--
	11-30-88	314	<.01	.52		30	7	110	3.9	--	1.2	--	--
	04-06-89	207	<.01	.11		30	<4	80	2.6	--	<1.0	--	--
4	05-25-88	341	<.01	.50		--	10	130	2.7	5.0	--	<.4	--
	12-01-88	426	<.01	.19		20	<4	160	3.4	--	2.9	<.4	--
	03-29-89	200	<.01	<.10		30	<4	90	2.3	--	<1.0	<.4	--
5	12-08-87	230	<.01	1.6		--	<4	110	5.9	390	--	.6	--
	05-24-88	355	<.01	2.1		--	15	150	3.8	390	--	.8	--
	11-30-88	291	<.01	2.4		30	11	110	3.2	--	360	<.4	--
	04-06-89	228	<.01	.61		30	7	70	2.2	--	9.9	<.4	--
6	12-09-87	238	<.01	1.7		--	7	90	3.6	200	--	<.4	--
	05-24-88	322	<.01	1.2		--	17	110	1.8	220	--	<.4	--
	08-23-88	312	<.01	3.6		--	16	110	4.6	--	260	.6	--
7	12-10-87	256	.02	.10		--	<4	80	1.9	.60	--	<.4	--
	05-24-88	285	<.01	<.10		--	9	90	3.9	.80	--	<.4	--
	08-23-88	207	<.01	<.10		--	<4	60	6.8	--	<1.0	.6	--
	11-30-88	248	<.01	<.10		20	4	70	3.7	--	<1.0	--	--
	04-06-89	233	<.01	<.10		20	5	60	3.0	--	<1.0	--	--

Table 3.-- Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226	Trit
8	12-10-87	228	<.01	0.21	--	<4	90	3.5	<0.4	--	<0.4	--
	05-24-88	346	<.01	.18	--	10	110	.4	1.2	--	<.4	--
9	12-11-87	223	<.01	.32	--	<4	100	3.0	.7	--	<.4	--
10	12-16-87	202	<.01	.59	--	18	90	3.4	.5	--	<.4	--
	05-23-88	336	<.01	.66	--	10	120	1.0	1.2	--	<.4	--
	09-08-88	306	<.01	.74	40	11	140	1.5	--	1.6	<.4	--
	12-01-88	267	<.01	.73	40	4	120	2.3	--	<1.0	--	--
	04-05-89	188	<.01	.49	30	4	100	3.9	--	<1.0	--	--
11	05-23-88	261	<.01	.16	--	8	80	1.1	.7	--	<.4	--
	08-24-88	303	<.01	.15	--	7	100	1.6	--	<1.0	<.4	--
	12-01-88	236	<.01	.22	20	<4	70	2.9	--	<1.0	--	--
	04-05-89	215	<.01	.16	20	5	60	2.5	--	<1.0	--	--
12	05-23-88	315	<.01	.72	--	9	100	5.3	.6	--	<.4	--
	08-24-88	401	<.01	.66	--	9	120	2.4	--	1.0	<.4	--
	12-01-88	244	<.01	.61	20	<4	90	5.2	--	1.1	--	--
	04-05-89	220	<.01	.23	20	5	90	4.2	--	2.3	--	--
13	05-23-88	280	<.01	.10	--	8	80	2.5	.7	--	<.4	--
	08-24-88	263	<.01	.26	--	5	90	3.6	--	1.1	<.4	--
	04-05-89	221	<.01	.11	20	5	60	2.7	--	<1.0	--	--
14	04-05-88	170	<.01	1.1	--	7	80	2.9	.6	--	<.4	--
	05-23-88	363	--	--	--	12	150	3.0	4.4	--	<.4	--
	09-08-88	378	<.01	16	20	12	150	2.0	--	4.0	<.4	--
	03-29-89	175	<.01	2.9	20	<4	90	2.6	--	<1.0	<.4	--
15	12-07-87	193	<.01	.44	--	<4	140	4.7	8.7	--	<.4	--
	04-05-88	154	--	--	--	<4	90	--	18	--	<.4	--
	05-25-88	181	<.01	.11	--	4	140	3.8	<.4	--	<.4	--
	09-01-88	190	<.01	<.10	--	<4	150	4.5	--	<1.0	<.4	--
	12-01-88	194	.01	<.10	30	<4	150	3.9	--	1.1	--	--

Table 3.-- Springflow and water-quality data for springs on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 6)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226	Trit
16	12-16-87	149	<.01	.070	--	<4	80	3.8	<.4	--	<.4	--
	04-05-88	162	<.01	.61	--	5	90	1.9	<.4	--	<.4	--
	05-23-88	230	<.01	.73	--	7	110	2.0	.6	--	<.4	--
	08-22-88	227	<.01	.80	--	<4	120	1.5	--	<1.0	<.4	--
	11-29-88	187	<.01	1.1	20	4	90	3.1	--	<1.0	--	--
17	03-29-89	167	<.01	.61	20	<4	90	1.9	--	<1.0	<.4	--
	04-05-88	155	<.01	.38	--	<4	80	2.5	<.4	--	<.4	--
	05-23-88	258	<.01	1.7	--	7	110	1.2	.8	--	<.4	--
	09-02-88	252	<.01	.67	--	5	120	2.1	--	1.2	<.4	--
	03-30-89	174	<.01	.45	20	<4	90	1.5	--	<1.0	<.4	--
18	04-05-88	191	<.01	.75	--	5	80	2.2	<.4	--	<.4	--
	05-23-88	259	<.01	1.1	--	8	100	5.7	.8	--	<.4	--
	11-29-88	202	<.01	.84	20	<4	90	3.4	--	<1.0	--	--
	03-30-89	193	<.01	.70	10	<4	90	1.9	--	<1.0	<.4	--
19	04-05-88	150	<.01	.61	--	<4	70	3.0	<.4	--	<.4	--
	05-25-88	171	<.01	.75	--	6	80	2.0	<.4	--	<.4	--
	09-01-88	196	<.01	.82	--	<4	90	1.6	--	<1.0	<.4	--
	12-01-88	241	<.01	1.2	30	<4	110	1.6	--	1.0	--	--

^a Laboratory value used instead of field measurement.

^b Analyses done using the Radon method instead of Planchet count.

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site

[N, North; W, West]

Site number (fig. 7)	Name	Latitude	Longitude	Date	Time	Q	Cond	pH	Temp
1	Crooked Creek at U.S. Highways 40 & 61 (Tributary 6100)	38 42 51 N	090 42 13 W	04-05-88 06-14-88 09-01-88 12-01-88	1530 0800 1415 1515	0.10 .02 .01 .50	388 540 537 470	8.0 7.7 7.8 8.0	20.5 16.0 19.0 6.0
2	Dardenne Creek at County Highway DD	38 44 04 N	090 48 11 W	12-17-87 04-05-88 06-13-88 09-01-88 12-02-88 04-12-89	1500 1645 0945 1630 1100 1330	15 30 .45 .30 2.0 20	297 309 415 405 359 --	7.5 7.6 8.0 7.8 7.5 --	2.5 19.5 20.5 23.0 4.5 --
3	Dardenne Creek near Cottleville	38 45 06 N	090 39 10 W	12-17-87 04-05-88 06-13-88 09-01-88 12-01-88 04-12-89	1315 1615 1150 1530 1545 1235	30 30 2.1 2.5 7.0 28	317 298 425 378 333 --	7.6 7.7 8.2 8.2 8.0 --	2.0 19.0 22.5 22.5 6.0 --
4	Little Femme Osage Creek near State Highway 94	38 40 01 N	090 45 14 W	05-23-88 12-01-88	1430 0930	.50 1.5	452 392	8.0 8.1	17.0 6.5
5	Schote Creek at U.S. Highways 40 and 61 (Tributary 6200)	38 43 16 N	090 43 23 W	12-07-87 04-04-88 06-13-88 09-01-88 12-01-88 04-07-89	1340 1710 1440 1330 1430 1000	.06 .13 .06 .05 .07 .75	326 305 359 380 350 192	7.1 7.2 7.6 7.4 7.6 7.3	10.0 15.5 20.5 16.0 11.0 9.5
6	Sewage outfall tributary (Tributary 5300)	38 41 30 N	090 43 40 W	12-08-87 05-24-88	1400 0845	.10 .06	417 509	7.8 8.1	10.5 16.0
7	Tributary 5000 at mouth	38 41 23 N	090 40 01 W	05-24-88 11-30-88	1600 1400	.06 .25	607 544	7.9 8.2	14.5 9.5

Table 4.-- *Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued*

Site number (fig. 7)	Name	Latitude	Longitude	Date	Time	Q	Cond	pH	Temp
8	Tributary 5100 at mouth	38 41 10 N	090 40 54 W	05-24-88 08-23-88 11-30-88	1620 1700 1300	0.30 .25 .20	655 659 405	8.2 7.6 8.2	17.0 15.5 8.0
9	Tributary 5200 at mouth	38 40 46 N	090 42 17 W	05-24-88 08-23-88 11-30-88	1730 1600 1130	.15 .02 .30	531 582 492	8.0 7.6 8.3	13.5 19.0 8.0
10	Tributary 5300 near mouth	38 40 28 N	090 43 03 W	12-09-87 05-24-88 11-30-88	1515 1130 1030	.30 .02 .10	395 522 438	7.6 8.6 9.1	10.0 15.0 5.5
11	Tributary 5400 at mouth	38 40 16 N	090 43 25 W	05-24-88 08-23-88 11-30-88	1045 1030 0820	.20 <.01 .10	575 257 457	8.1 7.9 8.2	15.0 23.0 4.5
12	Tributary of Schote Creek near county road D (Tributary 6200)	38 42 12 N	090 44 13 W	04-04-88 11-30-88 04-12-89	1620 1530 1115	.10 .05 .10	238 322 280	6.8 7.2 7.1	11.5 9.0 8.5
13	Unnamed tributary at Twin Island Lake (Tributary 6300)	38 43 48 N	090 43 44 W	04-05-88 06-13-88 09-01-88 12-01-88 04-07-89 06-07-89	1500 1320 1100 1400 0915 1125	6.0 1.0 .80 1.8 7.5 1.2	259 336 383 334 238 312	7.8 7.8 7.6 7.8 7.2 7.6	19.0 20.5 17.0 9.0 10.5 21.5
14	Unnamed tributary upstream from Lake 34 (Tributary 6300)	38 43 05 N	090 44 16 W	04-05-88 09-08-88	0930 0900	.60 .10	300 755	7.2 7.4	11.5 12.5
15	Ahden Hampton Knight Memorial Lake	38 42 28 N	090 44 30 W	03-30-89	--	.50	168	7.7	14.0

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 7)	Name	Latitude	Longitude	Date	Time	Q	Cond	pH	Temp
16	Busch Lake 36 (outflow)	38 42 28 N	090 43 57 W	12-17-87 03-22-88 06-14-88 08-22-88 11-29-88 04-05-89	-- -- -- -- -- --	0.40 .01 -- .01 .06 .60	583 475 450 623 462 376	7.2 7.2 7.8 7.2 7.6 7.6	3.5 11.5 27.5 21.5 7.0 10.5
17	Quarry near mouth of tributary 5400	38 40 17 N	090 43 24 W	08-23-88 11-30-88	-- --	-- --	501 500	8.7 9.0	30.0 9.5

Site number (fig. 7)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
1	04-05-88	37	8.6	28	3.7	137	0	112	42	28	0.3	9.5
	06-14-88	76	12	24	1.5	280	0	232	26	15	.3	13
	09-01-88	72	12	24	2.3	280	0	232	27	17	.2	12
	12-01-88	49	11	36	4.0	170	0	136	43	43	.2	10
2	12-17-87	41	6.7	8.7	3.6	128	0	105	27	14	.2	8.2
	04-05-88	44	6.6	8.3	2.3	142	0	116	30	9.9	.2	9.6
	06-13-88	61	11	9.3	2.8	200	0	164	26	10	.3	8.4
	09-01-88	61	13	6.4	2.1	240	0	195	14	10	.1	9.2
	12-02-88	55	9.2	8.4	3.1	160	0	134	33	10	.1	9.2
	04-12-89	--	--	--	--	--	--	--	--	--	--	--
3	12-17-87	38	7.8	13	3.9	127	0	104	24	21	.3	7.9
	04-05-88	39	7.0	9.0	2.5	127	0	104	26	10	.2	7.3
	06-13-88	55	13.	16	2.7	220	0	182	25	13	.3	6.9
	09-01-88	47	13.	15	2.6	200	0	161	16	12	.3	7.9
	12-01-88	44	10.	13	3.6	160	0	133	30	13	.2	9.0
	04-12-89	--	--	--	--	--	--	--	--	--	--	--

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 7)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
4	05-23-88	72	15	4.9	1.2	280	0	226	31	3.9	0.3	11
	12-01-88	63	13	4.3	1.2	220	0	180	31	4.3	.1	11
5	12-07-87	37	9.4	13	2.2	183	0	150	18	15	.4	8.6
	04-04-88	33	6.4	11	2.5	146	0	120	15	12	.3	5.6
	06-13-88	34	9.7	13	1.6	200	0	166	1.9	12	.4	9.8
	09-01-88	32	9.6	13	1.7	220	0	^a 149	2.2	12	.3	11
	12-01-88	33	9.8	15	1.8	210	0	^a 165	3.4	13	.4	10
	04-07-89	25	4.4	9.1	2.6	88	0	72	18	11	.2	4.2
6	12-08-87	57	13	16	2.7	174	0	142	68	5.8	.5	9.7
	05-24-88	54	16	31	2.5	210	0	176	71	11	.5	10
7	05-24-88	--	--	--	--	360	0	298	--	--	--	--
	11-30-88	78	15	17	2.5	280	0	230	24	28	.1	13
8	05-24-88	99	23	9.9	1.6	390	0	317	42	8.3	.3	15
	08-23-88	93	25	17	2.7	380	0	308	32	14	.2	14
	11-30-88	63	13	6.5	2.5	230	0	185	30	6.2	.1	14
9	05-24-88	87	16	6.7	1.7	310	0	255	42	5.7	.4	14
	08-23-88	99	18	7.3	2.2	350	0	288	36	6.0	.1	17
	11-30-88	77	14	8.1	1.8	230	0	193	37	12	.1	13
10	12-09-87	59	9.8	11	2.5	189	0	155	45	6.4	.3	12
	05-24-88	85	14	11	2.0	300	2	248	45	4.5	.4	14
	11-30-88	68	12	12	2.1	200	5	176	45	5.3	.3	12
11	05-24-88	92	19	6.4	1.3	290	0	242	77	5.4	.3	14
	08-23-88	35	6.0	2.4	5.6	98	0	80	41	1.6	.1	7.4
	11-30-88	76	14	5.5	1.4	230	0	189	54	7.5	.1	13
12	04-04-88	24	7.1	8.2	1.8	78	0	64	42	4.6	.2	11
	11-30-88	35	10	14	2.7	100	0	83	56	9.3	.1	12
	04-12-89	29	9.1	13	2.1	94	0	77	55	7.0	.1	11

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 7)	Date	Ca	Mg	Na	K	HCO ₃	CO ₃	Alk	SO ₄	Cl	F	SiO ₂
13	04-05-88	29	5.9	8.9	2.3	105	0	86	21	11	0.2	5.8
	06-13-88	40	9.5	13	2.2	160	0	134	15	13	.3	8.5
	09-01-88	41	11	15	2.4	230	0	185	7.2	12	.3	11
	12-01-88	42	10	14	2.5	170	0	140	17	14	.2	7.2
	04-07-89	32	6.4	9.4	2.4	100	0	84	22	11	.2	6.2
	06-07-89	42	8.6	13	2.4	140	0	117	18	15	.3	6.1
14	04-05-88	38	7.8	8.7	2.3	--	--	94	31	6.8	.2	10
	09-08-88	89	26	34	2.5	270	0	223	49	24	.1	11
15	03-30-89	25	3.6	3.7	2.6	71	0	58	21	4.0	.1	6.0
16	12-17-87	18	7.5	83	3.8	68	0	56	33	130	.3	4.4
	03-22-88	23	6.1	50	3.2	83	0	68	25	82	.2	5.7
	06-14-88	--	--	--	--	59	0	48	--	--	--	--
	08-22-88	30	10	67	3.4	205	0	168	1.1	97	.4	10
	11-29-88	15	6.2	60	3.1	45	0	37	29	97	.2	5.2
	04-05-89	20	5.0	45	2.8	56	0	46	27	74	.2	5.7
17	08-23-88	61	24	9.8	3.5	123	12	121	140	5.2	.2	1.5
	11-30-88	63	23	9.8	3.4	130	14	128	130	5.2	.2	2.4

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 7)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226
1	04-05-88	231	<.01	0.27	--	7	120	4.3	0.60	--	<.4
	06-14-88	299	<.01	1.3	--	6	130	1.7	.80	--	<.4
	09-01-88	306	<.01	1.3	--	6	130	2.1	--	1.4	<.4
	12-01-88	296	<.01	.94	30	<4	120	4.8	--	3.0	--
2	12-17-87	182	<.01	.65	--	<4	80	5.7	.50	--	<.4
	04-05-88	186	--	--	--	<4	90	4.1	.50	--	<.4
	06-13-88	237	<.01	.11	--	5	130	3.9	1.1	--	<.4
	09-01-88	232	<.01	<.10	--	4	110	3.0	--	1.2	<.4
	12-02-88	220	.01	.48	20	4	100	5.4	--	<1.0	--
	04-12-89	--	--	--	--	--	--	--	--	1.2	--
	12-17-87	189	<.01	<.10	--	<4	80	6.7	3.2	--	<.4
3	04-05-88	175	<.01	.55	--	<4	90	4.9	2.8	--	<.4
	06-13-88	245	.02	.66	--	4	140	5.3	4.3	--	<.4
	09-01-88	222	<.01	.25	--	<4	130	5.8	--	4.4	<.4
	12-01-88	208	.02	.78	30	<4	100	8.0	--	5.0	--
	04-12-89	--	--	--	--	--	--	--	--	3.7	--
	05-23-88	254	<.01	.15	--	7	80	2.0	.60	--	<.4
4	12-01-88	242	<.01	.14	20	<4	80	2.7	--	<1.0	--
	12-07-87	187	<.01	.20	--	<4	180	4.8	3.8	--	<.4
	04-04-88	168	<.01	.15	--	<4	130	5.1	14	--	<.4
	06-13-88	194	<.01	<.10	--	<4	220	5.0	.40	--	<.4
	09-01-88	188	<.01	<.10	--	<4	220	4.8	--	<1.0	<.4
	12-01-88	203	<.01	<.10	30	<4	220	4.7	--	6.8	--
5	04-07-89	128	.02	.30	30	<4	90	6.1	--	11	<.4
	12-08-87	273	<.01	3.4	--	7	150	6.4	1,000	--	b.27
	05-24-88	312	<.01	1.7	--	12	180	7.5	450	--	.6
6	05-24-88	--	<.01	.11	--	--	--	2.6	2.7	--	<.4
	11-30-88	315	<.01	.14	30	4	130	3.4	--	<1.0	--

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 7)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226
8	05-24-88	385	<.01	0.23	--	9	140	1.8	0.9	--	<.4
	08-23-88	370	<.01	1.00	--	7	160	2.2	--	<1.0	<.4
	11-30-88	241	<.01	.24	40	5	110	5.2	--	<1.0	--
9	05-24-88	292	<.01	.41	--	9	120	1.5	1.3	--	<.4
	08-23-88	346	<.01	.29	--	9	130	1.7	--	1.2	<.4
	11-30-88	287	<.01	.30	20	6	100	2.3	--	1.6	--
10	12-09-87	243	<.01	1.5	--	9	80	3.7	160	--	0.9
	05-24-88	319	<.01	.58	--	17	110	2.5	220	--	1.3
	11-30-88	277	<.01	1.9	30	12	100	3.3	--	190	1.0
11	05-24-88	347	<.01	<.10	--	10	140	2.5	.8	--	<.4
	08-23-88	151	<.01	.10	--	<4	130	14	--	<1.0	.9
	11-30-88	290	<.01	<.10	20	6	90	3.8	--	1.5	--
12	04-04-88	154	<.01	.67	--	<4	90	3.2	1.3	--	<.4
	11-30-88	204	<.01	.22	40	<4	120	4.0	--	28	--
	04-12-89	166	<.01	.33	40	4	110	2.4	--	5.6	<.4
13	04-05-88	158	<.01	.88	--	7	80	5.2	25	--	<.4
	06-13-88	193	.04	.47	--	<4	120	4.2	14	--	<.4
	09-01-88	198	.01	.13	--	<4	150	4.6	--	3.0	<.4
	12-01-88	199	.02	.62	40	5	120	5.0	--	11	<.4
	04-07-89	151	<.01	.95	40	<4	90	5.7	--	21	<.4
	06-07-89	175	.04	.69	30	5	120	--	19	--	--
14	04-05-88	190	<.01	4.0	--	8	100	4.4	94	--	<.4
	09-08-88	474	<.01	28	40	35	180	1.9	--	68	<.4
15	03-30-89	104	<.01	.13	30	<4	70	8.2	--	28	<.4

Table 4.-- Streamflow and water-quality data for surface-water sites on vicinity property near the Weldon Spring chemical plant site--Continued

Site number (fig. 7)	Date	DS	NO ₂	NO ₂ + NO ₃	B	Li	Sr	TOC	U	U total	Ra-226
16	12-17-87	308	< 0.01	4.6	--	<4	100	5.7	27	--	<0.4
	03-22-88	243	<.01	.60	--	<4	100	7.7	12	--	<.4
	06-14-88	--	.02	.12	--	--	--	6.5	16	--	<.4
	08-22-88	316	<.01	<.10	--	<4	200	6.3	--	1.4	.4
	11-29-88	251	<.01	.11	50	<4	90	6.6	--	27	--
	04-05-89	229	.01	.36	40	<4	90	6.8	--	<1.0	<.4
17	08-23-88	315	<.01	<.10	--	8	240	3.0	--	1.6	<.4
	11-30-88	335	<.01	<.10	40	7	250	3.0	--	1.4	--

^a Laboratory value used instead of field measurement.

^b Analyses done using the Radon method instead of Planchet count.

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property

Site number	Name	Date	Eh	DO	NO ₂ total	NO ₂ + NO ₃ total	NH ₃	NH ₃ total	P	P total	P ortho
Selected surface-water sites at the Weldon Spring chemical plant site (fig. 3) ^a											
3	Raffinate pit 3	03-14-89 06-08-89	-- --	-- 10.4	0.81 1.10	1,500 1,500	0.55 .32	0.59 .26	<0.01 <.01	0.01 .01	<0.01 <.01
4	Raffinate pit 4	03-14-89	325	--	--	--	<.01	.07	.02	.03	.02
5	Ash pond outflow	03-14-89	346	--	.24	9.6	.02	.07	.01	.08	.01
7	Frog pond	06-06-89	--	--	<.01	.10	.01	<.01	<.01	.03	<.01
9	Seep upstream from U.S. Department of Energy sewage treatment facility	03-15-89	367	--	.02	57	.03	.08	.01	.04	.01
10	Seepage west levee pit 4	04-11-89 06-08-89	-- 499	-- 6.6	-- <.01	-- .49	-- .02	-- .02	-- <.01	-- <.01	-- <.01
Wells (figs. 4 and 5)											
1	MW 2001	06-05-89	443	7.0	.02	11	.02	<.01	.03	.05	.03
2	MW 2002	08-02-89	548	--	<.01	230	.06	.07	.04	.04	.04
3	MW 2003	03-13-89 06-06-89	362 577	-- 6.0	<.01 <.01	440 640	.07 .14	.11 .11	.03 .02	.05 .02	.02 .02
4	MW 2004	08-02-89	537	6.4	<.01	.60	<.01	.02	.03	.07	.04
5	MW 2005	05-11-89 06-06-89	504 499	-- --	<.01 <.01	35 34	.02 .02	.02 <.01	.04 .04	.05 .04	.04 .04
6	MW 2006	03-14-89 06-06-89	328 294	-- 3.3	<.01 <.01	5.9 6.3	.01 .02	.06 .02	.02 .02	.02 .01	.02 .02

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Name	Date	Eh	DO	NO ₂ total	NO ₂ + NO ₃ total	NH ₃	NH ₃ total	P	P total	P ortho
<u>Wells (figs. 4 and 5)--Continued</u>											
21	MW 2021	08-01-89	469	2.7	--	<0.10	0.02	--	0.05	0.01	0.04
22	MW 2022	08-03-89	309	.7	<0.01	<0.10	.02	0.02	.03	.02	.01
29	MW 2029	08-03-89	706	4.1	<0.01	<0.10	<.01	<.01	.04	.05	.04
32	MW 3003	05-10-89	517	--	.20	400	.08	.09	.03	.10	.04
34	MW 3006	05-10-89	328	--	<0.01	<.10	.03	.03	.49	.04	.48
36	MW 3008	03-15-89	337	--	<0.01	610	.12	.15	.01	.01	.01
		06-06-89	508	11.0	<0.01	1,000	.39	.23	<.01	<.01	<.01
37	MW 3009	03-15-89	314	--	.01	85	.01	.06	<.01	<.01	<.01
		06-08-89	521	1.4	.02	22	.02	<.01	<.01	<.01	<.01
66	MWGS 01	01-10-89	--	--	--	--	--	--	--	--	--
		04-11-89	--	--	--	--	--	--	--	--	--
67	MWGS 02	01-05-89	--	--	--	--	--	--	--	--	--
		04-05-89	--	--	--	--	--	--	--	--	--
68	MWGS 03	12-08-88	--	--	--	--	--	--	--	--	--
		04-06-89	--	--	--	--	--	--	--	--	--
69	MWGS 04	12-15-88	--	--	--	--	--	--	--	--	--
		04-11-89	--	--	--	--	--	--	--	--	--
70	MWGS 05	01-06-89	--	--	--	--	--	--	--	--	--
		04-06-89	--	--	--	--	--	--	--	--	--
72	USGS well 2	03-16-89	334	--	<.01	.10	.04	.10	.01	.03	.02

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Name	Date	Eh	DO	NO ₂ total	NO ₂ + NO ₃ total	NH ₃	NH ₃ total	P	P total	P ortho
<u>Springs (fig. 6)</u>											
1	Burgermeister spring	03-16-89	364	--	<.01	6.4	0.01	0.06	0.02	0.04	0.01
		06-07-89	431	--	<.01	19	.01	<.01	.02	.02	.03
		08-02-89	510	8.2	<.01	20	.02	.02	.04	.04	.03
5	Spring 5303	04-06-89	--	--	--	--	--	--	--	--	--
<u>Surface water (fig. 7)</u>											
5	Schote Creek at U.S. Highways 40 and 61	04-07-89	--	--	--	--	--	--	--	--	--
12	Tributary of Schote Creek near county road D	04-12-89	--	--	--	--	--	--	--	--	--
13	Unnamed tributary at Twin Island Lake	04-07-89	--	--	--	--	--	--	--	--	--
		06-07-89	--	--	.04	.70	.40	.38	<.01	.03	.02
Site number	Date	C	Br	Al	As	Ba	Be	Cd	Cr	Co	Cu
<u>Selected surface-water sites at the Weldon Spring chemical plant site (fig. 3)^a</u>											
3	03-14-89	2.6	--	20	3	100	<10	<1	2	<1	3
	06-08-89	5.5	<.01	20	3	100	<10	<1	2	<1	3
4	03-14-89	8.0	--	10	6	150	<.5	<1	<1	<3	2
5	03-14-89	7.3	--	10	<1	68	<.5	<1	<1	<3	<1
7	06-06-89	8.4	<.01	20	5	65	<.5	<1	<1	<3	2
9	03-15-89	4.6	--	<10	<1	110	<.5	<1	20	<3	1
10	04-11-89	--	--	20	<1	34	<.5	1	<1	<3	<1
	06-08-89	1.8	<.01	<10	<1	21	<.5	<1	<1	<3	1

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Date	C	Br	Al	As	Ba	Be	Cd	Cr	Co	Cu
<u>Wells (figs. 4 and 5)</u>											
1	06-05-89	1.2	0.04	10	<1	210	<0.5	<1	2	<3	<1
2	08-02-89	.5	.09	<10	<1	300	10	<1	2	1	2
3	03-13-89	1.0	--	30	<1	300	<10	<1	3	1	<1
	06-06-89	1.7	.03	<10	<1	300	<10	<1	<1	1	<1
4	08-02-89	.4	.03	<10	<1	140	<.5	<1	<1	<3	2
5	05-11-89	--	--	<10	<1	170	<.5	<1	2	<3	1
	06-06-89	.5	.03	<10	<1	170	<.5	<1	<1	<3	1
6	03-14-89	4.7	--	<10	<1	280	<.5	<1	2	<3	2
	06-06-89	4.6	.09	<10	<1	280	<.5	<1	<1	<3	<1
21	08-01-89	--	.02	<10	2	220	<.5	<1	<1	<3	<1
22	08-03-89	.2	.02	<10	<1	180	<.5	<1	<1	<3	<1
29	08-03-89	.3	.02	<10	<1	120	<.5	1	<1	<3	2
32	05-10-89	--	--	<10	<1	300	<10	<1	2	1	1
34	05-10-89	1.6	--	<10	1	<2	1	<1	20	<3	<1
36	03-15-89	1.3	--	<10	<1	500	<10	<1	3	<1	<1
	06-06-89	2.5	.10	<10	<1	500	<10	<1	3	2	<1
37	03-15-89	.5	--	<10	2	1,300	<.5	<1	<1	<3	1
	06-08-89	.7	<.01	<10	3	450	<.5	<1	<1	4	<1
66	01-10-89	--	--	<10	<1	32	<.5	3	<1	<3	<1
	04-11-89	--	--	10	<1	40	<.5	<1	<1	<3	<1
67	01-05-89	--	--	<10	<1	56	<.5	1	<1	<3	<1
	04-05-89	--	--	<10	<1	50	<.5	<1	1	<3	1
68	12-08-88	--	--	<10	<1	130	<.5	2	<1	<3	18
	04-06-89	--	--	<10	<1	140	<.5	<1	<1	<3	20

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Date	C	Br	Al	As	Ba	Be	Cd	Cr	Co	Cu
<u>Wells (figs. 4 and 5)--Continued</u>											
69	12-15-88	--	--	<10	<1	48	<0.5	<1	<1	<3	1
	04-11-89	--	--	10	<1	33	<.5	4	<1	<3	<1
70	01-06-89	--	--	<10	<1	55	<.5	<1	<1	<3	<1
	04-06-89	--	--	<10	<1	67	<.5	3	<1	<3	1
72	03-16-89	0.3	--	<10	<1	330	<.5	<1	<1	<3	<1
<u>Springs (fig. 6)</u>											
1	03-16-89	2.8	--	<10	<1	77	<.5	<1	<1	<3	10
	06-07-89	2.7	0.04	<10	<1	120	<.5	<1	<1	<3	1
	08-02-89	1.6	.06	<10	<1	120	<.5	<1	1	<3	1
5	04-06-89	--	--	20	<1	68	<.5	<1	1	<3	1
<u>Surface water (fig. 7)</u>											
5	04-07-89	--	--	80	1	100	<.5	<1	<1	<3	2
12	04-12-89	--	--	20	<1	81	<.5	1	<1	<3	1
13	04-07-89	--	--	30	1	82	<.5	<1	<1	<3	2
	06-07-89	--	.08	<10	1	160	<.5	<1	<1	<3	<1

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Date	Fe	Fe++	Pb	Mn	Mo	Ni	Se	Ag	V	Zn
<u>Selected surface-water sites at the Weldon Spring chemical plant site (fig. 3)^a</u>											
3	03-14-89	50	--	<5	10	4,700	<1	200	1.0	290	20
	06-08-89	40	0	<1	10	4,700	1	<1	<1.0	520	10
4	03-14-89	3	--	<5	1	740	<1	7	2.0	70	<3
5	03-14-89	19	--	<5	6	<10	<1	1	<1.0	<6	8
7	06-06-89	9	0	<1	14	<10	2	<1	<1.0	<6	4
9	03-15-89	5	--	<5	2	20	<1	5	1.0	<6	12
10	04-11-89	110	--	<5	590	50	20	11	<1.0	<6	53
	06-08-89	4	0	<1	4	80	22	<1	<1.0	<6	12
<u>Wells (figs. 4 and 5)</u>											
1	06-05-89	5	0	3	<1	<10	<1	11	<1.0	<6	7
2	08-02-89	30	0	2	<10	3	3	8	<1.0	1	<10
3	03-13-89	60	20	<5	20	<1	<1	15	<1.0	<1	30
	06-06-89	40	0	<1	20	<1	1	<1	<1.0	<1	10
4	08-02-89	<3	0	1	<1	<10	1	<1	<1.0	<6	9
5	05-11-89	11	0	4	2	<10	<1	1	<1.0	<6	11
	06-06-89	5	0	1	<1	<10	1	<1	<1.0	<6	6
6	03-14-89	77	0	5	49	<10	58	<1	<1.0	<6	12
	06-06-89	90	0	2	56	<10	78	<1	<1.0	<6	12
21	08-01-89	5	20	1	110	10	3	<1	<1.0	<6	11
22	08-03-89	120	150	<1	55	<10	1	<1	<1.0	<6	12
29	08-03-89	3	0	1	7	10	2	<1	<1.0	<6	9
32	05-10-89	20	0	1	180	17	17	8	<1.0	<1	40
34	05-10-89	6	90	<1	2	<10	<1	<1	<1.0	<6	3

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Date	Fe	Fe++	Pb	Mn	Mo	Ni	Se	Ag	V	Zn
<u>Wells (figs. 4 and 5)--Continued</u>											
36	03-15-89	40	20	<5	10	<1	<1	16	1.0	<1	20
	06-06-89	40	<10	<1	20	<1	<1	<1	<1.0	<1	10
37	03-15-89	<3	--	<5	4	<10	21	2	<1.0	<6	8
	06-08-89	<3	0	<1	8	<10	35	<1	<1.0	<6	8
66	01-10-89	6	--	<5	150	<10	2	<1	<1.0	<6	8
	04-11-89	1,000	--	<5	110	<10	1	<1	<1.0	<6	16
67	01-05-89	260	--	<5	130	<10	2	<1	<1.0	<6	84
	04-05-89	110	--	<5	110	<10	4	<1	<1.0	<6	220
68	12-08-88	16	--	<5	17	<10	1	<1	<1.0	<6	28
	04-06-89	14	--	<5	11	<10	2	<1	<1.0	<6	20
69	12-15-88	3,100	--	<5	150	<10	3	<1	<1.0	<6	160
	04-11-89	1,400	--	<5	480	<10	2	<1	<1.0	<6	93
70	01-06-89	290	--	<5	76	<10	4	<1	<1.0	<6	19
	04-06-89	660	--	<5	10	<10	<1	<1	1.0	<6	20
72	03-16-89	28	0	<5	530	<10	<1	<1	<1.0	<6	8
<u>Springs (fig. 6)</u>											
1	03-16-89	8	0	<5	1	<10	<1	<1	<1.0	<6	6
	06-07-89	4	0	<1	2	<10	<1	<1	<1.0	<6	11
	08-02-89	3	10	<1	<1	<10	<1	1	<1.0	<6	7
5	04-06-89	8	--	<5	<1	<10	5	<1	<1.0	<6	5

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Date	Fe	Fe++	Pb	Mn	Mo	Ni	Se	Ag	V	Zn
<u>Surface water (fig. 7)</u>											
5	04-07-89	300	--	<5	1,300	<10	3	<1	<1.0	<6	7
12	04-12-89	35	--	<5	190	<10	3	<1	<1.0	<6	210
13	04-07-89	54	--	<5	400	<10	2	<1	<1.0	<6	9
	06-07-89	5	0	<1	22	<10	1	<1	<1.0	<6	4

Table 5.--Additional water-quality data for selected sites at the Weldon Spring chemical plant site and vicinity property--Continued

Site number	Name	Date	Ra-228	Hg
<u>Selected surface-water sites at the Weldon Spring chemical plant site (fig. 3)^a</u>				
4	Raffinate pit 4	12-03-87	9.8	--
5	Ash pond outflow	12-01-87	<1.0	--
8	Frog pond outflow	12-01-87	<1.0	--
<u>Wells (figs. 4 and 5)</u>				
35	MW 3007	12-17-87	<1.0	--
36	MW 3008	12-10-87	1.4	--
37	MW 3009	12-10-87	<1.0	--
66	MWGS 01	01-10-89	--	<0.1
67	MWGS 02	01-05-89	--	<1
68	MWGS 03	12-08-88	--	<1
69	MWGS 04	12-15-88	--	<1
70	MWGS 05	01-06-89	--	.1
<u>Spring (fig. 6)</u>				
1	Burgermeister spring	12-17-87	<1.0	--
<u>Surface water (fig. 7)</u>				
6	Sewage outfall tributary	12-08-87	<1.0	--

^aSites that typically have large uranium concentrations.

Table 6.-- *Daily mean specific conductance values for Burgermeister spring, July 1987 through September 1989*

[Mean values, in microsiemens per centimeter at 25 degrees Celsius; --, no data available]

Day	July 1987 - September 1987	
	July	August
		September
1	--	958
2	--	941
3	943	953
4	914	970
5	912	974
6	768	960
7	122	950
8	203	915
9	301	592
10	360	480
11	424	592
12	500	671
13	575	762
14	643	835
15	668	872
16	716	885
17	759	900
18	797	917
19	830	931
20	856	944
21	878	949
22	901	940
23	917	946
24	925	951
25	931	959
		927
		924
		920
		890
		897
		947
		948
		948
		937
		927
		933
		941
		943
		939
		939
		945
		939
		944
		930
		940
		940
		945
		939
		939
		947
		948
		948
		937
		927
		927
		924
		920
		890
		897

Table 6.-- Daily mean specific conductance values for Burgermeister spring, July 1987 through September 1989--Continued

Day	July	August	September
26	934	929	898
27	934	898	894
28	928	899	899
29	935	818	892
30	944	821	896
31	946	858	--
Mean	--	870	924
Maximum	--	974	948
Minimum	--	480	885

Table 6.-- Daily mean specific conductance values for Burgermeister spring, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	869	898	376	198	184	358	246	665	795	835	546	812
2	843	899	405	195	195	375	257	685	801	808	604	824
3	871	902	437	212	204	280	241	702	810	799	683	832
4	883	907	479	256	206	225	269	725	825	819	708	835
5	889	910	524	327	224	229	272	728	812	820	739	830
6	884	910	571	352	260	229	222	703	826	829	758	834
7	883	915	418	365	280	233	210	720	826	837	770	838
8	878	915	246	379	307	238	221	732	821	851	774	833
9	885	917	248	394	332	242	252	750	877	861	780	834
10	870	914	281	409	345	253	278	733	704	860	790	842
11	870	912	336	417	359	279	300	708	681	865	801	847
12	851	907	369	425	374	264	337	718	706	868	806	847
13	828	909	392	465	389	250	365	727	742	855	811	844
14	802	910	423	500	350	261	408	730	771	818	816	847
15	833	904	271	533	220	284	407	728	794	817	814	849
16	848	901	230	550	240	308	434	726	816	831	802	857
17	859	899	243	520	223	335	462	726	816	813	793	869
18	875	877	267	500	227	376	404	727	823	796	811	870
19	876	802	263	260	217	376	340	733	816	608	825	870
20	843	787	197	179	203	373	375	738	817	467	838	836
21	852	831	199	185	222	378	414	764	824	293	845	420
22	832	857	183	213	224	313	460	785	828	329	832	441
23	828	867	191	239	236	377	467	805	832	386	825	553
24	855	788	175	260	252	426	492	783	840	417	745	612
25	870	301	171	300	270	365	530	764	847	395	690	642

Table 6.-- Daily mean specific conductance values for Burgermeister spring, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	880	358	167	330	292	304	570	758	846	280	716	669
27	878	454	165	360	313	327	597	778	843	297	755	701
28	865	379	158	410	327	349	621	782	848	337	796	736
29	851	351	165	421	343	309	628	806	857	386	808	768
30	870	360	172	426	--	227	658	812	859	449	799	787
31	885	--	187	341	--	240	--	800	--	497	799	--
Mean	861	781	287	352	270	303	391	743	810	649	770	773
Maximum	889	917	571	550	389	426	658	812	877	868	845	870
Minimum	802	301	158	179	184	225	210	665	681	280	546	420
Oct. 1987-Sept. 1988			Mean 583	Maximum 917		Minimum 158						

Table 6.-- Daily mean specific conductance values for Burgermeister spring, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	798	774	377	300	360	470	275	595	360	684	727	760
2	770	777	420	310	375	491	289	605	400	705	741	764
3	693	780	460	290	360	500	238	641	460	714	744	741
4	699	779	504	270	348	504	235	638	520	714	757	719
5	721	780	549	250	370	526	250	649	560	716	766	722
6	747	785	597	230	387	510	264	710	620	723	769	739
7	765	770	648	238	408	427	277	715	660	733	775	746
8	773	768	701	240	425	426	290	662	670	742	786	750
9	774	772	735	269	448	459	291	664	680	747	795	761
10	773	778	750	296	473	398	306	656	690	751	805	770
11	772	773	770	310	491	272	328	636	695	757	806	777
12	771	711	790	328	512	274	349	630	700	760	809	776
13	779	497	792	344	509	290	374	640	705	763	812	771
14	786	529	786	363	474	309	383	653	710	765	816	771
15	784	585	784	387	391	349	404	662	720	759	817	765
16	784	348	790	394	278	372	421	668	725	758	819	768
17	787	367	798	414	299	381	435	670	730	757	825	730
18	787	476	804	434	324	313	452	682	690	752	840	730
19	778	528	792	449	342	313	461	684	590	750	781	736
20	768	335	794	466	354	242	462	685	615	748	797	746
21	763	257	798	494	318	116	465	693	640	734	803	752
22	784	284	505	516	312	177	483	695	664	619	802	758
23	781	316	230	536	331	245	503	697	681	595	794	762
24	787	344	240	553	362	261	516	700	691	410	752	762
25	751	369	269	450	388	282	527	640	706	430	553	764

Table 6.-- Daily mean specific conductance values for Burgermeister spring, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	725	308	240	124	404	294	537	370	715	610	586	767
27	737	256	230	160	419	315	548	500	720	657	673	766
28	757	276	235	200	433	338	560	520	639	672	708	765
29	768	303	240	240	--	341	575	250	630	685	730	762
30	774	343	269	280	--	337	592	291	639	700	748	765
31	768	--	296	320	--	286	--	309	--	712	753	--
Mean	765	532	555	337	389	349	403	607	639	697	764	755
Maximum	798	785	804	553	512	526	592	715	730	765	840	777
Minimum	693	256	230	124	278	116	235	250	360	410	553	719
Oct. 1988-Sept. 1989			Mean 567	Maximum 840		Minimum 116						

Table 7.--Daily mean specific conductance values for Frog pond outflow, July 1987 through September 1989

[Mean values, in microsiemens per centimeter at 25 degrees Celsius; ---, no flow]

Day	July	August	September
July 1987 - September 1987			
1	---	---	---
2	---	---	---
3	---	---	---
4	---	---	---
5	---	---	---
6	---	---	---
7	---	---	---
8	1,110	1,100	---
9	1,740	1,010	---
10	2,970	1,050	---
11	3,730	---	---
12	3,570	---	---
13	2,100	---	---
14	2,830	---	---
15	3,600	---	---
16	3,660	---	---
17	3,650	---	---
18	3,650	---	---
19	---	---	---
20	---	---	---
21	---	---	---
22	---	---	---
23	---	---	---
24	---	---	---
25	---	---	---

Table 7.--Daily mean specific conductance values for Frog pond outflow, July 1987 through September 1989--Continued

Day	July	August	September
26	---	---	---
27	---	881	---
28	---	923	---
29	---	---	620
30	---	---	751
31	---	---	---

Table 7.--Daily mean specific conductance values for Frog pond outflow, July 1987 through September 1989.-Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	750	---	1,250	1,110	1,280	2,240	580	---	---	---	---	---
2	---	---	1,220	1,150	833	1,930	955	---	---	---	---	---
3	---	---	1,640	1,140	932	1,170	1,560	---	---	---	---	---
4	---	---	2,100	935	1,050	600	1,740	1,090	---	---	---	---
5	---	---	1,700	---	1,320	609	1,550	---	---	---	---	---
6	---	---	1,610	---	1,500	687	1,210	---	---	---	---	---
7	---	---	859	---	1,500	737	1,420	---	---	---	---	---
8	---	---	697	---	1,460	1,180	1,480	---	---	---	---	---
9	---	---	1,290	---	855	1,280	1,350	955	752	---	---	---
10	---	---	1,220	---	962	1,340	---	936	---	---	---	---
11	---	---	1,630	---	1,130	1,780	---	---	---	732	---	---
12	854	---	2,080	---	1,170	1,570	---	---	---	---	---	---
13	927	---	1,590	---	1,380	1,960	---	---	---	---	---	---
14	---	---	1,560	---	1,220	1,940	---	---	---	---	1,010	---
15	---	---	1,000	---	613	1,910	---	---	---	---	1,020	---
16	---	---	742	1,290	738	1,760	---	---	---	---	1,070	---
17	833	648	976	353	823	1,850	---	---	---	---	1,060	---
18	837	927	1,060	548	878	1,690	955	---	---	621	---	---
19	804	---	1,290	826	1,080	1,670	1,160	---	---	1,090	---	---
20	789	---	757	699	643	1,720	---	---	---	964	---	534
21	827	---	601	727	726	1,740	---	---	---	802	---	544
22	827	---	705	856	---	1,670	---	---	---	1,420	---	549
23	808	---	709	1,010	---	1,760	---	862	---	---	---	---
24	751	---	991	1,260	---	1,060	---	979	---	---	734	---
25	796	472	959	1,280	2,160	1,120	---	920	---	---	750	---
26	---	530	787	1,220	1,100	1,400	---	---	---	588	750	---
27	---	611	1,190	1,080	---	1,400	---	---	---	734	747	---
28	---	645	653	---	---	1,390	---	---	---	899	737	---
29	---	1,010	506	---	---	1,110	---	---	744	836	734	---
30	---	1,210	616	---	---	589	---	---	804	986	741	---
31	---	---	922	1,440	---	463	---	---	---	---	---	---

Table 7.--Daily mean specific conductance values for Frog pond outflow, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	----	1,550	1,910	944	2,200	2,400	1,250	1,060	1,140	1,160	1,180	793
2	----	1,560	1,920	986	1,940	2,510	1,200	1,070	1,140	1,150	1,170	880
3	1,280	1,550	2,030	975	1,060	2,450	762	1,010	1,140	1,150	1,160	883
4	1,260	1,160	2,030	853	1,010	2,340	600	665	835	1,190	----	880
5	1,260	1,290	2,020	1,220	1,150	2,280	773	1,050	1,090	----	----	903
6	----	1,450	2,020	623	1,460	2,200	1,050	896	1,070	----	----	930
7	----	1,430	2,020	780	1,630	2,100	1,150	----	1,070	----	----	----
8	----	1,430	2,080	1,340	1,710	2,050	1,260	----	1,150	----	----	----
9	----	1,340	2,050	1,300	1,870	1,770	1,310	915	----	----	----	----
10	----	861	2,080	1,230	1,980	1,120	1,320	1,050	----	----	----	----
11	----	1,030	----	1,090	1,920	636	1,310	1,040	----	----	----	----
12	----	802	----	1,190	1,930	922	1,310	1,030	917	----	----	----
13	----	1,030	----	1,310	1,230	1,220	1,290	1,040	1,000	----	----	790
14	----	1,280	----	1,360	1,040	2,120	1,280	1,040	987	----	----	804
15	----	1,400	----	1,320	928	3,740	1,280	1,050	1,020	----	----	926
16	----	779	----	1,430	762	3,820	1,280	1,040	1,010	----	825	921
17	1,120	667	----	1,660	819	3,080	1,290	----	928	----	907	904
18	1,070	837	----	2,290	914	1,710	1,290	----	678	----	931	914
19	1,170	698	----	2,130	1,080	1,600	1,290	----	881	----	935	----
20	1,100	798	----	1,250	1,020	1,140	1,290	----	970	854	988	----
21	1,050	423	----	1,900	879	361	1,310	----	1,000	634	888	----
22	1,150	563	----	1,520	1,100	409	1,320	----	1,010	902	807	----
23	831	689	1,400	----	1,450	660	----	836	1,030	1,320	817	----
24	1,230	869	1,360	----	1,580	998	----	830	1,070	932	527	----
25	1,400	1,340	1,260	1,350	1,560	1,520	----	628	----	659	763	----
26	1,590	936	1,290	675	1,530	1,750	----	514	----	1,070	937	----
27	1,530	992	1,090	585	1,740	1,880	----	922	----	1,160	950	----
28	1,510	1,410	890	812	1,980	1,840	----	871	1,110	1,170	942	----
29	1,560	1,490	731	999	----	1,850	1,080	538	1,150	1,180	938	----
30	1,550	1,900	808	1,230	----	1,740	1,060	808	1,150	1,110	930	----
31	1,560	----	882	1,590	----	1,030	----	1,070	----	1,160	971	----

Table 8.--Daily mean specific conductance values for Ash pond outflow, July 1987 through September 1989

[Mean values, in microsiemens per centimeter at 25 degrees Celsius; ----, no flow]

Day	July	August	September
July 1987 - September 1987			
1	----	----	----
2	----	----	----
3	----	----	----
4	----	----	----
5	----	----	----
6	223	----	----
7	168	----	----
8	224	----	----
9	270	----	----
10	298	----	----
11	----	----	----
12	----	----	----
13	----	----	----
14	----	----	----
15	----	----	----
16	----	----	----
17	----	----	----
18	----	----	----
19	----	----	----
20	----	----	----
21	----	----	----
22	----	----	----
23	----	----	----
24	----	----	----
25	----	----	----

Table 8.--Daily mean specific conductance values for Ash pond outflow, July 1987 through September 1989--Continued

Day	July	August	September
26	----	----	----
27	----	----	----
28	----	----	----
29	----	----	----
30	----	----	----
31	----	----	----

Table 8.--Daily mean specific conductance values for Ash pond outflow, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	---	---	370	363	261	389	376	---	---	---	---	---
2	---	---	374	393	302	381	371	---	---	---	---	---
3	---	---	381	391	323	307	378	---	---	---	---	---
4	---	---	402	389	338	310	388	---	---	---	---	---
5	---	---	416	431	360	332	388	---	---	---	---	---
6	---	---	409	458	405	342	366	---	---	---	---	---
7	---	---	347	463	416	368	402	---	---	---	---	---
8	---	---	346	429	417	386	407	---	---	---	---	---
9	---	---	386	425	402	385	403	---	---	---	---	---
10	---	---	411	430	382	378	404	---	---	---	---	---
11	---	---	426	416	398	381	389	---	---	---	---	---
12	---	---	441	394	408	362	376	---	---	---	---	---
13	---	---	459	398	408	368	363	---	---	---	---	---
14	---	---	457	430	389	389	358	---	---	---	---	---
15	---	---	324	440	326	395	363	---	---	---	---	---
16	---	---	325	410	313	377	365	---	---	---	---	---
17	---	---	369	353	297	368	345	---	---	---	---	---
18	---	---	393	303	306	356	295	---	---	---	---	---
19	---	---	278	278	276	355	298	---	---	---	---	---
20	---	---	211	331	298	356	298	---	---	---	---	---
21	---	---	279	346	315	351	303	---	---	---	---	---
22	---	---	312	368	310	331	300	---	---	---	---	---
23	---	---	338	374	302	349	323	---	---	---	---	---
24	---	---	326	383	324	340	---	---	---	---	---	---
25	---	---	338	390	346	324	---	---	---	---	---	---
26	---	---	297	424	361	332	---	---	---	280	---	---
27	---	---	216	442	378	349	---	---	---	297	---	---
28	---	325	261	444	391	353	---	---	---	---	---	---
29	---	366	292	427	394	317	---	---	---	---	---	---
30	---	368	329	401	---	316	---	---	---	---	---	---
31	---	---	339	313	---	356	---	---	---	---	---	---

Table 8.--Daily mean specific conductance values for Ash pond outflow, July 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	---	---	---	453	424	422	403	---	411	---	---	---
2	---	---	485	440	413	408	377	---	438	---	---	---
3	---	---	484	429	428	392	301	---	431	---	---	---
4	---	---	472	457	443	377	287	---	431	---	---	---
5	---	---	470	419	436	384	305	---	400	---	---	---
6	---	---	459	380	456	377	317	---	400	---	---	---
7	---	---	481	403	464	413	318	---	419	---	---	---
8	---	---	260	449	445	385	320	---	529	---	---	---
9	---	---	313	439	---	426	320	462	---	---	---	---
10	---	---	---	403	---	441	313	378	---	---	---	---
11	---	---	---	448	---	347	303	379	---	---	---	---
12	---	---	---	412	---	389	309	379	---	---	---	---
13	---	---	---	434	379	398	321	395	---	---	---	---
14	---	---	---	438	331	408	304	394	---	---	---	---
15	---	---	---	425	315	423	297	395	---	---	---	---
16	---	---	---	431	---	423	288	393	---	---	---	---
17	---	---	---	452	---	401	287	395	---	---	---	---
18	---	---	---	442	---	448	290	404	519	---	---	---
19	---	245	---	435	---	454	289	416	564	---	---	---
20	---	295	---	430	---	273	284	412	---	---	---	---
21	---	344	---	426	354	255	282	423	---	---	---	---
22	---	369	439	412	---	286	290	400	---	---	---	---
23	---	377	481	396	---	301	---	391	---	---	---	---
24	---	---	484	391	432	313	---	365	---	---	---	---
25	---	---	489	354	373	---	---	360	---	---	---	---
26	---	---	457	320	339	---	---	359	---	---	---	---
27	---	---	444	346	369	330	---	397	---	---	---	---
28	---	---	417	347	384	334	---	355	---	---	---	---
29	---	---	452	355	---	342	---	341	---	---	---	---
30	---	---	453	349	---	347	---	347	---	---	---	---
31	---	---	456	376	---	396	---	380	---	---	---	---

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989

[Mean values, in cubic feet per second; --, no data available]

Day	May	June	July	Aug.	Sept.
May 1986 - September 1986					
1	0.11	0.10	0.25	0.09	0.08
2	.10	.10	.50	.08	.08
3	.10	.09	.38	.08	.09
4	.11	.09	.27	.08	.09
5	.11	.09	.15	.08	.10
6	.10	.09	.11	.24	.08
7	.10	.09	.09	.21	.13
8	.10	.10	.09	.16	.10
9	.10	.22	.09	.12	.08
10	.10	.15	.08	.11	.08
11	.11	.11	.12	.11	.12
12	.11	.09	.14	.10	.10
13	.10	.08	.11	.09	.09
14	.10	.10	.24	.09	.08
15	.11	.42	.25	.09	.08
16	.10	.34	.14	.09	.08
17	.10	.24	.10	.09	.09
18	.10	.14	.09	.09	.29
19	.10	.11	.08	.08	.28
20	.09	.10	.08	.08	.17
21	.09	.09	.08	.08	.13
22	.09	.13	.10	.08	.13
23	.09	.18	.12	.08	.14
24	.09	.16	.09	.08	.48
25	.10	.13	.08	.08	.31

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989--Continued

Day	May	June	July	Aug.	Sept.
26	0.18	0.13	0.08	0.08	0.16
27	.35	.13	.08	.08	.33
28	.27	.15	.08	.08	.35
29	.16	.14	.08	.08	.29
30	.12	.14	.09	.08	.57
31	.11	--	.09	.08	--
Total	3.70	4.23	4.33	3.04	5.18
Mean	.12	.14	.14	.10	.17
Maximum	.35	.42	.50	.24	.57
Minimum	.09	.08	.08	.08	.08
Median	.10	.12	.09	.08	.11
Acre-feet	7.3	8.4	8.6	6.0	10

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1986 - September 1987												
1	0.52	0.18	0.53	0.35	0.47	0.58	0.44	0.23	0.11	0.10	0.09	0.08
2	.49	.16	.55	.29	.48	.51	.42	.23	.13	.10	.09	.08
3	.60	.18	.50	.19	.44	.46	.40	.26	.16	.10	.10	.08
4	.66	.42	.46	.16	.40	.42	.39	.18	.13	.10	.10	.08
5	.49	.38	.41	.15	.42	.38	.37	.18	.12	.11	.10	.08
6	.41	.32	.40	.15	.42	.34	.36	.18	.11	.24	.09	.08
7	.38	.22	.40	.19	.39	.31	.34	.18	.10	.63	.09	.08
8	.37	.37	.42	.35	.37	.28	.33	.18	.10	.51	.11	.08
9	.36	.40	.46	.30	.34	.26	.38	.15	.10	.50	.41	.08
10	.33	.39	.45	.28	.33	.25	.34	.14	.11	.47	.25	.08
11	.29	.36	.41	.27	.43	.24	.30	.14	.11	.38	.15	.08
12	.26	.36	.40	.26	.40	.24	.28	.13	.11	.21	.12	.08
13	.25	.32	.39	.31	.38	.23	.47	.13	.11	.16	.11	.08
14	.23	.26	.38	.53	.38	.23	.65	.13	.10	.15	.11	.07
15	.23	.23	.35	.57	.34	.23	.53	.12	.10	.13	.10	.07
16	.21	.21	.32	.48	.26	.23	.48	.12	.10	.12	.10	.08
17	.17	.20	.42	.43	.23	.21	.45	.12	.09	.11	.10	.08
18	.15	.19	.40	.42	.21	.34	.42	.12	.09	.10	.09	.08
19	.13	.17	.38	.42	.20	.48	.40	.12	.09	.10	.09	.08
20	.12	.16	.36	.41	.20	.47	.40	.12	.10	.09	.09	.08
21	.11	.16	.33	.40	.20	.43	.39	.12	.10	.09	.09	.07
22	.24	.15	.30	.40	.20	.41	.43	.12	.10	.09	.09	.07
23	.38	.15	.27	.40	.24	.43	.40	.11	.10	.09	.08	.07
24	.21	.13	.26	.39	.25	.49	.38	.12	.09	.09	.09	.07
25	.39	.18	.24	.38	.24	.53	.37	.15	.09	.09	.10	.07

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989--Continued

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.42	0.54	0.22	0.38	0.21	0.48	0.34	0.14	0.09	0.09	0.09	0.08
27	.42	.48	.20	.36	.22	.45	.29	.13	.09	.10	.13	.10
28	.38	.45	.18	.36	.42	.44	.26	.12	.09	.09	.12	.10
29	.35	.41	.17	.41	--	.50	.24	.12	.09	.09	.10	.11
30	.30	.36	.17	.54	--	.49	.24	.11	.09	.09	.09	.09
31	.23	--	.37	.48	--	.47	--	.11	--	.09	.08	--
Total	10.08	8.49	11.10	11.01	9.07	11.81	11.49	4.51	3.10	5.41	3.55	2.41
Mean	.33	.28	.36	.36	.32	.38	.38	.15	.10	.17	.11	.08
Maximum	.66	.54	.55	.57	.48	.58	.65	.26	.16	.63	.41	.11
Minimum	.11	.13	.17	.15	.20	.21	.24	.11	.09	.09	.08	.07
Median	.33	.24	.38	.38	.34	.42	.38	.13	.10	.10	.10	.08
Acre-feet	20	17	22	22	18	23	23	8.9	6.1	11	7.0	4.8

Oct. 1986-Sept. 1987 Total 92.03 Mean 0.25 Maximum 0.66 Minimum 0.07 Median 0.23 Acre-feet 183

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	0.08	0.10	0.36	0.40	0.66	0.35	0.48	0.17	0.11	0.11	0.13	0.09
2	.08	.16	.32	.39	.55	.35	.48	.16	.11	.10	.11	.09
3	.07	.08	.25	.39	.49	.55	.48	.16	.11	.10	.10	.10
4	.07	.07	.18	.38	.46	.54	.45	.16	.11	.10	.10	.09
5	.08	.06	.13	.37	.41	.52	.44	.17	.11	.10	.10	.09
6	.08	.06	.12	.36	.39	.52	.55	.15	.11	.09	.10	.09
7	.09	.06	.39	.35	.38	.52	.47	.15	.11	.09	.10	.09
8	.10	.06	.54	.35	.36	.49	.45	.15	.11	.09	.10	.09
9	.10	.06	.47	.34	.36	.47	.43	.16	.17	.09	.10	.09
10	.20	.06	.40	.33	.36	.42	.42	.15	.14	.09	.09	.09
11	.15	.06	.37	.33	.36	.40	.40	.14	.13	.09	.09	.09
12	.09	.06	.34	.33	.36	.46	.40	.14	.12	.10	.09	.09
13	.09	.06	.26	.28	.36	.44	.40	.13	.11	.10	.09	.09
14	.09	.06	.21	.21	.38	.41	.39	.13	.11	.09	.10	.08
15	.08	.06	.52	.17	.46	.39	.38	.13	.10	.10	.10	.08
16	.08	.07	.50	.15	.44	.38	.37	.12	.09	.09	.09	.08
17	.08	.10	.42	.17	.46	.36	.35	.12	.11	.12	.09	.08
18	.08	.09	.40	.19	.43	.36	.34	.12	.10	.21	.09	.09
19	.08	.07	.50	.39	.53	.36	.32	.12	.10	.17	.09	.14
20	.21	.07	.63	.55	.53	.36	.33	.11	.10	.35	.09	.24
21	.08	.07	.54	.49	.48	.37	.30	.11	.10	.32	.09	.16
22	.08	.07	.47	.42	.46	.37	.28	.12	.10	.19	.09	.13
23	.08	.07	.43	.40	.43	.35	.26	.13	.09	.14	.15	.10
24	.11	.21	.46	.39	.40	.37	.25	.13	.09	.12	.13	.10
25	.07	.45	.54	.38	.38	.45	.25	.12	.09	.18	.11	.10

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.08	0.31	0.55	0.36	0.38	0.43	0.24	0.11	0.09	0.51	0.10	0.10
27	.08	.26	.62	.34	.36	.40	.22	.11	.09	.44	.09	.09
28	.07	.42	.62	.30	.36	.40	.21	.11	.09	.40	.10	.09
29	.07	.40	.52	.29	.36	.56	.20	.11	.09	.31	.10	.09
30	.07	.38	.46	.28	--	.59	.19	.11	.10	.23	.09	.09
31	.06	--	.42	.41	--	.51	--	.11	--	.18	.09	--
Total	2.83	4.11	12.94	10.49	12.34	13.45	10.73	4.11	3.19	5.40	3.09	3.02
Mean	.091	.14	.42	.34	.43	.43	.36	.13	.11	.17	.10	.10
Maximum	.21	.45	.63	.55	.66	.59	.55	.17	.17	.51	.15	.24
Minimum	.06	.06	.12	.15	.36	.35	.19	.11	.09	.09	.09	.08
Median	.08	.07	.43	.35	.40	.41	.37	.13	.10	.11	.10	.09
Acre-feet	5.6	8.2	26	21	24	27	21	8.2	6.3	11	6.1	6.0
Cal Yr 1987		Total 82.24	Mean 0.23	Maximum 0.65	Minimum 0.06	Median 0.15	Acre-feet 163					
Oct. 1987-Sept. 1988		Total 85.70	Mean 0.23	Maximum 0.66	Minimum 0.06	Median 0.15	Acre-feet 170					

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	0.13	0.09	0.33	0.42	0.40	0.30	0.47	0.20	0.36	0.12	0.14	0.13
2	.13	.09	.27	.41	.40	.27	.50	.18	.28	.12	.13	.15
3	.11	.09	.23	.45	.42	.29	.60	.17	.23	.12	.12	.13
4	.10	.09	.19	.50	.40	.27	.57	.17	.20	.12	.11	.12
5	.09	.10	.17	.54	.39	.28	.51	.17	.18	.12	.11	.11
6	.09	.10	.15	.59	.38	.33	.48	.16	.16	.11	.11	.11
7	.09	.09	.13	.53	.35	.38	.46	.16	.15	.11	.12	.11
8	.10	.10	.12	.48	.31	.36	.45	.16	.14	.11	.11	.11
9	.10	.09	.11	.43	.27	.39	.44	.18	.14	.11	.11	.11
10	.10	.11	.11	.42	.25	.51	.43	.19	.13	.11	.11	.11
11	.09	.11	.11	.40	.24	.63	.42	.18	.13	.11	.12	.11
12	.09	.23	.11	.40	.23	.59	.42	.17	.14	.11	.12	.11
13	.09	.22	.11	.39	.30	.50	.40	.16	.14	.11	.12	.11
14	.09	.14	.11	.38	.37	.46	.40	.16	.13	.11	.12	.13
15	.09	.13	.11	.38	.47	.42	.40	.15	.12	.11	.12	.13
16	.10	.43	.11	.37	.49	.41	.40	.15	.12	.11	.12	.12
17	.10	.29	.10	.35	.43	.41	.39	.14	.12	.11	.12	.12
18	.09	.19	.10	.34	.42	.51	.38	.14	.14	.11	.11	.11
19	.09	.25	.11	.31	.41	.45	.37	.14	.20	.12	.11	.11
20	.09	.53	.11	.28	.42	.66	.37	.14	.16	.13	.11	.11
21	.10	.54	.10	.25	.45	.61	.35	.14	.14	.18	.11	.11
22	.10	.48	.24	.23	.43	.51	.32	.14	.13	.22	.11	.11
23	.10	.44	.58	.22	.41	.49	.30	.14	.13	.17	.12	.11
24	.10	.43	.47	.22	.39	.46	.28	.14	.12	.34	.24	.10
25	.09	.41	.43	.34	.39	.44	.27	.18	.12	.33	.25	.11

Table 9.--Daily mean discharge for Burgermeister spring, May 1986 through September 1989.--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.09	0.44	0.48	0.65	0.38	0.43	0.25	0.40	0.12	0.21	0.15	0.11
27	.09	.49	.58	.58	.35	.42	.24	.29	.18	.16	.13	.11
28	.09	.42	.55	.51	.34	.42	.22	.28	.17	.15	.12	.13
29	.09	.40	.48	.48	--	.42	.22	.53	.14	.14	.11	.11
30	.09	.36	.44	.46	--	.43	.21	.44	.13	.14	.11	.11
31	.09	--	.42	.43	--	.49	--	.41	--	.14	.12	--
Total	2.99	7.88	7.66	12.74	10.49	13.54	11.52	6.36	4.75	4.46	3.91	3.46
Mean	.096	.26	.25	.41	.37	.44	.38	.21	.16	.14	.13	.12
Maximum	.13	.54	.58	.65	.49	.66	.60	.53	.36	.34	.25	.15
Minimum	.09	.09	.10	.22	.23	.27	.21	.14	.12	.11	.11	.10
Median	.09	.22	.15	.41	.39	.43	.40	.17	.14	.12	.12	.11
Acre-feet	5.9	16	15	25	21	27	23	13	9.4	8.8	7.8	6.9
Cal Yr 1988	Total 84.35 Mean 0.23 Maximum 0.66 Minimum 0.08 Median 0.14 Acre-feet 167											
Oct. 1988-Sept. 1989	Total 89.76 Mean 0.25 Maximum 0.66 Minimum 0.09 Median 0.17 Acre-feet 178											

Table 10.--Daily mean discharge for unnamed tributary at Twin Island Lake, August 1987 through September 1989

[Mean values, in cubic feet per second; --no data available]

Day	August	September
August 1987 - September 1987		
1	--	0.74
2	--	.63
3	--	.74
4	--	.63
5	--	.63
6	--	.81
7	--	.95
8	--	1.1
9	--	.95
10	--	.83
11	--	.80
12	--	.75
13	--	.69
14	--	.65
15	--	.74
16	--	.94
17	--	.94
18	0.52	.87
19	.52	.80
20	.52	.68
21	.85	.58
22	.63	.52
23	.63	.50
24	.63	.50
25	.63	.50

Table 10.--Daily mean discharge for unnamed tributary at Twin Island Lake, August 1987 through September 1989--Continued

Day	August	September
26	1.9	0.50
27	3.1	.53
28	1.8	.63
29	1.2	1.4
30	.96	.74
31	.74	--
Total	--	22.27
Mean	--	.74
Maximum	--	1.4
Minimum	--	.50

Table 10.--Daily mean discharge for unnamed tributary at Twin Island Lake, August 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	0.74	0.70	1.6	7.0	58	4.8	8.7	2.7	1.2	0.48	1.9	0.79
2	.63	.63	1.4	6.4	15	5.5	9.6	2.6	1.1	.48	1.5	.78
3	.52	.54	1.2	6.1	11	5.0	8.1	2.7	1.0	.46	1.3	.78
4	.52	.54	.96	5.8	9.5	17	7.0	3.0	.96	.46	1.2	.71
5	.52	.54	.85	5.4	7.6	14	7.1	2.8	.96	.44	1.1	.71
6	.52	.54	1.1	5.2	6.4	13	9.9	2.7	.85	.44	.96	.71
7	.52	.54	6.4	5.1	6.0	11	7.4	2.6	.85	.44	.85	.71
8	.52	.54	6.2	4.9	5.8	10	6.5	2.6	.85	.44	.85	.71
9	.52	.54	4.4	4.6	5.7	9.4	5.8	2.2	1.1	.44	.85	.71
10	1.6	.54	2.6	4.3	5.6	7.9	5.1	1.9	1.2	.44	.85	.71
11	1.3	.52	1.9	4.1	5.6	7.3	4.5	1.8	1.1	.44	.74	.71
12	.85	.52	1.5	3.9	5.1	11	4.0	1.8	1.1	.44	.74	.71
13	.80	.52	1.2	3.5	4.9	8.4	3.7	1.7	.96	.44	.74	.71
14	.74	.52	2.0	3.3	6.9	7.1	3.3	1.7	.96	.44	.85	.64
15	.71	.60	8.4	3.1	7.5	6.2	3.2	1.7	.85	.44	.74	.58
16	.71	1.3	6.2	3.1	7.0	5.6	3.0	1.6	.85	.44	.64	.58
17	.71	1.2	3.8	3.2	7.1	5.2	3.1	1.5	.76	1.2	.64	.71
18	.71	.90	2.5	3.0	6.8	5.1	4.2	1.5	.76	2.7	.64	.79
19	.71	.82	17	11	46	4.7	3.6	1.5	.70	2.2	.64	.79
20	1.2	.74	51	8.7	14	4.4	3.8	1.5	.70	3.4	.64	.58
21	.74	.71	12	7.9	9.4	4.1	3.5	1.5	.63	4.0	.64	.64
22	.71	.77	8.0	5.8	8.2	4.2	3.4	1.6	.63	2.2	.64	.86
23	.68	.70	5.5	4.8	7.1	3.7	3.2	1.9	.63	1.3	2.4	.86
24	.96	4.9	7.5	4.1	6.2	3.8	3.2	1.8	.58	.96	1.5	.79
25	.75	6.0	14	3.5	5.6	5.1	3.2	1.5	.58	20	1.2	.71

Table 10.--Daily mean discharge for unnamed tributary at Twin Island Lake, August 1987 through September 1989--Continued

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.64	3.0	14	3.2	5.3	4.7	3.1	1.4	0.52	15	1.1	0.64
27	.68	2.6	58	3.0	4.9	3.9	2.8	1.4	.52	5.9	1.0	.64
28	.63	3.3	45	2.8	5.0	3.6	2.7	1.3	.49	3.5	1.1	.58
29	.63	2.4	13	2.9	5.1	18	2.7	1.3	.49	2.8	1.0	.58
30	.63	1.9	9.9	3.0	--	19	2.7	1.3	.48	2.5	.87	.79
31	.63	--	8.2	14	--	11	--	1.2	--	2.0	.80	--
Total	22.73	39.57	317.31	156.7	298.3	288.7	142.1	58.3	24.36	76.82	80.62	21.21
Mean	.73	1.32	10.2	5.05	10.3	9.31	4.74	1.88	.81	2.48	.99	.71
Maximum	1.6	6.0	58	14	58	50	9.9	3.0	1.2	20	2.4	.86
Minimum	.52	.52	.85	2.8	4.9	3.6	2.7	1.2	.48	.44	.64	.58
Oct. 1987-Sept. 1988	Total 1,476.72 Mean 4.03 Maximum 58 Minimum 0.44											

Table 10.--Daily mean discharge for unnamed tributary at Twin Island Lake, August 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	1.4	0.71	1.6	3.1	2.2	1.2	7.2	2.0	2.1	0.78	0.70	1.4
2	1.0	.71	1.3	2.7	2.6	1.1	15	1.8	1.6	.85	.68	1.1
3	.85	.71	1.3	2.5	2.5	1.2	27	1.7	1.4	.78	.66	.74
4	.71	.71	1.1	2.8	2.2	1.3	18	1.7	1.3	.75	.66	.63
5	.61	.71	1.1	11	2.0	1.3	11	1.6	1.3	.70	.66	.62
6	.58	.71	1.1	12	1.9	2.1	8.6	1.5	1.3	.70	.75	.62
7	.58	.71	1.0	6.9	1.8	1.8	7.5	1.4	1.2	.70	.70	.62
8	.58	.78	.93	5.4	1.7	1.7	7.1	2.3	1.2	.68	.68	.62
9	.58	.85	.93	4.0	1.5	1.9	6.5	1.8	1.1	.68	.66	.71
10	.58	.93	.93	3.2	1.5	6.2	5.7	1.6	1.0	.68	.66	.71
11	.58	.71	.85	2.8	1.4	12	5.3	1.4	1.1	.68	.66	.62
12	.58	.93	.78	2.5	1.4	9.0	5.1	1.3	1.5	.65	.65	.80
13	.58	1.1	.85	2.2	1.7	6.4	4.9	1.3	1.3	.65	.70	1.2
14	.58	1.0	.93	2.1	1.9	4.9	4.6	1.3	1.0	.65	.80	2.1
15	.64	1.3	.85	2.0	3.1	3.3	4.4	1.3	.93	.65	.85	1.4
16	.64	3.0	.78	1.9	3.5	2.7	4.1	1.3	.85	.65	.80	.75
17	.71	1.9	.78	1.8	3.5	2.5	3.7	1.2	.85	.65	.60	.60
18	.64	1.3	.78	1.6	3.4	3.1	3.6	1.2	1.0	.65	.60	.75
19	.64	1.8	.78	1.5	2.1	3.5	3.3	1.2	1.0	.98	.62	.72
20	.71	7.1	.85	1.4	2.4	32	3.1	1.2	.93	1.0	.80	.60
21	.71	5.1	.78	1.4	2.6	21	3.0	1.2	.93	1.1	.98	.60
22	.71	3.3	2.6	1.4	2.5	12	2.7	1.2	.85	.97	.80	.60
23	.93	2.5	5.2	1.3	2.2	9.5	2.6	1.2	.85	.85	.89	.60
24	.71	2.0	4.8	1.3	1.8	8.4	2.5	1.2	.85	.70	1.4	.60
25	.64	1.6	3.7	2.2	1.7	7.3	2.4	2.5	.85	2.9	.98	.56

Table 10.--Daily mean discharge for unnamed tributary at Twin Island Lake, August 1987 through September 1989--Continued

Date	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.64	3.3	3.8	8.0	1.5	6.8	2.3	3.1	0.93	1.2	0.60	0.56
27	.71	3.8	5.9	5.0	1.4	6.3	2.2	2.8	1.1	1.1	.60	.56
28	.71	3.7	7.8	4.0	1.3	6.4	2.1	5.7	1.0	.93	.60	.56
29	.71	2.8	6.9	3.5	--	5.9	3.1	10	.93	.85	.60	.56
30	.71	2.1	5.6	3.0	--	6.6	2.4	6.9	.78	.77	.60	.56
31	.78	--	4.0	2.7	--	8.2	--	3.1	--	.73	.60	--
Total	21.73	57.87	70.60	107.2	59.3	197.6	181.0	69.0	33.03	26.61	22.54	23.07
Mean	.70	1.93	2.28	3.46	2.12	6.37	6.03	2.23	1.10	.86	.73	.77
Maximum	1.4	7.1	7.8	12	3.5	32	27	10	2.1	2.9	1.4	2.1
Minimum	.58	.71	.78	1.3	1.3	1.1	2.1	1.2	.78	.65	.60	.56
Oct. 1988-Sept. 1989	Total 869.55	Mean 2.38	Maximum 32	Minimum 0.56								

Table 11.--Daily mean discharge for Schote Creek at U.S. Highways 40 and 61, August 1987 through September 1989

[Mean values, in cubic feet per second; --, no data available]

Day	August	September
August 1987 - September 1987		
1	--	0.01
2	--	.03
3	--	.03
4	--	.01
5	--	.01
6	--	.01
7	--	.01
8	--	.04
9	--	.06
10	--	.06
11	--	.06
12	--	.07
13	--	.06
14	--	.06
15	--	.06
16	--	.08
17	--	.07
18	--	.07
19	0.03	.07
20	.03	.07
21	.09	.06
22	.04	.07
23	.03	.06
24	.01	.07
25	.01	.05

Table 11.--Daily mean discharge for Schote Creek at U.S. Highways 40 and 61, August 1987 through September 1989--Continued

Day	August	September
26	0.01	0.04
27	.04	.04
28	.04	.06
29	.03	.06
30	.01	.06
31	.03	--
Total	--	1.51
Mean	--	.05
Maximum	--	.08
Minimum	--	.01

Table 11.--Daily mean discharge for Schote Creek at U.S. Highways 40 and 61, August 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	0.04	0.03	0.05	0.06	2.9	0.09	2.3	0.06	0.05	0.05	0.04	0.05
2	.05	.03	.06	.04	3.7	.09	.74	.06	.05	.05	.04	.04
3	.06	.03	.06	.04	3.0	.60	.44	.06	.04	.04	.04	.04
4	.03	.03	.06	.04	.84	3.9	.19	.06	.04	.05	.04	.05
5	.03	.03	.06	.04	.32	3.8	.12	.06	.04	.05	.04	.04
6	.03	.04	.06	.04	.06	3.4	.28	.06	.04	.05	.04	.05
7	.04	.04	.06	.04	.06	2.5	.30	.06	.05	.06	.04	.04
8	.04	.04	.06	.04	.07	.82	.21	.06	.05	.05	.04	.05
9	.04	.05	.04	.04	.07	.39	.13	.06	.05	.06	.42	.04
10	.03	.06	.04	.04	.07	.17	.06	.07	.05	.06	.04	.05
11	.03	.06	.04	.04	.07	.15	.06	.07	.05	.06	.05	.05
12	.05	.07	.05	.04	.07	.21	.06	.08	.06	.05	.04	.04
13	.04	.07	.05	.05	.08	.17	.06	.04	.06	.06	.05	.04
14	.03	.06	.05	.05	.09	.18	.06	.06	.06	.05	.04	.05
15	.03	.06	.06	.05	.07	.18	.06	.04	.06	.04	.05	.04
16	.02	.06	.06	.05	.07	.18	.06	.04	.06	.05	.05	.05
17	.02	.09	.06	.05	.07	.18	.06	.05	.06	.06	.04	.05
18	.02	.06	.06	.05	.07	.18	.06	.04	.06	.07	.04	.04
19	.03	.06	.13	.12	.12	.17	.06	.04	.06	.07	.05	.04
20	.05	.05	.09	.06	.09	.17	.06	.04	.06	.06	.04	.04
21	.04	.06	.06	.06	.09	.17	.06	.04	.06	.05	.04	.04
22	.04	.07	.07	.06	.09	.17	.06	.05	.06	.04	.05	.04
23	.05	.07	.07	.06	.09	.17	.06	.05	.06	.04	.08	.05
24	.03	.06	.09	.06	.10	.17	.06	.06	.06	.04	.05	.05
25	.03	.07	.08	.06	.10	.18	.06	.05	.05	.15	.06	.04

Table 11.--Daily mean discharge for Schote Creek at U.S. Highways 40 and 61, August 1987 through September 1989--Continued

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.04	0.06	0.10	0.06	0.10	0.17	0.06	0.05	0.05	0.05	0.05	0.04
27	.05	.06	3.9	.06	.09	.17	.06	.06	.05	.04	.04	.04
28	.06	.06	6.8	.06	.09	.17	.06	.04	.04	.04	.04	.04
29	.07	.05	3.6	.06	.09	.42	.06	.05	.05	.05	.05	.05
30	.06	.06	1.1	.06	--	4.9	.06	.05	.06	.05	.04	.04
31	.04	--	.30	.13	--	3.7	--	.05	--	.04	.04	--
Total	1.22	1.64	17.37	1.71	12.73	27.92	5.97	1.66	1.59	1.68	1.77	1.32
Mean	.04	.06	.56	.06	.44	.90	.20	.05	.05	.05	.05	.04
Maximum	.07	.09	6.8	.13	3.7	4.9	2.3	.08	.06	.15	.42	.05
Minimum	.02	.03	.04	.04	.06	.09	.06	.04	.04	.04	.04	.04
Oct. 1987-Sept. 1988	Total 76.58		Mean 0.21	Maximum 6.8	Minimum 0.02							

Table 11.--Daily mean discharge for Schote Creek at U.S. Highways 40 and 61, August 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	0.04	0.04	0.07	0.07	0.06	0.06	0.04	0.04	0.04	0.04	0.04	0.04
2	.05	.04	.06	.08	.06	.06	.09	.04	.04	.05	.04	.04
3	.04	.04	.06	.08	.05	.06	2.0	.04	.04	.04	.04	.05
4	.04	.04	.06	.08	.05	.06	5.9	.04	.04	.04	.04	.05
5	.04	.04	.06	.13	.06	.06	3.5	.04	.04	.04	.04	.05
6	.04	.07	.06	.11	.06	.06	1.9	.04	.04	.04	.04	.05
7	.04	.10	.06	.11	.06	.06	.74	.04	.04	.04	.03	.05
8	.04	.10	.06	.11	.06	.06	.06	.04	.04	.04	.03	.05
9	.04	.05	.06	.10	.06	.07	.04	.04	.04	.04	.03	.05
10	.04	.05	.06	.09	.07	.13	.04	.04	.04	.04	.03	.05
11	.04	.06	.06	.08	.07	.09	.04	.04	.04	.04	.03	.05
12	.04	.07	.06	.07	.07	.06	.04	.04	.04	.04	.03	.05
13	.04	.07	.06	.07	.06	.06	.04	.04	.04	.07	.03	.05
14	.04	.06	.06	.07	.06	.06	.04	.04	.04	.06	.03	.05
15	.04	.09	.06	.07	.06	.06	.04	.04	.04	.04	.03	.05
16	.05	.05	.06	.07	.06	.06	.04	.04	.04	.04	.03	.05
17	.04	.05	.06	.07	.06	.06	.04	.04	.04	.04	.03	.05
18	.05	.05	.06	.06	.06	.05	.04	.04	.04	.04	.03	.05
19	.04	.08	.06	.06	.06	.05	.04	.04	.04	.04	.03	.05
20	.04	.10	.06	.06	.06	1.6	.04	.04	.04	.04	.03	.05
21	0.05	.06	.06	.06	.06	4.1	.04	.04	.04	.04	.03	.05
22	.05	.05	.08	.06	.06	3.3	.04	.04	.04	.04	.03	.05
23	.04	.05	.06	.06	.06	1.8	.04	.04	.04	.04	.03	.05
24	.04	.05	.06	.06	.06	.23	.04	.04	.04	.04	.04	.05
25	.04	.07	.06	.06	.06	.04	.04	.04	.04	.08	.04	.05

Table 11.--Daily mean discharge for Schote Creek at U.S. Highways 40 and 61, August 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
26	0.04	0.08	0.06	0.07	0.06	0.04	0.04	0.04	0.04	0.05	0.04	0.05
27	.04	.09	.05	.06	.06	.04	.04	.04	.04	.04	.04	.05
28	.04	.07	.05	.06	.06	.04	.04	.05	.04	.04	.04	.05
29	.04	.07	.05	.06	--	.04	.04	.04	.04	.04	.04	.05
30	.04	.07	.06	.06	--	.04	.04	.04	.04	.04	.04	.05
31	.04	--	.07	.06	--	.04	--	.04	--	.04	.04	--
Total	1.29	1.91	1.87	2.31	1.69	12.54	15.11	1.25	1.20	1.35	1.07	1.48
Mean	.04	.06	.06	.08	.06	.40	.50	.04	.04	.04	.04	.05
Maximum	.05	.10	.08	.13	.07	4.1	5.9	.05	.04	.08	.04	.05
Minimum	.04	.04	.05	.06	.05	.04	.04	.04	.04	.04	.03	.04
Oct. 1988-Sept. 1989	Total 43.07		Mean .12	Maximum 5.9	Minimum 0.03							

Table 12.--Daily total precipitation values for the 4 6-square-mile area based on the isohyetal method, June 1987 through September 1989

[Daily accumulated rainfall values, in inches; --, no data available]

Day	June	July	Aug.	Sept.
June 1987 to September 1987				
1	--	0.66	--	--
2	0.91	.01	--	--
3	--	--	--	--
4	--	--	0.40	--
5	--	.58	--	--
6	--	.32	--	--
7	--	4.45	--	0.12
8	--	.26	--	.13
9	--	--	2.44	.01
10	.52	--	.04	--
11	--	--	--	.10
12	--	--	--	--
13	.05	.36	--	--
14	--	.01	--	--
15	--	--	.20	.09
16	--	--	--	.04
17	--	--	.03	.43
18	--	--	--	.01
19	.02	--	.03	.01
20	.02	--	--	--
21	.04	--	.18	--
22	--	--	--	--
23	.02	--	--	--
24	--	--	--	--
25	--	--	--	--

Table 12.--Daily total precipitation values for the 4.6-square-mile area based on the isohyetal method, June 1987 through September 1989.-Continued

Day	June	July	Aug.	Sept.
26	--	--	--	0.01
27	--	--	1.20	.20
28	0.02	0.06	.29	--
29	--	--	--	.85
30	.02	--	--	--
31	--	--	--	--

Table 12.--Daily total precipitation values for the 4.6-square-mile area based on the isohyetal method, June 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1987 - September 1988												
1	--	--	0.04	--	1.90	--	--	--	--	--	--	--
2	--	--	.01	--	.22	0.45	--	--	--	--	0.04	--
3	--	--	--	--	.07	1.05	--	--	--	--	--	--
4	--	--	--	--	.26	.51	--	0.63	--	--	--	--
5	--	--	.22	--	--	--	--	--	--	--	--	--
6	--	--	--	--	--	--	0.74	--	--	--	.03	--
7	0.01	0.02	.63	0.06	--	--	--	--	--	--	--	--
8	--	.02	.36	--	--	.06	--	--	--	--	--	--
9	--	.02	.10	--	--	.10	--	.50	1.03	--	--	--
10	.70	.01	.01	--	--	--	--	--	--	--	--	--
11	.14	--	--	--	.43	--	--	--	--	0.56	--	--
12	--	--	--	--	--	.41	--	--	--	--	--	--
13	.02	--	--	--	--	--	--	--	--	--	.08	--
14	--	--	--	--	--	--	--	--	--	--	.21	--
15	--	--	1.36	--	--	--	--	--	--	--	.02	--
16	--	.46	--	--	--	--	--	--	--	--	--	--
17	--	.42	--	.03	--	--	--	--	--	--	--	0.12
18	--	--	--	.17	--	.08	--	--	--	1.00	--	--
19	--	--	.04	.43	.63	--	.01	--	--	.50	--	.22
20	.52	--	1.46	.42	.14	--	--	--	--	2.00	--	.68
21	.03	.01	--	--	--	--	--	--	--	1.00	--	--
22	--	--	--	--	--	--	--	--	--	--	.15	--
23	--	--	--	--	--	--	--	.28	--	--	1.55	--
24	.06	.01	.04	--	--	--	--	.09	--	--	--	--
25	--	2.30	--	.04	--	.51	--	--	--	--	--	--
26	.14	.08	--	--	--	.04	--	--	--	2.87	--	--
27	.03	.17	1.61	--	--	--	--	--	--	--	--	--
28	--	.55	.90	--	--	--	--	--	--	--	.32	--
29	--	.08	.03	--	--	.50	--	--	--	--	--	--
30	--	.03	--	--	--	1.00	--	--	.31	.04	--	--
31	--	--	--	--	--	--	--	--	--	.04	--	--

Table 12.--Daily total precipitation values for the 4.6-square-mile area based on the isohyetal method, June 1987 through September 1989--Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
October 1988 - September 1989												
1	1.09	--	--	0.11	--	--	0.40	0.38	0.02	--	--	--
2	.31	--	--	--	0.04	--	.12	.11	--	0.11	0.08	--
3	--	--	--	.02	--	--	.69	.28	--	--	--	--
4	--	0.32	--	--	.38	--	.51	.20	.15	--	--	--
5	--	.25	--	.23	.05	--	--	--	.02	--	--	--
6	--	.09	--	.69	--	0.90	--	--	--	--	--	0.04
7	--	--	--	.01	--	--	--	--	--	--	--	--
8	--	--	--	.07	--	--	.18	.07	--	--	--	--
9	.03	--	--	--	--	--	--	--	--	--	--	.04
10	--	.62	--	--	--	--	--	--	--	--	--	.03
11	--	--	--	--	--	--	--	--	.07	--	--	--
12	--	.66	--	.03	--	--	--	--	.05	--	--	--
13	--	.07	--	--	.20	--	--	--	--	.19	--	.11
14	--	--	--	.06	--	--	--	--	--	--	--	.21
15	--	--	--	.01	.27	--	.05	--	--	--	--	.02
16	.15	1.11	--	--	.17	--	--	--	--	.03	.13	--
17	--	--	--	--	--	--	--	--	.03	--	.42	--
18	.42	--	--	--	--	.42	.06	--	.56	.01	--	--
19	--	.33	--	--	--	--	--	.01	--	.02	--	.01
20	.16	1.25	--	--	.06	1.44	--	--	--	.50	.03	--
21	.13	.03	--	--	.17	.60	--	--	--	.49	.22	--
22	--	--	--	--	--	--	--	.02	--	.32	.24	--
23	.58	--	1.03	--	--	--	--	.37	--	.09	--	--
24	--	.01	.13	--	--	--	--	--	--	1.14	.67	--
25	--	--	--	--	--	--	--	.01	--	--	.57	--
26	--	.65	.04	.98	--	--	--	.69	.27	.02	.21	--
27	--	.11	.72	--	--	--	--	--	.27	.01	--	--
28	--	--	.99	--	--	.13	--	--	--	--	.13	--
29	--	--	--	.07	--	.02	--	1.35	--	--	.30	--
30	--	--	--	--	--	.03	--	--	--	.25	.12	--
31	--	--	--	--	--	--	--	--	--	.02	--	--

Table 13.--Construction data for wells at the Weldon Spring chemical plant site and vicinity property

[Latitude and longitude in degrees, minutes, and seconds; N, north; W, west; --, no data available]

Site number (figs. 14 and 15)	Well name	Latitude	Longitude	Altitude of land surface (feet)	Depth of well (feet)	Height of measuring point (feet)	Date well constructed
1	^a MW 2001	38 42 07 N	90 44 02 W	611.8	58.3	^b 613.4	07-26-86
2	^a MW 2002	38 42 05 N	90 44 00 W	623.8	58.2	^b 625.8	07-22-86
3	^a MW 2003	38 42 02 N	90 44 02 W	637.0	58.3	^b 638.8	07-21-86
4	^a MW 2004	38 42 08 N	90 43 49 W	642.9	75.7	^b 644.6	07-28-86
5	^a MW 2005	38 42 05 N	90 43 56 W	635.6	75.6	^b 637.4	07-28-86
6	^a MW 2006	38 41 58 N	90 43 29 W	634.1	65.5	^b 635.9	07-21-86
7	^a MW 2007	38 42 00 N	90 43 43 W	651.9	93.0	^b 653.6	07-25-86
8	^a MW 2008	38 42 06 N	90 43 35 W	622.8	55.0	^b 624.7	07-25-86
9	^a MW 2009	38 42 02 N	90 43 38 W	636.4	57.6	^b 638.6	07-16-86
10	^a MW 2010	38 41 58 N	90 43 33 W	643.0	58.0	^b 644.7	07-21-86
11	^a MW 2011	38 41 56 N	90 43 34 W	653.2	72.8	^b 655.3	07-18-86
12	^a MW 2012	38 41 55 N	90 43 27 W	634.9	58.0	^b 636.6	07-17-86
13	^a MW 2013	38 41 52 N	90 43 28 W	645.4	68.0	^b 647.1	07-16-86
14	^a MW 2014	38 41 49 N	90 43 25 W	647.4	58.0	^b 649.4	07-14-86
15	^a MW 2015	38 41 51 N	90 43 44 W	657.4	77.5	^b 660.0	07-30-86
16	^c MW 2016	38 42 06 N	90 43 41 W	635.1	150.5	^b 637.1	03-11-83
17	^a MW 2017	38 41 45 N	90 43 26 W	657.7	63.0	^b 659.8	07-15-86
18	^a MW 2018	38 41 36 N	90 43 51 W	661.5	63.0	^b 663.5	07-16-86
19	^a MW 2019	38 41 36 N	90 43 51 W	661.7	116.0	^b 663.2	06-16-88
20	^a MW 2020	38 41 42 N	90 43 37 W	655.5	119.6	^b 656.8	03-16-83
21	^a MW 2021	38 42 05 N	90 44 00 W	624.6	111.0	^b 626.2	06-16-88
22	^a MW 2022	38 42 06 N	90 43 56 W	636.1	126.0	^b 637.2	06-20-88
23	^a MW 2023	38 42 06 N	90 43 40 W	635.7	90.5	^b 637.3	06-23-88
24	^d MW 2024	38 42 06 N	90 43 41 W	635	150.0	^b 636.7	--
25	^a MW 2025	38 42 05 N	90 43 35 W	622.4	107.0	^b 624.0	06-21-88

Table 13.--Construction data for wells at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 14 and 15)	Well name	Latitude	Longitude	Altitude of land surface (feet)	Depth of well (feet)	Height of measuring point (feet)	Date well constructed
26	^a MW 2026	38 41 58 N	90 43 29 W	^b 634	117.9	^b 637.2	06-20-88
27	^a MW 2027	38 41 52 N	90 43 27 W	645	121.5	^b 646.8	05-15-88
28	^a MW 2028	38 41 51 N	90 43 44 W	657.8	131.0	^b 659.7	05-24-88
29	^a MW 2029	38 42 08 N	90 43 46 W	643.4	101.4	^b 645.3	06-28-88
30	^a MW 3001	38 41 43 N	90 44 01 W	664.2	75.0	^b 666.4	06-23-88
31	^a MW 3002	38 41 43 N	90 44 00 W	664.7	147.5	^b 666.7	06-22-88
32	^a MW 3003	38 41 58 N	90 44 00 W	644.3	89.2	^b 647.0	04-14-88
33	^c MW 3004	38 41 46 N	90 43 54 W	653.5	21.8	^b 655.5	04-08-83
34	^a MW 3006	38 41 58 N	90 43 59 W	645.8	135.0	^b 647.1	05-23-88
35	^c MW 3007	38 41 58 N	90 43 59 W	645.6	99.1	^e 647.7	04-12-83
36	^a MW 3008	38 41 49 N	90 43 52 W	645.1	101.0	^b 646.4	04-22-83
37	^a MW 3009	38 41 47 N	90 44 07 W	644.3	99.4	^b 647.3	04-18-83
38	^a MW 3010	38 41 38 N	90 43 57 W	665.0	90.7	^b 667.0	04-19-83
39	MW 3011	38 41 55 N	90 43 57 W	650	--	^b 652.1	--
40	^e MW 3013	38 41 50 N	90 44 05 W	^b 635	22.2	^b 636.5	--
41	^c MW 3018	38 41 52 N	90 44 05 W	631.0	26.8	^b 633.2	02-21-83
42	^a MW 3019	38 41 33 N	90 44 00 W	660.1	83.7	^b 662.0	04-01-88
43	^a MW 4001	38 41 53 N	90 44 12 W	621.0	40.0	^b 622.8	12-05-86
44	^a MW 4002	38 42 07 N	90 44 26 W	632.7	84.7	^b 635.2	04-04-83
45	^a MW 4003	38 41 34 N	90 44 24 W	669.9	106.2	^b 671.6	03-28-83
46	^a MW 4004	38 41 36 N	90 44 08 W	651.7	75.0	^b 653.2	03-30-88
47	^a MW 4005	38 41 38 N	90 44 17 W	656.4	78.4	^b 657.2	04-26-88
48	^a MW 4006	38 41 53 N	90 44 13 W	621.7	28.5	^b 623.0	04-06-83
49	^a MW 4007	38 41 53 N	90 44 12 W	621.5	89.6	^b 624.1	05-24-88
50	^a MW 4008	38 41 51 N	90 44 21 W	635.5	82.8	^b 637.5	03-21-88
51	^a MW 4009	38 41 58 N	90 44 11 W	624.2	76.6	^b 625.9	04-25-88
52	^a MW 4010	38 42 04 N	90 44 12 W	629.1	76.9	^b 630.7	03-23-88
53	^a MW 4011	38 42 06 N	90 44 05 W	626.9	75.8	^b 628.2	03-15-88
54	^a MW 4012	38 42 16 N	90 43 58 W	615.4	75.3	^b 617.4	05-02-88
55	^a MW 4013	38 42 15 N	90 43 53 W	606.8	59.5	^b 608.7	05-20-88

Table 13.--Construction data for wells at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 14 and 15)	Well name	Latitude	Longitude	Altitude of land surface (feet)	Depth of well (feet)	Height of measuring point (feet)	Date well constructed
56	^a MW 4014	38 42 16 N	90 43 42 W	607.5	65.0	^b 609.3	07-06-88
57	^a MW 4015	38 42 06 N	90 43 31 W	617.9	63.0	^b 619.6	06-27-88
58	^a MW 4016	38 42 07 N	90 43 23 W	643.1	83.7	^b 643.9	04-19-88
59	^a MW 4017	38 41 59 N	90 43 19 W	649.5	84.5	^b 651.8	07-01-88
60	^a MW 4018	38 41 53 N	90 43 15 W	648.0	74.5	^b 649.9	04-21-88
61	^a MW 4019	38 41 34 N	90 43 49 W	645.4	58.0	^b 647.3	12-09-86
62	^a MW 4020	38 41 42 N	90 43 24 W	657.9	76.8	^b 659.2	04-27-88
63	^a MW 4021	38 41 38 N	90 43 28 W	650.1	71.0	^b 651.9	06-30-88
64	^a MW 4022	38 41 30 N	90 43 56 W	666.3	88.8	^b 668.0	07-07-88
65	^a MW 4023	38 41 36 N	90 43 45 W	646.5	53.0	^b 648.5	07-07-88
66	^a MWGS 01	38 41 33 N	90 43 50 W	645	320	647	09-27-88
67	^a MWGS 02	38 41 33 N	90 43 50 W	645	661	647	08-22-88
68	^a MWGS 03	38 44 13 N	90 44 33 W	494	98.5	495.5	09-30-88
69	^a MWGS 04	38 44 13 N	90 44 33 W	494	310	496	09-29-88
70	^a MWGS 05	38 44 13 N	90 44 33 W	494	638	496.2	09-23-88
71	USGS well 1	38 43 14 N	90 44 33 W	589	107	591	02-17-86
72	USGS well 2	38 42 51 N	90 44 35 W	554	50	555	01-28-86
73	USGS well 2A	38 42 51 N	90 44 34 W	559	107	560	02-26-86
74	USGS well 3	38 42 54 N	90 44 54 W	585	80	586	02-21-86
75	USGS well 4	38 42 23 N	90 44 58 W	601	107	602	02-24-86
76	USGS well 5	38 43 09 N	90 43 57 W	580	87	581	02-08-86
77	USGS well 6	38 42 48 N	90 44 08 W	590	107	591	02-27-86
78	USGS well 7	38 42 28 N	90 44 11 W	570	107	571	02-27-86
79	USGS well 8	38 42 32 N	90 43 37 W	625	107	626	02-17-86
80	USGS well 9	38 42 24 N	90 44 24 W	590	90	591	02-13-86

Table 13.--Construction data for wells at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 14 and 15)	Well name	Latitude	Longitude	Altitude of land surface (feet)	Depth of well (feet)	Height of measuring point (feet)	Date well constructed
81	f Army MWS 01	38 42 10 N	90 44 15 W	596	43.0	£ 597.8	01-17-89
81	f Army MWV 01	38 42 10 N	90 44 15 W	596	15.0	£ 597.8	01-18-89
82	f Army MWD 02	38 42 06 N	90 44 17 W	604	125.1	£ 605.9	01-09-89
82	f Army MWS 02	38 42 06 N	90 44 17 W	604	55.8	£ 605.2	01-10-89
82	f Army MWV 02	38 42 06 N	90 44 17 W	603	16.8	£ 604.6	01-11-89
83	f Army MWS 03	38 41 52 N	90 44 27 W	634	63.0	£ 635.4	12-17-88
84	f Army MWS 04	38 41 52 N	90 44 14 W	623	39.6	£ 624.1	01-21-89
85	f Army MWD 05	38 41 19 N	90 44 30 W	600	116.1	£ 600.7	11-06-88
85	f Army MWS 05	38 41 19 N	90 44 30 W	599	67.0	£ 600.6	11-08-88
86	f Army MWD 06	38 42 06 N	90 45 05 W	620	134	£ 621.6	11-29-88
86	f Army MWS 06	38 4206 N	90 45 05 W	620	60.0	£ 621.3	12-03-88
87	f Army MWS 07	38 4204 N	90 44 49 W	640	63.0	£ 641.5	12-14-88
88	f Army MWS 08	38 4130 N	90 45 20 W	689	42.5	£ 690.4	11-04-88
88	f Army MWV 08	38 4130 N	90 45 20 W	689	23.8	£ 690.2	11-06-88
89	f Army MWD 09	38 4210 N	90 45 34 W	635	146	£ 636.1	11-21-88
89	f Army MWS 09	38 42 10 N	90 45 34 W	634	46.6	£ 635.4	11-19-88
89	f Army MWV 09	38 42 10 N	90 45 34 W	634	25.4	£ 635.8	11-18-88
90	f Army MWS 10	38 42 07 N	90 46 02 W	653	43.0	£ 654.2	11-08-88
91	f Army MWS 11	38 41 56 N	90 45 59 W	675	57.0	£ 676.4	01-06-89
92	f Army MWS 12	38 41 52 N	90 45 31 W	656	48	£ 657.1	01-31-89
93	f Army MWS 13	38 41 43 N	90 45 55 W	691	71.1	£ 692.2	12-21-88
93	f Army MWV 13	38 41 43 N	90 45 55 W	691	41.5	£ 692.4	01-04-89
94	f Army MWS 14	38 41 23 N	90 45 50 W	704	41.8	£ 705.1	01-23-89
95	f Army MWD 15	38 42 15 N	90 46 28 W	654	133.5	£ 655.8	11-19-88
95	f Army MWS 15	38 42 15 N	90 46 28 W	655	48	£ 656.7	11-21-88
96	f Army MWS 16	38 41 55 N	90 46 35 W	650	66	£ 651.2	12-19-88
96	f Army MWV 16	38 41 55 N	90 46 35 W	650	39	£ 651.8	01-03-89
97	f Army MWS 17	38 41 34 N	90 46 17 W	658	49	£ 659.6	12-06-88
97	f Army MWV 17	38 41 34 N	90 46 17 W	659	17	£ 660.3	12-13-88
98	f Army MWD 18	38 41 42 N	90 46 44 W	600	133.5	£ 601.6	12-01-88

Table 13.--Construction data for wells at the Weldon Spring chemical plant site and vicinity property--Continued

Site number (figs. 14 and 15)	Well name	Latitude	Longitude	Altitude of land surface (feet)	Depth of well (feet)	Height of measuring point (feet)	Date well constructed
98	^f Army MWS 18	38 41 42 N	90 46 44 W	600	72	^g 601.9	12-03-88
98	^f Army MWV 18	38 41 42 N	90 46 44 W	600	19	^g 601.4	12-04-88
99	^f Army MWS 19	38 42 16 N	90 46 57 W	647	61.5	^g 648.7	01-21-89
100	^f Army MWS 20	38 42 09 N	90 46 52 W	667	61.5	^g 668.5	01-24-89
101	^h Army well	38 41 30 N	90 44 34 W	670	235	671	06-01-38

^a John Bognar, Jacobs Engineering Group, written commun., 1989.

^b MK-Ferguson Company, Final survey altitudes for U.S. Department of Energy wells, written commun., 1990.

^c Bechtel National, Inc. (1987).

^d Don Penneman, Jacobs Engineering Group, written commun., 1989.

^e MK-Ferguson Company (1987).

^f IT Corporation (1989).

^g Don Meier, U.S. Army Corps of Engineers, Kansas City District, written commun., 1990.

^h Well logs on file at U.S. Geological Survey, Rolla, Missouri.

Table 14.--*Water-level data for wells at the Weldon Spring chemical plant site and vicinity property, May 1987 through August 1989*

[Water levels are in feet below measuring point; --, no data available]

Site number (figs. 14 and 15)	Well name	05-11-87	08-06-87	01-28-88	03-22-88	06-10-88	08-10-88	11-17-88	03-26-89	05-30-89	08-15-89
1	MW 2001	25.05	25.38	24.70	24.31	25.21	25.59	25.20	24.46	24.81	25.29
2	MW 2002	31.83	32.29	31.88	31.54	32.06	32.40	33.03	31.99	32.13	32.54
3	MW 2003	40.52	40.84	40.55	40.34	40.93	41.03	41.10	41.09	40.66	40.88
4	MW 2004	60.62	60.78	60.81	60.64	60.90	61.00	61.12	60.86	60.89	61.0
5	MW 2005	49.44	49.64	49.52	49.40	49.70	49.97	50.27	49.60	49.58	49.7
6	MW 2006	35.02	36.01	35.97	35.39	36.21	36.34	36.46	35.57	35.72	36.26
7	MW 2007	60.43	60.57	60.70	60.57	60.78	60.81	60.92	60.80	60.76	60.86
8	MW 2008	35.58	35.88	36.07	35.90	36.09	36.20	36.44	36.09	36.02	36.25
9	MW 2009	40.97	41.13	41.73	41.19	41.10	41.45	42.58	41.99	41.35	41.8
10	MW 2010	43.75	44.37	44.43	44.04	44.42	44.70	44.88	44.27	44.12	44.51
11	MW 2011	54.44	54.52	54.48	54.32	54.52	54.52	54.58	54.49	54.46	54.33
12	MW 2012	30.68	32.34	31.54	30.34	32.49	31.54	31.99	30.16	30.94	32.67
13	MW 2013	41.46	42.87	41.97	40.20	42.48	42.66	42.84	40.37	41.45	41.55
14	MW 2014	44.66	45.31	45.53	44.93	45.24	45.50	46.00	45.09	45.11	45.36
15	MW 2015	55.94	56.10	56.30	55.98	56.29	56.19	56.51	56.02	56.07	56.09
16	MW 2016	57.95	58.86	61.82	59.19	--	--	--	--	--	--
17	MW 2017	53.90	54.39	55.06	54.39	54.47	--	--	--	--	--
18	MW 2018	47.66	47.87	48.74	48.44	48.48	48.50	49.21	48.79	48.85	48.89
19	MW 2019	--	--	--	--	--	--	73.14	72.30	71.85	72.17
20	MW 2020	48.30	48.55	48.43	47.83	47.90	47.74	48.09	47.51	44.73	46.59
21	MW 2021	--	--	--	--	--	38.45	37.44	36.8	--	37.1
22	MW 2022	--	--	--	--	--	--	51.89	51.45	51.44	51.61
23	MW 2023	--	--	--	--	--	53.93	54.52	54.40	54.47	54.56
24	MW 2024	--	--	--	--	--	69.26	68.73	67.71	67.79	68.17
25	MW 2025	--	--	--	--	--	--	40.53	40.15	40.18	40.45
26	MW 2026	--	--	--	--	--	46.31	46.26	46.17	45.71	45.60
27	MW 2027	--	--	--	--	--	a	54.90	54.54	54.27	54.58
28	MW 2028	--	--	--	--	64.13	64.22	64.42	63.91	63.96	64.10
29	MW 2029	--	--	--	--	--	62.73	62.69	62.48	62.54	62.66
30	MW 3001	--	--	--	--	--	--	54.61	53.99	54.08	54.04

Table 14.--Water-level data for wells at the Weldon Spring chemical plant site and vicinity property, May 1987 through August 1989--Continued

Site number (figs. 14 and 15)	Well name	05-11-87	08-06-87	01-28-88	03-22-88	06-10-88	08-10-88	11-17-88	03-26-89	05-30-89	08-15-89
31	MW 3002	--	--	--	--	--	--	71.28	69.75	70.53	70.85
32	MW 3003	--	--	--	--	48.00	48.19	48.24	49.40	47.45	47.62
33	MW 3004	15.33	--	17.90	17.70	17.74	17.69	17.87	17.55	17.51	--
34	MW 3006	--	--	--	--	56.85	57.28	56.82	55.81	55.48	55.69
35	MW 3007	45.76	45.96	47.42	45.83	--	--	--	--	--	--
36	MW 3008	33.83	35.97	34.57	34.34	34.22	34.24	35.00	36.65	34.42	34.47
37	MW 3009	38.56	39.28	39.44	38.75	39.53	39.82	41.75	39.25	39.68	39.88
38	MW 3010	53.80	54.26	54.95	54.54	54.90	54.58	55.25	54.59	54.80	54.81
39	MW 3011	24.08	25.19	--	--	--	--	24.70	--	--	--
40	MW 3013	2.33	--	--	--	--	--	--	--	--	--
41	MW 3018	22.34	22.98	23.27	22.64	23.08	23.22	23.86	22.69	23.05	23.08
42	MW 3019	--	--	--	--	--	--	56.91	56.25	56.08	56.26
43	MW 4001	19.70	20.56	20.24	19.44	20.33	20.68	20.90	19.47	20.03	20.82
44	MW 4002	66.25	66.29	59.70	54.71	66.28	66.32	66.33	53.07	63.55	66.33
45	MW 4003	56.94	58.48	59.59	57.68	58.09	58.84	60.63	58.24	58.06	59.15
46	MW 4004	--	--	--	--	--	--	42.20	41.32	41.48	41.94
47	MW 4005	--	--	--	--	--	--	48.61	47.60	47.68	48.14
48	MW 4006	19.31	20.16	20.15	19.20	19.95	20.40	21.00	19.56	19.94	20.42
49	MW 4007	--	--	--	--	--	28.38	28.70	--	28.03	28.4
50	MW 4008	--	--	--	--	39.74	40.01	40.48	39.63	39.97	40.28
51	MW 4009	--	--	--	--	31.49	31.73	a	30.79	31.43	31.71
52	MW 4010	--	--	--	--	41.46	42.05	41.94	40.02	41.47	43.26
53	MW 4011	--	--	--	--	38.02	a	38.45	37.38	38.00	38.39
54	MW 4012	--	--	--	--	--	--	46.96	45.90	46.64	46.84
55	MW 4013	--	--	--	--	--	48.13	48.18	48.09	48.0	48.12
56	MW 4014	--	--	--	--	--	47.50	47.79	47.56	47.69	47.72
57	MW 4015	--	--	--	--	--	--	--	37.13	37.97	38.37
58	MW 4016	--	--	--	--	--	--	54.64	54.24	54.48	54.54
59	MW 4017	--	--	--	--	--	--	58.63	58.33	58.5	58.45
60	MW 4018	--	--	--	--	51.47	52.19	52.86	51.57	51.9	52.15

Table 14.--Water-level data for wells at the Weldon Spring chemical plant site and vicinity property, May 1987 through August 1989--Continued

Site number (figs. 14 and 15)	Well name	05-11-87	08-06-87	01-28-88	03-22-88	06-10-88	08-10-88	11-17-88	03-26-89	05-30-89	08-15-89
61	MW 4019	--	34.97	a	35.42	35.75	37.69	36.12	35.48	35.84	35.62
62	MW 4020	--	--	--	--	53.70	53.94	54.76	54.00	53.96	54.04
63	MW 4021	--	--	--	--	--	--	44.29	43.77	44.0	43.86
64	MW 4022	--	--	--	--	--	a	76.40	74.14	74.8	73.57
65	MW 4023	--	--	--	--	--	34.09	35.82	34.80	34.76	35.39
66	MWGS 01	--	--	--	--	--	--	--	142.12	142.5	143.3
67	MWGS 02	--	--	--	--	--	--	--	213.17	213.5	216.3
68	MWGS 03	--	--	--	--	--	--	--	.00	.56	4.18
69	MWGS 04	--	--	--	--	--	--	--	.00	.00	.00
70	MWGS 05	--	--	--	--	--	--	--	78.96	85.5	90.63
71	USGS well 1	47.85	48.02	47.26	47.78	47.95	48.03	48.46	48.06	47.88	48.21
72	USGS well 2	3.16	4.22	2.57	2.98	4.29	4.69	4.85	3.22	3.89	5.01
73	USGS well 2A	8.01	9.25	7.42	7.39	9.21	9.51	9.67	7.70	8.57	9.81
74	USGS well 3	21.76	22.00	21.09	22.08	22.30	22.46	22.83	22.56	22.52	22.89
75	USGS well 4	11.57	12.98	12.33	12.42	13.27	14.01	14.24	14.27	13.79	14.8
76	USGS well 5	41.80	42.07	41.60	41.06	42.15	42.70	43.90	42.93	42.38	43.0
77	USGS well 6	55.47	56.75	56.00	54.76	56.66	57.16	57.84	56.93	56.60	57.45
78	USGS well 7	26.39	26.38	25.70	26.32	26.38	26.32	26.52	26.40	26.22	25.87
79	USGS well 8	54.01	54.27	53.68	54.21	54.44	54.53	54.43	54.22	54.36	54.54
80	USGS well 9	24.06	24.57	15.39	14.93	24.69	24.77	17.93	15.49	22.97	24.44
81	Army MWS 01	--	--	--	--	--	--	--	--	15.8	16.72
81	Army MWV 01	--	--	--	--	--	--	--	--	12.26	13.87
82	Army MWD 02	--	--	--	--	--	--	--	--	22.2	22.78
82	Army MWS 02	--	--	--	--	--	--	--	--	22.93	23.68
82	Army MWV 02	--	--	--	--	--	--	--	--	16.91	16.96
83	Army MWS 03	--	--	--	--	--	--	--	--	40.2	40.26
84	Army MWS 04	--	--	--	--	--	--	--	--	20.9	21.58
85	Army MWD 05	--	--	--	--	--	--	--	--	21.04	21.93
85	Army MWS 05	--	--	--	--	--	--	--	--	34.09	34.98
86	Army MWD 06	--	--	--	--	--	--	--	--	18.97	19.48

Table 14.--Water-level data for wells at the Weldon Spring chemical plant site and vicinity property, May 1987 through August 1989--Continued

Site number (figs. 14 and 15)	Well name	05-11-87	08-06-87	01-28-88	03-22-88	06-10-88	08-10-88	11-17-88	03-26-89	05-30-89	08-15-89
86	Army MWS 06	--	--	--	--	--	--	--	--	18.88	19.35
87	Army MWS 07	--	--	--	--	--	--	--	--	43.71	44.06
88	Army MWS 08	--	--	--	--	--	--	--	--	35.18	36.38
88	Army MWV 08	--	--	--	--	--	--	--	--	Dry	Dry
89	Army MWD 09	--	--	--	--	--	--	--	--	16.63	17.20
89	Army MWS 09	--	--	--	--	--	--	--	--	15.2	16.16
89	Army MWV 09	--	--	--	--	--	--	--	--	16.92	17.93
90	Army MWS 10	--	--	--	--	--	--	--	--	22.98	24.36
91	Army MWS 11	--	--	--	--	--	--	--	--	27.5	28.23
92	Army MWS 12	--	--	--	--	--	--	--	--	20.56	21.10
93	Army MWS 13	--	--	--	--	--	--	--	--	39.8	40.58
93	Army MWV 13	--	--	--	--	--	--	--	--	39.77	40.58
94	Army MWS 14	--	--	--	--	--	--	--	--	37.87	38.34
95	Army MWD 15	--	--	--	--	--	--	--	--	30.62	31.93
95	Army MWS 15	--	--	--	--	--	--	--	--	31.18	32.22
96	Army MWS 16	--	--	--	--	--	--	--	--	20.02	23.20
96	Army MWV 16	--	--	--	--	--	--	--	--	19.7	22.99
97	Army MWS 17	--	--	--	--	--	--	--	--	22.0	23.67
97	Army MWV 17	--	--	--	--	--	--	--	--	16.55	17.24
98	Army MWD 18	--	--	--	--	--	--	--	--	23.5	23.86
98	Army MWS 18	--	--	--	--	--	--	--	--	69.25	64.93
98	Army MWV 18	--	--	--	--	--	--	--	--	20.17	Dry
99	Army MWS 19	--	--	--	--	--	--	--	--	22.47	24.93
100	Army MWS 20	--	--	--	--	--	--	--	--	35.82	36.82
101	Army well	--	--	61.80	58.35	57.99	60.17	63.96	59.61	59.3	62.01

^a Water-level measurement was taken on this day but not reported. Water level was not static or was in error for various reasons, such as the well was recently pumped, the well was not fully developed, or an error was made recording the measurement.