HYDROLOGIC DATA FOR THE WELDON SPRING RADIOACTIVE WASTE-DISPOSAL SITES, ST. CHARLES COUNTY, MISSOURI--1984-1986

By M.J. Kleeschulte, L.F. Emmett, and James H. Barks

U.S. GEOLOGICAL SURVEY

Open-File Report 86-488

Rolla, Missouri

1986

UNITED STATES DEPARTMENT OF THE INTERIOR

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GEOLOGICAL SURVEY

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CONVERSION FACTORS

For readers who prefer to use metric units, conversion factors for terms used in this report are listed below:

Multiply inch-pound unit	By	To obtain SI unit
inch	25.40	millimeter
foot	0.3048	meter
mile	1.609	kilometer
acre	0.4047	hectare
cubic foot per second	0.02832	cubic meter per second

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

$$°F = 1.8\ °C + 32$$

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ABSTRACT

This report presents hydrologic and water-quality data collected during an investigation of the Weldon Spring radioactive waste-disposal sites and surrounding area in St. Charles County, Missouri from 1984 to 1986. The data consists of water-quality analyses of samples collected from 45 ground-water and 28 surface-water sites. This includes analyses of water from 4 raffinate pits and from the Weldon Spring quarry. Also included in the report are the results of a seepage run on north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek. Mean daily discharges from March 1985 to April 1986 are presented for two springs located about 1.5 miles north of the chemical plant.

Nitrate concentrations ranging from 53 to 990 milligrams per liter as nitrogen were found in 5 monitoring wells near the raffinate pits. In most cases, water from these wells also had elevated concentrations of calcium, magnesium, sodium, sulfate, lithium, strontium, and uranium. Uranium concentrations in ground water were less than 5 micrograms per liter except for 5 sites near the raffinate pits where concentrations ranged from 6.0 to 86 micrograms per liter and 13 sites near the quarry and north of Femme Osage slough where concentrations ranged from 8.9 to 14,000 micrograms per liter. Water from the 6 observation wells sampled south of the slough all had uranium concentrations less than 5 micrograms per liter.

INTRODUCTION

The Uranium Division of the Mallinckrodt Chemical Works operated the Weldon Spring chemical plant in St. Charles County, Missouri for the U.S. Atomic Energy Commission from 1957 to 1966. Uranium ore concentrates and recycled scrap were converted to pure uranium trioxide, uranium tetrafluoride, and uranium metal. Some thorium residues also were processed. Wastes from the plant operation are referred to as raffinate and include the wastes from the extraction step and the solids that result from the neutralization of the wastes (Weidner and Boback, 1982). These wastes were pumped as a slurry to four large pits (hereafter called raffinate pits) that were constructed near the plant. An abandoned limestone quarry about 3 miles southwest of the plant also was used for the burial of contaminated solids and radioactive residues from various processing sites. As noted by Kleeschulte and Emmett (1986), the disposal of these radioactive wastes in an area underlain by carbonate rocks has created the potential for contamination of the ground water. The potential also exists for contamination of surface water by seepage from the pits to discharging springs and streams, and from surface runoff transporting contaminated soil (Kleeschulte and Emmett, 1986).

This report contains data collected for a hydrologic investigation of the Weldon Spring radioactive waste sites and surrounding area from 1984 to 1986. During the first year of the investigation historical information was compiled about the chemical plant, raffinate pits, and the quarry as well as the geology and hydrology of the area. Reconnaisance water-quality and ground-water-level data also were collected in 1984. This information and data are presented in an interpretive progress report (Kleeschulte and Emmett, 1986). In 1985 and 1986 additional detailed field data were collected to describe the ground-water flow system, hydrogeologic and water-quality characteristics of the aquifers underlying the area, surface- and ground-water relationships, and quality of surface water.

STUDY AREA

The study area is located in St. Charles County in eastern Missouri (fig. 1). Two distinct radioactive waste-disposal sites are in the Weldon Spring area. One site consists of the Weldon Spring chemical plant and the four raffinate pits that are located just north of the Mississippi-Missouri River drainage divide. The other site is an abandoned rock quarry (referred to as Weldon Spring quarry) in the bluff adjacent to the Missouri River flood plain and about 3 miles southwest of the chemical plant (fig. 1).

Surface drainage at the chemical plant and raffinate pits is toward the north by intermittent tributaries. These tributaries flow into the August A. Busch Memorial Wildlife Area lakes 35, 36, or both, then into Schote Creek, then Dardenne Creek, and eventually into the Mississippi River (fig. 2).

Glacial till deposits that are typically thin and dissected underlie the area north of the Mississippi-Missouri River drainage divide. Beneath the till deposits lies a karst limestone. The area south of the divide is characterized by rugged topography and is drained by many short, steep-gradient tributaries of the Missouri River.

The northern boundary of the 9-acre Weldon Spring quarry site is State Highway 94 and the southern boundary is the Missouri-Kansas-Texas Railroad line (fig. 3). The quarry sump covers about 0.5 acre and is about 100 to 120 feet lower in altitude than the quarry rim. The main floor is 70 to 90 feet below the rim and covers about 2 acres.

The downstream reaches of Femme Osage and Little Femme Osage Creeks were diverted from their natural channels by the levee constructed by the University of Missouri between 1959 and 1960. The new channel diverted the flow in both creeks outside the levee system to prevent annual flooding of farmland and a well field located inside the levee system. The downstream reaches of these creeks now form an isolated body of water locally known as the Femme Osage slough and Little Femme Osage slough. This slough system is between the Weldon Spring quarry site and a well field (fig. 3). The well field is under the jurisdiction of St. Charles County and is used as a public water supply (Kleeschulte and Emmett, 1986).

WATER QUALITY

Water-quality samples were collected from 45 ground-water and 28 surface-water sites. Locations of sampling sites in the vicinity of the chemical plant and raffinate pits are shown in figure 2; locations of sampling sites in the vicinity of the quarry are shown in figure 3; locations of the miscellaneous sites are shown in figure 1.

Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant are listed in table 1. Streamflow and water-quality data for surface-water sites in the vicinity of the chemical plant are listed in table 2. Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring quarry are listed in table 3. Well, streamflow, and water-quality data for miscellaneous sites are listed in table 4. Water-quality data collected in September 1984 for sites near Weldon Spring are presented in table 5. The September 1984 data were originally presented in a report by Kleeschulte and Emmett (1986).

All wells in the vicinity of the chemical plant that are listed in table 1 are open to bedrock with the exception of Bechtel wells B 2 and B 14 which are finished in glacial till and well B 16, which is finished in residual limestone. Casing was grouted in all the Bechtel and U.S. Geological Survey wells.

Several series of observation wells were drilled in the quarry site area by various contractors. The OB series wells were drilled in 1980 and the well construction data were reported as follows: "Drilling continued until auger refusal occurred on the bedrock surface. When drilling was complete, a two- or four-inch I.D. [inside diameter] PVC casing was inserted into the hole with a two-foot slotted well screen on the bottom. No backfilling was done in the four-inch holes...The two-inch cased holes were backfilled with the well cuttings." (Lawrence Berkeley Laboratory, 1980, p. 35). Because bedrock was encountered at shallower depths than anticipated, wells OB 11 and OB 12 were core drilled to obtain more geologic and hydrologic data (see table 3). "After drilling was completed [on these two wells] a two-inch I.D. #80 slotted well screen was inserted in the bore-hole for the entire bedrock section. Two-inch I.D. Schedule 40 casing was then extended from the top of the bedrock to the land surface." (Lawrence Berkeley Laboratory, 1980, p. 39). The construction data for the observation wells TW 2, TW 6, TW 7, TW 8, and TW 9 were obtained from Huey (1978) and all are bedrock wells.

Most of the ground-water samples were collected from observation wells. Where the well diameter was sufficiently large, a 3-inch diameter submersible pump with a garden hose for a discharge line was used to pump the well. Smaller diameter wells were sampled using a 1 3/4-inch diameter pneumatic pump equipped with a twin-line Neoprene[1] hose as a discharge line. The water samples were collected after a minimum of one pipe volume of water was removed from the well.

[1]Use of brand name in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

Surface-water samples were collected in hand-held polyethylene and glass bottles by submerging the bottles at a point about 10 feet from the bank in lakes and ponds. The sampling point in streams was near the centroid of flow. The samples from streams in the vicinity of the chemical plant on November 19, 1985 were the only ones collected during a storm runoff period.

All samples were submitted to the U.S. Geological Survey Laboratory in Arvada, Colorado for analysis. Samples were analyzed for inorganic substances according to methods described by Fishman and Friedman (1985) and for radioactive 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 micron membrane filters located between lucite plates, using a peristaltic pump as the pressure source.

Water temperature, specific conductance, pH, and alkalinity were determined in the field. Water temperature was measured with a mercury thermometer to the nearest 0.5°C (degrees Celsius). Specific conductance was measured using a portable conductivity meter with temperature compensation designed to express readings in microsiemens per centimeter at 25 degrees Celsius (us/cm at 25°C). The potentiometric method was used to measure both the pH and alkalinity. Alkalinity was determined by either incremental titration with 0.1600 normal sulfuric acid past the inflection point or titration to an end point of pH 4.5 with 0.01639 normal sulfuric acid.

SUMMARY OF WATER-QUALITY DATA

Dissolved-solids concentrations in ground water were less than 500 milligrams per liter (mg/L) except for 5 Bechtel wells on U.S. Department of Energy property near the raffinate pits where concentrations ranged from 841 to 6,040 mg/L. In most cases, water from these sites also had elevated concentrations of calcium, magnesium, sodium, sulfate, nitrate, lithium, strontium, and uranium. Nitrate concentrations in 5 wells ranged from 53 to 990 mg/L as N (nitrogen). Nitrate in samples from other ground-water sites were considerably less than the 10 mg/L as N drinking water standard (U.S. Environmental Protection Agency, 1985a).

Dissolved-solids concentrations in surface water were less than 500 mg/L except for the 4 raffinate pits, a seep near pit 4, Frog pond tributary, and Burgermeister spring. The raffinate pits had the largest concentrations, ranging from 934 to 12,700 mg/L. The pits correspondingly had the largest concentrations of nitrate, ranging from 50 to 1,900 mg/L. In 5 samples from Burgermeister spring the maximum concentration of dissolved solids was 682 mg/L and the maximum concentration of nitrate was 54 mg/L as N.

Uranium concentrations in ground water were less than 5 micrograms per liter (ug/L) except for 5 Bechtel wells near the raffinate pits where concentrations ranged from 6.0 to 86 ug/L and 13 sites near the quarry where concentrations ranged from 8.9 to 14,000 ug/L. These 13 quarry sites are all north of the Femme Osage slough. Uranium concentrations were less than 5.0 ug/L in 5 sampled wells that were located south of Femme Osage slough. Uranium concentrations exceeded 5 ug/L in water samples from 20 surface-water sites including the 4 raffinate pits (26-3,500 ug/L), Burgermeister spring (26-250 ug/L), the quarry (2,100 ug/L), and Femme Osage slough (77 ug/L).

SEEPAGE RUN

A seepage run was made April 1-4, 1985 on several north-flowing Dardenne Creek tributaries that are north of the chemical plant and raffinate pits. The streamflow measurements were made to locate stream reaches where surface flow is lost to the shallow aquifer or water is discharged from the aquifer to the stream. Streamflow was measured at 102 sites and water temperature and specific conductance were measured at selected sites (figs. 4-6 and table 6). Seepage-run data for two of the basins are shown in figures 5 and 6. During the two days preceeding the seepage run, about 3 inches of precipitation occurred (National Oceanic and Atmospheric Administration, 1985). The saturated conditions aided in the location of wet-weather springs.

Discharge measurements were made according to methods described by Buchanan and Somers (1969). Water temperature and specific conductance were measured using the procedures described in the "Water Quality" section.

BURGERMEISTER SPRING AND WET-WEATHER SPRING DISCHARGE

On March 20, 1985 the collection of continuous discharge data began at Burgermeister spring and a nearby wet-weather spring in the August A. Busch Memorial Wildlife Area 1.5 miles north of the chemical plant and raffinate pits (figs. 4-6). Mean daily discharges for the two sites are listed in tables 7 and 8.

Water levels (stage) were recorded by digital recorders every 5 minutes at the wet-weather spring because of its rapid response to precipitation and every 15 minutes at Burgermeister spring. A 90-degree sharp-crested V-notch weir was installed across the Burgermeister spring channel. The stage-discharge relation for the spring was defined by the weir formula, U.S. Bureau of Reclamation, 1953:

$$Q=2.49\ H^{2.48}$$

where Q=discharge of water, in cubic feet per second; and

H=height of water above the apex of the notch, in feet.

This stage-discharge relation was verified by occasional discharge measurements.

The stage-discharge relation for the wet-weather spring was developed by current-meter measurements made at varying stages; however, because of the rapid response of the spring and short duration of flow during storms, a gage height of 0.84 foot was the maximum stage at which a discharge measurement was made. During the period of record, eight days had some record exceeding the maximum stage at which discharge was measured. The mean daily discharge for these days was computed by correlating the mean daily gage height with the corresponding discharge.

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 mean daily discharge was computed by the shifting-control method. Using this method, correction factors based on individual discharge measurements were applied to the gage heights.

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(Page 9 follows)

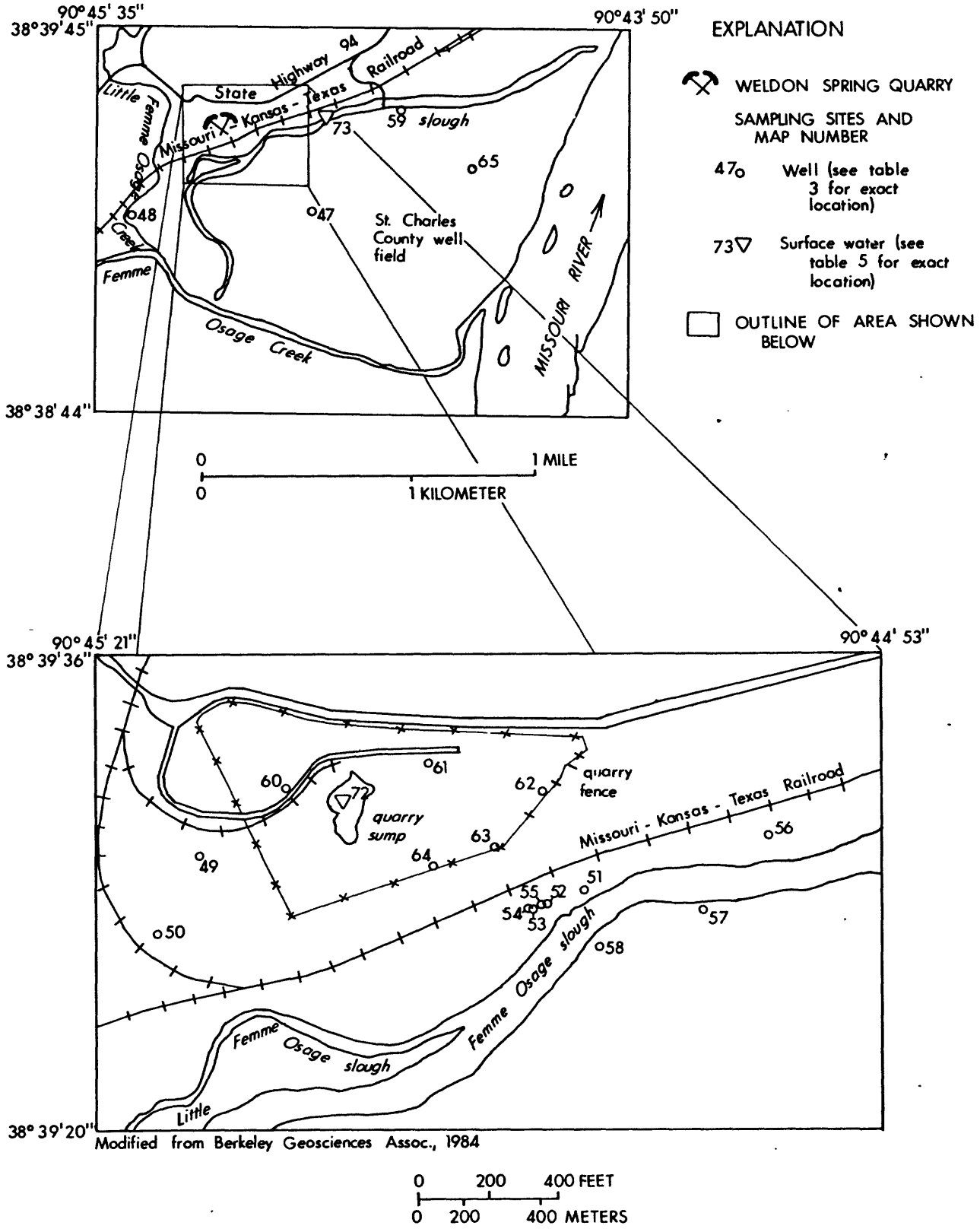

Figure 3.--Location of water - quality sampling sites in the vicinity of the Weldon Spring quarry.

(page 12 follows)

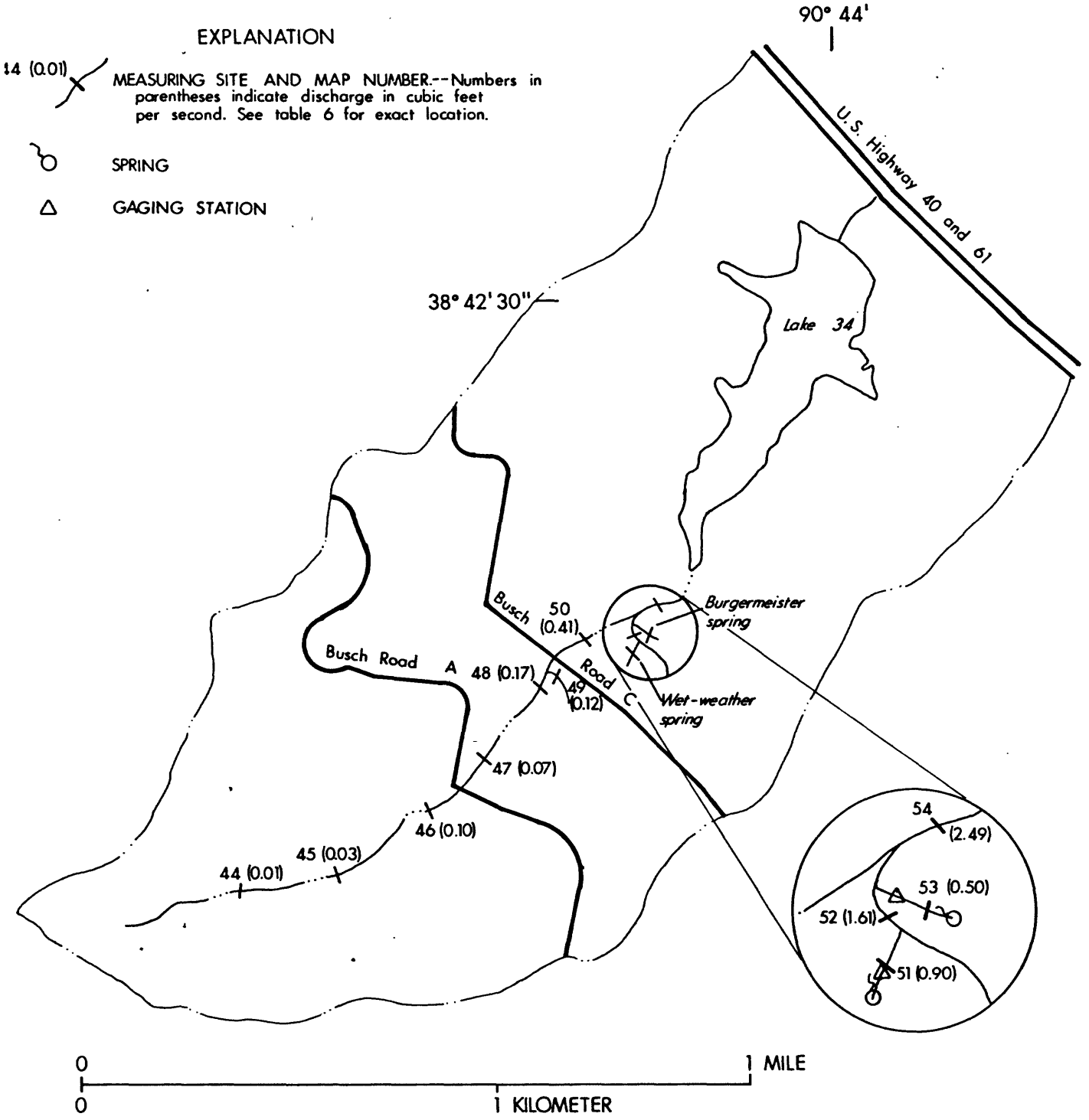

Figure 5.--Results of seepage run in tributary to Dardenne Creek upstream from August A. Busch Memorial Wildlife Area lake 34, April 2-3, 1985.

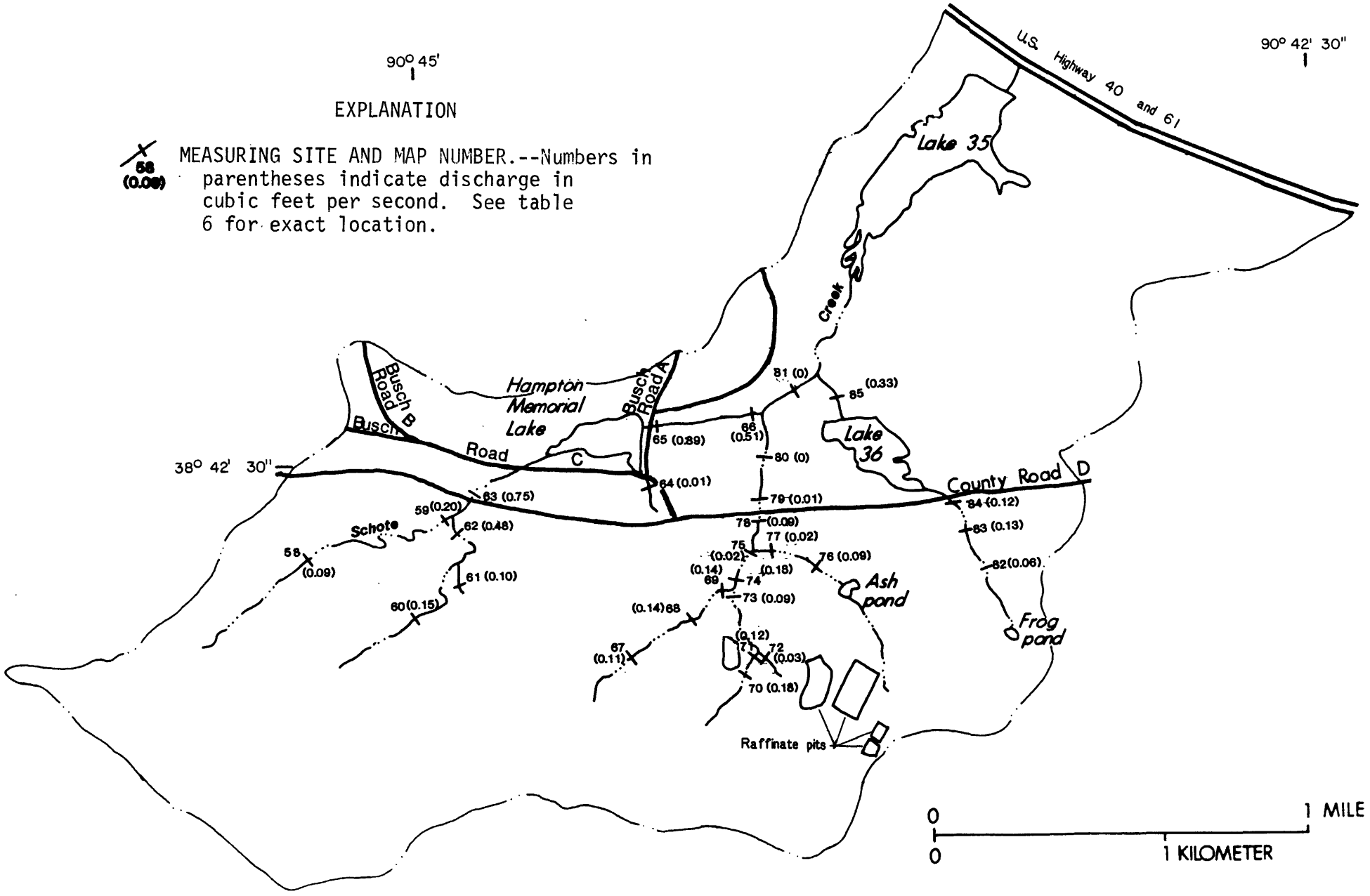

Figure 6.--Results of seepage run in Schote Creek basin upstream from U.S. Highway 40 and 61, April 1-3, 1985.

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant

[NGVD, National Geodetic Vertical Datum of 1929; --, no data; US/CM, microsiemens per centimeter at 25 °Celsius; DEG C, degrees Celsius; MG/L AS CACO3, milligrams per liter as calcium carbonate; IT-FLD, incremental titration field; <, less than; RA, radium; PCI/L, picocuries per liter]

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	ALTITUDE OF LAND SURFACE (FEET ABOVE NGVD)	WELL DEPTH (FEET)	CASING DEPTH, (FEET)	DEPTH TO WATER BELOW LAND SURFACE (FEET)
				Well Data				
1	BECHTEL B 2	384152	0904405	06-17-86	631	29.60	25.8	23.49
2	BECHTEL B 3	384206	0904341	02-19-86 06-17-86	635	150.50	150.5	60.00 56.85
3	BECHTEL B 4	384142	0904343	02-19-86 06-17-86	655	119.60	36.5	48.00 49.18
4	BECHTEL B 9	384207	0904426	02-20-86 06-17-86	633	84.70	41.0	52.00 66.18
5	BECHTEL B11	384134	0904424	02-20-86 06-17-86	670	106.20	51.0	57.00 58.43
6	BECHTEL B14	384146	0904354	06-17-86	654	21.83	21.8	18.77
7	BECHTEL B16	384154	0904411	02-20-86 06-17-86	622	28.50	28.5	17.00 20.53
8	BECHTEL B17	384155	0904400	02-18-86 06-17-86	646	99.10	39.0	50.00 46.99
9	BECHTEL B19A	384149	0904352	06-17-86	645	101.00	39.0	35.91
10	BECHTEL B21	384147	0904406	02-19-86 06-17-86	644	99.40	45.0	38.00 39.41
11	BECHTEL B23	384140	0904401	02-18-86 06-17-86	665	90.70	52.5	45.00 54.57
12	USGS WELL 1	384314	0904433	03-11-86 06-18-86	590	107.00	57.0	45.80 47.31
13	USGS WELL 2	384252	0904435	03-11-86 06-18-86	560	50.00	50.0	2.90 4.07

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	ALTITUDE OF LAND SURFACE (FEET ABOVE NGVD)	WELL DEPTH (FEET)	CASING DEPTH, (FEET)	DEPTH TO WATER BELOW LAND SURFACE (FEET)
				Well Data--Continued				
14	USGS WELL 2A	384252	0904434	03-11-86 06-18-86	560	107.00	26.0	5.10 8.76
15	USGS WELL 3	384254	0904453	03-11-86 06-18-86	585	80.00	66.0	20.30 21.99
16	USGS WELL 4	384223	0904459	03-12-86 06-18-86	600	107.00	30.0	10.00 13.49
17	USGS WELL 5	384310	0904357	03-11-86 06-18-86	580	87.00	23.0	38.80 42.70
18	USGS WELL 6	384248	0904408	03-11-86 06-18-86	590	107.00	70.0	54.20 57.08
19	USGS WELL 7	384228	0904411	03-10-86 06-18-86	572	107.00	32.0	24.60 26.47
20	USGS WELL 8	384230	0904336	03-10-86 06-18-86	625	107.00	60.0	51.60 54.44
21	USGS WELL 9	384223	0904425	03-11-86 06-18-86	590	90.00	24.0	15.00 24.78
22	BUSCH WILDLIFE (SHAW) WELL	384229	0904330	09-11-85	640	--	--	--
23	BUSCH WILDLIFE HEADQUARTERS WELL	384221	0904425	09-04-84	620	330.00	84.0	--

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)
			Physical Properties, Major Inorganic Constituents, and Trace Elements					
1	BECHTEL B 2	384152	0904405	06-18-86	2300	7.0	26.0	730
2	BECHTEL B 3	384206	0904341	02-19-86	588	7.5	12.0	340
				06-19-86	585	7.1	17.0	320
3	BECHTEL B 4	384142	0904343	02-19-86	1120	7.4	14.0	--
				06-18-86	1240	6.9	15.0	580
4	BECHTEL B 9	384207	0904426	02-20-86	430	7.6	12.5	220
5	BECHTEL B11	384134	0904424	02-20-86	550	7.4	13.5	--
				06-19-86	560	7.1	15.5	290
6	BECHTEL B14	384146	0904354	06-18-86	1380	7.7	22.5	390
7	BECHTEL B16	384154	0904411	02-20-86	450	7.8	8.0	220
				06-19-86	440	7.4	23.0	230
8	BECHTEL B17	384155	0904400	02-18-86	6600	6.8	14.5	3300
				06-18-86	7000	7.0	15.5	3200
9	BECHTEL B19A	384149	0904352	06-17-86	6800	6.7	15.0	3200
10	BECHTEL B21	384147	0904406	02-19-86	744	7.7	12.5	--
				06-18-86	760	7.6	15.5	350
11	BECHTEL B23	384140	0904401	02-18-86	658	7.4	15.0	330
				06-17-86	715	7.5	16.0	330
12	USGS WELL 1	384314	0904433	03-11-86	605	7.5	15.5	--
				06-25-86	665	6.9	14.5	280
13	USGS WELL 2	384252	0904435	03-11-86	500	7.6	13.0	250
				06-26-86	548	7.3	13.0	240
14	USGS WELL 2A	384252	0904434	03-11-86	528	7.6	13.5	290
				06-25-86	552	7.0	13.5	300
15	USGS WELL 3	384254	0904453	03-11-86	580	7.7	13.5	--
				06-26-86	605	7.0	14.0	290

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)
	Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued							
16	USGS WELL 4	384223	0904459	03-12-86	560	7.5	13.5	--
				06-26-86	532	7.4	13.5	280
17	USGS WELL 5	384310	0904357	03-11-86	608	7.7	14.0	--
				06-25-86	662	7.2	14.5	360
18	USGS WELL 6	384248	0904408	03-11-86	531	7.5	13.0	290
				06-25-86	522	7.3	14.5	270
19	USGS WELL 7	384228	0904411	03-10-86	474	7.7	13.0	260
				06-20-86	495	7.8	13.5	260
20	USGS WELL 8	384230	0904336	03-10-86	645	7.8	12.0	320
				06-25-86	650	7.2	15.0	330
21	USGS WELL 9	384223	0904425	03-11-86	490	7.8	14.0	250
				06-20-86	474	7.7	15.0	240
22	BUSCH WILDLIFE (SHAW) WELL	384229	0904330	09-11-85	695	7.9	14.0	350
23	BUSCH WILDLIFE HEADQUARTERS WELL	384221	0904425	09-04-84	550	7.3	15.5	280

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, IT-FLD (MG/L AS HCO3)	CARBONATE, IT-FLD (MG/L AS CO3)	ALKALINITY, FIELD (MG/L AS CACO3)	SULFATE, DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
		Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
1	06-18-86	180	200	55	230	0.9	664	0	544	220	11	0.3
2	02-19-86	47	60	46	6.2	1.1	--	--	292	21	2.0	0.2
	06-19-86	4	57	44	5.8	0.5	390	0	314	30	2.8	0.2
3	02-19-86	--	--	--	--	--	--	--	409	--	--	--
	06-18-86	150	130	62	54	1.4	520	0	416	260	9.3	0.3
4	02-20-86	6	44	27	5.6	0.7	--	--	215	16	1.8	0.1
5	02-20-86	--	--	--	--	--	--	--	270	--	--	--
	06-19-86	9	58	36	8.9	1.1	347	0	274	31	6.4	0.2
6	06-18-86	97	110	29	170	1.4	364	0	292	39	5.1	0.4
7	02-20-86	27	48	25	8.9	0.8	--	--	196	50	2.8	0.2
	06-19-86	10	51	25	9.2	0.9	268	0	203	45	3.4	0.2
8	02-18-86	3100	800	320	330	1.9	--	--	210	190	35	<0.1
	06-18-86	3000	820	280	340	13	271	0	217	320	22	0.2
9	06-17-86	2900	900	230	280	2.8	320	0	254	62	28	0.1
10	02-19-86	--	--	--	--	--	--	--	156	--	--	--
	06-18-86	190	69	42	12	0.8	188	0	152	35	2.9	0.2
11	02-18-86	--	48	51	27	15	--	--	382	18	3.7	0.2
	06-17-86	--	48	51	27	1.0	472	0	379	11	2.7	0.2
12	03-11-86	--	--	--	--	--	--	--	317	--	--	--
	06-25-86	--	83	18	30	2.2	527	0	368	19	4.5	0.2
13	03-11-86	--	60	24	18	0.7	--	--	272	5.8	1.3	0.3
	06-26-86	--	60	23	19	0.8	351	0	286	4.9	1.4	0.3
14	03-11-86	8	60	34	6.5	0.8	--	--	282	12	2.0	0.3
	06-25-86	--	62	34	7.3	1.3	381	0	304	9.9	3.3	0.3
15	03-11-86	--	--	--	--	--	--	--	302	--	--	--
	06-26-86	--	73	27	14	2.8	405	0	319	18	4.1	0.2

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM, DIS-, SOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, IT-FLD (MG/L AS HCO3)	CARBONATE, IT-FLD (MG/L AS CO3)	ALKALINITY, FIELD (MG/L AS CACO3)	SULFATE, DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
		Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
16	03-12-86	--	--	--	--	--	--	--	297	--	--	--
	06-26-86	--	60	32	7.6	2.6	351	0	280	15	2.7	0.1
17	03-11-86	--	--	--	--	--	--	--	314	--	--	--
	06-25-86	--	79	39	8.7	0.6	459	0	367	12	2.9	0.2
18	03-11-86	1	62	32	8.4	0.7	--	--	285	13	2.5	0.5
	06-25-86	--	58	31	7.0	1.3	342	0	274	16	1.9	0.5
19	03-10-86	14	44	37	5.1	1.6	--	--	249	17	2.1	0.4
	06-20-86	--	44	36	5.8	1.0	322	0	252	21	2.8	0.3
20	03-10-86	7	69	36	13	7.6	--	--	313	18	12	0.2
	06-25-86	4	75	35	12	2.6	400	0	323	17	4.7	0.1
21	03-11-86	21	53	28	12	2.3	--	--	226	16	10	0.2
	06-20-86	8	58	23	11	2.0	283	0	230	21	5.6	0.3
22	09-11-85	0	68	43	12	1.4	--	--	360	20	3.7	0.1
23	09-04-84	--	50	37	5.5	1.3	--	--	289	18	1.3	0.2

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	LITHIUM, DIS-SOLVED (UG/L AS LI)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
		Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued									
1	06-18-86	21	1620	1100	0.27	130	0.05	40	--	440	--
2	02-19-86	8.1	325	320	<0.01	0.87	--	12	1	170	1
	06-19-86	7.9	321	340	<0.01	<0.10	0.01	8	--	150	--
3	02-19-86	--	--	--	--	--	--	--	--	--	--
	06-18-86	10	841	780	<0.01	0.99	0.01	40	--	260	--
4	02-20-86	8.5	239	230	<0.01	1.10	--	7	5	87	<1
5	02-20-86	--	--	--	--	--	--	--	--	--	--
	06-19-86	9.2	304	320	<0.01	0.83	0.01	8	--	110	--
6	06-18-86	21	1090	560	0.14	130	0.06	20	--	390	--
7	02-20-86	8.2	283	260	0.10	4.10	--	7	2	120	9
	06-19-86	8.3	287	270	0.03	4.20	0.04	7	--	100	--
8	02-18-86	11	6040	1800	0.07	920	--	1700	33	1600	1
	06-18-86	10	5900	1900	0.05	930	0.08	1700	--	1500	--
9	06-17-86	12	5820	1700	0.08	990	0.04	260	--	1900	--
10	06-18-86	8.4	448	260	0.03	53.0	0.02	12	--	150	--
11	02-18-86	9.1	385	400	0.03	1.60	--	16	1	250	5
	06-17-86	9.0	380	380	<0.01	1.40	0.02	18	--	230	--
12	03-11-86	--	--	--	0.02	0.92	--	--	--	--	--
	06-25-86	13	354	430	<0.01	1.30	0.02	13	--	160	--
13	03-11-86	12	251	290	<0.01	<0.10	--	<4	3	210	<1
	06-26-86	12	276	290	<0.01	<0.10	0.01	7	--	190	--
14	03-11-86	8.0	288	290	<0.01	<0.10	--	<4	1	180	<1
	06-25-86	7.9	303	310	<0.01	<0.10	0.02	8	--	170	--
15	03-11-86	--	--	--	<0.01	0.53	--	--	--	--	--
	06-26-86	13	335	350	<0.01	0.57	0.01	13	--	250	--

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	LITHIUM, DIS-SOLVED (UG/L AS LI)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
				Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued							
16	03-12-86	--	--	--	0.01	<0.10	--	--	--	--	--
	06-26-86	8.8	289	300	0.01	0.94	0.01	9	--	130	--
17	03-11-86	--	--	--	0.03	0.13	--	--	--	--	--
	06-25-86	9.7	366	380	<0.01	0.18	0.01	10	--	200	--
18	03-11-86	13	310	300	<0.01	0.52	--	6	5	190	<1
	06-25-86	11	274	300	0.01	0.28	0.02	9	--	150	--
19	03-10-86	8.0	261	260	<0.01	<0.10	--	<4	1	150	<1
	06-20-86	8.7	254	280	<0.01	<0.10	0.01	6	--	150	--
20	03-10-86	9.0	369	350	0.03	2.30	--	5	8	170	<1
	06-25-86	8.7	355	350	0.04	2.90	0.01	8	--	91	--
21	03-11-86	9.0	281	270	0.01	2.00	--	5	3	150	4
	06-20-86	9.4	260	270	<0.01	3.30	0.02	5	--	73	--
22	09-11-85	8.4	370	370	<0.01	2.20	--	7	--	--	--
23	09-04-84	8.0	290	290	<0.01	<0.10	--	8	<10	150	<6

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM, NATURAL DIS-SOLVED (UG/L AS U)	TRITIUM, TOTAL (PCI/L)
			Radioactive Substances				
1	BECHTEL B 2	384152	0904405	06-18-86	--	9.1	--
2	BECHTEL B 3	384206	0904341	02-19-86	0.2	1.5	--
				06-19-86	--	0.9	--
3	BECHTEL B 4	384142	0904343	02-19-86	--	4.5	--
				06-18-86	--	49	--
4	BECHTEL B 9	384207	0904426	02-20-86	0.2	1.0	17
5	BECHTEL B11	384134	0904424	02-20-86	--	1.7	--
				06-19-86	--	1.4	--
6	BECHTEL B14	384146	0904354	06-18-86	--	2.3	--
7	BECHTEL B16	384154	0904411	02-20-86	0.2	1.4	<1.0
				06-19-86	--	1.5	--
8	BECHTEL B17	384155	0904400	02-18-86	0.3	--	--
				06-18-86	--	6.0	--
9	BECHTEL B19A	384149	0904352	06-17-86	--	6.6	--
10	BECHTEL B21	384147	0904406	02-19-86	--	54	--
				06-18-86	--	86	--
11	BECHTEL B23	384140	0904401	02-18-86	<0.2	2.6	<1.0
				06-17-86	--	1.9	--
12	USGS WELL 1	384314	0904433	03-11-86	--	2.6	--
				06-25-86	--	<1.0	--
13	USGS WELL 2	384252	0904435	03-11-86	0.3	0.7	--
				06-26-86	--	<1.0	--
14	USGS WELL 2A	384252	0904434	03-11-86	0.2	<0.4	--
				06-25-86	--	<1.0	--
15	USGS WELL 3	384254	0904453	03-11-86	--	1.8	--
				06-26-86	--	<1.0	--

Table 1.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	RA-226, DISSOLVED, PLANCHET COUNT (PCI/L)	URANIUM, NATURAL DISSOLVED (UG/L AS U)	TRITIUM, TOTAL (PCI/L)
				Radioactive Substances--Continued			
16	USGS WELL 4	384223	0904459	03-12-86	--	1.0	--
				06-26-86	--	<1.0	--
17	USGS WELL 5	384310	0904357	03-11-86	--	3.8	--
				06-25-86	--	1.0	--
18	USGS WELL 6	384248	0904408	03-11-86	0.2	3.0	--
				06-25-86	--	4.0	--
19	USGS WELL 7	384228	0904411	03-10-86	<0.1	<0.4	<1.0
				06-20-86	--	<0.8	--
20	USGS WELL 8	384230	0904336	03-10-86	0.2	3.3	--
				06-25-86	--	1.0	--
21	USGS WELL 9	384223	0904425	03-11-86	<0.1	1.3	--
				06-20-86	--	<0.8	--
22	BUSCH WILDLIFE (SHAW) WELL	384229	0904330	09-11-85	<0.4	0.4	<2.0
23	BUSCH WILDLIFE HEADQUARTERS WELL	384221	0904425	09-04-84	0.5	0.9	4.0

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant

[FT³/S, cubic feet per second; US/CM, microsiemens per centimeter at 25 °Celsius; DEG C, degrees Celsius; MG/L AS CACO3, milligrams per liter as calcium carbonate; IT-FLD, incremental titration field; UG/L, micrograms per liter; U-NAT, uranium, natural; PCI/L, picocuries per liter; CS, cesium; SR, strontium; YT, yttrium; RA, radium]

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	STREAM-FLOW, INSTAN-TANEOUS (FT3/S)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements						
24	ARMY POND	384154	0904417	09-11-85	--	122	8.9
25	ASH POND	384204	0904356	09-12-85	--	375	8.2
				06-19-86	--	352	7.6
26	ASH POND OUTFLOW	384205	0904359	03-12-86	0.3	345	8.4
27	ASH POND TRIBUTARY AT MOUTH	384208	0904410	11-19-85	0.6	253	8.2
28	BUSCH SEWAGE LAGOON OUTFLOW	384227	0904412	06-20-86	0.02	442	9.3
29	FROG POND	384157	0904328	09-12-85	--	620	8.6
30	FROG POND OUTFLOW	384158	0904328	03-12-86	0.3	1510	8.5
31	FROG POND TRIBUTARY	384205	0904332	11-19-85	0.7	2450	7.7
32	MIDDLE FORK OF TRIBUTARY TO SCHOTE CREEK AT MOUTH	384203	0904417	11-19-85	1.0	236	7.8
33	MIDDLE FORK OF TRIBUTARY TO SCHOTE CREEK	384152	0904415	03-11-86	0.1	362	8.4
34	OUTFLOW BUSCH LAKE 36	384228	0904357	03-10-86	--	492	7.8
				06-20-86	0.2	573	7.6
35	SEEP UPSTREAM FROM SEWAGE TREATMENT FACILITY	384139	0904348	06-19-86	0.01	503	7.2
36	SEEPAGE WEST LEVEE PIT 4	384153	0904404	06-18-86	0.01	1420	8.3
37	SEWAGE OUTFALL TRIBUTARY	384130	0904340	03-11-86	0.05	568	8.1

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	STREAM-FLOW, INSTAN-TANEOUS (FT3/S)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued						
38	TRIBUTARY OF SCHOTE CREEK NEAR COUNTY ROAD D	384212	0904413	11-19-85	2.5	230	7.9
39	UNNAMED CREEK DOWNSTREAM FROM LAKE 34 AND BURGERMEISTER SPRING	384339	0904353	06-26-86	0.3	367	6.9
40	WEST FORK OF TRIBUTARY TO SCHOTE CREEK	384200	0904424	03-11-86	0.01	323	8.2
41	RAFFINATE PIT NO. 1	384143	0904352	09-05-84	--	6100	8.9
				06-17-86	--	3700	8.7
42	RAFFINATE PIT NO. 2	384142	0904353	09-05-84	--	3200	9.3
				06-17-86	--	1520	9.4
43	RAFFINATE PIT NO. 3	384148	0904356	09-05-84	--	13000	8.6
				06-18-86	--	7800	8.9
44	RAFFINATE PIT NO. 4	384149	0904403	09-05-84	--	1430	9.6
				06-18-86	--	1520	9.1
45	BURGERMEISTER SPRING	384304	0904418	09-04-84	0.3	1090	6.9
				09-10-85	0.1	1040	6.8
				11-19-85	0.6	208	7.0
				03-10-86	--	660	7.3
				06-20-86	--	808	6.6
46	WET-WEATHER SPRING	384301	0904417	11-19-85	3.5	208	7.2

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE, IT-FLD (MG/L AS HCO3)	CARBONATE, IT-FLD (MG/L AS CO3)	ALKALINITY, FIELD (MG/L AS CACO3)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
24	09-11-85	26.5	52	--	14	4.2	4.9	1.6	--	--	61
25	09-12-85	18.0	150	23	37	15	19	4.9	--	--	131
	06-19-86	26.5	130	--	31	12	25	4.4	156	0	118
26	03-12-86	10.5	--	--	--	--	--	--	--	--	--
27	11-19-85	15.5	110	6	32	7.2	7.2	4.9	--	--	104
28	06-20-86	26.5	220	--	41	28	18	7.1	151	62	217
29	09-12-85	21.0	130	28	29	13	74	4.9	--	--	98
30	03-12-86	11.5	--	--	--	--	--	--	--	--	--
31	11-19-85	15.0	100	37	32	5.0	460	3.7	--	--	64
32	11-19-85	15.5	110	34	33	7.6	4.3	3.1	--	--	80
33	03-11-86	13.5	--	--	--	--	--	--	--	--	--
34	03-10-86	9.0	--	--	--	--	--	--	--	--	--
	06-20-86	27.0	100	21	26	8.7	71	3.5	98	0	75
35	06-19-86	22.0	150	5	38	13	28	3.7	176	0	137
36	06-18-86	31.0	820	710	210	72	20	1.6	137	0	116
37	03-11-86	--	--	--	--	--	--	--	--	--	--
38	11-19-85	15.5	110	20	32	6.9	5.2	3.5	--	--	88
39	06-26-86	21.5	140	--	39	10	16	2.4	181	0	140
40	03-11-86	--	--	--	--	--	--	--	--	--	--
41	09-05-86	22.5	1500	1500	560	26	520	48	--	--	34
	06-17-86	31.5	940	900	340	21	390	29	20	14	40

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM, DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE, IT-FLD (MG/L AS HCO3)	CAR-BONATE, IT-FLD (MG/L AS CO3)	ALKA-LINITY, FIELD (MG/L AS CACO3)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
42	09-05-84	22.0	1200	1200	380	66	180	33	--	--	37
	06-17-86	31.5	540	500	140	47	120	17	5.0	26	41
43	09-05-84	22.0	3500	3500	880	320	1500	150	--	--	37
	06-18-86	29.0	2500	2400	510	290	970	80	15	22	52
44	09-05-84	24.5	260	17	17	52	190	23	--	--	240
	06-18-86	28.5	250	--	18	49	190	18	178	70	259
45	09-04-84	12.0	420	180	120	30	47	3.2	--	--	243
	09-10-85	12.5	390	160	110	28	44	2.8	--	--	230
	11-19-85	13.0	96	8	29	5.8	5.0	2.5	--	--	88
	03-10-86	10.5	--	--	--	--	--	--	--	--	--
	06-20-86	12.0	330	130	93	23	35	2.7	244	0	189
46	11-19-85	13.0	96	10	29	5.8	6.1	2.4	--	--	86

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C, DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
24	09-11-85	5.6	1.1	0.4	0.4	69	69	<0.01	<0.10	--	--
25	09-12-85	51	5.9	0.6	19	243	230	<0.01	<0.10	--	<10
	06-19-86	53	10	0.7	11	234	220	<0.01	<0.10	0.02	--
26	03-12-86	--	--	--	--	--	--	0.20	9.00	--	--
27	11-19-85	30	2.0	0.4	15	170	160	0.02	2.60	--	180
28	06-20-86	34	15	0.2	7.9	284	350	0.31	0.53	0.61	--
29	09-12-85	73	83	0.3	4.3	343	340	<0.01	<0.10	--	10
30	03-12-86	--	400	--	--	--	--	<0.01	0.32	--	--
31	11-19-85	34	740	0.2	7.2	1300	1300	0.01	0.68	--	170
32	11-19-85	53	2.2	0.2	8.2	160	160	0.01	0.32	--	210
33	03-11-86	--	--	--	--	--	--	--	--	--	--
34	03-10-86	--	98	--	--	--	--	<0.01	0.41	--	--
	06-20-86	52	98	0.3	3.3	312	310	<0.01	<0.10	<0.01	--
35	06-19-86	64	11	0.4	14	262	260	<0.01	0.13	0.03	--
36	06-18-86	720	7.9	0.5	12	1190	1100	<0.01	0.30	0.02	--
37	03-11-86	--	--	--	--	--	--	0.01	10.0	--	--
38	11-19-85	37	2.2	0.2	11	145	150	0.01	1.20	--	190
39	06-26-86	17	16	0.2	7.5	197	200	0.02	0.53	0.02	--
40	03-11-86	--	--	--	--	--	--	--	--	--	--

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C, DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
41	09-05-84	400	17	2.5	5.4	5110	1700	32.0	700	--	30
	06-17-86	280	13	2.0	5.4	3070	1100	3.80	420	0.01	--
42	09-05-84	990	5.7	2.7	2.2	2770	1700	5.40	210	--	40
	06-17-86	580	4.4	2.2	2.8	1180	980	2.90	53.0	0.01	--
43	09-05-84	640	25	8.9	2.8	12700	3600	15.0	1900	--	30
	06-18-86	410	22	6.9	2.9	7450	2400	6.70	1200	0.02	--
44	09-05-84	150	7.7	7.8	1.7	1030	610	3.40	95.0	--	10
	06-18-86	130	7.4	6.3	0.4	934	650	0.60	79.0	0.01	--
45	09-04-84	48	37	0.2	11	682	440	<0.01	54.0	--	<10
	09-10-85	44	33	0.2	12	633	410	<0.01	51.0	--	30
	11-19-85	24	3.3	<0.1	12	134	130	<0.01	5.50	--	170
	03-10-86	--	--	--	--	--	--	<0.01	26.0	--	--
	06-20-86	49	25	0.2	12	512	360	<0.01	38.0	0.06	--
46	11-19-85	24	3.8	<0.1	12	131	140	<0.01	2.20	--	180

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM, DIS-SOLVED (UG/L AS LI)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
24	09-11-85	--	--	--	--	--	--	--	--	--	<4
25	09-12-85	3	57	<0.5	<1	<1	<3	2	27	<1	23
	06-19-86	--	--	--	--	--	--	--	--	--	23
26	03-12-86	--	--	--	--	--	--	--	--	--	--
27	11-19-85	1	53	<0.5	<1	<1	<3	5	160	1	10
28	06-20-86	--	--	--	--	--	--	--	--	--	9
29	09-12-85	2	71	<0.5	<1	<1	<3	1	9	<1	19
30	03-12-86	--	--	--	--	--	--	--	--	--	--
31	11-19-85	1	69	<0.5	<1	1	<3	4	120	1	10
32	11-19-85	<1	65	<0.5	<1	<1	<3	5	150	2	<4
33	03-11-86	--	--	--	--	--	--	--	--	--	--
34	03-10-86	--	--	--	--	--	--	--	--	--	--
	06-20-86	--	--	--	--	--	--	--	--	--	10
35	06-19-86	--	--	--	--	--	--	--	--	--	19
36	06-18-86	--	--	--	--	--	--	--	--	--	17
37	03-11-86	--	--	--	--	--	--	--	--	--	--
38	11-19-85	<1	67	<0.5	<1	<1	<3	3	130	<1	<4
39	06-26-86	--	--	--	--	--	--	--	--	--	8
40	03-11-86	--	--	--	--	--	--	--	--	--	--
41	09-05-84	6	90	12	<3	<1	<9	4	15	<1	140
	06-17-86	--	--	--	--	--	--	--	--	--	10

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM, DIS-SOLVED (UG/L AS LI)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued										
42	09-05-84	15	72	8	<3	<1	<9	4	<9	<1	140
	06-17-86	--	--	--	--	--	--	--	--	--	26
43	09-05-84	4	170	<5	<10	<1	<30	7	<30	11	460
	06-18-86	--	--	--	--	--	--	--	--	--	2700
44	09-05-84	2	100	0	<1	<1	<3	1	<3	17	660
	06-18-86	--	--	--	--	--	--	--	--	--	590
45	09-04-84	<1	150	2	<1	<1	<3	<1	<3	<1	77
	09-10-85	<1	160	<0.5	2	2	<3	3	7	<1	65
	11-19-85	<1	70	<0.5	<1	<1	<3	5	110	1	<4
	03-10-86	--	--	--	--	--	--	--	--	--	--
	06-20-86	--	--	--	--	--	--	--	--	--	49
46	11-19-85	<1	71	<0.5	<1	<1	<3	2	110	1	4

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY, DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued									
24	09-11-85	--	--	--	--	--	--	--	--	--
25	09-12-85	13	<0.1	<10	3	<1	<1	160	<6	15
	06-19-86	--	--	--	--	--	--	140	--	--
26	03-12-85	--	--	--	--	--	--	--	--	--
27	11-19-85	4	<0.1	<10	1	3	<1	100	<6	19
28	06-20-86	--	--	--	--	--	--	69	--	--
29	09-12-85	12	0.1	<10	3	<1	<1	200	<6	11
30	03-12-86	--	--	--	--	--	--	--	--	--
31	11-19-85	110	<0.1	10	3	1	<1	160	<6	22
32	11-19-85	26	<0.1	<10	90	1	<1	89	<6	18
33	03-11-86	--	--	--	--	--	--	--	--	--
34	03-10-86	--	--	--	--	--	--	--	--	--
	06-20-86	--	--	--	--	--	--	140	--	--
35	06-19-86	--	--	--	--	--	--	160	--	--
36	06-18-86	--	--	--	--	--	--	380	--	--
37	03-11-86	--	--	--	--	--	--	--	--	--
38	11-19-85	12	<0.1	<10	3	2	<1	92	<6	15
39	06-26-86	--	--	--	--	--	--	130	--	--
40	03-11-86	--	--	--	--	--	--	--	--	--
41	09-05-84	9	<0.1	3000	<1	<1	<1	1400	3200	45
	06-17-86	--	--	--	--	--	--	1000	--	--

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY, DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
	Streamflow, Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued									
42	09-05-84	9	<0.1	7100	<1	<1	<1	780	2000	25
	06-17-86	--	--	--	--	--	--	380	--	--
43	09-05-84	35	<0.1	3600	<1	<1	<1	2800	810	66
	06-18-86	--	--	--	--	--	--	1600	--	--
44	09-05-84	7	<0.1	670	<1	<1	<1	190	79	5
	06-18-86	--	--	--	--	--	--	180	--	--
45	09-04-84	4	<0.1	<10	<1	3	<1	220	<6	17
	09-10-85	13	0.1	<10	6	2	<1	210	<6	47
	11-19-85	4	<0.1	<10	6	1	<1	79	<6	9
	03-10-86	--	--	--	--	--	--	--	--	--
	06-20-86	--	--	--	--	--	--	190	--	--
46	11-19-85	5	<0.1	<10	2	1	<1	80	<6	26

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)
			Radioactive Substances		
24	ARMY POND	384154	0904417	09-11-85	--
25	ASH POND	384204	0904356	09-12-85	--
				06-19-86	--
26	ASH POND OUTFLOW	384205	0904359	03-12-86	--
27	ASH POND TRIBUTARY AT MOUTH	384208	0904410	11-19-85	1500
28	BUSCH SEWAGE LAGOON OUTFLOW	384227	0904412	06-20-86	--
29	FROG POND	384157	0904328	09-12-85	--
30	FROG POND OUTFLOW	384158	0904328	03-12-86	--
31	FROG POND TRIBUTARY	384205	0904332	11-19-85	50
32	MIDDLE FORK OF TRIBUTARY TO SCHOTE CREEK AT MOUTH	384203	0904417	11-19-85	5.4
33	MIDDLE FORK OF TRIBUTARY TO SCHOTE CREEK	384152	0904415	03-11-86	--
34	OUTFLOW BUSCH LAKE 36	384228	0904357	03-10-86	--
				06-20-86	--
35	SEEP UPSTREAM FROM SEWAGE TREATMENT FACILITY	384139	0904348	06-19-86	--
36	SEEPAGE WEST LEVEE RAFFINATE PIT 4	384153	0904404	06-18-86	--
37	SEWAGE OUTFALL TRIBUTARY	384130	0904340	03-11-86	--

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)
			Radioactive Substances--Continued		
38	TRIBUTARY OF SCHOTE CREEK NEAR COUNTY ROAD D	384212	0904413	11-19-85	310
39	UNNAMED CREEK DOWNSTREAM FROM LAKE 34 AND BURGERMEISTER SPRING	384339	0904353	06-26-86	--
40	WEST FORK OF TRIBUTARY TO SCHOTE CREEK	384200	0904424	03-11-86	--
41	RAFFINATE PIT NO. 1	384143	0904352	09-05-84	690
				06-17-86	--
42	RAFFINATE PIT NO. 2	384142	0904353	09-05-84	580
				06-17-86	--
43	RAFFINATE PIT NO. 3	384148	0904356	09-05-84	800
				06-18-86	--
44	RAFFINATE PIT NO. 4	384149	0904403	09-05-84	4500
				06-18-86	--
45	BURGERMEISTER SPRING	384304	0904418	09-04-84	190
				09-10-85	--
				11-19-85	16
				03-10-86	--
				06-20-86	--
46	WET-WEATHER SPRING	384301	0904417	11-19-85	17

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM, NATURAL DIS-SOLVED (UG/L AS U)	TRITIUM TOTAL (PCI/L)
				Radioactive Substances--Continued					
24	09-11-85	--	--	--	--	--	<0.4	<0.4	--
25	09-12-85	--	--	--	--	--	<0.4	820	--
	06-19-86	--	--	--	--	--	--	1000	--
26	03-12-86	--	--	--	--	--	--	4000	--
27	11-19-85	7.5	450	260	370	250	<0.2	1600	--
28	06-20-86	--	--	--	--	--	--	--	--
29	09-12-85	--	--	--	--	--	<0.4	140	78
30	03-12-86	--	--	--	--	--	--	88	--
31	11-19-85	8.3	21	25	13	23	<0.2	60	--
32	11-19-85	1.3	3.7	3.7	3.1	3.5	<0.2	6.0	--
33	03-11-86	--	--	--	--	--	--	<0.8	--
34	03-10-86	--	--	--	--	--	--	45	--
	06-20-86	--	--	--	--	--	--	51	--
35	06-19-86	--	--	--	--	--	--	110	--
36	06-18-86	--	--	--	--	--	--	1.8	--
37	03-11-86	--	--	--	--	--	--	390	--
38	11-19-85	6.0	64	120	55	110	<0.2	4600	--
39	06-26-86	--	--	--	--	--	--	13	--
40	03-11-86	--	--	--	--	--	--	1.0	--
41	09-05-84	34	220	18	190	17	290	26	77
	06-17-86	--	--	--	--	--	--	46	--

Table 2.--Streamflow and water-quality data for surface-water sites in the vicinity of the Weldon Spring chemical plant--Continued

MAP NUMBER (FIG. 2)	DATE OF SAMPLE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM, NATURAL DIS-SOLVED (UG/L AS U)	TRITIUM TOTAL (PCI/L)
				Radioactive Substances--Continued					
42	09-05-84	51	180	39	160	37	120	28	70
	06-17-86	--	--	--	--	--	--	180	--
43	09-05-84	13	560	34	480	32	180	350	76
	06-18-86	--	--	--	--	--	--	170	--
44	09-05-84	46	1000	780	890	730	8.4	3500	64
	06-18-86	--	--	--	--	--	--	2400	--
45	09-04-84	3.0	28	41	24	39	0.2	190	70
	09-10-85	--	--	--	--	--	<0.4	140	59
	11-19-85	2.4	6.1	13	5.1	13	<0.2	26	--
	03-10-86	--	--	--	--	--	--	210	--
	06-20-86	--	--	--	--	--	--	250	--
46	11-19-85	1.9	6.3	13	5.3	13	<0.2	27	--

Table 3.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring quarry

[NGVD, National Geodetic Vertical Datum of 1929; US/CM, microsiemens per centimeter at 25 °Celsius; DEG C, degrees Celsius; UG/L, micrograms per liter; --, no data; <, less than]

MAP NUMBER (FIG. 3)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	ALTITUDE OF LAND SURFACE (FEET ABOVE NGVD)	WELL DEPTH (FEET)	CASING DEPTH (FEET)	DEPTH BELOW LAND SURFACE (WATER LEVEL (FEET)
47	LW 2	383916	0904452	01-30-86	455	92.00	--	11.00
48	LW 11	383916	0904528	01-30-86	455	69.00	--	12.00
49	OB 1	383929	0904516	01-30-86	488	40.50	40.5	--
50	OB 2	383927	0904518	01-29-86	476	35.50	35.5	21.00
51	OB 6	383930	0904501	01-29-86	456	11.40	11.4	--
52	OB 7	383928	0904502	01-29-86	457	9.90	9.9	--
53	OB 10	383928	0904504	01-29-86	456	13.00	13.0	--
54	OB 11	383928	0904503	01-31-86	456	28.10	[a]28.1	5.00
55	OB 12	383928	0904503	01-31-86	456	28.60	[b]28.6	4.00
56	OBS 6	383930	0904457	01-29-86	459	--	--	--
57	OBS 12	383927	0904500	01-30-86	458	--	--	9.00
58	OBS 13	383926	0904502	01-30-86	461	45.50	(c)	12.00
59	OBS 16	383933	0904435	11-06-85	458	39.30	--	--
60	TW 2	383931	0904516	01-29-86	485	40.00	6.0	--
61	TW 6	383933	0904512	01-28-86	483	38.00	3.5	--
62	TW 7	383932	0904507	01-29-86	557	121.00	40.0	92.00
63	TW 8	383930	0904508	01-28-86	545	108.00	29.5	81.00
64	TW 9	383929	0904510	01-28-86	537	101.00	21.7	75.00
65	ST. CHARLES COUNTY WELL 5	383923	0904421	09-06-84	456	100.00	--	--

Table 3.--Well and water-quality data for ground-water sites in the vicinity of the Weldon Spring quarry--Continued

MAP NUMBER (FIG. 3)	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPER-ATURE (DEG C)	URANIUM, NATURAL DISSOLVED (UG/L AS U)
47	01-30-86	780	6.5	14.0	1.1
48	01-30-86	488	6.8	12.5	0.9
49	01-30-86	635	7.1	10.0	25
50	01-29-86	1060	6.3	10.5	8.9
51	01-29-86	1680	6.6	--	5100
52	01-29-86	1090	7.3	--	4300
53	01-29-86	1130	7.2	--	4500
54	01-31-86	875	7.0	12.0	100
55	01-31-86	1120	6.8	11.0	3900
56	01-29-86	800	8.0	--	47
57	01-30-86	850	6.6	12.0	4.2
58	01-30-86	880	6.7	12.0	4.0
59	11-06-85	522	7.3	15.0	0.4
60	01-29-86	880	6.3	11.0	140
61	01-28-86	1230	6.5	13.5	3800
62	01-29-86	1060	6.4	11.5	410
63	01-28-86	1130	6.6	12.0	14000
64	01-28-86	945	6.5	12.0	4700
65	09-06-84	752	7.1	14.0	<2.1

[a]Reached bedrock at 9.3 feet, cased full depth of well with 2-inch inside diameter #80 slotted well screen.
[b]Reached bedrock at 9.5 feet, cased full depth of well with 2-inch inside diameter #80 slotted well screen.
[c]Reached bedrock at about 20.5 feet.

Table 4.--Well, streamflow, and water-quality data for miscellaneous sites

[NGVD, National Geodetic Vertical Datum of 1929; FT^3/S, cubic feet per second; US/CM, microsiemens per centimeter at 25 °Celsius; DEG C, degrees Celsius; MG/L AS CACO3, milligrams per liter as calcium carbonate; PCI/L, picocuries per liter; --, no data; <, less than]

MAP NUMBER (FIG. 1)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	ALTITUDE OF LAND SURFACE (FEET) ABOVE NGVD)	WELL DEPTH (FEET)	STREAM FLOW, INSTAN-TANEOUS (FT3/S)
		Well and Streamflow Data					
66	LOST VALLEY SPRING	384018	0904541	09-11-85	520	--	0.2
67	REARING POND SPRING	384346	0904605	09-10-85	520	--	--
68	WELDON SPRING	384247	0904115	06-26-86	540	--	0.35
69	BELLEAU GARDENS WELL	384802	0904040	09-04-84	468	695.00	--
70	BINDER WELL	384255	0904221	09-11-85	570	215.00	--
71	OWEN WELL	384319	0904816	09-10-85	612	105.00	--

Table 4.--Well, streamflow, and water-quality data for miscellaneous sites--Continued

MAP NUMBER (FIG. 1)	DATE OF SAMPLE	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM, DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY, FIELD (MG/L AS CACO3)	SULFATE, DISSOLVED (MG/L AS SO4)
					Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued							
66	09-11-85	515	8.3	18.0	250	4	73	16	5.9	1.4	244	25
67	09-10-85	410	6.8	13.0	220	4	67	13	7.5	1.5	217	16
68	06-26-86	322	6.6	12.0	140	--	41	8.5	10	2.3	140	9.7
69	09-04-84	555	7.5	15.5	230	--	49	27	25	5.2	250	22
70	09-11-85	695	7.6	14.5	300	10	95	16	31	1.4	293	28
71	09-10-85	491	7.0	16.0	220	--	63	15	7.9	0.7	230	8.7

Table 4.--Well, streamflow, and water-quality data for miscellaneous sites--Continued

MAP NUMBER (FIG. 1)	DATE OF SAMPLE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	LITHIUM, DISSOLVED (UG/L AS LI)	STRONTIUM, DISSOLVED (UG/L AS SR)
					Physical Properties, Major Inorganic Constituents, and Trace Elements--Continued						
66	09-11-85	3.8	<0.1	13	285	280	<0.01	0.35	--	6	--
67	09-10-85	2.8	<0.1	12	260	250	<0.01	1.10	--	6	--
68	06-26-86	9.1	0.1	9.7	177	180	<0.01	0.77	0.04	6	85
69	09-04-84	20	0.7	8.5	292	310	<0.01	<0.10	--	32	740
70	09-11-85	18	0.1	14	393	380	<0.01	4.60	--	8	--
71	09-10-85	6.8	0.1	16	269	260	<0.01	2.40	--	7	--

Table 4.--Well, streamflow, and water-quality data for miscellaneous sites--Continued

MAP NUMBER (FIG. 1)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	RADIUM-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM, NATURAL DIS-SOLVED (UG/L AS U)	TRITIUM TOTAL (PCI/L)
			Radioactive Substances				
66	LOST VALLEY SPRING	384018	0904541	09-11-85	<0.4	0.7	56
67	REARING POND SPRING	384346	0904605	09-10-85	<0.4	1.1	58
68	WELDON SPRING	384247	0904115	06-26-86	--	<1.0	--
69	BELLEAU GARDENS WELL	384802	0904040	09-04-84	6.6	<0.4	5
70	BINDER WELL	384255	0904221	09-11-85	<0.4	0.7	--
71	OWEN WELL	384319	0904816	09-10-85	<0.4	0.7	30

Table 5.--Water-quality data for sites near Weldon Spring, September 1984

[US/CM, microsiemens per centimeter at 25 °C; DEG C, degrees Celsius; MG/L, milligrams per liter; CACO3, calcium carbonate; UG/L, micrograms per liter; U-NAT, uranium, natural; CS, cesium; RA, radium; PCI/L, picocuries per liter; PER MIL, parts per thousand; --, no data; <, less than]

MAP NUMBER (FIGS. 1-3)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE OF SAMPLE	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STANDARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN DIS-SOLVED (MG/L)
			Physical Properties and Major Inorganic Constituents					
41	RAFFINATE PIT 1	384143	0904352	09-05-84	6,100	8.9	22.5	10.8
42	RAFFINATE PIT 2	384142	0904353	09-05-84	3,200	9.3	22.0	9.7
43	RAFFINATE PIT 3	384148	0904356	09-05-84	13,000	8.6	22.0	12.2
44	RAFFINATE PIT 4	384149	0904403	09-05-84	1,430	9.6	24.5	8.9
72	QUARRY SITE	383931	0904511	09-05-84	600	7.7	23.5	5.0
73	FEMME OSAGE SLOUGH	383932	0904448	09-06-84	532	8.2	24.5	7.1
45	BURGERMEISTER SPRING	384304	0904418	09-04-84	1,090	6.9	12.0	8.5
23	BUSCH WILDLIFE HEADQUARTERS WELL	384221	0904425	09-04-84	550	7.3	15.5	--
69	BELLEAU GARDENS WELL	384802	0904040	09-04-84	555	7.5	15.5	--
65	ST. CHARLES COUNTY WELL 5	383923	0904421	09-06-84	752	7.1	14.0	--

Table 5.--Water-quality data for sites near Weldon Spring, September 1984--Continued

MAP NUMBER (FIGS. 1-3)	SITE DESIGNATION	CALCIUM, DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, FIELD (MG/L AS CACO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLOR-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG C DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)
						Physical Properties and Major Inorganic Constituents--Continued							
41	RAFFINATE PIT 1	560	26	520	48	34	400	17	2.5	5.4	5,110	32.0	668
42	RAFFINATE PIT 2	380	66	180	33	37	990	5.7	2.7	2.2	2,770	5.40	205
43	RAFFINATE PIT 3	880	320	1,500	150	37	640	25	8.9	2.8	12,700	15.0	1,890
44	RAFFINATE PIT 4	17	52	190	23	240	150	7.7	7.8	1.7	1,030	3.40	91.6
72	QUARRY SITE	70	19	14	11	172	120	16	.90	14	387	.060	2.34
73	FEMME OSAGE SLOUGH	73	18	9.1	7.5	269	24	6.9	.30	5.5	299	<.010	--
45	BURGERMEISTER SPRING	120	30	47	3.2	243	48	37	.20	11	682	<.010	--
23	BUSCH WILDLIFE HEADQUARTERS WELL	50	37	5.5	1.3	289	18	1.3	.20	8.0	290	<.010	--
69	BELLEAU GARDENS WELL	49	27	25	5.2	250	22	20	.70	8.5	292	<.010	--
65	ST. CHARLES COUNTY WELL 5	110	24	15	4.1	385	42	7.2	.30	25	456	<.010	--

Table 5.--Water-quality data for sites near Weldon Spring, September 1984--Continued

MAP NUMBER (FIGS. 1-3)	SITE DESIGNATION	DATE OF SAMPLE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC, DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM, DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
					Trace Elements						
41	RAFFINATE PIT 1	09-05-84	30	6	90	12	<3	<1	<9	4	15
42	RAFFINATE PIT 2	09-05-84	40	15	72	8	<3	<1	<9	4	<9
43	RAFFINATE PIT 3	09-05-84	30	4	170	<5	<10	<1	<30	7	<30
44	RAFFINATE PIT 4	09-05-84	10	2	100	<.0	<1	<1	<3	1	<3
72	QUARRY SITE	09-05-84	<10	<1	79	<.0	<1	<1	<3	<1	3
73	FEMME OSAGE SLOUGH	09-06-84	<10	2	170	<.0	1	<1	<3	<1	10
45	BURGERMEISTER SPRING	09-04-84	<10	<1	150	2	<1	<1	<3	<1	<3
23	BUSCH WILDLIFE HEADQUARTERS WELL	09-04-84	<10	<1	130	2	1	<1	<3	<1	<3
69	BELLEAU GARDENS WELL	09-04-84	<10	<1	96	2	<1	<1	<3	<1	59
65	ST. CHARLES COUNTY WELL 5	09-06-84	<10	1	480	<.0	1	<1	9	<1	7,000

Table 5.--Water-quality data for sites near Weldon Spring, September 1984--Continued

MAP NUMBER (FIGS. 1-3)	SITE DESIGNATION	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM, DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY, DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
					Trace Elements--Continued							
41	RAFFINATE PIT 1	<1	140	9	<.1	3,000	<1	<1	<1	1,400	32,000	45
42	RAFFINATE PIT 2	<1	140	9	<.1	7,100	<1	<1	<1	780	2,000	25
43	RAFFINATE PIT 3	11	460	35	<.1	3,600	<1	<1	<1	2,800	810	66
44	RAFFINATE PIT 4	17	660	7	<.1	670	<1	<1	<1	190	79	5
72	QUARRY SITE	2	24	190	<.1	<10	<1	<5	<1	370	<6	5
73	FEMME OSAGE SLOUGH	<1	12	390	<.1	<10	<1	<1	<1	290	<6	14
45	BURGERMEISTER SPRING	<1	77	4	<.1	<10	<1	3	<1	220	<6	17
23	BUSCH WILDLIFE HEADQUARTERS WELL	<1	8	8	<.1	<10	<1	<1	<1	150	<6	40
69	BELLEAU GARDENS WELL	<1	32	7	<.1	<10	<1	<1	<1	740	<6	33
65	ST. CHARLES COUNTY WELL 5	<1	33	810	<.1	<10	<1	<1	<1	580	<6	9

Table 5.--Water-quality data for sites near Weldon Spring, September 1984--Continued

MAP NUMBER (FIGS. 1-3)	SITE DESIGNATION	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RA-226, DIS-SOLVED PLAN-CHET COUNT (PCI/L)	URANIUM, DIS-SOLVED (UG/L AS U)	TRITIUM[a], IN WATER MOLE-CULES (TU)
				Radioactive Substances				
41	RAFFINATE PIT 1	690	34	220	18	290	26	24.0
42	RAFFINATE PIT 2	580	51	180	39	120	28	22.0
43	RAFFINATE PIT 3	800	13	560	34	180	350	24.0
44	RAFFINATE PIT 4	4,500	46	1,000	780	8.4	3,500	20.0
72	QUARRY SITE	2,700	11	300	180	<.7	2,100	23.0
73	FEMME OSAGE SLOUGH	89	2.1	17	12	.7	77	23.0
45	BURGERMEISTER SPRING	190	3.0	28	41	.2	190	22.0
23	BUSCH WILDLIFE HEADQUARTERS WELL	12	.9	<4.6	1.2	.5	.9	1.3
69	BELLEAU GARDENS WELL	27	1.0	9.8	1.0	6.6	<.4	1.5
65	ST. CHARLES COUNTY WELL 5	<8.7	.8	<6.2	.7	.3	<2.1	31.0

Table 5.--Water-quality data for sites near Weldon Spring, September 1984--Continued

MAP NUMBER (FIGS. 1-3)	SITE DESIGNATION	DATE OF SAMPLE	H-2/H-1 STABLE ISOTOPE RATIO (PER MIL)	O-18/O-16 STABLE ISOTOPE RATIO (PER MIL)
		Stable Isotope Ratios		
41	RAFFINATE PIT 1	09-05-84	0.0	4.9
42	RAFFINATE PIT 2	09-05-84	5.0	5.2
43	RAFFINATE PIT 3	09-05-84	7.5	4.9
44	RAFFINATE PIT 4	09-05-84	-10.5	.4
72	QUARRY SITE	09-05-84	-29.5	-3.4
73	FEMME OSAGE SLOUGH	09-06-84	-22.0	-1.7
45	BURGERMEISTER SPRING	09-04-84	-41.0	-5.8
23	BUSCH WILDLIFE HEADQUARTERS WELL	09-04-84	-44.0	-7.1
69	BELLEAU GARDENS WELL	09-04-84	-43.5	-7.3
65	ST. CHARLES COUNTY WELL 5	09-06-84	-47.5	-7.0

[a] $3.22 \frac{PCI}{l} = 1.0 T.U.$

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985

[--, no data collected]

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
1.	KRAUT RUN 0.8 MILE UPSTREAM OF WILSON ROAD	384255	0904934	4-3-85	0.44	155	21.0
2.	TRIBUTARY TO KRAUT RUN 0.7 MILE UPSTREAM OF WILSON ROAD	384258	0904936	4-3-85	0.03	130	19.5
3.	TRIBUTARY TO KRAUT RUN 0.2 MILE UPSTREAM OF WILSON ROAD	384305	0904905	4-3-85	0.05	--	--
4.	KRAUT RUN AT WILSON ROAD	384310	0904854	4-3-85	0.72	210	21.5
5.	TRIBUTARY TO KRAUT RUN AT BENNE ROAD	384227	0904917	4-3-85	0.07	153	17.0
6.	INFLOW TO KRAUT RUN TRIBUTARY 0.6 MILE DOWNSTREAM OF BENNE ROAD	384240	0904906	4-3-85	0.01	--	--
7.	TRIBUTARY TO KRAUT RUN 0.1 MILE UPSTREAM OF WILSON ROAD	384244	0904901	4-3-85	0.14	175	19.0
8.	TRIBUTARY TO KRAUT RUN NEAR THE MOUTH	384309	0904844	4-3-85	0.34	220	15.0
9.	TRIBUTARY TO KRAUT RUN NEAR THE MOUTH AND 0.2 MILE WEST OF COUNTY ROAD DD	384309	0904810	4-3-85	1.03	245	16.0
10.	INFLOW TO KRAUT RUN 0.2 MILE WEST OF COUNTY ROAD DD	384310	0904804	4-3-85	0.10	--	--
11.	KRAUT RUN AT COUNTY ROAD DD	384314	0904800	4-3-85	2.18	250	20.0

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
12.	TRIBUTARY TO KRAUT RUN 0.9 MILE DOWNSTREAM OF COUNTY ROAD DD	384325	0904708	4-3-85	0.03	--	--
13.	KRAUT RUN 1.0 MILE DOWNSTREAM OF COUNTY ROAD DD	384328	0904704	4-3-85	5.98	240	17.5
14.	KRAUT RUN 1.3 MILES DOWNSTREAM OF COUNTY ROAD DD	384339	0904655	4-3-85	6.40	235	15.0
15.	OUTFLOW FROM BUSCH LAKE 20, 0.3 MILE DOWNSTREAM OF LAKE	384319	0904627	4-4-85	0.03	122	11.0
16.	INFLOW TO TRIBUTARY OF BUSCH LAKE 33, 0.5 MILE DOWNSTREAM OF BUSCH LAKE 20	384329	0904624	4-4-85	0.01	--	--
17.	OUTFLOW TRIBUTARY OF BUSCH LAKE 20, 0.1 MILE UPSTREAM OF BUSCH ROAD C	384338	0904625	4-4-85	0.11	180	12.5
18.	OUTFLOW TRIBUTARY OF BUSCH LAKE 20 AT BUSCH ROAD C	384346	0904626	4-4-85	0.19	255	14.5
19.	TRIBUTARY DRAINING MARSHY AREA WEST OF BUSCH REARING PONDS AT BUSCH ROAD C	384352	0904611	4-4-85	1.34	310	15.0
20.	SPRING BRANCH NEAR BUSCH REARING PONDS AT BUSCH ROAD C	384353	0904602	4-4-85	0.52	315	13.0
21.	TRIBUTARY OF KRAUT RUN JUST UPSTREAM OF BUSCH LAKE 33 SPILLWAY	384359	0904542	4-4-85	1.49	--	--
22.	KRAUT RUN 0.1 MILE UPSTREAM OF DARDENNE CREEK	384416	0904541	4-4-85	21.8	180	14.0

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
23.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28 AT COUNTY ROAD D	384202	0904732	4-2-85	0.22	125	16.0
24.	INFLOW OF TRIBUTARY OF BUSCH LAKE 28, AT COUNTY ROAD D	384225	0904655	4-2-85	0.08	--	--
25.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28 AT COUNTY ROAD D	384227	0904657	4-2-85	0.35	140	12.5
26.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28 AT BUSCH ROAD C	384244	0904639	4-2-85	0.40	130	13.0
27.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28 0.8 MILE DOWNSTREAM OF BUSCH ROAD C	384304	0904601	4-2-85	0	--	--
28.	OUTFLOW TRIBUTARY OF BUSCH LAKE 31 AT BUSCH ROAD C	384235	0904550	4-2-85	0.58	135	15.0
29.	OUTFLOW TRIBUTARY OF BUSCH LAKE 31 AT MOUTH	384304	0904556	4-2-85 4-3-85	0.49 0.30	150 180	15.0 15.5
30.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28, UPSTREAM OF BUSCH ROAD B	384309	0904550	4-3-85	0	--	--
31.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28, 0.4 MILE DOWN-STREAM OF BUSCH ROAD B	384324	0904531	4-3-85	0	--	--
32.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28, 0.2 MILE UPSTREAM OF BUSCH ROAD B	384333	0904520	4-3-85	0.01	--	--
33.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28, AT BUSCH ROAD B	384341	0904519	4-3-85	0.08	240	17.5

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
34.	INFLOW TO TRIBUTARY OF BUSCH LAKE 28 BETWEEN BUSCH ROADS B AND C	384343	0904523	4-3-85	0.18	--	--
35.	SPRING IN OUTFLOW TRIBUTARY OF BUSCH LAKE 28 BETWEEN BUSCH ROADS A AND C	384345	0904522	4-3-85	0.15	--	--
36.	SPRING IN OUTFLOW TRIBUTARY OF BUSCH LAKE 28, AT BUSCH ROAD C	384346	0904523	4-3-85	0.75	--	--
37.	OUTFLOW TRIBUTARY OF BUSCH LAKE 28, JUST UPSTREAM OF DARDENNE CREEK	384408	0904516	4-3-85	1.66	--	--
38.	OUTFLOW TRIBUTARY OF BUSCH LAKE 6 AT BUSCH ROAD A	384322	0904510	4-3-85	0	--	--
39.	OUTFLOW TRIBUTARY OF BUSCH LAKE 8, 0.1 MILE DOWNSTREAM OF LAKE	384324	0904507	4-3-85	0.20	160	16.5
40.	OUTFLOW TRIBUTARY OF BUSCH LAKE 6, 0.2 MILE UPSTREAM OF BUSCH ROAD C	384337	0904500	4-3-85	0.18	160	17.0
41.	OUTFLOW TRIBUTARY OF BUSCH LAKE 6 AT BUSCH ROAD C	384343	0904450	4-3-85 4-4-85	0.10 0.05	160 170	17.0 13.0
42.	OUTFLOW TRIBUTARY OF BUSCH LAKE 23 AT MOUTH	384345	0904446	4-4-85	0.24	127	10.0
43.	OUTFLOW TRIBUTARY OF BUSCH LAKE 6, 0.2 MILE UPSTREAM OF DARDENNE CREEK	384402	0904449	4-4-85	0.50	145	13.0
44.	UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, 0.4 MILE UPSTREAM OF BUSCH ROAD A	384242	0904455	4-2-85	0.01	278	24.5

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
45.	UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, 0.2 MILE UPSTREAM OF BUSCH ROAD A	384243	0904446	4-2-85	0.03	330	15.0
46.	UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, JUST UPSTREAM OF BUSCH ROAD A	384248	0904437	4-2-85	0.10	255	14.0
47.	UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, JUST DOWNSTREAM OF BUSCH ROAD A	384253	0904432	4-2-85	0.07	285	13.0
48.	UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, JUST UPSTREAM OF BUSCH ROAD C	384258	0904428	4-2-85	0.17	280	13.5
49.	SPRING INFLOW TO UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, JUST UPSTREAM OF BUSCH ROAD C	384259	0904426	4-2-85	0.12	255	12.0
50.	UNNAMED TRIBUTARY UPSTREAM OF BUSCH LAKE 34, JUST DOWNSTREAM OF BUSCH ROAD C	384302	0904423	4-2-85	0.41	250	14.0
51.	WET-WEATHER SPRING	384301	0904417	4-?-85	0.90	133	14.0
52.	SPRING BRANCH JUST UPSTREAM OF BURGERMEISTER SPRING BRANCH	384302	0904417	4-2-85	1.61	280	10.0
53.	BURGERMEISTER SPRING	384304	0904418	4-2-85	0.50	--	--
54.	UNNAMED TRIBUTARY JUST UPSTREAM OF BUSCH LAKE 34	384304	0904416	4-2-85 4-3-85	2.49 1.97	276 300	11.0 11.0

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
55.	UNNAMED TRIBUTARY 0.2 MILE DOWNSTREAM OF BUSCH LAKE 34 AND AT U.S. HIGHWAY 40 AND 61	384339	0904352	4-3-85	6.63	260	13.0
56.	UNNAMED TRIBUTARY 0.5 MILE DOWNSTREAM OF BUSCH LAKE 34	384355	0904336	4-3-85	7.91	260	14.5
57.	UNNAMED TRIBUTARY 0.9 MILE DOWNSTREAM OF BUSCH LAKE 34	384401	0904318	4-3-85	7.43	280	14.5
58.	SCHOTE CREEK 0.5 MILE UPSTREAM OF COUNTY ROAD D	384209	0904532	4-2-85	0.09	345	14.5
59.	SCHOTE CREEK 0.2 MILE UPSTREAM OF COUNTY ROAD D	384215	0904507	4-2-85	0.20	263	14.0
60.	TRIBUTARY OF SCHOTE CREEK 0.4 MILE FROM MOUTH	384201	0904513	4-2-85	0.15	230	15.0
61.	INFLOW TO TRIBUTARY OF SCHOTE CREEK 0.3 MILE UPSTREAM FROM TRIBUTARY MOUTH	384205	0904504	4-2-85	0.10	227	14.6
62.	TRIBUTARY OF SCHOTE CREEK NEAR MOUTH	384213	0904504	4-2-85	0.48	225	12.5
63.	SCHOTE CREEK AT COUNTY ROAD D	384217	0904502	4-2-85	0.75	240	13.0
64.	TRIBUTARY INTO HAMPTON MEMORIAL LAKE, NEAR COUNTY ROAD D	384217	0904430	4-2-85	0.01	--	--
65.	SCHOTE CREEK NEAR BUSCH ROAD A	384227	0904428	4-2-85	0.89	173	13.5
66.	SCHOTE CREEK 0.3 MILE DOWNSTREAM OF BUSCH ROAD A	384228	0904411	4-2-85	0.51	175	13.5

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
67.	WEST FORK OF TRIBUTARY OF SCHOTE CREEK 0.3 MILE UPSTREAM OF MOUTH	384154	0904434	4-1-85	0.11	270	11.0
68.	WEST FORK OF TRIBUTARY OF SCHOTE CREEK 0.2 MILE UPSTREAM OF MOUTH	384159	0904423	4-1-85	0.14	295	13.5
69.	WEST FORK OF TRIBUTARY OF SCHOTE CREEK AT MOUTH	384203	0904417	4-1-85	0.14	275	13.5
70.	MIDDLE FORK OF TRIBUTARY OF SCHOTE CREEK 0.3 MILE UPSTREAM OF MOUTH	384151	0904415	4-1-85	0.18	225	12.5
71.	MIDDLE FORK OF TRIBUTARY OF SCHOTE CREEK 0.3 MILE UPSTREAM OF MOUTH	384154	0904413	4-1-85	0.12	225	12.5
72.	TRIBUTARY INFLOW TO MIDDLE FORK OF TRIBUTARY OF SCHOTE CREEK	384153	0904410	4-1-85	0.03	1,190	12.5
73.	MIDDLE FORK OF TRIBUTARY OF SCHOTE CREEK NEAR MOUTH	384201	0904416	4-1-85	0.09	313	12.5
74.	TRIBUTARY OF SCHOTE CREEK NEAR CONFLUENCE OF WEST AND MIDDLE FORKS	384205	0904416	4-1-85 4-2-85	0.18 0.07	293 --	13.0 --
75.	TRIBUTARY OF SCHOTE CREEK NEAR CONFLUENCE WITH ASH POND TRIBUTARY	384208	0904413	4-2-85	0.02	273	6.0
76.	EAST FORK OF TRIBUTARY DRAINING ASH POND DOWNSTREAM OF ASH POND	384206	0904401	4-2-85	0.09	380	7.0

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
77.	EAST FORK OF TRIBUTARY DRAINING ASH POND 0.2 MILE DOWNSTREAM OF ASH POND	384209	0904409	4-2-85	0.02	375	7.0
78.	TRIBUTARY OF SCHOTE CREEK JUST UPSTREAM OF COUNTY HIGHWAY D	384213	0904411	4-2-85	0.09	220	7.5
79.	TRIBUTARY OF SCHOTE CREEK JUST DOWNSTREAM OF COUNTY HIGHWAY D	384216	0904411	4-2-85	0.01	--	--
80.	TRIBUTARY OF SCHOTE CREEK 0.1 MILE UPSTREAM OF MOUTH	384222	0904410	4-2-85	0	--	--
81.	SCHOTE CREEK 0.1 MILE UPSTREAM OF INFLOW FROM BUSCH LAKE 36	384231	0904404	4-2-85	0	--	--
82.	FROG POND TRIBUTARY 0.2 MILE DOWNSTREAM OF FROG POND	384206	0904331	4-3-85	0.06	3,850	10.5
83.	FROG POND TRIBUTARY 0.1 MILE UPSTREAM OF COUNTY HIGHWAY D	384211	0904334	4-3-85	0.13	2,900	10.0
84.	FROG POND TRIBUTARY AT COUNTY HIGHWAY D	384215	0904337	4-3-85	0.12	2,010	10.5
85.	OUTFLOW TRIBUTARY OF BUSCH LAKE 36, 0.1 MILE DOWNSTREAM OF LAKE 36	384230	0904356	4-2-85 4-3-85	0.33 0.15	580 590	13.5 13.0
86.	SCHOTE CREEK AT U.S. HIGHWAY 40 AND 61	384317	0904320	4-3-85	0.53	215	12.0
87.	INFLOW TO SCHOTE CREEK AT SEWAGE LAGOON 0.7 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384320	0904240	4-3-85	0.10	--	--

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
88.	INFLOW TO SCHOTE CREEK 0.8 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384321	0904237	4-3-85	0.05	--	--
89.	SCHOTE CREEK 1.0 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384321	0904229	4-3-85	1.71	295	13.5
90.	SCHOTE CREEK AT COUNTY HIGHWAY K	384418	0904139	4-3-85	2.26	345	13.5
91.	CROOKED CREEK AT COUNTY HIGHWAY D	384219	0904258	4-2-85	0.07	472	11.0
92.	INFLOW TO CROOKED CREEK 0.4 MILE DOWNSTREAM OF COUNTY HIGHWAY D	384232	0904252	4-2-85	0.09	340	15.5
93.	INFLOW TO CROOKED CREEK 0.4 MILE DOWNSTREAM OF COUNTY HIGHWAY D	384233	0904249	4-2-85	0.12	--	--
94.	INFLOW TO CROOKED CREEK 0.5 MILE UPSTREAM OF U.S. HIGHWAY 40 AND 61	384238	0904240	4-2-85	0.04	140	17.0
95.	INFLOW TO CROOKED CREEK 0.4 MILE UPSTREAM OF U.S. HIGHWAY 40 AND 61	384238	0904235	4-2-85	0.08	170	11.5
96.	CROOKED CREEK 0.4 MILE UPSTREAM OF U.S. HIGHWAY 40 AND 61	384241	0904230	4-2-85	0.22	257	11.5
97.	CROOKED CREEK AT U.S. HIGHWAY 40 AND 61	384251	0904212	4-2-85	0.30	266	14.0
98.	INFLOW TO CROOKED CREEK 0.2 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384256	0904204	4-2-85	0.11	338	9.5

Table 6.--Seepage-run data for north-flowing tributaries to Dardenne Creek from Kraut Run to Crooked Creek, April 1-4, 1985--Continued

MAP NUMBER (FIGS. 4-6)	SITE DESIGNATION	LATITUDE	LONGITUDE	DATE	DISCHARGE, IN CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE, IN MICROSIEMENS PER CENTIMETER AT 25 °CELSIUS	WATER TEMPERATURE, IN °CELSIUS
99.	INFLOW TO CROOKED CREEK 0.2 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384257	0904159	4-2-85	0.20	--	--
100.	CROOKED CREEK 0.3 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384301	0904158	4-2-85	0.66	325	13.0
101.	CROOKED CREEK 0.5 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384307	0904152	4-2-85	0.70	335	13.0
102.	CROOKED CREEK 1.1 MILE DOWNSTREAM OF U.S. HIGHWAY 40 AND 61	384325	0904121	4-3-85	0.66	350	15.0

Table 7.--Mean daily discharge for Burgermeister spring, March 20, 1985 through April 30, 1986 (fig. 5, site 53)

MEAN VALUES, IN CUBIC FEET PER SECOND

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	---	.49	.49	.12	.25	.19	.16	.10	.19	.48	.19	.20	.32	.19
2	---	.46	.49	.12	.23	.17	.12	.09	.23	.45	.18	.71	.31	.18
3	---	.44	.44	.13	.22	.14	.11	.09	.18	.41	.17	.69	.30	.17
4	---	.42	.40	.36	.21	.14	.11	.10	.12	.40	.16	.61	.29	.17
5	---	.53	.38	.53	.20	.13	.10	.09	.10	.39	.15	.51	.29	.16
6	---	.51	.38	.54	.19	.12	.10	.09	.09	.38	.14	.47	.27	.15
7	---	.49	.34	.60	.18	.11	.10	.09	.08	.37	.14	.47	.25	.15
8	---	.47	.30	.52	.16	.11	.10	.10	.08	.36	.13	.44	.24	.14
9	---	.44	.26	.46	.16	.11	.10	.09	.08	.38	.13	.40	.23	.14
10	---	.44	.24	.42	.15	.10	.09	.09	.08	.58	.12	.38	.22	.14
11	---	.48	.23	.55	.13	.10	.09	.11	.07	.70	.13	.37	.21	.14
12	---	.47	.21	.54	.12	.10	.09	.11	.07	.53	.13	.36	.42	.14
13	---	.45	.22	.50	.12	.10	.09	.09	.09	.47	.13	.34	.43	.14
14	---	.47	.35	.46	.12	.10	.09	.09	.40	.42	.13	.35	.38	.14
15	---	.47	.37	.46	.12	.10	.09	.08	.49	.40	.12	.34	.36	.13
16	---	.44	.30	.43	.12	.10	.09	.08	.51	.39	.12	.34	.36	.13
17	---	.43	.24	.53	.11	.09	.09	.08	.41	.38	.13	.38	.35	.13
18	---	.42	.19	.52	.11	.09	.11	.08	.60	.37	.13	.43	.35	.13
19	---	.41	.17	.47	.11	.10	.11	.08	.72	.36	.13	.44	.38	.13
20	.38	.40	.16	.43	.11	.11	.09	.07	.54	.36	.13	.39	.36	.13
21	.38	.39	.14	.43	.11	.10	.09	.07	.46	.35	.13	.36	.35	.23
22	.38	.38	.14	.42	.11	.09	.11	.07	.42	.36	.15	.36	.34	.37
23	.37	.38	.13	.41	.11	.12	.10	.08	.40	.35	.16	.35	.34	.28
24	.37	.38	.13	.40	.11	.15	.09	.08	.39	.33	.16	.34	.32	.34
25	.36	.38	.13	.40	.19	.14	.09	.07	.38	.31	.13	.34	.31	.20
26	.36	.36	.13	.38	.42	.12	.09	.07	.42	.29	.12	.34	.29	.13
27	.36	.35	.13	.37	.25	.10	.09	.07	.51	.27	.11	.34	.26	.12
28	.38	.33	.12	.35	.17	.09	.09	.07	.52	.26	.11	.33	.24	.12
29	.47	.31	.13	.32	.15	.13	.09	.08	.47	.24	.11	---	.23	.12
30	.67	.34	.13	.29	.12	.34	.10	.09	.44	.23	.10	---	.22	.12
31	.59	---	.12	---	.17	.24	---	.12	---	.21	.11	---	.20	---
TOTAL	---	12.73	7.59	12.46	5.03	3.93	2.97	2.67	9.54	11.78	4.18	11.38	9.42	4.96
MEAN	---	.42	.24	.42	.16	.13	.10	.09	.32	.38	.13	.41	.30	.17
MAX	---	.53	.49	.50	.42	.34	.16	.12	.72	.70	.19	.71	.43	.37
MIN	---	.31	.12	.12	.11	.09	.09	.07	.07	.21	.10	.20	.20	.12

Table 8.--Mean daily discharge for wet-weather spring, March 20, 1985 through April 30, 1986 (fig. 5, site 51)

MEAN VALUES, IN CUBIC FEET PER SECOND

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	---	2.0	1.2	.00	.00	.00	.00	.00	.00	1.5	.00	.38	.00	.00
2	---	1.1	1.5	.00	.00	.00	.00	.00	.00	1.1	.00	[a]3.7	.00	.00
3	---	.48	.63	.00	.00	.00	.00	.00	.00	.38	.00	[a]3.7	.00	.00
4	---	.30	.02	.95	.00	.00	.00	.00	.00	.14	.00	3.2	.00	.00
5	---	1.5	.00	1.5	.00	.00	.00	.00	.00	.06	.00	2.2	.00	.00
6	---	1.5	.00	[a]1.6	.00	.00	.00	.00	.00	.01	.00	2.0	.00	.00
7	---	1.3	.00	2.1	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00
8	---	1.1	.00	1.4	.00	.00	.00	.00	.00	.00	.00	1.6	.00	.00
9	---	.58	.00	.53	.00	.00	.00	.00	.00	[a].18	.00	1.1	.00	.00
10	---	.58	.00	.04	.00	.00	.00	.00	.00	[a]2.5	.00	.63	.00	.00
11	---	1.2	.00	1.6	.00	.00	.00	.00	.00	[a]3.5	.00	.26	.00	.00
12	---	1.1	.00	1.6	.00	.00	.00	.00	.00	2.2	.00	.02	1.2	.00
13	---	.69	.00	1.2	.00	.00	.00	.00	.00	1.4	.00	.00	.93	.00
14	---	1.2	.01	.48	.00	.00	.00	.00	1.2	.72	.00	.00	.20	.00
15	---	1.1	.00	.46	.00	.00	.00	.00	1.4	.30	.00	.00	.01	.00
16	---	.58	.00	[a].15	.00	.00	.00	.00	1.7	.18	.00	.00	.00	.00
17	---	.38	.00	[a]1.4	.00	.00	.00	.00	[a].18	.09	.00	.48	.00	.00
18	---	.17	.00	1.3	.00	.00	.00	.00	[a]2.7	.02	.00	1.3	.00	.00
19	---	.10	.00	.69	.00	.00	.00	.00	[a]3.6	.00	.00	1.3	.20	.00
20	.00	.04	.00	.15	.00	.00	.00	.00	1.9	.00	.00	.63	.01	.00
21	.00	.00	.00	.01	.00	.00	.00	.00	1.1	.00	.00	.26	.00	.03
22	.00	.00	.00	.00	.00	.00	.00	.00	.53	.00	.00	.10	.00	.02
23	.00	.00	.00	.00	.00	.00	.00	.00	.19	.00	.00	.02	.00	.00
24	.00	.00	.00	.02	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.13	.00	.00	.00	.01	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.01	.00	.00	.00	.51	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00
29	1.1	.00	.00	.00	.00	.18	.00	.00	1.4	.00	.00	---	.00	.00
30	3.0	.00	.00	.00	.00	.16	.00	.00	.92	.00	.00	---	.00	.00
31	2.6	---	.00	---	.00	.00	---	.00	---	.00	.00	---	.00	---
TOTAL	---	17.00	3.36	17.18	.14	.34	.00	.00	21.18	14.28	.00	24.88	2.55	.05
MEAN	---	.57	.11	.57	.00	.01	.00	.00	.71	.46	.00	.89	.08	.00
MAX	---	2.0	1.5	2.1	.13	.18	.00	.00	3.6	3.5	.00	3.7	1.2	.03
MIN	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

[a]Computed by correlating the mean daily gage height with the corresponding discharge.