WATER-QUALITY DATA FOR SELECTED WELLS AND DRAINS IN THE OAKES STUDY AREA, SOUTH-CENTRAL NORTH DAKOTA, DECEMBER 1986 THROUGH SEPTEMBER 1987

By J. D. Wald, C. S. Helgesen, and M. C. Pokladnik

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TO METRIC UNITS

For those readers who may prefer to use metric (International System) units rather than inch-pound units, the conversion factors for the inch-pound units used in this report are given below.

Multiply inch-pound unit	By	To obtain metric unit
Acre	0.4047	hectare
Square mile	2.590	square kilometer

To convert degrees Celsius (°C) to degrees Fahrenheit (°F) use the following formula: °F = 9/5 °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 both the United States and Canada, formerly called mean sea level of 1929.

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INTRODUCTION

Operation of the Garrison Diversion Unit in North Dakota will divert water from the Missouri River near Lake Audubon into the upper James River basin (fig. 1). The diverted water will augment flows in the James River sufficiently to permit expanded irrigation and to provide additional water supplies for municipal and industrial use. The proposed Garrison Diversion Unit development and associated expanded irrigation has caused environmental concerns regarding potential mobilization, transport, and concentration of potentially toxic trace elements. In order to address these concerns, a study of trace elements was made cooperatively by the U.S. Bureau of Reclamation and the U.S. Geological Survey during 1986-88. The trace-element study area consists of approximately 130,000 acres and includes the Turtle Lake, Lincoln Valley, Harvey, New Rockford, LaMoure, and Oakes areas. As part of this study, Severson and others (1988) reported on the baseline geochemistry of soils, with special emphasis on selenium, for an irrigation test area of about 15 square miles near Oakes, N.Dak. This report presents the water-quality data collected during December 1986 through September 1987 from selected wells and drain sites in the Oakes study area.

Purpose and Scope

The purpose of this report is to present the water-quality data obtained during December 1986 through September 1987 from selected wells and drain sites in the Oakes study area, and to document the sample collection and processing procedures used. Water samples were collected from 63 wells and 23 drain sites during December 1986 through September 1987. The samples were collected by the U.S. Bureau of Reclamation and analyzed by the U.S. Bureau of Reclamation and the U.S. Geological Survey.

Location of Study Area

The Oakes study area is located south of the city of Oakes in Dickey County, south-central North Dakota. The study area consists of about 23 square miles in Tps. 130 and 131 N., Rs. 59 and 60 W. (figs. 1 and 2).

Location-Numbering Systems

The latitude-longitude and township-range location-numbering systems are used to identify the wells and drain sites in this report (fig. 3). The latitude-longitude identification number assigned to each well and drain site is based on the grid system of latitude and longitude and consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or drain sites within a 1-second grid.

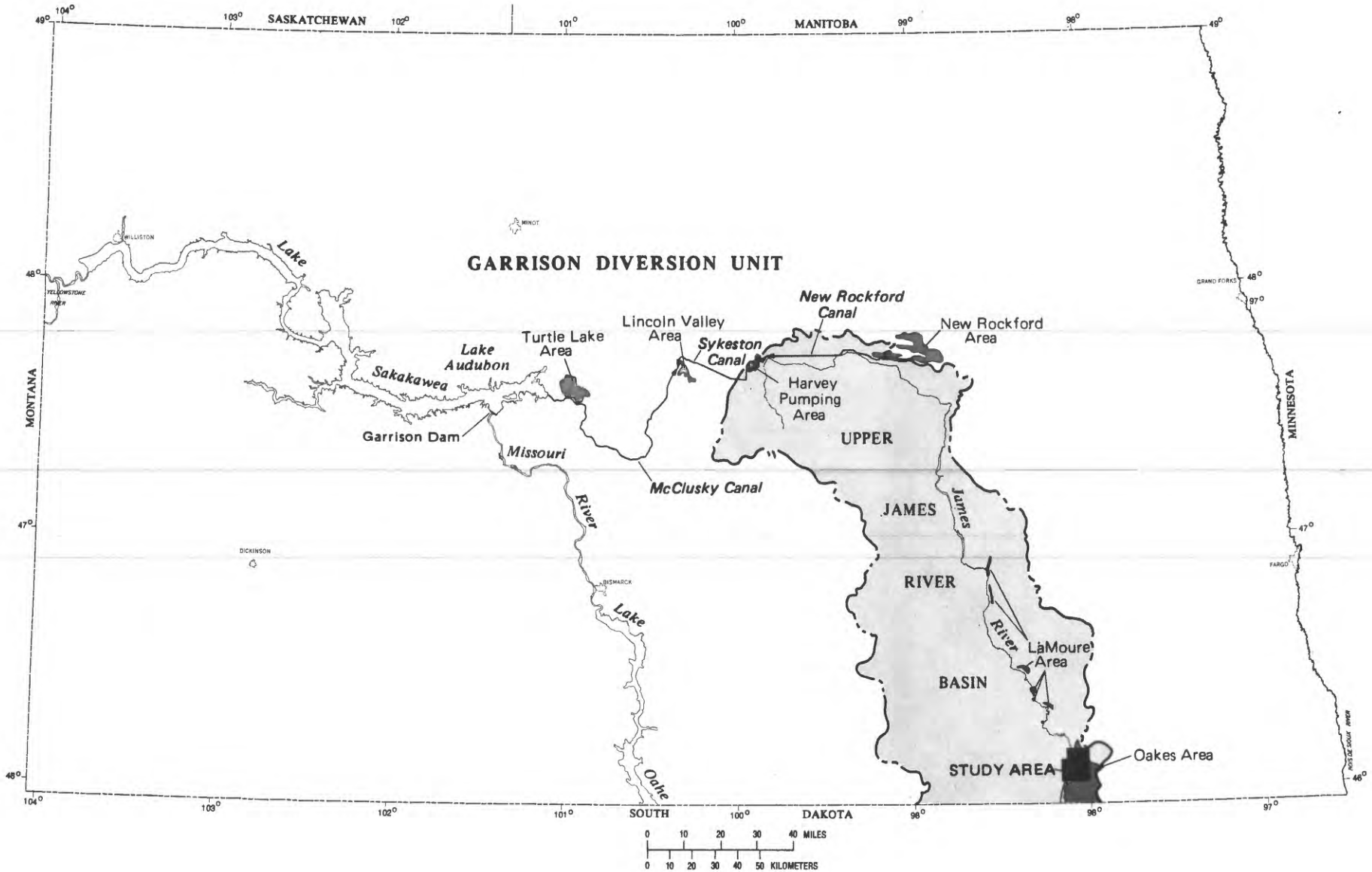


Figure 1.—Location of study area.

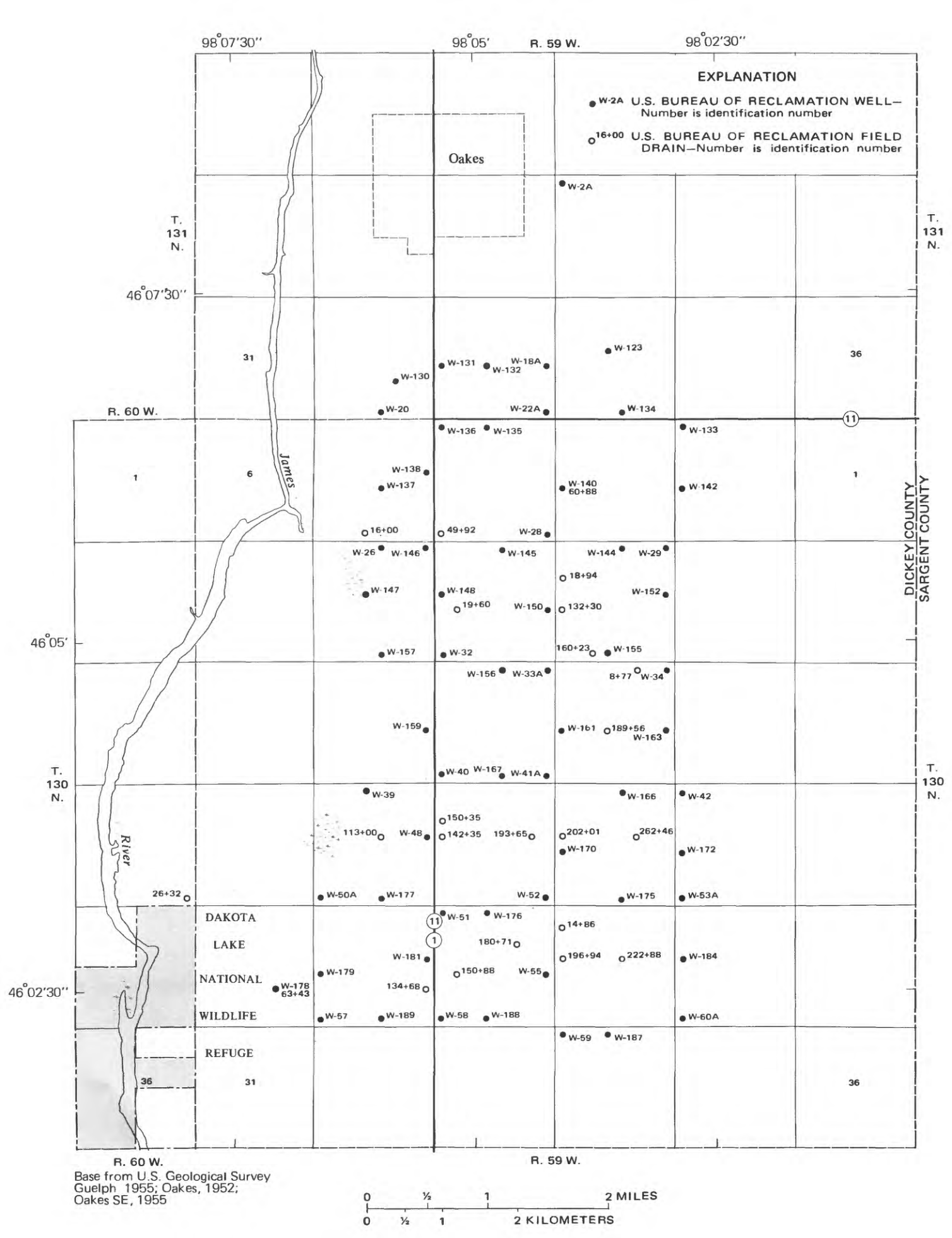
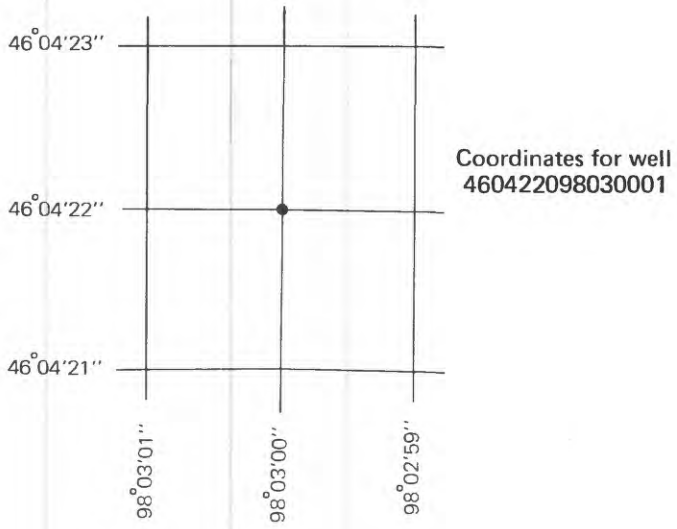
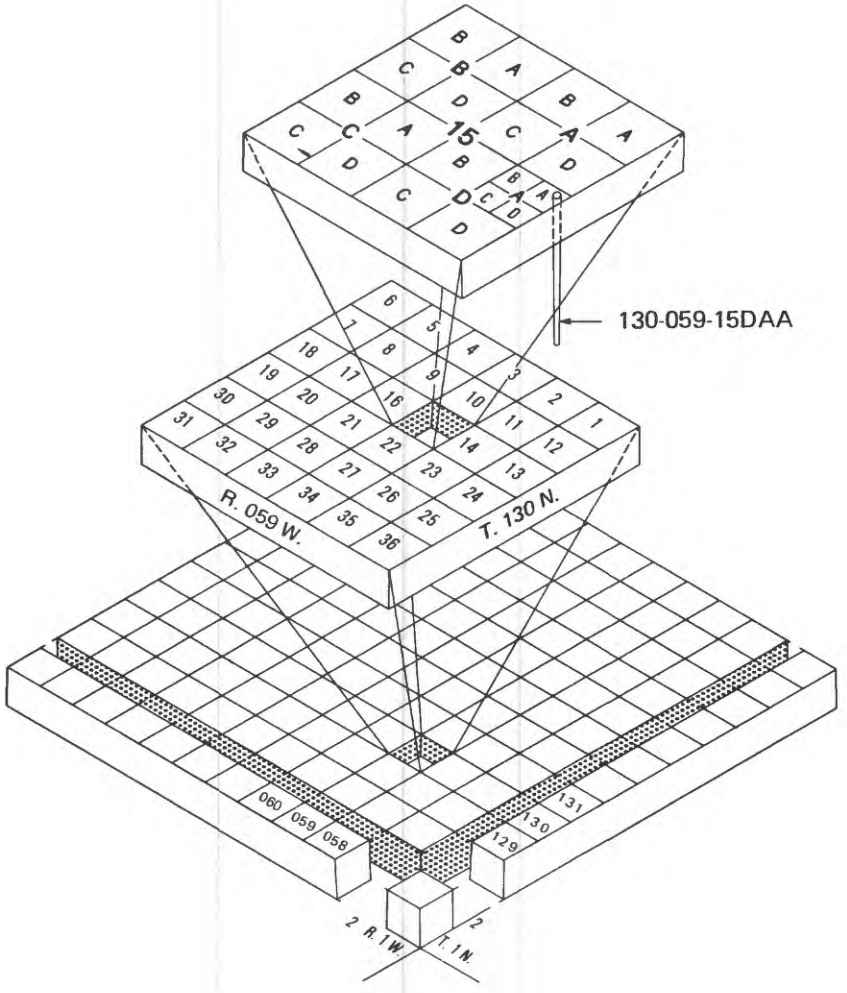


Figure 2.—Locations of data-collection sites in the Oakes area, south-central North Dakota.



LATITUDE AND LONGITUDE



TOWNSHIP AND RANGE

Figure 3.—Systems of numbering wells and drain sites using latitude and longitude and township and range.

The township-range identification number is based on the Federal system of rectangular surveys of the public lands. The first numeral denotes the township, the second denotes the range, and the third denotes the section in which the well or drain site is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre tract); thus, well 130-059-15DAA would be located in the NE¼NE¼SE¼ sec. 15, T. 130 N., R. 59 W. Consecutive terminal numbers are added if more than one well or drain site is recorded within a 10-acre tract.

WATER-QUALITY DATA COLLECTION AND ANALYSIS

Water samples were collected during December 1986 through September 1987 from 63 U.S. Bureau of Reclamation wells and 23 drain sites. The wells were completed in the Oakes aquifer and had a maximum depth of 29.8 feet. The locations of all data-collection sites are shown in figure 2. The locations and physical properties of the wells are listed in table 1; locations of drain sites are listed in table 2, and chemical analyses of water from the wells and drain sites are listed in table 3.

Sample Collection Procedures

Water levels in the wells were measured using steel tapes as described by Garber and Koopman (1969). The wells were evacuated of 2.5 times their volume of standing water using polyvinyl-chloride bailers. After the wells were evacuated, they were allowed to recover for 24 hours, or until water levels returned to within 5 percent of their original level. Prior to further disturbance, downhole water temperature and dissolved-oxygen concentration were determined using laboratory-calibrated Yellow Springs Instruments Models 57 and 58[1] dissolved-oxygen/temperature meters. The dissolved-oxygen meters were calibrated in the morning and evening. The meters were not shut off during the day and were found to remain in calibration.

Following the downhole determinations, ground-water samples were collected by U.S. Bureau of Reclamation personnel. Five liters (L) of ground water was collected and placed in polyethylene cubitainers that previously had been rinsed with sample water. All samples were returned to the U.S. Bureau of Reclamation headquarters in Oakes within 1 hour of collection. The U.S. Bureau of Reclamation had a roving driver who took the samples from the field to Oakes, thus insuring that a sample wasn't allowed to sit in a truck and undergo a temperature change. In two or three instances, a technician was sent back to resample a well.

Concurrent with ground-water sampling from wells, water samples were collected from the drains at selected drain access points. Samples were obtained from the centroid of drain flow using a teflon sewage sampler.

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[1]The use of trade names in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey or the U.S. Bureau of Reclamation.

Water samples collected from the drain sites were handled, processed, and analyzed in the same manner as described for ground-water samples from wells.

Sample Processing Procedures

Sample processing and preparation for laboratory analysis were completed by U.S. Bureau of Reclamation chemistry technicians and a U.S. Geological Survey hydrologic technician at the U.S. Bureau of Reclamation headquarters in Oakes, N.Dak. Specific conductance and pH were measured on sample aliquots using a Markson Electromark conductance meter and an Orion Model 811 pH meter. Each sample was composited (if necessary) in a 6-L teflon churn splitter for sample splitting. A 250-mL (milliliter) aliquot was drawn from the churn into a sample-rinsed 250-mL polyethylene bottle for laboratory determination of pH, specific conductance, and carbonate and bicarbonate concentrations. An additional 100-mL aliquot was drawn from the churn into a sample-rinsed 100-mL glass bottle for determination of total organic carbon concentrations.

Remaining sample water was filtered and separated into different aliquots for chemical analysis. A peristaltic pump equipped with sample-rinsed silicone rubber tubing was used to deliver sample water from the churn to a Geotech filter apparatus that used a 142-mm (millimeter) diameter, 0.45 µm (micrometer) pore size Millipore filter. Filtered water was collected directly in sample bottles of appropriate size and preserved according to the analysis to be performed on that sample aliquot. A 250-mL sample aliquot was filtered into an acid-rinsed polyethylene bottle and was preserved with 2 mL of concentrated nitric acid to a pH of less than 2 for analysis of principal cations. A 250-mL sample aliquot was filtered into a sample-rinsed polyethylene bottle for analysis of principal anions. A 500-mL sample aliquot was filtered into an acid-rinsed polyethylene bottle for analysis of most trace elements. A 200-mL sample aliquot was filtered into an acid-rinsed glass bottle and was preserved with a mixture of nitric acid and potassium dichromate for analysis of mercury. A 250-mL sample aliquot was filtered into a sample-rinsed brown polyethylene bottle and was preserved with mercuric chloride for analysis of nutrients. Nutrient samples were not processed until after all mercury samples had been processed and stored in a sealed cooler. Once processing was complete, samples were placed in iced coolers for shipment to the appropriate analytical laboratory.

Analytical Procedures

Samples were analyzed for total organic carbon by the U.S. Geological Survey National Water Quality Laboratory in Arvada, Colo. Samples were analyzed for the remaining constituents by the U.S. Bureau of Reclamation Laboratory in Bismarck, N.Dak. Samples were received by the laboratories within 4 days of collection. Analysis of organic-carbon and nutrient samples was completed within 10 days of collection. Analysis of remaining constituents was completed within 100 days of collection. The analytical methods and detection limits for determination of chemical constituents are listed in table 4. Some concentrations of cadmium and selenium are reported by the U.S. Bureau of Reclamation Laboratory as <0.5; however, upon storage of the data in the U.S. Geological Survey's water-quality data base, the cadmium and selenium concentrations were rounded to the nearest microgram per liter and are reported as <1 µg/L in table 3.

Quality Assurance

Processed distilled-water blanks and duplicate samples also were analyzed by both laboratories. All sample blanks indicated constituent concentrations below detection limits. Values for the duplicate samples (quality-assurance samples) are shown in table 3. Laboratory intercomparisons suggested no particular laboratory biases or contamination.

REFERENCES CITED

Garber, M.S., and Koopman, F.C., 1969, Methods of measuring water levels in deep wells: U.S. Geological Survey Techniques of Water-Resources Investigations, book 8, chapter A1, 23 p.

Severson, R.C., Wilson, S.A., and Grundy, W.D., 1988, Baseline geochemistry of soils, with emphasis on selenium, at the Oakes irrigation test area, North Dakota: U.S. Geological Survey Open-File Report 88-638, 38 p.

Table 1.--Records of wells

[USBR, U.S. Bureau of Reclamation]

Latitude-longitude identification number	Township-range identification number	Local identification number	Depth drilled (feet)	Depth of well (feet)	Date well constructed	Altitude of land surface (feet above sea level)
460632098025103	130-059-02BBB3	USBR W-133	33	21.6	09-25-79	1,313.7
460606098025104	130-059-02CBB4	USBR W-142	33	29.4	09-25-79	1,311.3
460606098040501	130-059-03CBB1	USBR W-140	33.5	19.5	09-26-79	1,310.5
460633098045201	130-059-04BAA	USBR W-135	23	19.2	06-13-84	1,307.5
460633098052001	130-059-04BBB	USBR W-136	33.5	29.8	09-21-79	1,305.8
460547098041503	130-059-04DDD3	USBR W-28	23	20.7	11-16-83	1,311.4
460613098052901	130-059-05ADD	USBR W-138	33	19.9	09-26-79	1,307.7
460607098055701	130-059-05DBB	USBR W-137	33	28.1	09-20-79	1,303.0
460541098052901	130-059-08AAA	USBR W-146	23.5	21.2	09-26-79	1,309.2
460541098055702	130-059-08ABB2	USBR W-26	23	15.1	11-15-83	1,303.3
460522098060602	130-059-08BDD2	USBR W-147	13	9.6	11-15-79	1,297.1
460455098055701	130-059-08DCC1	USBR W-157	33.5	17.1	10-01-79	1,302.5
460540098044301	130-059-09ABB	USBR W-145	25	18	09-26-79	1,311.5
460521098052001	130-059-09BCC	USBR W-148	28	17.1	09-23-79	1,312.8
460455098052002	130-059-09CCC2	USBR W-32	23	20	11-15-83	1,311.1
460514098041501	130-059-09DAA	USBR W-150	25	20.8	10-02-79	1,309.7
460540098030001	130-059-10AAA	USBR W-29	43	17.9	06-22-66	1,312.1
460540098032801	130-059-10ABB	USBR W-144	33.5	22.5	09-26-79	1,314.9
460520098030001	130-059-10ADD	USBR W-152	33.5	20.4	09-27-79	1,311.4
460455098033701	130-059-10CDD	USBR W-155	33	19.3	09-27-79	1,309.8
460448098030002	130-059-15AAA2	USBR W-34	23	16.9	07-16-84	1,310.2
460422098040501	130-059-15CBB	USBR W-161	33.5	23.6	10-03-79	1,316.6
460422098030001	130-059-15DAA	USBR W-163	33.5	20.8	10-02-79	1,312.0
460448098041502	130-059-16AAA2	USBR W-33A	18	18	10-01-75	1,311.4
460448098044301	130-059-16ABB	USBR W-156	23.5	19.4	09-24-84	1,311.8

Table 1.--Records of wells--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Depth drilled (feet)	Depth of well (feet)	Date well constructed	Altitude of land surface (feet above sea level)
460403098052002	130-059-16CCC2	USBR W-40	23	21	11-15-83	1,311.5
460403098044301	130-059-16DCC	USBR W-167	33.5	20.4	10-04-79	1,310.0
460403098041503	130-059-16DDD3	USBR W-41A	18	17.9	10-01-75	1,310.1
460423098052903	130-059-17DAA3	USBR W-159	33	20.8	09-28-79	1,314.1
460337098052901	130-059-20ADD	USBR W-48	23.5	17.4	11-01-79	1,306.5
460357098060601	130-059-20BAA	USBR W-39	23.5	20.1	10-04-79	1,301.4
460312098063402	130-059-20CCC2	USBR W-50A	23	18.7	07-19-84	1,304.0
460311098055701	130-059-20DCC	USBR W-177	20	17	10-09-79	1,302.4
460311098041502	130-059-21DDD2	USBR W-52	23	19	07-17-84	1,308.4
460356098032801	130-059-22ABB	USBR W-166	33.5	19.6	10-02-79	1,312.8
460330098040501	130-059-22CBB	USBR W-170	33.5	25.8	10-05-79	1,311.0
460310098032801	130-059-22DCC	USBR W-175	33.5	21.4	10-04-79	1,311.8
460356098025103	130-059-23BBB3	USBR W-42	18.9	18.9	07-17-84	1,311.6
460330098025101	130-059-23CBB	USBR W-172	33.5	27.6	10-10-79	1,314.2
460310098025103	130-059-23CCC3	USBR W-53A	23	20	07-18-84	1,310.8
460244098025101	130-059-26BCC	USBR W-184	33.5	18.1	10-10-79	1,313.2
460218098025102	130-059-26CCC2	USBR W-60A	23	19.4	07-18-84	1,312.3
460305098045201	130-059-28BAA	USBR W-176	33.5	21.2	10-09-79	1,308.9
460305098052002	130-059-28BBB2	USBR W-51	23	18.8	11-15-83	1,306.6
460219098052002	130-059-28CCC2	USBR W-58	23	21.2	11-15-83	1,304.6
460219098045201	130-059-28CDD1	USBR W-188	33.5	21.3	10-11-79	1,305.1
460238098041501	130-059-28DAA	USBR W-55	24	20.7	--	1,307.2
460245098052901	130-059-29ADD	USBR W-181	29	21.1	10-09-79	1,305.3
460239098063402	130-059-29CBB2	USBR W-179	23	23	07-17-84	1,304.4
460220098063402	130-059-29CCC2	USBR W-57	28.5	21.3	10-12-79	1,306.9

Table 1.--Records of wells--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Depth drilled (feet)	Depth of well (feet)	Date well constructed	Altitude of land surface (feet above sea level)
460219098055701	130-059-29DCC	USBR W-189	28.5	20.6	10-11-79	1,305.7
460233098070201	130-059-30DBD1	USBR W-178	28	21.3	10-15-79	1,302.0
460212098033701	130-059-34BAA	USBR W-187	33.5	20.8	10-12-79	1,310.8
460212098040503	130-059-34BBB3	USBR W-59	23	21.1	11-02-83	1,308.6
460818098040202	131-059-27BBB2	USBR W-2A	23	23	09-30-75	1,313.2
460654098054501	131-059-32DBD1	USBR W-130	33.5	23.5	10-03-79	1,297.4
460641098055402	131-059-32DCC2	USBR W-20	23	20.2	07-16-84	1,302.3
460700098044901	131-059-33CAA	USBR W-132	33	21.5	09-27-79	1,310.3
460700098051701	131-059-33CBB	USBR W-131	33.5	19	09-27-79	1,308.8
460700098041101	131-059-33DAA	USBR W-18A	24	24	09-30-75	1,311.2
460640098041104	131-059-33DDD4	USBR W-22A	13	11.8	07-17-84	1,307.5
460706098033402	131-059-34BDD2	USBR W-123	33	18.4	10-15-79	1,312.8
460640098032401	131-059-34DCC	USBR W-134	33	20.5	09-24-79	1,311.6

Table 2.--Locations of drain sites

[USBR, U.S. Bureau of Reclamation]

Latitude-longitude identification number	Township-range identification number	Local identification number
460606098040502	130-059-03CBB2	USBR 60+88
460547098052001	130-059-04CCC	USBR 49+92
460548098060601	130-059-05CDD	USBR 16+00
460515098051001	130-059-09CBA	USBR 19+60
460527098040501	130-059-10BCB	USBR 18+94
460514098040501	130-059-10CBB	USBR 132+30
460455098034701	130-059-10CDC	USBR 160+23
460448098031901	130-059-15ABA	USBR 8+77
460422098033702	130-059-15CAA2	USBR 189+56
460337098055701	130-059-20ACC	USBR 113+00
460337098042401	130-059-21ADC	USBR 193+65
460344098052001	130-059-21BCB	USBR 150+35
460337098052001	130-059-21BCC	USBR 142+35
460336098031901	130-059-22ACD	USBR 262+46
460337098040501	130-059-22BCC	USGS 202+01
460244098032801	130-059-27ACC	USBR 222+88
460258098040501	130-059-27BBC	USBR 14+86
460245098040501	130-059-27BCC	USBR 196+94
460245098043301	130-059-28ACD	USBR 180+71
460239098051001	130-059-28CBA	USBR 150+88
460232098052901	130-059-29DAD	USBR 134+68
460233098070202	130-059-30DBD2	USBR 63+43
460217098003202	130-060-25DDD2	USBR 26+32

Table 3.--Chemical analysis of water from wells and drain sites

[deg C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; µg/L, micrograms per liter; Solids, sum of constituents, dissolved (mg/L) does not include silica; FET-LAB, fixed endpoint-titration, laboratory; cadmium and selenium concentrations are rounded to the nearest µg/L; USBR, U.S. Bureau of Reclamation; --, no value; <, less than; a, U.S. Geological Survey, National Water Quality Laboratory, Arvada, Colo., duplicate sample; b, U.S. Bureau of Reclamation Laboratory, Bismarck, N.Dak., duplicate sample]

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460632098025103	130-059-02BBB3	USBR W-133	12-16-86	0945	--	640	--	7.60	--	366
			09-22-87	1042	12.5	710	--	7.60	--	374
460606098025104	130-059-02CBB4	USBR W-142	12-09-86	0940	8.5	5,490	0.6	7.40	10.9	4,920
			03-11-87	0901	7.0	5,300	.8	7.30	11.1	4,900
			06-24-87	1005	9.0	5,550	.7	7.27	10.7	4,940
			09-15-87	0910	11.0	5,250	1.5	7.29	11.7	4,820
460606098040501	130-059-03CBB1	USBR W-140	12-16-86	0955	9.0	790	--	7.40	--	486
			09-22-87	1055	12.0	790	--	7.40	--	473
460606098040502	130-059-03CBB2	USBR 60+88	12-11-86	1020	9.0	1,150	8.7	7.60	--	826
			06-23-87	0908	9.5	1,210	8.2	7.48	--	775
			09-15-87	1706	13.0	1,300	2.4	7.60	--	825
460633098045201	130-059-04BAA	USBR W-135	12-09-86	0920	8.5	5,410	1.5	7.00	10.2	5,230
			03-10-87	1321	7.0	5,410	.9	6.90	10.8	5,120
			06-24-87	0940	8.5	5,520	.7	6.96	10.8	5,180
			09-15-87	0855	12.0	5,100	.8	6.90	11.8	4,980
460633098052001	130-059-04BBB	USBR W-136	12-16-86	1102	9.0	2,310	--	7.40	--	1,820
			09-22-87	0911	11.5	2,370	--	7.40	--	1,880

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-133	12-16-86	71	41	16	1.8	0	360	11	45	0.4	0.60	<0.01
	09-22-87	73	43	20	2.0	0	330	22	46	.5	8.18	<.01
USBR W-142	12-09-86	280	350	810	21	0	630	100	3,100	8	.04	<.01
	03-11-87	270	350	750	19	0	630	100	3,100	7	.20	.02
	06-24-87	270	360	760	23	0	600	100	3,100	7	.01	<.01
	09-15-87	260	350	760	21	0	600	96	3,000	7	1.02	<.01
USBR W-140	12-16-86	75	31	57	9.5	0	370	7.0	120	1	.05	<.01
	09-22-87	79	31	54	9.7	0	390	9.0	97	1	.06	<.01
USBR 60+88	12-11-86	97	52	140	8.5	0	520	15	260	3	.20	<.01
	06-23-87	90	51	120	7.3	0	500	15	250	3	1.27	<.01
	09-15-87	99	51	130	22	0	560	15	230	3	1.89	.03
USBR W-135	12-09-86	560	350	600	15	0	530	120	3,300	5	.07	<.01
	03-10-87	550	360	590	15	0	530	120	3,200	5	.02	<.01
	06-24-87	550	350	580	15	0	520	120	3,300	5	.02	<.01
	09-15-87	600	300	540	15	0	500	120	3,200	5	.10	<.01
USBR W-136	12-16-86	190	110	260	11	0	580	51	910	4	.11	<.01
	09-22-87	200	110	270	12	0	580	54	940	4	.02	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-133	12-16-86	<0.05	<0.01	--	--	--	--	--	--	--	--	--
	09-22-87	.20	<.01	--	--	--	--	--	--	--	--	--
USBR W-142	12-09-86	1.45	.01	5	380	<1	4,800	820	0.2	7	<1	10
	03-11-87	1.06	<.01	4	400	1	2,700	780	.2	9	<1	11
	06-24-87	1.22	<.01	3	350	<1	5,500	850	.3	6	<1	13
	09-15-87	1.57	<.01	11	330	1	4,800	730	.8	6	<1	11
USBR W-140	12-16-86	.12	.02	--	--	--	--	--	--	--	--	--
	09-22-87	.34	<.01	--	--	--	--	--	--	--	--	--
USBR 60+88	12-11-86	.19	.08	5	100	<1	50	52	<.1	6	<1	4.7
	06-23-87	.11	.07	5	110	<1	20	250	.1	6	1	3.4
	09-15-87	.68	.18	11	120	<1	50	1,400	<.1	5	2	8.1
USBR W-135	12-09-86	.46	<.01	<1	310	<1	4,200	2,600	.3	3	<1	13
	03-10-87	.41	<.01	3	180	1	60	1,800	<.1	5	<1	25
	06-24-87	.42	<.01	3	230	1	3,800	2,000	<.1	3	<1	33
	09-15-87	.80	<.01	<1	210	2	2,700	5,000	.3	5	<1	3.9
USBR W-136	12-16-86	.88	.02	--	--	--	--	--	--	--	--	--
	09-22-87	1.39	<.01	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460547098052001	130-059-04CCC	USBR 49+92	12-11-86	0945	9.0	800	5.9	7.60	--	488
			03-10-87	1015	7.0	801	6.9	7.40	--	467
			06-23-87	0830	9.0	800	4.5	7.43	--	477
			09-15-87	1545	12.0	780	3.0	7.29	--	462
460547098041503	130-059-04DDD3	USBR W-28	12-16-86	1010	--	740	--	7.50	--	447
			09-22-87	1102	11.0	720	--	7.40	--	431
460613098052901	130-059-05ADD	USBR W-138	12-08-86	1600	9.0	942	.5	7.50	11.7	593
			03-10-87	1330	7.0	990	.5	7.40	11.9	639
			06-24-87	1318	11.0	1,040	1.7	7.39	11.5	618
			09-15-87	1000	12.5	1,010	.7	7.34	12.0	628
460548098060601	130-059-05CDD	USBR 16+00	12-10-86	1450	9.0	799	5.5	7.40	--	490
			03-10-87	1000	7.0	789	8.4	7.40	--	469
			06-23-87	0848	8.5	815	8.2	7.43	--	481
			09-15-87	1600	10.0	885	9.4	7.51	--	538
460607098055701	130-059-05DBB	USBR W-137	12-16-86	1037	7.5	580	--	7.60	--	329
			09-22-87	1120	10.5	580	--	7.60	--	331
460541098052901	130-059-08AAA	USBR W-146	12-16-86	1020	9.0	1,000	--	7.50	--	638
			09-22-87	1110	12.5	1,170	--	7.40	--	727

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR 49+92	12-11-86	100	34	33	5.1	0	390	12	110	0.7	1.40	<0.01
	03-10-87	100	33	29	4.7	0	380	11	98	.7	.88	<.01
	06-23-87	81	33	52	6.8	0	400	8.4	98	1	1.15	<.01
	09-15-87	99	34	27	5.3	0	360	13	100	.6	1.36	<.01
USBR W-28	12-16-86	79	40	40	5.3	0	420	11	67	.9	.07	<.01
	09-22-87	80	38	37	5.2	0	390	10	64	.9	.10	<.01
USBR W-138	12-08-86	110	42	65	8.6	0	520	21	94	1	.06	<.01
	03-10-87	110	45	58	8.2	0	550	25	120	1	.08	<.01
	06-24-87	120	47	60	9.6	0	550	22	90	1	.07	.01
	09-15-87	120	46	60	9.1	0	560	21	92	1	.18	<.01
USBR 16+00	12-10-86	100	34	32	5.1	0	390	13	110	.7	1.40	<.01
	03-10-87	98	32	27	4.8	0	380	12	100	.6	1.27	<.01
	06-23-87	97	34	34	5.2	0	380	14	110	.8	1.17	<.01
	09-15-87	120	40	24	5.1	0	370	25	140	.5	1.68	<.01
USBR W-137	12-16-86	68	23	27	4.5	0	330	5.9	36	.8	.03	<.01
	09-22-87	71	23	26	4.6	0	330	6.6	35	.7	.01	<.01
USBR W-146	12-16-86	130	43	37	4.5	0	450	14	190	.8	.19	<.01
	09-22-87	160	53	36	4.7	0	550	16	190	.7	.01	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR 49+92	12-11-86	0.26	0.01	<1	90	<1	210	530	<0.1	3	<1	3.7
	03-10-87	.09	.01	1	60	<1	190	510	<.1	3	3	4.2
	06-23-87	.11	.05	3	80	<1	50	290	.1	2	2	2.7
	09-15-87	.19	.01	1	70	<1	50	230	<.1	3	2	3.5
USBR W-28	12-16-86	.20	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.35	<.01	--	--	--	--	--	--	--	--	--
USBR W-138	12-08-86	.66	.01	2	170	<1	2,500	1,100	.3	3	<1	5.2
	03-10-87	.39	<.01	2	100	<1	340	1,400	<.1	3	<1	13
	06-24-87	.44	<.01	<1	160	<1	2,600	1,300	.2	2	<1	13
	09-15-87	.66	<.01	2	160	2	4,100	1,300	.5	3	1	5.3
USBR 16+00	12-10-86	.23	.02	1	90	<1	240	490	<.1	3	<1	5.7
	03-10-87	.09	<.01	2	50	<1	180	470	<.1	3	3	7.8
	06-23-87	.17	.02	2	100	<1	310	400	.2	3	1	2.4
	09-15-87	.29	<.01	2	90	<1	500	470	<.1	2	2	3.4
USBR W-137	12-16-86	.24	.02	--	--	--	--	--	--	--	--	--
	09-22-87	.41	.01	--	--	--	--	--	--	--	--	--
USBR W-146	12-16-86	.08	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.53	<.01	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460541098055702	130-059-08ABB2	USBR W-26	12-08-86	1615	8.5	636	1.3	7.60	10.1	414
			03-11-87	0915	7.0	649	1.3	7.50	9.7	425
			06-24-87	1045	8.5	698	.6	7.52	10.4	391
			09-15-87	1017	10.5	726	1.4	7.70	11.3	459
460522098060602	130-059-08BDD2	USBR W-147	12-16-86	1415	8.0	1,690	--	7.50	--	1,000
			09-22-87	1300	13.0	1,770	--	7.50	--	1,160
460455098055701	130-059-08DCC1	USBR W-157	12-12-86	0900	9.0	555	1.5	7.40	11.3	344
			03-11-87	1340	7.0	568	2.0	7.70	11.6	325
			06-24-87	1110	9.0	570	--	7.60	--	309
			09-15-87	1045	11.0	605	1.5	7.69	13.0	352
460540098044301	130-059-09ABB	USBR W-145	12-08-86	1150	11.0	968	.4	7.50	14.8	588
			03-10-87	1350	6.5	959	1.6	7.40	15.1	572
			06-24-87	1031	8.5	972	.5	7.37	13.7	564
			09-15-87	0948	12.0	832	1.3	7.32	14.8	502
460521098052001	130-059-09BCC	USBR W-148	12-09-86	1000	11.0	583	.9	7.60	14.8	347
			a12-09-86	1005	11.0	584	.9	7.60	14.8	371
			03-11-87	0929	8.5	549	1.7	7.50	15.1	317
			a03-11-87	0930	8.5	549	1.7	7.50	15.1	339
			a06-24-87	1054	10.0	592	1.7	7.49	14.6	362
			06-24-87	1059	10.0	592	1.7	7.49	14.6	329
			09-15-87	1028	12.0	595	1.7	7.50	15.2	349
			a09-15-87	1030	12.0	595	1.7	7.50	15.2	382

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-26	12-08-86	79	27	32	4.7	0	340	12	62	0.8	0.05	<0.01
	03-11-87	87	30	31	4.3	0	350	17	85	.8	.02	<.01
	06-24-87	78	26	33	4.2	0	360	17	56	.9	.09	<.01
	09-15-87	85	29	32	4.4	0	360	17	70	.8	.15	<.01
USBR W-147	12-16-86	190	86	27	4.0	0	350	190	300	.4	32.3	<.01
	09-22-87	260	93	30	5.8	0	360	180	390	.4	31.1	<.01
USBR W-157	12-12-86	79	24	11	2.9	0	360	1.8	47	.3	.03	<.01
	03-11-87	80	24	7.7	2.9	0	310	2.3	54	.2	.04	<.01
	06-24-87	74	22	9.9	3.0	0	290	2.4	54	.3	0	<.01
	09-15-87	82	24	9.9	3.2	0	310	2.3	79	.3	.46	<.01
USBR W-145	12-08-86	130	43	41	5.8	0	560	14	78	.8	.03	<.01
	03-10-87	130	42	37	5.5	0	560	13	67	.8	.07	<.01
	06-24-87	120	41	38	5.8	0	550	12	74	.8	.02	<.01
	09-15-87	110	36	34	5.4	0	500	5.0	60	.7	.09	<.01
USBR W-148	12-09-86	75	33	11	3.7	0	300	10	68	.3	.02	<.01
	a12-09-86	71	32	9.5	3.8	--	--	10	69	.2	<.10	<.01
	03-11-87	67	30	5.5	3.6	0	290	12	56	.1	.03	<.01
	a03-11-87	67	30	9.4	3.8	--	--	11	54	.2	<.10	<.01
	a06-24-87	68	29	9.1	3.5	--	--	13	61	.2	<.10	<.01
	06-24-87	71	32	8.8	3.6	0	300	10	54	.2	.09	<.01
	09-15-87	74	33	9.9	4.1	0	310	11	66	.2	.16	<.01
	a09-15-87	75	33	10	4.2	--	--	11	75	.2	<.10	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-26	12-08-86	0.20	0.10	5	100	<1	440	400	0.2	4	<1	4.6
	03-11-87	.18	.02	7	110	<1	72	570	<.1	4	<1	8.3
	06-24-87	.28	.03	9	90	<1	380	490	<.1	4	<1	5.7
	09-15-87	.36	.01	5	100	<1	390	390	.1	3	<1	9.6
USBR W-147	12-16-86	0	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.40	<.01	--	--	--	--	--	--	--	--	--
USBR W-157	12-12-86	.13	<.01	<1	90	<1	30	1,900	.1	3	<1	8.5
	03-11-87	.03	<.01	<1	50	<1	30	1,600	.1	6	<1	2.7
	06-24-87	0	<.01	<1	50	<1	10	1,600	--	2	<1	--
	09-15-87	.22	<.01	<1	50	<1	50	1,900	--	4	<1	110
USBR W-145	12-08-86	.28	.01	5	130	<1	1,000	1,100	.2	3	<1	5.2
	03-10-87	.10	<.01	5	110	<1	510	1,300	<.1	4	<1	5.3
	06-24-87	.26	.01	3	80	<1	570	1,300	<.1	4	<1	4.9
	09-15-87	.40	.02	3	90	<1	590	840	<.1	3	<1	4.9
USBR W-148	12-09-86	.15	.02	2	70	<1	30	900	.2	2	<1	4.5
	a12-09-86	--	.06	1	50	<1	18	850	--	2	<1	4.2
	03-11-87	.03	.02	3	60	<1	30	500	<.1	3	<1	4.3
	a03-11-87	--	--	1	40	<1	5	470	<.1	2	<1	7.0
	a06-24-87	--	.09	<1	40	<1	10	540	<.1	1	<1	4.3
	06-24-87	.09	.03	1	50	<1	<10	560	<.1	2	<1	3.9
	09-15-87	.29	.04	<1	50	1	30	680	<.1	2	<1	6.9
	a09-15-87	--	.06	1	50	<1	5	680	<.1	<1	<1	5.9

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460515098051001	130-059-09CBA	USBR 19+60	12-11-86	1115	9.5	875	4.5	7.40	--	547
			03-11-87	1505	5.5	792	5.5	7.40	--	512
			06-23-87	1056	11.0	737	.8	7.45	--	426
			09-15-87	1626	13.0	870	3.6	7.35	--	520
460455098052002	130-059-09CCC2	USBR W-32	12-16-86	1355	10.0	800	--	7.50	--	478
			09-22-87	1307	13.0	740	--	7.50	--	419
460514098041501	130-059-09DAA	USBR W-150	12-09-86	1130	9.5	810	.9	7.50	11.1	496
			03-10-87	1540	7.0	791	1.3	7.40	11.3	482
			06-24-87	1635	10.0	898	.6	7.35	10.4	529
			09-15-87	1115	13.0	965	1.6	7.44	11.0	575
460540098030001	130-059-10AAA	USBR W-29	12-16-86	1315	11.0	1,000	--	7.60	--	637
			09-23-87	0837	10.0	1,080	--	7.50	--	659
460540098032801	130-059-10ABB	USBR W-144	12-09-86	0950	9.0	810	.7	7.60	15.4	471
			03-10-87	1402	7.0	769	1.3	7.60	15.6	447
			06-24-87	1015	7.5	778	.9	7.44	15.1	458
			09-15-87	0932	10.0	825	1.2	7.41	15.7	466
460520098030001	130-059-10ADD	USBR W-152	12-09-86	1020	10.0	880	2.5	7.30	10.6	531
			03-10-87	1416	7.0	660	4.3	7.40	10.9	352
			06-24-87	1353	10.0	789	2.6	7.31	10.3	433
			09-15-87	1310	14.0	655	3.0	7.29	11.0	379

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR 19+60	12-11-86	120	42	24	4.9	0	340	21	170	0.5	1.00	<0.01
	03-11-87	110	38	18	4.1	0	330	22	160	.4	.66	<.01
	06-23-87	86	35	19	5.2	0	300	21	110	.4	1.21	<.01
	09-15-87	110	40	25	5.8	0	330	25	150	.5	1.73	<.01
USBR W-32	12-16-86	110	37	18	4.5	0	430	13	82	.4	.02	<.01
	09-22-87	100	33	12	4.4	0	410	12	50	.3	.06	<.01
USBR W-150	12-09-86	110	33	30	4.4	0	420	14	94	.7	.17	<.01
	03-10-87	110	32	23	4.0	0	390	15	110	.5	.15	<.01
	06-24-87	120	35	27	5.1	0	400	19	130	.6	.02	<.01
	09-15-87	130	36	26	4.5	0	400	20	160	.6	.20	<.01
USBR W-29	12-16-86	63	30	140	6.5	0	510	22	130	4	.05	<.01
	09-23-87	73	32	140	6.5	0	550	23	120	3	.08	<.01
USBR W-144	12-09-86	120	35	20	5.2	0	430	8.0	73	.4	.01	<.01
	03-10-87	110	33	13	5.3	0	430	8.4	69	.3	.08	<.01
	06-24-87	110	38	19	5.9	0	420	8.5	66	.4	.04	<.01
	09-15-87	110	36	21	5.6	0	430	8.3	73	.5	.16	<.01
USBR W-152	12-09-86	100	52	33	.55	0	480	14	93	.7	.01	<.01
	03-10-87	73	34	18	.88	0	390	3.2	30	.4	.01	<.01
	06-24-87	84	43	29	.33	0	430	17	47	.7	.02	<.01
	09-15-87	80	35	21	1.2	0	400	7.8	38	.5	.17	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR 19+60	12-11-86	0.22	<0.01	1	70	<1	130	570	0.2	3	<1	4.2
	03-11-87	.03	<.01	1	50	<1	30	220	<.1	3	4	5.6
	06-23-87	.08	.01	<1	70	<1	40	500	.1	3	2	2.3
	09-15-87	.24	.02	<1	70	<1	40	360	<.1	3	2	4.3
USBR W-32	12-16-86	.24	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.41	.01	--	--	--	--	--	--	--	--	--
USBR W-150	12-09-86	.28	.01	4	110	<1	60	810	.1	3	<1	5.5
	03-10-87	.07	<.01	4	90	<1	20	570	.1	4	<1	4.7
	06-24-87	.35	.03	4	90	<1	390	760	<.1	3	<1	5.8
	09-15-87	.53	.02	4	90	1	760	810	<.1	3	<1	7.0
USBR W-29	12-16-86	.19	.12	--	--	--	--	--	--	--	--	--
	09-23-87	.30	.12	--	--	--	--	--	--	--	--	--
USBR W-144	12-09-86	.24	.01	1	70	<1	620	1,600	.2	1	<1	8.4
	03-10-87	.04	<.01	2	60	<1	110	440	<.1	2	<1	4.1
	06-24-87	.21	.02	<1	70	<1	290	1,700	<.1	1	<1	3.5
	09-15-87	.34	.01	<1	70	<1	320	1,300	.1	1	<1	4.9
USBR W-152	12-09-86	.19	<.01	3	80	<1	30	380	.2	2	4	18
	03-10-87	0	<.01	2	60	<1	20	160	<.1	3	2	13
	06-24-87	.04	.01	2	70	<1	<10	79	<.1	2	3	25
	09-15-87	.29	.03	2	50	<1	40	580	<.1	2	1	23

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460527098040501	130-059-10BCB	USBR 18+94	12-11-86	1030	8.0	895	0.3	7.40	--	538
			03-11-87	1530	5.5	887	8.5	7.40	--	555
			06-23-87	0955	11.5	948	.8	7.33	--	570
			09-15-87	1642	12.0	885	4.5	7.33	--	528
460514098040501	130-059-10CBB	USBR 132+30	12-18-86	1010	9.5	720	--	7.50	--	415
			06-25-87	1722	11.0	680	--	7.40	--	372
			09-17-87	1113	12.0	660	--	7.50	--	380
460455098034701	130-059-10CDC	USBR 160+23	12-11-86	1400	9.0	799	2.8	7.40	--	474
			b12-11-86	1401	9.0	800	2.8	7.40	--	466
			03-11-87	1400	6.0	761	5.9	7.40	--	450
			b03-11-87	1402	6.0	761	5.9	7.40	--	478
			06-23-87	1015	10.0	752	.5	7.39	--	426
			09-16-87	1505	11.5	929	1.7	7.30	--	546
460455098033701	130-059-10CDD	USBR W-155	12-09-86	1030	9.5	780	.9	7.50	10.5	456
			03-11-87	1016	7.0	875	2.3	7.40	10.9	544
			06-24-87	1341	12.5	979	.9	7.37	9.7	568
			09-15-87	1325	15.0	712	1.3	7.44	11.0	415
460448098030002	130-059-15AAA2	USBR W-34	12-16-86	1335	9.0	830	--	7.50	--	494
			09-22-87	1322	12.5	830	--	7.40	--	487

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR 18+94	12-11-86	110	37	40	6.2	0	440	12	110	0.9	1.58	<0.01
	03-11-87	110	38	37	5.8	0	450	15	120	.8	1.71	<.01
	06-23-87	110	41	45	6.9	0	460	15	120	1	1.94	<.01
	09-15-87	110	35	41	6.3	0	440	13	100	.9	1.19	<.01
USBR 132+30	12-18-86	93	31	24	4.5	0	380	11	65	.6	1.27	<.01
	06-25-87	84	27	18	3.8	0	360	8.8	52	.4	1.74	<.01
	09-17-87	87	29	20	4.5	0	360	8.3	54	.5	1.25	<.01
USBR 160+23	12-11-86	110	35	25	4.9	0	410	15	86	.6	1.70	<.01
	b12-11-86	100	34	24	4.8	0	400	15	86	.5	1.71	<.01
	03-11-87	100	34	20	4.2	0	390	15	83	.4	1.14	<.01
	b03-11-87	100	34	19	4.0	0	390	15	86	.4	1.24	<.01
	06-23-87	93	33	22	4.7	0	370	12	76	.5	2.08	<.01
	09-16-87	110	37	41	5.9	0	420	23	120	.9	2.77	<.01
USBR W-155	12-09-86	82	46	27	6.7	0	460	5.4	60	.6	.04	<.01
	03-11-87	98	55	25	6.6	0	500	6.8	110	.5	.04	<.01
	06-24-87	100	59	30	7.8	0	510	8.6	110	.6	.02	<.01
	09-15-87	76	41	26	6.9	0	410	7.0	54	.6	.03	<.01
USBR W-34	12-16-86	100	42	25	5.8	0	470	7.5	77	.5	.01	<.01
	09-22-87	100	37	22	5.8	0	410	7.8	110	.5	.06	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR 18+94	12-11-86	0.27	0.01	1	90	<1	100	720	0.1	3	<1	5.0
	03-11-87	.05	.01	1	50	<1	60	670	<.1	3	2	7.9
	06-23-87	.12	.02	3	70	<1	40	750	<.1	3	<1	3.1
	09-15-87	.24	.02	2	90	<1	20	200	<.1	2	2	3.6
USBR 132+30	12-18-86	.12	.02	--	--	--	--	--	--	--	--	--
	06-25-87	.17	.01	--	--	--	--	--	--	--	--	--
	09-17-87	.31	.01	--	--	--	--	--	--	--	--	--
USBR 160+23	12-11-86	.23	.02	3	60	<1	40	630	<.1	3	<1	3.5
	b12-11-86	.21	.02	--	--	--	--	--	--	--	--	--
	03-11-87	.06	.01	3	50	<1	50	570	<.1	3	2	3.0
	b03-11-87	.09	.01	--	--	--	--	--	--	--	--	2.4
	06-23-87	.15	.02	3	60	<1	10	520	.1	3	<1	2.2
	09-16-87	.34	.03	4	70	<1	40	530	<.1	2	3	5.4
USBR W-155	12-09-86	.31	<.01	1	130	<1	610	740	.1	3	<1	5.5
	03-11-87	.17	<.01	2	120	<1	590	1,000	<.1	3	<1	6.8
	06-24-87	.35	<.01	1	100	<1	1,100	1,000	<.1	3	<1	7.3
	09-15-87	.44	.01	<1	90	1	740	610	<.1	3	<1	5.7
USBR W-34	12-16-86	.13	<.01	--	--	--	--	--	--	--	--	--
	09-22-87	.37	<.01	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460448098031901	130-059-15ABA	USBR 8+77	12-11-86	1325	9.0	671	0.5	7.40	--	383
			03-11-87	1410	7.0	649	2.0	7.30	--	374
			06-23-87	1025	10.0	620	.5	7.44	--	340
			09-16-87	1514	11.0	612	3.0	7.36	--	341
460422098033702	130-059-15CAA2	USBR 189+56	12-11-86	1250	9.0	660	.5	7.40	--	381
			03-10-87	1540	5.5	636	.7	7.40	--	364
			06-23-87	1542	10.5	650	.3	7.35	--	355
			09-16-87	1530	12.0	629	1.1	7.35	--	355
460422098040501	130-059-15CBB	USBR W-161	12-09-86	1100	10.5	785	2.6	7.50	17.0	501
			b12-09-86	1101	10.5	790	2.6	7.50	17.0	498
			03-11-87	1037	7.5	680	2.4	7.40	17.4	421
			b03-11-87	1038	7.5	680	2.4	7.40	17.4	431
			06-25-87	0926	10.5	723	1.4	7.50	17.0	443
			09-15-87	1426	12.5	689	1.8	7.44	18.4	423
460422098030001	130-059-15DAA	USBR W-163	12-09-86	1040	9.0	500	1.0	7.60	10.5	307
			03-10-87	1520	7.0	525	1.7	7.50	11.0	304
			06-24-87	1540	11.0	521	1.1	7.53	10.0	306
			09-15-87	1335	13.5	500	2.4	7.52	11.0	317
460448098041502	130-059-16AAA2	USBR W-33A	12-16-86	1343	10.0	790	--	7.50	--	487
			09-22-87	1315	11.5	870	--	7.50	--	525

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR 8+77	12-11-86	98	26	15	3.4	0	380	6.8	43	0.4	2.00	<0.01
	03-11-87	91	26	12	3.4	0	370	6.6	48	.3	1.77	<.01
	06-23-87	89	24	9.9	3.2	0	340	5.1	40	.2	2.17	<.01
	09-16-87	90	24	9.9	3.3	0	330	5.1	42	.2	2.05	<.01
USBR 189+56	12-11-86	86	33	15	4.2	0	380	7.2	48	.4	1.80	<.01
	03-10-87	84	31	12	3.5	0	360	6.9	48	.3	.73	<.01
	06-23-87	82	30	12	4.2	0	350	6.4	47	.3	1.85	<.01
	09-16-87	86	29	13	4.2	0	340	7.0	49	.3	1.48	<.01
USBR W-161	12-09-86	120	32	6.6	4.2	0	250	26	190	.1	.15	<.01
	b12-09-86	120	32	5.5	4.5	0	250	26	190	.1	.13	<.01
	03-11-87	100	27	2.2	1.8	0	280	13	130	0	.09	<.01
	b03-11-87	120	29	3.3	1.7	0	280	11	130	.1	.07	<.01
	06-25-87	110	31	5.5	2.1	0	280	12	140	.1	.04	<.01
	09-15-87	110	29	5.5	2.0	0	280	15	130	.1	.05	<.01
USBR W-163	12-09-86	82	16	3.3	1.9	0	220	3.1	93	.1	.02	<.01
	03-10-87	79	16	1.1	1.9	0	200	4.8	100	0	.04	<.01
	06-24-87	80	16	3.3	1.9	0	190	4.0	110	.1	.01	<.01
	09-15-87	85	16	2.2	2.1	0	180	4.9	120	.1	.03	<.01
USBR W-33A	12-16-86	110	30	26	4.3	0	350	16	130	.6	.04	<.01
	09-22-87	120	33	25	4.9	0	350	21	150	.5	.13	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR 8+77	12-11-86	0.24	0.01	1	50	<1	120	900	0.1	2	<1	2.1
	03-11-87	.05	.01	2	<40	<1	30	630	.1	3	<1	3.6
	06-23-87	.13	.01	1	50	<1	130	950	.2	2	1	1.5
	09-16-87	.24	.01	1	50	<1	90	750	<.1	2	2	2.5
USBR 189+56	12-11-86	.21	.01	3	50	<1	80	750	.2	4	<1	3.2
	03-10-87	0	<.01	4	60	<1	60	700	<.1	4	<1	3.3
	06-23-87	.13	.01	5	60	<1	40	710	.2	4	<1	1.8
	09-16-87	.23	.01	5	60	<1	70	660	<.1	4	1	2.7
USBR W-161	12-09-86	.26	.40	12	80	<1	30	1,300	.1	3	<1	11
	b12-09-86	.24	.08	--	--	--	--	--	--	--	--	--
	03-11-87	.05	.04	10	50	<1	60	650	<.1	3	<1	2.6
	b03-11-87	.05	.05	--	--	--	--	--	--	--	--	3.7
	06-25-87	.14	.05	9	40	<1	80	960	<.1	3	<1	4.0
	09-15-87	.33	.03	6	40	1	30	840	<.1	3	<1	4.1
USBR W-163	12-09-86	.16	<.01	20	60	<1	100	530	.2	3	<1	3.8
	03-10-87	.01	<.01	13	<40	<1	40	390	.6	4	<1	2.1
	06-24-87	.07	.01	14	40	<1	70	560	<.1	4	<1	2.6
	09-15-87	.26	<.01	13	<40	2	50	540	<.1	3	1	3.5
USBR W-33A	12-16-86	.09	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.34	.01	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460448098044301	130-059-16ABB	USBR W-156	12-09-86	1030	11.0	519	1.4	7.60	14.0	316
			03-11-87	0945	7.0	568	2.0	7.60	14.1	335
			06-24-87	1328	10.5	575	1.5	7.58	13.7	333
			09-15-87	1100	12.0	580	1.4	7.52	14.5	317
460403098052002	130-059-16CCC2	USBR W-40	12-16-86	1435	9.5	880	--	7.60	--	485
			09-23-87	0902	10.0	1,060	--	7.50	--	570
460403098044301	130-059-16DCC	USBR W-167	12-09-86	1250	10.5	599	1.5	7.60	12.0	364
			03-11-87	1045	8.0	561	1.3	7.60	11.9	324
			06-24-87	1514	11.0	579	2.2	7.58	12.1	327
			09-15-87	1416	14.0	550	1.7	7.52	13.1	329
460403098041503	130-059-16DDD3	USBR W-41A	12-16-86	1440	9.0	750	--	7.50	--	449
			b12-16-86	1445	9.0	750	--	7.50	--	452
			09-23-87	0855	9.5	760	--	7.50	--	437
			b09-23-87	0900	9.5	760	--	7.50	--	456
460423098052903	130-059-17DAA3	USBR W-159	12-09-86	1103	10.5	569	.6	7.60	17.4	335
			03-11-87	1250	9.0	599	.6	7.60	17.5	350
			06-24-87	1430	10.5	589	.6	7.63	17.9	328
			09-16-87	0922	11.5	590	1.9	7.51	18.9	346
460337098055701	130-059-20ACC	USBR 113+00	12-10-86	1505	9.0	801	4.5	7.30	--	479
			03-10-87	1045	6.5	793	7.6	7.30	--	468
			06-23-87	1140	9.5	789	5.3	7.30	--	449
			09-17-87	0955	11.5	786	7.3	7.42	--	474

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-156	12-09-86	74	24	9.9	2.3	0	270	4.6	66	0.3	0.02	<0.01
	03-11-87	78	25	5.5	2.1	0	270	5.3	87	.1	.01	<.01
	06-24-87	78	25	8.8	2.5	0	270	5.5	78	.2	.04	<.01
	09-15-87	78	24	7.7	2.3	0	270	5.7	64	.2	.20	<.01
USBR W-40	12-16-86	120	37	8.8	2.5	0	320	97	63	.2	.05	<.01
	09-23-87	140	44	8.8	2.9	0	310	150	65	.2	.04	<.01
USBR W-167	12-09-86	86	27	6.6	2.5	0	270	3.6	100	.2	.01	<.01
	03-11-87	77	25	3.3	2.5	0	270	3.8	78	.1	.04	<.01
	06-24-87	80	25	6.6	2.5	0	270	3.5	77	.2	.03	<.01
	09-15-87	81	25	4.4	2.5	0	270	3.9	78	.1	.04	<.01
USBR W-41A	12-16-86	85	34	27	8.1	0	360	14	100	.7	.01	<.01
	b12-16-86	85	33	27	8.0	0	360	10	110	.7	.01	<.01
	09-23-87	90	36	22	9.6	0	330	14	100	.5	.04	<.01
	b09-23-87	89	36	23	9.6	0	330	13	120	.5	.04	<.01
USBR W-159	12-09-86	82	30	5.5	2.2	0	320	3.0	53	.1	.23	<.01
	03-11-87	89	31	1.1	2.0	0	330	8.2	54	0	1.29	<.01
	06-24-87	79	29	4.4	2.2	0	300	3.8	59	.1	.17	<.01
	09-16-87	88	31	3.3	2.1	0	330	2.5	54	.1	.51	<.01
USBR 113+00	12-10-86	110	35	23	5.5	0	400	13	97	.5	1.15	<.01
	03-10-87	100	34	19	4.2	0	390	13	110	.4	.67	<.01
	06-23-87	99	34	22	5.4	0	380	12	85	.5	1.26	<.01
	09-17-87	110	34	23	5.7	0	390	12	99	.5	.72	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-156	12-09-86	0.19	0.01	1	70	<1	70	500	0.2	3	<1	4.6
	03-11-87	.07	<.01	3	60	<1	60	570	.6	3	<1	2.3
	06-24-87	.09	.01	2	70	<1	70	340	<.1	2	<1	3.5
	09-15-87	.29	.01	2	60	1	200	540	<.1	1	<1	4.4
USBR W-40	12-16-86	.08	.02	--	--	--	--	--	--	--	--	--
	09-23-87	.35	.01	--	--	--	--	--	--	--	--	--
USBR W-167	12-09-86	.22	.02	3	70	<1	570	880	.1	3	<1	5.0
	03-11-87	.08	.02	3	50	<1	70	690	.3	2	<1	4.5
	06-24-87	.12	.02	2	60	<1	340	620	<.1	2	<1	2.2
	09-15-87	.31	.01	2	40	1	170	820	.4	2	1	3.2
USBR W-41A	12-16-86	.08	.05	--	--	--	--	--	--	--	--	--
	b12-16-86	.08	.05	--	--	--	--	--	--	--	--	--
	09-23-87	.33	.04	--	--	--	--	--	--	--	--	--
	b09-23-87	.34	.03	--	--	--	--	--	--	--	--	--
USBR W-159	12-09-86	.12	.01	<1	80	<1	30	270	.2	2	1	6.9
	03-11-87	.01	<.01	1	60	<1	20	99	.1	2	1	3.6
	06-24-87	.10	.02	1	50	<1	20	240	<.1	1	1	6.5
	09-16-87	.23	.02	<1	50	<1	30	340	<.1	1	3	2.2
USBR 113+00	12-10-86	.25	.01	3	70	<1	180	660	.1	4	<1	4.7
	03-10-87	.07	<.01	3	70	<1	240	620	<.1	3	2	6.0
	06-23-87	.11	.01	3	70	<1	60	470	<.1	5	2	2.5
	09-17-87	.26	.01	3	80	<1	90	450	<.1	2	3	3.9

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460337098052901	130-059-20ADD	USBR W-48	12-09-86	1300	10.0	675	0.6	7.50	11.2	393
			03-12-87	1055	7.0	682	1.2	7.40	11.4	401
			06-25-87	1445	12.0	740	.7	7.43	11.4	415
			09-16-87	0944	15.0	685	1.2	7.41	11.6	394
460357098060601	130-059-20BAA	USBR W-39	12-10-86	1015	9.0	608	1.2	7.50	9.3	365
			03-12-87	1046	8.5	580	1.2	7.60	9.3	349
			06-24-87	1455	8.0	608	.4	7.54	9.2	341
			09-16-87	0934	13.0	580	1.5	7.57	10.5	341
460312098063402	130-059-20CCC2	USBR W-50A	12-17-86	1055	9.0	730	--	7.50	--	428
			09-23-87	0914	11.0	860	--	7.50	--	514
460311098055701	130-059-20DCC	USBR W-177	12-10-86	1036	9.0	915	.9	7.40	8.4	567
			03-12-87	1105	6.0	892	1.2	7.40	8.3	560
			06-25-87	1400	7.5	919	.4	7.42	8.4	545
			09-16-87	0955	12.5	825	1.3	7.44	9.2	493
460337098042401	130-059-21ADC	USBR 193+65	12-18-86	1125	8.5	800	--	7.50	--	459
			09-17-87	1315	11.5	780	--	7.50	--	462
460344098052001	130-059-21BCB	USBR 150+35	12-18-86	0935	8.0	800	--	7.40	--	476
			09-17-87	1125	12.5	800	--	7.50	--	480

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-48	12-09-86	90	30	20	4.2	0	380	15	47	0.5	0.15	<0.01
	03-12-87	92	30	18	3.7	0	380	17	53	.4	.20	<.01
	06-25-87	93	31	21	4.3	0	400	20	48	.5	.12	<.01
	09-16-87	90	30	21	4.4	0	390	14	40	.5	.37	<.01
USBR W-39	12-10-86	84	25	19	3.7	0	310	6.2	74	.5	.02	<.01
	03-12-87	78	23	15	3.2	0	300	6.5	74	.4	.02	<.01
	06-24-87	78	24	18	3.5	0	290	6.3	66	.5	.03	<.01
	09-16-87	76	23	18	3.7	0	300	6.6	66	.5	.08	<.01
USBR W-50A	12-17-86	76	24	57	7.9	0	450	9.9	33	2	.02	<.01
	09-23-87	95	30	63	9.3	0	500	12	60	1	.04	<.01
USBR W-177	12-10-86	120	35	36	4.9	0	440	25	130	.8	.02	<.01
	03-12-87	120	37	33	4.4	0	440	23	120	.7	.03	<.01
	06-25-87	120	35	34	4.8	0	420	24	120	.7	.01	<.01
	09-16-87	110	31	32	4.7	0	400	24	96	.7	1.09	<.01
USBR 193+65	12-18-86	100	36	24	5.7	0	410	9.6	80	.5	.92	<.01
	09-17-87	100	34	24	6.4	0	410	9.9	82	.5	.55	<.01
USBR 150+35	12-18-86	110	36	23	5.3	0	390	12	100	.5	.86	<.01
	09-17-87	100	35	24	6.0	0	390	12	100	.5	.41	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-48	12-09-86	0.21	0.01	12	120	<1	560	470	0.2	4	1	5.8
	03-12-87	.11	.01	8	120	<1	220	340	<.1	5	1	14
	06-25-87	.26	.01	10	110	<1	560	520	<.1	4	<1	3.8
	09-16-87	.34	.02	12	120	1	410	410	<.1	4	1	5.7
USBR W-39	12-10-86	.18	.01	6	90	<1	60	760	.3	4	<1	4.5
	03-12-87	.18	.01	13	110	<1	100	710	<.1	5	<1	5.4
	06-24-87	.27	.02	9	70	<1	70	690	<.1	3	<1	5.0
	09-16-87	.38	.01	9	90	2	160	670	<.1	4	1	3.7
USBR W-50A	12-17-86	.03	.02	--	--	--	--	--	--	--	--	--
	09-23-87	.22	.08	--	--	--	--	--	--	--	--	--
USBR W-177	12-10-86	.45	<.01	2	140	<1	630	1,100	.1	4	<1	5.7
	03-12-87	.20	.01	3	100	<1	290	950	.2	4	<1	4.9
	06-25-87	.35	.01	3	110	<1	510	1,000	<.1	3	<1	6.0
	09-16-87	.53	.01	2	80	1	260	870	<.1	3	<1	5.9
USBR 193+65	12-18-86	.12	.01	--	--	--	--	--	--	--	--	--
	09-17-87	.34	<.01	--	--	--	--	--	--	--	--	--
USBR 150+35	12-18-86	.09	<.01	--	--	--	--	--	--	--	--	--
	09-17-87	.31	<.01	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460337098052001	130-059-21BCC	USBR 142+35	12-11-86	1610	8.0	799	4.4	7.40	--	480
			b12-11-86	1611	8.0	800	4.4	7.40	--	475
			03-11-87	1328	6.5	779	8.5	7.30	--	473
			b03-11-87	1330	6.5	779	8.5	7.30	--	478
			06-23-87	1115	9.5	788	3.5	7.38	--	451
			b06-23-87	1120	9.5	790	--	7.40	--	463
			09-17-87	0922	11.0	798	7.2	7.40	--	481
			b09-17-87	0925	11.0	798	7.2	7.40	--	475
460311098041502	130-059-21DDD2	USBR W-52	12-16-86	1525	9.5	960	--	7.50	--	611
			09-22-87	1105	11.5	1,100	--	7.30	--	636
460356098032801	130-059-22ABB	USBR W-166	12-10-86	1025	9.0	701	.8	7.50	13.5	413
			03-12-87	0913	8.0	689	3.0	8.20	13.8	406
			06-25-87	0941	9.5	709	.9	7.47	13.4	398
			09-15-87	1435	12.5	683	2.7	7.44	14.4	406
460336098031901	130-059-22ACD	USBR 262+46	12-11-86	1420	9.0	741	.7	7.40	--	437
			03-10-87	1455	6.0	729	4.3	7.40	--	419
			06-23-87	1620	11.0	800	.4	7.30	--	453
			09-16-87	1555	13.0	680	4.1	7.30	--	394
460337098040501	130-059-22BCC	USBR 202+01	12-11-86	1345	8.5	780	.6	7.40	--	468
			03-10-87	1520	6.0	770	5.3	7.40	--	445
			06-23-87	1555	9.5	802	.5	7.36	--	452
			09-16-87	1450	11.0	793	5.3	7.37	--	464

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR 142+35	12-11-86	110	36	23	5.5	0	390	11	100	0.5	0.97	<0.01
	b12-11-86	100	35	22	5.6	0	390	11	100	.5	1.03	<.01
	03-11-87	100	35	19	5.2	0	390	12	110	.4	.51	<.01
	b03-11-87	110	35	19	4.6	0	390	11	110	.4	.58	<.01
	06-23-87	100	34	21	5.5	0	380	10	91	.5	1.00	<.01
	b06-23-87	100	35	21	5.3	0	390	10	94	.5	1.00	<.01
	09-17-87	110	34	24	6.0	0	390	11	100	.5	.49	<.01
	b09-17-87	100	35	24	5.9	0	400	12	100	.5	.49	<.01
USBR W-52	12-16-86	120	49	53	11	0	670	12	38	1	.01	<.01
	09-22-87	130	52	52	11	0	690	12	43	1	0	<.01
USBR W-166	12-10-86	98	32	15	3.7	0	390	7.0	62	.4	.02	<.01
	03-12-87	99	32	13	3.3	0	400	7.0	56	.3	.11	<.01
	06-25-87	95	31	15	3.8	0	390	6.5	54	.4	.02	<.01
	09-15-87	99	31	14	3.7	0	380	5.1	66	.3	.20	<.01
USBR 262+46	12-11-86	92	40	13	6.2	0	390	8.3	85	.3	1.91	<.01
	03-10-87	96	40	9.9	5.6	0	380	6.8	74	.2	1.05	<.01
	06-23-87	99	40	15	6.4	0	390	11	88	.3	1.72	<.01
	09-16-87	85	37	9.9	7.3	0	360	4.5	73	.2	.81	<.01
USBR 202+01	12-11-86	100	36	24	6.5	0	420	9.0	82	.5	.97	<.01
	03-10-87	98	35	21	5.4	0	420	8.7	70	.5	.62	<.01
	06-23-87	98	36	22	6.4	0	410	9.0	79	.5	.93	<.01
	09-16-87	100	34	24	6.5	0	410	9.7	80	.5	.63	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR 142+35	12-11-86	0.26	<0.01	4	70	<1	270	770	<0.1	4	<1	3.6
	b12-11-86	.25	.01	4	80	<1	260	760	<.1	4	<1	--
	03-11-87	.11	<.01	4	80	<1	340	710	<.1	3	<1	2.4
	b03-11-87	.10	<.01	4	70	<1	340	700	<.1	4	1	2.2
	06-23-87	.13	<.01	3	70	<1	130	580	.1	4	3	2.2
	b06-23-87	.16	.01	3	80	<1	120	570	<.1	4	3	--
	09-17-87	.30	<.01	4	80	<1	200	610	<.1	2	1	3.3
	b09-17-87	.32	.01	4	90	<1	200	620	<.1	2	<1	--
USBR W-52	12-16-86	.24	<.01	--	--	--	--	--	--	--	--	--
	09-22-87	.41	<.01	--	--	--	--	--	--	--	--	--
USBR W-166	12-10-86	.28	.03	16	110	<1	780	750	.2	6	<1	3.0
	03-12-87	.04	.01	7	90	<1	190	220	<.1	5	<1	2.5
	06-25-87	.24	.01	10	90	<1	90	680	<.1	5	<1	22
	09-15-87	.44	.01	10	70	2	240	590	<.1	4	1	8.0
USBR 262+46	12-11-86	.22	<.01	3	60	<1	380	820	<.1	3	<1	4.0
	03-10-87	.09	<.01	4	60	<1	220	860	<.1	3	1	5.4
	06-23-87	.12	<.01	3	80	<1	250	770	.1	3	2	2.7
	09-16-87	.25	.01	2	60	<1	30	480	<.1	1	1	16
USBR 202+01	12-11-86	.32	.01	8	100	<1	430	840	<.1	3	<1	3.7
	03-10-87	.15	<.01	8	90	<1	590	730	<.1	3	1	3.6
	06-23-87	.18	.01	7	80	<1	340	720	.2	4	2	2.8
	09-16-87	.33	.01	9	90	<1	410	680	<.1	2	1	3.7

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460330098040501	130-059-22CBB	USBR W-170	12-10-86	1010	9.5	720	1.6	7.50	12.9	424
			03-12-87	0935	7.5	711	1.9	7.50	13.2	419
			06-25-87	1500	8.0	720	.8	7.49	12.7	405
			09-17-87	0900	12.0	698	1.5	7.52	13.3	405
460310098032801	130-059-22DCC	USBR W-175	12-09-86	1115	10.0	540	1.4	7.60	11.9	313
			03-12-87	0920	7.0	541	2.5	7.50	12.3	327
			06-24-87	1714	10.5	507	1.7	7.50	11.9	276
			09-16-87	1714	12.0	470	2.5	7.61	12.5	265
460356098025103	130-059-23BBB3	USBR W-42	12-16-86	1505	9.0	670	--	7.50	--	393
			09-23-87	0847	11.0	660	--	7.50	--	395
460330098025101	130-059-23CBB	USBR W-172	12-10-86	1045	9.0	869	.6	7.50	13.4	524
			b12-10-86	1046	9.0	870	.6	7.50	13.4	513
			03-12-87	0910	7.5	849	.7	7.40	13.7	526
			b03-12-87	0912	7.5	849	.7	7.40	13.7	519
			06-24-87	1700	10.0	869	.8	7.41	13.4	501
			b06-24-87	1705	10.0	869	.8	7.41	13.4	496
			09-16-87	1030	11.0	832	1.3	7.46	14.3	504
			b09-16-87	1035	11.0	832	1.3	7.46	14.3	500
460310098025103	130-059-23CCC3	USBR W-53A	12-16-86	1520	9.0	540	--	7.70	--	304
			09-23-87	1100	10.0	530	--	7.60	--	297

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-170	12-10-86	97	27	24	4.2	0	400	6.3	70	0.6	0.01	<0.01
	03-12-87	98	26	22	3.8	0	400	7.5	65	.5	.03	<.01
	06-25-87	96	26	23	4.2	0	390	9.1	54	.6	.01	<.01
	09-17-87	96	26	22	4.3	0	380	9.7	59	.5	.05	<.01
USBR W-175	12-09-86	67	26	18	3.1	0	330	.99	34	.5	.02	<.01
	03-12-87	73	29	16	3.0	0	320	1.0	46	.4	.01	<.01
	06-24-87	59	24	15	3.1	0	290	1.2	30	.4	.01	<.01
	09-16-87	57	23	14	2.7	0	280	1.1	26	.4	.19	<.01
USBR W-42	12-16-86	100	29	7.7	3.1	0	370	1.0	66	.2	.02	<.01
	09-23-87	100	29	6.6	3.7	0	330	1.6	88	.2	.02	<.01
USBR W-172	12-10-86	140	31	11	3.5	0	410	42	92	.2	.01	<.01
	b12-10-86	140	30	8.8	3.6	0	410	42	88	.2	.02	<.01
	03-12-87	140	31	8.8	3.3	0	400	38	110	.2	.03	<.01
	b03-12-87	140	31	6.6	3.1	0	400	38	110	.1	.04	<.01
	06-24-87	130	30	8.8	3.6	0	370	35	110	.2	.02	<.01
	b06-24-87	140	30	8.8	3.5	0	370	35	99	.2	.04	<.01
	09-16-87	130	30	8.8	3.6	0	360	27	120	.2	.15	<.01
	b09-16-87	130	30	8.8	3.4	0	360	27	120	.2	.04	<.01
USBR W-53A	12-16-86	47	33	18	12	0	300	2.5	46	.5	.04	<.01
	09-23-87	49	33	13	12	0	310	2.7	33	.4	.05	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-170	12-10-86	0.26	<0.01	6	90	<1	490	770	0.1	4	<1	7.6
	03-12-87	.12	.02	6	120	<1	370	890	.2	4	<1	4.0
	06-25-87	.20	.01	8	110	<1	710	710	<.1	3	<1	2.3
	09-17-87	.40	.01	6	90	<1	750	670	<.1	3	1	3.7
USBR W-175	12-09-86	.21	.02	7	60	<1	210	770	.4	4	<1	4.4
	03-12-87	.04	.02	7	70	<1	130	730	.3	4	<1	7.8
	06-24-87	.13	.03	6	40	<1	40	640	<.1	4	<1	10
	09-16-87	.31	.03	7	40	1	40	610	<.1	5	1	4.3
USBR W-42	12-16-86	.15	<.01	--	--	--	--	--	--	--	--	--
	09-23-87	.31	<.01	--	--	--	--	--	--	--	--	--
USBR W-172	12-10-86	.34	.03	19	60	<1	310	1,800	<.1	3	<1	12
	b12-10-86	.33	.04	19	100	<1	290	1,800	<.1	2	<1	--
	03-12-87	.12	.03	14	70	<1	90	1,700	.6	3	<1	4.2
	b03-12-87	.17	.03	12	40	<1	80	1,700	<.1	2	<1	.2
	06-24-87	.26	.03	16	50	<1	80	1,500	<.1	2	2	4.4
	b06-24-87	.28	.03	17	50	<1	80	1,600	<.1	3	3	3.7
	09-16-87	.44	.03	22	60	3	210	1,600	<.1	2	2	5.5
	b09-16-87	.44	.03	21	50	3	200	1,700	<.1	2	1	4.6
USBR W-53A	12-16-86	.30	.02	--	--	--	--	--	--	--	--	--
	09-23-87	.43	.04	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460244098025101	130-059-26BCC	USBR W-184	12-10-86	1100	10.0	445	1.1	7.60	12.5	256
			a12-10-86	1105	10.0	445	1.1	7.60	12.5	254
			03-12-87	1410	7.5	469	1.5	7.60	13.1	268
			a03-12-87	1412	7.5	469	1.5	7.60	13.1	302
			06-25-87	1027	10.5	620	1.1	7.50	12.2	356
			a06-25-87	1030	10.5	620	1.1	7.50	12.2	--
			09-16-87	1040	11.5	582	1.5	7.55	13.5	343
			a09-16-87	1045	11.5	582	1.5	7.55	13.5	361
460218098025102	130-059-26CCC2	USBR W-60A	12-17-86	1325	10.0	850	--	7.80	--	519
			09-23-87	1040	12.5	840	--	7.90	--	510
460244098032801	130-059-27ACC	USBR 222+88	12-11-86	1445	8.0	758	.6	7.40	--	456
			a12-11-86	1450	8.0	758	.6	7.40	--	488
			a03-10-87	1415	5.5	741	1.9	7.40	--	479
			03-10-87	1418	5.5	741	1.9	7.40	--	447
			a06-23-87	1447	10.5	772	.9	7.39	--	495
			06-23-87	1450	10.5	770	.9	7.40	--	432
			09-16-87	1615	11.0	742	5.0	7.37	--	442
			a09-16-87	1620	11.0	742	5.0	7.37	--	424
460258098040501	130-059-27BBC	USBR 14+86	12-18-86	0745	7.0	890	--	7.40	--	540
			b12-18-86	0750	7.0	890	--	7.40	--	528
			06-25-87	1635	11.0	930	--	7.40	--	536
			b06-25-87	1640	--	930	--	7.40	--	536
			09-17-87	1330	11.5	900	--	7.40	--	530
			b09-17-87	1335	11.5	900	--	7.40	--	526

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-184	12-10-86	59	23	6.6	1.8	0	240	1.2	44	0.2	0	<0.01
	a12-10-86	57	23	4.7	1.7	--	--	1.3	48	.1	<.10	<.01
	03-12-87	63	24	4.4	1.7	0	250	1.5	49	.1	.03	<.01
	a03-12-87	64	24	4.9	2.0	--	--	1.7	51	.1	<.10	<.01
	06-25-87	82	31	6.6	2.2	0	300	2.5	82	.2	.01	<.01
	a06-25-87	--	--	--	--	--	--	--	--	--	<.10	<.01
	09-16-87	81	31	5.5	2.1	0	310	2.0	67	.1	.13	<.01
	a09-16-87	81	30	5.8	2.2	--	--	1.8	73	.1	<.10	<.01
USBR W-60A	12-17-86	110	46	11	5.8	0	360	11	140	.2	10.7	<.01
	09-23-87	110	46	8.8	6.7	0	360	8.9	150	.2	.82	.01
USBR 222+88	12-11-86	100	41	15	4.8	0	390	4.7	94	.3	3.06	<.01
	a12-11-86	96	40	15	4.8	--	--	5.6	100	.3	3.10	<.01
	a03-10-87	100	37	13	4.6	--	--	5.6	100	.3	2.30	<.01
	03-10-87	100	37	12	4.3	0	380	5.3	94	.3	2.23	<.01
	a06-23-87	96	38	14	4.3	0	370	5.0	100	.3	3.20	<.01
	06-23-87	97	40	13	4.7	0	370	4.6	85	.3	3.30	<.01
	09-16-87	100	35	13	4.6	0	370	4.5	97	.3	1.71	<.01
	a09-16-87	100	35	13	4.8	--	--	4.3	100	.3	1.80	<.01
USBR 14+86	12-18-86	110	47	29	6.4	0	440	15	110	.6	3.44	<.01
	b12-18-86	110	45	26	5.9	0	440	14	110	.6	3.48	<.01
	06-25-87	110	46	27	7.0	0	450	13	110	.6	3.82	<.01
	b06-25-87	110	45	26	7.0	0	450	14	110	.6	3.90	<.01
	09-17-87	110	43	27	6.7	0	420	14	120	.6	1.95	<.01
	b09-17-87	110	43	27	6.7	0	420	14	120	.6	1.95	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-184	12-10-86	0.14	0.02	41	50	<1	240	490	0.2	7	<1	2.4
	a12-10-86	--	.06	39	30	1	210	450	--	9	<1	3.5
	03-12-87	.03	.01	32	50	<1	340	540	<.1	9	<1	3.7
	a03-12-87	--	--	39	30	<1	330	500	<.1	7	<1	2.2
	06-25-87	.08	.01	28	50	<1	280	670	<.1	7	<1	3.8
	a06-25-87	--	.06	29	30	<1	--	--	<.1	4	<1	4.3
	09-16-87	.29	.01	24	50	1	220	610	<.1	6	<1	4.1
	a09-16-87	--	.09	34	30	<1	200	590	<.1	4	<1	4.1
USBR W-60A	12-17-86	.01	<.01	--	--	--	--	--	--	--	--	--
	09-23-87	.23	<.01	--	--	--	--	--	--	--	--	--
USBR 222+88	12-11-86	.17	.02	9	50	<1	70	490	<.1	5	<1	4.3
	a12-11-86	--	.09	11	50	<1	32	460	--	7	1	6.2
	a03-10-87	--	.09	10	50	<1	50	400	<.1	3	<1	6.1
	03-10-87	.02	.02	9	50	<1	70	390	<.1	5	1	3.1
	a06-23-87	.08	.09	10	50	<1	20	420	<.1	4	1	2.9
	06-23-87	.08	.03	9	60	<1	20	430	<.1	6	2	--
	09-16-87	.27	.02	9	60	<1	40	460	<.1	4	<1	5.2
	a09-16-87	--	.06	10	50	<1	28	460	<.1	4	<1	4.2
USBR 14+86	12-18-86	.03	.01	--	--	--	--	--	--	--	--	--
	b12-18-86	.01	.02	--	--	--	--	--	--	--	--	--
	06-25-87	.10	.03	--	--	--	--	--	--	--	--	--
	b06-25-87	.10	.02	--	--	--	--	--	--	--	--	--
	09-17-87	.29	.02	--	--	--	--	--	--	--	--	--
	b09-17-87	.28	.02	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460245098040501	130-059-27BCC	USBR 196+94	12-18-86	0730	7.0	760	--	7.80	--	447
			09-17-87	1335	12.0	750	--	7.50	--	437
460245098043301	130-059-28ACD	USBR 180+71	12-11-86	1525	8.0	841	1.1	7.40	--	513
			03-10-87	1620	6.5	849	4.4	7.40	--	516
			06-23-87	1429	10.5	869	.8	7.39	--	487
			09-16-87	1630	12.0	928	5.1	7.36	--	554
460305098045201	130-059-28BAA	USBR W-176	12-10-86	1028	9.0	655	1.3	7.40	11.2	383
			03-12-87	0940	7.0	659	1.6	7.40	11.9	384
			06-25-87	1345	8.0	680	.8	7.39	10.8	379
			09-16-87	1007	14.0	658	2.0	7.38	12.0	380
460305098052002	130-059-28BBB2	USBR W-51	12-17-86	1355	9.0	870	--	7.50	--	517
			09-23-87	0910	11.0	770	--	7.50	--	446
460239098051001	130-059-28CBA	USBR 150+88	12-17-86	1450	9.0	900	--	7.40	--	549
			09-17-87	1350	12.0	930	--	7.50	--	551
460219098052002	130-059-28CCC2	USBR W-58	12-17-86	1345	9.0	1,300	--	7.40	--	888
			09-23-87	1016	12.0	1,250	--	7.30	--	868
460219098045201	130-059-28CDD1	USBR W-188	12-10-86	1125	9.0	810	.8	7.50	7.6	490
			03-12-87	1325	6.5	801	.9	7.40	8.1	473
			06-25-87	1046	11.5	828	1.3	7.37	8.1	474
			09-16-87	1325	14.5	853	.9	7.35	9.4	507

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR 196+94	12-18-86	97	41	14	4.3	0	380	5.3	96	0.3	2.63	<0.01
	09-17-87	98	36	14	5.2	0	370	5.0	92	.3	1.82	<.01
USBR 180+71	12-11-86	110	44	24	5.9	0	440	9.6	100	.5	2.37	<.01
	03-10-87	110	43	23	5.3	0	440	11	100	.5	1.40	<.01
	06-23-87	100	43	22	5.9	0	410	10	96	.5	2.87	<.01
	09-16-87	120	44	31	7.5	0	470	12	110	.6	.98	<.01
USBR W-176	12-10-86	86	26	23	5.2	0	380	7.6	48	.6	.02	<.01
	03-12-87	89	26	21	5.1	0	380	7.5	49	.5	.02	<.01
	06-25-87	86	26	22	5.2	0	370	7.9	47	.6	.01	<.01
	09-16-87	86	26	22	5.2	0	380	7.5	48	.6	.10	<.01
USBR W-51	12-17-86	110	35	30	4.4	0	420	27	100	.6	.01	<.01
	09-23-87	100	31	24	4.3	0	400	20	67	.6	.02	<.01
USBR 150+88	12-17-86	110	45	33	6.2	0	460	16	110	.7	2.15	<.01
	09-17-87	110	43	34	6.9	0	440	17	120	.7	2.09	<.01
USBR W-58	12-17-86	150	49	110	11	0	730	49	150	2	.01	<.01
	09-23-87	160	48	100	11	0	710	47	150	2	.01	<.01
USBR W-188	12-10-86	110	35	23	6.4	0	450	5.9	85	.5	.17	<.01
	03-12-87	110	33	21	6.2	0	460	6.3	66	.5	0	<.01
	06-25-87	110	35	22	6.3	0	450	6.1	74	.5	.01	<.01
	09-16-87	120	37	23	6.7	0	480	7.1	82	.5	.02	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR 196+94	12-18-86	0	0.01	--	--	--	--	--	--	--	--	--
	09-17-87	.25	.02	--	--	--	--	--	--	--	--	--
USBR 180+71	12-11-86	.24	.01	5	70	<1	160	400	<0.1	5	<1	6.3
	03-10-87	.07	<.01	4	80	<1	340	450	.2	5	2	--
	06-23-87	.12	.01	3	70	<1	60	400	<.1	6	2	2.9
	09-16-87	.30	.01	2	90	<1	140	430	<.1	3	1	5.3
USBR W-176	12-10-86	.31	.01	4	110	<1	350	820	.2	4	<1	4.3
	03-12-87	.13	.01	6	100	<1	330	760	.3	4	<1	6.6
	06-25-87	.20	.01	5	100	<1	190	770	<.1	3	<1	4.1
	09-16-87	.42	.01	3	90	1	340	760	<.1	3	1	20
USBR W-51	12-17-86	.17	<.01	--	--	--	--	--	--	--	--	--
	09-23-87	.37	.01	--	--	--	--	--	--	--	--	--
USBR 150+88	12-17-86	.03	.01	--	--	--	--	--	--	--	--	--
	09-17-87	.28	.01	--	--	--	--	--	--	--	--	--
USBR W-58	12-17-86	.52	.01	--	--	--	--	--	--	--	--	--
	09-23-87	.73	.02	--	--	--	--	--	--	--	--	--
USBR W-188	12-10-86	.43	<.01	4	130	<1	1,300	830	.1	5	<1	4.5
	03-12-87	.22	<.01	14	130	<1	2,200	820	<.1	6	<1	5.0
	06-25-87	.34	<.01	9	120	<1	2,100	710	<.1	6	<1	3.8
	09-16-87	.37	.01	6	120	1	1,700	770	<.1	5	<1	5.1

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460238098041501	130-059-28DAA	USBR W-55	12-11-86	1515	11.5	880	1.5	7.40	10.4	525
			03-12-87	1340	6.5	850	1.5	7.40	10.7	520
			06-24-87	1735	12.5	900	1.8	7.33	9.9	513
			09-16-87	1105	14.0	905	1.4	7.38	11.2	532
460245098052901	130-059-29ADD	USBR W-181	12-10-86	1127	10.5	990	1.2	7.40	11.9	611
			03-12-87	1307	8.0	938	1.3	7.30	12.6	576
			06-25-87	1115	9.0	922	1.3	7.34	11.7	538
			09-16-87	1335	13.0	922	1.5	7.34	13.5	542
460239098063402	130-059-29CBB2	USBR W-179	12-17-86	1043	8.5	830	--	7.60	--	482
			09-23-87	1005	11.0	840	--	7.50	--	485
460220098063402	130-059-29CCC2	USBR W-57	12-17-86	1035	8.5	820	--	7.50	--	498
			09-23-87	1011	10.5	840	--	7.40	--	492
460232098052901	130-059-29DAD	USBR 134+68	12-11-86	1540	8.5	930	1.0	7.40	--	564
			03-10-87	1105	6.0	901	7.2	7.30	--	557
			06-23-87	1355	10.0	1,050	.5	7.30	--	585
			09-16-87	1650	12.0	1,060	6.3	7.34	--	645
460219098055701	130-059-29DCC	USBR W-189	12-10-86	1136	9.0	1,010	2.0	7.40	11.1	725
			03-12-87	1320	7.0	1,080	1.2	7.30	11.7	736
			06-25-87	1104	10.5	1,220	1.1	7.36	11.0	744
			09-16-87	1350	12.0	1,230	2.6	7.33	12.2	755

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-55	12-11-86	110	42	31	9.5	0	540	6.4	56	0.6	0.04	<0.01
	03-12-87	120	40	26	8.7	0	540	6.8	56	.6	0	<.01
	06-24-87	110	41	29	8.7	0	530	5.7	55	.6	.01	<.01
	09-16-87	120	41	27	9.5	0	520	10	71	.6	.14	<.01
USBR W-181	12-10-86	110	44	60	6.9	0	540	17	100	1	.08	<.01
	03-12-87	100	43	53	5.7	0	520	17	96	1	0	<.01
	06-25-87	98	41	54	6.5	0	500	17	75	1	.01	<.01
	09-16-87	98	41	54	6.8	0	490	20	80	1	.04	<.01
USBR W-179	12-17-86	97	26	62	7.1	0	520	20	11	1	.08	<.01
	09-23-87	98	26	58	7.1	0	510	20	24	1	.04	<.01
USBR W-57	12-17-86	90	34	54	6.2	0	480	8.4	67	1	.10	<.01
	09-23-87	93	34	51	6.4	0	490	9.1	58	1	.06	<.01
USBR 134+68	12-11-86	110	44	38	6.6	0	470	16	110	.8	2.22	<.01
	03-10-87	120	43	33	5.7	0	470	16	110	.7	1.44	<.01
	06-23-87	110	43	45	7.3	0	480	18	120	.9	2.83	<.01
	09-16-87	120	45	57	8.2	0	510	18	140	1	1.82	<.01
USBR W-189	12-10-86	110	37	110	9.3	0	600	16	140	2	.04	<.01
	03-12-87	110	40	110	8.6	0	610	17	150	2	0	<.01
	06-25-87	120	40	110	9.3	0	610	18	150	2	.01	<.01
	09-16-87	120	41	110	9.7	0	620	19	150	2	.24	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-55	12-11-86	0.45	<0.01	8	120	<1	720	1,100	0.4	3	<1	7.0
	03-12-87	.28	<.01	18	180	<1	2,400	1,000	<.1	4	<1	7.1
	06-24-87	.36	.01	13	150	<1	2,300	1,100	<.1	3	<1	6.1
	09-16-87	.48	<.01	8	120	1	1,000	950	<.1	3	<1	--
USBR W-181	12-10-86	.34	.01	<1	140	<1	800	1,100	.2	3	<1	7.5
	03-12-87	.09	<.01	2	170	<1	1,100	940	<.1	3	<1	4.1
	06-25-87	.17	.01	2	140	<1	680	1,200	<.1	2	<1	7.1
	09-16-87	.32	<.01	<1	130	<1	1,100	990	<.1	3	1	--
USBR W-179	12-17-86	.83	.01	--	--	--	--	--	--	--	--	--
	09-23-87	1.13	.01	--	--	--	--	--	--	--	--	--
USBR W-57	12-17-86	.08	.08	--	--	--	--	--	--	--	--	--
	09-23-87	.27	.09	--	--	--	--	--	--	--	--	--
USBR 134+68	12-11-86	.23	.01	3	70	<1	110	410	<.1	4	<1	4.1
	03-10-87	.06	.01	3	90	<1	160	460	<.1	6	2	4.2
	06-23-87	.12	.01	3	90	<1	50	330	<.1	5	2	3.5
	09-16-87	.30	.03	4	100	<1	110	380	<.1	4	2	4.7
USBR W-189	12-10-86	.49	.02	4	150	<1	470	630	.1	4	<1	6.3
	03-12-87	.29	<.01	11	180	<1	1,500	650	<.1	4	<1	6.6
	06-25-87	.41	.01	8	180	<1	1,400	660	<.1	4	<1	6.0
	09-16-87	.45	<.01	5	150	2	480	630	<.1	2	1	5.4

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460233098070201	130-059-30DBD1	USBR W-178	12-10-86	1053	9.5	929	0.6	7.40	11.2	583
			03-11-87	1311	7.0	900	.9	7.40	11.7	554
			06-25-87	1425	7.5	920	.9	7.37	11.2	533
			09-16-87	1357	11.0	890	1.2	7.35	12.5	531
460233098070202	130-059-30DBD2	USBR 63+43	12-10-86	1400	8.5	910	1.4	7.30	--	562
			03-10-87	1135	6.0	901	8.3	7.30	--	554
			06-23-87	1338	9.5	880	9.1	7.47	--	487
			09-17-87	1010	12.0	1,020	8.2	7.46	--	619
460212098033701	130-059-34BAA	USBR W-187	12-10-86	1110	9.5	580	1.2	7.50	10.9	346
			03-12-87	1350	8.0	601	1.0	7.50	11.1	348
			06-25-87	1005	11.0	630	.6	7.49	10.6	363
			09-16-87	1055	11.0	605	2.1	7.50	12.5	360
460212098040503	130-059-34BBB3	USBR W-59	12-17-86	1340	9.0	770	--	7.50	--	461
			09-23-87	1031	11.0	790	--	7.30	--	455
460217098003202	130-060-25DDD2	USBR 26+32	12-17-86	1415	2.5	850	--	7.60	--	504
			06-25-87	1623	22.0	850	--	7.60	--	482
			09-17-87	1400	16.5	890	--	7.70	--	523
460818098040202	131-059-27BBB2	USBR W-2A	12-08-86	1520	9.0	1,350	.4	7.50	17.4	865
			03-09-87	1450	8.5	832	1.0	7.00	16.8	500
			06-25-87	0857	9.0	1,070	.6	7.49	17.5	593
			09-17-87	0843	12.0	832	1.5	7.87	19.2	459

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-178	12-10-86	100	36	63	7.3	0	510	15	110	1	0.01	<0.01
	03-11-87	100	35	55	6.6	0	480	15	100	1	.01	<.01
	06-25-87	98	35	57	6.2	0	480	13	88	1	.01	<.01
	09-16-87	99	34	56	6.4	0	470	13	89	1	.03	<.01
USBR 63+43	12-10-86	110	43	44	6.7	0	470	16	110	.9	2.68	<.01
	03-10-87	110	40	42	6.0	0	480	15	110	.9	1.72	<.01
	06-23-87	92	38	46	5.7	0	430	9.1	82	1	3.13	<.01
	09-17-87	120	42	60	8.4	0	500	17	130	1	2.13	<.01
USBR W-187	12-10-86	85	25	6.6	3.1	0	300	3.8	76	.2	.02	<.01
	03-12-87	91	26	4.4	3.1	0	290	3.9	74	.1	.02	<.01
	06-25-87	89	26	5.5	3.0	0	300	4.1	85	.1	.01	<.01
	09-16-87	91	27	5.5	3.0	0	310	4.1	77	.1	.07	<.01
USBR W-59	12-17-86	100	43	11	4.7	0	430	4.4	85	.2	.06	<.01
	09-23-87	110	43	11	5.3	0	450	5.2	63	.2	.01	<.01
USBR 26+32	12-17-86	100	40	37	5.9	0	420	16	91	.8	1.78	<.01
	06-25-87	84	37	37	6.0	0	420	17	95	.9	0	<.01
	09-17-87	90	41	45	8.7	0	420	17	110	1	.08	<.01
USBR W-2A	12-08-86	150	98	48	5.1	0	700	85	130	.8	1.31	<.01
	03-09-87	100	48	21	4.0	0	470	37	55	.4	.03	<.01
	06-25-87	130	64	20	3.5	0	590	40	41	.4	4.21	.02
	09-17-87	110	37	15	4.6	0	450	36	28	.3	2.36	.04

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-178	12-10-86	0.58	0.02	6	150	<1	450	670	0.1	3	<1	10
	03-11-87	.10	<.01	3	130	<1	180	590	<.1	4	<1	24
	06-25-87	.15	.01	3	150	<1	480	630	<.1	3	<1	5.4
	09-16-87	.31	.01	2	120	2	590	580	<.1	3	<1	6.8
USBR 63+43	12-10-86	.23	.01	2	90	<1	90	310	.1	4	<1	4.4
	03-10-87	.05	.01	2	90	<1	100	410	<.1	5	1	4.4
	06-23-87	.10	.02	2	80	<1	60	160	<.1	5	2	4.0
	09-17-87	.27	.02	3	100	<1	50	280	<.1	3	1	4.7
USBR W-187	12-10-86	.22	.01	7	40	<1	180	720	.2	3	<1	4.2
	03-12-87	.09	<.01	12	50	<1	530	670	<.1	5	<1	6.0
	06-25-87	.16	.01	7	150	<1	180	700	<.1	4	<1	3.0
	09-16-87	.23	.01	5	50	1	180	690	<.1	2	<1	4.4
USBR W-59	12-17-86	.07	<.01	--	--	--	--	--	--	--	--	--
	09-23-87	.29	<.01	--	--	--	--	--	--	--	--	--
USBR 26+32	12-17-86	.01	.01	--	--	--	--	--	--	--	--	--
	06-25-87	.13	.02	--	--	--	--	--	--	--	--	--
	09-17-87	.25	.01	--	--	--	--	--	--	--	--	--
USBR W-2A	12-08-86	.18	.13	3	200	<1	20	730	.2	4	<1	13
	03-09-87	.03	.14	5	120	<1	30	100	.2	6	<1	21
	06-25-87	.18	.13	2	110	<1	20	1500	<.1	4	3	6.8
	09-17-87	.29	.19	4	110	<1	30	480	<.1	5	2	11

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460654098054501	131-059-32DBD1	USBR W-130	12-17-86	1010	7.5	1,200	--	7.50	--	846
			09-22-87	0850	10.0	1,290	--	7.30	--	993
460641098055402	131-059-32DCC2	USBR W-20	12-16-86	1050	7.5	1,500	--	7.60	--	1,090
			09-22-87	0903	8.0	1,420	--	7.50	--	1,090
460700098044901	131-059-33CAA	USBR W-132	12-17-86	0955	9.0	830	--	8.10	--	522
			09-22-87	1020	11.5	750	--	8.00	--	483
460700098051701	131-059-33CBB	USBR W-131	12-09-86	0938	11.0	529	3.8	7.50	18.3	288
			b12-09-86	0939	11.0	530	3.8	7.50	18.3	282
			03-10-87	1312	10.0	559	3.3	7.50	18.2	293
			b03-10-87	1315	10.0	559	3.3	7.50	18.2	287
			06-24-87	0915	8.5	605	2.4	7.53	17.8	306
			b06-24-87	0920	8.5	605	2.4	7.53	17.8	299
			09-15-87	1135	10.5	605	3.5	7.51	18.4	311
			b09-15-87	1140	10.5	605	3.5	7.51	18.4	306
460700098041101	131-059-33DAA	USBR W-18A	12-16-86	0900	8.0	660	--	7.60	--	394
			09-22-87	0930	10.5	690	--	7.60	--	406
460640098041104	131-059-33DDD4	USBR W-22A	12-16-86	1255	9.5	6,800	--	7.40	--	5,800
			09-22-87	0922	12.5	6,750	--	7.40	--	5,910
460706098033402	131-059-34BDD2	USBR W-123	12-16-86	0918	8.0	680	--	7.80	--	429
			b12-16-86	0923	8.0	680	--	7.80	--	422

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-130	12-17-86	140	52	87	6.9	0	460	36	300	2	0.05	<0.01
	09-22-87	170	65	79	7.6	0	470	36	400	1	.05	<.01
USBR W-20	12-16-86	120	42	200	11	0	540	19	430	4	.06	<.01
	09-22-87	130	42	190	11	0	540	20	430	4	.03	<.01
USBR W-132	12-17-86	120	38	7.7	2.4	0	170	34	230	.2	7.29	.15
	09-22-87	110	34	7.7	2.4	0	190	26	210	.2	.08	<.01
USBR W-131	12-09-86	73	29	5.5	1.2	0	300	3.7	23	.1	5.91	<.01
	b12-09-86	68	27	4.4	1.5	0	300	3.7	24	.1	5.73	<.01
	03-10-87	74	29	3.3	1.8	0	320	2.7	18	.1	5.67	<.01
	b03-10-87	70	30	3.3	1.4	0	310	2.7	19	.1	5.40	<.01
	06-24-87	77	32	4.4	2.1	0	320	5.5	20	.1	9.73	<.01
	b06-24-87	73	30	5.5	1.7	0	320	5.3	19	.1	9.63	<.01
	09-15-87	79	32	4.4	1.8	0	300	6.0	32	.1	10.3	<.01
	b09-15-87	75	32	5.5	1.8	0	300	6.0	30	.1	9.82	<.01
USBR W-18A	12-16-86	89	27	25	4.7	0	380	4.0	54	.6	.05	<.01
	09-22-87	93	28	24	4.8	0	390	4.5	58	.6	.10	<.01
USBR W-22A	12-16-86	160	310	1,400	14	0	1,260	59	3,300	15	.02	<.01
	09-22-87	170	310	1,300	15	0	1,250	59	3,400	14	.10	<.01
USBR W-123	12-16-86	100	30	12	2.6	0	280	8.3	140	.3	.38	<.01
	b12-16-86	96	29	12	2.7	0	280	8.3	140	.3	.34	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-130	12-17-86	0.57	<0.01	--	--	--	--	--	--	--	--	--
	09-22-87	.83	<.01	--	--	--	--	--	--	--	--	--
USBR W-20	12-16-86	.81	.01	--	--	--	--	--	--	--	--	--
	09-22-87	1.17	.02	--	--	--	--	--	--	--	--	--
USBR W-132	12-17-86	.01	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.24	.01	--	--	--	--	--	--	--	--	--
USBR W-131	12-09-86	.10	.04	1	80	<1	140	71	0.2	<1	4	16
	b12-09-86	.14	.03	<1	90	<1	30	30	.1	4	<1	--
	03-10-87	.01	.03	1	70	<1	30	13	<.1	2	5	3.3
	b03-10-87	0	<.01	<1	50	<1	20	12	<.1	2	5	3.6
	06-24-87	.08	.03	<1	60	<1	<10	17	<.1	<1	4	2.9
	b06-24-87	.07	.03	1	60	<1	10	8	<.1	2	5	4.0
	09-15-87	.30	.04	1	60	1	30	91	<.1	<1	4	4.2
	b09-15-87	.31	.04	<1	60	1	30	81	<.1	<1	2	7.7
USBR W-18A	09-22-87	.29	.01	--	--	--	--	--	--	--	--	--
	12-16-86	.06	.01	--	--	--	--	--	--	--	--	--
USBR W-22A	12-16-86	.06	.01	--	--	--	--	--	--	--	--	--
	09-22-87	.43	.01	--	--	--	--	--	--	--	--	--
USBR W-123	12-16-86	0	<.01	--	--	--	--	--	--	--	--	--
	b12-16-86	0	.01	--	--	--	--	--	--	--	--	--

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Latitude-longitude identification number	Township-range identification number	Local identification number	Date	Time	Temperature, water (deg C)	Specific conductance (µS/cm)	Oxygen, dissolved (mg/L)	pH (standard units)	Water level (feet below land surface)	Solids, sum of constituents, dissolved (mg/L)
460640098032401	131-059-34DCC	USBR W-134	12-16-86	0932	8.0	570	--	7.60	--	320
			09-22-87	1049	10.5	570	--	7.60	--	323

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Calcium, dissolved (mg/L as Ca)	Magnesium, dissolved (mg/L as Mg)	Sodium, dissolved (mg/L as Na)	Potassium, dissolved (mg/L as K)	Carbonate, FET-LAB (mg/L as CO_3)	Bicarbonate, FET-LAB (mg/L as HCO_3)	Chloride, dissolved (mg/L as Cl)	Sulfate, dissolved (mg/L as SO_4)	Sodium adsorption ratio	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, nitrite, dissolved (mg/L as N)
USBR W-134	12-16-86	68	22	26	5.4	0	330	10	23	0.7	0.16	<0.01
	09-22-87	71	23	24	5.4	0	330	14	20	.7	.13	<.01

Table 3.--Chemical analysis of water from wells and drain sites--Continued

Local identification number	Date	Nitrogen, ammonia, dissolved (mg/L as N)	Phosphate, ortho, dissolved (mg/L as PO_4)	Arsenic, dissolved (µg/L as As)	Boron, dissolved (µg/L as B)	Cadmium, dissolved (µg/L as Cd)	Iron, dissolved (µg/L as Fe)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Molybdenum, dissolved (µg/L as Mo)	Selenium, dissolved (µg/L as Se)	Carbon, organic total (mg/L as C)
USBR W-134	12-16-86	0.05	0.03	--	--	--	--	--	--	--	--	--
	09-22-87	.36	.01	--	--	--	--	--	--	--	--	--

Table 4.--Laboratory analytical methods and detection limits for determination of chemical constituents in water

[µg/L, micrograms per liter; mg/L, milligrams per liter; none, no detection limit given]

Constituent determined	U.S. Geological Survey National Water Quality Laboratory, Arvada, Colo.		U.S. Bureau of Reclamation Laboratory Bismarck, N.Dak.	
	Analytical method	Detection limit	Analytical method	Detection limit
Calcium	Atomic absorption, direct.	0.1 mg/L	Atomic absorption, direct.	0.1 mg/L
Magnesium	Atomic absorption, direct.	0.1 mg/L	Atomic absorption, direct.	0.1 mg/L
Sodium	Atomic absorption, direct.	0.1 mg/L	Atomic absorption, direct.	0.1 mg/L
Potassium	Atomic absorption, direct.	0.1 mg/L	Atomic absorption, direct.	0.05 mg/L
Carbonate	Titration.	None	Titration.	None
Bicarbonate	Titration.	None	Titration.	None
Chloride	Colorimetry, discrete analyzer, automatic.	0.1 mg/L	Titration, $AgNO_3$.	0.1 mg/L
Sulfate	Turbidimetry, automatic.	0.2 mg/L	Colorimetry, automatic.	2 mg/L
Nitrate	Ion chromatography, automatic.	0.01 mg/L	Colorimetry, automatic.	0.01 mg/L
Nitrite	Colorimetry, diazotization, automatic.	0.01 mg/L	Colorimetry, automatic.	0.01 mg/L
Ammonia	Colorimetry, automatic.	0.01 mg/L	Colorimetry, automatic.	0.05 mg/L
Orthophosphate	Colorimetry, phosphomolybdate, automatic.	0.01 mg/L	Colorimetry, automatic.	0.01 mg/L
Arsenic	Atomic absorption, hydride, automatic.	1 µg/L	Atomic absorption, furnace.	1 µg/L
Boron	Atomic emission, DC plasma.	10 µg/L	Colorimetry, automatic.	40 µg/L
Cadmium	Atomic absorption, chel-extraction.	1 µg/L	Atomic absorption, furnace.	0.2 µg/L
Iron	Atomic absorption, direct.	10 µg/L	Atomic absorption, direct.	10 µg/L
Manganese	Atomic absorption, direct.	10 µg/L	Atomic absorption, direct.	2 µg/L
Mercury	Atomic absorption, flameless, automatic.	0.1 µg/L	Atomic absorption, flameless.	0.1 µg/L
Molybdenum	Atomic absorption, chel-extraction.	1 µg/L	Atomic absorption, furnace.	1 µg/L
Selenium	Atomic absorption, hydride, automatic.	1 µg/L	Atomic absorption, hydride.	0.5 µg/L
Total organic carbon	Combustion, infrared.	0.1 mg/L		