1966

Water Resources Data for Colorado

Part 2. Water Quality Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of Colorado
and with other agencies

United States Department of the Interior
Geological Survey - Water Resources Division

Water Resources Data for Colorado 1966

Part 2: Water Quality Records

Prepared in cooperation with

Colorado Water Conservation Board
Bureau of Reclamation, U. S. Department of the Interior

Copies of this report may be obtained from
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U.S. Geological Survey
Denver Federal Center
Denver, Colorado 80225

Water resources records, 1966, for Colorado are in the following reports of the U.S. Geological Survey:

1. Water Resources Data for Colorado
   Part 1: Surface Water Records

2. Water Resources Data for Colorado
   Part 2: Water Quality Records

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[*Symbols after station name designate type of data: c, chemical; t, water temperature; s, sediment*]

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INTRODUCTION

Water-resources investigations of the U.S. Geological Survey include the collection of water quality data on the chemical and physical characteristics of surface- and ground-water supplies of the Nation. These water quality data for surface and ground waters in Colorado for the 1966 water year are presented in this report. Data for a few water quality stations in bordering States and selected data on the chemical quality of ground water in Colorado are also included. The data were collected by the Water Resources Division of the U.S. Geological Survey under the direction of R. Brennan, chemist-in-charge, Quality of Water Branch, succeeded by E. A. Moulder, district chief, Water Resources Division.

Water quality information is presented for chemical quality, fluvial sediment, and water temperatures. The chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium-adsorption-ratio, specific conductance, and pH. Fluvial sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material. Water temperature data represent once-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimums and maximums are obtained.

The Geological Survey has published an annual series of water-supply papers, "Quality of Surface Waters of the United States," from 1941 through 1963 which contain the chemical quality, temperature, and fluvial sediment data of the water. Each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records for Colorado are contained in Parts 5-6, 7-8, and 9-14 of the water-supply paper series. (See table, p. 15.) These publications are available in most public libraries. Beginning with the 1964 water year, water quality records for surface and ground water obtained by the Geological Survey were published in a new series of annual releases on a state boundary basis. This report is primarily for local and immediate use, and its distribution is limited. The records pertaining to surface waters will be published in the Geological Survey water-supply papers at 5-year intervals. The first compilation will cover only the water years 1964 and 1965.

WATER QUALITY RECORDS IN COLORADO, 1966

COOPERATION

Most data in this report were obtained as part of the Federal Program of the U.S. Geological Survey or in cooperation with the Bureau of Reclamation, U. S. Department of the Interior. Investigations of some ground water and surface water were made under cooperative agreement between the U.S. Geological Survey and the Colorado Water Conservation Board, F. L. Sparks, director.

Five of the records published in this report were furnished by the following U.S. Geological Survey districts: Utah district, two stations; New Mexico district, one station; Nebraska district, one station; and Wyoming district, one station.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms and abbreviations of water-quality and hydrologic data, as used in the text and tabular data of this report, are as follows:

Acre-foot (ac-ft) is a quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or 325,851 gallons. The term is commonly used in measuring volumes of water used or stored.

Cfs-days is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It equals 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons.

Cubic feet per second (cfs) is a unit expressing rates of discharge. One cubic foot per second is equal to the discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Discharge, in its simplest concept, means outflow; therefore, the use of this term is not restricted as to course or location. In this report it represents the total fluids measured in the stream.

Daily mean discharge is the mean discharge for one day.

Mean daily discharge is the arithmetic mean discharge for the same day during a specific period of years.

Mean discharge is the arithmetic mean of individual daily mean discharges during a specific period.

DEFINITION OF TERMS AND ABBREVIATIONS

Instantaneous discharge (at time of sampling). If the discharge at the time of sampling is reported instead of the daily mean, the heading of the discharge column is "Discharge (cfs)."

Drainage area is that area, in a specified location, measured in a horizontal plane, which is enclosed by a drainage divide.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Equivalents per million (epm) is a unit for expressing the concentration of chemical constituents in solution in terms of the interracting values of the electrically charged particles, or ions. One equivalent per million of a positively charged ion will react with one equivalent per million of a negatively charged ion. Parts per million is converted to equivalents per million by multiplying by the reciprocal of the combining weight of the ion. (See table below.)

Conversion factors: Parts per million to equivalents per million

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})	0.11119	Hydroxide (OH^{-1})	0.05880
Arsenic (As^{+3})	.04004	Iodide (I^{-1})	.00788
Barium (Ba^{+2})	.01456	Iron (Fe^{+3})	.05372
Beryllium (Be^{+2})	.22192	Lead (Pb^{+2})	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})	.14411
Bromide (Br^{-1})	.01251	Magnesium (Mg^{+2})	.08226
Cadmium (Cd^{+2})	.01779	Manganese (Mn^{+2})	.03640
Calcium (Ca^{+2})	.04990	Nickel (Ni^{+2})	.03406
Carbonate (CO_3^{-2})	.03333	Nitrate (NO_3^{-1})	.01613
Chloride (Cl^{-1})	.02821	Phosphate (PO_4^{-3})	.03159
Chromium (Cr^{+6})	.11539	Potassium (K^{+1})	.02557
Cobalt (Co^{+2})	.03394	Sodium (Na^{+1})	.04350
Copper (Cu^{+2})	.03148	Strontium (Sr^{+2})	.02282
Fluoride (F^{-1})	.05264	Sulfate (SO_4^{-2})	.02082
Hydrogen (H^{+1})	.99209	Zinc (Zn^{+2})	.03060

Gage height is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage", although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hardness of water is the property of water attributable to the presence of alkaline earths and is expressed as equivalent calcium carbonate ($CaCO_3$). Hardness is a physical-chemical characteristic, not a substance.

Particle size is the diameter, in millimeters (mm) of suspended sediment or bed material determined by sieve and sedimentation methods.

Particle-size classification agrees closely with recommendations made by the American Geophysical Union Subcommittee on sediment terminology (Lane and others, 1947, p. 937). The classification is as follows:

Clay:	Smaller than 0.004 mm.
Silt:	Between 0.004 and 0.062 mm.
Sand:	Between 0.062 and 2.0 mm.
Gravel:	Between 2.0 and 64.0 mm.

The particle-size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

Parts per million (ppm) is a unit for expressing the concentration of chemical constituents by weight, usually as grams of constituents per million grams of solution. In the laboratory the results are expressed in weights of solutes in a given volume of water. To express the results in parts per million, the data must be converted. For most waters, this conversion is made by assuming that a liter of water weighs 1 kilogram; thus milligrams per liter is equivalent to parts per million. Parts per million, for suspended sediment, is computed as 1 million times the ratio of the weight of sediment to the weight of the mixture of water and sediment.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are: Degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

DEFINITION OF TERMS AND ABBREVIATIONS

Sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks and is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. The following general relations are applicable:

Specific conductance x (0.65 ± 0.05) = ppm dissolved solids;

$$\frac{\text{Specific conductance}}{100} = \frac{\text{total epm}}{2}$$

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reaction with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the water year.

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in parts per million by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Water year in Geological Survey reports dealing with surface water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1966, is called the "1966 water year."

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

STATION NUMBERS AND WELL NUMBERS

A station number has been assigned as an added means of identification for each stream location where regular measurements of streamflow and determinations of water quality have been made. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between surface water gaging stations and water quality record stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete 8-digit number for each station, such as 06-7540.00, includes the part number "6" plus a six-digit station number. In this report, the nonessential zeros are not shown. For example, the complete number 06-7540.00 appears as 6-7540, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

The well numbers used in this report indicate their location. The numbering system, which is illustrated on page 8, is based on the U. S. Bureau of Land Management's system of land subdivision. The number shows

the location of the well or test hole by quadrant, township, range, section, and position within the section. The capital letter at the beginning of the location number indicates the quadrant in which the well is located. Four quadrants are formed by the intersection of the base line and the principal meridian--A indicates the northeast quadrant, B the northwest, C the southwest, and D the southeast. The first numeral indicates the township, the second the range, and the third the section in which the well is located. Lowercase letters following the section number locate the well within the section. The first letter denotes the quarter section, the second the quarter-quarter section, the third the quarter-quarter-quarter section, and the fourth the quarter-quarter-quarter-quarter section. The letters are assigned within the section in a counterclockwise direction beginning with (a) in the northeast quarter of the section. Letters are assigned within each quarter section, quarter-quarter section, and quarter-quarter-quarter section in the same manner. Where two or more locations are within the smallest subdivision, consecutive numbers beginning with 2 are added to the letters in the order in which the wells or test holes were inventoried. For example, C4-68-15daaa2 indicates a well in the northeast quarter of the northeast quarter of the northeast quarter of the southeast quarter of sec.15, T.4 S., R.68 W., and shows that this is the second well inventoried in the quarter-quarter-quarter-quarter section. The capital letter C indicates the township is south of the base line and that the range is west of the principal meridian.

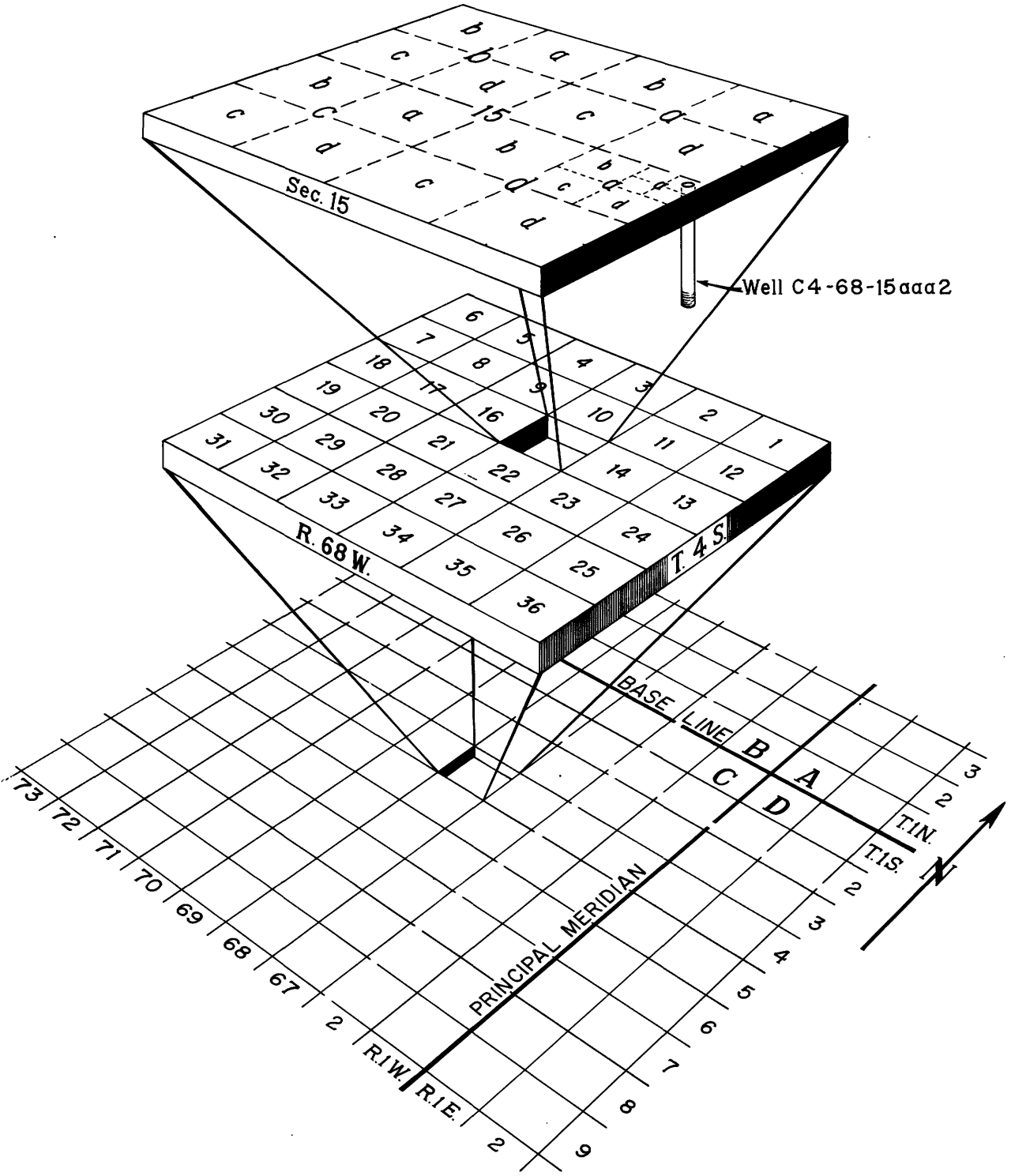

Figure 1.--System of numbering wells in Colorado.

COLLECTION AND EXAMINATION OF SAMPLES

Samples of surface water ordinarily were obtained at or near gaging stations because water-discharge data are essential for computation and interpretation of water-quality records. Samples taken daily were taken by local observers trained and supervised by personnel of the Geological Survey. Samples taken less frequently than daily generally were taken by Geological Survey personnel or by personnel of cooperating agencies. The map on page 10 shows the locations of the surface-water stations sampled in 1966.

Samples of ground water were taken at or near the points of well discharge. Data on the quality of ground water were collected at least once during the year. The areas in which these wells are located are shown on the map on page 11.

Solutes

The methods of collecting water samples and of compositing daily samples prior to laboratory analysis are described in a manual by Rainwater and Thatcher (1960). No single method of compositing of daily samples is applicable for all water-quality stations; the method used depends on the type of water problem being studied at the station. Generally, only samples having similar dissolved-solids content, indicated by measurements of conductivity, are included in any given composite. At sites where water-quality data were collected less frequently than daily, the data may represent conditions only at the time of sampling. For such sites, however, observations obtained over a period of years show relations that are useful in predicting the long-term water-quality characteristics.

Temperature

Water temperatures were measured at most of the water-quality stations. For daily stations, the water temperatures were taken at about the same time each day in order that the data would be relatively unaffected by diurnal variations in water temperature. Most large swiftly flowing streams probably have a small diurnal variation in water temperature, whereas sluggish or shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. The thermometers used for determining the water temperature were accurate to plus or minus 0.5°F.

At stations where thermographs are located, the records consist of maximum and minimum temperatures for each day and the monthly averages of maximum daily and minimum daily temperatures.

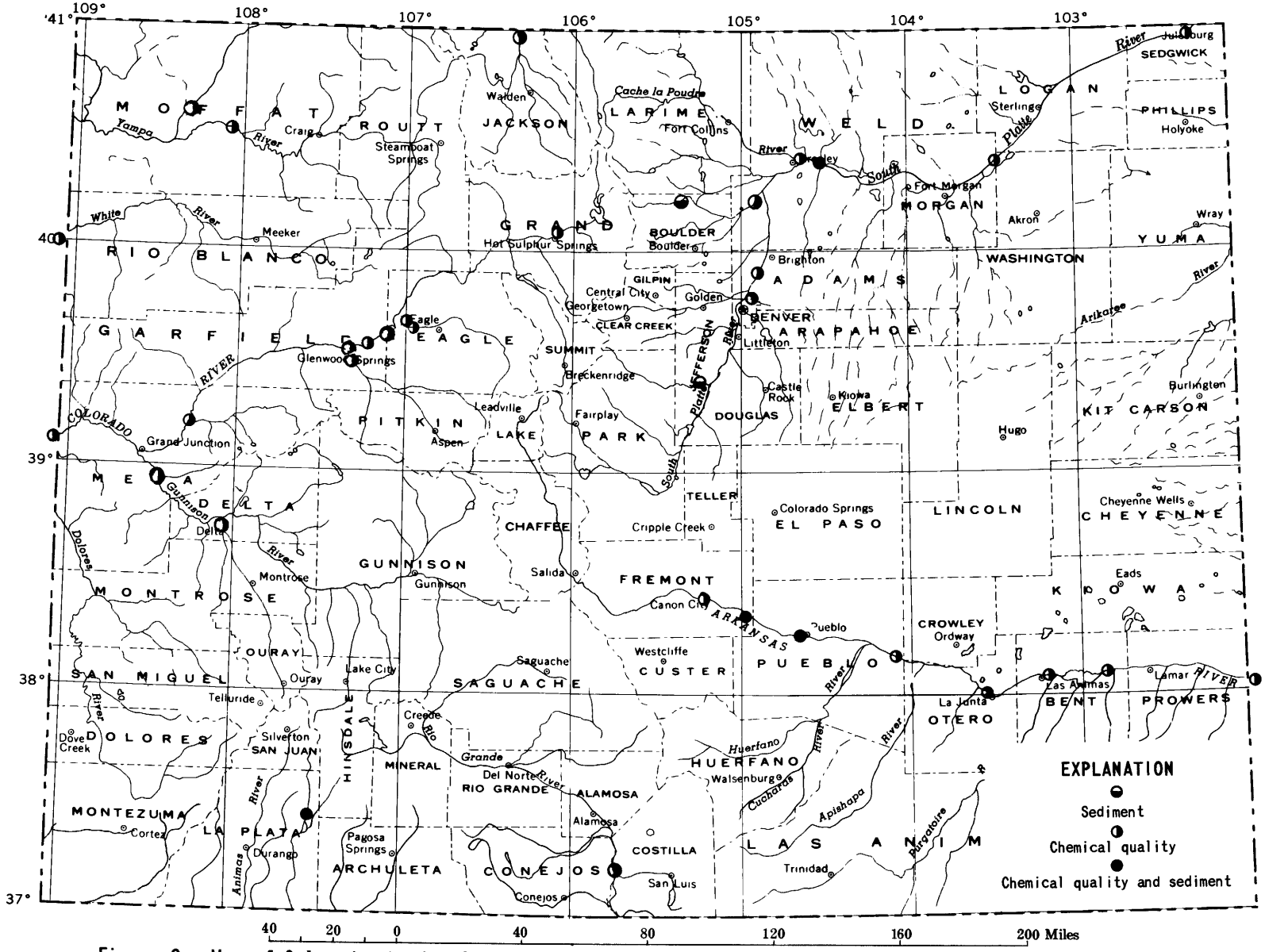

Figure 2.—Map of Colorado showing locations of sites where data on quality of surface water were obtained during the water year. Water-temperature data were obtained daily at some of these sites.

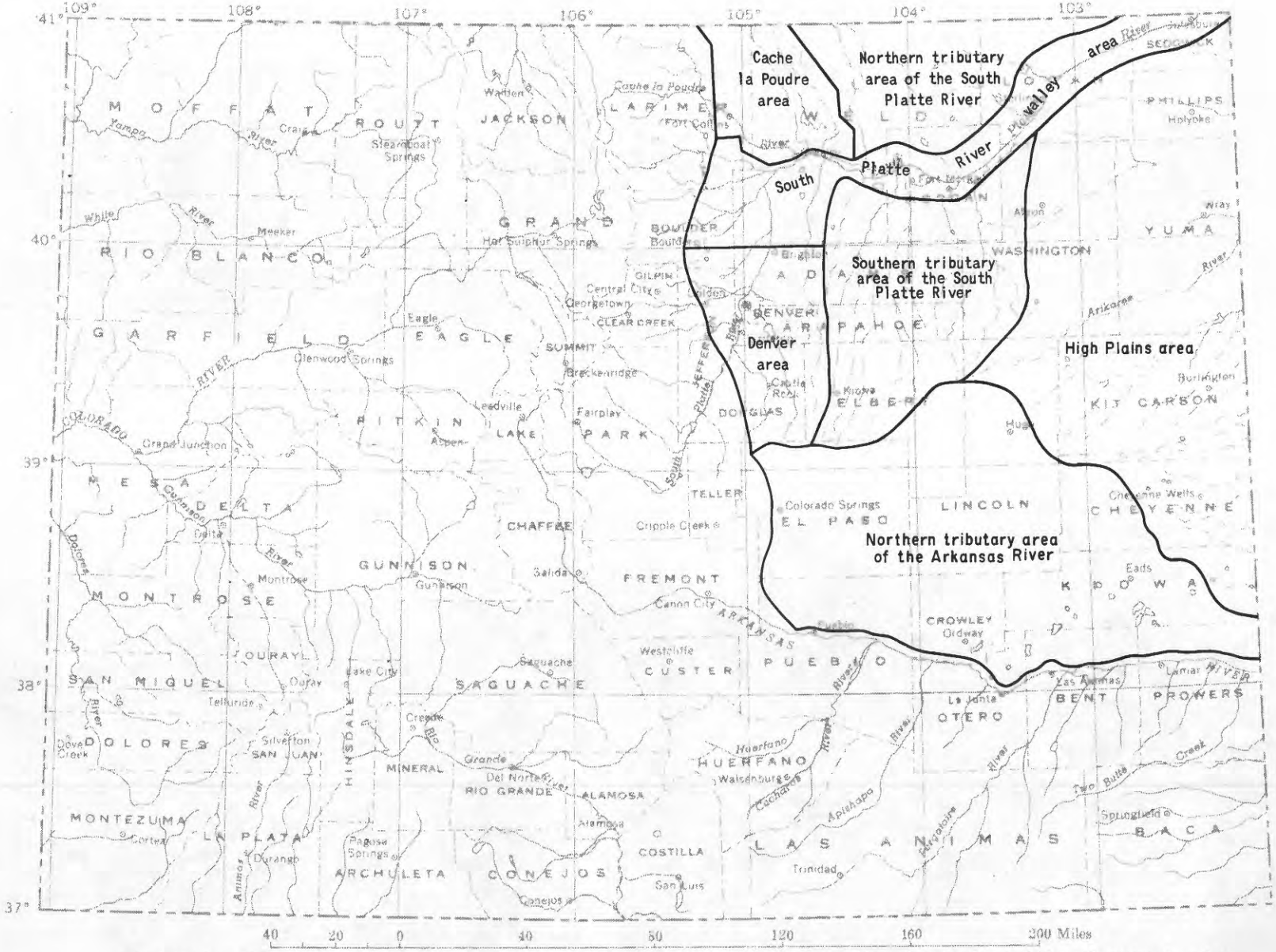

Figure 3.—Map of Colorado showing areas where data were obtained on the chemical quality of ground water.

Sediment

Suspended-sediment samples generally were collected periodically with depth-integrating cable-suspended or hand samplers at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of periodic measurements of the particle-size distribution of the suspended sediment and the bed material are included.

IRRIGATION NETWORK STATIONS

Irrigation Network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. The chemical-quality data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands.

Irrigation Network stations published in this report are identified under the station name by "Irrigation Network station" set in parentheses.

Over 100 Irrigation Network stations were selected in 1952 by the Subcommittee on Hydrology, Interagency Committee on Water Resources (now Committee on Hydrology, Water Resources Council). (Of these, approximately 77 currently are in operation.) Prior to water year 1966, chemical-quality data for irrigation was published in the annual water-supply series, "Quality of Surface Waters for Irrigation, Western States." Beginning with the 1966 water year, the Irrigation Network data will be published at 5-year intervals in the water-supply series entitled, "Quality of Surface Waters of the United States."

SELECTED REFERENCES

The following publications are available for background information on the methods for collecting, analyzing and evaluating the chemical and physical properties of surface waters:

Clarke, F. W., 1924, The composition of the river and lake waters of the United States: U.S. Geol. Survey Prof. Paper 135, 199 p.

Colby, B. R., 1963, Fluvial sediments--a summary of source, transportation, deposition, and measurements of sediment discharge: U.S. Geol. Survey Bull. 1181-A, 47 p.

Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geol. Survey Water-Supply Paper 1593, 17 p.

Collins, W. D., and Howard, C. S., 1928, Quality of water of Colorado River in 1925-26: U.S. Geol. Survey Water-Supply Paper 596-B, p. 33-43.

Gregg, D. O., and others, 1961, Public Water Supplies of Colorado (1959-60): Colorado State Univ. Agr. Expt. Sta., Gen. Ser. 757, 128 p.

Hem, John D., 1959, Study and interpretation of the chemical characteristics of natural water: U.S. Geol. Survey Water-Supply Paper 1473, 269 p.

Howard, C. S., 1955, Quality of water of the Colorado River, 1925-40: U.S. Geol. Survey open-file rept., 103 p.

Iorns, W. V., and others, 1964, Water resources of the Upper Colorado River Basin--basic data: U.S. Geol. Survey Prof. Paper 442, 1,036 p., 4 pls., 1 fig.

_____1965, Water resources of the Upper Colorado River Basin--technical report: U.S. Geol. Survey Prof. Paper 441, 370 p., 9 pls., 147 figs.

Lane, E. W., and others, 1947, Report of Subcommittee on terminology: Am. Geophys. Union Trans., v. 28, p. 937.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.

McGuinness, C. L., 1963, The role of ground water in the national water situation: U.S. Geol. Survey Water-Supply Paper 1800, 1,121 p.

Meinzer, O. E., 1923, The occurrence of ground water in the United States: U.S. Geol. Survey Water-Supply Paper 489, 321 p.

_____1923, Outline of ground-water hydrology, with definitions: U.S. Geol. Survey Water-Supply Paper 494, 71 p.

Rainwater, F. H., and Thatcher, L. L., 1960, Methods for collection and analysis of water samples: U.S. Geol. Survey Water-Supply Paper 1454, 301 p.

Stabler, Herman, 1911, Some stream waters of the Western United States: U.S. Geol. Survey Water-Supply Paper 274, 188 p.

U. S. Inter-Agency Committee on Water Resources, A study of methods used in measurement and analysis of sediment loads in streams:

Report 11, 1957, The development and calibration of visual accumulation tube: St. Anthony Falls Hydraulic Lab., Minneapolis, Minn., 109 p., 43 figs.

Report 12, 1957, Some fundamentals of particle-size analysis: Washington, U. S. Govt. Printing Office, 55 p., 9 figs.

Report AA, 1959, Federal Inter-agency sedimentation instruments and reports: St. Anthony Falls Hydraulic Lab., Minneapolis, Minn., 41 p., 27 figs.

Report 13, 1961, The single-stage sampler for suspended sediment: Washington, U. S. Govt. Printing Office, 105 p., 51 figs.

Report 14, 1963, Determinations of fluvial sediment discharge: Washington, U. S. Govt. Printing Office, 151 p., 70 figs.

WATER-SUPPLY PAPERS

The table below shows the annual series of Water-Supply Papers that give information on quality of surface waters in Colorado. Data for the Missouri River basin are given in parts 5-6; for the Arkansas River and Rio Grande basins, in parts 7-8; and for the Colorado River basin, in parts 9-14.

Water-supply paper numbers and parts, water years 1941-65

Report year	Parts 1-14 (1941-47)	Parts 5-6	Parts 7-8	Parts 9-14	Irrigation (1951-63) a
1941	942	--	--	--	--
1942	950	--	--	--	--
1943	970	--	--	--	--
1944	1022	--	--	--	--
1945	1030	--	--	--	--
1946	1050	--	--	--	--
1947	1102	--	--	--	--
1948	--	b1132	c1133	--	--
1949	--	b1162	c1163	--	--
1950	--	1187	1188	1189	--
1951	--	1198	1199	1200	1264
1952	--	1251	1252	1253	1362
1953	--	1291	1292	1293	1380
1954	--	1351	1352	1353	1430
1955	--	1401	1402	1403	1465
1956	--	1451	1452	1453	1485
1957	--	1521	1522	1523	1524
1958	--	1572	1573	1574	1575
1959	--	1643	1644	1645	1699
1960	--	1743	d1744	d1745	d1746
1961	--	1883	d1884	1885	d1886
1962	--	1943	1944	1945	1946
1963	--	1949	1950	1951	1952
1964-65	--	de1959	d1960-61	df1962	

a Annual series, "Quality of Surface Waters for Irrigation, Western States."
b Includes parts 1-6.
c Includes parts 7-14.
d In preparation.
e Part 6 only.
f Parts 9-10 only.

WATER QUALITY RECORDS

PART 6. MISSOURI RIVER BASIN

PLATTE RIVER BASIN

6-6200. NORTH PLATTE RIVER NEAR NORTHGATE, COLO.

LOCATION.--Lat 40°56'10", long 106°20'21", at gaging station at bridge on State Highway 125, 0.8 mile upstream from Camp Creek, 4.2 miles northwest of Northgate, Jackson County, and 4.4 miles south of Colorado-Wyoming State line.
DRAINAGE AREA.--1,431 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1965 to September 1966.
Water temperatures: October 1965 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 280 ppm Nov. 24-30; minimum, 148 ppm Jan. 1-11.
Hardness: Maximum, 180 ppm July 1-17; minimum, 90 ppm Jan. 1-11.
Specific conductance: Maximum daily, 545 micromhos Feb. 3; minimum daily, 222 micromhos Apr. 3.
Water temperatures: Maximum, 72°F May 30; minimum, freezing point on many days during November to February.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Hardness, 188 ppm July 12.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-10, 1965...	429	14		28	6.6	15	2.2	116	0	30	3.5	0.5	0.0	0.05	172	0.23	199	96	0	0.7	261	7.6
Oct. 11-31.....	290	14		25	6.7	12	2.0	115	0	15	3.5	.5	.0	.04	154	.21	121	91	0	.6	236	7.2
Nov. 1-12.....	213	7.2		26	9.0	12	1.8	128	0	17	6.4	.4	.0	.03	192	.26	110	101	0	.5	238	8.2
Nov. 13-23.....	266	8.9		32	6.6	14	2.2	130	0	22	5.7	.4	.0	.03	206	.28	148	108	1	.6	260	8.1
Nov. 24-30.....	235	9.9		35	8.9	17	2.2	151	0	39	2.8	.5	.0	.02	280	.38	178	124	0	.7	307	8.2
Dec. 1-9.....	200	13		28	11	15	3.8	140	0	26	3.5	.5	.0	.00	172	.23	92.8	113	0	.6	281	7.8
Dec. 10-31.....	161	13		28	9.5	13	1.8	131	0	28	3.5	.5	.0	.02	164	.22	71.2	108	0	.5	261	7.7
Jan. 1-11, 1966...	137	14		30	3.9	13	2.8	128	0	16	1.8	.4	.5	.03	148	.20	54.7	90	0	.6	254	7.7
Jan. 12-31.....	126	14		28	6.0	12	2.5	128	0	17	1.8	.4	.2	.02	162	.22	55.0	94	0	.5	255	7.5
Feb. 1-11.....	119	17		37	7.7	14	3.2	156	0	20	1.8	.5	.5	.04	190	.26	61.0	124	0	.5	304	7.5
Feb. 12-22.....	118	14		31	6.7	12	2.5	131	0	19	1.8	.4	.3	.05	166	.23	52.8	106	0	.5	259	7.4
Feb. 27-Mar. 11...	135	13		29	7.7	14	2.2	128	0	24	3.5	.4	.0	.00	162	.22	59.0	103	0	.6	259	8.0
Mar. 12-31.....	296	11		27	9.0	18	5.0	131	0	32	5.3	.4	.3	.10	196	.27	157	105	0	.8	296	8.1
Apr. 1-17.....	455	10		24	9.6	14	1.0	113	0	35	2.1	.4	.9	.01	156	.21	192	100	7	.6	257	7.5
Apr. 18-30.....	268	10		27	10	17	2.0	121	0	42	.0	.4	.0	.06	194	.26	140	110	11	.7	294	7.8
May 1-11.....	243	10		27	10	17	2.0	121	0	42	1.4	.5	.3	.06	196	.27	129	110	11	.7	292	7.3
May 12-31.....	277	12		39	12	26	2.5	171	0	51	4.6	.6	.3	.07	264	.36	197	148	7	.9	390	7.6
June 7-20.....	436	12		42	12	22	1.5	191	0	42	.7	.7	.3	.15	230	.31	271	154	0	.8	377	7.8
June 21-30.....	326	10		45	12	19	1.3	196	0	35	.0	.8	.2	.09	232	.32	204	160	0	.6	372	---
July 1-17.....	203	11		43	18	23	2.9	203	8	33	11	.8	1.0	.09	258	.35	141	180	0	.7	404	8.4

6-6200. NORTH PLATTE RIVER NEAR NORTHGATE, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
July 18-31, 1966..	200	11		30	15	16	3.1	156	0	28	5.3	0.8	1.3	0.03	194	0.26	105	134	6	0.6	314	7.7
Aug. 1-31.....	149	8.8		30	8.5	15	.9	139	0	22	5.3	.6	.1	.06	166	.23	66.7	111	0	.6	259	8.0
Sept. 1-30.....	56.7	9.5		33	10	16	1.7	149	0	30	3.5	.7	.0	.09	170	.23	26.0	122	0	.6	301	7.8
Weighted average	--[A]	11		31	9.7	17	2.2	142	--	31	3.5	0.5	0.3	0.05	193	0.26	115	118	2	0.7	296	7.6
Time-weighted average.....	A224	11		31	9.5	16	2.2	142	--	29	3.7	0.5	0.3	0.05	189	--	--	117	2	0.6	292	7.7
Tons per day....	--	6.8		19	5.8	9.9	1.3	85	--	18	2.1	0.3	0.2	0.03	--	--	--	--	--	--	--	--
Analyses of additional samples																						
July 12, 1966.....	B203	12	0.21	49	16	19	1.5	209	0	52	3.5	0.7	0.0	0.01	274	0.37	150	188	17	0.6	425	7.1
Aug. 12.....	B143	8.4	.43	30	8.8	14	1.5	131	0	25	2.5	.6	.0	.03	160	.22	61.7	112	4	.6	266	7.8

A Mean discharge based on 365 days; mean discharge for 355 days of chemical analyses, 221 cfs.
B Discharge at time of sampling.

6-6200. NORTH PLATTE RIVER NEAR NORTHGATE, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	270	244	314	--	319	246	225	285	--	397	276	277
2.....	281	239	300	--	474	244	226	288	--	394	264	260
3.....	278	241	289	256	545	247	222	269	--	393	278	260
4.....	265	248	275	254	249	249	240	265	--	395	249	245
5.....	261	252	276	253	249	251	243	255	--	406	275	253
6.....	251	256	274	253	246	251	253	270	--	421	293	254
7.....	251	256	274	255	256	249	260	279	367	426	280	258
8.....	246	255	269	239	248	242	249	318	386	429	285	261
9.....	243	257	263	237	252	252	250	305	391	437	286	257
10.....	241	256	258	241	263	244	232	306	390	426	285	261
11.....	239	258	257	251	256	245	233	309	392	426	276	261
12.....	240	264	263	242	254	287	233	325	399	423	274	268
13.....	239	267	261	244	253	289	241	368	384	423	270	287
14.....	239	262	259	248	257	286	252	381	391	416	281	294
15.....	240	259	257	246	265	274	263	400	395	416	271	297
16.....	231	261	265	248	258	313	262	416	398	419	271	294
17.....	246	264	273	240	258	278	260	416	383	407	268	301
18.....	232	266	277	243	259	324	263	415	372	384	266	310
19.....	238	276	273	251	270	325	272	416	354	373	265	302
20.....	229	279	273	251	252	320	291	408	347	366	265	304
21.....	232	276	254	252	264	292	303	408	352	327	264	310
22.....	232	293	252	255	274	292	314	391	355	322	258	314
23.....	235	298	257	252	323	293	308	389	357	310	248	318
24.....	232	279	--	251	433	295	309	352	363	295	255	321
25.....	232	274	--	253	1310	294	317	361	370	286	259	328
26.....	230	321	--	252	1250	293	312	387	380	306	260	324
27.....	231	320	--	248	272	287	305	384	392	290	260	324
28.....	237	357	--	248	258	282	281	383	397	285	267	323
29.....	232	361	--	241	--	268	267	385	399	282	269	314
30.....	234	340	--	241	--	245	271	384	397	282	272	319
31.....	236	--	--	242	--	230	--	384	--	282	271	--
Average	242	275	--	247	359	273	265	351	379	369	269	289

6-6200. NORTH PLATTE RIVER NEAR NORTHGATE, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	49	48	52	52	48	51	52	51	54	52	52	51	47	50	50	45	49	50	44	47	46	48	47	47	46	46	43	44	44	42	45	48
November	43	44	45	44	34	33	35	33	35	34	32	33	37	37	38	36	37	38	37	35	34	34	34	33	33	32	33	32	32	32	---	36
December	33	32	33	32	34	33	33	34	32	33	34	32	33	32	33	32	32	32	32	33	33	32	33	---	---	---	---	---	---	---	---	---
January	---	---	33	34	35	34	33	32	33	33	32	33	32	34	33	33	32	32	32	32	33	33	32	32	32	32	34	32	32	33	32	33
February	33	32	32	32	33	33	34	34	34	33	34	33	33	32	32	32	32	33	33	33	32	33	32	32	32	33	33	33	---	---	---	33
March	34	33	33	33	34	34	33	33	34	34	35	35	35	36	35	35	36	36	35	35	35	34	37	36	36	36	36	36	35	40	35	35
April	35	34	40	34	35	---	---	---	---	---	---	---	---	---	---	---	---	---	39	40	48	45	51	55	59	50	46	49	55	55	---	---
May	59	63	60	65	64	61	64	63	56	55	53	52	56	64	65	64	62	65	66	67	66	65	64	68	68	68	67	68	70	72	64	63
June	---	---	---	---	---	---	55	52	50	53	53	51	50	52	51	56	56	56	59	60	58	59	56	58	56	58	56	58	59	60	---	56
July	61	59	59	60	59	59	60	59	58	62	62	64	63	60	62	64	63	65	63	62	62	62	62	58	60	61	60	63	62	62	61	61
August	65	64	63	62	60	61	59	60	60	57	60	60	55	57	57	59	60	59	61	58	56	55	57	55	55	58	60	55	57	59	60	59
September	59	55	55	55	52	52	52	52	53	51	52	53	50	50	49	49	49	48	50	52	51	53	52	52	51	58	51	49	50	46	---	52

6-7142. BURLINGTON DITCH BELOW HEADGATE, AT DENVER, COLO.

LOCATION.--Lat 39°48'02", long 104°57'32", at York Street Bridge in Denver, Denver County, about 0.7 mile below headgate, and about 1 mile upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: June 1962 to September 1966.
REMARKS.--Records of discharge for water year October 1965 to September 1966 furnished by State engineer of Colorado.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 12, 1965 A...	--	14	0.18	57	16	72	5.5	161	0	123	62	1.1	30	0.24	469	0.64	--	206	74	2.2	797	6.9
Nov. 9.....	167	14	.09	63	15	90	7.0	267	0	132	65	1.1	.1	.25	490	.67	221	220	1	2.6	871	7.1
Dec. 7.....	4.4	17	.14	64	16	90	6.7	176	0	142	73	1.2	35	.36	562	.76	6.66	225	81	2.6	910	6.8
Jan. 12, 1966.....	120	16	.54	59	19	142	12	312	0	124	148	1.4	.2	.30	693	.94	225	224	0	4.1	1230	7.1
Feb. 16.....	101	16	.19	70	18	102	8.5	264	0	131	92	1.3	.3	.38	580	.79	158	246	29	2.8	965	7.0
Mar. 24.....	99.4	17	.21	63	19	96	8.1	237	0	153	88	1.7	2.1	.37	579	.79	155	236	42	2.7	941	7.0
Apr. 21.....	167	11	.17	54	13	77	5.9	187	0	102	83	1.4	.1	.23	446	.61	201	187	34	2.4	778	7.0
May 17.....	27.6	11	.09	51	15	60	4.3	151	0	92	57	1.3	4.5	.16	380	.52	28.2	188	64	1.9	670	6.8
June 8.....	36.4	12	.09	43	12	79	7.5	240	0	73	64	1.1	.5	.24	409	.56	40.1	156	0	2.7	718	7.2
July 12.....	45.1	16	.21	64	21	136	11	384	0	94	106	1.8	.5	.48	657	.89	80.0	245	0	3.8	1140	7.3
Aug. 10.....	36.4	11	.03	56	9.7	54	4.8	162	0	102	46	1.3	11	.15	400	.54	39.2	180	47	1.8	628	7.3
Sept. 12.....	29.3	12	.01	72	16	98	7.2	234	0	158	72	1.7	.9	.27	554	.75	43.7	244	52	2.7	939	7.2

A Sampled above sluiceway returning flow to river above gaging station.

6-7205. SOUTH PLATTE RIVER AT HENDERSON, COLO.

LOCATION.--Lat 39°55'19", long 104°52'05", at bridge on State Highway 22, 1,200 feet downstream from gaging station, and 0.2 mile west of Henderson, Adams County.
DRAINAGE AREA.--4,713 square miles upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: July 1955 to September 1957, June 1962 to September 1966.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 12, 1965.....	475	14	0.18	62	13	80	5.0	173	0	143	57	1.0	18	0.26	497	0.68	637	208	66	2.4	792	7.1
Nov. 9.....	108	17	.03	105	24	121	7.1	287	0	252	94	1.1	13	.36	801	1.09	234	362	127	2.8	1210	7.1
Dec. 7.....	294	18	.27	75	21	117	8.2	300	0	150	90	1.2	1.0	.45	657	.89	522	274	28	3.1	1080	6.9
Jan. 12, 1966.....	148	18	.14	90	25	123	8.8	338	0	203	98	1.2	.3	.40	735	1.00	294	326	49	3.0	1190	7.4
Feb. 16.....	145	18	.31	83	23	132	10	348	0	183	113	1.9	.3	.47	742	1.01	290	300	15	3.3	1250	7.1
Mar. 24.....	91	8.9	.27	91	28	140	9.3	340	0	229	110	1.6	1.1	.45	812	1.10	200	342	63	3.3	1300	7.3
Apr. 21.....	205	14	.28	70	14	120	8.6	283	0	126	109	1.4	.4	.33	623	.85	345	234	1	3.4	1050	7.1
May 17.....	377	12	.09	53	15	60	5.3	160	0	100	58	1.3	10	.15	399	.54	406	194	63	1.9	658	6.9
June 8.....	958	9.4	.08	42	8.8	51	5.6	163	0	97	39	.8	.4	.20	324	.44	838	170	36	1.9	530	6.9
July 12.....	108	15	.15	84	19	111	9.6	232	0	184	88	1.4	29	.26	685	.93	200	290	100	2.8	1060	7.1
Aug. 10.....	266	14	.06	72	11	91	7.4	208	0	142	74	1.4	8.6	.22	557	.76	400	225	54	2.6	919	6.9
Sept. 12.....	92	15	.03	85	21	117	8.4	216	0	197	100	1.8	48	.31	690	.94	171	300	123	2.9	1150	7.2

6-7310. ST. VRAIN CREEK AT MOUTH, NEAR PLATTEVILLE, COLO.

LOCATION.--Lat 40°15'29", long 104°52'45", at gaging station at bridge on county road, 1.3 miles upstream from mouth, and 4 miles northwest of Platteville, Weld County.
DRAINAGE AREA.--976 square miles.
RECORDS AVAILABLE.--Chemical analyses: September 1965 to September 1966.
REMARKS.--Values reported for dissolved solids less than 1,000 ppm are residues at 180°C, and values more than 1,000 ppm are calculated from the determined constituents unless otherwise noted.

Chemical analyses, in parts per million, September 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Sept. 14, 1965....	196	9.8	0.03	112	83	133	4.4	282	0	610	30	1.1	8.5	0.25	1130	1.54	598	620	389	2.3	1560	7.9
Oct. 12.....	265	--	.01	57	70	87	7.5	212	16	384	18	.8	1.0	.22	823	1.12	589	428	227	1.8	1170	8.6
Nov. 9.....	136	9.3	.04	105	79	122	5.4	312	0	561	29	1.0	9.3	.25	1070	1.46	393	588	332	2.2	1500	7.7
Dec. 7.....	158	3.0	.05	128	77	121	6.9	404	0	529	24	.8	4.0	.29	1090	1.48	465	636	305	2.1	1510	7.7
Jan. 11, 1966.....	139	9.9	.05	118	79	123	6.4	343	0	564	24	1.2	8.6	.25	1100	1.50	413	620	339	2.1	1510	7.6
Feb. 16.....	88	11	.06	111	80	129	2.9	301	0	562	30	1.2	18	.36	1090	1.48	259	608	361	2.3	1480	7.5
Mar. 24.....	82	10	.03	114	81	132	3.0	312	0	567	28	1.5	11	.30	1100	1.50	244	620	364	2.3	1550	7.7
Apr. 21.....	96	7.8	.10	122	109	167	5.0	326	0	751	25	1.9	11	.30	1360	1.85	353	755	488	2.6	1800	7.4
May 19.....	52	8.9	.00	122	93	150	3.4	338	0	654	30	1.6	9.6	.26	1240	1.69	174	688	411	2.5	1680	7.8
June 8.....	181	8.0	.01	112	91	132	4.4	256	0	666	21	1.3	6.9	.27	1170	1.59	572	655	445	2.2	1560	7.6
July 12.....	126	9.6	.05	104	100	144	5.7	280	0	675	30	1.6	6.7	.30	1210	1.65	412	670	440	2.4	1640	7.6
Aug. 10.....	91	10	.03	128	88	146	5.3	324	0	643	36	1.5	9.5	.28	1230	1.67	302	680	414	2.4	1660	8.0
Sept. 12.....	108	7.9	.00	132	90	157	4.5	336	0	685	32	1.5	10	.33	1290	1.75	376	700	424	2.6	1720	8.0

6-7525. CACHE LA POUDRE RIVER NEAR GREELEY, COLO.

LOCATION.--Lat 40°25'04", long 104°38'22", at gaging station at highway bridge, 3 miles east of courthouse in Greeley, Weld County, and 3 miles upstream from mouth.
DRAINAGE AREA.--1,877 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1951 to September 1952, August 1954 to August 1956, December 1963 to September 1966 (discontinued).
REMARKS.--Values reported for dissolved solids less than 1,000 ppm are residues at 180°C, and values more than 1,000 ppm are calculated from the determined constituents unless otherwise noted.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 27, 1965.....	112	13	0.01	208	107	136	11	471	0	803	45	0.8	8.0	0.36	1560	2.12	472	960	574	1.9	2030	7.4
Nov. 9.....	104	15	.04	204	102	136	12	440	0	802	42	.9	9.9	.37	1540	2.09	432	930	569	1.9	1990	7.3
Dec. 7.....	98	12	.08	208	103	143	13	489	0	772	44	.9	7.5	.39	1540	2.09	407	940	539	2.0	2030	7.4
Jan. 11, 1966.....	174	11	.06	156	89	125	5.0	304	0	687	35	.9	13	.29	1270	1.73	597	755	506	2.0	1680	7.7
Feb. 16.....	113	15	.10	172	84	119	5.8	322	0	672	55	1.0	15	.31	1300	1.77	397	776	512	1.9	1760	7.3
Mar. 24.....	88	13	.06	184	101	138	5.8	352	0	820	44	1.4	11	.34	1490	2.03	354	875	586	2.0	1890	7.9
Apr. 21.....	69	11	.07	182	111	144	7.2	340	0	600	43	1.6	22	.32	1490	2.03	278	910	631	2.1	1920	7.5
May 17.....	8.2	13	.00	200	90	135	8.1	416	0	712	34	1.1	19	.26	1420	1.93	31.3	868	527	2.0	1870	7.6
June 8.....	228	14	.15	92	49	84	33	524	0	134	57	.9	1.0	.23	789	1.07	486	430	0	1.8	1310	7.4
July 12.....	55	14	.09	176	122	159	9.0	324	0	880	56	1.2	13	.31	1590	2.16	236	940	674	2.3	2040	7.8
Aug. 10.....	22	13	.02	164	90	124	8.3	360	0	674	28	1.2	16	.26	1300	1.77	77.1	780	485	1.9	1720	7.7
Sept. 12.....	12	11	.00	172	80	124	6.7	356	0	671	32	1.5	12	.27	1290	1.75	41.7	760	468	2.0	1700	7.8

6-7540. SOUTH PLATTE RIVER NEAR KERSEY, COLO.

LOCATION.--Lat 40°24'44", long 104°33'46", at gaging station at bridge on State Highway 37, 1.9 miles north of railroad in Kersey, Weld County, and 2.5 miles downstream from Cache la Poudre River.
DRAINAGE AREA.--9,598 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1953, August 1954 to August 1957, June 1962 to September 1966.
REMARKS.--Values reported for dissolved solids less than 1,000 ppm are residues at 180°C, and values more than 1,000 ppm are calculated from the determined constituents unless otherwise noted.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 12, 1965.....	1340	12	0.04	114	60	110	5.5	270	0	442	48	1.2	9.8	0.25	976	1.33	3530	530	309	2.1	1330	7.6
Nov. 9.....	780	14	.01	144	66	122	7.1	324	0	544	51	1.0	10	.27	1120	1.52	2360	630	364	2.1	1560	7.5
Dec. 7.....	860	13	.08	135	58	124	8.0	344	0	479	55	1.0	4.6	.30	1050	1.43	2440	574	292	2.2	1490	7.4
Jan. 11, 1966.....	772	12	.06	136	64	125	6.4	311	0	551	54	1.0	13	.26	1120	1.52	2330	605	350	2.2	1540	7.3
Feb. 16.....	560	16	.03	140	63	138	7.3	316	0	526	71	1.2	18	.35	1140	1.55	1720	610	351	2.4	1600	7.3
Mar. 24.....	494	14	.06	150	73	146	6.3	320	0	612	68	1.3	18	.32	1250	1.70	1670	675	413	2.4	1680	7.6
Apr. 21.....	542	11	.09	122	63	150	7.7	279	0	509	68	1.9	14	.28	1080	1.47	1580	565	336	2.7	1550	7.1
May 17.....	52	14	.04	147	88	154	6.1	350	0	695	48	.9	12	.31	1340	1.82	188	730	443	2.5	1780	7.7
June 8.....	646	12	.03	107	50	98	21	320	0	397	39	1.1	.5	.23	907	1.23	1580	472	210	2.0	1270	7.6
July 12.....	104	16	.02	164	92	161	7.6	319	0	733	68	1.2	11	.28	1410	1.92	396	790	528	2.5	1890	7.3
Aug. 10.....	150	15	.04	172	81	143	8.1	350	0	682	40	1.5	14	.25	1330	1.81	539	765	478	2.3	1760	7.9
Sept. 12.....	302	13	.00	168	78	153	6.8	346	0	691	46	1.4	12	.28	1340	1.82	1090	740	456	2.4	1770	7.9

6-7540. SOUTH PLATTE RIVER NEAR KERSEY, COLO.--Continued

Periodic determinations of suspended-sediment discharge and particle size, water year October 1985 to September 1966
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters											Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 12, 1965.....	1210	57		1340	199	720	16	19				40	52	78	99	100		VPWC
Oct. 27.....	1200	54		1160	396	1240	9	12				23	27	53	89	100		VPWC
Nov. 9.....	1350	50		780	131	276	--	--				--	--	--	--	--		
Nov. 24.....	1300	45		860	211	490	--	--				--	--	--	--	--		
Dec. 7.....	1245	43		860	223	518	--	--				--	--	--	--	--		
Dec. 27.....	1130	32		668	261	471	--	--				--	--	--	--	--		
Jan. 11, 1966.....	1215	37		772	189	394	--	--				--	--	--	--	--		
Feb. 16.....	1325	33		560	192	290	--	--				--	--	--	--	--		
Mar. 11.....	1050	45		548	192	284	--	--				--	--	--	--	--		
Mar. 24.....	1130	44		494	142	189	--	--				--	--	--	--	--		
Apr. 5.....	1140	46		250	58	39	--	--				--	--	--	--	--		
Apr. 21.....	1055	48		542	312	456	--	--				--	--	--	--	--		
May 5.....	0820	54		55	44	6.5	--	--				--	--	--	--	--		
May 17.....	1330	61		52	12	1.7	--	--				--	--	--	--	--		
May 27.....	0900	61		58	11	1.7	--	--				--	--	--	--	--		
June 8.....	0945	55		639	1130	1950	58	68		78		88	94	97	100	--		VPWC
June 29.....	0900	65		80	14	3.0	--	--				--	--	--	--	--		
July 12.....	1035	72		104	24	6.7	--	--				--	--	--	--	--		
July 26.....	1605	80		88	26	6.2	--	--				--	--	--	--	--		
Aug. 10.....	1200	71		150	161	65.2	--	--				--	--	--	--	--		
Aug. 22.....	0825	61		189	168	85.7	--	--				--	--	--	--	--		
Sept. 12.....	1145	67		302	65	53	--	--				--	--	--	--	--		
Sept. 28.....	1230	67		222	35	21	--	--				--	--	--	--	--		

6-7600. SOUTH PLATTE RIVER AT BALZAC, COLO.

LOCATION.--Lat 40°24'24", long 103°27'58", at gaging station just upstream from highway bridge at Balzac siding, Morgan County, 2.8 miles northeast of Union, and 7.0 miles downstream from Beaver Creek.
DRAINAGE AREA.--16,852 square miles.
RECORDS AVAILABLE.--Chemical analyses: January 1950 to September 1951, August 1954 to September 1957, June 1962 to September 1966.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (calculated)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 12, 1965.....	994	2.6	0.00	134	62	127	6.1	288	0	544	58	1.0	5.8	0.25	1080	1.47	2900	590	354	2.3	1520	8.1
Nov. 9.....	415	14	.02	156	68	133	7.8	330	0	618	58	.7	7.1	.26	1220	1.66	1370	670	399	2.2	1670	7.7
Dec. 7.....	504	2.4	.03	166	63	150	8.9	332	0	629	63	.9	6.3	.29	1250	1.70	1700	674	402	2.5	1730	7.9
Jan. 11, 1966.....	674	15	.05	164	68	148	8.6	333	0	656	60	1.0	7.7	.24	1290	1.75	2350	690	417	2.5	1670	7.6
Feb. 16.....	680	16	.15	172	68	151	8.1	332	0	641	67	1.3	14	.30	1300	1.77	2390	706	434	2.5	1770	7.7
Mar. 24.....	21	18	.02	196	71	165	8.9	331	0	775	63	.6	4.3	.26	1470	2.00	83.3	780	508	2.6	1910	7.9
Apr. 21.....	209	14	.05	186	74	159	9.3	322	0	731	56	1.6	6.4	.27	1400	1.90	790	770	506	2.5	1850	7.6
May 17.....	100	14	.02	188	90	186	6.7	321	0	840	74	.8	1.4	.32	1560	2.12	421	840	577	2.8	2020	7.4
June 8.....	592	12	.00	144	58	141	8.4	214	0	630	51	.9	3.6	.19	1150	1.56	1840	600	424	2.5	1570	7.6
July 12.....	169	13	.03	158	69	177	11	232	0	744	64	1.1	3.4	.24	1350	1.84	616	680	490	3.0	1800	7.2
Aug. 10.....	277	11	.02	150	71	158	12	252	0	695	62	1.3	3.3	.25	1290	1.75	965	665	458	2.7	1730	7.7
Sept. 12.....	109	16	.00	208	73	177	11	328	0	821	64	1.0	5.2	.26	1540	2.09	453	820	551	2.7	1980	8.1

6-7640. SOUTH PLATTE RIVER AT JULESBURG, COLO.
(Irrigation Network station)

LOCATION.--Lat 40°58'46", long 102°15'15", at gaging station at bridge on U.S. Highway 385, 0.9 mile southeast of Julesburg, Sedgwick County, 3 miles upstream from Colorado-Nebraska State line, and 8 miles downstream from Lodgepole Creek.
DRAINAGE AREA.--23,138 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1966.
Water temperatures: October 1945 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 1,510 ppm Sept. 1-30; minimum, 1,310 ppm Feb. 1-28.
Hardness: Maximum, 732 ppm Sept. 1-30; minimum, 628 ppm Feb. 1-28.
Specific conductance: Maximum daily, 2,090 micromhos Sept. 3, 11; minimum daily, 704 micromhos Aug. 22.
Water temperatures: Maximum, 89°F Aug. 13; minimum, freezing point Jan. 2.
EXTREMES, 1945-66.-Dissolved solids: Maximum, 1,860 ppm Apr. 13, 1955; minimum, 429 ppm June 16, 1956.
Hardness: Maximum, 860 ppm Dec. 1, 1960; minimum, 173 ppm Mar. 1-12, 1947.
Specific conductance: Maximum daily, 3,000 micromhos Dec. 28, 30, 1962; minimum daily, 617 micromhos Aug. 19, 1953.
Water temperatures: Maximum (1946-49, 1950-66), 93°F July 28, Aug. 1, 1953, July 7, 18, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Values reported for sodium (Na) are determined by analysis and do not include potassium (K). Daily samples for chemical analysis composited by equal volume.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Color
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate				
Oct. 1-31, 1965.	1160	--	--	--	--	168	--	310	0	--	--	--	--	--	1380	1.88	4320	660	406	2.8	1770	7.4	
Nov. 1-30.....	980	--	--	--	--	162	--	307	0	--	--	--	--	--	1440	1.96	3810	701	449	2.7	1850	8.0	
Dec. 1-31.....	941	9.8	0.00	172	68	170	12	336	0	685	63	0.8	4.6	0.36	A1350	1.84	3430	708	432	2.8	1860	8.2	7
Jan. 1-31, 1966.	768	--	--	--	--	171	--	308	0	--	--	--	--	--	1460	1.99	3030	696	443	2.8	1840	8.1	
Feb. 1-28.....	1031	--	--	--	--	150	--	274	0	--	--	--	--	--	1310	1.78	3650	628	403	2.6	1690	8.2	
Mar. 1-31.....	623	--	--	--	--	184	--	309	0	--	--	--	--	--	1470	2.00	2470	718	465	3.0	1910	7.9	
Apr. 1-30.....	285	--	.00	--	--	188	--	272	0	--	--	--	--	--	1490	2.03	1150	688	465	3.1	1900	8.0	
May 1-31.....	67.8	--	--	--	--	185	--	264	0	--	--	--	--	--	1480	2.01	271	694	477	3.1	1890	8.0	
June 1-July 16..	93.5	28	--	180	60	178	15	258	0	775	70	.7	1.7	.32	A1440	1.96	364	698	486	2.9	1930	7.7	
July 17-Aug. 31.	64.8	26	--	178	56	180	16	250	0	710	69	.7	1.0	.26	A1360	1.85	238	674	469	3.0	1860	8.0	
Sept. 1-30.....	152	29	--	190	63	200	17	287	0	795	72	.7	2.5	.28	A1510	2.05	620	732	497	3.2	1990	7.7	
Weighted average.....	--	--	--	--	--	169	--	303	--	--	--	--	--	--	1400	1.90	1960	684	435	2.8	1820	7.8	
Time-weighted average.....	518	--	--	--	--	176	--	286	--	--	--	--	--	--	1420	--	--	691	456	2.9	1870	7.9	
Tons per day..	--	--	--	--	--	236	--	423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

A Calculated from determined constituents.

6-7640. SOUTH PLATTE RIVER AT JULESBURG, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	1680	1880	1750	--	--	--	--	1850	--		1900	1940
2	1660	1840	1760	1860	--	--	1950	1820	--		1900	2040
3	1890	1880	1840	--	--	--	1710	1900	1990		1940	2090
4	1710	1870	1780	--	--	--	1880	1770	1930		1950	1960
5	1660	1890	1860	--	--	--	1860	1760	1990		1950	2020
6	1760	1870	1890	--	--	--	1960	1840	1990		1780	1910
7	1660	1880	1870	--	--	1930	1750	1850	1960		1900	1750
8	1700	1940	1890	--	--	--	1950	1850	1550		1900	--
9	1650	1860	1900	1820	--	1760	--	1670	1640		1890	1950
10	1840	1830	1870	--	--	1810	1930	--	1780		1940	1960
11	1740	1870	--	--	--	1860	--	1860	1740		1910	2090
12	--	1890	1850	--	--	1780	1852	1900	1900		1830	1950
13	1900	1890	1870	--	--	1900	2050	1930	1950		1850	--
14	--	1830	1830	--	--	--	--	--	1960		1900	1970
15	1710	1910	1810	--	--	1900	1940	--	1930		1900	1970
16	--	1840	1930	--	--	1910	1940	--	1880		1890	2070
17	1720	1880	1720	--	--	1930	1830	--	1900		1910	1960
18	1850	1860	1941	--	--	1840	1830	--	1950		1900	2040
19	1660	--	1890	--	--	1930	1790	--	1950		1900	1940
20	1720	1820	1900	--	--	--	1860	--	--		1920	2040
21	1800	1840	1800	--	--	1900	1900	--	--		1880	2000
22	1750	1800	1800	--	--	1860	--	--	--		704	--
23	1840	1850	1870	--	--	1890	1840	--	--		1920	2040
24	1680	1750	--	--	--	--	--	--	--		1910	1960
25	1670	1770	--	--	--	1750	1930	--	--		1850	2020
26	1660	1760	1870	2060	1750	--	--	--	1950		1900	--
27	1660	1760	1890	--	1620	1850	1950	--	1770		1240	2000
28	1670	1750	1890	1840	--	--	1930	1840	1970		1870	1980
29	1720	1750	1840	1730	--	1880	1920	1890	1970		1800	--
30	1750	1710	1840	1710	--	2050	--	1910	1890		--	--
31	1700	--	--	--	--	1930	--	1980	--		1880	--
Average	1730	1840	1850	--	--	--	--	--	--		1830	1990

6-7640. SOUTH PLATTE RIVER AT JULESBURG, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	57	56	55	55	54	54	53	54	53	52	52	--	--	57	59	--	59	57	54	54	54	54	54	56	58	55	57	60	58	57	57	56
November	55	54	54	52	53	54	54	57	47	44	47	49	54	47	48	49	44	41	--	50	45	46	49	49	44	42	39	38	42	39	--	48
December	39	39	37	42	43	46	47	41	40	40	--	44	44	44	47	41	36	40	37	37	39	39	39	--	--	38	40	46	50	41	--	41
January	--	32	--	--	--	--	--	--	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March	--	--	--	--	--	--	59	--	49	48	50	49	59	--	59	49	52	52	52	--	53	51	49	--	49	--	57	--	52	54	52	--
April	--	58	54	49	52	59	58	58	--	61	--	52	58	--	59	61	63	61	57	57	55	--	59	--	74	--	73	67	68	--	--	--
May	65	64	64	60	60	61	61	57	52	--	48	49	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68	65	79	--	--
June	--	--	71	69	62	68	61	54	64	69	69	69	67	70	67	66	69	73	75	--	--	--	--	--	--	84	83	83	85	81	--	--
July	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
August	75	76	75	78	77	77	81	67	69	70	70	72	89	74	79	74	75	77	74	73	76	75	69	75	81	75	73	78	76	--	67	75
September	67	66	71	74	73	73	74	--	72	71	57	67	--	63	56	53	61	63	64	66	66	--	66	56	59	--	65	53	--	--	61	65

PART 7. LOWER MISSISSIPPI RIVER BASIN

ARKANSAS RIVER BASIN

7-0960. ARKANSAS RIVER AT CANON CITY, COLO.

LOCATION.--Lat 38°26'02", long 105°15'24", at gaging station, 800 feet upstream from Sand Creek, 0.7 mile downstream from Grape Creek, and 0.7 mile upstream from First Street Bridge in Canon City, Fremont County.
DRAINAGE AREA.--3,117 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1963 to September 1966.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na).

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Jan. 20, 1966.....	408					12		130	0	32	8.7				183	0.25	202	125	18	0.5	304	7.6
Feb. 18.....	318					16		151	0	38	7.2				206	.28	177	140	16	.6	345	7.7
Mar. 21.....	306					18		157	0	39	10				211	.29	174	144	15	.7	364	7.4
Apr. 18.....	642					9.5		87	0	27	4.5				124	.17	215	85	14	.4	209	7.1
May 16.....	502					10		93	0	31	5.9				144	.20	195	95	19	.4	232	7.7
June 13.....	1080					5.9		70	0	23	3.9				104	.14	303	74	17	.3	175	7.3
July 25.....	1020					12		112	0	29	5.2				149	.20	410	104	12	.5	238	7.3
Aug. 22.....	890					9.9		166	0	26	3.9				200	.27	481	147	11	.4	291	7.4
Sept. 24.....	195					20		156	0	41	8.5				207	.28	109	140	12	.7	340	7.6

7-0992. ARKANSAS RIVER NEAR PORTLAND, COLO.

LOCATION (revised).--Lat 38°20'16", long 104°56'24", at gaging station, 1.2 miles downstream from Willow Spring Creek, and 5.3 miles southeast of Portland, Fremont County.
DRAINAGE AREA.--4,280 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1964 to September 1966.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 29, 1965.....	759	11		65	18	25	2.4	159	0	137	10	0.6	1.8	0.05	351	0.48	719	236	106	0.7	546	7.5
Nov. 26.....	702	11		67	18	25	2.0	167	0	139	8.7	.7	1.1	.05	357	.49	677	240	103	.7	556	7.6
Dec. 21.....	540	13		69	22	25	2.3	170	0	159	9.2	.7	1.6	.04	389	.53	567	262	123	.7	587	7.5
Jan. 20, 1966.....	A440	14		67	23	26	1.1	176	0	161	11	.8	1.3	.06	400	.54	475	262	118	.7	600	7.6
Feb. 18.....	A460	14		75	24	30	1.1	177	0	183	12	1.0	2.3	.07	445	.61	553	283	138	.8	658	7.6
Mar. 21.....	A310	12		76	26	35	1.7	187	0	199	14	.9	.7	.05	469	.64	393	296	143	.9	692	7.5
Apr. 18.....	A670	9.4		42	16	17	2.0	110	0	100	7.8	.6	1.5	.04	264	.36	478	170	80	.6	461	7.5
May 16.....	A510	9.8		47	17	22	1.9	123	0	111	7.3	.6	1.2	.05	281	.38	387	186	85	.7	454	7.4
June 13.....	1240	7.7		34	9.7	14	1.5	89	0	72	3.8	.6	.4	.04	191	.26	639	125	52	.5	302	7.4
July 25.....	1440	16		66	13	19	3.9	157	0	111	6.0	1.1	.9	.08	327	.44	1270	219	90	.6	484	7.0
Aug. 22.....	1390	11		56	17	24	2.5	148	0	117	6.3	.7	.9	.05	311	.42	1170	208	87	.7	448	7.4
Sept. 24.....	A360	12		89	31	36	2.6	204	0	234	11	.8	1.4	.00	533	.72	518	350	183	.8	771	8.1

A Daily mean discharge.

7-0992. ARKANSAS RIVER NEAR PORTLAND, COLO.--Continued

Periodic determinations of suspended-sediment discharge and particle size, water year October 1965 to September 1966
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 15, 1965	1300	59		D 740	115	230	13	35		--		64	73	89	100	--		VPWC
Oct. 29	1430	53		759	128	262	--	--		--		--	--	--	--	--		
Nov. 12	1330	48		580	62	97	--	--		--		--	--	--	--	--		
Nov. 26	0845	42		702	171	324	--	--		--		--	--	--	--	--		
Dec. 10	1345	42		657	68	120	--	--		--		--	--	--	--	--		
Dec. 21	1000	33		540	102	149	--	--		--		--	--	--	--	--		
Jan. 7, 1966	1345	39		347	49	46	--	--		--		--	--	--	--	--		
Jan. 20	0930	32		D 440	42	50	--	--		--		--	--	--	--	--		
Feb. 4	1330	38		D 370	38	38	--	--		--		--	--	--	--	--		
Feb. 18	1415	42		D 460	25	31	--	--		--		--	--	--	--	--		
Mar. 4	1330	35		D 320	89	77	--	--		--		--	--	--	--	--		
Mar. 21	1145	50		D 310	28	23	--	--		--		--	--	--	--	--		
Apr. 4	0900	44		D 310	47	39	--	--		--		--	--	--	--	--		
Apr. 19	0910	45		D 670	232	420	--	--		--		27	47	73	95	100		V
May 2	1030	57		D 810	224	490	--	--		--		31	48	73	100	--		V
May 16	0840	60		D 510	175	241	--	--		--		29	45	70	100	--		V
May 26	0815	59		D 1100	304	903	3	4		--		19	33	66	96	100		VPWC
June 13	0945	64		1220	221	728	3	4		--		17	28	56	97	100		VPWC
June 27	0935	66		1540	499	2070	11	14		--		45	61	78	97	100		VPWC
July 11	0620	66		954	139	358	--	--		--		20	30	50	94	100		V
July 25	0700	67		1440	7020	27300	33	44		75		93	96	99	100	--		VPWC
Aug. 2	1500	70		2330	17900	113000	21	23		44		82	96	99	100	--		VPWC
Aug. 2	1500	70		2330	17800	112000	25	27		51		85	97	99	100	--		VPWC
Aug. 8	0645	65		1670	1740	7840	13	14		20		40	66	91	99	100		VPWC
Aug. 22	0730	63		1390	2180	8180	12	13		17		33	53	81	93	98		VPWC
Sept. 6	0930	63		856	1170	2700	4	4		--		20	44	82	98	100		VPWC
Sept. 24	1115	66		D 360	125	122	--	--		--		35	56	97	100	--		V

D Daily mean discharge.

7-0994. ARKANSAS RIVER ABOVE PUEBLO, COLO.

LOCATION.--Lat 38°16'15", long 104°43'15", at gaging station, 280 feet upstream from headgate of West Pueblo ditch, 0.2 miles downstream from Rock Canyon Barrier Dam, and 7 miles west of Pueblo, Pueblo County.
DRAINAGE AREA.--4,670 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1965 to September 1966.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na).

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 15, 1965.....	450	11		71	19	27	2.3	162	0	161	10	0.9	0.6	0.06	384	0.52	467	256	123	0.7	592	7.6
Oct. 29.....	500	11		68	18	27	2.3	163	0	157	10	.7	.0	.04	376	.51	508	246	112	.8	578	7.5
Nov. 26.....	476	12		72	21	30	2.3	172	0	171	10	.8	1.1	.05	409	.56	526	268	127	.8	619	7.5
Dec. 21.....	460	13		71	24	31	2.5	175	0	186	9.3	.8	1.9	.06	433	.59	538	276	132	.8	644	7.6
Jan. 20, 1966.....	400	--		--	--	40	--	176	0	186	9.7	--	--	--	435	.59	470	264	120	1.1	651	7.7
Feb. 18.....	320	--		--	--	48	--	182	0	220	11	--	--	--	492	.67	425	290	141	1.2	718	7.5
Mar. 21.....	182	--		--	--	49	--	189	0	246	16	--	--	--	536	.73	263	328	173	1.2	780	7.8
Apr. 18.....	560	9.8		50	14	18	2.1	118	0	102	7.0	.7	1.5	.05	302	.41	457	182	85	.6	418	7.6
May 16.....	530	9.7		47	22	25	2.0	128	0	130	11	.5	.8	.06	314	.43	449	210	105	.8	498	7.4
June 13.....	1040	7.8		36	11	15	1.7	90	0	78	3.5	.5	.5	.05	212	.29	595	133	59	.6	320	7.6
July 25.....	940	9.7		54	13	18	3.2	122	0	108	6.0	.8	1.4	.07	281	.38	713	188	88	.6	437	7.1
Aug. 22.....	700	11		71	20	27	2.9	164	0	169	6.7	.8	3.0	.07	398	.54	752	260	125	.7	552	7.7
Sept. 24.....	126	9.7		93	29	49	2.9	187	0	285	13	.8	.5	.06	607	.83	207	350	197	1.1	843	8.0

7-0994. ARKANSAS RIVER ABOVE PUEBLO, COLO.--Continued

Periodic determinations of suspended-sediment discharge and particle size, water year October 1965 to September 1966
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 15, 1965	1445	60		450	68	83	32	37		--		81	90	99	100	--		VPWC
Oct. 29	1500	54		500	61	82	--	--		--		--	--	--	--	--		
Nov. 12	1500	48		390	29	30	--	--		--		--	--	--	--	--		
Nov. 26	1025	43		476	87	110	--	--		--		--	--	--	--	--		
Dec. 10	1510	43		D 450	56	68	--	--		--		--	--	--	--	--		
Dec. 21	1200	34		D 460	149	185	--	--		--		--	--	--	--	--		
Jan. 7, 1966	1500	39		D 400	63	68	--	--		--		--	--	--	--	--		
Jan. 20	1100	32		D 400	77	83	--	--		--		--	--	--	--	--		
Feb. 18	1540	42		D 320	73	63	--	--		--		--	--	--	--	--		
Mar. 5	1140	33		D 260	66	46	--	--		--		--	--	--	--	--		
Mar. 21	1300	52		182	29	14	--	--		--		--	--	--	--	--		
Apr. 4	1030	45		227	37	23	--	--		--		--	--	--	--	--		
Apr. 18	1040	50		560	156	236	--	--		--		--	--	--	--	--		
May 2	1215	60		D 620	274	459	9	13		--		40	58	98	100	--		VPWC
May 16	1020	62		530	112	160	--	--		--		58	80	100	--	--		V
May 26	0915	60		868	384	900	4	5		--		23	41	85	100	--		VPWC
June 13	1155	66		1040	298	837	3	4		--		18	30	73	100	--		VPWC
June 27	1025	67		1320	1010	3600	17	22		37		56	67	85	98	99		VPWC
July 11	0800	68		762	571	1170	--	--		--		11	16	42	91	100		V
July 25	0920	69		940	1990	5050	31	37		60		87	98	99	100	--		VPWC
Aug. 2	1230	74		1450	65900	258000	33	42		70		98	100	--	--	--		VPWC
Aug. 2	1230	74		1450	47000	184000	32	44		71		98	100	--	--	--		VPWC
Aug. 8	0915	67		D 900	1100	2670	22	26		34		64	95	100	--	--		VPWC
Aug. 22	0945	63		D 700	3190	6030	42	46		60		74	90	99	100	--		VPWC
Sept. 6	1130	65		D 600	666	1080	8	9		14		43	80	99	100	--		VPWC
Sept. 24	1215	71		126	13	4.4	--	--		--		--	--	--	--	--		

D Daily mean discharge.

7-1170. ARKANSAS RIVER NEAR NEPESTA, COLO.

LOCATION (revised).--Lat 38°10'37", long 104°08'38", 0.5 mile north of Nepesta, Pueblo County, 2.7 miles downstream from headgate of Oxford Farmers Co. canal, 3.4 miles downstream from gaging station, and 10 miles downstream from Huerfano River.
DRAINAGE AREA.--9,345 square miles, of which 54 square miles is probably noncontributing.
RECORDS AVAILABLE.--Chemical analyses: November 1963 to September 1966 (discontinued).
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Discharges include diversion into Oxford Farmers Co. canal.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 30, 1965.....	409	11		97	33	53	4.2	176	0	309	20	0.9	4.6	0.08	652	0.89	720	376	232	1.2	898	7.3
Nov. 26.....	510	11		100	34	53	6.0	175	0	317	18	.9	6.2	.07	668	.91	920	388	244	1.2	914	7.6
Dec. 22.....	433	--		--	--	62	--	184	0	319	22	--	--	--	655	.89	766	380	229	1.4	926	7.6
Jan. 20, 1966.....	641	--		--	--	71	--	187	0	358	27	--	--	--	721	.98	1250	410	257	1.5	1010	7.5
Feb. 19.....	652	--		--	--	65	--	185	0	364	26	--	--	--	754	1.03	1330	426	274	1.4	1040	7.4
Mar. 22.....	225	--		--	--	69	--	187	0	406	24	--	--	--	810	1.10	492	460	307	1.4	1110	7.2
Apr. 19.....	234	--		--	--	46	--	143	0	267	18	--	--	--	528	.72	334	320	203	1.1	768	7.4
May 17.....	528	--		--	--	45	--	154	0	244	15	--	--	--	520	.71	741	304	178	1.1	727	7.4
June 13.....	432	--		--	--	26	--	110	0	150	9.7	--	--	--	337	.46	393	204	114	.8	513	7.3
July 25.....	220	--		--	--	40	--	152	0	321	14	--	--	--	623	.85	370	392	267	.9	854	7.5
Aug. 22.....	594	--		--	--	43	--	192	0	254	15	--	--	--	576	.78	924	350	193	1.0	814	7.3
Sept. 20.....	175	--		--	--	51	--	180	0	334	22	--	--	--	715	.97	338	416	268	1.1	974	7.4

7-1220. ARKANSAS RIVER NEAR LA JUNTA, COLO.

LOCATION.--Lat 38°00'40", long 103°35'18", at diversion of Fort Lyon Canal, 0.5 mile above headgate, and approximately 3 miles west of La Junta, Otero County.
DRAINAGE AREA.--12,210 square miles upstream from gaging station at La Junta.
RECORDS AVAILABLE.--Chemical analyses: January 1964 to September 1966.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Discharges obtained by adding mean daily flow in the Fort Lyon Canal to mean daily flow in the Arkansas River at La Junta.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 30, 1965.....	224	13		200	69	121	5.6	248	0	769	40	1.0	5.5	0.19	A1350	1.84	816	785	582	1.9	1780	7.4
Nov. 26.....	196	12		192	66	113	6.9	248	0	717	38	1.1	5.6	.18	A1270	1.73	672	750	547	1.8	1670	7.3
Dec. 22.....	592	--		--	--	92	--	216	0	528	28	--	--	--	1020	1.39	1630	565	388	1.7	1310	7.6
Jan. 21, 1966.....	298	--		--	--	93	--	222	0	531	30	--	--	--	1010	1.37	813	575	393	1.7	1300	7.5
Feb. 19.....	665	--		--	--	88	--	214	0	557	32	--	--	--	1060	1.44	1900	610	434	1.6	1370	7.6
Mar. 22.....	219	--		--	--	153	--	244	0	830	42	--	--	--	1460	1.99	863	790	590	2.4	1820	7.6
Apr. 18.....	128	--		--	--	127	--	234	0	826	39	--	--	--	1550	2.11	536	830	638	1.9	1830	7.4
May 16.....	564	--		--	--	138	--	196	0	663	35	--	--	--	1150	1.56	1750	600	439	2.5	1470	8.0
June 13.....	410	--		--	--	167	--	195	0	817	52	--	--	--	1480	2.01	1640	721	561	2.7	1810	7.5
July 25.....	895	--		--	--	92	--	202	0	713	23	--	--	--	1250	1.70	3020	740	574	1.5	1480	7.4
Aug. 23.....	1070	--		--	--	87	--	214	0	627	15	--	--	--	1140	1.55	3290	660	484	1.5	1370	7.7
Sept. 20.....	194	--		--	--	127	--	232	0	769	39	--	--	--	1410	1.92	739	770	580	2.0	1730	7.4

A Calculated from determined constituents.

7-1240. ARKANSAS RIVER AT LAS ANIMAS, COLO.

LOCATION.--Lat 38°05'08", long 103°12'50", at gaging station, 0.4 mile downstream from bridge on U.S. Highway 50, 1.5 miles north of courthouse in Las Animas, Bent County, and 3.5 miles upstream from Purgatoire River.
DRAINAGE AREA.--14,417 square miles, of which 441 square miles is probably noncontributing.
RECORDS AVAILABLE.--Chemical analyses: November 1963 to September 1966 (discontinued).
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na).

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 30, 1965.....	248	13		224	81	189	5.9	267	0	986	61	1.0	4.7	0.26	A1700	2.31	1140	895	676	2.8	2140	7.3
Nov. 26.....	193	12		236	69	211	6.9	273	0	1090	64	1.1	4.9	.31	A1850	2.52	964	955	731	3.0	2330	7.5
Dec. 21.....	312	--		--	--	165	--	243	0	832	49	--	--	--	1540	2.09	1300	775	576	2.6	1870	7.4
Jan. 20, 1966.....	B220	--		--	--	151	--	220	0	752	46	--	--	--	1350	1.84	802	700	520	2.5	1690	7.8
Feb. 19.....	376	--		--	--	162	--	228	0	858	50	--	--	--	1440	1.96	1460	755	566	2.9	1810	7.6
Mar. 22.....	35	--		--	--	439	--	307	0	1980	118	--	--	--	3400	4.62	321	1520	1270	4.9	3800	7.6
Apr. 18.....	45	--		--	--	470	--	311	0	1870	128	--	--	--	3500	4.76	425	1360	1100	5.5	3830	7.7
May 16.....	15	--		--	--	406	--	284	0	2080	96	--	--	--	3340	4.54	135	1650	1420	4.3	3600	8.1
June 13.....	15	--		--	--	327	--	277	0	1880	90	--	--	--	3210	4.37	130	1600	1370	3.6	3440	7.5
July 25.....	522	--		--	--	100	--	206	0	719	21	--	--	--	1220	1.66	1720	730	561	1.6	1470	7.6
Aug. 23.....	865	--		--	--	69	--	200	0	473	13	--	--	--	868	1.21	2070	526	362	1.3	1090	7.5
Sept. 19.....	26	--		281	92	232	--	246	0	1240	63	--	--	--	A2030	2.76	143	1080	877	3.1	2440	8.0

A Calculated from determined constituents.
B Daily mean discharge.

7-1305. ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, COLO.
(Irrigation Network station)

LOCATION.--Lat 38°05'02", long 102°55'10", at gaging station, 1.1 miles upstream from Caddoa Creek, 1.7 miles downstream from John Martin Dam, Bent County, and 2.9 miles southeast of Hasty.
DRAINAGE AREA.--18,917 square miles, of which 785 square miles is probably noncontributing.
RECORDS AVAILABLE.--Chemical analyses: August 1942 to August 1943, October 1945 to July 1949, January 1951 to September 1966.
Water temperatures: January 1951 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 2,850 ppm Mar. 16-18; minimum, 925 ppm Oct. 7-31.
Hardness: Maximum, 1,280 ppm Mar. 16-18; minimum, 490 ppm Oct. 7-31.
Specific conductance: Maximum daily, 3,530 micromhos Mar. 17; minimum daily, 1,090 micromhos Oct. 16.
Water temperatures: Maximum, 76°F Aug. 5-8; minimum, 34°F Jan. 22, 31.
EXTREMES, 1951-66.--Dissolved solids: Maximum, 4,530 ppm Feb. 1-3, 1965; minimum, 296 ppm June 18, 1965.
Hardness: Maximum, 1,910 ppm Aug. 8, 1955; minimum, 224 ppm July 6, 1960, June 18, 1965.
Specific conductance: Maximum daily, 5,180 micromhos Apr. 21, 1955; minimum daily, 476 micromhos June 18, 1965.
Water temperatures: Maximum, 85°F Aug. 6, 1951; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na).

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-6, 1965....	51.3					149		185	0	698	40				1230	1.67	170	610	458	2.6	1600	7.8
Oct. 7-31.....	166					97		154	0	518	26				925	1.26	415	490	364	1.9	1230	7.9
Nov. 1-30.....	217					116		165	0	574	28				1030	1.40	603	520	385	2.2	1340	7.9
Dec. 1-31.....	281					148		187	0	692	37				1190	1.62	903	604	451	2.6	1560	7.8
Jan. 1-4, 1966....	254					126		170	0	595	32				1000	1.36	686	530	391	2.4	1390	7.8
Jan. 5-6.....	22.0					297		253	0	1270	86				2200	2.99	131	1000	792	4.1	2600	7.9
Jan. 7-9.....	134					165		201	0	770	44				1340	1.82	485	670	505	2.8	1750	7.9
Jan. 10-20.....	108					204		227	0	970	58				1680	2.28	490	835	649	3.1	2090	7.8
Jan. 21-31.....	248					179		208	0	856	48				1460	1.99	978	740	569	2.9	1870	7.9
Feb. 1-28.....	477					160		216	0	779	43				1400	1.90	1800	700	523	2.6	1740	7.7
Mar. 1-15.....	166					195		225	0	927	52				1650	2.24	740	800	615	3.0	1980	7.7
Mar. 16-18.....	8.7					393		295	0	1670	109				2850	3.88	67.0	1280	1040	4.8	3200	7.8
Mar. 19-22.....	71.2					246		247	0	1130	64				1950	2.65	375	935	732	3.5	2310	7.9
Mar. 23-31.....	106					172		200	0	800	44				1420	1.93	406	685	521	2.9	1750	7.6
Apr. 1-2.....	72.5					186		192	0	844	45				1460	1.99	286	695	538	3.1	1780	7.3
Apr. 3-5.....	74.7					295		288	0	1420	105				2680	3.64	541	1220	984	3.7	3050	8.0
Apr. 6-30.....	690					138		167	0	633	31				1080	1.47	2010	540	403	2.6	1380	7.5
May 1-31.....	943					119		172	0	591	30				1130	1.54	2880	540	399	2.2	1400	7.9
June 1-30.....	885					120		172	0	625	32				1180	1.60	2820	575	434	2.2	1460	7.8

7-1305. ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
July 1-31, 1966...	1048					149		180	0	679	35				1210	1.65	3420	580	432	2.7	1520	7.8
Aug. 1-13.....	549					151		176	0	715	36				1250	1.70	1850	612	468	2.7	1570	7.9
Aug. 14.....	151					385		244	0	1500	96				2510	3.41	1020	1060	860	5.1	2840	8.1
Aug. 15-31.....	296					153		160	0	725	37				1270	1.73	1010	604	473	2.7	1560	8.0
Sept. 1-30.....	508					133		160	0	661	34				1190	1.62	1630	578	447	2.4	1480	8.0
Weighted average	--					138		177	--	665	34				1200	1.63	1560	586	441	2.5	1500	7.8
Time-weighted average.....	481					148		183	--	708	38				1260	--	--	620	469	2.6	1580	7.8
Tons per day....	--					179		231	--	864	45				--	--	--	--	--	--	--	--

7-1305. ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	1580	1450	1510	1350	1860	1780	1630	1370	1420	1500	1540	1450
2.....	1600	1530	1550	1320	1830	2030	1930	1370	1430	1500	1580	1430
3.....	1570	1490	1540	1320	1750	2140	2780	1390	1420	1500	1550	1450
4.....	1580	1460	1590	1530	1690	1960	3260	1390	1420	1500	1580	1450
5.....	1570	1540	1520	2420	1750	1960	3120	1390	1440	1480	1580	1450
6.....	1550	1500	1550	2780	1750	1980	1450	1400	1430	1500	1560	1460
7.....	1280	1230	1590	1820	1780	1930	1420	1400	1440	1490	1550	1460
8.....	1190	1200	1620	1570	1800	1820	1400	1370	1440	1500	1580	1460
9.....	1210	1220	1580	1850	1750	1820	1370	1370	1440	1500	1540	1450
10.....	1130	1230	1670	1980	1700	1860	1360	1370	1440	1500	1550	1470
11.....	1140	1270	1690	2050	1750	2070	1370	1380	1450	1500	1510	1480
12.....	1140	1200	1680	1980	1780	2030	1360	1390	1450	1500	1540	1470
13.....	1160	1400	1690	1990	1790	2010	1370	1370	1440	1520	1680	1470
14.....	1120	1440	1690	2160	1670	2110	1370	1400	1440	1530	2840	1470
15.....	1110	1340	1690	2150	1690	2110	1370	1400	1450	1520	1590	1480
16.....	1090	1280	1680	2150	1730	2760	1380	1390	1450	1530	1610	1480
17.....	1120	1350	1700	2150	1750	3530	1370	1400	1450	1520	1610	1480
18.....	1190	1250	1690	2150	1750	3310	1370	1380	1450	1520	1640	1470
19.....	1280	1240	1400	2130	1710	2380	1380	1390	1460	1520	1600	1470
20.....	1310	1240	1410	2130	1760	2060	1380	1380	1450	1530	1590	1480
21.....	1300	1280	1350	1960	1730	2670	1370	1400	1460	1530	1560	1510
22.....	1220	1300	1390	1550	1650	2120	1390	1390	1450	1530	1550	1500
23.....	1270	1260	1380	1910	1680	1640	1370	1410	1460	1530	1570	1530
24.....	1270	1290	1370	1920	1690	1880	1390	1410	1470	1590	1570	1560
25.....	1270	1260	1420	2030	1710	1860	1380	1400	1480	1550	1550	1560
26.....	1240	1330	1520	2030	1690	1850	1380	1410	1460	1550	1550	1560
27.....	1220	1410	1680	1910	1750	1880	1380	1410	1480	1560	1540	1570
28.....	1210	1370	1660	1830	1750	1860	1370	1410	1480	1540	1540	1560
29.....	1370	1420	1550	1770	--	1870	1390	1400	1490	1540	1540	1260
30.....	1370	1440	1630	1810	--	1510	1380	1410	1480	1550	1520	1400
31.....	1390	--	1310	1890	--	1440	--	1420	--	1550	1450	--
Average	1291	1340	1558	1922	1738	2071	1574	1392	1450	1521	1605	1476

7-1305. ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	55	54	57	57	52	52	57	57	58	57	57	52	57	52	57	56	58	57	57	56	55	54	55	55	55	56	51	55	53	55	50	55
November	55	55	56	54	53	56	55	55	54	53	55	53	54	53	53	52	50	53	52	51	51	51	51	51	51	49	49	48	49	49	---	52
December	49	47	47	46	46	47	46	47	46	47	46	46	46	46	45	45	45	45	44	42	41	42	42	42	42	41	41	41	41	41	40	44
January	40	39	38	38	38	38	39	38	40	39	39	39	39	39	40	37	37	37	38	38	37	34	36	37	36	36	37	37	36	36	34	38
February	37	36	36	36	37	36	37	37	37	37	37	37	37	36	36	36	36	37	37	38	37	39	37	37	37	40	39	37	---	---	---	37
March	39	38	37	35	38	39	37	37	38	38	39	42	42	40	40	43	48	46	41	42	48	39	39	39	41	44	44	43	45	44	43	41
April	43	44	44	48	48	46	46	46	46	46	47	47	46	47	48	48	54	47	48	48	48	48	52	50	48	48	48	49	50	50	---	48
May	50	50	51	51	51	51	52	53	51	51	54	53	55	57	58	55	57	59	55	56	57	60	58	59	60	59	60	60	60	60	59	56
June	62	62	63	65	64	63	63	63	61	63	65	65	64	65	65	65	66	65	65	67	66	67	68	68	68	68	69	69	70	70	---	65
July	70	70	69	69	71	70	70	72	70	72	71	72	72	72	72	72	72	75	72	72	73	73	72	73	74	74	75	74	74	74	74	72
August	74	75	75	74	76	76	76	76	74	74	74	73	73	73	72	73	73	73	75	73	72	72	67	70	70	70	70	69	69	70	70	73
September	70	70	70	75	75	70	70	70	70	74	74	68	68	68	67	67	73	68	67	66	66	62	66	62	66	64	64	64	64	62	---	68

7-1375. ARKANSAS RIVER NEAR COOLIDGE, KANS.

LOCATION (revised).--Lat 38°01'34", long 102°00'41", at gaging station at bridge, 1 mile south of Coolidge, Hamilton County, and 1.9 miles downstream from Colorado-Kansas State line.
DRAINAGE AREA.--25,410 square miles, of which 1,708 square miles is probably noncontributing.
RECORDS AVAILABLE.--Chemical analyses: November 1963 to September 1966.
Water temperatures: October 1964 to September 1966.
EXTREMES, 1965-66.--Specific conductance: Maximum daily, 4,410 micromhos Apr. 8; minimum daily, 996 micromhos Aug. 13.
Water temperatures: Maximum, 92°F July 5; minimum, freezing point on several days during December to March.
EXTREMES, 1964-66.--Specific conductance: Maximum daily, 4,970 micromhos Dec. 17, 1964; minimum daily, 454 micromhos June 18, 1965.
Water temperatures: Maximum, 92°F July 5, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Prior to Apr. 1, 1966, sampling site 0.3 mile upstream.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 29, 1965.....	170	12		345	146	485	8.9	255	0	2050	138	0.9	3.7	0.41	A3310	4.50	1520	1460	1250	5.5	3940	7.4
Nov. 26.....	257	12.		317	112	400	8.4	240	0	1710	110	.8	5.0	.45	A2790	3.79	1940	1250	1050	4.9	3400	7.6
Dec. 21.....	275	--		--	--	402	--	256	0	1640	98	--	--	--	2690	3.66	2000	1180	970	5.1	3160	7.9
Jan. 20, 1966.....	163	--		--	--	527	--	268	0	2070	122	--	--	--	3200	4.35	1410	1400	1180	6.1	3710	8.0
Feb. 18.....	535	--		--	--	289	--	248	0	1250	71	--	--	--	2120	2.88	3060	975	772	4.0	2500	8.1
Mar. 21.....	233	--		--	--	540	--	271	0	2230	135	--	--	--	3700	5.03	2330	1560	1340	5.9	4150	7.8
Apr. 18.....	553	--		--	--	176	--	191	0	857	45	--	--	--	1540	2.09	2300	730	573	2.8	1880	7.6
May 16.....	502	--		--	--	286	--	140	0	1110	54	--	--	--	1580	2.15	2140	725	610	4.6	1970	8.1
June 13.....	475	--		--	--	220	--	195	0	966	59	--	--	--	1760	2.39	2260	770	610	3.5	2100	7.6
July 26.....	577	--		--	--	240	--	220	0	1050	58	--	--	--	1800	2.45	2800	834	654	3.6	2160	7.5
Aug. 22.....	406	--		--	--	203	--	174	0	821	52	--	--	--	1430	1.94	1570	630	487	3.5	1800	7.4
Sept. 19.....	411	--		--	--	291	--	206	0	1220	74	--	--	--	2120	2.88	2350	910	741	4.2	2490	7.7

A Calculated from determined constituents.

7-1375. ARKANSAS RIVER NEAR COOLIDGE, KANS.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	3620	4070	3190	2200	2820	2120	2890	2220	2160	2840	2300	2140
2.....	3650	4170	3120	2060	2320	2340	2690	2290	2200	2880	2260	2140
3.....	3780	4190	3330	2150	3170	2940	3450	2330	2270	2910	2640	--
4.....	3880	4070	3850	2160	3020	3080	3820	3020	2260	2860	2690	2230
5.....	3900	3430	4070	2320	3410	3570	4110	3360	2240	2840	2420	2120
6.....	3980	3410	4120	2700	2370	3380	4210	3700	2260	2880	2660	2290
7.....	4050	3190	4210	2480	2390	3330	4370	3720	2200	2970	2700	2290
8.....	4090	3660	4280	2400	2390	3490	4410	3780	2200	2270	2350	2230
9.....	4080	2930	3570	2970	2430	3470	4090	3140	2230	2180	2090	2050
10.....	4080	2930	3680	2430	1980	2690	2860	2160	2270	1960	2250	2120
11.....	4070	3020	3340	2540	1980	2650	2120	1970	2100	1980	2270	2240
12.....	3890	3070	2830	2490	2170	2920	2030	2020	2080	1970	2410	2460
13.....	3860	3360	3590	2860	2290	3390	1970	2120	2140	1980	996	2510
14.....	3950	3260	3360	1810	2490	3510	2050	1950	2070	1980	1140	2560
15.....	3970	3360	3060	1940	1410	3640	1920	1990	2330	1990	2480	2500
16.....	4000	3340	2280	2710	2300	3640	1900	1970	2370	2020	3260	2470
17.....	3090	3420	3110	3420	2400	3740	1930	2120	2280	2050	3330	2310
18.....	2330	3590	3200	2290	2480	4030	1970	2030	2260	2080	3510	2430
19.....	2310	3520	3270	2760	2350	4160	1930	1990	1790	2060	3630	2450
20.....	3110	3430	3410	3150	2360	4180	2020	1980	1950	1830	3780	2510
21.....	3360	3300	3260	3380	2610	4350	2010	2030	1980	1940	1290	2550
22.....	3820	3490	3060	3400	2410	3810	2000	2010	2040	1900	2150	2730
23.....	3780	3330	2740	2470	2080	4070	2230	2090	2040	1890	2370	2820
24.....	3850	3460	2500	2550	2280	4070	2080	2120	1980	1860	2950	2800
25.....	3770	3600	2580	2280	2320	3860	2090	1980	2000	1920	3230	3190
26.....	4020	3340	2470	2830	2330	4050	2160	1980	2190	2140	3210	3500
27.....	4060	2900	2450	2860	2250	4110	2190	1950	2190	2270	3270	3420
28.....	3910	2950	2520	2610	2260	4160	2150	2060	2260	2010	3370	3420
29.....	3900	2880	2540	2780	--	--	2230	2110	2580	2100	3540	3210
30.....	3990	3050	2560	2630	--	--	2220	2140	2590	2260	3900	2490
31.....	4000	--	2540	2360	--	4100	--	2060	--	2310	3950	--
Average	3746	3390	3164	2580	2395	3546	2603	2335	2183	2230	2722	2557

7-1375. ARKANSAS RIVER NEAR COOLIDGE, KANS.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	49	51	51	53	54	52	50	51	62	64	49	49	52	64	51	54	57	54	50	51	45	48	48	49	53	48	48	55	45	47	50	52
November	49	47	45	43	57	53	45	60	--	43	47	43	43	41	43	44	41	38	42	41	44	46	42	48	44	43	34	36	34	36	--	44
December	46	50	35	34	38	36	36	--	45	41	47	38	44	37	34	37	37	37	34	32	--	34	35	33	34	39	34	37	34	44	36	38
January	36	36	38	33	32	41	38	35	41	41	43	35	38	41	37	34	33	33	38	33	32	32	34	32	35	32	34	35	36	34	35	36
February	34	35	35	35	35	34	33	34	34	33	36	32	33	37	32	32	34	35	34	36	37	33	33	37	35	36	38	39	--	--	--	35
March	39	40	36	32	32	34	34	38	40	45	46	42	44	46	50	47	59	59	55	56	60	39	33	57	54	59	44	45	--	--	55	46
April	48	51	51	40	41	42	57	43	44	54	50	52	51	62	56	54	--	48	45	39	44	46	58	65	67	72	57	51	50	47	--	51
May	62	58	69	74	77	73	77	65	60	63	54	--	--	69	57	58	65	57	56	58	68	69	59	53	63	74	64	66	74	--	66	65
June	67	76	64	84	64	67	75	65	59	66	74	62	66	66	65	63	63	75	79	70	70	74	67	69	69	75	79	73	67	68	--	69
July	76	84	68	70	92	68	77	69	69	70	69	70	74	72	73	74	75	76	81	72	74	75	76	77	90	76	85	73	83	77	77	76
August	75	81	68	74	85	88	69	74	72	68	76	76	84	70	79	79	86	82	68	77	67	64	62	60	62	63	87	73	84	68	76	74
September	74	66	--	76	64	64	76	74	75	68	63	63	65	64	60	58	60	60	59	61	63	62	74	80	72	74	59	68	59	59	--	66

8-2492. RIO GRANDE ABOVE CULEBRA CREEK, NEAR LOBATOS, COLO.
(Irrigation Network station)

LOCATION.--Lat 37°16'00", long 105°44'00", 0.5 mile southeast of La Sauses, 7 miles upstream from Culebra Creek, and 14 miles upstream from gaging station which is 10 miles east of Lobatos, Canejos County.
DRAINAGE AREA.--7,700 square miles, approximately, upstream from gaging station (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).
RECORDS AVAILABLE.--Chemical analyses: October 1946 to September 1966.
Water temperatures: July 1964 to January 1966 (discontinued).
EXTREMES, 1946-65.--Dissolved solids: Maximum, 805 ppm Sept. 21, 1959; minimum, 99 ppm Nov. 12-16, 1964.
Hardness: Maximum, 346 ppm June 9-14, 1953; minimum, 44 ppm Nov. 10-12, 14, 1960.
Specific conductance: Maximum daily, 1,110 micromhos Sept. 21, 1959; minimum daily, 122 micromhos June 1, 1949.
Water temperatures (1964-65): Maximum, 86°F July 28, 1964; minimum, freezing point on many days during winter months each year.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). This station was converted from daily to a monthly effective February 1966. Records of daily specific conductance are not available for December 1965. Culebra Creek which enters the Rio Grande between the sampling point and the gaging station is usually dry at its mouth. Inflow from this and other sources between sampling point and gaging station occurs only after heavy local rainfall.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (calculated)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-31, 1965.	525	26	--	28	5.1	20	--	100	0	40	6.6	0.2	2.0	--	177	0.24	251	91	9	0.9	269	7.3
Nov. 1-30.....	610	24	--	26	4.9	18	--	88	0	41	5.3	.2	1.8	--	164	.22	270	85	13	.8	250	7.0
Dec. 1-31.....	447	30	--	34	5.8	21	--	108	0	51	7.0	.4	2.2	--	204	.28	246	109	20	.9	315	7.2
Jan. 1-21, 1966..	419	30	--	28	5.4	16	--	100	0	35	4.7	.2	1.6	--	170	.23	191	92	10	.7	255	7.2
Feb. 15.....	370	30	--	24	3.9	15	--	90	0	27	3.6	.4	1.0	--	149	--	--	76	2	.7	215	7.1
Mar. 15.....	816	23	--	24	4.1	20	--	83	0	41	5.8	.2	1.7	--	161	--	--	77	9	1.0	244	7.0
Apr. 15.....	532	27	--	35	6.0	24	--	108	0	60	8.4	.3	0.9	--	215	--	--	112	24	1.0	328	7.8
May 15.....	574	24	--	70	14	55	--	126	0	216	16	.5	0.2	--	458	--	--	234	130	1.5	675	7.2
June 16.....	216	24	0.03	82	18	89	10	190	0	274	29	.8	0.2	0.20	620	--	--	280	124	2.3	918	7.5
July 15.....	56	27	--	84	18	89	--	216	0	246	29	.9	0.2	--	600	--	--	284	107	2.3	899	7.3
Aug. 15.....	65	30	--	56	12	55	--	180	0	127	18	.5	0.2	--	388	--	--	188	40	1.7	592	7.5
Sept. 15.....	50	29	.00	43	8.4	43	5.9	171	0	80	14	.6	0.2	.11	308	--	--	142	2	1.6	466	7.7

8-2492. RIO GRANDE ABOVE CULEBRA CREEK, NEAR LOBATOS, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	157	301	--	267	--	--	--	--	--	--	--	--
2	164	309	--	247	--	--	--	--	--	--	--	--
3	162	314	--	286	--	--	--	--	--	--	--	--
4	169	325	--	--	--	--	--	--	--	--	--	--
5	174	348	--	290	--	--	--	--	--	--	--	--
6	212	354	--	295	--	--	--	--	--	--	--	--
7	219	384	--	275	--	--	--	--	--	--	--	--
8	228	269	--	257	--	--	--	--	--	--	--	--
9	241	225	--	254	--	--	--	--	--	--	--	--
10	238	192	--	258	--	--	--	--	--	--	--	--
11	254	188	--	250	--	--	--	--	--	--	--	--
12	262	186	--	243	--	--	--	--	--	--	--	--
13	290	213	--	250	--	--	--	--	--	--	--	--
14	300	213	--	247	--	--	--	--	--	--	--	--
15	240	212	--	259	--	--	--	--	--	--	--	--
16	340	214	--	257	--	--	--	--	--	--	--	--
17	343	216	--	243	--	--	--	--	--	--	--	--
18	333	212	--	244	--	--	--	--	--	--	--	--
19	308	199	--	236	--	--	--	--	--	--	--	--
20	309	203	--	237	--	--	--	--	--	--	--	--
21	312	203	--	239	--	--	--	--	--	--	--	--
22	--	207	--	242	--	--	--	--	--	--	--	--
23	315	199	--	239	--	--	--	--	--	--	--	--
24	326	205	--	244	--	--	--	--	--	--	--	--
25	309	199	--	252	--	--	--	--	--	--	--	--
26	312	194	--	247	--	--	--	--	--	--	--	--
27	309	192	--	249	--	--	--	--	--	--	--	--
28	309	309	--	--	--	--	--	--	--	--	--	--
29	312	335	--	--	--	--	--	--	--	--	--	--
30	--	335	--	--	--	--	--	--	--	--	--	--
31	323	--	--	--	--	--	--	--	--	--	--	--
Average	267	248	--	254	--	--	--	--	--	--	--	--

Temperature (°F) of water, October to November 1965

Month	Day																													Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
October	54	55	55	53	56	54	56	56	59	57	58	54	52	50	53	51	48	45	43	50	58	--	55	50	53	50	54	52	48	--	46	53	824920
November	50	47	42	45	47	41	44	43	45	43	43	41	42	42	42	43	43	42	41	40	42	35	41	41	44	39	34	34	35	35	--	40	
December	33	34	33	--	32	35	35	34	33	35	34	33	34	33	33	32	32	33	34	33	30	32	--	33	33	34	34	--	--	--	--	33	66

9-0345. COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.

LOCATION.--Lat 40°04'27", long 106°06'24", at bridge at Hot Sulphur Springs, Grand County, 1 mile downstream from gaging station, and 3.5 miles upstream from Beaver Creek.
DRAINAGE AREA.--825 square miles upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: April 1947 to September 1966.
Water temperatures: April 1949 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 116 ppm Feb. 1; minimum, 63 ppm Mar. 1-23.
Hardness: Maximum, 74 ppm July 1-31; minimum, 37 ppm Feb. 16-28.
Specific conductance: Maximum daily, 186 micromhos Aug. 4; minimum daily, 81 micromhos Mar. 1.
Water temperatures: Maximum, 75°F July 6, 11, 14, 21; minimum, freezing point on many days during November to March.
EXTREMES, 1947-66.--Dissolved solids (1947-50, 1952-66): Maximum, 132 ppm July 16, 1962; minimum, 38 ppm June 21-30, 1947.
Hardness (1947-50, 1952-66): Maximum, 82 ppm May 17, 18, 1963; minimum, 20 ppm June 21-30, 1947.
Specific conductance: Maximum daily, 210 micromhos Apr. 13, 1958; minimum daily, 48 micromhos June 27, 1947.
Water temperatures (1949-66): Maximum, 75°F Aug. 8, 1957, July 6, 11, 14, 21, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Dissolved solids, 128 ppm Dec. 28; specific conductance, 203 micromhos Dec. 28.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-20, 1965...	128					4.6		68	0	5.5	1.7				86	0.12	29.6	54	0	0.3	130	7.5
Oct. 21.....	119					18		90	0	13	6.3				104	.14	33.3	58	0	1.0	169	7.9
Oct. 22-31.....	116					9.7		82	0	7.7	2.7				95	.13	29.7	58	0	.6	154	7.4
Nov. 1-30.....	111					11		78	0	9.5	2.2				83	.11	24.8	54	0	.7	148	7.6
Dec. 1-31.....	103					11		78	0	8.6	3.5				89	.12	24.7	54	0	.7	148	7.6
Jan. 1-31, 1966...	80.6					13		80	0	12	3.8				95	.13	20.6	56	0	.8	154	7.3
Feb. 1.....	73					9.9		84	0	7.4	5.0				116	.16	22.8	62	0	.5	159	7.9
Feb. 2-11.....	73.0					6.3		70	0	5.8	3.0				94	.13	18.5	54	0	.4	130	8.0
Feb. 12-14.....	75.3					1.8		45	0	3.7	1.6				69	.09	14.0	39	2	.1	85	6.8
Feb. 15.....	78					4.1		74	0	5.7	3.0				108	.15	22.7	62	1	.2	139	7.7
Feb. 16-28.....	80.4					3.3		46	0	3.7	1.9				73	.10	15.8	37	0	.2	87	7.8
Mar. 1-23.....	95.3					6.1		47	0	9.3	2.2				63	.09	16.1	38	0	.4	86	7.1
Mar. 24-27.....	119					9.8		81	0	13	3.0				96	.13	30.8	63	0	.5	149	7.1
Mar. 28-29.....	272					6.3		60	0	10	2.2				73	.10	53.5	49	0	.4	114	7.2
Mar. 30-31.....	285					8.3		84	0	11	2.6				100	.14	77.0	66	0	.4	148	7.2
Apr. 1-30.....	176					11		82	0	14	2.7				100	.14	47.5	62	0	.6	150	7.2
May 1-31.....	247					10		86	0	11	2.2				96	.13	64.0	63	0	.5	146	7.6

9-0345. COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
June 1-30, 1966...	196					12		90	0	11	3.2				107	0.15	56.5	63	0	0.7	156	7.7
July 1-31.....	165					8.5		98	0	8.0	2.7				112	.15	49.8	74	0	.4	170	7.6
Aug. 1-31.....	87.7					9.1		95	0	8.0	2.5				106	.14	25.0	70	0	.5	165	7.5
Sept. 1-30.....	52.3					8.0		89	0	8.6	2.4				103	.14	14.5	68	0	.4	156	7.4
Weighted average	--					9.6		82	--	9.8	2.7				96	0.13	33.0	60	0	0.5	147	7.4
Time-weighted average.....	129					9.3		80	--	9.3	2.7				95	--	--	59	0	0.5	145	7.4
Tons per day....	--					3.3		28	--	3.4	0.9				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Dec. 28, 1965.....	A100	13		18	3.6	21	1.8	102	0	11	7.1	0.6	0.3	0.07	128	0.17	34.5	59	0	1.2	203	7.6
June 20, 1966.....	A207	13		22	3.9	7.9	1.3	95	0	4.9	1.6	.3	.2	.04	108	.15	60.3	70	0	.4	159	7.7

A Discharge at time of sampling.

9-0345. COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	126	165	155	142	159	81	157	--	146	168	170	161
2.....	127	168	150	143	128	82	150	--	146	169	159	150
3.....	117	149	152	144	127	83	149	--	148	170	175	162
4.....	143	151	151	143	128	92	149	--	158	177	186	155
5.....	127	139	149	143	129	83	147	--	128	168	174	158
6.....	121	142	150	144	128	83	148	--	148	165	168	157
7.....	122	152	149	144	127	83	149	--	148	174	172	154
8.....	124	165	150	146	128	84	150	--	129	170	173	157
9.....	126	136	149	155	129	84	149	--	148	166	170	154
10.....	145	142	153	159	130	84	131	--	--	177	172	155
11.....	145	157	149	155	128	85	150	--	148	169	159	154
12.....	124	170	151	165	85	84	149	--	148	166	159	161
13.....	125	151	151	165	84	85	--	--	149	168	162	156
14.....	116	134	150	166	85	84	--	--	149	164	165	157
15.....	124	136	150	165	139	85	--	--	149	167	158	152
16.....	124	143	150	166	86	84	--	--	149	182	158	157
17.....	138	136	150	148	84	84	--	--	149	174	160	152
18.....	137	130	149	175	83	84	--	--	149	172	157	156
19.....	123	143	151	164	84	83	--	--	149	168	158	152
20.....	135	150	150	178	84	84	--	--	162	171	170	152
21.....	169	139	151	137	84	84	--	--	167	171	158	154
22.....	122	141	151	135	94	84	--	--	167	166	158	--
23.....	150	144	150	135	86	84	--	--	172	167	161	169
24.....	151	130	149	137	84	154	--	--	165	162	156	155
25.....	158	131	148	137	84	149	--	--	164	165	151	155
26.....	160	135	151	161	88	149	--	--	167	161	153	151
27.....	159	132	151	159	94	134	--	--	168	158	150	157
28.....	169	152	153	159	83	98	--	--	172	164	160	159
29.....	154	152	143	159	--	130	--	--	165	159	168	164
30.....	152	152	144	159	--	148	--	145	179	133	153	--
31.....	154	--	143	159	--	148	--	146	--	174	144	--
Average	137	145	149	153	105	98	--	--	154	167	162	156

COLORADO RIVER MAIN STEM--Continued

9-0345. COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	53	53	53	53	54	55	53	48	48	48	46	45	46	48	48	42	41	42	42	43	42	42	41	42	41	42	40	38	35	42	41	45
November	41	38	35	35	42	32	32	32	32	32	32	32	32	37	38	41	38	38	37	35	32	32	32	38	32	37	42	32	32	32	---	35
December	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	32	32	32	32	32	32
February	32	32	32	32	32	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	---	---	---	32
March	32	32	32	32	32	32	32	32	32	32	38	38	38	32	38	38	38	42	38	44	42	44	42	38	45	48	48	48	48	48	51	39
April	52	52	52	54	54	54	54	54	52	54	54	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	55	57	---	---
June	55	57	58	56	54	55	58	56	58	---	55	56	58	58	55	54	58	58	60	59	58	58	62	67	67	65	66	67	67	69	---	59
July	68	68	68	72	72	75	70	68	73	73	75	73	64	75	73	73	73	71	70	73	75	73	68	72	70	69	68	70	68	71	70	71
August	68	70	70	68	70	68	70	68	70	70	70	70	70	70	63	68	69	68	68	63	68	68	67	70	68	69	70	68	68	68	70	69
September	68	68	68	68	67	64	65	63	64	65	66	67	64	63	65	65	65	66	66	65	69	---	63	62	63	62	61	62	59	---	---	65

9-0690. EAGLE RIVER AT GYPSUM, COLO.

LOCATION.--Lat 39°39'00", long 106°57'06", at bridge at Gypsum, Eagle County, about 400 feet upstream from Gypsum Creek, about 520 feet upstream from bridge on U.S. Highways 6 and 24, and about 550 feet upstream from gaging station.
DRAINAGE AREA.--844 square miles.
RECORDS AVAILABLE.--Chemical analyses: April 1947 to September 1966.
Water temperatures: April 1949 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 686 ppm Sept. 1-30; minimum, 133 ppm June 1-5.
Hardness: Maximum, 432 ppm Sept. 1-30; minimum, 98 ppm May 19 to June 5.
Specific conductance: Maximum daily, 1,080 micromhos Sept. 29; minimum daily, 201 micromhos May 26.
Water temperatures: Maximum, 72°F July 14, 18; minimum, freezing point on many days during November to March.
EXTREMES, 1947-66.--Dissolved solids: Maximum, 1,370 ppm Aug. 11, 12, 1952; minimum, 102 ppm May 26-31, 1961.
Hardness (1947-50, 1957-66): Maximum, 600 ppm Dec. 7-9, 1964; minimum, 70 ppm June 23, 1957.
Specific conductance: Maximum daily, 1,850 micromhos Aug. 6, 1949; minimum daily, 155 micromhos May 23, 1958.
Water temperatures (1949-66): Maximum, 76°F Aug. 24, 1949; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Dissolved solids, 714 ppm Sept. 1. Minimum observed during water year: Hardness, 90 ppm May 27. Records of discharge are given for Eagle River below Gypsum, Colo.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-20, 1965...	420					30		126	0	144	38				350	0.48	397	241	138	0.8	602	7.8
Oct. 21-31.....	295					45		147	0	184	57				455	.62	362	295	174	1.1	760	7.7
Nov. 1-30.....	253					52		159	0	212	68				530	.72	362	334	204	1.2	860	7.9
Dec. 1-31.....	209					46		167	0	227	62				572	.78	323	360	223	1.1	857	7.8
Jan. 1-31, 1966...	180					57		169	0	238	73				598	.81	291	366	227	1.3	903	7.9
Feb. 1-28.....	172					62		168	0	236	79				613	.83	285	360	222	1.4	928	7.9
Mar. 1-8.....	163					54		169	0	240	74				635	.86	279	376	237	1.2	950	7.8
Mar. 9-14.....	235					35		164	0	209	44				520	.71	330	337	203	.8	788	7.5
Mar. 15-17.....	256					33		153	0	170	41				451	.61	312	288	163	.8	688	7.6
Mar. 18-28.....	200					55		163	0	221	73				580	.79	313	347	213	1.3	899	8.2
Mar. 29-31.....	250					33		140	0	167	42				440	.60	297	276	161	.9	675	7.7
Apr. 1-17.....	294					29		133	0	132	34				365	.50	290	232	123	.8	559	7.4
Apr. 18-27.....	340					17		122	0	102	27				313	.43	287	207	107	.5	491	7.7
Apr. 28-29.....	464					8.5		119	0	58	14				232	.32	291	159	61	.3	366	7.0
Apr. 30.....	520					4.1		136	0	56	6.3				198	.27	278	170	58	.1	261	7.9
May 1-2.....	640					21		122	0	90	19				254	.35	439	175	75	.7	404	7.5
May 3.....	852					13		114	0	46	5.8				162	.22	373	122	28	.5	245	7.6
May 4.....	1090					13		140	0	61	14				246	.33	724	170	55	.4	373	7.5
May 5-6.....	1390					11		108	0	46	4.8				152	.21	570	119	30	.4	244	7.5

9-0690. EAGLE RIVER AT GYPSUM, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
May 7-8, 1966.....	1755					18		138	0	69	8.7				207	0.28	981	159	46	0.6	332	7.4
May 9-12.....	1452					12		86	0	47	7.5				147	.20	576	104	33	.5	239	7.3
May 13-18.....	834					15		95	0	68	12				198	.27	446	134	56	.6	313	7.5
May 19-31.....	1329					9.0		78	0	42	7.2				142	.19	510	98	34	.4	225	7.1
June 1-5.....	1456					8.5		71	0	45	8.3				133	.18	523	98	40	.4	224	7.1
June 6-15.....	953					9.9		85	0	60	13				173	.24	445	129	59	.4	298	7.4
June 16-23.....	884					15		92	0	75	21				216	.29	516	150	75	.5	358	7.2
June 24-30.....	652					21		110	0	102	31				285	.39	502	193	103	.7	463	7.4
July 1-5.....	649					27		120	0	118	30				321	.44	562	206	108	.8	497	7.8
July 6-22.....	392					32		144	0	155	38				403	.55	427	264	146	.9	615	7.9
July 23-31.....	284					40		156	0	175	54				476	.65	365	298	170	1.0	719	8.0
Aug. 1-4.....	291					45		168	0	187	58				498	.68	391	316	178	1.1	768	7.7
Aug. 5-6.....	417					23		134	0	128	32				361	.49	406	238	128	.6	560	7.4
Aug. 7-23.....	239					32		176	0	190	54				533	.72	344	348	204	.7	806	7.8
Aug. 24-31.....	188					46		188	0	240	66				622	.85	316	398	244	1.0	919	7.8
Sept. 1-30.....	174					53		196	0	274	72				686	.93	322	432	271	1.1	1000	7.9
Weighted average	--					28		125	--	128	34				343	0.46	365	224	121	0.8	537	7.4
Time-weighted average.....	394					39		149	--	179	51				466	--	--	295	173	1.0	717	7.6
Tons per day....	--					29		133	--	136	37				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Dec. 6, 1965.....	A215	8.8		100	22	43	2.4	160	0	205	60	0.2	1.2	0.04	542	0.74	315	339	208	1.0	828	7.6
Mar. 23, 1966.....	A190	7.4		103	24	56	1.4	160	0	233	78	.5	1.3	.01	615	.84	315	354	223	1.3	920	7.7
May 27.....	A1490	4.4		26	5.8	7.0	.9	71	0	33	4.5	.3	.0	.05	133	.18	535	90	32	.3	210	7.2
Sept. 1.....	A187	9.1		115	35	50	3.1	194	0	278	66	.4	.1	.06	714	.97	360	428	269	1.0	977	7.6

A Discharge at time of sampling.

9-0690. EAGLE RIVER AT GYPSUM, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	556	812	958	911	888	914	570	407	222	465	785	967
2.....	558	815	850	857	871	925	506	402	220	407	785	954
3.....	501	826	837	1020	896	851	503	245	215	491	778	951
4.....	499	842	850	1050	924	1000	528	373	217	535	712	930
5.....	499	837	803	966	941	1070	569	218	237	567	548	954
6.....	514	826	841	831	900	978	633	270	265	612	573	970
7.....	536	860	851	845	908	877	626	347	297	570	716	970
8.....	557	867	859	841	929	890	605	318	303	612	774	964
9.....	578	837	817	841	901	769	632	210	278	630	815	957
10.....	593	880	807	834	971	748	548	214	301	649	843	977
11.....	590	842	769	887	915	764	524	254	305	653	853	977
12.....	608	914	773	858	921	802	527	281	298	573	868	977
13.....	615	868	809	877	938	821	535	300	307	565	858	977
14.....	627	873	837	868	939	802	556	322	315	604	723	970
15.....	645	826	841	845	936	595	536	337	292	631	799	970
16.....	682	870	829	882	879	706	552	319	331	647	838	967
17.....	675	813	856	975	905	764	508	298	340	647	863	948
18.....	688	798	966	1020	915	978	458	317	344	630	881	997
19.....	681	848	1010	884	932	855	467	270	355	609	873	1000
20.....	671	830	888	917	965	984	465	251	339	526	881	1010
21.....	710	846	914	945	950	825	497	250	379	583	785	990
22.....	709	817	828	892	932	844	516	221	393	643	660	1040
23.....	709	898	1000	900	993	978	528	220	362	661	684	1050
24.....	719	848	890	890	993	913	459	225	409	694	853	1060
25.....	727	877	913	887	947	872	420	214	431	730	883	1060
26.....	749	778	849	900	927	981	537	201	457	687	908	1070
27.....	770	862	857	903	904	742	543	215	490	649	908	1050
28.....	791	879	869	914	938	818	397	224	458	727	916	1040
29.....	778	,953	852	897	--	735	334	212	491	748	952	1080
30.....	807	978	825	887	--	655	261	214	432	776	967	1050
31.....	808	--	852	900	--	634	--	220	--	772	958	--
Average	650	854	861	900	927	841	511	269	336	622	814	995

EAGLE RIVER BASIN--Continued

9-0690. EAGLE RIVER AT GYPSUM, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	40	48	44	47	51	45	44	43	47	46	45	48	40	43	41	49	48	49	42	42	42	41	40	47	46	45	39	48	49	41	44	45
November	45	48	46	43	39	38	41	40	41	43	41	41	42	41	40	40	41	45	40	41	40	40	39	38	40	39	37	38	32	34	—	40
December	32	32	32	32	43	32	32	33	32	33	35	34	43	35	32	32	32	32	32	33	32	32	32	32	32	33	32	33	38	37	36	34
January	32	32	32	32	32	32	35	32	33	32	32	32	33	32	33	32	32	32	32	32	32	32	32	32	32	33	32	32	33	32	32	32
February	33	32	32	32	32	33	32	33	32	32	32	32	32	32	32	32	32	32	32	34	32	32	32	33	32	32	34	33	—	—	—	32
March	35	32	32	32	32	34	36	37	37	38	38	34	36	38	40	38	36	37	38	39	39	35	36	38	40	42	44	45	46	48	50	38
April	49	50	49	45	44	53	54	53	54	55	53	47	48	49	50	51	51	43	42	47	45	46	50	50	50	55	50	48	49	48	—	49
May	50	51	52	53	52	53	51	53	48	47	45	43	46	53	53	58	57	58	52	53	50	55	54	53	53	54	51	52	53	53	54	52
June	55	54	56	51	50	49	55	54	55	54	55	56	55	57	57	52	52	52	55	53	52	53	62	52	50	53	52	53	54	60	—	54
July	57	55	69	68	65	68	56	56	67	68	58	66	58	72	70	70	71	72	67	68	61	60	64	65	66	65	59	58	58	58	62	64
August	58	62	62	59	54	56	64	55	54	54	57	58	55	61	58	61	59	55	65	61	57	61	56	67	60	59	58	52	51	53	66	58
September	60	55	56	59	58	56	62	57	57	55	62	55	55	65	51	56	52	53	52	62	65	57	64	50	61	50	55	51	54	55	—	57

9-0711. COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.
(Irrigation Network station)

LOCATION.--Lat 39°34'12", long 107°13'34", at Shoshone powerplant, 6 miles upstream from gaging station at Glenwood Springs, Garfield County, and 6.5 miles upstream from Roaring Fork River.
DRAINAGE AREA.--4,560 square miles, approximately, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: October 1941 to September 1966.
Water temperatures: May 1949 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 441 ppm June 24-30; minimum, 184 ppm Aug. 23-27.
Hardness: Maximum, 222 ppm June 24-30; minimum, 120 ppm May 8-13, 21-31.
Specific conductance: Maximum daily, 753 micromhos June 28; minimum daily, 289 micromhos Aug. 27.
Water temperatures: Maximum, 70°F July 16, 31, Aug. 1, 2; minimum, freezing point on many days during November to March.
EXTREMES, 1941-66.--Dissolved solids: Maximum, 2,030 ppm Aug. 10, 1947; minimum, 105 ppm June 1-10, 1942.
Hardness: Maximum, 1,480 ppm Aug. 10, 1947; minimum, 72 ppm June 1-20, 1942.
Specific conductance: Maximum daily, 2,260 micromhos Aug. 10, 1947; minimum daily, 153 micromhos May 24, 1948.
Water temperatures (1949-66): Maximum, 71°F July 31, 1954, Aug. 19, 1955; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station. Records of discharge are given for Colorado River at Glenwood Springs, Colo.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-31, 1965...	1550					52		122	0	90	68				322	0.44	1350	177	77	1.7	592	7.6
Nov. 1-30.....	1436					58		126	0	89	78				337	.46	1310	180	77	1.9	629	7.7
Dec. 1-31.....	1428	10		48	10	57		119	0	76	78				342	.47	1320	163	65	2.0	596	7.7
Jan. 1-31, 1966...	1267					59		116	0	67	88				352	.48	1200	160	65	2.0	607	7.9
Feb. 1-28.....	1262					62		113	0	78	82				330	.45	1120	154	61	2.2	578	7.7
Mar. 1-31.....	1478					59		116	0	81	70				337	.46	1340	150	55	2.1	553	7.8
Apr. 1-30.....	1410					47		126	0	70	72				346	.47	1320	176	73	1.5	591	7.8
May 1-7.....	2617					25		116	0	45	35				236	.32	1670	138	43	.9	401	7.6
May 8-13.....	3892					19		106	0	37	26				200	.27	2100	120	33	.8	331	8.2
May 14-20.....	2460					28		106	0	53	43				258	.35	1710	142	55	1.0	434	7.3
May 21-31.....	3155					21		97	0	42	31				211	.29	1800	120	40	.8	356	7.4
June 1-9.....	2448					32		110	0	63	45				274	.37	1810	150	60	1.1	452	7.7
June 10-23.....	1712					46		129	0	88	64				358	.49	1650	188	82	1.5	588	7.9
June 24-30.....	1313					59		144	0	109	84				441	.60	1560	222	104	1.7	717	7.9
July 1-31.....	1440					52		138	0	92	72				376	.51	1460	198	85	1.6	630	7.8
Aug. 1-9.....	1307					64		144	0	100	76				387	.53	1370	190	72	2.0	648	7.8
Aug. 10.....	1190					70		140	0	117	78				390	.53	1250	194	79	2.2	652	7.7
Aug. 11-17.....	1249					61		136	0	96	78				390	.53	1320	188	76	1.9	639	7.8
Aug. 18-20.....	1157					1.6		224	0	13	1.9				191	.26	597	196	12	.1	356	8.1

9-0711. COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Aug. 21-22, 1966..	1250					57		140	0	99	76				381	0.52	1290	200	85	1.8	637	7.6
Aug. 23-27.....	1226					.5		216	0	11	3.2				184	.25	609	192	15	.0	340	8.1
Aug. 28-31.....	1202					57		124	0	93	78				360	.49	1170	184	82	1.8	620	7.6
Sept. 1-30.....	1149					61		132	0	97	82				376	.51	1170	192	84	1.9	649	7.6
Weighted average	--					49		123	--	75	66				324	0.44	1350	167	66	1.6	557	7.7
Time-weighted average.....	1547					52		125	--	79	70				335	--	--	171	69	1.7	578	7.7
Tons per day....	--					203		512	--	315	276				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Dec. 10, 1965.....	1530	9.4		46	10	47	2.0	115	0	69	68	0.3	0.2	0.03	314	0.43	1300	157	63	1.6	545	7.5
Mar. 23, 1966.....	1380	8.8		45	10	49	1.4	114	0	74	72	.5	.2	.01	334	.45	1240	155	61	1.7	563	7.4
Sept. 1.....	1210	9.0		43	18	55	2.6	124	0	89	78	.6	.1	.05	372	.51	1220	184	82	1.8	619	7.5

9-0711. COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	561	626	617	548	664	556	471	469	362	629	659	613
2.....	611	624	616	623	667	538	468	472	375	555	666	616
3.....	586	620	612	659	625	566	469	410	--	556	660	613
4.....	557	620	617	625	582	639	516	390	405	--	663	605
5.....	545	623	618	620	581	644	478	368	432	575	599	610
6.....	552	662	629	615	560	588	581	358	468	587	604	618
7.....	555	624	628	556	535	519	592	331	519	603	629	618
8.....	564	624	639	561	--	527	615	311	526	634	661	627
9.....	572	633	638	--	528	558	620	305	517	655	677	622
10.....	574	637	632	556	570	588	--	308	555	--	652	620
11.....	581	--	599	570	635	580	574	321	--	667	646	632
12.....	581	623	586	580	--	--	570	356	543	683	653	628
13.....	585	630	603	576	542	607	564	381	544	638	--	626
14.....	592	611	592	560	583	--	595	422	570	639	605	656
15.....	589	604	597	572	612	602	624	450	577	636	628	648
16.....	--	618	615	577	571	566	623	467	575	652	635	645
17.....	--	597	--	619	592	553	621	457	571	--	653	633
18.....	608	611	546	638	531	541	--	432	570	655	349	--
19.....	593	621	--	661	--	561	586	413	577	655	358	667
20.....	588	--	613	591	548	565	598	391	616	641	362	674
21.....	592	612	560	621	559	527	629	368	623	592	653	696
22.....	591	615	578	624	562	516	668	346	641	613	621	694
23.....	--	606	528	604	574	554	685	336	641	613	370	681
24.....	--	623	536	574	593	560	674	343	660	609	315	677
25.....	593	--	581	585	569	564	680	338	680	600	358	--
26.....	597	615	540	604	540	535	650	323	--	597	361	656
27.....	602	670	570	578	526	543	573	347	715	623	289	666
28.....	605	--	574	--	559	507	526	377	753	645	603	674
29.....	611	616	--	719	--	486	543	378	741	649	616	650
30.....	643	609	--	667	--	463	542	364	738	655	621	650
31.....	623	--	527	679	--	460	--	348	--	667	622	--
Average	587	622	592	605	576	552	583	376	573	625	559	643

COLORADO RIVER MAIN STEM--Continued

9-0711. COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	48	47	51	50	50	48	48	48	48	48	49	48	47	47	46	--	--	50	47	46	45	44	--	--	44	44	42	43	43	43	42	47
November	42	42	41	41	41	41	41	39	41	41	--	40	41	41	43	43	42	43	43	--	40	37	36	38	--	36	34	--	32	32	--	40
December	33	32	32	32	33	33	32	32	33	32	32	33	32	32	32	32	--	32	--	33	32	32	33	32	32	32	32	32	--	--	33	32
January	32	32	32	32	32	32	32	32	--	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	33	32	32	32
February	33	32	32	32	32	33	34	--	34	33	33	--	33	32	32	32	32	32	--	33	32	33	33	33	33	32	33	34	--	--	--	33
March	34	34	32	32	32	36	35	34	34	33	33	--	43	--	43	41	40	36	38	43	42	38	37	38	40	41	44	46	48	46	48	39
April	48	49	47	40	40	42	45	46	49	--	45	44	45	46	48	48	49	--	44	44	44	47	51	52	53	53	50	46	48	51	--	47
May	50	50	54	53	52	52	52	53	49	48	46	46	46	46	47	52	53	53	52	52	52	53	52	52	54	53	54	54	56	56	53	51
June	54	54	--	55	49	48	48	55	54	56	--	53	56	57	58	58	57	58	59	58	59	60	59	60	64	--	61	62	64	62	--	57
July	64	64	65	--	64	65	66	64	66	--	66	67	66	66	66	70	--	69	69	69	67	66	65	65	65	65	66	66	67	68	70	66
August	70	70	69	66	65	65	67	67	65	65	66	61	--	64	65	66	68	67	67	65	63	63	63	63	62	63	65	64	61	60	62	65
September	60	60	60	60	60	59	58	58	58	60	60	58	57	58	57	55	57	--	58	58	60	60	59	66	--	58	57	56	56	56	--	59

9-0850. ROARING FORK RIVER AT GLENWOOD SPRINGS, COLO.

LOCATION.--Lat 39°32'37", long 107°19'44", at gaging station at Glenwood Springs, Garfield County, 2,100 (revised) feet upstream from mouth.
DRAINAGE AREA.--1,460 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1958 to August 1961, May 1962 to September 1966.
Water temperatures: May 1962 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 509 ppm Sept. 1-30; minimum, 158 ppm May 8-11.
Hardness: Maximum, 318 ppm Sept. 1-30; minimum, 102 ppm May 8-11.
Specific conductance: Maximum daily, 859 micromhos Sept. 24; minimum daily, 211 micromhos May 9.
Water temperatures: Maximum, 72°F July 30; minimum, 33°F on several days during December to February.
EXTREMES, 1962-66.--Dissolved solids: Maximum, 509 ppm Sept. 1-30, 1966; minimum, 124 ppm July 1-13, 1965.
Hardness: Maximum, 320 ppm Oct. 1-13, 1963; minimum, 93 ppm July 1-13, 1965.
Specific conductance: Maximum daily, 859 micromhos Sept. 24, 1966; minimum daily, 189 micromhos May 26, 1964.
Water temperatures: Maximum, 72°F July 30, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-31, 1965...	1026					21		142	0	106	21				326	0.44	903	210	93	0.6	503	7.7
Nov. 1-30.....	671					21		158	0	117	27				376	.51	681	243	113	.6	575	7.7
Dec. 1-31.....	539					26		161	0	136	29				368	.50	536	258	126	.7	591	7.7
Jan. 1-31, 1966...	424					35		169	0	152	31				410	.56	469	264	125	.9	623	7.8
Feb. 1-28.....	383					38		160	0	156	31				410	.56	424	254	123	1.0	619	7.8
Mar. 1-26.....	392					22		161	0	138	26				385	.52	407	264	132	.6	602	7.7
Mar. 27-31.....	507					15		149	0	109	17				317	.43	434	226	104	.4	503	7.7
Apr. 1-30.....	772					8.7		132	0	83	13				268	.36	559	194	86	.3	429	7.7
May 1-4.....	1720					9.7		106	0	58	6.9				206	.28	957	136	49	.4	295	7.8
May 5-6.....	2800					9.2		90	0	47	4.8				173	.24	1310	110	36	.4	232	7.3
May 7.....	3200					19		120	0	86	12				260	.35	2250	164	66	.6	340	8.0
May 8-11.....	3170					8.5		82	0	44	5.2				158	.21	1350	102	35	.4	226	7.6
May 12-20.....	1738					10		97	2	62	8.9				204	.28	957	138	55	.4	301	8.3
May 21-31.....	2724					8.0		87	0	47	6.5				171	.23	1260	112	41	.3	244	7.7
June 1-10.....	2778					7.1		96	0	49	7.0				172	.23	1290	124	45	.3	270	7.7
June 11-25.....	2371					6.4		100	0	55	7.5				183	.25	1170	136	54	.2	303	8.0
June 26-30.....	1852					10		120	0	67	13				228	.31	1140	164	66	.3	366	7.9
July 1-4.....	1918					9.4		118	0	68	12				233	.32	1210	164	67	.3	365	7.7
July 5-12.....	1298					16		136	0	84	21				273	.37	957	194	82	.5	442	7.8
July 13-31.....	895					18		160	0	102	28				338	.46	817	238	107	.5	538	7.8

ROARING FORK RIVER BASIN--Continued

9-0850. ROARING FORK RIVER AT GLENWOOD SPRINGS, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Aug. 1-6, 1966....	800					27		170	0	113	34				373	0.51	806	246	107	0.7	581	7.4
Aug. 7-31.....	548					44		188	0	132	49				437	.59	647	265	111	1.2	687	7.7
Sept. 1-30.....	425					48		200	0	161	64				509	.69	584	318	154	1.2	787	7.8
Weighted average	--					17		130	--	90	19				282	0.38	713	190	82	0.5	438	7.7
Time-weighted average.....	935					24		151	--	114	27				345	--	--	228	104	0.7	536	7.7
Tons per day....	--					44		329	--	226	49				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Nov. 29, 1965.....	A509	10		83	16	29	1.6	176	0	137	37	0.3	0.5	0.04	410	0.56	563	273	129	0.8	646	7.6
Mar. 24, 1966.....	A346	9.5		80	16	20	.5	172	0	139	24	.6	.7	.01	401	.55	375	267	126	.5	596	7.8

A Discharge at time of sampling.

ROARING FORK RIVER BASIN--Continued

9-0850. ROARING FORK RIVER AT GLENWOOD SPRINGS, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	479	545	558	552	607	615	442	322	244	344	621	741
2.....	461	547	590	655	614	597	421	305	241	346	626	748
3.....	451	551	566	643	642	628	399	261	250	373	595	744
4.....	450	551	586	666	642	652	463	285	245	395	532	748
5.....	455	563	577	643	628	652	467	241	253	396	533	743
6.....	456	565	574	582	630	607	467	224	277	406	578	744
7.....	463	563	596	581	608	588	432	340	299	428	616	743
8.....	467	563	588	592	532	598	433	214	286	447	621	752
9.....	486	563	585	598	612	614	452	211	311	452	641	752
10.....	488	568	583	603	632	590	414	218	298	455	648	769
11.....	492	575	571	598	537	578	410	254	304	465	654	770
12.....	490	575	580	620	619	573	441	274	296	454	654	759
13.....	495	592	595	620	617	584	436	329	293	472	586	759
14.....	502	580	607	605	642	574	449	321	291	488	632	776
15.....	494	570	608	603	612	548	450	327	276	505	631	758
16.....	507	575	587	650	662	554	438	322	290	519	643	751
17.....	494	575	656	670	612	592	420	301	302	525	672	751
18.....	493	579	628	667	622	601	408	293	303	537	687	777
19.....	502	576	576	631	600	590	398	274	313	486	700	773
20.....	498	588	586	625	632	573	421	259	300	479	688	775
21.....	526	511	634	640	618	572	441	246	306	516	740	786
22.....	538	502	595	617	647	586	452	242	295	537	679	786
23.....	536	529	564	617	635	626	451	254	304	535	692	798
24.....	516	586	579	621	635	609	451	248	315	531	708	859
25.....	532	598	620	616	621	597	440	236	330	534	699	828
26.....	529	560	591	636	606	588	414	234	374	541	724	837
27.....	532	561	596	640	601	534	370	250	365	563	741	841
28.....	542	604	604	636	609	531	367	242	357	612	761	846
29.....	540	642	578	616	--	505	370	248	364	575	752	854
30.....	540	636	603	618	--	482	349	242	360	596	772	852
31.....	539	--	583	606	--	454	--	234	--	619	758	--
Average	499	569	591	621	616	580	425	266	301	488	664	780

ROARING FORK RIVER BASIN--Continued

9-0850. ROARING FORK RIVER AT GLENWOOD SPRINGS, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	52	53	58	54	53	54	54	53	54	55	56	53	52	54	53	52	50	48	52	52	52	52	53	54	54	52	50	50	50	49	49	52
November	49	49	48	47	47	47	47	47	47	45	43	47	46	45	45	45	45	45	45	44	45	45	45	45	42	37	36	35	38	38	---	44
December	37	35	36	36	37	38	38	38	38	38	39	39	37	36	35	35	33	33	33	33	33	34	33	34	34	34	36	39	40	40	38	36
January	33	33	33	35	34	35	36	38	39	38	37	38	38	38	38	38	36	36	35	34	34	34	34	34	34	36	36	36	36	35	34	36
February	36	36	37	37	38	37	37	36	36	36	36	34	34	34	34	33	36	36	36	36	40	40	40	40	40	40	40	41	---	---	---	37
March	39	39	37	37	38	40	42	41	43	43	45	44	42	44	44	42	--	---	44	45	43	43	43	44	48	50	47	47	52	54	54	44
April	54	58	45	50	48	45	46	47	50	51	52	53	53	55	56	56	54	52	45	49	50	51	54	55	61	45	46	48	54	56	---	51
May	58	54	56	56	57	56	57	57	51	55	46	48	52	57	58	56	56	56	59	60	54	49	55	56	56	53	55	56	58	54	52	55
June	58	57	58	57	57	55	57	58	58	58	60	58	57	59	58	56	59	60	60	57	60	60	60	61	61	60	63	61	62	59	---	59
July	62	62	65	67	67	67	65	66	67	67	65	66	65	68	69	67	68	68	68	69	65	65	65	---	69	68	68	70	71	72	70	67
August	68	70	70	67	69	69	68	69	65	69	68	64	68	68	68	69	67	66	68	67	66	65	66	67	67	66	68	66	65	65	63	67
September	63	61	63	64	64	63	63	64	65	63	62	60	60	62	59	61	62	63	63	64	64	65	65	65	64	63	62	62	62	59	---	63

COLORADO RIVER MAIN STEM

9-0955. COLORADO RIVER NEAR CAMEO, COLO.

LOCATION.--Lat 39°11'20", long 108°16'56", at Grand Valley project diversion dam, 3.7 miles upstream from Cameo, Mesa County, 0.4 mile upstream from Plateau Creek, and 5.9 miles downstream from gaging station.
DRAINAGE AREA.--8,050 square miles, approximately, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: October 1933 to September 1966.
Water temperatures: April 1949 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 691 ppm Sept. 1-30; minimum, 259 ppm May 22-31.
Hardness: Maximum, 268 ppm Sept. 1-30; minimum, 141 ppm May 22-31.
Specific conductance: Maximum daily, 1,230 micromhos Sept. 26, 27; minimum daily, 408 micromhos May 8.
Water temperatures: Maximum, 73°F on several days during July; minimum, freezing point on many days during November to February.
EXTREMES, 1933-66.--Dissolved solids (1933-43, 1950-66): Maximum, 1,080 ppm Sept. 22, 1962; minimum, 143 ppm June 11-20, 1935.
Hardness (1933-35, 1957-66): Maximum, 474 ppm Sept. 22, 1962; minimum, 98 ppm June 21-30, 1935.
Specific conductance (1941-66): Maximum daily, 1,860 micromhos June 16, 1964; minimum daily, 244 micromhos July 2, 1947, July 3, 1957.
Water temperatures (1949-66): Maximum, 76°F Aug. 16, 1962; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-31, 1965...	2713					95		156	0	125	121				550	0.75	4030	222	94	2.8	876	7.8
Nov. 1-30.....	2309					104		158	0	139	141				553	.75	3450	248	118	2.9	975	8.0
Dec. 1-24.....	2205					118		131	0	137	158				566	.77	3370	216	109	3.5	978	7.9
Dec. 25-28.....	2132					113		102	0	126	153				520	.71	2990	184	100	3.6	911	7.9
Dec. 29-31.....	2707					106		102	0	131	130				492	.67	3600	174	90	3.5	719	7.8
Jan. 1-31, 1966...	1853					129		151	0	136	172				606	.82	3030	228	104	3.7	1030	7.9
Feb. 1-28.....	1781					134		152	0	130	182				592	.81	2850	226	101	3.9	1020	7.9
Mar. 1-24.....	2130					120		160	0	139	150				585	.80	3360	226	95	3.5	977	7.7
Mar. 25-31.....	2247					93		154	0	113	118				490	.67	2970	208	82	2.8	825	7.6
Apr. 1-21.....	2442					93		150	0	113	115				477	.65	3150	200	77	2.9	799	8.1
Apr. 22-27.....	2028					103		125	6	127	155				554	.75	3030	240	128	2.9	980	8.5
Apr. 28-30.....	2610					88		98	1	107	110				410	.56	2890	158	76	3.0	764	8.3
May 1-4.....	3842					66		148	0	79	91				414	.56	4290	189	68	2.1	683	7.7
May 5-15.....	6915					37		137	0	56	50				290	.39	5410	160	48	1.3	487	7.6
May 16-21.....	4913					50		130	0	72	67				340	.46	4510	167	60	1.7	576	7.7
May 22-31.....	6721					34		115	0	52	47				259	.35	4700	141	47	1.2	445	7.7
June 1-6.....	6603					35		110	0	58	49				273	.37	4870	143	53	1.3	461	8.1
June 7-22.....	4493					55		126	0	81	75				358	.49	4340	174	71	1.8	601	8.0
June 23-30.....	3490					75		143	0	106	104				454	.62	4280	210	93	2.3	765	8.1
July 1-31.....	2555					93		159	0	121	127				534	.73	3680	234	104	2.6	890	7.8

COLORADO RIVER MAIN STEM--Continued

9-0955. COLORADO RIVER NEAR CAMEO, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Aug. 1-31, 1966...	1934					124		172	0	144	168				638	0.87	3330	258	117	3.4	1070	8.1
Sept. 1-30.....	1700					135		168	0	151	189				691	.94	3170	268	130	3.6	1160	7.7
Weighted average	--					90		145	--	111	120				487	0.66	3550	208	89	2.6	821	7.8
Time-weighted average.....	2702					103		150	--	123	138				536	--	--	221	98	3.0	905	7.9
Tons per day....	--					654		1060	--	806	874				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Dec. 8, 1965.....	A2200	10		64	19	100	1.9	158	0	136	131	0.4	2.9	0.05	557	0.76	3310	238	108	2.8	929	7.9
Mar. 24, 1966.....	A1960	9.2		60	18	106	3.5	155	0	128	139	.5	2.6	.03	557	.76	2950	222	95	3.1	940	7.7

A Discharge at time of sampling.

COLORADO RIVER MAIN STEM--Continued

9-0955. COLORADO RIVER NEAR CAMEO, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	797	939	1100	987	1120	1000	831	753	441	744	1020	1120
2.....	802	957	971	983	1120	1010	741	697	442	744	1080	1120
3.....	805	937	965	987	997	1010	731	671	450	737	1080	1100
4.....	783	949	971	1080	1000	--	728	602	447	732	1080	1100
5.....	783	975	972	1010	997	1070	732	538	482	737	1030	1110
6.....	789	969	965	980	1000	1080	760	502	487	775	952	1100
7.....	790	975	975	997	1010	1140	853	454	581	780	901	1090
8.....	833	997	990	993	987	1140	855	408	584	897	940	1130
9.....	837	969	987	934	1060	933	851	418	592	906	987	1130
10.....	826	988	990	943	1060	951	786	410	608	900	1040	1130
11.....	826	961	956	940	1070	945	790	473	604	906	1080	1140
12.....	836	961	875	932	1080	942	782	467	607	906	1070	1130
13.....	831	944	815	987	1080	942	788	526	595	917	1080	1150
14.....	832	952	858	974	1070	936	782	534	593	918	1080	1190
15.....	--	955	883	1070	980	945	848	571	600	914	1030	1110
16.....	899	955	883	1060	980	942	811	607	600	917	1010	1170
17.....	916	955	901	1060	977	945	814	605	598	960	1030	1170
18.....	972	964	963	1070	980	951	818	613	624	957	1060	1180
19.....	914	961	1090	1060	977	942	844	579	621	950	1090	1110
20.....	899	964	828	1060	971	948	837	520	621	980	1110	1160
21.....	924	964	1120	1040	977	951	837	514	632	915	1190	1180
22.....	861	963	1010	1040	958	913	942	454	628	914	1190	1180
23.....	850	967	966	1020	974	910	967	444	695	911	1100	1190
24.....	892	967	--	1010	--	900	974	448	693	935	1080	1210
25.....	885	961	895	1050	1010	--	974	452	695	935	1090	1210
26.....	893	1000	954	1000	1000	830	993	420	793	920	1100	1230
27.....	893	1010	898	997	1000	830	990	425	804	932	1080	1230
28.....	924	1000	860	1140	1010	823	767	--	798	926	1080	1200
29.....	918	1000	716	1140	--	825	764	449	799	935	1080	1190
30.....	939	1110	594	1120	--	825	762	448	820	983	1100	1210
31.....	928	--	846	1120	--	823	--	445	--	1000	1130	--
Average	862	972	926	1025	1016	944	831	514	617	889	1063	1155

9-0955. COLORADO RIVER NEAR CAMEO, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	52	52	52	52	52	52	52	52	52	51	51	51	51	51	--	52	52	52	49	46	46	46	46	48	47	47	47	46	46	46	46	50
November	45	45	45	44	44	44	43	43	43	43	42	42	42	43	43	44	44	43	43	43	43	42	42	42	42	40	35	34	34	32	--	42
December	32	32	33	33	33	33	33	34	34	35	35	36	36	35	35	35	34	33	33	33	32	33	32	33	33	32	32	32	33	33	33	33
January	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	--	33	33	33	34	--	--	--	32
March	34	34	34	--	34	34	35	35	36	37	39	40	40	40	45	45	45	45	45	45	45	41	41	41	--	42	45	46	47	47	48	41
April	48	47	46	45	44	44	48	50	49	50	50	50	50	50	52	45	47	44	45	45	45	46	49	50	49	54	52	52	52	53	--	48
May	53	55	59	56	56	56	55	55	55	54	48	46	51	51	54	53	53	56	55	52	52	54	54	54	55	55	55	--	55	56	56	54
June	55	55	57	56	56	56	57	57	58	60	60	60	61	61	61	61	61	61	62	65	64	63	64	65	65	66	66	67	67	66	--	61
July	66	66	67	67	67	67	68	69	69	70	71	71	71	72	72	72	73	73	73	73	73	73	73	72	71	72	72	72	72	--	--	71
August	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68	69	70	68	66	64	64	64	64	64	65	65	65	65	65	--
September	64	62	63	63	64	64	64	63	63	63	62	62	62	61	59	59	59	59	60	60	62	63	64	64	64	62	61	61	61	57	--	62

9-1525. GUNNISON RIVER NEAR GRAND JUNCTION, COLO.
(Irrigation Network station)

LOCATION.--Lat 38°59', long 108°27', at gaging station at bridge on State Highway 141, 0.4 mile downstream from Whitewater Creek, 0.5 mile south of Whitewater, and 8 miles southeast of Grand Junction, Mesa County.
DRAINAGE AREA.--7,870 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1931 to September 1966.
Water temperatures: April 1949 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 1,540 ppm Aug. 1-31; minimum, 358 ppm May 7-11.
Hardness: Maximum, 820 ppm Aug. 1-31; minimum, 220 ppm May 7-11.
Specific conductance: Maximum daily, 1,900 micromhos Aug. 28; minimum daily, 504 micromhos May 9.
Water temperatures: Maximum, 77°F July 28, Aug. 5, 7, 8, 20; minimum, freezing point on many days during December to March.
EXTREMES, 1931-66.--Dissolved solids: Maximum, 2,820 ppm Sept. 11-20, 1934; minimum, 203 ppm May 11-20, 1944, May 22-26, 1964.
Hardness (1931-35, 1943-66): Maximum, 1,370 ppm Sept. 1-20, 1934; minimum, 130 ppm May 22-26, 1964.
Specific conductance (1941-66): Maximum daily, 2,730 micromhos Sept. 10, 1956; minimum daily, 280 micromhos May 23, 1948.
Water temperatures (1949-66): Maximum, 86°F Aug. 13, 1958; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-13, 1965...	1945					69		185	0	462	10				906	1.23	4760	496	344	1.3	1180	7.8
Oct. 14-29.....	1940					90		208	0	544	14				1040	1.41	5450	561	390	1.7	1340	8.0
Oct. 30-31.....	1085					114		245	0	710	18				1350	1.84	3950	717	516	1.9	1640	7.9
Nov. 1-30.....	1063					125		245	0	745	19				1420	1.93	4080	731	530	2.0	1720	8.0
Dec. 1-31.....	983					132		163	0	689	19				1160	1.58	3080	590	456	2.4	1480	8.1
Jan. 1-31, 1966...	845					134		192	3	712	20				1230	1.67	2810	640	478	2.3	1570	8.3
Feb. 1-28.....	661					141		244	0	754	18				1370	1.86	2450	703	503	2.3	1700	8.0
Mar. 1-11.....	694					150		227	0	757	22				1330	1.81	2490	680	494	2.5	1660	8.2
Mar. 12-28.....	1140					103		204	0	519	15				944	1.28	2910	505	338	2.0	1220	7.7
Mar. 29-31.....	2443					65		169	0	305	9.6				593	.81	3910	328	189	1.6	825	7.8
Apr. 1-4.....	3588					39		137	0	181	6.2				392	.53	3800	224	112	1.1	563	7.8
Apr. 5-9.....	2408					49		146	0	226	7.6				464	.63	3020	260	140	1.3	664	7.8
Apr. 10-12.....	3333					45		130	0	204	7.2				410	.56	3690	232	125	1.3	590	7.7
Apr. 13-26.....	2403					59		143	0	286	9.3				550	.75	3570	300	183	1.5	767	7.7
Apr. 27-30.....	3458					49		131	0	233	7.8				454	.62	4240	254	146	1.3	644	7.7
May 1-6.....	4443					29		140	0	166	5.4				386	.52	4630	232	117	.8	560	7.7
May 7-11.....	5100					26		132	0	155	5.1				358	.49	4930	220	112	.8	523	7.7
May 12.....	3780					48		130	0	239	7.3				448	.61	4570	262	155	1.3	653	7.6
May 13-23.....	2532					56		150	0	340	8.7				649	.88	4440	367	244	1.3	878	7.6

9-1525. GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
May 24-27, 1966...	2352					58		151	0	368	9.1				706	0.96	4480	392	268	1.3	941	7.7
May 28-31.....	3270					44		135	0	268	7.2				529	.72	4670	304	193	1.1	733	7.6
June 1-4.....	3852					35		136	0	234	4.0				479	.65	4980	284	172	.9	675	7.7
June 5-19.....	1759					73		178	0	492	11				917	1.25	4360	514	368	1.4	1160	7.9
June 20-22.....	1487					86		198	0	585	12				1080	1.47	4340	602	440	1.5	1330	7.9
June 23-30.....	2080					49		148	0	347	7.0				670	.91	3760	386	265	1.1	892	7.8
July 1.....	1520					85		180	0	509	12				908	1.23	3730	510	362	1.6	1150	7.8
July 2-6.....	1124					103		196	0	632	15				1110	1.51	3370	615	454	1.8	1380	8.0
July 7-31.....	740					135		206	0	807	18				1370	1.86	2740	740	571	2.2	1640	8.0
Aug. 1-31.....	625					138		216	0	881	19				1540	2.09	2600	820	643	2.1	1810	7.9
Sept. 1-30.....	973					121		242	0	819	16				1460	1.99	3840	810	611	1.9	1740	7.7
Weighted average	--					84		178	--	487	12				901	1.22	3510	488	342	1.6	1150	7.8
Time-weighted average.....	1444					106		197	--	617	15				1110	--	--	594	432	1.9	1390	7.9
Tons per day....	--					327		696	--	1900	48				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Dec. 9, 1965.....	A1090	14		146	63	110	6.7	239	0	632	17	0.5	4.4	0.16	B1110	1.51	3270	622	426	1.9	1480	7.7
Mar. 16, 1966.....	A1240	13		108	58	88	7.0	196	0	518	14	.7	6.1	.12	892	1.21	2990	510	349	1.7	1170	7.7
May 17.....	A2310	13		89	35	55	3.0	150	0	332	9.0	.7	3.1	.11	643	.87	4010	364	241	1.3	863	7.6
Aug. 5.....	A775	16		203	67	121	7.0	236	0	808	17	1.7	6.5	.12	B1360	1.85	2850	784	590	1.9	1690	7.5

A Discharge at time of sampling.
B Calculated from determined constituents.

9-1525. GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	1070	1720	1610	—	--	1690	606	585	761	1150	1640	1850
2.....	1050	1720	--	--	1580	1690	576	564	634	1300	1640	1840
3.....	1100	1700	1590	1510	--	1650	531	563	662	1370	1740	1860
4.....	1100	1740	--	--	1690	1590	524	554	630	1370	1760	1780
5.....	1120	1770	--	1570	--	1650	572	542	929	1390	1750	1800
6.....	1120	1800	1500	--	--	1650	667	533	1050	1420	1690	1810
7.....	1160	1780	--	1610	1690	1630	690	523	1090	1400	1740	1740
8.....	1180	1810	1390	--	--	1600	704	517	1140	1400	1730	1740
9.....	1210	1800	--	--	1690	1590	673	504	1150	1450	1780	1740
10.....	1230	1810	1220	1410	--	1740	574	536	1100	1510	1770	1740
11.....	1240	1790	--	1430	1810	1520	544	527	1090	1540	1790	1740
12.....	1270	1750	--	--	--	1420	653	653	1120	1580	1810	1570
13.....	1310	1810	1570	--	--	1340	726	886	1180	1630	1810	1740
14.....	1410	1860	--	1460	1740	1310	733	831	1180	1640	1820	1720
15.....	1420	1660	1510	--	--	1290	748	860	1190	1690	1840	1710
16.....	1410	1730	--	--	1700	1210	775	873	1230	1730	1820	1670
17.....	1420	1660	1490	1460	--	1110	708	875	1250	1700	1810	1650
18.....	1530	1650	--	--	1700	1210	657	858	1290	1730	1840	1610
19.....	1490	1660	--	1500	--	1110	633	861	1310	1720	1840	1610
20.....	1350	1660	1530	--	--	1180	700	883	1290	1690	1850	1610
21.....	1260	1700	--	1500	1640	1150	795	906	1340	1680	1850	1610
22.....	1210	1620	1540	--	--	1150	846	893	1350	1680	1870	1690
23.....	1240	1690	--	--	1660	1140	829	933	869	1720	1810	1750
24.....	1250	1670	1410	1750	--	1280	831	972	821	1770	1810	1760
25.....	1240	1740	--	--	1690	1290	867	962	819	1700	1840	1760
26.....	1240	1590	--	1700	--	1230	847	922	861	1660	1840	1800
27.....	1180	1550	1530	--	--	1220	716	893	856	1640	1870	1810
28.....	1230	1640	--	1650	1690	1130	642	784	911	1660	1900	1820
29.....	1440	1590	1470	--	--	950	615	720	950	1650	1890	1840
30.....	1600	1660	--	--	--	818	599	734	1030	1600	1870	1810
31.....	1690	—	1410	1660	--	707	--	700	--	1720	1860	--
Average	1282	1711	--	--	--	1330	686	740	1036	1577	1802	1739

GUNNISON RIVER BASIN--Continued

9-1525. GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	55	50	51	53	59	57	54	53	52	53	53	53	51	52	53	54	52	50	48	52	49	47	48	49	49	47	47	46	47	47	48	51
November	48	48	47	48	47	45	44	45	46	46	45	45	45	42	46	46	46	48	45	45	45	46	44	45	46	47	38	36	36	34	--	44
December	32	--	32	--	--	36	--	36	--	38	--	--	39	--	37	--	35	--	--	32	--	32	--	32	--	--	32	--	34	--	38	--
January	--	--	32	--	32	--	32	--	--	32	32	--	--	32	--	--	32	--	32	--	32	--	--	32	--	32	--	32	--	--	32	--
February	--	32	--	32	--	--	34	--	32	--	33	--	--	32	--	32	--	33	--	--	35	--	35	--	37	--	--	39	--	--	--	--
March	39	38	38	32	34	37	37	40	42	40	47	42	45	45	45	47	44	40	46	45	46	46	38	46	46	47	49	49	47	48	48	43
April	49	48	46	44	42	44	46	48	49	50	48	44	50	50	49	51	55	51	46	42	45	48	49	52	54	57	50	48	48	52	--	48
May	57	51	52	58	56	56	57	59	56	55	57	50	52	53	55	56	59	58	58	57	51	60	57	55	58	60	58	58	60	61	60	56
June	58	58	60	59	60	62	60	59	62	60	62	60	62	63	64	65	64	63	65	67	65	65	65	64	64	63	63	63	67	65	--	63
July	66	67	66	68	70	70	70	70	71	71	76	72	70	71	70	71	72	72	73	71	72	74	72	72	72	74	74	77	73	75	75	72
August	75	73	73	74	77	73	77	77	70	69	69	68	70	68	66	74	75	69	70	77	67	65	67	64	65	67	68	66	65	66	64	70
September	65	61	62	65	64	63	62	64	63	65	63	61	62	62	60	60	60	60	60	60	62	63	64	62	65	62	62	62	60	59	--	62

9-1635.3. COLORADO RIVER BELOW COLORADO-UTAH STATE LINE

LOCATION.--Lat 39°09', long 108°57', at Westwater, Grand County, Utah, 9.5 miles downstream from gaging station, and about 4 miles downstream from Colorado-Utah State line.
DRAINAGE AREA.--17,900 square miles, approximately, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: May 1962 to September 1966.
Water temperatures: May 1962 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 1,430 ppm Aug. 1-31; minimum, 342 ppm May 7-10.
Hardness: Maximum, 724 ppm Aug. 1-31; minimum, 200 ppm May 7-10.
Specific conductance: Maximum daily, 2,050 micromhos Aug. 31; minimum daily, 511 micromhos May 10.
Water temperatures: Maximum, 82°F July 30; minimum, freezing point on many days during winter months.
EXTREMES, 1962-66.--Dissolved solids: Maximum, 2,610 ppm Jan. 3-5, 1965; minimum, 243 ppm June 14-30, 1965.
Hardness: Maximum, 1,080 ppm Jan. 3-5, 1965; minimum, 150 ppm June 14-30, 1965.
Specific conductance: Maximum daily, 3,680 micromhos Mar. 19, 1965; minimum daily, 357 micromhos June 22, 1965.
Water temperatures: Maximum, 82°F July 30, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station. Records of discharge are given for Colorado River near Colorado-Utah State line.
Maximum observed during water year: Dissolved solids, 1,480 ppm Sept. 27, 1966; hardness, 744 ppm Sept. 27, 1966.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-14, 1965..	5300					95		154	4	346	76				799	1.09	11430	392	259	2.1	1130	8.4
Oct. 15-31.....	4777					112		190	0	426	82				954	1.30	12300	472	316	2.2	1300	7.8
Nov. 1-30.....	3786					135		200	0	435	103				958	1.30	9790	470	306	2.7	1390	7.9
Dec. 1-31.....	3567					132		197	0	399	111				918	1.25	8840	446	284	2.7	1380	7.8
Jan. 1-31, 1966..	2770					149		207	0	398	135				958	1.30	7160	450	280	3.1	1400	7.8
Feb. 1-28.....	2762					159		200	0	390	140				989	1.35	7380	422	258	3.4	1430	7.8
Mar. 1-31.....	3624					119		182	0	340	111				827	1.12	8090	400	251	2.6	1220	7.8
Apr. 1-16.....	5459					52		139	0	163	62				507	.69	7470	258	144	1.4	799	7.9
Apr. 17-30.....	4437					81		156	0	280	68				650	.88	7790	340	212	1.9	971	7.9
May 1-6.....	7892					53		142	0	177	44				463	.63	9870	248	132	1.5	712	7.7
May 7-10.....	13000					33		128	0	123	28				342	.47	12000	200	95	1.0	538	7.6
May 11-22.....	8284					58		142	0	227	49				551	.75	12320	295	179	1.5	837	8.2
May 23-31.....	8899					49		126	0	187	41				452	.61	10860	249	146	1.4	699	8.0
June 1-8.....	8874					51		138	0	204	42				507	.69	12150	274	161	1.3	747	7.6
June 9-30.....	5248					77		162	0	304	64				695	.95	9850	372	239	1.7	1010	7.6
July 1-12.....	3455					107		180	0	422	92				954	1.30	8900	484	336	2.1	1300	7.8
July 13-31.....	2432					134		198	0	572	112				1190	1.62	7810	624	462	2.3	1620	7.7
Aug. 1-31.....	1929					176		220	0	714	130				1430	1.94	7450	724	544	2.8	1880	7.7
Sept. 1-30.....	2475					169		220	0	681	130				1370	1.86	9160	706	526	2.8	1830	7.8
Weighted average	--					103		174	--	353	87				813	1.10	8970	408	265	2.2	1170	7.8
Time-weighted average.....	4087					121		186	--	413	101				927	--	--	461	308	2.4	1320	7.8
Tons per day...	--					1140		1920	--	3900	956				--	--	--	--	--	--	--	--

COLORADO RIVER MAIN STEM--Continued

9-1635.3. COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

Analyses of additional samples (instantaneous discharges shown)

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Dec. 15, 1965....	3830	12		103	41	121	4.4	194	0	381	103	0.5	4.9	0.09	908	1.23	9390	424	265	2.6	1330	7.4
Apr. 7, 1966.....	4920	10		67	23	69	4.9	150	0	180	66	.5	4.1	.06	518	.70	6880	264	141	1.8	811	7.5
June 1.....	11140	9.2		63	20	47	2.4	127	0	179	36	.5	2.3	.07	441	.60	13260	238	134	1.3	653	7.4
Sept. 27.....	2100	11		177	73	168	6.0	220	0	731	133	.7	21	.16	1480	2.01	8390	744	564	2.7	1950	7.8

COLORADO RIVER MAIN STEM--Continued

9-1635.3. COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	1080	1430	1460	1230	1490	1370	713	766	685	1170	1690	1830
2.....	1080	1430	1470	1230	1490	1370	689	792	674	1410	1750	1830
3.....	1090	1440	1410	1320	1490	1370	644	714	700	1190	2010	1790
4.....	1080	1430	1400	1330	1500	1380	705	694	694	1130	1880	1840
5.....	1100	1430	1320	1320	1460	1360	709	673	712	1250	1850	1830
6.....	1100	1430	1310	1480	1400	1360	767	618	775	1250	1810	1840
7.....	1110	1440	1320	1490	1390	1400	808	578	827	1290	1720	--
8.....	1110	1420	1310	1270	1370	1400	845	549	884	1290	1720	--
9.....	1130	1420	1340	1260	1400	1210	854	535	932	1340	1680	--
10.....	1150	1420	1370	1260	1410	1200	797	511	967	1400	1670	--
11.....	1160	1430	1280	1520	1410	1260	823	762	964	1410	1810	--
12.....	1180	1400	1280	1530	1380	1260	821	769	1020	1470	1910	--
13.....	1200	1400	1360	1250	1650	1200	823	768	1050	1530	1900	--
14.....	1240	1370	1350	1320	1430	1090	872	774	1050	1550	1840	--
15.....	1470	1440	1380	1330	1470	1090	879	786	1020	1540	1840	1730
16.....	1470	1370	1310	1400	1380	1080	874	860	1020	1560	1850	1740
17.....	1470	1370	1410	1390	1380	1070	974	942	1070	1590	1840	1740
18.....	1270	1370	1430	1410	1380	1080	952	899	1070	1610	1880	1760
19.....	1350	1370	1410	1380	1330	1130	914	897	1070	1670	1910	1760
20.....	1340	1380	1610	1480	1330	1240	914	847	936	1670	1950	1740
21.....	1230	1370	1630	1490	1330	1240	917	821	927	1740	1950	1760
22.....	1230	1380	1620	1480	1420	1260	1020	851	929	1620	1940	1770
23.....	1220	1320	1630	1470	1450	1200	1020	720	924	1620	1970	1830
24.....	1220	1320	1230	1490	1440	1240	1020	714	935	--	1940	1900
25.....	1230	1310	1200	1480	1430	1200	1080	696	993	--	1890	1910
26.....	1220	1320	1260	1490	1490	1200	1090	681	990	--	1880	1930
27.....	1220	1330	1280	1450	1490	1190	1030	678	986	--	1930	1830
28.....	1230	1320	1380	1480	1490	1100	980	696	1010	--	1970	1930
29.....	1220	1310	1350	1480	--	1080	806	711	1110	1630	1940	1930
30.....	1340	1380	1240	1460	--	1090	796	693	1100	1630	1940	1940
31.....	1400	--	1220	1460	--	1050	--	695	--	1660	2050	--
Average	1220	1390	1370	1400	1430	1220	871	731	934	1470	1870	--

COLORADO RIVER MAIN STEM--Continued

9-1635.3. COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	57	59	61	63	64	65	63	58	59	56	55	54	57	58	56	55	52	54	55	56	54	51	52	49	53	53	51	51	49	49	50	55
November	49	46	48	48	49	47	46	47	48	47	46	46	47	47	47	46	46	47	46	47	45	44	44	43	42	41	38	36	37	36	--	45
December	36	35	35	36	36	37	37	37	38	36	37	39	37	36	35	37	34	33	33	33	33	32	33	33	33	32	32	32	32	34	32	35
January	32	32	32	32	32	33	32	32	33	33	32	33	33	32	33	32	32	32	32	32	32	32	32	32	32	32	33	32	32	32	33	32
February	32	32	33	34	32	32	32	32	33	34	34	33	32	33	33	32	33	33	33	34	36	36	37	39	38	39	40	38	--	--	--	34
March	39	40	40	41	42	40	42	44	44	45	47	45	46	47	45	46	46	44	45	45	46	46	45	47	48	46	49	50	52	53	50	45
April	54	54	52	52	51	50	50	52	54	55	55	55	56	56	57	55	56	53	52	50	50	53	55	58	58	57	55	52	57	60	--	54
May	61	64	63	64	65	64	64	64	61	58	56	55	57	58	58	62	65	66	68	62	60	62	62	61	61	62	63	63	61	61	63	62
June	60	60	63	61	62	61	62	61	64	65	64	64	66	68	70	69	70	72	71	70	70	69	70	69	71	71	70	70	68	69	--	67
July	72	68	68	70	72	75	74	75	75	75	76	75	74	73	71	74	73	74	80	78	79	78	76	--	--	--	--	--	81	82	78	75
August	77	76	76	75	73	73	75	75	77	74	77	75	72	76	78	80	79	76	73	72	69	67	67	65	67	69	68	71	68	67	69	73
September	67	65	64	66	66	68	--	--	--	--	--	--	--	--	63	63	61	63	63	64	68	66	68	70	66	64	67	66	65	62	--	--

9-2510. YAMPA RIVER NEAR MAYBELL, COLO.

LOCATION.--Lat 40°32'20", long 108°05'18", at county bridge, 1 mile north of Maybell, Moffat County, and about 3.5 miles downstream from gaging station.
DRAINAGE AREA.--3,410 square miles, approximately, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: November 1950 to September 1966.
Water temperatures: November 1950 to September 1966.
Sediment records: December 1950 to May 1958.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 477 ppm June 23-30; minimum, 74 ppm May 26.
Hardness: Maximum, 252 ppm Sept. 1-11; minimum, 50 ppm May 26.
Specific conductance: Maximum daily, 871 micromhos June 24; minimum daily, 130 micromhos Apr. 11-12.
Water temperatures: Maximum, 75°F Aug. 17, 24; minimum, freezing point on many days during December to March.
EXTREMES, 1950-66.--Dissolved solids: Maximum, 545 ppm Sept. 21-30, 1956; minimum, 64 ppm June 13, 1964.
Hardness: Maximum, 271 ppm Dec. 27-31, 1962; minimum, 43 ppm June 1-21, 1959.
Specific conductance: Maximum daily, 947 micromhos Sept. 24, 1955; minimum daily, 94 micromhos June 14, 1959.
Water temperatures: Maximum, 85°F Aug. 5, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station. Stream frozen Dec. 19 to Mar. 24.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-20, 1965...	679					30		145	0	58	13				234	0.32	429	132	13	1.1	379	8.0
Oct. 21-31.....	467					39		174	0	100	15				322	.44	406	182	39	1.3	508	8.1
Nov. 1-30.....	421					44		186	0	102	20				338	.46	384	191	38	1.4	546	7.8
Dec. 1-31.....	326					41		178	0	82	20				287	.39	253	170	24	1.4	489	8.0
Jan. 1-31, 1966...	335					46		188	0	94	21				315	.43	285	181	27	1.5	534	7.9
Feb. 1-28.....	280					42		184	0	98	20				334	.45	253	189	38	1.3	543	7.8
Mar. 1-9.....	286					50		188	0	101	22				343	.47	265	182	28	1.6	551	7.6
Mar. 10-21.....	2168					13		115	0	35	3.6				165	.22	966	107	13	.5	257	7.8
Mar. 22-25.....	1215					13		83	0	31	1.8				124	.17	407	75	6	.7	174	7.6
Mar. 26-31.....	1802					8.5		85	0	21	2.1				133	.18	647	76	6	.4	177	7.7
Apr. 1-12.....	2052					6.4		65	0	16	2.8				94	.13	521	60	6	.4	143	7.7
Apr. 13-17.....	1720					11		87	0	23	5.6				129	.18	599	80	8	.5	206	7.4
Apr. 18-27.....	1980					11		89	0	24	5.4				143	.19	764	82	9	.5	211	7.4
Apr. 28-30.....	2763					11		95	0	24	5.6				140	.19	1040	88	10	.5	218	7.6
May 1-8.....	3896					36		162	0	63	16				255	.35	2680	143	10	1.3	437	7.7
May 9-18.....	4284					41		198	0	75	19				309	.42	3570	179	17	1.3	514	7.9
May 19-25.....	3561					17		96	0	34	6.0				155	.21	1490	86	7	.8	255	7.3
May 26.....	3420					8.0		56	0	16	3.5				74	.10	683	50	4	.5	136	7.4
May 27-31.....	3446					20		94	0	37	8.6				147	.20	1370	84	6	.9	244	7.7
June 1-2.....	3705					84		230	0	130	41				418	.57	4180	200	11	2.6	673	8.2

9-2510. YAMPA RIVER NEAR MAYBELL, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
June 3, 1966.....	3370					48		134	0	85	26				252	0.34	2290	30	20	1.8	429	7.6
June 4-5.....	3140					64		206	0	110	29				349	.47	2960	186	17	2.0	567	8.1
June 6-7.....	2570					43		132	0	79	23				246	.33	1710	130	22	1.6	412	7.8
June 8.....	2060					82		226	0	136	40				410	.56	2280	204	19	2.5	670	8.1
June 9-10.....	2035					42		156	0	74	23				263	.36	1450	146	18	1.5	446	7.7
June 11.....	1930					29		96	0	54	12				150	.20	782	88	9	1.3	254	7.8
June 12.....	2050					95		224	0	160	41				418	.57	2310	202	18	2.9	666	8.1
June 13-19.....	1643					23		100	0	45	10				156	.21	692	94	12	1.0	262	7.5
June 20-22.....	1397					48		196	0	86	22				309	.42	1170	176	15	1.6	510	7.7
June 23-30.....	929					89		256	0	146	46				477	.65	1200	234	24	2.5	777	7.8
July 1-31.....	285					60		256	0	126	27				423	.58	325	248	38	1.7	675	7.9
Aug. 1-9.....	231					60		212	0	128	22				396	.54	247	206	32	1.8	629	7.8
Aug. 10-17.....	123					62		204	0	150	22				398	.54	132	220	53	1.8	677	7.9
Aug. 18-31.....	52.9					50		236	0	99	26				382	.52	54.5	224	30	1.5	630	8.0
Sept. 1-11.....	35.5					53		248	0	119	29				431	.59	41.2	252	49	1.5	683	8.1
Sept. 12-30.....	55.2					46		212	0	96	24				348	.47	51.8	208	34	1.4	569	7.9
Weighted average	--					32		144	--	61	14				235	0.32	616	133	15	1.1	383	7.7
Time-weighted average.....	971					41		177	--	85	19				300	--	--	172	26	1.3	489	7.8
Tons per day....	--					83		377	--	161	37				--	--	--	--	--	--	--	--

Analyses of additional samples

Dec. 7, 1965.....	A330	13		42	18	35	2.4	188	0	85	13	0.3	0.6	0.05	299	0.41	266	182	28	1.1	488	7.5
Mar. 30, 1966.....	A2070	8.8		35	16	25	5.8	138	0	86	7.9	.3	3.0	.04	285	.39	1590	152	39	.9	428	7.8
May 10.....	A5310	8.1		18	4.6	6.0	1.1	71	0	13	2.1	.2	.3	.06	100	.14	1430	64	5	.3	144	7.0
Aug. 30.....	A45	1.1		39	25	80	3.5	218	0	119	50	1.0	.2	.05	431	.59	52.3	198	19	2.5	706	8.0

A Discharge at time of sampling.

9-2510. YAMPA RIVER NEAR MAYBELL, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	351	502	482	--	--	--	145	402	676	680	--	678
2.....	353	506	482	--	538	552	170	396	670	679	--	677
3.....	351	507	483	526	--	--	143	417	429	677	--	676
4.....	351	504	438	--	541	550	142	408	675	672	644	675
5.....	349	500	484	529	--	--	143	411	459	675	629	678
6.....	349	506	443	--	--	--	138	428	396	669	631	667
7.....	350	506	491	533	543	549	137	508	428	677	610	681
8.....	345	486	493	--	--	--	135	511	670	677	638	683
9.....	351	550	495	--	533	542	148	508	463	680	--	678
10.....	396	556	494	533	--	--	137	505	428	685	677	687
11.....	397	556	494	--	542	265	130	503	254	685	--	681
12.....	396	556	494	534	--	--	130	510	666	679	--	572
13.....	396	555	494	--	--	--	206	509	263	678	--	549
14.....	394	555	495	532	544	250	206	543	252	677	--	549
15.....	397	552	491	--	--	--	194	520	262	674	--	547
16.....	400	556	494	--	543	257	205	514	264	679	--	554
17.....	398	557	494	534	--	--	208	531	252	675	--	546
18.....	398	556	491	--	544	257	208	525	270	674	--	544
19.....	398	557	494	528	--	--	202	258	270	677	--	674
20.....	397	551	--	--	--	--	218	250	504	676	--	554
21.....	504	554	--	530	546	255	208	266	512	677	--	563
22.....	501	557	496	--	--	--	206	262	513	674	--	549
23.....	505	555	--	--	544	174	214	247	864	680	--	551
24.....	500	555	495	532	--	--	212	250	871	679	--	563
25.....	508	554	--	--	541	175	201	247	749	683	--	562
26.....	508	558	--	532	--	173	211	136	746	678	--	563
27.....	505	556	477	--	--	177	202	243	748	683	--	566
28.....	505	553	--	534	544	175	216	246	744	677	--	548
29.....	504	557	478	--	--	174	223	--	743	667	671	609
30.....	508	555	--	--	--	176	215	--	742	678	610	568
31.....	507	--	494	533	--	177	--	--	--	681	609	--
Average	421	540	486	--	--	--	181	394	526	677	--	606

GREEN RIVER BASIN--Continued

9-2510. YAMPA RIVER NEAR MAYBELL, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	64	56	63	55	52	62	53	60	51	60	51	60	49	50	48	50	48	50	48	51	47	50	50	47	50	46	46	46	50	45	46	52
November	46	56	46	49	46	49	46	49	46	45	48	46	49	45	49	45	43	48	43	48	43	43	48	41	48	41	40	41	40	45	--	46
December	40	43	40	43	40	42	38	41	37	37	40	35	39	35	35	38	35	37	32	32	32	32	32	32	32	32	32	32	32	32	32	36
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	39	40	42	40	43	40	43	34
April	43	49	43	50	43	43	50	50	44	50	44	44	50	44	49	44	44	51	51	44	51	51	52	45	52	48	53	53	44	44	--	47
May	44	53	53	44	45	53	45	43	44	42	44	44	42	44	45	44	42	43	43	57	57	44	55	55	44	57	57	43	--	--	--	47
June	57	45	45	46	59	46	46	61	61	48	61	49	62	63	49	65	67	51	51	65	49	64	51	51	64	64	51	64	51	65	--	56
July	52	65	52	67	67	67	52	67	53	67	53	53	67	54	66	54	67	53	68	53	67	57	54	69	53	67	69	53	53	67	69	60
August	53	70	55	70	70	71	54	72	53	72	54	72	55	73	55	72	75	54	72	71	54	55	72	75	72	53	72	53	73	72	55	64
September	53	72	54	70	53	74	72	52	73	55	52	72	73	52	72	52	72	74	72	52	53	72	73	52	72	52	73	72	53	53	--	64

9-2599.5. LITTLE SNAKE RIVER ABOVE LILY, COLO.

LOCATION.--Lat 40°36'27", long 108°20'11", at bridge on State Highway 318, about 6 miles upstream from gaging station, about 10 miles northeast of Lily, Moffat County, and 16 miles upstream from mouth.
DRAINAGE AREA.--3,730 square miles, approximately, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: December 1950 to September 1966.
Water temperatures: December 1950 to September 1960, October 1961 to September 1966.
Sediment records: May 1958 to September 1964.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 985 ppm Aug. 6-27; minimum, 136 ppm June 1-7.
Hardness: Maximum, 386 ppm Aug. 1-2; minimum, 83 ppm June 1-7.
Specific conductance: Maximum daily, 1,470 micromhos Aug. 7; minimum daily, 199 micromhos June 2.
Water temperatures: Maximum, 86°F July 10; minimum, freezing point on many days during November to March.
EXTREMES, 1950-66.--Dissolved solids (1950-51, 1952-66): Maximum, 2,330 ppm July 24, 1955; minimum, 108 ppm June 1-21, 1964.
Hardness (1950-51, 1952-66): Maximum, 1,340 ppm July 24, 1955; minimum, 64 ppm July 1-8, 10, 1957, June 1-14, 1958, Mar. 11, 1960.
Specific conductance (1950-51, 1952-66): Maximum daily, 3,150 micromhos Aug. 16, 1961; minimum daily, 135 micromhos June 10, 1958.
Water temperatures (1950-60, 1961-66): Maximum, 88°F July 17, 1955; minimum, freezing point on many days during winter months.
REMARKS.--Where no potassium (K) is reported, sodium (Na) and potassium (K) are calculated and reported as sodium (Na). Additional samples were collected for more comprehensive definition of water quality at this station. Records of discharge are given for Little Snake River near Lily, Colo.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-31, 1965...	224					44		164	0	74	11				294	0.40	178	131	0	1.7	444	7.8
Nov. 1-30.....	146					51		192	0	92	13				339	.46	134	161	3	1.7	513	8.0
Dec. 1-8.....	132					49		222	0	91	15				364	.50	130	191	8	1.5	580	8.0
Dec. 9-15.....	172					43		190	0	74	14				313	.43	145	159	3	1.5	497	8.1
Dec. 16-24.....	88.9					62		248	4	113	19				433	.59	104	219	8	1.8	673	8.3
Dec. 25-31.....	136					47		210	0	83	14				337	.46	124	176	3	1.5	528	8.0
Jan. 1-31, 1966...	135					59		214	0	93	16				346	.47	126	166	0	2.0	555	7.9
Feb. 1-28.....	96.4					51		202	0	94	14				327	.44	85.0	172	6	1.7	516	7.9
Mar. 1-3.....	120					49		184	0	82	20				314	.43	102	157	6	1.7	504	7.9
Mar. 4-7.....	128					77		208	0	115	35				411	.56	142	173	2	2.5	656	7.7
Mar. 8-14.....	1397					50		160	0	82	13				291	.40	1100	127	0	1.9	464	7.7
Mar. 15-28.....	1462					54		164	0	117	12				353	.48	1390	156	21	1.9	538	7.9
Mar. 29-31.....	1192					37		145	4	85	7.5				275	.37	885	143	17	1.3	438	8.3
Apr. 1-17.....	1001					16		151	0	46	5.4				214	.29	578	144	20	.6	339	7.8
Apr. 18-28.....	980					14		125	0	36	5.0				187	.25	495	116	13	.6	279	7.9
Apr. 29-30.....	1185					8.0		104	0	25	3.3				159	.22	509	98	13	.4	220	7.8
May 1-31.....	1542					16		118	0	25	2.7				141	.19	587	92	0	.7	232	7.5
June 1-7.....	1246					14		98	0	29	2.5				136	.18	458	83	2	.7	208	7.8
June 8-14.....	698					23		116	0	43	7.8				167	.23	315	102	6	1.0	275	7.5

9-2599.5. LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
June 15-20, 1966..	404					34		146	0	66	10				240	0.33	262	127	7	1.3	378	7.8
June 21-27.....	279					48		182	0	88	16				308	.42	232	158	8	1.7	482	7.6
June 28-30.....	161					66		210	0	119	20				377	.51	164	181	8	2.1	590	7.4
July 1-2.....	86.5					87		226	0	171	24				467	.64	109	208	23	2.6	700	7.7
July 3-4.....	121					91		236	0	319	24				702	.95	229	362	168	2.1	972	8.0
July 5-6.....	53.0					183		256	0	379	66				889	1.21	127	300	90	4.6	1280	8.1
July 7-31.....	13.5					119		278	0	234	37				643	.87	23.3	264	36	3.2	957	7.8
Aug. 1-2.....	9.9					167		216	0	478	52				965	1.31	25.7	386	209	3.7	1320	7.8
Aug. 3-5.....	18.3					135		182	0	325	46				703	.96	34.6	260	111	3.6	1050	8.0
Aug. 6-27.....	1.9					210		222	0	454	73				985	1.34	5.04	302	120	5.3	1420	8.0
Weighted average	--					30		144	--	59	7.6				230	0.31	289	124	8	1.1	360	7.7
Time-weighted average.....	A423					62		186	--	121	19				375	--	--	170	19	1.9	571	7.8
Tons per day....	--					38		181	--	74	9.5				--	--	--	--	--	--	--	--
Analyses of additional samples																						
Dec. 7, 1965.....	B165	17		55	14	56	1.0	229	0	97	17	0.3	0.9	0.05	364	0.50	162	193	5	1.7	579	7.7
Mar. 30, 1966.....	B1170	11		42	11	41	3.3	166	0	89	9.3	.4	1.5	.07	299	.41	945	152	16	1.5	458	7.7
May 10.....	B2210	11		26	5.1	11	1.1	104	0	17	1.6	.3	.8	.06	150	.20	895	86	0	.5	195	7.6

A Mean discharge based on 365 days; mean discharge for 331 days of actual flow, 466 cfs.
B Discharge at time of sampling.

9-2599.5. LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	--	--	651	480	538	466	382	241	202	654	1190	
2.....	387	507	626	--	533	457	378	255	199	746	1460	
3.....	393	519	594	509	530	590	344	268	200	1000	1070	
4.....	400	520	572	--	528	--	334	263	209	945	--	
5.....	406	520	569	533	--	781	319	260	203	1440	1030	
6.....	405	527	544	--	518	618	343	238	209	1120	1360	
7.....	395	530	575	--	510	568	361	234	222	957	1470	
8.....	397	534	530	519	--	--	358	217	243	939	1450	
9.....	398	543	495	496	505	397	364	241	258	954	1380	
10.....	--	540	502	502	515	502	346	207	264	967	--	
11.....	410	542	481	500	515	449	334	207	276	--	--	
12.....	421	540	463	513	528	470	298	263	298	--	--	
13.....	429	534	479	527	--	470	293	270	303	--	--	
14.....	438	546	497	536	527	484	--	234	295	--	--	
15.....	449	547	549	533	536	575	325	223	321	--	--	
16.....	442	542	622	--	534	608	313	--	352	--	--	
17.....	453	522	--	569	--	553	291	218	375	--	--	
18.....	458	501	--	586	451	454	261	221	391	--	--	
19.....	--	491	683	--	526	473	251	207	407	--	--	
20.....	469	463	687	597	--	475	247	204	407	--	--	
21.....	--	457	717	--	515	480	269	220	481	--	--	
22.....	465	459	703	627	510	511	279	205	431	--	--	
23.....	453	472	--	--	508	522	286	222	442	--	--	
24.....	--	484	646	605	507	507	--	209	--	--	--	
25.....	455	479	591	593	505	559	328	201	499	--	--	
26.....	459	499	558	602	--	564	320	--	500	--	--	
27.....	472	523	--	--	--	606	293	203	537	--	--	
28.....	484	--	542	--	--	610	261	--	--	--	--	
29.....	495	598	--	570	--	489	217	245	577	--	--	
30.....	502	--	434	569	--	446	222	212	604	--	--	
31.....	505	--	--	557	--	378	--	240	--	--	--	
Average	440	516	572	--	--	519	307	229	346	--	--	

9-2599.5. LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	51	48	55	55	49	54	60	60	--	60	58	57	55	52	52	53	46	--	50	--	45	49	--	44	39	38	49	51	53	52	51
November	--	50	42	47	47	45	47	38	38	46	40	38	46	44	46	41	43	35	46	43	40	--	42	43	36	32	32	--	32	--	--	42
December	32	32	32	32	32	32	33	32	32	32	33	33	34	32	32	32	--	--	32	32	32	32	--	32	32	32	--	32	--	32	--	32
January	32	--	32	--	32	--	--	32	32	32	32	32	32	32	32	--	32	32	--	32	--	32	--	32	32	32	--	--	32	32	32	--
February	32	32	32	32	--	32	32	--	32	32	32	32	--	32	32	32	--	32	32	--	32	32	32	32	32	--	--	--	--	--	--	--
March	32	32	32	--	32	32	32	--	32	32	32	32	32	32	34	34	36	36	38	40	41	39	42	42	48	51	50	51	51	51	48	38
April	51	50	45	40	45	55	52	54	54	49	49	50	54	--	56	56	54	45	44	44	48	51	54	--	59	59	50	47	53	56	--	51
May	60	59	61	62	59	62	61	60	56	52	48	48	51	54	57	--	62	60	63	63	62	56	60	63	64	--	59	--	57	66	68	59
June	63	69	64	64	66	62	63	63	66	66	67	67	65	73	69	64	67	75	77	61	74	66	76	--	75	75	78	--	72	78	--	69
July	75	77	69	78	78	79	78	80	79	86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
August	74	79	75	--	70	78	83	70	79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
September	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

9-3065. WHITE RIVER NEAR WATSON, UTAH

LOCATION.--Lat 39°59", long 109°11", at bridge on State Highway 45, 350 feet upstream from gaging station, about 1 mile downstream from Evacuation Creek, and 7 miles north of Watson, Uintah County.
DRAINAGE AREA.--4,020 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: December 1950 to September 1966.
Water temperatures: December 1950 to September 1966.
EXTREMES, 1965-66.--Dissolved solids: Maximum, 2,380 ppm July 21; minimum, 248 ppm May 24-26.
Hardness: Maximum, 780 ppm July 21; minimum, 168 ppm May 24-26.
Specific conductance: Maximum daily, 3,500 micromhos July 21; minimum daily, 404 micromhos May 25.
Water temperatures: Maximum, 84°F July 18; minimum, freezing point on many days during winter months.
EXTREMES, 1950-66.--Dissolved solids (1950-54, 1955-66): Maximum, 2,380 ppm July 21, 1966; minimum, 209 ppm May 23-31, 1964.
Hardness (1954-66): Maximum, 1,410 ppm Aug. 4, 1955; minimum, 144 ppm Feb. 3, 1965.
Specific conductance: Maximum daily, 4,450 micromhos Aug. 4, 1955; minimum daily, 319 micromhos June 29, 1951.
Water temperatures: Maximum, 88°F Aug. 8, 1954; minimum, freezing point on many days during winter months.
REMARKS.--Additional samples were collected to further define the quality of water at this station.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 1-14, 1965..	602					64		193	0	139	51				447	0.61	727	236	78	1.8	728	7.8
Oct. 15-17.....	487					136		222	0	238	132				728	.99	957	320	138	3.3	1180	7.7
Oct. 18-31.....	503					73		206	0	158	58				504	.69	684	256	87	2.0	801	8.2
Nov. 1-30.....	467					82		212	0	171	65				530	.72	668	264	90	2.2	848	8.0
Dec. 1-18.....	437					93		229	0	183	72				565	.77	667	278	90	2.4	904	8.2
Dec. 19-31.....	426					108		259	0	221	82				666	.91	766	324	112	2.6	1040	7.9
Jan. 1-10, 1966..	422					95		232	0	216	67				613	.83	698	302	112	2.4	929	8.0
Jan. 11-24.....	383					98		242	0	203	76				619	.84	640	304	105	2.4	953	8.0
Jan. 25-31.....	384					101		253	0	202	82				647	.88	671	314	106	2.5	987	8.0
Feb. 1-28.....	372					98		234	0	197	73				597	.81	600	286	94	2.5	927	8.0
Mar. 1-31.....	1014					99		230	0	221	67				631	.86	1730	298	109	2.5	967	7.9
Apr. 1-17.....	499					84		209	0	173	62				526	.72	709	256	85	2.3	824	7.7
Apr. 18-30.....	597					62		184	0	134	48				433	.59	698	224	73	1.8	681	7.6
May 1-6.....	977					48		184	0	97	36				354	.48	934	198	47	1.5	560	8.0
May 7-11.....	1572					44		176	0	95	23				279	.38	1180	180	36	1.4	459	7.8
May 12-13.....	1525					28		180	0	91	41				398	.54	1640	240	92	.8	618	7.7
May 14-23.....	1016					36		170	0	87	31				316	.43	867	196	57	1.1	516	7.7
May 24-26.....	1337					26		146	0	69	24				248	.34	895	168	48	.9	414	7.8
May 27-28.....	1185					111		224	0	234	95				667	.91	2130	320	136	2.7	1030	8.0
May 29-31.....	923					46		154	0	110	30				299	.41	745	182	56	1.5	497	7.8
June 1-4.....	945					42		154	0	104	28				296	.40	755	182	56	1.4	474	7.3

9-3065. WHITE RIVER NEAR WATSON, UTAH--Continued

Chemical analyses, in parts per million, water year October 1965 to September 1966--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
June 5-15, 1966..	509					56		178	4	118	45				386	0.52	530	218	65	1.7	623	8.3
June 16-30.....	235					106		240	0	227	95				677	.92	430	336	139	2.5	1050	8.0
July 1-8.....	189					115		224	0	241	96				693	.94	354	320	136	2.8	1070	7.9
July 9-18.....	103					165		232	0	304	142				875	1.19	243	348	158	3.8	1340	7.7
July 19-20.....	156					166		260	0	346	127				942	1.28	397	392	179	3.6	1400	7.9
July 21.....	131					566		298	0	815	650				2380	3.24	842	780	536	8.8	3500	7.9
July 22-24.....	139					175		278	0	325	144				952	1.29	357	388	160	3.9	1450	8.1
July 25-31.....	229					126		264	0	261	100				774	1.05	479	356	139	2.9	1170	8.0
Aug. 1-8.....	432					126		272	0	306	79				813	1.11	948	378	155	2.8	1180	7.7
Aug. 9-21.....	270					115		236	0	220	99				687	.93	501	314	120	2.8	1060	7.7
Aug. 22-31.....	126					145		228	0	265	128				790	1.07	269	328	141	3.5	1230	8.0
Sept. 1-30.....	232					121		228	0	247	111				734	1.00	460	338	151	2.9	1130	8.0
Weighted average	--					83		212	--	177	64				537	0.73	730	268	94	2.2	839	7.9
Time-weighted average.....	504					96		221	--	199	77				599	--	--	288	106	2.4	932	7.9
Tons per day...	--					113		289	--	241	87				--	--	--	--	--	--	--	--

9-3065. WHITE RIVER NEAR WATSON, UTAH--Continued

Specific conductance (micromhos at 25°C), water year October 1965 to September 1966

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	700	796	934	--	914	926	935	591	492	1070	--	1290
2.....	700	823	967	858	895	890	--	582	457	1080	1370	1330
3.....	731	807	--	847	864	920	--	581	--	1090	1120	--
4.....	714	811	--	909	855	977	862	532	--	1050	1190	--
5.....	707	--	897	1040	--	--	829	535	545	1010	1160	--
6.....	685	--	914	1050	--	--	860	--	593	1040	1240	1110
7.....	700	811	908	--	932	974	--	--	605	1090	1110	1080
8.....	--	823	879	--	893	952	857	480	674	1090	1080	1070
9.....	--	863	878	928	885	920	--	478	673	1160	1000	1070
10.....	720	827	908	892	876	888	--	433	--	1380	--	1030
11.....	761	841	--	--	--	944	824	445	--	1260	1030	959
12.....	739	--	--	871	--	--	786	618	--	1400	1040	1050
13.....	750	--	853	877	900	--	747	--	--	1320	1040	1130
14.....	751	856	853	--	937	860	764	--	--	1340	1000	1190
15.....	--	842	868	--	962	872	773	507	--	1380	1040	1080
16.....	--	--	900	929	962	876	--	534	--	1420	--	1080
17.....	1180	834	--	935	962	869	--	550	--	1340	993	1050
18.....	797	851	--	955	955	900	--	587	--	1350	1020	1090
19.....	854	--	1070	940	964	--	--	512	--	1340	1090	1080
20.....	797	--	1100	1000	--	--	--	--	--	1450	1170	1120
21.....	793	839	1120	--	925	1100	--	--	993	3500	1180	1140
22.....	769	831	1180	--	925	1020	--	477	1030	1490	1070	1150
23.....	--	848	1220	1030	940	1020	--	437	1070	1520	1130	1150
24.....	--	874	1150	1000	926	958	--	411	1050	1350	1190	1150
25.....	763	--	--	1010	946	1030	--	404	1070	1280	1190	1190
26.....	803	--	928	1040	--	910	748	428	1040	1230	1180	1180
27.....	782	--	916	987	--	--	726	1010	--	1200	1230	1160
28.....	796	876	919	968	961	1120	666	1050	1010	--	1260	1250
29.....	--	892	922	--	--	1060	584	472	--	1110	1290	1130
30.....	--	961	922	--	--	1150	--	--	1150	1090	1320	1030
31.....	815	--	952	949	--	946	--	522	--	1080	1340	--
Average	--	--	964	--	--	961	--	549	--	1317	1145	1123

9-3065. WHITE RIVER NEAR WATSON, UTAH--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	53	51	50	60	51	51	51	--	--	55	52	51	50	48	--	--	49	50	47	46	45	46	--	--	46	45	45	44	--	--	42	--
November	43	43	43	41	--	--	41	40	42	41	39	--	--	42	43	--	44	44	--	--	40	37	40	40	--	--	--	32	32	32	--	--
December	32	32	32	32	32	32	32	32	34	33	32	32	32	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	34	32
February	35	33	33	34	--	--	35	35	32	33	32	32	32	33	33	33	33	33	34	--	34	35	34	35	35	--	--	35	--	--	--	34
March	35	34	34	32	--	--	35	36	35	35	36	--	--	38	39	38	35	37	--	--	43	37	35	38	38	53	--	45	46	48	47	--
April	48	--	--	43	42	44	--	48	--	--	48	47	47	48	--	--	--	--	--	--	--	--	--	--	--	58	47	48	51	--	--	--
May	54	54	54	54	57	--	--	60	59	54	54	54	--	--	53	54	54	56	57	--	--	58	57	58	59	59	68	70	60	--	60	--
June	60	60	--	--	58	58	63	62	64	--	--	--	--	--	--	--	--	--	--	--	66	67	62	64	66	65	--	69	--	67	--	--
July	69	72	73	76	68	70	68	68	73	81	73	74	69	66	70	72	70	84	83	72	71	74	69	73	75	71	71	--	71	74	72	72
August	--	70	74	74	68	--	69	70	65	--	68	63	70	72	67	--	73	72	69	72	64	63	64	66	65	65	64	65	69	62	63	68
September	60	60	--	--	--	62	62	63	63	65	64	62	65	62	54	56	58	58	60	60	61	62	62	63	62	62	58	59	60	52	--	61

SAN JUAN RIVER BASIN

9-3529. VALLECITO CREEK NEAR BAYFIELD, COLO.

LOCATION.--Lat 37°28'45", long 107°32'35", at gaging station, 60 feet upstream from Fall Creek, 0.7 mile downstream from Bear Creek, 7 miles north of Vallecito Dam, and 18 miles north of Bayfield, La Plata County.
DRAINAGE AREA.--72.1 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1963 to September 1966.
Water temperatures: November 1962 to September 1966.
EXTREMES, 1965-66.--Water temperatures: Maximum, 59°F July 27; minimum, freezing point on many days during December to March.
EXTREMES, 1962-66.--Water temperatures: Maximum, 62°F July 21, 1963; minimum, freezing point on many days during winter months each year.

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
Oct. 8, 1965.....	134	2.7		7.2	2.2	0.6	0.7	24	0	7.2	0.4	0.2	0.5	0.01	38	0.05	13.7	27	7		53	7.5
Nov. 8.....	53.0	--		--	--	--	--	31	0	--	--	--	--	--	--	--	--	31	5		82	7.4
Dec. 6.....	34.2	--		--	--	--	--	35	0	--	--	--	--	--	--	--	--	34	5		78	7.1
Jan. 6, 1966.....	31.8	--		--	--	--	--	27	0	--	2.1	--	--	--	--	--	--	35	13		77	7.1
Feb. 4.....	19.7	--		--	--	--	--	38	0	--	.6	--	--	--	--	--	--	41	9		86	7.2
Mar. 9.....	21.0	--		--	--	--	--	40	0	--	--	--	--	--	--	--	--	34	1		88	7.4
Mar. 31.....	110	3.7		8.8	2.2	1.1	.2	29	0	7.4	1.3	.3	.3	.01	46	.06	13.6	31	7		62	7.1
Apr. 27.....	192	--		--	--	--	--	26	0	--	--	--	--	--	--	--	--	39	18		68	6.7
May 25.....	549	--		--	--	--	--	25	0	--	--	--	--	--	--	--	--	22	1		62	7.1
June 10.....	379	--		--	--	--	--	22	0	--	--	--	--	--	--	--	--	27	9		54	7.0
July 8.....	165	--		--	--	--	--	19	0	--	--	--	--	--	--	--	--	20	4		43	7.1
Aug. 5.....	160	--		--	--	--	--	23	0	--	--	--	--	--	--	--	--	22	3		52	7.1
Aug. 30.....	50.9	--		--	--	--	--	26	0	--	--	--	--	--	--	--	--	25	3		66	7.1

9-3529. VALLECITO CREEK NEAR BAYFIELD, COLO.--Continued

Temperature (°F) of water, water year October 1965 to September 1966

Month	Day																														Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	44	46	46	46	46	46	46	45	45	45	46	44	43	44	45	43	40	39	39	41	41	42	42	43	42	42	42	41	41	42	42	43
Minimum	38	40	41	41	40	41	40	39	40	39	40	40	39	40	39	40	38	37	37	36	37	37	37	38	38	38	37	36	36	37	37	38
November																																
Maximum	41	40	39	39	39	38	38	38	39	39	37	38	39	39	38	38	38	37	37	36	36	36	35	35	35	35	35	35	34	34	--	37
Minimum	37	38	37	36	36	36	36	35	37	36	36	36	38	38	37	37	37	36	35	35	36	35	35	35	35	35	35	34	34	34	--	36
December																																
Maximum	34	34	34	34	34	34	32	32	33	33	33	33	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Minimum	34	34	34	34	34	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
January																																
Maximum	33	33	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Minimum	33	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March																																
Maximum	32	32	32	32	32	32	34	34	34	35	35	36	35	35	36	35	36	36	36	36	37	36	35	36	37	38	38	38	38	39	40	35
Minimum	32	32	32	32	32	32	32	34	34	34	34	34	34	34	34	34	34	34	34	36	35	34	34	34	36	35	36	35	35	35	35	34
April																																
Maximum	41	41	39	38	38	40	41	39	41	40	38	38	41	42	44	44	42	40	38	38	41	39	43	44	44	44	44	42	44	43	--	41
Minimum	36	36	35	34	34	34	35	36	36	37	37	35	37	37	38	38	38	38	35	35	35	35	35	37	38	38	38	36	38	38	--	36
May																																
Maximum	44	45	43	44	45	45	44	42	43	42	42	42	44	42	47	45	46	46	45	46	43	46	46	44	44	43	41	44	46	46	46	44
Minimum	37	38	38	38	38	38	38	39	40	38	39	38	37	38	39	39	38	39	38	38	39	40	40	38	39	39	39	39	40	39	41	39
June																																
Maximum	45	47	47	47	47	46	44	47	46	46	47	49	49	50	45	47	47	47	50	47	51	51	51	51	52	52	48	47	49	50	--	48
Minimum	40	39	39	40	40	40	40	40	41	42	41	41	40	40	41	42	42	43	42	45	44	44	43	42	42	46	45	45	47	46	--	42
July																																
Maximum	50	52	53	53	54	55	53	56	56	56	54	54	55	55	57	57	58	56	54	54	54	54	56	56	57	57	59	58	55	57	57	55
Minimum	45	44	46	46	47	46	47	48	47	48	49	49	49	48	50	50	51	51	51	51	51	50	51	52	51	53	52	53	52	51	52	49
August																																
Maximum	57	56	57	58	58	57	57	55	56	56	55	53	54	54	55	55	53	54	57	55	54	53	53	52	53	54	54	53	53	53	53	55
Minimum	51	53	51	51	50	51	50	49	49	50	49	50	48	50	49	51	50	50	52	51	49	48	50	47	48	48	50	48	48	50	50	50
September																																
Maximum	52	52	50	52	51	49	49	51	51	50	50	49	51	50	50	49	50	50	50	50	52	52	51	51	50	50	50	49	50	50	--	50
Minimum	50	48	46	47	48	47	46	46	48	48	48	47	46	46	46	42	44	45	46	47	47	48	48	48	48	47	48	45	46	46	--	47

9-3529. VALLECITO CREEK NEAR BAYFIELD, COLO.--Continued

Periodic determinations of suspended-sediment discharge, water years October 1964 to September 1966
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 2, 1964	1110	42		79	2	0.4												
Nov. 6	1245	34		19	1	.1												
Dec. 4	1200	32		11	3	.1												
Jan. 8, 1965	1010	32		22	2	.1												
Feb. 9	1200	32		20	1	.1												
Mar. 5	1130	32		17	1	T												
Apr. 1	1000	34		33	2	.2												
May 3	1010	36		508	5	6.8												
June 14	1720	45		1040	35	98												
July 15	1035	45		472	6	7.6												
Aug. 16	1025	47		134	1	.4												
Sept. 15	1345	50		102	0	0												
Oct. 8	1000	39		134	0	0												
Nov. 8	1330	38		52.4	1	.1												
Dec. 6	1130	32		34.0	2	.2												
Jan. 6, 1966	1330	32		31.7	0	0												
Feb. 4	1250	32		19.6	0	0												
Mar. 9	1300	34		21.0	1	.1												
Mar. 31	1350	37		110	3	.9												
Apr. 27	1030	37		192	6	3												
May 25	1245	42		549	3	4												
June 10	1245	46		381	2	2												
July 8	1020	48		165	2	.9												
Aug. 5	1000	51		160	2	.9												
Aug. 30	1230	--		46.9	1	.1												

T Less than 0.05 ton.

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO

Chemical analyses, in parts per million, water year October 1965 to September 1966

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
															Parts per million	Tons per acre-foot	Tons per day	Calcium, Magnesium	Noncarbonate			
PART 9. COLORADO RIVER BASIN																						
EAGLE RIVER BASIN																						
9-0699. GYPSUM CREEK AT GYPSUM (393900N 1065706)																						
Dec. 6, 1965	30	12		112	18	5.3	0.3	209	0	194	2.6	0.2	1.0	0.05	460	0.63	37.2	356	185	0.1	667	7.7
Mar. 23, 1966	15	9.6		107	19	5.1	.3	192	0	190	2.5	.4	1.1	.01	439	.60	17.7	345	188	.1	643	7.7
May 27	2.5	15		305	61	11	4.0	300	0	728	2.6	.5	5.5	.06	A1280	1.74	8.62	1010	764	.2	1540	7.7
Sept. 1	7.0	14		196	49	11	3.1	310	0	430	5.7	.4	3.8	.09	891	1.21	16.7	690	436	.2	1130	8.0
COLORADO RIVER MAIN STEM																						
9-0705. COLORADO RIVER NEAR DOTSERO (393840N 1070440)																						
Dec. 6, 1965	1370	9.7		49	10	21	1.8	121	0	76	26	0.2	0.2	0.03	253	0.34	936	164	65	0.7	424	7.5
Mar. 23, 1966	1240	8.8		42	10	19	1.2	109	0	70	22	.5	.4	.02	233	.32	780	146	57	.7	385	7.4
May 27	2960	7.0		34	7.8	12	1.5	96	0	49	7.1	.3	.1	.03	174	.24	1390	116	37	.5	279	7.7
Sept. 1	1240	8.4		47	14	21	2.0	119	0	87	26	.6	.1	.04	268	.36	897	176	78	.7	434	7.5
9-0725. COLORADO RIVER AT GLENWOOD SPRINGS (393300N 1071920)																						
Nov. 29, 1965	1020	9.7		55	13	108	4.0	131	0	95	155	0.3	0.4	0.04	511	0.69	1410	188	81	3.4	888	7.4
Mar. 24, 1966	1320	9.0		48	15	104	5.4	123	0	85	158	.4	.4	.05	479	.65	1710	180	79	3.4	849	7.6
GUNNISON RIVER BASIN																						
9-1495. UNCOMPAHGRE RIVER AT DELTA (384430N 1080450)																						
Dec. 13, 1965	192	16		228	92	199	5.7	268	0	1110	22	0.8	9.9	0.26	A1820	2.48	943	950	730	2.8	2240	7.7
Mar. 16, 1966	428	12		149	52	112	5.5	217	0	633	15	1.1	8.0	.15	A1090	1.48	1260	587	409	2.0	1450	7.5
May 18	183	17		216	71	126	3.7	236	0	833	12	1.2	13	.15	A1410	1.92	697	830	636	1.9	1740	7.8
Aug. 5	144	21		303	69	150	4.7	296	0	1090	17	2.4	14	.15	A1820	2.48	708	1040	797	2.0	2110	7.8

A Calculated from determined constituents.

Periodic determinations of suspended-sediment discharge and particle size, water year October 1965 to September 1966
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water;
P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
PART 6. MISSOURI RIVER BASIN																	
PLATTE RIVER BASIN																	
6-7070. NORTH FORK SOUTH PLATTE RIVER AT SOUTH PLATTE (392430N 1051030)																	
Oct. 1, 1965	1215	46		182	8	4						--	--	--	--			
Oct. 13	1145	45		144	6	2						--	--	--	--			
Oct. 26	0825	37		127	3	1						--	--	--	--			
Nov. 19	1230	36		76	2	.4						--	--	--	--			
Dec. 8	1245	32		E 50	7	.9						--	--	--	--			
Dec. 28	1030	32		E 50	1	.1						--	--	--	--			
Jan. 12, 1966	1430	32		E 38	2	.2						--	--	--	--			
Jan. 25	0820	32		E 38	4	.4						--	--	--	--			
Feb. 17	1500	32		E 36	1	.1						--	--	--	--			
Mar. 14	0900	33		E 42	10	1.1						--	--	--	--			
Mar. 24	1615	40		50	20	2.7						--	--	--	--			
Apr. 5	1615	48		31	2	.2						--	--	--	--			
Apr. 21	1510	50		65	1	.2						--	--	--	--			
May 4	1245	58		130	33	12						--	--	--	--			
May 19	1330	61		108	6	2						--	--	--	--			
May 27	1250	58		108	8	2						--	--	--	--			
June 17	1230	59		182	27	13	21	40				78	92	97	100			VPWC
June 28	1140	63		127	6	2						--	--	--	--			
July 13	0830	61		219	26	15						--	--	--	--			
July 27	0715	59		250	24	16						62	75	89	100			V
Aug. 9	1245	60		282	18	14						--	--	--	--			
Aug. 23	1640	59		282	20	15						--	--	--	--			
Sept. 7	1445	56		224	15	9.1						--	--	--	--			
Sept. 27	1330	56		241	12	7.8						--	--	--	--			

E Estimated.

Periodic determinations of suspended-sediment discharge and particle size, water year October 1965 to September 1966
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
PART 6. MISSOURI RIVER BASIN--Continued																	
PLATTE RIVER BASIN--Continued																	
6-7240. ST. VRAIN CREEK AT LYONS (401305N 1051534)																	
Oct. 12, 1965	1415	57		44	2	0.2											
Oct. 27	1400	52		12	1	T											
Nov. 9	1630	46		12	1	T											
Nov. 24	1500	46		30	2	.2											
Dec. 7	1530	41		19	2	.1											
Dec. 27	1300	33		19	2	.1											
Jan. 11, 1966	1500	38		18	3	.1											
Jan. 27	1230	34		4.4	0	0											
Feb. 16	1600	33		9.5	0	0											
Mar. 11	0910	36		10	0	0											
Mar. 24	1350	50		12	1	T											
Apr. 5	1300	53		9.5	0	0											
Apr. 21	1300	57		8.0	2	T											
May 5	0950	56		75	24	4.9											
May 19	0930	52		113	4	1											
May 27	1015	55		174	5	2											
June 8	1200	52		210	8	4											
June 28	0910	58		179	3	1											
July 12	1320	64		132	8	3											
July 26	1745	71		96	8	2											
Aug. 10	1415	75		68	11	2.0											
Aug. 22	0705	57		53	14	2.0											
Sept. 12	1450	70		24	4	.2											
Sept. 28	1445	66		16	0	0											

T Less than 0.05 ton.

CHEMICAL ANALYSES OF GROUND WATER IN COLORADO

Concentrations of dissolved constituents, dissolved solids, and hardness given in parts per million

Well number	Geologic source 1/	Depth of well (feet)	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe) 2/	Manganese (Mn) 2/	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Percent sodium	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
PART 6. MISSOURI RIVER BASIN																									
SOUTH PLATTE RIVER BASIN																									
DENVER AREA (SURFICIAL DEPOSITS)																									
(C-1-67)26aadd	Qb,Ql	41	8-17-66	55	24	0.01		136	35	115	3.8	342	0	230	120	0.8	53	0.13	903	482	202	34	2.3	1340	7.7
36ccc	Qb,Ql	45	8-17-66	54	24	.01		142	44	118	3.5	422	0	225	132	1.0	42	.16	982	535	189	32	2.2	1450	7.6
(C-2-67)7ddb	Qpp,Ql	40	9- 9-66	58	17	.00		118	23	103	4.8	404	0	204	38	1.1	17	.36	727	390	59	36	2.3	1090	7.8
9dadc	Qb,Ql	50	8-17-66	55	24	.00		265	64	270	5.0	400	0	357	556	1.4	62	.25	A1800	925	597	39	3.9	2890	7.7
16dddd	Qb,Ql	39	9-17-55	55	25	.07		203	49	105	4.0	292	0	140	380	.8	15	.20	A1070	708	469	--	1.7	1910	7.7
			11-12-55	56	--	--		--	--	126	4.8	298	0	150	574	.6	16	--	1500	948	704	--	1.8	2840	7.3
			3- 7-56	--	--	--		--	--	--	--	--	--	--	275	--	--	--	--	--	--	--	--	1520	--
			9- 9-66	55	22	.01		175	46	126	4.1	296	0	174	338	.6	17	.13	A1050	625	382	30	2.2	1830	7.7
30dcbc	Qpp,Ql	--	9- 9-66	56	21	.01		156	27	150	6.8	336	0	335	140	.8	14	.20	A1020	500	224	37	2.9	1550	7.7
(C-3-67)18abcd	Qpp,Qb, Ql	32	9- 9-66	66	21	.01		156	44	194	14	496	0	448	101	.7	16	.60	A1240	572	165	42	3.5	1790	7.9
(C-3-68)3cddc	Qb,Ql	33	9- 9-66	63	19	.02		107	28	97	8.8	280	0	156	116	1.1	50	.13	731	382	152	35	2.2	1150	7.7
14acbc2	Qb,Ql	34	9- 9-66	61	24	.03		125	25	175	12	490	0	123	184	1.1	28	.34	964	415	13	47	3.7	1520	7.6
(C-3-69)20acc	Qpp,Qb, Ql	32	9-14-66	57	15	.00		54	16	32	2.5	160	0	100	18	.4	22	.02	333	200	69	25	1.0	522	7.5
(C-4-67)17ddbc	Qb,Ql	46	9-14-66	57	26	.00		96	13	50	4.0	268	0	118	32	.7	20	.05	500	292	72	27	1.3	751	7.6
(C-4-68)11daab	Qpp,Qb, Ql	49	9-14-66	67	26	.00		235	24	150	8.2	436	0	467	132	.6	20	.48	A1280	686	328	32	2.5	1790	7.9
22ccab	Qpp,Qb, Ql	28	9-14-66	53	19	.00		191	30	146	5.2	272	0	373	168	.7	130	.38	A1200	600	377	34	2.6	1750	7.5
(C-4-69)34bbba	Qpp,Qb, Ql	32	8-15-66	55	21	.01		73	11	41	.6	294	0	61	5.0	.5	3.2	.06	355	228	0	28	1.2	571	7.7
(C-5-66)19ddcd	Qp,Qb, Ql	109	8-15-66	55	27	.01		63	12	23	4.5	208	0	66	14	.5	1.4	.03	313	208	37	19	.7	487	7.7
(C-6-66)9aabb	Qp,Qb, Ql	44	8-15-66	58	29	.01		65	16	30	3.7	230	0	75	16	.7	5.1	.02	358	228	39	22	.9	549	7.5
DENVER AREA (BEDROCK)																									
(C-1-66)4cdcd	Kdlc	360	9- 9-66	66	9.4	0.02		7.0	1.6	186	1.3	364	6	89	18	3.4	1.7	0.06	500	24	0	94	17	804	8.3
4dcad	Kdmc	188	9- 9-66	70	12	.00		49	12	129	2.8	314	0	130	44	.6	8.2	.17	539	174	0	61	4.3	878	7.8
21cddc	Kdmc	230	9- 9-66	59	8.6	.02		12	.2	207	1.2	184	0	295	19	1.6	.9	.07	626	31	0	93	16	981	7.7
(C-1-67)3dccb	Klb, Kla, Kfm	1100	9- 9-66	73	12	.02		.3	.7	227	1.0	542	0	.6	48	1.6	2.0	.27	565	4	0	99	53	935	8.2
(C-2-67)22aabb	TKdu	180	9- 9-66	59	8.7	.01		3.2	.7	110	.4	184	0	32	48	2.1	.1	.03	286	11	0	95	14	503	8.0
(C-3-67)35adda	Kdmc, Kdlc	1100	9- 4-66	76	11	.02		5.1	.4	62	1.8	156	0	16	1.9	1.4	.4	.00	173	14	0	89	7.1	281	7.8
36acdb	Kdmc	927	9-14-66	59	12	.00		5.3	.4	76	.6	205	0	2.7	5.8	1.6	.1	.05	201	15	0	91	8.5	337	7.7
(C-3-68)6cadd	Kdlc	614	9-14-66	60	9.0	.00		7.6	.7	138	1.1	272	0	91	6.5	1.1	.8	.02	385	22	0	93	13	627	8.1
6dccb	Kdmc	105	9-14-66	59	16	.02		417	39	556	2.0	420	0	1830	83	2.1	55	.43	A3210	1200	856	50	7.0	3810	7.9
12dcaa	Klb, Kla, Kfm	1626	6- 2-59	--	13	.05		1.6	.0	--	--	694	0	--	73	--	--	--	840	4	0	--	--	1120	8.1
			4-11-66	80	11	--		2.8	.7	294	2.7	640	28	.7	72	4.9	.1	.48	746	10	0	98	40	1230	8.6

See footnotes at end of table on page

Concentrations of dissolved constituents, dissolved solids, and hardness given in parts per million

Well number	Geologic source 1/	Depth of well (feet)	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe) 2/	Manganese (Mn) 2/	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Percent sodium	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
PART 6. MISSOURI RIVER BASIN--Continued																									
SOUTH PLATTE RIVER BASIN--Continued																									
DENVER AREA (BEDROCK)--Continued																									
(C-3-69)30abab	TKdu	100	9-14-66	69	20	0.02		61	16	66	2.9	164	0	191	23	0.6	6.4	0.09	466	218	84	39	1.9	704	7.5
(C-5-66)6dbbd	Klb, Kla, Kfm	2182	8-15-66	--	12	.00		18	2.7	33	3.1	134	0	18	.9	1.1	.0	.01	153	56	0	54	1.9	252	7.8
(C-5-68)24ddab	Klb, Kla, Kfm	2100	8-15-66	--	12	.01		21	1.8	37	2.4	150	0	16	1.3	1.2	.1	.02	169	60	0	56	2.1	275	7.7
28bccc	TKdu	693	8-15-66	67	9.6	.03		7.8	1.0	57	2.0	154	0	17	1.3	1.3	.0	.03	195	24	0	83	5.1	281	7.6
31abba	Kdmc, Kdlc	452	10-12-66	61	9.1	.02		8.8	1.9	55	1.6	152	0	24	2.1	1.4	.4	.04	173	30	0	79	4.4	274	7.9
(C-6-65)18adaa	TKdu	409	8-15-66	68	40	.00		.2	1.8	62	.6	144	0	10	5.0	.5	2.2	.01	187	8	0	94	9.5	257	7.9
(C-6-69)1bbbc	Kdlc	264	8-15-66	--	9.1	.00		58	10	167	4.5	280	0	269	42	.8	2.1	.15	692	186	0	65	5.3	1060	8.0
(C-7-67)27bdcb	TKdu	300	8-15-66	64	20	.04		48	6.8	16	3.2	170	0	37	3.0	.7	.1	.04	217	148	9	19	.6	348	7.6
SOUTH PLATTE VALLEY AREA																									
(B-1-65)30ccc	Qvf	70	8-17-66	55	18	0.00		106	59	128	4.0	432	0	238	124	1.8	11	0.26	927	506	152	35	2.5	1420	7.7
(B-1-66)6abd	Qal	50	9- 9-66	59	21	.02		127	42	161	6.9	346	0	318	153	1.1	43	.26	A1040	490	206	41	3.2	1590	7.8
(B-1-67)14dda	Qvf	30	9- 9-66	64	21	.00		117	60	149	3.6	476	0	305	108	1.4	18	.33	A1020	540	150	37	2.8	1560	7.8
36dcc	Qvf	26	8-17-66	58	17	.01		135	47	214	6.3	362	0	523	112	1.5	30	.30	A1260	530	233	46	4.0	1810	7.8
(B-3-57)6bdd	Qal	175	8-16-66	58	20	.00		261	52	110	9.7	302	0	779	53	.6	19	.05	A1450	865	617	21	1.6	1860	7.7
(B-3-66)18cba3	Qal	55	8-17-66	58	18	.00		107	36	113	4.3	312	0	270	96	1.1	10	.22	841	416	160	37	2.4	1270	7.5
(B-4-56)12aab	Qal	--	8-16-66	56	31	.01		311	91	203	20	340	0	1170	86	.6	20	.38	A2100	1150	871	27	2.6	2540	8.0
33bbb	Qal	90	8-16-66	56	19	.02		245	77	203	13	384	0	948	70	1.0	.4	.21	A1770	930	615	32	2.9	2280	7.8
(B-4-60)5ccc	Qal	69	8- 7-66	57	21	.00		266	80	248	19	318	0	1160	70	1.9	19	.45	A2040	995	734	35	3.4	2530	7.8
24cc	Qal	225	8-17-66	57	19	.00		154	26	75	8.5	300	0	307	24	1.0	82	.02	846	490	244	25	1.5	1170	7.6
24dcc	Qal	243	8-17-66	57	19	.00		196	27	104	9.8	294	0	458	36	.9	117	.01	A1110	600	359	27	1.8	1490	7.5
(B-4-62)24bdd	Qal	110	8-17-66	57	17	.00		95	40	91	5.5	272	0	332	26	1.0	.7	.13	760	402	179	33	2.0	1070	7.7
(B-4-63)4abb	Qvf	90	8-17-66	55	24	.01		231	74	242	6.7	400	0	933	87	.8	14	.29	A1810	880	552	37	3.5	2350	7.8
(B-4-64)1dcc	Qvf	76	8-17-66	53	20	.01		285	92	275	6.0	366	0	1050	222	1.0	8.0	.24	A2140	1090	790	35	3.6	2830	7.7
16abb	Qvf	39	8-17-66	53	20	.00		181	86	304	5.9	316	0	846	247	1.5	28	.24	A1670	805	546	45	4.7	2580	7.8
(B-4-65)14bdd	Qvf	78	7-20-66	55	20	.04		159	76	215	4.7	376	0	655	149	1.6	21	.29	A1490	710	402	40	3.5	2080	8.0
(B-4-66)28adc	Qal	98	9- 9-66	57	18	.01		125	53	118	4.0	350	0	309	105	1.1	71	.10	A976	530	243	32	2.2	1460	7.7
30acc	Qvf	61	8-17-66	57	18	.00		128	33	117	5.5	278	0	291	100	.8	57	.11	904	456	228	35	2.4	1320	7.7
(B-4-67)11abd	Qal	35	9- 8-66	59	17	.01		204	101	173	3.6	390	0	912	35	.8	26	.35	A1660	925	605	29	2.5	2100	7.9
(B-5-54)2bdd	Qvf	80	8-16-66	56	15	.00		101	47	121	9.4	196	0	490	43	1.0	.3	.22	956	444	283	37	2.5	1290	7.7
20ccd	Qal	90	8-16-66	54	35	.00		184	59	133	16	354	0	660	46	.6	8.0	.18	A1320	700	410	29	2.2	1720	7.7
(B-5-64)21bbc	Qal	67	8-22-66	57	20	.01		180	87	188	6.0	356	0	781	83	1.6	23	.31	A1540	805	513	33	2.9	2030	7.8

See footnotes at end of table on page

Concentrations of dissolved constituents, dissolved solids, and hardness given in parts per million

Well number	Geologic source 1/	Depth of well (feet)	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe) 2/	Manganese (Mn) 2/	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Percent sodium	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
PART 6. MISSOURI RIVER BASIN--Continued																									
SOUTH PLATTE RIVER BASIN--Continued																									
SOUTH PLATTE VALLEY AREA--Continued																									
(B-5-65)24ccc	Qvf	68	7-20-66	54	19	0.01		166	83	241	4.7	396	0	815	99	1.7	5.0	0.37	A1630	755	429	41	3.8	2180	7.9
31dba	Qvf	63	9- 9-66	67	19	.00		130	60	123	4.6	372	0	383	86	1.3	45	.11	A1040	570	265	32	2.2	1490	7.8
(B-5-66)36abc	Qvf	25	8-22-66	69	12	.01		168	117	169	6.9	360	0	891	34	1.6	39	.39	A1620	900	605	29	2.4	2060	7.8
(B-6-54)13dad2	Qal	76	8-16-66	57	26	.01		208	64	172	16	332	0	798	64	.8	6.3	.27	A1520	785	513	32	2.7	1960	7.9
(B-7-53)18bd	Qal	48	8-16-66	54	41	.01		152	46	127	20	312	0	526	50	.6	22	.16	A1140	575	319	31	2.3	1550	7.8
24cca	Qal	90	7-20-66	56	23	.04		223	73	194	16	346	0	900	72	.7	6.1	.30	A1680	855	571	33	2.9	2150	7.8
(B-6-52)9bbb	Qal	69	8-16-66	56	44	.00		232	81	188	23	310	0	956	77	.5	11	.23	A1760	910	656	30	2.7	2210	7.7
34abb	Qal,Qds	89	6-16-66	56	35	.02		130	32	93	7.4	268	0	391	28	.5	3.4	.15	866	454	234	30	1.9	1170	7.7
(B-6-53)25bd	Qal	80	8-16-66	57	37	.00		191	50	120	15	304	0	625	59	.5	9.3	.20	A1260	680	431	27	2.0	1670	7.5
(B-9-52)25ddd	Qal	79	6- 6-66	53	19	.01		226	73	216	13	280	0	1020	70	.6	.3	.28	A1780	865	635	35	3.2	2250	7.9
			8-16-66	54	19	.02		206	62	199	11	226	0	933	66	.5	.3	.26	A1610	770	585	36	3.1	2110	7.9
(B-10-49)11bcd	Qal	55	8-16-66	66	33	.00		260	45	234	16	324	0	930	113	.7	3.3	.25	A1790	835	569	37	3.5	2290	8.1
12db	Qal	42	7-19-66	56	16	.01		293	99	446	17	306	0	1660	124	1.1	4.1	.42	A2810	1140	887	46	5.8	3440	7.8
(B-10-51)14dcd	Qvf	65	8-16-66	63	47	.01		277	46	121	16	270	0	793	94	.5	18	.23	A1550	880	659	23	1.8	1960	7.8
(B-11-45)5ba	Qal	52	7-18-66	53	43	.00		244	63	183	28	300	0	917	85	.4	16	.26	A1730	870	624	31	2.7	2170	7.8
(B-11-46)18db	Qal	67	7-20-66	53	50	.00		301	58	264	29	340	0	1160	102	.5	12	.31	A2140	990	711	36	3.6	2610	7.9
19da	Qvf	21	6-16-66	57	46	.00		59	13	17	7.5	190	0	31	18	.6	31	.00	330	199	43	15	.5	470	7.5
SOUTHERN TRIBUTARY AREA																									
(B-1-63)2bbb	Qal	--	8-16-66	56	23	0.00		441	66	195	7.6	348	0	1280	152	0.2	26	0.30	A2360	1380	1090	23	2.3	2790	7.5
(B-1-65)11aaa	Qvf	22	8-17-66	56	26	.00		316	50	291	6.9	530	0	853	225	.6	30	.42	A2060	995	560	39	4.0	2750	7.9
(B-2-59)31dc1	Qal	140	8-19-66	57	21	.01		135	20	81	6.8	278	0	349	23	.9	2.7	.07	795	444	216	28	1.7	1100	7.5
(B-2-63)15ddc	Qvf	82	8-16-66	53	20	.02		593	117	486	8.5	430	0	2230	292	.5	30	.24	A3990	1960	1610	35	4.8	4590	7.8
23cd	Qvf	117	8-16-66	55	21	.01		400	67	152	6.9	234	0	1190	140	.4	20	.11	A2110	1280	1080	20	1.9	2520	7.9
(B-2-65)24dcc	Qvf	70	8-17-66	71	24	.00		399	73	361	6.6	388	0	1400	216	.6	15	.15	A2690	1300	977	38	4.4	3340	7.4
(B-3-56)27a	Qds	114	7-26-66	58	--	.00		--	--	9.8		116	0	16	1.9	--	--	--	131	93	0	--	.4	220	7.4
			8-17-66	62	16	.01		25	7.2	9.1	3.8	118	0	16	1.0	.5	.8	.00	135	92	0	17	.4	220	8.0
(B-3-62)10abb	Qvf	60	8-22-66	57	18	.01		57	11	64	3.1	210	0	131	8.2	.6	4.0	.06	393	186	14	42	2.0	608	7.6
(B-3-64)8cdd	Qvf	53	6- 7-66	54	22	.00		309	52	271	6.1	346	0	1090	129	.6	17	.15	A2070	985	701	37	3.8	2590	7.8
(B-10-48)11aad	Qds	86	8-16-66	58	43	.01		48	9.8	33	6.3	218	0	24	7.1	.7	21	.04	307	160	0	30	1.1	446	7.5
(C-1-55)7add	Qal	60	7-19-66	55	18	.00		215	74	95	8.9	312	0	742	34	.2	7.6	.17	A1350	840	584	20	1.4	1730	7.7
(C-1-65)26dcdc	Qv	64	9- 9-66	57	25	.01		91	13	35	4.6	224	0	117	32	.6	16	.06	446	278	94	21	.9	679	7.9
(C-4-55)35dba	Qal	88	6- 7-66	56	22	.00		65	16	13	3.5	198	0	64	8.5	.6	23	.00	319	229	67	11	.4	484	7.4

See footnotes at end of table on page

Concentrations of dissolved constituents, dissolved solids, and hardness given in parts per million

Well number	Geologic source 1/	Depth of well (feet)	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe) 2/	Manganese (Mn) 2/	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Percent sodium	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
PART 6. MISSOURI RIVER BASIN--Continued																									
SOUTH PLATTE RIVER BASIN--Continued																									
CACHE LA POUDRE AREA																									
(B-5-65)2bbb	Qt	123	8-19-66	54	31	0.00		236	59	114	9.6	324	0	738	35	0.4	39	0.14	A1420	830	564	23	1.7	1800	7.7
(B-6-64)24daa	Qal	37	8-19-66	54	39	.01		240	83	373	16	436	0	1210	72	1.0	65	.40	A2310	940	582	46	5.3	2870	7.8
31ccd	Qt(?)	100	8-19-66	56	28	.01		208	62	124	11	308	0	728	32	.6	13	.17	A1360	775	522	25	1.9	1770	7.6
32dab	Qt	43	8-19-66	56	22	.02		252	152	221	9.9	422	0	1240	68	1.8	47	.44	A2220	1260	909	27	2.7	2700	7.7
35baa	Qal	42	8-19-66	55	34	.01		329	496	1400	50	618	0	5040	196	.7	5.6	.68	A7860	2860	2350	51	11	8310	7.8
35ddb	Qal	41	8-19-66	55	34	.01		443	113	696	25	474	0	2500	137	1.0	17	.54	A4200	1570	1180	49	7.6	4830	7.9
(B-6-65)4baa1	Qal	42	8-19-66	53	32	.01		240	73	160	12	314	0	900	42	.4	41	.45	A1650	900	643	28	2.3	2110	7.8
22cbb	Qt	64	8-19-66	55	35	.00		294	57	144	12	356	0	926	40	.4	38	.18	A1720	970	678	24	2.0	2100	7.9
35bba	Qt	57	8-19-66	54	33	.01		219	71	112	7.4	352	.0	714	34	.7	41	.24	A1410	836	547	22	1.7	1790	7.9
(B-6-66)19dcb	Kf	487	8-19-66	67	9.2	.01		8.0	1.0	318	1.6	238	0	477	36	1.0	.9	.08	978	24	0	96	28	1470	7.8
28daa	Qt	44	8-19-66	54	18	.00		135	122	120	2.4	392	0	716	28	1.5	25	.21	A1360	840	519	24	1.8	1800	7.8
36acc	Qal	39	8-19-66	54	11	.02		179	86	146	4.0	348	0	779	30	.5	2.6	.26	A1410	800	515	28	2.2	1850	8.1
(B-6-67)1bbc	Qal	51	8-22-66	54	19	.00		88	103	100	1.8	448	0	453	20	2.1	23	.28	A1030	645	278	25	1.7	1440	8.0
7cbd	Qt	29	9- 8-66	56	16	.01		162	70	69	3.8	320	0	536	14	.8	28	.10	A1060	690	428	18	1.1	1420	7.6
(B-7-65)15bba	Qal	29	8-19-66	54	30	.00		204	50	101	10	386	0	535	32	.4	70	.13	A1220	715	398	23	1.6	1610	7.7
(B-7-66)3aad	Qal	42	8-19-66	54	23	.00		153	48	59	4.7	378	0	336	27	.5	22	.13	874	578	268	18	1.1	1200	7.7
7add	Kl	150	8-19-66	68	10	.00		77	33	38	4.6	274	0	183	4.8	.9	.1	.13	506	328	103	20	.9	737	7.9
36cbb	Qal	60	8-19-66	54	22	.01		211	152	147	4.0	400	0	1080	25	.8	20	.46	A1860	1150	822	22	1.9	2260	7.9
(B-7-68)23bbb	Qal	62	9-15-66	60	16	.02		297	142	190	9.6	328	0	1390	35	.6	16	.29	A2260	1320	1060	24	2.3	2650	7.6
(B-7-69)24daa	Qp	31	9- 8-66	58	15	.01		87	37	46	1.5	408	0	103	6.6	.8	20	.14	524	368	33	21	1.0	807	7.9
(B-8-65)29bbb	Qal	22	8-19-66	53	30	.02		208	82	160	8.3	456	0	754	38	.9	35	.32	A1540	855	481	29	2.4	1980	7.9
(B-8-66)22aab	Qal	38	8-19-66	53	25	.01		79	14	33	4.6	248	0	54	21	.4	64	.02	404	254	51	22	.9	627	8.0
(B-8-68)15bcb	Qal	52	9- 8-66	54	19	.01		298	96	103	4.0	348	0	1030	21	.8	25	.34	A1770	1140	855	16	1.3	2120	7.8
28bbb1	Qal	72	9-15-66	53	17	.01		512	157	187	4.0	346	0	1930	36	1.0	20	.50	A3030	1920	1640	17	1.9	3290	7.7
32aba1	Qal	90	9-21-66	53	18	.00		481	187	265	4.7	344	0	2070	39	1.2	23	.52	A3260	1970	1690	23	2.6	3480	7.8
(B-8-69)12bdd	Kprr	206	9- 8-66	67	9.6	.04		38	5.6	930	1.9	248	0	1900	14	.3	.7	.20	A3020	118	0	94	37	4030	7.7
27dbb	Qal	38	9- 6-66	54	12	.00		91	48	17	1.4	298	0	193	1.9	1.0	13	.07	567	426	182	8	.4	793	7.9
(B-9-66)33cac	Qal	40	8-19-66	53	24	.00		98	19	25	5.2	208	0	72	16	.5	148	.00	541	324	153	14	.6	739	7.5
(B-9-68)8cab	Qal	80	9-15-66	52	17	.00		268	93	68	4.2	288	0	930	14	.9	19	.22	A1560	1050	814	12	.9	1860	7.7
8dcb	Kpl(?)	700	9- 8-66	64	13	.00		54	45	350	2.5	152	0	931	7.5	.4	5.5	.18	A1480	318	193	70	8.5	2020	7.8
19bbb	Qp	41	9- 8-66	55	14	.00		93	45	71	2.0	354	0	257	10	1.1	14	.28	683	420	130	27	1.5	997	8.0
33cab2	Qal	90	9-21-66	50	16	.00		281	80	82	4.0	308	0	904	18	.9	28	.24	A1570	1030	777	15	1.1	1890	7.9
(B-9-69)14ada1	Qp	22	9- 8-66	57	15	.00		61	46	58	2.0	336	0	157	11	.9	21	.24	585	340	64	27	1.4	828	7.8
NORTHERN TRIBUTARY AREA																									
(B-8-55)33ddd	Kp	590	7-20-66	62	9.1	0.00		5.6	2.2	395	4.3	608	6	31	260	2.0	0.1	1.4	A1010	23	0	97	36	1770	8.3
(B-8-62)9baa	Qvf	25	8-19-66	54	29	.01		132	34	211	15	420	0	463	99	.6	.1	.14	A1190	468	124	49	4.2	1780	7.7
(B-9-60)34adc	Tw	100	8-19-66	57	20	.02		83	21	151	9.0	226	0	426	13	.2	.3	.07	836	296	111	52	3.8	1180	7.9
(B-10-62)2bab2	Qvf	22	8-19-66	53	43	.03		84	17	62	12	372	0	73	24	1.4	15	.12	527	280	0	31	1.6	774	7.9

See footnotes at end of table on page

Concentrations of dissolved constituents, dissolved solids, and hardness given in parts per million

Well number	Geologic source 1/	Depth of well (feet)	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe) 2/	Manganese (Mn) 2/	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Percent sodium	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
PART 6. MISSOURI RIVER BASIN--Continued																									
SOUTH PLATTE RIVER BASIN--Continued																									
NORTHERN TRIBUTARY AREA--Continued																									
(B-11-51)6bba	To	240	7-20-66	56	50	0.00		56	18	19	9.3	178	0	40	36	0.6	36	0.02	359	212	66	16	0.6	524	7.9
(B-12-62)34abb	Qvf	60	8-19-66	54	47	.01		47	15	14	5.9	205	0	15	9.1	1.0	14	.01	276	177	9	14	.5	401	7.5
PART 7. LOWER MISSISSIPPI RIVER BASIN																									
KANSAS RIVER BASIN																									
HIGH PLAINS AREA																									
(H-2-44)36bbb2	To	180	6- 6-66	60	55	0.00		34	12	16	8.8	185	0	14	2.8	1.0	5.9	0.04	236	136	0	19	0.6	339	7.7
(B-2-48)25cdb	To	361	6- 7-66	60	52	.01		35	13	13	8.4	182	0	12	3.5	1.0	5.9	.07	229	139	0	16	.5	329	7.5
(B-2-50)9ddd	To	218	6- 7-66	65	51	.01		31	12	10	7.8	158	0	9.4	5.4	.8	7.9	.01	215	126	0	14	.4	305	7.7
(B-5-43)24abb	To	260	7-18-66	60	54	.00		40	18	10	8.9	180	0	50	2.2	.9	6.6	.02	273	173	25	11	.3	379	7.6
(B-5-47)22bdb	To	368	9- 4-57	59	--	--		29	9.7	22	7.2	166	0	16	6.5	1.3	6.1	--	A180	112	0	--	.9	328	7.9
			7-26-66	62	43	.02		25	12	22	7.2	167	0	17	5.3	1.3	7.3	.09	219	113	0	28	.9	327	7.4
(B-7-43)27bbb	To	215	7-18-66	57	44	.00		37	11	11	6.7	178	0	13	4.4	.7	4.5	.05	221	137	0	14	.4	322	7.2
(B-8-47)19bbd	To	272	6- 7-66	58	42	.00		31	11	12	6.9	156	0	15	3.6	.8	3.9	.03	213	123	0	17	.5	292	8.1
(B-10-43)3dcb	To	400	6- 6-66	60	41	.00		36	14	15	8.2	192	0	14	5.1	.8	8.3	.04	229	147	0	17	.5	352	7.5
(C-1-44)27bbb	To	263	6- 6-66	59	50	.01		33	18	15	9.2	207	0	13	3.7	1.5	7.2	.03	249	157	0	16	.5	377	7.6
(C-2-43)22adb	Qal	57	6- 6-66	55	48	.01		74	16	43	11	308	0	76	14	1.4	.1	.07	414	250	0	26	1.2	638	8.2
(C-4-46)31cad	To	286	7-18-66	62	44	.01		27	14	14	4.7	172	0	11	4.5	.8	8.6	.04	209	126	0	19	.5	313	7.3
(C-5-51)23cdb	Qal,To	52	6- 7-66	62	44	.03		53	15	12	4.5	211	0	18	4.8	.6	25	.00	265	192	19	12	.4	417	7.6
(C-5½-44)36acd	To	125	7-26-66	59	33	.00		35	13	21	4.1	190	0	11	4.6	1.2	9.2	.04	220	140	0	24	.8	352	7.7
(C-6-50)30bdd	To	206	7-19-66	57	37	.01		34	10	8.5	3.3	158	0	6.8	2.0	.5	5.9	.02	188	126	0	12	.3	277	7.7
(C-8-43)32ccb	To	321	7-18-66	62	32	.00		28	12	23	4.0	181	0	11	2.9	1.7	6.9	.07	203	121	0	28	.9	329	7.7
(C-9-51)2acc	To	103	6-17-66	58	42	.01		32	16	40	3.3	220	0	27	10	1.4	4.1	.05	282	145	0	37	1.4	434	7.1
(C-11-44)21abb	To	180	6- 6-66	59	21	.00		36	11	13	2.7	162	0	11	7.7	.6	8.8	.01	186	134	1	17	.5	311	7.7
(C-12-47)10aad	To	183	6- 6-66	58	25	.01		39	14	18	2.7	193	0	15	8.0	.7	12	.00	223	154	0	20	.6	366	7.6
(C-13-44)21aac	To	182	7-26-66	59	20	.01		42	14	17	3.0	148	0	33	21	.6	18	.00	249	161	31	18	.6	393	7.7
ARKANSAS RIVER BASIN																									
NORTHERN TRIHUTARY AREA																									
(C-11-55)2bba	Qvf	32	7-19-66	61	16	0.00		53	24	143	3.7	346	0	206	24	1.0	11	0.25	646	230	0	57	4.1	990	7.8
(C-13-52)7bcd	Qvf	37	6- 7-66	54	13	.00		117	32	199	5.8	260	0	613	25	.5	.1	.17	A1130	425	212	50	4.2	1570	7.8

See footnotes at end of table on page

CHEMICAL ANALYSES OF GROUND WATER IN COLORADO--Continued

Concentrations of dissolved constituents, dissolved solids, and hardness given in parts per million

Well number	Geologic source 1/	Depth of well (feet)	Date of collection	Temperature (°F)	Silica (SiO_2)	Iron (Fe) 2/	Manganese (Mn) 2/	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$ Calcium, Magnesium	Hardness as $CaCO_3$ Noncarbonate	Percent sodium	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH
PART 7. LOWER MISSISSIPPI RIVER BASIN--Continued																									
ARKANSAS RIVER BASIN--Continued																									
NORTHERN TRIBUTARY AREA--Continued																									
(C-18-46)8cca	Qvf	48	7-19-66	56	19	0.01		250	115	400	8.2	292	0	1430	158	1.0	40	0.40	A2570	1100	856	44	5.3	3220	7.6
(C-20-42)36cda	To	187	7-19-66	60	23	.00		73	41	81	4.4	188	0	313	41	2.1	9.9	.29	705	352	198	33	1.9	997	8.0

1 Qal, alluvial deposits; Qds, dune sand; Qvf, valley fill deposits; Qt, terrace deposits; Qv, Verdos Alluvium; Ql, Louviers Alluvium; Qb, Broadway Alluvium; Qp, Piney Creek Alluvium; Qpp, post-Piney Creek Alluvium; To, Ogallala Formation; Tw, White River Group; TKdu, upper part of the Dawson Formation; Kdmc, middle conglomerate of the Dawson Formation; Kdlc, lower conglomerate of the Dawson Formation; Kp, Pierre Shale; Kpl, Larimer Sandstone Member of the Pierre Shale; Kprr, Rocky Ridge Sandstone Member of the Pierre Shale; Kf, Fox Hills Sandstone; Kfm, Milliken Sandstone Member of the Fox Hills Sandstone; Kl, Laramie Formation; Kla, A sandstone of the Laramie Formation; Klb, B sandstone of the Laramie Formation.

2 In solution at time of sampling, unless otherwise indicated.

A Calculated from determined constituents.

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