Quality of Surface Waters of the United States, 1969

Parts 9 and 10. Colorado River Basin and The Great Basin

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 2148

Prepared in cooperation with the States of California, Idaho, New Mexico, Utah, Wyoming, U.S. Bureau of Reclamation, and with other agencies

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PREFACE

This report was prepared by the U.S. Geological Survey in cooperation with the States of Arizona, California, Idaho, New Mexico, Utah, Wyoming, U.S. Bureau of Reclamation, and with other agencies, by personnel of the Water Resources Division, E. L. Hendricks, chief hydrologist, G. W. Whetstone, assistant chief hydrologist for Scientific Publications and Data Management, under the general direction of G. A. Billingsley, chief, Reports Section, and B. A. Anderson, chief, Data Reports Unit.

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QUALITY OF SURFACE WATERS OF THE UNITED STATES, 1969

PARTS 9 and 10

INTRODUCTION

The water-quality investigations of the United States Geological Survey are concerned with chemical and physical characteristics of surface- and ground-water supplies of the Nation. The data herein deal with the amounts of matter in solution and in suspension in streams, and represent that portion of the National Water Data System collected by the U.S. Geological Survey in cooperation with State, municipal, and other Federal agencies.

The records of chemical analysis, water temperature, and suspended sediment of surface waters given in this volume serve as a basis for determining the suitability of waters for various uses. The flow and water quality of a stream are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved solids may be expected during periods of high flow than during periods of low flow. Conversely, the suspended solids in some streams may change materially with relatively small variations in flow, whereas for other streams the quality of the water may remain relatively uniform throughout large ranges in discharge.

The Geological Survey has published annual records of chemical quality, water temperature, and suspended sediment since 1941. The records prior to 1948 were published each year in a single volume for the entire country, and in two volumes in 1948 and in 1949. From 1950 to 1958, the records were published in 4 volumes; from 1959 to 1963 in 5 volumes; from 1964 to 1967 in 6 volumes; and in 1968 in 10 volumes. The drainage basins covered by the 10 volumes are shown in Figure 1. The shaded area in Figure 1 represents the section of the country covered in this volume for the water year 1969 (October 1, 1968 to September 30, 1969).

To meet interim requirements, water-quality records have been released by the Geological Survey in annual reports, beginning with the 1964 water year, by State. These reports are entitled, "Water Resources Data for (State), Part 2. Water Quality Records." Distribution of these reports is limited and primarily for local needs. Any revisions or corrections found necessary to the records published in these annual State reports have been made and published in this volume without reference.

The records herein are listed by drainage basins in a downstream direction along the main stream. All stations on a tributary entering above a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. In the list of water-quality stations in the front of this volume, the rank of the tributaries is indicated by an indention. Each indention represents one rank.

As an added means of identification, a station number has been assigned for each stream location where regular measurements of water quantity or quality have been made. The numbers have been assigned to conform with the standard downstream order of listing gaging stations. The numbering system consists of an 8-digit number, such as 10191500 . The first 2 digits, "10" identifies the Part or hydrologic region used by the Geological Survey for reporting hydrologic data. The next 6 digits is the

station number which represents the location of the station in the standard downstream order within each of the 16 parts (fig. 1). The complete number (10191500) appears just to the left of the station name. The assigned numbers are in numerical order but are not consecutive. Gaps are left in the numbers to allow for new stations that may be established.

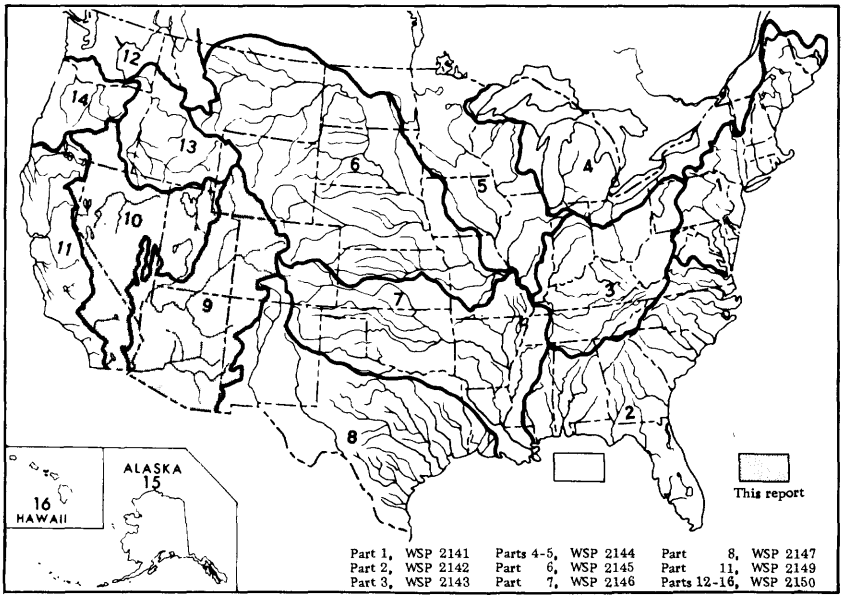

Figure 1.--Map of the United States showing basins covered by the 10 water-supply papers on quality of surface waters in 1969. The shaded part represents the section of the country covered by this volume; the unshaded part represents the section of the country covered by other water-supply papers.

Descriptive statements are given for each sampling station where chemical analyses, temperature measurements, or sediment determinations have been made. These statements include location of the station, drainage area, periods of records available, extremes of dissolved solids, hardness, specific conductance, temperature, sediment loads, and other pertinent data. Records of discharge of the streams at or near the sampling station are included in most tables of analyses.

During the water year ending September 30, 1969, the Geological Survey maintained 125 stations on 76 streams for the study of chemical and physical characteristics of surface water. Samples were collected daily and monthly at 114 of these locations for chemical-quality studies. Samples also were collected less frequently at many other points. Water temperatures were measured continuously at 8 and daily at 51 stations. All surface water samples collected and analyzed during the year have not been included. Single analyses made of daily samples before compositing have not been reported. Specific conductance is determined and reported for almost all daily samples.

At chemical-quality stations where data are continuously recorded at the stream site (monitors), the records consist of daily maximum, minimum, and mean values for each constituent measured. More detailed records (hourly values) may be obtained by writing the district office listed under Division of Work on page 22 .

Quantities of suspended sediment are reported for 43 stations during the year ending September 30, 1969. Sediment samples were collected one or more times daily at most stations, depending on the rate of flow and changes in stage of the stream. Particle-size distributions of sediments were determined at 25 stations.

Some of the stations for which data are published in this volume are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

International Hydrological Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and the general distribution of water in the principal river basins of the conterminous United States and Alaska.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. 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. Prior to water year 1966, these data were published in the annual water-supply paper series, "Quality of Surface Waters for Irrigation, Western States."

Pesticide program is a network of regularly sampled water-quality stations where additional monthly samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

Radiochemical program is a network of regularly sampled water-quality stations where additional samples are collected twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

COLLECTION AND EXAMINATION OF DATA

Quality of water stations usually are located at or near points on streams where streamflow is measured by the U.S. Geological Survey. The concentration of solutes and sediments at different locations in the stream-cross section may vary widely with different rates of water discharge depending on the source of the material and the turbulence and mixing of the stream. In general, the distribution of sediment in a stream section is much more variable than the distribution of solutes. It is necessary to sample some streams at several verticals across the channel and especially for sediment, to uniformly traverse the depth of flow. These measurements require special sampling equipment to adequately integrate the vertical and lateral variability of the concentration in the section. These procedures yield a velocity-weighted mean concentration for the section.

The near uniformly dispersed ions of the solute load move with the velocity of the transporting water. Accordingly, the mean section concentration of solutes determined from samples is a precise measure of the total solute load. The mean section concentration obtained from suspended sediment samples is a less precise measure of the total sediment load, because the sediment samplers do not traverse the bottom 0.3 foot of the sampling vertical where the concentration of suspended sediment is greatest and because a significant part of the coarser particles in many streams move in essentially continuous contact with the bed and are not represented in the suspended sediment sample. Hence, the computed sediment loads presented

in this report are usually less than the total sediment loads. For most streams the difference between the computed and total sediment loads will be small, in the order of a few percent.

CHEMICAL QUALITY

The methods of collecting and compositing water samples for chemical analysis are described by Brown, Skougstad, and Fishman (1970). No single method of compositing samples is applicable to all problems related to the study of water quality. Composites are made on the basis of dissolved-solids content as indicated by measurements of conductivity of daily samples, supplemented by other information such as chloride content, river stage, weather conditions and other background information of the stream.

TEMPERATURE

Daily water temperatures were measured at most of the stations at the time samples were collected for chemical quality or sediment content. So far as practicable, the water temperatures were taken at about the same time each day. Large streams have a small diurnal temperature change while small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

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

SEDIMENT

In general, suspended-sediment samples were collected daily with depth-integrating samplers (U.S. Inter-Agency, 1963). At some stations, samples were collected at a fixed sampling point at one vertical in the cross section. Depth-integrated samples were collected periodically at three or more verticals in the cross section to determine the cross-sectional distribution of the concentration of suspended sediment with respect to that at the daily sampling vertical. In streams where transverse distribution of sediment concentration ranged widely, samples were taken at two or more verticals to define more accurately the average concentration of the cross section. During periods of high or rapidly changing flow, samples generally were taken several times a day and, in some instances, hourly.

Sediment concentrations were determined by filtration-evaporation method. At many stations the daily mean concentration for some days was obtained by plotting the velocity-weighted instantaneous concentrations on the gage-height chart. The plotted concentrations, adjusted if necessary, for cross-sectional distribution were connected or averaged by continuous curves to obtain a concentration graph. This graph represented the estimated velocity-weighted concentration at any time, and for most periods daily mean concentrations were determined from the graph. The days were divided into shorter intervals when the concentration or water discharge were changing rapidly. During some periods of minor variation in concentration, the average concentration of the samples was used as the daily mean concentration. During extended periods of relatively uniform concentration and flow, samples for a number of days were composited to obtain average concentrations and average daily loads for each period. (See Expression of Results, p. 5 .)

For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. The estimates were further guided by precipitation records and sediment discharge at other stations in the same or adjacent basins.

In many instances where there were no observations for several days, the suspended-sediment loads for individual days were not estimated, because numerous factors influencing the quantities of transported sediment made it very difficult to make accurate estimates for individual days. However, estimated loads of suspended sediment for missing days in an otherwise continuous period of sampling have been included in monthly and annual totals in order to provide a complete record. For some streams, samples were collected weekly, monthly, or less frequently, and only rates of sediment discharge at the time of sampling are shown.

In addition to the records of quantities of suspended sediment transported, records of particle sizes of sediment are included. The particle sizes of suspended sediment for many of the stations, and the particle sizes of the bed material for some of the stations were determined intermittently.

The size of particles carried in suspension by streams commonly ranges from colloids (finer than about 0.24 microns) to coarse sand (2.0 mm). The common methods of particle-size analysis cannot accommodate such a wide range. Hence, it was necessary to separate most samples into two parts, that part coarser than 0.062 mm and that part finer than 0.062 mm. The separations were made by sieve or by fall velocity technique. The coarse fractions were classified by sieve separation or by visual-accumulation tube (U.S. Inter-Agency, 1957). The fine fractions were classified by the pipet method (Kilmer and Alexander, 1949) or the bottom withdrawal tube method (U.S. Inter-Agency, 1943).

EXPRESSION OF RESULTS

The quantities of solute concentrations analyzed in the laboratory are measured in either milligrams per liter or micrograms per liter. Milligrams per liter (mg/l, MG/L) is a unit which represents the weight of solute per unit volume of water. A microgram per liter (ug/l, UG/L) is one thousandth of a milligram per liter.

Milliequivalents per liter are not reported but they can be converted easily from milligrams per liter data. A milliequivalent per liter (me/l) is one thousandth of a gram equivalent weight of a constituent. Chemical equivalence in milliequivalents per liter can be obtained by (a) dividing the concentration in milligrams per liter by the combining weight of that ion, or (b) by multiplying the concentration (in mg/l) by the reciprocals of the combining weights. Table 1 on page 6, lists the reciprocals of the combining atomic weights based on carbon-12 (International Union of Pure and Applied Chemistry, 1961).

The hardness of water is conventionally expressed in all water analyses in terms of an equivalent quantity of calcium carbonate. Such a procedure is required because hardness is caused by several different cations, present in variable proportions. It should be remembered that hardness is an expression in conventional terms of a property of water. The actual presence of calcium carbonate in the concentration given is not to be assumed. The hardness caused by calcium and magnesium (and other cations if significant) equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness in excess of this quantity is called noncarbonate hardness. Hardness or alkalinity values expressed in milligrams per liter as calcium carbonate may be converted to milliequivalents per liter by dividing by 50.

The value usually reported as dissolved solids is the residue on evaporation after drying at 180°C for 1 hour. For some waters, particularly those containing moderately large quantities of soluble salts, the value reported is calculated from the quantities of the various determined constituents using the carbonate equivalent of the reported bicarbonate. The calculated sum of the constituents may be given instead of or in addition to the residue. In the analyses of most waters used for irrigation, the quantity of dissolved solids is given in tons per acre-foot as well as in milligrams per liter.

Table 1.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})*	0.11119	Iodide (I^{-1})	0.00788
Ammonia as NH^{+1}	.05544	Iron (Fe^{+3})*	.05372
Arsenic (As^{+3})*	.04004	Lead (Pb^{+2})*	.00965
Barium (Ba^{+2})	.01456	Lithium (Li^{+1})	.14411
Bicarbonate (HCO_3^{-1})	.01639	Magnesium (Mg^{+2})	.08226
Bromide (Br^{-1})	.01251	Manganese (Mn^{+2})*	.03640
Cadmium (Cd^{+2})*	.01779	Mercury (Hg^{+2})*	.00997
Calcium (Ca^{+2})	.04990	Nickel (Ni^{+2})*	.03406
Carbonate (CO_3^{-2})	.03333	Nitrate (NO_3^{-1})	.01613
Chloride (Cl^{-1})	.02821	Nitrite (NO_2^{-1})	.02174
Chromium (Cr^{+6})*	.11539	Phosphate (PO_4^{-3})	.03159
Cobalt (Co^{+2})*	.03394	Potassium (K^{+1})	.02557
Copper (Cu^{+2})*	.03148	Sodium (Na^{+1})	.04350
Cyanide (CN^{-1})	.03844	Strontium (Sr^{+2})*	.02283
Fluoride (F^{-1})	.05264	Sulfate (SO_4^{-2})	.02082
Hydrogen (H^{+1})	.99209	Sulfide (S^{-2})	.06238
Hydroxide (OH^{-1})	.05880	Zinc (Zn^{+2})*	.03060

* Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Specific conductance is given for most analyses and was determined by means of a conductance bridge and using a standard potassium chloride solution as reference. Specific conductance values are expressed in micromhos per centimeter at 25°C. Specific conductance in micromhos is 1 million times the reciprocal of specific resistance at 25°C. Specific resistance is the resistance in ohms of a column of water 1 centimeter long and 1 square centimeter in cross section.

The discharge of the streams is reported in cubic feet per second (see Streamflow, p. 19) and the temperature in degrees Celsius (°C). Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892). A unit of color is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Hydrogen-ion concentration is expressed in terms of pH units. By definition the pH value of a solution is the negative logarithm of the concentration of gram ions of hydrogen.

An average of analyses for the water year is given for most daily sampling stations. Most of these averages are arithmetical, time-weighted, or discharge-weighted; when analyses during a year are all on 10-day composites of daily samples with no missing days, the arithmetical and time-weighted averages are equivalent. 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 river each day for the water year. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all of the water passing a given station during the year. A discharge-weighted average is computed by multiplying the discharge for the 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. For most streams, discharge-weighted averages are lower than arithmetical averages because at times of high discharge the rivers generally have low concentrations of dissolved solids.

A program for computing these averages by digital computer was instituted in the 1962 water year. This program extended computations to include averages for pH values expressed in terms of hydrogen ion and averages for the concentration of individual constituents expressed in tons per day. Concentrations in tons per day are computed the same as daily sediment loads.

The concentration of sediment in milligrams per liter is computed as 1,000,000 times the ratio of the weight of sediment to the weight of water-sediment mixture. Daily

sediment loads are expressed in tons per day and except for subdivided days, are usually obtained by multiplying daily mean sediment concentrations in mg/l by the daily mean discharge in cubic feet per second, and the conversion factor, normally 0.0027.

For those days when the published sediment discharge value differs from the value computed, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method.

Particle-size analyses are expressed in percentages of material finer than classified sizes (in millimeters). The size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all 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 in distilled water. Chemical dispersion is not used for native-water analysis (Guy 1969).

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the U.S. Geological Survey began reporting data for chemical constituents and concentrations of suspended sediment in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. (See table 2 on page 8.) Temperature, in degrees Celsius may be converted to degrees Fahrenheit by using the table on page 8.

COMPOSITION OF SURFACE WATERS

All natural waters contain dissolved mineral matter. The quality of dissolved mineral matter in a natural water depends primarily on the type of rocks or soils with which the water has been in contact and the length of time of contact. Ground water is generally more highly mineralized than surface runoff because it remains in contact with the rocks and soils for much longer periods. Some streams are fed by both surface runoff and ground water from springs or seeps. Such streams reflect the chemical character of their concentrated underground sources during dry periods and are more dilute during periods of heavy rainfall. The dissolved-solids content in a river is frequently increased by drainage from mines or oil fields, by the addition of industrial or municipal wastes, or--in irrigated regions--by drainage from irrigated lands.

The mineral constituents and physical properties of natural waters reported in the tables of analyses include those that have a practical bearing on water use. The results of analyses generally include silica, iron, calcium, magnesium, sodium, potassium (or sodium and potassium together calculated as sodium), carbonate, bicarbonate, sulfate, chloride, fluoride, nitrate, boron, pH, dissolved solids, and specific conductance. Aluminum, manganese, color, acidity, dissolved oxygen, and other dissolved constituents and physical properties are reported for certain streams. Microbiologic (coliforms) and organic components (pesticides, total organic carbon) and minor elements (arsenic, cobalt, cadmium, copper, lead, mercury, nickel, strontium, zinc, etc.) are determined occasionally for some streams in connection with specific problems and the results are reported. The source and significance of the different constituents and properties of natural waters are discussed in the following paragraphs. The constituents are arranged in the order that they appear in the tables.

Table 2.--Factors for conversion of sediment concentration in milligrams per liter to parts per million*
(All values calculated to three significant figures)

Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170 -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

*Based on water density of 1.000 g/ml and a specific gravity of sediment of 2.65 g/cc.

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

*C = 5/9 (°F - 32) or °F = 9/5 (°C) + 32.

MINERAL CONSTITUENTS IN SOLUTION

Silica (SiO_2)

Silica is dissolved from practically all rocks. Some natural surface waters contain less than 5 milligrams per liter of silica and few contain more than 50 mg/l, but the more common range is from 10 to 30 mg/l. Silica affects the usefulness of a water because it contributes to the formation of boiler scale; it usually is removed from feed water for high-pressure boilers. Silica also forms troublesome deposits on the blades of steam turbines. However, it is not physiologically significant to humans, livestock, or fish, nor is it of importance in irrigation water.

Aluminum (Al)

Aluminum is usually present only in negligible quantities in natural waters except in areas where the waters have been in contact with the more soluble rocks of high aluminum content such as bauxite and certain shales. Acid waters often contain large amounts of aluminum. It may be troublesome in feed waters where it tends to be deposited as a scale on boiler tubes.

Iron (Fe)

Iron is dissolved from many rocks and soils. On exposure to air, normal basic waters that contain more than 1 mg/l of iron soon become turbid with the insoluble reddish ferric compounds produced by oxidation. Surface waters, therefore, seldom contain as much as 1 mg/l of dissolved iron, although some acid waters carry large quantities of iron in solution. Iron causes reddish-brown stains on porcelain or enameled ware and fixtures and on fabrics washed in the water. The highest desirable level of concentrations of iron in culinary and drinking-water is 0.1 mg/l (100 ug/l) with a maximum permissible level of 1.0 mg/l (1000 ug/l). (International Standards for Drinking-Water (ISD-W), 1971).

Manganese (Mn)

Manganese is dissolved in appreciable quantities from rocks in some sections of the country. It resembles iron in its chemical behavior and in its occurrence in natural waters. However, manganese in rocks is less abundant than iron. As a result the concentration of manganese is much less than that of iron and is not regularly determined in many areas. It is especially objectionable in water used in laundry work and in textile processing. Concentrations as low as 0.2 mg/l (200 ug/l) may cause a dark-brown or black stain on fabrics and porcelain fixtures. Appreciable quantities of manganese are often found in waters containing objectionable quantities of iron.

Calcium (Ca)

Calcium is dissolved from almost all rocks and soils, but the highest concentrations are usually found in waters that have been in contact with limestone, dolomite, and gypsum. Calcium and magnesium make water hard and are largely responsible for the formation of boiler scale. Most waters associated with granite or silicious sands contain less than 10 mg/l of calcium; waters in areas where rocks are composed of dolomite and limestone contain from 30 to 100 mg/l; and waters that have come in contact with deposits of gypsum may contain several hundred mg/l.

Magnesium (Mg)

Magnesium is dissolved from many rocks, particularly from dolomitic rocks. Its effect in water is similar to that of calcium. The magnesium in soft waters may amount to only 1 or 2 mg/l, but water in areas that contain large quantities of dolomite or other magnesium-bearing rocks may contain from 20 to 100 mg/l or more of magnesium.

Sodium and potassium (Na and K)

Sodium and potassium are dissolved from practically all rocks. Sodium is the predominant cation in some of the more highly mineralized waters found in the western United States. Natural waters that contain only 3 or 4 mg/l of the two together are likely to carry almost as much potassium as sodium. As the total quantity of these

constituents increases, the proportion of sodium becomes much greater. Moderate quantities of sodium and potassium have little effect on the usefulness of the water for most purposes, but waters that carry more than 50 to 100 mg/l of the two may require careful operation of steam boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

Bicarbonate, carbonate and hydroxide (HCO_3,CO_3, OH)

Bicarbonate, carbonate, or hydroxide is sometimes reported as alkalinity. The alkalinity of a water is produced by anions or molecular species of weak acids which are not fully dissociated above a pH of 4.5. Since the major causes of alkalinity in most natural waters are carbonate and bicarbonate ions dissolved from carbonate rocks, the results are usually reported in terms of these constituents. Although alkalinity may suggest the presence of definite amounts of carbonate, bicarbonate or hydroxide, there are other ions that contribute to alkalinity such as silicates, phosphates, borates, possibly fluoride, and certain organic anions which may occur in colored waters. The significance of alkalinity to the domestic, agricultural, and industrial user is usually dependent upon the nature of the cations (Ca, Mg, Na, K) associated with it. Alkalinity in moderate amounts does not adversely affect most users.

Hydroxide may occur in water that has been softened by the lime process. Its presence in streams usually can be taken as an indication of contamination and does not represent the natural chemical character of the water.

Sulfide (S)

Sulfide occurs in water as a result of bacterial and chemical processes. It usually is present as hydrogen sulfide. Variable amounts may be found in waters receiving sewage and (or) industrial wastes, such as from tanneries, papermills, chemical plants, and gas manufacturing work (California State Water Quality Control Board, 1963).

Waters containing sulfides, especially hydrogen sulfide, may be considered undesirable because of their odor. The toxicity to aquatic organisms differs significantly with the species and the nature of associated ions.

Sulfate (SO_4)

Sulfate is dissolved from most sedimentary rocks. Large quantities may be derived from beds of gypsum, sodium sulfate deposits, and some types of shale. Organic material containing sulfur adds sulfate to the water as a phase of the sulfur cycle. In natural waters, concentrations range from a few mg/l to several thousand mg/l.

ISD-W (1971) recommends 200 mg/l as the highest desirable level of sulfate concentration in drinking and culinary water.

Sulfates are less toxic to crops than chlorides.

Chloride (Cl)

Chloride is dissolved from rock materials in all parts of the country. Surface waters in the humid regions are usually low in chloride, whereas streams in arid or semiarid regions may contain several hundred mg/l of chloride leached from soils and rocks, especially where the streams receive return drainage from irrigated lands or are affected by ground-water-inflow carrying appreciable quantities of chloride. Large quantities of chloride in water that contains a high content of calcium and magnesium increases the water's corrosiveness. The presence of abnormal concentrations of chloride and nitrogenous material together in water supplies indicates possible pollution by human or animal wastes.

Fluoride (F)

Fluoride has been reported as being present in some rocks to about the same extent as chloride. However, the quantity of fluoride in natural surface waters is ordinarily very small compared to that of chloride. Investigations have proved that fluoride concentrations of about 0.6 to 1.7 mg/l reduced the incidence of dental caries and that concentrations greater than 1.7 mg/l also protect the teeth from cavities

but cause an undesirable black stain (Durfor and Becker, 1964, p. 20). Public Health Service, 1962, states, "When fluoride is naturally present in drinking water, the concentration should not average more than the appropriate upper control limit (0.6 to 1.7 mg/l). Presence of fluoride in average concentration greater than two times the optimum values shall constitute grounds for rejection of the supply." Concentration higher than the stated limits may cause mottled enamel in teeth, endemic cumulative fluorosis, and skeletal effects.

Bromide (Br)

Bromine is a very minor element in the earth's crust and is normally present in surface waters in only minute quantities. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It resembles chloride in that it tends to be concentrated in sea water.

Iodide (I)

Iodide is considerably less abundant both in rocks and water than bromine. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It occurs in sea water to the extent of less than 1 mg/l. Rankama and Sahama (1950) report iodide present in rainwater to the extent of 0.001 to 0.003 mg/l and in river water in about the same amount. Few waters will contain over 2.0 mg/l.

Nitrogen, organic (N)

Organic nitrogen includes all nitrogenous organic compounds, such as amino acid, polypeptides, and proteins. It is present naturally in all surface waters as the result of inflow of nitrogenous products from the watershed and the normal biological life of the stream.

Organic nitrogen is not pathologically significant but is sometimes an indication of pollution.

Nitrogen, ammonia (NH_4, as N)

Ammonia nitrogen includes nitrogen in the forms of NH_3 and NH_4^{+1}. As a component of the nitrogen cycle, it is often present in water, but usually in only small amounts. More than 0.1 mg/l usually indicates organic pollution (Rudolph, 1931).

There is no evidence that ammonia nitrogen in water is physiologically significant to man or livestock. Fish, however, cannot tolerate large quantities.

Nitrite (NO_2)

Nitrite is unstable in the presence of oxygen and is, therefore, absent or present in only minute quantities in most natural waters under aerobic condition. The presence of nitrite in water is sometimes an indication of organic pollution.

Recommended tolerances of nitrite in domestic water supplies differ widely. A generally accepted limit is 2 mg/l, but as little as 0.1 mg/l has been proposed (California State Water Quality Control Board, 1963).

Nitrate (NO_3)

Nitrate in water is considered a final oxidation product of nitrogenous material and may indicate contamination by sewage or other organic matter, such as agricultural runoff, or industrial waste. The quantities of nitrate present in surface waters are generally less than 5 mg/l (as NO_3) and have no effect on the value of the water for ordinary uses.

It has been reported that as much as 2 mg/l of nitrate in boiler water tends to decrease intercrystalline cracking of boiler steel. Studies made by Faucett and Miller (1946), Waring (1949) and by the National Research Council (Maxcy, 1950) concluded that drinking water containing nitrates in excess of 44 mg/l (as NO_3) should be regarded as unsafe for infant feeding. ISD-W (1971) sets 45 mg/l as the upper limit.

Phosphorus (P)

Phosphorus is an essential element in the growth of plants and animals. It occurs in water as organically bound phosphorus or as phosphate (PO_4). Some sources that contribute nitrate, such as organic wastes are also important sources of phosphorus. The addition of phosphates in water treatment constitutes a possible source although the dosage is usually small. In some areas phosphate fertilizers may yield some phosphorus to water. Another important source is the use of phosphates in detergents. Domestic and industrial sewage effluents often contain considerable amounts of phosphorus. Concentrations of phosphorus found in water are not reported to be toxic to man, animal, or fish. However, the element can stimulate the growth of algae, which may cause taste and odor problems in public water treatment and esthetic problems in recreation areas.

Boron (B)

Boron in small quantities has been found essential for plant growth, but irrigation water containing more than 1 mg/l boron is detrimental to citrus and other boron-sensitive crops. Boron is reported in Survey analyses of surface waters in arid and semiarid regions of the Southwest and West where irrigation is practiced or contemplated, but few of the surface waters analyzed have harmful concentrations of boron.

Dissolved solids

The reported quantity of dissolved solids--the residue on evaporation--consists mainly of the dissolved mineral constituents in the water. It may also contain some organic matter and water of crystallization. Waters with less than 500 mg/l of dissolved solids are usually satisfactory for domestic and some industrial uses. Water containing several thousand mg/l of dissolved solids are sometimes successfully used for irrigation where practices permit the removal of soluble salts through the application of large volumes of water on well-drained lands, but generally water containing more than about 2,000 mg/l is considered to be unsuitable for long-term irrigation under average conditions.

Arsenic (As)

Arsenic compounds are present naturally in some waters, but the occurrence of quantities detrimental to health is rare. Weed killers, insecticides and many industrial effluents contain arsenic and are potential sources of water pollution. The upper limits of arsenic concentration in drinking water should not exceed 0.05 mg/l (50 ug/l) and it would seem wiser to keep the level as low as possible (ISD-W, 1971). Concentrations of 2-4 mg of arsenic per liter are reported not to interfere with the self-purification of streams (Rudolfs and others, 1944) but concentrations in excess of 15 mg/l may be harmful to some fish.

Barium (Ba)

Barium may replace potassium in some of the igneous rock minerals, especially feldspar, and barium sulfate (barite) is a common barium mineral of secondary origin. Only traces of barium are present in surface water and sea water. Because natural water contains sulfate, barium will dissolve only in trace amounts. Barium sometimes occurs in brines from oil-well wastes.

Barium concentrations in excess of 1.0 mg/l is not suitable for drinking and culinary use because of the serious toxic effects of barium on heart, blood vessels, and nerves.

Cadmium (Cd)

This element is found in nature largely in the form of the sulfide, and as an impurity in zinc-lead ores. The carbonate and hydroxide are not very soluble in water and will precipitate at high pH values; the chloride, nitrate, and sulfate are soluble and remain in solution under most pH conditions.

The extensive use of the element and its salts in metallurgy, electroplating, ceramics, and photography make it a frequent component of industrial wastes.

The results of animal studies suggest that very small amounts of cadmium can produce nephrotoxic and cardiovascular effects. The reproductive organs of animals are specifically affected after parenteral administration of very small amounts of cadmium salts. The level of cadmium concentration proposed for water use is 0.01 mg/l (10 ug/l) or the lowest concentration that can be conveniently measured (ISD-W, 1971).

Chromium (Cr)

Few if any waters contain chromium from natural sources. Natural waters can probably contain only traces of chromium as a cation unless the pH is very low. When chromium is present in water, it is usually the result of pollution by industrial wastes. Concentrations of more than 0.05 mg/l of chromium in the hexavalent form constitute grounds for rejection of a water for domestic use on the basis of the standards of the U.S. Public Health Service (1962).

Cobalt (Co)

Cobalt occurs in nature in the minerals smaltite, $(Co,Ni)As_2$, and cobaltite, CoAsS. Alluvial deposits and soils derived from shales often contain cobalt in the form of phosphate or sulfate, but other soil types may be markedly deficient in cobalt in any form (Bear, 1955). Ruminant animals may be adversely affected by grazing on land deficient in cobalt.

For domestic water supplies, no maximum safe concentration has been established.

Copper (Cu)

Copper is a fairly common trace constituent of natural water. Small amounts may be introduced into water by solution of copper and brass water pipes and other copper-bearing equipment in contact with the water, or from copper salts added to control algae in open reservoirs. Copper salts such as the sulfate and chloride are highly soluble in waters with a low pH but in water of normal alkalinity the salts hydrolyze and the copper may be precipitated. In the normal pH range of natural water containing carbon dioxide, the copper might be precipitated as carbonate. The oxidized portions of sulfide-copper ore bodies contain other copper compounds. The presence of copper in mine water is common.

Copper imparts a disagreeable metallic taste to water. As little as 1.5 mg/l can usually be detected, and 5 mg/l can render the water unpalatable. Copper is not considered to be a cumulative systemic poison like lead and mercury; most copper ingested is excreted by the body and very little is retained. The pathological effects of copper are controversial, but it is generally believed very unlikely that humans could unknowingly ingest toxic quantities from palatable drinking water. The U.S. Public Health Service (1962) recommends that copper should not exceed 1.0 mg/l (10 ug/l) in drinking and culinary water. ISD-W, 1971 gives 0.05 mg/l (50 ug/l) as the highest desirable level.

Lead (Pb)

Lead seldom occurs in most natural waters, but industrial mine and smelter effluents may contain relatively large amounts of lead which contaminates the streams. Also, atmospheric contamination which is produced from several types of engine exhausts has considerably increased the availability of this element for solution in rainfall, resulting in contamination of lead in streams (Hem, 1970).

Lead in the form of sulfate is reported to be soluble in water to the extent of 31 mg/l (Seidell, 1940) at 25°C. In natural water this concentration would not be approached, however, since a pH of less than 4.5 would probably be required to prevent formation of lead hydroxide and carbonate. It is reported (Pleissner, 1907) that at 18°C water free of carbon dioxide will dissolve the equivalent of 1.4 mg/l of lead and the solubility is increased nearly four fold by the presence of 2.8 mg/l of carbon dioxide in the solution. Presence of other ions may increase the solubility of lead. Reports on human tolerance of lead vary widely. U.S. Public Health Service (1962) states that lead shall not exceed 0.05 mg/l (50 ug/l) in drinking and culinary water on carriers subject to Federal quarantine regulations. ISD-W, 1971 gives 0.10 mg/l (100 ug/l) as the upper limit.

Lithium (Li)

Lithium is present in some minerals but is not abundant in nature. From available information, most fresh waters rarely contain lithium of concentrations exceeding 10 mg/l, but larger quantities may be present in brines and thermal waters. Lithium is used in metallurgy, medicinal water, and some types of glass and storage batteries. Waste from such industries may contain lithium.

Mercury (Hg)

Mercury is the only common metal which is liquid at ordinary temperatures. It occurs free in nature but its chief source is cinnabar (HgS). Mercury compounds are virulent culminative poisons which are readily absorbed through the respiratory and gastrointestinal tracts or through unbroken skin (Weast and Selby, 1967).

The main source of high concentrations of dissolved mercury in water, in the form of highly toxic methyl mercury, $Hg(CH_3)_2$, comes from waste discharges from industrial users of mercury and from mercurial pesticides.

Fish from streams and lakes subject to mercury contamination have been found to contain amounts of mercury above the safe limits for food consumption. The U.S. Public Health Service has proposed that the upper limits of dissolved mercury in water for domestic use should not exceed 5 micrograms per liter (0.005 mg/l). ISD-W, 1971 recommends 0.001 mg/l (1 ug/l) as the upper limits of concentration.

Nickel (Ni)

Elemental nickel seldom occurs in nature, but its compounds are found in many ores and minerals. Many nickel salts are quite soluble and may contribute to water pollution, especially when discharged from metal-plating industries.

No set limit of nickel concentration has been established for public water supply.

Strontium (Sr)

Strontium is a typical alkaline-earth element and is similar chemically to calcium. Strontium may be present in natural water in amounts up to a few mg/l much more frequently than the available data indicate. In most surface water the amount of strontium is small in proportion to calcium. However, in sea water the ratio of strontium to calcium is 1:30.

Zinc (Zn)

Zinc is abundant in rocks and ores but is only a minor constituent in natural water because the free metal and its oxides are only sparingly soluble. In most alkaline surface waters it is present only in trace quantities, but more may be present in acid water. Chlorides and sulfates of zinc are highly soluble. Zinc is used in many commercial products, and industrial wastes may contain large amounts.

Zinc in water does not cause serious effects on health, but produces undesirable esthetic effects. ISD-W, 1971 gives 5 mg/l (5000 ug/l) of zinc content as the highest desirable level for drinking water and 15 mg/l as the maximum permissible level.

PROPERTIES AND CHARACTERISTICS OF WATER

Dissolved solids

Theoretically, dissolved solids are anhydrous residues of the dissolved substances in water.

All solutes affect the chemical and physical properties of the water and result in an osmotic pressure. Water with several thousand mg/l of dissolved solids is generally not palatable, although those accustomed to highly mineralized water may complain that less concentrated water tastes flat. The U.S. Public Health Service (1962) recommends that the maximum concentration of dissolved solids not exceed 500 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations, but permits 1,000 mg/l if no better water is available. ISD-W (1971) recommends 500 mg/l as the highest desirable level and 1500 mg/l as the maximum permissible level. Reported livestock

tolerances range from 3,000 mg/l (Colorado Agricultural Experiment Station, 1943) to 15,000 mg/l (Heller, 1933).

Industrial tolerances for dissolved solids differ widely, but few industrial processes will permit more than 1,000 mg/l. The Geological Survey classifies the degree of salinity of these more mineralized bodies of water as follows (Swenson and Baldwin, 1965):

Dissolved solids (mg/l)	Degree of salinity
Less than 1,000	Nonsaline.
1,000 to 3,000	Slightly saline.
3,000 to 10,000	Moderately saline.
10,000 to 35,000	Very saline.

Hardness

Hardness is the characteristic of water that receives the most attention in industrial and domestic use. It is commonly recognized by the increased quantity of soap required to produce lather. The use of hard water is also objectionable because it contributes to the formation of scale in boilers, water heaters, radiators, and pipes, with the resultant decrease in rate of heat transfer, possibility of boiler failure, and loss of flow.

Hardness is caused almost entirely by compounds of calcium and magnesium. Other constituents--such as iron, manganese, aluminum, barium, strontium, and free acid--also cause hardness, although they usually are not present in quantities large enough to have any appreciable effect.

Generally, bicarbonate and carbonate determine the proportions of "carbonate" hardness of water. Carbonate hardness is the amount of hardness chemically equivalent to the amount of bicarbonate and carbonate in solution. Carbonate hardness is approximately equal to the amount of hardness that is removed from water by boiling.

Noncarbonate hardness is the difference between the hardness calculated from the total amount of calcium and magnesium in solution and the carbonate hardness. The scale formed at high temperatures by the evaporation of water containing noncarbonate hardness commonly is tough, heat resistant, and difficult to remove.

Although many people talk about soft water and hard water, there has been no firm line of demarcation. Water that seems hard to an easterner may seem soft to a westerner. In this report hardness of water is classified as follows:

Hardness range (calcium carbonate in mg/l)	Hardness description
0-60	Soft
61-120	Moderately hard
121-180	Hard
More than 180	Very hard

Durfor and Becker, 1964, p. 23-27.

Acidity (H^{+1})

The use of the terms acidity and alkalinity is widespread in the literature of water analysis and is a cause of confusion to those who are more accustomed to seeing a pH of 7.0 used as a neutral point. Acidity of a natural water represents the content of free carbon dioxide and other uncombined gases, organic acids and salts of strong acids and weak bases that hydrolyze to give hydrogen ions. Sulfates of iron and aluminum in mine and industrial wastes are common sources of acidity.

Sodium adsorption ratio (SAR)

The term "sodium adsorption ratio (SAR)" was introduced by the U.S. Salinity Laboratory Staff (1954). It is a ratio expressing the relative activity of sodium ions

in exchange reaction with soil and is an index of the sodium or alkali hazard to the soil. Sodium adsorption ratio is expressed by the equation:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{++}+Mg^{++}}{2}}}$$

where the concentrations of the ions are expressed in milliequivalents per liter.

Waters are divided into four classes with respect to sodium or alkali hazard: low, medium, high, and very high, depending upon the SAR and the specific conductance. At a conductance of 100 micromhos per centimeter the dividing points are at SAR values of 10, 18, and 26, but at 5,000 micromhos the corresponding dividing points are SAR values of approximately 2.5, 6.5, and 11. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Specific conductance (micromhos per centimeter at 25°C)

Specific conductance is a convenient, rapid determination used to estimate the amount of dissolved solids in water. It is a measure of the ability of water to transmit a small electrical current (see p. 6). The more dissolved solids in water that can transmit electricity the greater the specific conductance of the water. Commonly, the amount of dissolved solids (in mg/l) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well and it may even vary in the same source with changes in the composition of the water (Durfor and Becker, 1964 p. 27-29).

Specific conductance of most waters in the eastern United States is less than 1,000 micromhos, but in the arid western parts of the country, a specific conductance of more than 1,000 micromhos is common.

Hydrogen-ion concentration (pH)

Hydrogen-ion concentration is expressed in terms of pH units (see p. 6). The values of pH often are used as a measure of the solvent power of water or as an indicator of the chemical behavior certain solutions may have toward rock minerals.

The degree of acidity or alkalinity of water, as indicated by the hydrogen-ion concentration, expressed as pH, is related to the corrosive properties of water and is useful in determining the proper treatment for coagulation that may be necessary at water-treatment plants. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity. The pH of most natural surface waters ranges between 6 and 8. Some alkaline surface waters have pH values greater than 8.0 and waters containing free mineral acid or organic matter usually have pH values less than 4.5.

The investigator who utilizes pH data in his interpretations of water analyses should be careful to place pH values in their proper perspective.

Temperature

Temperature is an important factor in properly determining the quality of water. This is very evident for such a direct use as an industrial coolant. Temperature is also important, but perhaps not so evident, for its indirect influence upon aquatic biota, concentrations of dissolved gases, and distribution of chemical solutes in lakes and reservoirs as a consequence of thermal stratification and variation.

Surface water temperatures tend to change seasonally and daily with air temperatures, except for the outflow of large springs. Superimposed upon the annual temperature cycle is a daily fluctuation of temperature which is greater in warm seasons than in cold and greater in sunny periods than with a cloud cover. Natural warming is due mainly to absorption of a solar radiation by the water and secondarily to transfer of heat from the air. Condensation of water vapor at the water surface is reported to furnish measurable quantities of heat. Heat loss takes place largely through radiation, with further

losses through evaporation and conduction to the air and to the streambed. Thus the temperature of a small stream generally reaches a maximum in mid- to late afternoon due to solar heating and reaches a minimum from early to mid-morning after nocturnal radiation.

Color

In water analysis the term "color" refers to the appearance of water that is free from suspended solids. Many turbid waters that appear yellow, red, or brown when viewed in the stream show very little color after the suspended matter has been removed. The yellow-to-brown color of some waters is usually caused by organic matter extracted from leaves, roots, and other organic substances in the ground. In some areas objectionable color in water results from industrial wastes and sewage. Clear deep water may appear blue as the result of a scattering of sunlight by the water molecules. Water for domestic use and some industrial uses should be free from any perceptible color. A color less than 15 units generally passes unnoticed (U.S. Public Health Service, 1962). Some swamp waters have natural color in excess of 300 units.

The extent to which a water is colored by material in solution is commonly reported as a part of a water analysis because a significant color in water may indicate the presence of organic material that may have some bearing on the dissolved solids content. Color in water is expressed in terms of units between 0 and 500 or more based on the above standard (see p. 6).

Turbidity

Turbidity is the optical property of a suspension with reference to the extent to which the penetration of light is inhibited by the presence of insoluble material. Turbidity is a function of both the concentration and particle size of the suspended material. It is reported in terms of mg/l of silica or Jackson turbidity units (JTU).

Turbid water is abrasive in pipes, pumps, and turbine blades. Although turbidity does not directly measure the safety of drinking water, it is related to the consumer's acceptance of the water. The highest desirable level of turbidity for drinking water is 5 JTU with a maximum permissible level of 25 JTU (ISD-W, 1971).

Density at 20°C

Density is the mass of any substance per unit volume at a designated standard temperature. Density should not be confused with specific gravity, which is a mass-to-mass relation.

The density value has some use in industries that utilize brines and whose basic unit of concentration of dissolved material is density. Density is used primarily by the chemist in the computation of milligrams per liter for highly mineralized waters.

Dissolved oxygen (DO)

Oxygen dissolved in water is derived from the air and from the oxygen given off in the process of photosynthesis by aquatic plants.

Dissolved oxygen in water has no adverse physiological effect and actually increases the palatability of the water. No minimum concentration of dissolved oxygen required to support fish life has been listed because the oxygen requirements of fish vary with the species and age, with temperature, and with concentration of other substances in the water.

Dissolved oxygen is responsible for many of the corrosion problems in industry.

Chemical oxygen demand (COD)

Chemical oxygen demand is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural-water color or with carbonaceous organic pollution from sewage or industrial wastes.

Biochemical oxygen demand (BOD)

Biochemical oxygen demand is a measure of the oxygen required to oxidize the organic material usable as a source of food by aerobic organisms.

Biological and microbiological information

Biological and microbiological information is an important aspect in the evaluation of water quality. The kinds and amount of aquatic biota in a stream or lake can be useful "indicators" of environmental conditions and particularly of the degree of pollution of water with organic wastes (Doudoroff and Warren, 1957). Biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms.

Chlorophyll (plant pigment).--The concentrations of photosynthetic pigments in natural waters vary with time and changing aquatic conditions. Concentrations of chlorophyll a, b, and c (spectrophotometric determination) are used to estimate the biomass and photosynthetic capacity of phytoplankton (blue-green algae). Ratios between the different forms of chlorophyll are thought to indicate the taxonomic composition or the physiological state of the algae community (Slack, 1970).

Plankton.--Plankton is the floating (or weakly swimming) animal or plant life in a body of water consisting, chiefly of minute plants (as diatomes and blue-green algae) and of minute animals (as protozoan, entomostracans and various larvae). Algae are known to cause tastes and odor in water supply.

Plankton population in water is obtained by count level (the number of organisms per milliliter).

Coliform bacteria.--Coliform organisms have long been used as indicators of sewage pollution, although the group includes bacteria from diverse natural sources and habitats. For example, members of the coliform group are indigenous to soil and vegetation as well as feces. Standards for drinking water quality provide definite minimums as to number of samples examined and the maximum number of coliform organisms allowable per 100 milliliters (ml) of finished water (Slack, 1970). The coliform population of water is determined either by the most probable number (MPN), or by the incubation membrane filter method, a direct count of coliform colonies per plate.

Fecal coliform bacteria.--Fecal coliform is that portion of the coliform group that is present in the intestinal tract of warm-blooded animals and is capable of producing gas from lactos in suitable culture medium at 44.5°C. Organisms from other sources generally cannot produce gas in this manner. (American Public Health Assoc. and others, 1965). Thus, in general, the presence of fecal coliform organisms indicates recent pollution (Slack, 1970).

Organics

Phenols.--Phenolic material in water resources is invariably the result of pollution. Phenols are widely used as disinfectants and in the synthesis of many organic compounds. Waste products from oil refineries, coke areas, and chemical plants may contain high concentrations. Fortunately, phenols decompose in the presence of oxygen and micro-organisms, and their persistence downstream from point of entry is relatively short lived. The rate of decomposition is dependent on the environment.

Very low concentrations impart such a disagreeable taste to water that it is highly improbable that harmful amounts could be consumed unknowingly. Reported thresholds of detection of taste and odor range from 0.001 to 0.01 mg/l.

Cyanide (CN).--Cyanides are not found free in nature, but may become contaminants of water supplies by means of effluents from gasworks, coke ovens, steel mills, electro-plating processes, and chemical industries. In natural streams and organic soils, simple cyanides are decomposed by bacterial action, whereas the metal-cyanide complexes are often quite stable and more resistant to degradation. The U.S. Public Health Service (1962) set a recommended limit of 0.01 mg cyanide per liter and a

mandatory limit of 0.2 mg/l for waters subject to interstate regulations. ISD-W (1971) sets the upper limit for drinking water as 0.05 mg/l.

Detergents (methylene blue active substance, MBAS).--Anionic surfactants in detergents resist chemical oxidation and biological breakdown. Soap is an example of this class and the synthetic members are sodium salts of organic sulfonates or sulfates (Rose, 1966). Their persistence in water over long periods of time contributes to pollution of both ground water and surface water. Some of the effects produced from detergent pollution are unpleasant taste, odor, and foaming (Wayman, and others, 1962). Although the physiological implications of MBAS to human beings is unknown, prolonged ingestion of this material by rats is believed to be nontoxic (Paynter, 1960). The U.S. Public Health Service (1962) recommends that MBAS should not exceed 0.5 mg/l in drinking and culinary waters. ISD-W (1971) sets 0.2 mg/l as the highest desirable level and 1.0 mg/l as the maximum permissible level.

Total Organic Carbon (TOC).--Total organic carbon is a measure of the organically related carbonaceous content of water. It includes all natural and manmade organic compounds which are combustable at a temperature of 950°C.

Sediment

Fluvial sediment generally is regarded as that material which is transported by, suspended in, or deposited by water. Suspended sediment is that part which remains in suspension in water owing to the upward components of turbulent currents or by colloidal suspension. Much fluvial sediment results from the natural process of erosion, which in turn is part of the geologic cycle of rock transformation. This natural process may be accelerated by agricultural practices. Sediment also is contributed by a number of industrial and construction activities. In certain sections, waste materials from mining, logging, oil-field, and other industrial operations introduce large quantities of suspended material.

The quantity of sediment, transported or available for transportation, is affected by climatic conditions, form or nature of precipitation, character of the solid mantle, plant cover, topography, and land use. The mode and rate of sediment erosion, transport, and deposition is determined largely by the size distribution of the particles or more precisely by the fall velocities of the particles in water. Sediment particles in the sand size range (larger than 0.062 mm) do not appear to be affected by flocculation or dispersion resulting from the mineral constituents in solution. In contrast, the sedimentation diameter of clay and silt particles in suspension may vary considerably from point to point in a stream or reservoir, depending on the mineral matter in solution and in suspension and the degree of turbulence present. The size of sediment particles in transport at any point depends on the type of erodible and soluble material in the drainage area, the degree of flocculation present, time in transport, and characteristics of the transporting flow. The flow characteristics include velocity of water, turbulence, and the depth, width, and roughness of the channel. As a result of these variable characteristics, the size of particles transported, as well as the total sediment load, is in constant adjustment with the characteristics and physical features of the stream and drainage area.

STREAMFLOW

Most of the records of stream discharge, used in conjunction with the chemical analyses and in the computation of sediment loads in this volume, are published in the Geological Survey water-supply paper series, "Surface Water Supply of the United States, 1966-70." The discharge reported for a composite sample is usually the average of daily mean discharges for the composite period. The discharges reported in the tables of single analyses are either daily mean discharges or discharges obtained at the time samples were collected and computed from a stage-discharge relation or from a discharge measurement.

PUBLICATIONS

Reports giving records of chemical quality and temperatures of surface waters and suspended-sediment loads of streams in the area covered by this volume for the water years 1941-69, are listed below:

Numbers of water-supply papers containing records for Part 9-10, 1941-69

Year	WSP	Year	WSP	Year	WSP	Year	WSP
1941	942	1949	1163	1957	1523	1965	1965
1942	950	1950	1189	1958	1574	1966	1995
1943	970	1951	1200	1959	1645	1967	2015
1944	1022	1952	1253	1960	1745	1968	2098
1945	1030	1953	1293	1961	1885	1969	2148
1946	1050	1954	1353	1962	1945		
1947	1102	1955	1403	1963	1951		
1948	1133	1956	1453	1964	1958		

Geological Survey reports containing chemical quality, temperature, and sediment data obtained before 1941 are listed below. Publications dealing largely with the quality of ground-water supplies and only incidentally covering the chemical composition of surface waters are not included. Publications that are out of print are preceded by an asterisk.

PROFESSIONAL PAPER

*135. Composition of river and lake waters of the United States, 1924.

BULLETINS

*479. The geochemical interpretation of water analyses, 1911.
770. The data of geochemistry, 1924.

WATER-SUPPLY PAPERS

*108. Quality of water in the Susquehanna River drainage basin, with an introductory chapter on physiographic features, 1904.
*161. Quality of water in the upper Ohio River basin and at Erie, Pa., 1906.
*193. The quality of surface waters in Minnesota, 1907.
*236. The quality of surface waters in the United States, Part 1, Analyses of waters east of the one hundredth meridian, 1909.
*237. The quality of the surface waters of California, 1910.
*239. The quality of surface waters of Illinois, 1910.
*273. Quality of the water supplies of Kansas, with a preliminary report on stream pollution by mine waters in southeastern Kansas, 1911.
*274. Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses, 1911.
*339. Quality of the surface waters of Washington, 1914.
*363. Quality of the surface waters of Oregon, 1914.
*418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917.
*596-B. Quality of water of Colorado River in 1925-26, 1928.
*596-D. Quality of water of Pecos River in Texas, 1928.
*596-E. Quality of the surface waters of New Jersey, 1928.
*636-A. Quality of water of the Colorado River in 1926-28, 1930.
*636-B. Suspended matter in the Colorado River in 1925-28, 1930.
*638-D. Quality of water of the Colorado River in 1928-30, 1932.
*839. Quality of water of the Rio Grande basin above Fort Quitman, Tex., 1938.

*889-E. Chemical character of surface water of Georgia, 1944.
*998. Suspended sediment in the Colorado River, 1925-41, 1947.
1048. Discharge and sediment loads in the Boise River drainage basin, Idaho, 1939-40, 1948.
1110-C. Quality of water of Conchas Reservoir, New Mexico, 1939-49, 1952.

Many of the reports listed are available for consultation in the larger public and institutional libraries. Copies of Geological Survey publications still in print may be purchased at a nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, who will, upon request, furnish lists giving prices.

COOPERATION

Many municipal, State, and Federal agencies assisted in collecting records for quality-of-water investigations. Many of the investigations were supported by funds appropriated directly to the U.S. Geological Survey. Chemical-quality and sediment-discharge investigations in the Colorado River basin in Arizona, Colorado, New Mexico, and Utah have been a continuing project since 1925.

The State, local, and Federal agencies that cooperated in these quality-of-water investigations are as follows:

Arizona--Bureau of Reclamation, U.S. Department of the Interior; Soil Conservation Service, U.S. Department of Agriculture; International Boundary and Water Commission, U.S. Department of State; Arizona State Land Department; Salt River Valley Water Users' Association; Metropolitan Water District of Southern California.

California--California Department of Water Resources; California Water Control Board; Metropolitan Water District of Southern California.

Idaho--Idaho Department of Reclamation, R. K. Higginson, State Reclamation engineer.

Nevada--Bureau of Reclamation, U.S. Department of the Interior; Soil Conservation Service, U.S. Department of Agriculture; Environmental Protection Agency.

New Mexico--New Mexico State engineer, S. E. Reynolds; New Mexico Interstate Stream Commission, S. E. Reynolds, secretary; New Mexico Institute of Mining and Technology; S. A. Colgate, president; Pecos River Commission, John W. Odell, Federal representative and chairman; S. L. Reveal, commissioner for New Mexico; J. C. Wilson succeeded by R. B. McGowen, commissioner for Texas; Bureau of Reclamation, U.S. Department of the Interior; Enrivonmental Protection Agency; Corps of Engineers, U.S. Army; Soil Conservation, U.S. Department of Agriculture; U.S. Department of the Air Force.

Utah--Utah Department of Natural Resources, Jay Bingham, succeeded by Gordon Harmston, executive director; Bureau of Reclamation, U.S. Department of the Interior.

Wyoming--Wyoming Department of Agriculture, G. J. Hertzler, commissioner; Wyoming Department of Economic Planning and Development, M. W. Goodson, chief of water development; Wyoming State Engineer, F. A. Bishop; Bureau of Reclamation, and Bureau of Land Management, U.S. Department of the Interior; Environmental Protection Agency.

DIVISION OF WORK

The quality-of-water work was performed by the Water Resources Division of the Geological Survey, E. L. Hendricks, chief hydrologist, and under the direction of the district chiefs listed in the preface.

Correspondence regarding the records in this report or any additional information should be directed to the district chief of the appropriate Geological Survey-Water Resources Division district office as indicated below.

State	District Office	Address
Arizona	Tucson 85717	P.O. Box 4070 2555 E. First Street
Colorado	Lakewood 80225	Building 25 Denver Federal Center
California	Menlo Park 94025	855 Oak Grove Avenue
Idaho	Boise 83702	Box 036, FBUSCH Room 365 550 West Fort Street
Nevada	Carson City 89701	Room 229, Federal Bldg. 705 North Plaza Street
New Mexico	Albuquerque 87106	P.O. Box 4369 Geology Bldg., 2d floor University of New Mexico Campus
Utah	Salt Lake City 84111	8002 Federal Bldg. 125 South State Street
Wyoming	Cheyenne 82001	4015 Warren Avenue P.O. Box 2087, 2d floor

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PART 9. COLORADO RIVER BASIN

COLORADO RIVER MAIN STEM

09034500 COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.

LOCATION.--Lat 40°04'27", long 106°06'24", Grand County, at bridge at Hot Sulphur Springs, 1 mile downstream from gaging station and 3.5 miles upstream from Beaver Creek.
DRAINAGE AREA.--825 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: April 1947 to September 1969.
Water temperatures: April 1949 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 137 mg/l Feb. 24-28, Mar. 1-5; minimum, 50 mg/l Apr. 19-20.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-31	77	11	18	2.9	6.3	79	5.8	3.0	.2
NOV.									
01-19	60	12	21	3.4	7.1	84	12	1.8	.1
20-30	62	12	23	4.4	8.1	92	13	5.1	.4
DEC.									
01-22	57	12	20	3.4	11	87	8.5	4.6	.5
23-25	60	14	21	6.1	16	104	13	6.6	1.0
26-31	57	12	19	6.6	7.0	82	13	3.8	.8
JAN.									
01-31	61	12	18	5.8	7.5	80	13	4.4	.4
FEB.									
01-17	64	13	22	6.3	8.4	90	15	4.7	1.6
18-23	65	12	18	4.9	5.8	74	8.5	3.6	1.1
24-28	59	12	26	7.5	9.4	99	20	7.4	.9
MAR.									
01-05	53	13	27	6.6	9.5	102	20	6.0	1.1
06-31	60	12	21	5.8	7.8	86	14	3.4	1.1
APR.									
01-18	189	6.8	20	4.9	7.4	81	6.2	5.0	1.5
19-20	244	5.7	8.0	2.9	2.4	39	1.8	1.8	.9
21-30	304	9.4	15	5.8	5.3	72	5.8	3.7	.8
MAY									
01-23	485	12	14	1.2	4.1	46	4.0	2.1	.5
24-31	1037	8.9	9.6	1.7	2.8	38	4.0	1.6	.7
JUNE									
01-15	884	10	14	1.0	3.5	49	4.2	1.9	.4
16-30	1032	9.8	12	1.7	3.4	51	3.2	1.7	.4
JULY									
01-07	733	12	14	1.9	3.9	54	2.5	2.3	1.0
08-31	317	14	19	3.9	6.7	87	5.0	2.6	.4
AUG.									
01-31	117	12	20	3.6	7.5	89	5.5	2.4	.3
SEPT.									
01-30	87	14	22	2.2	6.2	87	1.2	2.0	.2
WTD. AVG. TIME	--	11	15	2.5	4.9	62	5.0	2.4	.6
WTD. AVG. TONS PER DAY	234	12	19	3.8	6.8	78	7.9	3.2	.6
	--	6.9	9.6	1.6	3.1	39	3.2	1.5	.4

09034500 COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

EXTREMES.--1968-69:--Continued
Hardness: Maximum, 95 mg/l Feb. 24-28, Mar. 1-5; minimum, 31 mg/l May 24-31.
Specific conductance: Maximum daily, 263 micromhos Mar. 5; minimum daily, 59 micromhos May 29.
Water temperatures: Maximum, 23.0°C Aug. 4, 6, 9-10; minimum, freezing point on many days during November to April.
Period of record:
Dissolved solids (1947-50, 1952-69): Maximum, 167 mg/l Jan. 25-28, 1967; minimum, 38 mg/l June 21-30, 1947.
Hardness (1947-50, 1952-69): Maximum, 98 mg/l Feb. 12-16, 1967; minimum, 20 mg/l June 21-30, 1947.
Specific conductance: Maximum daily, 263 micromhos Mar. 5, 1968; minimum daily, 48 micromhos June 27, 1947.
Water temperatures: Maximum, 24.0°C Aug. 8, 1957, July 6, 11, 14, 21, 1966; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-31	.06	91	.12	18.9	58	0	.4	139	7.8
NOV.									
01-19	.07	100	.14	16.2	66	0	.4	155	7.9
20-30	.05	113	.15	18.9	76	1	.4	179	7.4
DEC.									
01-22	.05	113	.15	17.4	64	0	.6	168	7.5
23-25	.08	136	.18	22.0	77	0	.8	202	7.7
26-31	.07	110	.15	16.9	75	8	.4	163	7.5
JAN.									
01-31	.03	101	.14	16.6	68	2	.4	150	7.4
FEB.									
01-17	.08	119	.16	20.6	82	8	.4	186	7.7
18-23	.07	80	.11	14.0	64	3	.3	138	7.6
24-28	.07	137	.19	21.8	95	14	.4	213	7.8
MAR.									
01-05	.40	137	.19	19.6	95	11	.4	216	7.8
06-31	.09	109	.15	17.7	76	5	.4	171	7.6
APR.									
01-18	.10	99	.13	50.5	70	4	.4	158	7.4
19-20	.03	50	.07	32.9	32	0	.2	62	7.3
21-30	.07	87	.12	71.4	62	3	.3	126	7.4
MAY									
01-23	.04	76	.10	99.5	39	0	.3	39	6.4
24-31	.04	57	.08	159	31	0	.2	67	6.3
JUNE									
01-15	.03	70	.10	167	38	0	.2	86	6.5
16-30	.04	73	.10	203	38	0	.2	89	6.6
JULY									
01-07	.03	79	.11	156	42	0	.3	101	6.8
08-31	.06	101	.14	86.4	64	0	.3	149	7.1
AUG.									
01-31	.12	96	.13	30.3	64	0	.4	146	6.9
SEPT.									
01-30	.11	100	.14	23.5	64	0	.3	144	6.9
WTD. AVG. TIME	.05	82	.10	--	48	1	--	110	6.8
WTD. AVG. TONS PER DAY	.03	97	.13	52.2	62	2	.4	143	7.2
	.03	--	--	117	--	--	--	--	--

09034500 COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	142	186	161	138	259	143	109	70	86	140	140
2	137	140	183	170	142	259	144	79	103	86	146	140
3	130	139	143	151	144	162	160	--	76	98	143	152
4	130	140	165	153	160	147	165	90	75	119	143	154
5	140	141	167	163	154	263	162	89	79	105	157	156
6	130	140	166	153	201	--	172	88	77	103	159	158
7	130	139	151	153	197	165	154	93	102	104	131	140
8	124	141	166	163	213	163	155	92	80	140	131	--
9	126	172	172	154	213	163	158	92	76	121	145	150
10	137	142	172	154	210	152	157	91	76	144	148	123
11	142	148	173	142	167	159	155	121	86	141	152	118
12	--	139	172	142	168	159	155	88	92	146	150	125
13	131	137	172	--	167	195	--	87	91	147	151	140
14	143	139	165	--	178	196	156	84	94	148	152	142
15	132	151	172	144	208	184	160	84	94	152	145	142
16	134	154	170	153	208	198	104	93	78	154	153	139
17	--	154	166	185	211	167	216	93	78	153	144	153
18	--	142	165	173	166	166	169	80	68	150	144	150
19	139	149	166	154	--	163	63	79	67	152	161	142
20	142	146	172	155	150	161	60	79	100	150	145	144
21	142	137	163	185	92	160	128	80	74	155	144	152
22	143	138	136	163	132	160	129	60	93	147	144	139
23	143	137	205	165	140	165	129	106	94	--	141	145
24	146	--	162	138	223	178	149	75	96	130	148	154
25	129	148	238	138	218	178	114	67	100	140	--	156
26	129	147	163	138	223	177	113	67	87	144	146	146
27	139	145	--	137	150	173	--	60	85	145	148	142
28	138	145	160	137	233	167	129	60	86	144	--	143
29	137	146	--	137	--	166	123	59	85	150	136	143
30	139	138	--	138	--	166	123	65	120	150	136	143
31	141	--	165	148	--	--	--	64	--	150	141	--
AVG	136	155	169	153	178	178	140	82	86	135	145	143

09034500 COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	03.0	00.0	01.0	00.0	00.0	00.0	13.0	14.0	16.0	21.0	20.0
2	09.0	02.0	00.0	00.0	00.0	00.0	00.0	12.0	14.0	16.0	22.0	18.0
3	09.0	03.0	00.0	00.0	00.0	00.0	01.0	--	13.0	16.0	21.0	20.0
4	10.0	02.0	01.0	01.0	00.0	00.0	01.0	--	14.0	16.0	23.0	19.0
5	09.0	02.0	01.0	00.0	00.0	01.0	01.0	06.0	11.0	17.0	22.0	19.0
6	09.0	02.0	00.0	00.0	00.0	--	01.0	07.0	09.0	16.0	23.0	19.0
7	09.0	02.0	00.0	00.0	00.0	01.0	00.0	09.0	09.0	17.0	22.0	17.0
8	09.0	02.0	00.0	00.0	00.0	00.0	00.0	06.0	13.0	17.0	23.0	--
9	09.0	02.0	01.0	00.0	00.0	00.0	01.0	09.0	11.0	17.0	23.0	17.0
10	09.0	01.0	01.0	00.0	00.0	00.0	09.0	07.0	12.0	18.0	23.0	17.0
11	09.0	01.0	00.0	00.0	00.0	00.0	08.0	10.0	08.0	17.0	21.0	17.0
12	--	01.0	01.0	00.0	00.0	00.0	07.0	12.0	04.0	18.0	21.0	17.0
13	10.0	01.0	00.0	--	00.0	00.0	--	12.0	05.0	17.0	22.0	19.0
14	12.0	00.0	00.0	--	00.0	00.0	08.0	13.0	11.0	19.0	22.0	19.0
15	08.0	01.0	01.0	00.0	00.0	00.0	07.0	13.0	12.0	20.0	20.0	18.0
16	07.0	00.0	00.0	00.0	00.0	00.0	08.0	13.0	11.0	19.0	20.0	17.0
17	--	00.0	01.0	00.0	00.0	00.0	09.0	14.0	11.0	19.0	20.0	18.0
18	--	01.0	00.0	00.0	00.0	00.0	09.0	14.0	11.0	17.0	22.0	18.0
19	09.0	01.0	01.0	00.0	--	00.0	09.0	14.0	09.0	16.0	22.0	18.0
20	07.0	01.0	01.0	00.0	00.0	00.0	09.0	14.0	09.0	18.0	22.0	17.0
21	07.0	00.0	01.0	00.0	00.0	00.0	09.0	14.0	11.0	18.0	21.0	16.0
22	06.0	00.0	01.0	00.0	00.0	00.0	12.0	14.0	12.0	18.0	20.0	12.0
23	08.0	00.0	01.0	00.0	00.0	00.0	13.0	14.0	13.0	--	20.0	13.0
24	07.0	--	01.0	00.0	00.0	01.0	13.0	13.0	11.0	17.0	20.0	13.0
25	07.0	00.0	01.0	00.0	00.0	00.0	09.0	14.0	14.0	22.0	--	14.0
26	07.0	00.0	01.0	00.0	00.0	00.0	06.0	14.0	12.0	20.0	22.0	14.0
27	08.0	00.0	--	00.0	01.0	00.0	--	14.0	13.0	21.0	20.0	14.0
28	07.0	00.0	00.0	00.0	00.0	00.0	10.0	13.0	14.0	22.0	--	14.0
29	06.0	00.0	--	00.0	--	00.0	06.0	14.0	14.0	20.0	20.0	17.0
30	07.0	00.0	--	00.0	--	01.0	12.0	14.0	16.0	19.0	20.0	16.0
31	03.0	--	01.0	00.0	--	--	--	14.0	--	22.0	20.0	--
AVG	8.1	0.9	0.5	0.0	0.0	0.1	6.3	12.0	11.3	18.1	21.3	16.7

09069000 EAGLE RIVER AT GYPSUM, COLO.

LOCATION.--Lat 39°39'00", long 106°57'06", Eagle County, at bridge at Gypsum, about 400 ft upstream from Gypsum Creek, about 520 ft upstream from bridge on U.S. Highways 6 and 24, and about 550 ft upstream from gaging station.
DRAINAGE AREA.--844 sq mi.
PERIOD OF RECORD.--Chemical analyses: April 1947 to September 1969.
Water temperatures: April 1949 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 812 mg/l Aug. 27; minimum, 130 mg/l May 20-31.
Hardness: Maximum, 562 mg/l Aug. 27; minimum, 96 mg/l May 20-31.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-31	255	8.4	111	25	63	178	228	90	1.1
NOV.									
01-30	258	8.6	104	30	55	172	241	88	.8
DEC.									
01-31	193	9.2	106	32	55	168	234	87	.8
JAN.									
01-12	182	8.7	107	25	55	167	239	77	.4
13-31	179	8.7	105	26	46	163	237	63	.7
FEB.									
01-28	167	8.4	100	28	44	153	230	58	1.9
MAR.									
01-31	171	8.1	104	26	44	154	250	60	1.8
APR.									
01-05	260	6.2	92	24	30	150	195	42	2.3
06-21	369	5.9	68	18	22	130	128	29	1.4
22-30	806	5.4	42	11	9.6	110	62	13	2.1
MAY									
01-19	1069	7.0	36	7.8	8.2	94	47	10	1.1
20-31	2184	6.0	29	5.6	4.7	81	29	5.6	1.0
JUNE									
01-09	1546	5.8	32	5.4	6.7	79	40	9.7	.5
10-24	1213	6.2	40	9.7	10	95	64	13	.6
25...	1840	10	105	27	14	175	203	25	7.0
26-30	1464	6.2	43	9.5	11	99	69	16	.6
JULY									
01-06	1450	5.3	39	7.3	9.5	94	54	16	.2
07-22	839	5.9	55	9.5	16	118	86	24	.6
23-31	522	6.4	70	14	27	139	118	40	.4
AUG.									
01-07	365	6.8	83	15	38	153	147	54	.6
08-26	281	7.1	94	17	40	161	179	62	1.0
27...	242	15	168	35	8.9	152	437	5.8	4.0
28-31	249	8.6	109	26	38	184	228	58	1.1
SEPT.									
01-30	228	9.2	105	20	33	166	203	54	.6
WTD. AVG. TIME	--	6.8	60	14	21	118	109	31	1.0
WTD. AVG. TONS PER DAY	499	7.7	86	21	36	146	177	53	1.0
	--	9.2	81	18	29	159	146	42	1.3

09069000 EAGLE RIVER AT GYPSUM, COLO.--Continued

EXTREMES.--1968-69:--Continued
Specific conductance: Maximum daily, 1,160 micromhos Aug. 27; minimum daily, 182 micromhos May 31.
Water temperatures: Maximum, 21.0°C Sept. 5; minimum, freezing point on many days during November to March.
Period of record:
Dissolved solids: Maximum, 1,370 mg/l Aug. 11, 12, 1952; minimum, 100 mg/l June 13-25, 1968.
Hardness (1947-50, 1957-69): Maximum, 600 mg/l Dec. 7-9, 1964; minimum, 70 mg/l June 23, 1957.
Specific conductance: Maximum daily, 1,850 micromhos Aug. 6, 1949; minimum daily, 155 micromhos May 23, 1958.
Water temperatures: Maximum, 24.0°C Aug. 24, 1949; minimum, freezing point on many days during winter periods.
REMARKS.--Records of discharge are given for Eagle River below Gypsum (station 09070000).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-31	.07	628	.85	432	380	234	1.4	958	7.9
NOV.									
01-30	.00	651	.89	453	384	243	1.2	968	7.9
DEC.									
01-31	.01	649	.88	338	396	258	1.2	965	7.9
JAN.									
01-12	.00	629	.86	309	37D	233	1.2	921	7.9
13-31	.00	598	.81	289	368	234	1.0	874	7.7
FEB.									
01-28	.03	582	.79	262	364	239	1.0	862	7.9
MAR.									
01-31	.05	592	.81	273	368	242	1.0	879	8.1
APR.									
01-05	.04	515	.70	362	327	204	.7	756	7.6
06-21	.03	366	.50	365	242	135	.6	564	7.7
22-30	.04	214	.29	466	152	62	.3	340	7.7
MAY									
01-19	.03	181	.25	522	121	44	.3	281	6.9
20-31	.03	130	.18	767	96	30	.2	209	7.0
JUNE									
01-09	.03	134	.18	559	103	38	.3	242	7.1
10-24	.02	207	.28	678	141	63	.4	322	7.2
25...	--	534	.73	2650	374	230	.3	707	7.5
26-30	.01	213	.29	842	146	65	.4	334	7.4
JULY									
01-06	.00	180	.24	705	128	51	.4	303	7.9
07-22	.01	264	.36	598	175	78	.5	424	7.9
23-31	.01	357	.49	503	232	118	.8	572	7.9
AUG.									
01-07	.01	434	.59	428	268	143	1.0	682	7.9
08-26	.02	510	.69	387	303	171	1.0	777	8.1
27...	--	812	1.10	531	562	437	.2	1160	7.9
28-31	.00	567	.77	381	380	229	.8	847	8.2
SEPT.									
01-30	.03	563	.77	347	344	208	.8	815	8.0
WTD. AVG. TIME	.02	319	.43	--	206	109	--	490	7.5
WTD. AVG. TONS PER DAY	.03	--	--	429	--	--	--	--	--

09069000 EAGLE RIVER AT GYPSUM, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	912	946	1040	926	861	849	753	360	231	314	607	733
2	856	1020	894	902	887	861	753	323	230	310	647	769
3	875	997	935	962	879	859	810	271	246	310	665	851
4	925	973	923	870	912	871	753	256	244	291	688	876
5	928	940	941	954	867	864	696	252	237	314	711	858
6	915	980	953	918	954	869	653	271	213	292	728	816
7	909	980	953	879	814	741	629	274	242	351	745	879
8	912	1060	1030	874	791	739	584	295	250	377	780	861
9	904	963	975	905	855	878	631	304	257	403	802	860
10	902	1060	1000	994	886	882	639	299	314	421	840	787
11	895	990	937	1030	845	934	487	285	251	433	852	790
12	877	964	939	923	862	868	524	276	311	443	793	747
13	909	890	1000	853	655	892	529	271	325	427	755	808
14	903	896	1029	837	828	928	548	264	337	444	793	797
15	897	925	991	842	817	902	513	279	322	433	782	818
16	928	997	921	856	840	939	503	266	344	430	793	841
17	926	913	939	900	836	897	519	271	291	467	816	757
18	933	961	946	869	858	872	547	245	279	495	838	834
19	950	916	1030	934	908	835	552	253	314	421	808	759
20	936	908	1020	864	875	858	518	236	330	418	764	786
21	936	921	964	944	826	879	450	204	310	381	767	790
22	950	927	931	861	843	882	376	211	314	453	699	818
23	950	865	994	874	893	854	340	207	428	534	739	816
24	985	908	901	945	896	875	317	212	348	559	778	856
25	986	950	969	957	859	900	274	199	707	541	823	834
26	967	920	896	862	841	927	294	201	381	560	815	875
27	950	1030	884	794	854	913	331	207	375	576	1160	891
28	779	960	940	825	873	885	356	184	329	589	876	932
29	1020	957	913	864	--	811	374	191	292	604	859	839
30	994	1060	935	901	--	853	382	188	298	595	854	818
31	1000	--	917	936	--	791	--	182	--	591	828	--
AVG	925	963	958	894	858	870	520	249	311	444	787	823

09069000 EAGLE RIVER AT GYPSUM, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	07.0	06.0	00.0	00.0	00.0	04.0	07.0	08.0	13.0	12.0	14.0	13.0
2	07.0	04.0	00.0	00.0	00.0	03.0	04.0	07.0	07.0	13.0	15.0	14.0
3	06.0	03.0	00.0	00.0	00.0	04.0	06.0	12.0	09.0	12.0	14.0	19.0
4	07.0	05.0	00.0	00.0	00.0	03.0	05.0	10.0	09.0	16.0	14.0	20.0
5	07.0	06.0	00.0	00.0	00.0	03.0	12.0	10.0	11.0	16.0	16.0	21.0
6	08.0	05.0	00.0	00.0	00.0	03.0	13.0	09.0	11.0	17.0	16.0	19.0
7	06.0	03.0	00.0	00.0	00.0	03.0	04.0	09.0	14.0	11.0	14.0	17.0
8	07.0	03.0	00.0	00.0	00.0	02.0	04.0	11.0	16.0	11.0	14.0	17.0
9	07.0	04.0	00.0	00.0	00.0	03.0	06.0	12.0	12.0	12.0	14.0	17.0
10	08.0	04.0	00.0	00.0	00.0	02.0	07.0	08.0	12.0	12.0	17.0	17.0
11	10.0	03.0	00.0	00.0	01.0	01.0	07.0	08.0	13.0	13.0	14.0	18.0
12	11.0	04.0	00.0	00.0	00.0	00.0	10.0	08.0	14.0	12.0	14.0	18.0
13	10.0	03.0	00.0	00.0	01.0	02.0	11.0	08.0	09.0	13.0	14.0	14.0
14	09.0	03.0	00.0	00.0	01.0	02.0	07.0	08.0	10.0	16.0	16.0	16.0
15	09.0	02.0	00.0	01.0	02.0	03.0	08.0	08.0	13.0	14.0	14.0	16.0
16	06.0	02.0	00.0	02.0	02.0	06.0	08.0	08.0	11.0	14.0	13.0	14.0
17	05.0	03.0	00.0	02.0	02.0	07.0	04.0	07.0	12.0	14.0	16.0	14.0
18	06.0	01.0	00.0	02.0	00.0	08.0	05.0	09.0	08.0	16.0	16.0	12.0
19	07.0	03.0	00.0	02.0	01.0	06.0	07.0	07.0	10.0	15.0	14.0	12.0
20	06.0	02.0	00.0	03.0	02.0	05.0	08.0	09.0	14.0	14.0	19.0	14.0
21	06.0	01.0	00.0	03.0	03.0	07.0	09.0	08.0	14.0	14.0	13.0	16.0
22	07.0	01.0	00.0	02.0	02.0	08.0	08.0	08.0	11.0	14.0	20.0	13.0
23	04.0	08.0	00.0	00.0	01.0	08.0	08.0	07.0	10.0	14.0	15.0	14.0
24	05.0	02.0	00.0	00.0	01.0	04.0	09.0	07.0	11.0	14.0	13.0	11.0
25	04.0	00.0	00.0	00.0	06.0	06.0	07.0	08.0	10.0	14.0	13.0	13.0
26	06.0	01.0	00.0	00.0	04.0	07.0	06.0	08.0	14.0	11.0	14.0	09.0
27	05.0	00.0	00.0	00.0	04.0	08.0	08.0	09.0	07.0	16.0	12.0	14.0
28	04.0	00.0	00.0	00.0	04.0	08.0	06.0	08.0	13.0	14.0	16.0	13.0
29	04.0	00.0	00.0	00.0	--	08.0	06.0	09.0	14.0	16.0	16.0	13.0
30	03.0	00.0	00.0	00.0	--	11.0	06.0	11.0	12.0	16.0	15.0	13.0
31	05.0	--	00.0	00.0	--	08.0	--	08.0	--	14.0	21.0	--
AVG	6.5	2.7	0.0	0.5	1.3	4.9	7.2	8.6	11.4	13.8	15.0	15.0

09071100 COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.
(Irrigation network station)

LOCATION.--Lat 39°34'12", long 107°13'34", Garfield County, at Shoshone powerplant, 6 miles upstream from Glenwood Springs and 6.5 miles upstream from Roaring Fork River.
DRAINAGE AREA.--4,560 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1941 to September 1969.
Water temperatures: May 1949 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 433 mg/l Dec. 1-31; minimum, 182 mg/l May 19-31.
Hardness: Maximum, 212 mg/l Dec. 1-31; minimum, 106 mg/l May 19-31.
Specific conductance: Maximum daily, 798 micromhos Nov. 29; minimum daily, 246 micromhos May 28.
Water temperatures: Maximum, 20.0°C July 13, Aug. 5-8, 31; minimum, freezing point on many days during November to March.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-31	1257	9.4	57	14	59	132	98	83	.7
NOV.									
01-30	1134	12	59	12	61	130	102	84	.2
DEC.									
01-31	1060	9.9	51	20	61	132	96	100	.2
JAN.									
01-31	1070	9.3	54	15	67	125	90	92	1.1
FEB.									
01-28	1001	10	54	13	70	129	90	101	.0
MAR.									
01-31	1028	9.5	53	14	68	128	86	95	.2
APR.									
01-20	1768	8.8	51	14	43	131	83	56	.4
21-30	3060	10	40	10	25	118	50	35	.8
MAY									
01-18	3695	8.9	37	9.2	20	115	40	28	.3
19-31	5859	7.3	33	5.8	13	99	31	18	.3
JUNE									
01-10	3999	9.1	36	7.3	21	100	42	28	.3
11-18	3379	9.4	42	8.8	25	114	65	32	.3
19-30	5338	9.5	38	10	18	109	60	22	.4
JULY									
01-11	3975	9.1	42	8.3	22	113	57	32	.2
12-31	2192	9.2	51	12	38	135	74	54	.2
AUG.									
01-31	1511	11	54	13	52	133	92	71	1.0
SEPT.									
01-30	1318	8.7	59	12	54	143	94	79	.0
WTD. AVG. TIME	--	9.3	46	11	36	120	68	51	.3
WTD. AVG. TONS PER DAY	1952	9.6	51	13	50	127	82	71	.4
	--	49	241	57	191	635	357	269	1.8

09071100 COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

Period of record:
Dissolved solids: Maximum, 2,030 mg/l Aug. 10, 1947; minimum, 105 mg/l June 1-10, 1942.
Hardness: Maximum, 1,480 mg/l Aug. 10, 1947; minimum, 72 mg/l June 1-20, 1942.
Specific conductance: Maximum daily, 2,260 micromhos Aug. 10, 1947; minimum daily, 153 micromhos May 24, 1948.
Water temperatures: Maximum, 21.5°C July 31, 1954, Aug. 19, 1955; minimum, freezing point on many days during winter periods.

REMARKS.--Discharges obtained by subtracting the daily mean flow in Roaring Fork River at Glenwood Springs (station 09085000) from the daily mean flow in Colorado River below Glenwood Springs (station 09085100).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-31	.04	404	.55	1370	200	92	1.8	659	7.8
NOV.									
01-30	.02	400	.54	1230	194	87	1.9	669	7.6
DEC.									
01-31	.00	433	.59	1240	212	104	1.8	721	7.8
JAN.									
01-31	.02	404	.55	1170	198	96	2.1	669	8.2
FEB.									
01-28	.00	424	.58	1150	190	84	2.2	698	7.6
MAR.									
01-31	.01	410	.56	1140	190	85	2.1	690	7.9
APR.									
01-20	.00	347	.47	1660	185	78	1.4	554	7.6
21-30	.00	245	.33	2020	143	46	.9	389	7.7
MAY									
01-18	.00	228	.31	2280	130	32	.8	348	7.7
19-31	.04	182	.25	2880	106	25	.5	279	7.6
JUNE									
01-10	.00	212	.29	2290	120	38	.8	330	6.7
11-18	.00	254	.35	2320	142	49	.9	398	7.0
19-30	.00	219	.30	3160	135	46	.7	348	7.0
JULY									
01-11	.01	234	.32	2510	140	47	.8	371	7.1
12-31	.01	321	.44	1900	178	67	1.2	524	7.0
AUG.									
01-31	.00	369	.50	1510	--	79	1.6	610	7.5
SEPT.									
01-30	.01	393	.53	1400	196	79	1.7	650	7.8
WTD. AVG. TIME	.01	297	.40	--	156	59	--	479	7.4
WTD. AVG. TONS PER DAY	.05	--	--	1710	--	--	--	--	--

09071100 COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	671	777	781	798	673	577	453	275	337	607	649
2	613	657	706	680	738	688	596	411	307	344	641	633
3	606	--	761	644	759	677	641	352	324	339	643	646
4	633	669	738	656	766	673	638	345	355	342	642	648
5	637	669	723	686	759	662	--	350	343	342	642	645
6	--	685	696	637	695	708	607	321	326	358	642	627
7	640	690	667	637	624	688	591	332	334	372	626	654
8	632	671	727	628	655	709	557	340	337	397	629	632
9	629	649	733	707	678	754	571	329	337	400	599	628
10	634	693	711	750	743	--	567	336	338	417	622	665
11	645	--	721	728	748	729	541	331	362	428	618	637
12	623	618	691	679	719	700	496	332	404	473	577	632
13	--	649	725	629	675	635	498	326	397	478	576	663
14	630	635	786	626	641	706	510	315	423	477	570	672
15	618	638	763	618	645	700	506	319	427	491	596	652
16	673	641	745	635	628	719	498	323	415	521	--	650
17	680	656	688	632	628	716	510	334	374	538	605	665
18	673	665	707	684	690	631	520	332	367	546	98	675
19	661	664	703	691	725	670	484	304	337	549	01	662
20	699	654	739	645	683	683	498	296	336	487	595	669
21	673	639	719	629	660	695	455	281	351	--	604	675
22	673	656	725	629	674	682	402	267	346	505	607	679
23	676	641	635	636	691	658	356	269	354	540	593	668
24	691	643	722	723	706	673	339	274	360	477	591	661
25	671	642	643	--	660	692	313	277	338	485	613	639
26	670	640	637	661	668	695	326	274	343	--	615	632
27	724	640	--	615	677	686	366	257	349	518	618	674
28	679	654	660	613	699	675	385	246	--	569	626	--
29	668	798	695	664	--	691	415	247	325	573	612	660
30	671	718	659	705	--	647	453	251	325	594	615	648
31	670	--	705	--	--	627	--	250	--	594	666	--
AVG	655	665	708	663	693	686	490	312	352	464	612	653

09071100 COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.0	06.0	00.0	01.0	00.0	02.0	08.0	10.0	12.0	14.0	19.0	19.0
2	10.0	06.0	00.0	00.0	01.0	03.0	07.0	11.0	12.0	15.0	19.0	18.0
3	09.0	--	00.0	00.0	00.0	02.0	07.0	13.0	12.0	16.0	19.0	18.0
4	09.0	06.0	00.0	00.0	00.0	02.0	08.0	11.0	13.0	17.0	19.0	19.0
5	10.0	06.0	00.0	00.0	00.0	01.0	--	10.0	14.0	16.0	20.0	18.0
6	--	04.0	00.0	00.0	00.0	01.0	09.0	10.0	14.0	16.0	20.0	17.0
7	10.0	03.0	00.0	00.0	00.0	01.0	07.0	09.0	14.0	16.0	20.0	17.0
8	09.0	01.0	01.0	00.0	00.0	01.0	06.0	09.0	16.0	16.0	20.0	17.0
9	08.0	01.0	00.0	00.0	00.0	01.0	08.0	11.0	14.0	16.0	19.0	17.0
10	08.0	02.0	00.0	00.0	00.0	--	08.0	13.0	14.0	17.0	19.0	17.0
11	09.0	--	00.0	00.0	00.0	01.0	09.0	11.0	12.0	17.0	19.0	17.0
12	09.0	01.0	00.0	00.0	01.0	00.0	09.0	12.0	13.0	19.0	19.0	17.0
13	--	02.0	00.0	01.0	01.0	01.0	09.0	12.0	13.0	20.0	18.0	14.0
14	09.0	02.0	00.0	01.0	01.0	01.0	09.0	11.0	13.0	18.0	19.0	12.0
15	09.0	02.0	01.0	01.0	01.0	00.0	09.0	10.0	13.0	18.0	19.0	14.0
16	08.0	01.0	00.0	01.0	02.0	02.0	08.0	11.0	13.0	19.0	--	14.0
17	06.0	01.0	00.0	01.0	01.0	01.0	08.0	11.0	13.0	19.0	18.0	14.0
18	06.0	01.0	00.0	00.0	01.0	02.0	08.0	12.0	12.0	19.0	18.0	14.0
19	06.0	01.0	00.0	01.0	02.0	03.0	09.0	12.0	13.0	19.0	18.0	14.0
20	06.0	01.0	00.0	01.0	03.0	04.0	12.0	13.0	13.0	17.0	18.0	12.0
21	06.0	01.0	00.0	01.0	03.0	04.0	09.0	13.0	13.0	--	18.0	14.0
22	06.0	01.0	00.0	01.0	03.0	06.0	12.0	12.0	13.0	19.0	18.0	19.0
23	06.0	01.0	00.0	00.0	02.0	05.0	11.0	11.0	13.0	19.0	18.0	13.0
24	06.0	01.0	00.0	00.0	02.0	03.0	09.0	11.0	12.0	19.0	18.0	14.0
25	06.0	01.0	00.0	--	03.0	03.0	09.0	12.0	09.0	18.0	18.0	13.0
26	07.0	00.0	00.0	00.0	03.0	03.0	06.0	12.0	09.0	--	18.0	12.0
27	07.0	00.0	--	01.0	03.0	04.0	07.0	12.0	10.0	19.0	19.0	12.0
28	05.0	01.0	00.0	01.0	03.0	06.0	08.0	12.0	--	19.0	18.0	--
29	05.0	00.0	00.0	01.0	--	07.0	09.0	12.0	12.0	19.0	18.0	13.0
30	05.0	00.0	00.0	00.0	--	08.0	09.0	13.0	13.0	18.0	18.0	12.0
31	06.0	--	00.0	--	--	07.0	--	12.0	--	19.0	20.0	--
AVG	7.4	1.8	0.0	0.4	1.2	2.8	8.5	11.4	12.6	17.6	18.7	15.2

09095500 COLORADO RIVER NEAR CAMEO, COLO.

LOCATION.--Lat 39°11'20", long 108°16'56", Mesa County, at Grand Valley project diversion dam, 0.4 mile upstream from Plateau Creek, 3.7 miles upstream from Cameo, and 5.9 miles downstream from gaging station.
DRAINAGE AREA.--8,050 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1933 to September 1969.
Water temperatures: April 1949 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 728 mg/l Mar. 1-25; minimum, 214 mg/l May 20-31.
Hardness: Maximum, 284 mg/l Nov. 1-30; minimum, 126 mg/l May 20-31.
Specific conductance: Maximum daily, 1,290 micromhos Dec. 13; minimum daily, 327 micromhos May 28.
Water temperatures: Maximum, 23.0°C Aug. 4-6; minimum, freezing point on many days during November to January.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-31	2087	9.4	72	21	124	180	155	175	2.1
NOV.									
01-30	1901	8.1	74	25	131	180	160	178	2.1
DEC.									
01-31	1691	9.2	78	21	145	180	160	205	6.6
JAN.									
01-31	1727	8.9	68	23	136	175	163	180	4.9
FEB.									
01-28	1547	9.0	72	22	150	173	162	198	5.9
MAR.									
01-25	1532	8.1	70	23	148	173	16	192	5.9
26-31	1708	9.4	64	21	103	165	150	128	5.0
APR.									
01-12	2604	9.6	64	19	99	173	137	125	3.5
13-21	3640	9.5	57	17	69	174	94	82	2.4
22-30	6414	9.5	48	14	45	162	68	52	2.7
MAY									
01-19	7519	8.4	43	12	35	149	52	44	.9
20-31	11660	6.6	37	8.4	24	111	43	29	.6
JUNE									
01-11	8531	7.2	41	11	33	124	54	43	.6
12-30	8382	8.9	42	14	40	138	75	47	1.3
JULY									
01-17	7022	9.1	46	11	42	127	66	56	.8
18-31	4246	8.9	59	15	68	164	96	88	1.8
AUG.									
01-07	2921	10	64	18	90	161	116	128	1.4
08-31	2345	11	71	16	110	167	119	155	1.9
SEPT.									
01-30	2199	8.9	73	20	122	178	155	162	2.8
WTD. AVG. TIME	--	8.6	54	15	73	152	92	96	2.2
WTD. AVG. TONS PER DAY	3560	8.9	64	19	104	165	118	139	3.2
	--	83	521	148	697	1450	886	918	21

09095500 COLORADO RIVER NEAR CAMEO, COLO.--Continued

Period of record:
Dissolved solids (1933-43, 1950-69): Maximum, 1,080 mg/l Sept. 22, 1962; minimum, 143 mg/l June 11-20, 1935.
Hardness (1933-35, 1957-69): Maximum, 474 mg/l Sept. 22, 1962; minimum, 98 mg/l June 21-30, 1935.
Specific conductance (1941-69): Maximum daily, 1,860 micromhos June 16, 1964; minimum daily, 244 micromhos July 2, 1947, July 3, 1957.
Water temperatures: Maximum, 24.5°C Aug. 16, 1962; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-31	.01	671	.91	3770	266	118	3.3	1080	8.0
NOV.									
01-30	.00	696	.95	3570	284	136	3.4	1120	8.0
DEC.									
01-31	.02	727	.99	3320	282	134	3.8	1200	8.0
JAN.									
01-31	.00	693	.94	3230	266	122	3.6	1130	8.0
FEB.									
01-28	.01	726	.99	3030	272	130	4.0	1190	7.6
MAR.									
01-25	.02	728	.99	3010	270	128	3.9	1210	7.7
26-31	.05	582	.79	2680	246	111	2.9	94	7.9
APR.									
01-12	.00	566	.77	3980	240	98	2.8	908	7.8
13-21	.00	445	.61	4370	210	67	2.1	714	7.8
22-30	.00	337	.46	5840	178	45	1.5	542	7.8
MAY									
01-19	.01	289	.39	5870	158	35	1.2	473	7.8
20-31	.02	214	.29	6740	126	35	.9	353	7.7
JUNE									
01-11	.00	267	.36	6150	147	45	1.2	431	7.1
12-30	.00	309	.42	6990	164	51	1.4	503	7.2
JULY									
01-17	.02	363	.49	6880	161	57	1.4	509	7.3
18-31	.04	428	.58	4910	208	74	2.0	700	7.0
AUG.									
01-07	.00	526	.72	4150	232	100	2.6	872	7.7
08-31	.00	592	.81	3750	241	104	3.1	984	7.7
SEPT.									
01-30	.04	640	.88	3800	264	118	3.3	1050	7.8
WTD. AVG. TIME	.01	443	.60	--	197	75	--	692	7.6
WTD. AVG. TONS PER DAY	.11	--	--	4260	--	--	--	--	--

09095500 COLORADO RIVER NEAR CAMEO, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	1100	1180	1220	1270	1160	944	531	363	437	801	1030
2	1070	1080	1190	1220	1270	1160	944	514	382	437	834	1030
3	1070	1100	--	1110	1270	1250	953	525	379	451	850	1030
4	1060	--	--	1090	1280	1250	956	479	460	446	875	1050
5	1070	--	--	1100	1270	1250	933	474	460	431	901	1040
6	1050	--	1170	1090	1270	1240	934	484	451	475	915	1060
7	1050	--	1170	1100	1280	1260	937	473	430	442	925	1070
8	1080	--	1130	1100	1140	1260	872	496	450	459	940	1020
9	1070	--	1180	1110	1140	--	874	503	450	492	954	1040
10	1070	--	1270	1100	1130	1200	854	463	448	507	951	1010
11	1080	--	1270	1080	1120	1230	859	475	447	558	966	1010
12	1080	1160	1280	1160	1130	1230	860	469	480	564	963	1010
13	1080	1150	1290	1170	1130	1220	718	449	552	562	960	1010
14	1090	1090	1170	1160	1140	1220	717	448	559	607	966	1110
15	1080	1090	1190	1150	1140	1220	733	454	572	607	931	1050
16	1080	1090	1190	1170	1200	1170	717	427	572	607	975	1090
17	1130	1090	1250	1150	1210	1170	713	420	542	605	978	1090
18	1060	1090	1190	1160	1200	1170	717	426	521	649	990	1090
19	1060	1090	1190	1160	1210	1170	704	437	500	656	990	1090
20	1030	1090	1200	1170	1210	1180	713	356	465	658	966	1090
21	1070	1070	1200	1150	1200	1180	706	339	460	660	966	1080
22	1030	1070	1190	1150	1210	1180	611	342	460	602	969	1080
23	1050	1060	1180	1080	1200	1190	549	356	459	673	994	1070
24	1040	1060	1200	1070	1210	1180	548	339	595	679	994	1070
25	1040	1070	1180	1040	1220	1190	474	350	555	704	994	1060
26	1050	1130	1180	1080	1160	949	457	352	464	705	994	1040
27	1050	1170	1230	1090	1170	940	475	350	454	705	1020	1050
28	1090	1190	1220	1070	1170	938	543	327	445	707	1020	1050
29	1090	1160	1210	1070	--	940	598	350	437	825	1030	1040
30	1100	1190	1230	1060	--	944	586	345	439	807	1060	1050
31	1100	--	1220	1260	--	941	--	351	--	803	1060	--
AVG	1070	--	1210	1130	1200	1150	739	422	475	597	959	1050

09095500 COLORADO RIVER NEAR CAMEO, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	08.0	00.0	00.0	01.0	03.0	08.0	10.0	13.0	16.0	21.0	19.0
2	12.0	08.0	00.0	00.0	01.0	03.0	08.0	10.0	12.0	16.0	21.0	19.0
3	12.0	08.0	--	00.0	01.0	03.0	08.0	11.0	12.0	17.0	22.0	19.0
4	12.0	--	--	00.0	01.0	03.0	09.0	11.0	14.0	17.0	23.0	19.0
5	12.0	--	--	00.0	01.0	03.0	09.0	11.0	16.0	16.0	23.0	19.0
6	12.0	--	00.0	00.0	01.0	03.0	09.0	11.0	17.0	16.0	23.0	19.0
7	11.0	--	00.0	00.0	01.0	03.0	09.0	11.0	15.0	16.0	22.0	19.0
8	10.0	--	00.0	00.0	01.0	03.0	07.0	11.0	14.0	16.0	22.0	19.0
9	10.0	--	00.0	00.0	01.0	--	08.0	12.0	16.0	17.0	21.0	18.0
10	10.0	--	00.0	00.0	01.0	04.0	--	12.0	16.0	17.0	22.0	18.0
11	10.0	--	00.0	00.0	01.0	03.0	09.0	12.0	14.0	18.0	22.0	18.0
12	10.0	04.0	00.0	00.0	01.0	03.0	08.0	12.0	12.0	19.0	22.0	18.0
13	10.0	04.0	00.0	00.0	01.0	03.0	11.0	12.0	14.0	19.0	20.0	18.0
14	09.0	03.0	00.0	00.0	01.0	03.0	11.0	12.0	14.0	19.0	21.0	19.0
15	09.0	03.0	00.0	00.0	01.0	04.0	11.0	12.0	14.0	19.0	20.0	19.0
16	09.0	03.0	00.0	01.0	01.0	03.0	11.0	12.0	15.0	19.0	21.0	16.0
17	09.0	03.0	00.0	01.0	02.0	04.0	08.0	13.0	14.0	20.0	21.0	16.0
18	08.0	02.0	00.0	01.0	02.0	05.0	08.0	13.0	13.0	20.0	20.0	16.0
19	08.0	02.0	00.0	01.0	02.0	05.0	11.0	13.0	14.0	20.0	20.0	16.0
20	08.0	02.0	00.0	01.0	02.0	06.0	11.0	13.0	14.0	20.0	20.0	14.0
21	08.0	01.0	00.0	01.0	02.0	06.0	12.0	13.0	14.0	18.0	20.0	14.0
22	08.0	01.0	00.0	01.0	02.0	06.0	13.0	13.0	15.0	19.0	20.0	13.0
23	08.0	01.0	00.0	01.0	02.0	06.0	12.0	13.0	16.0	21.0	20.0	13.0
24	06.0	01.0	00.0	01.0	02.0	06.0	13.0	13.0	14.0	21.0	21.0	13.0
25	08.0	01.0	00.0	01.0	04.0	06.0	09.0	13.0	12.0	21.0	20.0	14.0
26	08.0	01.0	00.0	01.0	03.0	06.0	06.0	13.0	12.0	--	20.0	14.0
27	08.0	00.0	00.0	01.0	03.0	06.0	04.0	13.0	12.0	21.0	21.0	14.0
28	08.0	00.0	00.0	01.0	03.0	06.0	11.0	13.0	13.0	21.0	21.0	14.0
29	08.0	00.0	00.0	01.0	--	07.0	09.0	13.0	14.0	21.0	21.0	14.0
30	08.0	00.0	00.0	01.0	--	06.0	11.0	13.0	14.0	21.0	20.0	14.0
31	08.0	--	00.0	01.0	--	08.0	--	13.0	--	21.0	19.0	--
AVG	9.4	2.5	0.0	0.5	1.6	4.5	9.4	12.1	13.9	18.7	20.9	16.5

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.
(Irrigation network station)

LOCATION.--Lat 38°59'00", long 108°27'00", near center of sec.14, T.2 S., R.1 E., Ute Meridian, Mesa County, 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.
DRAINAGE AREA.--7,928 sq mi.
PERIOD OF RECORD.--Chemical analyses: October 1931 to September 1969.
Water temperatures: April 1949 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,470 mg/l Nov. 1; minimum, 122 mg/l Mar. 1.
Hardness: Maximum, 794 mg/l Nov. 1; minimum, 105 mg/l May 1-6.
Specific conductance: Maximum daily, 1,930 micromhos Oct. 26; minimum daily, 323 micromhos Apr. 26.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-24	1483	16	164	63	106	236	700	22	6.8
25-31	1156	18	176	77	138	258	829	18	7.8
NOV.									
01...	2150	16	182	82	146	268	877	22	6.9
02-22	2161	15	106	46	80	188	442	12	5.5
23-30	2464	16	84	32	57	164	310	9.9	3.7
DEC.									
01-31	2421	13	76	31	49	164	272	11	4.1
JAN.									
01-31	2375	12	75	33	45	159	266	11	3.5
FEB.									
01-04	1716	11	70	29	44	159	222	9.5	1.8
05-14	703	15	152	74	130	266	705	22	9.1
15-25	1969	12	72	36	60	168	300	12	3.8
26-28	763	11	133	69	123	234	630	22	6.9
MAR.									
01...	1510	12	128	68	129	229	600	20	5.3
02-31	2383	11	68	28	48	154	240	7.4	2.5
APR.									
01-06	3093	11	66	24	42	168	189	9.2	1.4
07-20	4376	11	51	18	28	140	133	5.7	1.3
21-30	7356	9.5	43	13	17	121	82	4.9	1.9
MAY									
01-06	6770	7.8	48	16	71	127	107	5.6	1.0
07-31	5065	8.6	59	25	30	124	172	6.2	2.1
JUNE									
01-03	3237	12	80	27	47	136	295	7.0	2.6
04-23	2724	13	106	40	65	171	424	10	3.9
24-25	5100	13	129	49	103	183	545	15	6.6
26-30	4694	14	93	38	56	159	363	7.7	3.8
JULY									
01-08	2399	17	111	38	70	177	400	9.4	4.9
09-31	1351	17	160	61	102	221	612	16	7.3
AUG.									
01-08	1132	19	176	63	116	230	700	18	.2
09-16	1492	16	132	54	83	195	528	12	7.4
17-19	3127	17	75	21	36	144	207	6.3	5.5
20-27	1232	16	144	57	92	207	570	16	6.3
28-31	1448	16	184	55	112	215	670	22	8.6
SEPT.									
01-05	1416	18	180	65	111	223	680	20	7.4
06-17	1949	17	152	50	92	228	542	12	7.2
18-30	2275	15	131	43	77	214	455	12	4.6
WTD. AVG. TIME	--	12	88	34	57	165	315	10	3.6
WTD. AVG. TONS PER DAY	2590	14	104	41	69	181	396	12	4.4
	--	87	614	239	398	1150	2200	69	26

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

EXTREMES.--1968-69:--Continued
Water temperatures: Maximum, 25.0°C July 11; minimum, freezing point on many days during December to February.
Period of record:
Dissolved solids: Maximum, 2,820 mg/l Sept. 11-20, 1934; minimum, 122 mg/l Mar. 1, 1969.
Hardness (1931-35, 1943-69): Maximum, 1,370 mg/l Sept. 1-20, 1934; minimum, 105 mg/l May 1-6, 1969.
Specific conductance (1941-69): Maximum daily, 2,730 micromhos Sept. 10, 1958; minimum daily, 280 micromhos May 23, 1948.
Water temperatures: Maximum, 30.0°C Aug. 13, 1958; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-24	.05	1230	1.67	4930	668	474	1.8	1520	8.0
25-31	.05	1410	1.92	4400	756	544	2.2	1710	8.0
NOV.									
01...	.06	1470	2.00	8530	794	574	2.3	1770	7.8
02-22	.07	839	1.14	4900	452	298	1.6	1090	7.9
23-30	.05	612	.83	4070	340	206	1.3	847	8.0
DEC.									
01-31	.03	563	.77	3680	318	184	1.2	776	7.8
JAN.									
01-31	.03	585	.80	3750	324	194	1.1	798	8.0
FEB.									
01-04	.00	501	.68	2320	292	162	1.1	709	7.4
05-14	.00	1390	1.89	2640	684	466	2.2	1660	7.7
15-25	.00	589	.80	3130	330	192	1.4	823	7.7
26-28	.00	1230	1.67	2530	614	422	2.2	1500	7.9
MAR.									
01...	.01	122	1.66	497	600	412	2.3	152	7.7
02-31	.01	502	.68	3230	284	158	1.2	715	7.8
APR.									
01-06	.00	465	.63	3880	262	124	1.1	658	7.5
07-20	.00	343	.47	4050	201	86	.9	497	7.6
21-30	.00	261	.35	5180	159	60	.6	375	7.6
MAY									
01-06	.03	279	.38	5100	105	85	.7	419	7.6
07-31	.02	384	.52	5250	248	146	.8	566	7.7
JUNE									
01-03	.00	566	.77	4950	312	201	1.2	755	7.9
04-23	.04	786	1.07	5780	428	288	1.4	1010	8.0
24-25	.01	1040	1.41	14300	524	374	2.0	1300	8.1
26-30	.03	678	.92	8590	388	258	1.7	904	8.0
JULY									
01-08	.01	805	1.09	5210	432	237	1.5	1040	6.7
09-31	.05	1150	1.56	4200	650	410	1.7	1430	7.2
AUG.									
01-08	.01	1340	1.82	4100	700	511	1.9	1590	8.0
09-16	.00	1020	1.39	4110	550	390	1.5	1260	8.0
17-19	.02	459	.62	3880	274	156	.9	654	7.8
20-27	.00	1100	1.50	3660	594	424	1.6	1350	8.1
28-31	.01	1240	1.69	4850	685	509	1.9	1520	8.0
SEPT.									
01-05	.00	1310	1.78	5010	716	533	1.8	1550	7.7
06-17	.01	1100	1.50	5790	584	397	1.7	1370	7.7
18-30	.00	936	1.27	5750	504	329	1.5	1180	7.7
WTD. AVG. TIME	.02	638	.87	--	355	221	--	846	7.8
WTD. AVG. TONS PER DAY	.15	--	--	4460	--	--	--	--	--

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1500	1770	812	752	667	1520	683	386	697	889	1500	1560
2	1490	1120	847	743	691	726	666	421	738	948	1470	1560
3	1450	1010	817	736	703	721	669	406	835	987	1450	1530
4	1490	1030	795	738	739	787	663	386	923	1000	1570	1580
5	1660	994	797	740	1210	742	642	421	943	1050	1650	1610
6	1600	970	765	737	1670	720	593	454	925	1120	1710	1480
7	1580	1070	795	754	1660	740	559	521	917	1140	1750	1400
8	1590	1200	789	751	1610	694	540	585	903	1150	1610	1380
9	1570	1320	788	749	1600	698	542	587	931	1230	1300	1380
10	1540	1330	790	718	1610	705	541	586	937	1340	1290	1460
11	1480	1300	813	693	1740	721	539	540	961	1540	1230	1440
12	1410	1340	815	697	1810	715	464	490	1010	1470	1260	1370
13	1440	1310	693	727	1800	694	452	479	1120	1450	1250	1330
14	1540	1010	746	741	1760	661	436	474	1160	1400	1290	1290
15	1550	971	750	870	1190	654	418	532	1180	1390	1260	1350
16	1590	962	796	976	915	687	441	490	1130	1430	1250	1320
17	1560	953	783	912	768	695	471	520	900	1340	614	1260
18	1526	939	792	816	766	683	462	525	1080	1430	532	1220
19	1480	939	758	796	767	696	475	519	993	1440	817	1220
20	1450	959	713	775	757	695	447	525	1010	1430	1220	1220
21	1430	851	778	791	762	700	407	524	1070	1280	1350	1200
22	1430	1090	734	820	756	683	370	522	1020	1240	1360	1150
23	1420	866	715	909	759	740	368	528	1030	1330	1310	1260
24	1440	856	728	878	765	730	328	583	1280	1400	1340	1170
25	1730	846	746	736	890	710	325	630	1320	1430	1380	1150
26	1930	857	755	789	1470	734	323	648	977	1490	1390	1150
27	1900	822	764	853	1500	716	328	633	900	1430	1430	1150
28	1470	808	761	955	1540	658	345	602	909	1450	1450	1140
29	1870	824	753	853	--	646	421	625	887	1510	1500	1140
30	1900	825	751	761	--	864	413	659	844	1560	1600	1140
31	1430	--	774	671	--	716	--	680	--	1530	1540	--
AVG	1550	1040	771	768	1170	737	477	531	984	1320	1340	1320

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	08.0	02.0	03.0	00.0	05.0	08.0	10.0	14.0	18.0	23.0	19.0
2	13.0	09.0	02.0	00.0	00.0	03.0	08.0	11.0	14.0	19.0	23.0	18.0
3	11.0	08.0	01.0	00.0	00.0	03.0	07.0	11.0	16.0	19.0	23.0	19.0
4	13.0	09.0	01.0	00.0	00.0	04.0	08.0	12.0	17.0	21.0	24.0	19.0
5	12.0	07.0	01.0	00.0	00.0	03.0	08.0	11.0	18.0	18.0	24.0	19.0
6	12.0	07.0	01.0	00.0	00.0	04.0	07.0	11.0	19.0	18.0	23.0	18.0
7	12.0	06.0	01.0	01.0	01.0	03.0	07.0	10.0	20.0	19.0	23.0	19.0
8	14.0	04.0	02.0	02.0	00.0	02.0	06.0	10.0	19.0	18.0	24.0	19.0
9	09.0	04.0	01.0	00.0	00.0	03.0	07.0	11.0	18.0	19.0	23.0	18.0
10	10.0	05.0	02.0	00.0	00.0	03.0	08.0	13.0	17.0	21.0	23.0	18.0
11	10.0	04.0	04.0	00.0	00.0	03.0	08.0	14.0	16.0	25.0	22.0	18.0
12	12.0	04.0	02.0	01.0	01.0	03.0	09.0	13.0	14.0	22.0	22.0	18.0
13	12.0	06.0	01.0	02.0	02.0	03.0	09.0	13.0	15.0	22.0	20.0	18.0
14	12.0	06.0	01.0	03.0	03.0	02.0	09.0	12.0	17.0	23.0	21.0	19.0
15	12.0	06.0	01.0	04.0	03.0	02.0	09.0	13.0	17.0	23.0	21.0	19.0
16	09.0	04.0	01.0	03.0	03.0	04.0	08.0	13.0	17.0	23.0	21.0	19.0
17	07.0	05.0	02.0	03.0	04.0	05.0	07.0	13.0	16.0	22.0	18.0	16.0
18	07.0	05.0	01.0	03.0	03.0	06.0	08.0	13.0	16.0	22.0	18.0	16.0
19	06.0	06.0	00.0	02.0	03.0	06.0	08.0	14.0	17.0	22.0	19.0	16.0
20	07.0	05.0	03.0	03.0	02.0	08.0	10.0	14.0	18.0	22.0	19.0	16.0
21	07.0	05.0	01.0	04.0	03.0	05.0	10.0	14.0	16.0	21.0	20.0	16.0
22	07.0	04.0	00.0	04.0	03.0	08.0	11.0	15.0	18.0	21.0	20.0	14.0
23	07.0	06.0	00.0	03.0	05.0	06.0	11.0	14.0	18.0	22.0	20.0	14.0
24	07.0	05.0	00.0	01.0	04.0	05.0	10.0	14.0	16.0	22.0	21.0	12.0
25	08.0	04.0	00.0	01.0	04.0	05.0	08.0	16.0	13.0	22.0	19.0	12.0
26	08.0	06.0	02.0	02.0	05.0	04.0	07.0	16.0	13.0	23.0	21.0	14.0
27	08.0	02.0	02.0	04.0	04.0	06.0	07.0	16.0	14.0	22.0	21.0	12.0
28	07.0	03.0	01.0	03.0	06.0	07.0	08.0	17.0	16.0	22.0	22.0	15.0
29	07.0	02.0	02.0	02.0	--	07.0	10.0	16.0	18.0	22.0	21.0	15.0
30	07.0	02.0	01.0	00.0	--	08.0	10.0	17.0	17.0	22.0	19.0	15.0
31	08.0	--	01.0	00.0	--	08.0	--	16.0	--	22.0	18.0	--
WG	9.4	5.2	1.2	1.7	2.0	4.6	8.3	13.3	16.4	21.1	21.1	16.6

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE

LOCATION.--Lat 39°04'45", long 109°06'15", in NW¼SW¼, sec.12, T.20 S., R.25 E., Grand County, at Westwater, about 4 miles downstream from Colorado-Utah State line and 9.5 miles downstream from gaging station 09163500.
DRAINAGE AREA.--17,900 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: May 1962 to June 1969 (discontinued).
Water temperatures: May 1962 to June 1969 (discontinued).
EXTREMES.--October 1968 to June 1969:
Dissolved solids: Maximum, 3,980 mg/l Mar. 16-17; minimum, 335 mg/l Apr. 22-30.
Hardness: Maximum, 765 mg/l Jan. 1-18, 26-31; minimum, 190 mg/l Apr. 22-30.
Specific conductance: Maximum daily, 5,140 micromhos Mar. 17; minimum daily, 461 micromhos Apr. 22.
Period of record:
Dissolved solids: Maximum, 3,980 mg/l Mar. 16-17, 1969; minimum, 243 mg/l June 14-30, 1965.

CHEMICAL ANALYSES, OCTOBER 1968 TO JUNE 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-31	3532	--	--	--	--	228	550	120	--
NOV.									
01-30	4373	--	--	--	--	210	440	130	--
DEC.									
01-31	4188	--	--	--	--	188	295	85	--
JAN.									
01-18	4166	--	--	--	--	384	652	150	--
19-25	4529	--	--	--	--	178	322	92	--
26-31	4791	--	--	--	--	403	653	150	--
FEB.									
01-09	2961	--	--	--	--	183	267	98	--
10-11	2490	--	--	--	--	216	375	148	--
12-13	2625	--	--	--	--	165	252	90	--
14...	3340	--	--	--	--	206	430	158	--
15-28	3779	--	--	--	--	182	316	112	--
MAR.									
01-11	3976	--	--	--	--	166	253	92	--
12...	3970	--	--	--	--	480	1440	838	--
13-15	3903	--	--	--	--	165	261	94	--
16-17	3920	--	--	--	--	539	1460	825	--
18-31	4246	--	--	--	--	167	249	86	--
APR.									
01-17	6751	--	--	--	--	170	191	60	--
18-21	7480	--	--	--	--	151	162	49	--
22-30	13240	--	--	--	--	135	112	28	--
MAY									
01-31	13490	--	--	--	--	127	122	34	--
JUNE									
01-07	11380	--	--	--	--	133	180	45	--
08-10	10500	--	--	--	--	118	134	37	--
11-30	11600	--	--	--	--	156	212	47	--
ANALYSES OF ADDITIONAL SAMPLES									
NOV.									
12...	A 3810	11	110	51	132	206	425	125	8.1
JAN.									
21...	A 4280	11	79	34	100	170	278	85	6.2
APR.									
25...	A17600	8.8	46	15	33	134	97	24	3.3

A DISCHARGE AT TIME OF SAMPLING.

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

Period of record:--Continued
Hardness: Maximum, 1,080 mg/l Jan. 3-5, 1965; minimum, 150 mg/l June 14-30, 1965.
Specific conductance: Maximum daily, 5,140 micromhos Mar. 17, 1969; minimum daily, 357 micromhos June 22, 1965.
Water temperatures (1962-68): Maximum, 28.0°C July 30, 1966, July 13, 1968; minimum, freezing point on many days during winter periods.
REMARKS.--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 (station 09163500). Minimum observed during period: Dissolved solids, 310 mg/l, and hardness, 176 mg/l Apr. 25.

CHEMICAL ANALYSES, OCTOBER 1968 TO JUNE 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-31	--	1170	1.59	11160	580	393	2.9	1590	7.7
NOV.									
01-30	--	1010	1.37	11900	478	306	3.1	1440	7.7
DEC.									
01-31	--	788	1.07	8900	398	244	1.8	1110	7.7
JAN.									
01-18	--	1550	2.11	17400	765	450	3.2	2010	7.7
19-25	--	776	1.06	9490	340	194	2.9	1120	7.9
26-31	--	1520	2.07	19700	765	435	3.3	1980	7.9
FEB.									
01-09	--	762	1.04	6090	360	210	2.2	1140	7.9
10-11	--	1060	1.44	7130	505	328	2.4	1520	8.1
12-13	--	692	.94	4910	320	185	2.3	1050	8.1
14...	--	1070	1.46	9650	470	301	3.4	1530	8.2
15-28	--	827	1.12	8440	364	215	2.8	1220	8.0
MAR.									
01-11	--	694	.94	7450	317	181	2.4	1040	7.8
12...	--	3960	5.39	42400	512	118	23	5040	7.9
13-15	--	696	.95	7340	328	193	2.3	1090	7.9
16-17	--	3980	5.41	42100	546	104	22	5040	8.1
18-31	--	673	.92	7720	310	173	2.4	1010	7.9
APR.									
01-17	--	550	.75	10000	270	131	1.9	810	7.4
18-21	--	464	.63	9370	230	106	1.7	689	7.8
22-30	--	335	.46	12000	190	79	1.1	514	7.9
MAY									
01-31	--	359	.49	13100	198	94	1.2	546	7.7
JUNE									
01-07	--	475	.65	14600	262	153	1.2	711	7.2
08-10	--	363	.49	10300	204	107	1.2	560	7.5
11-30	--	536	.73	16800	294	166	1.4	786	7.7
ANALYSES OF ADDITIONAL SAMPLES									
NOV.									
12...	.02	1010	1.32	10400	485	316	2.6	1420	7.9
JAN.									
21...	.10	705	.96	8150	334	195	2.4	1060	7.5
APR.									
25...	.08	310	.42	14700	176	66	1.1	470	7.6

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1570	1490	--	--	1200	--	--	554	--	--	--	--
2	1570	1410	--	1950	--	--	771	501	723	--	--	--
3	1570	--	--	--	1070	--	934	600	688	--	--	--
4	1570	1570	--	960	--	1050	946	--	671	--	--	--
5	1610	1570	--	--	--	1090	922	630	799	--	--	--
6	--	1500	--	1960	--	1040	--	542	692	--	--	--
7	1570	1430	--	--	--	1010	960	566	690	--	--	--
8	1600	1410	--	2270	--	1030	816	617	--	--	--	--
9	1570	1410	--	--	--	--	918	635	510	--	--	--
10	1570	--	--	2010	1520	1020	777	631	610	--	--	--
11	1570	1500	1090	--	--	1040	794	--	865	--	--	--
12	1582	--	113	--	1050	5040	677	552	896	--	--	--
13	--	1470	1130	1900	--	1160	--	547	753	--	--	--
14	1562	1410	1136	--	1530	1050	723	494	712	--	--	--
15	1570	1410	--	1900	--	1060	772	565	--	--	--	--
16	1570	1410	1130	--	1130	4950	779	647	907	--	--	--
17	1610	--	1140	1360	--	5140	772	488	693	--	--	--
18	1570	1410	1130	--	1030	1150	608	572	667	--	--	--
19	1570	1400	1130	1120	--	1040	689	--	729	--	--	--
20	--	1410	1130	--	1230	1010	--	524	832	--	--	--
21	1570	1430	1140	--	--	987	770	497	--	--	--	--
22	1580	1410	--	--	1120	990	461	492	--	--	--	--
23	1570	1410	--	1980	--	--	525	497	--	--	--	--
24	1570	1410	--	--	1410	977	527	502	--	--	--	--
25	1540	--	--	1150	--	1010	526	--	--	--	--	--
26	1730	--	--	--	1370	1010	500	495	--	--	--	--
27	--	--	1130	2110	--	1020	--	506	--	--	--	--
28	1595	--	1140	--	--	1020	527	502	--	--	--	--
29	1510	--	--	1360	--	--	526	485	--	--	--	--
30	1570	--	1130	--	--	--	--	504	--	--	--	--
31	--	--	--	--	--	1030	--	--	--	--	--	--
AVG	1601	--	--	--	--	1540	709	544	--	--	--	--

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	07.0	--	--	03.0	--	--	15.0	--	--	--	--
2	14.0	06.0	--	01.0	--	--	14.0	15.0	16.0	--	--	--
3	15.0	--	--	--	03.0	--	14.0	15.0	16.0	--	--	--
4	15.0	08.0	--	02.0	--	06.0	15.0	--	16.0	--	--	--
5	15.0	06.0	--	--	--	06.0	15.0	14.0	16.0	--	--	--
6	--	06.0	--	01.0	--	06.0	--	14.0	16.0	--	--	--
7	15.0	07.0	--	--	--	05.0	14.0	15.0	16.0	--	--	--
8	14.0	06.0	--	01.0	--	06.0	15.0	15.0	--	--	--	--
9	14.0	06.0	--	--	--	--	14.0	15.0	16.0	--	--	--
10	14.0	--	--	01.0	02.0	07.0	15.0	15.0	16.0	--	--	--
11	14.0	06.0	03.0	--	--	08.0	15.0	--	16.0	--	--	--
12	14.0	--	03.0	--	03.0	08.0	15.0	15.0	16.0	--	--	--
13	--	06.0	02.0	01.0	--	09.0	--	15.0	16.0	--	--	--
14	15.0	07.0	02.0	--	02.0	09.0	14.0	16.0	15.0	--	--	--
15	15.0	06.0	--	02.0	--	--	15.0	16.0	--	--	--	--
16	14.0	05.0	03.0	--	03.0	09.0	14.0	15.0	15.0	--	--	--
17	14.0	--	03.0	03.0	--	10.0	15.0	16.0	12.0	--	--	--
18	15.0	05.0	02.0	--	03.0	10.0	15.0	16.0	16.0	--	--	--
19	14.0	06.0	01.0	03.0	--	10.0	15.0	--	16.0	--	--	--
20	--	06.0	01.0	--	04.0	10.0	--	16.0	16.0	--	--	--
21	14.0	06.0	02.0	--	--	10.0	14.0	16.0	--	--	--	--
22	14.0	06.0	--	--	04.0	10.0	14.0	16.0	--	--	--	--
23	15.0	05.0	--	02.0	--	--	15.0	16.0	--	--	--	--
24	14.0	05.0	--	--	05.0	10.0	14.0	15.0	--	--	--	--
25	14.0	--	--	03.0	--	10.0	14.0	--	--	--	--	--
26	14.0	--	--	--	05.0	10.0	13.0	15.0	--	--	--	--
27	--	--	01.0	03.0	--	10.0	--	16.0	--	--	--	--
28	14.0	--	01.0	--	--	11.0	14.0	16.0	--	--	--	--
29	15.0	--	--	02.0	--	--	14.0	16.0	--	--	--	--
30	14.0	--	01.0	--	--	--	--	16.0	--	--	--	--
31	--	--	--	--	--	12.0	--	--	--	--	--	--
AVG.	14.0	--	--	--	--	--	14.0	15.0	--	--	--	--

09180000 DOLORES RIVER NEAR CISCO, UTAH

LOCATION.--Lat 38°47'50", long 109°11'40", in SW¼SE¼, sec.18, T.23 S., R.25 E., Grand County, at gaging station 9 miles upstream from mouth, 13.5 miles downstream from Colorado-Utah State line, and 14 miles southeast of Cisco.
DRAINAGE AREA.--4,580 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1969.
Water temperatures: March 1951 to September 1959, October 1964 to September 1969.
Sediment records: March 1951 to September 1964.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 5,210 mg/l Oct. 9-11; minimum, 224 mg/l Apr. 14-30.
Hardness: Maximum, 1,070 mg/l Sept. 12-15; minimum, 149 mg/l Apr. 14-30.
Specific conductance: Maximum daily, 8,350 micromhos Oct. 10; minimum daily, 310 micromhos Apr. 23.
Water temperatures: Maximum, 28.0°C Aug. 5; minimum, freezing point on many days during December to February.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-08	71	--	--	--	--	--	1320	128	0	1080	1810
09-11	86	--	--	--	--	--	1770	192	0	1480	2280
12-18	102	--	--	--	--	--	1010	138	0	1070	1280
19-23	120	--	--	--	--	--	1020	110	0	713	1550
24-31	119	--	--	--	--	--	883	116	0	582	1410
NOV.											
01-21	135	--	--	--	--	--	856	132	0	510	1300
22-30	118	--	--	--	--	--	1010	140	0	571	1490
DEC.											
01-20	99	--	--	--	--	--	1120	156	0	593	1650
21-31	101	--	--	--	--	--	861	172	0	465	1280
JAN.											
01-25	152	--	--	--	--	--	689	170	0	345	1080
26-31	308	--	--	--	--	--	478	163	0	378	725
FEB.											
01-03	195	--	--	--	--	--	606	22	0	488	988
04-08	190	--	--	--	--	--	1080	168	0	460	1660
09-22	192	--	--	--	--	--	620	161	0	368	962
23-28	180	--	--	--	--	--	912	144	0	422	1450
MAR.											
01-08	178	--	--	--	--	--	628	149	0	412	950
09-20	170	--	--	--	--	--	896	147	0	600	1280
21-31	280	--	--	--	--	--	426	184	0	390	588
APR.											
01-06	1222	--	--	--	--	--	195	186	0	250	265
07-08	2575	--	--	--	--	--	98	172	0	131	128
09-13	3654	--	--	--	--	--	34	147	0	78	40
14-30	4518	--	--	--	--	--	17	125	0	51	21
MAY											
01-31	2735	--	--	--	--	--	23	123	0	59	28
JUNE											
01-09	1786	--	--	--	--	--	27	111	0	68	36
10-12	1473	--	--	--	--	--	38	109	0	80	50
13-16	996	--	--	--	--	--	71	49	0	168	115
17-19	932	--	--	--	--	--	93	119	0	252	132
20-30	941	--	--	--	--	--	87	98	0	173	128
JULY											
01-08	792	--	--	--	--	--	99	97	0	151	118
09-12	433	--	--	--	--	--	202	104	0	158	310
13-22	588	--	--	--	--	--	225	126	0	285	320
23-26	872	--	--	--	--	--	79	154	0	342	75
27-28	462	--	--	--	--	--	83	174	0	181	100
29-31	356	--	--	--	--	--	155	127	0	425	212
AUG.											
01-13	197	--	--	--	--	--	354	128	0	423	475
14-17	152	--	--	--	--	--	740	110	0	650	1010
18-19	127	--	--	--	--	--	391	153	0	437	610
20-26	215	--	--	--	--	--	542	180	0	522	725
27-29	177	--	--	--	--	--	43	198	0	80	55
30...	255	--	--	--	--	--	88	221	0	188	128
31...	624	--	--	--	--	--	175	221	0	461	250
SEPT.											
01-11	177	--	--	--	--	--	278	166	0	967	300
12-15	404	--	--	--	--	--	455	222	0	1040	562
16-18	307	--	--	--	--	--	174	180	0	538	180
19-24	279	--	--	--	--	--	156	219	0	375	148
25-30	170	--	--	--	--	--	298	158	0	504	375
WTD. AVG. TIME	--	--	--	--	--	--	126	130	0	151	179
WTD. AVG. TONS PER DAY	796	--	--	--	--	--	509	144	0	413	740
	--	--	--	--	--	--	272	279	0	324	384

09180000 DOLORES RIVER NEAR CISCO, UTAH--Continued

Period of record:
Dissolved solids (1953-69): Maximum, 8,220 mg/l Mar. 4, 1964; minimum, 200 mg/l June 1-10, 1957, May 1-31, 1958.
Hardness (1953-69): Maximum, 1,900 mg/l Sept. 21-30, 1956; minimum, 132 mg/l May 1-31, 1958.
Specific conductance: Maximum daily, 12,800 micromhos Mar. 4, 1964; minimum daily, 254 micromhos May 8, June 6, 1952.
Water temperatures (1951-59, 1968-69): Maximum, 29.5°C Aug. 14, 1958; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.
Minimum observed during water year: Hardness, 148 mg/l Apr. 14.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-08	--	16	4510	6.13	865	930	825	19	6680	7.3
09-11	--	4.5	5210	7.09	1210	1010	852	24	7930	7.6
12-18	--	19	3360	4.57	925	850	737	15	5210	7.5
19-23	--	28	3860	5.25	1250	830	740	15	5830	7.5
24-31	--	17	3270	4.45	1050	785	690	14	5220	7.4
NOV.										
01-21	--	30	3660	4.16	1120	636	528	15	4900	7.6
22-30	--	29	3320	4.52	1060	642	527	17	5340	7.6
DEC.										
01-20	--	30	3680	5.00	984	670	542	19	5870	7.5
21-31	--	21	2850	3.88	777	576	435	16	4610	7.4
JAN.										
01-25	--	33	2480	3.37	1020	550	411	13	4030	7.5
26-31	--	25	1840	2.50	1530	530	396	9.0	2980	7.7
FEB.										
01-03	--	65	2500	3.40	1320	655	637	10	3910	7.4
04-08	--	24	3730	5.07	1910	625	487	19	5980	7.5
09-22	--	32	300	3.13	156	550	418	11	3760	7.7
23-28	--	38	3220	4.38	1570	650	532	16	5190	7.5
MAR.										
01-08	--	30	2320	3.16	1120	550	428	12	3760	7.9
09-20	--	22	2820	3.84	1290	620	499	16	4590	7.9
21-31	--	27	1700	2.31	1290	482	331	8.5	2730	8.0
APR.										
01-06	--	14	1010	1.37	3330	374	221	4.4	1600	7.9
07-08	--	6.8	550	.75	3820	251	110	2.7	914	7.8
09-13	--	3.2	322	.44	3180	187	66	1.1	525	8.0
14-30	--	1.5	224	.30	2730	149	46	.6	351	7.9
MAY										
01-31	--	1.2	244	.33	1800	152	51	.8	389	7.7
JUNE										
01-09	--	1.4	255	.35	1230	155	64	.9	421	7.6
10-12	--	2.3	306	.42	1220	163	74	1.3	506	7.2
13-16	--	25	546	.74	1470	242	202	2.0	832	7.5
17-19	--	31	753	1.02	1900	368	270	2.1	1120	7.4
20-30	--	21	569	.77	1450	268	188	2.3	901	7.3
JULY										
01-08	--	10	465	.63	994	196	116	3.1	788	7.0
09-12	--	9.6	804	1.09	940	256	171	5.5	1380	7.0
13-22	--	10	1060	1.44	1680	370	267	5.1	1700	7.2
23-26	--	10	781	1.06	1840	424	298	1.7	1100	7.3
27-28	--	11	606	.82	756	300	157	2.1	940	7.4
29-31	--	21	1130	1.54	1090	526	422	2.9	1640	7.4
AUG.										
01-13	--	23	1530	2.08	814	465	360	7.1	2390	8.1
14-17	--	34	2610	3.55	1070	610	520	13	4020	8.0
18-19	--	25	1800	2.45	617	610	485	6.9	2850	7.9
20-26	--	25	2050	2.79	1190	555	407	10	3160	8.0
27-29	--	.0	430	.58	205	230	68	1.2	737	7.9
30...	--	11	748	1.02	515	375	194	2.0	1110	7.6
31...	--	26	1460	1.99	2460	655	474	3.0	2010	7.6
SEPT.										
01-11	--	12	2040	2.77	975	970	834	3.9	2630	7.4
12-15	--	2.0	2590	3.52	2830	1070	888	6.0	3470	7.6
16-18	--	22	1270	1.73	1050	600	452	3.1	1770	7.6
19-24	--	20	926	1.26	698	455	275	3.2	1370	7.6
25-30	--	25	1480	2.01	679	555	425	5.5	2190	7.7
WTD. AVG. TIME	--	7.2	614	.86	1320	246	139	--	996	7.7
WTD. AVG. TONS PER DAY	--	20	1850	2.67	--	500	382	9.0	3030	7.6
	--	15	--	--	--	--	--	--	--	--

09180000 DOLORES RIVER NEAR CISCO, UTAH--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
ANALYSES OF ADDITIONAL SAMPLES											
NOV.											
18...	A 125	5.9	132	72	574	29	--	148	--	556	862
JAN.											
29...	A 303	6.1	98	55	302	17	--	168	0	405	455
APR.											
14...	A4860	5.9	43	10	23	3.7	--	124	0	53	24
JULY											
24...	A 750	5.9	78	17	44	4.3	--	112	0	188	44

A DISCHARGE AT TIME OF SAMPLING.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7050	--	5460	4320	3610	--	1670	357	341	701	1900	2250
2	7030	5240	--	4280	3760	--	1560	370	362	753	--	2570
3	--	5200	5630	--	4350	--	1410	340	389	--	2010	2550
4	--	5210	5680	4200	6460	--	1740	331	404	--	--	2430
5	--	5410	5880	4370	6160	3640	--	--	442	802	2460	2500
6	7880	5270	5590	4280	4680	--	--	--	448	747	2430	2500
7	6070	4790	--	4060	6500	3890	850	352	--	809	2330	2610
8	5580	5110	5360	--	--	--	978	465	478	893	2340	2710
9	--	5480	5710	--	3780	4340	564	458	487	1190	2430	2890
10	8350	5050	6480	4020	3680	4440	565	450	506	--	2710	2900
11	7510	--	6700	4040	3600	4910	541	--	506	--	2660	2850
12	5650	5370	--	4370	--	5060	--	450	505	1560	--	--
13	5840	--	6520	--	--	5440	418	446	709	--	2470	--
14	5190	5230	5770	--	3490	4760	383	408	--	--	--	3910
15	4840	5030	5710	3960	--	--	--	421	--	1800	3560	3030
16	4630	4530	5560	3930	3360	4310	422	422	955	1790	--	1590
17	--	4200	--	3710	3510	4210	379	--	1080	1730	4470	1730
18	5110	4150	--	--	--	3990	362	465	1220	1690	3170	1990
19	--	4010	--	--	3900	--	348	449	1070	--	2530	--
20	5770	4260	--	3380	3970	--	337	396	833	1560	--	--
21	6560	4800	--	3520	4060	2830	312	395	845	--	--	1160
22	5630	5350	--	3900	4100	--	--	353	892	1590	3710	1230
23	5280	--	4620	3830	4640	--	310	370	--	--	3490	1450
24	--	6230	4730	--	5740	2860	--	--	--	885	2830	1650
25	4900	--	5450	--	--	2850	323	334	922	1280	--	2030
26	5010	--	5060	3340	--	2460	316	355	993	1140	2820	2050
27	5150	5020	4130	3140	--	2500	317	369	964	751	--	--
28	5130	5220	4290	2760	--	2630	356	359	1050	1130	--	1950
29	5480	5030	4640	--	--	2750	379	351	851	1380	737	2460
30	5590	5170	4270	2710	--	3060	366	327	794	1670	1110	2460
31	--	--	4200	2920	--	2610	--	319	--	1870	2010	--
AVG	--	5020	--	--	--	--	633	388	721	--	--	2300

09180000 DOLORES RIVER NEAR CISCO, UTAH--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS RESIDUE AT 180 C (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
ANALYSES OF ADDITIONAL SAMPLES										
NOV. 18...	.5	34	2420	3.18	817	625	504	10	3840	7.5
JAN. 29...	.6	18	1480	2.01	1210	470	332	6.1	2360	7.2
APR. 14...	.3	2.3	252	.34	3310	148	46	.8	384	7.3
JULY 24...	.4	6.6	468	.64	948	264	172	1.2	702	7.7

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	17	17	--	--	--	18	17	16	--	15	15	16	17	14	14	14	--	11	--	10	12	12	12	--	11	11	12	12	11	11	--	--
NOVEMBER.	--	10	11	11	10	11	11	9	6	8	--	7	--	7	6	5	7	6	6	7	5	7	--	5	--	--	5	3	4	1	--	7
DECEMBER.	1	--	1	0	0	1	--	1	1	1	2	--	0	0	0	0	--	--	--	--	--	--	--	0	0	0	0	0	0	0	0	--
JANUARY..	0	0	--	0	0	0	0	--	--	0	0	0	--	--	0	0	0	--	--	0	0	0	0	--	--	--	0	3	3	--	2	1	--
FEBRUARY.	0	1	1	2	1	2	3	--	3	4	4	--	--	3	--	3	4	--	4	4	4	5	6	5	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	8	--	7	--	8	6	7	6	5	5	--	10	10	11	--	--	12	--	--	10	10	10	10	12	14	15	14	--
APRIL....	14	14	14	15	--	--	--	--	--	--	--	--	--	--	--	9	9	9	9	11	12	--	12	--	9	9	9	10	12	12	--	--
MAY.....	12	14	11	14	--	--	12	12	14	14	--	16	16	16	16	16	--	16	17	15	17	17	17	--	15	18	17	18	18	17	17	15
JUNE.....	18	18	18	19	20	20	--	20	19	19	18	18	19	--	--	19	18	19	19	19	18	20	--	--	15	17	19	18	19	21	--	19
JULY.....	22	22	--	--	21	21	21	22	23	--	--	24	--	--	25	24	25	24	--	24	--	23	--	23	25	25	26	25	25	26	27	--
AUGUST...	27	--	27	--	28	27	27	27	27	27	26	--	24	--	26	--	26	26	26	--	--	25	25	26	--	25	--	--	22	23	23	--
SEPTEMBER	22	21	23	23	22	24	24	23	22	23	23	--	--	20	20	19	20	19	--	--	17	17	17	18	18	19	--	19	19	19	--	20

09180500 COLORADO RIVER NEAR CISCO, UTAH
(Irrigation network station)

LOCATION.--Lat 38°48'40", long 109°17'35", in NW¼NW¼ sec.17, T.23, S., R.24 E., Grand County, at gaging station 1 mile downstream from Dolores River, 11 miles south of Cisco, 36 miles downstream from Colorado-Utah State line, 97 miles upstream from Green River, and 235 miles upstream from San Juan River.
DRAINAGE AREA.--24,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: August 1928 to September 1969.
Water temperatures: May 1949 to September 1959, October 1964 to September 1969.
Sediment records: May 1930 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,250 mg/l Oct. 1-9, Aug. 29-31; minimum, 320 mg/l Apr. 21-30.
Hardness: Maximum, 618 mg/l Aug. 29-31; minimum, 185 mg/l Apr. 21-30.
Specific conductance: Maximum daily, 1,860 micromhos Mar. 11; minimum daily, 456 micromhos Apr. 26.
Water temperatures: Maximum, 27.0°C Aug. 5-8, 19; minimum, freezing point on many days during December to February.
Sediment concentrations: Maximum daily, 13,000 mg/l June 25; minimum daily, 11 mg/l Jan. 11.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.											
01-09	3318	8.6	134	64	--	--	174	180	0	579	158
10-24	3753	11	134	47	--	--	183	204	0	510	158
25-31	3060	9.5	134	55	--	--	183	208	0	512	175
NOV.											
01-05	4470	10	115	48	--	--	138	136	0	437	150
06-13	3824	10	112	46	--	--	147	180	0	402	152
14-30	4490	11	95	40	--	--	147	186	0	350	142
DEC.											
01-21	4117	12	91	38	--	--	136	184	0	301	148
22-31	3876	12	90	35	--	--	131	176	0	290	140
JAN.											
01-21	3988	11	85	34	--	--	118	180	0	265	126
22-31	4703	12	80	33	--	--	115	185	0	277	100
FEB.											
01-05	3418	11	83	35	--	--	122	177	0	278	124
06-16	2882	11	109	46	--	--	182	214	0	400	182
17-28	3858	11	83	36	--	--	113	186	0	285	106
MAR.											
01-10	3869	11	75	32	--	--	113	170	0	262	106
11...	3760	9.3	84	63	--	--	222	166	0	302	350
12-19	3892	10	71	24	--	--	117	166	0	263	108
20-31	4362	10	72	31	--	--	111	170	0	252	98
APR.											
01-11	7636	11	74	29	--	--	75	184	0	204	70
12-20	11620	12	61	18	--	--	49	162	0	138	42
21-30	17770	10	51	14	--	--	33	147	0	94	26
MAY											
01-20	15200	7.6	58	19	--	--	31	150	0	117	30
21-31	17630	6.2	53	15	--	--	28	130	0	106	26
JUNE											
01-03	15200	8.1	56	17	--	--	34	133	0	126	29
04-12	11040	8.8	66	21	--	--	47	149	0	164	41
13-17	8920	10	80	33	--	--	50	172	0	220	50
18-26	13110	11	77	24	--	--	54	161	0	210	38
27-30	15420	11	67	22	--	--	40	147	0	171	32
JULY											
01-06	12030	11	66	19	--	--	48	145	0	171	37
07-10	9438	10	68	24	--	--	49	142	0	183	45
11-13	7720	10	69	32	--	--	70	152	0	218	72
14-31	5820	11	79	49	--	--	90	178	0	325	75
AUG.											
01-03	4053	15	118	46	--	--	125	182	0	450	95
04-06	3113	14	123	47	--	--	129	198	0	440	110
07-15	2744	13	133	51	--	--	130	171	0	500	112
16-18	3920	18	120	46	--	--	114	193	0	432	88
19-21	3750	15	100	36	--	--	80	175	0	312	71
22-28	2906	15	143	49	--	--	146	202	0	562	128
29-31	3587	12	160	54	--	--	146	202	0	562	128
SEPT.											
01-14	3674	14	152	54	--	--	132	219	0	535	105
15-19	4288	13	132	53	--	--	117	216	0	470	90
20-30	4373	14	127	46	--	--	112	209	0	430	90
WTD. AVG. TIME	--	10	79	29	--	--	79	166	0	240	73
WTD. AVG. TONS PER DAY	6574	11	93	36	--	--	107	177	0	312	100
	--	182	1410	525	--	--	1420	2950	0	4270	1300

ANALYSES OF ADDITIONAL SAMPLES

NOV.											
12...	A 3690	10	110	56	174	6.6	--	208	0	445	192
DEC.											
06...	A 4100	11	81	43	145	6.2	--	180	0	318	165
JAN.											
14...	A 4220	10	63	44	129	4.9	--	170	0	280	148
FEB.											
10...	A 2510	11	108	47	212	6.7	--	204	0	390	251
APR.											
15...	A13300	8.2	56	16	38	3.3	--	157	0	110	34
JULY											
03...	A11600	8.5	69	20	50	3.0	--	138	0	174	46

A DISCHARGE AT TIME OF SAMPLING.

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

EXTREMES.--1968-69:--Continued
Sediment loads: Maximum daily, 608,000 tons June 26; minimum daily, 111 tons Jan. 11.
Period of record:
Dissolved solids (1928-52, 1953-69): Maximum, 2,670 mg/l Aug. 11-20, 1940; minimum, 202 mg/l June 11-20, 1933, July 1-10, 1957.
Hardness (1928-35, 1943-52, 1953-69): Maximum, 1,090 mg/l Sept. 1-10, 1934; minimum, 131 mg/l June 11-20, 1952.
Specific conductance (1941-52, 1953-69): Maximum daily, 4,820 micromhos Dec. 13, 1957; minimum daily, 291 micromhos May 31, 1958.
Water temperatures (1949-52, 1953-59, 1964-69): Maximum, 29.5°C July 29, 1966; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 69,000 mg/l Oct. 27, 1951; minimum daily, 4 mg/l Aug. 22, 1960.
Sediment loads: Maximum daily, 2,790,000 tons Oct. 14, 1941; minimum daily, 14 tons Aug. 22, 1960.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-09	--	6.5	1250	1.70	11200	600	452	3.1	1690	7.7
10-24	--	7.8	1170	1.59	11900	530	363	3.5	1650	7.7
25-31	--	8.4	1200	1.63	9910	560	389	3.4	1710	7.8
NOV.										
01-05	--	7.8	1040	1.41	12600	484	372	2.7	1510	7.7
06-13	--	7.2	1020	1.39	10500	468	320	2.9	1500	7.6
14-30	--	6.7	876	1.19	10600	404	251	3.2	1310	7.7
DEC.										
01-21	--	7.8	853	1.16	9480	384	233	3.0	1280	7.9
22-31	--	7.9	816	1.11	8540	366	222	3.0	1210	7.6
JAN.										
01-21	--	5.4	792	1.08	8530	350	202	2.7	1190	7.6
22-31	--	5.8	739	1.01	9380	336	184	2.7	1110	7.9
FEB.										
01-05	--	7.4	787	1.07	7260	350	205	2.8	1180	7.5
06-16	--	10	1090	1.48	8480	460	285	3.7	1580	7.7
17-28	--	5.6	761	1.03	7930	358	205	2.6	1140	7.7
MAR.										
01-10	--	6.2	720	.98	7520	320	181	2.8	1080	7.6
11...	--	11	1180	1.60	12000	470	334	4.5	1860	7.6
12-19	--	5.3	718	.98	7530	318	182	2.8	1080	7.6
20-31	--	7.8	678	.92	7990	306	167	2.8	1020	7.6
APR.										
01-11	--	4.8	585	.80	12100	302	151	1.9	883	7.5
12-20	--	3.7	426	.58	13400	228	95	1.4	655	7.8
21-30	--	3.1	320	.44	15400	185	64	1.1	498	7.8
MAY										
01-20	--	1.7	367	.50	15100	222	99	.9	556	7.4
21-31	--	1.7	335	.46	15900	194	87	.9	503	7.5
JUNE										
01-03	--	.7	360	.49	14800	208	99	1.0	553	7.8
04-12	--	1.3	452	.61	13500	250	128	1.3	689	7.8
13-17	--	5.0	583	.79	14000	336	195	1.2	848	7.8
18-26	--	3.5	537	.73	14000	290	158	1.4	776	7.7
27-30	--	3.2	449	.61	18700	260	139	1.2	676	7.8
JULY										
01-06	--	1.2	435	.59	14100	245	126	1.3	662	6.9
07-10	--	2.3	480	.65	12200	267	151	1.3	733	6.7
11-13	--	2.9	588	.80	12300	303	178	1.7	883	6.8
14-31	--	4.7	774	1.05	12200	398	252	2.0	1110	7.1
AUG.										
01-03	--	5.4	984	1.34	10800	484	335	2.5	1350	7.8
04-06	--	5.0	1040	1.41	8740	500	338	2.5	1430	8.1
07-15	--	5.4	1130	1.54	8370	540	400	1.4	1520	8.0
16-18	--	4.8	966	1.31	10200	488	333	2.2	1310	8.1
19-21	--	1.6	752	1.02	7610	396	252	1.7	1060	8.1
22-28	--	3.3	1160	1.58	9100	560	388	2.7	1560	8.0
29-31	--	5.2	1250	1.70	12100	618	452	2.5	1660	7.9
SEPT.										
01-14	--	8.4	1200	1.63	11900	602	422	2.4	1590	7.9
15-19	--	8.8	1040	1.41	12000	546	369	2.2	1420	8.1
20-30	--	3.4	978	1.33	11500	504	333	2.2	1350	8.1
WTD. AVG. TIME	--	4.2	631	.86	11200	319	183	--	924	7.6
WTD. AVG. TONS PER DAY	--	75	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

NOV.										
12...	.9	9.8	1150	1.56	11500	505	334	3.4	1650	7.8
DEC.										
06...	1.0	7.9	905	1.23	10000	380	232	3.2	1380	7.7
JAN.										
14...	.8	9.1	788	1.07	8980	338	195	3.1	1220	7.6
FEB.										
10...	.5	13	1130	1.55	7660	464	297	4.3	1720	7.7
APR.										
15...	.3	2.0	378	.51	13600	208	79	1.1	567	7.5
JULY										
03...	.3	6.7	472	.64	14800	255	142	1.4	712	6.6

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1650	--	1280	1200	1060	--	966	551	524	633	1350	1640
2	1650	1730	--	--	1140	--	960	585	541	642	--	1680
3	1680	1490	1290	1160	1190	--	922	584	595	683	1350	1650
4	1780	1420	1310	1180	1270	--	911	534	654	--	1460	1660
5	--	1350	1280	1210	1250	1070	933	505	699	677	1370	1660
6	1740	1390	1260	1210	1560	--	--	--	721	671	1450	1600
7	1690	1360	1260	1170	1640	1130	878	557	--	717	1500	1610
8	1700	1350	1290	1190	--	--	873	583	678	726	1540	1560
9	--	1510	1310	1170	1660	1060	812	600	674	756	1580	1510
10	1700	1630	1300	1140	1560	1060	806	629	646	--	1550	1560
11	1690	--	1300	1150	1580	1860	771	--	695	836	1500	1520
12	1620	1600	--	1180	1530	1110	--	478	700	892	1440	--
13	1650	--	1310	--	--	1190	705	541	752	921	1550	1470
14	1600	1550	1340	1190	1560	1070	650	565	--	--	--	1510
15	1600	1470	1280	1230	1590	--	--	561	--	1010	1450	1400
16	1610	1330	1230	1180	1530	1080	624	550	902	993	--	1430
17	--	1290	--	1200	1220	1050	622	--	889	1010	1440	1400
18	1620	1240	1240	1260	--	1020	678	552	788	1080	1180	1450
19	--	1250	--	--	1130	--	665	558	805	--	935	1430
20	1680	1290	1180	1190	1090	1040	661	554	747	1110	1010	--
21	1670	1270	--	1140	1110	1030	519	514	709	--	1240	1380
22	1640	1260	1180	1110	1090	1050	--	514	725	1130	1470	1400
23	1590	--	1270	1120	1210	--	521	479	698	1030	1510	1370
24	--	1320	1350	--	1110	1010	502	--	805	1020	1520	1370
25	1620	1260	1230	--	--	1040	--	504	896	1070	--	1370
26	1610	--	1230	1070	--	1030	456	539	823	1120	1700	1340
27	1670	1230	1230	1140	--	1010	473	523	685	1100	1570	--
28	1770	1220	1250	1090	--	1020	489	503	670	1140	1560	1330
29	1650	1210	1230	--	--	1030	513	485	691	1160	1560	1300
30	1700	1230	1150	1090	--	1020	531	485	647	1240	1700	1320
31	1800	--	1170	1100	--	987	--	507	--	1320	1710	--
AVG	1670	1370	1260	1160	--	--	697	538	717	949	1450	1480

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	17	17	17	15	--	17	17	15	--	14	14	15	16	15	14	14	--	10	--	10	12	11	11	--	11	11	12	11	11	10	11	13
NOVEMBER.	--	10	10	10	10	10	10	8	6	7	--	6	--	6	5	5	6	6	6	7	6	7	--	5	5	--	4	3	3	1	--	6
DECEMBER.	1	--	1	1	1	1	1	2	1	1	2	--	1	1	0	1	--	0	--	0	--	0	0	0	0	0	0	0	0	0	0	1
JANUARY..	0	--	0	0	0	0	0	0	0	0	0	0	--	0	0	0	0	0	--	0	0	0	0	--	--	0	3	3	--	1	1	0
FEBRUARY.	0	1	1	1	1	2	3	--	4	4	4	4	--	4	3	4	5	--	4	4	5	5	5	5	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	7	--	6	--	6	5	5	5	4	4	--	8	8	9	--	9	10	8	--	8	8	9	9	11	12	14	14	--
APRIL....	12	14	12	14	11	--	--	--	--	--	--	--	--	--	--	9	10	9	8	12	12	--	11	9	--	9	9	10	12	12	--	--
MAY.....	12	14	10	12	11	--	11	12	14	14	--	15	15	15	14	15	--	16	16	14	16	16	16	--	14	17	17	17	17	16	16	15
JUNE.....	16	17	17	18	19	19	--	19	18	18	18	17	18	--	--	17	16	17	18	18	17	18	17	16	14	14	15	16	17	18	--	17
JULY.....	19	20	20	--	20	19	20	20	21	--	19	24	24	--	25	24	24	24	--	23	--	23	23	22	24	25	25	24	24	24	25	23
AUGUST...	26	--	26	26	27	27	27	27	26	26	26	24	25	--	26	--	25	25	27	23	24	24	24	25	--	25	25	24	23	23	23	25
SEPTEMBER	23	22	22	23	22	23	23	22	22	22	22	--	20	20	19	18	19	19	19	--	17	17	17	17	18	18	--	18	18	18	--	20

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	[illegible]	70	593	[illegible]	195	1690	4160	67	753
2	[illegible]	54	468	4740	695	8890	4180	75	846
3	[illegible]	[illegible]	404	4950	[illegible]	10600	4390	83	982
4	3400	3020	27700	4650	440	5520	4280	74	855
5	[illegible]	3000	28000	[illegible]	460	5960	4260	112	1290
6	3320	340	3050	4550	320	3930	4240	66	756
7	3310	81	724	4100	[illegible]	2340	4220	73	832
8	[illegible]	102	[illegible]	[illegible]	[illegible]	[illegible]	4220	70	798
9	[illegible]	169	[illegible]	[illegible]	[illegible]	946	4180	77	869
10	[illegible]	236	2450	[illegible]	76	681	4080	86	947
11	[illegible]	395	4240	[illegible]	59	535	4220	197	2240
12	4080	306	[illegible]	[illegible]	[illegible]	522	4280	129	1490
13	[illegible]	[illegible]	2350	[illegible]	[illegible]	[illegible]	4240	61	698
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1560	4100	66	731
15	[illegible]	[illegible]	1470	[illegible]	203	2600	3880	53	555
16	3700	136	[illegible]	[illegible]	241	3120	3880	46	482
17	3700	219	[illegible]	4550	172	[illegible]	3920	65	688
18	[illegible]	302	[illegible]	[illegible]	151	1890	4080	84	925
19	3700	219	[illegible]	[illegible]	153	[illegible]	3980	79	849
20	3760	136	[illegible]	[illegible]	[illegible]	1600	3740	73	737
21	[illegible]	127	[illegible]	[illegible]	153	1900	3940	68	723
22	3650	[illegible]	[illegible]	[illegible]	106	1260	3600	63	612
23	[illegible]	137	[illegible]	[illegible]	[illegible]	1640	3300	57	508
24	[illegible]	118	[illegible]	[illegible]	[illegible]	1660	3800	74	759
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1340	3920	25	265
26	2980	[illegible]	[illegible]	[illegible]	105	1310	4080	58	639
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1180	4240	91	1040
28	[illegible]	102	[illegible]	[illegible]	85	987	4060	87	954
29	3010	[illegible]	[illegible]	[illegible]	[illegible]	713	3380	157	1640
30	2920	[illegible]	[illegible]	[illegible]	37	1020	3960	68	727
31	[illegible]	[illegible]	[illegible]	--	-	--	3920	127	1340
TOTAL	107560	-	[illegible]	[illegible]	--	71633	[illegible]	--	27530

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3820	141	[illegible]	[illegible]	179	1980	2750	17	126
2	3670	54	[illegible]	3760	[illegible]	1010	3400	56	514
3	3550	26	[illegible]	[illegible]	[illegible]	843	4180	177	2000
4	3670	13	[illegible]	[illegible]	72	649	4240	183	2090
5	3670	23	[illegible]	[illegible]	50	317	4180	186	2100
6	3530	78	[illegible]	[illegible]	62	383	4100	158	1750
7	3630	94	[illegible]	2600	62	435	4120	162	1800
8	3740	79	798	2780	69	518	4040	142	1550
9	4040	64	698	2770	76	568	3960	121	1290
10	3850	38	395	2530	58	396	3800	90	923
11	3750	11	111	2450	47	311	3760	92	934
12	3850	113	1170	2500	47	317	3840	77	798
13	4050	76	831	2780	1550	1160D	3840	91	943
14	4240	40	[illegible]	3140	3050	25900	3780	83	847
15	4380	257	3040	3780	784	8000	3820	80	825
16	4570	[illegible]	5270	4080	458	5050	3800	78	800
17	[illegible]	[illegible]	6050	4480	768	9290	3860	98	1020
18	4360	[illegible]	[illegible]	4460	572	6890	4000	211	2280
19	4340	250	2930	4400	376	447D	4120	494	5500
20	4140	214	2390	4260	360	4140	4530	777	9500
21	4140	148	1650	4200	277	3140	4300	1030	12000
22	4690	1620	20500	4120	190	2110	4100	707	7830
23	4950	887	11900	4100	164	1820	4360	594	6990
24	4420	645	7700	4040	126	1370	4440	480	5750
25	3880	403	4220	3290	46	409	4340	383	4490
26	3700	161	1610	2870	21	163	4080	284	3130
27	5160	1570	21900	3090	32	267	4100	187	2070
28	6550	[illegible]	[illegible]	2980	27	217	4180	363	4100
29	5180	1700	23800	--	--	--	4400	386	4590
30	4480	560	6770	-	--	--	4530	487	5960
31	4020	259	2810	--	--	--	4990	659	8880
TOTAL	130790	--	185333	95080	--	92463	125940	--	103380

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	5470	977	14400	13500	1420	51800	16700	887	40000
2	6040	1510	24600	14400	1470	57200	15100	736	30000
3	6640	2090	37500	15800	2020	86200	13100	636	22500
4	6930	2880	53500	17300	2140	100000	11400	647	19900
5	6840	2870	53000	17100	2120	97900	10700	571	16500
6	7320	3260	64400	16300	1700	74800	10600	573	16400
7	8630	4680	109000	15500	1430	59800	11200	618	18700
8	9640	5880	153000	15400	1320	54900	11700	665	21000
9	8320	3580	80400	14200	1160	44500	11600	582	18200
10	8420	3230	73400	13100	1300	46000	11100	500	15000
11	9750	3840	101000	13300	1200	43100	10800	514	15000
12	11400	4090	126000	15000	1110	45000	10300	485	13500
13	13000	3990	140000	15900	1550	66500	9550	438	11300
14	12800	3470	120000	15800	1220	52000	8530	389	8960
15	13200	3400	121000	15200	1330	54600	8240	375	8340
16	12600	5880	200000	15500	1050	43900	8470	568	13000
17	10800	2740	79900	14900	945	38000	9800	1130	29900
18	9970	3010	81000	14300	842	32500	11100	1170	35100
19	9800	2340	61900	15400	1190	49500	11900	1450	46600
20	10200	2470	68000	16000	1340	57900	12200	1060	34900
21	12400	3580	120000	17200	1750	81300	11500	699	21700
22	15500	4660	195000	18400	1850	91900	10900	476	14000
23	18300	5670	280000	19000	1660	85200	11100	667	20000
24	20000	5460	295000	18600	1470	73000	12300	4600	153000
25	22200	5310	318000	17300	1310	61200	16900	13000	593000
26	22200	3670	220000	16300	966	42500	20100	11200	608000
27	18700	3110	157000	16400	982	43500	17400	1750	82200
28	15500	2200	92100	17800	1290	62000	15500	1400	58600
29	13400	1660	60100	18600	1190	59800	14200	1050	40300
30	14100	1840	70000	17500	1050	49600	14600	1000	39400
31	--	--	--	17000	1020	46800	--	--	--
TOTAL	360070	--	3569600	497800	--	1852900	368590	--	2065000

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	13900	1270	47700	4200	551	6250	3860	2370	24700
2	12800	652	22500	4080	364	4010	3500	4290	40500
3	11600	533	16600	3880	178	1860	3310	1900	17000
4	11300	690	21100	3400	173	1590	3160	1550	13200
5	11400	616	19000	3050	296	2440	3180	1020	8760
6	11200	587	17800	2890	241	1880	3480	413	3880
7	10500	760	21500	2630	119	845	3500	309	2920
8	9610	472	12200	2550	103	709	3500	304	2870
9	9060	382	9340	2750	98	728	3440	280	2600
10	8580	371	8590	2720	66	485	3820	5350	55200
11	8110	360	7880	2650	47	336	4060	2200	24100
12	7750	249	5210	2700	49	357	4100	2170	24000
13	7300	229	4510	2850	66	508	4020	950	10300
14	6640	226	4050	2850	83	639	4500	2700	32800
15	6150	223	3700	3000	99	802	4460	2800	33700
16	5830	196	3090	2960	90	719	4160	1920	21600
17	5710	310	4780	4060	315	3450	4320	2280	26600
18	5580	190	2860	4740	935	12000	4260	885	10200
19	5580	196	2950	4740	1920	24600	4240	695	7960
20	6290	795	13500	3460	985	9200	4100	750	8300
21	6960	1280	24100	3050	650	5350	4200	800	9070
22	7850	3490	74000	3010	1420	11500	4900	3200	42300
23	6980	3050	57500	3010	875	7110	5050	2920	39800
24	6040	1660	27100	2960	385	3080	4780	1210	15600
25	5760	965	15000	3210	3330	28900	4550	694	8530
26	5970	2110	34000	2920	2680	21100	4340	381	4460
27	5360	1520	22000	2680	900	6510	4240	312	3570
28	4920	572	7600	2550	700	4820	4120	243	2700
29	4360	416	4900	2870	4610	35700	3980	194	2080
30	4440	334	4000	3690	6580	65600	3840	168	1740
31	4340	333	3900	4200	3080	34900	--	--	--
TOTAL	237870	--	522960	100310	--	297978	120970	--	501040

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 2399500
TOTAL LOAD FOR YEAR (TONS) 9391043

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 14 1968	1300	13	3690	157	1560	20	31	--	--	--	92	97	100	--	--	--	VPWC
NOV 12.....	1245	3	3690	47	468	--	--	--	--	--	--	--	--	--	--	--	
DEC 6.....	1445	1	4100	59	653	--	--	--	--	--	--	--	--	--	--	--	
JAN 14 1969	1330	0	4220	40	456	--	--	--	--	--	--	--	--	--	--	--	
FEB 10.....	1210	2	2510	47	319	44	52	--	--	--	88	98	99	100	--	--	VPWC
MAR 10.....	1345	4	3760	87	883	--	--	--	--	--	--	--	--	--	--	--	
APR 15.....	1155	12	13300	3370	121000	21	23	--	35	--	68	86	97	100	--	--	VPWC
MAY 12.....	1250	12	14800	528	21100	22	29	--	47	--	84	99	100	--	--	--	VPWC
MAY 22.....	1720	16	19000	1670	85700	13	17	--	26	--	58	83	99	100	--	--	VPWC
JUN 9.....	1245	18	11900	1680	54000	34	43	--	61	--	71	81	98	100	--	--	VPWC
JUN 25.....	1730	14	18100	14700	718000	39	50	--	72	--	93	98	100	--	--	--	VPWC
JUL 3.....	1135	21	11600	281	8800	20	28	--	--	--	89	100	--	--	--	--	VPWC
AUG 4.....	1415	25	3180	173	1490	34	48	--	--	--	94	98	100	--	--	--	VPWC
SEP 11.....	1300	18	4060	605	6630	30	40	--	65	--	98	100	--	--	--	--	VPWC

09188500 GREEN RIVER AT WARREN BRIDGE, NEAR DANIEL, WYO.

LOCATION.--Lat 43°01'00", long 110°07'20", in sec.8, T.35 N., R.111 W., Sublette County, at bridge on U.S. Highways 187 and 189, 100 ft downstream from gaging station, 3 miles upstream from Beaver Creek, and 12 miles north of Daniel.

DRAINAGE AREA.--468 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: May 1962 to September 1964, October 1967 to September 1969.
Water temperatures: May 1962 to September 1964.
Sediment records: October 1968 to September 1969 (miscellaneous).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
15...	1320	410	4.0	90	55	14	2.7	.9	113	0	99	1.9
NOV.												
13...	1215	185	8.2	220	75	18	3.7	1.0	146	0	147	1.8
DEC.												
19...	1140	125	6.3	60	84	16	4.1	2.1	159	0	152	.6
JAN.												
11...	1600	140	7.8	10	85	19	4.0	1.4	157	0	165	.9
FEB.												
13...	1145	116	8.8	260	90	13	3.8	1.5	146	0	161	.0
MAR.												
23...	1340	14[illegible]	12	230	87	22	4.4	1.6	159	0	176	1.4
MAY												
06...	0845	1260	3.9	30	55	12	5.6	2.3	156	0	67	1.0
JUNE												
03...	1430	1280	3.1	90	35	6.1	2.0	.7	96	0	37	1.8
JULY												
08...	1010	1120	3.2	90	24	4.9	1.5	.5	61	0	30	3.2
AUG.												
07...	1210	658	3.0	50	31	5.2	1.4	.6	74	0	30	.7
28...	1330	406	1.8	--	33	7.7	1.8	.8	68	0	68	.5
SEPT.												
24...	1155	236	2.7	50	54	11	2.8	1.2	98	2	98	2.8

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
15...	.3	.1	50	234	.33	259	194	101	.1	376	7.8	4
NOV.												
18...	.4	.[illegible]	10	327	.46	168	263	143	.1	499	7.5	1
DEC.												
19...	.2	.1	10	343	.49	122	277	147	.1	523	7.6	0
JAN.												
11...	.4	.1	2[illegible]	361	.49	135	289	160	.1	558	7.2	0
FEB.												
13...	.5	.2	10	351	.50	114	278	158	.1	535	7.7	0
MAR.												
23...	.6	.[illegible]	40	383	.54	151	309	179	.1	587	8.0	0
MAY												
06...	.4	.[illegible]	20	230	.32	762	184	56	.2	364	7.9	8
JUNE												
03...	.2	.2	[illegible]	133	.20	498	114	35	.1	237	7.7	12
JULY												
08...	.2	.2	10	98	.14	275	80	30	.1	170	7.9	12
AUG.												
07...	.2	.2	10	108	.16	206	99	38	.1	207	8.0	15
28...	.2	.[illegible]	10	147	.19	153	114	58	.1	235	8.0	16
SEPT.												
24...	.2	.1	0	223	.30	143	180	96	.1	359	8.4	12

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED OXYGEN (MG/L)
AUG.					
28...	1330	406	245	8.7	8.7
SEPT.					
24...	1155	236	365	8.5	8.8

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 3, 1969	1430	12.5	1280	16	56

09192600 GREEN RIVER NEAR BIG PINEY, WYO.

LOCATION.--Lat 42°34'14", long 109°56'58", in NE¼NE¼NE¼ sec.21, T.30 N., R.110 W., Sublette County, at bridge on State Secondary Highway 1801, 1.9 miles upstream from New Fork River, 8.4 miles northeast of Big Piney, and 16.2 miles southwest of Boulder.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
14...	0820	325	4.8	110	55	13	7.1	1.1	149	0	80	.6
NOV.												
19...	1515	200	11	220	59	26	5.7	1.4	201	0	106	1.8
DEC.												
19...	1400	180	6.5	--	84	17	6.2	1.3	204	0	121	.8
JAN.												
13...	1200	203	8.1	210	77	20	5.7	1.4	203	0	118	.1
FEB.												
15...	1720	194	9.6	240	77	19	5.2	1.5	195	0	112	1.8
MAR.												
21...	1730	209	10	0	73	22	6.0	1.4	204	0	113	.7
MAY												
09...	1200	2320	6.0	210	47	10	4.6	1.4	162	0	34	3.5
JUNE												
07...	1200	1700	7.0	290	45	7.9	6.4	1.3	139	0	37	1.8
JULY												
12...	1530	596	5.0	140	45	9.0	7.8	1.2	147	0	42	4.5
AUG.												
24...	1815	684	2.9	310	33	7.3	4.0	.6	87	0	38	1.1
SEPT.												
05...	1645	255	7.6	90	41	9.4	5.4	1.2	104	0	63	3.5

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
14...	.3	.1	20	235	.32	207	191	69	.2	391	7.5	5
NOV.												
19...	.4	.0	30	311	.45	177	255	90	.2	506	7.7	--
DEC.												
19...	.3	.1	10	337	.48	172	280	113	.2	530	7.8	0
JAN.												
13...	.3	.1	30	331	.45	180	273	106	.1	529	7.4	0
FEB.												
15...	.4	1.4	20	324	.44	171	270	110	.1	516	7.9	0
MAR.												
21...	.4	.0	40	327	.47	194	271	104	.2	530	8.0	0
MAY												
09...	.3	.5	10	188	.25	1140	160	27	.2	320	7.7	11
JUNE												
07...	.3	.3	70	175	.24	817	145	31	.2	0	7.7	14
JULY												
12...	.2	.2	30	187	.26	309	151	30	.3	321	7.9	20
AUG.												
24...	.2	.1	10	133	.18	247	113	42	.2	246	7.5	23
SEPT.												
05...	.2	.2	10	193	.26	129	142	57	.2	311	7.9	16

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 7, 1969	1200	14.0	1700	50	230

09201000 NEW FORK RIVER NEAR BOULDER, WYO.

LOCATION.--Lat 42°45'01", long 109°43'41", in NW¼NE¼NW¼ sec.16, T.32 N., R.108 W., Sublette County, at gaging station 70 ft downstream from highway bridge, 700 ft upstream from Boulder Creek, and 0.5 mile northwest of Boulder.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
14...	1330	349	7.3	130	20	4.7	6.5	1.6	90	0	4.8	2.7
NOV.												
17...	1620	244	11	280	29	6.6	7.8	1.6	127	0	12	2.1
DEC.												
19...	1300	133	8.1	50	26	7.1	6.9	1.1	114	0	9.2	1.3
JAN.												
13...	1030	167	9.5	110	27	5.0	7.2	1.6	110	0	5.8	1.1
FEB.												
12...	1615	163	9.3	50	22	5.4	5.8	1.5	95	0	9.0	.0
MAR.												
22...	1745	137	9.8	340	25	5.8	7.0	1.6	110	0	7.2	1.4
MAY												
05...	1615	405	7.3	40	19	3.8	6.2	1.5	74	0	16	1.2
JUNE												
04...	2030	1050	8.2	150	15	2.6	3.2	.9	56	0	.0	3.5
JULY												
07...	1815	671	6.0	90	22	3.4	4.4	.7	92	0	.0	5.3
AUG.												
08...	1710	291	6.7	40	22	5.1	5.4	1.3	98	0	.0	1.1
SEPT.												
05...	1800	127	9.2	120	29	6.8	8.3	2.1	134	0	1.6	5.0

09201000 NEW FORK RIVER NEAR BOULDER, WYO.--Continued

DRAINAGE AREA.--552 sq mi.
PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
14...	.2	.0	30	92	.13	94.5	69	0	.3	167	7.7	6
NOV.												
17...	.2	.0	140	133	.18	85.6	100	0	.3	223	7.0	1
DEC.												
19...	.1	.1	7	116	.18	48.8	94	0	.3	206	7.6	0
JAN.												
13...	.1	.0	30	110	.16	51.4	87	0	.3	200	7.0	0
FEB.												
12...	.2	1.5	10	102	.16	51.1	76	0	.3	176	8.1	0
MAR.												
22...	.3	.0	40	112	.16	42.9	88	0	.3	203	7.7	0
MAY												
05...	.2	.0	10	91	.12	98.4	64	3	.3	140	7.4	12
JUNE												
04...	.2	.3	7	62	.08	164	48	2	.2	104	7.1	18
JULY												
07...	.2	.0	0	87	.12	156	70	0	.2	155	8.1	18
AUG.												
08...	.2	.1	20	90	.13	73.9	77	0	.3	179	7.7	20
SEPT.												
25...	.2	.2	40	129	.18	44.6	100	0	.4	229	8.1	16

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUNE 4, 1969	2015	18.0	1050	33	94

09205000 NEW FORK RIVER NEAR BIG PINEY, WYO.

LOCATION.--Lat 42°34'02", long 109°55'46", in SE¼NE¼NE¼ sec.22, T.30 N., R.110 W., Sublette County, at gaging station at old highway bridge, 2 miles upstream from mouth and 9.5 miles northeast of Big Piney.
DRAINAGE AREA.--1,230 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1969.
Water temperatures: October 1965 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 133 mg/l Apr. 5-18; minimum, 37 mg/l May 8-31.
Hardness: Maximum, 90 mg/l Sept. 1-30; minimum, 26 mg/l May 8-31.
Specific conductance: Maximum daily, 263 micromhos Apr. 9; minimum daily, 53 micromhos May 27.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	--	545	8.2	--	21	6.6	9.4	1.7	88	0	16	3.8
NOV.												
01-30	--	421	--	--	24	4.1	7.1	1.7	95	0	12	2.4
DEC.												
01-31	--	282	11	--	27	4.0	8.1	1.7	105	0	8.2	1.6
JAN.												
01-31	--	277	15	--	24	3.8	7.0	1.6	92	0	12	.4
FEB.												
01-28	--	337	11	--	21	3.2	7.2	1.5	76	0	12	1.8
MAR.												
01-30	--	377	6.3	--	15	4.0	6.6	1.8	62	0	9.9	2.5
31...	--	565	6.1	--	20	4.4	11	3.9	72	0	32	4.0
APR.												
01-04	--	565	6.1	--	20	4.4	11	3.9	72	0	32	4.0
05-18	--	1390	8.3	--	25	3.6	12	3.8	101	0	26	3.4
19-30	--	964	6.8	--	19	2.8	7.1	2.1	79	0	12	2.2
MAY												
01-07	--	884	6.9	--	15	1.6	5.0	1.4	57	0	3.4	1.8
08-31	--	302	5.1	--	6.8	2.2	2.7	1.0	33	0	1.0	1.4
JUNE												
01-13	--	358	5.3	--	11	2.2	3.9	.9	48	0	2.4	4.3
14-30	--	224	7.2	--	16	3.9	5.4	1.2	73	0	6.7	3.2
JULY												
01-31	--	1410	8.7	--	22	3.8	5.4	1.2	85	0	8.2	4.6
AUG.												
01-31	--	561	8.7	--	23	5.5	8.0	1.6	99	0	6.7	2.1
SEPT.												
01-30	--	359	8.8	--	33	2.1	10	2.1	116	0	9.9	3.2
WTD. AVG. TIME	--	--	7.3	--	17	3.3	5.8	1.5	69	0	7.7	2.9
WTD. AVG. TONS PER DAY	--	922	8.8	--	21	3.8	7.2	1.7	84	0	10	2.6
	--	--	19	--	42	8.3	15	3.7	173	0	19	7.2

ANALYSES OF ADDITIONAL SAMPLES

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
14...	1020	A 495	7.4	130	21	6.2	8.1	1.3	93	0	14	2.1
DEC.												
19...	1340	A 250	9.8	40	28	4.1	8.2	1.5	108	0	13	1.4
MAR.												
21...	1530	A 380	11	130	22	1.3	5.9	1.3	79	0	8.2	.7
AUG.												
28...	1205	A 384	7.7	--	27	4.1	11	2.0	106	0	15	2.6
SEPT.												
24...	0955	A 372	8.7	90	28	6.8	10	2.3	123	0	21	3.0

DATE	TIME	DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED OXYGEN (MG/L)
AUG.					
28...	1210	384	220	8.6	8.3
SEPT.					
24...	0955	372	230	8.4	8.5

A DISCHARGE AT TIME OF SAMPLING.

09205000 NEW FORK RIVER NEAR BIG PINEY, WYO.--Continued

EXTREMES.--1968-69:--Continued
Water temperatures: Maximum, 22.0°C July 31; minimum, freezing point on many days during November to April.
Period of record:
Dissolved solids: Maximum, 164 mg/l Nov. 1-30, 1966; minimum, 37 mg/l May 8-31, 1969.
Hardness: Maximum, 106 mg/l Feb. 1-10, 1966; minimum, 24 mg/l May 24-31, 1967.
Specific conductance: Maximum daily, 389 micromhos Mar. 7, 1967; minimum daily, 52 micromhos May 28, 1967.
Water temperatures: Maximum, 23.0°C Aug. 4, 1966; minimum, freezing point on many days during winter periods.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality. Maximum observed during water year: Dissolved solids, 140 mg/l Sept. 24; hardness, 98 mg/l Sept. 24.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-31	.2	.2	90	111	.16	171	80	8	.5	184	6.8	--
NOV.												
01-30	.3	.5	60	109	.16	139	76	0	.4	188	7.0	--
DEC.												
01-31	.2	.5	70	114	.16	89.8	84	0	.4	203	7.0	--
JAN.												
01-31	.2	.3	50	109	.16	85.3	76	1	.4	190	7.2	--
FEB.												
01-28	.2	.5	0	95	.15	100	65	3	.4	164	7.3	--
MAR.												
01-30	.2	.3	60	77	.13	95.7	55	4	.4	138	7.3	--
31...	.2	.9	50	118	.16	180	69	10	.6	186	7.4	--
APR.												
01-04	.2	.9	50	118	.16	180	69	10	.6	186	7.4	--
05-18	.2	.9	60	133	.17	465	77	0	.6	213	7.7	--
19-30	.1	.3	50	91	.12	224	60	0	.4	158	7.2	--
MAY												
01-07	.2	.3	20	64	.09	158	44	0	.4	116	7.3	--
08-31	.1	.3	10	37	.05	326	26	0	.2	60	7.0	--
JUNE												
01-13	.1	.2	0	54	.08	599	38	0	.3	92	7.5	--
14-30	.1	.3	0	80	.11	496	57	0	.3	136	7.8	--
JULY												
01-31	.2	.1	10	96	.13	365	70	0	.3	160	8.1	--
AUG.												
01-31	.3	.0	70	105	.15	167	79	0	.4	191	8.0	--
SEPT.												
01-30	.3	.2	20	127	.18	126	90	0	.5	226	8.1	--
WTD. AVG. TIME	.2	.3	0	90	--	--	56	1	.3	136	7.5	--
WTD. AVG. TONS PER DAY	.4	.7	0	200	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
14...	.2	.0	30	106	.15	143	78	2	.4	182	7.3	6
DEC.												
19...	.1	.1	10	119	.16	81.0	87	0	.4	199	7.6	0
MAR.												
21...	.3	.2	30	90	.13	98.5	60	0	.3	161	8.2	0
AUG.												
28...	.2	.0	20	122	.17	126	84	0	.5	198	8.2	17
SEPT.												
24...	.2	.1	20	140	.18	135	98	0	.4	233	8.2	8

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 7, 1969	1420	14.5	3350	34	308

09205000 NEW FORK RIVER NEAR BIG PINEY, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	--	195	158	--	162	131	66	153	170	215
2	169	167	201	190	166	--	181	126	85	--	170	218
3	168	160	200	184	166	--	179	130	91	179	170	216
4	168	157	197	187	169	--	190	116	91	160	172	216
5	--	164	187	184	181	--	202	109	100	144	178	217
6	169	161	189	182	199	--	228	100	87	144	182	224
7	172	157	186	183	174	131	168	90	95	143	186	215
8	174	175	192	184	150	131	233	79	84	146	186	217
9	171	196	192	191	152	124	263	71	105	144	189	219
10	174	--	189	198	156	124	205	67	109	149	191	221
11	178	183	187	199	152	124	207	64	90	--	194	223
12	--	186	188	195	158	131	--	62	87	164	196	221
13	182	192	192	193	154	131	227	60	93	152	196	225
14	182	190	198	184	153	124	207	61	118	148	202	227
15	187	203	193	183	155	131	207	57	116	173	200	226
16	177	--	187	183	152	136	203	58	112	158	191	228
17	172	205	187	187	158	137	198	55	--	167	227	--
18	165	208	194	189	156	136	198	55	131	159	188	231
19	--	188	197	191	164	141	193	62	150	148	191	225
20	--	185	196	184	272	141	190	55	146	149	192	223
21	161	187	192	182	158	133	186	56	146	154	192	224
22	160	185	195	181	158	139	175	54	139	151	193	226
23	154	185	196	200	159	138	166	59	139	153	191	--
24	154	198	192	194	--	146	149	57	146	156	191	226
25	157	189	189	191	134	141	144	56	150	164	192	227
26	--	200	184	--	136	138	137	55	148	162	195	227
27	162	--	186	180	135	135	133	53	--	180	201	226
28	161	--	188	165	134	142	133	55	161	170	202	225
29	162	--	185	159	--	147	133	55	155	170	207	234
30	164	--	188	159	--	152	130	57	155	168	208	235
31	--	--	195	160	--	232	--	60	--	168	210	--
AVG	168	--	191	184	161	139	183	71	171	157	192	223

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	0.0	0.0	0.0	--	0.0	9.0	12.0	16.0	18.0	17.0
2	11.0	2.0	0.0	0.0	0.0	--	0.0	12.0	13.0	--	16.0	15.0
3	9.0	3.0	0.0	0.0	0.0	--	0.0	12.0	14.0	17.0	18.0	14.0
4	10.0	2.0	0.0	0.0	0.0	--	0.0	11.0	15.0	16.0	20.0	15.0
5	--	2.0	0.0	0.0	0.0	--	0.0	14.0	18.0	16.0	19.0	14.0
6	8.0	1.0	0.0	0.0	0.0	--	0.0	12.0	14.0	15.0	18.0	15.0
7	7.0	1.0	0.0	0.0	0.0	0.0	0.0	12.0	14.0	16.0	18.0	18.0
8	6.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	13.0	16.0	18.0	17.0
9	7.0	0.0	0.0	0.0	0.0	0.0	2.0	11.0	15.0	16.0	21.0	15.0
10	7.0	--	0.0	0.0	0.0	0.0	4.0	10.0	14.0	17.0	19.0	14.0
11	8.0	1.0	0.0	0.0	0.0	0.0	3.0	10.0	13.0	--	20.0	14.0
12	--	0.0	0.0	0.0	0.0	0.0	--	10.0	14.0	18.0	18.0	17.0
13	7.0	0.0	0.0	0.0	0.0	0.0	6.0	10.0	12.0	18.0	19.0	14.0
14	8.0	0.0	0.0	0.0	0.0	0.0	8.0	10.0	14.0	18.0	20.0	14.0
15	6.0	0.0	0.0	0.0	0.0	0.0	6.0	11.0	14.0	18.0	18.0	14.0
16	5.0	--	0.0	0.0	0.0	0.0	6.0	10.0	12.0	19.0	18.0	13.0
17	4.0	0.0	0.0	0.0	0.0	0.0	8.0	10.0	--	18.0	18.0	--
18	5.0	0.0	0.0	0.0	0.0	0.0	7.0	10.0	14.0	19.0	18.0	14.0
19	--	0.0	0.0	0.0	0.0	0.0	8.0	11.0	16.0	20.0	18.0	14.0
20	--	0.0	0.0	0.0	0.0	0.0	8.0	10.0	16.0	20.0	20.0	14.0
21	5.0	0.0	0.0	0.0	0.0	0.0	12.0	12.0	14.0	18.0	20.0	13.0
22	5.0	0.0	0.0	0.0	0.0	0.0	12.0	12.0	13.0	20.0	19.0	13.0
23	5.0	0.0	0.0	0.0	0.0	0.0	12.0	14.0	14.0	20.0	20.0	--
24	7.0	0.0	0.0	0.0	0.0	0.0	8.0	14.0	12.0	18.0	21.0	14.0
25	6.0	0.0	0.0	0.0	0.0	0.0	4.0	12.0	10.0	18.0	20.0	14.0
26	--	0.0	0.0	--	0.0	0.0	4.0	14.0	10.0	18.0	18.0	14.0
27	5.0	--	0.0	0.0	0.0	0.0	7.0	14.0	12.0	20.0	18.0	14.0
28	5.0	--	0.0	0.0	0.0	0.0	10.0	14.0	12.0	20.0	18.0	15.0
29	6.0	--	0.0	0.0	--	0.0	8.0	12.0	12.0	18.0	18.0	13.0
30	5.0	--	0.0	0.0	--	0.0	8.0	10.0	14.0	19.0	19.0	11.0
31	--	--	0.0	0.0	--	0.0	--	10.0	--	22.0	18.0	--
AVG	6.5	0.5	0.0	0.0	0.0	0.0	5.2	11.4	13.4	18.0	18.7	14.3

09207700 DRY PINEY CREEK NEAR BIG PINEY, WYO.

LOCATION.--Lat 42°23'25", long 110°15'09", in NW¼NE¼ sec. 27, T. 28 N., R. 113 W., Sublette County, at gaging station 8.3 miles upstream from mouth and 16.3 miles southwest of Big Piney.

DRAINAGE AREA.--67 sq mi, approximately.

PERIOD OF RECORD.--Water temperatures: April 1966 to September 1969.
Sediment records: April 1966 to September 1969.

EXTREMES.--1968-69:
Water temperatures: *Maximum, 24.0°C June 4, 6, 19; minimum, freezing point on many days during October to April.*
Sediment concentrations: Maximum daily, 9,310 mg/l July 29; minimum daily, no flow for many days during November to March.
Sediment loads: Maximum daily, 330 tons June 16; minimum daily, 0 ton on many days during October to March.

Period of record:
Water temperatures: Maximum, 24.0°C Aug. 2, 1967, June 4, 6, 19, 1969; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 9,310 mg/l July 29, 1969; minimum daily, no flow for many days most years.
Sediment loads: Maximum daily, 330 tons June 16, 1969; minimum daily, 0 ton on many days most years.

REMARKS.--*Flow affected by ice Nov. 2-21, Mar. 28 to Apr. 3. No flow Nov. 22 to Mar. 27.*

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	--	--	--	--	--	09.0	19.0	14.0	15.0	--
2	--	--	--	--	--	--	02.0	06.0	15.0	--	22.0	--
3	13.0	--	--	--	--	--	01.0	12.0	--	15.0	--	--
4	--	--	--	--	--	--	02.0	13.0	24.0	--	20.0	10.0
5	--	--	--	--	--	--	02.0	--	22.0	--	13.0	--
6	09.0	--	--	--	--	--	02.0	--	24.0	--	22.0	--
7	--	--	--	--	--	--	01.0	14.0	23.0	--	--	--
8	--	--	--	--	--	--	02.0	--	13.0	--	--	--
9	00.0	--	--	--	--	--	03.0	18.0	14.0	--	13.0	--
10	--	--	--	--	--	--	04.0	08.0	16.0	--	--	--
11	--	--	--	--	--	--	04.0	10.0	12.0	21.0	--	--
12	--	--	--	--	--	--	08.0	10.0	13.0	23.0	--	--
13	--	--	--	--	--	--	08.0	05.0	14.0	--	13.0	--
14	--	--	--	--	--	--	09.0	08.0	--	--	--	--
15	--	--	--	--	--	--	05.0	06.0	--	21.0	--	--
16	--	--	--	--	--	--	07.0	11.0	--	23.0	--	--
17	--	--	--	--	--	--	08.0	08.0	--	14.0	15.0	--
18	04.0	--	--	--	--	--	07.0	20.0	--	14.0	--	06.0
19	--	00.0	--	--	--	--	07.0	15.0	24.0	19.0	--	--
20	--	--	--	--	--	--	12.0	10.0	--	--	--	--
21	--	--	--	--	--	--	06.0	09.0	--	--	14.0	--
22	--	--	--	--	--	--	12.0	10.0	--	--	--	--
23	--	--	--	--	--	--	07.0	07.0	--	--	14.0	--
24	--	--	--	--	--	--	12.0	07.0	--	--	--	--
25	--	--	--	--	--	--	07.0	07.0	13.0	--	--	--
26	--	--	--	--	--	--	06.0	23.0	13.0	--	--	--
27	--	--	--	--	--	--	11.0	10.0	15.0	15.0	--	--
28	--	--	--	--	--	--	15.0	22.0	16.0	16.0	13.0	--
29	--	--	--	--	--	--	11.0	21.0	18.0	18.0	--	--
30	--	--	--	--	--	--	12.0	22.0	--	20.0	12.0	--
31	--	--	--	--	--	--	--	18.0	--	--	--	--
AVG	--	--	--	--	--	--	6.6	12.1	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
APR 5, 1969	1835	2	33	12600	1120	--	37	--	59	--	90	97	99	100	--	--	VPWC
APR 9.....	1910	--	22	10200	606	--	39	--	62	--	89	95	99	100	--	--	VPWC
APR 17.....	1050	4	6.0	674	11	--	39	--	56	--	87	94	100	--	--	--	VPWC
JUN 8.....	2130	13	37	3970	397	--	59	--	81	--	94	97	100	--	--	--	VPWC
JUN 19.....	1910	24	19	5410	278	--	76	--	94	--	100	--	--	--	--	--	PWC

09207700 DRY PINEY CREEK NEAR BIG PINEY, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.08	89	.02	.31	131	.11	0	--	0
2	.08	52	.01	.29	131	.10	0	--	0
3	.06	23	0	.26	131	.09	0	--	0
4	.06	23	0	.31	131	.11	0	--	0
5	.08	23	0	.27	131	.10	0	--	0
6	.08	23	0	.20	131	.07	0	--	0
7	.08	23	0	.15	131	.05	0	--	0
8	.08	23	0	.11	131	.04	0	--	0
9	.06	23	0	.14	131	.05	0	--	0
10	.08	23	0	.12	131	.04	0	--	0
11	.08	23	0	.10	131	.04	0	--	0
12	.08	23	0	.11	131	.04	0	--	0
13	.06	23	0	.10	131	.04	0	--	0
14	.57	131	.20	.08	131	.03	0	--	0
15	.58	131	.21	.10	131	.04	0	--	0
16	.23	131	.08	.08	131	.03	0	--	0
17	.23	131	.08	.06	131	.02	0	--	0
18	.27	131	.10	.10	131	.04	0	--	0
19	.23	131	.08	.12	131	.04	0	--	0
20	.17	131	.06	.04	131	.01	0	--	0
21	.17	131	.06	.01	131	0	0	--	0
22	.23	131	.08	0	--	0	0	--	0
23	.23	131	.08	0	--	0	0	--	0
24	.17	131	.06	0	--	0	0	--	0
25	.14	131	.05	0	--	0	0	--	0
26	.17	131	.06	0	--	0	0	--	0
27	.14	131	.05	0	--	0	0	--	0
28	.17	131	.06	0	--	0	0	--	0
29	.72	131	.25	0	--	0	0	--	0
30	.27	131	.10	0	--	0	0	--	0
31	.31	131	.11	--	--	--	0	--	0
TOTAL	5.96	--	1.80	3.06	--	1.09	0	--	0

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	--	0	0	--	0	0	--	0
2	0	--	0	0	--	0	0	--	0
3	0	--	0	0	--	0	0	--	0
4	0	--	0	0	--	0	0	--	0
5	0	--	0	0	--	0	0	--	0
6	0	--	0	0	--	0	0	--	0
7	0	--	0	0	--	0	0	--	0
8	0	--	0	0	--	0	0	--	0
9	0	--	0	0	--	0	0	--	0
10	0	--	0	0	--	0	0	--	0
11	0	--	0	0	--	0	0	--	0
12	0	--	0	0	--	0	0	--	0
13	0	--	0	0	--	0	0	--	0
14	0	--	0	0	--	0	0	--	0
15	0	--	0	0	--	0	0	--	0
16	0	--	0	0	--	0	0	--	0
17	0	--	0	0	--	0	0	--	0
18	0	--	0	0	--	0	0	--	0
19	0	--	0	0	--	0	0	--	0
20	0	--	0	0	--	0	0	--	0
21	0	--	0	0	--	0	0	--	0
22	0	--	0	0	--	0	0	--	0
23	0	--	0	0	--	0	0	--	0
24	0	--	0	0	--	0	0	--	0
25	0	--	0	0	--	0	0	--	0
26	0	--	0	0	--	0	0	--	0
27	0	--	0	0	--	0	0	--	0
28	0	--	0	0	--	0	1.0	625	1.7
29	0	--	0	--	--	--	11	1200	36
30	0	--	0	--	--	--	16	2000	86
31	0	--	0	--	--	--	15	1900	77
TOTAL	0	--	0	0	--	0	43.0	--	200.7

09207700 DRY PINEY CREEK NEAR BIG PINEY, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	13	2600	91	5.5	180	2.7	6.6	50	.89
2	14	2800	106	5.5	180	2.7	6.6	55	.98
3	19	2990	153	6.0	225	3.6	6.0	25	.40
4	13	4060	208	5.5	170	2.5	5.5	75	1.1
5	13	5710	318	5.2	125	1.8	5.0	70	.94
6	9.0	3860	114	5.4	125	1.8	5.0	50	.68
7	3.0	1900	15	4.8	175	2.3	5.6	70	1.1
8	6.6	4370	78	5.0	170	2.3	22	2250	251
9	12	7020	262	5.0	140	1.9	17	1150	59
10	21	3320	210	5.8	160	2.5	9.3	265	6.7
11	16	3870	225	5.6	140	2.1	9.1	290	7.1
12	13	2930	136	5.2	130	1.8	8.4	260	5.9
13	13	2990	117	5.4	125	1.8	8.9	320	7.7
14	9.6	1560	43	5.6	115	1.7	10	585	16
15	8.0	500	11	6.2	100	1.7	8.3	474	11
16	5.7	648	10	6.4	130	2.2	26	4700	330
17	7.5	777	13	5.4	120	1.7	16	2630	114
18	9.7	720	18	5.6	130	2.0	8.9	910	22
19	8.0	516	11	6.0	110	1.8	11	1570	60
20	9.8	480	13	6.1	140	2.3	8.4	424	9.6
21	12	575	19	6.2	120	2.0	7.5	118	2.4
22	14	690	26	6.2	80	1.3	7.2	143	2.8
23	14	655	27	6.2	75	1.3	6.7	128	2.3
24	12	960	31	6.4	100	1.7	7.4	231	4.6
25	7.7	490	10	6.2	85	1.4	7.2	127	2.5
26	6.4	340	5.9	6.2	120	2.0	6.7	71	1.3
27	6.0	367	6.4	6.2	120	2.0	6.2	62	1.0
28	6.0	270	4.4	6.1	140	2.3	7.2	91	1.8
29	6.2	250	4.2	6.4	90	1.6	7.5	114	2.3
30	6.6	225	4.0	6.9	35	.65	6.2	78	1.3
31	--	--	--	6.6	50	.89	--	--	--
TOTAL	314.3	--	2294.9	180.8	--	60.34	273.4	--	928.39

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	5.5	57	.85	1.7	109	.50	.17	42	.02
2	5.0	59	.80	1.4	32	.12	.14	42	.02
3	4.5	99	1.2	1.2	19	.06	.20	42	.02
4	4.2	83	.94	1.2	23	.07	.17	42	.02
5	4.1	54	.60	1.2	46	.15	.17	42	.02
6	4.0	46	.50	1.1	34	.10	.14	42	.02
7	3.9	47	.49	.99	42	.11	.12	42	.01
8	4.0	52	.56	.91	42	.10	.10	42	.01
9	3.9	60	.63	.74	42	.08	.08	42	.01
10	3.9	73	.77	.58	42	.07	.52	330	.46
11	3.5	98	.93	.45	42	.05	.83	210	.47
12	3.1	103	.86	.51	42	.06	.51	88	.12
13	3.0	22	.18	.83	42	.09	.35	12	.01
14	3.1	32	.27	.74	42	.08	.31	12	.01
15	3.6	46	.45	.58	42	.07	.27	12	.01
16	4.4	143	1.7	.58	42	.07	.17	12	.01
17	4.1	68	.75	.66	42	.06	.23	12	.01
18	3.5	40	.38	1.1	42	.12	.20	12	.01
19	3.1	46	.39	1.2	42	.14	.23	12	.01
20	3.0	68	.55	.83	42	.09	.27	12	.01
21	2.8	38	.29	.66	42	.07	.31	12	.01
22	2.7	33	.24	.51	42	.06	.35	12	.01
23	2.4	41	.27	.45	42	.05	.35	12	.01
24	2.4	44	.29	.35	42	.04	.31	12	.01
25	2.8	49	.37	.31	42	.04	.27	12	.01
26	2.6	49	.34	.31	42	.04	.27	12	.01
27	2.2	31	.18	.31	42	.04	.27	12	.01
28	2.2	25	.15	.23	42	.03	.23	12	.01
29	10	9310	251	.27	42	.03	.20	12	.01
30	7.0	8800	166	.17	42	.02	.27	12	.01
31	3.3	288	2.6	.20	42	.02	--	--	--
TOTAL	117.8	--	435.53	22.27	--	2.63	8.01	--	1.38

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 968.60
TOTAL LOAD FOR YEAR (TONS) 3926.76

09209400 GREEN RIVER NEAR LA BARGE, WYO.

LOCATION.--Lat 42°11', long 110°10', in SW¼ sec.33, T.26 N., R.112 W., Lincoln County, at bridge 0.7 mile north of La Barge, 6.5 miles upstream from gaging station, and 9.5 miles upstream from Muddy Creek.
DRAINAGE AREA.--3,910 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1969.
Water temperatures: October 1963 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 270 mg/l Apr. 1-6; minimum, 91 mg/l May 17-31.
Hardness: Maximum, 174 mg/l Dec. 1-31; minimum, 75 mg/l May 17-31.
Specific conductance: Maximum daily, 512 micromhos Apr. 3; minimum daily, 145 micromhos May 30.
Water temperatures: Maximum, 22.0°C July 31, Aug. 1, 3, 4, 26; minimum, freezing point on many days during November to April.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	--	1100	7.0	--	35	11	12	1.5	134	0	42	5.0
NOV.												
01-09	--	962	7.4	--	39	14	11	1.2	139	0	55	3.9
10-30	--	865	9.0	--	46	12	12	1.5	164	0	57	3.8
DEC.												
01-31	--	589	10	--	51	12	12	1.7	163	0	63	3.4
JAN.												
01-31	--	550	9.5	--	47	13	12	1.9	160	0	60	5.3
FEB.												
01-28	--	678	9.6	--	44	11	9.6	1.5	131	0	54	3.5
MAR.												
01-31	--	709	8.4	--	43	12	12	2.2	145	0	58	2.1
APR.												
01-06	--	1350	6.2	--	45	13	30	6.5	177	0	72	8.8
07-23	--	2640	7.7	--	42	12	17	4.2	173	0	44	4.8
24-30	--	2680	6.2	--	41	13	10	2.3	163	0	46	2.6
MAY												
01-08	--	2540	6.9	--	41	12	8.4	1.8	149	0	36	2.5
09-16	--	4500	6.0	--	30	6.2	5.2	1.4	103	0	20	1.8
17-31	--	5730	4.9	--	23	4.4	4.4	1.3	75	0	14	1.4
JUNE												
01-13	--	5710	5.9	--	29	6.0	7.8	1.2	107	0	24	3.2
14-30	--	3910	7.6	--	33	10	11	1.2	140	0	33	4.3
JULY												
01-31	--	2315	7.2	--	35	4.3	9.8	1.2	110	6	15	8.5
AUG.												
01-31	--	1238	5.7	--	29	9.0	9.3	1.3	115	0	27	2.5
SEPT.												
01-30	--	656	5.5	--	38	11	12	1.4	128	0	49	6.5
WTD. AVG. TIME	--	--	6.8	--	35	8.6	9	1.7	125	1	33	4.0
WTD. AVG. TONS PER DAY	--	1700	7.6	--	39	10	11	1.7	137	1	44	4.3
	--	--	31	--	159	40	45	7.7	575	3	152	18

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
09...	1210	A1060	7.2	130	36	10	12	1.5	131	0	43	2.1
DEC.												
19...	0950	A532	9.2	220	49	14	12	1.6	166	0	5.9	2.1
MAR.												
19...	1730	A690	12	170	41	12	9.6	1.3	137	0	49	2.8

A DISCHARGE AT TIME OF SAMPLING.

09209400 GREEN RIVER NEAR LA BARGE, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 358 mg/l Mar. 31 to Apr. 3, 1966; minimum, 91 mg/l May 17-31, 1969.
Hardness: Maximum, 278 mg/l Jan. 19-22, 1968; minimum, 75 mg/l May 17-31, 1969.
Specific conductance: Maximum daily, 734 micromhos Jan. 22, 1968; minimum daily, 145 micromhos May 30, 1969.
Water temperatures: Maximum, 23.5°C July 19, 25, 27, Aug. 1, 1966; minimum, freezing point on many days during winter periods.

REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality. Maximum observed during water year: Hardness, 180 mg/l Dec. 19.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-31	.3	.3	30	180	.25	552	135	25	.5	320	7.6	--
NOV.												
01-09	.3	.6	40	200	.29	545	155	41	.4	333	7.6	--
10-30	.3	1.0	50	223	.32	547	165	30	.4	381	7.7	--
DEC.												
01-31	.2	.0	30	233	.31	366	174	40	.4	389	7.1	--
JAN.												
01-31	.3	.7	0	229	.32	345	170	39	.4	376	8.2	--
FEB.												
01-28	.2	.4	0	198	.29	392	153	46	.3	345	7.8	--
MAR.												
01-31	.3	.2	60	209	.29	402	154	35	.4	340	7.7	--
APR.												
01-06	.2	.9	100	270	.38	1030	166	21	1.0	467	7.5	--
07-23	.2	.5	60	217	.30	1600	155	13	.6	386	7.7	--
24-30	.2	.3	60	202	.29	1520	157	23	.3	340	7.6	--
MAY												
01-08	.3	.7	40	183	.25	1260	150	28	.3	333	7.9	--
09-16	.2	.4	50	122	.19	1680	101	17	.2	223	7.4	--
17-31	.2	.4	30	91	.14	1580	75	13	.2	171	7.5	--
JUNE												
01-13	.1	.2	0	130	.18	2070	97	9	.3	220	7.9	--
14-30	.2	.3	360	170	.24	1840	125	10	.4	287	8.1	--
JULY												
01-31	.2	.2	30	141	.19	877	105	5	.4	254	8.4	--
AUG.												
01-31	.3	.1	40	141	.20	502	110	16	.4	267	7.2	--
SEPT.												
01-30	.3	.2	50	187	.25	326	139	34	.4	331	7.8	--
WTD. AVG. TIME	.2	.3	0	161	--	--	122	18	.4	282	7.8	--
WTD. AVG. TONS PER DAY	.2	.4	50	186	.26	--	139	26	.4	322	7.7	--
	1.0	1.6	0	742	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
09...	.2	.1	0	176	.24	509	132	25	.5	314	7.2	4
DEC.												
19...	.3	.2	20	230	.32	342	180	44	.4	383	8.1	0
MAR.												
19...	.4	.0	210	195	.27	373	151	39	.3	339	7.7	0

09209400 GREEN RIVER NEAR LA BARGE, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	296	323	395	385	359	332	359	341	174	291	252	294
2	296	326	410	381	356	331	424	337	198	296	248	294
3	291	327	413	377	349	327	512	335	212	304	241	298
4	288	327	408	373	349	326	497	339	219	307	241	301
5	294	324	390	373	349	336	490	328	215	292	243	301
6	298	325	313	372	347	344	502	317	192	263	248	306
7	296	324	382	366	350	345	400	302	--	255	248	308
8	297	318	389	366	342	336	374	314	216	254	246	311
9	289	335	386	378	335	338	418	253	246	254	248	315
10	300	363	387	--	347	345	378	234	242	259	258	318
11	312	367	383	406	342	350	387	224	225	266	261	318
12	319	360	380	--	341	349	379	207	221	264	270	343
13	321	373	381	--	343	351	362	222	246	257	257	331
14	317	378	393	374	320	344	377	210	267	241	288	333
15	320	394	391	376	347	338	381	209	276	238	281	336
16	340	377	382	--	349	336	379	200	288	247	252	332
17	330	376	373	377	346	338	386	195	301	254	243	332
18	328	395	376	380	343	331	386	187	314	290	257	331
19	322	418	391	386	345	338	374	181	314	229	254	331
20	215	368	397	382	361	339	377	181	313	231	293	332
21	312	370	391	373	356	--	372	174	308	238	266	331
22	215	371	399	373	350	347	372	175	294	236	262	336
23	320	356	385	376	351	350	366	172	287	231	261	337
24	315	381	381	385	356	349	347	176	279	232	265	342
25	313	392	377	400	--	362	318	168	298	236	269	340
26	321	388	374	405	329	352	322	162	287	244	271	342
27	319	408	372	388	322	364	326	162	283	248	275	341
28	317	395	373	378	327	360	334	152	290	251	279	340
29	321	418	378	363	--	358	348	147	294	249	282	339
30	325	--	376	353	--	363	350	145	294	260	283	344
31	335	--	380	356	--	367	--	149	--	252	287	--
AVG	305	364	384	377	344	344	386	222	261	257	262	325

09209400 GREEN RIVER NEAR LA BARGE, WYO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	4.0	0.0	0.0	0.0	0.0	1.0	11.0	13.0	18.0	22.0	19.0
2	13.0	3.0	0.0	0.0	1.0	0.0	1.0	12.0	15.0	19.0	18.0	18.0
3	12.0	3.0	0.0	0.0	1.0	0.0	1.0	9.0	16.0	19.0	22.0	16.0
4	12.0	3.0	0.0	0.0	0.0	1.0	1.0	12.0	18.0	15.0	22.0	16.0
5	11.0	2.0	0.0	1.0	0.0	1.0	1.0	13.0	20.0	17.0	21.0	16.0
6	10.0	2.0	0.0	1.0	0.0	1.0	1.0	14.0	16.0	17.0	19.0	16.0
7	9.0	2.0	0.0	1.0	1.0	1.0	0.0	14.0	--	17.0	20.0	18.0
8	8.0	0.0	0.0	1.0	1.0	1.0	1.0	13.0	14.0	19.0	19.0	17.0
9	7.0	0.0	0.0	0.0	0.0	0.0	2.0	13.0	16.0	19.0	17.0	18.0
10	7.0	1.0	0.0	--	1.0	0.0	2.0	10.0	13.0	19.0	20.0	17.0
11	8.0	1.0	0.0	0.0	0.0	0.0	6.0	11.0	15.0	19.0	21.0	18.0
12	8.0	1.0	0.0	--	0.0	0.0	7.0	13.0	13.0	20.0	20.0	18.0
13	10.0	1.0	0.0	--	0.0	0.0	7.0	13.0	13.0	20.0	20.0	16.0
14	8.0	0.0	0.0	1.0	0.0	0.0	7.0	13.0	13.0	20.0	21.0	13.0
15	8.0	0.0	0.0	1.0	0.0	0.0	7.0	11.0	14.0	20.0	18.0	14.0
16	7.0	0.0	0.0	--	1.0	0.0	7.0	13.0	13.0	20.0	16.0	15.0
17	6.0	0.0	0.0	1.0	0.0	1.0	9.0	13.0	14.0	21.0	17.0	15.0
18	6.0	1.0	0.0	0.0	0.0	0.0	8.0	14.0	17.0	20.0	18.0	15.0
19	7.0	1.0	0.0	1.0	0.0	0.0	8.0	13.0	18.0	21.0	20.0	15.0
20	7.0	1.0	0.0	1.0	0.0	0.0	10.0	14.0	18.0	20.0	19.0	14.0
21	7.0	1.0	0.0	1.0	0.0	--	12.0	14.0	17.0	19.0	21.0	14.0
22	6.0	1.0	0.0	1.0	0.0	0.0	12.0	14.0	15.0	21.0	21.0	14.0
23	7.0	0.0	0.0	0.0	0.0	0.0	13.0	16.0	15.0	20.0	20.0	14.0
24	7.0	0.0	0.0	0.0	0.0	0.0	9.0	15.0	14.0	18.0	20.0	14.0
25	7.0	0.0	1.0	1.0	0.0	0.0	7.0	12.0	12.0	20.0	21.0	12.0
26	7.0	0.0	--	1.0	0.0	0.0	4.0	15.0	10.0	19.0	22.0	11.0
27	4.0	0.0	0.0	1.0	0.0	1.0	7.0	17.0	12.0	18.0	21.0	15.0
28	7.0	0.0	0.0	0.0	0.0	1.0	7.0	15.0	14.0	21.0	19.0	15.0
29	7.0	0.0	0.0	1.0	--	1.0	10.0	16.0	12.0	19.0	18.0	13.0
30	6.0	0.0	0.0	0.0	--	1.0	11.0	13.0	16.0	21.0	19.0	12.0
31	6.0	--	0.0	0.0	--	1.0	--	10.0	--	22.0	15.0	--
AVG	8.0	0.9	0.0	0.5	0.2	0.3	5.9	13.0	14.6	19.2	19.5	15.2

SUSPENDED-SEDIMENT DISCHARGE MEASURMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 5, 1969	1900	20.0	3520	76	722

09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WYO.

LOCATION.--Lat 42°01', long 110°03', in NW¼ sec.31, T.24 N., R.111 W., Sweetwater County, at bridge 1 mile east of Fontenelle and 3.6 miles downstream from gaging station.
DRAINAGE AREA.--4,500 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969.
Water temperatures: October 1967 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 382 mg/l Nov. 20-25; minimum, 154 mg/l June 11-19.
Hardness: Maximum, 220 mg/l Mar. 12-23; minimum, 115 mg/l June 11-19, 24-30.
Specific conductance: Maximum daily, 613 micromhos Nov. 25; minimum daily, 253 micromhos June 13.
Water temperatures: Maximum, 18.0°C Aug. 3-31; minimum, 1.0°C Dec. 7, 22.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-18	--	2290	10	--	42	7.5	14	1.5	133	0	53	2.5
19-31	--	1120	6.7	--	41	10	16	1.7	133	0	59	3.2
NOV.												
01-19	--	828	3.4	--	42	13	18	1.3	138	0	79	3.6
20-25	--	302	3.7	--	76	6.3	40	1.2	152	0	174	4.6
26-29	--	1150	2.1	--	41	12	16	1.2	145	0	66	3.4
30...	--	293	5.9	--	53	17	35	1.5	147	0	140	4.2
DEC.												
01-03	--	293	5.9	--	53	17	35	1.5	147	0	140	4.2
04-31	--	476	5.6	--	52	16	26	1.5	155	0	122	3.7
JAN.												
01-31	--	816	7.4	--	52	16	23	1.6	165	0	100	5.3
FEB.												
01-28	--	1720	6.5	--	47	13	17	1.9	160	0	76	2.8
MAR.												
01-11	--	1680	5.6	--	48	16	15	1.8	164	0	84	3.0
12-23	--	660	6.4	--	58	18	25	2.0	175	0	128	4.9
24-31	--	1040	6.1	--	50	15	18	1.9	167	0	89	4.3
APR.												
01-30	--	2120	6.1	--	46	16	18	1.9	156	0	74	5.3
MAY												
01-31	--	3210	5.8	--	42	15	15	2.3	150	0	61	5.4
JUNE												
01-10	--	3440	5.8	--	35	13	11	1.4	128	0	52	4.3
11-19	--	7720	5.6	--	32	8.5	8.6	1.2	110	0	39	5.0
20-23	--	1820	6.1	--	34	10	13	1.4	113	0	59	5.4
24-30	--	3420	6.1	--	31	9.1	10	1.4	116	0	41	3.2
JULY												
01-31	--	2280	7.4	--	41	8.4	12	1.2	134	0	45	6.4
AUG.												
01-31	--	1430	7.6	--	39	11	15	1.6	140	0	52	3.9
SEPT.												
01-30	--	1100	5.7	--	41	12	15	1.4	134	0	64	6.5
WTD. AVG. TIME	--	--	6.4	--	42	12	15	1.7	143	0	64	4.6
WTD. AVG. TONS PER DAY	--	1780	6.3	--	45	13	17	1.6	146	0	75	4.5
	--	--	29	--	189	55	68	7.5	638	0	287	21

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
08...	1400	A 2680	6.2	50	35	11	15	1.6	128	0	55	2.6
DEC.												
19...	0900	A438	4.9	50	52	15	26	1.2	156	0	120	2.5
MAR.												
28...	1400	A960	6.2	40	55	17	25	2.4	165	0	125	4.3
JULY												
10...	1245	A 1730	7.7	140	37	14	15	1.2	140	0	58	6.5

A DISCHARGE AT TIME OF SAMPLING.

09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 382 mg/l Nov. 20-25, 1968; minimum, 154 mg/l June 11-19, 1969.
Hardness: Maximum, 240 mg/l Dec. 14-31, 1967; minimum, 115 mg/l June 11-19, 24-30, 1969.
Specific conductance: Maximum daily, 701 micromhos Dec. 23, 1967; minimum daily, 253 micromhos June 13, 1969.
Water temperatures: Maximum, 18.0°C July 28, Aug. 13, 1968, Aug. 3-31, 1969; minimum, freezing point Nov. 27, Dec. 21, 1967, Feb. 1, 1968.

REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality. Minimum observed during water year: Water temperature, freezing point on Dec. 19.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-18	.3	.2	60	196	.28	1270	135	26	.5	336	7.7	--
19-31	.4	.4	20	223	.31	689	145	36	.6	364	7.8	--
NOV.												
01-19	.3	.6	70	229	.34	563	159	46	.6	396	7.4	--
20-25	.4	.7	50	282	.54	323	217	92	1.2	604	7.1	--
26-29	.3	1.2	50	214	.33	745	154	35	.6	385	7.4	--
30...	.3	.1	50	329	.48	278	201	80	1.1	550	7.3	--
DEC.												
01-03	.3	.1	50	329	.48	278	201	80	.9	550	7.3	--
04-31	.3	.0	50	303	.42	393	193	66	.8	490	7.0	--
JAN.												
01-31	.3	.5	0	287	.39	630	194	59	.7	471	7.9	--
FEB.												
01-28	.3	.4	180	244	.36	1240	173	42	.6	431	7.6	--
MAR.												
01-11	.3	.7	110	255	.38	1270	185	50	.5	447	8.0	--
12-23	.4	1.1	210	330	.47	620	220	76	.7	557	7.9	--
24-31	.3	.7	80	267	.41	842	188	51	.6	476	7.9	--
APR.												
01-30	.4	.8	40	246	.35	1470	179	51	.6	406	8.2	--
MAY												
01-31	.3	.4	0	221	.32	2030	168	45	.5	377	8.2	--
JUNE												
01-10	.2	.2	10	186	.25	1690	140	35	.4	316	8.2	--
11-19	.2	.2	0	154	.21	3170	115	25	.3	256	8.1	--
20-23	.2	.1	660	186	.25	894	127	34	.5	304	8.2	--
24-30	.2	.3	0	159	.22	1580	115	20	.4	268	8.2	--
JULY												
01-31	.2	.2	0	188	.26	1170	138	28	.4	324	8.0	--
AUG.												
01-31	.3	.5	60	200	.29	819	145	30	.5	374	7.6	--
SEPT.												
01-30	.3	.3	70	212	.28	612	151	41	.5	361	8.0	--
WTD. AVG. TIME	.3	.4	0	218	--	--	157	40	.5	374	7.9	--
WTD. AVG. TONS PER DAY	1.3	1.8	0	974	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
08...	.3	.2	0	190	.26	1380	134	29	.6	338	7.1	13
DEC.												
19...	.3	.2	50	299	.43	374	191	63	.8	497	7.2	0
MAR.												
28...	.6	.0	20	317	.44	835	206	71	.8	488	7.4	6
JULY												
10...	.3	.3	100	209	.29	981	150	35	.5	345	8.0	16

09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	332	375	553	476	425	434	428	386	333	281	329	361
2	330	376	555	478	423	431	420	385	324	306	329	366
3	330	391	524	474	422	432	422	386	306	305	328	363
4	335	404	480	479	421	430	425	386	312	300	327	359
5	330	389	480	479	422	432	424	387	308	314	334	359
6	332	390	477	489	425	433	424	386	301	322	339	353
7	330	369	480	480	416	435	427	385	305	343	351	352
8	330	387	481	478	422	436	422	387	300	339	350	355
9	330	391	477	471	420	434	421	381	298	339	355	356
10	349	390	478	467	422	437	420	383	296	338	347	357
11	355	391	474	470	416	438	416	385	263	331	351	362
12	338	394	452	468	417	553	417	386	254	336	348	362
13	353	411	451	466	416	551	413	384	253	332	353	364
14	338	393	475	467	417	552	412	384	258	326	353	364
15	335	396	480	481	418	552	414	384	256	322	354	359
16	335	395	481	467	420	549	411	378	257	324	346	359
17	337	390	491	469	419	547	413	379	259	322	348	358
18	340	393	492	470	418	547	415	376	263	312	350	360
19	360	398	498	471	421	540	414	373	266	311	350	367
20	362	525	509	472	421	541	417	376	302	308	355	357
21	367	610	508	471	424	539	413	364	308	308	356	358
22	378	612	526	476	423	539	401	345	305	309	357	355
23	376	612	529	469	424	544	403	346	317	310	365	357
24	373	609	495	469	425	482	401	350	270	309	364	357
25	375	613	479	470	424	478	377	346	270	312	364	365
26	379	395	480	463	424	476	388	340	270	315	367	368
27	380	365	480	453	425	476	388	358	272	318	373	380
28	377	367	478	446	429	466	389	352	271	326	366	375
29	407	369	479	441	--	458	387	354	273	326	363	416
30	385	551	476	432	--	458	387	338	283	327	364	388
31	397	--	476	432	--	443	--	309	--	324	363	--
AVG	354	435	490	467	421	485	410	369	285	319	351	363

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	8.0	3.0	2.0	2.0	3.0	4.0	6.0	14.0	15.0	17.0	17.0
2	13.0	8.0	2.0	2.0	2.0	2.0	3.0	7.0	14.0	16.0	17.0	17.0
3	12.0	8.0	2.0	2.0	2.0	2.0	3.0	8.0	14.0	16.0	18.0	17.0
4	13.0	8.0	2.0	2.0	2.0	2.0	4.0	8.0	14.0	16.0	18.0	17.0
5	13.0	8.0	2.0	3.0	2.0	2.0	3.0	8.0	14.0	15.0	18.0	17.0
6	13.0	8.0	2.0	3.0	3.0	3.0	3.0	8.0	14.0	16.0	18.0	17.0
7	12.0	7.0	1.0	3.0	3.0	2.0	3.0	8.0	15.0	16.0	18.0	17.0
8	11.0	6.0	2.0	2.0	3.0	2.0	3.0	7.0	14.0	16.0	18.0	17.0
9	11.0	7.0	2.0	2.0	2.0	2.0	4.0	8.0	14.0	16.0	18.0	17.0
10	12.0	6.0	2.0	2.0	3.0	2.0	4.0	8.0	14.0	16.0	18.0	17.0
11	11.0	6.0	2.0	2.0	3.0	2.0	4.0	8.0	14.0	16.0	18.0	17.0
12	12.0	6.0	2.0	3.0	3.0	2.0	3.0	9.0	14.0	16.0	18.0	17.0
13	12.0	6.0	2.0	3.0	3.0	3.0	4.0	10.0	14.0	16.0	18.0	17.0
14	11.0	6.0	2.0	3.0	3.0	3.0	4.0	10.0	14.0	16.0	18.0	17.0
15	11.0	6.0	2.0	3.0	3.0	3.0	4.0	9.0	15.0	16.0	18.0	17.0
16	10.0	6.0	2.0	3.0	3.0	3.0	4.0	10.0	14.0	16.0	18.0	17.0
17	9.0	5.0	2.0	3.0	3.0	3.0	4.0	10.0	14.0	--	18.0	17.0
18	10.0	5.0	2.0	3.0	2.0	3.0	4.0	10.0	15.0	--	18.0	17.0
19	11.0	5.0	3.0	3.0	2.0	3.0	4.0	11.0	16.0	17.0	18.0	16.0
20	9.0	5.0	2.0	3.0	2.0	3.0	4.0	10.0	16.0	17.0	18.0	16.0
21	9.0	4.0	2.0	3.0	2.0	3.0	5.0	11.0	16.0	16.0	18.0	16.0
22	8.0	4.0	1.0	3.0	2.0	3.0	6.0	13.0	15.0	17.0	18.0	16.0
23	9.0	3.0	2.0	3.0	3.0	3.0	6.0	13.0	15.0	17.0	18.0	15.0
24	8.0	3.0	3.0	3.0	3.0	3.0	6.0	13.0	14.0	17.0	18.0	15.0
25	8.0	3.0	3.0	2.0	3.0	3.0	4.0	13.0	14.0	17.0	18.0	15.0
26	8.0	3.0	3.0	3.0	3.0	3.0	5.0	13.0	15.0	17.0	18.0	15.0
27	8.0	3.0	3.0	3.0	2.0	3.0	5.0	13.0	15.0	17.0	18.0	16.0
28	8.0	3.0	3.0	3.0	2.0	3.0	5.0	13.0	15.0	17.0	18.0	16.0
29	8.0	3.0	2.0	3.0	--	4.0	5.0	13.0	15.0	17.0	18.0	16.0
30	8.0	3.0	2.0	2.0	--	4.0	5.0	13.0	15.0	17.0	18.0	16.0
31	8.0	--	2.0	2.0	--	4.0	--	14.0	--	17.0	18.0	--
AVG	10.2	5.4	2.1	2.6	2.5	2.7	4.1	10.1	14.5	16.3	17.9	16.4

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 5, 1969	1200	16.5	3300	6	53

09216000 BIG SANDY RIVER BELOW EDEN, WYO.

LOCATION.--Lat 42°00', long 109°35', in SE¼ sec.31, T.24 N., R.107 W., Sweetwater County, at gaging station 0.1 mile downstream from Simpson Gulch, 8.0 miles southwest of Eden, and 8.8 miles downstream from Little Sandy Creek.

DRAINAGE AREA.--1,610 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1961 to September 1964, October 1967 to September 1969. Sediment records: October 1968 to September 1969 (miscellaneous).

REMARKS.--Prior to October 1967, published as Big Sandy Creek below Eden, Wyo.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
08...	1100	47	11	140	257	91	375	3.8	263	0	1470	64
NOV.												
23...	1535	46	13	210	231	79	311	3.2	240	0	1280	57
DEC.												
20...	1650	21	13	--	255	103	370	3.6	264	0	1470	62
JAN.												
17...	1700	19	13	50	277	96	377	4.1	262	0	1590	60
FEB.												
21...	0945	27	13	160	243	73	280	4.6	214	0	1280	49
MAR.												
28...	1600	31	11	90	183	60	247	3.6	183	0	1010	43
MAY												
05...	1100	171	11	30	54	16	98	2.0	103	0	281	16
JUNE												
02...	1115	134	8.4	150	73	35	98	2.1	121	0	374	23
JULY												
07...	1320	111	8.2	110	100	56	172	2.1	174	0	658	36
AUG.												
12...	1130	71	14	190	177	46	178	2.9	214	0	788	44
28...	0930	62	12	--	212	70	291	4.3	250	0	1150	51
SEPT.												
24...	0810	46	12	540	267	88	372	4.5	269	0	1460	68

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONO-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
OCT.												
08...	1.1	1.2	330	2400	3.43	272	1020	804	5.1	3100	7.5	6
NOV.												
23...	1.1	1.5	350	2100	3.09	282	901	704	4.5	2780	7.2	3
DEC.												
20...	.6	3.5	350	2420	3.44	143	1060	843	4.9	2960	7.9	1
JAN.												
17...	1.0	2.0	270	2550	3.52	133	1090	875	5.0	3090	7.8	1
FEB.												
21...	1.0	3.7	220	2050	2.92	157	906	730	4.0	2630	8.0	0
MAR.												
28...	1.0	.9	220	1650	2.45	151	707	557	4.1	2250	7.4	2
MAY												
05...	.5	.0	90	519	.75	254	202	118	2.7	814	7.2	10
JUNE												
02...	.6	.2	70	674	.93	247	325	226	2.4	965	7.7	15
JULY												
07...	.8	.2	90	1120	1.59	351	480	337	3.4	1570	8.1	18
AUG.												
12...	.9	2.1	270	1360	2.00	282	631	455	3.1	1870	7.8	16
28...	.6	2.1	350	1920	2.67	328	816	611	4.4	2330	8.2	14
SEPT.												
24...	.6	3.4	380	2410	3.37	308	1030	809	5.0	2900	8.0	8

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC CONO-UCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED OXYGEN (MG/L)
AUG.					
28...	0930	62	2300	8.3	8.2
SEPT.					
24...	0810	46	3100	8.1	8.4

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 2, 1969	1115	15.0	134	29	10

09216300 GREEN RIVER AT BIG ISLAND, NEAR GREEN RIVER, WYO.

LOCATION.--Lat 41°45'52", long 109°44'05", in SW¼SE¼ sec.26, T.21 N., R.109 W., Sweetwater County, at Big Island bridge, 6.2 miles downstream from Dry Creek, 9.5 miles downstream from Big Sandy River, and 21 miles northwest of Green River.

PERIOD OF RECORD.--Chemical analyses: August 1966 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).

REMARKS.--Discharge records computed by adding the discharge of Big Sandy River below Eden (station 09216000) to that of Green River below Fontenelle Reservoir (station 09211200).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
08...	1330	2530	5.0	60	42	14	25	1.6	127	0	98	3.9
NOV.												
23...	1200	251	4.8	170	88	44	131	2.0	177	0	520	16
DEC.												
19...	0815	453	5.0	120	79	24	73	1.5	170	0	307	8.9
JAN.												
14...	1645	776	6.5	150	61	26	53	1.9	172	0	207	6.2
FEB.												
20...	1420	1800	7.3	40	53	18	28	1.7	154	5	122	5.0
MAR.												
28...	1115	1120	6.1	180	64	18	43	2.0	170	0	162	7.1
MAY												
08...	0745	3920	9.4	1000	47	13	27	2.8	157	0	95	5.9
JUNE												
04...	1700	3880	6.8	470	40	10	18	2.0	134	0	67	3.5
JULY												
10...	1030	1460	6.0	200	46	16	31	1.4	140	0	117	8.7
AUG.												
12...	0840	1420	7.2	20	47	16	30	1.4	128	6	125	6.4
SEPT.												
03...	1730	1200	8.0	100	51	18	39	1.6	146	0	155	9.7

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	PORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
08...	.3	.1	40	252	.37	1860	163	59	.9	419	7.5	11
NOV.												
23...	.7	.2	100	894	1.24	618	400	255	2.8	1280	7.4	2
DEC.												
19...	.5	.2	60	583	.82	736	297	158	1.8	867	7.7	0
JAN.												
14...	.4	.2	40	447	.61	943	258	117	1.4	664	7.1	0
FEB.												
20...	.2	.6	80	317	.44	1580	205	70	.8	512	8.4	0
MAR.												
28...	.6	.0	50	387	.60	1330	233	94	1.2	663	7.7	6
MAY												
08...	.4	.2	120	279	.37	2880	170	41	.9	451	7.6	9
JUNE												
04...	.3	.0	60	214	.30	2350	141	31	.7	362	7.5	20
JULY												
10...	.3	.2	50	295	.41	1190	180	65	1.0	508	7.8	18
AUG.												
12...	.3	.2	20	303	.43	1210	185	70	1.0	493	8.4	18
SEPT.												
03...	.3	.2	20	355	.47	1120	199	79	1.2	548	7.8	18

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 4, 1969	1700	19.5	3880	18	167

09216950 BITTER CREEK NEAR GREEN RIVER, WYO.

LOCATION.--Lat 41°31'25", long 109°25'41", in NE¼SE¼ sec.24, T.18 N., R.107 W., Sweetwater County, 0.3 mile south of U.S. Highway 30, 1.7 miles east of Green River, and 1.9 miles upstream from mouth.

PERIOD OF RECORD.--Chemical analyses: August 1966 to September 1969.
Sediment records: August 1966 to September 1969 (partial record).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.												
23...	0750	.40	9.3	130	64	77	858	15	378	0	862	820
MAR.												
27...	0830	27	6.1	170	148	79	307	11	214	0	783	242
MAY												
06...	1600	4.6	2.6	330	128	116	1590	16	407	0	1720	1400
JULY												
07...	1800	1.1	4.3	60	122	87	493	12	250	0	852	465
SEPT.												
23...	1145	32	7.2	70	105	48	253	11	153	0	620	182

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
NOV.												
23...	1.2	1.0	1200	2890	3.90	3.10	475	165	17	4540	7.2	0
MAR.												
27...	1.0	6.3	320	1690	2.43	130	696	520	5.1	2500	7.3	--
MAY												
06...	1.2	3.3	1300	5180	6.47	59.1	796	462	25	6830	8.1	18
JULY												
07...	1.1	.6	770	2160	3.06	6.68	661	456	8.3	3280	8.0	22
SEPT.												
23...	.5	3.0	300	1330	1.82	116	461	335	5.1	1900	7.8	10

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED OXYGEN (MG/L)
SEPT.					
23...	1145	32	2000	8.0	7.9

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
MAR 27, 1969	0830	00.0	27	820	60
MAY 6.....	1715	18.0	4.6	118	1.5
JUL 7.....	1800	22.0	1.1	281	.83

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.

LOCATION.--Lat 41°30'59", long 109°26'54", in NW¼NE¼NE¼ sec.26, T.18 N., R.107 W., Sweetwater County, at bridge on State Highway 530 in town of Green River, 0.8 mile upstream from Bitter Creek, 1 mile upstream from gaging station, and 5 miles upstream from high waterline of Flaming Gorge Reservoir.
DRAINAGE AREA.--10,000 sq mi, approximately (at gaging station), of which 300 sq mi is probably noncontributing.
PERIOD OF RECORD.--Chemical analyses: May 1951 to September 1969.
Water temperatures: May 1951 to September 1969.
Sediment records: May 1951 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 758 mg/l Nov. 22-26; minimum, 189 mg/l June 11-20.
Hardness: Maximum, 344 mg/l Nov. 22-26; minimum, 126 mg/l June 11-20.
Specific conductance: Maximum daily, 1,270 micromhos Nov. 26; minimum daily, 282 micromhos June 16.
Water temperatures: Maximum, 25.0°C July 17, Sept. 15; minimum, freezing point on many days during November to March.
Sediment concentrations: Maximum daily, 3,410 mg/l June 21; minimum daily, 2 mg/l Nov. 24, Dec. 4, 15, March 14.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-18	--	2360	4.4	--	47	9.8	28	1.8	127	0	102	3.7
19-31	--	1270	2.1	--	50	18	45	1.6	163	0	158	5.6
NOV.												
01-10	--	1360	1.8	--	51	21	51	1.5	153	0	181	7.1
11-21	--	908	1.8	--	55	21	57	1.5	155	0	202	7.9
22-26	--	322	3.2	--	80	35	120	1.9	188	0	410	15
27-30	--	952	.9	--	53	19	45	1.9	168	0	166	6.0
DEC.												
01-02	--	952	.9	--	53	19	45	1.9	168	0	166	6.0
03-15	--	449	3.2	--	78	30	100	2.2	192	0	358	12
16-28	--	516	3.5	--	78	29	95	2.2	197	0	338	9.4
29-31	--	704	4.5	--	68	24	65	2.1	188	0	230	7.7
JAN.												
01-07	--	704	4.5	--	68	24	65	2.1	188	0	230	7.7
08-18	--	819	5.4	--	66	21	57	2.1	194	0	206	6.8
19-31	--	902	5.3	--	69	19	50	1.9	187	0	194	6.3
FEB.												
01-14	--	1500	5.5	--	62	14	32	2.0	177	0	130	5.2
15-28	--	1610	4.8	--	53	18	31	1.8	172	0	123	4.3
MAR.												
01-14	--	1500	4.9	--	58	18	34	1.4	178	0	134	5.7
15-25	--	1020	5.8	--	71	25	70	1.6	192	0	238	9.5
26-31	--	1370	5.7	--	58	19	50	1.6	178	0	162	7.0
APR.												
01-21	--	2020	6.2	--	51	19	46	1.4	166	0	153	7.5
22-30	--	3190	5.7	--	48	15	32	1.2	160	0	100	5.9
MAY												
01-14	--	3310	6.9	--	54	13	29	4.0	160	0	94	5.5
15-31	--	3410	6.2	--	59	5.1	25	3.0	162	0	84	4.4
JUNE												
01-10	--	4260	6.4	--	41	12	22	2.0	139	0	79	3.9
11-20	--	7940	6.9	--	44	3.9	15	1.3	117	4	52	3.2
21-30	--	2320	6.1	--	36	11	26	1.3	121	4	78	4.0
JULY												
01-07	--	2780	5.5	--	35	15	26	1.7	131	2	86	3.9
08-31	--	2430	5.0	--	39	14	27	2.0	137	2	92	3.6
AUG.												
01-15	--	1800	3.3	--	41	16	31	1.2	142	0	115	4.3
16-31	--	1350	2.9	--	45	18	41	1.2	140	0	153	5.8
SEPT.												
01-15	--	1190	3.9	--	50	18	46	2.0	148	0	161	6.8
16-30	--	1090	2.7	--	50	19	48	1.8	148	0	169	7.0
WTD. AVG. TIME	--	--	5.2	--	50	14	34	1.9	150	1	118	5.1
WTD. AVG. TONS PER DAY	--	1920	4.6	--	54	17	44	1.9	160	0	156	6.1
	--	--	27	--	255	69	172	9.7	769	4	606	26
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
11...	1540	A742	4.2	110	41	13	31	1.7	129	0	104	4.3
DEC.												
18...	1315	A455	7.0	20	50	41	94	1.7	185	0	310	10
MAR.												
28...	0930	A1120	5.8	130	63	19	43	2.0	174	0	164	6.8
MAY												
06...	1530	A3150	5.9	80	48	13	28	2.8	154	0	94	5.2
JULY												
08...	1325	A1700	5.2	90	47	11	24	1.2	143	0	86	7.4
AUG.												
26...	1450	A1270	3.2	--	51	16	41	1.9	144	0	144	5.5
SEPT.												
23...	1355	A1070	2.5	60	48	18	44	1.9	129	8	160	4.4

A DISCHARGE AT TIME OF SAMPLING.

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

EXTREMES.--1968-69:--Continued
Sediment loads: Maximum daily, 23,800 tons June 21; minimum daily, 1.5 tons Nov. 24.
Period of record:
Dissolved solids (1951-67, 1969): Maximum, 855 mg/l Nov. 15-20, 1955; minimum, 156 mg/l May 23-31, 1958.
Hardness: Maximum, 420 mg/l Nov. 15-20, 1955; minimum, 106 mg/l May 23-31, 1958.
Specific conductance: Maximum daily, 1,270 micromhos Nov. 26, 1968; minimum daily, 219 micromhos May 22, 1954.
Water temperatures: Maximum, 26.0°C July 8, 22, 1961, July 24, 1962; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 15,000 mg/l Aug. 11, 1963; minimum daily, 0 mg/l Sept. 18, 1962.
Sediment loads: Maximum daily, 110,000 tons Mar. 28, 1962; minimum daily, 0 ton Sept. 18, 1962.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality. Flow affected by ice Nov. 17, 18, Nov. 28 to Dec. 20, Jan. 16 to Feb. 6, Feb. 20 to Mar. 14, Mar. 28 to Apr. 4.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-18	.3	.2	20	259	.40	1890	158	54	1.0	429	8.0	--
19-31	.3	.1	40	361	.54	1360	201	67	1.4	569	8.0	--
NOV.												
01-10	.3	.3	30	390	.55	1170	212	86	1.5	610	7.4	--
11-21	.2	.2	40	423	.59	1050	224	97	1.7	649	7.6	--
22-26	.3	.1	100	758	1.06	680	344	190	2.8	1090	7.8	--
27-30	.2	.0	30	375	.49	925	209	71	1.3	595	7.7	--
DEC.												
01-02	.2	.0	30	375	.49	925	209	71	1.3	595	7.7	--
03-15	.3	.0	80	678	.93	829	319	161	2.4	992	7.8	--
16-28	.3	.0	60	652	.88	906	314	152	2.3	953	7.5	--
29-31	.3	.0	60	494	.66	928	270	116	1.7	741	7.8	--
JAN.												
01-07	.3	.0	60	494	.66	928	270	116	1.7	741	7.8	--
08-18	.2	.0	40	456	.61	1000	251	100	1.6	686	7.8	--
19-31	.3	.0	30	437	.59	1050	248	95	1.4	665	7.7	--
FEB.												
01-14	.3	.1	30	338	.45	1440	213	68	1.0	545	7.8	--
15-28	.3	.1	20	321	.47	1490	204	63	.9	515	7.7	--
MAR.												
01-14	.3	.0	60	344	.48	1420	219	73	1.0	553	8.1	--
15-25	.3	.1	50	515	.72	1450	280	122	1.8	779	8.1	--
26-31	.2	.0	160	391	.54	1470	222	76	1.5	601	8.1	--
APR.												
01-21	.3	.2	60	367	.50	2020	204	68	1.4	573	8.1	--
22-30	.3	.2	30	285	.39	2480	182	51	1.0	456	8.1	16
MAY												
01-14	.2	.2	0	282	.38	2500	177	46	.9	453	8.2	--
15-31	.1	.2	0	267	.35	2390	168	35	.8	422	8.1	--
JUNE												
01-10	.2	.0	40	234	.32	2610	152	38	.8	388	7.9	--
11-20	.6	.3	10	189	.26	4070	126	23	.6	306	8.5	--
21-30	.2	.3	0	227	.32	1480	136	30	1.0	374	8.5	--
JULY												
01-07	.1	.1	30	239	.33	1850	149	38	.9	396	8.4	--
08-31	.2	.1	30	252	.35	1690	157	41	.9	416	8.3	--
AUG.												
01-15	.1	.1	40	282	.44	1580	169	53	1.0	473	7.1	--
16-31	.1	.1	50	336	.51	1380	186	71	1.3	537	7.3	--
SEPT.												
01-15	.2	.1	40	361	.51	1220	--	--	1.4	559	7.7	--
16-30	.2	.0	20	371	.53	1140	--	--	1.5	581	7.3	--
WTD. AVG. TIME	.3	.1	0	303	--	--	179	55	1.1	482	8.0	--
WTD. AVG. TONS PER DAY	.2	.1	38	363	.51	--	206	73	1.3	567	7.9	--
	1.4	.8	0	1550	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
11...	.3	.2	40	263	.36	529	156	50	1.1	457	7.7	12
DEC.												
18...	.3	.5	50	606	.83	747	292	140	2.4	891	7.4	0
MAR.												
28...	.6	.0	20	390	.58	1290	235	92	1.2	643	7.1	0
MAY												
06...	.5	.5	20	274	.38	2350	175	49	.9	460	7.5	13
JULY												
08...	.4	.3	0	253	.35	1190	168	51	.8	448	8.2	17
AUG.												
26...	.2	.1	50	334	.46	1170	194	76	1.3	540	8.2	22
SEPT.												
23...	.2	.1	20	370	.49	1030	196	77	1.4	549	8.7	15

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED OXYGEN (MG/L)
AUG.					
20...	1420	1270	540	8.9	8.4
SEPT.					
23...	1350	1070	565	8.9	9.8

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	410	603	596	783	615	524	582	430	388	360	415	566
2	418	598	678	752	566	517	611	438	394	364	426	572
3	413	598	893	728	557	527	576	444	355	406	417	596
4	418	590	1040	752	557	536	616	446	366	402	423	562
5	412	647	1170	733	557	524	617	448	369	404	433	573
6	409	632	997	720	544	529	575	450	372	423	452	575
7	412	634	977	719	518	524	549	446	372	435	481	557
8	416	560	1020	694	515	533	548	445	414	456	506	559
9	422	605	994	695	518	514	540	448	417	498	496	582
10	420	613	926	755	518	544	540	444	415	501	491	576
11	440	751	911	695	516	600	610	444	343	477	505	577
12	425	670	944	693	513	554	577	443	299	459	513	582
13	425	657	1040	675	509	603	625	442	306	457	503	589
14	439	675	1040	671	522	672	606	437	284	462	513	584
15	444	652	985	670	520	763	583	446	289	461	509	573
16	440	655	892	704	508	815	564	429	282	468	510	569
17	442	647	907	700	509	796	585	426	303	466	509	567
18	442	536	905	711	517	764	568	431	314	404	509	563
19	494	540	970	685	512	758	546	432	323	404	522	567
20	529	646	970	657	519	797	550	434	332	392	512	567
21	520	729	959	667	512	788	548	434	406	385	527	589
22	563	806	985	686	518	771	481	407	452	383	528	564
23	562	1090	956	705	511	775	479	396	453	383	529	570
24	552	1090	985	747	508	808	480	397	457	380	527	583
25	552	1240	988	749	514	822	445	392	460	397	538	596
26	551	1270	979	676	515	682	444	416	334	392	537	606
27	571	734	991	675	522	616	447	417	334	389	550	651
28	570	516	979	647	522	608	446	444	333	400	571	644
29	569	517	763	639	--	587	450	442	327	418	568	628
30	648	523	781	605	--	572	449	401	332	414	561	657
31	674	--	770	615	--	566	--	403	--	416	557	--
AVG	483	700	935	696	526	644	541	430	360	421	504	584

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
MAR 30, 1969	0705	1	A1710	2170	10000	--	41	--	60	--	100	--	--	--	--	--	PWC
JUN 21.....	0930	16	2950	5170	41200	--	69	--	95	--	100	--	--	--	--	--	PWC

A DAILY MEAN DISCHARGE.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	7.0	0.0	0.0	0.0	0.0	7.0	9.0	15.0	18.0	20.0	21.0
2	12.0	7.0	0.0	0.0	0.0	0.0	7.0	10.0	14.0	19.0	18.0	20.0
3	13.0	6.0	1.0	0.0	0.0	0.0	7.0	11.0	16.0	19.0	21.0	19.0
4	13.0	6.0	0.0	0.0	0.0	0.0	7.0	11.0	16.0	20.0	22.0	18.0
5	12.0	4.0	1.0	0.0	0.0	0.0	7.0	11.0	17.0	17.0	22.0	18.0
6	13.0	4.0	0.0	0.0	0.0	0.0	7.0	11.0	17.0	18.0	20.0	15.0
7	11.0	3.0	0.0	0.0	0.0	0.0	3.0	10.0	17.0	18.0	21.0	19.0
8	10.0	0.0	1.0	0.0	0.0	0.0	4.0	11.0	16.0	18.0	18.0	18.0
9	10.0	0.0	0.0	0.0	0.0	0.0	8.0	12.0	13.0	19.0	21.0	20.0
10	11.0	1.0	0.0	0.0	0.0	0.0	9.0	10.0	14.0	19.0	21.0	20.0
11	12.0	4.0	0.0	0.0	0.0	0.0	8.0	14.0	16.0	18.0	20.0	21.0
12	11.0	3.0	0.0	1.0	0.0	0.0	7.0	14.0	15.0	20.0	20.0	20.0
13	11.0	3.0	0.0	0.0	0.0	0.0	7.0	12.0	13.0	20.0	20.0	18.0
14	11.0	3.0	0.0	0.0	0.0	0.0	8.0	12.0	12.0	20.0	20.0	15.0
15	7.0	1.0	0.0	0.0	0.0	0.0	5.0	12.0	14.0	20.0	21.0	25.0
16	7.0	0.0	0.0	0.0	0.0	0.0	5.0	13.0	12.0	21.0	20.0	18.0
17	6.0	0.0	0.0	0.0	0.0	0.0	4.0	13.0	13.0	25.0	20.0	19.0
18	8.0	0.0	0.0	1.0	0.0	0.0	7.0	13.0	16.0	22.0	20.0	19.0
19	8.0	1.0	0.0	1.0	0.0	0.0	5.0	14.0	16.0	20.0	20.0	18.0
20	8.0	3.0	0.0	1.0	0.0	0.0	8.0	13.0	16.0	20.0	20.0	18.0
21	8.0	2.0	0.0	1.0	0.0	0.0	12.0	15.0	16.0	19.0	21.0	15.0
22	9.0	2.0	0.0	0.0	0.0	0.0	12.0	14.0	14.0	20.0	22.0	20.0
23	8.0	2.0	0.0	0.0	0.0	0.0	13.0	15.0	15.0	19.0	22.0	20.0
24	9.0	1.0	0.0	0.0	0.0	0.0	9.0	15.0	15.0	19.0	22.0	20.0
25	8.0	1.0	0.0	0.0	0.0	0.0	7.0	15.0	15.0	20.0	23.0	18.0
26	9.0	0.0	0.0	0.0	0.0	0.0	7.0	14.0	14.0	20.0	23.0	18.0
27	9.0	0.0	0.0	0.0	0.0	0.0	7.0	16.0	14.0	21.0	22.0	16.0
28	9.0	0.0	0.0	0.0	0.0	1.0	9.0	19.0	14.0	20.0	20.0	16.0
29	9.0	0.0	0.0	0.0	--	0.0	9.0	18.0	14.0	19.0	20.0	15.0
30	9.0	1.0	0.0	0.0	--	1.0	9.0	15.0	17.0	21.0	20.0	15.0
31	8.0	--	0.0	0.0	--	2.0	--	15.0	--	20.0	20.0	--
AVG	9.7	2.1	0.0	0.1	0.0	0.1	7.4	13.1	14.8	19.6	20.6	18.4

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2500	16	108	1190	5	16	320	9	7.8
2	2440	12	79	1170	10	32	300	11	8.9
3	2530	11	75	1160	7	22	315	4	3.4
4	2470	13	87	967	6	16	375	2	2.0
5	2520	7	48	953	6	15	450	8	9.7
6	2510	7	47	1000	5	14	450	5	6.1
7	2510	9	61	1160	13	41	435	3	3.5
8	2490	6	40	1220	6	20	460	3	3.7
9	2440	7	46	978	5	13	460	4	5.0
10	2530	11	75	840	8	18	475	3	3.8
11	1250	6	20	907	10	24	480	4	5.2
12	1890	8	41	977	6	16	475	4	5.1
13	2410	12	78	971	4	10	465	5	6.3
14	2480	114	763	961	3	7.6	500	6	8.1
15	2510	162	1100	1000	6	16	500	2	2.7
16	2460	44	292	943	6	15	495	4	5.3
17	2460	30	199	930	10	25	480	4	5.2
18	2090	16	90	920	16	40	455	8	9.8
19	1570	5	21	892	12	29	465	7	8.8
20	1460	4	16	835	5	11	465	7	8.8
21	1460	6	24	671	5	9.1	450	10	12
22	1380	4	15	331	4	3.6	405	8	8.7
23	1280	12	41	297	3	2.4	415	8	9.0
24	1300	15	53	283	2	1.5	490	7	9.3
25	1310	12	42	251	5	3.4	615	8	13
26	1280	6	21	448	17	21	655	8	14
27	1250	4	14	1440	33	128	640	7	12
28	1240	12	40	1550	43	180	680	8	15
29	1060	7	20	1300	48	168	680	8	15
30	862	10	23	880	9	19	660	8	14
31	1100	11	33	--	--	--	640	9	16
TOTAL	59042	--	3612	27325	--	936.6	15150	--	257.2

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	660	7	12	1520	14	57	1640	13	58
2	741	7	14	1430	19	73	1720	18	84
3	675	7	13	1530	26	107	1650	34	151
4	702	9	17	1560	17	72	1660	21	94
5	735	8	16	1650	17	76	1610	12	52
6	762	9	19	1710	14	65	1710	15	69
7	790	11	23	1720	12	56	1810	27	132
8	775	8	17	1630	15	66	1700	15	69
9	750	6	12	1570	16	68	1560	10	42
10	758	8	16	1590	17	73	1450	10	39
11	805	9	20	1630	20	88	1330	6	22
12	835	10	23	1670	19	86	1300	11	39
13	858	8	19	1620	16	70	955	7	18
14	860	18	42	1570	15	64	865	2	4.7
15	855	10	23	1600	11	48	910	13	32
16	858	10	23	1620	13	57	975	103	271
17	845	11	25	1540	13	54	1020	72	198
18	805	11	24	1470	15	60	1060	62	177
19	802	10	22	1490	12	48	1030	37	103
20	825	8	18	1550	13	54	990	26	69
21	795	7	15	1580	17	73	1000	27	73
22	800	8	17	1510	14	57	1070	6	17
23	785	7	15	1610	18	78	1090	11	32
24	739	9	18	1710	12	55	1080	12	35
25	775	7	15	1790	11	53	1030	44	122
26	840	7	16	1720	16	74	1040	50	140
27	920	10	25	1690	14	64	1070	67	194
28	1000	11	30	1600	12	52	1120	175	529
29	1090	10	29	--	--	--	1360	935	3430
30	1110	10	30	--	--	--	1710	1850	8540
31	1240	12	40	--	--	--	1920	1360	7050
TOTAL	25790	--	648	44880	--	1848	40435	--	21885.7

09217000 *GREEN RIVER NEAR GREEN RIVER, WYO.--Continued*

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2000	1530	8260	3280	116	1030	3710	24	240
2	1990	1140	6130	3280	166	1470	3750	32	324
3	2010	550	2980	3260	108	951	4970	59	791
4	2030	270	1480	3260	104	915	5330	51	734
5	2100	255	1450	3240	110	962	4490	27	327
6	2220	326	1950	3240	71	621	3920	19	201
7	2250	316	1920	3150	77	655	3280	16	142
8	2230	271	1630	3310	56	500	3920	1060	11200
9	2220	274	1640	3150	61	519	3400	965	8860
10	2020	173	944	3350	41	371	3860	415	4330
11	1890	94	480	3370	47	428	8180	878	17600
12	1890	93	475	3420	56	517	10200	203	5590
13	1980	150	802	3470	61	572	10500	273	7740
14	2010	148	803	3550	69	661	9590	157	4070
15	2010	167	906	3260	46	405	9220	132	3290
16	1920	102	529	3220	38	330	9420	148	3760
17	1920	92	477	3120	39	329	7710	105	2190
18	1940	67	351	3050	23	189	5790	125	1950
19	1940	83	435	3050	29	239	4710	98	1250
20	1940	97	508	3050	35	288	4080	47	518
21	1940	91	477	3050	23	189	3030	3410	23800
22	2540	161	1170	4060	63	691	2170	925	5420
23	3170	390	3340	4300	97	1130	1950	102	537
24	3190	209	1800	4300	53	615	2280	75	462
25	3280	107	948	4300	50	581	3460	73	682
26	3310	93	831	4280	17	196	4000	53	572
27	3350	143	1290	2900	13	102	4100	42	465
28	3330	117	1050	2460	16	106	3840	67	695
29	3290	82	728	2480	16	107	3790	45	460
30	3280	74	655	3370	22	200	3770	48	489
31	--	--	--	3640	27	265	--	--	--
TOTAL	71190	--	46439	104220	--	16134	152420	--	108689

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3310	47	420	2290	14	87	1170	6	19
2	3130	32	270	2290	34	210	1170	11	35
3	2950	18	143	2310	27	168	1170	13	41
4	2590	8	56	2310	17	106	1170	13	41
5	2530	19	130	2200	16	95	1150	23	71
6	2510	22	149	1880	13	66	1150	10	31
7	2460	16	106	1590	29	124	1160	9	28
8	1950	14	74	1540	17	71	1170	11	35
9	1650	17	76	1530	10	41	1170	8	25
10	1640	18	80	1540	10	42	1190	12	39
11	1870	17	86	1510	27	110	1330	19	68
12	1980	17	91	1500	21	85	1280	13	45
13	1980	12	64	1500	13	53	1210	29	95
14	2010	20	109	1500	10	40	1190	46	148
15	2040	31	171	1500	8	32	1170	20	63
16	2010	58	315	1530	8	33	1180	15	48
17	1990	25	134	1540	8	33	1190	16	51
18	2130	33	190	1550	32	134	1180	16	51
19	2690	49	356	1530	29	120	1170	27	85
20	3070	51	423	1500	17	69	1170	12	38
21	3240	54	472	1440	11	43	1200	10	32
22	3240	53	464	1370	13	48	1220	16	53
23	3240	68	595	1330	7	25	1190	23	74
24	3220	38	330	1320	8	29	1100	33	98
25	3100	13	109	1300	9	32	1040	16	45
26	2780	28	210	1280	9	31	993	17	46
27	2690	26	189	1240	8	27	948	8	20
28	2670	16	115	1180	5	16	910	8	20
29	2420	11	72	1180	6	19	904	8	20
30	2350	14	89	1160	10	31	863	6	14
31	2320	13	81	1160	8	25	--	--	--
TOTAL	77760	--	6169	48600	--	2045	34108	--	1479

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 700920
TOTAL LOAD FOR YEAR (TONS) 210142.5

09222000 BLACKS FORK NEAR LYMAN, WYO.

LOCATION.--Lat 41°27'08", long 110°10'20", in SW¼NW¼SW¼ sec.15, T.17 N., R.113 W., Uinta County, at gaging station at bridge on old U.S. Highway 30S, 8.5 miles downstream from Smiths Fork and 11 miles northeast of Lyman.
DRAINAGE AREA.--821 sq mi.
PERIOD OF RECORD.--Chemical analyses: March 1962 to September 1969.
Water temperatures: May 1962 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 3,180 mg/l Sept. 17-21; minimum, 248 mg/l May 9-13.
Hardness: Maximum, 1,300 mg/l Sept. 17-21; minimum, 139 mg/l May 9-13.
Specific conductance: Maximum daily, 3,860 micromhos Sept. 19; minimum daily, 392 micromhos May 11.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-17	1.2	.3	590	1730	2.48	172	692	489	4.7	2310	8.2	--
18-31	1.1	.2	500	1390	2.00	167	573	403	4.0	1940	8.0	--
NOV.												
01-13	1.1	.6	290	1530	2.27	149	656	442	4.1	2180	7.8	--
14-22	1.1	.3	360	1780	2.57	204	738	510	4.6	2440	7.7	--
23-30	1.0	1.0	280	1450	2.14	153	642	408	3.9	2070	7.6	--
DEC.												
01-04	1.0	.0	240	1550	2.14	136	661	440	4.2	2060	7.4	--
05-31	.8	.0	190	1140	1.54	110	510	305	3.6	1570	7.2	--
JAN.												
01-31	.7	.3	150	978	1.34	195	460	270	2.9	1410	7.3	--
FEB.												
01-28	.7	.7	280	726	1.10	138	361	179	2.3	1160	7.6	--
MAR.												
01-19	.8	2.8	70	715	1.03	91.6	357	186	2.2	1090	7.6	--
20-27	.9	.9	100	873	1.19	113	283	125	4.6	1440	7.6	--
28-31	.5	1.2	140	664	.95	456	277	95	3.2	1050	8.2	--
APR.												
01-22	.5	1.2	140	664	.95	456	277	95	3.2	1050	8.2	--
23-30	.3	.5	120	447	.65	380	233	71	2.0	729	8.2	--
MAY												
01-08	.3	.5	100	326	.46	416	194	66	1.2	521	7.8	--
09-13	.3	.6	80	248	.35	443	139	37	1.1	426	7.8	--
14-21	.4	.4	110	359	.51	461	178	64	1.7	586	7.8	--
22-25	.7	.5	190	587	.82	473	288	138	2.1	910	8.0	--
26-31	.8	.5	210	825	1.17	694	410	237	2.4	1210	8.1	--
JUNE												
01-08	.9	.6	280	1150	1.66	609	549	329	3.0	1640	8.1	--
09-16	1.0	1.1	510	1320	1.89	1290	465	207	5.0	1940	8.1	--
17-22	.9	.0	350	1020	1.41	1330	420	160	3.9	1480	8.3	--
23-30	1.0	.2	320	1200	1.73	758	536	276	3.7	1730	8.3	--
JULY												
01-25	1.8	.6	370	1820	2.54	268	777	560	4.5	2380	8.0	--
26-29	1.9	.5	400	1870	2.87	279	871	695	4.1	2670	8.0	--
30-31	1.1	1.2	430	1700	2.41	268	706	522	4.5	2280	8.0	--
AUG.												
01-09	1.1	1.2	430	1700	2.41	268	706	522	4.5	2280	8.0	--
10-17	1.2	.6	510	2100	3.10	123	901	731	4.5	2800	8.1	--
18-27	1.1	.7	450	1620	2.26	125	621	456	5.0	2240	7.9	--
28-31	1.3	.2	560	2540	3.70	80.8	1040	885	5.4	3280	7.8	--
SEPT.												
01-07	1.2	.2	560	2580	3.73	88.8	1050	902	5.5	3230	8.0	--
08-16	1.3	.2	640	2940	4.19	78.2	1180	1030	6.0	3590	7.9	--
17-21	1.3	.1	700	3180	4.54	84.8	1300	1150	5.9	3840	7.8	--
22-30	1.3	.1	630	2850	4.04	78.6	1200	1050	5.6	3510	8.0	--
WTD. AVG. TIME	.7	.6	0	835	--	--	370	189	2.9	1230	7.9	--
WTD. AVG. TONS PER DAY	.9	.6	306	1290	1.89	--	556	369	3.6	1790	7.8	--
	.2	.2	0	266	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
17...	1.1	.1	340	1660	2.34	344	701	482	4.3	2250	7.6	1
DEC.												
18...	.8	.1	160	970	1.51	92.9	475	296	2.8	1530	7.6	0
MAR.												
25...	.8	.2	120	888	1.28	96.4	392	207	3.1	1360	7.3	0
JULY												
13...	1.2	.3	440	1980	2.80	239	806	601	5.0	2520	8.1	22

09222000 BLACKS FORK NEAR LYMAN, WYO.--Continued

EXTREMES.--1968-69:--Continued
Water temperatures: Maximum, 28.0°C July 18, 19; minimum, freezing point on many days during November to March.
Period of record:
Dissolved solids: Maximum, 4,000 mg/l Jan. 13-30, 1963; minimum, 248 mg/l May 9-13, 1969.
Hardness: Maximum, 1,580 mg/l Jan. 13-30, 1963; minimum, 139 mg/l May 9-13, 1969.
Specific conductance: Maximum daily, 5,140 micromhos Jan. 26, 1963; minimum daily, 392 micromhos May 11, 1969.
Water temperatures: Maximum, 28.0°C July 18, 19, 1969; minimum, freezing point on many days during winter periods.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
01-17	--	35	17	--	179	60	285	3.0	247	0	969	95
18-31	--	42	15	--	144	52	222	2.7	207	0	777	78
NOV.												
01-13	--	33	11	--	162	61	244	2.3	261	0	831	90
14-22	--	40	14	--	179	71	289	2.8	278	0	986	99
23-30	--	36	13	--	159	59	228	2.0	285	0	762	80
DEC.												
01-04	--	32	15	--	180	52	246	2.7	270	0	839	80
05-31	--	36	14	--	134	42	188	2.3	250	0	585	55
JAN.												
01-31	--	73	12	--	115	42	145	3.7	232	0	501	44
FEB.												
01-28	--	63	12	--	115	18	101	2.2	222	0	331	36
MAR.												
01-19	--	45	12	--	99	27	97	2.2	208	0	337	35
20-27	--	48	12	--	81	19	178	5.1	192	0	411	70
28-31	--	242	13	--	73	23	121	4.4	222	0	259	60
APR.												
01-22	--	242	13	--	73	23	121	4.4	222	0	259	60
23-30	--	293	11	--	59	20	69	2.9	197	0	151	36
MAY												
01-08	--	453	9.0	--	47	19	40	2.0	156	0	109	22
09-13	--	631	10	--	39	10	31	1.6	124	0	78	16
14-21	--	454	12	--	47	14	51	2.1	139	0	141	23
22-25	--	291	11	--	71	27	82	2.8	183	0	269	33
26-31	--	298	13	--	102	38	110	3.0	211	0	413	40
JUNE												
01-08	--	185	13	--	151	42	160	3.0	268	0	584	64
09-16	--	344	17	--	126	37	250	4.9	314	0	614	111
17-22	--	472	18	--	116	32	184	4.2	293	12	431	77
23-30	--	221	12	--	137	47	196	3.0	305	6	562	81
JULY												
01-25	--	53	8.5	--	190	73	288	3.1	265	0	1030	99
26-29	--	49	9.9	--	213	82	279	3.3	215	0	1070	106
30-31	--	56	16	--	165	72	276	4.4	224	0	974	79
AUG.												
01-09	--	56	16	--	165	72	276	4.4	224	0	974	79
10-17	--	20	13	--	221	85	310	3.7	207	0	1280	86
18-27	--	28	20	--	134	69	284	3.9	201	0	906	97
28-31	--	11	18	--	240	107	397	3.9	189	0	1570	111
SEPT.												
01-07	--	12	12	--	227	118	407	3.7	180	0	1610	113
08-16	--	9.4	9.5	--	259	129	471	3.7	182	0	1860	117
17-21	--	9.4	8.1	--	287	142	493	3.7	182	0	2030	121
22-30	--	9.8	8.0	--	249	141	450	3.5	189	0	1790	112
WTD. AVG. TIME	--	--	13	--	96	31	134	3.1	218	1	393	54
WTD. AVG. TONS PER DAY	--	118	13	--	139	51	205	3.1	228	0	698	69
	--	--	4.0	--	31	10	43	1.0	69	0	125	17
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
17...	1015	A 74	11	180	166	69	264	3.5	267	0	930	88
DEC.												
18...	1130	A 31	12	220	118	44	142	1.9	218	0	488	56
MAR.												
25...	1700	A 38	13	110	99	35	141	4.5	225	0	420	64
JULY												
13...	1140	A 43	7.8	140	211	68	329	2.8	250	0	1140	93

A DISCHARGE AT TIME OF SAMPLING.

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 5, 1969	0800	09.0	110	111	33

09222000 BLACKS FORK NEAR LYMAN, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2430	2250	2180	1470	1230	1160	943	625	1360	1970	2000	3460
2	2380	2130	2080	1440	1200	1140	1020	565	1420	2340	2130	3380
3	2320	2070	2100	1450	1190	1110	1030	516	1630	2340	2340	3200
4	2300	2130	1920	1440	1180	1070	1030	485	1700	2480	2420	3260
5	2360	2220	1740	1430	1170	1130	1040	485	1820	2700	2460	2790
6	2370	2190	1580	1430	1190	1100	1060	468	1880	2590	2550	3390
7	2380	2190	1620	1640	1170	1100	1020	470	1840	2460	2620	3410
8	2530	2020	1790	1830	1130	1080	1100	501	1820	2460	2650	3510
9	2510	2210	1660	1730	1150	1100	1230	449	2060	2510	2600	3620
10	2420	2460	1710	1510	1160	1160	1130	440	1920	2520	2830	3470
11	2410	2220	1630	1470	1150	1140	1080	392	1580	2620	2890	3460
12	2350	2180	1590	1370	1150	1120	1020	394	1970	2500	2740	3570
13	2320	2290	1580	1270	1160	1150	976	395	1800	2540	2770	3760
14	2220	2380	1670	1240	1140	1110	962	569	2150	2410	2820	3660
15	2440	2460	1590	1280	1170	1140	885	516	1930	2490	2760	3620
16	2680	2560	1540	1560	1150	1140	1300	496	2120	2520	2760	3600
17	2330	2650	1520	1410	1120	1110	1300	543	1440	2280	2730	3790
18	2320	2550	1560	1270	1140	1140	1160	668	1480	2310	2140	3840
19	2040	2570	1580	1250	1130	526	1060	642	1510	2280	2400	3860
20	1920	2330	1530	1270	1150	1450	962	607	1720	2300	1990	3840
21	1850	2330	1460	1690	1090	1470	957	646	1260	2400	2260	3780
22	1720	2300	1480	1380	1090	1430	925	732	1590	2490	2140	3560
23	1750	1940	1430	1430	1100	1540	823	887	1810	2510	1900	3450
24	1880	1900	1420	1370	1120	1600	752	980	1910	2550	2280	3280
25	2040	1990	1450	1320	1120	1500	645	1030	2130	2470	2420	3340
26	2080	1940	1480	1400	1090	1280	676	1180	1730	2840	2500	3560
27	2160	2070	1480	1250	1090	1300	713	1150	1520	2610	2620	3480
28	2220	2100	1440	1190	1130	785	775	1140	1630	2610	3060	3460
29	2250	2260	1480	1220	--	1020	797	1170	1750	2670	3250	3570
30	2320	2340	1470	1200	--	1030	743	1170	1870	2230	3380	3800
31	2360	--	1500	1250	--	1070	--	1280	--	2190	3370	--
AVG	2250	2240	1620	1400	1150	1170	970	696	1750	2460	2570	3530

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	2.0	0.0	0.0	0.0	0.0	2.0	13.0	12.0	18.0	22.0	14.0
2	8.0	1.0	0.0	0.0	0.0	0.0	2.0	15.0	12.0	19.0	17.0	14.0
3	5.0	3.0	0.0	0.0	0.0	0.0	4.0	15.0	16.0	21.0	22.0	18.0
4	6.0	3.0	0.0	0.0	0.0	0.0	4.0	14.0	18.0	15.0	17.0	18.0
5	7.0	2.0	0.0	0.0	0.0	0.0	5.0	13.0	19.0	16.0	22.0	15.0
6	6.0	1.0	0.0	1.0	0.0	0.0	6.0	9.0	20.0	16.0	20.0	16.0
7	5.0	0.0	0.0	1.0	0.0	0.0	2.0	9.0	16.0	14.0	20.0	12.0
8	7.0	0.0	0.0	0.0	0.0	0.0	1.0	16.0	16.0	16.0	22.0	20.0
9	7.0	2.0	0.0	0.0	0.0	0.0	4.0	16.0	14.0	18.0	16.0	22.0
10	10.0	1.0	0.0	0.0	0.0	0.0	6.0	16.0	18.0	18.0	20.0	18.0
11	9.0	2.0	0.0	0.0	0.0	0.0	7.0	10.0	12.0	20.0	22.0	22.0
12	8.0	1.0	0.0	0.0	0.0	0.0	6.0	10.0	16.0	17.0	22.0	19.0
13	9.0	0.0	0.0	0.0	0.0	0.0	6.0	11.0	15.0	20.0	25.0	18.0
14	8.0	0.0	0.0	0.0	0.0	0.0	4.0	10.0	11.0	21.0	24.0	10.0
15	5.0	0.0	0.0	0.0	0.0	0.0	4.0	11.0	16.0	20.0	22.0	16.0
16	6.0	0.0	0.0	0.0	0.0	0.0	4.0	9.0	12.0	27.0	22.0	10.0
17	0.0	0.0	0.0	0.0	0.0	0.0	4.0	12.0	13.0	26.0	15.0	20.0
18	2.0	0.0	0.0	0.0	0.0	0.0	8.0	17.0	18.0	28.0	22.0	22.0
19	1.0	0.0	0.0	0.0	0.0	0.0	4.0	12.0	22.0	28.0	22.0	19.0
20	1.0	0.0	0.0	0.0	0.0	1.0	7.0	12.0	18.0	18.0	23.0	16.0
21	1.0	0.0	0.0	0.0	0.0	0.0	8.0	11.0	14.0	25.0	26.0	11.0
22	0.0	0.0	0.0	0.0	0.0	1.0	9.0	12.0	13.0	24.0	26.0	8.0
23	3.0	0.0	0.0	0.0	0.0	1.0	11.0	14.0	18.0	25.0	24.0	12.0
24	2.0	0.0	0.0	0.0	0.0	0.0	9.0	14.0	12.0	20.0	16.0	14.0
25	3.0	0.0	0.0	0.0	0.0	0.0	3.0	14.0	9.0	26.0	17.0	16.0
26	4.0	0.0	0.0	0.0	0.0	1.0	2.0	15.0	12.0	24.0	20.0	15.0
27	2.0	0.0	0.0	0.0	0.0	1.0	10.0	14.0	10.0	14.0	22.0	14.0
28	3.0	0.0	0.0	0.0	0.0	2.0	12.0	14.0	12.0	18.0	20.0	12.0
29	2.0	0.0	0.0	0.0	--	1.0	13.0	14.0	10.0	18.0	20.0	8.0
30	3.0	0.0	0.0	0.0	--	2.0	13.0	16.0	12.0	17.0	15.0	12.0
31	3.0	--	0.0	0.0	--	3.0	--	13.0	--	20.0	18.0	--
AVG	4.6	0.6	0.0	0.0	0.0	0.4	6.0	12.9	14.5	20.2	20.6	15.3

09224450 HAMS FORK NEAR GRANGER, WYO.

LOCATION.--Lat 41°35'56", long 109°59'28", in center of sec.30, T.19 N., R.111 W., Sweetwater County, at railroad bridge 1.2 miles northwest of Granger and 1.8 miles upstream from mouth.

DRAINAGE AREA.--670 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1965 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFSI	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
11...	1600	18	3.9	50	53	25	40	1.6	182	0	146	13
NOV.												
22...	1800	36	3.5	110	79	30	42	1.7	225	0	191	28
DEC.												
18...	1305	11	4.4	190	116	36	44	2.1	325	0	249	21
JAN.												
17...	1030	23	3.6	110	101	30	48	2.4	268	0	207	22
FEB.												
18...	1100	16	7.2	160	102	26	33	2.1	262	0	186	20
MAR.												
25...	1145	19	4.5	260	80	27	34	2.3	243	0	158	17
MAY												
11...	1100	912	4.6	340	56	12	9.6	1.9	206	0	31	3.5
JUNE												
05...	1130	120	7.9	120	69	17	26	1.6	240	0	80	7.1
JULY												
13...	1500	52	1.2	120	59	30	42	1.2	242	0	140	15
AUG.												
09...	0840	40	3.5	390	52	24	33	1.3	180	0	119	13
SEPT.												
06...	0700	28	13	260	41	20	38	1.6	165	0	113	16

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
11...	.4	.1	30	373	.50	17.7	232	83	1.1	617	7.2	9
NOV.												
22...	.5	.2	70	486	.69	49.6	320	135	1.0	769	7.6	1
DEC.												
18...	.5	.1	70	633	.89	19.4	439	172	.9	959	7.5	0
JAN.												
17...	.5	.1	30	547	.78	35.4	375	155	1.1	813	7.5	0
FEB.												
18...	.5	.6	60	507	.71	22.6	360	145	.8	790	7.9	0
MAR.												
25...	.5	.3	200	444	.65	24.4	310	111	.8	744	7.7	0
MAY												
11...	.3	.4	0	221	.32	571	190	21	.3	401	7.7	12
JUNE												
05...	.4	.3	20	327	.47	111	241	44	.7	561	7.7	20
JULY												
13...	.4	.3	100	408	.58	59.5	269	70	1.1	690	8.1	22
AUG.												
09...	.4	.3	220	335	.46	36.5	228	80	.9	564	7.7	18
SEPT.												
06...	.4	.5	80	325	.46	25.7	184	49	1.2	548	8.0	7

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.

LOCATION.--Lat 41°32'46", long 109°41'34", in NE¼NE¼NE¼ sec.15, T.18 N., R.109 W., Sweetwater County, at gaging station 200 ft upstream from bridge on U.S. Highway 30, 4.5 miles upstream from Spider Creek, and 12 miles east of Little America.
DRAINAGE AREA.--3,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1969.
Water temperatures: March 1951 to September 1963, December 1964 to September 1969.
Sediment records: October 1967 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,730 mg/l Sept. 10-30; minimum, 295 mg/l May 1-23.
Hardness: Maximum, 643 mg/l Dec. 1-8; minimum, 169 mg/l Jan. 18-31.
Specific conductance: Maximum daily, 3,240 micromhos Aug. 9; minimum daily, 411 micromhos May 13.
Water temperatures: Maximum, 26.0°C on several days during July and August; minimum, freezing point on many days during November to March.
Sediment concentrations: Maximum daily, 6,820 mg/l Apr. 1; minimum daily, 7 mg/l Oct. 13, Aug. 24.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-10	--	64	4.6	--	121	51	250	3.9	237	0	730	87
11-20	--	70	5.7	--	103	47	290	4.3	268	0	710	88
21-31	--	81	7.5	--	96	50	220	4.3	237	0	585	76
NOV.												
01-15	--	75	7.2	--	63	51	300	5.1	335	0	630	87
16-24	--	95	7.2	--	55	55	322	5.1	380	0	620	93
25-30	--	80	9.3	--	103	62	272	2.6	337	0	690	101
DEC.												
01-08	--	74	11	--	157	61	244	5.1	354	0	704	106
09-23	--	64	11	--	103	50	272	4.3	404	0	584	79
24-29	--	69	11	--	90	47	260	4.0	396	0	556	64
30-31	--	66	11	--	37	46	480	4.2	602	80	575	70
JAN.												
01-03	--	66	11	--	37	46	480	4.2	602	80	575	70
04-17	--	91	10	--	79	44	284	4.2	394	0	544	67
18-31	--	100	8.8	--	9.9	35	324	3.8	365	35	416	53
FEB.												
01-15	--	73	9.5	--	99	36	150	4.1	328	0	371	55
16-28	--	51	10	--	79	32	168	3.7	346	1	344	50
MAR.												
01-21	--	53	9.7	--	90	32	148	3.1	316	6	310	49
22-28	--	128	8.2	--	72	23	162	3.1	239	3	322	51
29-31	--	825	10	--	68	24	94	4.1	219	0	211	48
APR.												
01-14	--	825	10	--	68	24	94	4.1	219	0	211	48
15-30	--	1240	9.0	--	64	21	54	2.8	231	0	121	27
MAY												
01-23	--	1290	8.4	--	53	16	28	2.5	178	9	76	14
24-31	--	610	8.7	--	72	14	64	2.8	178	0	189	25
JUNE												
01-08	--	357	11	--	104	20	105	2.9	243	0	295	36
09-30	--	573	14	--	78	44	157	3.7	297	0	364	61
JULY												
01-14	--	178	7.4	--	104	42	148	4.1	255	6	428	56
15-31	--	86	5.6	--	94	51	200	4.5	205	7	570	65
AUG.												
01-08	--	88	9.9	--	88	40	193	4.5	214	0	515	65
09-31	--	38	3.7	--	72	42	265	4.0	240	0	620	67
SEPT.												
01-09	--	19	.5	--	22	40	346	4.2	264	0	640	70
10-30	--	15	1.2	--	18	53	490	5.0	368	0	890	94
WTD. AVG. TIME	--	--	9.4	--	68	27	101	3.3	235	4	234	38
WTD. AVG. TONS PER DAY	--	283	8.1	--	75	39	215	3.9	292	4	467	62
	--	--	7.2	--	52	20	77	2.5	179	3	179	29
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
15...	1545	A 70	5.8	500	103	35	348	4.6	345	7	708	102
DEC.												
18...	1345	A 62	10	20	181	16	219	3.8	345	0	573	77
MAR.												
25...	1420	A125	8.6	120	81	30	154	2.9	228	0	371	53
AUG.												
28...	0730	A17	1.4	--	58	45	250	4.3	155	3	652	65
JULY												
13...	1730	A102	5.4	50	103	52	163	3.7	234	0	540	59
SEPT.												
23...	1700	A9.9	2.8	70	16	54	515	5.1	191	122	835	86

A DISCHARGE AT TIME OF SAMPLING.

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

EXTREMES.--1968-69:--Continued
Sediment loads: Maximum daily, 14,500 tons Apr. 4; minimum daily, 0.60 ton Sept. 7.
Period of record:
Dissolved solids (1951-67, 1969): Maximum, 4,480 mg/l Oct. 1-3, 1953; minimum, 278 mg/l Feb. 12, 13, 1954.
Hardness: Maximum, 1,980 mg/l Feb. 1-14, 1955; minimum, 48 mg/l Jan. 21, 22, 26, 1953.
Specific conductance: Maximum daily (1951-64, 1965-69), 6,010 micromhos Oct. 1, 1953; minimum daily, 411 micromhos May 13, 1969.
Water temperatures (1951-62, 1966-69): Maximum, 29.0°C July 15, 16, 1955; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 6,820 mg/l Apr. 1, 1969; minimum daily, 6 mg/l Jan. 26, 1968.
Sediment loads: Maximum daily, 52,000 tons June 6, 1968; minimum daily, 0.60 ton Sept. 7, 1968.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additonal samples were collected for more comprehensive definition of water quality. Flow affected by ice Dec. 10 to Apr. 3.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-10	.7	.1	350	1370	1.96	249	513	319	4.8	1940	8.2	--
11-20	.6	.1	60	1180	1.97	274	451	231	5.9	2010	8.0	--
21-31	.6	.2	20	1160	1.66	267	445	251	4.5	1700	8.2	--
NOV.												
01-15	.6	.1	240	1310	1.85	275	366	91	6.8	1950	8.1	--
16-24	.5	.4	210	1350	1.90	359	362	50	7.3	2010	7.9	--
25-30	.6	2.1	320	1410	2.00	318	510	234	5.2	2020	8.0	--
DEC.												
01-08	.6	1.5	290	1460	2.05	302	643	353	4.2	2000	8.0	--
09-23	.5	.2	210	1300	2.03	257	462	131	5.5	1860	8.0	--
24-29	.4	1.7	210	1230	1.78	244	418	93	5.5	1770	7.9	--
30-31	.5	.1	260	1600	2.14	280	281	0	12	2290	9.1	--
JAN.												
01-03	.5	.1	260	1600	2.14	280	281	0	12	2290	9.1	--
04-17	.5	.1	210	1230	1.67	302	379	56	6.4	1770	8.2	--
18-31	.3	.0	150	1070	1.44	286	169	0	11	1610	9.1	--
FEB.												
01-15	.5	.2	160	886	1.25	181	394	125	3.3	1310	8.1	--
16-28	.4	.6	130	859	1.20	172	330	45	4.0	1280	8.3	--
MAR.												
01-21	.4	.9	140	804	1.11	117	356	87	3.4	1200	8.4	--
22-28	.4	1.1	160	764	1.08	274	275	74	4.3	1170	8.4	--
29-31	.4	.1	140	568	.80	1310	269	89	2.5	900	7.9	--
APR.												
01-14	.4	.1	140	568	.80	1310	269	89	2.5	900	7.9	--
15-30	.3	.2	70	413	.57	1400	244	55	1.5	671	7.9	--
MAY												
01-23	.2	.2	0	295	.41	1040	201	40	.9	479	8.6	--
24-31	.3	.2	60	464	.68	873	236	90	1.8	747	8.0	--
JUNE												
01-08	.4	.3	170	695	.94	663	342	143	2.5	1030	7.7	--
09-30	.6	.5	250	869	1.21	1380	377	133	3.5	1310	7.9	--
JULY												
01-14	.5	.2	0	921	1.29	458	432	213	3.1	1350	8.4	--
15-31	.6	.1	280	1100	1.58	269	443	263	4.1	1610	8.5	--
AUG.												
01-08	.5	.1	240	1020	1.47	257	383	207	4.3	1480	7.7	--
09-31	.5	.2	310	1190	1.73	130	354	157	6.1	1750	8.1	--
SEPT.												
01-09	.6	.3	290	1250	1.70	64.1	220	3	10	1840	7.9	--
10-30	.6	.2	430	1730	2.39	71.3	263	0	13	2510	8.2	--
WTD. AVG. TIME	.4	.3	0	601	--	--	281	86	2.5	923	8.2	--
WTD. AVG. TONS PER DAY	.5	.3	190	1020	1.48	--	350	119	5.1	1500	8.2	--
	.3	.2	0	459	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
15...	.7	.3	410	1490	2.11	293	399	104	7.6	2100	8.4	8
DEC.												
18...	.5	.2	210	1250	1.71	211	516	233	4.2	1760	7.9	0
MAR.												
25...	.5	.4	170	814	1.13	280	327	140	3.7	1200	7.8	0
AUG.												
28...	.5	.1	330	1160	1.55	52.3	329	197	6.0	1610	8.4	18
JULY												
13...	.5	.2	250	1040	1.46	295	471	279	3.3	1480	8.0	22
SEPT.												
23...	.6	.3	400	1730	2.33	45.7	263	0	14	2460	9.8	18

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED OXYGEN (MG/L)
AUG. 28...	0730	17	1590	8.7	5.8
SEPT. 23...	1700	9.9	2630	9.7	11.3

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1760	1750	2030	2230	1290	1120	976	524	985	--	--	1960
2	1760	1680	2060	2300	1280	1200	915	551	925	1200	1590	1690
3	1840	1760	--	1860	1280	1140	968	502	991	1240	1550	1850
4	2290	1770	2060	1780	1310	1120	971	502	947	1280	1470	2000
5	2120	1830	2010	1860	1370	1150	928	484	1010	1240	1430	1870
6	1940	1810	2100	1590	1380	1190	875	452	1070	1280	1360	1770
7	1920	1930	1980	1760	1390	1170	866	457	1110	1260	1400	1780
8	1880	2570	1920	1770	1380	1520	842	458	1140	1400	--	1920
9	1900	2170	1840	1890	1410	1190	896	469	1270	1480	3240	1930
10	1900	1850	1720	1650	1330	1230	963	469	1380	1410	1810	2750
11	2230	1760	1610	1640	1260	1170	915	444	1580	1580	1640	2160
12	2100	1780	1650	1900	1370	1330	868	424	1390	1420	1670	2800
13	1910	1890	1670	2150	--	1180	764	411	1270	1570	1720	2130
14	1880	1960	1730	1760	1330	1210	725	412	1310	1480	1730	1920
15	1970	2060	1730	1560	1310	1210	690	489	1320	1620	1830	2170
16	1910	--	--	1680	1240	1210	692	463	1490	1560	1840	2170
17	1830	2440	--	1610	1270	1180	839	467	1210	1670	1700	2650
18	1910	2200	1720	2810	1290	1130	828	480	1560	1620	1790	2120
19	2080	1980	1730	3130	1350	1210	820	481	1160	1820	1930	2640
20	2150	1850	1980	--	1250	1180	753	537	1160	2070	1460	2940
21	1980	1850	1990	2600	1260	1120	737	537	1160	1760	1660	2410
22	1880	1970	2080	1270	1290	995	692	539	1150	1670	1420	2640
23	1780	2020	2210	1210	1200	--	666	545	1220	1610	1390	2660
24	1700	1960	1900	1440	1510	1140	639	605	1120	1610	1570	2710
25	1600	--	1900	1450	1210	1220	588	644	1120	1570	1850	2930
26	1570	2050	1730	1520	1400	1120	564	678	1170	1370	1830	2960
27	1570	2080	1680	2130	1520	1220	539	738	1340	1450	1750	2900
28	1520	2070	1660	1380	1240	1230	547	828	1320	1430	1740	2780
29	1640	2080	1590	1390	--	591	530	850	1150	1480	1580	3090
30	1640	1930	2730	1330	--	696	549	864	1160	1640	1840	2800
31	1680	--	2450	1360	--	696	--	895	--	1460	1680	--
AVG	1870	1970	1910	1800	1320	1140	771	554	1210	1510	1710	2370

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

TEMPERATURE (°C) O WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	7.0	1.0	2.0	0.0	1.0	3.0	10.0	19.0	19.0	--	18.0
2	14.0	8.0	0.0	2.0	0.0	2.0	4.0	12.0	18.0	18.0	24.0	19.0
3	14.0	7.0	--	3.0	1.0	2.0	6.0	13.0	18.0	22.0	25.0	19.0
4	13.0	7.0	2.0	2.0	1.0	1.0	5.0	12.0	22.0	24.0	24.0	18.0
5	14.0	7.0	2.0	2.0	0.0	1.0	8.0	12.0	20.0	22.0	24.0	18.0
6	14.0	5.0	2.0	2.0	0.0	1.0	8.0	12.0	20.0	24.0	24.0	19.0
7	12.0	4.0	3.0	2.0	1.0	1.0	4.0	13.0	19.0	20.0	26.0	16.0
8	12.0	0.0	3.0	2.0	1.0	1.0	5.0	13.0	18.0	24.0	--	16.0
9	10.0	0.0	2.0	1.0	1.0	1.0	7.0	14.0	20.0	24.0	25.0	16.0
10	11.0	4.0	2.0	0.0	2.0	0.0	7.0	13.0	17.0	24.0	25.0	16.0
11	12.0	5.0	2.0	1.0	1.0	1.0	7.0	15.0	18.0	23.0	24.0	15.0
12	11.0	4.0	2.0	1.0	1.0	1.0	8.0	15.0	17.0	22.0	24.0	15.0
13	10.0	3.0	2.0	2.0	--	1.0	8.0	15.0	16.0	22.0	24.0	14.0
14	9.0	0.0	2.0	2.0	1.0	1.0	9.0	14.0	17.0	24.0	24.0	14.0
15	7.0	0.0	2.0	1.0	1.0	2.0	9.0	14.0	17.0	24.0	24.0	15.0
16	9.0	--	--	1.0	1.0	2.0	6.0	14.0	12.0	25.0	23.0	15.0
17	7.0	0.0	--	2.0	1.0	2.0	8.0	15.0	13.0	26.0	24.0	16.0
18	7.0	0.0	2.0	3.0	1.0	2.0	8.0	15.0	15.0	25.0	23.0	17.0
19	6.0	1.0	1.0	4.0	1.0	2.0	10.0	17.0	18.0	24.0	23.0	17.0
20	6.0	1.0	1.0	--	1.0	2.0	10.0	16.0	18.0	24.0	22.0	19.0
21	7.0	1.0	1.0	2.0	1.0	2.0	10.0	17.0	16.0	24.0	26.0	18.0
22	6.0	1.0	1.0	2.0	2.0	2.0	11.0	17.0	16.0	24.0	26.0	18.0
23	7.0	2.0	1.0	1.0	2.0	--	14.0	16.0	16.0	24.0	26.0	18.0
24	7.0	2.0	1.0	1.0	2.0	2.0	11.0	17.0	14.0	24.0	24.0	17.0
25	8.0	2.0	1.0	1.0	2.0	2.0	8.0	17.0	16.0	25.0	24.0	16.0
26	9.0	2.0	1.0	2.0	2.0	1.0	5.0	19.0	16.0	26.0	25.0	16.0
27	9.0	2.0	1.0	1.0	1.0	2.0	6.0	19.0	16.0	26.0	25.0	16.0
28	10.0	2.0	0.0	1.0	1.0	2.0	10.0	20.0	14.0	24.0	24.0	17.0
29	10.0	2.0	1.0	1.0	--	2.0	10.0	19.0	16.0	24.0	25.0	14.0
30	8.0	2.0	1.0	0.0	--	1.0	10.0	17.0	18.0	24.0	24.0	15.0
31	7.0	--	1.0	0.0	--	1.0	--	16.0	--	--	24.0	--
AVG	9.7	2.7	1.4	1.5	1.0	1.4	7.7	15.0	17.0	23.5	24.3	16.5

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS INDICATED
MAR 29, 1969	1135	1	300	4060	3290	--	69	--	90	--	100	--	--	--	--	--	PWC
MAR 31.....	1405	1	505	6480	8840	--	60	--	84	--	98	100	--	--	--	--	VPWC
APR 1.....	1445	3	645	7200	12500	--	59	--	83	--	98	100	--	--	--	--	VPWC
APR 2.....	0930	4	825	6460	14400	--	57	--	81	--	97	99	100	--	--	--	VPWC
MAY 11.....	1450	15	1440	1090	4240	--	23	--	35	--	65	89	100	--	--	--	VPWC
JUN 24.....	1600	14	445	3860	4640	--	85	--	98	--	100	--	--	--	--	--	PWC

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	65	17	3.0	81	24	5.2	73	83	16
2	69	16	3.0	82	21	4.6	71	104	20
3	67	23	4.2	84	18	4.1	68	133	24
4	66	33	5.9	86	38	8.8	71	113	22
5	66	18	3.2	85	42	9.6	77	101	21
6	64	20	3.5	88	33	7.8	82	88	19
7	62	32	5.4	83	31	6.9	80	104	22
8	59	15	2.4	80	76	16	73	108	21
9	58	17	2.7	66	42	7.5	71	93	18
10	59	27	4.3	73	92	18	71	86	16
11	61	21	3.5	67	107	19	69	84	16
12	61	15	2.5	70	104	20	73	77	15
13	61	7	1.2	66	124	22	70	81	15
14	63	9	1.5	66	53	9.4	67	77	14
15	68	11	2.0	55	57	8.5	66	76	14
16	72	14	2.7	44	51	6.1	65	79	14
17	72	18	3.5	56	50	7.6	64	68	12
18	74	15	3.0	68	43	7.9	62	59	9.9
19	80	35	7.6	85	26	6.0	57	65	10
20	86	45	10	107	45	13	61	45	7.4
21	86	34	7.9	129	103	36	59	45	7.2
22	90	40	9.7	125	106	36	57	42	6.5
23	93	30	7.5	118	108	34	56	41	6.2
24	86	21	4.9	119	99	32	64	60	10
25	86	19	4.4	101	102	28	75	67	14
26	78	22	4.6	84	98	22	72	76	15
27	74	17	3.4	71	67	13	70	27	5.1
28	70	12	2.3	78	51	11	65	48	8.4
29	73	12	2.4	75	76	15	66	26	4.6
30	73	18	3.5	74	95	19	64	32	5.5
31	77	21	4.4	--	--	--	64	26	4.5
TOTAL	2219	--	130.1	2466	--	454.0	2103	--	413.3

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	64	16	2.8	77	51	11	51	48	6.6
2	70	29	5.5	75	49	9.9	54	46	6.7
3	67	18	3.3	77	51	11	50	55	7.4
4	71	28	5.4	72	92	18	51	47	6.5
5	77	12	2.5	73	85	17	54	31	4.5
6	88	11	2.6	75	73	15	52	46	6.5
7	93	13	3.3	76	55	11	48	70	9.1
8	87	32	7.5	74	74	15	44	82	9.7
9	80	59	13	74	58	12	40	51	5.5
10	89	48	12	79	46	9.8	38	36	3.7
11	93	53	13	77	47	9.8	42	46	5.2
12	107	52	15	73	25	4.9	44	78	9.3
13	96	46	12	69	16	3.0	47	63	8.0
14	97	44	12	63	30	5.1	45	61	7.4
15	102	42	12	58	33	5.2	49	56	7.4
16	100	26	7.0	55	61	9.1	58	26	4.1
17	99	26	6.9	53	51	7.3	64	27	4.7
18	97	42	11	51	21	2.9	68	42	7.7
19	108	92	27	48	31	4.0	69	98	18
20	115	150	47	47	37	4.7	69	75	14
21	113	96	29	48	42	5.4	68	68	12
22	110	50	15	47	33	4.2	74	131	26
23	103	67	19	47	34	4.3	86	170	39
24	99	131	35	52	14	2.0	103	239	66
25	103	89	25	56	38	5.7	125	198	67
26	102	84	23	55	55	8.2	138	222	83
27	100	83	22	52	23	3.2	163	208	92
28	96	39	10	49	42	5.6	210	1750	992
29	91	44	11	--	--	--	300	4730	3830
30	86	61	14	--	--	--	395	4920	5250
31	83	41	9.2	--	--	--	505	6310	8600
TOTAL	2886	--	433.0	1752	--	224.3	3204	--	19209.0

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	645	6820	11900	1210	460	1500	475	112	144
2	825	6230	13900	1310	500	1770	456	107	132
3	1020	3900	10700	1340	630	2280	422	181	206
4	1230	4360	14500	1350	570	2080	384	163	169
5	1090	2160	6360	1380	730	2720	329	184	163
6	1020	2190	6030	1350	780	2840	278	183	137
7	1000	1620	4370	1310	620	2190	250	151	102
8	917	1210	3000	1300	510	1790	259	259	181
9	695	1110	2080	1310	530	1870	326	230	202
10	620	760	1270	1410	610	2320	576	585	910
11	802	1000	2170	1460	1030	4060	415	530	594
12	897	1080	2620	1510	920	3750	440	340	404
13	1020	1160	3190	1490	730	2940	395	1090	1160
14	1050	890	2520	1400	590	2230	380	440	451
15	1050	1160	3290	1430	570	2200	540	410	598
16	1180	1170	3730	1410	500	1900	558	1170	1760
17	1250	1630	5500	1470	510	2020	829	2110	4720
18	1190	1430	4590	1290	490	1710	1290	2210	7700
19	1200	1220	3950	1120	338	1020	944	1090	2780
20	1200	1170	3790	1050	325	921	744	1220	2450
21	1160	920	2880	1010	309	843	756	1920	3920
22	1150	730	2270	965	273	711	794	6340	13600
23	1200	970	3140	863	250	583	564	2980	4540
24	1310	1230	4350	771	244	508	460	3160	3920
25	1390	1190	4470	728	180	354	405	1160	1270
26	1490	1190	4790	677	147	269	385	430	447
27	1380	790	2940	586	188	297	425	360	413
28	1280	470	1620	556	148	222	525	660	936
29	1220	540	1780	540	122	178	465	430	540
30	1190	550	1770	524	122	173	395	151	161
31	--	--	--	496	138	185	--	--	--
TOTAL	32671	--	139470	34616	--	48434	15464	--	54710

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	355	165	158	157	1060	449	22	23	1.4
2	295	152	121	118	1520	484	22	39	2.3
3	242	153	100	95	890	228	21	20	1.1
4	200	121	65	82	380	84	21	58	3.3
5	182	111	55	74	162	32	21	32	1.8
6	172	107	50	66	91	16	18	17	.83
7	157	92	39	57	85	13	16	14	.60
8	154	82	34	54	56	8.2	16	20	.86
9	148	42	17	49	52	6.9	17	22	1.0
10	139	51	19	46	44	5.5	19	21	1.1
11	130	73	26	42	58	6.6	22	39	2.3
12	115	68	21	40	73	7.9	20	38	2.1
13	105	71	20	37	26	2.6	17	52	2.4
14	100	72	19	37	50	5.0	17	34	1.6
15	124	103	34	36	29	2.8	17	19	.87
16	105	72	20	33	28	2.5	17	26	1.2
17	118	70	22	37	32	3.2	15	26	1.1
18	100	53	14	70	57	11	14	19	.72
19	90	52	13	49	34	4.5	13	18	.63
20	86	63	15	50	18	2.4	12	22	.71
21	84	46	10	52	21	2.9	11	53	1.6
22	80	62	13	46	19	2.4	11	86	2.6
23	76	45	9.2	40	12	1.3	11	27	.80
24	72	39	7.6	35	7	.66	9.9	71	1.9
25	66	42	7.5	31	10	.84	13	32	1.1
26	70	38	7.2	30	13	1.1	14	20	.76
27	66	36	6.4	26	10	.70	14	24	.91
28	65	89	16	23	16	.99	13	18	.63
29	61	178	29	24	44	2.9	14	23	.87
30	72	55	11	23	24	1.5	14	27	1.0
31	130	78	27	23	18	1.1	--	--	--
TOTAL	3959	--	1005.9	1582	--	1391.49	481.9	--	40.09

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1034D3.9
TOTAL LOAD FOR YEAR (TONS) 265915.18

09229500 HENRYS FORK AT LINWOOD, UTAH

LOCATION.--Lat 41°00'45", long 109°40'20", in NW¼NW¼ sec.23, T.12 N., R.109 W., Sweetwater County, Wyo., 0.4 mile north of Wyoming-Utah State line, approximately 1 mile downstream from gaging station, 2 miles upstream from State Highway 530 at Linwood, 4 miles northeast of Manila, and 7 miles upstream from mouth.
DRAINAGE AREA.--520 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1969.
Water temperatures: March 1951 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,350 mg/l Sept. 1-30; minimum, 346 mg/l May 9-22.
Hardness: Maximum, 830 mg/l Sept. 1-30; minimum, 224 mg/l May 26.
Specific conductance: Maximum daily, 1,710 micromhos Sept. 20; minimum daily, 476 micromhos May 20.
Water temperatures: Maximum, 25.0°C July 16, Aug. 3, 5; minimum, freezing point on several days during November and December.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
01-31	--	50	26	--	143	86	--	--	270	0	585	28
NOV.												
01-30	--	56	20	--	142	84	--	--	276	0	604	26
DEC.												
01-31	--	48	19	--	146	80	--	--	290	0	594	26
JAN.												
01-06	--	61	15	--	146	74	--	--	291	0	525	20
07-31	--	59	17	--	126	79	--	--	275	0	472	22
FEB.												
01-28	--	49	15	--	130	67	--	--	272	0	445	28
MAR.												
01-16	--	52	18	--	130	69	--	--	281	0	420	22
17-31	--	94	16	--	112	52	--	--	226	0	390	22
APR.												
01-30	--	96	16	--	97	49	--	--	248	0	298	20
MAY												
01-08	--	71	13	--	79	40	--	--	208	0	228	17
09-22	--	190	13	--	57	23	--	--	160	0	108	13
23-25	--	193	19	--	91	40	--	--	249	0	226	16
26...	--	190	14	--	22	41	--	--	163	0	121	12
27-31	--	170	17	--	76	29	--	--	215	0	176	14
JUNE												
01-04	--	94	16	--	75	30	--	--	199	0	182	14
05-08	--	63	20	--	86	47	--	--	249	0	240	17
09-14	--	78	28	--	130	67	--	--	325	0	400	23
15-19	--	172	25	--	96	45	--	--	285	0	265	19
20-22	--	287	23	--	100	47	--	--	285	0	277	20
23-30	--	142	23	--	120	68	--	--	302	0	410	25
JULY												
01-29	--	23	24	--	156	95	--	--	319	0	588	30
30-31	--	154	35	--	186	47	--	--	235	0	605	24
AUG.												
01-31	--	25	24	--	164	83	--	--	262	0	570	28
SEPT.												
01-30	--	7.0	22	--	182	91	--	--	296	0	670	32
WTD. AVG. TIME	--	--	19	--	113	59	--	--	254	0	386	22
WTD. AVG. TONS PER DAY	--	--	3.3	--	20	10	--	--	45	0	68	3.8

ANALYSES OF ADDITIONAL SAMPLES

DATE	TIME	DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
DEC.												
08...	0830	A53	13	--	136	92	58	9.1	290	0	582	28
MAR.												
17...	1440	A124	14	--	108	67	44	7.2	247	0	412	20
JUNE												
10...	0845	A88	19	--	95	39	35	8.0	272	0	224	14
AUG.												
26...	1645	A25	24	--	160	89	78	13	235	0	665	27
SEPT.												
18...	0730	A9.5	21	--	140	101	81	9.9	168	0	742	30
23...	1320	A11	21	40	180	107	103	13	264	2	805	32

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED OXYGEN (MG/L)
AUG.					
26...	1630	A25	1500	8.1	7.2
SEPT.					
23...	1520	A11	1800	8.3	8.2

A DISCHARGE AT TIME OF SAMPLING.

09229500 HENRYS FORK AT LINWOOD, UTAH.--Continued

Period of record:
Dissolved solids: Maximum, 3,700 mg/l Oct. 14, 15, 1961; minimum, 291 mg/l June 9-21, 1968.
Hardness: Maximum, 2,100 mg/l Oct. 14, 15, 1961; minimum, 200 mg/l June 9-21, 1968.
Specific conductance: Maximum daily, 3,750 micromhos Oct. 15, 1961; minimum daily, 385 micromhos June 16, 1968.
Water temperatures: Maximum, 29.0°C July 29, 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality. Maximum observed during water year: Dissolved solids, 1,390 mg/l Sept. 23. Minimum observed during water year: Dissolved solids, 117 mg/l Aug. 26.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-31	--	--	--	1080	1.47	146	710	489	1.2	1380	8.0	--
NOV.												
01-30	--	--	--	1100	1.50	166	700	474	1.4	1370	8.1	--
DEC.												
01-31	--	--	--	1080	1.47	140	695	457	1.5	1370	8.1	--
JAN.												
01-06	--	--	--	1080	1.47	178	670	431	1.1	1340	7.6	--
07-31	--	--	--	987	1.34	157	640	414	.9	1260	8.2	--
FEB.												
01-28	--	--	--	938	1.28	124	600	377	1.0	1210	7.9	--
MAR.												
01-16	--	--	--	918	1.25	129	610	380	.7	1180	8.0	--
17-31	--	--	--	816	1.11	207	495	310	1.1	1060	8.1	--
APR.												
01-30	--	--	--	700	.95	181	442	239	.9	945	7.9	--
MAY												
01-08	--	--	--	572	.78	110	364	193	.7	781	7.2	--
09-22	--	--	--	346	.47	177	238	107	.3	535	7.8	--
23-25	--	--	--	615	.84	320	390	186	.7	816	8.0	--
26...	--	--	--	432	.59	222	224	90	.7	514	7.7	--
27-31	--	--	--	494	.67	227	310	134	.8	680	8.0	--
JUNE												
01-04	--	--	--	482	.66	109	312	149	.7	677	7.6	--
05-08	--	--	--	595	.81	101	410	206	.7	825	7.3	--
09-14	--	--	--	933	1.27	196	600	334	.9	1200	7.7	--
15-19	--	--	--	692	.94	321	425	191	1.1	937	7.8	--
20-22	--	--	--	696	.95	539	445	211	1.0	943	7.9	--
23-30	--	--	--	904	1.23	347	580	332	1.1	1180	8.0	--
JULY												
01-29	--	--	--	1230	1.51	76.4	780	518	1.0	1510	7.7	--
30-31	--	--	--	1190	1.50	495	660	467	1.5	1440	7.6	--
AUG.												
01-31	--	--	--	1170	1.41	79.0	750	535	.7	1420	7.8	--
SEPT.												
01-30	--	--	--	1350	1.65	25.5	830	587	1.1	1610	7.8	--
WTD. AVG. TIME	--	--	--	827	--	--	528	320	.9	1070	7.9	--
WTD. AVG. TONS PER DAY	--	--	--	978	1.33	--	624	403	1.0	1240	7.9	--
	--	--	--	145	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

DEC.												
08...	1.3	.5	230	1110	1.51	159	720	482	.9	1400	8.0	0
MAR.												
17...	.6	1.3	210	839	1.14	281	545	342	.8	1120	8.0	--
JUNE												
10...	.7	.5	160	609	.83	145	395	172	.8	845	7.8	15
AUG.												
26...	.5	.2	300	1280	1.74	86.4	766	573	1.2	1550	8.1	23
SEPT.												
18...	.5	.1	0	1240	1.65	31.8	765	627	1.3	1510	8.0	9
23...	.6	.2	370	1470	2.00	7140	889	669	1.5	1740	8.3	19

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUN 5, 1969	2040	17.0	51	67	9.2

09229500 HENRYS FORK AT LINWOOD, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1280	1420	1560	1370	1170	1120	818	--	639	1560	1140	1560
2	1300	--	1490	1340	1220	1110	823	885	712	1390	--	1550
3	1340	1230	1330	1330	1240	1170	760	839	783	--	1310	1570
4	1350	1330	1300	1320	1210	1370	927	787	563	1610	1340	1590
5	1350	1340	1360	--	1360	1140	--	756	859	1570	1300	1590
6	1370	1340	1290	--	1260	1360	792	755	838	1560	1350	1590
7	1370	1340	1320	1370	1300	1060	1010	746	797	1490	1190	1590
8	1270	1350	1390	1260	1380	1370	1020	695	789	1530	1390	1630
9	1370	1640	1360	1380	1230	1130	1000	588	--	1600	1400	1630
10	1370	1490	1320	1390	1300	1050	958	582	--	1630	1370	1610
11	1350	1370	1240	1390	1170	1090	930	582	--	--	1380	1510
12	1360	1430	1240	1210	1110	1150	--	527	--	1600	1380	1500
13	1450	1460	1340	1330	1210	1130	1000	514	1410	1590	1460	1510
14	1370	1300	1410	1210	1170	1100	987	519	983	1590	1440	1560
15	1410	1350	--	1330	1170	1350	1100	550	961	1200	1490	--
16	1420	1510	1370	1250	1160	1120	1120	513	968	1300	1360	1530
17	1460	1380	1310	1220	1170	1050	--	--	914	1310	1510	1520
18	1490	1410	1380	1080	1160	1060	--	566	934	1390	1460	1610
19	1450	1350	1390	1290	1200	1060	1110	518	923	1410	1440	1440
20	--	1360	1380	1250	1200	1020	1050	476	917	1370	--	1710
21	1420	1280	1350	1130	1210	1060	945	486	914	1440	1390	--
22	1380	1350	1430	1220	1210	1110	857	489	997	1500	1320	--
23	1310	1100	--	1380	1170	1110	857	856	1090	1570	1440	1700
24	1350	1240	1490	1220	1170	1080	859	794	1240	1570	1510	1670
25	1290	1340	1430	1210	1170	1100	872	799	1150	1570	1480	1680
26	1330	1360	1370	1200	1120	1110	936	514	1150	--	1490	1690
27	1320	1370	1370	1200	1120	1110	936	789	1170	1580	1530	1670
28	--	1420	1380	1210	1120	1120	951	795	1240	1590	1610	1670
29	1450	1500	1310	1230	--	1010	942	549	--	1610	1550	1670
30	1440	--	1280	1220	--	1000	945	583	1290	1390	1500	1670
31	--	--	1360	1220	--	862	--	--	--	1480	1580	--
AVG	1370	1370	1360	1440	1200	1120	942	644	969	1500	1420	1600

09229500 HENRYS FORK AT LINWOOD, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	8.0	3.0	2.0	1.0	1.0	6.0	--	18.0	23.0	22.0	19.0
2	13.0	--	3.0	2.0	1.0	1.0	8.0	15.0	22.0	23.0	--	19.0
3	11.0	7.0	2.0	2.0	1.0	1.0	6.0	14.0	20.0	--	25.0	20.0
4	12.0	6.0	2.0	2.0	1.0	1.0	10.0	14.0	22.0	21.0	21.0	20.0
5	12.0	6.0	2.0	2.0	1.0	1.0	--	13.0	22.0	20.0	25.0	20.0
6	11.0	4.0	2.0	2.0	1.0	1.0	8.0	12.0	19.0	20.0	19.0	20.0
7	11.0	4.0	2.0	2.0	1.0	1.0	8.0	14.0	19.0	20.0	20.0	20.0
8	7.0	0.0	0.0	2.0	1.0	1.0	8.0	16.0	20.0	18.0	--	18.0
9	9.0	4.0	1.0	2.0	1.0	1.0	11.0	18.0	--	20.0	--	18.0
10	9.0	5.0	1.0	2.0	1.0	1.0	11.0	20.0	--	22.0	23.0	18.0
11	10.0	6.0	2.0	2.0	1.0	1.0	8.0	15.0	--	--	20.0	18.0
12	11.0	6.0	2.0	2.0	1.0	1.0	--	11.0	--	21.0	17.0	18.0
13	11.0	1.0	1.0	2.0	1.0	1.0	11.0	16.0	12.0	20.0	18.0	18.0
14	11.0	0.0	1.0	2.0	1.0	1.0	11.0	18.0	12.0	20.0	21.0	18.0
15	9.0	3.0	--	2.0	1.0	1.0	6.0	13.0	12.0	22.0	17.0	--
16	6.0	2.0	2.0	2.0	1.0	1.0	7.0	16.0	12.0	25.0	17.0	17.0
17	5.0	2.0	2.0	2.0	1.0	4.0	--	--	15.0	22.0	18.0	16.0
18	7.0	3.0	2.0	2.0	1.0	4.0	--	11.0	20.0	22.0	19.0	17.0
19	7.0	3.0	2.0	2.0	1.0	4.0	13.0	16.0	18.0	21.0	16.0	18.0
20	--	3.0	2.0	2.0	1.0	4.0	12.0	--	18.0	24.0	--	13.0
21	7.0	3.0	1.0	2.0	1.0	3.0	--	16.0	17.0	21.0	20.0	--
22	7.0	3.0	2.0	2.0	1.0	4.0	12.0	20.0	18.0	21.0	--	--
23	7.0	3.0	--	2.0	1.0	2.0	10.0	20.0	17.0	19.0	22.0	18.0
24	7.0	2.0	3.0	2.0	1.0	1.0	10.0	--	13.0	20.0	22.0	18.0
25	6.0	1.0	1.0	2.0	1.0	3.0	9.0	19.0	15.0	19.0	22.0	18.0
26	6.0	0.0	2.0	2.0	1.0	3.0	7.0	19.0	12.0	--	22.0	18.0
27	7.0	0.0	2.0	2.0	1.0	3.0	11.0	21.0	17.0	19.0	23.0	17.0
28	--	0.0	2.0	2.0	1.0	2.0	14.0	22.0	18.0	19.0	19.0	17.0
29	8.0	0.0	2.0	2.0	--	3.0	15.0	22.0	--	19.0	19.0	16.0
30	9.0	--	2.0	2.0	--	4.0	--	19.0	21.0	22.0	21.0	16.0
31	--	--	2.0	2.0	--	5.0	--	--	--	23.0	21.0	--
AVG	8.9	3.0	1.8	2.0	1.0	2.1	9.6	16.9	17.2	20.9	20.3	17.9

09234500 GREEN RIVER NEAR GREENDALE, UTAH
(Irrigation network station)

LOCATION.--Lat 40°54'30", long 109°25'20", in NW¼SE¼ sec.15, T.2 N., R.22 E., Daggett County, at gaging station 0.5 mile downstream from Flaming Gorge Dam, 2 miles south of Dutch John, 4 miles northeast of Greendale, 13 miles southeast of Linwood, and 407.0 miles from mouth.
DRAINAGE AREA.--15,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1956 to September 1969.
Water temperatures: October 1956 to September 1959, October 1963 to September 1969.
Sediment records: October 1956 to September 1959.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 573 mg/l May 1-31; minimum, 497 mg/l Nov. 1-30.
Hardness: Maximum, 292 mg/l Oct. 1-31, May 1-31; minimum, 270 mg/l Nov. 1-30.
Specific conductance: Maximum daily, 844 micromhos May 5; minimum daily, 706 micromhos Dec. 2.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.											
01-31	2283	4.3	51	40	--	--	67	176	0	239	32
NOV.											
01-30	2308	4.3	63	28	--	--	51	166	0	206	21
DEC.											
01-31	2234	5.1	59	30	--	--	59	164	0	229	20
JAN.											
01-31	2970	4.1	66	30	--	--	65	175	0	235	31
FEB.											
01-28	3954	3.6	66	30	--	--	60	178	0	234	21
MAR.											
01-31	2702	3.6	68	25	--	--	66	181	0	229	22
APR.											
01-30	2522	2.9	68	27	--	--	73	188	0	248	20
MAY											
01-31	3103	1.1	63	29	--	--	63	188	0	234	22
JUNE											
01-30	1823	2.9	66	29	--	--	69	193	0	228	25
JULY											
01-31	2571	3.7	64	30	--	--	63	192	0	222	22
AUG.											
01-31	3151	3.2	65	68	--	--	61	185	0	219	21
SEPT.											
01-30	2768	3.6	67	26	--	--	60	182	0	218	22
WTD. AVG. TIME	--	3.5	64	33	--	--	63	181	0	229	23
WTD. AVG. TONS PER DAY	2690	3.5	64	33	--	--	63	181	0	228	23
	--	25	466	241	--	--	457	1310	0	1660	168

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
ANALYSES OF ADDITIONAL SAMPLES										
DEC.										
08...	.2	7.1	492	.67	3450	261	128	1.5	713	8.0
MAR.										
17...	.5	5.8	541	.74	1640	280	134	1.5	784	7.6
JUNE										
10...	.6	6.4	536	.73	1450	282	130	1.7	788	8.0
SEPT.										
18...	.3	3.9	509	.69	3900	272	124	1.7	762	7.9
24...	.5	5.7	518	.70	4880	280	133	1.5	757	8.4

09234500 GREEN RIVER NEAR GREENDALE, UTAH--Continued

EXTREMES.--1968-69:--Continued
Water temperatures: Maximum, 11.0°C on many days during October to December; minimum, 3.0°C Feb. 26, 27.
Period of record:
Dissolved solids (1956-58, 1959-69): Maximum, 866 mg/l Mar. 18-23, 1961; minimum, 236 mg/l June 1-30, 1961.
Hardness (1956-58, 1959-69): Maximum, 424 mg/l Dec. 1-9, 1960; minimum, 145 mg/l June 1-30, 1961.
Specific conductance (1956-58, 1959-69): Maximum daily, 1,340 micromhos Aug. 30, 1961; minimum daily, 325 micromhos June 2, 1961.
Water temperatures (1956-59, 1963-69): Maximum (1956-59, 1963-69), 24.0°C July 24, 25, 1959; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.
Minimum observed during water year: Dissolved solids, 492 mg/l; hardness, 261 mg/l Dec. 8.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-31	--	--	539	.73	3320	292	148	1.7	808	7.9
NOV.										
01-30	--	--	497	.68	3100	270	134	1.3	748	7.8
DEC.										
01-31	--	--	498	.68	3000	272	137	1.6	732	7.9
JAN.										
01-31	--	--	516	.70	4140	290	146	1.7	761	7.9
FEB.										
01-28	--	--	535	.73	5710	288	142	1.5	777	7.9
MAR.										
01-31	--	--	545	.74	3980	274	126	1.7	793	7.7
APR.										
01-30	--	--	572	.78	3900	287	128	1.9	811	8.1
MAY										
01-31	--	--	573	.78	4800	292	138	1.6	817	7.9
JUNE										
01-30	--	--	544	.74	2680	282	124	1.8	789	7.0
JULY										
01-31	--	--	545	.74	3780	282	125	1.6	785	7.0
AUG.										
01-31	--	--	532	.72	4530	276	124	1.6	776	6.8
SEPT.										
01-30	--	--	532	.72	3980	276	127	1.6	758	6.8
WTD. AVG. TIME	--	--	536	.73	3900	282	134	--	780	7.6
WTD. AVG. TONS PER DAY	--	--	536	.73	--	282	133	1.6	780	7.6
	--	--	--	--	--	--	--	--	--	--

DATE	DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
ANALYSES OF ADDITIONAL SAMPLES											
DEC.											
08...	A2600	4.2	62	26	55	2.1	--	162	0	220	18
MAR.											
17...	A1120	2.7	66	--	59	2.6	--	178	0	234	20
JUNE											
10...	A998	2.4	66	29	65	2.7	--	185	0	221	20
SEPT.											
18...	A2840	2.0	63	28	64	2.3	--	181	0	212	20
24...	A3490	3.8	58	33	57	2.3	--	179	4	210	20

A DISCHARGE AT TIME OF SAMPLING.

09234500 GREEN RIVER NEAR GREENDALE, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	799	814	712	--	768	773	--	824	784	773	780	765
2	811	812	706	760	773	767	803	830	781	778	784	765
3	798	807	711	--	775	771	803	825	783	784	760	769
4	784	805	709	756	775	771	811	828	806	--	782	--
5	806	799	714	751	773	777	818	844	781	--	790	762
6	806	803	714	754	773	777	814	828	--	793	780	763
7	804	812	715	759	773	779	816	826	798	807	783	763
8	804	805	716	750	774	777	801	835	797	777	780	768
9	800	724	715	765	774	783	--	823	791	800	776	763
10	811	719	722	766	775	783	803	825	783	785	762	773
11	813	761	730	763	777	785	806	811	781	791	788	765
12	802	772	726	763	775	785	802	832	779	786	775	762
13	811	752	730	763	775	787	811	809	787	790	773	763
14	808	728	728	767	775	779	821	810	787	784	776	763
15	802	728	729	765	776	779	835	806	789	774	776	760
16	802	712	729	765	774	--	833	819	789	777	775	762
17	802	717	730	768	771	--	806	814	785	779	780	762
18	806	727	731	764	775	785	806	823	794	786	777	762
19	802	719	735	765	777	785	818	801	791	782	773	765
20	796	709	737	769	777	787	806	819	785	784	773	763
21	800	709	--	771	775	791	818	806	798	--	770	760
22	797	738	738	771	775	787	811	815	799	786	772	762
23	798	712	738	769	776	785	772	803	797	797	765	756
24	811	710	741	768	774	780	810	803	796	790	773	760
25	811	712	--	771	777	782	786	788	785	781	773	756
26	802	719	741	771	777	786	768	799	777	793	760	756
27	800	717	745	771	781	793	820	799	792	776	--	756
28	804	716	746	773	777	795	802	798	805	784	--	764
29	805	714	748	771	--	--	--	798	791	782	--	756
30	808	722	746	771	--	806	799	811	799	781	769	754
31	825	--	745	773	--	808	--	781	--	779	768	--
AVG	804	746	728	765	774	783	807	813	790	784	774	762

09234500 GREEN RIVER NEAR GREENDALE, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

	DAY																													
MONTH	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	AVERAGE
OCTOBER..	9	9	9	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	10	11	11	11	11	10	11	11	11	11	11	11	10
NOVEMBER.	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	10	11	10	--	11
DECEMBER.	11	10	10	10	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	--	8	8	7	--	8	7	7	7	7	7	8
JANUARY..	--	7	--	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	4	4	4	6
FEBRUARY.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	--	--	--	4
MARCH....	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	--	--	4	4	4	4	4	4	4	4	4	4	4	--	4	4	4
APRIL....	--	4	4	4	4	4	4	4	--	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	6	6	4	--	5	--	4
MAY.....	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	4	5
JUNE.....	4	4	5	5	5	--	5	5	5	4	5	5	5	4	5	5	5	5	5	5	5	5	5	5	6	5	6	6	6	6	--	5
JULY.....	5	6	5	--	--	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	--	6	6	7	6	6	6	6	6	6	7	6
AUGUST...	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	8	7	8	8	8	8	8	8	8	8	8	8	--	--	--	8	7
SEPTEMBER	8	8	8	--	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	--	8

09251000 YAMPA RIVER NEAR MAYBELL, COLO.

LOCATION.--Lat 40°32'20", long 108°05'18", Moffat County, at county bridge, 1 mile north of Maybell and about 3.5 miles downstream from gaging station.
DRAINAGE AREA.--3,410 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: November 1950 to September 1969.
Water temperatures: November 1950 to September 1969.
Sediment records: December 1950 to May 1958.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 438 mg/l May 4; minimum, 92 mg/l Mar. 1-15.
Hardness: Maximum, 232 mg/l Dec. 20-31; minimum, 60 mg/l Apr. 1-14.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
01-31	354	9.5	43	20	43	190	98	20	.1
NOV.									
01-30	325	12	45	29	49	220	121	22	.2
DEC.									
01-19	276	12	44	23	45	199	101	22	.2
20-31	282	11	44	30	52	188	139	24	1.5
JAN.									
01-31	293	12	46	25	47	205	127	22	1.1
FEB.									
01-28	284	10	43	25	51	186	129	20	.9
MAR.									
01-15	338	6.5	16	6.8	4.7	70	12	3.7	.5
16-31	496	9.8	46	24	49	192	125	21	1.1
APR.									
01-14	3233	6.8	16	4.9	5.7	61	13	3.2	.6
15-30	4996	8.4	21	6.3	7.9	86	18	4.1	.7
MAY									
01-02	5060	14	49	25	53	192	135	20	2.4
03...	6450	8.6	--	--	5.5	69	16	4.4	.5
04...	7140	19	--	--	50	195	143	17	.5
05-31	6597	8.4	17	6.6	5.0	73	14	3.1	4.5
JUNE									
01-14	3631	8.8	21	7.8	7.8	87	19	3.6	.6
15-28	3867	9.1	23	7.1	11	100	27	4.2	.4
29-30	3530	8.7	18	7.1	8.5	80	23	4.9	.4
JULY									
01-10	2091	8.5	31	11	22	135	48	11	.3
11-24	906	4.9	35	15	33	165	65	17	.2
25-31	585	5.8	33	15	30	157	58	17	3.9
AUG.									
01-31	340	7.1	35	16	35	167	67	20	.1
SEPT.									
01-30	337	4.2	35	14	31	156	66	15	.1
WTD. AVG. TIME	--	8.6	24	9.5	14	102	35	7.0	1.9
WTD. AVG. TONS PER DAY	1520	8.9	35	17	32	155	76	15	.9
	--	36	95	38	59	420	144	29	7.7

ANALYSES OF ADDITIONAL SAMPLES

SEPT.									
08...	A 260	7.5	34	14	34	160	62	16	.4
30...	A 261	.2	32	15	32	150	61	16	.4

A DISCHARGE AT TIME OF SAMPLING.

09251000 YAMPA RIVER NEAR MAYBELL, COLO.--Continued

EXTREMES.--1968-69:--Continued
Specific conductance: Maximum daily, 645 micromhos May 1; minimum daily, 129 micromhos Apr. 2.
Water temperatures: Maximum, 28.0°C on several days during July and August; minimum, freezing point Nov. 21.
Period of record:
Dissolved solids: Maximum, 656 mg/l Aug. 11, 1968; minimum, 64 mg/l June 13, 1964.
Hardness: Maximum, 384 mg/l Aug. 11, 1968; minimum, 43 mg/l June 1-21, 1959.
Specific conductance: Maximum daily, 947 micromhos Sept. 24, 1955; minimum daily, 94 micromhos June 14, 1959.
Water temperatures: Maximum, 29.5°C Aug. 5, 1963; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-31	.03	337	.46	322	190	34	1.4	536	7.8
NOV.									
01-30	.03	391	.53	343	231	51	1.4	610	8.0
DEC.									
01-19	.04	360	.49	268	204	41	1.4	557	7.9
20-31	.02	410	.56	312	232	78	1.5	626	7.9
JAN.									
01-31	.04	385	.52	294	217	49	1.4	596	7.8
FEB.									
01-28	.09	396	.54	304	210	57	1.5	606	7.9
MAR.									
01-15	.06	92	.13	84.0	68	11	.2	140	7.4
16-31	.07	385	.52	516	212	55	1.5	601	7.6
APR.									
01-14	.17	104	.14	908	60	10	.3	139	7.4
15-30	.13	129	.18	1740	78	7	.4	185	7.4
MAY									
01-02	.26	428	.58	5850	216	59	1.5	612	7.7
03...	--	144	.20	2510	72	15	.3	161	7.6
04...	--	438	.60	8440	230	70	1.4	607	7.7
05-31	.11	106	.14	1890	70	10	.3	143	7.6
JUNE									
01-14	.02	127	.17	1250	84	13	.4	175	6.6
15-28	.00	140	.19	1460	87	5	.5	214	6.6
29-30	.23	122	.17	1160	75	9	.4	174	6.6
JULY									
01-10	.00	211	.39	1190	125	14	.9	341	7.6
11-24	.00	269	.37	658	150	16	1.2	435	7.8
25-31	.00	249	.34	393	144	15	1.1	405	7.8
AUG.									
01-31	.01	266	.36	744	152	15	1.2	437	7.7
SEPT.									
01-30	.03	250	.34	227	144	16	1.1	410	8.0
WTD. AVG. TIME	.09	166	.23	--	99	15	--	243	7.4
WTD. AVG. TONS PER DAY	.05	273	.37	--	157	30	1.0	424	7.7
	.34	--	--	682	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

SEPT.									
08...	.00	244	.33	171	142	11	1.2	412	8.0
30...	.00	238	.32	168	140	17	1.2	401	7.9

09251000 YAMPA RIVER NEAR MAYBELL, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	436	575	564	622	608	137	131	645	132	294	445	419
2	455	571	564	620	588	137	129	580	148	339	442	409
3	455	575	565	589	586	139	133	161	195	292	444	385
4	454	576	564	590	586	138	132	607	197	311	444	378
5	455	607	563	587	587	137	141	155	197	379	443	424
6	520	612	563	589	586	137	132	145	197	379	443	426
7	522	614	564	591	587	137	133	145	198	340	447	411
8	522	616	566	591	587	137	138	144	197	339	444	454
9	524	611	566	594	587	138	133	140	183	342	444	432
10	523	612	566	598	581	142	130	144	132	363	445	470
11	526	610	563	592	584	142	132	144	137	403	443	477
12	523	612	566	590	612	142	133	143	207	427	445	486
13	521	619	561	591	622	143	133	141	140	396	444	453
14	522	607	567	590	624	143	134	144	138	348	443	424
15	521	613	553	590	621	142	165	145	215	441	442	402
16	523	616	550	587	619	592	160	140	219	456	442	407
17	526	616	549	587	617	607	157	140	226	444	442	401
18	523	610	547	589	623	606	160	--	210	457	444	422
19	523	610	547	590	618	588	158	--	200	453	411	402
20	522	602	623	598	619	606	158	--	201	376	439	402
21	575	611	625	592	618	606	161	--	201	458	443	398
22	567	611	628	591	622	607	158	--	199	461	442	383
23	579	611	629	592	602	630	174	--	200	472	442	374
24	575	609	624	589	610	632	179	--	252	472	444	360
25	575	619	627	593	609	631	178	--	222	431	444	384
26	577	612	629	594	609	472	163	--	231	420	443	360
27	577	610	629	594	605	606	183	--	204	422	443	387
28	560	608	626	591	608	592	180	--	200	365	446	404
29	577	610	626	590	--	589	158	--	186	298	427	417
30	577	610	626	591	--	591	158	--	161	440	433	443
31	576	--	627	592	--	600	--	--	--	445	424	--
AVG	530	606	586	593	604	375	150	--	192	395	440	413

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	03.0	01.0	01.0	01.0	01.0	03.0	10.0	20.0	14.0	24.0	21.0
2	21.0	09.0	01.0	01.0	01.0	02.0	06.0	11.0	19.0	20.0	27.0	24.0
3	20.0	09.0	01.0	01.0	01.0	01.0	03.0	10.0	18.0	14.0	24.0	26.0
4	14.0	02.0	01.0	01.0	01.0	02.0	07.0	14.0	15.0	24.0	28.0	21.0
5	15.0	02.0	01.0	01.0	01.0	01.0	03.0	10.0	15.0	21.0	27.0	24.0
6	18.0	08.0	01.0	01.0	01.0	01.0	06.0	14.0	16.0	14.0	27.0	24.0
7	12.0	07.0	01.0	01.0	01.0	01.0	04.0	11.0	15.0	14.0	24.0	24.0
8	18.0	01.0	01.0	01.0	01.0	02.0	07.0	11.0	17.0	24.0	24.0	21.0
9	18.0	01.0	01.0	01.0	01.0	01.0	04.0	11.0	17.0	27.0	28.0	20.0
10	11.0	04.0	01.0	01.0	01.0	01.0	08.0	14.0	17.0	26.0	24.0	22.0
11	16.0	04.0	01.0	01.0	01.0	02.0	04.0	14.0	16.0	22.0	24.0	20.0
12	14.0	04.0	01.0	01.0	01.0	02.0	08.0	11.0	16.0	21.0	28.0	19.0
13	09.0	04.0	01.0	01.0	01.0	01.0	04.0	14.0	17.0	27.0	26.0	19.0
14	09.0	04.0	01.0	01.0	01.0	02.0	05.0	14.0	14.0	26.0	22.0	19.0
15	13.0	01.0	01.0	01.0	01.0	01.0	09.0	11.0	17.0	26.0	22.0	18.0
16	07.0	04.0	01.0	01.0	01.0	02.0	05.0	--	14.0	21.0	28.0	18.0
17	12.0	01.0	01.0	01.0	01.0	01.0	09.0	14.0	14.0	26.0	21.0	19.0
18	12.0	03.0	01.0	01.0	01.0	03.0	06.0	--	14.0	22.0	28.0	19.0
19	07.0	03.0	01.0	01.0	01.0	02.0	09.0	--	17.0	27.0	24.0	18.0
20	11.0	01.0	01.0	01.0	01.0	03.0	06.0	--	17.0	27.0	24.0	18.0
21	11.0	00.0	01.0	01.0	01.0	02.0	10.0	--	14.0	27.0	28.0	18.0
22	06.0	02.0	01.0	01.0	01.0	03.0	05.0	--	17.0	22.0	21.0	18.0
23	07.0	01.0	01.0	01.0	01.0	04.0	11.0	--	14.0	26.0	24.0	18.0
24	11.0	01.0	01.0	01.0	01.0	03.0	11.0	--	15.0	22.0	27.0	17.0
25	06.0	01.0	01.0	01.0	01.0	04.0	06.0	--	13.0	24.0	28.0	18.0
26	11.0	01.0	01.0	01.0	01.0	03.0	12.0	--	13.0	28.0	24.0	18.0
27	04.0	01.0	01.0	01.0	01.0	04.0	08.0	--	13.0	24.0	24.0	18.0
28	04.0	01.0	01.0	01.0	01.0	03.0	09.0	--	14.0	24.0	23.0	17.0
29	10.0	01.0	01.0	01.0	--	02.0	09.0	--	16.0	21.0	26.0	18.0
30	03.0	01.0	01.0	01.0	--	04.0	13.0	--	16.0	27.0	21.0	17.0
31	10.0	--	01.0	01.0	--	02.0	--	--	--	24.0	24.0	--
AVG	11.4	2.8	1.0	1.0	1.0	2.1	7.0	--	15.6	22.8	24.9	19.7

09259700 LITTLE SNAKE RIVER NEAR BAGGS, WYO

LOCATION (revised).--Lat 41°00'17", long 107°54'59", in SW¼ sec.18, T.12 N., R.94 W., Carbon County, at former gaging station 600 ft upstream from Wyoming-Colorado State line, 0.5 mile upstream from Scandinavian Wash, and 15 miles west of Baggs.

DRAINAGE AREA.--3,020 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1965 to Sptember 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
10...	0700	126	13	--	48	18	55	3.1	248	0	91	16
NOV.												
06...	1705	131	20	330	46	13	32	2.0	203	0	57	10
DEC.												
17...	1100	99	20	100	46	14	15	2.7	186	0	50	7.5
FEB.												
05...	1330	115	26	310	54	16	30	2.2	223	0	65	5.3
MAR.												
18...	1515	155	23	20	45	14	32	2.8	196	0	60	9.9
APR.												
10...	1400	898	14	260	46	15	39	2.5	164	0	120	9.3
MAY												
13...	0805	2500	12	340	21	3.2	5.7	1.3	68	0	19	1.4
JUNE												
18...	0720	1170	12	470	28	4.9	15	1.5	112	0	27	4.8
JULY												
16...	0800	110	13	200	45	12	39	2.0	204	0	67	13
AUG.												
20...	0800	5.1	4.0	90	54	29	170	4.3	268	0	264	110
26...	1030	10	5.8	--	53	32	191	5.3	293	0	303	90
SEPT.												
23...	0745	5.0	16	110	25	4.7	167	3.9	249	6	160	41

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
10...	.5	.7	80	367	.50	125	192	0	1.7	577	8.2	6
NOV.												
06...	.3	.1	50	281	.39	101	166	0	1.1	445	7.7	3
DEC.												
17...	.3	.4	20	248	.37	72.2	173	20	.5	431	7.6	0
FEB.												
05...	.4	.2	50	309	.42	96.9	200	17	.9	491	7.6	0
MAR.												
18...	.5	.6	80	284	.41	125	170	9	1.1	468	7.9	0
APR.												
10...	.5	.9	40	328	.45	795	177	42	1.3	507	7.6	--
MAY												
13...	.3	.6	100	99	.13	648	65	9	.3	146	7.2	10
JUNE												
18...	.3	.2	110	149	.21	486	90	0	.7	244	7.8	12
JULY												
16...	.5	.5	50	292	.41	88.5	164	0	1.3	496	7.9	24
AUG.												
20...	.7	.2	170	768	1.10	11.2	255	35	4.6	1310	7.8	16
26...	.5	.2	120	825	1.14	22.7	266	26	5.1	1300	8.1	20
SEPT.												
23...	.3	1.4	90	548	.75	7.42	82	0	8.0	836	8.6	8

DATE	TIME	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED OXYGEN (MG/L)
AUG.					
26...	1030	10	1320	8.3	8.2
SEPT.					
23...	0745	5.0	855	8.8	8.9

09259950 LITTLE SNAKE RIVER ABOVE LILY, COLO.

LOCATION.--Lat 40°36'27", long 108°20'11", Moffat County, at bridge on State Highway 318, about 6 miles upstream from gaging station, about 10 miles northeast of Lily, and 16 miles upstream from mouth.
DRAINAGE AREA.--3,730 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1969 (discontinued).
Water temperatures: December 1950 to September 1960, October 1961 to September 1969 (discontinued).
Sediment records: May 1958 to September 1964.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,600 mg/l Aug. 9; minimum, 131 mg/l May 5-31.
Hardness: Maximum, 930 mg/l Aug. 9; minimum, 66 mg/l June 26.
Specific conductance: Maximum daily, 1,850 micromhos Aug. 9; minimum daily, 142 micromhos May 28.
Water temperatures: Maximum, 30.0°C July 27; minimum, freezing point on many days during November to March.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)
OCT.									
12-31	116	14	47	16	50	222	103	20	.1
NOV.									
01-27	107	14	50	15	57	222	100	20	.2
28-30	88	18	65	20	85	280	154	27	.3
DEC.									
01-31	91	18	53	18	54	246	98	19	.2
JAN.									
01-31	90	16	48	14	52	212	94	20	.3
FEB.									
01-28	87	18	50	16	51	221	92	18	.1
MAR.									
01-19	123	15	48	19	59	221	93	22	3.3
20-23	305	11	36	54	45	159	53	13	.4
24-31	1217	10	31	7.8	80	171	88	26	2.6
APR.									
01-21	1183	13	38	12	47	160	86	13	1.7
22-30	2179	12	29	8.0	15	119	34	4.0	1.7
MAY									
01-04	2378	13	29	6.3	11	108	25	2.0	1.1
05-31	2706	11	20	4.4	6.9	81	14	1.0	.7
JUNE									
01-12	1346	11	22	5.4	13	83	21	3.9	.7
13-25	1049	12	27	7.3	20	120	37	5.8	.9
26...	2590	16	17	5.7	90	167	70	30	2.6
27-30	1435	12	25	6.3	23	117	36	5.5	1.0
JULY									
01-12	553	13	27	8.5	95	132	42	8.9	.7
13-24	164	13	42	13	56	192	100	19	.9
25-31	83	13	65	20	92	228	211	30	1.1
AUG.									
01-08	74	18	38	4.9	186	279	191	64	8.4
09...	37	16	301	44	139	334	885	30	.3
10...	23	11	52	22	123	275	203	41	.5
SEPT.									
08...	2.6	12	73	20	141	225	290	55	.3
12-30	23	12	55	--	162	194	234	61	1.9
30...	29	9.3	63	16	145	271	229	48	.8

09259950 LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued

Period of record:
Dissolved solids (1950-51, 1952-69): Maximum, 2,330 mg/l July 24, 1955; minimum, 108 mg/l June 1-21, 1964.
Hardness (1950-51, 1952-69): Maximum, 1,340 mg/l July 24, 1955; minimum, 64 mg/l July 1-8, 10, 1957, June 1-14, 1958, Mar. 11, 1960.
Specific conductance (1950-51, 1952-69): Maximum daily, 3,150 micromhos Aug. 16, 1961; minimum daily, 135 micromhos June 10, 1956.
Water temperatures: Maximum, 31.0°C July 17, 1955; minimum, freezing point on many days during winter periods.
REMARKS.--Records of discharge are given for Little Snake River near Lily, Colo. (Station 09260000).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
12-31	.03	371	.50	116	184	2	1.6	561	7.8
NOV.									
01-27	.05	380	.52	110	186	4	1.8	578	8.0
28-30	.05	517	.70	123	246	16	2.4	761	8.0
DEC.									
01-31	.00	391	.53	96.1	207	5	1.6	595	8.0
JAN.									
01-31	.03	359	.49	87.2	180	6	1.7	544	8.1
FEB.									
01-28	.00	364	.50	85.5	189	8	1.6	554	8.0
MAR.									
01-19	.05	383	.52	127	198	17	1.8	602	7.9
20-23	.32	262	.36	216	112	0	1.9	396	7.9
24-31	.27	349	.47	1150	110	0	3.3	536	7.8
APR.									
01-21	.12	310	.42	990	146	15	1.7	464	7.6
22-30	.11	186	.25	1090	106	8	.6	268	7.6
MAY									
01-04	.16	171	.23	1100	98	9	.5	230	7.7
05-31	.14	131	.18	957	68	2	.4	160	7.7
JUNE									
01-12	.13	137	.19	498	76	8	.7	200	7.8
13-25	.13	184	.25	521	98	0	.9	277	7.8
26...	.13	322	.44	2250	66	0	4.8	462	8.2
27-30	.13	181	.25	701	88	0	1.0	272	8.0
JULY									
01-12	.14	195	.27	291	102	0	1.1	302	7.4
13-24	.13	354	.48	157	160	3	1.9	546	7.6
25-31	.12	570	.78	128	246	39	2.6	838	7.7
AUG.									
01-08	.40	678	.92	135	114	0	7.6	1030	8.2
09...	.02	1600	2.18	160	930	656	2.0	1850	7.4
10...	.03	596	.81	37.0	222	0	3.6	963	8.2
SEPT.									
08...	.00	742	1.01	5.39	264	80	3.8	1090	8.2
12-30	.20	722	98.0	44.8	206	0	4.9	1080	8.4
30...	.02	682	.93	54.9	222	0	4.3	1020	8.2

09259950 LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	703	--	--	--	596	272	153	234	906	--
2	--	--	712	--	576	525	540	237	164	--	1200	--
3	--	--	--	--	586	--	527	215	178	247	1030	--
4	--	555	700	549	612	--	494	203	--	255	969	--
5	--	560	--	543	611	--	460	186	204	269	--	--
6	--	571	--	539	--	--	455	182	217	278	--	--
7	--	572	619	540	582	--	444	--	223	289	--	--
8	--	--	589	535	--	574	428	180	212	293	--	--
9	--	596	--	557	576	605	479	166	--	307	1850	--
10	--	574	--	567	564	630	399	174	213	341	963	--
11	--	597	555	561	557	629	498	174	214	372	--	--
12	--	562	551	549	545	617	503	171	220	388	--	--
13	--	602	581	--	528	627	436	156	240	414	--	--
14	680	--	--	539	517	627	412	156	240	416	--	--
15	--	--	593	504	508	639	--	156	--	474	--	--
16	625	--	--	--	--	626	401	152	256	515	--	--
17	--	569	555	487	--	604	452	--	275	536	--	--
18	571	609	--	--	488	572	429	159	280	--	--	--
19	--	--	551	617	494	504	--	160	308	565	--	--
20	564	--	--	--	495	--	420	153	249	605	--	--
21	--	--	549	480	--	--	369	151	337	665	--	--
22	514	--	542	--	626	377	337	145	249	565	--	--
23	--	569	557	--	--	414	302	145	--	--	--	--
24	526	559	548	--	556	584	264	143	250	672	--	--
25	537	560	--	603	553	466	261	145	335	719	--	--
26	--	576	--	544	--	451	213	148	462	738	--	--
27	--	--	--	525	--	--	205	145	317	752	--	1140
28	563	598	--	--	--	565	225	142	266	788	--	1160
29	570	776	--	533	--	585	256	143	266	775	--	1110
30	576	812	--	538	--	601	--	--	240	1170	--	931
31	--	--	--	552	--	555	--	146	--	873	--	--
AVG	--	--	--	--	--	--	400	168	252	518	--	--

09259950 *LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued*

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	00.0	--	--	--	07.0	12.0	14.0	22.0	--	24.0
2	--	--	00.0	--	00.0	00.0	08.0	13.0	17.0	--	--	29.0
3	--	--	--	--	00.0	--	06.0	13.0	18.0	21.0	--	24.0
4	--	07.0	00.0	00.0	00.0	--	10.0	13.0	--	23.0	--	25.0
5	--	08.0	--	00.0	00.0	--	08.0	11.0	20.0	22.0	--	--
6	--	04.0	--	00.0	--	--	10.0	13.0	18.0	20.0	--	--
7	--	04.0	00.0	00.0	00.0	--	08.0	--	22.0	21.0	--	--
8	--	--	00.0	00.0	--	--	10.0	09.0	21.0	22.0	--	--
9	--	05.0	--	00.0	00.0	--	11.0	13.0	--	23.0	--	14.0
10	--	05.0	--	00.0	00.0	00.0	09.0	14.0	18.0	25.0	--	24.0
11	--	02.0	00.0	00.0	00.0	00.0	12.0	14.0	14.0	26.0	--	--
12	--	05.0	00.0	00.0	00.0	00.0	11.0	15.0	14.0	26.0	--	--
13	--	02.0	00.0	--	00.0	00.0	12.0	14.0	17.0	26.0	--	--
14	13.0	--	--	--	00.0	00.0	12.0	14.0	19.0	22.0	--	--
15	--	--	00.0	00.0	00.0	00.0	--	16.0	--	28.0	--	--
16	08.0	--	--	--	--	00.0	09.0	15.0	18.0	18.0	--	--
17	--	01.0	00.0	00.0	--	00.0	08.0	--	17.0	--	--	--
18	10.0	02.0	--	--	00.0	00.0	11.0	16.0	20.0	--	--	--
19	--	--	00.0	00.0	00.0	00.0	--	17.0	18.0	27.0	--	--
20	09.0	--	--	--	00.0	--	14.0	15.0	20.0	--	--	--
21	--	--	00.0	00.0	--	--	15.0	15.0	19.0	--	--	--
22	05.0	--	00.0	--	00.0	00.0	13.0	17.0	20.0	--	--	--
23	--	03.0	00.0	--	--	00.0	13.0	17.0	--	--	--	--
24	11.0	02.0	00.0	--	00.0	00.0	11.0	17.0	16.0	22.0	--	--
25	10.0	01.0	--	00.0	00.0	01.0	08.0	18.0	13.0	28.0	--	--
26	--	01.0	--	00.0	--	00.0	07.0	18.0	11.0	29.0	--	--
27	--	--	--	00.0	--	--	07.0	18.0	15.0	30.0	--	18.0
28	09.0	00.0	--	--	--	02.0	09.0	18.0	17.0	24.0	--	18.0
29	09.0	00.0	--	00.0	--	06.0	12.0	18.0	19.0	23.0	--	08.0
30	09.0	00.0	--	00.0	--	04.0	--	--	21.0	26.0	--	01.0
31	--	--	--	00.0	--	06.0	--	15.0	--	25.0	--	--
AVG	--	--	--	--	--	--	10.0	14.9	17.5	24.1	--	--

09261000 GREEN RIVER NEAR JENSEN, UTAH

LOCATION.--Lat 40°24'34", long 109°14'05" in SW¼SE¼ sec.5, T.5 S., R.24 E., Uintah County, at gaging station 300 ft upstream from highway bridge, 1 mile downstream from Cub Creek and Chew Ranch, 4 miles southeast of Dinosaur National Monument headquarters, 6.5 miles northeast of Jensen, 12 miles upstream from Brush Creek, and 313.9 miles from mouth.
DRAINAGE AREA.--25,400 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: June 1947 to September 1952, April 1962 to September 1969.
Water temperatures: March 1949 to September 1959, October 1961 to September 1969.
Sediment records: May 1948 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 518 mg/l Feb. 1-28, Aug. 1-31; minimum, 224 mg/l June 1-8.
Hardness: Maximum, 286 mg/l June 9; minimum, 122 mg/l June 1-8.
Specific conductance: Maximum daily, 832 micromhos Sept. 13; minimum daily, 284 micromhos June 3.
Water temperatures: Maximum, 22.0°C July 28; minimum, freezing point Dec. 21, 24, 25, Jan. 10.
Sediment concentrations: Maximum daily, 8,510 mg/l June 9; minimum daily, 21 mg/l Dec. 4.
Sediment loads: Maximum daily, 160,000 tons June 9; minimum daily, 172 tons Dec. 4.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.											
01-31	2919	--	--	--	--	--	67	186	0	218	26
NOV.											
01-30	3059	--	--	--	--	--	62	180	0	198	25
DEC.											
01-31	2971	--	--	--	--	--	45	180	0	188	26
JAN.											
01-19	3025	--	--	--	--	--	55	179	0	198	24
20-31	4562	--	--	--	--	--	58	172	0	205	22
FEB.											
01-28	4745	--	--	--	--	--	61	182	0	216	23
MAR.											
01-31	3872	--	--	--	--	--	65	190	0	191	30
APR.											
01-12	7926	--	--	--	--	--	54	182	0	175	22
13-24	7771	--	--	--	--	--	34	160	0	104	14
25-30	9603	--	--	--	--	--	21	135	0	66	10
MAY											
01-31	11700	--	--	--	--	--	26	115	0	76	12
JUNE											
01-08	7972	--	--	--	--	--	19	117	0	53	9.1
09...	6960	--	--	--	--	--	36	164	0	201	15
10-19	5779	--	--	--	--	--	32	131	0	74	11
20-30	7865	--	--	--	--	--	42	142	0	95	15
JULY											
01-09	5541	--	--	--	--	--	34	141	0	100	17
10-26	4196	--	--	--	--	--	55	170	0	171	23
27-31	3360	--	--	--	--	--	59	181	0	190	26
AUG.											
01-31	3779	--	--	--	--	--	55	181	0	193	26
SEPT.											
01-30	3407	--	--	--	--	--	66	186	0	205	24
WTD. AVG. TIME	--	--	--	--	--	--	46	159	0	147	20
WTD. AVG. TONS PER DAY	4990	--	--	--	--	--	52	170	0	170	22
	--	--	--	--	--	--	620	2140	0	1990	264

ANALYSES OF ADDITIONAL SAMPLES

DEC.											
18...	A 2700	5.4	61	26	56	2.1	--	176	0	204	23
JAN.											
22...	A 4840	5.3	63	27	61	2.3	--	176	0	215	22
MAR.											
14...	A 4500	4.5	67	28	63	2.6	--	189	0	226	27
JUNE											
13...	A 5280	6.4	32	12	25	1.9	--	104	0	71	11
JULY											
23...	A 2880	4.3	59	23	57	3.0	--	165	0	185	21
AUG.											
22...	A 2640	3.1	58	31	62	2.6	--	180	0	201	25
SEPT.											
29...	A 3050	3.5	58	30	63	2.8	--	184	0	221	25

A DISCHARGE AT TIME OF SAMPLING.

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 2,150 mg/l Sept. 10, 1963; minimum, 131 mg/l May 15-31, 1963.
Hardness (1947-51, 1962-69): Maximum, 1,250 mg/l Aug. 12, 1963; minimum, 84 mg/l June 1-16, 1963.
Specific conductance: Maximum daily, 2,330 micromhos Sept. 10, 1963; minimum daily, 176 micromhos May 24, 1963.
Water temperatures: Maximum, 30.0°C July 11, 1958; minimum (1949-59, 1961-64, 1965-69), freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 40,600 mg/l Aug. 23, 1960; minimum daily, 9 mg/l Oct. 7-11, 1953, Nov. 22, 1962.
Sediment loads: Maximum daily, 2,500,000 tons Mar. 29, 1962; minimum daily, 10 tons on many days during 1962-63.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Chemical-quality samples and temperature data collected at site 8 miles downstream from gaging station. Maximum observed during water year: Dissolved solids, 525 mg/l Mar. 14.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-31	--	--	508	.69	3700	270	117	1.8	772	7.7
NOV.										
01-30	--	--	479	.65	3960	254	106	1.7	727	7.8
DEC.										
01-31	--	--	388	.53	3110	282	134	1.2	723	7.8
JAN.										
01-19	--	--	503	.68	4110	266	119	1.5	734	7.5
20-31	--	--	491	.67	6050	260	119	1.6	728	7.9
FEB.										
01-28	--	--	518	.70	6640	274	125	1.6	761	7.8
MAR.										
01-31	--	--	502	.68	5250	256	100	1.8	743	7.0
APR.										
01-12	--	--	464	.63	9930	244	95	1.5	682	7.8
13-24	--	--	326	.44	6840	184	53	1.1	486	7.6
25-30	--	--	250	.34	6480	147	36	.8	373	7.8
MAY										
01-31	--	--	243	.33	7680	134	40	1.0	362	7.7
JUNE										
01-08	--	--	224	.30	4820	122	26	.8	334	7.4
09...	--	--	502	.68	9430	286	152	.9	680	7.4
10-19	--	--	250	.34	3900	131	24	1.2	382	7.6
20-30	--	--	305	.41	6480	146	30	1.5	456	7.7
JULY										
01-09	--	--	299	.41	4470	170	54	1.1	459	7.4
10-26	--	--	437	.59	4950	230	91	1.6	659	7.1
27-31	--	--	478	.65	4340	254	106	1.6	718	7.1
AUG.										
01-31	--	--	518	.70	5290	266	118	1.5	754	7.8
SEPT.										
01-30	--	--	498	.68	4580	256	103	1.8	744	8.2
WTD. AVG. TIME	--	--	391	.53	5240	211	81	--	589	7.7
WTD. AVG. TONS PER DAY	--	--	432	.59	--	234	95	1.5	656	7.7

ANALYSES OF ADDITIONAL SAMPLES

DEC.										
18...	.3	5.9	484	.66	3530	258	114	1.5	721	8.1
JAN.										
22...	.4	6.9	504	.69	6590	267	123	1.6	746	8.1
MAR.										
14...	.4	4.6	525	.71	6380	282	127	1.6	778	7.9
JUNE										
13...	.4	1.8	235	.32	3350	728	43	1.0	355	7.4
JULY										
23...	--	--	470	.64	2970	240	105	1.6	688	6.6
AUG.										
22...	.5	5.2	498	.68	4100	270	122	1.6	800	8.0
SEPT.										
29...	.5	6.5	494	.68	4070	268	117	1.7	729	7.3

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	788	751	--	--	756	759	728	389	--	406	773	733
2	779	762	723	713	--	--	721	369	291	387	760	746
3	785	--	725	723	765	759	716	380	284	465	--	726
4	769	749	719	732	762	759	738	--	394	--	741	744
5	769	767	724	--	764	767	--	386	353	--	739	749
6	--	767	716	739	758	762	--	358	--	--	749	751
7	783	761	--	728	768	--	708	396	--	460	749	--
8	792	743	--	724	770	762	701	406	--	531	753	746
9	784	742	717	748	--	--	657	390	680	498	760	742
10	794	--	714	753	767	769	650	--	403	583	--	749
11	783	673	716	746	762	776	621	--	346	577	753	776
12	782	683	714	--	754	774	584	356	345	610	758	814
13	--	713	--	735	754	763	--	324	352	--	759	832
14	--	733	--	741	--	--	511	385	370	632	756	--
15	770	721	--	742	758	765	497	399	--	697	765	736
16	764	720	727	746	--	--	514	388	378	691	--	741
17	763	--	722	748	760	763	543	390	420	705	--	739
18	760	700	737	747	762	761	500	--	404	659	747	756
19	758	696	733	--	758	773	521	--	407	696	753	738
20	--	703	728	684	756	752	--	375	444	--	743	739
21	754	709	733	747	760	716	472	314	436	--	758	--
22	758	710	--	758	751	717	441	338	--	651	--	700
23	751	718	--	745	--	--	411	296	464	702	--	747
24	754	711	726	631	756	682	464	297	480	693	--	721
25	732	713	723	739	766	668	353	--	514	640	759	737
26	745	710	725	--	745	670	383	312	466	684	758	713
27	--	714	725	742	739	716	--	328	435	--	737	727
28	752	722	725	742	753	693	396	--	441	701	752	--
29	746	--	--	--	--	722	352	357	--	719	744	720
30	743	--	723	758	--	--	379	371	410	717	748	725
31	762	--	726	747	--	--	--	371	--	721	--	--
AVG	766	723	--	734	--	--	542	361	--	617	--	744

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

	DAY																													AVER-
MONTH	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	AGE
OCTOBER..	14	13	14	13	13	--	12	12	10	12	12	13	--	--	11	8	7	8	8	--	9	8	10	11	11	12	--	9	9	9	10	11
NOVEMBER.	9	9	--	8	8	7	7	6	6	--	6	6	7	7	6	5	--	5	6	6	7	6	7	--	6	6	3	4	--	3	--	6
DECEMBER.	--	2	3	1	3	4	--	--	3	4	4	3	--	--	--	2	2	1	1	0	--	--	0	0	1	1	1	--	1	1		--
JANUARY..	--	1	1	1	--	2	2	1	1	0	1	--	2	3	4	4	4	3	--	4	4	5	4	1	2	--	3	3	--	1	1	2
FEBRUARY.	1	--	1	1	1	2	3	3	--	3	4	3	3	--	4	--	4	4	3	4	3	4	--	4	4	4	4	2	--	--	--	3
MARCH....	3	--	3	4	4	3	--	3	--	2	3	4	4	--	6	--	6	6	7	8	6	7	--	5	5	5	7	8	8	--	--	--
APRIL....	9	7	9	9	--	--	8	9	10	10	10	11	--	10	10	10	10	9	10	--	13	15	14	14	11	12	--	12	13	14	--	11
MAY.....	14	14	15	--	12	14	14	14	15	--	--	15	15	15	14	14	15	--	--	16	15	16	15	16	--	15	18	--	15	15	16	--
JUNE.....	--	16	17	17	17	--	--	--	19	18	18	17	17	17	--	17	17	16	19	18	18	--	17	17	14	15	16	16	--	18	--	--
JULY.....	19	20	20	--	--	--	20	20	20	20	21	20	--	20	19	18	21	19	19	--	--	21	20	18	20	20	--	22	21	21	20	--
AUGUST...	21	21	--	19	20	19	19	19	19	--	19	19	18	17	17	--	--	--	18	19	18	19	--	--	--	--	17	18	19	18	18	18	--	--
SEPTEMBER	18	17	17	17	15	16	--	16	16	16	18	16	16	--	16	16	15	15	15	16	--	15	15	15	14	15	15	--	15	15	--	16

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS B, BOTTOM WITHDRAWAL TUBE C, CHEMICALLY DISPERSED N, IN NATIVE WATER P, PIPET S, SIEVE V, VISUAL ACCUMULATION TUBE W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 21, 1968	1325	9	3320	116	1040	--	--	--	--	--	--	--	--	--	--	--	
NOV 21.....	0930	4	2720	64	470	--	--	--	--	--	--	--	--	--	--	--	
JAN 22, 1969	1250	5	4840	743	9710	7	8	--	--	--	28	58	98	100	--	--	VPWC
FEB 14.....	1240	3	4540	253	3100	--	--	--	--	--	--	--	--	--	--	--	
MAR 14.....	1250	2	4500	211	2560	8	9	--	--	--	34	50	88	100	--	--	VPWC
APR 16.....	1145	9	7370	1180	23500	28	31	--	42	--	64	78	92	99	100	--	VPWC
MAY 5.....	0815	12	11500	1930	59900	13	17	--	24	--	55	79	94	99	100	--	VPWC
JUN 13.....	1200	17	5280	283	4030	21	30	--	--	--	69	89	99	100	--	--	VPWC
JUL 23.....	1100	16	2880	651	5060	61	70	--	96	--	100	--	--	--	--	--	SPWC
AUG 21.....	1145	14	2460	150	996	32	38	--	--	--	86	96	100	--	--	--	VPWC
SEP 12.....	1545	16	3270	1960	17300	69	78	--	99	--	100	--	--	--	--	--	SPWC
SEP 29.....	1340	15	3050	117	963	--	--	--	--	--	--	--	--	--	--	--	

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2650	133	952	2640	64	456	3290	74	657
2	2520	27	184	2230	50	301	3050	63	519
3	2690	35	254	2720	37	272	2540	42	288
4	2530	43	294	2720	24	176	3040	21	172
5	2600	44	309	2850	44	339	3110	24	202
6	2640	44	314	2870	63	488	3070	26	216
7	2410	45	293	2880	45	350	3280	26	230
8	2370	45	288	2520	27	184	3330	27	243
9	2460	45	299	2850	39	300	3360	27	245
10	2700	106	773	2830	51	390	3360	30	272
11	2870	93	721	2720	62	455	3570	33	318
12	2970	80	642	2740	46	340	3160	76	648
13	3080	68	565	2860	29	224	3300	119	1060
14	3080	56	466	2830	66	504	2900	162	1270
15	3160	44	375	3180	103	884	3210	205	1780
16	3160	32	273	3080	103	857	3180	249	2140
17	3170	66	565	3290	104	924	3310	216	1930
18	3170	100	856	3200	104	899	2720	184	1350
19	3240	106	927	3060	109	901	2610	146	1030
20	3340	112	1010	3530	115	1100	2650	109	780
21	3310	118	1050	3270	67	592	2590	97	678
22	3270	95	839	3680	133	1320	2900	85	666
23	3320	72	645	3430	102	945	2790	73	550
24	3260	50	440	3640	70	688	2900	61	478
25	2990	28	226	3740	38	384	3170	49	419
26	3300	28	249	3690	80	797	3000	40	324
27	3290	27	240	3450	121	1130	2890	32	250
28	2490	27	182	2660	109	783	2350	59	374
29	2810	56	425	3310	97	867	2360	86	548
30	2800	85	643	3310	86	769	2500	112	756
31	2830	74	565	--	--	--	2610	122	860
TOTAL	90480	--	15864	91780	--	18619	92100	--	21253

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2700	133	970	4680	253	3200	4870	325	4270
2	2140	143	826	4650	402	5050	4900	341	4510
3	2590	153	1070	4600	550	6830	4890	356	4700
4	2550	120	826	4500	318	3860	4880	215	2830
5	2740	86	636	4460	280	3370	4790	74	957
6	2350	53	336	4450	242	2910	4840	118	1540
7	2560	87	601	4460	397	4780	4850	161	2110
8	3110	121	1020	4350	386	4530	4740	205	2620
9	3020	94	766	4530	374	4570	4540	248	3040
10	3020	67	546	4550	362	4450	4570	292	3600
11	3150	114	970	4490	311	3770	4580	291	3600
12	3040	161	1320	4220	260	2960	4800	309	4000
13	3120	207	1740	4510	256	3120	4600	298	3700
14	3030	242	1980	4480	253	3060	4500	296	3600
15	3370	278	2530	4460	263	3170	3270	204	1800
16	2890	272	2120	4850	273	3570	1980	103	551
17	3440	267	2480	4860	283	3710	1690	84	383
18	4060	330	3620	4840	315	4120	1570	106	449
19	4570	393	4850	4880	353	4650	2010	295	1600
20	4040	456	4970	5020	250	3390	2120	376	2150
21	4160	630	7080	5170	147	2050	2250	469	2850
22	4810	804	10400	5160	247	3440	2500	741	5000
23	4760	692	8890	5140	348	4830	2970	1580	12700
24	4610	580	7220	5130	448	6210	3060	1820	15000
25	4670	593	7480	5130	472	6540	3140	2410	20400
26	4710	607	7720	5360	495	7160	2850	2400	18500
27	4780	620	8000	5110	402	5550	2870	2410	18700
28	4490	491	5950	4830	309	4030	3160	1760	15000
29	4540	362	4440	--	--	--	5680	2380	36500
30	4570	233	2870	--	--	--	5400	2300	33500
31	4600	104	1290	--	--	--	7150	2670	51500
TOTAL	112190	--	105517	132870	--	118880	120020	--	281660

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	7430	2740	55000	6380	87	1500	10200	574	15800
2	7200	2670	51900	7650	784	16200	9450	537	13700
3	7310	2710	53500	9300	741	18600	9090	440	10800
4	7840	3500	74100	10500	716	20300	8240	274	6100
5	8210	1490	33000	11500	702	21800	7340	200	3960
6	8130	1480	32500	12200	692	22800	6920	180	3360
7	8390	1610	36500	12900	675	23500	6180	160	2670
8	9180	2120	52500	13600	776	28500	6360	5080	87200
9	9820	2530	67100	14400	887	34500	6960	8510	160000
10	8550	1740	40200	12700	831	28500	6520	5000	88000
11	6100	820	13500	12300	813	27000	6210	2390	40100
12	6950	2130	40000	11300	770	23500	5700	572	8800
13	7330	3080	61000	12200	804	26500	4960	321	4300
14	7250	3010	58900	13100	876	31000	5120	282	3900
15	7840	2730	57800	13500	878	32000	5040	272	3700
16	8160	2450	54000	13000	798	28000	4960	254	3400
17	9190	5400	134000	11600	718	22500	4730	211	2690
18	8160	2450	54000	11200	694	21000	6500	1110	19500
19	6030	1010	16400	10300	665	18500	8050	1060	23000
20	6370	1130	19400	11600	718	22500	8550	953	22000
21	5730	905	14000	11400	715	22000	6410	867	15000
22	8050	828	18000	12400	478	16000	6750	1020	18600
23	8440	834	19000	12500	474	16000	7220	1280	25000
24	10700	2040	58900	12300	512	17000	7060	1210	23100
25	10800	2060	60100	11800	565	18000	7710	1560	32500
26	12300	3700	123000	10900	680	20000	10400	4270	120000
27	11100	2300	68900	11600	702	22000	8890	3870	92900
28	9070	878	21500	11900	694	22300	8260	2710	60400
29	7180	144	2790	12300	687	22800	7820	1540	32500
30	7170	139	2690	12800	671	23200	7450	378	7600
31	--	--	--	11700	639	20200	--	--	--
TOTAL	245980	--	1394180	362830	--	688200	215050	--	950580

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	6970	388	7300	3780	1960	20000	2950	80	637
2	5630	431	6550	3960	1440	15400	2860	75	579
3	5840	425	6700	5210	483	6790	3000	49	397
4	5710	376	5800	5020	457	6190	3160	53	452
5	5400	357	5200	4950	441	5890	4190	65	735
6	5120	221	3060	4650	398	5000	4490	231	2800
7	4990	186	2510	4670	238	3000	3750	148	1500
8	5100	290	3990	4760	68	874	3620	138	1350
9	5110	297	4100	4730	72	920	3380	439	4010
10	4570	235	2900	4720	71	905	3650	720	7100
11	4420	230	2740	4290	55	637	3380	1440	13100
12	4220	206	2350	4480	116	1400	3360	2150	19500
13	4540	241	2950	4320	99	1150	3210	1730	15000
14	4250	166	1900	4530	64	783	3480	2340	22000
15	4470	204	2460	4660	43	541	2860	337	2600
16	4590	242	3000	3570	62	598	2640	158	1130
17	4280	208	2400	2990	81	654	2910	165	1300
18	3840	202	2090	3250	102	895	3130	120	1010
19	4010	203	2200	3330	82	737	3220	83	722
20	3540	214	2050	3240	61	534	3700	150	1500
21	3460	217	2030	3190	639	5500	3110	119	999
22	3760	1040	10600	3070	142	1180	2890	231	1800
23	4100	1220	13500	2940	138	1100	3370	212	1930
24	4220	1320	15000	3330	139	1250	3900	199	2100
25	3780	333	3400	3180	140	1200	3800	282	2890
26	3580	279	2700	3240	90	787	3800	361	3700
27	3240	200	1750	3280	40	354	3740	274	2770
28	2900	153	1200	2760	40	298	3650	187	1840
29	3280	203	1800	2250	40	243	3330	100	899
30	3250	199	1750	2190	37	219	3690	95	946
31	4130	3720	41500	2600	71	498	--	--	--
TOTAL	136300	--	167480	117140	--	85527	102220	--	117296

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1818960
TOTAL LOAD FOR YEAR (TONS) 3965056

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH

LOCATION.--Lat 40°12'57", long 109°47'05", in SE¼SE¼ sec.17, T.3 S., R.2 E., Uintah Meridian, Uintah County, at gaging station 0.2 mile downstream from Uinta River, 1.2 miles southeast of Randlett, and 6.5 miles southeast of Fort Duchesne.
DRAINAGE AREA.--3,920 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1951, November 1956 to September 1969.
Water temperatures: December 1950 to September 1951, November 1956 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,790 mg/l Aug. 11-12; minimum, 258 mg/l May 19-24.
Hardness: Maximum, 700 mg/l Aug. 11-12, 13-31; minimum, 152 mg/l May 19-24.
Specific conductance: Maximum daily, 2,530 micromhos Aug. 28; minimum daily, 384 micromhos May 20.
Water temperatures: Maximum, 23.0°C Aug. 4; minimum, freezing point on many days during November to March.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-11	258	--	--	--	--	--	239	344	0	714	90
12-27	372	--	--	--	--	--	213	348	0	621	77
28-31	300	--	--	--	--	--	202	350	0	599	78
NOV.											
01-03	318	--	--	--	--	--	234	360	0	700	89
04-30	475	--	--	--	--	--	161	338	0	477	62
DEC.											
01-07	536	--	--	--	--	--	150	324	0	428	58
08-28	637	--	--	--	--	--	101	272	0	295	47
29-31	697	--	--	--	--	--	75	254	0	222	32
JAN.											
01-09	741	--	--	--	--	--	80	265	0	194	31
10-21	678	--	--	--	--	--	87	251	0	271	46
22-25	645	--	--	--	--	--	121	250	0	455	71
26-31	630	--	--	--	--	--	98	287	0	261	46
FEB.											
01-20	626	--	--	--	--	--	80	261	0	226	38
21-25	734	--	--	--	--	--	69	234	0	229	36
26-28	817	--	--	--	--	--	188	252	0	610	101
MAR.											
01-31	846	--	--	--	--	--	115	294	0	338	56
APR.											
01-03	1233	--	--	--	--	--	97	272	0	261	52
04-11	940	--	--	--	--	--	93	272	0	254	46
12-15	1178	--	--	--	--	--	80	251	0	223	38
16-17	1410	--	--	--	--	--	154	301	0	452	60
18-22	990	--	--	--	--	--	96	279	0	271	45
23-30	1327	--	--	--	--	--	71	244	0	196	33
MAY											
01-07	1466	--	--	--	--	--	66	228	0	175	31
08-11	2152	--	--	--	--	--	49	199	0	124	22
12-18	3176	--	--	--	--	--	38	169	0	96	18
19-24	4240	--	--	--	--	--	29	141	0	80	12
25-31	3681	--	--	--	--	--	33	142	0	90	14
JUNE											
01-02	2610	--	--	--	--	--	40	174	0	108	22
03-10	1769	--	--	--	--	--	59	198	0	173	30
11-16	1452	--	--	--	--	--	75	233	0	210	36
17...	5030	--	--	--	--	--	197	251	0	560	110
18-19	5205	--	--	--	--	--	79	205	0	253	49
20-26	2827	--	--	--	--	--	46	164	0	144	28
27-30	1735	--	--	--	--	--	69	221	0	199	39
JULY											
01-03	800	--	--	--	--	--	101	260	0	285	55
04-05	434	--	--	--	--	--	135	283	0	388	73
06-08	345	--	--	--	--	--	161	304	0	475	89
09-31	190	--	--	--	--	--	244	335	0	658	132
AUG.											
01-10	157	--	--	--	--	--	253	333	0	720	125
11-12	172	--	--	--	--	--	300	362	0	825	140
13-31	140	--	--	--	--	--	274	351	0	790	132
SEPT.											
01-30	168	--	--	--	--	--	263	346	0	748	120
WTD. AVG. TIME	--	--	--	--	--	--	89	233	0	256	42
WTD. AVG. TONS PER DAY	889	--	--	--	--	--	145	286	0	418	67
	--	--	--	--	--	--	214	559	0	615	101

ANALYSES OF ADDITIONAL SAMPLES

JAN.											
27...	A710	10	68	41	88	2.0	--	224	0	279	46
MAR.											
24...	A978	13	79	58	115	4.6	--	311	0	368	50
JUNE											
11...	A1640	11	66	41	86	3.1	--	251	0	244	42
JULY											
30...	A150	15	136	196	270	4.4	--	342	0	777	155
AUG.											
22...	A139	14	120	81	244	4.4	--	304	0	675	135
SEPT.											
26...	A150	12	128	92	255	4.4	--	348	0	765	140

A DISCHARGE AT TIME OF SAMPLING.

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 3,330 mg/l Aug. 1-6, 9-26, 29, 30, 1961; minimum, 209 mg/l June 22-24, 1965.
Hardness (1956-69): Maximum, 1,020 mg/l May 1-15, 1959; minimum, 133 mg/l June 22-24, 1965.
Specific conductance (1950-51, 1956-60, 1961-69): Maximum daily, 4,490 micromhos Aug. 24, 1960; minimum daily, 291 micromhos May 29, 1951.
Water temperatures: Maximum, 27.0°C July 15, 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Hardness, 775 mg/l July 30; water temperature, 28.0°C Aug. 22. Daily water temperatures are usually taken earlier in the day than those reported as "maximum observed during water year".

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-11	--	--	1430	1.94	996	637	359	4.1	1880	7.6
12-27	--	--	1250	1.70	1260	576	291	3.9	1690	8.0
28-31	--	--	1240	1.69	1000	582	295	3.6	1670	8.0
NOV.										
01-03	--	--	1400	1.96	1200	640	345	4.0	1880	8.0
04-30	--	--	1040	1.41	1330	510	233	3.1	1440	8.1
DEC.										
01-07	--	--	957	1.30	1390	466	200	3.0	1310	8.0
08-28	--	--	727	.99	1250	376	153	2.3	1060	7.9
29-31	--	--	576	.78	1080	320	112	1.8	866	7.9
JAN.										
01-09	--	--	511	.69	1020	288	71	2.0	780	7.9
10-21	--	--	631	.86	1160	364	158	2.0	997	7.9
22-25	--	--	1020	1.39	1780	515	310	2.3	1370	7.9
26-31	--	--	656	.89	1120	358	123	2.3	965	8.1
FEB.										
01-20	--	--	587	.80	992	328	114	1.9	878	8.1
21-25	--	--	598	.81	1190	332	140	1.6	905	8.0
26-28	--	--	1290	1.75	2850	575	368	3.4	1690	7.9
MAR.										
01-31	--	--	850	1.16	1940	422	181	2.4	1210	8.0
APR.										
01-03	--	--	701	.95	2330	358	135	2.2	1020	7.6
04-11	--	--	670	.91	1700	350	127	2.2	997	7.9
12-15	--	--	610	.83	1940	316	110	2.0	897	7.9
16-17	--	--	1040	1.41	3960	466	219	3.1	1420	7.9
18-22	--	--	661	.90	1770	365	136	2.2	1000	8.0
23-30	--	--	547	.74	1960	296	96	1.8	823	8.0
MAY										
01-07	--	--	496	.67	1960	270	83	1.7	761	7.7
08-11	--	--	384	.52	2230	216	53	1.5	607	7.7
12-18	--	--	314	.43	2690	182	43	1.2	492	7.7
19-24	--	--	258	.35	2950	152	36	1.0	410	7.8
25-31	--	--	275	.37	2730	158	42	1.1	435	7.7
JUNE										
01-02	--	--	347	.47	2450	200	57	1.2	525	7.7
03-10	--	--	424	.58	2030	256	94	1.6	708	7.3
11-16	--	--	568	.77	2230	298	107	1.9	843	7.9
17...	--	--	1270	1.73	17200	515	309	3.8	1690	8.1
18-19	--	--	656	.89	9220	328	160	1.9	953	7.9
20-26	--	--	405	.55	3090	224	90	1.3	613	8.1
27-30	--	--	593	.81	2780	242	111	1.8	817	8.1
JULY										
01-03	--	--	734	1.00	1590	368	155	2.3	1060	7.5
04-05	--	--	941	1.28	1100	445	213	2.8	1320	7.5
06-08	--	--	1150	1.56	1070	520	271	3.1	1560	7.7
09-31	--	--	1480	2.01	759	615	340	4.3	1970	7.6
AUG.										
01-10	--	--	1570	2.14	666	650	377	4.3	2070	8.1
11-12	--	--	1790	2.43	831	700	403	4.9	2320	8.0
13-31	--	--	1700	2.31	643	700	412	4.5	2220	8.2
SEPT.										
01-30	--	--	1670	2.27	758	660	376	4.4	2020	8.0
WTD. AVG. TIME	--	--	638	.87	1530	322	133	--	921	7.9
WTD. AVG. TONS PER DAY	--	--	961	1.35	--	448	214	2.8	1320	7.9
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

JAN.										
27...	.5	2.1	658	.89	1260	338	154	2.1	964	8.0
MAR.										
24...	.8	1.2	870	1.18	2300	436	181	2.4	1230	8.0
JUNE										
11...	.7	.9	662	.90	2930	335	129	2.0	963	7.9
JULY										
30...	--	--	1680	2.22	680	775	495	4.2	2170	7.8
AUG.										
22...	.9	.6	1490	1.93	559	632	383	4.2	2010	7.6
SEPT.										
26...	.4	.9	1600	2.14	648	700	415	4.2	2110	7.5

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1700	1900	1390	852	852	1400	997	801	464	963	1860	1940
2	1760	1890	1330	670	903	1310	1030	799	586	1090	1840	2030
3	1800	1840	1380	647	955	1320	1030	706	602	1130	2070	2300
4	1830	1580	1390	625	935	1360	977	726	654	1270	2140	2210
5	1920	1500	1370	832	953	1290	993	753	686	1360	2000	2100
6	1840	1500	1200	820	866	1230	1010	770	703	1460	1990	2170
7	1890	1470	1100	770	825	1220	--	776	702	1560	2120	2100
8	1890	1480	1020	797	816	1290	977	632	685	1660	2120	2140
9	1980	1480	997	879	866	1290	990	613	833	1690	2290	2130
10	2000	1480	968	1010	884	1210	1050	608	787	--	2270	1990
11	1990	1400	983	1050	963	1130	1010	571	750	1750	2300	2050
12	1920	1420	952	1010	838	1080	898	508	741	2070	2350	1920
13	1950	1400	993	909	855	1010	898	495	759	1900	1970	1830
14	1570	1410	1140	832	796	1020	880	460	857	1910	2290	1940
15	1580	1400	1050	922	812	1020	899	495	935	2060	2460	1930
16	1670	1480	983	961	861	997	1590	484	997	1800	2500	2000
17	1550	1480	943	1060	842	1000	1240	524	1690	1740	2490	1920
18	1550	1420	952	966	840	1060	1090	477	1080	1970	2320	1840
19	1570	1440	1170	988	872	1320	1040	435	826	2140	1890	1800
20	1550	1510	1200	1020	838	1410	1030	384	611	2040	1850	1820
21	1560	1520	1150	1050	1080	1390	1040	412	512	2020	1970	--
22	1590	1410	1080	1260	966	1400	939	389	518	1950	1880	2100
23	1650	1350	1160	1450	899	1360	880	415	546	1890	2000	--
24	1680	--	1140	1310	868	1230	737	413	673	1920	2100	--
25	1640	1450	1110	1450	863	1240	756	456	714	2010	2240	1830
26	1700	1370	1060	1080	1730	1260	798	431	713	2150	2290	2030
27	1710	1350	1100	1000	1730	1230	767	428	733	2060	2310	2140
28	1760	1430	1060	966	1620	1210	846	433	774	1950	2530	2100
29	1800	1390	905	1010	--	1120	872	434	846	2010	2320	2160
30	1800	1310	939	876	--	1020	875	429	918	2120	2390	2240
31	1870	--	755	811	--	1000	901	430	--	2030	2180	--
AVG	1750	1480	1100	963	964	1210	968	538	763	1790	2170	2030

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	12	11	11	12	11	11	12	11	8	14	8	9	10	11	10	7	5	4	4	6	6	6	6	6	6	6	6	6	5	6	7	8
NOVEMBER.	6	5	6	7	6	5	3	2	2	2	2	2	3	3	3	3	1	0	1	1	--	--	4	--	1	0	0	0	0	0	--	3
DECEMBER.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEBRUARY.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	--	--	--	0
MARCH....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	3	2	2	4	5	5	5	6	9	2
APRIL....	7	7	8	6	7	8	--	9	7	8	9	10	10	9	9	7	7	8	7	10	10	12	12	12	7	6	7	8	10	11	10	9
MAY.....	10	11	10	11	12	11	12	11	11	12	12	12	12	11	12	10	12	12	12	12	12	12	13	13	13	14	14	14	14	15	13	12
JUNE.....	13	13	14	15	16	17	15	15	16	16	15	15	16	14	16	16	15	14	16	15	16	15	15	11	11	11	14	16	14	15	--	15
JULY.....	17	18	19	18	20	18	19	16	18	20	20	20	19	20	20	21	21	21	20	20	21	21	21	20	18	20	19	19	21	21	21	20
AUGUST...	21	21	21	23	22	22	18	20	19	20	20	20	19	19	20	20	18	20	20	20	23	20	19	20	22	21	20	21	20	18	17	20
SEPTEMBER	18	18	16	15	15	17	17	18	18	18	17	16	16	16	16	15	15	15	15	15	--	--	--	--	14	13	14	15	15	16	--	16

09306500 WHITE RIVER NEAR WATSON, UTAH

LOCATION.--Lat 39°59', long 109°11', in sec.2, T.10 S., R.24 E., Uintah County, at bridge on State Highway 45, 350 ft upstream from gaging station, about 1 mile downstream from Evacuation Creek, and 7 miles north of Watson.
DRAINAGE AREA.--4,020 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1969.
Water temperatures: December 1950 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,020 mg/l Sept. 11-12; minimum, 242 mg/l June 1-5.
Hardness: Maximum, 518 mg/l Aug. 5; minimum, 125 mg/l Mar. 4.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-09	373	--	--	--	--	--	54	228	0	158	30
10-31	440	--	--	--	--	--	59	220	0	162	30
NOV.											
01-30	399	--	--	--	--	--	64	232	0	175	31
DEC.											
01-02	385	--	--	--	--	--	64	202	0	188	35
03-06	408	--	--	--	--	--	80	261	0	211	46
07-20	427	--	--	--	--	--	65	222	0	177	34
21-31	426	--	--	--	--	--	58	240	0	167	41
JAN.											
01-31	382	--	--	--	--	--	65	225	0	158	38
FEB.											
01-11	345	--	--	--	--	--	49	224	0	134	40
12-20	352	--	--	--	--	--	121	208	25	233	120
21-29	350	--	--	--	--	--	79	212	0	172	50
MAR.											
01-03	350	--	--	--	--	--	75	234	0	193	39
04...	350	--	--	--	--	--	35	137	0	60	18
05-22	441	--	--	--	--	--	83	241	0	206	47
23...	1000	--	--	--	--	--	89	186	8	363	92
24-31	773	--	--	--	--	--	76	196	0	251	36
APR.											
01-13	651	--	--	--	--	--	70	224	0	200	40
14-15	722	--	--	--	--	--	45	204	0	143	24
16...	790	--	--	--	--	--	86	215	0	192	45
17-21	788	--	--	--	--	--	55	208	0	151	33
22-27	1342	--	--	--	--	--	32	178	0	97	16
28-30	1247	--	--	--	--	--	32	177	0	93	16
MAY											
01-04	1250	--	--	--	--	--	32	188	0	80	17
05-31	1988	--	--	--	--	--	23	156	0	57	14
JUNE											
01-05	1660	--	--	--	--	--	29	167	0	56	14
06-11	1116	--	--	--	--	--	32	182	0	73	16
12-18	1139	--	--	--	--	--	52	223	0	110	26
19-24	1042	--	--	--	--	--	42	220	0	100	18
25-26	1570	--	--	--	--	--	76	214	0	142	48
27-30	1372	--	--	--	--	--	36	196	0	98	16
JULY											
01-04	1042	--	--	--	--	--	28	171	0	77	19
05-09	768	--	--	--	--	--	34	189	0	90	22
10-19	422	--	--	--	--	--	57	218	0	131	37
19-21	438	--	--	--	--	--	107	298	0	303	40
22-23	556	--	--	--	--	--	85	255	0	171	35
24-29	356	--	--	--	--	--	60	242	0	157	32
30-31	490	--	--	--	--	--	76	250	0	193	35
AUG.											
01-04	435	--	--	--	--	--	68	257	0	167	30
05...	419	--	--	--	--	--	88	238	0	450	32
06-13	361	--	--	--	--	--	65	249	0	162	29
14-15	465	--	--	--	--	--	113	279	0	218	83
16-31	403	--	--	--	--	--	63	248	0	168	27
SEPT.											
01-06	414	--	--	--	--	--	55	235	0	155	30
07-08	446	--	--	--	--	--	64	232	5	190	41
09-10	591	--	--	--	--	--	117	226	0	153	154
11-12	909	--	--	--	--	--	137	260	0	385	128
13-21	471	--	--	--	--	--	67	240	0	160	39
22...	630	--	--	--	--	--	111	212	0	299	152
23-24	548	--	--	--	--	--	67	232	0	159	44
25-30	434	--	--	--	--	--	49	204	4	137	27
WTD. AVG. TIME	--	--	--	--	--	--	50	203	0	128	30
WTD. AVG. TONS PER DAY	665	--	--	--	--	--	60	219	1	156	36
	--	--	--	--	--	--	88	357	1	225	52
ANALYSES OF ADDITIONAL SAMPLES											
DEC.											
17...	A450	13	66	31	62	1.3	--	220	0	183	35
MAR.											
24...	A908	8.3	71	22	80	3.8	--	163	0	256	31
JUNE											
10...	A1140	11	54	18	36	2.1	--	196	0	96	18
JULY											
23...	A468	14	68	25	72	4.0	--	250	0	186	34
AUG.											
22...	A419	15	71	37	53	3.2	--	257	0	190	25
SEPT.											
25...	A458	13	56	29	46	2.3	--	217	0	139	24

A DISCHARGE AT TIME OF SAMPLING.

09306500 WHITE RIVER NEAR WATSON, UTAH--Continued

EXTREMES.--1968-69:--Continued
Specific conductance: Maximum daily, 1,480 micromhos Sept. 11; minimum daily, 327 micromhos May 29.
Water temperatures: Maximum, 26.0°C Aug. 3; minimum, freezing point on many days during winter months.
Period of record:
Dissolved solids (1950-54, 1955-69): Maximum, 2,380 mg/l July 21, 1966; minimum, 209 mg/l May 23-31, 1964.
Hardness (1954-69): Maximum, 1,410 mg/l Aug. 4, 1955; minimum, 125 mg/l Mar. 4, 1969.
Specific conductance: Maximum daily, 4,450 micromhos Aug. 4, 1955; minimum daily, 316 micromhos June 27, 1968.
Water temperatures: Maximum, 31.0°C Aug. 8, 1954; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-09	--	--	471	.64	474	276	89	1.4	707	8.1
10-31	--	--	457	.64	555	264	84	1.6	717	7.9
NOV.										
01-30	--	--	482	.66	519	276	96	1.7	737	8.1
DEC.										
01-02	--	--	543	.74	564	272	125	1.7	794	8.1
03-06	--	--	623	.85	686	324	110	1.9	928	8.1
07-20	--	--	517	.70	596	274	92	1.7	771	8.2
21-31	--	--	583	.79	671	302	105	1.5	856	8.2
JAN.										
01-31	--	--	253	.34	261	262	78	1.7	772	7.8
FEB.										
01-11	--	--	502	.68	468	275	91	1.3	765	8.0
12-20	--	--	786	1.07	747	360	147	2.8	1190	8.3
21-28	--	--	519	.71	490	252	78	2.2	801	8.0
MAR.										
01-03	--	--	561	.76	530	284	92	1.9	826	8.2
04...	--	--	250	.34	236	125	23	1.4	389	7.9
05-22	--	--	591	.80	704	298	100	2.1	887	8.2
23...	--	--	984	1.34	2660	480	314	1.8	1350	8.5
24-31	--	--	516	.84	--	308	147	1.9	892	8.1
APR.										
01-13	--	--	582	.79	1020	296	112	1.8	843	7.7
14-15	--	--	450	.61	877	252	85	1.2	662	7.9
16...	--	--	668	.88	1380	324	148	2.1	953	7.7
17-21	--	--	454	.63	966	254	83	1.5	694	8.1
22-27	--	--	333	.45	1210	200	54	1.0	498	7.7
28-30	--	--	328	.45	1100	196	51	7.0	492	8.0
MAY										
01-04	--	--	317	.43	1070	192	38	1.0	485	7.9
05-31	--	--	249	.34	1340	156	28	.8	382	7.9
JUNE										
01-05	--	--	242	.33	1090	153	16	1.0	378	7.7
06-11	--	--	282	.38	850	178	29	1.0	443	7.9
12-18	--	--	392	.53	1210	221	39	1.5	603	8.0
19-24	--	--	365	.50	1030	219	39	1.2	560	8.0
25-26	--	--	488	.66	2070	225	50	2.2	741	7.8
27-30	--	--	336	.46	1250	207	46	1.1	509	8.0
JULY										
01-04	--	--	329	.45	926	186	46	.9	455	7.3
05-09	--	--	357	.49	740	206	51	1.0	511	7.4
10-18	--	--	439	.60	500	244	65	1.6	678	7.6
19-21	--	--	776	1.06	918	384	140	2.4	1080	7.6
22-23	--	--	530	.72	796	252	43	2.3	808	7.7
24-29	--	--	486	.66	467	276	78	1.6	740	7.8
30-31	--	--	556	.76	736	290	85	1.9	828	7.6
AUG.										
01-04	--	--	510	.69	599	280	69	1.8	782	7.9
05...	--	--	952	1.29	1080	518	323	1.7	1210	7.7
06-13	--	--	508	.69	495	272	68	1.7	765	8.0
14-15	--	--	717	.98	900	326	97	2.7	1070	8.0
16-31	--	--	509	.69	554	279	76	1.6	757	8.0
SEPT.										
01-06	--	--	489	.67	547	277	84	1.4	733	8.2
07-08	--	--	572	.78	689	316	118	1.6	838	8.3
09-10	--	--	696	.95	1110	308	123	2.9	1090	8.2
11-12	--	--	1020	1.39	2500	496	283	2.7	1420	8.2
13-21	--	--	512	.70	551	273	76	1.7	781	8.1
22...	--	--	924	1.26	1570	458	284	2.3	1330	8.1
23-24	--	--	512	.70	758	272	82	1.8	794	8.1
25-30	--	--	437	.59	512	248	74	1.3	667	8.3
WTD. AVG. TIME	--	--	408	.55	733	233	66	--	623	7.9
WTD. AVG. TONS PER DAY	--	--	465	.63	--	262	82	1.6	731	8.0
	--	--	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES										
DEC.										
17...	.3	.7	516	.70	627	291	111	1.6	784	8.1
MAR.										
24...	.6	4.3	585	.80	1430	268	134	2.1	853	7.6
JUNE										
10...	.5	1.1	355	.48	1090	206	45	1.1	536	8.0
JULY										
23...	--	--	522	.71	660	271	66	1.9	780	7.2
AUG.										
22...	.5	1.7	545	.74	617	328	117	1.3	795	7.4
SEPT.										
25...	.4	.1	445	.61	495	260	82	1.2	700	8.1

09306500 WHITE RIVER NEAR WATSON, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	689	729	705	--	--	828	967	508	361	417	828	752
2	721	739	883	--	--	827	983	517	372	426	782	715
3	697	725	1080	--	--	823	870	480	371	452	751	709
4	713	743	875	--	--	389	906	435	384	499	743	722
5	715	786	880	--	--	815	853	384	406	508	1210	719
6	701	731	835	--	--	832	853	424	422	479	810	776
7	714	813	--	--	--	959	831	395	426	517	761	944
8	715	715	--	--	--	858	807	385	412	496	736	731
9	732	721	778	--	765	965	785	402	436	523	744	1290
10	732	705	832	--	--	893	758	407	490	556	756	883
11	756	784	754	--	--	873	795	404	464	630	--	1480
12	735	752	724	--	--	1010	793	373	611	--	760	1370
13	--	731	732	--	--	944	746	379	544	615	779	904
14	796	721	--	--	1190	871	664	395	536	685	1270	886
15	--	682	--	--	--	--	660	365	523	723	866	791
16	664	728	--	--	--	--	953	377	629	741	803	810
17	683	732	--	--	--	878	683	372	716	716	798	876
18	688	752	747	--	--	793	709	377	644	726	820	710
19	730	743	801	--	--	758	761	399	593	890	801	691
20	702	714	621	--	--	854	667	357	550	1100	750	679
21	811	719	927	--	850	832	649	361	552	1260	742	673
22	684	722	--	--	--	997	519	428	544	787	773	1330
23	701	736	785	--	--	1350	526	376	539	829	738	881
24	701	722	855	--	--	878	479	408	577	716	734	708
25	688	735	--	--	--	780	456	371	877	725	674	663
26	689	712	--	--	801	805	435	378	605	759	768	656
27	695	797	--	--	--	830	--	370	561	746	703	657
28	715	--	--	--	753	871	471	353	540	725	699	670
29	778	859	--	--	--	941	497	327	509	750	695	691
30	697	694	--	--	--	1020	507	--	437	780	765	660
31	751	--	--	--	--	1010	--	336	--	875	779	--
AVG	717	739	--	--	--	878	709	394	521	688	794	834

09306500 WHITE RIVER NEAR WATSON, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	09.0	01.0	--	--	01.0	09.0	12.0	12.0	18.0	21.0	18.0
2	11.0	07.0	03.0	--	--	00.0	09.0	13.0	14.0	18.0	22.0	19.0
3	11.0	07.0	01.0	--	--	00.0	09.0	12.0	15.0	20.0	26.0	--
4	12.0	07.0	02.0	--	--	01.0	09.0	11.0	15.0	18.0	23.0	17.0
5	11.0	04.0	03.0	--	--	00.0	10.0	12.0	16.0	19.0	23.0	16.0
6	12.0	05.0	02.0	--	--	01.0	10.0	11.0	15.0	20.0	23.0	16.0
7	14.0	03.0	--	--	--	01.0	09.0	12.0	16.0	18.0	22.0	15.0
8	14.0	02.0	--	--	--	00.0	07.0	11.0	16.0	18.0	23.0	17.0
9	13.0	04.0	03.0	--	00.0	00.0	09.0	12.0	17.0	19.0	20.0	16.0
10	13.0	04.0	03.0	--	--	01.0	10.0	13.0	16.0	19.0	21.0	17.0
11	10.0	06.0	03.0	--	--	00.0	10.0	13.0	16.0	19.0	--	16.0
12	12.0	05.0	03.0	--	--	00.0	09.0	13.0	16.0	--	22.0	14.0
13	--	04.0	03.0	--	--	00.0	09.0	13.0	16.0	21.0	21.0	14.0
14	14.0	04.0	--	--	00.0	00.0	11.0	13.0	16.0	22.0	22.0	16.0
15	--	04.0	--	--	--	--	11.0	12.0	16.0	21.0	22.0	15.0
16	09.0	06.0	--	--	--	--	10.0	12.0	16.0	22.0	21.0	14.0
17	05.0	04.0	--	--	--	01.0	11.0	12.0	16.0	21.0	20.0	13.0
18	04.0	03.0	00.0	--	--	01.0	10.0	12.0	16.0	22.0	20.0	13.0
19	06.0	04.0	00.0	--	--	01.0	09.0	13.0	16.0	21.0	19.0	14.0
20	06.0	04.0	00.0	--	--	01.0	10.0	13.0	17.0	20.0	21.0	14.0
21	07.0	04.0	00.0	--	00.0	01.0	12.0	13.0	18.0	21.0	20.0	16.0
22	06.0	03.0	--	--	--	01.0	11.0	13.0	17.0	21.0	21.0	12.0
23	07.0	06.0	00.0	--	--	01.0	13.0	14.0	18.0	22.0	20.0	11.0
24	07.0	03.0	01.0	--	--	01.0	13.0	16.0	17.0	23.0	20.0	12.0
25	06.0	01.0	--	--	--	01.0	11.0	16.0	14.0	21.0	21.0	11.0
26	07.0	02.0	--	--	01.0	01.0	09.0	16.0	11.0	20.0	21.0	11.0
27	06.0	04.0	--	--	--	01.0	--	15.0	12.0	21.0	21.0	14.0
28	07.0	--	--	--	00.0	01.0	08.0	16.0	15.0	22.0	22.0	14.0
29	06.0	00.0	--	--	--	03.0	11.0	16.0	16.0	22.0	22.0	12.0
30	07.0	00.0	--	--	--	08.0	12.0	--	16.0	21.0	21.0	15.0
31	09.0	--	--	--	--	08.0	--	13.0	--	23.0	19.0	--
AVG	09.0	04.0	--	--	--	01.0	10.0	13.0	15.0	20.0	21.0	14.0

09314500 PRICE RIVER AT WOODSIDE, UTAH

LOCATION.--Lat 39°15'50", long 110°20'45", in SE¼ sec.9, T.18 S., R.14 E., Emery County, at gaging station on left downstream wingwall of old highway bridge, 200 ft downstream from railroad bridge at Woodside, and 22 miles (revised) upstream from mouth.
DRAINAGE AREA.--1,500 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1946 to September 1949, February 1951 to September 1969.
Water temperatures: February 1951 to September 1959, November 1961 to September 1963, October 1964 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 4,990 mg/l Dec. 1-13; minimum, 729 mg/l May 1-7.
Hardness: Maximum, 1,840 mg/l Dec. 1-13; minimum, 310 mg/l May 1-7.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-05	146	--	--	--	--	--	428	290	0	1600	48
06...	197	--	--	--	--	--	830	294	0	2800	62
07-09	121	--	--	--	--	--	603	332	0	2090	52
10-22	85	--	--	--	--	--	596	344	0	2090	56
23-31	61	--	--	--	--	--	722	340	0	2510	66
NOV.											
01-22	64	--	--	--	--	--	710	344	0	2500	70
23-30	48	--	--	--	--	--	739	360	0	2620	85
DEC.											
01-13	32	--	--	--	--	--	784	438	0	2940	88
14-31	31	--	--	--	--	--	598	446	0	2350	77
JAN.											
01-14	32	--	--	--	--	--	579	464	0	2190	74
15-17	35	--	--	--	--	--	361	330	0	1480	60
18-24	34	--	--	--	--	--	481	388	0	1880	57
25-31	30	--	--	--	--	--	619	424	0	2350	79
FEB.											
01-04	31	--	--	--	--	--	795	474	0	2800	89
05-25	36	--	--	--	--	--	620	404	0	2190	68
26-28	40	--	--	--	--	--	361	243	0	1210	40
MAR.											
01-04	112	--	--	--	--	--	552	335	0	2030	76
05-10	137	--	--	--	--	--	436	343	0	1570	55
11-12	184	--	--	--	--	--	278	323	0	1020	34
13...	167	--	--	--	--	--	127	308	0	482	24
14-16	131	--	--	--	--	--	349	341	0	1310	50
17-22	500	--	--	--	--	--	172	268	0	650	27
23-26	768	--	--	--	--	--	335	266	0	1140	31
27-29	660	--	--	--	--	--	249	240	0	890	30
30-31	280	--	--	--	--	--	500	293	0	1800	52
APR.											
01-04	398	--	--	--	--	--	380	306	0	1480	50
05-06	550	--	--	--	--	--	230	313	0	960	39
07-15	542	--	--	--	--	--	109	272	0	415	22
16-18	369	--	--	--	--	--	280	309	0	965	36
19-21	397	--	--	--	--	--	166	316	0	572	32
22-30	686	--	--	--	--	--	111	291	0	375	21
MAY											
01-07	783	--	--	--	--	--	132	300	0	312	18
08-09	1020	--	--	--	--	--	161	304	0	550	21
10-12	845	--	--	--	--	--	99	299	0	360	18
13-25	630	--	--	--	--	--	105	289	0	365	18
26-31	485	--	--	--	--	--	112	270	0	405	18
JUNE											
01-09	379	--	--	--	--	--	150	276	0	557	24
10-16	241	--	--	--	--	--	220	288	0	773	31
17-19	409	--	--	--	--	--	244	292	0	876	34
20-22	261	--	--	--	--	--	244	295	0	851	33
23-25	525	--	--	--	--	--	264	283	0	986	35
26-30	249	--	--	--	--	--	327	289	0	1150	40
JULY											
01-03	115	--	--	--	--	--	371	287	0	1340	48
04-19	103	--	--	--	--	--	405	264	0	1470	49
20-25	197	--	--	--	--	--	308	260	0	1250	39
26-31	134	--	--	--	--	--	344	260	0	1360	42
AUG.											
01-14	96	--	--	--	--	--	396	254	0	1760	47
15-20	162	--	--	--	--	--	391	285	0	1700	47
21-24	157	--	--	--	--	--	318	257	0	1340	40
25-29	94	--	--	--	--	--	440	262	0	1730	51
30-31	1604	--	--	--	--	--	228	196	0	1290	34
SEPT.											
01-02	158	--	--	--	--	--	308	242	0	1430	44
03-10	368	--	--	--	--	--	428	276	0	1730	52
11-14	270	--	--	--	--	--	281	243	0	1330	40
15-21	101	--	--	--	--	--	445	291	0	1800	56
22...	109	--	--	--	--	--	182	195	0	1240	32
23-30	81	--	--	--	--	--	471	293	0	1810	56
WTD. AVG. TIME	--	--	--	--	--	--	257	288	0	963	34
WTD. AVG. TONS PER DAY	225	--	--	--	--	--	432	326	0	1610	51
	--	--	--	--	--	--	156	175	0	585	20

ANALYSES OF ADDITIONAL SAMPLES

NOV.											
13...	A60	4.9	208	216	559	7.7	--	328	0	2320	62
JAN.											
15...	A35	7.7	180	158	382	6.3	--	344	0	1630	53
APR.											
09...	A564	5.1	132	26	108	3.2	--	271	0	421	20
JULY											
09...	A75	2.4	149	165	413	7.9	--	235	0	1710	49
AUG.											
13...	A172	4.1	257	141	386	8.8	--	224	0	1820	46

A DISCHARGE AT TIME OF SAMPLING.

09314500 PRICE RIVER AT WOODSIDE, UTAH--Continued

EXTREMES.--1968-69:--Continued
Specific conductance: Maximum daily, 5,750 micromhos Dec. 2; minimum daily, 990 micromhos May 4.
Water temperatures: Maximum, 26.0°C July 16, 17; minimum, freezing point on many days during winter periods.
Period of record:
Dissolved solids: Maximum, 8,220 mg/l Dec. 11, 1951; minimum, 592 mg/l May 21-30, 1952.
Hardness: Maximum, 3,010 mg/l Dec. 11, 1951; minimum, 310 mg/l May 1-7, 1969.
Specific conductance: Maximum daily, 8,540 micromhos Dec. 11, 1951; minimum daily, 814 micromhos June 1, 1952.
Water temperatures: Maximum, 32.0°C July 10, 11, 1954; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-05	--	--	2560	3.48	1010	1040	802	5.8	3020	7.9
06...	--	--	4350	5.92	2310	1440	1200	9.5	4710	7.7
07-09	--	--	3120	4.24	1020	1210	938	7.5	3560	8.0
10-22	--	--	3210	4.37	737	1240	958	7.4	3620	7.9
23-31	--	--	3860	5.25	636	1420	1140	8.3	4200	7.9
NOV.										
01-22	--	--	3910	5.32	676	1440	1160	8.1	4220	8.0
23-30	--	--	4170	5.67	540	1540	1240	8.2	4440	8.0
DEC.										
01-13	--	--	4990	6.79	431	1840	1480	7.9	5100	8.0
14-31	--	--	4180	5.68	350	1620	1250	6.5	4390	8.0
JAN.										
01-14	--	--	3900	5.30	337	1500	1120	6.5	4120	8.0
15-17	--	--	2680	3.64	253	1110	839	4.7	3050	8.0
18-24	--	--	3350	4.56	308	1310	992	5.8	3670	8.1
25-31	--	--	4140	5.63	335	1560	1210	6.8	4410	8.1
FEB.										
01-04	--	--	4580	6.23	383	1700	1310	8.4	4740	8.2
05-25	--	--	3530	4.80	343	1360	1030	7.3	3800	8.2
26-28	--	--	1960	2.67	212	730	531	5.8	2370	8.2
MAR.										
01-04	--	--	3660	4.98	1110	1300	1020	6.7	4010	7.6
05-10	--	--	2710	3.69	1000	1040	764	5.9	3120	7.6
11-12	--	--	1870	2.54	929	770	505	4.4	2230	7.6
13...	--	--	1020	1.39	460	512	259	2.4	1370	7.5
14-16	--	--	2390	3.25	845	955	675	4.9	2700	7.8
17-22	--	--	1210	1.65	1630	560	340	3.2	1590	7.8
23-26	--	--	1940	2.64	4020	720	502	5.4	2370	7.8
27-29	--	--	1540	2.09	2740	625	428	4.3	1930	7.8
30-31	--	--	2930	3.98	2220	1100	860	6.6	3240	7.8
APR.										
01-04	--	--	2660	3.62	2860	1040	784	5.1	2970	7.8
05-06	--	--	1880	2.56	2790	810	553	3.5	2240	7.9
07-15	--	--	881	1.20	1290	448	225	2.2	1180	8.0
16-18	--	--	1720	2.34	1710	700	447	4.6	2100	8.0
19-21	--	--	1140	1.55	1220	538	279	3.1	1490	8.1
22-30	--	--	804	1.09	1490	418	179	2.4	1110	8.1
MAY										
01-07	--	--	729	.99	1540	310	64	3.3	1040	7.7
08-09	--	--	1130	1.54	3110	500	251	3.1	1500	7.8
10-12	--	--	814	1.11	1860	430	195	2.1	1140	7.9
13-25	--	--	804	1.09	1370	415	178	2.2	1120	8.0
26-31	--	--	864	1.18	1130	425	204	2.4	1180	8.0
JUNE										
01-09	--	--	1060	1.44	1090	515	289	2.9	1400	6.9
10-16	--	--	1040	1.41	677	605	369	3.9	1740	7.1
17-19	--	--	1530	2.08	1690	670	431	4.1	1900	7.1
20-22	--	--	1500	2.04	1060	645	403	4.2	1900	7.4
23-25	--	--	1600	2.18	2270	735	503	4.2	2080	7.6
26-30	--	--	1960	2.67	1320	780	543	5.1	2360	7.2
JULY										
01-03	--	--	2270	3.09	705	890	655	5.4	2640	7.3
04-19	--	--	2470	3.36	687	935	719	5.8	2830	7.5
20-25	--	--	2050	2.79	1090	900	687	4.5	2410	7.6
26-31	--	--	2300	3.13	832	940	727	4.9	2670	7.6
AUG.										
01-14	--	--	3060	4.16	793	1240	1040	4.9	3270	8.0
15-20	--	--	3000	4.08	1310	1220	986	4.9	3220	8.2
21-24	--	--	2340	3.18	992	970	759	4.4	2640	8.0
25-29	--	--	3080	4.19	782	1300	915	5.7	3340	8.0
30-31	--	--	2240	3.05	9700	1060	894	3.1	2460	7.9
SEPT.										
01-02	--	--	2440	3.32	1060	1080	882	4.1	2760	7.7
03-10	--	--	3010	4.09	2990	1170	944	5.4	3280	7.9
11-14	--	--	2350	3.20	1710	1030	831	3.8	2650	7.8
15-21	--	--	3170	4.31	866	1220	986	5.5	3440	7.9
22...	--	--	2200	2.99	647	1100	940	2.4	2470	7.8
23-30	--	--	3180	4.32	695	1180	940	6.0	3450	7.9
WTD. AVG. TIME	--	--	1720	--	--	1040	492	3.9	2050	7.8
WTD. AVG. TONS PER DAY	--	--	2740	3.77	--	--	811	5.5	3050	7.9
	--	--	1040	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

NOV.										
13...	.6	6.6	3820	4.82	619	1410	1140	6.5	4050	7.9
JAN.										
15...	.6	11	2730	3.53	258	1100	818	5.0	3080	7.9
APR.										
09...	.3	2.0	873	1.19	1330	438	216	2.2	1170	7.8
JULY										
09...	.4	.5	2720	3.55	551	1050	856	5.5	3050	7.8
AUG.										
13...	--	--	2900	3.77	1350	1220	1040	4.8	3110	7.6

09314500 PRICE RIVER AT WOODSIDE, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3130	4560	5090	4130	4520	3270	3190	1060	1230	2720	2990	2630
2	3120	4620	5750	4140	4660	4300	3060	1070	1230	2490	3180	2880
3	3130	4380	5370	4010	5240	4010	2970	1010	1270	2710	3000	3190
4	2520	4140	5520	4100	4570	4260	2710	990	1360	3030	3010	3100
5	3150	4160	5630	4080	4110	3310	2440	1000	1390	2950	3720	3950
6	4710	4070	5260	3970	4100	3230	2040	1010	1450	3080	3530	3440
7	3760	4110	5320	4060	4170	3040	1290	1100	1490	3100	3400	3080
8	3410	4300	4990	3990	3910	3510	1180	1620	1500	0010	3330	3050
9	3520	4160	5050	4050	3900	2910	1180	1380	1630	3140	3250	3330
10	3190	4570	4660	4090	3940	2670	1160	1180	1740	3080	3130	3240
11	3210	4540	4370	3990	3930	2300	1120	1120	1610	2890	3270	2570
12	3680	3890	4530	4640	4090	2160	1080	1110	1660	2890	3460	2460
13	3640	4100	5060	4150	3900	1370	1010	1090	1680	2810	3170	2740
14	3690	4140	4430	4140	3840	2400	1240	1140	1770	2760	3330	2840
15	4180	4130	4480	2700	3800	1200	1340	1160	1830	2660	2990	3260
16	4200	3990	4590	3120	3530	2510	1910	1120	1830	2080	3130	3360
17	4220	4200	4260	3340	3770	1560	2450	1300	1860	2530	3150	3330
18	3440	4320	4330	3500	4030	1390	1950	1240	2070	2600	3150	3210
19	3430	4200	4370	3690	3440	1400	1560	1050	1760	2830	3180	3640
20	3240	4200	4830	3850	3270	1410	1570	1020	1950	2490	3690	3620
21	3260	3960	4700	3940	3560	1740	1330	1010	1850	1940	2640	3690
22	3410	3620	4050	3690	3440	1850	1160	1040	1910	2810	2610	2470
23	3640	4460	4960	3240	3540	2100	1170	1060	2030	2230	2760	3690
24	3770	4620	4740	3750	3730	2570	1080	1110	2030	2380	2590	3360
25	4030	4320	4460	4020	3760	2510	1040	1200	2170	2380	3350	3350
26	4400	3940	4440	4300	2570	2190	1010	1190	2700	3000	3440	3300
27	4370	4300	4180	4950	2190	1890	1070	1210	2310	2630	3250	3360
28	4320	3920	4120	4500	2350	1870	1120	1180	1940	2720	3310	3390
29	4390	4520	4030	4530	--	2030	1130	1150	2110	2490	3400	3460
30	4420	5190	4140	4040	--	3150	1120	1150	2740	2690	2540	3740
31	4260	--	4290	4320	--	3330	--	1180	--	2640	2390	--
AVG	3700	4250	4710	3970	3780	2560	1590	1140	1800	2610	3140	3220

09314500 PRICE RIVER AT WOODSIDE, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	18	17	17	11	14	18	17	16	14	15	16	17	15	15	9	6	9	8	12	12	10	11	12	13	14	7	8	5	6	7	8	12
NOVEMBER.	7	6	7	9	10	9	7	7	9	7	6	6	6	7	3	2	3	0	2	2	0	2	3	1	1	2	1	1	1	1	--	4
DECEMBER.	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
FEBRUARY.	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	4	3	1	1	1	2	1	4	1	--	--	--	1
MARCH....	1	1	0	1	2	0	0	1	1	1	2	1	0	2	1	1	3	1	7	3	6	6	5	4	4	4	7	7	13	8	9	3
APRIL....	10	9	11	8	9	10	7	7	8	8	9	10	9	9	8	7	8	9	9	11	13	13	12	13	9	11	7	10	11	16	--	10
MAY.....	15	16	13	16	13	13	9	11	16	17	16	18	15	18	13	13	16	14	18	18	17	19	18	15	19	18	18	18	18	18	17	16
JUNE....	16	17	19	20	21	17	18	16	18	17	17	18	17	17	17	18	16	16	18	21	19	17	18	16	15	13	17	18	16	17	--	17
JULY....	16	21	21	18	22	17	18	20	18	20	21	24	23	21	22	26	26	21	21	21	22	21	22	22	23	21	20	22	22	22	23	21
AUGUST...	24	22	22	16	22	22	24	21	22	24	22	22	21	21	21	20	20	22	18	18	18	20	18	21	21	21	22	18	20	18	18	21
SEPTEMBER	18	16	18	16	18	20	19	18	18	16	17	16	18	16	16	16	14	15	16	14	16	11	12	13	13	14	13	14	13	15	--	16

09315000 GREEN RIVER AT GREEN RIVER, UTAH
(Irrigation network, pesticide, and radiochemical station)

LOCATION.--Lat 38°59'37", long 110°08'35", in NW¼NE¼ sec.15, T.21 S., R.16 E., Emery County, at bridge on U.S. Highways 50 and 6 in town of Green River, 0.7 mile upstream from gaging station.
DRAINAGE AREA.--40,600 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: August 1928 to September 1969.
Water temperatures: May 1949 to September 1959, October 1964 to September 1969.
Sediment records: May 1930 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 994 mg/l Aug. 28-31; minimum, 280 mg/l June 1-7.
Hardness: Maximum, 530 mg/l Aug. 28-31; minimum, 173 mg/l June 1-7.
Specific conductance: Maximum daily, 1,320 micromhos Aug. 30; minimum daily, 415 micromhos May 25.
Water temperatures: Maximum, 22.0°C on several days during June to August; minimum, freezing point on many days during November to February.
Sediment concentrations: Maximum daily, 23,800 mg/l Aug. 30; minimum daily, 22 mg/l Nov. 3.
Sediment loads: Maximum daily, 360,000 tons Aug. 30; minimum daily, 200 tons Nov. 3.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-04	3958	6.2	83	42	--	--	104	216	0	369	32
05-15	3472	5.7	80	42	--	--	103	217	0	354	35
16-31	3889	6.0	74	39	--	--	84	215	0	294	32
NOV.											
01-17	3517	6.4	94	29	--	--	93	220	0	330	22
18-30	3974	6.7	81	36	--	--	78	210	0	295	31
DEC.											
01-09	3454	6.4	67	41	--	--	84	212	0	291	30
10-20	3807	5.7	71	35	--	--	76	204	0	267	29
21-31	2940	7.0	77	43	--	--	83	230	0	302	32
JAN.											
01-17	3651	7.1	73	33	--	--	74	212	0	251	29
18-31	5728	6.6	67	32	--	--	73	194	0	248	28
FEB.											
01-09	4739	6.1	71	36	--	--	78	208	0	265	32
10-28	6056	5.9	69	33	--	--	75	198	0	257	29
MAR.											
01-17	6039	5.1	72	32	--	--	86	211	0	270	30
18-21	4192	6.1	76	36	--	--	86	228	0	285	29
22-31	5923	7.2	73	37	--	--	112	221	0	332	36
APR.											
01-18	10090	7.2	69	30	--	--	73	215	0	230	27
19-25	10620	7.4	58	28	--	--	52	202	0	170	20
26-30	15080	9.1	49	19	--	--	31	181	0	98	13
MAY											
01-05	11680	11	48	24	--	--	37	189	0	116	16
06-18	19330	11	51	20	--	--	35	183	0	113	14
19-31	18650	9.0	44	16	--	--	31	158	0	92	12
JUNE											
01-07	14000	8.3	42	17	--	--	34	146	0	104	13
08-17	9021	8.6	51	20	--	--	43	161	0	141	17
18-19	12100	10	68	32	--	--	93	196	0	272	42
20-23	12520	9.2	51	22	--	--	44	165	0	146	18
24-30	11770	9.0	61	22	--	--	56	175	0	188	18
JULY											
01-04	9798	9.0	43	20	--	--	50	171	0	133	15
05-31	5221	7.9	56	24	--	--	49	174	0	167	19
AUG.											
01-22	4579	6.0	77	33	--	--	98	207	0	318	29
23-27	3658	5.7	75	35	--	--	95	210	0	310	30
28-31	4312	7.6	145	41	--	--	93	203	0	505	28
SEPT.											
01-08	3399	5.6	80	41	--	--	75	214	0	300	31
09-10	5125	4.8	75	34	--	--	90	220	0	280	35
11-14	5072	7.2	91	35	--	--	96	238	0	322	36
15-22	3942	6.8	82	34	--	--	90	221	0	302	32
23-30	4341	6.2	77	36	--	--	88	214	0	298	32
WTD. AVG. TIME	--	7.8	63	28	--	--	63	193	0	209	23
WTD. AVG. TONS PER DAY	6796	7.0	70	32	--	--	75	202	0	253	27
	--	144	1170	513	--	--	1170	3580	0	3890	426

ANALYSES OF ADDITIONAL SAMPLES
(DISCHARGE AT TIME OF SAMPLING)

OCT.											
14...	3620	6.0	75	43	98	2.7	--	226	0	332	35
NOV.											
14...	3710	6.5	72	39	90	2.5	--	220	0	292	30
DEC.											
11...	4150	6.6	72	30	79	2.2	--	216	0	260	28
JAN.											
15...	3880	6.7	66	34	75	2.5	--	204	0	246	26
FEB.											
11...	5720	6.1	67	32	69	2.0	--	200	0	252	28
MAR.											
14...	5750	5.8	69	35	78	2.7	--	211	0	272	32
APR.											
10...	11100	8.3	68	31	69	2.9	--	211	0	242	22
MAY											
12...	19600	9.7	43	19	32	2.1	--	165	0	96	10
JUNE											
10...	9550	8.5	43	21	38	1.8	--	152	0	122	13
JULY											
03...	9690	9.6	52	19	42	2.5	--	183	0	128	14
25...	4460	6.0	71	35	83	2.9	--	218	0	237	25
AUG.											
14...	4590	4.6	73	33	86	3.2	--	196	0	302	25
SEPT.											
17...	4240	6.1	90	35	93	3.9	--	230	0	328	32

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 3,440 mg/l Dec. 1-3, 1967; minimum, 194 mg/l June 21-30, 1933.
Hardness: Maximum, 1,880 mg/l Dec. 1-3, 1967; minimum, 128 mg/l June 21-30, 1933.
Specific conductance (1941-69): Maximum daily, 3,250 micromhos Dec. 1, 1967; minimum daily, 272 micromhos May 13, 1956.
Water temperatures (1949-59, 1965-69): Maximum, 30.0°C Aug. 13, 1958; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 66,000 mg/l July 11, 1936; minimum daily, 20 mg/l Sept. 27, 1956.
Sediment loads: Maximum daily, 2,230,000 tons July 11, 1936; minimum daily, 54 tons Sept. 27, 1956.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.
Maximum observed during water year: Temperature, 28.0°C July 3. Daily water temperatures are usually taken earlier in the day than those reported as "maximum observed during water year."

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	PHOSPHATE (PO4) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.											
01-04	--	--	--	794	1.08	8490	380	203	2.3	1090	7.7
05-15	--	--	--	767	1.04	7190	372	194	2.3	1070	8.0
16-31	--	--	--	688	.94	7220	344	168	2.0	784	7.8
NOV.											
01-17	--	--	--	696	.95	6610	352	172	2.2	1010	7.8
18-30	--	--	--	670	.91	7190	352	180	1.8	984	7.8
DEC.											
01-09	--	--	--	663	.90	6180	336	162	2.0	947	8.0
10-20	--	--	--	609	.83	6260	321	154	1.8	885	7.9
21-31	--	--	--	688	.94	5460	368	179	1.9	990	8.0
JAN.											
01-17	--	--	--	603	.82	5940	316	142	1.8	878	7.7
18-31	--	--	--	585	.80	9050	298	139	1.8	851	7.6
FEB.											
01-09	--	--	--	631	.86	8070	322	151	1.9	896	7.8
10-28	--	--	--	593	.81	9700	308	146	1.9	853	8.0
MAR.											
01-17	--	--	--	646	.88	10500	310	137	2.1	922	8.0
18-21	--	--	--	687	.93	7780	338	151	2.0	986	8.2
22-31	--	--	--	763	1.04	12200	334	153	2.7	1080	8.2
APR.											
01-18	--	--	--	585	.80	15900	294	118	1.9	839	7.6
19-25	--	--	--	481	.65	13800	258	92	1.4	700	7.7
26-30	--	--	--	341	.46	13900	202	54	.9	510	7.7
MAY											
01-05	--	--	--	363	.49	11400	217	62	1.1	541	7.9
06-18	--	--	--	357	.49	18600	211	61	1.0	528	7.8
19-31	--	--	--	304	.41	15300	176	46	1.0	450	7.7
JUNE											
01-07	--	--	--	280	.38	10600	173	53	1.1	457	7.9
08-17	--	--	--	385	.52	9380	210	78	1.3	572	7.8
18-19	--	--	--	661	.90	21600	300	139	2.3	937	7.8
20-23	--	--	--	401	.55	13600	217	82	1.3	588	7.9
24-30	--	--	--	462	.63	14700	243	99	1.6	667	7.9
JULY											
01-04	--	--	--	380	.52	10100	190	50	1.6	562	7.9
05-31	--	--	--	447	.61	6300	238	95	1.4	656	7.6
AUG.											
01-22	--	--	--	668	.91	8260	328	158	2.4	954	7.7
23-27	--	--	--	659	.90	6510	330	158	2.3	942	7.9
28-31	--	--	--	994	1.35	11600	530	363	1.8	1270	7.7
SEPT.											
01-08	--	--	--	706	.96	6480	368	192	1.7	981	7.6
09-10	--	--	--	660	.90	9130	326	146	2.2	924	7.6
11-14	--	--	--	793	1.08	10900	372	177	2.2	1090	7.7
15-22	--	--	--	703	.96	7480	344	163	2.1	981	7.8
23-30	--	--	--	690	.94	8090	340	164	2.1	957	7.8
WTD. AVG. TIME	--	--	--	520	.71	9650	271	113	--	746	7.8
WTD. AVG. TONS PER DAY	--	--	--	596	.81	--	305	139	1.8	846	7.8
	--	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
14...	.4	12	.04	717	.98	7010	364	179	2.2	1030	8.1
NOV.											
14...	.5	5.4	.00	684	.93	6850	343	160	2.1	980	8.0
DEC.											
11...	.7	5.3	.00	620	.84	6950	304	127	1.9	900	8.0
JAN.											
15...	.5	5.3	.00	578	.79	6060	304	137	1.9	853	8.0
FEB.											
11...	.4	5.1	.02	587	.80	9070	301	137	1.7	835	8.0
MAR.											
14...	.3	4.2	--	606	.82	9410	316	143	1.9	880	8.0
APR.											
10...	.5	1.1	.08	550	.75	16500	296	123	1.7	813	7.6
MAY											
12...	.4	2.5	.05	307	.42	16200	788	653	1.0	476	7.6
JUNE											
10...	.5	1.3	.00	343	.47	8840	196	71	1.2	529	7.9
JULY											
03...	.3	.8	.06	376	.51	9840	207	57	1.3	568	7.3
25...	--	--	--	546	.74	6580	320	141	2.0	897	8.0
AUG.											
14...	.4	2.8	.02	633	.86	7850	316	155	2.1	914	7.4
SEPT.											
17...	.4	4.9	.05	779	1.06	8920	370	181	2.1	1050	8.1

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1090	1020	880	893	879	932	997	520	444	537	--	--
2	1030	1020	891	--	879	935	941	531	447	566	--	978
3	1100	1020	899	--	876	941	935	573	476	567	--	1010
4	1100	1020	978	--	900	938	944	568	436	569	--	1010
5	1100	1030	978	--	900	932	941	506	439	578	--	990
6	1080	1040	978	901	905	929	886	570	475	572	--	--
7	1140	1040	981	897	897	929	846	607	481	667	--	962
8	1150	1050	951	892	889	923	826	545	545	662	--	922
9	1080	1050	951	869	890	926	815	535	553	671	--	954
10	1080	1050	892	862	852	926	803	548	524	--	--	895
11	1050	990	879	859	847	915	798	522	510	706	--	1250
12	1020	987	880	861	850	915	774	514	579	--	--	1050
13	1020	1000	879	859	862	887	761	523	583	718	--	1020
14	1020	1000	862	862	843	884	761	480	592	--	--	1020
15	1020	980	866	872	840	926	744	476	614	--	--	1030
16	997	957	869	879	843	917	759	512	572	--	--	978
17	1010	957	865	851	838	917	785	537	637	--	--	984
18	1000	978	895	834	841	951	792	495	910	--	935	987
19	990	969	897	819	848	936	706	451	964	--	903	--
20	994	1020	892	823	848	980	702	461	610	--	966	--
21	994	1010	990	832	845	993	718	456	610	--	975	--
22	978	1000	1010	819	829	1070	744	464	596	--	975	919
23	966	1000	1010	836	831	1100	692	467	548	--	958	942
24	966	1000	1030	861	829	1120	663	428	779	--	955	942
25	957	936	1030	871	897	1130	653	415	621	--	916	994
26	957	928	1030	844	897	1140	533	466	614	--	935	1020
27	975	990	1010	873	872	1050	531	439	681	--	935	1010
28	975	990	957	859	869	1060	507	428	676	--	1220	919
29	966	994	948	831	--	1020	495	443	700	--	1270	917
30	966	984	891	850	--	1020	474	446	601	--	1320	917
31	959	--	884	827	--	1020	--	467	--	--	1240	--
AVG	1020	996	933	858	864	977	750	496	593	--	--	984

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	10	10	9	9	9	9	8	8	8	8	8	8	8	8	8	8	11
NOVEMBER.	8	8	8	8	8	8	8	8	8	8	7	7	7	6	6	6	6	4	4	4	4	4	4	4	3	3	2	2	2	0	--	6
DECEMBER.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	--	--	--	--	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	2	2	1	1	1	1	1	1	1	0	0	1
FEBRUARY.	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	3	--	--	--	1
MARCH....	3	3	3	3	3	3	3	--	--	--	2	2	3	3	2	1	2	3	5	5	5	6	5	5	5	4	5	5	6	6	6	4
APRIL....	6	8	8	9	9	9	6	7	8	8	8	8	7	7	9	10	10	9	10	9	9	10	10	9	9	10	10	11	11	11	--	9
MAY.....	11	11	13	13	12	12	12	12	12	12	13	12	12	12	12	13	13	13	13	13	13	12	12	12	12	12	13	13	13	12	12	12
JUNE.....	13	13	15	16	16	15	16	16	15	19	20	20	19	22	20	19	19	19	19	20	20	20	20	19	19	19	19	19	19	20	--	18
JULY.....	19	19	20	20	20	20	20	20	20	--	20	--	22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUGUST...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	21	22	20	22	21	22	22	22	20	21	19	19	19	20
SEPTEMBER	--	20	19	19	20	--	20	19	19	19	19	19	19	19	19	19	17	17	--	--	--	16	16	16	16	16	15	15	15	15	--	18

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS B, BOTTOM WITHDRAWAL TUBE C, CHEMICALLY DISPERSED N, IN NATIVE WATER P, PIPET S, SIEVE V, VISUAL ACCUMULATION TUBE W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 14, 1968	1745	14	362D	225	2200	--	--	--	--	--	--	--	--	--	--	--	
NOV 14.....	1045	5	371D	52	521	--	--	--	--	--	--	--	--	--	--	--	
DEC 11.....	1240	0	4150	343	3840	12	14	--	--	--	59	81	100	--	--	--	VPWC
JAN 15, 1969	1150	0	3880	342	3580	30	41	--	--	--	87	96	100	--	--	--	VPWC
FEB 11.....	1310	4	572D	846	13100	7	9	--	--	--	41	79	99	100	--	--	VPWC
MAR 14.....	1240	2	5750	292	4530	28	37	--	--	--	94	100	--	--	--	--	VPWC
APR 10.....	1050	11	11100	4890	147000	16	19	--	26	--	51	79	91	97	100	--	VPWC
MAY 12.....	1645	18	19600	228D	121000	22	31	--	52	--	94	100	--	--	--	--	VPWC
JUN 10.....	1325	21	9550	1660	42800	14	15	--	24	--	47	79	99	100	--	--	VPWC
JUN 19.....	18D0	21	13500	4250	155000	--	--	--	--	--	--	--	--	--	--	--	
JUL 3.....	1130	20	9690	1950	510DD	21	23	--	32	--	58	82	98	100	--	--	VPWC
JUL 9.....	1320	--	6510	721	12700	--	--	--	--	--	--	--	--	--	--	--	
AUG 14.....	123D	25	459D	901	11200	28	38	--	65	--	86	90	100	--	--	--	VPWC
SEP 17.....	1300	17	4240	3450	395D0	54	65	--	88	--	94	96	100	--	--	--	VPWC

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4120	1240	13800	3260	45	396	3430	77	713
2	4030	1100	12000	3350	44	398	3510	76	720
3	3970	1270	13600	3370	22	200	3650	84	828
4	3710	1260	12600	3350	28	253	3600	95	923
5	3540	1240	11900	3100	31	259	3460	93	869
6	3600	715	6950	3290	34	302	3000	95	770
7	3480	115	1080	3540	36	344	3160	158	1350
8	3480	122	1150	3540	49	468	3460	277	2590
9	3460	137	1280	3710	53	531	3820	271	2800
10	3370	135	1230	3680	78	775	3940	175	1860
11	3130	133	1120	3400	58	532	4000	143	1540
12	3400	116	1060	3650	52	512	4120	109	1210
13	3370	123	1120	3770	48	489	3910	77	813
14	3620	166	1620	3710	57	571	4090	46	508
15	3740	134	1350	3680	58	576	3880	48	503
16	3880	103	1080	3650	57	562	3740	49	495
17	3940	96	1020	3740	62	626	3480	67	630
18	4090	96	1060	3850	71	738	3680	113	1120
19	4120	95	1060	3940	66	702	3540	111	1060
20	4150	100	1120	4030	50	544	3480	156	1470
21	4090	102	1130	3970	49	525	3510	45	426
22	3970	107	1150	3710	49	491	2970	44	353
23	4060	84	921	3910	54	570	1700	45	207
24	4030	92	1000	3940	43	457	1640	141	624
25	3910	63	665	4180	67	756	2070	137	766
26	3880	59	618	4090	74	817	2340	140	885
27	3800	71	728	4120	160	1780	3210	252	2180
28	3600	66	642	4120	172	1910	3600	442	4300
29	3680	56	556	4030	174	1890	3800	420	4310
30	3740	53	535	3770	79	804	3800	177	1820
31	3290	59	524	--	--	--	3700	45	450
TOTAL	116250	--	95669	111450	--	19778	105290	--	39093

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3600	50	486	5720	117	1810	6860	415	7690
2	3500	47	444	4660	116	1460	6670	407	7110
3	3500	44	416	4150	120	1340	6160	234	3890
4	3500	42	397	4560	101	1240	5750	239	3710
5	3500	40	378	4660	87	1090	6200	241	4030
6	3500	37	350	4430	86	1030	6200	245	4100
7	3500	114	1080	4270	71	819	6120	245	4050
8	3500	163	1540	4660	145	1820	6160	137	2280
9	3500	148	1400	5540	144	2150	6200	164	2750
10	3500	41	387	5970	158	2550	6080	165	2710
11	3500	47	444	5750	497	7720	5970	187	3010
12	3500	34	321	5610	149	2260	5830	190	2990
13	3500	65	614	5680	149	2290	5900	218	3470
14	3700	60	599	5540	372	5560	5790	255	3990
15	3850	306	3180	5540	190	2840	5750	246	3820
16	4330	157	1840	5830	182	2860	5790	241	3770
17	4590	205	2540	5610	166	2510	5440	241	3540
18	4890	179	2360	5580	160	2410	4790	387	5010
19	4950	212	2830	6050	244	3990	4120	881	9800
20	4820	256	3330	5830	242	3810	3800	884	9070
21	5300	536	7670	5900	237	3780	4060	858	9410
22	5830	490	7710	6160	329	5470	4990	2050	27600
23	5750	555	8620	6310	325	5540	5930	2040	32700
24	5970	362	5840	6620	325	5810	6200	2460	41200
25	6390	364	6280	6510	397	6980	6510	2440	42900
26	6390	348	6000	6430	410	7120	6310	2030	34600
27	5930	350	5600	7030	654	12400	6050	2180	35600
28	5680	288	4420	7110	665	12800	5900	2200	35000
29	5970	259	4170	--	--	--	5680	4200	64400
30	6200	295	4940	--	--	--	5610	4080	61800
31	6120	335	5540	--	--	--	6050	4320	70600
TOTAL	142260	--	91726	157710	--	111459	178670	--	546600

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	7610	4440	91200	11300	1320	40300	18100	682	33300
2	8290	5910	132000	10800	1390	40500	16800	662	30000
3	9990	5780	156000	10800	1280	37300	14800	615	24600
4	9910	4870	130000	11200	1250	37800	13200	534	19000
5	9380	4590	116000	14300	1450	56000	12500	538	18200
6	9950	3800	102000	17500	1750	82700	12000	462	15000
7	10600	4050	116000	18000	1770	86000	10600	460	13200
8	10500	2910	82500	18500	2370	118000	10300	652	18100
9	10500	2030	57600	19000	2390	123000	9950	655	17600
10	11200	3200	96800	19900	2060	111000	9470	470	12000
11	12100	1870	61100	20200	2040	111000	9690	285	7460
12	11400	1790	55100	19500	1900	100000	9290	480	12000
13	9470	1780	45500	19500	1430	75300	9070	688	16800
14	8850	1230	29400	19000	1390	71300	8380	741	16800
15	9640	1200	31200	19800	3230	173000	8080	737	16100
16	10400	1250	35100	20500	1380	76400	7860	1660	35200
17	10700	1490	43100	20500	1240	68600	8120	1820	39900
18	11200	1470	44500	19400	1270	66500	10900	3480	102000
19	11400	1070	32900	18800	1820	92400	13300	3620	130000
20	11500	1070	33200	19000	1520	78000	12900	1020	35500
21	10100	1060	28900	18700	1640	82800	13100	1080	38200
22	8940	1440	34800	19600	1050	55600	12700	1010	34600
23	9420	1990	50600	19000	1040	53400	11400	1570	48300
24	10200	1880	51800	19600	1380	73000	11200	5000	151000
25	12800	1900	65700	19400	1380	72300	11200	2750	83200
26	14600	2340	92200	18600	808	40600	11400	2260	69600
27	15900	2350	101000	18200	874	42900	11500	2550	79200
28	16800	3310	150000	17500	982	46400	13100	2560	90500
29	15200	1920	78800	17800	585	28100	13000	2550	89500
30	12900	2220	77300	18000	576	28000	11000	1720	51100
31	--	--	--	18300	587	29000	--	--	--
TOTAL	331450	--	2222300	552200	--	2197200	344910	--	1347960

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	10800	1410	41100	3510	454	4300	3210	1900	16500
2	10200	1100	30300	3650	497	4900	3030	820	6710
3	9550	797	20600	4180	709	8000	3050	463	3810
4	8640	489	11400	4560	877	10800	3320	515	4620
5	7570	301	6150	4270	755	8700	3370	549	5000
6	7360	309	6140	5120	1200	16600	3400	493	4530
7	7190	270	5240	5260	1280	18200	3600	437	4250
8	6780	267	4890	5120	1200	16600	4210	816	9280
9	6390	594	10200	4890	1050	13900	4990	1030	13900
10	6080	298	4890	4850	1030	13500	5260	5500	78100
11	6010	265	4300	4920	1080	14300	5860	12900	204000
12	5790	601	9400	4920	1080	14300	4720	3700	47200
13	5330	1390	20000	4950	1090	14600	4890	3420	45200
14	5060	1160	15800	4690	1330	16800	4820	3400	44200
15	4820	1010	13100	4890	1740	23000	4300	3530	41000
16	5120	1200	16600	4690	1330	16800	4120	3080	34300
17	4920	1080	14300	4690	1330	16800	4210	2680	30500
18	5020	1140	15500	4920	2180	29000	3800	1950	20000
19	5060	1160	15800	4300	752	8730	3510	1930	18300
20	4990	1110	15000	4120	1600	17800	3540	1940	18500
21	4690	940	11900	4270	1800	20800	3970	4380	46900
22	4690	940	11900	3970	1290	13800	4090	5250	58000
23	4590	888	11000	3880	1210	12700	4330	821	9600
24	4210	730	8300	3850	1200	12500	4720	840	10700
25	4530	875	10700	3570	1190	11500	4210	1980	22500
26	4590	888	11000	3480	529	4970	3940	1790	19000
27	4850	1030	13500	3510	527	4990	4370	1960	23100
28	4180	709	8000	3740	10000	101000	4490	278	3370
29	3970	625	6700	3570	13300	128000	4270	277	3190
30	3740	535	5400	5610	23800	360000	4400	278	3300
31	3660	439	4100	4330	10000	117000	--	--	--
TOTAL	180180	--	383210	136280	--	1074890	124000	--	849560

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 2480650
TOTAL LOAD FOR YEAR (TONS) 8979445

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH

LOCATION.--Lat 38°52'20", long 110°22'20", in NE¼SW¼ sec.27, T.22 S., R.14 E., Emery County, at gaging station just downstream from bridge on State Highway 24, 15 miles southwest of Green River and 35 miles upstream from mouth.
DRAINAGE AREA.--1,670 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: November 1946 to September 1949, November 1950 to September 1969.
Water temperatures: July to September 1949, October 1950 to September 1962, October 1964 to September 1969.
Sediment records: March 1948 to September 1949, October 1950 to September 1959.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 4,320 mg/l Dec. 1-3; minimum, 614 mg/l May 11-17.
Hardness: Maximum, 1,620 mg/l Dec. 1-3; minimum, 322 mg/l May 11-17.
Specific conductance: Maximum daily, 4,650 micromhos Dec. 6; minimum daily, 773 micromhos May 15.
Water temperatures: Maximum, 29.0°C Aug. 24, 25; minimum, freezing point on many days during November to February.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-14	120	7.1	216	1.0	--	--	460	274	0	1870	49
15-31	61	6.0	228	185	--	--	457	300	0	1930	48
NOV.											
01-11	54	6.8	216	197	--	--	642	278	0	2350	51
12-15	45	6.1	220	95	--	--	503	108	0	1850	28
16...	45	7.1	190	215	--	--	648	120	0	2490	55
17...	45	3.9	232	63	--	--	331	88	0	1390	28
18...	45	8.9	216	199	--	--	607	170	0	2420	15
19-21	45	.9	216	54	--	--	270	60	0	1240	14
22...	43	7.8	200	201	--	--	534	184	0	2170	54
23-26	39	4.0	220	51	--	--	232	68	0	1140	16
27-28	34	6.4	236	81	--	--	374	96	0	1560	25
29-30	30	9.1	248	240	--	--	503	230	0	2290	78
DEC.											
01-03	29	9.8	315	204	--	--	589	170	0	2560	72
04...	31	7.8	253	92	--	--	425	84	0	1770	20
05-13	44	10	232	266	--	--	521	219	0	2280	64
14-17	40	7.7	240	137	--	--	368	205	0	1670	42
18-23	35	11	255	182	--	--	436	266	0	1950	60
24-31	38	10	253	165	--	--	463	254	0	1960	49
JAN.											
01-15	43	7.4	224	158	--	--	460	313	0	1810	50
16-20	62	6.4	184	136	--	--	376	259	0	1500	45
21-27	69	5.7	180	146	--	--	410	289	0	1580	42
28-31	48	6.2	220	199	--	--	654	311	0	2360	57
FEB.											
01-28	52	7.7	192	148	--	--	351	278	0	1500	45
MAR.											
01-19	99	8.4	198	141	--	--	396	308	0	1550	50
20-21	195	8.1	188	72	--	--	206	226	0	945	32
22-28	258	7.2	212	139	--	--	487	266	0	1800	48
29-31	90	7.3	200	122	--	--	415	263	0	1560	44
APR.											
01-07	114	5.5	180	134	--	--	370	274	0	1460	43
08-12	223	6.0	104	95	--	--	57	274	0	500	21
13-14	138	4.8	160	119	--	--	255	300	0	1100	38
15-22	134	4.4	144	97	--	--	242	293	0	960	33
23...	598	5.6	110	75	--	--	128	278	0	570	27
24-30	335	4.1	90	53	--	--	93	266	0	385	18
MAY											
01-07	389	6.5	90	58	--	--	84	243	0	405	20
08...	1000	8.0	146	71	--	--	270	240	0	964	30
09-10	684	5.9	84	54	--	--	105	228	0	430	17
11-17	744	5.8	71	35	--	--	66	222	0	254	13
18-22	586	5.7	71	40	--	--	68	238	0	263	14
23-31	641	5.8	14	35	--	--	88	242	0	288	14
JUNE											
01-05	811	6.2	78	50	--	--	84	261	0	332	16
06-13	473	6.6	90	57	--	--	109	283	0	422	18
14-23	473	8.0	124	75	--	--	167	280	0	690	24
24-25	871	15	166	49	--	--	131	227	0	655	22
26-30	387	6.8	106	71	--	--	140	274	0	582	20
JULY											
01-04	220	6.7	106	79	--	--	160	210	0	700	26
05-11	137	7.1	147	125	--	--	312	254	0	1240	42
12-26	107	9.0	168	118	--	--	294	248	0	1240	36
27-31	87	7.1	174	135	--	--	340	255	0	1410	37
AUG.											
01-17	68	7.2	224	153	--	--	351	246	0	1620	46
18-20	213	8.8	289	146	--	--	440	268	0	1910	48
21-28	94	8.7	232	129	--	--	370	252	0	1580	44
29-31	661	10	236	79	--	--	223	227	0	1130	26
SEPT.											
01-09	116	9.8	257	102	--	--	414	232	0	1650	38
10-13	210	9.7	289	102	--	--	322	222	0	1550	32
14-21	88	9.2	248	131	--	--	402	206	0	1740	38
22...	159	7.3	176	88	--	--	276	232	0	1130	24
23-30	60	7.4	212	163	--	--	512	231	0	2010	22
WTD. AVG. TIME	--	7.1	134	85	--	--	213	254	0	878	27
WTD. AVG. TONS PER DAY	180	7.3	186	128	--	--	344	255	0	1420	39
	--	3.4	65	42	--	--	104	124	0	428	13
ANALYSES OF ADDITIONAL SAMPLES											
NOV.											
26...	A37	8.2	250	193	479	7.6	--	285	0	2200	50
JAN.											
23...	A68	8.1	208	131	305	6.0	--	308	0	1460	38
APR.											
09...	A235	6.2	174	129	342	6.2	--	303	0	1380	40
JULY											
11...	A103	6.1	160	144	353	7.5	--	252	0	1550	36
AUG.											
12...	A82	6.1	184	175	388	10	--	203	0	1710	50

A DISCHARGE AT TIME OF SAMPLING.

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 6,430 mg/l May 22-25, 1967; minimum, 487 mg/l June 21-30, 1957.
Hardness: Maximum, 2,280 mg/l July 11, 13-18, 1954; minimum, 298 mg/l June 21-30, 1957.
Specific conductance: Maximum daily, 7,230 micromhos July 15, 1954; minimum daily, 689 micromhos June 29, 1957.
Water temperatures: Maximum (1949, 1950-61, 1965-69), 35.0°C July 11, 1954; minimum (1949, 1950-61, 1964-69), freezing point on many days during winter months.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Temperature, 30.0°C July 11. Daily water temperatures are usually taken earlier in the day than those reported as "maximum observed during water year."

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-14	--	--	3060	3.96	991	1240	1020	5.7	3430	7.8
15-31	--	--	3280	.00	540	1330	1080	5.4	3590	7.8
NOV.										
01-11	--	--	3620	4.90	528	1350	1120	7.6	3730	8.1
12-15	--	--	2660	3.75	323	960	871	7.1	2970	7.6
16...	--	--	3710	4.98	451	1360	1260	7.6	3860	7.8
17...	--	--	2120	2.84	258	840	768	5.0	2480	7.5
18...	--	--	3680	4.83	447	1360	1220	7.2	3790	7.8
19-21	--	--	1750	2.49	213	760	711	4.3	2090	7.3
22...	--	--	3550	4.43	412	1320	1170	6.4	3630	7.9
23-26	--	--	1740	2.34	183	760	704	3.7	2050	7.4
27-28	--	--	2370	3.17	218	925	8560	5.3	2660	7.7
29-30	--	--	3660	4.73	296	1590	1400	5.5	3090	7.9
DEC.										
01-03	--	--	4320	5.21	338	1620	1490	6.4	4420	8.0
04...	--	--	2710	3.55	227	1010	941	5.9	3110	8.0
05-13	--	--	3760	4.68	447	1510	1330	5.8	3960	8.1
14-17	--	--	2760	3.50	298	1160	997	4.7	3060	8.0
18-23	--	--	3400	4.11	321	1380	1170	5.1	3610	8.0
24-31	--	--	3200	4.11	328	1310	1100	5.6	3450	8.1
JAN.										
01-15	--	--	2970	3.89	345	1210	953	5.8	3210	8.1
16-20	--	--	2430	3.22	407	1020	808	5.1	2750	8.2
21-27	--	--	2550	3.41	475	1050	813	5.5	2890	8.2
28-31	--	--	3660	4.96	474	1370	1110	7.7	3880	8.2
FEB.										
01-28	--	--	2650	3.60	372	1090	862	4.6	2890	8.0
MAR.										
01-19	--	--	2690	3.66	719	1080	822	5.3	3010	8.1
20-21	--	--	1670	2.27	879	765	580	3.2	2020	7.8
22-28	--	--	3040	4.13	2120	1100	882	6.4	3450	8.0
29-31	--	--	2660	3.62	646	1000	784	5.7	3060	8.0
APR.										
01-07	--	--	2490	3.39	766	1000	775	5.1	2820	7.9
08-12	--	--	1030	1.40	620	650	425	1.0	1320	8.1
13-14	--	--	2100	2.86	782	890	644	3.7	2410	7.8
15-22	--	--	1780	2.42	644	760	520	3.8	2110	8.0
23...	--	--	1220	1.66	1970	582	354	2.3	1570	7.9
24-30	--	--	854	1.16	772	442	224	1.9	1140	8.0
MAY										
01-07	--	--	862	1.17	905	465	266	1.7	1150	7.9
08...	--	--	1880	2.56	5080	655	458	4.6	2140	7.9
09-10	--	--	897	1.22	1660	430	243	2.2	1200	7.9
11-17	--	--	614	.84	1230	322	140	1.6	836	8.0
18-22	--	--	621	.84	983	340	145	1.6	874	7.9
23-31	--	--	676	.92	1170	326	127	2.1	931	8.0
JUNE										
01-05	--	--	739	1.01	1620	400	186	1.8	1010	7.2
06-13	--	--	921	1.25	1180	460	228	2.2	1220	7.2
14-23	--	--	1370	1.67	1750	620	390	2.9	1680	7.3
24-25	--	--	1250	1.56	2940	615	429	2.3	1540	7.4
26-30	--	--	1170	1.44	1220	555	330	2.6	1490	7.5
JULY										
01-04	--	--	1340	1.60	796	590	418	2.9	1640	7.5
05-11	--	--	2230	2.72	825	880	672	4.6	2500	7.8
12-26	--	--	2240	2.71	647	905	702	4.3	2520	7.8
27-31	--	--	2510	3.03	590	990	781	4.7	2780	7.8
AUG.										
01-17	--	--	2900	3.43	532	1190	988	4.4	3100	7.8
18-20	--	--	3320	4.52	1910	1320	1100	5.3	3580	7.8
21-28	--	--	2800	3.81	711	1110	903	4.8	3050	7.8
29-31	--	--	1990	2.71	3550	915	729	3.2	2290	7.8
SEPT.										
01-09	--	--	2560	3.48	802	1060	870	5.5	2840	7.8
10-13	--	--	2460	3.35	1400	1140	958	4.1	2700	7.8
14-21	--	--	2760	3.75	656	1160	991	5.1	2970	7.9
22...	--	--	1840	2.48	790	800	610	4.2	2160	7.9
23-30	--	--	3110	4.23	504	1200	1010	6.4	3310	7.6
WTD. AVG. TIME	--	--	1600	2.09	779	698	497	--	1880	7.8
WTD. AVG. TONS PER DAY	--	--	2410	3.01	--	992	825	4.6	2680	7.9
	--	--	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES										
NOV.										
26...	.7	3.0	3590	4.53	359	1420	1186	5.5	3760	7.9
JAN.										
23...	1.3	3.4	2500	3.14	459	1060	807	4.1	2800	7.7
APR.										
09...	.4	1.7	2360	3.03	1500	965	717	4.8	2690	7.9
JULY										
11...	.4	.4	2450	3.24	681	991	784	4.9	2720	7.8
AUG.										
12...	--	--	2920	3.97	646	1180	1010	4.9	3120	7.8

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3170	3520	--	3510	2960	2680	2800	1350	--	1490	3020	2690
2	3170	3620	4450	3540	2960	2670	3010	1230	886	1560	--	2810
3	3700	--	4390	3130	3090	--	2850	1110	1020	1720	--	2760
4	3480	3540	3110	3530	3170	2990	2590	981	1090	1770	3220	--
5	3450	3350	4510	3560	3300	2910	2660	948	1040	2520	3200	2550
6	3400	--	4650	3180	3290	2990	--	975	1090	2100	3120	2550
7	3440	--	--	3170	3010	2960	3100	1420	1160	2390	3170	3020
8	3500	--	--	2850	2900	3000	1410	2140	1190	2650	--	3250
9	3510	4010	--	2850	2980	3150	1300	1370	--	2590	3210	3150
10	--	3990	3790	2960	2680	3260	1240	1040	--	2700	3230	2630
11	3360	4030	3730	3080	2750	3290	--	931	1190	2650	--	2610
12	3480	--	3510	3130	2710	3050	1400	868	1270	2330	--	2860
13	--	2570	3510	3230	2890	3200	2390	803	1370	2420	3210	--
14	--	2840	2480	3100	2900	3290	2430	801	--	2650	2950	3070
15	3660	3510	2900	--	2880	3020	1900	773	--	2600	2660	3650
16	3590	3860	3440	3060	2760	2970	2010	831	1960	2680	3240	3120
17	--	2480	3330	2690	2830	3010	2020	829	1800	2800	3250	3030
18	3740	3790	3730	2790	2860	3080	2160	899	1890	2630	3300	2680
19	3630	1990	3660	2640	2900	2630	2160	852	1940	2700	3940	--
20	--	2190	2930	2470	2880	2010	2360	851	1540	2700	3500	--
21	3520	2080	3710	2720	2900	2040	--	841	1440	2010	2930	--
22	3510	3630	3700	2770	2960	2990	--	894	1470	2140	--	2160
23	3380	2140	3850	2780	2960	2950	1570	957	1390	2400	--	3240
24	3350	1960	3880	2850	2940	3550	--	--	1240	--	2990	3280
25	3490	--	3640	3020	2970	3260	1000	--	1840	2540	2960	3250
26	3610	--	3880	3050	2940	4060	978	1010	1430	2750	3210	3330
27	--	2870	3120	2930	2910	3730	1040	1020	1760	2660	3090	--
28	3750	2440	3080	3860	2700	3450	1230	--	1370	2670	3190	3460
29	3590	3880	--	3800	--	3160	1230	884	1400	2820	1850	3390
30	3560	3900	3450	--	--	--	1330	782	1480	2790	2380	--
31	3520	--	3050	--	--	2970	--	--	--	3010	2630	--
AVG	3500	--	3600	3080	2930	3050	1930	1010	1410	2450	3060	--

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

	DAY																												AVER-
MONTH	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	AGE
OCTOBER..	13	14	13	14	11	12	13	14	15	--	13	12	--	--	12	7	--	8	9	--	12	6	6	6	6	12	--	13	5	7	7	10
NOVEMBER.	9	9	--	7	6	--	--	--	6	8	3	--	4	7	3	3	7	4	7	1	2	1	6	2	--	--	0	0	0	1	--	--
DECEMBER.	--	0	0	0	0	0	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	3	0	0	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	0
FEBRUARY.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3	2	--	--	--	0
MARCH....	3	4	--	2	2	3	1	3	2	2	2	6	6	7	6	7	11	12	9	4	6	11	7	6	3	9	12	11	13	--	14	6
APRIL....	13	14	13	16	13	--	9	9	14	17	--	18	17	15	12	16	18	17	14	15	--	--	20	--	13	14	11	14	17	13	--	14
MAY.....	13	12	11	13	14	12	15	11	13	16	18	16	17	16	14	17	15	17	17	19	22	16	18	--	--	19	20	--	19	20	--	16
JUNE.....	--	21	21	26	19	24	24	24	--	--	22	17	23	--	--	19	18	14	18	20	19	19	19	13	14	16	14	18	20	23	--	19
JULY.....	18	26	25	20	26	21	19	20	20	22	22	23	24	21	20	21	23	23	24	24	22	23	27	--	23	23	22	24	24	23	24	23
AUGUST...	23	--	--	26	23	22	22	--	23	26	--	--	20	20	22	21	21	21	19	20	19	--	--	--	29	29	23	24	23	20	18	19	--
SEPTEMBER	21	21	21	--	20	18	23	21	20	--	20	19	--	20	19	19	17	16	--	--	--	--	14	14	14	14	18	--	14	16	--	--	--

09330230 FREMONT RIVER NEAR CAINEVILLE, UTAH

LOCATION.--Lat 38°16'40", long 111°04'00", in NE¼NE¼ sec.20, T.29 S., R.8 E., Wayne County, at gaging station 2 miles downstream from Pleasant Creek, 4.5 miles southwest of Caineville, and 9.8 miles east of Fruita, Utah.

DRAINAGE AREA.--1,190 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: March to September 1967 (miscellaneous).
Water temperatures: March 1967 to September 1969.
Sediment records: March 1967 to September 1969.

EXTREMES.--1968-69:
Sediment concentrations: Maximum daily, 129,000 mg/l July 20; minimum daily, 39 mg/l June 11.
Sediment loads: Maximum daily, 105,000 tons Sept. 10; minimum daily, 3.6 tons June 11.

Period of record:
Water temperatures (1967-68): Maximum, 31.0°C Aug. 12, 1967; minimum, freezing point on many days during December 1967 and January 1968.
Sediment concentrations: Maximum daily, 129,000 mg/l July 20, 1969; minimum daily, 11 mg/l July 23, 1968.
Sediment loads: Maximum daily, 105,000 tons Sept. 10, 1969; minimum daily, 1 ton Apr. 17-21, 1967, and on several days in July 1968.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--
DECEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APRIL....	--	13	10	--	16	13	13	10	19	15	9	12	16	10	9	--	14	13	--	16	19	16	21	11	11	8	--	7	12	11	--	13
MAY.....	15	13	--	12	13	15	--	18	21	18	21	13	17	21	20	17	25	19	10	11	14	18	15	9	10	10	21	24	18	21	15	16
JUNE.....	23	--	16	12	20	27	16	--	17	17	27	--	15	20	19	24	16	15	22	17	16	26	22	16	--	23	25	13	29	16	--	20
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	--	--	21	--	--	--	--	--	--	29	--	--	--	--	--
AUGUST...	--	--	--	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23	--
SEPTEMBER	--	--	--	--	--	--	--	--	20	--	--	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	19	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 14, 1968	1300	16	47	34	4.3	--	--	--	--	--	--	--	--	--	--	--	
NOV 18.....	1115	4	80	271	59	11	13	--	--	--	35	66	96	100	--	--	VPWC
DEC 23.....	1355	0	54	256	37	9	13	--	--	--	40	70	97	100	--	--	VPWC
JAN 23, 1969	1150	4	98	461	122	8	11	--	22	--	37	67	94	100	--	--	VPWC
JAN 27.....	1035	6	123	1720	571	15	19	--	--	--	48	77	98	100	--	--	VPWC
FEB 18.....	1245	6	85	391	90	10	15	--	--	--	49	75	98	100	--	--	VPWC
MAR 17.....	1430	11	92	819	203	47	65	--	84	--	89	96	100	--	--	--	VPWC
APR 22.....	1700	22	46	277	34	8	9	--	--	--	35	90	100	--	--	--	VPWC
MAY 21.....	1430	23	84	4500	1020	7	9	--	14	--	31	79	99	100	--	--	VPWC
JUN 17.....	1250	14	243	126000	82700	20	28	--	42	--	77	97	100	--	--	--	VPWC
JUL 17.....	1345	28	28	553	42	4	6	--	13	--	57	93	99	100	--	--	VPWC
JUL 20.....	0820	21	121	232000	75800	23	29	--	56	--	78	94	100	--	--	--	VPWC
AUG 12.....	1420	20	84	13700	3110	48	69	--	92	--	95	97	100	--	--	--	VPWC
SEP 9.....	1445	23	65	9670	1700	54	67	--	77	--	89	98	100	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHOD OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
FEB 18, 1969	1245	6		85	1	4	15	26	34	37	43	53	65	95	--	SV
APR 22.....	1700	22		46	--	3	9	15	19	22	28	39	59	97	--	SV
JUL 17.....	1345	28		28	2	5	10	15	19	22	30	44	68	100	--	SV
SEP 9.....	1445	23		65	--	4	13	20	24	26	31	42	64	94	--	SV

09330230 FREMONT RIVER NEAR CAINEVILLE, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	51	185	25	69	363	68	50	539	73
2	49	140	18	75	599	121	50	555	75
3	49	85	11	75	516	104	62	296	50
4	52	122	17	77	432	90	65	885	155
5	49	134	18	69	365	68	60	756	122
6	51	146	20	71	298	57	55	627	93
7	49	106	14	71	295	57	55	1130	168
8	49	110	15	71	196	38	67	869	157
9	49	114	15	72	288	56	71	608	117
10	51	96	13	72	267	52	75	114	23
11	51	79	11	71	193	37	80	551	119
12	49	78	10	74	224	45	74	295	59
13	48	52	6.7	79	291	62	67	498	90
14	48	46	6.0	79	292	62	64	701	121
15	51	67	9.2	80	292	63	63	903	154
16	57	293	45	80	313	68	62	1110	186
17	54	170	25	79	334	71	62	198	33
18	52	131	18	80	296	64	62	286	48
19	57	171	26	79	264	56	61	373	61
20	58	146	23	77	302	63	61	379	62
21	57	120	18	74	340	68	60	337	55
22	56	100	15	69	392	73	50	295	40
23	54	116	17	65	376	66	54	258	38
24	54	96	14	61	260	43	57	113	17
25	54	92	13	58	376	59	60	298	48
26	54	88	13	58	268	42	70	482	91
27	56	150	23	58	214	34	80	331	71
28	58	129	20	61	295	49	90	325	79
29	61	108	18	61	376	62	95	374	96
30	62	75	13	58	457	72	94	252	64
31	58	127	20	--	--	--	92	289	72
TOTAL	1648	--	529.9	2123	--	1870	2068	--	2637

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	92	326	81	66	1680	299	90	279	68
2	93	382	96	75	656	133	87	268	63
3	94	437	111	84	252	57	88	258	61
4	95	1300	333	87	345	81	92	363	90
5	98	2460	651	75	609	123	100	468	126
6	100	4730	1280	85	457	105	92	311	77
7	96	2930	759	94	347	88	88	429	102
8	90	1130	275	84	398	90	85	506	116
9	85	441	101	88	789	187	87	583	137
10	75	1250	253	90	730	177	92	660	164
11	70	880	166	90	671	163	94	275	70
12	72	1770	344	90	450	109	85	290	67
13	76	637	131	92	427	106	92	674	167
14	95	630	162	88	358	85	88	423	100
15	109	623	183	90	371	90	87	386	91
16	105	523	148	88	322	76	90	776	189
17	100	423	114	87	272	64	98	874	231
18	98	625	165	87	378	89	101	872	238
19	103	848	236	90	352	86	105	1370	388
20	111	944	283	87	338	79	103	1080	300
21	115	1040	323	87	324	76	100	788	213
22	111	848	254	88	462	110	101	497	136
23	101	522	142	87	380	89	105	727	206
24	85	849	195	87	299	70	94	615	156
25	96	1140	295	88	360	86	90	719	175
26	107	1430	413	94	460	117	96	485	126
27	121	1720	562	90	769	187	101	694	189
28	101	643	175	87	354	83	105	460	130
29	90	859	209	--	--	--	105	643	182
30	74	296	59	--	--	--	101	676	184
31	70	988	187	--	--	--	100	635	171
TOTAL	2928	--	8686	2425	--	3105	2942	--	4713

09330230 FREMONT RIVER NEAR CAINEVILLE, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	100	582	157	33	291	26	54	658	96
2	92	528	131	33	117	10	53	596	85
3	90	406	99	34	118	11	48	444	58
4	87	344	81	37	119	12	42	315	36
5	82	281	62	39	252	27	40	116	13
6	82	320	71	42	558	63	40	166	18
7	79	231	49	53	738	106	40	177	19
8	77	187	39	54	918	134	39	128	13
9	79	173	37	48	3250	421	38	79	8.1
10	72	178	35	41	366	41	34	52	4.8
11	68	159	29	42	276	31	34	39	3.6
12	67	112	20	41	310	34	35	48	4.5
13	65	124	22	43	465	54	36	60	5.8
14	64	146	25	42	293	34	35	84	7.9
15	62	175	29	43	684	79	41	276	31
16	62	170	28	47	309	39	48	792	103
17	62	164	27	47	429	54	185	78300	43500
18	62	157	26	49	1000	132	60	4800	778
19	59	132	21	67	5790	1050	35	1400	132
20	56	107	16	80	6880	1490	32	400	35
21	48	196	25	87	5100	1200	30	298	24
22	48	371	48	75	3400	688	29	144	11
23	45	294	36	68	3750	688	28	140	11
24	42	271	31	71	2200	422	63	26500	5950
25	41	273	30	75	2600	526	42	2100	238
26	37	199	20	85	3920	900	34	1000	92
27	36	201	20	88	3600	855	30	238	19
28	37	203	20	79	2500	533	26	176	12
29	36	145	14	74	2120	424	24	97	6.3
30	36	232	23	64	1610	278	24	115	7.5
31	--	--	--	65	1200	211	--	--	--
TOTAL	1873	--	1271	1746	--	10573	1299	--	51322.5

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	26	132	9.3	43	2150	249	46	1000	124
2	25	113	7.6	107	42000	26900	46	900	112
3	24	96	6.2	45	4400	535	45	800	97
4	23	81	5.0	54	4120	600	45	700	85
5	24	96	6.2	56	4100	620	45	600	73
6	27	151	11	58	4470	700	45	500	61
7	28	172	13	49	3020	399	45	400	49
8	28	172	13	48	2780	360	109	48000	35300
9	28	172	13	48	2780	360	77	13900	2900
10	30	234	19	46	2540	315	144	83300	105000
11	28	172	13	46	2540	315	100	38000	10300
12	28	1950	469	80	29500	7260	60	2470	400
13	41	3850	536	65	13000	2280	50	1410	190
14	32	995	86	58	2270	355	45	530	64
15	30	753	61	53	1640	235	45	510	62
16	29	651	51	52	1570	220	45	490	59
17	28	556	42	58	2270	355	45	470	57
18	56	6970	1420	53	1600	229	45	450	55
19	43	20900	11400	53	1500	215	45	430	52
20	99	129000	48100	53	1400	200	45	410	50
21	32	6200	536	53	1300	186	45	390	47
22	31	848	71	49	1000	132	45	370	45
23	31	848	71	47	800	102	45	350	42
24	32	972	84	47	700	89	45	330	40
25	35	1430	135	47	600	76	45	310	38
26	36	1580	154	47	500	63	45	290	35
27	36	1580	154	47	400	51	45	270	33
28	34	1250	115	59	3990	1100	45	250	30
29	39	1710	180	127	52100	62100	45	220	27
30	41	1940	215	50	25000	3380	45	190	23
31	41	2060	244	47	1100	140	--	--	--
TOTAL	1065	--	64240.3	1745	--	110121	1622	--	155450

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 23484
TOTAL LOAD FOR YEAR (TONS) 414518.7

09346400 SAN JUAN RIVER NEAR CARRACAS, COLO.

LOCATION.--Lat 37°00'47", long 107°18'39", in SE¼SW¼ sec.17, T.32 N., R.4 W., Archuleta County, at gaging station just upstream from flow line of Navajo Reservoir, 3 miles northwest of Carracas, 7.2 miles upstream from Piedra River, and at mile 178.8.

DRAINAGE AREA.--1,230 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July to September 1969.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, JULY TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
JULY											
08...	0800	852	17	17	3.1	6.7	1.3	60	0	18	.8
AUG.											
04...	1015	800	18	22	4.6	9.7	2.2	82	0	30	1.2
SEP.											
09...	1535	460	18	27	9.2	16	3.0	112	0	54	1.5

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
JULY										
08...	--	.1	75	94	50	1	.4	140	7.3	15.0
AUG.										
04...	--	.6	122	128	73	6	.5	180	8.1	19.0
SEP.										
09...	.3	.1	180	184	101	9	.7	314	7.8	19.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC COND-UCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY										
08...	0800	852	135	--	15.0	6.4	.6	<10	A 400	<10
AUG.										
04...	1015	800	180	8.2	19.0	6.2	--	<10	5500	100
SEP.										
09...	1535	460	242	8.2	19.0	5.5	--	<10	3000	<10

A ANALYZED BY U.S. GEOLOGICAL SURVEY.

09349800 PIEDRA RIVER NEAR ARBOLES, COLO.

LOCATION.--Lat 37°05'17", long 107°23'52", in NE¼SW¼ sec.21, T.33 N., R.5 W., Archuleta County, at gaging station 3 miles downstream from Ignacio Creek, 5.2 miles northeast of Arboles Post Office, and 8 miles upstream from mouth.

DRAINAGE AREA.--629 sq mi.

PERIOD OF RECORD.--Chemical analyses: July to September 1969.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, JULY TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SC4) (MG/L)	CHLO-RIDE (CL) (MG/L)
JULY											
08...	1200	322	14	25	3.3	7.9	1.6	76	0	29	1.2
AUG.											
04...	1130	300	15	28	4.0	8.4	2.1	87	0	30	1.2
SEP.											
09...	1345	320	14	29	3.8	7.2	1.6	87	0	30	1.6

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
JULY										
08...	--	.0	106	119	73	10	.4	187	7.5	15.0
AUG.										
04...	--	.1	122	132	86	14	.4	201	8.0	20.0
SEP.										
09...	.3	.1	140	131	85	14	.3	214	7.4	17.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC COND-UCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY										
08...	1200	322	185	--	15.0	8.0	3.3	<10	A 91	<10
AUG.										
04...	1130	300	210	7.9	20.0	6.7	--	<10	100	<10
SEP.										
09...	1345	320	190	8.2	17.0	8.1	--	<10	100	<10

A ANALYZED BY U.S. GEOLOGICAL SURVEY.

09352900 VALLECITO CREEK NEAR BAYFIELD, COLO.
(Hydrologic bench-mark station)

LOCATION.--Lat 37°28'39", long 107°32'35", in NW¼ sec.16, T.37 N., R.6 W. (projected), La Plata County, temperature recorder at gaging station, 60 ft upstream from Fall Creek, 0.8 mile downstream from Bear Creek, 6.7 miles north of Vallecito Dam, and 18 miles north of Bayfield.

DRAINAGE AREA.--72.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1968.
Water temperatures: November 1962 to September 1969.

EXTREMES.--1966-69:
Water temperatures: Maximum, 16.0°C Aug. 8-11; minimum, freezing point on many days during November to March.

Period of record:
Water temperatures: Maximum, 17.0°C July 21, 1963; minimum, freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT		NOV		DEC		JAN		FEB		MAR	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	08.0	07.0	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0
2	08.0	06.0	03.0	02.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0
3	07.0	06.0	02.0	02.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0
4	07.0	07.0	02.0	02.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0
5	07.0	05.0	02.0	02.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0
6	07.0	06.0	02.0	02.0	01.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
7	07.0	06.0	02.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
8	06.0	06.0	01.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
9	06.0	04.0	01.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
10	06.0	04.0	01.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
11	06.0	06.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
12	06.0	06.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
13	06.0	05.0	01.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
14	06.0	05.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
15	06.0	06.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
16	06.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
17	04.0	02.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
18	02.0	01.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
19	03.0	02.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	02.0	01.0
20	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	02.0	01.0
21	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
22	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
23	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
24	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
25	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
26	04.0	03.0	.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0
27	04.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	02.0	01.0
28	03.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	02.0	01.0
29	03.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	--	--	02.0	02.0
30	03.0	03.0	00.0	00.0	00.0	00.0	00.0	00.0	--	--	02.0	01.0
31	04.0	03.0	--	--	00.0	00.0	00.0	00.0	--	--	01.0	01.0
AVG	05.0	04.0	01.0	01.0	00.0	00.0	00.0	00.0	00.0	00.0	01.0	01.0

DAY	APR		MAY		JUN		JUL		AUG		SEPT	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	02.0	01.0	07.0	03.0	08.0	03.0	11.0	07.0	13.0	11.0	11.0	11.0
2	02.0	01.0	07.0	03.0	07.0	04.0	12.0	08.0	13.0	11.0	11.0	09.0
3	02.0	02.0	05.0	03.0	08.0	04.0	12.0	08.0	13.0	11.0	11.0	09.0
4	03.0	02.0	04.0	04.0	08.0	04.0	10.0	08.0	13.0	11.0	11.0	10.0
5	02.0	02.0	05.0	03.0	08.0	06.0	11.0	08.0	13.0	11.0	11.0	09.0
6	02.0	01.0	04.0	04.0	08.0	07.0	11.0	08.0	13.0	11.0	12.0	09.0
7	02.0	01.0	05.0	03.0	07.0	06.0	11.0	07.0	14.0	10.0	12.0	10.0
8	03.0	01.0	07.0	03.0	10.0	07.0	11.0	07.0	16.0	12.0	11.0	10.0
9	03.0	02.0	08.0	04.0	10.0	07.0	09.0	08.0	16.0	12.0	10.0	09.0
10	03.0	02.0	08.0	04.0	08.0	07.0	11.0	07.0	16.0	12.0	11.0	08.0
11	03.0	02.0	06.0	04.0	07.0	06.0	11.0	08.0	16.0	12.0	10.0	09.0
12	03.0	02.0	06.0	04.0	08.0	06.0	10.0	08.0	15.0	12.0	10.0	09.0
13	04.0	02.0	06.0	04.0	09.0	07.0	11.0	08.0	13.0	12.0	10.0	09.0
14	03.0	02.0	06.0	04.0	08.0	06.0	12.0	08.0	13.0	12.0	09.0	08.0
15	03.0	03.0	07.0	04.0	09.0	07.0	11.0	08.0	14.0	11.0	09.0	08.0
16	03.0	02.0	08.0	03.0	09.0	08.0	11.0	09.0	14.0	11.0	09.0	08.0
17	04.0	02.0	08.0	03.0	08.0	07.0	10.0	09.0	13.0	11.0	09.0	08.0
18	03.0	02.0	07.0	03.0	08.0	06.0	11.0	09.0	14.0	11.0	09.0	07.0
19	04.0	02.0	07.0	03.0	09.0	07.0	10.0	09.0	12.0	11.0	09.0	08.0
20	05.0	02.0	07.0	04.0	11.0	07.0	10.0	09.0	13.0	11.0	08.0	08.0
21	05.0	02.0	07.0	04.0	11.0	07.0	11.0	09.0	13.0	10.0	08.0	08.0
22	04.0	02.0	07.0	04.0	10.0	07.0	12.0	08.0	13.0	11.0	08.0	07.0
23	05.0	02.0	06.0	04.0	09.0	07.0	11.0	09.0	12.0	11.0	08.0	06.0
24	06.0	03.0	06.0	04.0	09.0	07.0	11.0	09.0	12.0	10.0	08.0	06.0
25	06.0	03.0	08.0	04.0	07.0	06.0	12.0	09.0	13.0	11.0	08.0	07.0
26	04.0	03.0	08.0	04.0	09.0	07.0	12.0	09.0	13.0	11.0	08.0	07.0
27	06.0	03.0	08.0	04.0	11.0	06.0	13.0	09.0	13.0	11.0	08.0	07.0
28	06.0	03.0	07.0	04.0	12.0	07.0	13.0	11.0	14.0	11.0	08.0	08.0
29	07.0	03.0	07.0	04.0	11.0	07.0	14.0	10.0	14.0	12.0	09.0	07.0
30	06.0	03.0	08.0	04.0	11.0	07.0	12.0	11.0	12.0	11.0	09.0	08.0
31	--	--	08.0	04.0	--	--	13.0	10.0	12.0	10.0	--	--
AVG	04.0	02.0	07.0	04.0	09.0	06.0	11.0	09.0	13.0	11.0	10.0	08.0

09354500 LOS PINOS RIVER AT LA BOCA, COLO.

LOCATION.--Lat 37°00'40", long 107°35'55", in SE¼ sec.15, T.32 N., R.7 W., La Plata County, at gaging station on downstream end of right abutment of the Denver and Rio Grand Western Railroad Co. bridge at southeast edge of La Boca, 0.1 mile upstream from Spring Creek and 13 miles upstream from mouth.

DRAINAGE AREA.--510 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July to September 1969.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, JULY TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
JULY											
08...	1600	155	8.3	30	4.9	13	1.9	130	0	15	2.0
AUG.											
04...	1300	415	8.0	21	3.5	9.6	1.9	92	0	12	2.9
SEP.											
11...	1100	278	7.6	24	3.9	9.3	1.8	100	0	12	6.8

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
JULY										
08...	--	1.3	131	140	91	0	.6	234	7.6	18.0
AUG.										
04...	--	.9	96	105	66	0	.5	169	7.9	21.0
SEP.										
11...	.3	.1	120	115	78	0	.5	187	7.6	16.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC CONDUCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY										
08...	1600	155	235	--	18.0	7.8	1.8	10	A 700	<10
AUG.										
04...	1300	415	180	7.7	21.0	6.6	--	<10	8500	120
SEP.										
11...	1100	278	180	8.4	16.0	8.5	--	<10	2200	<10

A ANALYZED BY U.S. GEOLOGICAL SURVEY.

09355500 SAN JUAN RIVER NEAR ARCHULETA, N. MEX.
(Irrigation network station)

LOCATION.--Lat 36°48'10", long 107°41'55", in N½ sec.20, T.30 N., R.8 W., San Juan County, at gaging station 0.5 mile upstream from Gobernador Canyon, 0.8 mile northeast of Archuleta, 7.2 miles downstream from Navajo Dam, and at river mile 136.8.

DRAINAGE AREA.--3,260 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: December 1954 to December 1968 (daily), January to September 1969 (monthly).
Water temperatures: December 1954 to January 1969.
Sediment records: December 1954 to September 1965.

EXTREMES.--1954-68:
Dissolved solids (1956-68): Maximum, 472 mg/l Jan. 5, 1960; minimum, 85 mg/l June 14 to July 11, 1957.
Hardness (1956-68): Maximum, 250 mg/l Sept. 19, 1961; minimum, 40 mg/l July 1-11, 1957.
Specific conductance: Maximum daily, 685 micromhos Jan. 5, 1960; minimum daily, 101 micromhos July 2, 1957.
Water temperatures: Maximum, 26.0°C Aug. 19, 1955; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)
OCT.								
01-14	--	A 790	13	--	32	5.4	--	18
15-31	--	A 394	13	30	33	5.0	21	--
NOV.								
01-26	--	A 383	13	--	32	5.6	--	20
27-30	--	A 382	14	--	32	3.4	--	20
DEC.								
01-31	--	A 400	13	--	32	3.9	--	19
JAN.								
06...	1500	401	12	--	32	4.4	--	17
FEB.								
03...	1230	2020	12	--	31	3.8	--	22
MAR.								
03...	1140	2000	11	--	29	5.2	--	14
APR.								
02...	0900	387	11	20	33	5.7	19	--
MAY								
02...	0940	2010	13	--	31	9.4	--	11
JUNE								
03...	1835	1990	13	--	32	7.1	--	11
JULY								
09...	1200	1980	12	50	30	5.8	15	--
AUG.								
04...	1545	1200	12	--	30	13	--	2.5
SEP.								
11...	1330	1300	11	--	29	8.1	--	11

DATE	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT.									
01-14	--	98	0	54	2.1	.3	.5	--	--
15-31	2.6	98	0	62	3.7	.2	.6	90	194
NOV.									
01-26	--	98	0	58	2.6	.3	.5	--	--
27-30	--	98	0	51	2.4	.2	.5	--	--
DEC.									
01-31	--	99	0	50	2.2	.2	.3	--	--
JAN.									
06...	--	98	0	50	1.4	.2	.1	--	--
FEB.									
03...	--	114	0	41	2.6	.2	.2	--	--
MAR.									
03...	--	94	0	42	2.2	.3	.7	--	--
APR.									
02...	2.1	102	0	55	2.2	.3	.5	60	181
MAY									
02...	--	104	0	47	2.7	.3	.5	--	--
JUNE									
03...	--	98	0	47	2.1	.2	.9	--	--
JULY									
09...	2.1	97	0	48	2.0	.3	.5	80	165
AUG.									
04...	--	95	0	45	2.1	.3	.7	--	--
SEP.									
11...	--	81	7	46	1.8	.3	.7	--	--

A DAILY MEAN DISCHARGE.

09355500 SAN JUAN RIVER NEAR ARCHULETA, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.								
01-14	173	102	22	.8	279	7.5	--	--
15-31	189	103	22	.9	304	7.6	--	3
NOV.								
01-26	180	103	22	.8	289	7.5	--	--
27-30	172	94	14	.9	264	7.7	--	--
DEC.								
01-31	170	96	15	.8	268	7.7	--	--
JAN.								
06...	165	98	18	.7	265	7.5	6.0	--
FEB.								
03...	169	93	0	1.0	245	8.1	5.0	--
MAR.								
03...	150	94	17	.6	248	7.2	3.0	--
APR.								
02...	179	106	22	.8	288	7.4	6.0	3
MAY								
02...	166	116	31	.4	267	7.3	8.0	--
JUNE								
03...	161	109	28	.5	260	7.5	10.0	--
JULY								
09...	165	99	20	.7	261	7.5	9.0	3
AUG.								
04...	157	128	50	.1	271	7.6	5.0	--
SEP.								
11...	155	106	28	.5	246	8.5	12.0	--

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	300	264	--	--	--	--	--	--	--	--	--
2	293	293	264	--	--	--	288	267	--	--	--	--
3	284	301	260	--	245	248	--	--	260	--	--	--
4	282	309	264	--	--	--	--	--	--	--	271	--
5	282	312	269	--	--	--	--	--	--	--	--	--
6	277	284	264	265	--	--	--	--	--	--	--	--
7	279	279	262	--	--	--	--	--	--	--	--	--
8	279	279	267	--	--	--	--	--	--	--	--	--
9	277	279	265	--	--	--	--	--	--	261	--	--
10	276	284	264	--	--	--	--	--	--	--	--	--
11	279	283	262	--	--	--	--	--	--	--	--	246
12	282	284	275	--	--	--	--	--	--	--	--	--
13	277	282	269	--	--	--	--	--	--	--	--	--
14	293	293	271	--	--	--	--	--	--	--	--	--
15	314	296	271	--	--	--	--	--	--	--	--	--
16	309	296	267	--	--	--	--	--	--	--	--	--
17	301	306	267	--	--	--	--	--	--	--	--	--
18	293	296	267	--	--	--	--	--	--	--	--	--
19	312	289	265	--	--	--	--	--	--	--	--	--
20	293	292	266	--	--	--	--	--	--	--	--	--
21	306	283	266	--	--	--	--	--	--	--	--	--
22	312	286	268	--	--	--	--	--	--	--	--	--
23	312	286	265	--	--	--	--	--	--	--	--	--
24	293	286	264	--	--	--	--	--	--	--	--	--
25	312	293	265	--	--	--	--	--	--	--	--	--
26	309	285	267	--	--	--	--	--	--	--	--	--
27	293	266	265	--	--	--	--	--	--	--	--	--
28	289	261	265	--	--	--	--	--	--	--	--	--
29	303	264	265	--	--	--	--	--	--	--	--	--
30	292	264	268	--	--	--	--	--	--	--	--	--
31	308	--	267	--	--	--	--	--	--	--	--	--
AVG	293	287	266	--	--	--	--	--	--	--	--	--

09355500 SAN JUAN RIVER NEAR ARCHULETA, N. MEX.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	10.0	9.0	--	--	--	--	--	--	--	--	--
2	13.0	12.0	8.0	--	--	--	6.0	8.0	--	--	--	--
3	9.0	12.0	7.0	--	5.0	3.0	--	--	10.0	--	--	--
4	9.0	11.0	5.0	--	--	--	--	--	--	--	7.6	--
5	10.0	11.0	8.0	--	--	--	--	--	--	--	--	--
6	9.0	9.0	5.0	6.0	--	--	--	--	--	--	--	--
7	9.0	9.0	8.0	--	--	--	--	--	--	--	--	--
8	10.0	11.0	5.0	--	--	--	--	--	--	--	--	--
9	10.0	11.0	5.0	--	--	--	--	--	--	9.0	--	--
10	13.0	8.0	8.0	--	--	--	--	--	--	--	--	--
11	13.0	9.0	8.0	--	--	--	--	--	--	--	--	12.0
12	13.0	9.0	5.0	--	--	--	--	--	--	--	--	--
13	13.0	9.0	5.0	--	--	--	--	--	--	--	--	--
14	9.0	9.0	5.0	--	--	--	--	--	--	--	--	--
15	12.0	9.0	5.0	--	--	--	--	--	--	--	--	--
16	9.0	8.0	5.0	--	--	--	--	--	--	--	--	--
17	8.0	7.0	5.0	--	--	--	--	--	--	--	--	--
18	8.0	7.0	5.0	--	--	--	--	--	--	--	--	--
19	11.0	9.0	5.0	--	--	--	--	--	--	--	--	--
20	13.0	10.0	5.0	--	--	--	--	--	--	--	--	--
21	13.0	8.0	5.0	--	--	--	--	--	--	--	--	--
22	12.0	5.0	5.0	--	--	--	--	--	--	--	--	--
23	10.0	5.0	5.0	--	--	--	--	--	--	--	--	--
24	11.0	5.0	5.0	--	--	--	--	--	--	--	--	--
25	12.0	5.0	5.0	--	--	--	--	--	--	--	--	--
26	12.0	5.0	5.0	--	--	--	--	--	--	--	--	--
27	10.0	6.0	5.0	--	--	--	--	--	--	--	--	--
28	10.0	8.0	5.0	--	--	--	--	--	--	--	--	--
29	12.0	8.0	5.0	--	--	--	--	--	--	--	--	--
30	12.0	8.0	5.0	--	--	--	--	--	--	--	--	--
31	12.0	--	5.0	--	--	--	--	--	--	--	--	--
AVG	10.9	8.4	5.6	--	--	--	--	--	--	--	--	--

09357300 SAN JUAN RIVER ABOVE ANIMAS RIVER, AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'10", long 108°12'45", in NE¼SE¼NE¼ sec.20, T.29 N., R.13 W., San Juan County, 100 ft upstream from mouth of Animas River at south edge of Farmington and at river mile 99.

DRAINAGE AREA.--5,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: March 1963 to September 1969.

REMARKS.--Discharges are estimated from the streamflow records of the San Juan River at Farmington (station 09365000) and Animas River at Farmington (station 09364500).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
25...	1030	362	16	--	70	7.2	52	--	140	0	194	3.6
DEC.												
03...	0800	284	13	--	62	8.6	50	--	140	0	180	3.6
JAN.												
06...	1645	505	13	--	55	5.4	41	--	121	0	146	3.9
FEB.												
03...	1830	2090	12	--	44	5.6	24	--	132	0	72	2.9
MAR.												
03...	1730	1950	12	--	36	5.4	22	--	107	0	66	3.0
APR.												
02...	1320	310	11	--	56	7.4	48	--	128	0	160	5.2
MAY												
02...	0845	1940	12	--	36	5.4	24	--	105	0	70	3.3
JUNE												
04...	0845	1970	14	--	36	4.9	22	--	103	0	68	5.0
JULY												
10...	1110	1640	11	--	38	4.9	21	--	109	0	71	2.6
AUG.												
04...	2015	870	11	--	48	4.1	34	--	116	0	108	3.2
SEP.												
10...	1730	1145	10	10	41	9.4	34	2.7	112	8	106	2.4

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.												
25...	--	1.3	--	--	413	204	90	1.6	633	7.2	8.0	--
DEC.												
03...	--	1.4	--	--	388	190	76	1.6	597	7.3	.0	--
JAN.												
06...	--	1.2	--	--	326	159	60	1.4	496	7.3	3.0	--
FEB.												
03...	--	.2	--	--	226	133	25	.9	366	7.1	2.0	--
MAR.												
03...	--	.0	--	--	197	112	24	.9	323	7.2	2.0	--
APR.												
02...	--	.2	--	--	351	170	65	1.6	550	7.1	--	--
MAY												
02...	--	.0	--	--	203	112	26	1.0	331	7.2	9.0	--
JUNE												
04...	--	.5	--	--	201	110	26	.9	316	7.9	13.0	--
JULY												
10...	--	.3	--	--	203	115	26	.8	328	7.4	17.0	--
AUG.												
04...	--	1.0	--	--	266	137	42	1.3	426	7.8	24.0	--
SEP.												
10...	.4	2.2	40	252	272	141	36	1.2	415	8.5	21.0	3

09363500 ANIMAS RIVER NEAR CEDAR HILL, N. MEX.

LOCATION.--Lat 37°02'15", long 107°52'25", in sec.7, T.32 N., R.9 W., La Plata County, at gaging station 0.8 mile downstream from Florida River, 2.5 miles upstream from Colorado-New Mexico State line, and 8.5 miles north of Cedar Hill.

DRAINAGE AREA.--1,090 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July to September 1969.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, JULY TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
JULY											
09...	0800	1580	5.7	36	4.5	7.2	1.2	79	0	50	5.2
AUG.											
04...	1430	720	8.4	53	9.2	15	3.0	134	0	78	10
SEP.											
11...	0920	696	9.1	55	8.0	14	2.5	134	0	79	8.1

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONO-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
JULY										
09...	--	.5	154	150	106	42	.3	252	7.9	16.0
AUG.										
04...	--	.9	252	244	170	60	.5	402	8.2	23.0
SEP.										
11...	.5	.6	258	243	170	60	.5	403	7.5	14.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC CONO-UCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY										
09...	0800	1580	238	--	16.0	9.4	1.0	<10	A 15	<10
AUG.										
04...	1430	720	400	8.3	23.0	7.0	--	<10	3500	10
SEP.										
11...	0920	696	407	8.1	14.0	8.2	--	<10	600	<10

A ANALYZED BY U.S. GEOLOGICAL SURVEY.

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'13", long 108°12'07", in SE¼ sec.16, T.29 N., R.13 W., San Juan County, at gaging station at bridge on former State Highway 17, 0.6 mile downstream from bridge on State Highway 17 and 1.3 miles upstream from mouth.

DRAINAGE AREA.--1,360 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: June 1940 to September 1969.
Water temperatures: December 1950 to September 1969.
Sediment records: December 1950 to September 1969.

EXTREMES.--1968-69:
Dissolved solids: Maximum, 610 mg/l Nov. 2; minimum, 127 mg/l May 19-31.
Hardness: Maximum, 360 mg/l Oct. 1-3; minimum, 99 mg/l May 19-31.
Specific conductance: Maximum daily, 983 micromhos Oct. 4; minimum daily, 211 micromhos May 29.
Water temperatures: Maximum, 28.0°C Aug. 10, 19; minimum, freezing point on several days during December and January.
Sediment concentrations: Maximum daily, 13,400 mg/l Aug. 15; minimum daily, 8 mg/l Jan. 13.
Sediment loads: Maximum daily, 31,900 tons Sept. 21; minimum daily, 5.1 tons Nov. 12.

Period of record:
Dissolved solids (1940-49, 1952-54, 1956-69): Maximum, 1,500 mg/l Aug. 19, 1949; minimum, 111 mg/l June 11-17, 19-20, 1944.
Hardness (1956-69): Maximum, 608 mg/l July 30, 1961; minimum, 80 mg/l July 1-7, 1957.
Specific conductance (1941-69): Maximum daily, 1,980 micromhos Aug. 19, 1944; minimum daily, 170 micromhos June 27, 1944.
Water temperatures: Maximum, 32.0°C Aug. 26, 1966; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 36,800 mg/l July 23, 1954; minimum daily, 1 mg/l on several days during September 1956, 1958.
Sediment loads: Maximum daily, 337,000 tons July 23, 1954; minimum daily, less than 0.50 ton on many days during 1955-57, 1959, 1960, and 1963.

REMARKS.--Additional chemical analysis performed in conjunction with sediment particle-size analysis.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	PO-TAS-SIUM (K) (MG/L)
OCT.								
01-03	146	9.6	--	116	17	--	54	--
04-31	215	10	0	110	13	47	--	4.3
NOV.								
01...	230	7.6	--	104	11	--	40	--
02...	265	11	--	119	13	--	68	--
03-17	228	9.2	--	114	16	--	42	--
18-30	254	8.8	--	110	9.8	--	43	--
DEC.								
01-31	247	12	--	112	15	--	42	--
JAN.								
01-28	265	10	10	100	16	43	--	3.6
29-31	235	11	--	115	13	--	54	--
FEB.								
01-28	246	10	--	110	12	--	44	--
MAR.								
01-18	245	9.5	--	105	12	--	42	--
19-28	497	10	--	85	12	--	36	--
29-31	890	11	--	85	10	--	29	--
APR.								
01-07	1130	9.6	--	72	8.6	--	22	--
08-21	1210	7.9	--	60	8.6	--	14	--
22-30	1820	6.6	40	46	6.6	7.4	--	1.3
MAY								
01-18	1870	6.4	--	45	5.5	--	9.9	--
19-31	3450	5.9	--	35	2.8	--	4.4	--
JUNE								
01-11	2590	6.1	--	37	4.3	--	7.6	--
12-16	1690	6.2	--	46	5.6	--	12	--
17-25	2030	5.9	--	44	5.4	--	4.4	--
26-30	1750	6.0	--	43	5.5	--	10	--
JULY								
01-07	1960	4.9	--	38	3.4	--	8.3	--
08-19	1390	6.5	10	50	5.4	6.6	--	2.0
20-23	2040	6.4	--	40	5.4	--	7.4	--
24-27	1250	7.1	--	50	5.6	--	12	--
28-31	792	7.9	--	61	7.5	--	20	--
AUG.								
01-06	715	11	--	74	11	--	25	--
07-31	352	11	--	85	10	--	32	--
SEP.								
01-09	322	13	--	89	55	--	43	--
10-22	629	11	--	72	30	--	25	--
23-30	672	15	--	64	17	--	16	--
WTD AVG.	--	7.5	--	57	8.0	--	15	--
TIME WTD. AVG.	845	9.3	--	82	12	--	28	--
TONS PER DAY	--	17	--	129	18	--	37	--

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)
OCT.									
01-03	220	0	255	21	.5	.3	--	--	581
04-31	214	0	219	20	.5	.2	170	555	529
NOV.									
01...	200	0	190	20	.5	.4	--	--	472
02...	228	0	258	28	.5	.9	--	--	610
03-17	204	0	230	23	.5	.0	--	--	535
18-30	190	0	213	22	.5	.0	--	--	500
DEC.									
01-31	210	0	212	26	.6	1.5	--	--	524
JAN.									
01-28	200	0	208	17	.5	1.5	90	549	498
29-31	218	0	229	27	.5	1.8	--	--	558
FEB.									
01-28	195	0	216	24	.5	.2	--	--	513
MAR.									
01-18	182	0	212	21	.5	1.0	--	--	492
19-28	178	0	158	17	.4	3.6	--	--	410
29-31	174	0	145	13	.5	4.1	--	--	384
APR.									
01-07	159	0	110	9.7	.4	2.8	--	--	313
08-21	138	0	88	6.4	.3	1.4	--	--	255
22-30	112	0	60	2.7	.4	1.2	50	203	187
MAY									
01-18	106	0	58	4.9	.3	1.2	--	--	183
19-31	80	0	37	1.8	.3	1.2	--	--	127
JUNE									
01-11	88	0	45	4.0	.3	1.2	--	--	148
12-16	106	0	64	5.2	.4	1.1	--	--	192
17-25	95	0	53	4.8	.4	.9	--	--	166
26-30	100	0	61	3.8	.4	.0	--	--	179
JULY									
01-07	82	0	52	3.4	.4	.0	--	--	150
08-19	108	0	71	6.1	.5	.0	90	221	201
20-23	96	0	52	3.1	.4	.0	--	--	162
24-27	113	0	70	5.0	.4	.0	--	--	206
28-31	135	0	96	9.4	.5	.0	--	--	268
AUG.									
01-06	168	0	127	8.6	.4	1.2	--	--	341
07-31	186	0	148	11	.4	.5	--	--	389
SEP.									
01-09	210	0	162	21	.5	2.4	--	--	489
10-22	168	4	130	10	.5	1.3	--	--	367
23-30	138	6	114	6.8	.4	.9	--	--	308
WTD. AVG.	123	0	88	7.5	.4	1.0	--	--	246
TIME WTD. AVG.	165	0	150	14	.5	.0	--	--	382
TONS PER DAY	281	0	201	17	.9	2.3	--	--	561

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.								
01-03	.79	229	360	180	1.2	904	7.7	--
04-31	.75	322	330	154	1.1	829	7.9	3
NOV.								
01...	.64	293	305	141	1.0	746	7.7	--
02...	.83	436	350	163	1.6	931	7.7	--
03-17	.73	329	350	183	1.0	829	7.9	--
18-30	.68	343	315	160	1.1	775	7.9	--
DEC.								
01-31	.71	349	340	168	1.0	807	8.0	--
JAN.								
01-28	.75	393	315	151	1.1	769	8.0	5
29-31	.76	354	340	162	1.3	835	8.1	--
FEB.								
01-28	.76	341	325	165	1.1	779	7.9	--
MAR.								
01-18	.67	325	310	161	1.0	762	7.7	--
19-28	.56	550	260	174	1.0	639	7.5	--
29-31	.52	923	255	112	.8	591	7.6	--
APR.								
01-07	.43	955	215	84	.6	487	7.8	--
08-21	.35	833	185	72	.4	407	7.9	--
22-30	.28	998	142	50	.3	310	7.8	5
MAY								
01-18	.25	924	135	48	.4	306	7.9	--
19-31	.17	1180	99	34	.2	227	7.7	--
JUNE								
01-11	.20	1040	110	38	.3	254	7.5	--
12-16	.26	876	138	51	.4	325	7.5	--
17-25	.23	910	132	54	.2	281	7.6	--
26-30	.24	846	130	48	.4	308	7.6	--
JULY								
01-07	.20	794	109	42	.3	262	7.6	--
08-19	.30	829	147	58	.2	357	7.6	4
20-23	.22	892	122	44	.3	277	7.5	--
24-27	.28	695	148	56	.4	356	7.7	--
28-31	.36	573	183	72	.6	483	7.9	--
AUG.								
01-06	.46	658	230	92	.7	565	7.7	--
07-31	.53	370	254	102	.9	633	7.8	--
SEP.								
01-09	.67	425	280	108	1.1	684	8.1	--
10-22	.50	623	236	98	.7	569	8.4	--
23-30	.42	559	208	95	.5	492	8.4	--
WTD. AVG.	.34	--	171	70	.5	401	7.8	--
TIME WTD. AVG.	.53	--	249	114	.8	600	7.9	--
TONS PER DAY	--	--	--	--	--	--	--	--

DATE	TIME	DIS-CHARGE (CFS)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	CHLO-RIDE (CL) (MG/L)
ANALYSIS OF ADDITIONAL SAMPLES								
APR. 02...	1400	1220	65	15	22	136	0	20

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
APR. 02...	324	222	110	.6	483	7.8	10.0

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	893	746	820	756	850	748	524	344	230	258	535	689
2	896	931	755	778	799	766	525	310	257	259	501	738
3	929	828	820	789	797	758	472	284	263	257	664	706
4	983	834	822	786	831	765	478	267	268	246	539	716
5	912	828	824	793	782	775	465	283	266	255	552	623
6	885	815	824	776	787	763	480	309	244	270	535	682
7	859	822	820	764	744	736	457	333	245	289	562	708
8	--	815	802	762	765	745	404	333	257	310	580	699
9	842	832	795	779	773	776	420	361	259	357	591	673
10	851	826	780	763	785	761	429	366	256	398	625	586
11	850	830	775	772	792	764	397	334	256	397	--	536
12	822	844	787	752	793	765	378	304	286	389	634	546
13	829	834	800	767	783	774	382	287	337	372	640	570
14	819	887	802	764	758	764	398	293	339	354	587	576
15	813	829	781	772	758	774	407	304	347	346	613	580
16	808	817	793	767	766	764	401	288	333	354	624	585
17	810	833	790	727	769	780	409	283	303	358	659	587
18	795	778	788	772	781	724	423	--	281	318	677	582
19	821	749	831	776	785	631	440	245	281	349	668	593
20	787	753	826	795	782	638	425	231	288	248	654	619
21	804	764	--	778	785	633	405	223	275	266	631	572
22	788	782	863	797	773	648	351	216	260	295	529	539
23	817	772	886	730	775	661	302	219	267	306	666	459
24	804	791	878	757	775	628	289	216	276	325	706	450
25	802	778	--	781	754	630	282	237	296	357	671	472
26	813	788	785	855	772	661	277	241	335	368	661	491
27	790	786	770	668	770	653	304	219	314	379	655	508
28	799	802	772	745	755	608	337	212	333	411	660	532
29	797	774	773	800	--	609	341	211	302	432	680	557
30	823	799	773	836	--	601	324	214	274	444	665	575
31	815	--	780	882	--	568	--	218	--	477	673	--
AVG	835	808	805	774	779	705	397	272	284	336	621	591

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	8.0	3.0	0.0	4.0	5.0	8.0	9.0	13.0	15.0	25.0	19.0
2	19.0	10.0	3.0	2.0	2.0	7.0	8.0	9.0	20.0	19.0	25.0	23.0
3	16.0	10.0	2.0	1.0	2.0	8.0	8.0	9.0	16.0	19.0	20.0	23.0
4	17.0	10.0	2.0	0.0	3.0	5.0	8.0	9.0	16.0	16.0	21.0	24.0
5	15.0	10.0	2.0	1.0	4.0	7.0	9.0	8.0	16.0	20.0	20.0	23.0
6	18.0	10.0	2.0	3.0	5.0	7.0	10.0	8.0	17.0	20.0	20.0	17.0
7	18.0	6.0	4.0	3.0	5.0	5.0	8.0	7.0	15.0	20.0	20.0	17.0
8	--	8.0	4.0	3.0	5.0	7.0	5.0	7.0	12.0	20.0	22.0	22.0
9	16.0	8.0	4.0	3.0	4.0	5.0	6.0	10.0	16.0	19.0	25.0	22.0
10	15.0	8.0	5.0	5.0	6.0	5.0	8.0	10.0	15.0	20.0	28.0	22.0
11	17.0	7.0	5.0	2.0	8.0	5.0	9.0	15.0	15.0	20.0	--	21.0
12	18.0	10.0	2.0	2.0	10.0	8.0	8.0	11.0	15.0	21.0	25.0	21.0
13	18.0	7.0	2.0	5.0	5.0	7.0	9.0	10.0	17.0	22.0	25.0	20.0
14	18.0	8.0	2.0	6.0	6.0	8.0	8.0	10.0	17.0	22.0	25.0	20.0
15	14.0	7.0	1.0	5.0	5.0	10.0	9.0	14.0	15.0	22.0	24.0	20.0
16	14.0	7.0	4.0	5.0	4.0	11.0	9.0	14.0	15.0	22.0	25.0	20.0
17	12.0	6.0	1.0	5.0	7.0	13.0	8.0	10.0	15.0	22.0	20.0	20.0
18	11.0	6.0	0.0	5.0	6.0	10.0	7.0	--	15.0	22.0	25.0	20.0
19	15.0	7.0	0.0	5.0	5.0	10.0	10.0	14.0	16.0	20.0	28.0	20.0
20	10.0	8.0	0.0	5.0	5.0	4.0	10.0	9.0	17.0	18.0	25.0	19.0
21	13.0	8.0	--	6.0	7.0	5.0	11.0	10.0	17.0	20.0	23.0	15.0
22	15.0	7.0	0.0	5.0	6.0	7.0	10.0	10.0	17.0	22.0	26.0	18.0
23	13.0	8.0	0.0	3.0	5.0	6.0	9.0	13.0	17.0	22.0	23.0	19.0
24	13.0	8.0	0.0	2.0	10.0	4.0	8.0	10.0	15.0	23.0	20.0	18.0
25	13.0	6.0	--	3.0	9.0	3.0	8.0	14.0	15.0	22.0	25.0	20.0
26	13.0	6.0	1.0	6.0	8.0	4.0	5.0	18.0	15.0	22.0	25.0	20.0
27	13.0	5.0	2.0	3.0	8.0	5.0	10.0	18.0	18.0	19.0	27.0	13.0
28	11.0	6.0	3.0	3.0	9.0	5.0	12.0	15.0	21.0	23.0	25.0	14.0
29	13.0	6.0	2.0	1.0	--	5.0	8.0	17.0	18.0	24.0	24.0	20.0
30	12.0	4.0	3.0	1.0	--	8.0	9.0	12.0	19.0	25.0	25.0	18.0
31	13.0	--	1.0	2.0	--	7.0	--	10.0	--	25.0	25.0	--
AVG	14.7	7.5	2.0	3.2	5.8	6.6	8.5	11.3	16.1	20.9	23.8	19.6

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	140	80	30	230	140	87	240	28	18
2	156	155	65	265	700	501	252	54	37
3	142	76	29	252	780	531	236	87	55
4	200	180	97	228	72	44	236	45	29
5	220	410	244	218	52	31	216	96	56
6	224	386	233	226	37	23	220	88	52
7	206	160	89	226	25	15	242	61	40
8	200	100	54	220	29	17	262	70	50
9	190	91	47	214	36	21	260	80	56
10	194	91	48	204	15	8.3	268	99	72
11	202	113	62	204	11	6.1	282	85	65
12	212	103	59	210	9	5.1	272	97	71
13	200	63	34	224	22	13	252	63	43
14	192	81	42	250	75	51	248	76	51
15	198	98	52	250	56	38	265	76	54
16	212	93	53	248	70	47	280	50	38
17	204	83	46	250	60	41	285	21	16
18	214	89	51	268	63	46	260	26	18
19	226	105	64	272	88	65	236	39	25
20	230	48	30	260	79	55	228	47	29
21	220	58	34	262	76	54	250	50	34
22	226	22	13	262	86	61	208	32	18
23	220	31	18	262	72	51	190	45	23
24	224	34	21	258	39	27	224	59	36
25	220	110	65	258	53	37	252	110	75
26	220	37	22	234	44	28	272	162	119
27	234	37	23	236	12	7.6	265	48	34
28	232	77	48	245	9	6.0	232	42	26
29	224	69	42	258	48	33	242	31	20
30	216	54	31	255	49	34	248	80	54
31	218	64	38	--	--	--	234	115	73
TOTAL	6416	--	1784	7249	--	1984.1	7657	--	1387

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	226	21	13	224	88	53	248	220	147
2	234	27	17	232	85	53	242	132	86
3	230	48	30	228	88	54	240	88	57
4	234	81	51	228	81	50	238	120	77
5	234	60	38	240	78	51	242	135	88
6	238	62	40	260	51	36	242	82	54
7	238	37	24	260	52	37	245	78	52
8	238	32	21	250	43	29	238	71	46
9	238	32	21	222	52	31	230	69	43
10	238	29	19	226	62	38	228	70	43
11	230	24	15	232	52	33	230	64	40
12	248	36	24	248	58	39	234	65	41
13	248	8	5.4	275	100	74	222	73	44
14	268	55	40	298	365	294	224	78	47
15	318	280	240	275	282	209	224	51	31
16	310	160	134	258	288	201	226	75	46
17	288	100	78	255	195	134	234	150	95
18	252	80	54	245	71	47	299	1600	1360
19	252	60	41	240	68	44	451	4020	5040
20	245	62	41	252	130	88	451	2340	2850
21	272	88	65	242	85	56	471	1600	2030
22	342	670	619	240	41	27	518	1020	1430
23	312	430	362	242	74	48	598	2790	4840
24	262	165	117	240	75	49	484	1350	1760
25	242	118	77	238	61	39	393	610	647
26	292	548	510	262	95	67	408	600	661
27	376	2650	2690	258	170	118	513	1420	1970
28	312	750	632	248	118	79	652	2400	4220
29	250	260	176	--	--	--	764	2990	6170
30	236	185	118	--	--	--	910	4250	10400
31	220	105	62	--	--	--	1000	3820	10300
TOTAL	8123	--	6374.4	6918	--	2078	11899	--	54715

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1020	2900	7990	1710	260	1200	3460	225	2100
2	1130	3600	11000	2020	290	1580	2750	210	1560
3	1050	2230	6320	2260	330	2010	2560	300	2070
4	1050	1520	4310	2260	300	1830	2380	290	1860
5	1080	1500	4370	2030	182	998	2480	135	904
6	1270	1660	5690	1790	152	735	2720	150	1100
7	1400	2200	9320	1770	175	836	2550	120	826
8	1180	1050	3350	1500	163	660	2300	83	515
9	1100	800	2380	1390	145	544	2360	135	860
10	1250	930	3140	1380	135	503	2530	130	888
11	1390	930	3490	1540	196	815	2430	88	577
12	1440	960	3730	1860	204	1020	2030	70	384
13	1280	450	1560	1940	163	854	1700	68	312
14	1190	390	1250	1850	125	624	1540	65	270
15	1200	350	1130	1810	115	562	1550	70	293
16	1120	275	832	1960	154	815	1640	92	407
17	1120	255	771	2120	185	1060	2040	165	909
18	1000	250	675	2520	500	3400	2220	175	1050
19	1050	230	652	2840	560	4290	2080	120	674
20	1170	265	837	3060	1680	13900	2030	90	493
21	1480	720	2880	3360	610	5530	2020	72	393
22	1860	1750	8790	3570	440	4240	2090	65	367
23	2080	1160	6510	3750	410	4150	2040	60	330
24	2200	810	4810	3460	240	2240	1900	51	262
25	2210	630	3760	2940	190	1510	1840	51	253
26	2000	415	2240	3000	195	1580	1770	135	645
27	1700	300	1380	3440	230	2140	1740	85	399
28	1400	230	869	3890	450	4730	1630	50	220
29	1430	235	907	3930	570	6050	1720	60	279
30	1610	250	1090	3670	430	4260	1900	89	457
31	--	--	--	3630	360	3530	--	--	--
TOTAL	41460	--	105033	78250	--	78196	64000	--	21657

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2000	70	378	640	155	268	255	90	62
2	1980	54	289	794	2530	10500	260	408	286
3	2030	55	301	830	3570	8960	230	172	107
4	2160	65	379	788	6000	12800	240	100	65
5	2060	50	278	624	1670	2810	474	10500	15800
6	1840	38	189	616	400	665	372	1950	1960
7	1660	28	125	480	225	292	288	380	295
8	1390	23	86	448	282	341	324	330	289
9	1200	30	97	372	160	161	456	1090	1340
10	1220	232	764	358	98	95	584	890	1400
11	1170	85	269	344	101	94	640	750	1300
12	1260	68	231	330	166	148	696	2180	4100
13	1380	280	1040	294	138	110	624	970	1630
14	1320	120	428	597	12900	21700	568	495	759
15	1290	85	296	715	13400	28000	552	288	429
16	1310	115	407	456	3200	3940	496	429	575
17	1280	150	518	318	320	275	488	310	408
18	1640	440	1950	255	176	121	480	238	308
19	2230	1930	12000	235	122	77	440	217	258
20	2480	650	4350	294	115	91	679	5990	21500
21	2190	410	2420	270	93	68	1010	10900	31900
22	1820	295	1450	240	75	49	918	2700	6690
23	1680	245	1110	318	350	395	927	1210	3030
24	1450	208	814	408	1330	1470	864	1160	2710
25	1280	315	1090	379	345	353	765	700	1450
26	1170	333	1050	330	183	163	704	680	1290
27	1080	230	671	294	82	65	616	600	998
28	945	165	421	282	78	59	544	410	602
29	828	118	264	265	103	74	488	510	672
30	765	98	202	250	78	53	472	530	675
31	632	84	143	270	90	66	--	--	--
TOTAL	46740	--	34010	13094	--	94263	16454	--	102888

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 308260
TOTAL LOAD FOR YEAR (TONS) 504369.5

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE, V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV 2, 1968	1600	10.	272	738	542	60	77	--	96	--	100	--	--	--	--	--	PWC
MAR 1, 1969	1130	05.	265	486	348	60	79	--	96	--	100	--	--	--	--	--	PWC
MAR 23.....	0915	05.	729	3840	7560	35	43	--	71	--	97	100	--	--	--	--	SPWC
MAR 29.....	0745	05.	1070	2630	7600	41	51	--	70	--	95	100	--	--	--	--	VPWC
APR 2.....	1400	10.	1120	6360	19200	35	46	58	68	80	87	93	97	99	100	--	VPWC
APR 2.....	1400	10.	1120	6360	19200	2	8	48	65	78	87	93	97	99	100	--	VPN
APR 7.....	0630	08.	1490	2220	8930	21	26	--	42	--	89	99	100	--	--	--	VPWC
MAY 20.....	0630	09.	2730	362	2670	25	31	--	42	--	80	95	100	--	--	--	VPWC
JUN 20.....	1530	17.	1910	92	474	--	--	--	--	--	87	96	100	--	--	--	S
JUN 26.....	1615	15.	1770	211	1010	--	--	--	--	--	96	99	100	--	--	--	S
JUL 10.....	1630	20.	1200	556	1800	--	--	--	--	--	97	99	100	--	--	--	S
JUL 19.....	1500	22.	2000	2310	12500	46	58	--	75	--	96	99	100	--	--	--	SPWC
AUG 4.....	1100	21.	963	6670	17300	52	65	--	84	--	99	100	--	--	--	--	SPWC
AUG 14.....	1550	25.	576	12900	20100	65	74	--	95	--	100	--	--	--	--	--	PWC
SEP 5.....	1700	23.	440	10700	12700	59	70	--	95	--	100	--	--	--	--	--	PWC
SEP 10.....	1840	22.	608	880	1440	30	39	--	57	--	90	95	99	100	--	--	VPWC
SEP 21.....	1830	18.	828	8010	17900	43	65	--	83	--	98	100	--	--	--	--	VPWC

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'25", long 108°13'30", in SE¼ sec.17, T.29 N., R.13 W., San Juan County, at gaging station 360 ft downstream from highway bridge, 4,000 ft downstream from Animas River, and 1 mile west of Farmington, river mile 97.4.

DRAINAGE AREA.--7,240 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: May 1962 to September 1969.
Water temperatures: June 1962 to September 1969.

EXTREMES.--1968-69:
Dissolved solids: Maximum, 797 mg/l Aug. 23; minimum, 154 mg/l May 18-31.
Hardness: Maximum, 300 mg/l Aug. 23, Sept. 12; minimum, 104 mg/l May 18-31.
Specific conductance: Maximum daily, 1,240 micromhos Aug. 23; *minimum daily, 241 micromhos* May 29.
Water temperatures: Maximum, 28.0°C Aug. 10, 19; minimum, freezing point on several days during December and January.

Period of record:
Dissolved solids: Maximum, 1,380 mg/l July 12, 1967; minimum, 103 mg/l May 11-15, 1962.
Hardness: Maximum, 820 mg/l Aug. 6, 1968; minimum, 65 mg/l May 11-15, 1962.
Specific conductance: Maximum daily, 1,930 micromhos July 31, 1967; minimum daily, 154 micromhos May 13, 1962.
Water temperatures: Maximum, 33.5°C July 6, 1967; minimum, freezing point on several days during December and January of most years.

REMARKS.--Samples from right and left banks are composites. Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.									
01-14	702	13	62	7.2	41	144	0	144	6.6
15-31	560	13	78	9.6	51	163	0	195	10
NOV.									
01...	632	13	76	8.7	55	147	0	190	7.2
02-05	592	13	85	10	64	172	0	235	14
06-13	544	13	70	8.6	50	144	0	189	6.0
14-17	521	14	85	7.8	69	166	0	244	12
18-30	539	13	78	8.1	49	155	0	190	10
DEC.									
01-31	685	12	80	7.9	44	150	0	182	5.0
JAN.									
01-21	803	14	78	7.2	47	144	0	192	7.7
22-26	1210	13	65	4.4	52	142	0	167	6.9
27...	2050	12	85	6.9	150	214	2	382	8.9
28-29	1420	13	68	4.5	55	150	0	170	8.3
30-31	2260	15	49	5.2	26	126	0	92	4.4
FEB.									
01-28	2280	13	48	3.6	25	116	0	86	4.2
MAR.									
01-17	2300	13	44	4.9	25	111	0	84	3.9
18-19	2690	13	59	5.8	49	159	0	142	5.5
20-23	2620	12	52	6.2	31	139	0	101	5.0
24-31	1030	11	82	9.6	37	170	0	163	8.6
APR.									
01-02	1540	10	75	10	27	168	0	130	7.8
03-21	2930	10	50	6.1	20	128	0	76	3.6
22-30	3760	8.3	42	5.6	15	112	0	63	2.8
MAY									
01-17	3670	8.5	42	4.9	18	108	0	74	3.6
18-31	5360	6.7	36	3.4	11	92	0	48	2.8
JUNE									
01-11	4630	6.9	39	3.5	14	98	0	54	5.2
12-30	3860	8.1	42	4.9	18	110	0	68	4.2
JULY									
01-11	3530	8.7	44	2.2	15	100	0	69	1.3
12...	2570	13	53	7.3	37	150	0	116	3.6
13-17	3080	9.9	46	5.6	18	112	0	80	4.4
18-19	3360	11	66	5.5	44	154	0	152	3.6
20-24	3300	9.8	50	7.3	19	118	0	91	3.2
25...	2960	14	96	9.8	110	198	0	350	4.1
26-31	2000	11	56	5.0	22	124	0	96	5.8
AUG.									
01-02	1690	14	66	6.2	36	158	0	128	4.3
03-04	2220	17	80	8.6	42	206	0	163	3.8
05-19	1500	12	55	7.5	24	138	0	104	5.7
20-22	985	13	72	10	33	164	0	141	8.9
23...	1810	12	108	7.7	150	226	0	402	6.1
24-25	1730	18	62	7.1	50	167	0	145	6.2
26-29	1500	13	52	5.4	27	130	0	101	4.0
30-31	1590	12	65	6.8	58	170	0	166	4.4
SEP.									
01-08	1320	13	53	7.2	31	146	6	101	6.1
09-11	1970	11	68	8.4	54	154	14	163	7.8
12...	2420	13	101	12	142	198	10	406	7.4
13-20	1740	12	55	8.0	39	106	13	107	6.6
21-22	2440	12	68	10	43	118	16	143	17
23-30	1810	13	53	6.3	25	103	13	96	5.6
WTD. AVG.	--	10	50	5.4	25	120	1	95	4.5
TIME WTD. AVG.	2090	11	59	6.3	33	132	1	124	5.6
TONS PER DAY	--	58	283	30	142	676	5	534	26

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONO-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
01-14	1.5	346	.47	646	194	66	1.3	540	7.7
15-31	2.5	439	.60	459	234	100	1.5	677	7.7
NOV.									
01...	1.9	416	.57	467	202	82	1.7	641	7.3
02-05	2.7	509	.69	591	254	113	1.7	777	7.7
06-13	1.8	409	.56	565	210	92	1.5	628	7.7
14-17	2.6	516	.70	769	244	108	1.9	780	7.8
18-30	2.3	426	.58	667	228	101	1.4	658	7.7
DEC.									
01-31	2.5	407	.55	743	232	109	1.3	639	7.6
JAN.									
01-21	3.0	420	.57	911	224	106	1.4	635	7.5
22-26	2.4	381	.52	1250	180	64	1.7	586	7.6
27...	1.5	751	1.02	4040	240	64	4.2	1090	7.7
28-29	2.4	395	.54	1370	188	65	1.7	611	7.7
30-31	1.6	255	.35	1560	144	40	.9	404	7.6
FEB.									
01-28	1.1	238	.32	1470	135	40	.9	380	7.8
MAR.									
01-17	.9	231	.31	1440	130	35	1.0	374	7.5
18-19	2.4	355	.48	2580	171	40	1.6	546	7.6
20-23	1.4	277	.38	1960	155	42	1.1	442	7.6
24-31	2.9	398	.54	1110	244	104	1.0	627	7.6
APR.									
01-02	4.5	347	.47	1440	229	92	.8	556	7.5
03-21	1.4	230	.31	1820	150	45	.7	384	7.7
22-30	1.2	193	.26	1960	128	36	.6	320	7.9
MAY									
01-17	1.2	205	.28	2030	128	40	.7	336	7.7
18-31	1.2	154	.21	2230	104	28	.5	259	7.6
JUNE									
01-11	1.2	172	.23	2150	112	32	.6	288	7.5
12-30	1.2	200	.27	2080	125	35	.7	329	7.6
JULY									
01-11	1.3	190	.26	1810	119	37	.6	312	7.5
12...	.1	304	.41	2440	162	39	1.3	481	7.5
13-17	1.7	221	.30	1840	138	46	.7	358	7.4
18-19	1.8	360	.49	3270	187	61	1.4	559	7.5
20-24	2.0	240	.33	2140	155	58	.7	367	7.5
25...	.1	681	.93	5440	280	118	2.9	1000	7.6
26-31	1.6	258	.35	1390	160	58	.8	411	7.7
AUG.									
01-02	1.6	334	.45	1520	190	62	1.1	531	7.7
03-04	.2	416	.57	2490	236	68	1.2	645	7.5
05-19	1.4	278	.38	1130	168	56	.8	464	7.7
20-22	.8	360	.49	957	222	88	1.0	577	7.9
23...	.5	797	1.08	3900	300	116	3.8	1220	7.6
24-25	1.1	371	.50	1730	184	48	1.6	583	7.8
26-29	1.2	268	.36	1090	152	46	.9	434	7.7
30-31	.8	397	.54	1690	190	52	1.8	624	7.7
SEP.									
01-08	1.5	291	.40	1040	162	32	1.1	453	8.4
09-11	1.2	403	.55	2140	204	54	1.6	624	8.6
12...	.0	788	1.07	5150	300	121	3.6	1130	8.4
13-20	1.5	285	.39	1340	170	62	1.0	463	8.6
21-22	2.0	369	.50	2430	212	89	1.3	594	8.5
23-30	1.2	264	.36	1290	158	52	.9	418	8.6
WTD. AVG.	1.4	251	.34	--	148	48	.9	404	7.7
TIME WTD. AVG.	1.7	307	.42	--	173	64	1.1	485	7.7
TONS PER DAY	7.9	1420	--	--	--	--	--	--	--

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	CROSS SECTION LOCATION (FT)	DISCHARGE (CFS)	FIELD SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (MG/L)	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	IMMEDIATE COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)
DEC.												
03...	0700	20	520	--	--	.0	11.5	--	1.0	10	65000	50
03...	0730	60	520	--	--	.0	11.4	--	2.0	<1	294000	150
JAN.												
07...	0800	20	743	--	--	.0	11.7	--	1.9	--	--	--
07...	0830	60	743	--	--	.0	11.5	--	1.9	--	--	--
FEB.												
04...	0800	20	2290	320	--	2.0	10.8	--	.4	70	800	40
04...	0830	60	2290	460	--	2.0	11.3	--	1.4	7200	A32000	600
MAR.												
03...	1400	20	2220	360	--	3.0	9.8	--	.8	20	680	<10
03...	1445	60	2220	550	--	3.0	9.7	--	1.7	54000	2340000	14100
APR.												
02...	1200	20	1650	520	--	12.0	8.1	--	.6	100	1500	90
02...	1245	60	1650	500	--	12.0	7.2	--	1.3	110000	700000	1500
MAY												
02...	0730	20	3960	300	--	9.0	8.6	--	1.0	--	--	--
02...	0810	60	3960	310	--	9.0	9.1	--	1.8	--	--	--
JUNE												
04...	0800	60	4420	280	--	12.0	9.2	--	1.0	120000	245000	13000
04...	0830	20	4420	280	--	12.0	9.1	--	1.1	700	18000	600
JULY												
10...	1000	60	3000	390	--	15.0	8.3	--	2.0	4020	20100	110
10...	1040	20	3000	325	--	15.0	8.9	--	1.2	10	2700	10
AUG.												
04...	1901	20	1170	460	8.0	23.0	5.4	--	.8	<10	5000	20
04...	2000	60	1170	530	8.1	24.0	5.7	--	1.1	<10	20000	30
SEP.												
10...	1500	60	1820	438	8.2	20.0	7.0	22	.6	<10	2850000	5
10...	1630	20	1820	450	--	20.0	6.7	10	1.0	<10	10000	<10

A ANALYZED BY U.S. GEOLOGICAL SURVEY.

DATE	TIME	CROSS SECTION LOCATION (FT)	DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
ANALYSES OF ADDITIONAL SAMPLES												
JUNE												
04...	0900	--	4180	6.7	--	39	3.8	13	--	94	0	56
JULY												
10...	1002	60	3000	8.1	--	45	6.8	19	1.8	109	0	78
10...	1041	20	2980	10	--	40	6.3	20	1.8	106	0	74
AUG.												
04...	1901	20	1170	11	--	50	5.9	37	3.2	126	0	116
04...	2002	60	1170	9.9	--	60	7.5	36	3.8	150	0	119
SEP.												
10...	1502	60	1820	12	--	62	8.3	35	3.5	157	0	126
10...	1631	20	1820	12	110	48	5.9	34	3.0	120	0	113

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
JUNE											
04...	4.0	--	.5	--	169	113	36	.5	286	7.1	13.0
JULY											
10...	5.9	--	.6	247	219	138	48	.7	357	7.7	15.0
10...	3.6	--	.0	207	208	124	37	.8	334	7.8	15.0
AUG.											
04...	5.3	--	1.0	294	251	148	45	1.3	453	8.1	23.0
04...	11	--	3.0	330	324	179	56	1.2	505	8.0	24.0
SEP.											
10...	3.2	.5	1.2	363	329	191	62	1.1	521	7.4	20.0
10...	4.2	.5	.6	294	280	144	46	1.2	434	7.8	20.0

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	518	639	632	605	395	370	589	322	261	294	595	424
2	514	912	655	619	387	374	520	323	285	292	466	424
3	503	751	642	614	386	348	470	300	288	289	725	431
4	637	727	555	610	382	363	408	296	294	282	552	422
5	595	706	642	523	391	373	399	324	286	290	--	497
6	565	631	620	607	380	366	404	365	269	302	466	444
7	536	610	607	614	357	368	384	397	277	315	467	420
8	--	677	623	612	379	372	379	367	285	331	480	575
9	517	663	619	604	369	379	392	364	285	348	466	847
10	527	605	651	608	389	343	349	354	283	373	385	493
11	530	588	638	604	372	389	372	338	287	350	--	445
12	522	604	677	597	337	385	362	319	311	482	470	1130
13	511	612	644	562	358	376	363	318	340	366	394	505
14	522	898	618	634	408	389	375	324	338	353	--	484
15	656	729	652	805	384	355	369	324	339	343	535	448
16	677	750	637	700	395	380	382	392	377	354	476	456
17	678	735	638	672	388	397	378	312	404	358	468	442
18	674	682	637	663	379	454	377	--	315	523	467	455
19	692	687	751	687	385	619	371	277	309	590	395	438
20	688	664	538	671	379	440	371	305	315	408	626	456
21	692	675	--	685	380	430	369	269	304	339	454	564
22	695	684	634	618	370	432	343	248	292	365	649	516
23	634	676	662	564	376	462	317	246	298	355	1240	432
24	690	596	722	453	358	656	304	244	--	355	653	425
25	690	678	--	497	366	672	302	--	327	999	510	378
26	634	644	628	741	369	680	300	271	372	427	457	431
27	628	653	626	1100	364	653	323	286	338	396	437	422
28	701	595	661	662	364	640	342	245	339	409	395	381
29	686	659	565	569	--	615	341	241	316	400	--	429
30	688	658	632	418	--	608	328	242	300	396	741	430
31	698	--	684	389	--	566	--	244	--	438	509	--
AVG	616	679	637	622	379	459	376	305	311	391	536	488

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	14.0	5.0	0.0	5.0	6.0	16.0	16.0	13.0	19.0	25.0	19.0
2	20.0	12.0	4.0	2.0	2.0	7.0	12.0	15.0	14.0	15.0	25.0	22.0
3	15.0	10.0	2.0	0.0	2.0	8.0	10.0	9.0	18.0	20.0	18.0	20.0
4	17.0	10.0	3.0	0.0	3.0	6.0	8.0	13.0	16.0	16.0	22.0	22.0
5	15.0	10.0	2.0	1.0	5.0	6.0	9.0	9.0	17.0	20.0	--	23.0
6	16.0	11.0	2.0	4.0	5.0	8.0	10.0	9.0	18.0	20.0	20.0	17.0
7	17.0	7.0	5.0	4.0	5.0	5.0	13.0	10.0	17.0	20.0	20.0	17.0
8	--	9.0	4.0	3.0	7.0	6.0	11.0	13.0	12.0	20.0	22.0	21.0
9	17.0	8.0	2.0	3.0	5.0	5.0	12.0	13.0	17.0	19.0	25.0	20.0
10	15.0	6.0	6.0	5.0	6.0	5.0	10.0	10.0	19.0	20.0	28.0	21.0
11	17.0	6.0	6.0	3.0	8.0	5.0	12.0	15.0	15.0	20.0	--	22.0
12	19.0	9.0	2.0	6.0	11.0	8.0	11.0	16.0	15.0	22.0	24.0	20.0
13	18.0	8.0	3.0	5.0	6.0	7.0	8.0	15.0	17.0	22.0	25.0	19.0
14	18.0	8.0	4.0	5.0	7.0	6.0	13.0	15.0	17.0	22.0	--	19.0
15	14.0	7.0	2.0	5.0	5.0	8.0	12.0	15.0	16.0	22.0	25.0	19.0
16	14.0	7.0	5.0	6.0	5.0	10.0	10.0	15.0	15.0	22.0	25.0	20.0
17	12.0	6.0	1.0	5.0	7.0	11.0	13.0	10.0	15.0	22.0	19.0	20.0
18	12.0	6.0	0.0	4.0	6.0	13.0	13.0	--	17.0	22.0	25.0	20.0
19	12.0	8.0	0.0	5.0	5.0	10.0	10.0	17.0	17.0	22.0	28.0	20.0
20	12.0	8.0	0.0	6.0	5.0	11.0	10.0	15.0	20.0	19.0	25.0	20.0
21	14.0	8.0	--	6.0	7.0	10.0	10.0	15.0	17.0	22.0	23.0	18.0
22	12.0	7.0	0.0	5.0	6.0	7.0	10.0	15.0	17.0	23.0	25.0	19.0
23	13.0	7.0	0.0	4.0	6.0	5.0	9.0	14.0	16.0	22.0	23.0	19.0
24	13.0	6.0	0.0	3.0	11.0	8.0	8.0	11.0	15.0	23.0	20.0	18.0
25	13.0	6.0	--	3.0	9.0	10.0	8.0	--	16.0	23.0	25.0	20.0
26	13.0	6.0	1.0	7.0	8.0	10.0	5.0	18.0	15.0	22.0	24.0	20.0
27	13.0	5.0	2.0	5.0	8.0	11.0	10.0	20.0	18.0	20.0	26.0	13.0
28	12.0	6.0	3.0	4.0	9.0	13.0	15.0	17.0	21.0	22.0	25.0	14.0
29	12.0	5.0	4.0	1.0	--	5.0	16.0	18.0	18.0	24.0	--	20.0
30	12.0	5.0	2.0	3.0	--	8.0	14.0	12.0	19.0	25.0	22.0	16.0
31	13.0	--	2.0	2.0	--	7.0	--	12.0	--	25.0	21.0	--
AVG	14.6	7.7	2.4	3.7	6.2	7.9	10.9	13.8	16.5	21.2	23.5	19.3

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.

LOCATION.--Lat 36°47'35", long 108°43'55", in SW¼ sec.22, T.30 N., R.18 W., San Juan County, at gaging station 3 miles west of Shiprock, 6 miles downstream from Chaco River, and at river mile 61.0.
DRAINAGE AREA.--12,900 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: February 1941 to September 1945, July 1957 to September 1969.
Water temperatures: December 1950 to September 1969.
Sediment records: December 1950 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 821 mg/l Aug. 24; minimum, 183 mg/l May 17-31.
Hardness: Maximum, 386 mg/l Sept. 9; minimum, 120 mg/l Feb. 5-11.
Specific conductance: Maximum daily, 1,270 micromhos Sept. 9; minimum daily, 278 micromhos May 30.
Water temperatures: Maximum, 28.0°C Aug. 10; minimum, freezing point on several days during December to February.
Sediment concentrations: Maximum daily, 44,100 mg/l Aug. 15; minimum daily, 350 mg/l Dec. 24.
Sediment loads: Maximum daily, 473,000 tons Sept. 21; minimum daily, 657 tons Dec. 24.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-04	715	13	--	81	13	--	72	--	162	0	241	16
05-06	850	15	--	88	13	--	86	--	178	0	269	20
07-14	774	13	--	82	14	--	67	--	160	0	241	16
15-31	566	12	--	102	18	--	82	--	180	0	312	22
NOV.												
01...	780	10	--	104	19	--	82	--	176	0	320	23
02-03	820	12	--	106	16	--	135	--	188	0	412	25
04-13	574	11	--	102	18	--	80	--	180	0	307	22
14-30	660	11	--	98	16	--	80	--	176	0	296	21
DEC.												
01-31	773	13	--	92	16	--	66	--	166	0	262	17
JAN.												
01-21	771	9.8	--	71	15	--	69	--	102	0	269	16
22-25	997	9.7	--	69	13	--	65	--	128	0	229	14
26-29	1180	12	--	78	9.1	--	99	--	156	0	290	8.6
30-31	1740	11	--	57	9.3	--	53	--	136	0	159	7.8
FEB.												
01-04	1910	13	--	53	9.2	--	30	--	126	0	122	1.6
05-11	2180	12	--	32	9.7	--	26	--	58	0	116	4.5
12-28	2260	11	--	47	8.4	--	39	--	105	0	122	2.2
MAR.												
01-19	2240	10	--	49	8.1	--	35	--	118	0	123	4.4
20-21	2540	13	--	52	6.9	--	51	--	144	0	133	6.2
22-23	2430	13	--	50	7.1	--	38	--	133	0	112	5.8
24-29	1050	11	--	80	14	--	55	--	160	0	221	8.7
30-31	1350	11	--	78	13	--	47	--	158	0	198	8.8
APR.												
01-03	1800	11	20	75	15	37	--	3.6	172	0	168	4.5
04-21	--	12	--	51	9.0	--	24	--	130	0	97	4.4
22-30	3710	9.7	--	46	7.5	--	21	--	120	0	82	3.6
MAY												
01-06	3740	11	--	47	7.2	--	19	--	110	0	84	5.8
07...	3710	15	--	48	6.3	--	72	--	140	0	170	7.1
08-16	3320	12	--	48	7.5	--	25	--	119	0	94	5.6
17-31	5240	9.5	--	40	7.1	--	10	--	95	0	64	2.7
JUNE												
01-16	4220	11	--	42	7.1	--	20	--	112	0	74	4.9
17...	4150	15	--	56	7.4	--	38	--	150	0	114	6.2
18-30	3760	11	--	45	6.7	--	22	--	113	0	84	4.7
JULY												
01-08	3440	8.3	10	42	6.6	20	--	1.7	104	0	88	4.4
09-18	3110	10	--	49	8.1	--	32	--	125	0	109	5.2
19...	3880	15	--	85	8.0	--	55	--	144	0	220	8.0
20-21	4100	13	--	67	9.0	--	28	--	170	0	149	6.4
22-25	3030	11	--	54	8.1	--	31	--	134	0	108	7.1
26...	2660	14	--	72	11	--	95	--	198	0	246	7.2
27...	2400	13	--	71	8.0	--	58	--	166	0	176	9.2
28-31	1780	11	--	60	8.3	--	36	--	139	0	128	8.4
AUG.												
01-14	1540	15	--	68	12	--	48	--	168	0	167	7.2
15...	2490	20	--	74	7.6	--	184	--	282	0	356	8.4
16-19	1380	15	--	66	10	--	59	--	162	0	182	7.5
20-21	722	15	--	89	19	--	71	--	176	0	273	15
22-23	1200	16	--	69	11	--	65	--	160	0	201	9.2
24...	2100	18	--	100	10	--	158	--	248	0	404	7.8
25-31	1490	14	--	70	10	--	50	--	166	0	171	7.6
SEP.												
01-08	1840	13	--	66	10	--	52	--	166	0	163	9.0
09...	3410	18	--	124	19	--	118	--	245	0	410	9.0
10-13	2480	14	--	80	10	--	80	--	186	0	237	9.2
14-19	1730	13	--	63	9.0	--	48	--	144	5	150	9.2
20-22	3210	15	--	1.0	23	--	52	--	208	0	270	18
23-30	1930	12	--	59	11	--	36	--	144	6	134	7.8
WTD. AVG.	--	11	--	55	9.3	--	37	--	129	0	136	6.9
TIME WTD. AVG.	A2118	12	--	65	11	--	49	--	140	0	178	9.9
TONS PER DAY	--	63	--	304	52	--	204	--	714	1	754	38

A MEAN DISCHARGE BASED ON 365 DAYS. MEAN DISCHARGE BASED ON 347 DAYS OF REPORTED DISCHARGE, 2050 CFS.

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

Period of record:
Dissolved solids: Maximum, 2,980 mg/l July 30-31, 1959; minimum, 115 mg/l June 21-28, 30, 1944.
Hardness: Maximum, 1,100 mg/l July 30-31, 1959; minimum, 70 mg/l June 21-28, 30, 1944.
Specific conductance (1957-89): Maximum daily, 4,360 micromhos July 31, 1959; minimum daily, 188 micromhos June 6, 1958.
Water temperatures: Maximum, 34.0°C July 20, 1968; minimum, freezing point on many days during winter periods of most years.
Sediment concentrations: Maximum daily, 114,000 mg/l Aug. 11, 1967; minimum daily, 2 mg/l May 4, 1963.
Sediment loads: Maximum daily, 2,000,000 tons Aug. 11, 1967; minimum daily, 1 ton on several days during July and September 1959, September 1962, May and July 1963.
REMARKS.--Additional chemical analysis on Feb. 3, 1969 performed in conjunction with sediment particle-size analysis. Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.											
01-04	.4	4.5	--	521	.71	1010	254	121	2.0	777	7.7
05-06	.4	4.2	--	584	.79	1340	272	126	2.3	865	7.6
07-14	.4	3.4	--	516	.70	1080	262	131	1.8	771	7.8
15-31	.4	5.1	--	642	.87	981	330	182	2.0	939	7.8
NOV.											
01...	.4	5.5	--	651	.85	1170	336	192	2.0	954	7.7
02-03	.5	5.4	--	804	1.09	1780	332	178	3.2	1160	7.6
04-13	.4	4.6	--	634	.86	983	328	180	1.9	936	7.8
14-30	.4	4.0	--	613	.83	1090	312	167	2.0	895	7.9
DEC.											
01-31	.5	4.8	--	553	.75	1150	294	158	1.7	816	7.5
JAN.											
01-21	.4	2.0	--	502	.68	1050	238	154	1.9	758	7.7
22-25	.4	2.8	--	466	.63	1250	226	121	1.9	706	7.6
26-29	.5	3.8	--	578	.79	1840	232	104	2.8	866	7.7
30-31	.4	3.2	--	367	.50	1630	176	64	1.7	569	7.9
FEB.											
01-04	.3	1.7	--	293	.40	1510	170	66	1.0	469	7.7
05-11	.3	.3	--	230	.31	1350	120	72	1.0	374	7.1
12-28	.3	1.0	--	274	.37	1670	152	66	1.1	446	7.0
MAR.											
01-19	.3	.8	--	289	.39	1750	156	60	1.2	471	7.9
20-21	.4	3.2	--	337	.46	2310	158	40	1.8	531	7.8
22-23	.3	2.3	--	294	.40	1930	154	45	1.3	471	7.7
24-29	.3	4.2	--	473	.64	1340	258	127	1.5	740	7.7
30-31	.3	4.6	--	439	.60	1600	250	120	1.3	686	7.7
APR.											
01-03	.3	4.1	70	404	.55	1960	248	107	1.0	627	7.7
04-21	.3	4.1	--	264	.36	2260	164	58	.8	427	7.9
22-30	.3	1.5	--	231	.31	2310	146	48	.7	374	7.8
MAY											
01-06	.3	1.6	--	230	.31	2320	147	57	.7	364	7.8
07...	.4	--	--	388	.53	3890	146	32	2.6	613	7.7
08-16	.3	1.8	--	253	.34	2270	151	54	.9	401	7.7
17-31	.3	2.0	--	183	.25	2590	129	51	.4	303	7.7
JUNE											
01-16	.3	1.4	--	216	.29	2460	134	42	.8	335	7.8
17...	.4	2.8	--	314	.43	3520	170	47	1.3	485	7.8
18-30	.3	1.4	--	231	.31	2350	140	48	.8	369	7.8
JULY											
01-08	.3	1.1	50	223	.30	2070	133	48	.8	356	7.5
09-18	.3	1.9	--	276	.38	2320	156	54	1.1	104	7.7
19...	.5	5.0	--	468	.64	4900	245	127	1.5	703	8.0
20-21	.5	5.0	--	362	.49	4010	204	64	.9	579	7.9
22-25	.4	3.0	--	289	.39	2360	168	58	1.0	457	7.9
26...	.6	1.8	--	545	.74	3910	225	62	2.8	824	7.9
27...	.5	2.2	--	420	.57	2720	210	74	1.7	640	8.0
28-31	.4	2.7	--	323	.44	1550	184	70	1.2	510	7.9
AUG.											
01-14	.4	2.4	--	403	.55	1680	220	82	1.4	624	7.7
15...	.7	.2	--	790	1.07	5310	216	0	5.4	1160	7.8
16-19	.5	2.0	--	422	.57	1570	207	74	1.8	633	7.7
20-21	.4	5.9	--	575	.78	1120	300	156	1.8	846	7.9
22-23	.4	4.0	--	455	.62	1470	216	85	1.9	672	7.7
24...	.5	.3	--	821	1.12	4660	292	89	4.0	1160	7.5
25-31	.4	3.1	--	408	.55	1640	219	83	1.5	633	8.0
SEPT											
01-08	.4	2.5	--	398	.54	1980	209	73	1.5	613	8.2
09...	.6	.6	--	819	1.11	7540	386	185	2.6	1220	7.8
10-13	.5	2.0	--	524	.71	3510	242	90	2.2	782	8.0
14-19	.4	2.6	--	371	.50	1730	194	68	1.5	576	8.3
20-22	.5	2.3	--	593	.81	5140	368	198	1.2	891	8.1
23-30	.2	2.4	--	339	.46	1770	194	66	1.1	512	8.3
WTD. AVG.	.3	2.1	--	323	.44	--	179	73	1.1	502	7.8
TIME WTD. AVG.	.4	2.8	--	398	.54	--	212	97	1.4	608	7.8
TONS PER DAY	1.9	12	--	1790	--	--	--	--	--	--	--

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (MG/L)	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	IMMEDIATE COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)
JULY											
09...	1600	3050	--	--	21.0	--	--	1.6	--	--	--
AUG.											
05...	0930	2450	650	8.0	21.0	4.6	--	1.4	<10	8500	<10
SEP.											
10...	1130	1990	850	8.0	19.0	5.3	16	2.3	<10	<100	<10

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
24...	1730	546	10	--	105	18	--	84	--	180	0	323
DEC.												
02...	1830	725	11	--	97	16	--	74	--	170	0	289
JAN.												
06...	1730	745	11	--	88	15	--	58	--	158	0	241
FEB.												
03...	1530	2500	--	--	50	20	31	--	--	120	0	--
03...	1545	1900	14	--	52	8.4	--	31	--	122	0	118
MAR.												
03...	1410	2220	12	--	51	10	--	34	--	122	0	125
APR.												
02	1040	1720	11	10	80	15	40	--	3.5	188	0	178
MAY												
01...	1940	4360	11	--	45	7.9	--	20	--	114	0	84
JUNE												
04...	1030	4180	9.5	--	43	6.9	--	17	--	106	0	75
JULY												
09...	1600	3050	9.1	--	46	8.5	25	--	1.8	110	0	100
AUG.												
05...	0930	2450	11	--	66	8.8	56	--	4.2	143	0	182
SEP.												
10...	1130	1990	11	--	73	8.9	86	--	4.6	164	0	268

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
24...	22	.4	4.7	--	--	656	336	188	2.0	959	7.6	12.0
DEC.												
02...	17	.4	4.6	--	--	593	308	168	1.8	870	7.8	.0
JAN.												
06...	15	.4	5.6	--	--	512	280	150	1.5	770	7.4	.0
FEB.												
03...	3.4	--	--	--	280	--	208	110	.9	457	7.9	5.0
03...	4.2	.3	2.1	--	--	290	164	64	1.1	459	7.6	3.0
MAR.												
03...	7.2	.3	.5	--	--	300	168	68	1.1	489	7.1	5.0
APR.												
02	8.8	.4	2.4	70	--	431	260	106	1.1	658	7.6	10.0
MAY												
01...	4.0	.3	.8	--	--	229	145	52	.7	367	7.4	10.0
JUNE												
04...	3.8	.3	.6	--	--	208	136	49	.6	337	7.5	14.0
JULY												
09...	6.3	--	.5	--	237	251	147	57	.9	401	8.1	21.0
AUG.												
05...	11	--	3.7	--	421	413	196	79	1.7	621	8.1	21.0
SEP.												
10...	6.1	.6	2.6	--	554	542	226	92	2.5	826	7.7	19.0

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	781	954	851	782	471	432	669	369	306	352	550	647
2	778	1200	877	762	486	440	608	354	312	340	719	547
3	780	1120	--	776	475	477	620	341	333	342	662	679
4	795	994	--	768	432	452	453	331	342	339	--	587
5	912	975	867	770	381	448	432	348	336	354	654	568
6	817	954	--	762	374	443	443	449	322	362	611	666
7	785	936	867	720	359	436	436	613	310	373	603	573
8	768	910	831	698	368	426	423	468	322	383	583	626
9	734	922	--	643	366	455	426	430	337	407	573	1270
10	761	919	--	646	375	424	428	417	329	422	583	838
11	799	919	--	687	377	450	417	412	323	434	588	645
12	796	922	812	726	457	483	415	384	337	451	578	565
13	789	922	843	708	467	470	413	364	368	552	587	1080
14	782	898	846	737	462	468	421	362	388	456	683	626
15	765	1030	852	848	464	516	420	365	391	430	1160	605
16	970	949	829	906	443	480	415	434	388	417	737	550
17	970	941	820	780	470	466	425	358	485	415	611	533
18	970	903	--	828	408	495	422	331	401	445	593	571
19	947	866	--	728	405	642	438	331	357	703	598	547
20	957	867	752	770	456	572	433	319	357	596	593	1050
21	962	851	738	782	452	488	412	310	365	561	846	947
22	962	853	739	712	447	465	394	299	351	459	601	647
23	962	869	--	759	446	474	388	290	341	486	733	523
24	954	863	794	685	446	521	366	280	349	451	1160	492
25	965	927	802	654	439	778	364	296	361	440	758	487
26	949	932	--	767	436	820	352	312	342	824	726	519
27	954	878	--	856	436	824	356	297	409	640	587	512
28	949	883	--	1060	455	809	379	281	388	500	554	508
29	934	883	772	762	--	735	389	279	388	500	562	520
30	952	859	--	638	--	697	380	278	374	507	535	531
31	931	--	785	488	--	670	--	283	--	537	648	--
AVG	875	929	--	748	430	540	431	354	357	467	665	648

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	8.0	1.0	1.0	1.0	6.0	15.0	16.0	17.0	19.0	22.0	18.0
2	19.0	13.0	2.0	1.0	2.0	4.0	13.0	16.0	14.0	19.0	22.0	17.5
3	15.0	11.0	1.0	0.0	0.0	3.0	10.0	15.0	15.0	19.0	20.0	16.0
4	15.0	10.0	2.0	0.0	0.0	6.0	13.0	13.0	19.0	18.0	25.0	18.0
5	16.0	10.0	1.0	0.0	2.0	5.0	14.0	11.0	15.0	18.0	21.0	17.0
6	16.0	9.0	1.0	2.0	3.0	6.0	14.0	10.0	17.0	18.0	23.0	18.0
7	17.0	7.0	2.0	3.0	3.0	4.0	13.0	8.0	16.0	18.0	22.0	17.5
8	15.0	8.0	3.0	3.0	3.0	5.0	6.0	9.0	15.0	17.0	21.0	20.0
9	15.0	8.0	3.0	2.0	2.0	5.0	7.0	12.0	15.0	19.0	25.0	19.0
10	15.0	8.0	5.0	4.0	2.0	4.0	13.0	16.0	15.0	18.0	28.0	19.5
11	18.0	8.0	7.0	3.0	3.0	6.0	11.0	13.0	13.0	21.0	22.0	17.0
12	19.0	8.0	2.0	5.0	6.0	7.0	13.0	13.0	14.0	21.0	22.0	16.5
13	19.0	7.0	1.0	5.0	5.0	7.0	12.0	13.0	14.0	19.0	24.0	18.0
14	17.0	8.0	1.0	5.0	5.0	8.0	15.0	13.0	16.0	20.0	22.0	15.5
15	14.0	5.0	2.0	8.0	4.0	8.0	13.0	18.0	16.0	21.0	20.0	15.5
16	11.0	6.0	4.0	7.0	4.0	10.0	10.0	18.0	16.0	20.0	20.0	20.0
17	10.0	7.0	1.0	3.0	2.0	10.0	13.0	17.0	16.0	20.0	20.0	19.5
18	11.0	6.0	1.0	3.0	5.0	11.0	13.0	17.0	14.0	19.0	20.0	21.0
19	11.0	8.0	0.0	5.0	4.0	6.0	15.0	13.0	15.0	19.0	19.0	21.0
20	14.0	8.0	0.0	7.0	3.0	10.0	14.0	13.0	16.0	20.0	19.0	16.5
21	14.0	8.0	0.0	7.0	3.0	6.0	17.0	14.0	15.0	19.0	19.0	16.5
22	13.0	8.0	1.0	8.0	5.0	8.0	17.0	14.0	15.0	20.0	22.0	17.5
23	13.0	7.0	1.0	4.0	5.0	7.0	11.0	14.0	16.0	20.0	19.0	17.5
24	13.0	6.0	2.0	2.0	4.0	3.0	15.0	14.0	16.0	21.0	18.0	18.0
25	14.0	6.0	1.0	1.0	5.0	3.0	8.0	14.0	13.0	22.0	18.0	18.0
26	14.0	4.0	1.0	8.0	5.0	3.0	7.0	13.0	15.0	22.0	20.0	18.0
27	13.0	4.0	4.0	6.0	8.0	5.0	8.0	18.0	16.0	21.0	20.0	19.5
28	13.0	3.0	0.0	3.0	3.0	13.0	15.0	14.0	16.0	22.0	20.0	19.0
29	13.0	4.0	4.0	1.0	--	14.0	16.0	18.0	17.0	22.0	20.0	20.5
30	11.0	3.0	3.0	0.0	--	14.0	16.0	18.0	17.0	22.0	18.0	19.5
31	13.0	--	1.0	0.0	--	14.0	--	17.0	--	23.0	17.5	--
AVG	14.4	7.2	1.8	3.4	3.4	7.1	12.5	14.2	15.4	19.9	20.9	18.1

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	830	2090	4680	780	1750	3690	726	1910	3740
2	692	2410	4500	964	12900	33600	740	3990	7970
3	592	2070	3310	764	3480	7180	740	4250	8490
4	747	5250	10600	677	3000	5480	740	3490	6970
5	853	7700	17700	635	2470	4230	756	2570	5250
6	846	6310	14400	614	2100	3480	756	2800	5720
7	800	4650	10000	607	1890	3100	788	4000	8510
8	768	3300	6840	558	1500	2260	815	5500	12100
9	796	3350	7200	558	1490	2240	847	3900	8920
10	734	3050	6040	522	1700	2400	839	3000	6800
11	759	3220	6600	522	1850	2610	839	6600	15000
12	769	3000	6230	522	1720	2420	854	5400	12500
13	793	3010	6440	522	3210	4520	807	4700	10200
14	770	4920	10200	635	4050	6940	799	3740	8070
15	669	3410	6160	642	4540	7870	798	4300	9260
16	523	1090	1540	691	4090	7630	808	3400	7420
17	510	1440	1980	691	4350	8120	832	3480	7820
18	509	1450	1990	712	4800	9230	755	3400	6930
19	539	1590	2310	726	4310	8450	732	2670	5280
20	531	1420	2040	712	4040	7770	756	2400	4900
21	543	1000	1470	705	4490	8550	811	2800	6130
22	541	860	1260	691	3650	6810	701	600	1140
23	548	950	1410	691	3260	6080	621	400	671
24	557	1040	1560	656	3590	6360	695	350	657
25	560	950	1440	663	4640	8310	808	1070	2330
26	560	1170	1770	677	6890	12600	812	4230	9270
27	560	1280	1940	670	1700	3080	784	1200	2540
28	588	1000	1590	684	1740	3210	740	6200	12400
29	621	1000	1680	698	710	1340	778	8820	18500
30	663	949	1700	712	500	961	765	4980	10300
31	607	1990	3260	--	--	--	762	4500	9260
TOTAL	20378	--	149840	19901	--	190521	24004	--	235048

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	748	6000	12100	1860	11400	57300	2160	3130	18300
2	753	5190	10600	1980	11300	60400	2190	2700	16000
3	751	2820	5720	1950	7250	38200	2220	3720	22300
4	755	2180	4440	2130	8000	46000	2170	6430	37700
5	746	3050	6140	2240	10800	65300	2210	5500	32800
6	745	3300	6640	2240	7800	47200	2230	7210	43400
7	757	2930	5990	2240	8500	51400	2230	4100	24700
8	746	5360	10800	2210	5900	35200	2190	2990	17700
9	753	5750	11700	2270	5800	35500	2220	6150	36900
10	818	4810	10600	1930	5120	26700	2240	4890	29600
11	800	4000	8640	2270	6300	38600	2220	3990	23900
12	800	3120	6740	2260	8330	50800	2230	4400	26500
13	866	3510	8210	2360	5350	34100	2240	4930	29800
14	897	3750	9080	2330	5400	34000	2260	6000	36600
15	930	1780	4470	2350	3780	24000	2240	4200	25400
16	900	3740	9090	2250	3100	18800	2240	5750	34800
17	840	4600	10400	2240	4600	27800	2200	6400	38000
18	848	3730	8540	2310	5300	33100	2290	5490	33900
19	842	1220	2770	2290	4600	28400	2560	11400	78800
20	860	1780	4130	2270	4100	25100	2650	16800	120000
21	900	2300	5590	2240	4010	24300	2420	6100	39900
22	1100	7450	23600	2180	4800	28300	2390	6600	42600
23	1180	7400	23600	2270	4300	26400	2470	8900	59400
24	1120	6800	20600	2290	3100	19200	1310	5400	19100
25	1100	10500	31200	2320	3900	24400	796	4200	9030
26	1260	12200	41500	2110	4400	25100	726	3000	5880
27	1600	23800	103000	2240	4100	24800	756	3500	7140
28	1430	27000	104000	2180	4000	23500	1120	6000	18100
29	1100	13000	38600	--	--	--	1240	6900	23100
30	1710	16200	74800	--	--	--	1360	7900	29000
31	1760	21100	100000	--	--	--	1340	11500	41600
TOTAL	30415	--	723290	61810	--	973900	61118	--	1021950

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1500	12000	48600	3590	5300	51400	5490	400	5930
2	1720	10100	46900	3790	4300	44000	4720	2030	25900
3	2190	9000	53200	3920	6150	65100	4440	1740	20900
4	3230	7000	61000	4070	6550	72000	4200	2490	28200
5	3230	3000	26200	3760	5490	55700	4270	3810	43900
6	3330	10900	98000	3320	6300	56500	4500	4100	49800
7	3610	12700	124000	3710	10400	104000	4690	1840	23300
8	3430	9600	88900	3520	5270	50100	4290	1670	19300
9	3130	7250	61300	3230	6250	54500	4210	910	10300
10	3180	5500	47200	3160	5000	42700	4310	835	9720
11	3390	10300	94300	3160	3900	33300	4430	935	11200
12	3510	11700	111000	3560	3550	34100	4070	770	8460
13	3370	7000	63700	3750	5000	50600	3820	1200	12400
14	3170	7500	64200	3630	4600	45100	3450	3100	28900
15	3070	6000	49700	3450	4750	44200	3360	2450	22200
16	3100	6200	51900	2460	2200	14600	3350	5420	49000
17	3080	4900	40700	3350	3100	28000	4150	8800	98600
18	2820	5500	41900	4170	4250	47900	4190	5900	66700
19	2750	5750	42700	4900	6800	90000	4060	6500	71300
20	2690	3700	26900	5090	6250	85900	3930	4600	48800
21	2950	4750	37800	5420	6400	93700	3710	4700	47100
22	3580	10000	96700	5730	7800	121000	3860	3420	35600
23	4110	11400	127000	5870	8100	128000	3840	3600	37300
24	4150	8000	89600	5850	5600	88500	3740	3300	33300
25	4170	8650	97400	5080	6450	88500	3740	3550	35800
26	4060	7000	76700	4710	3500	44500	3680	3190	31700
27	3620	6480	63300	5190	4400	61700	3750	3510	35500
28	3200	5170	44700	5850	2110	33300	3570	3310	31900
29	3170	4990	42700	6010	760	12300	3410	3460	31900
30	3420	5800	53600	5760	1090	17000	3420	2910	26900
31	--	--	--	5590	600	9060	--	--	--
TOTAL	95930	--	1971800	134650	--	1767260	120650	--	1001810

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3520	2830	26900	1430	650	2510	1550	6550	27400
2	3580	1500	14500	1490	4300	17300	1570	4700	19900
3	3740	5110	51600	2600	18300	135000	1670	6600	29800
4	3520	2410	22900	2020	17400	94900	1610	2250	9780
5	3580	3790	36600	1540	6750	28100	1990	8220	48000
6	3360	2800	25400	1480	2880	11500	1990	8550	45900
7	3150	3210	27300	1340	2400	8680	1960	3000	15900
8	3050	1450	11900	1270	1310	4490	2370	9000	57600
9	2970	1660	13300	1220	800	2640	3410	33200	338000
10	2780	580	4350	1230	980	3250	2730	27100	200000
11	2960	700	5590	1170	910	2870	2270	12200	74800
12	2890	7300	57000	1150	700	2170	2670	17200	140000
13	3150	5020	42700	1150	720	2240	2270	36100	221000
14	3250	2830	24800	2400	37900	346000	1900	11600	59500
15	3290	1120	9950	2490	44100	296000	1640	7770	34400
16	3340	795	7170	1630	14500	63800	1610	4450	19300
17	3170	890	7620	1380	6500	24200	1700	4200	19300
18	3320	3980	35900	1270	3150	10800	1760	4300	20400
19	3880	16600	174000	1230	2480	8240	1760	3050	14500
20	4200	10600	120000	866	1320	3340	3000	16900	240000
21	3990	11500	124000	578	916	2180	4420	31800	473000
22	3560	6250	60100	1060	1890	5410	2200	13100	77800
23	3000	4420	35800	1340	8060	36500	2160	7700	44900
24	2620	2010	14200	2100	32200	183000	2020	5750	31400
25	2940	30000	260000	1810	11500	56200	2280	3090	19000
26	2660	17900	129000	1690	7000	31900	2090	2420	13700
27	2400	7040	45600	1370	2150	7950	1890	2140	10900
28	1970	2310	12300	1270	1710	5860	1780	2000	9610
29	1800	1110	5390	1260	1540	5240	1640	1610	7130
30	1710	850	3920	1380	2050	7640	1580	1600	6830
31	1650	1260	5610	1640	16400	72600	--	--	--
TOTAL	95060	--	1415400	45854	--	1482510	63490	--	2329750

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 773200
TOTAL LOAD FOR YEAR (TONS) 13263079

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV 2, 1968	1700	13.0	932	14300	36000	46	62	--	74	--	86	97	100	--	--	--	VPWC
JAN 27, 1969	1645	07.0	1820	28500	140000	35	46	--	57	--	77	91	98	99	100	--	VPWC
FEB 3.....	1530	05.0	1950	4990	26300	4	7	7	9	14	33	69	95	97	100	--	VPWC
FEB 3.....	1530	05.0	1950	4990	26300	1	4	6	8	11	33	69	95	97	100	--	VPN
FEB 20.....	0730	03.0	2310	3880	24200	4	4	--	5	--	19	52	97	100	--	--	VPWC
MAR 15.....	1700	08.0	2160	2800	16300	15	17	--	21	--	34	58	96	100	--	--	VPWC
APR 1.....	1700	15.0	1690	12000	54800	14	17	--	21	--	47	72	95	100	--	--	VPWC
MAY 7.....	0715	08.0	4090	19100	211000	27	31	--	36	--	45	56	93	100	--	--	VPWC
JUN 20.....	0945	16.0	4030	2500	27200	4	4	--	6	--	18	37	83	100	--	--	VPWC
JUL 12.....	2045	23.0	2350	18700	119000	71	80	--	91	--	95	97	99	100	--	--	VPWC
JUL 21.....	0800	19.0	4210	13300	151000	47	53	--	60	--	79	96	100	--	--	--	VPWC
JUL 25.....	1945	25.0	3020	47000	383000	55	65	--	77	--	92	97	100	--	--	--	VPWC
AUG 5.....	1030	21.0	1520	6130	25200	46	62	--	76	--	88	92	98	100	--	--	VPWC
AUG 14.....	1630	23.0	3700	43600	436000	43	51	--	62	--	90	96	98	100	--	--	VPWC
SEP 10.....	1315	19.0	2650	22900	164000	41	49	--	62	--	88	95	98	100	--	--	VPWC
SEP 21.....	1500	16.0	3050	32400	267000	38	53	--	71	--	90	97	99	100	--	--	VPWC

09378700 COTTONWOOD WASH NEAR BLANDING, UTAH

LOCATION.--Lat 37°33'40", long 109°34'40", in NE¼NW¼ sec.23, T.37 S., R.21 E., San Juan County, at gaging station about 2 miles downstream from Brush Basin Canyon and 7 miles southwest of Blanding.

DRAINAGE AREA.--205 sq mi.

PERIOD OF RECORD.--Water temperatures: March 1968 to September 1969.
Sediment records: March 1968 to September 1969.

EXTREMES.--1968-69:
Sediment concentrations: Maximum daily, 46,900 mg/l July 19; minimum daily, no flow for many days during October, and June to September.
Sediment loads: Maximum daily, 41,400 tons July 19; minimum daily, 0 ton on many days during October, and June to September.

Period of record:
Sediment concentrations: Maximum daily, 110,000 mg/l July 26, 1968; minimum daily, no flow for many days each year.
Sediment loads: Maximum daily, 1,800,000 tons Aug. 1, 1968; minimum daily, 0 ton on many days during October, and June to September 1969.

REMARKS.--No flow Oct. 1-3, June 28 to July 17, Aug. 1, 5-10, 27, 28, Sept. 2-8, 23-30.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

	DAY																												AVER-
MONTH	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	AGE
OCTOBER..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--
DECEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	--	--	--	0	--	0	--	0	--	0	0	0	--	--	--	--
FEBRUARY.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	5	--	--	--	--	--	6	--	3	--	--	--	--	--	--
MARCH....	--	--	--	--	8	--	--	3	9	--	6	--	8	--	--	14	14	6	14	6	16	8	4	2	1	6	10	8	10	5	--	--
APRIL....	--	15	12	--	10	8	10	8	8	10	14	10	9	12	10	11	7	--	12	13	14	13	12	10	8	12	21	17	12	15	--	12
MAY.....	--	--	11	14	--	10	12	24	--	--	9	--	--	20	--	--	--	10	--	--	--	28	--	--	28	--	--	--	--	--	--	--
JUNE.....	--	26	--	31	--	--	--	--	--	--	13	--	--	--	--	--	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	19	20	21	18	--	20	18	22	--	--	--	--	--	--
AUGUST...	--	22	19	19	--	--	--	--	--	--	--	--	22	16	--	--	--	17	--	--	30	--	--	--	--	--	--	--	20	15	15	--
SEPTEMBER	14	--	--	--	--	--	--	--	21	15	15	15	16	14	13	--	--	--	--	--	--	14	10	--	--	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JAN 28, 1969	1025	0	5.5	430	6.4	51	63	--	77	--	89	93	100	--	--	--	VPWC
FEB 26.....	1000	3	21	2240	127	44	45	--	61	--	79	98	100	--	--	--	VPWC
MAR 22.....	2230	10	130	31700	11100	7	9	--	14	--	47	89	100	--	--	--	VPWC
APR 16.....	1740	14	42	2180	247	11	12	--	17	--	40	88	100	--	--	--	VPWC
MAY 7.....	1830	15	43	4610	535	24	31	--	46	--	66	91	100	--	--	--	VPWC
JUN 4.....	1455	31	1.8	108	.52	13	26	--	--	--	39	56	92	100	--	--	VPWC
JUL 19.....	0630	18	337	94700	86200	24	27	--	37	--	70	93	100	--	--	--	VPWC
JUL 19.....	0700	18	273	85000	62700	21	27	--	37	--	67	95	100	--	--	--	VPWC
JUL 19.....	1030	19	100	38500	10400	38	41	--	60	--	82	95	100	--	--	--	VPWC
JUL 20.....	0725	17	73	33000	6500	30	30	--	47	--	76	95	98	99	99	100	SVPWC
JUL 22.....	0600	18	12	11000	356	56	72	--	93	--	97	100	--	--	--	--	VPWC
AUG 21.....	1440	30	2.8	6480	49	77	94	--	99	--	100	--	--	--	--	--	SPWC
AUG 29.....	1620	20	416	93600	105000	18	20	--	29	--	48	81	99	100	--	--	VPWC
SEP 13.....	1810	21	156	236000	99400	7	8	--	13	--	38	78	96	100	--	--	VPWC
SEP 14.....	0720	14	7.0	24100	455	62	77	--	92	--	97	100	--	--	--	--	VPWC
SEP 15.....	0640	13	1.4	5750	22	86	98	--	100	--	--	--	--	--	--	--	SPWC
SEP 21.....	1930	15	54	53800	7840	30	34	--	48	--	68	92	99	100	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHOD OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
JAN 28, 1969	1025	0		5.5	2	6	52	85	92	94	96	98	100	--	--	SV
FEB 26.....	1000	3		21	2	18	62	88	94	96	97	98	99	100	--	SV
APR 16.....	1740	14		42	1	10	48	75	87	92	97	99	100	--	--	SV
MAY 7.....	1830	15		43	1	9	56	78	90	93	96	99	100	--	--	SV
JUN 4.....	1455	31		1.8	1	9	59	79	89	91	94	98	100	--	--	SV
AUG 21.....	1440	30		2.8	--	5	40	72	83	88	94	98	100	--	--	SV

09378700 COTTONWOOD WASH NEAR BLANDING, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	--	0	1.0	160	.43	.50	70	.09
2	0	--	0	1.0	160	.43	.50	70	.09
3	0	--	0	1.0	160	.43	.50	70	.09
4	5.0	1110	15	1.0	160	.43	.50	70	.09
5	1.0	--	.43	1.0	160	.43	.50	70	.09
6	1.0	160	.43	1.0	160	.43	.50	70	.09
7	1.0	160	.43	1.0	160	.43	.50	70	.09
8	1.0	160	.43	1.0	160	.43	.50	70	.09
9	1.0	160	.43	1.0	160	.43	.50	70	.09
10	1.0	160	.43	1.0	160	.43	.50	70	.09
11	1.0	160	.43	1.0	160	.43	.50	70	.09
12	1.0	160	.43	1.0	160	.43	.50	70	.09
13	1.0	160	.43	1.0	160	.43	.50	70	.09
14	1.0	160	.43	1.0	160	.43	.50	70	.09
15	1.0	160	.43	1.0	160	.43	.50	70	.09
16	1.0	160	.43	1.0	160	.43	.50	70	.09
17	1.0	160	.43	1.0	160	.43	.50	70	.09
18	1.0	160	.43	1.0	160	.43	.50	70	.09
19	1.0	160	.43	1.0	160	.43	.50	70	.09
20	1.0	160	.43	1.0	160	.43	.50	70	.09
21	1.0	160	.43	1.0	160	.43	.50	70	.09
22	1.0	160	.43	1.0	160	.43	.50	70	.09
23	1.0	160	.43	1.0	160	.43	.50	70	.09
24	1.0	160	.43	1.0	160	.43	.50	70	.09
25	1.0	160	.43	1.0	160	.43	.50	70	.09
26	1.0	160	.43	.50	70	.09	.50	70	.09
27	1.0	160	.43	.50	70	.09	.50	70	.09
28	1.0	160	.43	.50	70	.09	.50	70	.09
29	1.0	160	.43	.50	70	.09	.50	70	.09
30	1.0	160	.43	.50	70	.09	.50	70	.09
31	1.0	160	.43	--	--	--	.50	70	.09
TOTAL	32.0	--	26.61	27.50	--	11.20	15.50	--	2.79

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.0	160	.43	6.0	1420	23	13	2620	92
2	1.0	160	.43	6.0	1420	23	12	1950	63
3	1.0	160	.43	6.0	1420	23	11	1380	41
4	1.0	160	.43	6.0	1420	23	11	1490	44
5	1.0	160	.43	6.0	1420	23	7.0	1700	32
6	2.0	370	2.0	9.0	2350	57	7.0	1170	22
7	2.0	370	2.0	9.0	2350	57	6.6	786	14
8	2.0	370	2.0	7.0	1700	32	5.6	1260	19
9	2.0	370	2.0	7.0	1700	32	4.4	1010	12
10	2.0	370	2.0	7.0	1700	32	3.7	1600	16
11	3.0	620	5.0	8.0	2040	44	4.4	1430	17
12	3.0	620	5.0	8.0	2040	44	6.3	1880	32
13	3.0	620	5.0	9.0	2350	57	8.2	2130	47
14	5.0	1110	15	8.0	2040	44	6.3	1530	26
15	25	8300	560	8.0	2040	44	6.3	1530	26
16	4.0	880	9.5	10	2710	73	10	4850	131
17	4.5	988	12	9.0	2350	57	30	8850	717
18	5.0	1110	15	9.0	2350	57	67	11100	2010
19	4.0	880	9.5	11	3030	90	76	9500	1950
20	10	2710	73	10	2710	73	45	6000	729
21	12	3400	110	10	2710	73	48	5900	765
22	14	4100	155	10	2710	73	71	11100	2130
23	5.0	1110	15	10	2710	73	60	8400	1360
24	4.0	880	9.5	10	2710	73	20	2850	154
25	4.0	880	9.5	15	3210	130	14	1850	70
26	100	44400	12000	22	3030	180	16	4650	201
27	7.0	1700	32	12	3090	100	31	7150	598
28	5.5	1280	19	11	3370	100	69	12400	2310
29	5.5	1280	19	--	--	--	112	20000	6050
30	5.5	1280	19	--	--	--	149	22700	9130
31	5.5	1280	19	--	--	--	114	17500	5390
TOTAL	249.5	--	13128.15	259.0	--	1710	1044.8	--	34198

09378700 COTTONWOOD WASH NEAR BLANDING, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	120	20300	6580	12	393	13	2.7	118	.86
2	118	19900	6340	10	369	10	2.5	101	.68
3	95	15800	4050	9.5	345	8.8	2.7	118	.86
4	89	16900	4060	9.5	486	12	2.0	67	.36
5	116	26200	8210	10	700	19	1.8	56	.27
6	110	19800	5880	15	800	32	1.6	37	.16
7	91	14400	3540	30	2600	211	1.6	37	.16
8	64	6500	1120	18	1300	63	1.8	56	.27
9	80	9500	2050	13	620	22	1.6	37	.16
10	89	9000	2160	10	400	11	1.4	34	.13
11	104	9500	2670	10	290	7.8	1.4	34	.13
12	116	10000	3130	10	345	9.3	1.8	56	.27
13	116	11300	3540	9.5	300	7.7	1.6	37	.16
14	98	8100	2140	8.6	250	5.8	1.8	56	.27
15	96	8500	2200	8.6	250	5.8	1.8	56	.27
16	55	2900	431	8.6	250	5.8	1.4	34	.13
17	46	2100	261	8.2	271	6.0	1.4	34	.13
18	55	3150	468	7.4	335	6.7	1.4	34	.13
19	46	2500	310	5.3	419	6.0	1.4	34	.13
20	59	4350	693	5.3	419	6.0	1.6	37	.16
21	66	4800	855	5.3	419	6.0	1.6	37	.16
22	64	4350	752	4.7	457	5.8	1.6	37	.16
23	54	3050	445	4.4	387	4.6	1.6	37	.16
24	43	1990	231	3.7	210	2.1	1.6	37	.16
25	33	1420	127	3.7	210	2.1	1.6	37	.16
26	24	786	51	3.7	210	2.1	1.8	56	.27
27	18	627	30	2.9	140	1.1	1.6	37	.16
28	16	638	28	2.9	140	1.1	0	--	0
29	15	953	39	2.9	140	1.1	0	--	0
30	14	417	16	2.9	140	1.1	0	--	0
31	--	--	--	2.7	118	.86	--	--	--
TOTAL	2110	--	62407	258.3	--	496.66	46.7	--	6.92

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	--	0	0	--	0	.37	2000	2.0
2	0	--	0	30	17000	8300	0	--	0
3	0	--	0	46	11800	3600	0	--	0
4	0	--	0	1.0	7500	20	0	--	0
5	0	--	0	0	--	0	0	--	0
6	0	--	0	0	--	0	0	--	0
7	0	--	0	0	--	0	0	--	0
8	0	--	0	0	--	0	0	--	0
9	0	--	0	0	--	0	9.7	14200	1110
10	0	--	0	0	--	0	4.1	18400	407
11	0	--	0	5.2	3790	184	3.0	7000	57
12	0	--	0	13	11000	386	16	16700	4320
13	0	--	0	80	30600	14100	26	37200	6550
14	0	--	0	25	12800	962	6.1	20000	392
15	0	--	0	10	8500	230	2.9	10000	78
16	0	--	0	88	26000	27800	3.2	11000	95
17	0	--	0	4.7	9000	114	1.4	2500	9.4
18	9.2	10000	999	2.3	5500	34	1.8	4500	22
19	164	46900	41400	13	9500	333	1.4	3000	11
20	42	24900	5110	3.0	8000	65	1.2	1900	6.2
21	27	25400	2470	2.8	7000	53	7.7	13000	760
22	8.6	8000	186	2.5	4700	32	.13	5900	2.1
23	4.4	2500	30	34	20500	12700	0	--	0
24	43	19100	9470	2.5	5000	34	0	--	0
25	30	10000	810	2.0	2100	11	0	--	0
26	13	1600	56	1.0	750	2.0	0	--	0
27	7.4	1200	24	0	--	0	0	--	0
28	5.6	900	14	0	--	0	0	--	0
29	46	21800	8010	116	24800	29100	0	--	0
30	31	25300	3410	12	12600	652	0	--	0
31	1.0	5600	15	2.5	13700	140	--	--	--
TOTAL	432.2	--	72004	496.5	--	98852.0	85.00	--	13821.7

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 5057.00
TOTAL LOAD FOR YEAR (TONS) 296665.03

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH
(Irrigation network station)

LOCATION.--Lat 37°09'04", long 109°52'00", in SE¼NW¼ sec.7, T.42 S., R.19 E., San Juan County, at bridge on State Highway 47, 1,800 ft downstream from gaging station, 20 miles southwest of Bluff, and 114 miles upstream from mouth.
DRAINAGE AREA.--23,000 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: February to June 1927, October 1929 to September 1969.
Water temperatures: May 1944 to September 1961, October 1964 to September 1969.
Sediment records: August to September 1928, July 1929 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,560 mg/l Aug. 29; minimum, 251 mg/l May 20-31.
Hardness: Maximum, 1,030 mg/l Aug. 29; minimum, 184 mg/l May 1-6.
Specific conductance: Maximum daily, 1,700 micromhos Aug. 29; minimum daily, 343 micromhos May 30.
Water temperatures: Maximum, 29.0°C Aug. 1, 2, 5, 6, 11; minimum, freezing point Dec. 5, Jan. 16.
Sediment concentrations: Maximum daily, 67,200 mg/l July 26; minimum daily, 100 mg/l Dec. 24.
Sediment loads: Maximum daily, 1,240,000 tons July 19; minimum daily, 30 tons Dec. 24.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-04	862	11	91	30	--	--	82	174	0	341	22
05-09	1488	13	111	31	--	--	107	212	0	408	29
10-16	1051	12	98	32	--	--	88	180	0	368	24
17-31	674	10	117	39	--	--	106	196	0	462	30
NOV.											
01-14	804	11	118	37	--	--	120	204	0	478	30
15-20	899	11	113	40	--	--	107	198	0	458	29
21-30	797	9.9	107	38	--	--	92	190	0	412	28
DEC.											
01-22	787	11	107	34	--	--	91	188	0	398	27
23-31	602	12	115	37	--	--	96	206	0	422	30
JAN.											
01-14	812	12	103	35	--	--	87	182	0	388	26
15-22	1416	10	96	36	--	--	114	180	0	425	32
23-25	1457	1.0	106	47	--	--	77	165	10	462	28
26-28	3097	8.9	70	32	--	--	86	161	0	312	24
29-31	1797	8.9	91	28	--	--	119	186	0	400	22
FEB.											
01-16	2370	10	70	17	--	--	46	157	0	188	13
17-28	2342	9.5	63	19	--	--	54	150	0	200	14
MAR.											
01-18	2272	11	65	21	--	--	49	150	0	203	14
19-25	4849	11	71	24	--	--	66	182	0	242	14
26-31	1903	10	99	34	--	--	108	209	0	395	26
APR.											
01-05	3176	9.4	93	28	--	--	53	189	0	263	21
06-17	3857	9.5	62	17	--	--	39	156	0	143	22
18-30	3591	9.0	54	14	--	--	35	138	0	121	21
MAY											
01-06	3915	7.7	53	13	--	--	23	136	0	108	7.8
07-10	3832	8.5	60	14	--	--	49	151	0	167	11
11-19	3610	7.4	53	13	--	--	32	132	0	126	12
20-31	5432	5.8	43	11	--	--	18	109	0	88	7.0
JUNE											
01-12	4487	7.9	46	13	--	--	18	117	0	94	10
13-17	3510	8.6	52	15	--	--	31	126	0	131	12
18-19	4525	10	67	15	--	--	40	146	0	172	12
20-30	3634	8.6	52	15	--	--	33	127	0	138	11
JULY											
01-09	3442	9.2	50	14	--	--	28	127	0	118	10
10-19	3065	10	58	14	--	--	44	138	0	154	17
20-22	5520	10	98	19	--	--	70	168	0	300	19
23-26	3350	10	63	17	--	--	39	146	0	168	12
27...	2580	13	94	15	--	--	155	189	0	392	18
28-31	1978	10	71	18	--	--	49	151	0	202	14
AUG.											
01-03	1527	13	75	22	--	--	50	172	0	213	16
04-07	2040	15	94	26	--	--	68	215	0	280	15
08-11	1242	13	75	22	--	--	53	169	0	223	17
12...	1180	16	188	32	--	--	60	223	0	300	19
13-15	2003	13	63	36	--	--	44	189	0	216	16
16-17	2030	22	71	27	--	--	153	295	0	338	17
18-25	1410	14	63	38	--	--	69	196	0	265	18
26...	1640	15	97	26	--	--	89	219	0	325	18
27-28	1425	14	71	27	--	--	53	175	0	226	16
29...	1910	17	327	53	--	--	50	228	0	905	16
30-31	2185	13	80	41	--	--	59	194	0	300	17
SEPT.											
01-10	1649	13	86	17	--	--	62	177	0	244	14
11-12	1835	13	115	21	--	--	111	211	0	402	18
13...	2910	12	77	20	--	--	39	194	0	173	15
14-15	2030	11	94	14	--	--	105	194	0	326	16
16-21	2157	11	71	23	--	--	50	157	0	220	16
22-23	2925	12	123	19	--	--	98	175	0	412	18
24-30	1910	10	75	17	--	--	43	153	0	201	12
WTD. AVG. TIME	2283	9.7	69	20	--	--	51	154	0	208	16
WTD. AVG. TONS PER DAY	--	10	81	25	--	--	65	167	0	269	19
	--	61	433	125	--	--	320	965	0	1300	100

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 1,860 mg/l July 21-31, 1934; minimum, 152 mg/l June 11-20, 1952.
Hardness: Maximum, 1,030 mg/l Aug. 29, 1969; minimum, 102 mg/l July 1-6, 8-10, 1957.
Specific conductance (1941-69): Maximum daily, 2,790 micromhos Sept. 19, 1959; minimum daily, 208 micromhos June 17, 1952.
Water temperatures: Maximum, 33.5°C July 31, 1959; minimum (1944-61, 1965-69), freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 383,000 mg/l Sept. 21, 1929; minimum daily, no flow for several days during July 1934 and August 1939.
Sediment loads: Maximum daily, 12,000,000 tons Oct. 14, 1941; minimum daily, 0 ton on several days during July 1934 and August 1939.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-04	--	--	671	.91	1560	350	207	1.9	953	7.5
05-09	--	--	814	1.11	3270	404	230	2.3	1130	7.7
10-16	--	--	722	.98	2050	374	226	2.0	1010	7.6
17-31	--	--	890	1.21	1620	454	293	2.2	1190	7.8
NOV.										
01-14	--	--	901	1.23	1960	446	279	2.5	1230	7.6
15-20	--	--	884	1.20	2150	448	286	2.2	1190	7.8
21-30	--	--	809	1.10	1740	424	268	1.9	1110	7.8
DEC.										
01-22	--	--	764	1.04	1620	408	254	2.0	1070	7.8
23-31	--	--	859	1.17	1400	442	273	2.0	1140	7.7
JAN.										
01-14	--	--	770	1.05	1690	400	251	1.9	1030	7.6
15-22	--	--	809	1.10	3090	388	240	2.5	1090	7.7
23-25	--	--	926	1.26	3640	456	303	2.0	1200	8.3
26-28	--	--	634	.86	5300	304	172	2.1	899	7.7
29-31	--	--	775	1.05	3760	342	189	2.8	1070	7.8
FEB.										
01-16	--	--	446	.61	2850	242	113	1.3	641	7.5
17-28	--	--	452	.61	2860	234	111	1.5	655	7.9
MAR.										
01-18	--	--	454	.62	2790	248	125	1.3	659	7.7
19-25	--	--	535	.73	7000	276	127	1.7	761	7.8
26-31	--	--	811	1.10	4170	384	213	2.4	1060	7.9
APR.										
01-05	--	--	623	.85	5340	346	191	1.2	858	7.8
06-17	--	--	382	.52	3980	223	95	1.1	556	7.9
18-30	--	--	333	.45	3230	193	80	1.1	486	7.9
MAY										
01-06	--	--	304	.41	3210	184	72	.8	447	7.4
07-10	--	--	401	.55	4150	206	82	1.5	588	7.5
11-19	--	--	329	.45	3210	186	78	1.0	488	7.6
20-31	--	--	251	.34	3680	752	63	.6	368	7.6
JUNE										
01-12	--	--	263	.36	3190	768	72	.6	408	7.2
13-17	--	--	333	.45	3160	190	87	1.0	494	7.7
18-19	--	--	422	.57	5160	228	108	1.2	602	7.7
20-30	--	--	402	.55	3940	191	87	1.0	497	7.7
JULY										
01-09	--	--	302	.41	2810	780	76	.9	453	7.8
10-19	--	--	388	.53	3210	202	89	1.3	569	7.9
20-22	--	--	644	.88	9600	324	186	1.7	877	7.7
23-26	--	--	405	.55	3660	226	106	1.1	590	7.9
27...	--	--	778	1.06	5420	295	140	3.4	1040	7.7
28-31	--	--	462	.63	2470	248	124	1.3	664	7.9
AUG.										
01-03	--	--	509	.69	2100	276	135	1.3	712	7.7
04-07	--	--	646	.88	3560	340	164	1.6	883	7.7
08-11	--	--	523	.71	1750	280	141	1.4	747	7.4
12...	--	--	1020	1.39	3250	600	417	1.1	1260	7.3
13-15	--	--	533	.72	2880	306	151	1.1	770	7.6
16-17	--	--	802	1.09	4400	286	44	3.9	1120	7.6
18-25	--	--	596	.81	2270	312	151	1.7	841	7.7
26...	--	--	770	1.05	3410	350	170	2.1	1050	7.5
27-28	--	--	538	.73	2070	286	142	1.4	772	7.7
29...	--	--	1560	2.12	8050	1030	845	.7	1700	7.7
30-31	--	--	652	.89	3850	368	209	1.3	907	7.7
SEPT.										
01-10	--	--	561	.76	2500	284	139	1.6	797	6.8
11-12	--	--	812	1.10	4020	376	203	2.5	1090	7.5
13...	--	--	478	.65	3760	276	117	1.0	691	7.5
14-15	--	--	698	.95	3830	292	133	2.7	958	7.6
16-21	--	--	500	.68	2910	272	143	1.3	720	7.7
22-23	--	--	770	1.05	6080	384	240	2.2	1020	7.6
24-30	--	--	435	.59	2240	258	133	1.2	665	7.7
WTD. AVG. TIME	--	--	475	.65	2980	360	128	--	670	7.7
WTD. AVG. TONS PER DAY	--	--	576	.78	--	356	165	1.6	802	7.7

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
ANALYSES OF ADDITIONAL SAMPLES											
NOV. 15...	811	9.4	98	45	91	3.6	--	190	0	432	25
DEC. 05...	767	9.6	107	28	82	3.6	--	184	0	375	24
JAN. 16...	1870	9.6	75	23	89	4.7	--	180	0	289	24
FEB. 12...	2260	11	64	18	47	2.4	--	141	0	206	14
MAR. 12...	2280	10	59	21	45	2..	--	131	0	198	14
APR. 16...	3620	9.2	52	16	32	2.3	--	136	0	140	10
JULY 28...	2220	11	71	14	63	3.9	--	150	0	213	12

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	944	1180	1090	1000	673	651	971	464	365	482	665	783
2	944	1360	1080	1090	639	661	914	476	396	464	698	898
3	950	1350	1110	1040	652	659	892	442	401	445	773	778
4	931	1270	1110	1070	609	660	798	428	404	443	819	775
5	1190	1340	1100	1070	623	667	727	437	415	429	1010	861
6	1060	1250	1040	1070	648	649	628	429	414	446	882	738
7	1150	1220	1100	1060	633	643	609	547	407	450	829	787
8	1100	1220	1070	1050	630	643	578	651	396	449	765	766
9	1050	1210	1060	1040	597	668	544	576	424	456	753	702
10	1010	1160	1050	1020	599	651	542	576	429	481	740	824
11	988	1170	1060	907	632	643	580	531	408	505	733	1260
12	979	1170	1090	1010	634	654	524	528	421	528	1260	929
13	1020	1150	1070	1010	602	652	532	476	440	630	793	691
14	1010	1140	1050	1010	674	652	536	454	485	652	771	1030
15	988	1150	1030	980	720	639	531	447	507	551	747	885
16	973	1160	1060	930	664	661	527	461	514	537	1190	735
17	1000	1290	1050	1030	627	672	512	506	501	500	1040	731
18	1050	1220	1060	1190	667	682	535	525	652	668	813	713
19	1170	1210	1070	1160	641	700	542	460	551	613	766	695
20	1220	1160	1050	1150	677	802	529	399	492	1010	861	712
21	1200	1100	916	1160	644	849	534	399	479	879	803	735
22	1230	1110	1160	1160	637	720	499	362	470	743	807	1170
23	1230	1100	1170	1350	637	729	502	358	464	618	990	880
24	1220	1110	1200	1250	637	699	459	348	438	580	861	729
25	1220	1110	1290	1010	629	824	437	368	454	592	845	640
26	1210	1110	1300	779	646	1030	422	381	489	569	1050	617
27	1210	1150	1130	973	701	1180	458	388	575	1040	795	611
28	1200	1130	1020	945	679	1180	449	378	559	729	749	635
29	1190	1110	1010	1180	--	1080	469	347	520	645	1700	669
30	1190	1110	1060	1090	--	990	481	343	515	626	825	726
31	1190	--	1070	939	--	963	--	354	--	674	980	--
AVG	1100	1180	1090	1060	644	759	575	445	466	594	881	790

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
ANALYSES OF ADDITIONAL SAMPLES										
NOV. 15...	.7	6.8	852	1.16	1870	428	272	1.9	1140	7.9
DEC. 05...	.9	9.0	760	1.03	1570	384	233	1.8	1040	7.8
JAN. 16...	.8	8.4	627	.85	3170	282	134	2.3	901	7.7
FEB. 12...	.4	3.2	443	.60	2700	235	119	1.3	655	7.6
MAR. 12...	.4	2.6	426	.58	2620	235	128	1.3	628	7.7
APR. 16...	.4	2.2	350	.48	3420	196	84	1.0	515	7.9
JULY 28...	.5	3.0	545	.75	3290	234	111	1.8	703	6.6

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	18	18	14	16	17	17	14	15	15	15	18	19	17	16	14	12	12	9	11	12	12	12	13	13	13	--	13	12	11	10	11	14
NOVEMBER.	10	10	10	10	9	8	8	5	5	7	6	6	5	5	6	5	5	5	5	5	6	4	4	5	5	3	3	3	4	3	--	6
DECEMBER.	3	2	2	1	0	1	1	2	2	2	3	2	2	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1	2
JANUARY..	1	1	2	1	2	1	2	2	1	1	1	2	2	2	3	0	3	3	3	3	3	3	2	4	4	4	5	2	2	1	2	2
FEBRUARY.	1	2	2	2	2	4	3	5	5	5	6	5	6	5	6	6	6	6	6	6	6	5	5	6	7	6	7	5	--	--	--	5
MARCH....	6	7	6	6	6	5	4	5	5	4	4	5	6	5	6	8	9	10	10	9	8	13	9	8	9	10	11	9	10	9	10	7
APRIL....	13	14	12	13	11	12	11	12	13	14	13	14	13	13	13	13	13	13	10	15	15	17	18	17	15	16	15	15	16	16	17	--	14
MAY.....	17	18	18	16	16	13	16	16	17	17	16	19	20	19	19	19	16	18	19	20	21	20	20	21	18	21	21	22	22	22	19	19
JUNE.....	19	19	20	22	23	23	22	22	23	20	19	20	21	22	22	22	21	19	20	21	22	22	22	21	21	21	20	21	21	21	22	--	21
JULY.....	23	23	23	23	23	24	24	24	24	24	24	24	24	24	25	24	25	24	23	23	24	25	26	25	26	25	26	27	26	27	28	24
AUGUST...	29	29	28	28	29	29	28	28	28	28	29	25	26	27	26	25	24	25	25	26	25	25	25	23	26	25	26	26	22	25	25	26
SEPTEMBER	25	24	24	24	24	24	22	24	24	23	22	22	22	21	21	21	20	21	21	20	18	18	18	19	19	20	17	18	21	20	--	21

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD INDICATED	METHOD OF ANALYSIS
OCT 3, 1968	1400	13	819	698	1540	23	28	--	42	--	83	99	100	--	--	--	VPWC	
NOV 15.....	1130	5	811	1180	2580	16	18	--	24	--	61	98	100	--	--	--	VPWC	
DEC 5.....	1040	0	767	2210	4580	4	4	--	6	--	14	57	98	100	--	--	VPWC	
JAN 16, 1969	1435	0	1870	8020	40500	47	58	--	75	--	89	99	100	--	--	--	VPWC	
FEB 12.....	1505	5	2260	8220	50200	5	6	--	8	--	32	74	96	100	--	--	VPWC	
MAR 12.....	1135	2	2280	4770	29400	3	3	--	4	--	16	54	92	100	--	--	VPWC	
APR 16.....	1415	13	3620	9740	95200	9	11	--	16	--	31	64	96	100	--	--	VPWC	
MAY 23.....	1700	20	5860	27900	441000	2	2	--	4	--	19	83	100	--	--	--	VPWC	
JUN 11.....	1300	16	3990	4190	45100	2	3	--	3	--	12	38	86	95	100	--	VPWC	
JUL 28.....	1815	26	2220	10600	63500	39	48	--	63	--	76	92	99	100	--	--	VPWC	
AUG 22.....	1050	23	718	7010	13600	29	38	--	51	--	71	88	98	100	--	--	VPWC	
SEP 4.....	1355	21	1550	3280	13700	32	45	--	62	--	95	100	--	--	--	--	VPWC	

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHOD OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
OCT 3, 1968	1400	13		819	44	95	100	--	--	--	--	--	--	--	--	SV
NOV 15.....	1130	5		811	2	8	51	91	100	--	--	--	--	--	--	SV
DEC 5.....	1040	0		767	2	10	56	87	99	100	--	--	--	--	--	SV
JAN 16, 1969	1435	0		1870	3	18	55	93	100	--	--	--	--	--	--	SV
FEB 12.....	1505	5		2260	6	24	66	99	100	--	--	--	--	--	--	SV
MAR 12.....	1135	2		2280	--	5	45	83	97	98	99	99	100	--	--	SV
APR 16.....	1415	13		3620	1	4	43	92	100	--	--	--	--	--	--	SV
JUN 11.....	1300	16		3990	0	2	42	82	98	99	99	100	--	--	--	SV
JUL 28.....	1815	26		2220	1	7	48	89	100	--	--	--	--	--	--	SV
AUG 22.....	1050	23		718	1	8	63	91	94	94	94	95	96	100	--	SV
SEP 4.....	1355	21		1550	5	28	62	89	98	98	99	99	100	--	--	SV

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	753	713	1450	670	553	1000	782	796	1680
2	774	766	1600	906	3940	14800	789	798	1700
3	811	845	1850	1300	12800	44900	789	798	1700
4	1110	6120	19300	873	3670	8650	796	800	1720
5	1860	11600	58300	796	2330	5010	774	756	1580
6	1980	12900	69000	745	696	1400	774	756	1580
7	1350	8750	31900	738	662	1320	718	650	1260
8	1200	7250	23500	767	748	1550	731	659	1300
9	1050	1590	4510	745	696	1400	740	691	1380
10	1050	1590	4510	753	713	1450	760	731	1500
11	1050	1590	4510	731	659	1300	782	796	1680
12	1050	1590	4510	724	655	1280	827	896	2000
13	1080	1650	4810	731	659	1300	866	984	2300
14	1080	1650	4810	774	756	1580	811	845	1850
15	1030	1510	4200	889	1040	2500	789	798	1700
16	1020	1490	4100	998	1370	3690	819	859	1900
17	738	678	1350	889	1040	2500	866	984	2300
18	711	625	1200	858	950	2200	889	1040	2500
19	690	590	1100	881	1020	2430	922	1140	2840
20	697	600	1130	881	1020	2430	789	798	1700
21	684	585	1080	858	950	2200	670	553	1000
22	684	585	1080	942	924	2100	640	506	874
23	657	519	921	942	924	2130	600	432	700
24	651	512	900	827	896	2000	110	100	30
25	645	508	885	774	756	1580	350	127	120
26	638	482	830	760	731	1500	600	432	700
27	645	508	885	789	798	1700	731	659	1300
28	645	508	885	753	713	1450	750	706	1430
29	670	553	1000	760	731	1500	760	731	1500
30	684	585	1080	767	748	1550	760	731	1500
31	677	558	1020	--	--	--	760	731	1500
TOTAL	28364	--	258206	24621	--	120370	22744	--	46824

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	760	731	1500	2310	8980	56000	2240	8100	49000
2	760	731	1500	2360	9260	59000	2240	8100	49000
3	760	731	1500	2370	9380	60000	2220	8010	48000
4	760	731	1500	2380	9490	61000	2190	7780	46000
5	760	731	1500	2360	9260	59000	2270	8320	51000
6	760	731	1500	2400	9720	63000	2260	8190	50000
7	760	731	1500	2500	10700	72200	2250	7410	45000
8	767	748	1550	2440	9870	65000	2280	6500	40000
9	827	896	2000	2310	8980	56000	2270	5710	35000
10	811	845	1850	2300	8860	55000	2270	4890	30000
11	834	910	2050	1750	3170	15000	2250	4610	28000
12	834	910	2050	2250	8230	50000	2250	4120	25000
13	972	1290	3360	2370	9380	60000	2280	4220	26000
14	998	1340	3610	2520	10100	68700	2250	4120	25000
15	1840	5230	26000	2540	10200	70000	2300	4350	27000
16	1710	4550	21000	2760	13400	99900	2320	4390	27500
17	1620	4000	17500	2790	13300	100000	2370	4390	27500
18	1370	2760	10200	2390	9610	62000	2430	4800	31500
19	1190	2020	6490	2310	9060	57000	2750	6060	45000
20	1070	1630	4710	2440	9870	65000	3340	8210	74000
21	1060	1570	4490	2480	8660	58000	3090	7190	60000
22	1470	3280	13000	2360	9260	59000	2920	6600	52000
23	1500	3410	13800	2310	8980	56000	3090	7190	60000
24	1480	3330	13300	2280	8450	52000	3100	7170	60000
25	1390	2800	10500	2140	7440	43000	1650	2240	9980
26	3020	15900	130000	2140	7440	43000	1140	1010	3110
27	3080	16800	140000	2240	8100	49000	1010	770	2100
28	3190	18600	160000	2210	8040	48000	1460	1780	7020
29	1910	5820	30000	--	--	--	2100	3530	20000
30	1350	2740	10000	--	--	--	2690	5640	41000
31	2130	7300	42000	--	--	--	3020	6990	57000
TOTAL	41743	--	679960	66030	--	1661800	72250	--	1151710

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2820	6170	47000	3390	8370	76000	5540	21400	320000
2	2850	6370	49000	3640	9360	92000	5330	22200	319000
3	3090	7190	60000	3930	9990	106000	4730	17200	220000
4	3150	7410	63000	4170	11300	127000	4450	15400	185000
5	3970	10300	110000	4270	11600	134000	4200	13700	155000
6	4000	11100	120000	4090	11100	123000	4200	13700	155000
7	4030	11100	121000	3820	10200	105000	4450	15400	185000
8	4060	11100	122000	4160	11200	126000	4390	15000	178000
9	3720	9760	98000	3820	10200	105000	4060	12800	140000
10	3640	9360	92000	3530	8920	85000	4000	11600	125000
11	3920	9920	105000	3460	8670	81000	4240	14500	166000
12	4110	11300	125000	3530	8920	85000	4250	14800	170000
13	4230	11600	132000	3890	10500	110000	3950	12000	128000
14	3900	9780	103000	3950	10000	107000	3480	9150	86000
15	3640	9360	92000	3850	10200	106000	3320	8030	72000
16	3600	9160	89000	3370	8240	75000	3200	7640	66000
17	3430	8420	78000	2340	4510	28500	3620	10000	97700
18	3340	8090	73000	3650	9440	93000	4390	15200	180000
19	3040	7070	58000	4450	15400	135000	4140	13200	148000
20	2930	6570	52000	5040	19800	269000	3960	12200	130000
21	2940	6630	53000	5210	21300	300000	3670	10100	100000
22	3340	8090	73000	5450	23100	340000	3550	9390	90000
23	4000	11100	120000	5740	27100	420000	3690	10200	102000
24	4240	11700	134000	5960	28600	460000	3610	9850	96000
25	4280	11700	135000	5630	25700	391000	3640	10100	99300
26	4490	12800	155000	4880	19000	250000	3970	13100	140000
27	4130	11400	127000	4740	18000	230000	3790	10700	109000
28	3620	9310	91000	5260	21800	310000	3510	9290	88000
29	3180	7570	65000	5820	23500	369000	3260	7840	69300
30	3150	7410	63000	5830	23500	370000	3320	8260	74000
31	--	--	--	5630	21700	330000	--	--	--
TOTAL	108840	--	2805000	136500	--	5988500	119910	--	4193000

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3550	9390	90000	1560	16600	69900	1810	22500	110000
2	3610	9750	95000	1380	10700	39900	1440	14700	57200
3	3550	9390	90000	1640	18700	82800	1300	12800	44900
4	3600	9670	94000	2960	50100	400000	1320	3840	13700
5	3720	10700	107000	2090	26600	150000	1230	10500	34900
6	3670	10100	100000	1590	16500	70800	1540	21200	88100
7	3360	8380	76000	1520	15600	64000	1470	20200	80200
8	3090	7190	60000	1400	13500	51000	1280	16500	57000
9	2830	6150	47000	1230	10800	35900	1880	27600	140000
10	2600	5410	38000	1190	9960	32000	3220	54100	470000
11	2570	5330	37000	1150	9660	30000	1880	27600	140000
12	2460	4810	31900	1180	10000	31900	1790	22800	110000
13	2920	6600	52000	1080	8570	25000	2910	54700	430000
14	2890	6410	50000	1290	12300	42800	2160	37700	220000
15	2840	6260	48000	3640	23500	256000	1900	27300	140000
16	2710	5740	42000	2380	29600	190000	1670	18600	83900
17	2720	5860	43000	1680	18500	83900	1570	15600	66100
18	2930	6570	52000	1360	13100	48100	1560	18500	77900
19	6010	57700	1240000	1300	12300	43200	1580	19500	83200
20	6420	63500	1100000	1340	12700	45900	1550	19100	79900
21	5820	54100	850000	1140	9420	29000	5010	51600	873000
22	4320	37700	440000	731	3950	7890	3430	38700	375000
23	3570	35330	340000	866	9410	22000	2420	24500	160000
24	3040	32900	270000	2360	45500	290000	2270	21200	130000
25	3080	49300	410000	2180	42500	250000	2130	12500	71900
26	3690	67200	670000	1660	27100	120000	2040	10300	56700
27	2580	35900	250000	1670	14900	59100	1870	10300	52000
28	2270	26100	160000	1380	13230	49200	1770	10500	50200
29	2010	24000	130000	1910	33000	170000	1700	10500	48200
30	1960	22700	120000	2430	35100	230000	1590	10500	45100
31	1670	20200	91100	1940	24800	130000	--	--	--
TOTAL	102060	--	7224000	51007	--	3150200	59290	--	4389100

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 833359
TOTAL LOAD FOR YEAR (TONS) 31668670

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 36°51'53", long 111°35'15", in NE¼SE¼ sec.13, T.40 N., R.7 E., Coconino County, in Navajo Indian Reservation, at gaging station at head of Marble Gorge at Lees Ferry, 0.8 mile upstream from Paria River, 16 miles downstream from Glen Canyon Dam, 28 miles downstream from Utah-Arizona State line, and 61.5 miles upstream from Little Colorado River.
DRAINAGE AREA.--107,900 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: January to July 1926, October 1926 to June 1927, October 1928 to September 1930, November 1942 to October 1945, October 1947 to September 1969.
Water temperatures: July 1949 to September 1969.
Sediment records: October 1928 to December 1933, November 1942 to September 1944, October 1947 to September 1968 (daily), October 1968 to September 1969 (partial record).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 750 mg/l Apr. 26-30; minimum, 493 mg/l Nov. 1-30.
Hardness: Maximum, 388 mg/l Apr. 26-30; minimum, 252 mg/l Oct. 1-31, Nov. 1-30.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
01-31	10170	11	--	66	21	--	--	72	144	0	216	45
NOV.												
01-30	10650	11	--	66	21	--	--	69	151	0	206	43
DEC.												
01-11	10590	10	--	72	22	--	--	72	149	0	230	45
12-31	10250	10	--	78	26	--	--	8[illegible]	162	0	273	52
JAN.												
01-31	9264	10	--	87	28	--	--	98	172	0	302	61
FEB.												
01-28	8296	9.8	--	78	37	--	--	101	177	0	311	66
MAR.												
01-31	11520	9.9	--	93	30	--	--	106	182	0	320	72
APR.												
01-25	14900	10	10	93	33	101	4.6	--	182	0	320	72
26-30	13280	12	--	95	37	--	--	101	186	0	338	71
MAY												
01-31	12410	11	--	100	30	--	--	95	184	0	320	66
JUNE												
01-30	14710	11	--	86	42	--	--	76	181	0	300	61
JULY												
01-31	15540	11	40	82	38	87	4.6	--	173	0	280	56
AUG.												
01-31	15120	10	--	74	25	--	--	78	166	2	235	49
SEPT.												
01-30	13340	11	--	69	23	--	--	75	155	5	220	44
WTD. AVG. TIME	--	11	--	81	29	--	--	85	169	1	274	57
WTD. AVG. TONS PER DAY	12200	11	--	81	29	--	--	85	169	1	274	57
	--	347	--	2680	945	--	--	2660	5580	22	9030	1880

ANALYSES OF ADDITIONAL SAMPLES

JULY												
30...	A 12000	--	--	76	27	78	4.2	--	169	0	244	54
AUG.												
20...	A 9490	--	--	71	27	76	3.8	--	164	0	238	50
SEPT.												
17...	A 18400	--	--	66	25	70	3.6	--	158	0	215	48

A DISCHARGE AT TIME OF SAMPLING.

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

EXTREMES.--1968-69:--Continued
Specific conductance: Maximum daily, 1,170 micromhos Feb. 27; minimum daily, 741 micromhos Sept. 22.
Water temperatures: Maximum, 20.0°C on several days during October; minimum, 6.0°C Jan. 30, Mar. 5.
Period of record (1965-69):
Dissolved solids: Maximum, 757 mg/l Apr. 1-30, 1967; minimum, 296 mg/l Sept. 1-30, 1965.
Hardness: Maximum, 388 mg/l Apr. 26-30, 1969; minimum, 166 mg/l Aug. 1-31, Sept. 1-30, 1965.
Specific conductance: Maximum daily, 1,260 micromhos Apr. 20, 21, 1967; minimum daily, 460 micromhos Aug. 10, 1965.
Water temperatures: Maximum, 21.0°C on several days during August to October 1965, 1967, 1968; minimum, 5.0°C on several days during February 1967.
REMARKS.--Because of the regulation of flow by Glen Canyon Dam since Mar. 13, 1963, and the subsequent filling of Lake Powell, extreme values for the period of record include only those obtained after July 31, 1965, beginning with the 1969 water year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.												
01-31	--	3.6	--	--	506	.69	13900	252	134	2.0	789	7.6
NOV.												
01-30	--	3.1	--	--	493	.67	14200	252	128	1.9	783	7.8
DEC.												
01-11	--	3.5	--	--	528	.72	15100	272	150	1.9	827	7.6
12-31	--	4.0	--	--	611	.83	16900	302	169	2.2	915	7.7
JAN.												
01-31	--	4.1	--	--	675	.92	16900	332	191	2.3	1020	7.8
FEB.												
01-28	--	4.3	--	--	694	.94	15500	346	201	2.4	1060	8.0
MAR.												
01-31	--	4.5	--	--	724	.98	22500	356	207	2.5	1090	7.9
APR.												
01-25	.4	5.5	170	780	729	1.06	31400	366	217	2.3	1110	7.8
26-30	--	5.1	--	--	750	1.02	26900	388	235	2.2	1120	7.4
MAY												
01-31	--	4.8	--	--	717	.98	24000	374	223	2.1	1080	7.7
JUNE												
01-30	--	4.7	--	--	670	.91	26600	386	238	1.7	1030	8.1
JULY												
01-31	.4	4.3	130	643	638	.87	27000	318	176	2.1	957	8.0
AUG.												
01-31	--	4.5	--	--	560	.76	22900	286	146	2.0	838	8.3
SEPT.												
01-30	--	3.6	--	--	527	.72	19000	266	131	2.0	796	8.5
WTD. AVG. TIME	--	4.3	--	--	627	--	--	321	181	2.1	954	7.9
WTD. AVG. TONS PER DAY	--	141	--	--	20600	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

JULY												
30...	--	--	--	603	566	.82	19500	300	161	2.0	923	7.8
AUG.												
20...	--	--	--	575	547	.78	13200	282	148	1.9	862	8.2
SEPT.												
17...	--	--	--	525	--	.71	26100	268	138	1.9	816	7.7

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)	DATE	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	LOAD (TONS)
OCT 6, 1968..	6250	<1	0	MAY 13.....	15500	14	586
OCT 15.....	12100	<1	0	MAY 27.....	10100	4	109
OCT 27.....	9010	<1	0	MAY 28.....	13100	12	424
DEC 5.....	12700	<1	0	JUN 3.....	16600	10	448
DEC 14.....	8190	41	907	JUN 12.....	13800	6	224
DEC 29.....	9800	<1	0	JUN 17.....	13200	3	107
JAN 9, 1969..	8900	6	144	JUN 24.....	16500	5	223
JAN 21.....	10900	13	383	JUL 3.....	18200	4	197
JAN 28.....	13100	12	424	JUL 10.....	16600	20	896
FEB 17.....	8550	35	808	JUL 23.....	16900	256	11700
FEB 24.....	9350	38	959	AUG 8.....	14700	9	357
MAR 26.....	11600	87	2720	AUG 20.....	16400	7	310
MAR 31.....	12800	17	588	AUG 28.....	19000	771	39600
APR 7.....	13100	10	354	SEP 24.....	13100	3	106
APR 14.....	16700	52	2340	SEP 30.....	13000	2	70
APR 29.....	13800	21	782				

<1 IN CONCENTRATION COLUMN INDICATES CONCENTRATION BELOW THE LIMITS OF DETECTION.

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	774	788	775	--	1070	1080	1100	1110	1060	985	886	--
2	792	786	794	925	1090	1110	1080	--	1060	--	--	--
3	815	789	975	957	1060	1120	1080	--	1050	--	--	810
4	799	763	833	--	1060	1100	1090	--	1050	991	817	827
5	--	--	836	--	--	1120	1110	--	1050	--	879	--
6	--	793	850	--	1040	1090	1140	1100	1050	1010	--	--
7	815	770	--	932	1060	1090	1120	1110	1040	--	838	--
8	803	751	--	952	1070	1150	1110	1120	1050	988	--	792
9	805	778	834	975	1040	1130	1110	1100	1040	988	--	815
10	765	774	836	986	1060	1110	1110	1090	1040	985	--	768
11	762	780	--	986	1050	1080	1100	--	1030	974	875	--
12	796	818	910	989	1050	1060	1100	1090	1050	--	848	--
13	794	--	886	962	1060	1090	1100	1070	1030	--	--	--
14	812	--	901	962	1050	1070	1110	1080	1030	963	815	804
15	--	--	--	947	1030	1040	1150	1080	1020	--	812	797
16	871	--	864	965	1020	1050	1120	1080	--	955	--	755
17	780	834	860	973	1050	1080	1120	1080	--	941	--	769
18	--	--	--	970	1070	1080	--	--	--	934	778	--
19	--	--	890	978	1020	1090	--	1070	1020	--	--	--
20	771	--	913	975	1080	1090	1120	--	1010	--	863	--
21	769	--	939	1000	1080	1080	--	1070	1010	--	--	--
22	769	--	1000	1040	1030	1090	1110	1070	--	928	--	741
23	760	--	962	1090	1040	1120	1110	--	1010	936	--	--
24	--	--	930	1130	1030	--	1120	1070	1000	--	--	--
25	748	--	--	1090	1050	1130	1150	--	991	931	834	747
26	--	--	--	1050	1100	1100	1140	1050	--	--	817	802
27	--	--	908	1110	1170	1090	--	1060	--	--	844	811
28	769	757	--	1160	1110	1100	1120	1060	991	918	834	779
29	760	--	910	1140	--	--	1110	1050	991	906	783	789
30	778	775	925	1160	--	1080	--	1050	991	926	--	817
31	--	--	--	1140	--	1080	--	1050	--	--	--	--
AVG	--	--	--	1020	1060	1090	1110	--	1030	--	--	--

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	18.0	12.0	--	9.0	9.	11.	10.0	12.0	14.0	16.	--
2	20.0	14.0	12.	9.0	7.0	-.	9..	--	10.0	--	--	--
3	20.0	16.0	12.0	9.0	8.0	8..	9.7	--	12.0	--	--	17.
4	19.0	16.0	12.0	--	7.0	7.	9..	--	12..	14..	15.0	17.
5	--	--	12.0	--	--	^..	9..	-	11.0	--	15.0	-
6	--	14.0	12.0	--	7.0	-.	9.0	9.0	11..	14.0	--	--
7	20.0	14.0	--	9.0	7.0	7.0	11.0	9.0	13.0	--	17.	--
8	20.0	14.0	--	9.0	7.0	8.0	11.	9.0	13.0	14.0	--	16.
9	20.0	16.0	11.0	9.0	7.0	9..	11.0	11.0	14.0	14.0	--	18.0
10	20.0	16.0	11.0	9.0	8.0	-	11.0	10.0	11.0	14.0	--	18.0
11	20.0	16.0	--	9.0	7.0	9.0	9..	--	13.	15.	16.0	--
12	20.0	16.0	11.0	9.0	7.0	.0	9.0	10.	14.	--	17.0	--
13	20.0	--	11.0	9.0	8.0	7.0	10.0	10.0	13.0	--	--	--
14	--	--	11.0	9.0	8.0	7.0	1 .0	10..	13.0	15..	17.0	17.
15	--	--	--	9.0	8.0	8.0	9.0	10.0	15.0	--	17.	18.0
16	19.0	--	--	9.0	8.0	8.0	9..	9.0	--	15.0	--	18..
17	18.0	12.0	10.0	9.0	8.0	9.0	9.0	11.0	-	15.	--	18.0
18	--	--	--	9.0	8.0	9.0	--	-	--	15.0	18.0	--
19	--	--	10.0	9.0	8.0	9.0	--	11.0	13..	-	--	--
20	18.0	--	10.0	9.0	7.0	9.0	9.0	--	14.		16.	-
21	18.0	--	10.0	9.0	7.0	9..	--	12.0	14.	--	--	-
22	18.0	--	10.0	9.0	8.0	9.0	8.0	10.0	--	15.0	--	18.0
23	18.0	--	10.0	9.0	8.0	9.0	.0	--	13.0	15.0	--	--
24	--	--	10.0	9.0	8.0	--	7.0	12.0	14.0	--	--	--
25	18.0	--	--	7.0	8.0	9.0	7.0	--	14.0	15.0	17.0	18.0
26	--	--	--	7.0	7.0	10.0	7.0	12.0	--	--	17.	18.0
27	--	--	9.0	8.0	8.0	10.0	--	11.0	--	--	17.0	17.0
28	18.0	13.0	--	8.0	8.0	10.0	9.0	11.0	14.0	15.0	17.0	17..
29	18.0	--	9.0	8.0	--	--	9.0	11.0	14.0	15.0	17.0	17.0
30	17.0	12.0	9.0	8.0	--	10.0	--	10.0	13.0	15.0	--	17.0
31	--	--	--	7.0	-	11.0	-	11.0	--	-	-	
AVG	--	--	--	8.6	7.6	8.5	9.1	-	12..	--		-

09382000 PARIA RIVER AT LEES FERRY, ARIZ.

LOCATION (revised).--Lat 36°52'20", long 111°35'38", in NW¼NE¼ sec.13, T.40 N., R.7 E., Coconino County, at gaging station 0.6 mile northwest of Lees Ferry and 1.1 miles upstream from mouth.

DRAINAGE AREA.--1,410 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1947 to February 1950.
Specific conductance: October 1964 to September 1969.
Water temperatures: October 1956 to September 1969.
Sediment records: October 1947 to September 1969.

EXTREMES.--1968-69:
Specific conductance: Maximum daily, 4,000 micromhos Aug. 12; minimum daily, 500 micromhos Oct. 1, May 28, June 1, 12, July 1, 5.
Water temperatures: Maximum, 33.0°C June 28; minimum, freezing point on Jan. 31, Feb. 1, 2.
Sediment concentrations: Maximum daily, 481,000 mg/l Aug. 13; minimum daily, 70 mg/l May 25.
Sediment loads: Maximum daily, 578,000 tons Aug. 13; minimum daily, 0.49 ton June 30.

Period of record:
Specific conductance: Maximum daily, 4,000 micromhos Aug. 12, 1969; minimum daily, 320 micromhos May 21, 1967.
Water temperatures (1956-61, 1965-69): Maximum, 35.5°C Aug. 11, 1958, July 29, 1960; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 780,000 mg/l Aug. 9, 1968; minimum daily, 1 mg/l June 1-10, 1950.
Sediment loads: Maximum daily, 5,100,000 tons Sept. 12, 1958; minimum daily, 0 ton on many days of most years.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1.....	500	800	1500	--	1300	1650	1300	950	500	500	1600	2700
2.....	550	850	1500	1400	1300	1650	1200	--	600	--	--	2000
3.....	1400	1000	1700	1400	1300	1400	1000	--	550	--	--	1300
4.....	--	950	1500	--	--	1600	1100	--	550	--	1500	1600
5.....	1000	1000	1400	--	1250	1600	1500	--	650	500	1600	2000
6.....	700	1000	1500	900	--	1600	1500	1000	650	550	--	--
7.....	1100	950	--	900	1000	1400	1400	1400	550	--	1700	--
8.....	800	1000	--	1200	1100	1800	1400	3000	600	600	1400	2500
9.....	1100	1000	1600	1200	1100	1700	1100	1600	600	--	1400	2000
10.....	1000	1000	1600	--	1200	1500	1400	1500	600	550	--	1900
11.....	850	950	--	1150	1100	1400	1150	--	550	550	1400	--
12.....	850	--	1500	1200	1150	1550	1400	1300	500	550	4000	--
13.....	900	1500	1600	1100	1200	1500	1200	1300	550	--	2500	--
14.....	900	1100	1400	1150	1150	1500	1300	--	550	750	3000	--
15.....	900	1300	--	1200	1100	1500	1200	--	550	600	3000	2500
16.....	950	1200	1500	1400	1400	1550	1200	1100	550	600	1600	2200
17.....	1200	1100	1400	1100	1000	1450	1100	700	600	1400	--	3000
18.....	--	1100	1600	1100	1200	1600	1200	--	550	1280	1700	--
19.....	1200	1000	--	1100	1250	1600	1200	--	500	1890	--	--
20.....	--	1100	1200	1100	1250	1400	--	--	900	2400	2000	--
21.....	1100	1100	1000	1200	1100	1650	1200	--	700	2870	1400	--
22.....	1000	1000	1000	1400	1250	1650	1400	600	--	2500	1400	--
23.....	1000	1100	1100	1200	1200	1500	1200	600	600	2600	--	--
24.....	1200	1100	1000	1000	1500	1500	1200	600	550	--	--	--
25.....	900	1200	--	1000	1300	1500	1200	550	600	2000	700	1200
26.....	1200	1250	--	1600	1600	1400	1200	550	--	2150	--	1300
27.....	850	1250	1000	1700	1500	1600	1200	575	--	2600	1500	1200
28.....	900	1250	--	1400	1600	1300	1000	500	600	1300	700	900
29.....	850	1600	1600	1500	--	1400	1000	700	550	1500	1200	1100
30.....	900	1500	1600	1200	--	850	--	550	550	1830	2700	900
31.....	800	--	1600	1450	--	800	--	550	--	1600	--	--
AVERAGE	950	1110	--	1230	1250	1490	1230	--	585	1400	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	21	14	15	--	15	22	17	21	14	20	16	17	20	21	16	16	14	--	15	--	10	10	11	16	16	17	17	18	17	12	17	16
NOVEMBER.	14	17	13	14	12	14	14	13	6	6	12	--	10	11	5	7	10	5	6	6	6	7	5	6	10	8	5	1	3	4	--	9
DECEMBER.	4	9	14	2	2	4	--	--	2	3	--	4	1	4	--	5	3	3	--	2	3	3	3	2	--	--	4	--	3	4	3	--
JANUARY..	--	3	4	--	--	5	3	5	4	--	3	4	4	4	4	--	--	--	--	--	--	--	--	4	4	4	4	4	4	4	0	--
FEBRUARY.	0	0	--	--	2	--	3	3	4	--	6	3	7	5	5	7	7	5	5	5	5	5	6	5	5	5	5	5	--	--	--	5
MARCH....	6	5	5	3	7	5	6	2	5	4	7	5	9	11	8	12	11	12	9	9	--	10	10	10	11	13	12	11	11	11	12	8
APRIL....	12	12	12	14	15	12	13	13	14	14	16	20	20	18	20	14	20	19	20	--	23	13	8	9	9	12	12	23	21	--	--	15
MAY.....	13	--	--	--	--	14	14	14	17	24	--	20	27	--	--	15	27	--	--	--	--	16	18	16	17	20	21	21	22	20	19	--
JUNE.....	21	19	21	28	19	18	25	30	25	27	17	23	24	30	20	22	25	30	16	25	20	--	22	23	22	--	--	33	18	18	--	23
JULY.....	32	--	--	--	20	19	--	21	--	24	26	26	--	29	29	28	27	30	26	24	26	25	21	--	26	24	26	25	26	26	24	--
AUGUST...	25	--	--	25	26	--	25	25	25	--	24	26	23	24	23	24	--	23	--	25	24	24	--	--	--	27	--	27	27	27	25	--	--
SEPTEMBER	27	29	24	24	24	--	--	21	29	19	--	--	--	--	21	24	19	--	--	--	--	--	--	--	25	26	27	24	18	15	--	--

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4.8	678	88	8.0	211	4.3	19	3030	155
2	11	5220	155	7.6	189	3.9	24	3040	197
3	11	15800	469	11	465	14	24	4640	312
4	11	6080	181	9.4	375	9.5	13	2420	114
5	11	950	28	9.0	284	6.8	8.3	860	19
6	9.8	498	13	8.6	115	2.6	9.0	680	17
7	5.8	421	6.6	9.0	175	4.0	10	700	19
8	9.0	353	8.6	9.4	200	5.1	9.0	700	17
9	7.2	274	5.3	10	182	4.9	18	725	35
10	6.9	145	2.7	9.8	181	4.8	21	925	52
11	8.3	121	2.7	10	162	4.3	24	2840	161
12	7.2	123	2.4	11	180	5.1	18	4600	186
13	9.0	198	4.8	12	507	16	11	1380	41
14	8.3	523	12	13	689	24	9.0	900	22
15	12	236	7.6	14	645	24	9.0	800	19
16	13	257	9.0	13	506	18	10	1730	47
17	12	437	14	13	581	20	12	2270	73
18	12	380	12	13	500	18	12	1910	62
19	12	311	10	14	535	20	12	1200	39
20	11	290	8.6	14	496	19	10	425	11
21	11	292	8.7	15	510	20	9.0	235	5.7
22	10	275	7.4	14	524	20	9.0	170	4.1
23	7.6	239	4.9	15	509	20	10	185	5.0
24	6.2	1460	24	15	492	20	12	195	6.3
25	9.0	1200	29	14	378	14	13	327	11
26	6.9	2220	41	15	360	14	14	620	23
27	6.9	485	9.0	14	1260	48	14	1060	40
28	6.6	210	3.7	16	2770	119	15	1670	68
29	6.6	179	3.2	15	2850	115	15	2180	88
30	6.2	179	3.0	16	3150	137	15	2050	83
31	6.6	161	2.9	--	--	--	16	2000	86
TOTAL	275.9	--	1177.1	367.8	--	755.3	424.3	--	2018.1

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	18	1680	82	18	2150	104	45	7450	905
2	18	1230	60	23	2200	137	40	7040	760
3	18	1140	55	26	1450	102	35	7050	666
4	20	1430	77	25	1400	94	35	7430	702
5	25	1860	126	31	1450	121	34	7420	681
6	34	2370	217	44	4200	499	29	6250	489
7	30	1980	159	52	4410	619	21	6650	377
8	33	1950	180	50	2830	382	14	4900	185
9	38	2190	224	45	12700	1540	13	3500	123
10	23	1530	95	35	9900	936	14	3150	119
11	26	1160	81	43	6850	795	17	4650	213
12	25	788	53	50	6980	942	16	3820	165
13	36	2080	213	52	5950	835	15	2850	115
14	44	2550	303	53	7630	1090	17	3150	144
15	60	27900	4480	42	4750	539	17	3230	148
16	55	10500	1560	50	5390	728	18	4350	211
17	50	2910	393	57	13700	2130	28	13400	1570
18	45	1600	194	44	9930	1180	78	35500	8330
19	45	1890	230	53	9720	1430	103	45000	13300
20	48	2540	329	52	9630	1350	84	40400	9370
21	50	5960	805	52	8050	1130	85	31900	7950
22	330	75500	84300	47	4500	570	134	39100	16600
23	134	32500	11800	46	3750	466	172	45400	22700
24	73	10900	2150	48	5800	752	83	35200	7980
25	56	9900	1500	48	6370	826	52	28800	5400
26	910	129000	382000	114	52800	19200	76	48500	9680
27	500	14000	157000	124	50100	16800	119	29400	10200
28	150	37600	15200	55	13300	1980	148	29500	13300
29	60	10300	1670	--	--	--	137	48100	20700
30	30	5780	468	--	--	--	156	61300	31900
31	14	2950	112	--	--	--	167	77300	35700
TOTAL	2998	--	666116	1379	--	57277	2002	--	220683

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	154	54900	22300	11	38000	1130	2.5	251	1.7
2	167	26600	12700	10	30600	826	2.5	269	1.8
3	147	29400	12700	12	15000	486	4.5	278	3.4
4	90	25100	6100	15	10000	405	5.0	281	3.8
5	50	10800	1450	17	10000	459	4.5	353	4.3
6	75	18600	3770	51	13300	2470	4.0	279	3.0
7	76	9990	2050	70	24000	4540	3.6	181	1.8
8	70	14200	2680	54	44000	6420	4.0	161	1.7
9	60	9010	1460	40	14100	1520	4.5	132	1.6
10	50	7990	1080	20	9000	486	2.5	675	4.6
11	40	14100	1520	15	3990	162	5.5	265	3.9
12	30	8990	728	10	3740	101	6.0	175	2.8
13	25	14300	965	8.2	3640	80	5.5	237	3.5
14	20	11100	599	10	2020	54	4.0	169	1.8
15	15	7850	318	9.4	1430	36	3.6	162	1.6
16	14	7630	288	5.5	1650	24	6.5	298	5.2
17	13	5120	180	6.0	515	8.3	5.0	276	3.7
18	12	3570	116	6.0	400	6.5	6.5	230	4.0
19	12	3460	112	5.0	400	5.4	5.5	188	2.8
20	11	2580	77	5.0	300	4.0	4.5	2820	34
21	12	2190	71	5.0	300	4.0	3.2	1130	9.8
22	13	3850	135	4.0	255	2.8	1.4	430	1.6
23	15	7320	296	4.5	151	1.8	2.2	250	1.5
24	20	11300	610	4.5	87	1.1	2.2	268	1.6
25	25	8180	552	4.0	70	.76	1.9	234	1.2
26	22	5450	324	3.2	99	.86	1.9	206	1.1
27	17	5460	251	3.6	181	1.8	2.2	175	1.0
28	10	2900	78	3.6	188	1.8	1.6	142	.61
29	9.4	1220	31	2.5	459	3.1	2.2	125	.74
30	12	10500	340	2.8	218	1.6	1.4	132	.49
31	--	-	--	2.8	161	1.2	--	--	--
TOTAL	1206.4	-	73881	420.6	--	19244.02	110.4	--	110.64

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3.2	151	1.3	30	92200	7470	69	165000	30700
2	3.1	124	.94	22	55100	3270	21	95400	5410
3	4.0	146	1.2	10	50800	2470	12	31400	1020
4	4.5	99	1.2	14	48200	1820	12	9770	446
5	4.7	60	.87	45	51400	7030	22	20800	1240
6	3.2	121	1.0	36	40300	3920	16	9300	402
7	2.[illegible]	201	2.1	12	24400	791	32	29600	2860
8	3.7	493	4.7	7.0	14000	265	34	64700	5940
9	2.5	347	2.3	9.2	19900	821	68	72900	13600
10	2.5	156	1.1	5.0	20400	2750	25	50100	3380
11	2.[illegible]	141	1.4	34	69200	9040	18	30500	1480
12	2.8	173	1.3	29	102000	7990	9.4	14000	355
13	4.5	866	11	309	481000	578000	12	22000	1140
14	3.6	541	5.2	223	173000	123000	202	63100	40600
15	1.6	270	1.2	62	119000	16700	36	42800	4160
16	5.5	15200	226	17	59300	2720	58	40000	6730
17	6.5	31900	560	8.8	26500	630	62	40400	7070
18	25	12800	1320	5.0	8700	117	24	23700	1540
19	151	291000	235000	133	127000	91300	13	10100	354
20	162	612000	206000	94	97500	28100	12	5400	175
21	242	312000	275000	30	35700	2890	10	1200	32
22	103	178000	58800	19	18900	970	11	900	27
23	40	217000	23400	12	13000	421	10	300	8.1
24	175	352000	194000	18	38700	2810	7.6	250	5.1
25	177	244000	118000	17	36000	2280	7.6	205	4.2
26	185	311000	164000	18	60200	2920	7.6	184	3.8
27	69	208000	40800	19	52000	2670	6.5	170	3.0
28	33	30100	2680	25	34800	2350	7.0	136	2.6
29	30	39800	3220	52	87900	26900	6.5	122	2.1
30	220	217000	218000	208	260000	167000	5.5	115	1.7
31	80	87200	18800	75	160000	32400	--	--	--
TOTAL	1792.4	--	1453842.71	1596.0	--	1131815	836.7	--	128691.6

TOTAL DISCHARGE FOR YEAR (CFS DAYS) 13449.5
TOTAL LOAD FOR YEAR (TONS) 3861611.47

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 3, 1968	1730	14	11	14700	437	70	93	--	100	--	--	--	--	--	--	--	SPWC
NOV 16.....	0900	7	14	464	18	68	80	--	96	--	97	100	--	--	--	--	SPWC
DEC 2.....	1545	9	28	3570	270	37	50	--	76	--	84	94	100	--	--	--	VPWC
JAN 15, 1969	1715	4	60	30100	4880	50	64	--	87	--	96	100	--	--	--	--	VPWC
FEB 10.....	1520	--	34	9320	856	81	91	--	99	--	100	--	--	--	--	--	SPWC
FEB 28.....	1050	5	35	12600	1870	60	74	--	90	--	97	100	--	--	--	--	VPWC
MAR 19.....	1100	9	56	37100	5610	58	71	--	91	--	95	100	--	--	--	--	VPWC
MAR 27.....	1130	11	47	22500	2860	56	70	81	89	90	93	98	100	--	--	--	VPWC
MAR 27.....	1130	11	47	22500	2860	--	1	3	83	88	93	98	100	--	--	--	VPN
MAR 31.....	1210	12	70	88200	16700	26	31	--	74	--	81	99	100	--	--	--	VPWC
APR 9.....	1130	14	60	7090	1150	56	72	--	97	--	99	100	--	--	--	--	SPWC
APR 18.....	1400	19	12	3460	112	39	49	--	74	--	90	100	--	--	--	--	VPWC
APR 26.....	1145	12	20	5130	277	61	81	--	93	--	96	99	100	--	--	--	SPWC
MAY 9.....	1030	17	40	13800	1490	21	71	--	93	--	97	99	100	--	--	--	VPWC
MAY 14.....	1210	19	11	1780	53	54	69	81	84	87	88	96	100	--	--	--	VPWC
MAY 14.....	1210	19	11	1780	53	2	5	28	82	87	88	96	100	--	--	--	VPN
JUN 21.....	0900	20	2.5	1040	7.0	74	93	--	99	--	100	--	--	--	--	--	SPWC
JUL 19.....	1045	26	175	92900	43900	29	39	--	58	--	77	94	100	--	--	--	VPWC
JUL 30.....	1000	26	920	428000	1060000	8	10	12	13	17	29	68	97	100	--	--	VPWC
JUL 30.....	1000	26	920	428000	1060000	--	--	1	13	17	29	68	97	100	--	--	VPN
AUG 13.....	0700	23	650	060000	186000	5	6	--	9	--	20	41	77	99	100	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
MAR 27, 1969	1130	11			1	10	35	73	81	87	91	95	100	--		S
MAY 14.....	1210	19			--	9	59	96	98	99	100	--	--	--	--	S

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.

LOCATION.--Lat 35°52'40", long 111°24'40", in NE¼SE¼ sec.22, T.29 N., R.9 E. (unsurveyed), Coconino County, at bridge on U.S. Highway 89 at Cameron, in Navajo Indian Reservation, 2.5 miles upstream from Moenkopi Wash, 9 miles upstream from Coconino Dam site, 12 miles upstream from gaging station near Cameron (station 09402000), and 57.5 miles upstream from mouth.

DRAINAGE AREA.--26,500 sq mi, approximately (at gaging station).

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1958.
Specific conductance: October 1964 to September 1969.
Water temperatures: October 1951 to September 1969.
Sediment records: October 1947 to September 1969.

EXTREMES.--1968-69:
Specific conductance: Maximum daily, 2,720 micromhos May 12; minimum daily, 255 micromhos Apr. 11.
Sediment concentrations: Maximum daily, 126,000 mg/l July 25; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 608,000 tons Sept. 12; minimum daily, 0 ton on many days.

Period of record:
Specific conductance: Maximum daily, 2,720 micromhos May 12, 1969; minimum daily, 250 micromhos Dec. 20, 1966.
Sediment concentrations: Maximum daily, 228,000 mg/l Aug. 30, 1966; minimum daily, no flow on many days each year.
Sediment loads: Maximum daily, 2,580,000 tons Sept. 21, 1952; minimum daily, 0 ton on many days each year.

REMARKS.--Appreciable inflow, mostly from Moenkopi Wash, may occur between sampling site and gaging station during periods of local storm runoff. Sediment loads are computed using discharge at gaging station and include estimated loads from Moenkopi Wash. No flow Oct. 1-5, 20-31, Nov. 1, 2, 4-20, Dec. 1 to Jan. 12, May 5-7, May 24 to July 4, July 7-17, Sept. 29, 30.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	--	--	410	1100	400	720	--	--	900	900
2	--	--	--	--	425	1200	390	780	--	--	1000	975
3	--	--	--	--	415	1300	395	800	--	--	975	1000
4	--	--	--	--	410	1300	400	800	--	--	900	1000
5	--	--	--	--	440	1200	440	750	--	--	750	1100
6	--	--	--	--	460	1200	460	--	--	--	850	650
7	775	--	--	--	480	1250	430	--	--	--	800	825
8	800	--	--	--	525	1200	420	--	--	--	750	700
9	800	--	--	--	500	1400	365	880	--	--	750	700
10	775	--	--	--	560	1300	350	--	--	--	900	675
11	800	--	--	--	570	1200	255	1180	--	--	950	800
12	775	--	--	--	590	1200	360	2720	--	--	1200	750
13	800	--	--	--	550	1200	405	1700	--	--	750	1000
14	800	--	--	--	650	1050	440	2000	--	--	1300	1200
15	850	--	--	--	720	945	450	1800	--	--	1300	1100
16	900	--	--	--	850	770	450	1180	--	--	1200	1100
17	--	--	--	1050	850	750	410	1050	--	--	950	775
18	--	--	--	750	900	750	390	950	--	--	865	1000
19	--	--	--	700	990	800	400	900	--	--	825	900
20	--	--	--	740	1100	800	440	890	--	--	1000	1000
21	--	1000	--	600	1100	1600	440	900	--	1800	750	1000
22	--	1000	--	750	1100	1100	450	950	--	1800	1000	1000
23	--	900	--	750	1150	1100	450	900	--	1900	900	1000
24	--	1000	--	775	1200	675	495	--	--	1900	800	1000
25	--	1000	--	1550	1200	525	570	--	--	--	850	1000
26	--	1100	--	600	1100	470	520	--	--	1800	950	1000
27	--	1100	--	850	1100	540	525	--	--	925	1150	1100
28	--	--	--	540	1100	445	650	--	--	1090	1000	--
29	--	--	--	440	--	430	695	--	--	775	700	--
30	--	--	--	400	--	440	700	--	--	875	1100	--
31	--	--	--	405	--	420	--	--	--	875	850	--
AVG	--	--	--	--	765	956	451	--	--	--	934	935

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	--	--	--	--	--	--	18	18	17	17	18	19	10	19	15	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	9	11	7	3	7	6	--	--	--	--	--
DECEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	6	8	6	6	8	7	4	7	8	6	6	3	2	3	--
FEBRUARY.	3	2	3	3	5	5	8	7	1	8	9	6	8	8	8	12	11	8	9	9	7	7	1	4	10	8	9	10	--	--	--	7
MARCH....	10	3	7	6	9	9	9	11	9	2	10	9	11	5	11	8	12	13	12	13	13	13	8	12	10	12	14	15	15	12	16	10
APRIL....	16	15	10	12	13	12	14	14	17	17	17	18	11	18	18	11	18	16	19	13	21	21	20	19	18	16	12	22	21	21	--	16
MAY.....	22	23	8	11	11	--	--	--	27	--	16	20	22	20	22	21	25	22	25	17	20	12	--	--	--	--	--	--	--	--	--	--
JUNE.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	36	35	34	--	35	26	28	28	28	27	--
AUGUST...	27	32	28	30	32	32	32	32	32	25	30	28	30	31	25	30	27	25	29	30	30	28	28	24	31	29	28	27	28	27	28	29
SEPTEMBER	28	26	26	27	27	28	24	28	27	28	26	24	24	22	26	25	26	26	26	26	25	25	25	25	26	25	25	--	--	--	--	26

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	--	--	--	--	--	--			
2	--	--	--	0	--	0			
3	--	--	--	.30	30600	25			
4	--	--	--	0	--	0			
5	0	--	0	--	--	--			
6	1510	57000	334000	--	--	--			
7	638	58800	103000	--	--	--			
8	198	49800	26600	--	--	--			
9	93	42000	10500	--	--	--			
10	53	41300	5910	--	--	--			
11	40	31800	3430	--	--	--			
12	26	38400	2700	--	--	--			
13	17	34200	1570	--	--	--			
14	12	34100	1100	--	--	--			
15	7.4	35600	711	--	--	--			
16	3.8	36900	379	--	--	--			
17	1.6	34700	150	--	--	--			
18	.60	33700	55	--	--	--			
19	.20	32600	18	--	--	--			
20	0	--	0	0	--	0			
21	--	--	--	27	49000	4570			
22	--	--	--	24	59900	3880			
23	--	--	--	16	52600	2270			
24	--	--	--	10	43100	1160			
25	--	--	--	7.4	36900	737			
26	--	--	--	2.6	30700	216			
27	--	--	--	1.6	24100	104			
28	--	--	--	.70	20400	39			
29	--	--	--	.20	19400	10			
30	--	--	--	.20	15000	8.1			
31	--	--	--	--	--	--			
TOTAL	2600.60	--	490123	90.00	--	13019.1	0	--	0

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	--	--	--	906	24600	61700	26	3410	239
2	--	--	--	520	13900	19500	24	2570	167
3	--	--	--	415	11200	12500	18	1390	68
4	--	--	--	320	8750	7560	16	755	33
5	--	--	--	246	8440	5610	15	763	31
6	--	--	--	192	8750	4540	14	786	30
7	--	--	--	160	8300	3590	11	818	24
8	--	--	--	124	4830	1620	7.4	838	17
9	--	--	--	101	4050	1100	9.2	1500	37
10	--	--	--	91	4800	1180	28	963	73
11	--	--	--	80	3170	685	43	990	115
12	0	--	0	70	2310	437	43	2350	273
13	2.4	26600	244	70	1820	344	43	3370	391
14	3.4	34500	317	59	1680	268	171	6450	3740
15	4.0	30400	328	48	935	121	270	22400	16400
16	5.0	26700	360	38	830	85	254	32100	22000
17	106	34000	14600	34	955	88	160	26800	11600
18	186	52100	27700	31	650	54	189	24000	12200
19	126	43000	14600	30	745	60	133	21700	7790
20	73	40200	7920	28	705	53	93	18600	4670
21	58	36900	5780	29	805	63	143	44300	17100
22	41	27800	3080	32	890	77	100	107000	28900
23	30	25900	2100	41	1340	148	528	70800	111000
24	22	27900	1660	49	1430	189	969	39800	104000
25	514	47500	72900	40	1190	129	1060	26700	76400
26	626	34900	59000	31	1710	143	770	20300	42200
27	415	20000	22400	29	7390	579	776	18400	38600
28	1990	47900	287000	28	7510	568	650	21500	37700
29	3120	55400	456000	--	--	--	584	16700	26300
30	4150	41700	470000	--	--	--	728	17800	35000
31	1940	27000	136000	--	--	--	1140	25700	79100
TOTAL	13411.8	--	1581989	3842	--	122991	9015.6	--	676198

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1540	22300	92700	11	575	17			
2	1860	20300	102000	6.6	420	7.5			
3	1950	25200	133000	2.8	305	2.3			
4	2030	22000	121000	.60	154	.25			
5	1780	23200	111000	0	--	0			
6	1390	18000	67600	0	--	0			
7	1050	17500	49600	0	--	0			
8	997	18000	48400	6.2	479	19			
9	990	18600	49700	10	525	14			
10	836	16300	36800	5.0	250	3.4			
11	650	11200	19700	20	1370	208			
12	505	9990	13600	86	3490	810			
13	450	11300	13700	67	18200	3290			
14	415	14700	16500	51	24700	3400			
15	375	13300	13500	82	20200	4470			
16	375	9200	9320	69	16900	3150			
17	385	7330	7640	50	8330	1150			
18	324	6600	5770	40	3350	362			
19	258	7410	5160	30	2210	179			
20	198	9900	5290	10	1870	50			
21	162	4210	1840	5.0	1450	20			
22	121	3570	1170	2.6	895	4.8			
23	90	3310	804	1.0	445	1.2			
24	60	5780	936	0	--	0			
25	50	4350	587	--	--	--			
26	45	2210	269	--	--	--			
27	40	1830	198	-	--	--			
28	37	1910	191	--	--	--			
29	29	1130	88	--	--	--			
30	22	1230	73	--	--	--			
31	--	--	--	--	--	--			
TOTAL	14014	--	928136	555.20	--	17158.45	0	--	0

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	--	--	--	150	59300	24000	242	77000	50300
2	--	--	--	75	65000	13200	152	77000	31600
3	--	--	--	40	62900	6790	75	57200	11600
4	0	--	0	20	54600	2950	49	60300	7980
5	53	31100	6770	1060	90500	260000	163	69700	38000
6	3.3	5100	45	510	95400	131000	164	64000	28300
7	0	--	0	200	97500	52600	1600	111000	510000
8	--	--	--	100	76400	20600	860	78900	189000
9	--	--	--	40	79000	8530	338	58200	53100
10	--	--	--	50	57200	7720	165	52900	23600
11	--	--	--	80	65100	14700	2920	80400	103000
12	--	--	--	40	67600	7300	2500	90100	608000
13	--	--	--	20	65000	3510	700	105000	198000
14	--	--	--	260	61600	44900	250	94300	63600
15	--	--	--	100	76600	20700	120	92800	30100
16	--	--	--	75	93400	18900	252	95600	93900
17	0	--	0	50	79700	10800	496	88500	119000
18	.10	6930	8.9	30	53500	4330	216	104000	60700
19	3.1	12600	150	20	84200	4550	104	94300	26500
20	9.4	20400	1040	15	83600	3380	59	91700	14600
21	197	81700	77100	10	70200	1900	30	85900	6960
22	74	99500	19900	5.0	70400	950	10	84000	2270
23	38	112000	11200	4.0	53500	578	7.0	84000	1590
24	20	101000	5450	3.0	70000	568	4.0	81600	882
25	81	126000	29900	2.0	74700	403	3.4	78500	721
26	434	111000	210000	1.1	55100	164	1.4	80600	305
27	1130	107000	367000	103	91200	25400	.40	73800	80
28	1280	75400	313000	72	74900	14600	.10	20000	5.4
29	1720	52400	253000	87	49300	14600	0	--	0
30	921	54200	145000	431	124000	165000	0	--	0
31	560	61600	93100	319	87400	75200	--	--	--
TOTAL	6523.90	--	1532663.9	3972.1	--	959823	11481.30	--	2273693.4

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 70506.50
TOTAL LOAD FOR YEAR (TONS) 8595794.85

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JAN 17, 1969	1200	7	306	56900	47000	65	74	--	85	--	90	97	100	--	--	--	VPWC
JAN 26.....	1100	8	620	34900	58400	46	51	--	63	--	70	78	90	98	100	--	VPWC
JAN 28.....	1215	3	2310	59400	370000	34	40	--	57	--	76	90	100	--	--	--	VPWC
JAN 30.....	1500	3	4670	27800	351000	28	31	--	40	--	76	96	100	--	--	--	VPWC
FEB 1.....	1200	2	880	23100	54900	30	34	--	41	--	55	78	96	99	100	--	VPWC
FEB 27.....	1200	9	29	9780	766	87	98	--	99	--	99	100	--	--	--	--	SPWC
MAR 14.....	1200	4	48	11600	1500	32	40	--	55	--	75	96	100	--	--	--	SPWC
MAR 27.....	1430	16	789	19700	42000	44	54	60	68	74	82	93	98	100	--	--	VPWC
MAR 27.....	1430	16	789	19700	42000	6	16	62	67	74	82	93	98	100	--	--	VPN
MAR 31.....	1200	15	990	23800	63600	31	34	--	57	--	80	90	98	100	--	--	VPWC
APR 5.....	1600	18	1720	18800	87300	43	51	--	67	--	91	98	100	--	--	--	VPWC
MAY 15.....	1200	20	80	26200	5660	79	87	--	91	--	93	98	100	--	--	--	VPWC
JUL 28.....	1140	26	620	55200	92400	68	80	--	88	--	93	98	100	--	--	--	VPWC
JUL 28.....	1455	24	2190	120000	710000	41	48	--	60	--	78	90	99	100	--	--	VPWC
JUL 28.....	2100	--	2350	71800	456000	58	66	--	77	--	89	96	100	--	--	--	VPWC
AUG 6.....	1600	34	315	91200	77600	59	76	--	87	--	92	96	100	--	--	--	VPWC
AUG 26.....	1225	25	1.0	56800	153	96	99	--	100	--	--	--	--	--	--	--	SPWC
AUG 30.....	1500	--	380	120000	123000	58	71	--	90	--	96	98	100	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	31.0	64.0	METHOD OF ANALYSIS
MAR 27, 1969	1400				2	17	65	85	96	98	98	99	100	--	--	S

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.

LOCATION (revised).--Lat 36°06'05", long 112°05'08", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, at gaging station in Grand Canyon National Park at Kaibab Bridge, 0.4 mile upstream from Bright Angel Creek, 4.5 miles northeast of village of Grand Canyon, 26 miles downstream from Little Colorado River, 104 miles downstream from Glen Canyon Dam, and 267 miles upstream from Hoover Dam.
DRAINAGE AREA.--137,800 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: August 1925 to November 1942, September 1943 to September 1969.
Water temperatures: October 1936 to October 1942, September 1943 to September 1969.
Sediment records: October 1925 to November 1942, September 1943 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 812 mg/l Feb. 1-28; minimum, 569 mg/l Dec. 1-4.
Hardness: Maximum, 382 mg/l Mar. 1-31; minimum, 264 mg/l Oct. 1-31.
Specific conductance: Maximum daily, 1,270 micromhos Mar. 2; minimum daily, 842 micromhos Oct. 26.
Water temperatures: Maximum, 21.0°C Oct. 1, 2; minimum, 7.0°C on several days during January and February.
Sediment concentrations: Maximum daily, 12,200 mg/l Oct. 7; minimum daily, 20 mg/l May 26.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	10520	11	--	70	22	--	--	99	182	0	210	78
NOV.												
01-30	11350	10	--	70	22	--	--	100	182	0	215	76
DEC.												
01-04	10900	11	--	70	25	--	--	87	156	0	220	76
JAN.												
01-31	10210	10	--	86	29	--	--	121	188	0	288	97
FEB.												
01-28	9164	11	--	92	30	--	--	140	192	0	332	108
MAR.												
01-31	11820	12	--	97	34	--	--	114	194	0	322	94
APR.												
01-30	15580	11	10	94	33	111	4.8	--	196	0	320	96
MAY												
01-31	12990	11	--	91	34	--	--	115	190	0	316	93
JUNE												
01-30	14620	11	--	88	32	--	--	108	187	0	300	84
JULY												
01-31	16160	12	0	82	36	100	4.9	--	188	0	290	78
AUG.												
01-31	16300	12	--	85	23	--	--	88	187	0	234	69
SEPT.												
01-30	14150	13	--	84	19	--	--	93	183	0	231	67
WTD. AVG. TIME	--	11	--	85	29	--	--	106	188	0	277	84
WTD. AVG. TONS PER DAY	13000	11	--	85	29	--	--	108	188	0	277	85
	--	398	--	3000	1010	--	--	3550	6590	0	9710	2950

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

EXTREMES.--1968-69:--Continued
Sediment loads: Maximum daily, 697,000 tons Sept. 2; minimum daily, 472 tons Jan. 13.
Period of record (1965-69):
Dissolved solids: Maximum, 948 mg/l Jan. 30, 1968; minimum, 360 mg/l Aug. 7-31, 1965.
Hardness: Maximum, 438 mg/l July 29, 1968; minimum, 184 mg/l Sept. 1-30, 1965.
Specific conductance: Maximum daily, 1,570 micromhos Jan. 30, 1968; minimum daily, 561 micromhos Sept. 3, 1965.
Water temperatures: Maximum, 23.0°C Sept. 4, 1967, Sept. 9, 10, 1968; minimum, 4.0°C Jan. 4, 1966, Jan. 7, 1968.
Sediment concentrations: Maximum daily, 28,000 mg/l Aug. 14, 1967; minimum daily, 4 mg/l Nov. 7, 1966.
Sediment loads: Maximum daily, 1,100,000 tons Aug. 14, 1967; minimum daily, 55 tons Nov. 7, 1966.
REMARKS.--Because of the regulation of flow by Glen Canyon Dam since Mar. 13, 1963, and the subsequent filling of Lake Powell, extreme values for the period of record include only those obtained after July 31, 1965, beginning with the 1969 water year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.												
01-31	--	3.2	--	--	582	.79	16500	264	115	2.7	904	7.6
NOV.												
01-30	--	3.1	--	--	585	.80	17900	266	117	2.7	902	7.7
DEC.												
01-04	--	2.7	--	--	569	.77	16700	276	148	2.3	903	7.5
JAN.												
01-31	--	3.6	--	--	727	.99	20000	332	178	2.9	1130	7.7
FEB.												
01-28	--	4.8	--	--	812	1.10	20100	354	196	3.2	1170	7.9
MAR.												
01-31	--	4.7	--	--	773	1.05	24700	382	223	2.5	1180	8.0
APR.												
01-30	.4	5.2	170	783	772	1.06	32900	372	211	2.5	1160	8.0
MAY												
01-31	--	4.6	--	--	758	1.03	26600	368	212	2.6	1160	7.8
JUNE												
01-30	--	4.5	--	--	720	.98	28400	352	199	2.5	1100	7.9
JULY												
01-31	.4	2.2	160	698	698	.95	30500	354	200	2.3	1040	7.9
AUG.												
01-31	--	4.3	--	643	607	.87	28300	306	153	2.2	965	7.8
SEPT.												
01-30	--	4.2	--	615	601	.84	23500	286	136	2.4	918	7.8
WTD. AVG. TIME	--	4.0	--	--	690	--	--	331	177	2.5	1050	7.8
WTD. AVG. TONS PER DAY	--	141	--	--	24200	--	--	--	--	--	--	--

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	957	889	888	--	1130	1250	1140	1180	1170	1070	1090	1020
2	914	861	927	--	1260	1270	1120	1160	1140	--	1050	957
3	936	--	--	--	1170	--	1110	1160	1110	--	994	900
4	917	889	892	--	--	1220	1100	1170	1110	--	981	930
5	964	887	--	--	1190	1240	1110	1190	--	--	984	895
6	--	--	--	--	1170	1230	1110	1170	--	--	--	--
7	959	--	--	1160	1210	--	1130	1140	--	--	--	895
8	939	--	--	1070	1150	--	1150	1150	1140	--	--	950
9	939	--	--	1130	1160	--	1190	1170	1120	1070	--	930
10	915	--	--	1100	1190	--	1190	1150	1100	1060	--	900
11	973	--	--	1130	--	--	1160	1200	1090	1070	--	925
12	936	898	--	--	--	--	1170	1170	1100	--	--	877
13	982	934	--	1110	--	--	1160	--	1100	1060	--	882
14	903	934	--	1200	1170	--	1170	--	--	1040	--	909
15	903	851	--	1030	1170	1160	1160	--	1100	1010	--	908
16	876	--	--	1050	--	--	1160	--	--	1030	--	989
17	931	869	--	1080	1170	1130	1190	--	1090	1010	1000	916
18	964	870	--	--	1170	1120	1200	--	1100	1000	1010	975
19	861	912	--	1080	1160	1150	1170	1160	1080	--	937	906
20	874	919	--	1090	1170	1150	1180	1160	1070	--	957	906
21	878	--	--	1160	1170	1180	1190	1130	--	--	981	853
22	927	869	--	1110	1170	1160	1150	1130	1090	997	--	--
23	--	889	--	1120	1190	1150	1160	1140	1090	1080	937	--
24	851	--	--	1230	1150	1190	1170	1150	1100	1010	--	--
25	863	934	--	--	1150	1200	1190	1180	1090	994	950	--
26	842	959	--	1200	1230	1190	1180	1170	1100	1080	896	--
27	948	934	--	1200	1170	1190	1230	1230	1090	--	921	885
28	867	894	--	1250	1200	1140	1230	1150	1100	1080	907	908
29	896	--	--	1110	--	1150	1190	1130	--	1050	926	918
30	894	947	--	1110	--	1160	1170	1180	1080	1080	918	850
31	861	--	--	1070	--	1180	--	1140	--	--	1080	--
AVG	905	--	--	--	--	--	1160	1160	--	--	--	916

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	18.0	12.0	--	7.0	9.0	12.0	12.0	14.0	17.0	18.0	19.0
2	21.0	17.0	12.0	--	7.0	9.0	12.0	12.0	14.0	--	18.0	18.0
3	19.0	--	--	--	8.0	--	11.0	12.0	14.0	--	18.0	19.0
4	19.0	16.0	12.0	--	--	8.0	11.0	11.0	14.0	--	18.0	18.0
5	20.0	16.0	--	--	7.0	9.0	11.0	11.0	--	--	18.0	19.0
6	--	--	--	--	7.0	8.0	11.0	10.0	--	--	--	--
7	19.0	--	--	8.0	8.0	--	10.0	11.0	--	--	--	19.0
8	19.0	--	--	8.0	8.0	--	11.0	11.0	14.0	--	--	19.0
9	19.0	--	--	8.0	8.0	--	11.0	12.0	15.0	16.0	--	19.0
10	19.0	--	--	8.0	8.0	--	11.0	13.0	14.0	16.0	--	18.0
11	20.0	--	--	8.0	--	--	12.0	13.0	14.0	16.0	--	19.0
12	19.0	15.0	--	--	--	--	12.0	12.0	14.0	--	--	18.0
13	19.0	15.0	--	8.0	--	--	12.0	--	16.0	17.0	--	18.0
14	20.0	14.0	--	9.0	8.0	--	12.0	--	--	17.0	--	19.0
15	18.0	14.0	--	9.0	9.0	8.0	11.0	--	16.0	18.0	--	18.0
16	18.0	--	--	9.0	--	--	10.0	--	--	17.0	--	18.0
17	17.0	14.0	--	9.0	9.0	9.0	10.0	--	15.0	17.0	18.0	18.0
18	17.0	14.0	--	--	9.0	10.0	10.0	--	16.0	17.0	19.0	18.0
19	18.0	14.0	--	9.0	8.0	10.0	10.0	13.0	16.0	--	16.0	18.0
20	17.0	14.0	--	9.0	8.0	9.0	12.0	14.0	16.0	--	17.0	18.0
21	18.0	--	--	9.0	8.0	10.0	12.0	14.0	--	--	18.0	18.0
22	18.0	16.0	--	9.0	8.0	10.0	12.0	14.0	16.0	18.0	--	--
23	--	13.0	--	9.0	8.0	10.0	12.0	15.0	17.0	17.0	18.0	--
24	18.0	--	--	9.0	8.0	9.0	11.0	14.0	16.0	17.0	--	--
25	18.0	13.0	--	--	9.0	9.0	11.0	14.0	14.0	17.0	20.0	--
26	18.0	13.0	--	9.0	9.0	10.0	10.0	15.0	14.0	17.0	19.0	--
27	19.0	12.0	--	9.0	9.0	11.0	10.0	16.0	16.0	--	18.0	18.0
28	17.0	12.0	--	8.0	9.0	11.0	11.0	16.0	16.0	19.0	18.0	19.0
29	17.0	--	--	7.0	--	11.0	11.0	14.0	--	18.0	17.0	19.0
30	17.0	12.0	--	6.0	--	11.0	12.0	16.0	17.0	18.0	18.0	19.0
31	18.0	--	--	7.0	--	12.0	--	14.0	--	--	18.0	--
AVG	18.5	--	--	--	8.1	--	11.1	13.2	15.1	--	--	18.5

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSES: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 18, 1968	1300	17	18200	791	38900	2	3	--	4	--	23	73	97	100	--	--	VPWC
APR 18, 1969	1020	10	18200	716	35200	9	12	--	15	--	29	66	95	100	--	--	VPWC
JUN 12.....	1230	14	18400	407	20200	--	--	--	--	--	10	42	90	100	--	--	VWC
JUL 16.....	1010	17	20500	463	25600	--	--	--	--	--	11	54	94	100	--	--	VWC
AUG 22.....	1105	18	23600	1310	83500	23	27	28	30	33	48	74	93	100	--	--	VPWC
AUG 22.....	1105	18	23600	1310	83500	2	5	26	29	33	48	74	93	100	--	--	VPN
SEP 27.....	1130	18	20800	853	47900	7	8	--	9	--	24	72	98	100	--	--	VPWC

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	9380	249	7000	13000	350	13400	9680	160	4180
2	8760	115	3020	11800	245	8660	8430	54	1230
3	7170	75	1610	9350	145	4060	12600	182	6190
4	7580	65	1480	7240	62	1270	12900	262	9140
5	7120	53	1130	10800	258	8910	13100	270	9550
6	7310	85	1860	12100	325	11800	12800	260	8980
7	8200	12200	290000	12400	383	14200	11900	200	6430
8	9380	7870	184000	11900	419	14900	9700	150	3930
9	10100	2640	71400	11000	392	12900	6430	100	1740
10	10200	1190	36400	9550	230	6580	10700	170	4910
11	10400	854	23900	7750	139	3230	11000	200	5940
12	11300	717	24000	10600	275	8740	11300	200	6100
13	11200	533	17100	10900	214	6990	11300	200	6100
14	9990	350	10500	13500	912	36800	10600	170	4860
15	12300	595	21900	12700	495	18800	8660	150	3510
16	12400	595	22100	13100	430	16900	7730	150	3130
17	13800	450	18600	10900	246	8040	11300	200	6100
18	12600	475	18200	8350	125	3130	11100	200	5990
19	11800	300	10600	13200	371	14200	12300	250	8300
20	9880	335	9920	13400	410	16500	14400	300	11700
21	7680	185	4260	14500	339	14700	13700	300	11100
22	10400	160	4990	13800	93	3850	10500	250	7090
23	11000	250	8240	12600	300	11300	8980	150	3640
24	12300	345	12700	12800	333	12800	12300	250	8300
25	12500	305	11400	8940	140	3750	10900	200	5890
26	12000	846	30600	11200	283	9400	7940	150	3220
27	11600	325	11300	12200	258	9430	10200	200	5510
28	10100	167	5030	12300	244	8990	11300	250	7630
29	12400	350	13200	7870	71	1670	11200	250	7560
30	12700	500	19200	10600	175	5760	9300	150	3770
31	12600	360	13600	--	--	--	10800	200	5830
TOTAL	326150	--	909240	340350	--	311660	335050	--	187550

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	10100	100	2940	16300	2520	)16000	8060	675	14800
2	5660	70	1160	16500	1780	83300	7800	295	6370
3	8580	80	2000	7030	638	11800	7240	248	4970
4	8010	80	1870	9420	1030	26700	8700	261	6280
5	6260	70	1280	8010	496	11300	9480	260	6820
6	5000	70	1020	7100	343	6900	8660	249	5970
7	8080	80	1880	8160	332	7680	9280	260	6680
8	7920	90	2080	9230	408	10700	9350	270	6990
9	8810	90	2310	8820	275	6550	8900	250	6160
10	9610	145	4060	6620	105	1970	7030	180	3500
11	8900	145	3760	8500	180	4340	9710	300	8060
12	7100	105	2170	8660	190	4660	9700	310	8320
13	4610	38	472	8820	180	4500	9830	360	9790
14	9090	154	4380	9060	179	4600	14200	910	35800
15	12500	471	17900	8820	182	4550	18600	1630	82100
16	11300	210	6920	7940	103	2320	17100	1070	49400
17	11700	1150	39200	7240	158	3240	12800	645	22800
18	11600	1350	45700	9140	342	8410	13300	800	28700
19	10700	1330	39900	9460	283	7590	14200	793	31200
20	6120	1350	24100	9460	315	8450	15000	1020	41500
21	12000	1320	43200	11300	925	28800	13800	779	29800
22	11600	615	20800	9460	178	4770	14000	875	33900
23	9780	395	11300	8240	155	3620	12800	835	29600
24	10500	1650	54300	7600	158	3460	12400	1440	48500
25	12700	3490	12900	9590	333	9160	14300	2920	118000
26	12400	5550	186000	8380	162	3850	12800	2270	78500
27	9300	3050	76600	8980	213	5420	12800	1140	40400
28	14900	6360	272000	8740	335	8300	13700	1180	44700
29	16100	7490	330000	--	--	--	15900	1540	66800
30	17700	7620	367000	--	--	--	13400	1290	47800
31	17800	5160	251000	--	--	--	11600	1330	42700
TOTAL	316430	--	1830202	256580	--	402940	366420	--	968910

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	14300	2220	86200	15500	445	20100	12200	160	5590
2	18700	3740	193000	15600	496	22100	12200	169	5900
3	17300	3280	155000	17200	817	40800	15300	617	27300
4	17200	3080	149000	15500	645	29200	16500	700	32500
5	16600	2810	131000	12700	265	9810	14900	467	20200
6	15400	2500	108000	16500	685	33000	16200	788	36200
7	12200	2000	68500	16100	547	25800	18000	846	41900
8	14500	1380	56200	15800	412	19000	15700	600	26000
9	13700	1060	40800	15100	433	19000	12800	290	10800
10	13900	1190	44400	14500	370	15600	16100	440	20300
11	15600	985	43100	12400	240	8680	16100	363	16700
12	14800	810	33700	10600	225	6950	14500	321	13100
13	14900	545	22800	15200	650	28800	13600	162	6300
14	14300	620	24900	16700	750	36500	15200	163	7090
15	17500	1340	65800	17400	900	45700	13600	234	9110
16	17100	1180	56600	16500	800	38500	10700	130	3980
17	17900	900	45200	13000	380	14400	14300	369	15500
18	16600	665	31000	11000	300	9620	13200	285	10800
19	18100	945	48000	8270	229	5210	14500	575	24300
20	15600	515	22600	12900	438	18000	14900	354	15700
21	13600	252	9620	13700	350	14000	15700	383	17200
22	18300	875	46500	13500	275	10800	13300	249	9480
23	17500	633	31500	12700	248	9180	11700	212	7440
24	16500	450	21200	11100	160	5180	15800	458	21500
25	16800	712	34300	8660	93	2350	16400	421	20100
26	14500	625	25400	6610	20	385	15700	304	13800
27	12600	405	14300	8680	65	1640	16600	363	17200
28	10800	203	6160	10500	135	4130	15600	331	14800
29	16000	608	28400	9830	65	1860	13400	175	6710
30	14600	485	19900	9680	98	2770	13900	217	8630
31	---	---	---	9140	65	1730	---	---	---
TOTAL	467400	---	1665080	402570	---	500795	438600	---	486130

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	15800	295	13300	17200	3920	194000	11800	3620	113000
2	18500	289	15300	16200	2990	139000	11900	2590	89000
3	18200	347	18100	15200	995	43300	16300	2000	94200
4	18200	360	18800	13300	900	34200	16900	1580	74800
5	17300	360	17800	15200	910	39600	16400	738	34300
6	15200	335	14600	16600	775	36800	16200	1840	88400
7	15900	295	13400	15900	650	29600	15700	6010	261000
8	17000	350	17000	16100	780	35900	14400	8750	322000
9	16200	263	12200	15500	900	39900	17500	2800	142000
10	16400	245	11500	13800	995	39300	17900	2020	104000
11	17000	270	13100	11400	745	24300	18200	4480	199000
12	17100	175	8560	17600	1450	73000	20900	11400	697000
13	14900	179	7630	16600	1050	49900	17400	3100	156000
14	10800	160	4940	16900	700	33800	9950	3500	101000
15	14600	299	12500	17300	1190	58900	7940	3000	68800
16	15200	317	14300	17200	1400	68900	12400	2900	104000
17	15800	346	15600	17200	2410	117000	15400	2620	106000
18	18200	621	32800	12800	3620	125000	15300	4310	177000
19	18200	460	24000	16800	2720	125000	15500	1800	80600
20	16500	505	23800	17200	1130	57300	15100	1440	62800
21	11400	400	13000	17400	2140	110000	12700	1610	59100
22	16500	1100	51900	17000	979	47200	7800	1000	22500
23	17900	2540	128000	17400	675	33600	12000	900	31200
24	17400	1370	66700	16000	499	22800	13300	800	30700
25	17100	930	45500	11600	400	13300	13400	700	27100
26	17500	1980	96300	19000	875	47600	13700	600	23700
27	16600	2360	112000	19000	775	42800	14000	690	27900
28	11500	4630	151000	18800	565	30400	12600	470	17100
29	15400	8900	401000	19600	1120	62800	8710	196	4940
30	15500	7820	342000	18300	945	49500	13300	329	13300
31	17300	3200	158000	15100	2540	111000	---	---	---
TOTAL	501100	---	1874630	505200	---	1935700	424600	---	3332440

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 4680450
TOTAL LOAD FOR YEAR (TONS) 14405277

09403000 BRIGHT ANGEL CREEK NEAR GRAND CANYON, ARIZ.

LOCATION (revised).--Lat 36°06'11", long 112°05'44", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, at gaging station in Grand Canyon National Park, 0.4 mile upstream from mouth and 4 miles northeast of village of Grand Canyon.

DRAINAGE AREA.--101 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1969.
Sediment records: November 1966 (partial record).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CHLORIDE (CL) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.								
10...	1110	14	17	204	0	3.2	319	8.1
20...	1650	14	17	212	0	2.8	335	8.0
NOV.								
14...	1210	11	17	208	0	3.5	333	8.2
JAN.								
13...	1410	9	18	204	0	3.2	327	8.1
FEB.								
18...	1330	11	19	218	0	3.8	394	8.0
MAR.								
06...	1240	7	19	224	0	3.0	373	7.7
APR.								
02...	1145	14	46	220	0	2.3	349	8.0
15...	0730	10	178	136	0	1.4	222	7.9
28...	1415	16	276	124	0	1.7	232	7.5
MAY								
24...	1245	13	174	152	0	2.4	220	7.1
JUNE								
13...	1325	21	44	194	0	1.4	292	7.1
JULY								
11...	1235	24	27	195	0	1.8	364	8.1
AUG.								
20...	1725	22	22	208	0	2.4	335	7.5
SEPT.								
20...	1700	19	21	212	0	1.9	335	7.8

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.

LOCATION.--Lat 36°51'50", long 112°34'45", in SE¼ sec.14, T.40 N., R.3 W. (unsurveyed), Coconino County, at gaging station in Kaibab Indian Reservation, at Nagles Crossing, 0.2 mile downstream from Johnson Wash and 6.5 miles southwest of Fredonia.

DRAINAGE AREA.--1,085 sq mi.

PERIOD OF RECORD.--Specific conductance: October 1967 to September 1969.
Water temperatures: October 1967 to September 1969.
Sediment records: October 1963 to Setember 1969.

EXTREMES.--1968-69:
Specific conductance: Maximum daily, 5,000 micromhos Dec. 4; minimum daily, 580 micromhos Jan. 25.
Water temperatures: Maximum, 27.0°C July 28; minimum, freezing point on several days during December to March.
Sediment concentrations: Maximum daily, 145,000 mg/l July 23; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 346,000 tons July 23; minimum daily, 0 ton on many days.

Period of record:
Specific conductance: Maximum daily, 7,000 micromhos Apr. 16, 17, 23, 24, 1968; minimum daily, 550 micromhos Feb. 15, 1968.
Water temperatures: Maximum, 28.0°C June 8, 1968; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 230,000 mg/l July 28, 1968; minimum daily, no flow on many days each year.
Sediment loads: Maximum daily, 346,000 tons July 23, 1969; minimum daily, 0 ton on many days each year.

REMARKS.--No flow Oct. 1 to Dec. 2, May 3-6, May 13 to July 21, Aug. 17-22, 25-27, Sept. 2-10, 13-16, 18-30.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	--	--	--	1000	1100	680	975	--	--	--	--	--
2	--	--	--	1100	800	700	920	--	--	--	--	--
3	--	--	--	1100	980	1100	780	--	--	--	--	--
4	--	--	5000	980	950	750	850	--	--	--	--	--
5	--	--	4500	950	800	750	900	--	--	--	--	--
6	--	--	2500	925	990	740	860	--	--	--	--	--
7	--	--	2000	945	800	800	790	--	--	--	--	--
8	--	--	1800	1100	770	800	820	1300	--	--	--	--
9	--	--	1800	1400	800	1000	900	1400	--	--	--	--
10	--	--	1800	2500	800	1100	820	--	--	--	--	--
11	--	--	1400	--	750	1000	820	--	--	--	1100	--
12	--	--	1300	1200	780	900	870	--	--	--	--	--
13	--	--	1700	1200	750	900	750	--	--	--	--	--
14	--	--	1400	640	750	950	950	--	--	--	1500	--
15	--	--	1200	680	800	1000	950	--	--	--	1350	--
16	--	--	1000	1100	700	1000	880	--	--	--	1300	--
17	--	--	1250	1850	700	800	980	--	--	--	--	--
18	--	--	1250	2300	725	1100	950	--	--	--	--	--
19	--	--	1850	2000	700	1100	980	--	--	--	--	--
20	--	--	1400	950	690	1100	1050	--	--	--	--	--
21	--	--	1500	750	650	1000	1020	--	--	--	--	--
22	--	--	--	900	700	900	1000	--	--	--	--	--
23	--	--	1100	800	700	940	1100	--	--	1650	--	--
24	--	--	1600	750	800	1000	1200	--	--	1000	--	--
25	--	--	1300	580	700	1230	1600	--	--	1150	--	--
26	--	--	1100	720	650	1270	--	--	--	1700	--	--
27	--	--	1100	700	600	1000	--	--	--	1600	--	--
28	--	--	975	700	750	1100	--	--	--	1800	1600	--
29	--	--	1050	800	--	900	--	--	--	2000	--	--
30	--	--	1050	880	--	900	--	--	--	2750	--	--
31	--	--	1200	1000	--	975	--	--	--	3000	917	--
AVG	--	--	1670	1080	774	951	948	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER.	--	--	--	0	3	3	1	4	4	6	5	0	3	3	2	4	3	0	3	1	2	--	4	1	2	1	2	2	4	3	2	3
JANUARY..	0	0	7	7	9	13	2	0	0	1	--	1	2	4	3	4	8	7	4	4	3	2	4	1	2	8	6	0	1	0	1	3
FEBRUARY.	1	2	0	0	1	0	3	3	4	1	3	3	4	2	4	9	8	3	1	1	4	3	4	4	4	4	0	9	--	--	--	3
MARCH....	1	9	8	7	2	1	2	10	4	2	4	6	7	6	10	13	14	11	8	10	13	8	7	0	7	13	2	4	7	9	7	7
APRIL....	10	10	7	9	10	10	7	8	10	11	12	11	12	11	8	8	8	4	8	17	12	7	11	14	7	--	--	--	--	--	--	10
MAY.....	--	--	--	--	--	--	--	20	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUNE.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	21	22	25	21	27	26	26	18	--
AUGUST...	--	--	--	--	--	--	--	--	--	--	18	--	--	24	22	18	--	--	--	--	--	--	--	--	--	--	--	22	--	--	22	--
SEPTEMBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1							D	--	D
2							D	--	D
3							1.0	140	.38
4							1.6	417	5.0
5							1.6	1280	5.5
6							1.6	1250	5.4
7							3.2	1410	12
8							3.6	2090	20
9							3.9	3820	40
10							3.9	882D	117
11							4.7	4600	58
12							3.9	2500	26
13							3.2	2750	24
14							3.9	2800	29
15							4.7	319D	40
16							4.4	4800	57
17							5.D	325D	44
18							1.6	1070	4.6
19							4.1	540	6.0
20							4.0	610	6.6
21							4.0	450	4.9
22							3.0	385	3.1
23							2.0	430	2.3
24							2.0	735	4.0
25							5.0	1000	14
26							4.0	1130	12
27							3.5	650	6.1
28							3.0	970	7.9
29							2.5	177D	12
30							2.0	1020	5.5
31							1.5	91D	3.7
TOTAL	0	--	0	0	--	0	92.4	--	575.98

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.0	1450	3.9	20	4230D	2280	15	4470	181
2	1.0	1320	3.6	15	23900	968	15	3720	151
3	1.0	1370	3.7	10	8750	236	15	1310	53
4	1.0	2100	5.7	10	8960	333	15	4800	195
5	1.0	3800	10	14	2030D	767	10	5990	162
6	1.0	5340	14	15	9900	400	10	3740	101
7	2.0	2910	16	15	12200	574	10	298D	80
8	2.0	316D	17	15	4650	188	9.0	4570	111
9	1.8	1050	5.1	13	4990	175	10	6780	183
10	1.4	980	3.7	13	3100	109	9.1	6730	165
11	2.9	3220	25	14	5990	226	13	7220	253
12	2.4	4630	30	19	3650	187	13	8570	301
13	2.6	3150	22	18	3150	153	12	8330	270
14	9.2	8130	314	12	4500	146	13	5990	210
15	6.8	5600	103	12	7000	227	9.1	6860	169
16	3.8	790	8.1	25	6700	452	2.4	1270	8.2
17	.80	465	1.0	15	29DD	117	3.1	2840	24
18	.60	440	.71	12	2650	86	12	8420	273
19	1.1	405	1.2	10	3350	9D	9.1	8910	219
20	6.2	248D	51	10	4630	125	8.7	8650	203
21	17	7840	821	10	5980	162	20	15900	859
22	54	39800	5910	10	365D	99	26	21800	1530
23	30	13500	1090	1D	2600	70	35	26400	2490
24	15	4100	166	1D	3680	99	41	34400	3810
25	111	65600	38700	21	5750	326	36	24000	2330
26	311	143000	127000	95	14400	4090	36	22700	2210
27	199	1D4000	55900	44	4440	527	51	59800	8930
28	62	56700	9490	20	2580	139	96	85000	24400
29	40	23000	2480	--	--	--	121	80600	29800
30	30	29500	2390	--	--	--	154	112000	53DD0
31	25	39900	2690	--	--	--	202	180D00	113D00
TOTAL	943.60	--	247275.71	507	--	13351	1031.5	--	245671.2

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCEN-TRATION (MG/L)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCEN-TRATION (MG/L)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCEN-TRATION (MG/L)	JUNE LOAD (TONS)
1	194	173000	100000	.10	3000	.81			
2	240	183000	135000	.10	3000	.81			
3	242	170000	127000	0	--	0			
4	131	81900	30000	0	--	0			
5	140	88400	36500	0	--	0			
6	222	151000	111000	0	--	0			
7	104	60500	19100	5.6	1670	36			
8	64	47900	10100	9.1	8600	212			
9	88	52500	14700	3.5	730	6.9			
10	105	62200	19800	2.0	300	1.6			
11	109	68000	22900	1.0	200	.54			
12	130	97100	43900	.50	100	.14			
13	83	57200	14300	0	--	0			
14	63	66600	13400	--	--	--			
15	42	33900	3920	--	--	--			
16	20	34600	1870	--	--	--			
17	20	35800	1930	--	--	--			
18	15	26400	1070	--	--	--			
19	13	21600	758	--	--	--			
20	16	24100	1240	--	--	--			
21	13	13500	474	--	--	--			
22	8.0	11900	257	--	--	--			
23	7.0	14800	280	--	--	--			
24	1.0	5710	15	--	--	--			
25	.20	3500	1.9	--	--	--			
26	.10	3000	.81	--	--	--			
27	.10	3000	.81	--	--	--			
28	.10	3000	.81	--	--	--			
29	.10	3000	.81	--	--	--			
30	.10	3000	.81	--	--	--			
31	--	--	--	--	--	--			
TOTAL	2070.70	--	709519.95	21.90	--	258.80	0	--	0

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN CONCEN-TRATION (MG/L)	JULY LOAD (TONS)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN CONCEN-TRATION (MG/L)	AUGUST LOAD (TONS)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN CONCEN-TRATION (MG/L)	SEPTEMBER LOAD (TONS)
1	--	--	--	.90	20000	49	.10	20000	5.4
2	--	--	--	.60	10000	16	0	--	0
3	--	--	--	.60	25000	40	0	--	0
4	--	--	--	.50	10000	14	0	--	0
5	--	--	--	.50	10000	14	0	--	0
6	--	--	--	.40	8000	8.6	0	--	0
7	--	--	--	.30	7000	5.7	0	--	0
8	--	--	--	.20	5000	2.7	0	--	0
9	--	--	--	.10	2000	.54	0	--	0
10	--	--	--	.40	8000	8.6	0	--	0
11	--	--	--	1.2	10700	35	82	95700	72300
12	--	--	--	.50	8000	11	1.5	45900	186
13	--	--	--	.20	5000	2.7	0	--	0
14	--	--	--	22	198000	15700	0	--	0
15	--	--	--	3.0	161000	1300	0	--	0
16	--	--	--	.50	101000	136	0	--	0
17	--	--	--	0	--	0	9.2	33900	2010
18	--	--	--	0	--	0	0	--	0
19	--	--	--	0	--	0	--	--	--
20	--	--	--	0	--	0	--	--	--
21	0	--	0	0	--	0	--	--	--
22	5.0	116000	4870	0	--	0	--	--	--
23	150	346000	145000	1.2	29700	306	--	--	--
24	130	252000	88500	14	116000	6880	--	--	--
25	15	68800	2810	0	--	0	--	--	--
26	7.0	37700	713	0	--	0	--	--	--
27	.90	53600	130	0	--	0	--	--	--
28	.90	22300	54	1.3	26300	454	--	--	--
29	1.4	8490	78	5.1	55500	1340	--	--	--
30	2	22000	1310	.10	10000	2.7	0	--	0
31	1.2	25700	83	10	98500	3490	--	--	--
TOTAL	333.40	--	243548	63.60	--	29816.54	92.80	--	74501.4

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 5156.90
TOTAL LOAD FOR YEAR (TONS) 1564518.58

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC 16, 1968	1530	4	7.5	8480	172	29	32	--	59	--	82	96	100	--	--	--	VPWC
JAN 14, 1969	1740	4	19	13300	682	28	35	--	58	--	80	91	97	100	--	--	VPWC
JAN 22.....	1100	2	68	45100	8280	29	36	--	50	--	72	91	99	100	--	--	VPWC
FEB 6.....	1010	0	13	14800	519	25	30	--	45	--	63	89	99	100	--	--	VPWC
FEB 15.....	1500	4	12	7850	254	62	78	--	96	--	98	98	100	--	--	--	SPWC
MAR 25.....	0900	1	36	27200	2640	25	33	40	45	52	65	89	98	100	--	--	PWC
MAR 25.....	0900	1	36	27200	2640	--	1	4	44	50	65	89	98	100	--	--	VPN
MAR 29.....	0815	4	158	137000	58400	21	25	--	36	--	58	86	97	100	--	--	VPWC
APR 2.....	1200	9	292	115000	90700	27	34	--	43	--	66	94	100	--	--	--	VPWC
APR 14.....	1300	12	95	70400	18100	34	43	--	60	--	79	97	100	--	--	--	VPWC
MAY 8.....	1200	20	9.1	9580	235	43	55	--	81	--	93	99	100	--	--	--	VPWC
JUL 23.....	1100	21	910	283000	695000	54	63	--	77	--	96	99	100	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
MAR 25, 1969	0905		1		2	8	28	88	99	100	--	--	--	--	--	S

09406000 VIRGIN RIVER AT VIRGIN, UTAH

LOCATION.--Lat 37°11'54", long 113°12'25", in NW¼NE¼ sec.28, T.41 S., R.12 W., Washington County, at gaging station 1.1 miles west of Virgin and 2.3 miles downstream from North Creek.

DRAINAGE AREA.--934 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1956.
Water temperatures: October 1950 to September 1956, May 1962 to September 1969.
Sediment records: May 1962 to to September 1969.

EXTREMES.--1968-69:
Sediment concentrations: Maximum daily, 37,000 mg/l July 20; minimum daily, 19 mg/l July 11.
Sediment loads: Maximum daily, 205,000 tons Jan. 25; minimum daily, 4.6 tons July 11.

Period of record:
Sediment concentrations: Maximum daily, 150,000 mg/l (partly estimated) Sept. 5, 1965; minimum daily, 19 mg/l July 11, 1969.
Sediment loads: Maximum daily, 1,300,000 tons Dec. 6, 1966; minimum daily, 4.6 tons July 11, 1969.

DAY

MONTH	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	AVERAGE
OCTOBER..	--	--	--	--	--	--	--	--	--	15	--	--	--	--	--	--	--	15	--	15	--	--	--	--	--	--	--	--	--	15	--	--
NOVEMBER.	--	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	5	--	--	7	--	--	--	--	--	--	--
DECEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	--	--	3	--	0	--	--	--	--	5	3	--	--	--	--
JANUARY..	--	5	4	--	8	--	8	--	--	9	--	9	--	--	9	--	--	--	--	--	8	--	--	10	5	5	8	--	--	--	--	0	--
FEBRUARY.	--	--	--	--	--	5	--	--	--	--	--	--	--	8	--	11	--	--	--	--	--	5	--	--	--	--	--	--	--	--	--	--
MARCH....	9	13	--	--	--	8	--	--	--	6	--	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--
APRIL....	--	--	--	5	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9	12	12	14	8	8	7	9	--	--	--	--
MAY.....	--	--	--	--	--	10	--	13	15	12	10	12	11	10	12	10	--	12	10	--	--	--	--	--	--	--	--	--	--	--	--	--
JUNE.....	--	--	--	--	--	--	20	--	20	18	--	--	--	17	--	20	--	24	24	--	--	--	--	20	23	23	--	24	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24	24	27	--	--	--	--	--	--	--	--	26	--	--	--	--	--	--
AUGUST...	--	25	25	--	20	--	--	--	30	20	25	--	25	22	22	26	--	--	--	--	18	24	25	19	--	--	--	--	--	--	24	--	--
SEPTEMBER	--	20	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	--	20	24	--	20	22	22	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS B, BOTTOM WITHDRAWAL TUBE C, CHEMICALLY DISPERSED N, IN NATIVE WATER P, PIPET S, SIEVE V, VISUAL ACCUMULATION TUBE W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 10, 1968	1900	15	100	1120	302	4	5	--	8	--	18	68	99	100	--	--	VPWC
NOV 21.....	1740	11	134	1140	412	3	6	--	10	--	16	55	97	100	--	--	VPWC
JAN 3, 1969	1250	4	138	944	352	3	4	--	--	--	16	38	95	100	--	--	VPWC
JAN 25.....	1815	--	8110	15800	346000	24	34	--	56	--	79	96	100	--	--	--	VPWC
JAN 26.....	1215	8	936	14300	36100	30	40	--	54	--	76	93	100	--	--	--	VPWC
MAR 6.....	1510	8	230	2200	1370	49	58	--	81	--	89	94	100	--	--	--	VPWC
MAY 13.....	1940	14	1170	3030	9570	10	13	--	21	--	35	56	84	99	100	--	VPWC
JUN 10.....	1345	17	230	61	38	--	--	--	--	--	--	--	--	--	--	--	--
JUL 20.....	2030	--	562	60100	91200	38	39	--	64	--	90	96	99	100	--	--	VPWC
JUL 24.....	0700	--	546	15800	23300	18	19	--	39	--	95	100	--	--	--	--	VPWC
JUL 25.....	1430	26	300	3730	3020	52	52	--	71	--	94	100	--	--	--	--	VPWC
AUG 14.....	1030	22	170	44500	20400	45	54	--	84	--	94	99	100	--	--	--	VPWC
SEP 26.....	1810	24	89	1160	279	9	9	--	18	--	42	86	100	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHOD OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
OCT 10, 1968	1900	15		100	1	9	43	66	71	72	74	80	93	100	--	SV
MAR 6, 1969	1510	8		230	0	3	49	95	98	98	99	99	100	--	--	SV
JUN 10.....	1345	17		230	--	0	6	43	56	59	63	72	89	100	--	SV

09406000 VIRGIN RIVER AT VIRGIN, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	87	775	182	119	1630	524	138	933	347
2	99	714	191	115	1740	540	144	1150	447
3	110	653	194	118	1230	392	121	1360	444
4	102	592	163	116	719	225	129	926	322
5	107	408	118	119	584	187	132	491	175
6	99	223	59	126	450	153	127	518	177
7	90	465	113	127	316	108	135	545	198
8	102	707	195	129	362	126	134	572	207
9	96	949	246	124	408	136	138	599	223
10	95	1190	305	127	454	156	135	626	228
11	107	712	205	126	374	127	146	653	257
12	92	234	58	127	293	100	127	680	233
13	98	236	62	130	212	74	121	707	231
14	90	237	58	126	245	83	126	606	206
15	97	238	62	134	278	100	139	506	190
16	94	239	60	150	939	380	134	483	175
17	111	241	72	144	1600	622	131	460	163
18	107	364	105	140	1010	382	116	408	128
19	106	487	139	143	421	163	124	355	119
20	102	430	118	141	800	305	132	348	124
21	111	373	112	140	1180	446	118	342	109
22	108	315	92	134	204	74	109	453	133
23	109	257	76	136	242	89	122	564	186
24	104	199	56	135	280	102	121	624	204
25	113	400	122	133	319	114	146	684	269
26	101	600	164	126	366	124	149	260	104
27	101	800	218	126	413	140	133	213	76
28	106	1000	286	135	460	168	132	191	68
29	104	1200	337	120	507	164	124	168	56
30	107	1400	404	121	720	235	125	145	49
31	110	1510	448	--	--	--	124	403	135
TOTAL	3165	--	5020	3887	--	6539	4032	--	5983

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	129	661	230	133	390	140	369	1860	1850
2	129	920	320	144	514	200	254	1010	693
3	134	1080	391	136	300	110	301	1230	1000
4	136	848	311	134	276	100	286	6480	5000
5	134	616	223	149	422	170	223	2160	1300
6	130	431	151	174	830	390	241	2920	1900
7	140	246	93	180	864	420	198	1570	839
8	137	561	207	149	298	120	175	1250	590
9	130	876	307	148	288	115	172	1160	539
10	124	1190	398	153	329	136	189	1430	730
11	133	992	356	160	329	142	181	1330	650
12	131	795	281	183	334	165	172	1160	539
13	132	800	285	207	492	275	181	757	370
14	326	11300	9950	195	1310	690	172	689	320
15	230	4400	2730	187	1250	631	168	595	270
16	180	1300	632	367	3730	3700	197	1070	569
17	150	412	167	280	1520	1150	295	4330	3450
18	148	200	80	255	944	650	372	9460	9500
19	170	1800	826	307	3260	2700	379	9770	10000
20	1150	15000	56600	321	3580	3100	380	7000	7180
21	1330	17000	89700	296	2690	2150	390	4270	4500
22	816	16100	35500	294	2650	2100	473	5250	6700
23	510	2100	2890	313	2900	2450	461	5540	6900
24	127	750	257	307	2840	2350	387	5360	5600
25	3460	17800	205000	418	4610	5200	386	5280	5500
26	1670	14000	63100	882	15500	36900	428	9170	10600
27	1460	23800	95300	379	1950	2000	476	11100	14300
28	353	4800	4570	348	1700	1600	577	16400	25500
29	215	1300	755	--	--	--	613	13700	22700
30	146	1000	394	--	--	--	705	11000	20900
31	140	800	302	--	--	--	767	13300	27500
TOTAL	14300	--	572306	7199	--	69854	10568	--	197989

09406000 VIRGIN RIVER AT VIRGIN, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	805	14500	31500	1390	6950	26100	416	167	187
2	888	13100	31400	1430	5310	20500	379	148	151
3	876	12900	30500	1380	4780	17800	355	129	123
4	663	6030	10800	1140	3570	11000	322	144	125
5	762	9720	20000	1050	1530	4340	318	159	136
6	936	16200	40900	1130	2440	7440	323	83	72
7	654	4470	7890	1380	8050	30000	323	105	92
8	600	4200	6800	1380	3900	14500	323	102	89
9	644	4430	7700	1480	7010	28000	328	64	56
10	702	6590	12500	1460	4820	19000	283	56	43
11	816	12600	27800	1360	2400	8810	242	57	37
12	972	12400	32500	1350	3290	12000	238	129	83
13	1020	13100	36100	1480	6760	27000	255	112	77
14	1070	11400	32900	1460	5100	20100	222	54	32
15	997	7680	20500	1400	4890	18500	195	56	29
16	841	5730	13000	1270	3500	12000	202	59	32
17	832	5120	11500	1200	2350	7610	250	312	211
18	900	4120	10000	1160	2620	8210	277	897	671
19	778	5470	11500	1110	2600	7790	218	173	102
20	972	6670	17500	1020	1450	3990	192	115	59
21	1280	14500	50100	948	1860	4760	177	93	44
22	1620	11900	52100	900	1910	4640	170	114	52
23	1700	13300	61000	854	954	2200	167	212	96
24	1620	12300	53800	806	574	1250	167	37	16
25	1180	5650	18000	758	1120	2290	170	42	19
26	948	3280	8400	718	593	1150	157	44	19
27	843	5010	11400	677	427	780	151	38	15
28	972	4840	12700	616	373	620	144	178	69
29	1160	3700	11600	556	283	425	141	79	30
30	1280	5640	19500	515	226	314	132	46	16
31	--	--	--	467	196	247	--	--	--
TOTAL	29331	--	711890	33845	--	323366	7237	--	2783

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN OISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN OISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	124	60	20	116	1080	338	80	1300	281
2	121	75	24	127	649	222	73	1040	205
3	117	53	17	124	1190	398	68	1060	194
4	110	31	9.2	213	3430	1970	67	740	134
5	109	43	12	141	2200	838	67	304	55
6	104	55	15	119	695	223	97	2500	655
7	100	40	11	107	532	154	110	3200	950
8	97	42	11	100	1030	278	94	2840	721
9	95	43	11	136	2800	1030	86	2800	650
10	94	134	34	180	5800	2820	80	1270	274
11	94	19	4.6	120	4780	1550	174	29500	13900
12	94	24	5.9	110	3700	1100	300	18700	15100
13	92	30	7.3	190	17500	8980	150	7650	3100
14	91	34	8.1	170	13100	6000	110	3270	971
15	86	40	9.2	111	3250	974	220	26900	16000
16	85	62	14	103	1610	448	120	4320	1400
17	90	33	7.8	98	2100	556	110	3270	971
18	214	9690	5600	92	2000	497	105	3000	850
19	246	11000	7310	114	15500	4770	98	2270	600
20	444	37000	44400	97	6900	1810	100	1280	346
21	299	4800	3880	100	2290	618	104	1230	345
22	323	6900	6020	90	583	141	102	1110	306
23	551	9000	13400	88	391	93	99	999	267
24	400	8150	8800	93	1450	364	95	704	180
25	300	4320	3500	93	789	198	94	410	104
26	203	21200	11600	97	1260	330	90	1230	299
27	184	18400	9140	92	2040	507	86	1300	302
28	130	2200	772	91	705	173	86	1460	339
29	129	1510	526	163	36000	15800	77	950	197
30	129	1640	571	100	14000	3780	77	1040	216
31	120	676	219	88	1640	390	--	--	--
TOTAL	5375	--	115959.1	3663	--	57350	3219	--	59912

TOTAL OISCHARGE FOR YEAR (CFS-DAYS) 125821
TOTAL LOAD FOR YEAR (TONS) 2128951.1

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH

LOCATION.--Lat 37°09'45", long 113°23'40", in NE¼NE¼SW¼ sec.2, T.42 S., R.14 W., Washington County, at gaging station, at bridge on State Highway 17, 1.8 miles downstream from Quail Creek, and 6.2 miles west of Hurricane.

DRAINAGE AREA.--1,530 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: March 1967 (miscellaneous).
Water temperatures: March 1967 to September 1969.
Sediment records: March 1967 to September 1969.

EXTREMES.--1968-69:
Sediment concentrations: Maximum daily, 55,000 mg/l Aug. 30; minimum daily, 37 mg/l July 12.
Seiment loads: Maximum daily, 756,000 tons Jan. 25; minimum daily, 9.0 tons July 15.

Period of record:
Sediment concentrations: Maximum daily, 84,000 mg/l Sept. 23, 1967; minimum daily, 37 mg/l July 12, 1969.
Sediment loads: Maximum daily, 756,000 tons Jan. 25, 1969; minimum daily, 9.0 tons July 15, 1969.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	18	22	--	--	--	--	21	--	12	--	--	21	--	18	--	10	--	18	--	--	16	--	11	--	20	--	--	19	--	14	--	--
NOVEMBER.	18	--	--	17	--	9	--	--	16	--	13	--	9	--	9	--	--	13	--	13	--	13	--	9	--	5	--	--	--	--	--	--
DECEMBER.	--	--	7	--	7	--	9	--	4	--	9	--	--	9	--	8	--	7	--	--	4	--	4	--	--	6	--	7	--	3	--	--
JANUARY..	--	8	--	7	--	6	--	7	--	8	--	--	9	9	11	--	13	--	--	7	10	8	--	7	8	7	--	6	--	7	--	--
FEBRUARY.	8	--	4	--	7	--	9	--	--	11	--	11	--	10	--	--	6	--	8	--	9	--	--	7	--	5	--	11	--	--	--	--
MARCH....	--	--	8	--	9	--	9	--	--	7	--	11	--	9	--	--	13	--	10	--	--	13	--	7	--	12	--	--	16	--	11	--
APRIL....	12	12	9	--	--	11	9	10	12	12	13	13	13	12	10	11	12	10	12	14	14	14	12	10	10	10	11	12	14	12	--	12
MAY.....	14	13	12	12	12	12	14	14	15	16	14	15	15	14	14	16	16	16	16	16	16	18	18	19	18	18	19	19	20	20	21	16
JUNE.....	19	20	21	19	19	26	23	18	24	16	17	--	--	24	22	22	19	23	18	26	24	18	24	19	25	17	26	27	17	27	--	21
JULY.....	19	--	21	--	27	24	18	28	19	29	27	28	--	22	29	22	23	29	26	22	28	24	26	23	28	28	23	28	24	30	24	25
AUGUST...	31	--	23	28	23	26	21	31	24	24	28	23	30	23	30	23	28	22	29	20	29	21	27	21	29	23	28	23	27	20	29	25
SEPTEMBER	21	27	21	27	19	28	25	28	21	28	19	24	22	25	18	23	17	26	26	22	21	15	23	24	22	24	24	16	23	18	--	23

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS B, BOTTOM WITHDRAWAL TUBE C, CHEMICALLY DISPERSED N, IN NATIVE WATER P, PIPET S, SIEVE V, VISUAL ACCUMULATION TUBE W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 1, 1968	1120	18	82	1200	266	6	8	--	14	--	28	84	99	100	--	--	VPWC
DEC 3.....	1710	7	146	1480	583	4	5	--	10	--	20	65	96	100	--	--	VPWC
JAN 8, 1969	1700	7	164	1730	766	3	5	--	8	--	19	55	94	100	--	--	VPWC
JAN 20.....	0915	7	1720	41800	194000	12	12	--	22	--	49	88	100	--	--	--	VPWC
JAN 25.....	1605	8	8350	52600	1190000	13	15	--	24	--	48	80	96	100	--	--	VPWC
JAN 26.....	0740	7	2320	33600	210000	18	23	--	35	--	57	80	97	100	--	--	VPWC
FEB 26.....	1020	6	1490	15900	64000	19	26	--	40	--	54	74	94	99	100	--	VPWC
APR 1.....	0500	9	1260	8410	28600	18	19	--	30	--	62	84	98	100	--	--	VPWC
APR 24.....	0655	9	1980	11800	63100	14	21	--	33	--	53	78	97	100	--	--	VPWC
APR 24.....	1845	12	1550	7530	31500	14	19	--	30	--	48	74	94	100	--	--	VPWC
MAY 13.....	1445	16	1610	5220	22700	12	19	--	28	--	46	62	83	99	100	--	VPWC
JUN 23.....	1355	24	205	97	54	13	14	--	--	--	69	77	94	100	--	--	VPWC
JUL 23.....	1155	26	267	18000	13000	31	42	--	70	--	93	95	99	100	--	--	VPWC
JUL 24.....	0710	22	224	14300	8650	37	43	--	70	--	80	94	99	100	--	--	VPWC
JUL 24.....	1115	24	495	19200	25700	17	22	--	43	--	68	89	98	100	--	--	VPWC
JUL 25.....	1130	26	211	15200	8660	47	58	--	81	--	92	96	99	100	--	--	VPWC
AUG 6.....	1200	25	122	1290	425	38	49	--	61	--	71	82	97	100	--	--	VPWC
SEP 25.....	1640	24	109	918	270	8	12	--	32	--	53	75	99	100	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHOD OF ANALYSIS H, HYDROMETER O, OPTICAL ANALYZER S, SIEVE V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
OCT 1, 1968	1120	18		82	0	9	71	99	100	--	--	--	--	--	--	SV
DEC 3.....	1710	7		146	2	18	53	76	83	84	86	89	95	100	--	SV
JUN 23, 1969	1355	24		205	1	1	19	53	67	71	75	81	93	100	--	SV
AUG 6.....	1200	25		122	1	2	24	67	90	94	96	98	100	--	--	SV

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	80	1340	289	103	2110	587	136	1890	694
2	73	1950	384	101	2040	556	146	1840	725
3	78	1950	411	107	1970	569	142	1690	648
4	83	1960	439	107	1900	549	134	1970	713
5	88	1970	468	107	1780	514	139	2250	844
6	83	1980	444	105	1650	468	133	2170	779
7	82	1990	441	118	1980	631	137	2090	773
8	83	1920	430	113	2310	705	143	2110	815
9	82	1850	410	111	2640	791	141	2130	811
10	83	1740	390	109	2210	650	136	2030	745
11	90	1640	399	113	1780	543	139	1930	724
12	88	1530	364	105	1800	510	141	1850	704
13	85	1670	383	105	1820	516	128	1770	612
14	90	1810	440	105	2460	697	131	1690	598
15	109	2040	600	120	3110	1010	141	2020	769
16	105	2260	641	127	2860	981	140	2350	888
17	90	2340	569	127	2620	898	140	2280	862
18	105	2420	686	120	2370	768	132	2220	791
19	120	2200	713	124	2140	716	120	2220	719
20	113	2000	610	129	1920	669	142	2220	851
21	100	1800	486	129	2160	752	153	2220	917
22	100	1800	486	129	2400	836	149	2100	845
23	100	1800	486	124	2220	743	145	1990	779
24	98	1790	474	124	2050	686	153	2390	987
25	96	1780	461	122	2100	692	169	2780	1270
26	96	1780	461	129	2150	749	189	3180	1620
27	101	1770	483	131	2100	743	172	2640	1230
28	113	1770	540	127	2040	700	164	2100	930
29	116	1750	548	129	1990	693	158	2170	926
30	109	1730	509	124	1940	650	156	2240	943
31	101	1920	524	--	--	--	153	2600	1070
TOTAL	2940	--	14969	3524	--	20572	4502	--	26582

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	156	2960	1250	211	1370	780	497	2600	3490
2	157	3320	1410	208	1210	680	354	2420	2310
3	160	3270	1410	196	1050	556	385	2240	2330
4	158	3220	1370	191	1150	593	372	1950	1960
5	158	2800	1190	196	1250	662	317	1660	1420
6	163	2380	1050	214	1460	844	323	1650	1440
7	166	2340	1050	230	1670	1040	289	1640	1280
8	165	2120	944	211	1470	837	260	1580	1110
9	162	2040	892	199	1270	682	258	1510	1050
10	158	2150	917	205	1070	592	272	1450	1060
11	165	2270	1010	208	1020	573	273	1170	862
12	169	2400	1100	230	971	603	265	883	632
13	173	2520	1180	256	874	604	272	867	637
14	371	11200	11200	247	776	518	261	851	600
15	330	9500	8460	215	1240	720	266	1210	869
16	240	5600	3630	365	1710	1690	277	1570	1170
17	197	3400	1810	324	2170	1900	368	1930	1920
18	185	2800	1400	228	1960	1210	508	2220	3040
19	221	3300	1970	267	1740	1250	565	2520	3840
20	1170	22400	82300	264	1350	962	522	3020	4260
21	1570	32000	208000	260	952	668	543	3520	5160
22	905	27000	70900	244	1120	738	644	4030	7010
23	426	8000	9200	249	1300	874	761	3440	7070
24	362	4500	4400	253	1470	1000	558	2850	4290
25	4460	33300	756000	518	5510	16600	492	2440	3240
26	2240	30700	196000	1620	17400	81300	551	2040	3030
27	1840	31100	148000	617	4700	7830	676	4050	7390
28	462	8500	10600	445	2500	3000	807	6060	13200
29	322	4100	3560	--	--	--	871	8070	19000
30	240	2500	1620	--	--	--	988	9180	24500
31	230	2000	1240	--	--	--	1080	10000	29200
TOTAL	17881	--	1535063	8871	--	129306	14875	--	158370

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1130	9000	27500	1470	6250	24800	501	424	574
2	1260	12400	42200	1530	5950	24600	464	402	504
3	1290	11600	40400	1500	5150	20900	429	400	463
4	948	9350	23900	1350	4200	15300	395	334	356
5	1070	12700	36700	1250	3250	11000	374	365	369
6	1320	12800	45600	1310	3600	12700	396	289	309
7	958	7600	19700	1590	6500	27900	371	266	266
8	824	5750	12800	1590	5000	21500	367	410	406
9	886	7000	16700	1630	5150	22700	348	251	236
10	953	7000	18000	1580	4400	18800	332	212	190
11	1090	8800	25900	1540	4000	16600	330	280	249
12	1290	10500	36600	1490	3700	14900	331	257	230
13	1310	9800	34700	1650	5100	22700	337	235	214
14	1360	10000	36700	1620	4500	19700	317	213	182
15	1310	8700	30800	1550	4800	20100	283	175	134
16	1100	6500	19300	1410	3350	12800	275	137	102
17	1040	6300	17700	1360	2750	10100	297	192	154
18	1160	6600	20700	1330	2650	9520	357	955	921
19	965	4500	11700	1300	2350	8250	299	1150	928
20	1140	7500	23100	1230	2100	6970	264	173	123
21	1430	10600	40900	1150	1750	5630	241	119	77
22	1680	11800	53500	1100	1700	5050	214	198	114
23	1750	11800	55800	1040	1550	4350	205	91	50
24	1740	9350	43900	967	1250	3260	199	143	77
25	1420	6750	25900	874	1100	2600	202	120	65
26	1200	4550	14700	806	1060	2310	199	114	61
27	1070	3450	9970	735	786	1560	182	102	50
28	1160	4250	13300	666	708	1270	174	74	35
29	1310	5500	19500	609	642	1060	169	109	50
30	1370	6250	23100	559	499	753	154	79	33
31	--	--	--	531	466	668	--	--	--
TOTAL	36534	--	841270	38317	--	370151	9006	--	7522

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	138	88	33	130	1130	397	94	1070	272
2	131	88	31	130	988	347	93	691	174
3	124	88	29	130	846	297	84	649	147
4	113	91	28	200	2880	1560	88	426	101
5	116	95	30	141	4360	1660	93	401	101
6	109	59	17	116	1240	388	94	558	142
7	105	68	19	106	727	208	129	8900	3100
8	101	56	15	102	779	215	113	3650	1110
9	98	89	24	101	516	141	107	950	274
10	96	64	17	162	13700	5990	100	698	188
11	98	55	15	105	4250	1200	132	2550	909
12	98	37	9.8	103	2250	626	194	13000	6810
13	96	56	15	184	11500	5710	330	19900	17700
14	98	75	20	169	21100	9630	121	8000	2610
15	88	38	9.0	111	4850	1450	118	850	271
16	87	47	11	104	1650	463	241	8520	5540
17	94	350	89	99	950	254	233	21000	13200
18	236	6620	4860	101	900	245	131	4500	1590
19	224	6250	3780	109	1480	436	121	2100	687
20	342	13000	13700	126	7400	2520	112	1530	463
21	282	17400	14700	106	3250	930	110	1720	511
22	172	3350	1560	96	1150	298	116	1330	417
23	433	19800	28800	92	702	174	123	1330	442
24	320	13800	12100	103	1410	392	116	1370	429
25	202	7100	3870	105	939	266	108	993	290
26	194	6250	3270	99	808	216	100	985	266
27	166	12200	5470	97	586	153	100	717	194
28	141	5850	2230	102	622	171	100	578	156
29	146	4200	1660	114	4730	1460	103	727	202
30	146	2660	1050	173	55000	25700	101	534	146
31	144	1310	509	101	2500	682	--	--	--
TOTAL	4938	--	97970.8	3717	--	64179	3805	--	58442

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 148910
TOTAL LOAD FOR YEAR (TONS) 3324396.8

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.
(Irrigation network station)

LOCATION.--Lat 36°53', long 113°56', in SW¼SW¼ sec.4, T.40 N., R.15 W., Mohave County, at gaging station 0.4 mile downstream from Beaver Dam Wash, 0.4 mile upstream from Littlefield, and 36 miles upstream from waterline of Lake Mead at elevation 1,221 ft above mean sea level.
DRAINAGE AREA.--5,090 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: July 1949 to September 1969.
Water temperatures: October 1947 to September 1969.
Sediment records: October 1947 to September 1968.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 2,680 mg/l Sept. 1-30; minimum, 477 mg/l May 1-17.
Hardness: Maximum, 1,430 mg/l Sept. 1-30; minimum, 290 mg/l May 1-17.
Specific conductance: Maximum daily, 3,550 micromhos Sept. 15; minimum daily, 689 micromhos May 14, 15.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-31	96	--	--	--	--	--	346	314	0	1110	410
NOV.											
01-20	117	--	--	--	--	--	346	330	0	956	430
21-30	138	--	--	--	--	--	359	330	0	937	415
DEC.											
01-31	168	--	--	--	--	--	--	289	0	775	372
JAN.											
01-14	184	--	--	--	--	--	255	279	0	720	345
15-16	293	--	--	--	--	--	160	264	0	475	210
17-19	207	--	--	--	--	--	211	323	0	625	315
20...	706	--	--	--	--	--	172	264	0	475	190
21-22	1810	--	--	--	--	--	79	210	0	290	84
23-25	1504	--	--	--	--	--	154	262	0	500	202
26-28	3345	--	--	--	--	--	69	185	0	420	68
29-31	458	--	--	--	--	--	166	287	0	562	220
FEB.											
01-25	345	--	--	--	--	--	202	294	0	600	255
26-28	2857	--	--	--	--	--	71	206	0	442	92
MAR.											
01-18	417	--	--	--	--	--	179	279	0	612	230
19-22	524	--	--	--	--	--	136	248	0	450	152
23-26	1038	--	--	--	--	--	111	234	0	400	130
27-31	1228	--	--	--	--	--	77	197	0	260	78
APR.											
01-20	1268	--	--	--	--	--	61	231	0	215	74
21-30	1619	--	--	--	--	--	49	220	0	173	63
MAY											
01-17	1751	--	--	--	--	--	49	207	0	141	57
18-23	1108	--	--	--	--	--	58	215	0	163	77
24-31	718	--	--	--	--	--	79	236	0	227	114
JUNE											
01-09	390	--	--	--	--	--	149	260	0	398	200
10-21	215	--	--	--	--	--	188	272	0	530	265
22-30	90	--	--	--	--	--	274	248	0	910	380
JULY											
01-20	63	--	--	--	--	--	266	191	0	1140	380
21-31	158	--	--	--	--	--	233	291	0	935	315
AUG.											
01-31	69	--	--	--	--	--	281	225	0	1120	390
SEPT.											
01-30	148	--	--	--	--	--	239	277	0	1160	365
WTD. AVG. TIME	--	--	--	--	--	--	110	236	0	397	146
WTD. AVG. TONS PER DAY	475	--	--	--	--	--	211	264	0	738	286
	--	--	--	--	--	--	149	302	0	508	187

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
01...	A 60	18	333	122	289	30	--	199	0	1240	420
NOV.										
05...	A 95	18	289	107	285	27	--	258	0	1040	410
26...	A 122	18	265	92	274	24	--	282	0	904	385
JAN.											
18...	A 201	17	253	56	223	18	--	290	0	753	305
MAR.											
30...	A 1340	13	92	29	59	8.0	--	186	0	234	71
APR.											
17...	A 860	11	96	46	71	6.7	--	244	0	248	86

A DISCHARGE AT TIME OF SAMPLING.

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

EXTREMES.--1968-69:--Continued
Water temperatures: Maximum, 32.0°C Aug. 1, 2, 4; minimum, 4.0°C Dec. 24.
Period of record:
Dissolved solids (1949-50, 1953-69): Maximum, 4,250 mg/l Aug. 12, 1964; minimum, 477 mg/l May 1-17, 1969.
Hardness (1949-50, 1953-69): Maximum, 2,250 mg/l Aug. 12, 1964, Aug. 21, 1966; minimum, 290 mg/l May 1-17, 1969.
Specific conductance: Maximum daily, 4,650 micromhos Aug. 21, 1966; minimum daily, 689 micromhos May 14, 15, 1969.
Water temperatures: Maximum, 33.5°C July 7, 1953; minimum, 1.5°C Jan. 4, 1949, Jan. 4, 1950.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-31	--	--	2510	3.41	651	1240	983	4.3	3290	7.8
NOV.										
01-20	--	--	2330	3.17	736	1120	849	4.5	3110	7.9
21-30	--	--	2200	2.99	820	1050	779	4.8	2960	8.0
DEC.										
01-31	--	--	2050	2.79	930	1020	788	3.4	2780	7.7
JAN.										
01-14	--	--	1860	2.53	924	910	681	3.7	2550	7.9
15-16	--	--	1300	1.77	1030	660	444	2.7	1840	7.8
17-19	--	--	1750	2.38	978	900	635	3.1	2380	7.9
20...	--	--	1180	1.60	2250	605	389	3.1	1710	7.8
21-22	--	--	750	1.02	3670	420	248	1.7	1100	7.7
23-25	--	--	1290	1.76	5240	685	470	2.6	1810	7.9
26-28	--	--	894	1.22	8070	534	382	1.3	1200	7.8
29-31	--	--	1440	1.96	1780	770	535	2.6	1960	7.9
FEB.										
01-25	--	--	1610	2.19	1500	785	544	3.1	2150	8.0
26-28	--	--	1030	1.40	7950	600	436	1.3	1360	7.9
MAR.										
01-18	--	--	1540	2.09	1730	800	571	2.8	2060	7.9
19-22	--	--	1130	1.54	1600	590	387	2.4	1560	7.9
23-26	--	--	994	1.35	2790	550	358	2.1	1380	7.9
27-31	--	--	562	.76	1860	375	213	1.7	980	7.9
APR.										
01-20	--	--	671	.91	2300	385	196	1.4	971	7.9
21-30	--	--	572	.78	2500	344	164	1.1	850	7.8
MAY										
01-17	--	--	477	.65	2260	290	120	1.3	734	7.7
18-23	--	--	543	.74	1620	328	152	1.4	847	7.8
24-31	--	--	743	1.01	1440	420	226	1.7	1110	7.8
JUNE										
01-09	--	--	1160	1.58	1220	585	372	2.7	1650	7.8
10-21	--	--	1480	2.01	859	740	517	3.0	2050	7.8
22-30	--	--	2170	2.95	527	1090	887	3.6	2770	7.6
JULY										
01-20	--	--	2540	3.45	432	1300	1140	3.2	3100	7.9
21-31	--	--	2240	3.05	956	1150	911	3.0	2750	7.8
AUG.										
01-31	--	--	2540	3.45	473	1290	1110	3.4	3120	7.8
SEPT.										
01-30	--	--	2680	3.64	1070	1430	1200	2.7	3210	7.8
WTD. AVG. TIME	--	--	1040	1.46	1330	624	371	--	1440	7.8
WTD. AVG. TONS PER DAY	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
01...	1.3	.6	2660	3.47	431	1330	1167	3.4	3360	7.6
NOV.										
05...	.9	2.1	2410	3.14	618	1160	948	3.6	3130	7.7
26...	.8	2.7	2190	2.87	721	1040	809	3.7	2910	7.8
JAN.										
18...	.8	2.7	1780	2.41	966	860	622	3.3	2410	7.6
MAR.										
30...	.6	1.7	637	.87	2310	350	197	1.4	939	7.7
APR.										
17...	.6	1.9	717	.98	1670	430	230	1.5	1060	7.9

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3430	3220	3020	2640	2230	1690	860	748	1370	3130	3070	3180
2	3460	3220	2950	2500	2180	1730	845	--	1450	3100	3070	3180
3	3320	3220	2840	2590	2250	1900	815	821	1550	3120	3110	3290
4	--	3160	2880	2580	2320	1860	984	793	1600	3010	3100	3180
5	3520	3100	2880	2470	2350	2010	984	--	1720	3040	3180	3170
6	3390	3200	2880	2430	--	2090	875	--	1700	3050	3100	3150
7	3400	3250	2870	2480	2190	2120	962	761	1710	3050	3130	3080
8	3360	3160	2860	2580	2250	2120	1130	714	1800	--	3100	3150
9	3300	3120	2810	2610	2310	2060	1110	705	1890	3150	3110	3180
10	3390	3090	2810	2640	2350	2150	1110	719	1950	3150	3080	3180
11	3370	3090	2790	2640	2350	2170	1040	723	1990	3170	3140	3170
12	3320	3100	2860	2540	2310	2240	895	743	2010	3130	--	3390
13	3300	3130	2820	2440	2240	2180	903	712	1990	3100	3160	--
14	3290	3200	2850	--	1990	2150	874	689	2050	3150	3030	3450
15	3250	3030	2910	1720	2150	2270	887	689	2180	3160	2990	3550
16	3250	2940	2790	1960	2190	2250	964	734	2250	3130	3130	3390
17	3310	2930	2710	2360	1670	2120	1030	757	1890	3040	3140	3100
18	3300	2930	2720	2370	--	1770	1030	780	1910	3070	3110	3160
19	3250	2900	2770	2420	2030	1550	1060	773	1970	3000	3340	3210
20	3070	2890	2790	1710	1900	1570	1050	823	2210	3200	3210	3230
21	2970	2840	2810	1170	2020	1570	860	884	2270	2460	3220	3230
22	3220	2890	2560	1040	2040	1550	824	901	2410	--	3190	3190
23	3200	2870	2720	1550	--	1130	783	910	2540	--	3130	3150
24	3250	2950	2720	1920	2070	1320	749	963	2610	2750	3180	3210
25	3220	3010	2680	1950	1940	1560	799	1040	2690	--	3140	3210
26	3280	3010	--	1210	1090	1510	912	990	2740	2530	3130	3190
27	--	2930	--	987	1360	1060	987	1080	--	2690	3090	3160
28	3200	2950	2550	1400	1630	1040	955	1140	2920	2760	3130	3160
29	3170	3000	2610	1740	--	993	833	--	3080	2930	3120	3320
30	3100	2990	2660	1950	--	936	779	1250	3120	2940	--	3210
31	3200	--	2670	2200	--	874	--	1330	--	3030	3220	--
AVG	3280	3040	2790	2090	2060	1730	929	858	2120	3000	3130	3220

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVER-AGE
OCTOBER..	26	26	20	--	21	22	23	22	22	22	22	22	21	21	19	19	20	21	21	21	21	21	21	21	21	--	21	20	20	20		21
NOVEMBER.	20	20	20	14	14	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	11	11	14	17	17	17	13	12	14	13	--	16
DECEMBER.	13	11	11	11	11	11	11	11	11	11	10	11	10	10	10	10	8	8	9	8	7	9	6	4	9	--	--	9	10	10	10	10
JANUARY..	10	10	12	13	12	13	12	10	9	11	11	11	12	--	13	13	11	11	12	12	12	11	9	10	10	11	9	10	7	7	9	11
FEBRUARY.	9	8	11	11	10	--	10	10	10	11	11	12	13	13	12	13	13	--	13	13	13	12	--	12	11	10	11	11	--	13	13	11
MARCH....	11	12	11	11	12	11	12	12	12	12	12	12	12	13	13	14	16	16	14	17	17	16	14	13	15	15	15	16	18	16	16	14
APRIL....	17	17	17	18	15	14	15	16	16	16	20	20	20	15	15	15	18	15	20	20	21	20	20	20	18	18	20	21	20	20	--	18
MAY.....	20	--	17	18	--	--	17	20	18	20	20	20	20	20	20	22	23	22	22	22	25	25	25	25	25	25	25	26	27	--	20	20	22
JUNE.....	20	28	30	30	30	30	30	30	23	27	28	25	30	28	28	28	25	28	30	30	30	30	30	25	25	28	--	28	30	30	--	28
JULY.....	30	30	30	30	30	30	30	--	30	30	30	30	30	30	30	30	30	30	28	28	28	--	--	--	30	--	30	30	30	30	31	30
AUGUST...	32	32	31	32	30	30	30	30	30	30	30	--	30	30	30	30	30	30	30	30	31	30	30	30	30	30	30	30	30	--	30	30
SEPTEMBER	30	30	30	28	27	27	27	28	27	27	27	25	--	23	25	24	23	25	24	24	24	25	24	24	25	25	25	25	25	25	--	26

09415200 VIRGIN RIVER NEAR RIVERSIDE, NEV.

LOCATION.--Lat 36°41'38", long 114°15'37", in NE¼NE¼ sec.27, T.14 S., R.69 E., Clark County, 3.7 miles downstream from Riverside bridge, 10 miles southwest of Mesquite, and about 10 miles upstream from high waterline of Lake Mead at elevation 1,221.4 ft above mean sea level.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Samples collected Oct. 9 and 23, Nov. 6 and 20, and Dec. 4 and 18, were composited for analysis of some constituents. The composite results are listed following the first date of each pair. Bicarbonate (HCO_3) and carbonate (CO_3) determined in laboratory. This station has been operated by the Environmental Protection Agency since January 1964. Chemical data furnished by Environmental Protection Agency, Denver, Colo., and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO_3)	CARBONATE (CO_3)
OCT.								
09...	0430	13	322	128	356	30	230	0
23...	0445	11						
NOV.								
06...	0500	7	294	117	333	27	238	0
20...	0515	10						
DEC.								
04...	-	2	269	107	302	24	270	0
18...	0525	1						
JAN.								
15...	0455	11	238	91	279	22	277	0
FEB.								
12...	-	10	250	86	245	20	285	0
MAR.								
05...	0505	6	220	66	174	14	267	0
APR.								
02...	1630	20	134	34	70	9.4	203	0
23...	0510	15	105	30	54	7.7	199	0
JUNE								
03...	1635	32	148	55	144	14	203	0
JULY								
08...	1600	31	-	-	-	-	-	-
AUG.								
20...	1505	35	-	-	-	-	-	-

DATE	SULFATE (SO_4)	CHLORIDE (CL)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	TOTAL HARDNESS (AS $CACO_3$)	SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH	DISSOLVED OXYGEN (DO)
OCT.							
09...	1200	506	2830	1330	3740	-	6.2
23...							8.7
NOV.							
06...	1080	466	2570	1220	3450	-	9.0
20...							8.5
DEC.							
04...	948	426	2350	1110	3160	-	9.3
18...							
JAN.							
15...	812	381	2080	970	2900	-	-
FEB.							
12...	802	336	1990	980	2720	-	-
MAR.							
05...	672	212	1590	823	2150	-	-
APR.							
02...	344	86	833	476	1180	7.8	9.1
23...	251	70	660	388	977	8.0	-
JUNE							
03...	462	195	1180	595	1770	8.1	8.1
JULY							
08...	-	-	-	-	-	8.3	-
AUG.							
20...	-	-	-	-	-	7.9	-

09419700 LAS VEGAS WASH NEAR HENDERSON, NEV.

LOCATION.--Lat 36°05'20", long 114°59'05", in SE¼SW¼ sec.30, T.21 S., R.63 E., Clark County, 3.5 miles north of Henderson and 6.0 miles upstream from high waterline of Lake Mead at elevation 1,221.4 ft above mean sea level.

DRAINAGE AREA.--2,125 sq mi, of which 1,518 sq mi contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Bicarbonate (HCO_3) and carbonate (CO_3) determined in laboratory. Discharge includes waste water and sewage effluent from industrial plants. This station has been operated by the Environmental Protection Agency since January 1964. Chemical data furnished by Environmental Protection Agency, Denver, Colo., and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO_3)	CARBONATE (CO_3)	SULFATE (SO_4)	CHLORIDE (CL)	NITRATE (AS N)
OCT.											
03...	0810	14	276	114	485	31	282	0	941	727	4.8
08...	0750	14	246	105	432	30	272	0	849	638	-
17...	0820	13	290	118	511	33	268	0	986	787	5.7
22...	1250	13	253	105	428	29	288	0	831	648	-
31...	0800	12	314	128	535	34	288	0	1050	841	5.5
NOV.											
05...	1320	13	312	120	540	34	260	0	1050	821	-
14...	0825	10	249	106	450	30	261	0	829	682	5.3
19...	1310	11	224	99	376	28	242	0	758	578	-
26...	0800	8	286	125	492	32	259	0	1010	780	5.5
DEC.											
03...	1305	6	300	125	530	33	251	0	1020	859	-
12...	0755	4	259	113	469	30	264	0	904	761	6.7
17...	1300	9	244	108	433	29	248	0	830	684	-
26...	1250	8	248	112	462	37	248	0	856	716	3.9
JAN.											
02...	1310	6	250	110	474	39	254	0	858	720	-
09...	0805	6	289	130	548	36	260	0	1020	823	3.8
14...	1300	11	234	107	418	30	252	0	815	620	-
23...	0800	8	252	125	502	82	253	0	910	817	3.5
FEB.											
11...	1300	9	236	109	404	29	244	0	851	612	-
18...	1645	10	257	114	470	32	235	0	902	725	5.7
MAR.											
19...	1430	13	255	120	434	29	266	0	919	665	4.9
APR.											
16...	1730	17	296	131	516	28	272	0	1060	782	5.7
MAY											
27...	1745	21	342	152	620	32	308	0	1230	942	7.4
JUNE											
25...	1845	21	349	142	658	37	298	0	1240	991	3.6
JULY											
23...	1600	24	292	114	531	32	288	0	1030	771	2.9
AUG.											
20...	1530	22	302	123	562	31	280	0	1070	817	3.7

DATE	NITRITE (AS N)	AMMONIA (AS N)	ORGANIC NITROGEN (N)	ORTHOPHOSPHATE (PO_4)	TOTAL SOLUBLE PHOSPHATE (PO_4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	TOTAL HARDNESS (AS $CACO_3$)	SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH	DISSOLVED OXYGEN (DO)
OCT.										
03...	.42	.58	.56	20	22	2860	1160	4150	-	6.2
08...	-	-	-	-	-	2570	1050	3730	-	6.2
17...	.65	1.8	.62	19	22	3040	1210	4370	-	4.2
22...	-	-	-	-	-	2580	1070	3740	-	3.9
31...	.16	.97	.65	18	19	3230	1310	4590	-	4.5
NOV.										
05...	-	-	-	-	-	3210	1270	4540	-	5.3
14...	.30	1.8	.40	12	17	2670	1060	3910	-	3.6
19...	-	-	-	-	-	2370	967	3460	-	4.0
26...	.11	.40	.46	13	15	3060	1230	4360	-	5.0
DEC.										
03...	-	-	-	-	-	3220	1270	4560	-	5.1
12...	.24	.94	.47	16	16	2810	1120	4130	-	5.1
17...	-	-	-	-	-	2640	1060	3890	7.4	4.2
26...	.32	2.5	.24	23	25	2740	1080	3950	8.0	3.7
JAN.										
02...	-	-	-	-	-	2770	1080	3950	-	-
09...	.24	3.0	6.2	21	23	3160	1260	4490	-	5.0
14...	-	-	-	-	-	2460	1020	3580	7.1	3.9
23...	.25	6.1	.80	22	28	2930	1140	4490	7.7	4.4
FEB.										
11...	-	-	-	-	-	2550	1040	3620	-	-
18...	.28	2.5	.53	16	18	2810	1110	4010	7.6	4.9
MAR.										
19...	.36	3.2	.69	19	20	2690	1130	3880	7.3	5.1
APR.										
16...	-	-	-	16	16	3140	1280	4460	7.5	1.5
MAY										
27...	-	-	-	15	16	3650	1480	5230	7.7	4.0
JUNE										
25...	-	-	-	-	11	3770	1460	5330	7.5	5.2
JULY										
23...	-	-	-	-	14	3120	1200	4390	7.0	1.8
AUG.										
20...	-	-	-	-	18	3260	1260	4580	7.5	3.4

09419750 LAS VEGAS WASH BELOW HENDERSON, NEV.

LOCATION.--Lat 36°05'55", long 114°56'40", in NW¼NE¼ sec.28, T.21 S., R.63 E., Clark County, 5 miles northeast of Henderson, and 3.5 miles upstream from high waterline of Lake Mead at elevation 1,221.4 ft above mean sea level.

DRAINAGE AREA.--2,179 sq mi, of which 1,571 sq mi contribute directely to surface runoff.

PERIOD OF RECORD.--Chemical analyses: March to September 1969.

REMARKS.--Bicarbonate (HCO_3) and carbonate (CO_3) determined in laboratory. Discharge includes waste water and sewage effluent from industrial plants. Chemical data furnished by Environmental Protection Agency, Denver, Colo., and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, MARCH TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO_3)	CARBONATE (CO_3)	SULFATE (SO_4)
MAR. 19...	1705	15	408	185	568	26	242	0	1400
APR. 16...	1500	18	454	200	614	54	260	0	1490
MAY 27...	1645	23	536	236	678	68	260	0	1790
JUNE 25...	1745	23	547	234	670	74	250	0	1810
JULY 23...	1300	26	458	188	624	62	255	0	1490
AUG. 20...	1425	23	515	217	732	67	246	0	1680

DATE	CHLORIDE (CL)	NITRATE (AS N)	ORTHOPHOSPHATE (PO_4)	TOTAL SOLUBLE PHOSPHATE (PO_4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	TOTAL HARDNESS (AS $CACO_3$)	SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH	DISSOLVED OXYGEN (DO)
MAR. 19...	980	-	-	-	3920	1780	5420	8.1	9.4
APR. 16...	1080	12	12	12	4300	1960	5860	7.9	-
MAY 27...	1270	15	8.0	9.2	4950	2310	6710	7.8	10.0
JUNE 25...	1340	11	-	2.7	5080	2330	6920	8.1	8.3
JULY 23...	1100	10	-	3.6	4280	1920	5850	8.1	7.7
AUG. 20...	1300	13	-	3.4	4970	2180	6640	7.9	9.1

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NEV.

LOCATION.--Lat 36°07'20", long 114°54'15", in NE¼SE¼ sec.14, T.21 S., R.63 E., Clark County, about 0.6 mile upstream from high waterline of Lake Mead at elevation 1,221.4 ft above mean sea level and 11 miles northwest of Boulder City.

DRAINAGE AREA.--2,193 sq mi, of which 1,586 sq mi contribute directly to surface runoff.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Bicarbonate (HCO_3) and carbonate (CO_3) determined in laboratory. Discharge includes waste water and sewage effluent from industrial plants. This station has been operated by the Environmental Protection Agency since January 1964. Chemical data furnished by Environmental Protection Agency, Denver, Colo., and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO_3)	CARBONATE (CO_3)	SULFATE (SO_4)	CHLORIDE (CL)	NITRATE (AS N)
OCT.											
03...	0725	15	440	186	640	63	311	0	1440	1100	9.6
08...	0700	15	447	190	637	58	275	0	1460	1090	-
17...	0730	13	441	193	640	58	267	0	1450	1090	14
22...	1200	13	448	192	632	58	267	0	1450	1100	-
31...	0715	13	467	200	671	60	259	0	1530	1160	14
NOV.											
05...	1240	14	489	214	708	63	254	0	1620	1220	-
14...	0745	10	420	188	584	58	252	0	1390	1110	11
19...	1235	11	424	189	610	57	242	0	1410	1070	-
26...	0720	9	450	208	640	62	245	0	1500	1130	11
DEC.											
03...	1235	7	472	214	666	62	240	0	1590	1180	-
12...	0720	6	421	192	610	57	242	0	1440	1140	11
17...	1220	9	423	192	610	59	238	0	1420	1180	-
26...	1205	7	421	193	604	69	256	0	1410	1110	3.4
JAN.											
02...	1240	5	404	192	594	64	247	0	1380	1050	-
09...	0730	6	433	198	646	57	242	0	1460	1120	3.6
14...	1225	10	443	205	692	96	244	0	1490	1230	-
23...	0720	9	386	182	568	57	259	0	1340	968	3.9
FEB.											
11...	1220	9	396	187	568	54	248	0	1390	958	-
18...	1545	10	398	182	572	54	254	0	1390	962	13
MAR.											
19...	1615	12	428	197	612	58	254	0	1500	1040	9.5
APR.											
16...	1630	18	476	203	622	58	270	0	1630	1110	9.9
MAY											
27...	1500	24	532	243	721	66	279	0	1840	1260	9.1
JUNE											
25...	1600	22	548	245	741	71	284	0	1890	1300	4.8
JULY											
23...	1435	26	466	193	647	61	276	0	1590	1090	7.4
AUG.											
20...	1300	23	506	207	716	64	270	0	1720	1240	8.6

DATE	NITRITE (AS N)	AMMONIA (AS N)	ORGANIC NITROGEN (N)	ORTHOPHOSPHATE (PO_4)	TOTAL SOLUBLE PHOSPHATE (PO_4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	TOTAL HARDNESS (AS $CACO_3$)	SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH	DISSOLVED OXYGEN (DO)
OCT.										
03...	.043	.12	.74	14	14	4220	1860	5830	-	7.9
08...	-	-	-	-	-	4220	1900	5820	-	7.1
17...	.007	.12	.06	12	13	4220	1900	5830	-	8.5
22...	-	-	-	-	-	4240	1910	5830	-	10.1
31...	.004	.08	.04	13	17	4390	1990	6040	-	7.8
NOV.										
05...	-	-	-	-	-	4650	2100	6360	-	9.5
14...	.005	.20	.17	7.7	9.3	4070	1820	5620	-	8.5
19...	-	-	-	-	-	4070	1840	5670	-	9.7
26...	.004	.20	.14	7.7	9.7	4390	1980	5990	-	9.0
DEC.										
03...	-	-	-	-	-	4580	2060	6210	-	9.3
12...	.005	.16	.05	9.3	11	4170	1840	5670	-	9.2
17...	-	-	-	-	-	4140	1850	5660	7.3	9.3
26...	.047	.33	.88	10	14	4170	1850	5710	8.0	9.1
JAN.										
02...	-	-	-	-	-	4110	1800	5590	-	12.0
09...	.13	.18	.57	10	14	4310	1900	5820	-	10.7
14...	-	-	-	-	-	4560	1950	6330	7.7	10.3
23...	.18	.46	.17	14	17	3870	1710	5340	7.9	10.6
FEB.										
11...	-	-	-	-	-	3920	1760	5240	-	-
18...	.007	.10	.10	7.8	8.3	3910	1740	5320	8.3	9.8
MAR.										
19...	.006	.11	.11	8.7	12	4200	1880	5630	8.2	10.2
APR.										
16...	-	-	-	9.8	11	4460	2030	6000	8.2	9.3
MAY										
27...	-	-	-	6.7	7.7	5040	2330	6710	8.3	9.5
JUNE										
25...	-	-	-	-	2.5	5160	2380	6850	8.2	9.6
JULY										
23...	-	-	-	-	2.8	4420	1960	5880	8.0	8.4
AUG.										
20...	-	-	-	-	6.1	4900	2120	6430	8.1	8.1

09420900 LAKE MEAD NEAR LAS VEGAS BEACH, NEV.

LOCATION.--Lat 36°06'30", long 114°49'10" (unsurveyed), Clark County, 2.8 miles east-southeast of Las Vegas Beach and 10 miles northeast of Henderson.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Samples collected 10 ft below lake surface. Bicarbonate (HCO_3) and carbonate (CO_3) determined in laboratory. This station has been operated by the Environmental Protection Agency since July 1968. Chemical data furnished by Environmental Protection Agency, Denver, Colo., and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	NITRATE (AS N)	NITRITE (AS N)	AMMONIA (AS N)	ORGANIC NITROGEN (N)	ORTHO-PHOSPHATE (PO_4)	TOTAL SOLUBLE PHOSPHATE (PO_4)	FIELD PH	DISSOLVED OXYGEN (DO)
OCT.										
02...	1530	25	.03	.005	.07	.37	.15	.18	-	-
16...	1510	21	.10	.005	.20	.40	.16	.22	-	-
30...	1620	20	.15	.004	.17	.65	.17	.23	-	-
NOV.										
13...	1610	18	.24	.003	.13	.36	.12	.14	-	-
25...	1615	16	.30	.003	.22	.48	.03	.20	-	-
DEC.										
11...	1540	14	.21	.002	.09	.34	.16	.28	-	-
26...	1540	11	.35	.002	.10	1.6	.09	.20	-	-
JAN.										
08...	1600	13	.56	.002	.06	1.7	.09	.15	-	-
22...	1615	14	.72	.003	.08	.38	.53	.58	-	8.3
MAY										
29...	0930	25	.54	.010	.03	.14	<.01	<.01	9.4	8.5
AUG.										
28...	1030	29	<.05	-	-	-	-	.18	9.8	-

09420950 LAKE MEAD AT SADDLE ISLAND, NEV.

LOCATION.--Lat 36°03'45", long 114°47'40", in NE¼ sec.11, T.22 S., R.64 E., Clark County, directly offshore from Southern Nevada Water Project intake structure on Saddle Island, and 7 miles north-northeast of Boulder City.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Samples collected 10 ft below lake surface. Bicarbonate (HCO_3) and carbonate (CO_3) determined in laboratory. This station has been operated by the Environmental Protection Agency since July 1968. Chemical data furnished by Environmental Protection Agency, Denver, Colo., and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	NITRATE (AS N)	NITRITE (AS N)	AMMONIA (AS N)	ORGANIC NITROGEN (N)	ORTHO-PHOSPHATE (PO_4)	TOTAL SOLUBLE PHOSPHATE (PO_4)	FIELD PH	DISSOLVED OXYGEN (DO)
OCT.										
02...	1445	25	.16	.003	.08	.34	.06	.10	-	-
16...	1430	21	.17	.002	.14	.32	.06	.12	-	-
30...	1530	20	.19	.003	.08	.40	.06	.11	-	-
NOV.										
13...	1520	19	.15	.003	.09	.34	.05	.08	-	-
25...	1525	17	.45	.002	.09	.36	.05	.09	-	-
DEC.										
11...	1500	15	.30	.001	.07	.32	.03	.11	-	-
26...	1415	12	.42	.001	.07	.85	.05	.14	-	-
JAN.										
08...	1515	14	.38	.001	.04	2.9	.05	.10	-	-
22...	1520	14	.65	.001	.08	.17	.07	.10	-	8.2
MAY										
29...	1200	25	.35	.010	.04	.11	<.01	<.01	7.6	8.5
AUG.										
28...	1220	30	<.05	-	-	-	-	.01	-	-

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.

LOCATION.--Lat 36°00'58", long 114°44'13", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River Meridian, on State line between Mohave County, Ariz., and Clark County, Nev., at gaging station midway between Hoover Dam intake towers.
DRAINAGE AREA.--167,800 sq mi, approximately.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DEPTH (FT)	STAGE (FT ABOVE DATUM)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT.									
02...	0	1136.50	25	8.2	81	33	114	5.0	123
02...	5	1131.50	25	--	--	--	--	--	--
02...	25	1111.50	25	--	--	--	--	--	123
02...	75	1061.50	25	--	--	--	--	--	123
02...	125	1011.50	18	8.0	87	31	104	5.0	151
02...	175	961.00	15	9.0	87	30	105	5.0	154
02...	225	911.00	14	8.5	86	30	104	5.0	161
02...	275	861.00	13	8.2	86	30	103	5.0	160
02...	325	811.00	13	--	--	--	--	--	160
02...	375	761.00	12	9.4	86	30	103	5.0	162
02...	412	724.00	12	--	--	--	--	--	162
30...	0	1137.50	23	8.6	84	33	106	5.0	129
30...	5	1132.50	23	--	--	--	--	--	--
30...	25	1112.50	21	--	--	--	--	--	--
30...	75	1062.50	21	8.6	85	32	112	5.0	129
30...	125	1012.50	18	8.8	88	31	101	5.0	151
30...	175	962.00	15	--	--	--	--	--	--
30...	225	912.00	13	8.5	88	30	101	5.0	161
30...	275	862.00	13	8.6	88	29	98	5.0	161
30...	325	812.00	12	--	--	--	--	--	--
30...	375	762.00	12	8.9	86	30	102	5.0	161
30...	414	723.00	12	--	--	--	--	--	--
NOV.									
27...	0	1139.50	17	8.8	86	33	107	4.0	139
27...	10	1129.50	17	--	--	--	--	--	138
27...	25	1114.50	17	--	--	--	--	--	138
27...	75	1064.50	17	--	--	--	--	--	138
27...	125	1014.50	17	9.3	86	32	111	4.0	139
27...	175	964.00	14	9.1	86	32	102	4.0	156
27...	225	914.00	12	--	--	--	--	--	165
27...	238	901.00	--	9.5	85	31	103	4.0	165
27...	275	864.00	11	9.6	87	30	103	4.0	165
27...	325	814.00	11	--	--	--	--	--	165
27...	375	764.00	--	10	86	30	103	4.0	165
27...	415	724.00	--	--	--	--	--	--	--
DEC.									
30...	0	1140.50	13	8.0	88	32	106	5.0	146
30...	10	1130.50	13	--	--	--	--	--	--
30...	25	1115.50	13	--	--	--	--	--	--
30...	75	1065.50	13	--	--	--	--	--	--
30...	125	1015.50	13	--	--	--	--	--	--
30...	175	965.00	13	--	--	--	--	--	--
30...	225	915.00	13	8.5	88	32	105	5.0	155
30...	238	902.00	13	9.3	88	32	105	5.0	155
30...	275	865.00	13	9.0	89	30	102	5.0	163
30...	325	815.00	11	--	--	--	--	--	--
30...	375	765.00	11	9.6	88	30	102	5.0	163
30...	415	725.00	11	--	--	--	--	--	--
JAN.									
30...	0	1140.50	13	8.9	88	32	109	4.0	151
30...	10	1130.50	13	--	--	--	--	--	--
30...	25	1115.50	13	--	--	--	--	--	--
30...	75	1065.50	13	--	--	--	--	--	--
30...	125	1015.50	13	--	--	--	--	--	--
30...	175	965.00	13	8.5	88	32	109	4.0	151
30...	225	915.00	13	--	--	--	--	--	--
30...	238	902.00	12	8.5	88	31	105	4.0	151
30...	275	865.00	12	8.9	87	30	105	4.0	161
30...	325	815.00	12	--	--	--	--	--	--
30...	375	765.00	12	8.9	87	30	104	4.0	162
30...	416	724.00	12	--	--	--	--	--	--
FEB.									
27...	0	1141.50	12	8.4	89	32	104	4.0	153
27...	10	1131.50	12	--	--	--	--	--	153
27...	25	1116.50	12	--	--	--	--	--	153
27...	75	1066.50	12	--	--	--	--	--	150
27...	125	1016.50	12	--	--	--	--	--	153
27...	175	966.00	12	--	--	--	--	--	153
27...	225	916.00	12	--	--	--	--	--	154
27...	238	903.00	12	8.3	89	31	103	5.0	154
27...	275	866.00	12	8.4	89	31	103	4.0	153
27...	325	816.00	12	--	--	--	--	--	154
27...	375	766.00	12	8.2	89	31	103	4.0	154
27...	420	721.00	12	--	--	--	--	--	153

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1940 to September 1969.
REMARKS.--Samples collected by Bureau of Reclamation and analyzed by the Metropolitan Water District of Southern California, LaVerne, Calif.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.									
02...	0	338	99	.4	740	338	237	1150	7.8
02...	--	--	100	--	--	337	--	1140	7.6
02...	0	--	99	--	--	--	--	1150	7.8
02...	0	--	98	--	--	--	--	1150	7.9
02...	0	305	93	1.5	710	345	221	1130	7.5
02...	0	312	92	1.5	719	343	217	1120	7.7
02...	0	296	90	1.9	702	340	208	1110	7.7
02...	0	295	89	1.9	698	338	207	1110	7.8
02...	0	--	89	--	--	--	--	1100	7.5
02...	0	294	90	1.7	701	340	207	1100	7.4
02...	0	--	90	--	--	--	--	1100	7.3
30...	0	317	100	1.1	719	346	240	1170	7.8
30...	--	--	100	--	--	--	--	1170	7.8
30...	--	--	100	--	--	--	--	1170	7.9
30...	0	333	100	.8	741	346	240	1170	8.0
30...	0	308	92	1.9	709	347	223	1120	7.6
30...	--	--	92	--	--	--	--	1110	8.0
30...	0	298	90	2.0	703	343	211	1110	8.0
30...	0	288	89	1.6	688	341	209	1100	8.3
30...	--	--	89	--	--	--	--	1100	7.9
30...	0	292	89	2.0	695	338	206	1100	8.1
30...	--	--	89	--	--	--	--	1100	7.7
NOV.									
27...	0	312	100	1.4	722	351	237	1185	7.3
27...	0	--	99	--	--	--	--	1185	7.8
27...	0	--	99	--	--	--	--	1185	8.1
27...	0	--	100	--	--	--	--	1185	7.3
27...	0	326	99	.8	734	348	235	1185	7.9
27...	0	300	92	1.4	705	346	218	1145	7.3
27...	0	--	90	--	--	--	--	1135	7.7
27...	0	292	90	1.7	699	340	205	1135	7.8
27...	0	290	90	1.8	698	345	208	1125	8.1
27...	0	--	90	--	--	--	--	1120	8.1
27...	0	292	90	1.4	699	338	203	1125	7.9
27...	--	--	90	--	--	--	--	1120	8.1
DEC.									
30...	0	327	96	.8	736	353	233	1160	7.4
30...	--	--	97	--	--	--	--	1160	7.3
30...	--	--	97	--	--	--	--	1160	7.4
30...	--	--	96	--	--	--	--	1160	7.5
30...	--	--	96	--	--	--	--	1160	7.4
30...	--	--	96	--	--	--	--	1160	7.4
30...	0	316	95	1.4	727	351	224	1160	7.4
30...	0	315	94	1.5	727	351	224	1160	7.6
30...	0	301	91	2.0	711	348	214	1130	7.5
30...	--	--	90	--	--	--	--	1130	7.5
30...	0	295	90	2.0	703	343	209	1120	7.4
30...	--	--	87	--	--	--	--	1120	7.3
JAN.									
30...	0	320	97	2.0	736	351	227	1170	7.8
30...	--	--	97	--	--	--	--	1170	8.1
30...	--	--	97	--	--	--	--	1160	7.8
30...	--	--	97	--	--	--	--	1160	8.1
30...	--	--	97	--	--	--	--	1160	8.2
30...	0	315	97	2.0	730	351	227	1160	8.2
30...	--	--	96	--	--	--	--	1160	8.2
30...	0	315	96	2.0	727	349	225	1160	8.2
30...	0	299	91	2.2	707	343	211	1120	7.7
30...	--	--	91	--	--	--	--	1120	7.9
30...	0	294	91	2.0	701	341	208	1120	7.7
30...	--	--	90	--	--	--	--	1120	8.0
FEB.									
27...	0	310	95	1.7	721	354	229	1155	7.5
27...	0	--	94	--	--	--	--	1160	7.6
27...	0	--	95	--	--	--	--	1155	8.3
27...	1	--	95	--	--	--	--	1160	8.3
27...	0	--	94	--	--	--	--	1155	8.1
27...	0	--	95	--	--	--	--	1155	8.1
27...	0	--	95	--	--	--	--	1165	7.6
27...	0	313	94	1.2	722	352	226	1165	7.6
27...	0	314	94	2.3	723	352	227	1155	8.2
27...	0	--	95	--	--	--	--	1150	8.3
27...	0	313	94	1.8	722	352	226	1155	8.3
27...	1	--	94	--	--	--	--	1155	8.4

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DEPTH (FT)	STAGE (FT ABOVE DATUM)	TEMPERATURE (DEG C)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
MAR.									
27...	0	1140.50	15	9.2	89	32	105	5.0	154
27...	25	1115.50	13	--	--	--	--	--	153
27...	75	1065.50	12	--	--	--	--	--	154
27...	125	1015.50	12	--	--	--	--	--	154
27...	175	965.00	12	8.5	89	31	106	4.0	156
27...	225	915.00	12	--	--	--	--	--	159
27...	238	902.00	12	8.9	89	31	105	4.0	157
27...	275	865.00	12	--	--	--	--	--	159
27...	325	815.00	12	8.9	89	31	107	5.0	159
27...	375	765.00	12	--	--	--	--	--	159
27...	420	720.00	11	--	--	--	--	--	160
APR.									
30...	0	1141.50	17	8.2	88	32	107	5.0	153
30...	10	1131.50	16	--	--	--	--	--	153
30...	25	1116.50	15	--	--	--	--	--	153
30...	75	1066.50	13	--	--	--	--	--	154
30...	125	1016.50	12	--	--	--	--	--	155
30...	175	966.00	12	--	--	--	--	--	157
30...	225	916.00	11	8.2	90	31	104	5.0	157
30...	238	903.00	11	8.5	90	31	104	5.0	159
30...	275	866.00	11	8.0	90	31	103	5.0	160
30...	325	816.00	11	--	--	--	--	--	161
30...	375	766.00	11	8.5	90	31	103	5.0	162
30...	420	721.00	11	--	--	--	--	--	163
MAY									
29...	0	1142.50	22	9.0	89	32	111	4.0	154
29...	0	1132.50	21	--	--	--	--	--	154
29...	0	1117.50	20	--	--	--	--	--	153
29...	0	1067.50	15	--	--	--	--	--	153
29...	12	1017.50	13	--	--	--	--	--	155
29...	17	967.00	12	8.5	90	31	109	4.0	155
29...	225	917.00	12	9.0	90	31	104	4.0	159
29...	239	903.00	12	8.7	90	31	103	4.0	157
29...	275	867.00	12	--	--	--	--	--	161
29...	325	817.00	12	--	--	--	--	--	162
29...	375	767.00	12	8.5	90	31	105	4.0	162
29...	420	722.00	12	--	--	--	--	--	--
JUNE									
27...	0	1142.50	24	8.3	84	33	109	5.0	137
27...	10	1132.50	24	--	--	--	--	--	137
27...	25	1117.50	23	7.9	85	32	109	5.0	139
27...	75	1067.50	14	8.2	90	31	108	5.0	155
27...	125	1017.50	13	--	--	--	--	--	159
27...	175	967.00	12	--	--	--	--	--	159
27...	225	917.00	12	8.8	90	31	106	5.0	160
27...	239	903.00	12	8.2	89	31	106	5.0	161
27...	275	867.00	12	--	--	--	--	--	161
27...	325	817.00	12	8.5	90	31	105	5.0	162
27...	375	767.00	12	--	--	--	--	--	163
JULY									
30...	0	1143.50	30	8.8	80	33	113	5.0	122
30...	25	1118.50	28	--	--	--	--	--	122
30...	75	1068.50	17	8.8	90	32	108	5.0	154
30...	125	1018.50	14	--	--	--	--	--	154
30...	175	968.00	13	--	--	--	--	--	157
30...	225	918.00	12	8.8	90	31	108	5.0	160
30...	240	903.00	12	9.6	89	31	108	5.0	160
30...	275	868.00	12	9.0	89	31	108	5.0	160
30...	325	818.00	12	--	--	--	--	--	161
30...	375	768.00	12	9.4	89	31	108	5.0	163
30...	421	722.00	12	--	--	--	--	--	163
AUG.									
27...	0	1145.50	29	9.3	80	33	113	5.0	121
27...	10	1135.50	28	--	--	--	--	--	--
27...	25	1120.50	28	8.8	80	33	113	5.0	121
27...	75	1070.50	20	8.9	90	32	110	5.0	153
27...	125	1020.50	12	--	--	--	--	--	--
27...	175	970.00	13	--	--	--	--	--	--
27...	225	920.00	12	8.8	90	32	106	5.0	161
27...	240	905.00	12	9.8	90	32	106	5.0	162
27...	275	870.00	12	--	--	--	--	--	--
27...	325	820.00	12	--	--	--	--	--	--
27...	375	770.00	12	9.5	90	32	106	5.0	163
27...	422	723.00	12	--	--	--	--	--	--
SEPT.									
26...	0	1147.50	26	7.4	81	34	116	5.0	118
26...	10	1137.50	26	--	--	--	--	--	117
26...	25	1122.50	26	7.4	81	34	115	5.0	117
26...	75	1072.50	21	7.8	89	32	104	5.0	151
26...	125	1022.50	16	--	--	--	--	--	154
26...	175	972.00	13	--	--	--	--	--	156
26...	225	922.00	13	7.8	89	31	106	5.0	160
26...	241	906.00	12	7.8	90	31	106	5.0	160
26...	275	872.00	12	--	--	--	--	--	161
26...	325	822.00	12	--	--	--	--	--	161
26...	375	772.00	12	8.0	90	31	106	5.0	162
26...	422	725.00	12	--	--	--	--	--	162

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
MAR.									
27...	0	315	93	1.9	729	354	228	1170	7.8
27...	--	--	93	--	--	--	--	1170	7.9
27...	--	--	92	--	--	--	--	1160	8.2
27...	--	--	92	--	--	--	--	1160	7.8
27...	0	317	92	2.4	728	352	225	1160	7.9
27...	--	--	92	--	--	--	--	1160	8.1
27...	0	317	92	2.7	728	350	221	1160	8.0
27...	--	--	92	--	--	--	--	1160	8.2
27...	0	319	92	2.3	734	352	222	1160	8.2
27...	--	--	92	--	--	--	--	1160	8.0
27...	--	--	92	--	--	--	--	1160	7.8
APR.									
30...	0	317	93	1.4	728	351	226	1170	7.9
30...	0	--	94	--	--	--	--	1180	8.1
30...	0	--	94	--	--	--	--	1170	7.9
30...	0	--	93	--	--	--	--	1170	8.0
30...	0	--	95	--	--	--	--	1170	8.1
30...	0	--	94	--	--	--	--	1170	7.9
30...	0	313	92	2.0	728	354	225	1170	8.0
30...	0	309	92	2.0	721	352	222	1150	7.8
30...	0	309	92	1.8	720	352	221	1150	7.8
30...	0	--	91	--	--	--	--	1150	8.0
30...	0	306	91	2.2	718	352	219	1150	8.0
30...	0	--	90	--	--	--	--	1150	7.8
MAY									
29...	0	323	97	1.5	744	354	228	1210	8.1
29...	0	--	96	--	--	--	--	1200	7.8
29...	0	--	97	--	--	--	--	1200	7.8
29...	0	--	97	--	--	--	--	1200	7.8
29...	0	--	96	--	--	--	--	1200	7.8
29...	0	316	95	2.4	734	354	227	1200	7.8
29...	0	310	92	2.0	722	352	222	1190	7.8
29...	1	312	92	2.8	723	352	221	1190	8.3
29...	0	--	92	--	--	--	--	1190	8.1
29...	0	--	91	--	--	--	--	1190	7.7
29...	0	309	91	2.7	722	352	219	1190	8.0
29...	0	--	91	--	--	--	--	1200	7.9
JUNE									
27...	0	330	100	.6	739	348	236	1160	7.8
27...	0	--	100	--	--	--	--	1160	7.2
27...	0	328	98	1.6	737	346	232	1160	7.4
27...	0	321	97	.6	739	354	227	1155	7.5
27...	0	--	97	--	--	--	--	1155	7.8
27...	0	--	96	--	--	--	--	1150	7.3
27...	0	312	95	1.4	729	352	221	1145	7.5
27...	0	312	95	1.8	729	352	220	1140	7.3
27...	0	--	94	--	--	--	--	1140	7.6
27...	0	308	94	1.7	724	352	219	1135	7.6
27...	0	--	94	--	--	--	--	1135	7.8
JULY									
30...	0	337	99	.9	738	338	238	1150	8.1
30...	0	--	100	--	--	--	--	1150	8.0
30...	0	321	98	2.1	742	356	230	1160	7.7
30...	0	--	98	--	--	--	--	1160	7.7
30...	0	--	98	--	--	--	--	1160	7.7
30...	0	314	96	2.5	734	352	221	1150	7.9
30...	0	318	94	2.6	738	352	221	1150	7.8
30...	0	316	94	2.9	735	350	219	1150	8.8
30...	0	--	94	--	--	--	--	1150	7.8
30...	0	310	94	3.1	731	350	216	1150	7.8
30...	0	--	92	--	--	--	--	1150	7.8
AUG.									
27...	0	336	100	.6	738	338	239	1160	8.0
27...	--	--	100	--	--	--	--	1160	7.9
27...	0	338	100	.5	739	338	239	1160	7.8
27...	0	330	98	2.4	753	358	233	1160	7.7
27...	--	--	98	--	--	--	--	1160	7.7
27...	--	--	96	--	--	--	--	1150	7.8
27...	0	314	94	2.4	733	358	226	1150	7.8
27...	0	309	94	2.5	729	356	223	1150	7.8
27...	--	--	94	--	--	--	--	1150	7.8
27...	--	--	94	--	--	--	--	1150	7.9
27...	0	309	94	2.7	730	356	222	1150	7.8
27...	--	--	95	--	--	--	--	1150	7.7
SEPT.									
26...	0	346	102	.6	751	342	245	1190	7.7
26...	--	--	102	--	--	--	--	1190	7.7
26...	0	345	102	.6	749	342	244	1190	7.8
26...	0	315	94	2.6	725	356	231	1170	7.5
26...	--	--	94	--	--	--	--	1170	7.7
26...	--	--	94	--	--	--	--	1160	7.5
26...	0	313	92	2.8	727	352	221	1160	7.7
26...	0	315	90	2.8	728	352	221	1160	7.8
26...	--	--	90	--	--	--	--	1150	7.9
26...	--	--	90	--	--	--	--	1150	8.0
26...	0	312	90	2.7	726	352	219	1150	7.7
26...	--	--	90	--	--	--	--	1150	7.6

09421500 COLORADO RIVER BELOW HOOVER DAM, ARIZ.-NEV.
(Irrigation network station)

LOCATION.--Lat 36°00'55", long 114°44'16", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River Meridian, Mohave County, Ariz., or in SW¼NE¼ sec.29, T.22 S., R.65 E., Mount Diablo Meridian, Clark County, Nev., downstream from gaging station in powerhouse at downstream side of Hoover Dam.

DRAINAGE AREA.--167,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1939 to September 1969.
Water temperatures: October 1941 to September 1965.

REMARKS.--Samples are taken on or about the fifth, fifteenth, and twenty-fifth of each month and composited to represent the entire month. Records of specific conductance and temperature of individual samples available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	7908	9.1	20	92	28	104	4.7	--	174	0	301	94
NOV.												
01-30	7676	8.9	--	92	27	--	--	115	170	0	304	94
DEC.												
01-31	8987	9.1	--	92	28	--	--	115	167	0	312	94
JAN.												
01-31	8927	9.4	--	92	30	--	--	116	162	0	322	97
FEB.												
01-28	9934	9.0	--	94	28	--	--	118	160	0	326	95
MAR.												
01-31	13410	8.6	--	92	30	--	--	117	160	0	327	94
APR.												
01-30	15030	8.7	10	92	30	106	5.3	--	159	0	322	104
MAY												
01-31	13570	9.0	--	92	31	--	--	110	162	0	316	94
JUNE												
01-30	12660	9.7	--	89	32	--	--	116	166	0	320	97
JULY												
01-31	12560	9.4	10	92	36	107	5.7	--	164	0	318	92
AUG.												
01-31	11270	9.6	--	92	33	--	--	112	174	0	320	95
SEPT.												
01-30	10390	9.5	--	93	29	--	--	114	170	0	311	94
WTD. AVG. TIME	--	9.2	--	92	30	--	--	--	165	0	318	96
WTD. AVG. TONS PER DAY	11000	9.2	--	92	30	--	--	--	166	0	317	95
	--	273	--	2740	908	--	--	--	4920	0	9460	2850

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH (UNITS)
OCT.												
01-31	.4	2.2	210	740	722	1.01	15800	344	202	2.4	1110	7.7
NOV.												
01-30	--	4.1	--	--	729	.99	15100	342	202	2.7	1120	7.6
DEC.												
01-31	--	2.4	--	--	734	1.00	17800	346	209	2.7	1130	7.6
JAN.												
01-31	--	2.2	--	--	749	1.02	18100	354	221	2.7	1150	8.0
FEB.												
01-28	--	1.8	--	--	751	1.02	20100	350	219	2.7	1140	7.8
MAR.												
01-31	--	2.1	--	--	750	1.02	27200	352	221	2.7	1150	7.8
APR.												
01-30	.4	2.0	180	763	749	1.04	31000	352	222	2.5	1140	8.0
MAY												
01-31	--	2.8	--	--	735	1.00	26900	358	225	2.5	1140	7.8
JUNE												
01-30	--	1.2	--	--	747	1.02	25500	354	218	2.7	1150	7.7
JULY												
01-31	.4	1.7	170	786	743	1.07	26700	376	242	2.4	1150	7.7
AUG.												
01-31	--	1.2	--	--	749	1.02	22800	366	224	2.6	1150	7.8
SEPT.												
01-30	--	2.5	--	--	737	1.00	20700	350	210	2.7	1150	7.8
WTD. AVG. TIME	--	2.1	--	--	742	--	--	355	219	2.6	1140	7.8
WTD. AVG. TONS PER DAY	--	2.2	--	--	741	1.06	--	354	218	2.6	1140	7.8
	--	63	--	--	22100	--	--	--	--	--	--	--

09424150 COLORADO RIVER AQUEDUCT NEAR PARKER DAM, ARIZ.-CALIF.

LOCATION.--Lat 34°19'00", long 114°09'25", in NW¼SW¼ sec.28, T.3 N., R.27 E., San Bernardino Meridian, San Bernardino County, at gaging station at intake pumping plant of Metropolitan Water District of Southern California on Lake Havasu, 1.8 miles upstream from Parker Dam and 154 miles downstream from Hoover Dam.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)
OCT.												
01...	6940	--	--	83	31	108	5.0	150	0	308	96	--
08...	6940	23	8.0	82	32	110	6.0	138	1	311	97	.8
15...	6030	--	--	82	31	108	5.0	144	0	311	96	--
23...	6860	21	9.0	82	32	107	5.0	143	1	305	96	.4
29...	6640	--	--	84	31	109	5.0	150	0	310	96	--
NOV.												
06...	6800	20	8.0	76	32	110	5.0	121	4	307	98	.9
12...	6780	--	--	84	32	108	5.0	152	0	311	100	--
24...	6780	--	--	84	32	109	5.0	153	0	310	99	--
DEC.												
08...	6900	14	8.0	85	31	110	5.0	148	0	312	96	.4
10...	7000	--	--	85	31	110	5.0	155	0	316	99	--
24...	6940	--	--	86	32	111	5.0	155	0	314	101	--
FEB.												
07...	7460	11	7.0	85	31	107	5.0	139	4	310	96	.4
MAR.												
08...	4340	13	7.0	88	32	109	4.0	148	2	314	98	.4
APR.												
08...	3530	19	5.0	83	31	110	5.0	128	2	321	97	.4
MAY												
07...	4900	21	9.0	89	33	108	5.0	145	2	323	98	.4
JUNE												
08...	5100	24	8.0	82	32	122	4.0	127	4	335	101	.5
JULY												
08...	7870	26	9.0	84	33	133	5.0	137	1	328	101	.5
AUG.												
06...	6820	26	10	83	32	110	5.0	135	1	323	100	.5
SEPT.												
08...	6620	29	9.0	81	34	109	5.0	129	2	318	100	.5

DATE	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	PH (UNITS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
OCT.											
01...	--	752	--	1.02	41	335	212	2.6	123	7.8	1120
08...	.8	717	717	.98	41	336	221	2.6	115	8.4	1110
15...	--	749	--	1.02	41	332	214	2.6	118	7.9	1120
23...	.7	710	709	.97	51	336	217	3.2	119	8.4	1130
29...	--	757	--	1.03	41	327	214	2.6	123	8.0	1130
NOV.											
06...	.5	701	701	.95	42	321	215	2.7	106	8.5	1100
12...	--	765	--	1.04	40	341	216	2.5	125	7.8	1130
24...	--	766	--	1.04	41	341	215	2.6	125	8.0	1130
DEC.											
08...	1.1	723	722	.98	41	340	219	2.6	121	8.3	1150
10...	--	774	--	1.05	41	340	213	2.6	127	8.0	1140
24...	--	775	--	1.05	41	346	219	2.6	127	8.0	1160
FEB.											
07...	1.0	716	715	.97	40	340	219	2.5	121	8.6	1140
MAR.											
08...	2.2	730	730	.99	40	351	226	2.5	125	8.5	1160
APR.											
08...	.8	718	719	.98	41	335	227	2.6	108	8.4	1150
MAY											
07...	1.6	741	741	1.01	39	358	236	2.5	122	8.4	1180
JUNE											
08...	.8	752	752	1.02	44	336	225	2.9	111	8.5	1160
JULY											
08...	1.3	764	764	1.01	45	345	231	3.1	114	8.4	1170
AUG.											
06...	.8	732	732	1.00	41	339	227	2.6	112	8.4	1150
SEPT.											
08...	.9	724	723	.98	40	342	233	2.6	109	8.5	1140

09427520 (revised) COLORADO RIVER BELOW PARKER DAM, ARIZ.-CALIF.

LOCATION (revised).--Lat 34°17'44", long 114°08'22", in NW¼NW¼ sec.3, T.2 N., R.27 E., San Bernardino Meridian, San Bernardino County, Calif., at gaging station on north end of powerplant at Parker Dam, 13 miles northeast of Parker, Ariz., and 14 miles upstream from Headgate Rock Dam.

DRAINAGE AREA.--178,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1969.
Water temperatures: February 1954 to September 1969.

EXTREMES.--1968-69:
Water temperatures: Maximum, 28.0°C Sept. 9; minimum, 9.0°C on several days during December and January.

Period of record (1954-69):
Water temperatures: Maximum, 28.5°C Aug. 12, 13, 18, 1955; minimum (1954-65, 1966-69), 8.0°C Jan. 12, 1964.

REMARKS.--During period October 1963 to September 1968, samples collected 3.9 miles downstream from Parker Dam. Temperature probe above water level Jan. 28 to Feb. 5; recorder inoperative July 8-10. Formerly published as station 09428000.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+KI (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SC4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01...	1045	7970	9.3	--	88	27	--	--	114	152	307	96
31...	1500	8480	9.4	--	90	28	--	--	115	160	309	96
DEC.												
02...	1100	10800	9.2	--	90	28	--	--	118	158	310	102
JAN.												
02...	1100	4610	9.4	--	90	29	--	--	118	159	314	100
FEB.												
03...	1240	16700	8.9	--	89	32	--	--	117	158	323	99
MAR.												
03...	1240	14700	10	--	85	27	--	--	111	160	293	89
APR.												
01...	1400	13900	8.5	0	95	28	112	5.8	--	162	328	99
MAY												
01...	0925	12700	8.2	--	96	29	--	--	130	163	348	102
JUNE												
02...	1530	17400	9.3	--	92	32	--	--	121	163	334	100
JULY												
01...	1325	10400	9.8	10	94	29	114	6.1	--	162	324	99
AUG.												
22...	0850	12830	--	--	86	31	116	5.4	--	154	312	99
SEPT.												
18...	1730	8580	--	--	86	31	113	5.4	--	152	312	102

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.												
01...	--	1.5	--	--	718	.98	15500	332	208	2.7	1130	7.5
31...	--	.7	--	--	727	.99	16600	338	207	2.7	1140	7.5
DEC.												
02...	--	.3	--	--	736	1.00	21500	340	210	2.8	1140	7.4
JAN.												
02...	--	.9	--	--	739	1.01	9200	342	212	2.8	1150	7.7
FEB.												
03...	--	2.6	--	--	750	1.02	33800	352	222	2.7	1150	7.6
MAR.												
03...	--	1.2	--	--	695	.95	27600	322	191	2.7	1070	7.6
APR.												
01...	.4	1.5	200	769	758	1.05	28900	352	219	2.6	1170	7.9
MAY												
01...	--	1.7	--	--	795	1.08	27300	358	224	3.0	1170	7.7
JUNE												
02...	--	.7	--	--	769	1.05	36100	360	226	2.8	1170	7.6
JULY												
01...	.4	.9	210	788	757	1.07	22100	354	221	2.6	1200	7.4
AUG.												
22...	--	--	--	780	725	1.06	27000	344	218	2.7	1170	7.8
SEPT.												
18...	--	--	--	771	--	1.05	17900	344	219	2.7	1160	7.8

09427520 COLORADO RIVER BELOW PARKER DAM, ARIZ.-CALIF.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT		NOV		DEC		JAN		FEB		MAR	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	23.0	22.0	21.0	20.0	15.0	14.0	09.0	09.0	--	--	14.0	13.0
2	23.0	22.0	21.0	19.0	15.0	14.0	09.0	09.0	--	--	14.0	13.0
3	23.0	22.0	20.0	19.0	14.0	13.0	10.0	10.0	--	--	14.0	13.0
4	22.0	22.0	20.0	19.0	14.0	13.0	10.0	10.0	--	--	14.0	13.0
5	23.0	22.0	20.0	19.0	13.0	13.0	10.0	10.0	--	--	13.0	13.0
6	22.0	22.0	19.0	19.0	13.0	13.0	10.0	10.0	11.0	11.0	13.0	13.0
7	22.0	22.0	19.0	19.0	13.0	13.0	10.0	10.0	11.0	11.0	13.0	13.0
8	22.0	22.0	19.0	19.0	13.0	13.0	10.0	10.0	11.0	11.0	13.0	13.0
9	22.0	22.0	19.0	19.0	13.0	12.0	10.0	10.0	11.0	11.0	13.0	13.0
10	23.0	22.0	19.0	18.0	12.0	12.0	10.0	10.0	12.0	12.0	13.0	13.0
11	22.0	22.0	19.0	18.0	12.0	12.0	10.0	10.0	12.0	12.0	13.0	13.0
12	22.0	22.0	19.0	18.0	12.0	12.0	10.0	10.0	12.0	12.0	14.0	13.0
13	22.0	22.0	18.0	18.0	12.0	12.0	10.0	10.0	12.0	12.0	14.0	14.0
14	22.0	22.0	18.0	18.0	12.0	12.0	10.0	10.0	12.0	12.0	14.0	13.0
15	22.0	21.0	18.0	18.0	12.0	12.0	10.0	10.0	12.0	12.0	14.0	13.0
16	22.0	21.0	18.0	18.0	12.0	11.0	10.0	10.0	12.0	12.0	14.0	13.0
17	22.0	21.0	18.0	17.0	12.0	11.0	10.0	10.0	13.0	13.0	14.0	14.0
18	21.0	21.0	18.0	18.0	11.0	11.0	11.0	10.0	13.0	13.0	14.0	14.0
19	21.0	21.0	18.0	18.0	11.0	11.0	11.0	11.0	13.0	13.0	14.0	14.0
20	21.0	20.0	17.0	17.0	11.0	11.0	11.0	11.0	13.0	13.0	14.0	14.0
21	21.0	20.0	17.0	17.0	11.0	10.0	11.0	11.0	13.0	13.0	15.0	14.0
22	21.0	20.0	17.0	17.0	10.0	10.0	11.0	10.0	13.0	13.0	14.0	14.0
23	21.0	20.0	17.0	17.0	10.0	10.0	11.0	10.0	13.0	13.0	15.0	14.0
24	21.0	20.0	17.0	17.0	10.0	09.0	11.0	11.0	13.0	13.0	15.0	15.0
25	21.0	20.0	17.0	17.0	09.0	09.0	11.0	11.0	13.0	13.0	15.0	15.0
26	21.0	20.0	17.0	17.0	09.0	09.0	12.0	11.0	14.0	13.0	15.0	15.0
27	21.0	20.0	16.0	16.0	09.0	09.0	12.0	11.0	14.0	13.0	16.0	15.0
28	20.0	20.0	16.0	16.0	09.0	09.0	--	--	14.0	13.0	16.0	16.0
29	21.0	20.0	16.0	16.0	09.0	09.0	--	--	--	--	17.0	16.0
30	21.0	20.0	15.0	15.0	09.0	09.0	--	--	--	--	18.0	17.0
31	20.0	20.0	--	--	09.0	09.0	--	--	--	--	18.0	17.0
AVG	21.6	21.1	18.1	17.8	11.5	11.2	10.4	10.2	12.5	12.3	14.4	14.0

DAY	APR		MAY		JUN		JUL		AUG		SEP	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	17.0	17.0	21.0	20.0	23.0	23.0	25.0	24.0	27.0	26.0	27.0	26.0
2	17.0	16.0	21.0	20.0	23.0	23.0	25.0	24.0	27.0	26.0	26.0	26.0
3	16.0	16.0	21.0	20.0	23.0	22.0	25.0	24.0	27.0	27.0	26.0	26.0
4	17.0	16.0	20.0	19.0	23.0	22.0	24.0	24.0	27.0	27.0	26.0	25.0
5	17.0	17.0	20.0	19.0	23.0	23.0	24.0	24.0	27.0	27.0	26.0	25.0
6	16.0	16.0	21.0	20.0	24.0	23.0	24.0	24.0	27.0	26.0	26.0	24.0
7	17.0	17.0	21.0	20.0	23.0	23.0	24.0	24.0	27.0	26.0	27.0	26.0
8	17.0	17.0	21.0	20.0	23.0	23.0	--	--	26.0	26.0	27.0	27.0
9	18.0	17.0	21.0	21.0	23.0	23.0	--	--	26.0	26.0	28.0	27.0
10	17.0	16.0	22.0	21.0	23.0	23.0	--	--	26.0	25.0	27.0	26.0
11	16.0	16.0	22.0	21.0	23.0	23.0	25.0	24.0	26.0	26.0	26.0	26.0
12	16.0	16.0	22.0	21.0	24.0	23.0	24.0	24.0	26.0	26.0	26.0	25.0
13	16.0	16.0	21.0	21.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	25.0
14	17.0	16.0	21.0	21.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	25.0
15	17.0	16.0	21.0	21.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	25.0
16	18.0	17.0	21.0	21.0	24.0	24.0	25.0	24.0	26.0	25.0	26.0	25.0
17	18.0	17.0	22.0	21.0	25.0	24.0	24.0	24.0	26.0	25.0	25.0	24.0
18	18.0	18.0	22.0	22.0	25.0	24.0	24.0	24.0	26.0	25.0	26.0	25.0
19	18.0	17.0	22.0	21.0	25.0	24.0	25.0	24.0	26.0	25.0	26.0	24.0
20	18.0	17.0	22.0	21.0	24.0	24.0	25.0	24.0	26.0	26.0	26.0	24.0
21	18.0	17.0	23.0	22.0	24.0	24.0	26.0	25.0	27.0	26.0	24.0	24.0
22	18.0	18.0	22.0	22.0	24.0	24.0	26.0	25.0	27.0	26.0	25.0	24.0
23	18.0	17.0	23.0	22.0	24.0	24.0	25.0	24.0	27.0	26.0	25.0	24.0
24	18.0	17.0	23.0	22.0	24.0	24.0	25.0	24.0	26.0	26.0	26.0	24.0
25	18.0	18.0	23.0	22.0	24.0	23.0	25.0	25.0	26.0	26.0	25.0	24.0
26	18.0	18.0	23.0	22.0	24.0	23.0	25.0	25.0	26.0	26.0	25.0	24.0
27	18.0	18.0	23.0	23.0	24.0	24.0	26.0	24.0	26.0	26.0	24.0	24.0
28	18.0	18.0	24.0	23.0	24.0	24.0	26.0	26.0	26.0	26.0	24.0	24.0
29	18.0	18.0	23.0	23.0	25.0	24.0	26.0	26.0	26.0	25.0	24.0	24.0
30	18.0	18.0	23.0	23.0	25.0	25.0	27.0	26.0	26.0	25.0	24.0	24.0
31	--	--	--	23.0	--	--	27.0	26.0	26.0	26.0	--	--
AVG	17.4	16.9	21.8	21.2	23.8	23.5	25.0	24.4	26.3	25.9	25.7	24.9

09428510 POSTON WASTEWAY NEAR POSTON, ARIZ.

LOCATION.--Lat 33°59'58", long 114°26'41", in SW¼SE¼ sec.28, T.8 N., R.21 W., Yuma County, at gaging station 0.8 mile upstream from mouth, 2.5 miles west of Poston, and 14 miles southwest of Parker.
PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.								
03...	--	10	95	40	129	188	--	340
11...	--	12	106	43	147	200	--	380
18...	--	13	118	45	156	224	--	405
24...	--	10	90	40	113	164	--	330
30...	--	12	105	38	131	188	--	350
NOV.								
06...	--	13	145	43	182	264	--	445
15...	--	11	92	34	123	168	--	320
22...	--	12	90	33	120	160	--	325
26...	--	13	129	46	174	244	--	420
DEC.								
08...	--	12	92	36	124	152	--	340
13...	--	11	103	35	125	180	--	330
20...	--	16	140	49	193	256	--	470
24...	--	16	103	40	137	180	--	370
JAN.								
02...	--	18	119	42	164	222	--	405
10...	--	15	130	48	176	250	--	430
16...	--	14	97	38	131	174	--	350
31...	--	17	159	52	206	292	--	500
FEB.								
07...	--	18	167	51	200	300	--	500
14...	--	9.0	108	32	132	180	--	340
20...	--	9.0	100	32	124	172	--	330
MAR.								
03...	--	9.0	118	45	175	227	--	450
14...	--	16	143	49	193	272	--	480
19...	--	13	134	48	181	260	--	450
26...	--	9.0	106	38	134	184	--	360
APR.								
04...	--	9.0	114	40	160	208	--	410
10...	--	16	169	53	240	296	--	570
17...	--	12	142	43	179	236	--	470
MAY								
01...	--	14	146	50	189	272	--	500
08...	--	18	154	50	219	280	--	530
16...	--	16	154	53	214	288	--	530
23...	129	16	153	53	210	288	--	530
28...	209	15	137	46	188	248	--	460
JUNE								
06...	--	14	116	44	160	216	--	410
11...	--	10	114	45	150	208	--	410
18...	--	14	145	49	203	276	--	490
26...	--	14	145	51	203	264	--	510
JULY								
03...	--	16	150	50	197	268	--	490
11...	--	15	145	49	198	268	--	490
18...	--	10	116	41	162	208	--	410
24...	--	12	129	45	183	236	--	420
AUG.								
01...	--	15	135	54	209	262	--	500
07...	--	13	119	47	171	228	--	420
15...	--	12	111	42	138	184	--	390
21...	--	15	143	49	184	256	--	460
29...	--	14	138	43	175	232	--	450
SEP.								
06...	--	10	105	41	130	192	--	360
15...	--	13	129	48	177	232	--	460
21...	--	11	110	40	138	184	--	380
25...	--	10	113	38	155	196	--	400

09428510 POSTON WASTEWAY NEAR POSTON, ARIZ.--Continued

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.								
03...	122	830	1.13	400	246	2.8	1340	7.4
11...	142	930	1.26	440	276	3.0	1490	7.6
18...	152	1000	1.36	480	296	3.1	1620	7.5
24...	112	777	1.06	390	256	2.5	1280	7.8
30...	132	862	1.17	420	266	2.8	1400	7.6
NOV.								
06...	182	1140	1.55	540	324	3.4	1840	7.8
15...	118	782	1.06	370	232	2.8	1260	7.8
22...	108	768	1.04	360	229	2.7	1220	7.8
26...	178	1080	1.47	510	310	3.3	1750	7.8
DEC.								
08...	118	798	1.09	376	252	2.8	1280	7.8
13...	128	822	1.12	400	252	2.7	1330	7.8
20...	192	1190	1.62	550	340	3.6	1920	7.9
24...	132	888	1.21	420	272	2.9	1400	7.7
JAN.								
02...	158	1020	1.39	470	288	3.3	1600	7.8
10...	178	1100	1.50	520	315	3.4	1760	7.7
16...	127	844	1.15	400	258	2.9	1340	7.7
31...	212	1290	1.75	610	370	3.6	2060	7.8
FEB.								
07...	208	1290	1.75	625	379	3.5	2040	7.8
14...	132	843	1.15	400	252	2.9	1330	7.5
20...	117	798	1.09	380	239	2.8	1310	7.8
MAR.								
03...	146	1060	1.44	480	294	3.5	1630	7.5
14...	182	1200	1.63	560	337	3.6	1890	7.7
19...	172	1130	1.54	530	317	3.4	1780	7.8
26...	132	871	1.18	420	269	2.8	1380	7.7
APR.								
04...	142	979	1.33	450	280	3.3	1510	7.7
10...	232	1430	1.94	640	398	4.1	2170	7.5
17...	168	1130	1.54	530	336	3.4	1750	7.7
MAY								
01...	168	1200	1.63	570	347	3.4	1910	7.7
08...	202	1310	1.78	590	360	3.9	1990	7.5
16...	198	1310	1.78	600	364	3.8	2000	7.7
23...	192	1300	1.77	600	364	3.7	1980	7.7
28...	182	1150	1.56	530	326	3.5	1790	7.6
JUNE								
06...	152	1000	1.36	470	293	3.2	1520	7.6
11...	142	975	1.33	470	300	3.0	1520	7.5
18...	192	1230	1.67	565	338	3.7	1890	7.6
26...	188	1240	1.69	570	354	3.7	1890	7.7
JULY								
03...	198	1240	1.69	580	360	3.8	1880	7.6
11...	188	1220	1.66	565	345	3.6	1920	7.7
18...	152	995	1.35	460	290	3.3	1550	7.5
24...	162	1050	1.43	505	312	3.1	1640	7.8
AUG.								
01...	198	1240	1.69	560	345	3.8	1830	7.8
07...	168	1050	1.43	490	303	3.4	1630	7.8
15...	138	923	1.26	450	299	2.8	1410	7.8
21...	192	1170	1.59	560	350	3.4	1810	8.0
29...	172	1110	1.51	520	330	3.3	1700	8.1
SEP.								
06...	128	870	1.18	430	272	2.7	1330	8.1
15...	168	1110	1.51	520	330	3.4	1660	8.1
21...	138	909	1.24	440	289	2.9	1410	7.9
25...	142	956	1.30	440	280	3.2	1440	8.0

09429030 PALO VERDE DRAIN NEAR PARKER, ARIZ.

LOCATION.--Lat 33°45'25", long 114°29'48", in NE¼SW¼ sec.24, T.5 N., R.22 W., Yuma County, at bridge 0.5 mile upstream from mouth, 0.5 mile northeast of Palo Verde Dam, 9 miles north of Ehrenberg, and 31 miles southwest of Parker.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.,								
03...	--	17	116	41	124	196	--	360
11...	--	18	116	39	127	192	--	360
18...	--	18	111	42	128	192	--	370
24...	--	17	116	39	133	196	--	370
NOV.								
06...	--	17	121	38	136	200	--	380
15...	--	16	124	34	132	196	--	370
22...	--	16	119	40	133	196	--	370
26...	--	17	122	39	132	204	--	365
DEC.								
08...	--	16	114	40	125	200	--	350
13...	--	17	119	38	132	204	--	360
20...	--	18	119	40	134	202	--	370
24...	--	18	116	46	117	196	--	365
JAN.								
02...	--	26	119	40	134	202	--	370
10...	--	18	118	40	130	200	--	365
16...	--	17	119	45	128	202	--	370
24...	--	18	114	40	135	196	--	360
31...	--	17	122	35	135	192	--	370
FEB.								
07...	--	18	119	40	133	200	--	370
14...	--	20	122	38	141	200	--	380
20...	--	18	118	34	135	192	--	370
28...	--	11	111	41	153	203	--	412
MAR.								
14...	--	18	124	39	132	204	--	380
19...	--	16	124	39	135	204	--	380
26...	--	16	118	43	130	204	--	370
APR.								
04...	--	16	119	40	145	208	--	390
10...	--	26	126	38	150	208	--	400
17...	--	18	126	35	147	200	--	400
MAY								
01...	--	14	129	34	150	200	--	410
08...	--	20	113	39	147	196	--	400
16...	--	16	122	35	144	192	--	390
22...	35	16	129	41	156	204	--	430
28...	--	16	122	40	160	204	--	405
JUNE								
06...	--	16	121	38	152	196	--	400
11...	--	15	119	40	138	188	--	390
18...	--	17	118	40	157	192	--	400
26...	--	16	122	43	154	200	--	420
JULY								
03...	--	18	126	40	142	196	--	390
11...	--	17	118	44	145	196	--	400
18...	--	18	129	41	164	204	--	420
24...	--	16	122	40	144	200	--	390
AUG.								
01...	--	17	129	36	166	202	--	420
07...	--	17	127	40	169	204	--	420
15...	--	17	122	45	156	200	--	420
21...	--	17	132	44	165	208	--	430
29...	--	18	134	43	170	204	--	430
SEP.								
06...	--	18	130	46	158	208	--	420
15...	--	18	134	45	168	212	--	430
20...	--	18	134	45	169	212	--	440
26...	30	15	129	43	174	212	--	430

09429030 PALO VERDE DRAIN NEAR PARKER, ARIZ.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.								
03...	138	894	1.22	460	300	2.5	1450	7.5
11...	138	894	1.22	450	292	2.6	1450	7.8
18...	132	897	1.22	450	292	2.6	1420	7.8
24...	138	911	1.24	450	290	2.7	1470	8.0
NOV.								
06...	140	932	1.27	460	296	2.8	1470	7.7
15...	135	909	1.24	450	290	2.7	1430	7.8
22...	145	921	1.25	460	300	2.7	1450	7.8
26...	145	922	1.25	465	298	2.7	1470	7.9
DEC.								
08...	138	883	1.20	450	286	2.6	1420	7.9
13...	142	910	1.24	455	288	2.7	1440	7.7
20...	142	924	1.26	460	294	2.7	1450	7.7
24...	138	898	1.22	480	320	2.3	1410	7.7
JAN.								
02...	142	932	1.27	460	294	2.7	1430	7.7
10...	142	913	1.24	460	296	2.6	1430	7.7
16...	148	928	1.26	480	314	2.5	1480	7.7
24...	148	913	1.24	450	290	2.8	1420	7.8
31...	142	917	1.25	450	292	2.8	1430	7.7
FEB.								
07...	142	922	1.25	460	296	2.7	1450	7.9
14...	148	949	1.29	460	296	2.9	1460	7.8
20...	133	904	1.23	436	278	2.8	1410	7.8
28...	131	961	1.31	446	280	3.2	1490	7.6
MAR.								
14...	138	933	1.27	470	302	2.6	1470	7.7
19...	142	938	1.28	470	302	2.7	1460	7.8
26...	142	921	1.25	470	302	2.6	1460	7.7
APR.								
04...	142	956	1.30	460	290	2.9	1460	7.5
10...	148	992	1.35	470	300	3.0	1480	7.5
17...	142	968	1.32	460	296	3.0	1470	7.5
MAY								
01...	138	975	1.33	460	296	3.0	1490	7.9
08...	133	950	1.29	444	284	3.0	1440	7.7
16...	142	945	1.29	450	292	3.0	1440	7.9
22...	152	1030	1.40	490	322	3.1	1550	7.8
28...	162	1010	1.37	470	302	3.2	1560	7.6
JUNE								
06...	152	977	1.33	460	300	3.1	1450	7.8
11...	142	938	1.28	460	306	2.8	1470	7.9
18...	162	990	1.35	460	302	3.2	1510	7.7
26...	152	1010	1.37	480	316	3.1	1550	7.7
JULY								
03...	158	972	1.32	480	320	2.8	1500	7.5
11...	152	974	1.32	475	314	2.9	1540	7.6
18...	172	1050	1.43	490	322	3.2	1570	7.5
24...	152	964	1.31	470	306	2.9	1480	8.0
AUG.								
01...	162	1030	1.40	470	304	3.3	1510	8.0
07...	172	1050	1.43	480	312	3.4	1580	7.8
15...	162	1020	1.39	490	326	3.1	1540	8.2
21...	178	1070	1.46	510	340	3.2	1620	8.1
29...	188	1080	1.47	510	342	3.3	1650	8.2
SEP.								
06...	178	1050	1.43	515	344	3.0	1600	8.2
15...	188	1090	1.48	520	346	3.2	1670	8.1
20...	182	1090	1.48	520	346	3.2	1680	8.1
26...	182	1080	1.47	500	326	3.4	1600	8.2

09429060 LOWER MAIN DRAIN NEAR PARKER, ARIZ.

LOCATION.--Lat 33°45'40", long 114°29'05", in SW¼NW¼ sec.19, T.5 N., R.21 W., Yuma County, at gaging station 2.8 miles upstream from outlet to Colorado River and 31 miles south of Parker.
PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
03...	--	14	138	55	226	236	--	470
11...	--	16	177	48	314	264	--	555
18...	--	16	164	61	314	272	--	565
24...	--	16	151	59	295	260	--	545
NOV.								
01...	--	15	154	60	292	264	--	540
06...	--	15	162	62	318	280	--	570
15...	--	15	154	57	284	260	--	530
22...	--	16	170	55	311	280	--	560
26...	--	15	151	54	276	252	--	515
DEC.								
08...	--	15	146	55	253	252	--	485
13...	--	15	148	51	249	252	--	490
20...	--	15	150	57	286	248	--	535
24...	--	15	158	60	291	264	--	535
JAN., 1969								
02...	--	16	130	45	212	226	--	440
10...	--	15	150	57	292	264	--	535
16...	--	16	130	48	212	230	--	440
23...	--	20	194	70	421	336	--	670
31...	--	19	194	70	428	308	--	695
FEB.								
07...	--	20	210	65	417	320	--	695
14...	--	17	156	54	273	260	--	520
20...	--	13	146	48	241	248	--	470
28...	--	10	125	59	246	247	--	488
MAR.								
14...	--	15	154	56	286	272	--	535
19...	--	14	166	55	288	276	--	545
26...	--	13	158	53	284	260	--	520
APR.								
04...	--	17	162	60	325	280	--	590
10...	--	14	169	59	314	292	--	580
17...	--	15	167	54	290	280	--	570
MAY , 1969								
01...	--	11	151	54	277	268	--	540
08...	--	16	145	60	298	264	--	560
16...	--	14	164	59	301	284	--	580
22...	144	15	174	62	348	296	--	650
28...	--	15	170	60	339	288	--	605
JUNE								
06...	--	15	164	62	332	284	--	600
11...	--	13	162	62	292	280	--	580
18...	--	14	159	54	291	272	--	550
26...	--	14	158	59	296	276	--	570
JULY								
03...	--	16	162	60	301	284	--	580
11...	--	14	142	60	242	252	--	520
18...	--	19	178	70	333	308	--	620
24...	--	15	151	56	267	272	--	530
AUG.								
01...	--	15	161	57	311	282	--	570
07...	--	15	172	60	320	300	--	560
15...	--	14	170	60	311	284	--	590
21...	--	15	175	67	320	304	--	590
29...	--	14	148	58	269	260	--	530
SEP.								
06...	--	16	148	55	250	256	--	510
15...	--	13	132	56	248	244	--	510
20...	--	16	162	63	328	288	--	590
22...	267	12	150	55	291	256	--	530

09429060 LOWER MAIN DRAIN NEAR PARKER, ARIZ.--Continued

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
03...	268	1290	1.75	570	376	4.1	2130	7.7
11...	375	1620	2.20	640	424	5.4	2630	7.7
18...	378	1630	2.22	660	437	5.3	2700	7.8
24...	342	1540	2.09	620	407	5.2	2510	7.9
NOV.								
01...	345	1540	2.09	630	414	5.1	2550	7.7
06...	375	1640	2.23	660	430	5.4	2700	7.8
15...	335	1500	2.04	620	407	5.0	2430	7.9
22...	365	1620	2.20	650	420	5.3	2630	7.9
26...	325	1460	1.99	600	394	4.9	2380	7.7
DEC.								
08...	305	1380	1.88	590	384	4.5	2260	7.8
13...	288	1370	1.86	580	374	4.5	2240	7.8
20...	335	1500	2.04	610	406	5.0	2450	7.7
24...	355	1550	2.11	640	424	5.0	2500	7.8
JAN., 1969								
02...	232	1190	1.62	510	324	4.1	1920	7.8
10...	335	1520	2.07	610	394	5.1	2450	7.7
16...	238	1200	1.63	520	332	4.0	1950	7.8
23...	505	2050	2.79	770	494	6.6	3200	7.8
31...	515	2080	2.83	770	518	6.7	3310	7.7
FEB.								
07...	505	2070	2.82	790	528	6.4	3350	7.8
14...	318	1470	2.00	610	397	4.8	2380	7.8
20...	278	1320	1.80	560	356	4.4	2150	7.8
28...	270	1320	1.80	555	352	4.5	2150	7.6
MAR.								
14...	325	1510	2.05	615	392	5.0	2430	7.7
19...	335	1540	2.09	640	414	5.0	2490	7.7
26...	335	1490	2.03	610	397	5.0	2380	7.7
APR.								
04...	365	1660	2.26	650	420	5.5	2580	7.7
10...	358	1640	2.23	665	426	5.3	2590	7.7
17...	318	1550	2.11	640	410	5.0	2460	7.7
MAY , 1969								
01...	298	1460	1.99	600	380	4.9	2330	7.8
08...	325	1540	2.09	610	394	5.3	2370	7.7
16...	332	1590	2.16	650	417	5.1	2480	7.8
22...	375	1770	2.41	690	448	5.8	2790	7.7
28...	385	1720	2.34	670	434	5.7	2620	7.7
JUNE								
06...	375	1690	2.30	665	432	5.6	2590	7.7
11...	328	1580	2.15	660	430	4.9	2510	7.7
18...	325	1530	2.08	620	397	5.1	2360	7.7
26...	325	1560	2.12	635	408	5.1	2420	7.7
JULY								
03...	332	1590	2.16	650	417	5.1	2460	7.8
11...	268	1370	1.86	600	394	4.3	2180	7.7
18...	395	1770	2.41	730	478	5.4	2760	7.6
24...	292	1450	1.97	605	382	4.7	2240	7.8
AUG.								
01...	345	1600	2.18	635	404	5.4	2410	7.8
07...	385	1660	2.26	675	429	5.4	2590	7.8
15...	355	1640	2.23	670	437	5.2	2470	8.2
21...	385	1700	2.31	710	460	5.2	2600	8.1
29...	305	1450	1.97	610	397	4.7	2220	8.1
SEP.								
06...	282	1390	1.89	595	385	4.5	2140	8.1
15...	262	1340	1.82	560	360	4.6	2000	8.1
20...	375	1680	2.28	665	429	5.5	2510	8.2
22...	335	1500	2.04	600	390	5.2	2300	8.0

09429220 OUTFALL DRAIN NEAR PALO VERDE, CALIF.

LOCATION.--Lat 33°21'41", long 114°43'20", in SE¼SE¼ sec.26, T.9 S., R.21 E., San Bernardino Meridian, Imperial County, at gaging station at bridge on State Highway 78, 3.3 miles upstream from mouth and 5 miles south of Palo Verde.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
03...	--	18	140	49	419	312	--	555
11...	--	18	146	45	443	308	--	555
18...	--	19	154	43	459	324	--	585
24...	--	19	146	48	459	320	--	575
29...	--	18	138	50	444	320	--	560
NOV.								
06...	--	18	142	45	409	312	--	525
13...	--	18	122	52	393	276	--	555
22...	--	19	138	48	418	316	--	555
26...	--	19	126	52	459	284	--	615
DEC.								
07...	--	19	142	44	412	312	--	540
11...	--	19	137	45	409	306	--	560
13...	--	19	134	48	413	308	--	555
20...	--	20	137	51	431	312	--	580
24...	--	19	134	50	426	304	--	580
JAN., 1969								
02...	--	21	130	48	403	294	--	535
10...	--	19	146	55	479	336	--	605
16...	--	20	137	45	409	300	--	565
24...	--	20	142	49	469	324	--	575
29...	--	20	138	50	497	304	--	630
FEB.								
07...	--	19	142	48	459	312	--	585
14...	--	18	138	48	447	316	--	575
20...	--	18	138	48	397	312	--	545
28...	--	10	125	57	440	305	--	650
MAR.								
13...	--	18	135	49	380	308	--	535
27...	--	17	150	43	420	312	--	570
APR.								
05...	--	17	137	48	427	312	--	590
10...	--	16	135	45	394	300	--	560
17...	--	18	146	48	460	316	--	620
24...	--	15	146	45	442	320	--	610
MAY								
01...	--	16	154	37	429	312	--	590
08...	--	18	134	48	438	304	--	610
16...	--	16	140	49	436	312	--	600
21...	--	16	140	49	399	304	--	600
29...	585	16	146	45	461	320	--	610
JUNE								
06...	--	16	140	44	410	304	--	550
13...	--	16	135	47	419	312	--	590
17...	--	17	138	44	421	308	--	580
27...	--	17	138	48	425	320	--	580
JULY								
03...	--	20	138	48	443	316	--	580
09...	--	17	142	45	439	312	--	600
18...	--	19	138	48	443	312	--	610
24...	672	17	135	45	410	316	--	550
AUG.								
01...	--	17	137	46	428	318	--	590
07...	--	17	138	44	427	318	--	570
13...	--	17	138	48	430	316	--	580
22...	--	16	132	54	395	316	--	570
28...	--	18	135	52	436	312	--	590
SEP.								
06...	--	17	138	48	434	320	--	570
11...	643	17	145	58	501	328	--	640
20...	--	14	143	47	457	316	--	590
26...	--	16	127	66	417	312	--	590

09429220 OUTFALL DRAIN NEAR PALO VERDE, CALIF.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
03...	445	1780	2.42	550	294	7.8	2980	7.7
11...	485	1850	2.52	550	298	8.2	3030	7.7
18...	485	1910	2.60	560	294	8.4	3140	7.8
24...	495	1900	2.58	560	298	8.4	3180	7.8
29...	475	1840	2.50	550	288	8.2	3090	7.7
NOV.								
06...	445	1740	2.37	540	284	7.7	2860	7.8
13...	405	1680	2.28	520	294	7.5	2790	7.9
22...	435	1770	2.41	540	281	7.8	2910	7.8
26...	465	1880	2.56	530	297	8.7	3070	7.8
DEC.								
07...	435	1750	2.38	535	279	7.7	2860	7.9
11...	412	1740	2.37	525	274	7.8	2820	7.9
13...	425	1750	2.38	530	278	7.8	2840	7.9
20...	445	1820	2.48	550	294	8.0	2960	7.8
24...	435	1800	2.45	540	290	8.0	2940	7.9
JAN., 1969								
02...	425	1710	2.33	520	279	7.7	2780	7.8
10...	515	1990	2.71	590	314	8.6	3260	7.8
16...	412	1740	2.37	525	279	7.8	2820	7.8
24...	505	1920	2.61	555	290	8.7	3100	7.8
29...	515	2000	2.72	550	300	9.2	3210	7.8
FEB.								
07...	485	1890	2.57	550	294	8.5	3050	7.9
14...	465	850	1.16	540	281	8.4	2970	7.9
20...	412	1710	2.33	540	284	7.4	2870	7.8
28...	408	1840	2.50	545	295	8.2	2890	7.6
MAR.								
13...	395	1670	2.27	540	288	7.1	2770	7.7
27...	435	1790	2.43	550	294	7.8	2960	7.6
APR.								
05...	425	1800	2.45	540	284	8.0	2890	7.7
10...	388	1690	2.30	520	274	7.5	2690	7.7
17...	465	1920	2.61	560	301	8.4	3070	7.7
24...	435	1850	2.52	550	288	8.2	2980	7.7
MAY								
01...	425	1810	2.46	535	279	8.1	2870	7.9
08...	425	1820	2.48	530	280	8.3	2920	7.7
16...	438	1840	2.50	550	294	8.1	2970	7.8
21...	385	1740	2.37	550	300	7.4	2780	7.7
29...	465	1900	2.58	550	288	8.6	3050	7.8
JUNE								
06...	425	1740	2.37	530	280	7.7	2780	7.7
13...	405	1770	2.41	530	274	7.9	2820	7.8
17...	415	1770	2.41	525	272	8.0	2780	7.8
27...	425	1790	2.43	540	278	7.9	2890	7.7
JULY								
03...	455	1840	2.50	540	281	8.3	2980	7.8
09...	435	1830	2.49	540	284	8.2	2900	7.7
18...	435	1850	2.52	540	284	8.3	2920	8.0
24...	412	1730	2.35	520	261	7.8	2750	8.0
AUG.								
01...	415	1790	2.43	530	269	8.1	2780	7.9
07...	425	1780	2.42	525	264	8.1	2800	7.9
13...	435	1810	2.46	540	281	8.0	2860	8.1
22...	395	1720	2.34	550	291	7.3	2680	7.9
28...	445	1830	2.49	550	294	8.1	2900	7.8
SEP.								
06...	445	1810	2.46	540	278	8.1	2840	8.0
11...	535	2060	2.80	600	331	8.9	3100	8.1
20...	475	1880	2.56	550	291	8.5	2920	8.0
26...	445	1820	2.48	590	334	7.5	2750	8.1

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, ARIZ.

LOCATION.--Lat 32°43'22", long 114°32'46", in SE¼NE¼ sec.19, T.8 S., R.22 W., Yuma County, on left bank 0.6 mile upstream from Gila River, 5 miles east of Yuma, 9 miles downstream from Laguna Dam, 12 miles upstream from northerly international boundary, and 14 miles downstream from Imperial Dam.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
07...	--	13	105	36	179	204	--	360
14...	--	--	103	40	--	204	--	--
21...	--	--	105	38	--	208	--	--
28...	--	--	95	40	--	192	--	--
NOV.								
04...	--	12	98	35	159	188	--	340
12...	--	--	102	40	--	208	--	--
18...	--	--	103	37	--	192	--	--
25...	--	--	102	40	--	200	--	--
DEC.								
02...	--	12	106	38	171	196	--	365
09...	--	--	97	41	--	192	--	--
16...	--	--	100	37	--	180	--	--
24...	--	--	92	39	--	168	--	--
30...	--	--	102	43	--	200	--	--
JAN., 1969								
06...	--	12	108	37	179	208	--	360
13...	--	--	105	38	--	210	--	--
20...	--	--	106	40	--	208	--	--
27...	--	--	111	42	--	224	--	--
FEB.								
03...	--	14	111	40	199	220	--	370
10...	--	--	113	36	--	204	--	--
17...	--	--	110	33	--	196	--	--
24...	--	--	106	38	--	204	--	--
MAR.								
03...	--	11	108	37	187	204	--	380
10...	--	--	97	38	--	168	--	--
17...	--	--	108	41	--	212	--	--
24...	--	--	103	40	--	196	--	--
APR.								
07...	--	10	105	38	177	208	--	390
14...	--	--	110	35	--	200	--	--
21...	--	--	97	38	--	184	--	--
28...	--	--	106	35	--	192	--	--
MAY								
05...	--	10	111	40	192	208	--	400
12...	--	--	111	36	--	200	--	--
19...	--	--	110	38	--	204	--	--
26...	--	--	111	35	--	204	--	--
JUNE								
02...	--	9.0	105	41	179	208	--	390
09...	--	--	105	36	--	204	--	--
16...	--	--	97	38	--	184	--	--
23...	--	--	106	40	--	200	--	--
30...	--	--	108	37	--	196	--	--
JULY								
07...	--	13	106	40	182	200	--	390
14...	--	--	110	35	--	200	--	--
22...	--	--	103	40	--	196	--	--
28...	--	--	102	33	--	188	--	--
AUG.								
04...	--	12	102	38	186	196	--	400
11...	--	--	108	44	--	192	--	--
18...	--	--	100	44	--	192	--	--
25...	--	--	106	40	--	192	--	--
SEP.								
02...	--	12	110	38	168	192	--	380
08...	--	--	105	41	--	196	--	--
15...	--	--	103	45	--	212	--	--
22...	--	--	114	43	--	212	--	--
29...	--	--	105	41	--	200	--	--

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, ARIZ.--Continued

DRAINAGE AREA.--185,000 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
REMARKS.--Unpublished chemical analyses for water years 1968-69 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO (SAR)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
07...	182	977	1.33	410	242	3.8	1610	7.8
14...	192	984	1.34	420	252	--	1640	7.7
21...	182	984	1.34	420	250	--	1640	7.7
28...	178	924	1.26	400	242	--	1540	7.8
NOV.								
04...	162	900	1.22	390	236	3.5	1490	7.8
12...	182	978	1.33	420	250	--	1630	7.7
18...	178	954	1.30	410	252	--	1590	7.7
25...	178	936	1.27	420	256	--	1560	7.8
DEC.								
02...	178	968	1.32	420	260	3.6	1570	7.8
09...	168	918	1.25	410	252	--	1530	7.8
16...	162	888	1.21	400	252	--	1480	7.7
24...	158	858	1.17	390	252	--	1430	7.8
30...	192	990	1.35	430	266	--	1650	7.8
JAN., 1969								
06...	188	988	1.34	420	250	3.8	1660	7.8
13...	188	972	1.32	420	248	--	1620	7.8
20...	178	960	1.31	430	260	--	1620	7.8
27...	208	1060	1.44	450	266	--	1760	7.8
FEB.								
03...	218	1060	1.44	440	260	4.1	1700	7.8
10...	202	978	1.33	430	262	--	1630	7.8
17...	188	954	1.30	410	250	--	1590	7.8
24...	172	942	1.28	420	252	--	1570	7.9
MAR.								
03...	188	1010	1.37	420	252	4.0	1620	7.8
10...	178	972	1.32	400	262	--	1620	7.8
17...	188	996	1.35	440	266	--	1660	7.9
24...	162	918	1.25	420	260	--	1530	7.7
APR.								
07...	162	986	1.34	420	250	3.8	1530	7.8
14...	188	942	1.28	420	256	--	1570	7.6
21...	148	846	1.15	400	249	--	1410	7.9
28...	152	894	1.22	410	252	--	1490	7.7
MAY								
05...	192	1050	1.43	440	270	4.0	1620	7.9
12...	168	960	1.31	425	261	--	1600	7.6
19...	168	978	1.33	430	262	--	1630	7.6
26...	162	948	1.29	420	252	--	1580	7.7
JUNE								
02...	172	1000	1.36	430	260	3.8	1590	7.8
09...	172	942	1.28	410	242	--	1570	7.8
16...	148	870	1.18	400	249	--	1450	7.7
23...	178	942	1.28	430	266	--	1570	7.7
30...	168	924	1.26	420	260	--	1540	7.8
JULY								
07...	182	1010	1.37	430	266	3.8	1570	7.8
14...	162	924	1.26	420	256	--	1540	7.8
22...	172	906	1.23	420	260	--	1510	8.1
28...	168	888	1.21	392	238	--	1480	8.1
AUG.								
04...	168	1000	1.36	410	250	4.0	1580	7.9
11...	168	918	1.25	450	292	--	1530	7.9
18...	178	906	1.23	430	272	--	1510	8.1
25...	178	912	1.24	430	272	--	1520	7.9
SEP.								
02...	172	976	1.33	430	272	3.5	1520	8.2
08...	208	990	1.35	430	270	--	1650	8.2
15...	188	972	1.32	440	266	--	1620	8.1
22...	218	996	1.35	460	286	--	1660	8.1
29...	188	966	1.31	430	266	--	1610	8.1

09430500 GILA RIVER NEAR GILA, N. MEX.

LOCATION.--Lat 33°03'40", long 108°32'12", in NE¼NW¼ sec.30, T.14 S., R.16 W., Grant County, at gaging station at Hooker Dam site, 1.6 miles upstream from Mogollon Creek and 7 miles northeast of Gila.

DRAINAGE AREA.--1,864 sq mi.

PERIOD OF RECORD.--Chemical analyses: June 1963 to July 1967, November 1968 to April 1969 (discontinued).
Water temperatures: July 1959 to July 1967.
Sediment records: July 1959 to July 1967.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, NOVEMBER 1968 TO APRIL 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.										
25...	1030	55	35	26	5.1	35	124	0	30	16
APR.										
23...	0840	93	8.9	18	5.6	25	89	0	25	12

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
NOV.									
25...	2.8	.0	211	E6	0	1.6	313	7.5	8.0
APR.									
23...	2.4	.2	141	68	0	1.3	246	7.1	14.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC COND-UCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
25...	0940	56	312	--	8.0	10.6	.6	--	A140	--
JAN.										
24...	0945	86	290	8.4	7.0	10.5	.5	--	A4	--
FEB.										
24...	0930	72	285	8.0	7.0	10.9	.4	<10	A360	<10
MAR.										
26...	0845	120	260	6.9	5.0	9.6	1.1	<1	A38	<1
APR.										
23...	0850	92	245	8.1	14.0	8.8	1.0	--	2000	--

A ANALYZED BY U.S. GEOLOGICAL SURVEY.

09430600 MOGOLLON CREEK NEAR CLIFF, N. MEX.
(Hydrologic bench-mark station)

LOCATION.--Lat 33°10'01", long 108°38'58", in SE¼ sec.13, T.13 S., R.18 W., Grant County, at gaging station 12 miles upstream from mouth and 14.2 miles north of Cliff.

DRAINAGE AREA.--69 sq mi.

PERIOD OF RECORD.--Chemical analyses: February 1967 to September 1969.
Sediment records: October 1968 to September 1969 (partial records).

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)
OCT.									
24...	1030	1.2	18	20	20	2.2	7.2	1.0	72
NOV.									
22...	1630	2.2	--	--	18	2.4	--	--	65
25...	1150	2.1	17	20	18	1.9	6.7	.9	62
DEC.									
16...	1115	2.3	17	10	22	2.2	6.1	.8	50
JAN.									
24...	1200	22	17	10	12	1.5	5.0	.7	32
FEB.									
24...	1200	10	17	0	12	1.7	4.8	.9	36
MAR.									
26...	1100	28	17	0	10	1.2	3.8	.5	30
APR.									
23...	1100	22	17	0	8.0	1.0	3.5	.5	25
JULY									
31...	0940	1.4	20	70	15	2.8	6.8	1.2	59
AUG.									
27...	1415	1.2	22	10	16	2.9	6.8	1.2	59
SEP.									
24...	0830	1.4	17	0	16	3.1	7.2	1.3	64

DATE	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	TOTAL NITRO-GEN (N) (MG/L)	NITRATE (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)
OCT.									
24...	0	15	1.5	.4	.00	.1	.040	10	102
NOV.									
22...	0	--	1.3	--	--	--	--	--	94
25...	0	15	1.4	.4	.02	.1	.030	0	92
DEC.									
16...	0	35	1.2	.5	--	.0	.030	30	116
JAN.									
24...	0	17	1.1	.5	--	.1	.020	20	80
FEB.									
24...	0	16	1.0	.4	--	.0	.010	20	73
MAR.									
26...	0	14	.8	.4	--	.0	.000	0	66
APR.									
23...	0	10	.5	.4	--	.0	.000	0	56
JULY									
31...	0	13	1.0	.5	--	.0	.020	20	89
AUG.									
27...	2	10	1.5	.5	--	.0	.050	10	94
SEP.									
24...	0	14	1.2	.5	--	.0	.050	20	93

DATE	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)
OCT.								
24...	101	59	0	.4	147	7.3	11.0	3
NOV.								
22...	--	55	2	--	138	7.5	6.0	--
25...	92	53	2	.4	136	7.5	7.0	5
DEC.								
16...	110	64	23	.3	166	6.9	4.0	5
JAN.								
24...	71	36	10	.4	98	7.0	4.0	5
FEB.								
24...	72	37	8	.3	100	7.0	5.0	5
MAR.								
26...	63	30	6	.3	84	6.9	6.0	3
APR.								
23...	53	24	4	.3	68	7.1	12.0	10
JULY								
31...	89	47	0	.4	124	7.3	21.0	6
AUG.								
27...	92	52	0	.4	127	8.5	27.0	0
SEP.								
24...	91	52	0	.4	131	7.8	14.0	3

09430600 MOGOLLON CREEK NEAR CLIFF, N. MEX.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECIFIC CONDUCTANCE (MICROMHOS)	FIELD PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	DIS-SOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (MG/L)	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	IMMEDIATE COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)
OCT.												
24...	1030	1.3	185	8.5	11.0	3	9.8	--	.3	--	67	--
NOV.												
25...	1150	2.2	132	7.7	7.0	5	10.5	--	.6	--	88	--
JAN.												
24...	1200	23	115	8.1	4.0	5	10.8	--	.3	--	9	--
FEB.												
24...	1200	10	120	7.4	5.0	5	10.8	--	.3	<10	43	<10
MAR.												
26...	1100	28	80	7.2	6.0	3	10.4	--	1.0	<1	37	<1
APR.												
23...	1100	22	78	7.6	12.0	10	8.8	--	.6	<10	16	<10
JULY												
31...	0940	1.4	130	--	21.0	6	7.2	--	.6	<10	300	<10
AUG.												
27...	1415	1.2	125	7.8	27.0	0	7.4	--	1.6	<10	1000	<10
SEP.												
24...	0830	1.0	250	--	14.0	3	8.3	5	1.3	<10	32	115

SPECTROGRAPHIC AND RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-SOLVED ALUMINUM (AL) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	DIS-SOLVED BERYLLIUM (BE) (UG/L)	DIS-SOLVED BISMUTH (BI) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)
OCT.										
24...	1030	60	0	17	.2	<4	<40	7	.2	4
APR.										
23...	1100	50	--	7	.4	<1	<10	<1	.4	2

DATE	DIS-SOLVED GERMANIUM (GE) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED LITHIUM (LI) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	DIS-SOLVED MOLYBDENUM (MO) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	DIS-SOLVED RUBIDIUM (RB) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED STRONTIUM (SR) (UG/L)	DIS-SOLVED TIN (SN) (UG/L)
OCT.										
24...	<8	2	3	5	1	<3	2	.4	170	<4
APR.										
23...	<2	0	0	3	0	1	0	.1	30	<1

DATE	DIS-SOLVED TITANIUM (TI) (UG/L)	DIS-SOLVED VANADIUM (V) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	DIS-SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS-PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS-SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS-PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS-SOLVED RADIUM 226 (RA) (PC/L)	DIS-SOLVED NATURAL URANIUM (U) (UG/L)
OCT.									
24...	1	2.0	<170	<.4	<.4	1.6	.7	.0	.08
APR.									
23...	2	.7	<40	1.1	<.4	1.2	<.4	.0	<.01

09430600 MOGOLLON CREEK NEAR CLIFF, N. MEX.--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	ALDRIN (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DI-ELDRIN (UG/L)
OCT. 24...	1030	8.0	.00	.00	.00	.00	.00
APR. 23...	1100	5.0	.00	.00	.00	.00	.00

DATE	ENDRIN (UG/L)	HEPTA-CHLOR (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
OCT. 24...	.00	.00	.00	.00	.00	.00
APR. 23...	.00	.00	.00	.00	.00	.00

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
OCT 24, 1968	1100	11.	1.5	1	0
FEB 24, 1969	1300	10.	11	9	.27
MAR 26.....	1230	7.	31	9	.75
APR 23.....	1110	13.	23	1	.06
JUL 31.....	0955		1.4	4	.02
AUG 27.....	1500	27.	1.2	2	.01
SEP 24.....	0830	14.	1.4	12	.05

09431500 GILA RIVER NEAR REDROCK, N. MEX.

LOCATION.--Lat 32°43'30", long 108°40'30", in W½ sec.23, T.18 S., R.18 W., Grant County, at gaging station 0.2 mile downstream from Copper Canyon, 0.2 mile (revised) upstream from lower end of Box Canyon, 4.7 miles northeast of Redrock, and 14 miles downstream from Mangas Creek.

DRAINAGE AREA.--2,829 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1967 to January 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.											
31...	1100	36	34	53	8.3	--	45	--	242	0	38
NOV.											
26...	1035	87	36	48	6.6	--	41	--	210	0	35
DEC.											
12...	1115	84	34	44	7.3	--	40	--	200	0	34
JAN.											
29...	1115	163	32	33	5.2	--	29	--	137	0	28
FEB.											
12...	1000	103	33	38	5.8	--	37	--	170	0	32
MAR.											
17...	1030	95	32	35	6.6	--	40	--	180	0	33
APR.											
08...	1500	198	33	31	5.0	26	--	1.9	130	0	26
MAY											
07...	1350	89	33	36	9.7	--	41	--	180	0	31
JUNE											
30...	1130	16	32	41	11	--	48	--	216	0	38
JULY											
18...	1100	48	33	47	8.9	40	--	4.3	217	0	36
AUG.											
04...	0930	19	33	50	14	--	49	--	263	0	39
18...	1130	32	27	40	7.8	--	29	--	176	0	27
SEP.											
09...	1115	143	32	46	7.5	--	29	--	190	0	29

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.										
31...	14	2.1	.1	314	166	0	1.5	486	7.2	12.0
NOV.										
26...	15	2.3	.1	287	147	0	1.5	443	7.6	7.0
DEC.										
12...	16	2.3	.1	276	140	0	1.5	427	7.4	7.0
JAN.										
29...	14	2.0	.1	210	104	0	1.2	317	7.9	6.0
FEB.										
12...	15	2.3	.1	247	119	0	1.5	374	8.0	7.0
MAR.										
17...	16	2.3	.3	256	123	0	1.6	382	7.8	8.0
APR.										
08...	13	1.9	.3	202	98	0	1.1	297	7.2	15.0
MAY										
07...	16	2.2	.3	258	130	0	1.6	380	7.9	12.0
JUNE										
30...	20	2.3	.8	299	147	0	1.7	446	7.5	27.0
JULY										
18...	14	2.0	4.5	297	154	0	1.4	446	7.9	26.0
AUG.										
04...	18	2.1	.2	334	181	0	1.6	497	7.8	24.0
18...	12	1.2	3.3	234	132	0	1.1	350	7.7	23.0
SEP.										
09...	13	1.4	2.3	253	146	0	1.1	383	7.3	23.0

09433500 SUNSET CANAL ABOVE NEW MEXICO-ARIZONA STATE LINE, N. MEX.

LOCATION.--Lat 32°41'42", long 109°02'48", in NW¼SW¼ sec.31, T.18 S., R.21 W., Hidalgo County, north of U.S. Highway 70, 2.8 miles west of Virden.

PERIOD OF RECORD.--Chemical analyses: August 1969.

CHEMICAL ANALYSES, AUGUST 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
AUG. 27...	0820	1.1	46	92	16	152	3.6	519	0	114	41

DATE	DIS-SOLVED FLUC-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
AUG. 27...	A2.2	32	745	754	300	0	3.8	B1150	C7.6	18.0

A INCLUDES 0.2 MG/L DISSOLVED OXYGEN.
B FIELD DETERMINATION, 1100 MICROMHOS.
C FIELD DETERMINATION, 7.1 UNITS.

09436500 NEW MODEL CANAL ABOVE NEW MEXICO-ARIZONA STATE LINE, N. MEX.

LOCATION.--Lat 32°40'54", long 109°02'48", in NW¼SW¼ sec.6, T.18 S., R.21 W., Hidalgo County, north of U.S. Highway 70, upstream from New Mexico-Arizona State line, and 2.8 miles west of Virden.

PERIOD OF RECORD.--Chemical analyses: July to September 1969.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, JULY TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
JULY											
30...	1215	--	36	67	14	71	3.2	300	0	83	30
SEP.											
23...	1400	5.3	36	88	18	80	4.7	353	0	117	38

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
JULY										
30...	--	4.4	437	457	222	0	2.1	712	7.5	17.0
SEP.										
23...	1.8	.2	546	556	298	8	2.0	860	7.6	17.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC COND-UCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMP-ERATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY										
30...	1215	--	750	--	17.0	1.7	.4	<100	<100	<100
AUG.										
27...	1140	--	820	--	17.0	--	--	--	--	--
SEP.										
23...	1400	5.3	1000	8.2	17.0	4.2	--	<10	500	10

09438000 GILA RIVER ABOVE NEW MEXICO-ARIZONA STATE LINE, N. MEX.

LOCATION.--Lat 32°41'12", long 109°02'50", in SE¼NW¼NE¼ sec.6, T.19 S., R.21 W., Hidalgo County, at State line, 2.8 miles west of Virden, N. Mex., and 3.5 miles southeast of Duncan, Ariz.

DRAINAGE AREA.--3,349 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969.

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.											
03...	0830	30	34	54	10	--	56	--	276	0	45
NOV.											
06...	1215	100	34	54	9.8	--	44	--	248	0	42
DEC.											
05...	1400	200	33	50	8.5	--	43	--	234	0	39
JAN.											
10...	1315	250	33	46	8.5	--	36	--	213	0	38
FEB.											
07...	1515	300	33	41	8.1	--	30	--	180	0	35
JULY											
30...	1105	--	35	46	9.0	43	--	3.9	224	6	39
AUG.											
27...	1100	12	33	48	8.7	43	--	4.5	240	0	39
SEP.											
23...	1345	32	36	46	8.5	41	--	5.1	191	10	33

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.											
03...	14	2.0	.0	--	351	177	0	1.8	542	7.7	16.0
NOV.											
06...	12	2.1	1.2	--	321	175	0	1.4	515	7.5	13.0
DEC.											
05...	10	2.2	.4	--	301	160	0	1.5	483	7.6	10.0
JAN.											
10...	8.8	.5	.3	--	276	150	0	1.3	455	7.6	10.0
FEB.											
07...	8.4	2.1	.2	--	247	136	0	1.1	412	7.6	11.0
JULY											
30...	15	--	1.5	303	308	155	0	1.5	477	8.5	24.0
AUG.											
27...	15	1.9	2.0	300	313	156	0	1.5	488	8.1	26.0
SEP.											
23...	16	2.2	.2	288	252	141	0	1.5	430	8.5	26.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC COND-UCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY										
30...	1105	50	480	--	24.0	6.9	2.3	<10	3700	<10
AUG.										
27...	1100	12	480	8.1	26.0	6.8	--	--	--	--
SEP.										
23...	1345	32	300	7.6	26.0	7.3	--	<10	500	10

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, N. MEX.

LOCATION.--Lat 33°14'50", long 108°52'45", in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, at gaging station 0.2 mile upstream from hot springs, 5 miles south of Glenwood, 6 miles downstream from Whitewater Creek, and at mile 64.6.

DRAINAGE AREA.--1,653 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1963 to September 1969.
Sediment records: April 1963 to July 1967 (partial records).

REMARKS.--Bacteriological data furnished by New Mexico Public Health Laboratory.

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.												
23...	1045	25	36	--	40	9.0	--	23	--	200	0	12
NOV.												
26...	1430	25	35	--	40	8.3	--	23	--	200	0	12
DEC.												
24...	1130	23	35	--	40	8.5	--	25	--	205	0	11
JAN.												
15...	1345	40	35	--	42	7.5	--	27	--	211	0	11
FEB.												
06...	1245	38	33	--	40	8.9	--	23	--	200	6	12
MAR.												
19...	1030	29	34	--	36	11	--	24	--	204	0	9.0
APR.												
03...	0900	49	32	0	36	9.2	20	--	1.9	180	0	13
MAY												
14...	1130	37	33	--	30	7.8	--	20	--	162	0	12
JUNE												
13...	0840	27	34	--	31	7.9	--	18	--	161	0	12
JULY												
07...	1530	32	36	0	31	11	22	--	2.6	184	0	13
31...	1330	260	38	--	37	9.4	38	--	3.4	189	0	13
AUG.												
05...	0840	38	33	--	32	7.3	--	18	--	161	0	11
28...	0830	320	36	--	35	8.4	29	--	2.6	162	8	12
SEP.												
09...	1045	292	29	--	50	9.6	--	16	--	212	0	17
24...	1100	33	35	--	36	8.8	21	--	2.4	191	0	11

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CON-DUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
23...	5.7	.4	.5	--	--	225	137	0	.8	348	7.4	13.0
NOV.												
06...	5.0	.5	.3	--	--	222	134	0	.9	345	7.6	8.0
DEC.												
24...	5.7	.4	.1	--	--	227	135	0	.9	346	7.3	7.0
JAN.												
15...	5.6	.5	1.0	--	--	234	136	0	1.0	349	7.4	14.0
FEB.												
06...	5.3	.5	.4	--	--	227	136	0	.9	343	8.3	11.0
MAR.												
19...	4.8	.3	.2	--	--	219	133	0	.9	341	7.7	12.0
APR.												
03...	7.6	.4	.3	40	--	209	128	0	.8	318	7.4	12.0
MAY												
14...	3.7	.3	.2	--	--	187	107	0	.9	277	7.4	19.0
JUNE												
13...	3.3	.3	.1	--	--	186	110	0	.8	282	7.3	--
JULY												
07...	5.6	.4	1.1	40	--	213	121	0	.9	319	7.8	29.0
31...	35	--	.8	--	264	268	132	0	1.4	430	8.0	26.0
AUG.												
05...	3.5	.3	.7	--	--	185	110	0	.8	282	7.4	19.0
28...	21	.5	2.3	--	226	235	124	0	1.1	372	8.7	18.0
SEP.												
09...	2.4	.5	1.2	--	--	230	163	0	.5	351	7.9	19.0
24...	5.0	.4	1.2	--	210	214	136	0	.8	320	8.2	14.0

DATE	TIME	DIS-CHARGE (CFS)	FIELD SPECI-FIC CON-DUCTANCE (MICRO-MHOS)	FIELD PH (UNITS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	CHEM-ICAL OXYGEN DEMAND (MG/L)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)
JULY											
31...	1330	260	420	--	26.0	6.5	--	1.3	<10	140	<10
AUG.											
28...	0830	320	450	7.8	18.0	7.4	--	1.4	<10	10300	<10
SEP.											
24...	1100	33	360	8.8	14.0	7.9	2	.8	<10	1000	10

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.

LOCATION.--Lat 32°52'06", long 109°30'38", in SE¼NE¼ sec.31, T.6 S., R.28 E., Graham County, at gaging station 0.6 mile downstream from intake of Brown Canal, 8 miles northeast of Solomon, and 17 miles downstream from San Francisco River.

DRAINAGE AREA.--7,898 sq mi.

PERIOD OF RECORD.--Specific conductance: January 1965 to September 1969.
Water temperatures: January 1965 to September 1969.
Sediment records: February 1965 to September 1969.

EXTREMES.--1968-69:
Specific conductance: Maximum daily, 1,800 micromhos June 29, 30, July 12; minimum daily, 300 micromhos Sept. 2.
Water temperatures: Maximum, 34.0°C June 28, July 2; minimum, 3.0°C Dec. 22.
Sediment concentrations: Maximum daily, 33,800 mg/l Sept. 2; minimum daily, 5 mg/l June 23.
Sediment loads: Maximum daily, 84,600 tons Sept. 2; minimum daily, 0.59 ton June 23.

Period of record:
Specific conductance (1967-69): Maximum daily, 1,800 micromhos June 29, 30, July 12, 1969; minimum daily, 260 micromhos Feb. 15, 28, 29, Apr. 4, 1968.
Water temperatures (1967-69): Maximum, 34.0°C June 28, July 2, 1969; minimum, 2.0°C Dec. 20, 21, 1967.
Sediment concentrations: Maximum daily, 52,000 mg/l July 28, 1967; minimum daily, 5 mg/l June 23, 1969.
Sediment loads: Maximum daily, 1,900,000 tons Dec. 23, 1965; minimum daily, 0.59 ton June 23, 1969.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	1200	950	900	690	990	890	1000	1400	1700	950	370
2	1300	1200	950	900	730	980	850	1000	1400	1620	880	300
3	1300	1200	950	900	730	980	800	1000	1400	1680	800	510
4	1200	1200	950	900	780	980	780	1050	1300	1600	860	510
5	1200	1200	950	900	790	980	720	1000	1300	1620	1200	440
6	1100	900	950	900	790	980	710	950	1300	1640	1000	640
7	1100	1100	950	1000	810	950	700	900	1400	1600	1020	730
8	1150	1100	950	950	810	950	700	925	1400	1640	960	500
9	1200	1100	950	900	860	910	680	925	1400	1640	700	560
10	1200	1200	930	900	830	880	700	1000	1400	1640	1120	460
11	1200	1100	1000	900	890	910	720	1000	1400	1600	1120	510
12	1200	1100	1000	860	860	910	730	1050	1400	1800	1150	510
13	1250	1100	1000	900	880	930	780	1050	1400	1350	1200	--
14	1250	1100	1000	900	860	930	780	1000	1400	1600	1150	480
15	1250	1000	950	790	890	960	800	1000	1400	650	820	600
16	1300	900	950	790	900	960	810	1000	1400	1050	1000	450
17	1250	950	950	800	900	960	810	1100	1500	960	1000	610
18	1250	1000	1000	820	900	990	840	1100	1600	700	1050	650
19	1200	1000	1000	840	900	1000	840	1100	1600	860	1100	750
20	1200	1000	1000	840	940	1010	890	1150	1500	1000	1200	840
21	1200	1000	1000	840	940	1010	910	1150	1500	920	1200	1000
22	1200	1000	1000	830	960	1000	910	1150	1500	800	1210	1000
23	1200	1000	1000	840	960	960	910	1200	1500	1100	1190	1010
24	1200	1000	1000	790	960	790	950	1200	1500	1100	1220	1010
25	1200	1000	950	800	960	900	900	1250	1600	820	1200	1100
26	1200	1000	980	790	960	880	950	1250	1450	560	1080	1080
27	1200	1000	450	780	980	890	975	1200	1490	700	950	1100
28	1200	1000	700	680	1000	880	975	1250	1780	800	1000	1150
29	1100	1000	820	680	--	900	1000	1250	1800	785	1000	1150
30	1200	1000	850	680	--	910	1000	1250	1800	880	780	1300
31	1200	--	900	690	--	900	--	1250	--	1000	820	--
AVG	1210	1060	934	838	873	940	833	1090	1470	1210	1030	735

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	19	20	20	25	25	25	17	17	--	24	19	17	17	18	17	13	11	11	13	21	21	21	19	17	20	19	14	13	18	14	13	18
NOVEMBER.	14	20	18	13	12	11	12	11	10	10	9	10	12	13	12	14	11	11	12	11	11	11	11	11	10	11	12	8	8	8	--	12
DECEMBER.	8	10	10	6	9	10	10	10	10	11	11	11	10	10	11	8	8	8	7	8	4	3	6	6	8	8	7	7	7	9	9	8
JANUARY..	10	10	10	9	9	7	9	9	9	8	11	8	11	10	11	12	11	12	13	14	13	13	12	11	12	13	14	12	10	5	9	11
FEBRUARY.	8	9	10	9	9	7	10	10	10	12	13	13	13	13	15	13	9	12	8	8	8	10	8	7	8	13	11	13	--	--	--	10
MARCH....	14	13	13	11	12	15	10	12	11	10	14	14	15	12	13	14	13	11	16	17	17	15	17	12	18	18	19	20	20	22	20	15
APRIL....	17	19	16	15	17	18	20	15	21	20	15	18	17	17	21	18	17	22	17	19	20	22	21	18	20	18	22	23	22	25	--	19
MAY.....	25	24	23	21	17	17	15	19	16	22	25	24	24	25	26	20	26	27	26	26	27	27	29	27	27	28	30	25	28	29	23	24
JUNE.....	28	27	19	29	29	30	29	28	27	22	26	26	29	28	26	21	28	29	31	29	25	28	29	30	30	31	32	34	27	28	--	28
JULY.....	26	34	30	29	31	31	29	32	31	30	28	31	32	29	25	30	26	30	28	25	24	26	30	32	30	28	24	25	30	25	29	29
AUGUST...	28	26	25	30	30	24	25	28	25	28	25	30	30	26	25	27	24	23	29	28	28	27	28	24	28	27	25	27	24	24	24	27
SEPTEMBER	23	23	27	28	28	27	28	22	27	27	25	22	--	25	19	25	26	26	26	25	21	20	25	26	27	24	26	25	25	26	--	25

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	83	18	4.0	92	11	2.7	176	128	61
2	83	16	3.6	90	13	3.2	176	135	64
3	80	31	6.7	90	9	2.2	172	134	62
4	94	30	7.6	98	10	2.6	188	115	58
5	97	19	5.0	105	10	2.8	189	140	71
6	88	22	5.2	108	16	4.6	189	99	50
7	97	32	8.4	108	13	3.8	185	98	49
8	114	29	8.9	115	12	3.7	181	126	62
9	108	23	6.7	118	31	9.8	181	90	44
10	91	22	5.4	118	20	6.4	186	91	46
11	88	19	4.5	118	21	6.7	181	86	42
12	88	18	4.3	118	29	9.2	168	130	59
13	83	29	6.5	122	30	9.9	160	69	30
14	77	16	3.3	160	73	32	155	63	26
15	72	14	2.7	253	463	316	177	78	37
16	74	11	2.2	228	582	358	189	84	43
17	77	11	2.3	214	248	143	188	73	37
18	85	11	2.5	200	124	67	179	88	42
19	85	15	3.4	190	127	65	172	47	22
20	93	18	4.5	186	152	76	152	52	21
21	96	13	3.3	190	242	124	143	53	20
22	100	13	3.5	209	223	126	135	53	19
23	97	13	3.4	186	145	73	127	49	17
24	101	15	4.1	172	145	67	127	56	19
25	97	14	3.6	176	145	69	127	79	27
26	97	15	3.9	163	174	76	155	66	28
27	94	10	2.5	190	203	104	413	2080	2600
28	95	10	2.6	181	144	70	274	650	481
29	92	12	3.0	176	126	60	241	172	112
30	92	10	2.5	176	110	52	235	172	109
31	92	8	2.0	--	--	--	210	144	82
TOTAL	2810	--	132.1	4650	--	1945.6	5731	--	4440

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	191	121	62	331	262	234	154	25	10
2	190	106	54	314	215	182	165	28	12
3	190	99	51	308	184	153	167	31	14
4	186	109	55	294	168	133	168	35	16
5	176	100	48	282	148	113	179	36	17
6	176	117	56	276	144	107	193	31	16
7	172	99	46	265	111	79	197	34	18
8	163	103	45	265	80	57	202	32	17
9	155	90	38	263	73	52	202	33	18
10	151	78	32	251	57	39	202	24	13
11	147	69	27	240	78	50	190	25	13
12	151	80	33	223	98	59	184	21	10
13	151	84	34	227	89	54	189	32	16
14	163	100	44	227	60	37	180	21	10
15	186	131	66	211	68	39	180	21	10
16	225	146	89	203	79	43	171	28	13
17	214	121	70	203	82	45	163	26	11
18	214	114	66	203	102	56	141	31	12
19	205	136	75	194	74	39	122	30	9.9
20	195	146	77	189	53	27	115	32	9.9
21	190	134	69	189	55	28	111	31	9.3
22	181	138	67	192	124	64	121	37	12
23	205	135	75	192	57	30	167	82	37
24	220	114	68	199	55	30	200	114	62
25	209	113	64	199	54	29	198	60	32
26	205	263	146	192	42	22	222	88	53
27	290	341	267	157	22	9.3	222	75	45
28	380	274	281	150	19	7.7	202	60	33
29	365	254	250	--	--	--	188	55	28
30	360	273	265	--	--	--	183	37	18
31	341	263	242	--	--	--	197	48	26
TOTAL	6547	--	2862	6439	--	1818.0	5475	--	621.1

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	209	55	31	109	17	5.0	48	22	2.8
2	245	94	62	109	15	4.4	44	12	1.4
3	282	113	86	100	16	4.3	47	15	1.9
4	334	170	153	101	26	7.1	58	19	3.0
5	360	184	179	103	28	7.8	63	17	2.9
6	366	189	187	147	29	12	60	15	2.4
7	360	204	198	165	39	17	47	14	1.8
8	366	185	183	146	29	11	44	15	1.8
9	372	184	185	129	30	10	51	11	1.5
10	353	190	181	122	24	7.9	56	12	1.8
11	346	163	152	109	21	6.2	54	14	2.0
12	346	154	144	104	19	5.3	54	11	1.6
13	334	132	119	106	26	7.4	54	11	1.6
14	322	114	99	109	22	6.4	54	6	.87
15	290	114	89	115	23	7.1	51	6	.83
16	290	94	74	115	22	6.8	42	7	.79
17	267	80	58	112	20	6.0	40	7	.76
18	245	74	49	112	17	5.1	44	8	.95
19	229	50	31	104	16	4.5	49	7	.93
20	209	35	20	94	15	3.8	51	6	.83
21	190	33	17	86	15	3.5	47	9	1.1
22	185	25	12	83	9	2.0	44	6	.71
23	176	20	9.5	82	15	3.3	44	5	.59
24	185	22	11	82	13	2.9	40	8	.86
25	163	22	9.7	82	12	2.6	38	6	.62
26	162	23	10	76	13	2.6	38	28	2.9
27	150	22	8.9	74	14	2.8	40	24	2.6
28	146	21	8.3	65	12	2.1	37	8	.80
29	132	17	6.0	63	11	1.9	35	8	.76
30	115	15	4.6	58	24	3.8	37	8	.80
31	--	--	--	58	12	1.9	--	--	--
TOTAL	7729	--	2377.0	3120	--	174.5	1411	--	44.20

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	24	29	1.9	110	5620	2430	714	31900	61800
2	28	37	2.8	161	7370	3800	874	33800	84600
3	28	19	1.4	79	6000	1280	583	29800	51300
4	28	21	1.6	74	4100	819	398	12200	13100
5	33	23	2.0	64	5980	1030	545	20700	33700
6	35	22	2.1	64	11100	1920	363	11500	11600
7	28	29	2.2	83	2450	549	245	3350	2220
8	28	24	1.8	154	5420	2900	402	15100	19100
9	35	27	2.5	143	12600	4860	506	12000	17600
10	42	24	2.7	83	3250	728	590	11500	18300
11	63	32	5.4	65	825	145	676	13200	29800
12	110	429	216	59	455	72	1020	24800	69600
13	69	850	166	66	2290	407	579	12500	19500
14	44	389	46	150	5350	2170	520	7300	10200
15	319	27100	37100	158	14900	6360	385	3500	3640
16	94	12600	3160	102	4850	1340	385	3020	3140
17	288	14500	16300	92	1250	310	346	2840	2650
18	199	13300	7150	88	1150	273	302	1480	1210
19	128	4490	1550	80	645	139	250	725	489
20	99	1950	521	72	530	103	170	590	271
21	83	5000	1120	61	345	57	130	250	88
22	221	19200	12900	55	254	38	125	199	67
23	103	4020	1120	57	225	35	105	140	40
24	82	2300	509	56	533	80	102	110	30
25	186	4820	2640	58	412	65	101	125	34
26	271	30500	23100	93	1720	432	86	100	23
27	152	6480	2660	111	1920	575	64	61	10
28	262	3830	2910	91	520	128	57	51	7.8
29	176	2990	1420	185	6730	4160	50	38	5.1
30	112	1500	454	188	8050	4090	42	62	7.0
31	63	750	128	518	16700	27900	--	--	--
TOTAL	3433	--	115196.4	3420	--	69195	10715	--	454131.9

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 61480
TOTAL LOAD FOR YEAR (TONS) 652937.80

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC 27, 1968	1145	4	561	4470	6770	28	37	--	75	--	96	100	--	--	--	--	VPWC
JUL 15, 1969	0810	23	702	53700	102000	40	50	--	85	--	99	100	--	--	--	--	VPWC
JUL 15.....	1050		443	39400	47100	35	54	--	89	--	100	--	--	--	--	--	VPWC
AUG 6.....	0645	24	68	13600	2500	56	76	--	100	--	--	--	--	--	--	--	SPWC
SEP 2.....	0950	22	1040	38600	108000	38	49	--	79	--	98	99	100	--	--	--	VPWC
SEP 12.....	1030	22	1290	26600	92600	39	49	--	73	--	96	99	100	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
DEC 10, 1968	1100	9			--	17	40	42	78	94	99	100	--	--	--	S
JUN 27, 1969	1230	30			--	1	8	32	57	75	83	89	100	--	--	S
SEP 26.....	1100	22			1	3	19	53	68	74	79	86	100	--	--	S

09460200 FRYE CREEK AT THATCHER, ARIZ.

LOCATION.--Lat 32°50'00", long 109°45'39", in SW¼ sec.11, T.7 S., R.25 E., Graham County, at gaging station 1,300 ft downstream from Frye Creek detention dam and 1 mile south of Thatcher.

DRAINAGE AREA.--24.3 sq mi.

PERIOD OF RECORD.--Sediment records: March 1963 to September 1969.

REMARKS.--This station is operated in conjunction with a trap efficiency study of the Frye Creek detention reservoir. Results are published by flow event, as opposed to the normal procedure of reporting daily values.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(WHERE NO MEAN CONCENTRATIONS ARE SHOWN, LOADS ARE COMPUTED FROM DISCHARGE-SEDIMENT LOAD CURVES)

DATE	FLOW EVENT NO.	OUTFLOW[A] DURATION (HOURS)	TOTAL[B] OUTFLOW (ACRE-FEET)	MEAN DISCHARGE FOR PERIOD (CFS)	MEAN CONCENTRATION (MG/L)	OUTFLOW SEDIMENT LOAD (TONS)
JUL 18-19, 1969..	61	8	25	37	1,030	5,460
JUL 20.....	62	5	2.0	5.0	--	5.2
AUG 14.....	63	3	.4	1.7	--	.38
AUG 27-28.....	64	6.5	6.0	11	--	12
AUG 28-29.....	65	9	9.5	13	8,770	273
SEP 7-8.....	66	7	1.6	8.7	3,370	13
SEP 13.....	67	7.5	9.7	16	--	18

A DURATION OF EVENT IS BASED ON TIME WHEN FLOW IS MORE THAN 0.2 CFS.
B EXCLUDING OUTFLOW BELOW 0.2 CFS.

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE SIZE, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JUL 18, 1969	1655	20	30	53400	4330	29	45	52	70	88	99	100	--	--	--	--	VPWC
JUL 18.....	1655	20	30	53400	4330	2	10	27	62	86	99	100	--	--	--	--	VPN
AUG 28.....	2100	22	84	31200	7080	28	44	--	72	--	98	100	--	--	--	--	VPWC
SEP 7.....	1900	22	22	6700	398	49	73	87	96	97	100	--	--	--	--	--	SPWC
SEP 7.....	1900	22	22	6700	398	10	42	75	93	96	100	--	--	--	--	--	SPN

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.

LOCATION.--Lat 31°37'33", long 110°10'26", in NE¼NE¼ sec.11, T.21 S., R.21 E., Cochise County, at gaging station in Spanish land grant of San Juan de las Boquillas y Nogales, at county highway bridge 0.3 mile south of Charleston, 1.5 miles upstream from Charleston Dam site, 9 miles upstream from Babocomari River, and 29 miles upstream from Benson.

DRAINAGE AREA.--1,219 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Specific conductance: October 1964 to September 1969.
Water temperatures: July 1963 to September 1969.
Sediment records: July 1963 to September 1969.

EXTREMES.--1968-69:
Specific conductance: Maximum daily, 510 micromhos July 16; minimum daily, 140 micromhos Mar. 16.
Water temperatures: Maximum, 30.0°C Aug. 28; minimum, 1.0°C Dec. 24.
Sediment concentrations: Maximum daily, 20,800 mg/l Aug. 6; minimum daily, 1.0 mg/l Oct. 23, 24, Nov. 2, 12.
Sediment loads: Maximum daily, 78,600 tons July 28; minimum daily, 0.01 ton July 3, 8, 7.

Period of record:
Specific conductance: Maximum daily, 1,550 micromhos Dec. 22, 1967; minimum daily, 140 micromhos Mar. 18, 1969.
Water temperatures: Maximum, 36.0°C July 12, 1968; minimum, freezing point on several days during 1964-66.
Sediment concentrations: Maximum daily, 30,600 mg/l July 29, 1966; minimum daily, 1 mg/l May 27, 28, 31, June 1, 2, 1966, Oct. 23, 24, Nov. 2, 12, 1969.
Sediment loads: Maximum daily, 410,000 tons Aug. 14, 1964; minimum daily, 0.01 ton July 3, 8, 7, 1969.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	430	450	400	425	420	--	410	300	340	400	350
2	380	450	450	410	425	350	--	410	300	--	450	350
3	380	450	450	420	420	270	450	390	350	380	420	250
4	390	450	420	420	400	350	460	400	300	290	400	340
5	380	430	430	420	425	410	420	370	--	290	400	370
6	390	460	430	420	410	380	400	380	340	330	286	370
7	380	460	410	410	410	440	410	380	350	360	300	360
8	380	450	430	430	440	350	420	380	350	350	265	350
9	370	450	450	430	440	430	410	390	350	320	245	360
10	370	440	450	430	430	420	410	390	350	320	310	360
11	450	470	440	440	450	420	420	390	340	380	350	400
12	380	490	450	440	450	460	400	390	360	350	350	--
13	380	450	450	420	460	--	430	380	300	300	299	400
14	400	470	460	440	--	330	420	380	360	320	377	240
15	450	490	450	440	450	470	420	380	340	338	400	240
16	400	510	--	450	450	420	420	400	360	510	360	310
17	400	470	--	--	490	350	460	400	360	370	340	370
18	400	470	--	440	460	140	470	380	340	410	360	370
19	400	470	--	440	450	400	430	390	350	400	350	450
20	420	470	--	440	450	320	430	380	320	360	370	350
21	420	480	--	450	470	380	--	380	330	340	400	400
22	400	500	--	460	460	350	450	400	320	300	410	370
23	400	500	410	480	460	360	450	390	380	345	390	370
24	430	390	440	460	470	440	430	390	380	370	400	380
25	430	440	440	480	420	440	400	280	400	378	440	400
26	430	410	470	480	400	450	400	390	300	290	--	350
27	450	450	440	480	300	460	390	300	300	370	360	340
28	450	440	440	450	360	460	420	350	290	200	250	340
29	400	420	440	425	--	460	400	360	350	303	280	350
30	410	450	420	400	--	410	400	300	340	360	253	340
31	440	--	400	425	--	400	--	350	--	385	300	--
AVG	405	457	438	437	432	391	422	376	338	345	350	352

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	28	20	22	18	13	23	13	18	13	18	13	16	14	--	18	22	18	10	11	16	10	13	10	13	11	24	10	18	10	13	18	16
NOVEMBER.	18	11	18	9	12	7	9	7	10	6	16	8	12	13	13	10	13	7	9	8	9	7	13	7	12	5	7	7	7	6	--	10
DECEMBER.	6	6	10	2	12	3	8	3	13	6	13	14	12	3	7	--	--	--	--	--	--	--	--	10	1	6	11	6	3	6	3	10	--
JANUARY..	3	5	11	4	3	4	12	5	7	11	6	7	11	10	17	13	--	8	10	7	14	9	13	7	10	9	15	10	10	11	9	9
FEBRUARY.	2	11	3	9	10	8	8	7	6	7	6	9	11	--	2	7	2	11	8	7	6	6	4	4	4	5	18	13	--	--	--	7
MARCH....	4	5	3	8	6	6	7	5	7	4	18	13	--	5	10	3	12	5	13	19	15	10	9	12	15	18	15	20	20	9	9	10
APRIL....	--	--	20	22	10	12	10	12	11	15	10	14	10	15	10	14	27	26	10	25	--	17	10	15	10	21	9	13	10	17	--	15
MAY.....	25	23	12	15	12	15	9	16	12	17	14	17	15	18	20	23	15	19	15	17	14	27	13	20	14	24	15	20	25	18	15	17
JUNE.....	21	17	21	17	--	16	20	16	21	16	20	20	23	16	21	18	21	18	21	18	20	18	23	18	20	24	26	17	22	17	--	20
JULY.....	23	--	28	17	24	18	18	22	26	26	26	23	25	23	24	22	25	22	25	22	27	22	20	28	24	22	25	21	23	23	26	23
AUGUST...	22	26	22	29	29	25	28	24	23	26	23	25	22	26	22	25	21	23	20	22	28	27	22	25	21	--	20	30	22	24	22	24
SEPTEMBER	23	21	27	26	25	20	22	22	25	21	28	--	20	20	20	17	26	23	28	16	23	14	21	22	21	20	21	15	17	14	--	21

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4.8	11	.14	9.6	8	.20	11	26	.77
2	5.0	22	.30	10	1	.03	11	24	.71
3	5.6	18	.27	11	8	.24	11	13	.39
4	5.6	8	.12	11	3	.09	11	10	.30
5	5.6	12	.18	11	3	.09	11	5	.15
6	5.6	9	.14	11	3	.09	11	6	.18
7	5.3	8	.11	10	2	.05	11	5	.15
8	5.3	8	.11	11	6	.18	11	2	.06
9	5.3	6	.09	11	7	.21	11	4	.12
10	5.3	7	.10	11	5	.15	11	12	.36
11	5.3	3	.04	11	6	.18	11	9	.27
12	5.3	7	.10	11	1	.03	11	10	.30
13	5.6	8	.11	12	4	.13	11	15	.45
14	5.3	8	.11	12	3	.10	11	23	.68
15	5.0	3	.04	13	3	.11	11	22	.65
16	5.0	7	.09	13	2	.07	11	20	.59
17	5.6	7	.11	12	4	.13	11	20	.59
18	5.9	6	.10	12	4	.13	11	20	.59
19	6.2	3	.05	12	4	.13	11	20	.59
20	6.5	6	.11	10	4	.11	12	15	.49
21	6.5	4	.07	10	4	.11	12	15	.49
22	6.8	3	.06	9.6	10	.26	12	15	.49
23	6.8	1	.02	10	3	.08	11	17	.50
24	7.2	1	.02	10	14	.38	11	11	.33
25	7.2	3	.06	11	16	.48	12	12	.39
26	7.2	5	.10	11	29	.86	13	8	.28
27	7.2	4	.08	11	21	.62	14	13	.49
28	7.2	4	.08	11	12	.36	13	8	.28
29	8.0	4	.09	11	26	.77	12	13	.42
30	8.8	3	.07	11	31	.92	12	7	.23
31	9.2	6	.15	--	--	--	12	7	.23
TOTAL	191.2	--	3.22	330.2	--	7.29	355	--	12.52

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	12	7	.23	13	13	.46	12	12	.39
2	12	6	.19	13	21	.74	12	10	.32
3	12	18	.58	13	10	.35	12	15	.49
4	11	5	.15	13	11	.39	12	18	.58
5	12	11	.36	14	13	.49	12	9	.29
6	12	11	.36	14	8	.30	12	2	.06
7	12	10	.32	14	12	.45	12	9	.29
8	12	12	.39	14	11	.42	12	7	.23
9	12	23	.75	14	17	.64	12	6	.19
10	12	11	.36	14	19	.72	12	9	.29
11	12	8	.26	14	14	.53	11	14	.42
12	12	9	.29	14	21	.79	11	10	.30
13	12	11	.36	14	12	.45	12	10	.32
14	12	14	.45	15	15	.61	12	14	.45
15	13	8	.28	14	18	.68	12	19	.62
16	14	10	.38	12	20	.65	12	3	.10
17	14	9	.34	12	9	.29	12	7	.23
18	14	8	.30	12	8	.26	12	4	.13
19	14	12	.45	12	15	.49	11	7	.21
20	15	10	.40	12	15	.49	12	6	.19
21	15	10	.40	14	14	.53	12	6	.19
22	15	10	.40	14	9	.34	12	8	.26
23	14	12	.45	14	11	.42	12	7	.23
24	14	11	.42	14	11	.42	12	8	.26
25	14	12	.45	14	18	.68	12	15	.49
26	14	7	.26	13	10	.35	11	17	.50
27	14	11	.42	13	16	.56	12	7	.23
28	13	18	.63	13	11	.39	12	18	.58
29	13	27	.95	--	--	--	12	12	.39
30	13	17	.60	--	--	--	12	17	.55
31	13	18	.63	--	--	--	12	16	.52
TOTAL	403	--	12.81	376	--	13.89	368	--	10.30

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	12	10	.32	7.2	8	.16	4.1	2	.02
2	13	10	.35	7.6	12	.25	3.9	14	.15
3	12	7	.23	7.6	7	.14	3.9	11	.12
4	12	10	.32	8.0	18	.39	3.7	8	.08
5	13	13	.46	8.4	8	.18	3.7	10	.10
6	13	18	.63	8.8	11	.26	3.7	14	.14
7	13	7	.25	9.2	6	.15	3.4	17	.16
8	13	12	.42	10	8	.22	3.2	47	.41
9	13	11	.39	9.6	5	.13	3.2	40	.35
10	12	10	.32	9.2	9	.22	3.1	11	.09
11	12	8	.26	9.2	6	.15	3.1	18	.15
12	13	8	.28	8.8	6	.14	2.9	12	.09
13	13	8	.28	8.4	8	.18	2.6	10	.07
14	12	8	.24	8.4	6	.14	3.2	20	.17
15	11	6	.18	8.0	18	.39	2.9	14	.11
16	11	13	.39	7.2	6	.12	2.3	9	.06
17	11	9	.27	6.8	6	.11	2.3	17	.11
18	11	16	.48	6.5	8	.14	2.1	7	.04
19	11	8	.24	6.2	8	.13	2.3	7	.04
20	11	15	.45	6.2	8	.13	2.1	5	.03
21	9.6	10	.26	6.2	7	.12	1.8	5	.02
22	9.2	7	.17	5.9	14	.22	2.3	4	.02
23	8.8	4	.09	5.6	7	.11	2.6	10	.07
24	8.4	6	.14	5.3	10	.14	2.2	6	.04
25	9.2	5	.12	5.6	6	.09	1.9	4	.02
26	9.2	7	.17	5.3	10	.14	2.1	7	.04
27	8.0	6	.13	4.5	7	.09	2.1	4	.02
28	8.0	6	.13	4.1	10	.11	1.9	8	.04
29	7.6	5	.10	4.1	35	.39	1.6	14	.06
30	7.6	7	.14	4.1	7	.08	1.5	11	.04
31	--	--	--	4.1	10	.11	--	--	--
TOTAL	327.6	--	8.21	216.1	--	5.33	81.7	--	2.86

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.5	6	.02	23	255	16	48	795	103
2	2.1	5	.03	19	121	6.2	229	3700	3290
3	1.9	3	.01	16	55	2.4	117	2840	897
4	1.5	6	.02	15	64	2.6	45	1010	123
5	1.0	7	.02	47	1380	2700	40	1400	204
6	.90	3	.01	274	20800	17400	33	2070	184
7	.70	8	.01	240	14200	11300	23	325	20
8	1.4	23	.09	447	14300	23900	24	222	14
9	3.2	10	.09	145	7650	2990	22	250	15
10	3.1	42	.35	43	1750	203	17	125	5.7
11	8.0	51	1.1	27	349	25	15	52	2.1
12	5.6	24	.36	33	1460	245	15	317	13
13	3.6	21	.20	30	2800	227	19	1510	35
14	19	112	23	129	12000	5310	69	7180	1340
15	28	330	7680	29	1500	117	40	5600	605
16	107	12700	4990	23	336	21	29	3800	298
17	24	3250	211	16	100	4.3	26	5130	360
18	10	990	27	15	81	3.3	18	1860	90
19	12	1900	62	18	708	34	15	595	24
20	6.5	500	8.8	14	870	33	14	163	6.2
21	18	3450	287	16	998	43	11	175	5.2
22	24	4700	395	11	500	15	10	80	2.2
23	25	4800	814	9.6	135	3.5	9.6	55	1.4
24	32	8070	950	9.6	120	3.1	9.2	56	1.4
25	464	19700	38700	31	1510	151	8.8	32	.76
26	335	13200	15700	26	890	62	8.4	61	1.4
27	43	3100	360	296	11500	13400	7.2	46	.89
28	861	18100	78600	123	6830	2310	6.8	66	1.2
29	134	8500	3080	80	4280	925	7.2	47	.91
30	45	1350	164	637	9940	24500	6.8	36	.66
31	30	875	71	64	3640	629	--	--	--
TOTAL	2252.00	--	147125.11	2906.2	--	106581.4	943.0	--	7645.02

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 8750.00
TOTAL LOAD FOR YEAR (TONS) 261427.96

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
AUG 6, 1969	1030	22	348	24300	22800	49	60	--	84	--	94	96	98	100	--	--	VPWC
AUG 8.....	1850	25	1200	24000	77800	38	46	--	61	--	86	94	98	100	--	--	VPWC
AUG 14.....	1130	27	152	12200	5010	47	60	--	83	--	96	98	100	--	--	--	VPWC
AUG 27.....	0700	20	680	24400	44800	37	42	--	63	--	78	83	93	100	--	--	VPWC
SEP 15.....	1230	20	50	6810	919	47	56	--	70	--	80	82	89	98	100	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
MAR 5, 1969	1200	9			--	1	4	24	53	83	94	98	100	--	--	S
JUN 25.....	1100	26			1	3	19	53	75	92	97	98	100	--	--	S
SEP 24.....	1215	30			--	2	19	61	86	96	99	100	--	--	--	S

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.

LOCATION.--Lat 32°07'35", long 110°17'22", in SW¼ sec.15, T.15 S., R.20 E., Cochise County, at gaging station 6 miles downstream from Tres Alamos Wash and 11 miles north of Benson.

DRAINAGE AREA.—2,500 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Sediment records: March 1966 to September 1969.

EXTREMES.--1968-69:
Sediment concentrations: Maximum daily, 67,100 mg/l Dec. 21; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 240,000 tons Dec. 20; minimum daily, 0 ton on many days.

Period of record:
Sediment concentrations: Maximum daily, 78,600 mg/l July 28, 1969; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 98,400 tons July 28, 1969; minimum daily, 0 ton on many days.

MONTHLY AND ANNUAL SUMMARY OF SUSPENDED-SEDIMENT DISCHARGE, MARCH 1966 TO SEPTEMBER 1967

MONTH	DISCHARGE (CFS)	SUSPENDED SEDIMENT (TONS)	MONTH	DISCHARGE (CFS)	SUSPENDED SEDIMENT (TONS)
MARCH 1966	0	0	DECEMBER 1966	0	0
APRIL	0	0	JANUARY 1967	0	0
MAY	0	0	FEBRUARY	0	0
JUNE	0	0	MARCH	0	0
JULY	5,001.9	646,000	APRIL	0	0
AUGUST	13,001.0	1,510,000	MAY	0	0
SEPTEMBER	2,005.9	101,000	JUNE	0	0
			JULY	5,877.0	487,000
TOTAL FOR PERIOD.	20,008.8	2,257,000	AUGUST	3,247.0	212,000
			SEPTEMBER	1,007.2	50,200
OCTOBER 1966	28.3	200			
NOVEMBER	0	0	TOTAL FOR YEAR.	10,159.5	749,700

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, MARCH 1966 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JUL 22, 1966	1830	29	3.3	6530	58	78	98	--	99	--	100	--	--	--	--	--	SPWC
JUL 28	1215	--	328	56400	49900	47	56	68	80	88	96	99	100	--	--	--	VPWC
JUL 28	1215	--	328	56400	49900	1	3	15	80	88	96	99	100	--	--	--	VPN
AUG 8	1430	27	690	57900	108000	38	51	--	68	--	86	94	99	100	--	--	VPWC
AUG 11	0900	23	6.2	5040	84	66	84	--	96	--	97	99	100	--	--	--	VPWC
SEP 1	1400	29	104	13200	3710	55	71	--	88	--	94	97	99	100	--	--	VPWC
SEP 12	1730	25	56	18300	2770	55	75	--	96	--	99	99	100	--	--	--	VPWC
SEP 20	1020	27	22	3040	181	64	83	--	93	--	98	99	100	--	--	--	SPWC
JUL 7, 1967	1800	27	28	42500	3210	62	77	--	94	--	98	99	100	--	--	--	VPWC
JUL 26	1520	27	3050	49600	408000	31	39	--	59	--	94	98	100	--	--	--	VPWC
DEC 20	1415	7	530	38800	55500	35	47	--	76	--	90	97	100	--	--	--	VPWC
DEC 21	1530	7	2680	59800	433000	22	27	--	40	--	63	81	97	99	100	--	VPWC
JUL 16, 1969	1600	29	49	44100	5830	54	72	--	95	--	99	100	--	--	--	--	VPWC
AUG 8	0700	22	707	43600	83200	39	50	--	72	--	93	98	100	--	--	--	VPWC
AUG 12	1800	22	1950	79400	418000	36	46	--	63	--	88	96	99	100	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, MARCH 1966 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
SEP 13, 1967	1010				--	2	18	53	75	88	95	98	100	--	--	S
MAR 19, 1968	0950	8		20	4	8	19	38	54	62	65	71	--	100	--	S
MAR 5, 1969	1400				17	25	44	80	95	99	100	--	--	--	--	S
JUN 25	1300	--			8	13	35	74	89	94	95	96	100	--	--	S
AUG 12	1300	35			1	4	21	55	76	91	98	100	--	--	--	S

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	.20	0	0	0	0	0	0	0	0
25	0	0	0	.40	10	0	0	0	0
26	.10	2	0	.10	10	0	0	0	0
27	0	0	0	.20	10	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	--	--	--	0	0	0	--	--	--
TOTAL	.30	--	0	.70	--	0	0	--	0

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	0	0	10	21600	583	517	28500	52200
2	0	0	0	28	25200	2190	17	9700	445
3	0	0	0	5.9	14300	228	2.5	1900	13
4	0	0	0	3.6	12500	122	0	0	0
5	0	0	0	27	46900	3420	0	0	0
6	0	0	0	23	6860	426	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	282	8800	38200	0	0	0
9	0	0	0	114	17400	5360	0	0	0
10	0	0	0	1090	39900	172000	0	0	0
11	0	0	0	150	32100	13000	0	0	0
12	0	0	0	50	8600	1160	0	0	0
13	0	0	0	30	5000	405	0	0	0
14	0	0	0	10	2000	54	0	0	0
15	0	0	0	8.0	1000	22	0	0	0
16	0	0	0	5.0	500	6.8	0	0	0
17	0	0	0	3.0	300	2.4	0	0	0
18	0	0	0	2.0	200	1.1	0	0	0
19	0	0	0	2.0	200	1.1	0	0	0
20	0	0	0	50	40600	9360	0	0	0
21	0	0	0	30	35000	2840	0	0	0
22	0	0	0	15	15400	624	0	0	0
23	0	0	0	10	8100	219	0	0	0
24	0	0	0	10	2000	54	0	0	0
25	158	47800	20400	8.0	1000	22	0	0	0
26	37	6660	665	5.0	500	6.8	0	0	0
27	45	7760	943	4.0	400	4.3	0	0	0
28	41	8000	886	3.0	300	2.4	0	0	0
29	36	5000	486	3.0	300	2.4	0	0	0
30	20	4000	216	3.0	300	2.4	0	0	0
31	10	4000	108	119	9900	9620	--	--	--
TOTAL	347	--	23704	2103.5	--	259938.7	536.5	--	52658

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 12124.70
TOTAL LOAD FOR YEAR (TONS) 744075.30

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	91	33800	8300	0	0	0	0	0	0
4	20	9260	500	0	0	0	0	0	0
5	.10	7	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	15	13600	550
16	0	0	0	0	0	0	64	20400	3520
17	0	0	0	0	0	0	42	11300	1280
18	0	0	0	0	0	0	41	10700	1180
19	0	0	0	0	0	0	35	10300	973
20	0	0	0	0	0	0	1490	49100	240000
21	0	0	0	0	0	0	3020	67100	54800
22	0	0	0	0	0	0	648	29400	58900
23	0	0	0	0	0	0	202	13300	7250
24	0	0	0	0	0	0	123	8700	2890
25	0	0	0	0	0	0	90	5600	1360
26	0	0	0	0	0	0	76	4400	903
27	0	0	0	0	0	0	60	4100	664
28	0	0	0	0	0	0	50	4000	540
29	0	0	0	0	0	0	40	4000	432
30	0	0	0	0	0	0	35	4000	378
31	0	0	0	--	--	--	35	4000	378
TOTAL	111.10	--	8800	0	--	0	6066	--	375998

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	35	3000	284	14	1700	64	37	1000	100
2	35	3000	284	11	1500	44	36	1000	97
3	35	2700	255	10	1000	27	36	1000	97
4	35	2500	236	10	1000	27	35	1000	94
5	35	2200	208	7.8	700	15	35	650	61
6	34	2150	197	9.2	900	22	34	600	55
7	34	2100	193	11	1500	44	34	550	50
8	41	2100	232	9.2	900	22	34	600	55
9	37	2100	210	7.8	700	15	34	1400	128
10	42	2100	238	20	2350	127	32	2300	199
11	43	2050	238	22	1950	116	34	2900	266
12	38	2000	205	41	5650	626	95	10700	2740
13	35	2100	198	42	3600	408	104	8400	2360
14	22	2250	134	64	5500	950	83	5400	1210
15	22	2000	119	62	4050	678	73	3900	769
16	32	1800	156	63	4450	757	50	3100	418
17	36	1950	190	59	4600	733	50	2800	378
18	34	1950	179	56	3900	590	45	2600	316
19	32	1850	160	54	3300	481	45	2150	261
20	29	1800	141	52	2850	400	40	1900	205
21	17	1000	46	51	2900	399	35	1700	161
22	10	500	14	49	2600	344	30	1300	105
23	11	500	15	45	2400	292	20	1900	103
24	12	700	23	43	2050	238	10	2000	54
25	16	700	30	42	1400	159	8.4	800	18
26	17	1000	46	41	1100	122	5.0	400	5.4
27	23	1500	93	40	1200	130	2.4	200	1.3
28	31	1800	151	37	1100	110	.70	50	.90
29	17	1000	46	37	1000	100	.10	7	0
30	16	1000	43	--	--	--	0	0	0
31	16	1500	65	--	--	--	0	0	0
TOTAL	872	--	4629	1010.0	--	8040	1077.60	--	10307.60

09471800 SAN PEDRO RIVER NEAR BENSON, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0
15	0	0	0	.20	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
31	--	--	--	0	0	0	--	--	--
TOTAL	0	--	0	.20	--	0	0	--	0

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	0	0	3.4	13100	120	45	11300	1370
2	0	0	0	3.4	5000	46	35	12000	1130
3	0	0	0	4.9	10000	132	25	13000	878
4	0	0	0	5.4	8000	117	15	14200	575
5	0	0	0	3.4	4000	37	10	12000	324
6	0	0	0	52	24400	3420	65	23600	4140
7	0	0	0	487	33900	58800	9.2	12000	298
8	0	0	0	419	37400	48600	5.0	10000	135
9	0	0	0	389	36500	44400	3.0	8000	65
10	0	0	0	51	28900	3980	2.0	5000	27
11	2.0	10000	54	5.0	11200	151	173	16000	27000
12	15	14000	567	104	15100	20700	37	37000	3760
13	5.0	11000	148	5.0	11500	155	5.0	10000	135
14	1.0	1000	2.7	365	31400	51600	2.0	5000	27
15	30	30000	2430	43	24600	2940	184	34200	17000
16	45	40800	4960	10	11900	321	81	25600	5600
17	32	15000	1650	5.0	6000	81	8.0	15000	324
18	33	27600	2650	4.0	5000	54	5.0	10000	135
19	80	38700	10600	3.0	2000	16	4.0	10000	108
20	9.7	24500	642	2.0	1000	5.4	4.0	8000	86
21	5.0	3000	40	1.0	900	2.4	3.0	5000	40
22	5.0	2000	27	.50	300	.40	3.0	5000	40
23	15	2000	81	.20	100	.05	2.0	4000	22
24	5.0	10000	135	.10	50	.01	2.0	4000	22
25	5.0	2000	27	.10	50	.01	1.0	3000	8.1
26	704	39000	74100	.10	50	.01	.50	1500	2.0
27	100	25600	6900	15	25900	1050	0	0	0
28	454	78600	96400	91	25200	6180	0	0	0
29	432	41400	57100	20	14000	756	0	0	0
30	40	23500	2540	420	13900	29900	0	0	0
31	7.0	16800	318	70	16400	3100	--	--	--
TOTAL	2024.7	--	261371.7	2582.50	--	276664.28	728.70	--	63251.1

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 5336.10
TOTAL LOAD FOR YEAR (TONS) 601287.08

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.

LOCATION.--Lat 32°58'38", long 110°46'11", in SE¼SW¼ sec.24, T.5 S., R.15 E., Pinal County, at gaging station 0.7 mile (revised) south of Winkelman and 1.0 mile upstream from mouth.

DRAINAGE AREA.--4,471 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Chemical analyses: January 1967 (miscellaneous).
Specific conductance: January 1966 to September 1969.
Water temperatures: January 1966 to September 1969.
Sediment records: January 1966 to September 1969.

EXTREMES.--1968-69:
Specific conductance: Maximum daily, 2,050 micromhos Sept. 15; minimum daily, 410 micromhos July 30.
Water temperatures: Maximum, 41.0°C Sept. 10; minimum, 8.0°C Oct. 17, 23.
Sediment concentrations: Maximum daily, 83,000 mg/l Aug. 8; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 98,400 tons Aug. 8; minimum daily, 0 ton on many days.

Period of record:
Specific conductance: Maximum daily, 2,050 micromhos Sept. 15, 1969, minimum daily, 320 micromhos Feb. 14, 1968.
Water temperatures: Maximum, 42.0°C Sept. 10, 1968; minimum, 2.0°C Dec. 31, 1966.
Sediment concentrations: Maximum daily, 119,000 mg/l July 8, Sept. 24, 1967; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 961,000 tons Dec. 20, 1967; minimum daily, 0 ton on many days.

REMARKS.--No flow Oct. 20-28, May 26 to July 20, July 24-26, Sept. 23, 24, 27-30.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1200	1200	1200	1150	1160	1190	1020	1150	--	--	690	450
2	1100	1200	1200	1080	1150	1200	1020	1150	--	--	1000	700
3	1100	1150	1200	1150	1180	1200	1050	1200	--	--	1200	725
4	1100	1200	1200	1180	1000	1190	1050	1150	--	--	1100	950
5	1100	1200	1200	1150	1150	950	1050	1100	--	--	900	620
6	1100	1200	1200	1150	1040	1000	1050	1100	--	--	490	700
7	1100	1200	1200	1150	1080	1000	1050	1100	--	--	740	950
8	1100	1200	1200	1150	1040	1000	1040	1080	--	--	477	710
9	1200	1200	1200	1130	1040	1000	1050	1100	--	--	510	900
10	1200	1200	1200	1080	1100	1000	1050	1100	--	--	420	980
11	1200	1150	1200	1100	1040	1000	1020	1100	--	--	530	1000
12	1200	1200	1200	1100	1090	1000	1020	1150	--	--	585	500
13	1200	1200	1200	1050	1060	1000	1040	1150	--	--	605	480
14	1200	1300	1200	1050	1050	1000	1050	1150	--	--	590	810
15	1200	900	1200	1120	1080	1000	1040	1180	--	--	525	2050
16	1200	1000	1200	1020	1120	1000	1040	1180	--	--	720	1200
17	1200	1200	1200	1020	1100	1000	1040	1150	--	--	775	705
18	1200	1150	1200	1100	1110	1000	1050	1200	--	--	915	980
19	1200	1150	1160	1170	1090	1000	1050	1250	--	--	980	1020
20	--	1150	1050	1100	1120	1010	1050	1300	--	--	990	1020
21	--	1150	1160	1100	1100	1010	1050	1200	--	--	990	1000
22	--	1200	1120	1100	1140	1000	1080	1050	--	753	890	1030
23	--	1150	1120	1100	1160	1010	1080	1100	--	--	820	--
24	--	1150	1120	1100	1160	1010	1100	1100	--	--	970	--
25	--	1150	1100	1100	1100	1000	1100	1100	--	--	850	1080
26	--	1200	1020	1100	1170	1000	1100	--	--	--	900	1060
27	--	1200	460	--	1190	1010	1120	--	--	--	580	--
28	--	1200	800	1100	1190	1020	1110	--	--	625	735	--
29	1200	1200	1100	1140	--	1010	1110	--	--	658	460	--
30	1200	1150	1140	1160	--	1010	1150	--	--	410	690	--
31	1100	--	1140	1160	--	1010	--	--	--	575	535	--
AVG	--	1170	1130	1110	1110	1030	1060	--	--	--	747	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	14	12	30	19	14	14	15	15	14	14	15	36	32	16	15	10	8	9	28	--	--	--	--	--	--	--	--	--	--	14	26	13	--
NOVEMBER.	26	22	16	23	17	25	21	23	23	21	21	22	18	19	14	21	20	22	24	23	23	24	16	20	20	19	20	19	15	16	--	20
DECEMBER.	20	16	17	17	20	21	18	16	20	20	20	18	17	13	20	19	17	16	13	14	17	13	16	11	18	14	10	12	12	19	17	16
JANUARY..	--	20	19	15	21	22	22	22	14	19	15	21	21	16	18	21	19	21	24	22	20	21	20	18	19	19	23	16	18	20	20	20
FEBRUARY.	17	22	21	19	22	21	21	17	23	25	24	20	19	21	22	22	22	18	16	19	22	20	12	25	24	23	25	20	--	--	--	21
MARCH....	18	22	24	20	21	23	19	22	22	20	21	24	20	18	20	20	26	27	27	28	26	17	26	26	27	29	30	29	26	31	28	24
APRIL....	28	30	24	30	31	23	27	28	29	26	22	27	29	30	27	28	30	31	31	28	33	30	28	30	29	29	29	31	31	32	--	29
MAY.....	32	33	28	22	18	25	30	31	34	35	26	34	32	34	33	34	38	40	36	38	39	29	37	22	24	--	--	--	--	--	--	--
JUNE.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	--	--	--	--	--	--	31	32	33	29	--
AUGUST...	32	31	38	41	39	36	25	33	35	33	31	27	30	30	30	31	30	30	30	29	30	30	24	34	37	38	30	30	29	27	33	32
SEPTEMBER	25	25	28	35	30	25	34	25	38	34	24	27	27	24	24	34	28	35	35	28	26	35	--	--	32	36	--	--	--	--	--	--

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	--	0	.20	154	S.08	13	106	3.7
2	0	--	0	.30	170	.14	12	135	4.4
3	0	--	0	.40	225	.24	11	174	5.2
4	1.0	580	1.6	.50	216	.29	14	173	6.5
5	1.0	295	.80	1.0	222	.60	14	183	6.9
6	.70	256	.48	1.6	232	1.0	14	178	6.7
7	.50	240	.32	2.6	233	1.6	14	180	6.8
8	.40	193	.21	3.1	229	1.9	16	176	7.6
9	.20	184	.10	3.1	281	2.3	14	173	6.5
10	.10	176	.05	3.1	242	2.0	16	159	6.9
11	.10	164	.04	3.1	211	1.8	16	168	7.3
12	.10	126	.03	3.1	215	1.8	19	192	9.8
13	.10	161	.04	8.4	239	5.4	17	176	8.1
14	.10	162	.04	48	2650	S342	16	154	6.6
15	.10	160	.04	103	2580	S873	16	182	7.9
16	.10	153	.04	30	1150	93	15	130	5.3
17	.10	158	.04	19	330	17	14	134	5.1
18	.10	141	.04	14	203	7.6	14	97	3.7
19	.10	105	.03	12	204	6.6	16	162	7.0
20	0	--	0	8.4	192	4.4	16	145	6.3
21	--	--	--	4.5	183	2.2	19	204	10
22	--	--	--	6.2	161	2.7	18	144	7.0
23	--	--	--	5.3	149	2.1	19	251	13
24	--	--	--	5.3	139	2.0	21	258	15
25	--	--	--	6.2	112	1.9	23	249	15
26	--	--	--	6.0	126	2.0	465	2420	S 7570
27	--	--	--	7.0	108	2.0	546	2600	S 9990
28	0	--	0	10	119	3.2	97	965	253
29	.10	104	.03	10	98	2.6	72	193	38
30	.10	150	.04	12	105	3.4	63	168	28
31	.10	122	.03	--	--	--	59	189	30
TOTAL	5.10	--	4.00	337.40	--	1386.85	1699	--	18097.3

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	53	124	18	18	66	3.2	18	45	2.2
2	39	132	14	18	56	2.7	18	35	1.7
3	34	123	11	16	74	3.2	19	41	2.1
4	30	140	11	19	55	2.8	21	28	1.6
5	20	138	7.4	14	49	1.8	19	51	2.6
6	18	94	4.6	11	59	1.8	23	40	2.5
7	16	128	5.5	8.4	74	1.7	37	69	6.9
8	15	97	3.9	7.2	77	1.5	34	104	9.5
9	18	99	4.8	5.3	51	.73	37	51	5.1
10	25	72	4.9	5.3	67	.96	34	89	8.2
11	21	72	4.1	7.2	53	1.0	34	76	7.0
12	21	42	2.4	9.6	64	1.6	32	41	3.5
13	23	49	3.0	11	63	1.9	32	63	5.4
14	32	132	11	12	54	1.7	32	61	5.3
15	37	227	23	14	67	2.5	32	57	4.9
16	48	253	33	14	68	1.8	32	100	8.6
17	45	187	23	14	76	2.9	32	41	3.5
18	32	173	15	16	62	2.7	30	31	2.5
19	27	138	10	18	80	3.9	30	32	2.6
20	25	127	8.6	19	66	3.4	27	45	3.3
21	21	131	7.4	21	45	2.6	27	32	2.3
22	23	161	10	21	68	3.8	25	50	3.4
23	23	157	9.7	23	104	6.4	27	20	1.4
24	23	122	7.6	21	61	3.4	25	23	1.6
25	23	87	5.4	19	44	2.2	27	27	2.0
26	21	113	6.4	12	70	2.3	27	22	1.6
27	19	66	3.4	11	50	1.5	23	28	1.7
28	19	100	5.1	14	57	2.2	18	47	2.3
29	19	80	4.1	--	--	--	14	42	1.6
30	16	69	3.0	--	--	--	11	23	.68
31	18	83	4.0	--	--	--	12	46	1.5
TOTAL	804	--	284.3	399.0	--	68.19	809	--	109.08

S COMPUTED BY SUBDIVIDING DAY.

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	11	37	1.1	3.8	22	.23			
2	12	35	1.1	3.8	17	.17			
3	8.4	36	.82	3.1	34	.28			
4	7.2	46	.89	3.8	41	.42			
5	9.6	24	.62	14	53	2.0			
6	11	41	1.2	14	56	2.1			
7	9.6	20	.52	12	49	1.6			
8	12	18	.58	9.6	42	1.1			
9	12	24	.78	7.2	30	.58			
10	14	18	.68	6.2	36	.60			
11	16	47	2.0	3.8	46	.47			
12	16	71	3.1	3.8	22	.22			
13	16	42	1.8	3.8	33	.34			
14	16	31	1.3	3.8	22	.22			
15	14	27	1.0	3.1	30	.25			
16	12	32	1.0	3.1	23	.19			
17	11	24	.71	2.6	14	.10			
18	11	25	.74	2.1	27	.15			
19	11	31	.92	1.6	19	.08			
20	11	19	.56	1.0	15	.04			
21	9.6	9	.23	1.3	11	.04			
22	8.4	15	.34	1.0	22	.06			
23	7.2	12	.23	.30	47	.04			
24	5.3	16	.23	.20	26	.01			
25	4.5	9	.11	.10	31	.01			
26	5.3	12	.17	0	--	0			
27	4.5	5	.06	--	--	--			
28	5.3	9	.13	--	--	--			
29	5.3	17	.24	--	--	--			
30	3.8	45	.46	--	--	--			
31	--	--	--	--	--	--			
TOTAL	300.0	--	23.62	109.10	--	11.30	0	--	0

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	--	--	--	125	46800	S21100	45	50800	6170
2	--	--	--	21	5800	329	9.6	24500	635
3	--	--	--	6.2	1640	27	14	13100	495
4	--	--	--	4.7	1410	18	21	15600	S 2040
5	--	--	--	13	1660	S 72	81	48200	S 13800
6	--	--	--	59	23000	S7410	9.6	27600	715
7	--	--	--	12	22300	723	19	29200	S 2700
8	--	--	--	415	83000	S98400	34	40900	S 3750
9	--	--	--	278	67600	53400	9.6	9750	253
10	--	--	--	269	60800	44200	4.5	2600	32
11	--	--	--	57	45000	6920	17	6980	1700
12	--	--	--	74	33400	S 8890	246	52400	S 39600
13	--	--	--	86	32000	S 8750	34	49900	S 4580
14	--	--	--	316	80200	S68500	12	18200	S 590
15	--	--	--	216	77300	S51800	43	20900	S 6580
16	--	--	--	42	32600	3700	30	23100	4280
17	--	--	--	37	16800	1680	53	49200	7040
18	--	--	--	21	6800	385	8.4	23500	533
19	--	--	--	19	4400	226	3.8	4420	45
20	0	--	0	18	8500	413	1.6	1060	4.6
21	6.2	1780	S102	14	6500	246	1.0	549	I.5
22	33	4880	S1440	16	2350	102	.20	350	.19
23	3.6	3720	S119	16	1550	67	0	--	0
24	0	--	0	11	450	13	0	--	0
25	0	--	0	11	250	7.4	.50	110	.15
26	0	--	0	11	650	19	.20	50	.03
27	281	57100	S80200	341	48000	S53000	0	--	0
28	143	48900	18900	162	31300	S23600	0	--	0
29	203	44800	S58200	289	34900	S42000	0	--	0
30	277	71600	53500	7.2	28900	562	0	--	0
31	72	46400	9020	152	67000	S36400	--	--	--
TOTAL	1018.8	--	221481	3119.1	--	532959.4	698.00	--	95544.47

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 9298.50
TOTAL LOAD FOR YEAR (TONS) 869969.51

S COMPUTED BY SUBDIVIDING DAY.

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV 14, 1968	1615	19	53	3580	512	58	75	--	95	--	99	100	--	--	--	--	SPWC
DEC 27.....	1140	10	292	6560	5170	32	41	--	67	--	88	97	100	--	--	--	VPWC
JUL 29, 1969	1630	36	773	168000	351000	47	65	--	89	--	98	98	99	100	--	--	VPWC
AUG 6.....	1615	39	147	55800	22100	55	68	--	95	--	100	--	--	--	--	--	SPWC
AUG 8.....	1630	37	383	70800	73200	49	65	--	91	--	100	--	--	--	--	--	SPWC
AUG 15.....	0630	28	274	90700	67100	52	67	--	92	--	98	99	100	--	--	--	SPWC
AUG 27.....	0710	25	900	76600	186000	34	55	--	78	--	98	100	--	--	--	--	VPWC
SEP 12.....	1845	28	143	105000	40500	49	62	--	92	--	99	100	--	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
DEC 19, 1969	1100	9			--	1	9	31	53	70	82	89	100	--	--	S
JUN 29.....	1600	--			--	2	13	46	74	91	97	100	--	--	--	S
SEP 25.....	1130	29			4	6	15	43	68	86	93	97	100	--	--	S

09474000 GILA RIVER AT KELVIN, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 33°06'11", long 110°58'26", in NE¼NW¼ sec.12, T.4 S., R.13 E., Pinal County, at Florence-Kelvin road bridge at Kelvin, 200 ft upstream from Mineral Creek, 700 ft upstream from gaging station, 18 miles downstream from San Pedro River, 19 miles upstream from Ashurst-Hayden Dam, and 49 miles downstream from Coolidge Dam.
DRAINAGE AREA.--18,011 sq mi at gaging station, of which 5,125 sq mi is downstream from Coolidge Dam.
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1969.
Water temperatures: December 1950 to September 1969.
Sediment records: January 1958 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,290 mg/l Jan. 1-15; minimum, 559 mg/l Dec. 26-28.
Hardness: Maximum, 560 mg/l Jan. 1-15; minimum, 248 mg/l Dec. 26-28.
Specific conductance: Maximum daily, 2,030 micromhos Jan. 13, Sept. 27; minimum daily, 806 micromhos Jan. 26.
Water temperatures: Maximum, 31.0°C July 30, Aug. 8, 19; minimum, 7.0°C Dec. 21, 22.
Sediment concentrations: Maximum daily, 26,200 mg/l Aug 8; minimum daily, 5 mg/l Oct. 19.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-11	203	30	--	96	14	--	--	134	190	0	199	160
12-31	91	32	0	128	21	153	12	--	206	0	317	194
NOV.												
01-04	100	35	--	122	19	--	--	151	200	0	285	176
05-15	160	29	--	103	18	--	--	135	192	0	233	158
16-30	100	31	--	136	26	--	--	170	217	0	357	190
DEC.												
01-05	98	30	--	120	24	--	--	169	226	0	299	192
06-25	355	31	--	94	20	--	--	152	202	0	178	190
26-28	1320	23	--	78	13	--	--	96	174	0	149	112
29-31	265	28	--	122	24	--	--	163	229	0	293	186
JAN.												
01-15	161	32	20	172	32	196	12	--	224	0	512	224
16...	590	27	--	104	23	--	--	104	190	10	264	96
17-25	403	30	--	156	27	--	--	193	216	0	464	196
26...	331	22	--	97	34	--	--	30	4	0	390	24
27-31	130	28	--	160	33	--	--	207	214	0	504	200
FEB.												
01-02	116	28	--	142	32	--	--	210	236	0	418	222
03-09	184	27	--	100	28	--	--	175	218	0	243	222
10-28	393	27	--	88	22	--	--	157	205	0	181	208
MAR.												
01-31	602	28	--	81	15	--	--	155	198	0	150	200
APR.												
01-30	593	28	30	79	17	154	6.2	--	208	0	146	212
MAY												
01-31	633	29	--	76	27	--	--	150	200	0	140	224
JUNE												
01-30	700	27	--	74	22	--	--	169	210	0	135	234
JULY												
01-31	824	33	10	77	18	150	6.4	--	210	0	134	220
AUG.												
01-31	815	32	--	80	19	--	--	161	222	0	137	212
SEPT.												
01-30	467	31	10	94	23	157	7.2	--	227	0	188	225
WTD. AVG. TIME	--	30	--	85	20	--	--	--	209	0	169	211
WTD. AVG. TONS PER DAY	489	30	--	96	21	--	--	--	209	0	209	206
	--	39	--	112	27	--	--	--	276	0	223	278

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

EXTREMES.--1968-69:--Continued
Sediment loads: Maximum daily, 78,800 tons Aug. 8; minimum daily, 1.2 tons Oct. 19.
Period of record:
Dissolved solids: Maximum, 4,330 mg/l Jan. 3, 1966; minimum, 294 mg/l Sept. 24, 1954, Feb. 12, 1963.
Hardness: Maximum, 2,610 mg/l Jan. 3, 1966; minimum, 152 mg/l Sept. 1-30, 1957.
Specific conductance: Maximum daily, 5,120 micromhos May 22, 1961; minimum daily, 407 micromhos Jan. 20, 1952.
Water temperatures: Maximum, 36.5°C July 25, Aug. 20, 1953; minimum, 3.5°C Jan. 13, 1962.
Sediment concentrations: Maximum daily, 153,000 mg/l July 30, 1961; minimum daily, 1 mg/l May 8, 1961.
Sediment loads: Maximum daily, 740,000 tons Dec. 23, 1965; minimum daily, 0.01 ton on several days during June and July 1961.
REMARKS.--No appreciable inflow from Mineral Creek between sampling point and gaging station except during periods of heavy local rains. Load figures include sediment load from Mineral Creek.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.												
01-11	--	1.5	150	--	728	.99	399	298	142	3.4	1170	8.0
12-31	1.1	.6	170	977	960	1.33	240	404	235	3.3	1470	8.2
NOV.												
01-04	--	1.1	170	--	987	1.21	239	382	218	3.4	1380	8.1
05-15	--	1.9	140	--	772	1.05	334	330	172	3.2	1230	8.1
16-30	--	1.1	180	--	1020	1.39	275	448	270	3.5	1570	8.1
DEC.												
01-05	--	.5	170	--	946	1.29	250	400	215	3.7	1480	8.1
06-25	--	.9	160	--	755	1.03	724	290	124	3.9	1230	8.2
26-28	--	1.7	120	--	559	.76	1990	248	136	2.6	921	7.9
29-31	--	1.1	160	--	930	1.26	665	402	214	3.5	1440	8.1
JAN.												
01-15	1.4	.2	220	1300	1290	1.77	565	560	376	3.6	1880	8.0
16...	--	.2	160	--	721	.98	1150	356	183	2.4	1080	8.4
17-25	--	.2	240	--	1160	1.58	1260	502	325	3.8	1730	8.1
26...	--	1.4	30	--	600	.82	536	380	377	.7	806	5.3
27-31	--	2.7	250	--	1240	1.69	435	534	358	3.9	1810	8.0
FEB.												
01-02	--	1.5	260	--	1170	1.59	366	485	291	4.2	1780	7.9
03-09	--	2.2	190	--	904	1.23	449	365	186	4.0	1480	8.0
10-28	--	1.5	180	--	786	1.07	834	310	142	3.9	1310	8.0
MAR.												
01-31	--	.9	180	--	727	.99	1180	264	102	4.1	1210	8.2
APR.												
01-30	1.0	.6	180	749	746	1.02	1200	266	95	4.1	1240	8.2
MAY												
01-31	--	.9	280	--	745	1.01	1270	300	136	3.8	1250	8.1
JUNE												
01-30	--	.8	180	--	765	1.04	1450	276	104	4.4	1250	8.1
JULY												
01-31	1.0	1.2	180	759	744	1.03	1690	264	92	4.0	1270	8.0
AUG.												
01-31	--	2.3	180	--	752	1.02	1660	276	94	4.2	1260	8.0
SEPT.												
01-30	1.0	4.4	210	946	843	1.15	1070	328	142	3.8	1390	8.2
WTD. AVG. TIME	--	1.4	0	--	777	--	--	296	124	4.0	1280	8.1
WTD. AVG. TONS PER DAY	--	1.9	0	--	1030	--	--	--	--	--	--	--

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	1420	1600	1770	1880	1240	1210	1250	1250	1270	1270	1240
2	1110	1380	1470	1860	1690	1250	1210	1240	1250	1270	1300	1280
3	113	1370	1470	1890	1530	1270	1230	1250	1260	1230	1300	1310
4	1080	1360	1450	1950	1550	1270	1220	1230	1270	--	1270	1310
5	1120	1290	1440	1790	1490	1230	1220	1240	1260	1250	1290	1260
6	122	1270	1310	1960	1440	1240	1230	1250	1260	1270	1300	1320
7	1230	1240	1240	1950	1470	1210	1230	1260	1240	1230	1310	1300
8	1190	1260	1260	1950	1450	1220	1250	1280	1260	1260	1130	1290
9	1220	--	1250	1990	1420	1210	1260	1280	1260	1240	1210	1330
10	1220	1260	1250	1810	1370	1190	1240	1260	1250	1270	1180	1330
11	120	1250	1210	2020	1360	1180	1240	1250	1250	1240	1260	1320
12	1450	1240	1200	1940	1360	--	1260	--	1250	1260	1310	967
13	--	--	1220	2030	1370	1170	1250	1260	1260	1270	1280	1310
14	1490	1190	1220	1830	1380	1190	1250	1260	--	1250	1200	1330
15	1560	1110	1200	1540	1370	1190	1250	1260	1260	1270	1240	1740
16	1510	1420	1190	1080	1340	1190	1250	1250	1260	1260	1310	1430
17	1500	1520	1210	1470	1330	1190	1250	1250	1270	1270	1290	1340
18	1490	1590	1210	1650	1350	1190	1260	1240	1260	1270	1300	1370
19	1470	1570	1220	1750	1330	1190	1250	1250	--	1270	1300	1390
20	1500	1620	1260	1740	1260	1190	1250	1230	1260	1280	--	1400
21	1430	1600	1200	1830	1270	1190	1240	1250	1250	1270	1290	1440
22	1471	1550	1230	1840	1230	1180	1250	1240	1240	1260	1310	1450
23	1470	1620	1200	1750	1250	1190	1260	1250	1240	1270	1310	1440
24	1460	1600	1240	1720	1280	1220	1260	1260	1250	1270	1320	1450
25	--	1590	1210	1760	--	1230	1250	1260	1270	1270	1300	1450
26	1503	1600	870	806	1260	1240	1240	1230	1260	1270	1310	1550
27	1470	1590	--	1730	1250	1230	1230	1260	1260	1360	1100	2030
28	1490	1610	962	1840	1260	1220	1230	1260	1260	1270	1270	1520
29	1490	1560	1250	1810	--	1230	1240	1230	1260	1270	1080	1450
30	1460	1570	1320	1830	--	1220	1230	1260	1250	1220	1310	1440
31	1420	--	1750	1850	--	1210	--	1260	--	1270	1290	--
AVG.	1360	1440	1270	1770	1390	1210	1240	1250	1260	1260	1260	1390

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	19.0	13.0	12.0	13.0	11.0	16.0	19.0	20.0	24.0	30.	27.0
2	22.0	19.0	12.0	12.0	10.0	11.0	16.0	18.0	20.0	24.0	29.0	25.0
3	22.0	19.0	12.0	12.0	10.0	14.0	14.0	18.0	20.0	23.0	30.0	25.0
4	22.0	18.0	11.0	14.0	11.0	12.0	15.0	15.0	20.0	--	30.0	27.0
5	22.0	18.0	11.0	14.0	14.0	12.0	14.0	13.0	21.0	24.0	30.0	25.0
6	22.0	17.0	11.0	15.0	--	12.0	14.0	14.0	21.0	24.0	30.0	25.0
7	23.0	17.0	11.0	15.0	13.0	12.0	13.0	17.0	20.0	23.0	30.0	26.0
8	22.0	16.0	12.0	14.0	14.0	13.0	14.0	18.0	22.0	25.0	31.0	26.0
9	22.0	--	12.0	12.0	12.0	10.0	15.0	20.0	22.0	25.0	30.0	28.0
10	22.0	16.0	13.0	14.0	14.0	12.0	15.0	20.0	21.0	28.0	30.0	26.0
11	--	16.0	13.0	14.0	12.0	11.0	14.0	22.0	20.0	27.0	29.0	25.0
12	23.0	15.0	11.0	15.0	12.0	--	15.0	--	20.0	28.0	29.0	24.0
13	--	--	10.0	15.0	12.0	10.0	17.0	22.0	20.0	29.0	29.0	24.0
14	22.0	13.0	10.0	--	12.0	9.0	16.0	20.0	--	30.0	29.0	26.0
15	21.0	12.0	11.0	15.0	12.0	9.0	15.0	20.0	20.0	30.0	30.0	24.0
16	20.0	14.0	11.0	14.0	12.0	12.0	16.0	20.0	20.0	28.0	30.0	24.0
17	21.0	16.0	10.0	14.0	12.0	13.0	17.0	22.0	20.0	29.0	30.0	25.0
18	20.0	16.0	8.0	15.0	12.0	13.0	16.0	20.0	21.0	27.0	30.0	25.0
19	21.0	15.0	10.0	15.0	10.0	14.0	17.0	20.0	--	28.0	31.0	25.0
20	20.0	14.0	9.0	15.0	10.0	15.0	16.0	20.0	21.0	28.0	--	26.0
21	20.0	16.0	7.0	15.0	10.0	14.0	19.0	19.0	21.0	28.0	30.0	25.0
22	20.0	16.0	7.0	16.0	10.0	11.0	18.0	20.0	21.0	28.0	30.0	25.0
23	20.0	16.0	9.0	15.0	10.0	13.0	19.0	20.0	21.0	29.0	29.0	25.0
24	20.0	16.0	10.0	14.0	12.0	12.0	18.0	20.0	22.0	30.0	29.0	25.0
25	--	15.0	10.0	14.0	--	12.0	17.0	20.0	21.0	30.0	25.0	25.0
26	20.0	13.0	9.0	15.0	13.0	14.0	16.0	20.0	22.0	28.0	25.0	25.0
27	20.0	14.0	--	17.0	14.0	15.0	16.0	20.0	22.0	30.0	27.0	26.0
28	20.0	13.0	9.0	14.0	12.0	15.0	17.0	20.0	22.0	29.0	25.0	28.0
29	20.0	12.0	10.0	13.0	--	15.0	17.0	21.0	22.0	29.0	25.0	26.0
30	20.0	12.0	10.0	12.0	--	15.0	19.0	20.0	23.0	31.0	25.0	26.0
31	20.0	--	10.0	13.0	--	10.0	--	20.0	--	30.0	26.0	--
AVG	21.1	15.5	10.4	14.1	11.8	12.1	16.1	19.3	20.9	27.5	28.6	25.5

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	268	140	101	90	138	34	89	61	15
2	249	145	97	100	77	21	99	96	26
3	251	95	64	100	84	23	99	90	24
4	249	124	83	110	54	16	102	133	37
5	223	98	59	128	77	26	102	226	62
6	176	62	29	138	54	20	137	369	136
7	176	62	29	142	65	25	197	417	222
8	166	75	34	146	31	12	226	268	164
9	162	65	28	148	75	30	233	224	141
10	162	46	20	155	123	51	251	194	131
11	155	39	16	158	25	11	318	241	207
12	110	23	6.8	158	99	42	338	301	275
13	105	18	5.1	162	265	116	341	254	234
14	101	14	3.8	200	205	111	344	121	112
15	99	22	5.8	228	1100	745	368	179	178
16	95	22	5.6	178	775	372	403	188	204
17	93	13	3.2	142	210	80	414	157	175
18	91	15	3.7	114	95	29	407	127	140
19	91	5	1.2	108	80	23	403	162	176
20	93	22	5.5	100	143	39	418	144	162
21	87	10	2.3	94	66	17	486	175	230
22	87	26	6.1	90	48	12	466	141	177
23	85	29	6.5	88	75	18	478	171	221
24	85	32	7.3	87	84	20	458	160	198
25	85	25	5.7	87	242	57	410	87	96
26	86	16	3.7	86	70	16	1450	1380	11700
27	84	23	5.2	82	51	11	1920	3750	21900
28	86	65	15	84	68	15	587	1020	1750
29	86	16	3.7	79	65	14	375	255	258
30	88	14	3.3	81	55	12	276	141	105
31	88	50	12	--	--	--	144	101	39
TOTAL	4062	--	671.5	3663	--	2018	12339	--	39495

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	101	110	30	93	22	5.5	450	256	311
2	78	72	15	139	321	122	446	243	292
3	80	65	14	153	318	131	446	124	149
4	79	64	14	158	173	74	446	219	264
5	74	52	10	170	243	112	454	282	346
6	77	21	4.3	178	215	103	478	179	231
7	84	16	3.6	193	329	171	506	287	392
8	80	50	11	202	209	114	494	411	548
9	80	34	7.3	231	133	83	562	523	794
10	78	72	15	231	155	97	594	562	901
11	79	29	6.2	268	342	254	679	638	1180
12	76	24	4.9	309	319	266	694	563	1050
13	73	39	7.7	322	249	216	670	490	886
14	128	59	20	334	219	197	658	440	782
15	1250	108	378	334	215	194	662	470	840
16	590	521	830	338	211	193	666	485	872
17	318	371	318	338	199	182	670	409	740
18	223	115	69	341	207	190	666	416	748
19	189	52	26	392	404	428	666	366	658
20	245	300	233	443	378	452	670	361	653
21	270	71	52	478	400	516	674	393	715
22	1440	467	2400	478	442	570	678	280	513
23	371	193	193	506	377	515	694	325	609
24	294	99	79	514	294	408	698	278	524
25	276	53	39	482	244	318	658	275	488
26	331	67	71	458	287	355	614	267	443
27	189	42	21	450	256	311	606	280	458
28	141	32	12	450	247	300	610	238	392
29	117	36	11	--	--	--	618	216	360
30	104	30	8.4	--	--	--	622	262	440
31	97	65	17	--	--	--	626	312	527
TOTAL	7612	--	4920.4	8983	--	6877.5	18675	--	18106

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	674	317	577	610	92	152	638	111	191
2	678	309	566	610	187	308	634	102	174
3	678	161	295	626	233	394	646	90	157
4	658	167	297	650	251	440	658	187	332
5	658	333	592	666	249	448	654	181	320
6	658	225	400	674	160	291	662	192	343
7	658	339	602	674	104	189	662	160	286
8	658	343	609	674	127	231	694	174	326
9	600	324	525	638	118	203	694	178	334
10	570	174	268	618	128	214	690	140	261
11	580	260	407	614	180	298	686	152	282
12	570	168	258	602	117	190	686	148	274
13	570	212	326	586	118	187	686	149	276
14	570	284	437	582	189	297	682	130	239
15	570	305	469	590	251	400	686	168	311
16	570	253	389	602	241	392	686	252	467
17	570	253	389	602	139	226	706	235	448
18	560	225	340	618	211	352	722	137	267
19	550	183	272	630	256	435	730	140	276
20	550	151	224	642	231	400	742	196	393
21	550	72	107	642	223	386	738	202	402
22	540	113	165	642	259	449	738	181	361
23	540	155	226	646	202	352	738	112	223
24	540	124	181	646	165	288	738	169	337
25	540	82	120	646	192	335	738	223	444
26	560	162	245	654	225	397	746	226	455
27	580	109	171	654	213	376	734	201	398
28	600	186	301	654	188	332	734	183	363
29	600	111	180	650	162	284	730	190	374
30	600	52	84	642	162	281	730	188	370
31	--	--	--	634	87	149	--	--	--
TOTAL	17800	--	10022	19618	--	9676	21008	--	9684

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	734	150	297	920	1530	3800	734	5400	10700
2	722	203	396	885	735	1760	694	2850	5340
3	714	139	267	860	589	1370	694	1000	1870
4	710	105	201	860	485	1130	694	525	984
5	698	106	200	831	729	1640	706	9000	17200
6	698	120	226	855	610	1410	674	4250	7730
7	734	161	319	870	645	1520	670	980	1770
8	738	149	297	1030	26200	78800	694	1950	3650
9	738	153	305	988	19200	53100	678	1210	2220
10	738	223	444	970	14600	38200	654	435	768
11	738	245	488	825	5000	11100	646	400	698
12	780	229	482	790	1500	3200	892	20300	52100
13	780	203	428	775	2150	4500	626	11000	18600
14	780	172	362	830	16100	36100	558	2000	3020
15	780	258	543	880	17600	41900	534	7280	10500
16	830	244	547	730	2450	4830	466	3110	3910
17	810	208	455	722	1250	2440	410	21200	23400
18	830	1120	2560	710	800	1530	344	5950	5530
19	820	750	1660	710	455	872	312	768	647
20	835	409	922	710	399	765	262	391	276
21	825	350	780	710	440	843	228	234	144
22	830	410	917	730	499	984	218	243	143
23	1050	1090	3160	730	375	739	214	311	180
24	925	489	1220	734	299	592	209	185	104
25	910	360	884	726	395	774	206	200	111
26	875	389	919	730	365	719	204	189	104
27	960	12200	38600	878	15800	41700	197	128	68
28	1010	11900	32500	824	16100	36200	195	119	63
29	915	3020	7800	961	16600	47100	193	103	54
30	1090	22600	68300	722	6250	12200	191	73	38
31	945	5990	15300	762	4350	8950	--	--	--
TOTAL	25542	--	181779	25258	--	440768	13997	--	171922

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 178557
TOTAL LOAD FOR YEAR (TONS) 895939.4

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC 27, 1968	1700	9	610	3110	5120	32	47	--	76	--	98	100	--	--	--	--	SPWC
JUL 27, 1969	1900	30	1320	43600	155000	54	72	--	96	--	99	100	--	--	--	--	VPWC
AUG 8.....	1900	31	1110	42800	128000	55	65	--	92	--	99	100	--	--	--	--	VPWC
AUG 27.....	1900	27	870	26400	62000	48	60	--	85	--	99	100	--	--	--	--	VPWC
SEP 12.....	1700	24	754	24600	50100	42	59	--	86	--	98	99	99	100	--	--	SPWC

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: H, HYDROMETER; O, OPTICAL ANALYZER; S, SIEVE; V, VISUAL ACCUMULATION TUBE)

DATE	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .062	.125	.250	.500	1.00	2.00	4.00	8.00	16.0	32.0	64.0	METHOD OF ANALYSIS
FEB 11, 1969	1200	14			4	16	33	37	43	51	58	66	100	--	--	S
JUN 26.....	1300	22			12	23	36	78	93	96	97	97	100	--	--	S

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, ARIZ.
(Irrigation network station)

LOCATION.--Lat 33°33'59", long 111°32'08", in sec.33, T.3 N., R.8 E. (unsurveyed), Maricopa County, at Stewart Mountain Dam, 3.5 miles upstream from gaging station and 9.5 miles upstream from Verde River.

DRAINAGE AREA.--6,232 sq mi, at gaging station, of which 21 sq mi is downstream from Stewart Mountain Dam.

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1969.
Water temperatures: December 1950 to September 1969.

EXTREMES.--1968-69:
Dissolved solids: Maximum, 544 mg/l Nov. 1-30; minimum, 508 mg/l Apr. 1-30.
Hardness: Maximum, 200 mg/l June 1-30; minimum, 162 mg/l Mar. 1-31, Apr. 1-30.
Specific conductance: Maximum daily, 995 micromhos Dec. 10; minimum daily, 894 micromhos Apr. 13.
Water temperatures: Maximum, 29.0°C Sept. 11, 12; minimum, 11.0°C on many days during January and February.

Period of record:
Dissolved solids: Maximum, 1,300 mg/l Aug. 21-28, 1951; minimum, 361 mg/l Mar. 21-31, 1953.
Hardness: Maximum, 270 mg/l Nov. 1-30, 1956; minimum, 121 mg/l Dec. 22-23, 1967.
Specific conductance: Maximum daily, 2,490 micromhos Aug. 20, 1951; minimum daily (1950-64, 1965-68), 620 micromhos Mar. 28, 1953.
Water temperatures: Maximum, 29.0°C Aug. 24, 26, 27, 1951, Sept. 11, 12, 1969; minimum, 9.5°C Feb. 14, 1951.

REMARKS.--No inflow between sampling point and gaging station except during periods of heavy local rains.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
01-31	924	20	--	50	9.7	--	--	129	149	0	47	194
NOV.												
01-30	423	18	--	53	12	--	--	131	159	0	49	200
DEC.												
01-31	799	16	--	48	13	--	--	134	160	0	50	198
JAN.												
01-31	188	18	--	49	12	--	--	132	152	0	49	200
FEB.												
01-28	475	18	--	53	9.7	--	--	130	154	0	49	196
MAR.												
01-31	611	19	--	53	7.3	--	--	125	152	0	51	181
APR.												
01-30	1388	19	20	54	6.7	120	4.3	--	152	0	48	180
MAY												
01-31	2147	18	--	56	10	--	--	129	153	0	48	204
JUNE												
01-30	2269	18	--	49	19	--	--	120	158	0	49	198
JULY												
01-31	1129	20	0	50	9.5	123	4.4	--	152	0	50	188
AUG.												
01-31	205	21	--	50	9.5	--	--	125	152	0	48	184
SEPT.												
01-30	1310	20	--	52	9.4	--	--	125	152	0	48	188
WTD. AVG. TIME	--	19	--	52	11	--	--	127	154	0	49	194
WTD. AVG. TONS PER DAY	990	19	--	51	11	--	--	128	154	0	49	193
	--	50	--	138	30	--	--	320	411	0	130	517

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.												
01-31	--	.6	140	--	523	.71	1310	165	43	4.4	951	8.0
NOV.												
01-30	--	2.8	120	--	544	.74	621	182	52	4.2	946	7.7
DEC.												
01-31	--	1.2	140	--	539	.73	1160	172	41	4.4	964	7.7
JAN.												
01-31	--	.6	120	--	536	.73	272	170	45	4.4	947	7.8
FEB.												
01-28	--	.4	120	--	532	.72	682	172	46	4.3	938	8.0
MAR.												
01-31	--	.7	120	--	512	.70	845	162	37	4.3	912	8.1
APR.												
01-30	.5	.5	90	542	508	.74	2030	162	37	4.1	908	8.0
MAY												
01-31	--	.5	130	--	541	.74	3140	182	56	4.2	956	7.9
JUNE												
01-30	--	.3	110	--	531	.72	3250	200	70	3.7	953	7.9
JULY												
01-31	.3	1.7	110	526	522	.72	1600	164	39	4.2	933	7.7
AUG.												
01-31	--	1.9	130	--	515	.70	285	164	39	4.2	931	7.9
SEPT.												
01-30	--	1.2	120	--	519	.71	1840	168	43	4.2	937	7.8
WTD. AVG. TIME	--	.8	0	--	527	--	--	176	49	4.1	942	7.9
WTD. AVG. TONS PER DAY	--	1.0	121	--	527	.72	--	172	46	4.2	940	7.9
	--	2.2	0	--	1410	--	--	--	--	--	--	--

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	962	943	952	--	952	908	903	925	967	934	932	924
2	959	952	955	--	954	934	903	930	970	938	929	934
3	954	969	952	--	952	901	903	944	970	934	929	934
4	957	943	948	945	947	903	901	941	967	931	--	936
5	957	947	950	947	952	908	906	944	967	938	932	936
6	954	943	950	950	942	908	904	945	967	934	936	946
7	951	948	947	950	947	909	904	945	964	934	924	949
8	957	945	982	947	947	906	901	955	961	931	927	954
9	954	943	974	947	942	910	903	950	958	926	927	947
10	959	943	995	950	939	910	901	952	961	929	932	954
11	954	945	979	945	939	903	903	950	958	929	924	944
12	954	945	990	947	939	--	899	955	955	936	929	952
13	954	945	987	950	937	--	894	950	955	934	927	939
14	954	945	977	947	934	--	899	959	956	934	931	934
15	951	945	952	950	939	--	896	958	953	938	929	934
16	949	945	952	947	937	--	901	955	961	936	931	937
17	951	945	952	950	934	--	899	958	955	936	929	939
18	954	948	952	950	934	--	903	958	955	936	929	932
19	949	940	--	950	934	--	901	958	953	934	934	929
20	949	943	--	952	934	--	908	964	944	934	934	929
21	--	940	--	955	932	910	913	967	945	934	934	927
22	949	945	--	952	937	913	913	958	947	943	935	927
23	951	945	--	950	937	911	915	967	939	934	935	929
24	951	945	--	950	934	910	915	973	936	934	929	929
25	946	950	--	950	932	917	918	973	939	934	951	927
26	954	950	--	952	932	913	922	973	936	931	934	927
27	949	950	--	947	929	929	925	973	936	--	934	924
28	949	955	--	952	929	934	927	976	934	931	931	924
29	949	950	--	952	--	906	925	970	934	924	941	922
30	949	955	--	947	--	909	930	973	934	--	931	924
31	949	--	--	947	--	906	--	973	--	924	929	--
AVG	952	946	--	949	939	--	907	957	952	933	931	934

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	16.[illegible]	14.0	--	11.[illegible]	12.0	13.0	14.0	16.0	19.[illegible]	22.[illegible]	--
2	18.0	17.0	14.0	--	11.[illegible]	12.0	13.0	14.0	16.0	19.0	21.0	--
3	18.0	17.0	14.0	--	11.0	12.0	13.0	14.0	16.0	18.0	21.0	--
4	18.0	16.[illegible]	14.0	--	11.[illegible]	12.0	13.0	14.0	16.0	19.0	--	--
5	18.0	16.0	14.0	12.0	11.0	12.0	13.0	14.0	17.0	19.0	21.0	--
6	18.0	16.0	14.0	12.0	11.0	12.0	13.0	14.0	16.0	19.[illegible]	22.0	--
7	17.0	16.0	14.0	12.0	11.0	12.0	13.0	14.0	16.0	19.0	22.[illegible]	--
8	--	17.0	14.0	12.0	11.0	11.0	13.0	14.0	16.0	19.0	21.0	--
9	17.0	16.0	13.0	12.0	11.0	12.0	13.0	15.0	16.0	19.0	21.0	--
10	17.0	16.0	13.0	11.0	11.0	12.0	13.0	15.0	17.0	19.0	21.0	--
11	17.0	16.0	13.0	11.0	11.0	12.0	13.0	15.0	17.0	19.0	21.0	--
12	18.0	16.0	13.0	11.0	11.0	--	13.0	15.0	17.0	19.0	21.0	--
13	18.0	--	13.0	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
14	18.0	16.0	13.0	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
15	18.0	16.0	13.0	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
16	18.0	16.0	13.0	11.0	12.0	--	13.0	15.0	17.0	19.0	22.0	--
17	17.0	15.0	12.0	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
18	17.0	15.0	12.0	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
19	17.0	15.0	--	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
20	17.0	16.0	--	11.0	12.0	--	13.0	15.0	17.0	19.0	21.0	--
21	--	16.0	--	11.0	12.0	12.0	14.0	15.0	18.0	19.0	21.0	--
22	17.0	16.0	--	11.0	12.0	12.0	14.0	15.0	18.0	--	21.[illegible]	--
23	17.0	16.0	--	11.0	12.0	12.0	14.0	15.0	18.0	21.0	22.0	--
24	17.0	16.0	--	11.0	12.0	12.0	14.0	16.0	18.0	21.0	21.0	--
25	17.0	16.0	--	11.0	11.0	12.0	14.0	--	18.0	21.0	21.0	--
26	17.0	15.0	--	11.0	11.0	12.0	14.0	16.0	18.0	21.0	21.0	--
27	17.0	15.0	--	11.0	11.0	12.0	14.0	16.0	18.0	--	22.0	--
28	17.0	14.[illegible]	--	11.0	11.0	12.0	14.[illegible]	16.[illegible]	19.0	21.0	22.[illegible]	--
29	17.0	14.0	--	12.0	--	13.0	14.0	16.0	18.0	22.0	22.0	--
30	17.0	14.0	--	11.0	--	13.0	14.0	16.0	18.0	--	21.0	--
31	17.0	--	--	11.0	--	13.0	--	16.0	--	22.0	21.0	--
AVG	17.4	15.7	--	11.2	11.4	--	13.3	15.0	17.1	19.[illegible]	21.3	--

09508300 WET BOTTOM CREEK NEAR CHILDS, ARIZ.
(Hydrologic bench-mark station)

LOCATION.--Lat 34°09'39", long 111°41'32", in sec.36, T.9½N., R.6 E. (unsurveyed), Gila County, at gaging station, in Tonto National Forest, 1.4 miles upstream from mouth, and 13 miles south of town of Childs.

DRAINAGE AREA.--37 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: August 1968 to September 1969.
Sediment records: August 1968 to September 1969 (partial records).

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, AUGUST TO SEPTEMBER 1968

DATE	TIME	TEMPERATURE	DISCHARGE	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
AUG.												
21...	1030	25	.92	30	10	34	5.9	14	1.5	118	0	0.2
SEPT.												
16...	1330	24	.05	31	30	37	9.1	20	1.6	193	0	3.0

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180°C)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
AUG.												
21...	4.8	1.2	.1	1.3	50	150	84	0	.7	217	7.7	5
SEPT.												
16...	8.6	1.3	.2	.05	20	204	130	0	.8	323	8.0	3

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	DISSOLVED IRON (FE) (UG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.												
15...	1000	19	.12	29	20	44	7.3	22	1.4	202	0	5.8
NOV.												
18...	1130	13	.34	31	30	42	8.3	26	1.2	209	0	7.0
DEC.												
12...	1230	10	.36	31	0	40	7.8	25	1.2	200	0	8.0
JAN.												
21...	1140	11	16	17	60	9.0	1.1	5.2	.7	28	0	9.6
FEB.												
20...	1330	8	36	14	30	7.0	1.3	3.1	.5	21	0	9.2
MAR.												
18...	1240	11	26	14	50	6.5	1.5	3.2	.5	21	0	8.8
APR.												
22...	0930	17	.82	27	0	25	5.2	11	1.0	114	0	10
MAY												
16...	1100	16	.13	28	10	32	6.8	14	1.2	149	2	6.8
JUNE												
26...	--	--	.00	--	--	--	--	--	--	--	--	--
JULY												
17...	--	--	.00	--	--	--	--	--	--	--	--	--
AUG.												
18...	1030	28	.18	36	80	44	11	27	1.7	230	4	3.6
SEPT.												
10...	0930	26	.10	31	10	42	12	28	2.3	242	0	.0

DATE	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	PHOSPHATE (PO4) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180°C) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	COLOR (PLATINUM-COBALT UNITS)
OCT.												
15...	11	1.4	.1	.25	80	212	140	0	.8	351	8.0	3
NOV.												
18...	11	1.7	.1	.03	80	219	139	0	1.0	363	8.2	3
DEC.												
12...	9.7	2.0	.0	.04	60	238	132	0	.9	355	8.0	3
JAN.												
21...	1.9	.6	.1	.12	40	76	27	4	.4	78	7.1	25
FEB.												
20...	2.0	.4	.1	.02	30	61	23	6	.3	64	7.2	15
MAR.												
18...	2.2	.4	.2	.03	30	62	22	5	.3	64	7.3	30
APR.												
22...	5.4	1.0	.1	.01	60	139	84	0	.5	216	8.1	30
MAY												
16...	7.4	1.1	.0	.00	90	167	108	0	.6	273	8.3	3
JUNE												
26...	--	--	--	--	--	--	--	--	--	--	--	--
JULY												
17...	--	--	--	--	--	--	--	--	--	--	--	--
AUG.												
18...	16	1.6	.0	.05	70	221	170	0	.9	401	8.4	5
SEPT.												
10...	10	.8	.0	.04	70	242	154	0	1.0	391	8.2	3

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, AUGUST 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
FEB 27, 1968	0930	14	14	14	.52	FEB 20, 1969	1330	8	36	10	.97
SEP 16.....	1030	24	.06	9	0	MAR 18.....	1230	11	26	3	.21
OCT 15.....	1000	19	.12	4	0	MAY 16.....	1115	16	.13	11	0
NOV 18.....	1120	13	.34	3	0	AUG 18.....	1030	28	.18	0	0
DEC 12.....	1230	10	.36	4	0	SEP 10.....	0930	26	.10	4	0
JAN 21, 1969	1130	10	16	5	.22	SEP 12.....	1030	18	.33	1	T

T LESS THAN 0.05 TON.

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.
(Irrigation network station)

LOCATION.--Lat 33°49'05", long 111°37'53", in sec.33, T.6 N., R.7 E. (unsurveyed), Maricopa County, at Bartlett Dam, 2.1 miles upstream from gaging station, 6.1 miles upstream from Camp Creek, and 18 miles east of town of Cave Creek.

DRAINAGE AREA.--6,188 sq mi (at gaging station).

PERIOD OF RECORD--Chemical analyses: December 1950 to September 1969.
Water temperatures: December 1950 to September 1969.

EXTREMES.--1968-69:
Dissolved solids: Maximum, 375 mg/l Nov. 1-30; minimum, 196 mg/l July 1-31.
Hardness: Maximum, 240 mg/l Dec. 1-31, Jan. 1-31; minimum, 136 mg/l July 1-31.
Specific conductance: Maximum daily, 632 micromhos Dec. 25; minimum daily, 292 micromhos July 26.
Water temperatures: Maximum, 30.0°C Aug. 28, 29, 30, Sept. 5; minimum, 8.0°C Jan. 2, 3, Feb. 11.

Period of record:
Dissolved solids: Maximum, 550 mg/l Dec. 18-21, 1956; minimum, 152 mg/l May 1-31, 1965.
Hardness: Maximum, 413 mg/l Dec. 18-21, 1956; minimum, 102 mg/l May 1-31, 1965.
Specific conductance: Maximum daily, 958 micromhos Nov. 10, 1956; minimum daily, 225 micromhos May 14, 1965.
Water temperatures (1950-65, 1967-69): Maximum, 32.0°C July 18, Aug. 14, 1951; minimum, 5.0°C Jan. 30, 1952.

REMARKS.--No inflow between sampling point and gaging station except during periods of heavy local rains.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	164	21	30	43	26	32	3.9	--	240	0	63	21
NOV.												
01-30	78	23	--	45	28	--	--	49	256	12	68	23
DEC.												
01-31	39	20	--	46	30	--	--	36	268	0	71	18
JAN.												
01-31	70	21	--	48	29	--	--	33	274	0	67	13
FEB.												
01-28	106	20	--	44	29	--	--	34	264	0	64	16
MAR.												
01-15	1103	20	--	44	28	--	--	24	246	6	54	7.2
16-28	2069	20	--	40	23	--	--	17	216	2	36	11
29-31	2463	17	--	35	16	--	--	15	173	0	34	6.8
APR.												
01-10	2046	20	--	40	13	--	--	19	174	0	34	11
11-30	303	16	70	39	12	15	2.3	--	168	0	30	10
MAY												
01-31	213	17	--	34	16	--	--	17	174	0	29	10
JUNE												
01-30	403	19	--	34	16	--	--	14	164	4	27	11
JULY												
01-31	1290	21	20	38	10	13	1.9	--	168	0	22	6.2
AUG.												
01-13	1883	20	--	46	8.0	--	--	16	180	0	23	7.2
14-31	1956	20	--	47	17	--	--	24	200	8	45	11
SEPT.												
01-30	92	23	--	46	24	--	--	27	210	12	62	9.0
WTD. AVG. TIME	--	20	--	41	16	--	--	--	194	3	36	9.6
WTD. AVG. TONS PER DAY	594	20	--	42	21	--	--	--	217	3	49	13
	--	31	--	65	26	--	--	--	304	4	56	15

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RES)-DUE AT 180°C (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.												
01-31	.4	.3	210	316	329	.43	140	214	18	.9	530	8.2
NOV.												
01-30	--	.3	210	--	375	.51	79.0	227	17	1.4	565	8.4
DEC.												
01-31	--	.2	210	--	353	.48	37.2	240	20	1.0	591	8.0
JAN.												
01-31	--	.2	210	--	346	.47	65.4	240	15	.9	585	8.2
FEB.												
01-28	--	.3	190	--	337	.46	96.4	231	14	1.0	567	8.2
MAR.												
01-15	--	.2	180	--	305	.41	908	226	14	.7	545	8.4
16-28	--	.4	160	--	256	.35	1430	196	15	.5	476	8.3
29-31	--	.6	120	--	210	.29	1400	155	13	.5	364	8.0
APR.												
01-10	--	.8	110	--	224	.30	1240	152	9	.7	361	8.0
11-30	.4	.7	100	211	209	.29	173	148	10	.5	347	8.0
MAY												
01-31	--	.6	80	--	210	.29	121	150	7	.6	342	8.1
JUNE												
01-30	--	.7	110	--	207	.28	225	149	8	.5	334	8.3
JULY												
01-31	.1	1.1	120	192	196	.26	669	136	0	.5	310	8.1
AUG.												
01-13	--	.4	100	--	210	.29	1070	148	0	.6	341	8.2
14-31	--	.4	140	--	271	.37	1430	188	11	.8	449	8.5
SEPT.												
01-30	--	1.3	200	--	308	.42	76.5	212	20	.8	529	8.5
WTD. AVG. TIME	--	.6	0	--	242	--	--	171	8	.6	405	8.2
WTD. AVG. TONS PER DAY	--	.5	161	--	283	.38	--	194	12	.8	467	8.2
	--	.9	0	--	380	--	--	--	--	--	--	--

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	484	561	525	585	585	551	366	345	336	330	320	503
2	486	552	578	585	583	550	365	349	337	327	328	539
3	490	556	574	588	583	550	363	345	339	327	331	560
4	488	537	590	578	582	550	364	346	336	316	337	560
5	481	556	579	593	580	556	366	--	335	310	340	562
6	476	553	585	590	596	547	367	341	338	305	353	557
7	531	550	585	593	577	550	346	349	335	308	350	557
8	527	488	587	590	577	548	345	349	339	308	347	559
9	529	560	597	590	576	545	344	346	337	307	346	--
10	552	543	585	596	576	549	448	347	335	306	345	555
11	548	555	594	593	578	541	348	346	336	298	341	546
12	549	557	585	591	576	545	348	349	333	315	348	534
13	553	557	584	590	555	484	345	345	334	302	342	539
14	550	586	594	587	557	546	346	343	334	298	395	532
15	550	567	592	585	557	548	345	344	332	344	409	515
16	553	596	592	565	556	456	348	348	337	344	414	514
17	526	592	594	585	557	456	341	348	334	303	416	494
18	532	532	593	584	556	453	348	345	334	301	422	515
19	525	546	582	583	555	455	349	339	333	296	427	516
20	525	586	587	584	581	486	345	345	332	--	442	523
21	523	588	589	585	575	479	346	350	--	300	460	520
22	525	584	558	584	534	484	346	343	342	300	460	520
23	525	527	594	589	545	483	350	340	344	297	458	520
24	524	--	611	586	545	484	343	336	324	294	460	520
25	523	--	632	588	544	485	343	332	327	302	454	519
26	562	--	626	587	555	484	343	340	333	292	456	520
27	564	579	613	590	555	484	343	337	331	294	456	512
28	567	583	609	583	545	484	344	337	325	305	491	516
29	561	577	620	588	--	362	--	339	327	313	489	521
30	552	577	584	586	--	360	347	337	323	309	484	521
31	552	--	622	582	--	366	--	337	--	326	486	--
AVG	529	562	590	586	565	497	353	343	333	309	403	529

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	19.0	15.0	10.0	10.0	10.0	13.0	13.0	--	--	26.0	29.0
2	22.0	18.0	15.0	8.0	10.0	10.0	13.0	13.0	--	--	25.0	29.0
3	23.0	19.0	15.0	8.0	10.0	10.0	15.0	13.0	13.0	--	21.0	27.0
4	23.0	19.	15.0	9.0	10.0	10.0	15.0	13.0	13.0	--	21.0	28.0
5	23.0	18.0	15.0	11.0	10.0	10.0	15.0	--	13.0	--	24.0	30.0
6	23.0	19.0	14.0	11.0	12.0	11.0	16.0	13.0	13.0	--	22.0	29.0
7	21.0	17.0	14.0	12.0	10.0	9.0	12.0	13.0	13.0	--	25.0	29.0
8	22.0	15.0	13.0	12.0	10.0	9.0	12.0	12.0	13.0	--	24.0	29.0
9	23.0	14.0	13.0	12.0	12.0	10.0	12.0	12.0	13.0	--	24.0	--
10	23.0	15.0	--	11.0	13.0	10.0	12.0	14.0	13.0	--	24.0	29.0
11	23.0	15.0	13.0	12.0	8.0	10.0	12.0	14.0	13.0	--	24.0	27.0
12	23.0	15.0	12.0	12.0	10.0	10.0	12.0	14.0	13.0	--	25.	27.
13	23.0	15.0	11.0	11.0	11.0	11.0	12.0	14.0	13.0	--	25.0	27.
14	23.0	15.0	11.0	11.0	11.0	11.0	12.0	14.0	13.0	--	26.0	27.0
15	23.0	15.0	13.0	11.0	11.0	11.0	12.0	14.0	13.0	--	26.0	27.0
16	23.0	15.0	13.0	10.0	11.0	10.0	12.0	14.0	13.0	--	27.0	27.0
17	23.0	16.0	13.0	10.0	11.0	10.0	11.0	15.0	13.0	16.0	27.0	26.0
18	--	17.0	13.0	10.0	11.0	10.0	11.0	15.0	--	16.0	27.0	28.0
19	23.0	17.0	11.0	10.0	11.0	10.0	12.0	15.0	--	26.0	28.0	29.0
20	23.0	17.0	11.0	10.0	10.0	12.0	12.0	15.0	--	--	28.0	28.0
21	23.0	15.0	10.0	10.0	12.0	12.0	13.0	15.0	--	25.0	28.0	28.0
22	23.0	15.0	10.0	10.0	10.0	12.0	--	13.	--	25.0	26.0	27.0
23	--	--	10.0	--	9.0	12.	13.0	14.0	--	25.0	29.0	27.0
24	23.0	--	10.0	12.0	9.0	13.0	12.0	13.0	--	27.0	29.0	27.0
25	23.0	--	10.0	12.0	11.0	12.0	12.0	13.0	--	27.0	28.0	25.0
26	23.0	--	10.0	12.0	12.0	12.0	12.0	13.0	--	27.0	28.0	24.0
27	20.0	15.0	10.0	13.0	12.0	12.0	12.0	13.0	--	27.0	28.0	25.0
28	20.0	15.0	13.0	13.0	10.0	13.0	12.0	13.0	--	21.0	30.0	25.0
29	20.0	15.0	10.0	13.0	--	13.0	--	13.0	--	26.0	30.0	25.0
30	20.0	14.0	10.0	13.0	--	13.0	13.0	13.0	--	26.0	30.0	24.0
31	19.0	--	10.0	13.0	--	13.0	--	13.0	--	25.0	29.0	--
AVG	22.3	16.1	12.0	11.1	10.6	11.0	12.6	13.5	--	--	25.9	27.1

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 33°13'36", long 112°46'17", in SW¼NE¼ sec.28, T.2 S., R.5 W., Maricopa County, Enterprise Canal at gaging station at bridge on former U.S. Highway 80, 0.2 mile downstream from Gillespie Dam and 8 miles downstream from Hassayampa River.

DRAINAGE AREA.--49,650 sq mi.

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1969.
Water temperatures: December 1950 to February 1968.

EXTREMES.--1950-69:
Dissolved solids: Maximum, 7,720 mg/l Dec. 1-31, 1962; minimum, 144 mg/l Dec. 26-28, 1967.
Hardness: Maximum, 2,220 mg/l July 1-18, 1966; minimum, 80 mg/l Dec. 26-28, 1967.
Specific conductance: Maximum daily, 13,200 micromhos July 10, 11, 1966; minimum daily, 236 micromhos Dec. 28, 1967.
Water temperatures: Maximum (1950-67), 37.0°C July 8, 1958, July 22, 1959, Aug. 5, 8, 1966; minimum (1950-65), 2.0°C Jan. 1, 1951.

REMARKS.--Samples from Enterprise Canal are believed to be representative of total flow passing Gillespie Dam, including spill and amount diverted into Gila Bend Canal. Prior to October 1967 published as 09519500 Gila River below Gillespie Dam.

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)
OCT.												
01-18	23	26	280	112	--	--	953	286	0	1000	1350	--
19-22	12	27	305	126	--	--	1120	292	0	1170	1570	--
24-31	16	27	280	115	--	--	969	296	0	1000	1390	--
FEB.												
01-12	28	26	280	117	--	--	1060	258	0	1110	1460	--
13...	34	23	265	104	--	--	864	262	0	900	1250	--
MAR.												
03...	22	22	385	177	--	--	1430	342	0	1540	2040	--
15...	23	23	345	138	--	--	1250	320	0	1300	1770	--
27...	20	22	365	160	--	--	1320	306	0	1280	2000	--
APR.												
08-16	30	31	290	113	--	--	971	286	0	1060	1360	--
17-28	24	31	190	62	638	7.7	--	230	0	648	880	4.3
29-30	26	26	360	146	--	--	1200	331	0	1290	1740	--
MAY												
04...	20	35	340	144	--	--	1190	298	0	1260	1730	--
JUNE												
10...	18	30	298	140	--	--	1170	230	0	1280	1630	--
JULY												
03...	12	35	290	145	1280	14	--	167	0	1340	1820	2.6
25...	21	25	250	101	--	--	871	236	0	860	1280	--
AUG.												
06...	9.3	32	160	49	--	--	581	186	0	528	800	--
SEPT.												
11...	16	26	265	85	--	--	781	253	5	905	1150	--

DATE	NITRATE (NO3) (MG/L)	TOTAL NITROGEN (N) (MG/L)	PHOSPHATE (PO4) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.												
01-18	65	15	3.5	2500	3930	5.34	244	1160	926	12	6060	7.8
19-22	53	--	--	2900	4520	6.15	146	1280	1040	14	6910	7.9
24-31	51	--	--	2500	3940	5.41	172	1170	936	12	6200	7.8
FEB.												
01-12	59	--	--	3300	4240	5.77	321	1180	968	13	6510	7.7
13...	66	15	4.1	2600	3610	4.91	331	1190	875	11	5590	8.0
MAR.												
03...	47	12	1.1	4300	5820	7.92	346	1690	1410	15	8700	8.0
15...	40	--	--	3400	5030	6.84	312	1430	1170	14	7580	8.1
27...	40	--	--	3900	5340	7.26	288	1570	1320	14	8530	7.8
APR.												
08-16	56	--	--	2800	4020	5.47	391	1190	955	12	6090	8.1
17-28	53	13	1.2	2100	2630	3.60	172	730	541	13	4150	8.2
29-30	57	--	--	3400	4990	6.79	350	1500	1230	14	7520	7.9
MAY												
04...	41	12	1.8	3700	4910	6.68	265	1440	1200	14	7400	7.8
JUNE												
10...	46	14	1.4	4200	4730	6.43	230	1320	1130	14	7100	7.8
JULY												
03...	39	9.2	.97	3800	5050	7.14	170	1320	1180	15	7780	7.2
25...	47	--	--	2700	3550	4.83	201	1040	846	12	5590	7.5
AUG.												
06...	39	10	1.2	2000	2280	3.10	57.3	600	447	10	3740	7.8
SEPT.												
11...	39	3.9	1.1	2200	3280	4.46	142	1010	794	11	5160	8.3

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.

LOCATION.--Lat 32°42'45", long 114°33'09", in SW¼SE¼ sec.19, T.8 S., R.22 W., Yuma County, 0.5 mile upstream from mouth and 5 miles east of Yuma.

DRAINAGE AREA.--58,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Unpublished chemical analyses for water years 1962-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
07...	--	22	162	67	474	288	--	530
21...	--	--	166	67	--	280	--	--
NOV.								
04...	--	22	166	62	471	288	--	540
18...	--	--	146	52	--	236	--	--
DEC.								
02...	--	22	142	58	401	260	--	480
16...	--	--	150	61	--	272	--	--
30...	--	--	150	72	--	280	--	--
JAN., 1969								
13...	--	24	182	84	539	296	--	490
27...	--	--	158	65	--	276	--	--
FEB.								
10...	--	16	132	49	323	232	--	440
24...	--	--	182	82	--	292	--	--
MAR.								
10...	--	20	166	70	487	208	--	450
26...	--	--	190	84	--	296	--	--
APR.								
09...	--	20	191	79	568	296	--	510
MAY								
07...	--	18	158	53	436	268	--	520
21...	--	--	129	55	--	248	--	--
JUNE								
06...	--	22	166	68	445	268	--	540
26...	--	--	170	76	--	276	--	--
JULY								
10...	--	20	198	87	591	292	--	500
23...	--	--	178	65	--	280	--	--
AUG.								
06...	--	20	170	82	536	290	--	450
22...	--	--	188	85	--	296	--	--
SEP.								
03...	--	--	178	87	--	264	--	--
19...	--	--	158	65	--	280	--	--

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONST)-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT., 1968								
07...	655	2050	2.79	680	444	7.9	3530	7.6
21...	658	2080	2.83	690	460	--	3460	7.6
NOV.								
04...	635	2040	2.77	670	434	7.9	3430	7.6
18...	515	1770	2.41	580	386	--	2950	7.7
DEC.								
02...	535	1770	2.41	595	382	7.2	3020	7.7
16...	645	2000	2.72	625	402	--	3340	7.8
30...	725	2160	2.94	670	440	--	3600	7.8
JAN., 1969								
13...	865	2330	3.17	800	558	8.3	4060	7.6
27...	555	1870	2.54	660	434	--	3110	7.8
FEB.								
10...	415	1490	2.03	530	340	6.1	2510	7.9
24...	892	2400	3.26	790	550	--	4000	7.8
MAR.								
10...	795	2090	2.84	700	530	8.0	3870	7.6
26...	875	2450	3.33	820	578	--	4090	7.6
APR.								
09...	895	2410	3.28	800	558	8.7	4180	7.8
MAY								
07...	565	1880	2.56	610	390	7.7	3070	7.6
21...	495	1660	2.26	550	346	--	2760	7.6
JUNE								
06...	625	2000	2.72	695	475	7.3	3220	7.5
26...	785	2260	3.07	735	508	--	3760	7.5
JULY								
10...	975	2520	3.43	850	610	8.8	4440	7.8
23...	745	2000	2.72	710	480	--	3330	8.0
AUG.								
06...	865	2320	3.16	760	522	8.4	3840	8.0
22...	925	2400	3.26	820	578	--	4000	7.9
SEP.								
03...	992	2490	3.39	800	584	--	4150	8.0
19...	755	1980	2.69	660	430	--	3300	8.0

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY ABOVE MORELOS DAM, NEAR ANDRADE, CALIF.

LOCATION.--Lat 32°43'07", long 114°43'05", in NE¼SE¼ sec.21, T.8 S., R.24 W., Gila and Salt River Meridian, Yuma County, Ariz., at northerly international boundary, 0.5 mile east of Andrade, 1.1 miles upstream from Morelos Dam, 1.1 miles downstream from Rockwood Gate, 20.7 miles upstream from southerly international boundary, and 21 miles downstream from Laguna Dam.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
07...	--	12	103	42	183	204	--	360
14...	--	12	106	39	189	204	--	360
21...	--	12	100	41	188	200	--	370
28...	--	13	103	40	184	204	--	360
NOV.								
04...	--	12	103	42	183	204	--	360
12...	--	12	105	41	184	208	--	360
18...	--	12	108	41	195	208	--	380
25...	--	12	106	45	203	212	--	380
DEC.								
02...	--	12	111	41	202	216	--	380
09...	--	12	106	45	192	208	--	360
16...	--	13	114	45	242	204	--	400
23...	--	11	114	45	234	204	--	390
30...	--	11	116	44	236	208	--	390
JAN., 1969								
06...	--	11	110	45	237	200	--	390
13...	--	13	122	45	244	190	--	400
20...	--	13	127	49	286	224	--	435
27...	--	13	118	45	207	224	--	390
FEB.								
03...	--	14	113	42	206	216	--	370
10...	--	12	111	40	191	204	--	360
17...	--	12	122	45	251	208	--	400
24...	--	12	124	44	236	208	--	390
MAR.								
03...	--	12	119	46	240	196	--	390
10...	--	11	106	50	242	199	--	400
17...	--	10	113	48	239	192	--	400
24...	--	11	118	45	242	200	--	400
APR.								
01...	--	11	116	46	230	200	--	390
07...	--	11	118	45	230	200	--	390
14...	--	10	119	45	253	200	--	410
21...	--	10	124	41	245	200	--	420
28...	--	11	119	45	230	204	--	400
MAY								
05...	--	10	121	43	245	212	--	430
12...	--	11	111	45	229	208	--	430
19...	--	11	118	45	228	212	--	430
26...	--	11	127	43	247	216	--	440
JUNE								
02...	--	12	130	45	249	216	--	450
09...	--	11	130	45	243	220	--	430
16...	--	11	121	46	263	212	--	430
23...	--	14	119	49	267	208	--	430
30...	--	12	129	43	254	208	--	430
JULY								
07...	--	11	124	41	240	200	--	410
14...	--	11	129	43	249	196	--	430
22...	--	12	114	45	242	200	--	410
28...	--	11	111	49	226	200	--	400
AUG.								
04...	--	11	113	47	252	200	--	430
11...	--	11	110	46	241	200	--	410
18...	--	11	118	45	242	200	--	420
25...	--	11	121	41	242	196	--	420
SEP.								
02...	--	11	114	48	245	204	--	430
08...	--	12	114	52	243	208	--	420
15...	--	11	121	48	234	212	--	420
22...	--	14	116	44	206	208	--	390
29...	--	11	108	37	177	188	--	380

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY ABOVE MORELOS DAM, NEAR ANDRADE, CALIF.--Continued

DRAINAGE AREA.--243,000 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
REMARKS.--Unpublished chemical analyses for water years 1962-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO (SAR)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
07...	202	1000	1.36	430	262	3.8	1660	7.8
14...	208	1020	1.39	425	258	4.0	1690	7.8
21...	198	1010	1.37	420	256	4.0	1660	7.7
28...	198	1000	1.36	420	252	3.9	1660	7.7
NOV.								
04...	202	1000	1.36	430	262	3.8	1660	7.7
12...	202	1010	1.37	430	260	3.9	1670	7.7
18...	212	1050	1.43	440	270	4.1	1720	7.6
25...	228	1080	1.47	450	276	4.2	1790	7.7
DEC.								
02...	222	1080	1.47	445	268	4.2	1750	7.8
09...	228	1050	1.43	450	280	3.9	1740	7.8
16...	292	1210	1.65	470	302	4.9	2000	7.8
23...	288	1180	1.60	470	302	4.7	2020	7.8
30...	288	1190	1.62	470	300	4.7	2020	7.9
JAN., 1969								
06...	288	1180	1.60	460	296	4.8	1990	7.8
13...	318	1240	1.69	490	334	4.8	2080	7.8
20...	358	1380	1.88	520	336	5.5	2310	7.9
27...	242	1130	1.54	480	296	4.1	1860	7.8
FEB.								
03...	242	1100	1.50	455	278	4.2	1810	7.8
10...	222	1040	1.41	440	272	4.0	1750	7.8
17...	318	1250	1.70	490	320	4.9	2090	7.9
24...	302	1210	1.65	490	320	4.6	2040	7.9
MAR.								
03...	312	1220	1.66	485	324	4.7	2080	7.8
10...	295	1200	1.63	470	307	4.9	2020	7.8
17...	302	1210	1.65	480	322	4.7	2070	7.8
24...	302	1220	1.66	480	316	4.8	2050	7.8
APR.								
01...	292	1180	1.60	480	316	4.6	2030	7.9
07...	292	1190	1.62	480	316	4.6	2040	7.8
14...	312	1250	1.70	480	316	5.0	2080	7.8
21...	292	1230	1.67	480	316	4.9	2000	7.9
28...	282	1190	1.62	480	312	4.6	2010	7.7
MAY								
05...	278	1230	1.67	480	306	4.9	2010	7.9
12...	242	1170	1.59	460	290	4.6	1910	7.7
19...	252	1190	1.62	480	306	4.5	1940	7.8
26...	282	1260	1.71	495	318	4.8	2060	7.7
JUNE								
02...	288	1280	1.74	510	333	4.8	2090	7.9
09...	292	1260	1.71	510	330	4.7	2090	7.8
16...	312	1290	1.75	490	316	5.2	2130	7.9
23...	328	1310	1.78	500	330	5.2	2150	7.8
30...	308	1280	1.74	500	330	4.9	2100	7.8
JULY								
07...	292	1220	1.66	480	316	4.8	2010	7.8
14...	308	1270	1.73	500	340	4.8	2100	7.9
22...	288	1210	1.65	470	306	4.9	2010	7.9
28...	278	1180	1.60	480	316	4.5	1950	8.1
AUG.								
04...	292	1250	1.70	475	311	5.0	2000	8.2
11...	282	1200	1.63	465	301	4.9	1950	8.0
18...	288	1220	1.66	480	316	4.8	1970	8.2
25...	282	1220	1.66	470	310	4.9	1990	8.2
SEP.								
02...	282	1230	1.67	480	312	4.9	2000	8.1
08...	298	1240	1.69	500	330	4.7	2050	8.2
15...	282	1220	1.66	500	326	4.6	1980	8.1
22...	242	1120	1.52	470	300	4.1	1790	8.1
29...	182	989	1.35	420	266	3.7	1550	8.1

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, ARIZ.

LOCATION.--Lat 32°29'48", long 114°48'48", at gaging station in Mexico, 0.2 mile upstream from southerly international boundary, 2 miles west of San Luis, Ariz., 19.4 miles downstream from Morelos Dam, and 20.5 miles downstream from northerly international boundary.

DRAINAGE AREA.--243,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

REMARKS.--Unpublished chemical analyses for water years 1962-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
31...	--	23	294	128	1160	312	--	940
DEC.								
31...	--	--	274	126	--	288	--	--
JAN., 1969								
30...	--	--	290	130	--	344	--	--
FEB.								
27...	--	20	214	113	809	296	--	780
MAR.								
27...	--	--	158	61	--	240	--	--
APR.								
29...	--	--	214	89	--	292	--	--
MAY								
29...	--	19	198	84	659	260	--	780
JUNE								
26...	--	--	194	89	--	252	--	--
AUG.								
28...	--	--	178	72	--	192	--	--
SEP.								
30...	--	18	266	126	1190	320	--	990

DATE	CHLO-RIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT., 1968								
31...	1810	4510	6.13	1260	1000	14	7520	7.4
DEC.								
31...	1790	4390	5.97	1200	964	--	7310	7.6
JAN., 1969								
30...	1790	4380	5.96	1260	978	--	7300	7.5
FEB.								
27...	1210	3290	4.47	1000	758	11	5190	7.7
MAR.								
27...	435	1630	2.22	645	448	--	2720	7.6
APR.								
29...	995	2910	3.96	900	660	--	4850	7.5
MAY								
29...	885	2760	3.75	840	627	9.9	4420	7.6
JUNE								
26...	965	2860	3.89	850	644	--	4770	7.5
AUG.								
28...	892	2430	3.30	740	582	--	4050	7.9
SEP.								
30...	1760	4510	6.13	1180	918	15	7000	7.9

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, ARIZ.-CALIF.

LOCATION.--Lat 32°52'34", long 114°27'18", in SE¼SW¼ sec.30, T.6 S., R.21 W., Gila and Salt River Meridian, Yuma County, Ariz., temperature recorder at gaging station 0.6 mile downstream from intake at east end of Imperial Dam.

PERIOD OF RECORD.--Chemical analyses: December 1967 to September 1969 (miscellaneous).
Water temperatures: January 1956 to September 1969.

EXTREMES.--1968-69:
Water temperatures: Maximum, 32.0°C on many days during July, August, and September; minimum, 11.0°C on several days during January and February.

Period of record:
Water temperatures. Maximum, 32.0°C on many days during summer months of most years; minimum, 7.0°C Jan. 13-17, 1964.

REMARKS.--No flow Nov. 22-27. Temperature recorder inoperative Dec. 24 to Jan. 2, May 5-14, Sept. 29, 30.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	BICARBONATE (HCO3) (MG/L)	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
JAN. 08...	1415	97	31	168	142	810	1.10	370	232	1350	7.8

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT		NOV		DEC		JAN		FEB		MAR	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	25.0	24.0	20.0	20.	12.0	12.0	--	--	12.0	11.0	15.0	14.0
2	25.0	24.0	20.0	20.0	12.0	12.0	--	--	12.0	11.0	16.0	14.0
3	25.0	24.0	20.0	20.0	12.0	12.0	11.0	11.0	12.0	11.0	15.0	14.0
4	24.0	24.	20.0	20.0	12.0	12.0	11.0	11.0	12.0	12.0	14.0	14.0
5	24.0	24.0	20.0	20.0	12.0	12.0	12.0	11.0	13.0	12.0	14.0	14.0
6	24.0	24.	20.0	19.0	12.0	12.0	12.0	12.0	14.0	13.	14.0	14.
7	24.0	24.0	19.0	18.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14.0
8	24.0	24.0	18.0	16.0	12.0	12.0	12.0	12.0	14.0	13.0	14.0	14.
9	24.0	24.0	16.0	16.0	12.0	12.0	12.0	12.0	13.0	13.0	14.0	14.0
10	24.0	24.0	16.0	16.0	12.0	12.0	12.0	12.0	13.0	13.0	14.0	14.0
11	24.0	24.0	16.0	16.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14..
12	24.0	24.0	16.0	16.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14.0
13	24.0	24.0	16.0	16.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14.
14	24.0	23.0	16.0	16.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14.0
15	23.0	22.0	16.0	16.0	12.0	12.0	12.0	12.0	14.0	14.0	14.0	14.0
16	22.0	21.0	16.0	16.0	12.0	12.0	12.0	12.0	14.0	14.0	15.0	14.0
17	21.0	20.0	16.0	16.0	12.0	12.0	14.0	12.0	14.0	14.0	16.0	15.0
18	20.0	20.0	16.0	16.0	12.0	12.0	14.0	13.0	14.0	14.0	16.0	15.0
19	20.0	20.0	16.0	16.0	12.0	12.0	14.0	14.0	14.0	14.0	16.0	16.
20	20.0	20.0	16.0	16.0	12.0	12.0	15.0	14.0	14.0	14.0	17.0	16.0
21	20.0	20.0	16.0	16.0	12.0	12.0	15.0	14.0	14.0	14.0	17.0	17.0
22	20.0	20.0	--	--	12.0	12.0	15.0	14.0	14.0	14.0	17.0	17.0
23	20.0	20.0	--	--	12.0	12.0	15.0	14.0	14.0	13.0	17.0	17.0
24	20.0	20.0	--	--	--	--	14.	14.0	13.0	13.0	17.0	17.0
25	20.0	20.0	--	--	--	--	14.0	14.0	14.0	13.0	17.0	16.0
26	20.0	20.0	--	--	--	--	15.0	14.0	14.0	14.0	16.0	16.0
27	20.0	20.0	--	--	--	--	15.0	14.0	15.0	14.0	17.0	17.
28	20.0	20.0	14.0	14.0	--	--	14.0	13.0	16.0	15.0	19.0	17.0
29	20.0	20.0	14.0	12.0	--	--	14.0	12.0	--	--	19.0	18.0
30	20.0	20.0	12.0	12.0	--	--	14.0	13.0	--	--	20.0	19.
31	20.0	20.0	--	--	--	--	14.0	12.0	--	--	23..	20.0
AVG	22.1	21.9	16.9	16.6	12.0	12.0	13.2	12.6	13.7	13.3	15.8	15.4

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, ARIZ.--CALIF.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	APR		MAY		JUN		JUL		AUG		SEP	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	20.0	19.0	23.0	22.0	27.0	26.0	29.0	28.0	32.0	31.0	32.0	31.0
2	20.0	19.0	23.0	22.0	27.0	26.0	29.0	28.0	32.0	31.0	32.0	31.0
3	20.0	19.0	23.0	22.0	26.0	26.0	30.0	29.0	32.0	31.0	32.0	31.0
4	20.0	19.0	22.0	21.0	26.0	25.0	30.0	29.0	32.0	32.0	32.0	30.0
5	20.0	20.0	--	--	26.0	25.0	30.0	29.0	32.0	32.0	31.0	30.0
6	20.0	20.0	--	--	27.0	26.0	29.0	28.0	32.0	31.0	32.0	30.0
7	20.0	19.0	--	--	27.0	26.0	28.0	28.0	31.0	30.0	31.0	30.0
8	20.0	19.0	--	--	27.0	26.0	28.0	27.0	31.0	30.0	31.0	30.0
9	20.0	19.0	--	--	26.0	26.0	29.0	27.0	31.0	30.0	32.0	30.0
10	19.0	19.0	--	--	26.0	24.0	29.0	28.0	30.0	30.0	31.0	30.0
11	20.0	19.0	--	--	24.0	24.0	29.0	28.0	31.0	30.0	31.0	30.0
12	21.0	20.0	--	--	24.0	24.0	31.0	29.0	32.0	30.0	30.0	30.0
13	22.0	21.0	--	--	25.0	24.0	31.0	30.0	32.0	30.0	30.0	30.0
14	22.0	21.0	--	--	27.0	25.0	31.0	30.0	32.0	30.0	30.0	29.0
15	21.0	20.0	25.0	24.0	27.0	27.0	31.0	30.0	32.0	31.0	29.0	28.0
16	20.0	20.0	25.0	24.0	27.0	26.0	30.0	29.0	32.0	32.0	28.0	28.0
17	20.0	20.0	26.0	24.0	27.0	26.0	30.0	29.0	32.0	31.0	28.0	28.0
18	20.0	20.0	26.0	25.0	27.0	26.0	29.0	29.0	32.0	31.0	29.0	28.0
19	21.0	20.0	26.0	25.0	27.0	26.0	30.0	29.0	32.0	30.0	29.0	28.0
20	22.0	21.0	26.0	25.0	28.0	27.0	31.0	30.0	31.0	30.0	28.0	28.0
21	22.0	21.0	26.0	25.0	28.0	27.0	31.0	30.0	31.0	30.0	28.0	27.0
22	22.0	22.0	26.0	25.0	28.0	27.0	31.0	31.0	31.0	30.0	27.0	26.0
23	22.0	22.0	26.0	25.0	27.0	27.0	31.0	31.0	32.0	31.0	27.0	26.0
24	22.0	21.0	26.0	25.0	27.0	26.0	31.0	31.0	31.0	30.0	27.0	26.0
25	21.0	20.0	26.0	25.0	28.0	27.0	31.0	30.0	31.0	30.0	28.0	26.0
26	20.0	20.0	26.0	26.0	27.0	27.0	31.0	30.0	32.0	30.0	28.0	27.0
27	20.0	20.0	26.0	26.0	27.0	27.0	31.0	30.0	32.0	30.0	28.0	26.0
28	21.0	20.0	27.0	26.0	28.0	27.0	31.0	30.0	31.0	30.0	27.0	26.0
29	22.0	21.0	27.0	26.0	28.0	27.0	31.0	30.0	30.0	30.0	--	--
30	22.0	22.0	28.0	27.0	29.0	27.0	31.0	31.0	30.0	30.0	--	--
31	--	--	28.0	27.0	--	--	32.0	31.0	32.0	30.0	--	--
AVG	20.7	20.1	--	--	26.8	26.0	30.1	29.3	31.4	30.4	29.5	28.5

09523000 ALL-AMERICAN CANAL NEAR IMPERIAL DAM, ARIZ.-CALIF.

LOCATION.--Lat 32°52'17", long 114°28'47", in SE¼NW¼ sec.17, T.15 S., R.24 E., San Bernardino Meridian in California, Imperial County, at gaging station on left bank, 6,000 ft downstream from intake at west end of Imperial Dam and 13.7 miles upstream from turnout to Yuma Main Canal.

PERIOD OF RECORD.--Chemical analyses: August to September 1969.

REMARKS.--Records of discharge furnished by Imperial Irrigation District.

CHEMICAL ANALYSES, AUGUST TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
AUG. 12...	1440	8040	31	1320	862	1.17	18700
SEPT. 16...	1300	5120	28	1350	898	1.22	12400

DATE	NITRATE (NO3) (MG/L)	AMMONIA (NH4) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	ORTHO PHOS-PHATE (PO4) (MG/L)	PHOS-PHATE (PO4) (MG/L)	TOTAL SOL-UBLE PHOS-PHATE (PO4) (MG/L)
AUG. 12...	1.2	.01	.37	.06	.06	.00
SEPT. 16...	.5	.00	.74	.02	.30	.02

PESTICIDE ANALYSES, AUGUST TO SEPTEMBER 1969

DATE	ALDRIN (UG/L)	DDD (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
AUG. 12...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SEPT. 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, ARIZ.
(Irrigation network station)

LOCATION.--Lat 32°43'39", long 114°37'13", in NW¼NE¼ sec.35, T.16 S., R.22 E., San Bernardino Meridian, Yuma County, at gaging station at Colorado River siphon outlet on Arizona side of river, 0.2 mile upstream from bridge on U.S. Highway 80 over Colorado River at Yuma, 0.3 mile west of old Yuma Territorial Prison, and 3.5 miles downstream from siphon-drop powerplant.
PERIOD OF RECORD.--Chemical analyses: September 1926 to September 1928, October 1942 to September 1969.
Water temperatures: May 1961 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,040 mg/l Jan. 20-31; minimum, 823 mg/l Mar. 1-31.
Hardness: Maximum, 410 mg/l Apr. 1-30; minimum, 365 mg/l Oct. 1-31, Feb. 1-28.
Specific conductance: Maximum daily, 1,670 micromhos Jan. 28; minimum daily, 1,210 micromhos Mar. 6.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	--	352	17	10	100	28	151	9.2	--	175	354	142
NOV.												
01-30	--	322	15	--	100	32	--	--	167	184	365	148
DEC.												
01-31	--	203	14	--	100	32	--	--	165	185	368	144
JAN.												
01-19	--	192	14	--	98	31	--	--	166	180	373	138
20-31	--	192	14	--	109	32	--	--	201	210	400	176
FEB.												
01-28	--	454	13	--	95	31	--	--	154	160	355	132
MAR.												
01-31	--	404	13	--	98	31	--	--	135	174	326	128
APR.												
01-30	--	529	14	--	102	38	141	5.5	--	182	362	128
MAY												
01-31	--	538	15	--	98	32	--	--	152	180	357	133
JUNE												
01-30	--	550	15	--	96	38	--	--	139	180	350	130
JULY												
01-31	--	572	16	0	95	32	132	5.6	--	174	351	130
AUG.												
01-31	--	531	16	--	94	32	--	--	152	174	354	132
SEPT.												
01-30	--	469	15	--	98	32	--	--	161	168	359	143
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
01...	0930	--	--	--	94	33	--	--	--	168	--	138
NOV.												
05...	1030	--	9.0	--	94	35	--	--	144	176	340	138
DEC.												
03...	1430	--	--	--	94	38	--	--	--	176	--	148
JAN.												
07...	0930	--	--	--	98	31	--	--	--	168	--	142
FEB.												
04...	1000	--	--	--	98	31	--	--	--	168	--	148
MAR.												
04...	0915	--	9.0	--	94	35	--	--	137	172	330	138
APR.												
08...	1315	--	--	--	95	35	--	--	--	176	--	138
MAY												
06...	0920	--	7.0	--	94	40	--	--	134	172	350	132
JUNE												
03...	0940	--	8.0	--	94	38	--	--	136	172	350	128
JULY												
01...	0930	--	--	--	95	32	--	--	--	168	--	132
AUG.												
07...	1320	A755	--	--	95	31	--	--	--	168	--	128
SEPT.												
02...	--	--	--	--	97	34	--	--	--	164	--	132

A DISCHARGE AT TIME OF SAMPLING.

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, ARIZ.--Continued

EXTREMES.--1968-69:--Continued
Water temperatures: Maximum, 31.0°C on many days during July to September; minimum, 7.0°C Dec. 27.
Period of record (1943-69):
Dissolved solids: Maximum, 1,040 mg/l Jan. 20-31, 1969; minimum, 532 mg/l Jan. 1-10, 1953.
Hardness: Maximum, 520 mg/l July 7, 1962; minimum, 260 mg/l Jan. 1-10, 1953.
Specific conductance: Maximum daily, 1,680 micromhos Dec. 5, 1967; minimum daily, 795 micromhos Jan. 5, 1953.
Water temperatures (1967-69): Maximum, 31.0°C on many days during July to September 1969; minimum, 7.0°C Dec. 27, 1968.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.												
01-31	.4	4.1	240	915	892	1.24	870	365	222	3.4	1360	8.2
NOV.												
01-30	--	4.4	--	--	921	1.25	801	380	229	3.7	1420	8.2
DEC.												
01-31	--	1.5	--	--	918	1.25	503	380	228	3.7	1390	8.0
JAN.												
01-19	--	1.5	--	--	910	1.24	472	370	222	3.8	1360	8.0
20-31	--	2.0	--	--	1040	1.41	511	400	228	4.4	1570	8.1
FEB.												
01-28	--	3.3	--	--	871	1.18	1070	365	224	3.5	1320	8.5
MAR.												
01-31	--	2.1	--	--	823	1.12	898	370	227	3.0	1290	8.1
APR.												
01-30	.5	1.9	200	884	884	1.20	1270	410	261	3.0	1310	7.9
MAY												
01-31	--	1.1	--	--	877	1.19	1270	378	230	3.4	1350	8.1
JUNE												
01-30	--	1.5	--	--	858	1.17	1270	394	246	3.0	1330	8.1
JULY												
01-31	.4	1.2	220	890	852	1.21	1380	370	227	3.0	1320	8.0
AUG.												
01-31	--	1.3	--	--	869	1.18	1250	368	225	3.4	1330	8.0
SEPT.												
01-30	--	1.7	--	904	904	1.23	1150	378	227	3.6	1390	8.4
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
01...	--	--	--	--	810	1.10	--	370	232	--	1350	7.7
NOV.												
05...	--	--	--	--	848	1.15	--	380	236	3.2	1380	7.6
DEC.												
03...	--	--	--	--	846	1.15	--	390	246	--	1410	8.0
JAN.												
07...	--	--	--	--	834	1.13	--	370	232	--	1390	7.8
FEB.												
04...	--	--	--	--	822	1.12	--	370	232	--	1370	7.9
MAR.												
04...	--	--	--	--	829	1.13	--	380	239	3.1	1300	7.7
APR.												
08...	--	--	--	--	792	1.08	--	380	236	--	1320	8.0
MAY												
06...	--	--	--	--	843	1.15	--	400	259	2.9	1360	7.8
JUNE												
03...	--	--	--	--	840	1.14	--	390	249	3.0	1340	7.9
JULY												
01...	--	--	--	--	810	1.10	--	370	232	--	1360	7.8
AUG.												
07...	--	--	--	--	780	1.06	1590	365	227	--	1300	8.1
SEPT.												
02...	--	--	--	--	798	1.09	--	380	246	--	1330	8.0

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1320	1430	1410	1400	1490	1330	1290	1350	1350	1320	1360	1360
2	1320	1370	1410	1410	1380	1310	1300	1360	1330	1310	1350	1350
3	1320	1370	--	1400	1410	1330	1290	1360	1330	1320	1270	1330
4	1320	1380	1410	1380	1360	1310	1300	1370	1350	1330	1280	1340
5	1340	1390	1390	--	1360	1290	1320	1380	1350	1330	1300	1340
6	1350	1360	1350	--	1350	1210	1300	1350	1350	1320	1300	1400
7	1370	1360	1350	--	1300	1240	1320	1340	1340	1320	1320	1430
8	1330	1370	1350	--	1290	1260	1300	1330	1340	1320	1290	1370
9	1350	1390	1360	1340	1300	1260	1330	1340	1350	1320	1320	1360
10	1360	1390	1390	1320	1310	1280	1300	1350	1370	1320	1320	1370
11	1350	1410	1380	1320	1300	1260	1320	1380	1330	1310	1320	1420
12	1350	1440	1370	1320	1280	1260	1300	1420	1330	1310	1340	1450
13	1370	1430	1370	1320	1260	1270	1320	1400	1320	1320	1350	1460
14	1410	1420	1350	1350	1260	1310	1310	1360	1330	1330	1340	1460
15	1390	1430	1360	1350	1270	1290	1300	1340	1330	1320	1340	1470
16	1390	1410	1400	1360	1270	1290	1310	1350	1350	1320	1340	1420
17	1360	--	1400	1340	1300	1320	1320	1350	1320	1320	1320	1420
18	1370	--	1410	1320	1310	1340	1310	1330	1330	1320	--	1310
19	1370	--	1400	1390	1310	1280	1340	1350	1290	1310	--	1380
20	1410	--	1390	1450	--	1290	1330	1350	1320	1300	1340	1460
21	1430	1420	1380	1490	--	1280	1310	1350	1310	1320	1340	1410
22	1380	1410	--	1530	--	1290	1300	--	1260	1320	1350	1460
23	1360	1410	1380	1550	1320	1290	1290	1340	1350	1290	1330	1480
24	1350	1410	1380	1530	1340	1280	--	1340	1330	1330	1340	1410
25	1360	1430	1380	1570	1330	1270	1300	1310	1320	1320	1330	1390
26	1410	1450	1380	1630	1310	1290	--	1320	1330	1310	1340	1350
27	--	1440	1370	1660	1320	1280	1290	1340	1330	1320	1330	1360
28	--	1450	1490	1670	1330	1300	1360	1340	1330	1330	1340	1360
29	--	1480	1420	1620	--	1300	1350	1350	1330	1310	1340	1370
30	--	1450	1420	1590	--	1310	1330	1350	1340	1320	1350	1360
31	--	--	1430	1620	--	1290	--	1360	--	1320	1340	--
AVG	1360	1410	1390	1450	1320	1290	1310	1350	1330	1320	1330	1400

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, ARIZ.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	20.0	11.0	11.0	11.0	14.0	19.0	21.0	26.0	27.0	29.0	30.
2	23.0	19.0	12.0	10.0	10.0	13.0	19.0	22.0	26.0	29.0	31.0	30.0
3	23.0	19.0	--	11.0	11.0	13.0	18.0	21.0	26.0	29.0	31.0	31.0
4	23.0	19.0	11.0	11.0	12.0	12.0	17.0	20.0	25.0	29.0	31.0	31.
5	23.0	19.0	10.0	--	11.0	12.0	18.0	19.0	26.0	29.0	31.0	31.0
6	23.0	18.0	11.0	--	11.0	12.0	18.0	19.0	26.0	28.0	31.0	30.
7	23.0	18.0	11.0	--	12.0	13.0	18.0	19.0	26.0	28.0	31.	30.
8	23.0	17.0	11.0	--	11.0	12.0	17.0	21.0	25.0	27.0	31.0	30.0
9	23.0	16.0	11.0	11.0	12.0	12.0	18.0	22.0	26.0	27.0	31.0	30.0
10	23.0	16.0	11.0	11.0	12.0	14.0	18.0	23.0	24.0	28.0	29.0	30.0
11	23.0	16.0	11.0	10.0	12.0	12.0	19.0	24.0	23.0	28.0	30.0	31.0
12	23.0	16.0	11.0	10.0	13.0	12.0	19.0	25.0	23.0	26.0	31.0	30.0
13	23.0	17.0	11.0	12.0	12.0	13.0	19.0	26.0	24.0	29.0	31.0	29.0
14	23.0	16.0	10.0	12.0	12.0	13.0	20.0	25.0	24.0	29.0	31.0	29.0
15	22.0	16.0	10.0	12.0	13.0	12.0	19.0	24.0	26.0	29.0	31.0	28.0
16	21.0	16.0	10.0	13.0	13.0	13.0	19.0	24.0	26.0	29.0	31.0	27.0
17	20.0	--	11.0	12.0	13.0	14.0	19.0	24.0	26.0	29.0	31.0	26.0
18	19.0	--	10.0	12.0	14.0	15.0	19.0	24.0	26.0	28.0	--	27.0
19	19.0	--	9.0	13.0	12.0	11.0	19.0	25.0	26.0	28.0	--	27.0
20	19.0	--	10.0	14.0	--	11.0	19.0	25.0	26.0	29.0	29.0	26.0
21	19.0	16.0	8.0	15.0	--	12.0	20.0	25.0	26.0	29.0	29.0	23.0
22	20.0	16.0	--	14.0	--	11.0	21.0	--	26.0	30.0	30.0	24.0
23	20.0	16.0	8.0	15.0	11.0	16.0	21.0	26.0	26.0	30.0	30.0	24.0
24	20.0	16.0	8.0	16.0	12.0	16.0	--	24.0	27.0	30.0	31.0	25.0
25	20.0	16.0	8.0	16.0	12.0	16.0	21.0	24.0	--	31.0	30.0	24.0
26	20.0	14.0	8.0	15.0	13.0	17.0	--	26.0	26.0	29.0	30.0	26.0
27	--	13.0	7.0	14.0	13.0	17.0	21.0	26.0	26.0	29.0	30.0	26.0
28	--	12.0	8.0	14.0	13.0	16.0	19.0	26.0	26.0	29.0	30.0	26.0
29	--	12.0	8.0	13.0	--	17.0	20.0	26.0	25.0	30.0	30.0	28.0
30	--	11.0	9.0	12.0	--	18.0	21.0	27.0	27.0	30.0	29.0	27.0
31	--	--	9.0	12.0	--	19.0	--	27.0	--	31.0	29.0	--
AVG	21.6	16.2	9.8	12.6	12.0	13.8	19.1	23.7	25.6	28.9	30.3	27.9

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, ARIZ.

LOCATION.--Lat 32°44'35", long 114°26'02", in NW¼NE¼ sec.17, T.8 S., R.21 W., Yuma County, at gaging station 8 miles upstream from outlet to Gila River and 11 miles east of Yuma.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
07...	--	27	310	121	1080	392	--	920
14...	--	--	274	135	--	388	--	--
21...	--	--	294	143	--	392	--	--
28...	--	--	310	140	--	392	--	--
NOV.								
04...	--	27	262	126	1220	252	--	1120
11...	--	--	298	130	--	364	--	--
18...	--	--	294	138	--	364	--	--
25...	--	--	306	145	--	400	--	--
DEC.								
02...	--	27	314	143	1220	404	--	1060
09...	--	--	306	148	--	408	--	--
16...	--	--	298	155	--	400	--	--
23...	--	--	266	140	--	236	--	--
30...	--	--	290	145	--	332	--	--
JAN., 1969								
06...	--	27	322	140	1160	412	--	980
13...	--	--	310	143	--	404	--	--
20...	--	--	314	140	--	408	--	--
27...	--	--	318	138	--	416	--	--
FEB.								
03...	--	28	318	133	1240	412	--	1000
10...	--	--	222	94	--	376	--	--
17...	--	--	270	111	--	384	--	--
24...	--	--	254	123	--	380	--	--
MAR., 1969								
03...	--	26	294	118	1070	388	--	930
17...	--	--	274	128	--	312	--	--
24...	--	--	298	128	--	392	--	--
31...	--	--	298	121	--	388	--	--
APR.								
07...	--	25	302	128	1160	396	--	1020
14...	--	--	318	133	--	396	--	--
21...	--	--	290	116	--	392	--	--
28...	--	--	270	104	--	388	--	--
MAY								
05...	--	24	262	99	855	388	--	850
12...	--	--	234	89	--	376	--	--
19...	--	--	246	99	--	384	--	--
26...	--	--	238	99	--	384	--	--
JUNE								
02...	--	21	234	96	816	384	--	840
09...	--	22	250	101	822	388	--	840
16...	--	--	258	111	--	396	--	--
23...	--	--	262	113	--	392	--	--
30...	--	--	278	109	--	392	--	--
JULY								
07...	--	23	278	104	960	392	--	930
14...	--	--	264	103	--	388	--	--
21...	--	--	262	109	--	384	--	--
28...	--	--	262	113	--	388	--	--
AUG.								
04...	--	24	246	118	962	392	--	740
11...	--	--	214	99	--	196	--	--
18...	--	--	202	106	--	204	--	--
25...	--	--	222	99	--	248	--	--
SEP.								
02...	--	25	246	99	830	360	--	860
08...	--	--	234	106	--	372	--	--
15...	--	--	262	99	--	380	--	--
22...	--	--	278	152	--	408	--	--
29...	--	--	298	130	--	408	--	--

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, ARIZ.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
REMARKS.--Unpublished chemical analyses for water years 1961-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
07...	1660	4310	5.86	1270	948	13	7110	7.7
14...	1590	4210	5.73	1240	922	--	7010	7.8
21...	1790	4620	6.28	1320	998	--	7700	7.7
28...	1940	4800	6.53	1350	1030	--	8000	7.7
NOV.								
04...	1740	4620	6.28	1170	964	16	7440	7.6
11...	1740	4520	6.15	1280	982	--	7540	7.6
18...	1790	4600	6.26	1300	1000	--	7670	7.5
25...	1860	4720	6.42	1360	1030	--	7860	7.8
DEC.								
02...	1840	4810	6.54	1370	1040	14	7810	7.6
09...	1860	4690	6.38	1370	1040	--	7820	7.8
16...	1890	4710	6.41	1380	1050	--	7850	7.7
23...	1940	4810	6.54	1240	1050	--	8020	7.6
30...	1860	4700	6.39	1320	1050	--	7830	7.6
JAN., 1969								
06...	1810	4640	6.31	1380	1040	14	7700	7.7
13...	1840	4530	6.16	1360	1030	--	7550	7.7
20...	1840	4610	6.27	1360	1030	--	7690	7.7
27...	1860	4640	6.31	1360	1020	--	7730	7.7
FEB.								
03...	1890	4820	6.56	1340	1000	15	7610	7.8
10...	958	2850	3.88	940	632	--	4730	7.8
17...	1310	3540	4.81	1130	815	--	5950	7.8
24...	1340	3520	4.79	1140	828	--	5870	7.9
MAR., 1969								
03...	1610	4240	5.77	1220	902	13	6840	7.7
17...	1710	4300	5.85	1210	954	--	7170	7.6
24...	1660	4300	5.85	1270	948	--	7170	7.7
31...	1710	4260	5.79	1240	922	--	7100	7.7
APR.								
07...	1710	4540	6.17	1280	956	14	7160	7.7
14...	1860	4630	6.30	1340	1020	--	7720	7.6
21...	1560	3980	5.41	1200	878	--	6640	7.7
28...	1260	3480	4.73	1100	782	--	5800	7.7
MAY								
05...	1210	3500	4.76	1060	742	11	5590	7.8
12...	1040	2940	4.00	950	642	--	4900	7.6
19...	1090	3080	4.19	1020	705	--	5140	7.7
26...	1040	3110	4.23	1000	685	--	5190	7.7
JUNE								
02...	1110	3310	4.50	980	665	11	5120	7.8
09...	1160	3390	4.61	1040	722	11	5270	7.7
16...	1360	3590	4.88	1100	776	--	5990	7.6
23...	1440	3660	4.98	1120	798	--	6100	7.6
30...	1360	3680	5.00	1140	818	--	6140	7.6
JULY								
07...	1360	3850	5.24	1120	798	13	6100	7.7
14...	1340	3630	4.94	1080	762	--	6050	7.7
21...	1390	3600	4.90	1100	785	--	6000	8.0
28...	1290	3470	4.72	1120	802	--	5790	8.0
AUG.								
04...	1490	3780	5.14	1100	778	13	6030	7.8
11...	1360	3510	4.77	940	780	--	5850	8.0
18...	1310	3480	4.73	940	772	--	5800	8.0
25...	1340	3490	4.75	960	756	--	5820	7.9
SEP.								
02...	1160	3400	4.62	1020	725	11	5350	7.9
08...	1140	3000	4.08	1020	715	--	5000	7.7
15...	1160	3110	4.23	1060	749	--	5190	8.0
22...	2150	4380	5.96	1320	986	--	7300	8.0
29...	1810	4440	6.04	1280	946	--	7400	8.0

09534000 MAIN DRAIN NEAR SAN LUIS, ARIZ.

LOCATION.--Lat 32°29'17", long 114°47'16", in SE¼NE¼ sec.11, T.11 S., R.25 W., Yuma County, at gaging station at pumping plant, 0.1 mile upstream from international boundary and 0.4 mile west of San Luis.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
07...	--	21	145	53	306	276	--	430
14...	--	--	146	52	--	272	--	--
21...	--	--	148	51	--	268	--	--
28...	--	--	130	55	--	252	--	--
NOV.								
04...	--	21	--	--	--	--	--	420
12...	--	22	138	52	328	252	--	450
18...	--	--	135	52	--	252	--	--
25...	--	--	140	54	--	264	--	--
DEC.								
02...	--	22	138	54	321	268	--	440
09...	--	--	138	56	--	276	--	--
16...	--	--	146	50	--	264	--	--
23...	--	--	113	55	--	182	--	--
30...	--	--	122	52	--	216	--	--
JAN., 1969								
06...	--	19	132	51	297	252	--	420
13...	--	--	134	55	--	264	--	--
20...	--	--	140	51	--	260	--	--
27...	--	--	143	49	--	264	--	--
FEB.								
03...	--	23	146	48	341	264	--	440
10...	--	--	143	52	--	260	--	--
17...	--	--	137	51	--	256	--	--
24...	--	--	143	52	--	264	--	--
MAR., 1969								
03...	--	18	145	53	338	268	--	450
10...	--	--	113	55	--	180	--	--
17...	--	--	137	51	--	236	--	--
24...	--	--	145	51	--	260	--	--
APR.								
01...	--	18	150	53	338	272	--	470
07...	--	--	150	55	--	276	--	--
14...	--	--	145	51	--	264	--	--
21...	--	--	146	57	--	272	--	--
28...	--	--	143	57	--	264	--	--
MAY								
06...	--	20	145	53	343	268	--	500
12...	--	--	150	53	--	268	--	--
19...	--	--	150	53	--	276	--	--
26...	--	--	153	52	--	276	--	--
JUNE								
02...	--	17	143	57	335	272	--	490
09...	--	--	143	57	--	272	--	--
16...	--	--	138	57	--	264	--	--
23...	--	--	146	55	--	276	--	--
30...	--	--	145	52	--	264	--	--
JULY								
01...	--	--	95	32	--	168	--	--
07...	--	19	146	52	343	276	--	490
14...	--	--	143	49	--	264	--	--
21...	--	--	143	57	--	268	--	--
28...	--	--	142	52	--	268	--	--
AUG.								
05...	--	20	146	51	350	278	--	490
11...	--	--	106	52	--	148	--	--
18...	--	--	106	50	--	164	--	--
25...	--	--	122	48	--	196	--	--
SEP.								
02...	--	18	140	54	321	264	--	480
08...	--	--	142	50	--	264	--	--
15...	--	--	146	50	--	268	--	--
22...	--	--	140	54	--	268	--	--
29...	--	--	146	52	--	268	--	--

09534000 MAIN DRAIN NEAR SAN LUIS, ARIZ.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
REMARKS.--Unpublished chemical analyses for water years 1961-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO (SAR)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
07...	405	1500	2.04	580	354	5.5	2560	7.7
14...	425	1590	2.16	580	357	--	2650	7.7
21...	408	1570	2.14	580	360	--	2610	7.7
28...	415	1480	2.01	550	344	--	2470	7.6
NOV.								
04...	--	--	--	--	--	--	2530	--
12...	425	1540	2.09	560	354	6.0	2620	7.8
18...	395	1510	2.05	550	344	--	2510	7.8
25...	415	1550	2.11	570	354	--	2580	7.7
DEC.								
02...	415	1520	2.07	565	345	5.9	2520	7.8
09...	425	1590	2.16	575	348	--	2650	7.8
16...	415	1550	2.11	570	354	--	2580	7.8
23...	428	1600	2.18	510	361	--	2660	7.7
30...	418	1540	2.09	520	343	--	2560	7.7
JAN., 1969								
06...	385	1430	1.94	540	334	5.6	2390	7.8
13...	425	1540	2.09	560	344	--	2560	7.8
20...	425	1520	2.07	560	347	--	2540	7.8
27...	425	1570	2.14	560	344	--	2620	7.7
FEB.								
03...	445	1580	2.15	560	344	6.3	2580	7.8
10...	435	1570	2.14	570	357	--	2600	7.8
17...	395	1510	2.05	550	340	--	2520	7.8
24...	425	1550	2.11	570	354	--	2590	7.9
MAR., 1969								
03...	445	1580	2.15	580	360	6.1	2610	7.8
10...	415	1520	2.07	510	362	--	2540	7.7
17...	385	1490	2.03	550	356	--	2490	7.7
24...	435	1580	2.15	570	357	--	2630	7.6
APR.								
01...	435	1600	2.18	590	367	6.0	2630	7.7
07...	415	1580	2.15	600	374	--	2630	7.8
14...	425	1520	2.07	570	354	--	2530	7.6
21...	445	1590	2.16	600	377	--	2650	7.7
28...	412	1580	2.15	590	374	--	2630	7.7
MAY								
06...	415	1610	2.19	580	360	6.2	2620	7.7
12...	425	1580	2.15	590	370	--	2630	7.6
19...	425	1600	2.18	590	364	--	2660	7.5
26...	420	1620	2.20	595	368	--	2700	7.6
JUNE								
02...	415	1590	2.16	590	367	6.0	2680	7.7
09...	445	1590	2.16	590	367	--	2650	7.7
16...	398	1540	2.09	580	364	--	2570	7.6
23...	445	1590	2.16	590	364	--	2650	7.6
30...	405	1510	2.05	575	358	--	2520	7.6
JULY								
01...	132	810	1.10	370	232	--	1350	7.8
07...	418	1610	2.19	580	354	6.2	2600	7.7
14...	395	1510	2.05	560	344	--	2510	7.7
21...	398	1540	2.09	590	370	--	2570	7.8
28...	398	1480	2.01	570	350	--	2460	8.0
AUG.								
05...	425	1620	2.20	575	347	6.4	2560	7.9
11...	422	1510	2.05	480	358	--	2520	8.1
18...	392	1420	1.93	470	336	--	2360	8.1
25...	408	1470	2.00	500	340	--	2450	8.0
SEP.								
02...	392	1540	2.09	570	304	5.8	2430	8.0
08...	408	1490	2.03	560	344	--	2480	8.0
15...	408	1470	2.00	570	350	--	2450	8.1
22...	418	1480	2.01	570	350	--	2460	8.0
29...	425	1500	2.04	580	360	--	2500	8.0

09534500 EAST MAIN CANAL WASTEWAY NEAR SAN LUIS, ARIZ.

LOCATION.--Lat 32°29'13", long 114°47'01", in NW¼SW¼ sec.12, T.11 S., R.25 W., Yuma County, at gaging station 0.2 mile east of Main drain pumping plant and 0.2 mile west of San Luis.
PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT., 1968								
07...	--	11	102	35	178	164	--	360
21...	--	--	86	48	--	152	--	--
NOV.								
04...	--	10	121	58	334	156	--	500
18...	--	--	100	41	--	156	--	--
DEC.								
03...	--	11	105	43	209	180	--	390
16...	--	--	98	48	--	160	--	--
31...	--	--	103	40	--	188	--	--
JAN., 1969								
13...	--	9.0	98	40	162	174	--	350
29...	--	--	113	45	--	168	--	--
FEB.								
10...	--	6.0	92	37	152	156	--	340
24...	--	.0	68	41	223	48	--	390
MAR.								
03...	--	7.0	102	40	191	184	--	370
10...	--	--	87	37	--	144	--	--
19...	--	--	97	41	--	156	--	--
APR.								
07...	--	7.0	100	39	168	152	--	370
21...	--	--	95	40	--	168	--	--
MAY								
06...	--	6.0	103	40	180	168	--	380
20...	--	--	92	41	--	146	--	--
JUNE								
02...	--	7.0	95	40	170	162	--	380
17...	--	--	103	40	--	172	--	--
30...	--	--	86	38	--	132	--	--
JULY								
14...	--	7.0	94	45	162	164	--	380
28...	--	--	86	36	--	128	--	--
AUG.								
11...	--	10	87	36	181	118	--	390
25...	--	--	95	40	--	176	--	--
SEP.								
10...	--	--	103	45	--	148	--	--
22...	--	--	118	35	--	176	--	--

09534500 EAST MAIN CANAL WASTEWAY NEAR SAN LUIS, ARIZ.--Continued

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-65 and continuing record for water years 1966-68 available in district office at Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT., 1968								
07...	198	966	1.31	400	266	3.9	1610	7.7
21...	222	1030	1.40	410	286	--	1720	7.8
NOV.								
04...	438	1540	2.09	540	412	6.2	2620	7.7
18...	238	1060	1.44	420	292	--	1760	7.9
DEC.								
03...	242	1090	1.48	440	292	4.3	1830	7.9
16...	272	1130	1.54	460	309	--	1890	7.8
31...	222	1050	1.43	420	266	--	1750	7.9
JAN., 1969								
13...	182	928	1.26	410	268	3.5	1520	7.8
29...	302	1190	1.62	465	327	--	1980	8.0
FEB.								
10...	162	866	1.18	380	252	3.4	1390	7.9
24...	268	1010	1.37	338	298	5.3	1750	8.2
MAR.								
03...	212	1010	1.37	420	269	4.1	1680	8.0
10...	172	882	1.20	370	252	--	1470	7.8
19...	198	948	1.29	410	282	--	1580	7.7
APR.								
07...	188	948	1.29	410	286	3.6	1520	7.8
21...	172	888	1.21	400	262	--	1480	7.9
MAY								
06...	198	991	1.35	420	282	3.8	1600	7.8
20...	188	930	1.26	400	280	--	1550	7.7
JUNE								
02...	172	945	1.29	400	267	3.7	1510	7.9
17...	198	972	1.32	420	279	--	1620	7.9
30...	168	876	1.19	370	267	--	1460	7.5
JULY								
14...	172	942	1.28	420	286	3.4	1520	7.8
28...	178	864	1.18	364	259	--	1440	8.2
AUG.								
11...	182	945	1.29	365	268	4.1	1470	8.1
25...	162	858	1.17	400	256	--	1430	8.1
SEP.								
10...	232	1010	1.37	440	318	--	1690	8.0
22...	238	984	1.34	440	296	--	1640	8.1

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
TRIBUTARIES AND DIVERSIONS BETWEEN PARKER DAM AND PALO VERDE DAM								
09429130 OLIVE LAKE DRAIN NEAR BLYTHE, CALIF. (LAT 33°40'36", LONG 114°32'09")								
OCT 1968 30...	--	--	127	40	--	260	--	--
JAN 1969 16...	--	--	130	40	--	264	--	--
APR. 24...	7.6	--	146	40	--	296	--	--
JULY 24...	22	16	140	46	138	276	--	410
AUG. 20...	--	--	142	43	--	292	--	--
SEP. 11...	--	15	143	42	147	284	--	415
DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM								
09429225 ANDERSON DRAIN NEAR PALO VERDE, CALIF. (LAT 33°21'19", LONG 114°43'00")								
OCT 1968 29...	--	21	228	178	2570	616	--	1820
APR 1969 24...	.98	--	220	127	--	228	--	--
JULY 22...	1.0	--	194	106	--	556	--	--
AUG. 13...	--	22	226	125	2320	628	--	1740
SEP. 11...	2.1	--	226	111	--	612	--	--
COLORADO RIVER MAIN STEM								
09429300 COLORADO RIVER BELOW CIBOLA VALLEY, ARIZ. (LAT 33°13'15", LONG 114°40'20")								
JAN 1968 24...	--	11	108	41	194	212	--	380
SEP. 10...	6640	9.0	98	38	144	178	--	340
DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM								
09529000 NORTH GILA DRAIN NO. 1 NEAR YUMA, ARIZ. (LAT 32°45'29", LONG 114°31'20")								
DEC 1968 31...	--	--	126	55	--	284	--	--
APR 1969 07...	--	16	122	52	330	256	--	570
JULY 31...	--	--	119	47	--	252	--	--
09529050 NORTH GILA DRAIN NO. 3 NEAR YUMA, ARIZ. (LAT 32°44'28", LONG 114°26'39")								
OCT 1968 31...	--	--	94	38	--	208	--	--
DEC. 31...	--	17	92	37	153	164	--	350
JULY 1969 31...	--	--	81	34	--	144	--	--
09529160 SOUTH GILA PUMP OUTLET CHANNEL NO. 3 NEAR YUMA, ARIZ. (LAT 32°43'04", LONG 114°30'12")								
MAR 1969 03...	--	--	254	118	--	348	--	--
APR. 24...	43	--	250	118	--	348	--	--
JUNE 30...	43	21	258	111	743	348	--	520
JULY 31...	28	--	250	111	--	316	--	--
AUG. 21...	41	--	242	116	--	314	--	--
09529000 BRUCE CHURCH DRAIN NEAR YUMA, ARIZ. (LAT 32°43'26", LONG 114°31'07")								
NOV 1968 04...	--	--	198	87	--	388	--	--
APR 1969 06...	--	--	204	71	--	400	--	--
JUNE 05...	--	22	207	71	305	432	--	680
09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, ARIZ. (LAT 32°42'31", LONG 114°31'45")								
FEB 1969 18...	--	--	170	65	--	268	--	--
JUNE 30...	44	21	158	72	495	272	--	460
AUG. 15...	41	--	113	72	--	114	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
TRIBUTARIES AND DIVERSIONS BETWEEN PARKER DAM AND PALO VERDE DAM								
09429130 OLIVE LAKE DRAIN NEAR BLYTHE, CALIF. (LAT 33°40'36", LONG 114°32'09")								
OCT 1968								
30...	132	882	1.20	480	267	--	1470	7.9
JAN 1969								
16...	131	912	1.24	490	274	--	1520	7.6
APR.								
24...	142	978	1.33	530	288	--	1630	7.7
JULY								
24...	132	1020	1.39	540	314	2.6	1560	8.2
AUG.								
20...	142	960	1.31	530	290	--	1600	8.0
SEP.								
11...	132	1040	1.41	530	297	2.8	1580	8.0
DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM								
09429225 ANDERSON DRAIN NEAR PALO VERDE, CALIF. (LAT 33°21'19", LONG 114°43'00")								
OCT 1968								
29...	3180	8310	11.3	1300	795	31	12700	7.7
APR 1969								
24...	2780	7080	9.63	1070	883	--	11800	7.6
JULY								
22...	2040	5460	7.43	920	464	--	9100	8.2
AUG.								
13...	2690	7440	10.1	1080	565	31	11400	8.1
SEP.								
11...	2310	6060	8.24	1020	518	--	10100	8.1
COLORADO RIVER MAIN STEM								
09429300 COLORADO RIVER BELOW CIBOLA VALLEY, ARIZ. (LAT 33°13'15", LONG 114°40'20")								
JAN 1969								
24...	208	1050	1.43	440	266	4.0	1730	7.9
SEP.								
10...	152	870	1.18	400	254	3.1	1440	8.1
DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM								
09529000 NORTH GILA DRAIN NO. 1 NEAR YUMA, ARIZ. (LAT 32°45'29", LONG 114°31'20")								
DEC 1968								
31...	325	1480	2.01	540	307	--	2460	7.7
APR 1969								
07...	308	1530	2.08	520	310	6.3	2420	7.8
JULY								
31...	288	1340	1.82	490	284	--	2240	8.0
09529050 NORTH GILA DRAIN NO. 3 NEAR YUMA, ARIZ. (LAT 32°44'28", LONG 114°26'39")								
OCT 1968								
31...	152	882	1.20	390	220	--	1470	7.7
DEC.								
31...	152	883	1.20	380	246	3.4	1460	7.7
JULY 1969								
31...	141	828	1.13	340	222	--	1380	8.1
09529160 SOUTH GILA PUMP OUTLET CHANNEL NO. 3 NEAR YUMA, ARIZ. (LAT 32°43'04", LONG 114°30'12")								
MAR 1969								
03...	1440	3270	4.45	1120	834	--	5450	7.6
APR.								
24...	1360	3340	4.54	1110	824	--	5570	7.4
JUNE								
30...	1340	3170	4.31	1100	814	9.7	5410	7.6
JULY								
31...	1460	3460	4.71	1080	821	--	5760	7.6
AUG.								
21...	1320	3210	4.37	1080	822	--	5350	7.8
09529000 BRUCE CHURCH DRAIN NEAR YUMA, ARIZ. (LAT 32°43'26", LONG 114°31'07")								
NOV 1968								
04...	325	1660	2.26	850	532	--	2760	7.8
APR 1969								
06...	282	1590	2.16	800	472	--	2650	7.6
JUNE								
05...	292	1790	2.43	810	456	4.7	2650	7.5
09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, ARIZ. (LAT 32°42'31", LONG 114°31'45")								
FEB 1969								
18...	799	2140	2.91	690	470	--	3560	7.7
JUNE								
30...	755	2100	2.86	690	467	8.2	3650	7.6
AUG.								
19...	765	2050	2.79	580	486	--	3410	8.1

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM								
09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, ARIZ. (LAT 32°42'24", LONG 114°33'19")								
OCT 1968								
31...	--	--	114	54	--	268	--	--
FEB 1969								
10...	--	--	110	48	--	296	--	--
18...	--	22	162	65	487	296	--	460
JUNE								
30...	45	--	158	70	--	288	--	--
AUG.								
15...	41	--	158	67	--	290	--	--
09529440 SOUTH GILA PUMP OUTLET CHANNEL NO. 4 NEAR YUMA, ARIZ. (LAT 32°42'46", LONG 114°35'50")								
FEB 1969								
18...	--	--	338	135	--	340	--	--
09530000 RESERVATION MAIN DRAIN NO. 4 NEAR YUMA, ARIZ. (LAT 32°44'09", LONG 114°37'16")								
NOV 1968								
25...	--	18	142	48	205	248	--	430
FEB 1969								
25...	--	--	145	47	--	260	--	--
MAY								
22...	50	--	150	50	--	268	--	--
JULY								
28...	55	20	148	49	197	260	--	450
AUG.								
13...	53	--	151	47	--	264	--	--
28...	--	--	135	47	--	240	--	--
SEP.								
16...	66	18	142	48	216	240	--	480
09530500 DRAIN 8-B NEAR YUMA, ARIZ. (LAT 32°44'39", LONG 114°41'45")								
NOV 1968								
25...	--	20	94	35	177	228	--	350
FEB 1969								
25...	--	--	110	43	--	260	--	--
JULY								
28...	2.1	17	86	43	179	180	--	380

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	CHLORIDE (CL) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS ITONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM								
09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, ARIZ. (LAT 32°42'24", LONG 114°33'19")								
OCT 1968								
31...	315	1410	1.92	505	285	--	2350	7.7
FEB 1969								
10...	445	1740	2.37	470	228	--	2900	7.8
18...	715	2060	2.80	670	428	8.2	3520	7.7
JUNE								
30...	685	2140	2.91	680	444	--	3560	7.7
AUG.								
15...	675	2050	2.79	670	432	--	3420	8.0
09529440 SOUTH GILA PUMP OUTLET CHANNEL NO. 4 NEAR YUMA, ARIZ. (LAT 32°42'46", LONG 114°35'50")								
FEB 1969								
18...	1690	3740	5.09	1400	1120	--	6240	7.4
09530000 RESERVATION MAIN DRAIN NO. 4 NEAR YUMA, ARIZ. (LAT 32°44'09", LONG 114°37'16")								
NOV 1968								
25...	245	1210	1.65	550	346	3.8	1930	7.8
FEB 1969								
25...	232	1180	1.60	555	342	--	1960	7.7
MAY								
22...	228	1180	1.60	580	360	--	1970	7.3
JULY								
28...	225	1220	1.66	570	357	3.6	1960	8.0
AUG.								
13...	222	1180	1.60	570	354	--	1960	8.1
28...	202	1090	1.48	530	333	--	1810	8.0
SEP.								
15...	230	1250	1.70	550	353	4.0	1900	8.0
09530500 DRAIN 8-B NEAR YUMA, ARIZ. (LAT 32°44'39", LONG 114°41'45")								
NOV 1968								
25...	152	942	1.28	380	193	4.0	1520	7.9
FEB 1969								
25...	178	1070	1.46	450	237	--	1790	7.8
JULY								
28...	168	963	1.31	390	242	3.9	1560	8.1

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS POTAS-SIUM (NA K) (MG/L)	POTAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
COLORADO RIVER MAIN STEM												
09070500 COLORADO RIVER NEAR DOTSERO, COLO. (LAT 39 38 40 LONG 107 04 40)												
NOV 1968												
07...	--	929	7.5	63	12	30	--	--	140	--	116	40
MAR 1969												
03...	--	964	9.3	51	13	22	--	--	123	--	83	29
JUN												
02...	--	4100	--	--	--	8.8	--	--	91	--	33	9.0
AUG												
26...	--	1290	8.4	49	12	22	--	--	125	--	77	23
PLATEAU CREEK BASIN												
09105000 PLATEAU CREEK NEAR CAMEO, COLO. (LAT 39 11 00 LONG 108 16 10)												
NOV 1968												
19...	--	102	28	55	38	68	--	--	408	--	90	10
MAR 1969												
03	--	55	24	50	40	73	--	--	386	--	115	11
JUN												
05...	--	168	--	--	--	36	--	--	255	--	55	4.0
AUG												
27...	--	95	29	44	48	80	--	--	426	--	102	8.8
GUNNISON RIVER BASIN												
09149900 UNCOMPAHGRE RIVER AT DELTA, COLO. (LAT 38 44 30 LONG 108 04 50)												
NOV 1968												
15...	--	198	13	250	106	212	--	--	276	--	1250	23
MAR 1969												
05...	--	103	12	228	112	227	--	--	275	--	1270	26
JUN												
06...	--	479	--	--	--	105	--	--	226	--	635	14
AUG												
29...	--	265	19	253	79	178	--	--	291	--	1080	20
GREEN RIVER BASIN												
09203000 EAST FORK RIVER NEAR BIG SANDY, WYO. (LAT 42 40 00 LONG 109 25 00)												
JUL 1968												
10...A	0915	248	2.7	1.8	.6	2.0	--	.1	8	0	4.2	.2
SAN JUAN RIVER BASIN												
09346400 SAN JUAN RIVER NEAR CARRACAS, COLO. (LAT 37 00 47 LONG 107 18 30)												
JUL 1969												
08...	--	852	17	17	3.1	6.7	--	1.3	60	--	18	.8
AUG												
04...	--	800	18	22	4.6	9.7	--	2.2	82	--	30	1.2
SEP												
09...	--	460	18	27	9.2	16	--	3.0	112	--	54	1.5
09349800 PIEDRA RIVER NEAR ARBOLES, COLO. (LAT 37 05 17 LONG 107 23 52)												
JUL 1969												
08...	--	322	14	25	3.3	7.9	--	1.6	76	--	29	1.2
AUG												
04...	--	300	15	28	4.0	8.4	--	2.1	87	--	30	1.2
SEP												
09...	--	320	14	29	3.8	7.2	--	1.6	87	--	30	1.6
09354500 LOS PINOS RIVER AT LA BOCA, COLO. (LAT 37 00 40 LONG 107 35 55)												
JUL 1969												
08...	--	155	8.3	30	4.9	13	--	1.9	130	--	15	2.0
AUG												
04...	--	415	8.0	21	3.5	9.6	--	1.9	92	--	12	2.9
SEP												
11...	--	278	7.6	24	3.9	9.3	--	1.8	100	--	12	6.8
09363500 ANIMAS RIVER NEAR CEDAR HILL, COLO. (LAT 37 02 15 LONG 107 52 25)												
JUL 1969												
09...	--	1580	5.7	36	4.9	7.2	--	1.2	79	--	50	5.2
AUG												
04...	--	720	8.4	53	9.2	15	--	3.0	134	--	78	10
SEP												
11...	--	696	9.1	55	8.0	14	--	2.5	134	--	79	8.1
AMARGO CREEK NEAR LUMBERTON, N. MEX. (LAT 36 55 59 LONG 106 55 03)												
MAY 1969												
07...	--	--	--	--	--	--	--	--	--	--	--	46
SAN JUAN RIVER AT PUMPING STATION DIVERSION TO MORGAN LAKE, N. MEX. (LAT 36 44 33 LONG 108 27 39)												
APR 1969												
24...	1530	5000	4.1	40	6.8	--	18	--	107	0	71	3.8
MAY												
20...B	1025	5000	7.6	36	6.3	14	--	1.4	98	0	60	3.0

A INCLUDES 0.09 MG/L TOTAL IRON (FE).
B INCLUDES 0.02 UG/L DISSOLVED IRON (FE).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO (SAR)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (C°)
COLORADO RIVER MAIN STEM												
09070500 COLORADO RIVER NEAR DOTSERO, COLO. (LAT 39 38 40 LONG 107 04 40)												
NOV 1968												
07...	--	.3	.02	345	.47	865	208	93	.9	555	7.6	13.0
MAR 1969												
03...	--	.4	.00	283	.38	737	180	79	.7	443	7.2	4.0
JUN												
02...	--	.3	.00	168	.23	1860	102	27	.4	248	7.4	6.0
AUG												
26...	--	.4	.01	266	.36	926	171	68	.7	428	7.2	14.0
PLATEAU CREEK BASIN												
09105000 PLATEAU CREEK NEAR CAMEO, COLO. (LAT 39 11 00 LONG 108 16 10)												
NOV 1968												
19...	--	2.3	.02	506	.69	139	294	0	1.7	768	7.8	1.0
MAR 1969												
03...	--	4.0	.15	508	.69	75.4	290	0	1.9	783	8.1	5.0
JUN												
05...	--	.3	.02	322	.44	146	184	0	1.2	481	8.2	22.0
AUG												
27...	--	.4	.02	517	.70	133	308	0	2.0	797	7.3	18.0
GUNNISON RIVER BASIN												
09149900 UNCOMPAHGRE RIVER AT DELTA, COLO. (LAT 38 44 30 LONG 108 04 50)												
NOV 1968												
15...	--	19	.02	2110	2.87	1130	1060	834	2.8	2350	8.0	4.0
MAR 1969												
05...	--	17	.00	2120	2.88	590	1030	804	3.1	2400	7.6	7.0
JUN												
06...	--	24	.16	1250	1.70	1620	680	495	1.8	1500	7.7	15.0
AUG												
29...	--	18	.04	1860	2.45	1330	955	716	2.5	2110	7.5	17.0
GREEN RIVER BASIN												
09203000 EAST FORK RIVER NEAR BIG SANDY, WYO. (LAT 42 40 00 LONG 109 25 00)												
JUL 1968												
10...	.1	.1	--	C14	.02	9.37	7	0	.3	19	6.7	9.0
SAN JUAN RIVER BASIN												
09346400 SAN JUAN RIVER NEAR CARRACAS, COLO. (LAT 37 00 47 LONG 107 18 30)												
JULY 1969												
08...	--	.1	--	75	.10	173	50	1	.4	140	7.3	15.0
AUG												
04...	--	.6	--	122	.17	264	73	6	.5	180	8.1	19.0
SEP												
09...	.3	.1	--	180	.24	224	101	9	.7	314	7.8	19.0
09349800 PIEDRA RIVER NEAR ARBOLES, COLO. (LAT 37 05 17 LONG 107 23 52)												
JUL 1969												
08...	--	.0	--	106	.14	92.2	73	11	.4	187	7.5	15.0
AUG												
04...	--	.1	--	122	.17	98.8	86	15	.4	201	8.0	20.0
SEP												
09...	.3	.1	--	140	.19	121	85	14	.3	214	7.4	17.0
09354500 LOS PINOS RIVER AT LA BOCA, COLO. (LAT 37 00 40 LONG 107 35 55)												
JUL 1969												
08...	--	1.3	--	131	.18	54.8	91	0	.6	234	7.6	18.0
AUG												
04...	--	.9	--	96	.13	108	66	0	.5	169	7.9	21.0
SEP												
11...	.3	.1	--	120	.16	90.1	78	0	.5	187	7.6	16.0
09363500 ANIMAS RIVER NEAR CEDAR HILL, COLO. (LAT 37 02 15 LONG 107 52 25)												
JUL 1969												
09...	--	.5	--	154	.21	657	106	41	.3	252	7.9	16.0
AUG												
04...	--	.9	--	252	.34	490	170	60	.5	402	8.2	23.0
SEP												
11...	.5	.6	--	258	.35	485	170	60	.5	403	7.5	14.0
AMARGO CREEK NEAR LUMBERTON, N. MEX. (LAT 36 55 59 LONG 106 55 03)												
MAY 1969												
07...	--	--	--	--	--	--	--	--	--	2890	--	3.0
SAN JUAN RIVER AT PUMPING STATION DIVERSION TO MORGAN LAKE, N. MEX. (LAT 36 44 33 LONG 108 27 39)												
APR 1969												
24...	--	.0	--	C197	--	--	128	40	.7	325	8.1	14.0
MAY												
20...D	.4	.4	--	C177	--	--	116	36	.6	287	7.3	12.0

C SUM OF CONSTITUENTS.
D INCLUDES 0.06 MG/L DISSOLVED BORON (B).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	SODIUM PLUS POTAS-SIUM (NA+K) (MG/L)	POTAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
SAN JUAN RIVER BASIN--CONTINUED												
MORGAN LAKE NEAR SHIPROCK, N. MEX. (LAT 36 41 32 LONG 108 28 53)												
APR 1969												
24...	1500	--	1.0	82	32	--	109	--	137	0	390	38
MORGAN LAKE AT DAM, N. MEX. (LAT 36 41 22 LONG 108 29 19)												
MAY 1969												
20...B	1040	--	.6	83	32	108	--	5.3	142	0	406	38
CHACO RIVER AT HOGBACK GAP, N. MEX. (LAT 36 42 39 LONG 108 31 55)												
MAY 1969												
20...	1130	1.6	7.9	475	1070	--	1890	--	294	0	8120	505
21...C	1345	4.5	.8	270	44	342	--	9.7	--	24	1340	107
09367950 CHACO RIVER NEAR WATERFLOW, N. MEX. (LAT 36 44 10 LONG 108 33 50)												
APR 1969												
25...	1245	7.9	3.6	208	56	--	282	--	68	0	1100	96
MAY												
21...E	1430	3.73	5.8	255	63	357	--	10	45	2	1360	128
LITTLE COLORADO RIVER BASIN												
PUERCO RIVER OF THE WEST, AT NM 40 CROSSING, N. MEX. (LAT 35 27 38 LONG 108 56 29)												
APR 1969												
01...	--	--	10	36	3.2	--	46	--	198	0	31	4.1

B INCLUDES 0.02 UG/L DISSOLVED IRON (FE).
E INCLUDES 0.03 UG/L DISSOLVED IRON (FE).

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
GREEN RIVER BASIN																	
09189500 HORSE CREEK AT SHERMAN RANGER STATION, WYO. (LAT 42 56 40 LONG 110 23 20)																	
JUN 3 1969	0945	4.5	246	29	19	--	--	--	--	--	--	--	--	--	--	--	
09193000 NEW FORK RIVER BELOW NEW FORK LAKE, NEAR CORA, WYO. (LAT 43 05 00 LONG 110 00 30)																	
JUN 4 1969	1230	12.0	369	3	3.0	--	--	--	--	--	--	--	--	--	--	--	
09198500 POLE CREEK BELOW LITTLE HALF MOON LAKE, NEAR PINEDALE, WYO. (LAT 42 53 00 LONG 109 43 00)																	
JUN 6 1969	1115	12.5	523	1	1.4	--	--	--	--	--	--	--	--	--	--	--	
09199500 FALL CREEK NEAR PINEDALE, WYO. (LAT42 51 21 LONG 109 43 12)																	
JUN 5 1969	1630	16.0	212	4	2.3	--	--	--	--	--	--	--	--	--	--	--	
09202000 BOULDER CREEK BELOW BOULDER LAKE, NEAR BOULDER, WYO. (LAT 42 49 10 LONG 109 42 59)																	
JUN 6 1969	1545	11.0	1410	6	23	--	--	--	--	--	--	--	--	--	--	--	
09203000 EAST FORK RIVER NEAR BIG SANDY, WYO. (LAT 42 40 00 LONG 109 25 00)																	
JUN 7 1969	1100	6.0	738	4	8.0	--	--	--	--	--	--	--	--	--	--	--	
09204000 SILVER CREEK NEAR BIG SANDY, WYO. (LAT 42 45 00 LONG 109 31 00)																	
JUN 6 1969	1815	12.0	296	6	4.8	--	--	--	--	--	--	--	--	--	--	--	
09205500 NORTH PINEY CREEK NEAR MASON, WYO. (LAT 42 39 20 LONG 110 20 40)																	
JUN 7 1969	1020	7.0	247	138	92	--	--	--	--	--	--	--	--	--	--	--	
09208000 LABARGE CREEK NEAR LABARGE MEADOWS RANGER STATION, WYO. (LAT 42 30 30 LONG 110 40 10)																	
JUN 6 1969	1200	8.5	43.4	4	.5	--	--	--	--	--	--	--	--	--	--	--	
09210500 FONTENELLE CREEK NEAR HERSHLER RANCH, NEAR FONTENELLE, WYO. (LAT 42 05 45 LONG 110 25 10)																	
JUN 5 1969	1550	16.5	152	42	17	--	--	--	--	--	--	--	--	--	--	--	
09212500 BIG SANDY RIVER AT LECKIE RANCH, NEAR BIG SANDY, WYO. (LAT 42 35 00 LONG 109 17 00)																	
JUN 7 1969	1400	12.5	491	7	9.3	--	--	--	--	--	--	--	--	--	--	--	

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	ORTHO PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO (SAR)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (°C)
SAN JUAN RIVER BASIN--CONTINUED												
MORGAN LAKE NEAR SHIPROCK, N. MEX. (LAT 36 41 32 LONG 108 28 53)												
APR 1969 24...	--	.6	--	C720	--	--	336	224	2.6	1090	7.3	18.0
MORGAN LAKE AT DAM, N. MEX. (LAT 36 41 22 LONG 108 29 19)												
MAY 1969 20...F	.6	.1	--	C744	--	--	340	224	2.5	1090	7.6	21.0
CHACO RIVER AT HOGBACK GAP, N. MEX. (LAT 36 42 39 LONG 108 31 55)												
MAY 1969 20...G	--	370	--	C12600	--	--	5600	5360	11	12700	7.6	22.0
21...H	.5	40	--	C2190	--	--	855	806	5.1	2760	9.9	28.0
09367950 CHACO RIVER NEAR WATERFLOW, N. MEX. (LAT 36 44 10 LONG 108 33 50)												
APR 1969 25...	--	32	--	C1810	--	--	750	694	4.5	2430	7.8	17.0
MAY 21...I	.7	43	--	C2250	--	--	895	854	5.2	2910	8.4	28.0
LITTLE COLORADO RIVER BASIN												
PUERCO RIVER OF THE WEST, AT NM 40 CROSSING, N. MEX. (LAT 35 27 38 LONG 108 56 29)												
APR 1969 01...	.4	1.9	--	C230	--	--	103	0	2.0	380	7.5	--

C SUM OF CONSTITUENTS.
F INCLUDES 0.16 MG/L DISSOLVED BORON (B).
G INCLUDES 1.009 DENSITY (G/ML AT 20°C).
H INCLUDES 4.0 MG/L DISSOLVED BORON (B).
I INCLUDES 4.6 MG/L DISSOLVED BORON (B).

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEM-PERA-TURE (°C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALY-SIS
GREEN RIVER BASIN--CONTINUED																	
09213500 BIG SANDY RIVER NEAR FARSON, WYO. (LAT 42 19 00 LONG 109 29 00)																	
JUN 2 1969	1530	14.5	327	366	323	--	--	--	--	--	--	--	--	--	--	--	
09214000 LITTLE SANDY CREEK NEAR ELKHORN, WYO. (LAT 42 32 00 LONG 109 13 00)																	
JUN 7 1969	1505	13.5	125	8	2.7	--	--	--	--	--	--	--	--	--	--	--	
09214500 LITTLE SANDY CREEK ABOVE EDEN, WYO. (LAT 42 15 00 LONG 109 18 00)																	
JUN 3 1969	1500	15.5	53.0	273	39	--	--	--	--	--	--	--	--	--	--	--	
09215000 PACIFIC CREEK NEAR FARSON, WYO. (LAT 42 08 00 LONG 109 19 00)																	
APR 14 1969	1345	13.0	24.1	2780	181	--	51	--	56	--	100	--	--	--	--	--	PWC
09218500 BLACKS FORK NEAR MILLBURNE, WYO. (LAT 41 03 26 LONG 110 34 27)																	
JUN 4 1969	0630	6.0	599	28	45	--	--	--	--	--	--	--	--	--	--	--	
GILA RIVER BASIN																	
09480500 SANTA CRUZ RIVER NEAR NOGALES, ARIZ. (LAT 31 20 40 LONG 110 51 05)																	
OCT 2 1968	1022	25.0	.80	94	.20	--	--	--	--	--	--	--	--	--	--	--	
OCT 25	1315	24.0	.90	2	0	--	--	--	--	--	--	--	--	--	--	--	
JAN 27 1969	1300	19.0	4.6	77	.96	--	--	--	--	--	--	--	--	--	--	--	
FEB 24	1130	18.0	3.6	12	.12	--	--	--	--	--	--	--	--	--	--	--	
APR 14	1040	22.0	1.2	24	.08	--	--	--	--	--	--	--	--	--	--	--	
JUN 23	1030	27.0	.10	4	0	--	--	--	--	--	--	--	--	--	--	--	
AUG 26	1330	26.0	20	313	17	--	--	--	--	--	--	--	--	--	--	--	
AUG 27	1035	23.0	199	4020	2160	49	57	--	74	--	90	95	100	--	--	--	VPWC
AUG 28	1110	30.0	66	342	61	--	--	--	--	--	--	--	--	--	--	--	
09482500 SANTA CRUZ RIVER AT TUCSON, ARIZ. (LAT 32 13 15 LONG 110 58 50)																	
AUG 8 1969	1530	35.0	76	25600	5250	--	--	--	--	--	--	--	--	--	--	--	
SEP 5	1300	29.0	78	11800	2480	--	--	--	--	--	--	--	--	--	--	--	

BEAR RIVER BASIN

10020100 BEAR RIVER ABOVE RESERVOIR, NEAR WOODRUFF, UTAH

LOCATION.--Lat 41°26'05", long 111°01'00", in NW¼NW¼ sec.29, T.17 N., R.120 W., Uinta County, Wyo., at gaging station 9.3 miles upstream from Woodruff Narrows Dam and 10 miles southeast of Woodruff.

DRAINAGE AREA.--780 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
18...	0900	155	7.6	10	47	17	9.3	2.1	214	0	18	8.5
NOV.												
19...	1630	125	7.4	70	47	20	13	1.8	231	0	23	10
DEC.												
04...	1130	174	8.1	--	60	22	13	1.7	275	0	22	10
JAN.												
28...	1330	102	10	--	54	18	12	1.7	244	0	14	10
FEB.												
12...	1100	87	11	--	53	19	11	1.6	220	12	15	11
MAR.												
19...	1400	130	11	--	52	25	13	2.5	267	0	28	11
MAY												
10...	1330	1120	7.6	450	31	8.6	3.7	.5	127	0	7.4	3.4
JUNE												
11...	1800	341	8.4	--	37	15	9.0	1.9	189	0	6.6	8.7
23...	1800	298	10	--	46	16	8.0	2.4	208	0	14	5.3
JULY												
30...	0930	28	9.1	--	51	29	21	3.9	305	0	20	19
AUG.												
25...	1615	5.3	4.4	--	35	31	40	5.3	262	0	35	38

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
18...	.1	.2	40	215	.32	98.8	187	11	.3	382	7.5	3
NOV.												
19...	.2	.4	90	236	.33	81.7	200	11	.4	418	7.8	2
DEC.												
04...	.2	.2	10	272	.38	79.2	240	14	.4	469	7.6	0
JAN.												
28...	.2	1.7	40	242	.34	68.9	210	10	.4	431	7.9	0
FEB.												
12...	.2	1.7	20	244	.33	57.8	213	13	.3	427	8.5	0
MAR.												
19...	.3	1.6	180	276	.39	102	233	14	.4	493	7.9	--
MAY												
10...	.3	.4	70	125	.18	405	113	9	.2	230	7.2	10
JUNE												
11...	.3	.3	50	180	.26	177	155	0	.3	303	8.0	16
23...	.1	.5	7	203	.28	166	175	4	.3	350	8.1	16
JULY												
30...	.5	.7	90	304	.43	23.9	246	7	.6	559	8.0	--
AUG.												
25...	.3	.3	40	318	.46	4.81	214	0	1.2	597	8.1	--

10027000 TWIN CREEK AT SAGE, WYO.

LOCATION.--Lat 41°49', long 110°58', in SE¼ sec.7, T.21 N., R.119 W., Lincoln County, at former gaging station 0.5 mile southwest of Sage and 5 miles upstream from mouth.

DRAINAGE AREA.--246 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969 (discontinued).
Sediment records: October 1968 to September 1969 (partial records).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
18...	1415	4.6	12	80	86	45	33	4.5	269	0	212	23
NOV.												
19...	1415	6.0	10	160	81	44	33	2.7	251	0	197	24
JAN.												
09...	1330	5.4	13	0	86	44	46	3.6	292	0	247	29
FEB.												
17...	1535	4.8	13	160	97	42	56	3.2	287	0	253	30
MAR.												
24...	1725	9.2	11	120	86	43	56	4.8	270	0	226	31
MAY												
07...	0800	34	14	180	79	32	34	3.7	299	0	146	16
JUNE												
03...	1640	11	13	150	77	47	41	2.9	311	0	175	20

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)
OCT.												
18...	.5	.2	80	548	.77	7.36	400	179	.7	854	8.0	5
NOV.												
19...	.6	.2	90	517	.71	8.46	384	178	.7	796	7.7	0
JAN.												
09...	.6	.2	90	623	.88	8.72	420	180	1.0	951	7.3	0
FEB.												
17...	.6	.5	50	677	.88	15.3	415	180	1.2	959	8.0	0
MAR.												
24...	.7	.9	40	593	.86	15.7	392	171	1.2	942	7.8	0
MAY												
07...	.5	.2	80	472	.65	43.9	327	82	.8	754	7.8	10
JUNE												
03...	.5	.4	50	530	.77	16.8	385	130	.9	850	8.0	12

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WAT E TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
MAY 7, 1969	0930	09.5	35	233	22
JUN 3.....	1640	12.5	11	78	2.3

10039500 BEAR RIVER AT BORDER, WYO.

LOCATION.--Lat 42°12'40", long 111°03'11", in NE¼NE¼ sec.15, T.14 S., R.46 E., Bear Lake County, Idaho, at gaging station 0.2 mile west of Wyoming-Idaho State line, 0.5 mile west of Border, and 2.1 miles upstream from Thomas Fork.
DRAINAGE AREA.--2,490 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1969.
Water temperatures: October 1965 to September 1969.
Sediment records: October 1968 to September 1969 (miscellaneous).
EXTREMES.--1968-69:
Dissolved solids: Maximum, 436 mg/l July 1-15; minimum, 219 mg/l Mar. 31 to Apr. 6.
Hardness: Maximum, 311 mg/l July 1-15; minimum, 159 mg/l Mar. 31 to Apr. 6.
Specific conductance: Maximum daily, 777 micromhos July 15; minimum daily, 312 micromhos Apr. 3.
Water temperatures: Maximum, 22.0°C on several days during July and August; minimum, freezing point on many days during December to February.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.												
01-31	--	198	11	--	61	25	24	2.0	244	0	69	23
NOV.												
01-30	--	266	11	--	59	24	20	2.0	244	0	66	21
DEC.												
01-31	--	271	7.7	--	60	17	23	2.0	250	0	49	18
JAN.												
01-31	--	238	9.2	--	63	22	20	2.1	247	0	55	21
FEB.												
01-28	--	213	9.3	--	61	23	18	2.0	249	0	51	17
MAR.												
1-10	--	225	8.6	--	59	22	19	2.1	233	0	60	18
11-18	--	184	11	--	63	22	22	2.2	256	0	60	22
19-30	--	292	8.1	--	51	19	19	2.7	228	0	54	17
31...	--	2320	6.1	--	40	15	15	5.3	160	0	42	14
APR.												
01-06	--	2300	6.1	--	40	15	15	5.3	160	0	42	14
07-10	--	2710	7.9	--	46	22	29	6.5	198	0	53	30
11-22	--	1530	9.9	--	53	31	37	5.4	264	0	77	38
23-30	--	1340	7.7	--	52	25	22	3.1	246	0	56	22
MAY												
01-04	--	1310	7.4	--	56	19	16	2.5	238	0	35	15
25-31	--	1330	7.9	--	55	14	12	2.1	217	0	24	11
JUNE												
01-13	--	465	9.3	--	56	18	16	1.6	210	5	46	16
14-30	--	642	12	--	67	29	41	3.1	298	8	68	38
JULY												
01-15	--	452	13	--	66	35	42	3.0	311	12	74	43
16-31	--	371	12	--	104	11	36	2.8	308	8	65	40
AUG.												
01-31	--	162	13	--	56	27	30	2.1	253	0	68	29
SEPT.												
01-30	--	115	8.9	--	54	23	26	1.6	214	0	70	27
WTD. AVG. TIME	--	--	9.0	--	56	21	23	3.2	236	1	52	23
WTD. AVG. TONS PER DAY	--	487	9.8	--	61	22	24	2.4	246	1	58	24
	--	--	12	--	74	28	30	4.1	310	2	68	30

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
18...	1245	A224	8.7	20	62	26	22	1.8	258	0	67	22
DEC.												
17...	1710	A265	7.4	290	64	22	15	1.7	256	0	53	18
MAR.												
24...	1720	A250	7.2	30	76	8.9	17	2.0	231	0	46	17
JULY												
28...	1900	A444	9.4	60	54	45	44	3.0	319	12	73	42
SEPT.												
10...B	1300	A107	5.9	--	64	26	28	3.0	264	0	69	29

A DISCHARGE AT TIME OF SAMPLING.
B INCLUDES 8.5 MG/L DISSOLVED OXYGEN (FIELD DETERMINATION).

10039500 BEAR RIVER AT BORDER, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 480 mg/l Mar. 29 to Apr. 6, 1967; minimum, 219 mg/l Mar. 31 to Apr. 6, 1969.
Hardness: Maximum, 311 mg/l July 1-15, 1969; minimum, 159 mg/l Mar. 31 to Apr. 6, 1969.
Specific conductance: Maximum daily, 883 micromhos July 21, 1966; minimum daily, 312 micromhos Apr. 3, 1969.
Water temperatures: Maximum, 22.0°C on several days during 1966-69; minimum, freezing point on many days during winter periods.

REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality. Maximum observed during water year: Dissolved solids, 440 mg/l July 8; hardness, 320 mg/l July 8.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)
OCT.												
01-31	.3	.4	5[illegible]	336	.47	186	254	54	.7	558	7.5	--
NOV.												
01-30	.4	.6	29[illegible]	324	.44	233	245	45	.6	540	7.7	--
DEC.												
01-31	.2	.7	6[illegible]	301	.42	228	219	14	.7	541	7.6	--
JAN.												
01-31	.3	.9	1[illegible]	313	.43	202	240	37	.6	538	8.1	--
FEB.												
1-28	.3	.9	22[illegible]	335	.45	189	248	44	.5	548	7.8	--
MAR.												
01-10	.6	.4	[illegible]	305	.42	173	236	45	.5	520	8.0	--
11-18	.5	.3	5[illegible]	329	.44	163	247	37	.6	557	8.1	--
19-30	.6	1.2	1[illegible]	294	.40	233	229	42	.5	506	7.9	--
31...	.3	2.2	7[illegible]	219	.32	1440	159	28	.5	378	7.8	--
APR.												
01-06	.3	2.2	7[illegible]	219	.32	1440	159	28	.5	378	7.8	--
07-10	.2	1.6	7[illegible]	288	.41	2220	190	28	.9	506	8.1	--
11-22	.3	.9	[illegible]	382	.53	1620	260	43	1.0	642	8.2	--
23-30	.2	1.[illegible]	1[illegible]	310	.43	1140	231	29	.6	517	8.2	--
MAY												
31-04	.3	.8	4[illegible]	269	.37	969	219	24	.5	479	8.0	--
05-31	.2	.[illegible]	4[illegible]	234	.32	955	195	17	.4	417	8.2	--
JUNE												
01-13	.3	.[illegible]	2[illegible]	271	.38	352	212	31	.5	468	8.3	--
14-30	.4	.1	[illegible]	413	.58	745	285	27	1.1	692	8.3	--
JULY												
01-15	.3	.5	8[illegible]	436	.62	554	311	36	1.0	743	8.4	--
16-31	.3	.1	9[illegible]	426	.59	351	355	39	.9	714	8.3	--
AUG.												
01-31	.3	.3	13[illegible]	350	.50	169	253	45	.8	644	8.1	--
SEPT.												
01-30	.3	.2	4[illegible]	316	.44	100	230	54	.7	553	7.9	--
WTD. AVG. TIME	.3	.8	[illegible]	326	--	--	228	31	.7	528	8.1	--
WTD. AVG. TONS PER DAY	.3	.6	79	324	.45	--	242	38	.7	561	8.0	--
	.4	1.1	[illegible]	401	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
19...	.2	.1	4[illegible]	337	.47	208	262	50	.6	577	7.5	6
DEC.												
17...	.2	.1	3[illegible]	3[illegible]	.44	230	249	39	.4	546	7.3	0
MAR.												
24...	.3	.3	18[illegible]	298	.40	197	228	39	.5	512	7.4	0
JULY												
09...	.5	.3	22[illegible]	440	.63	551	320	38	1.1	770	8.4	19
SEPT.												
10...	--	--	--	355	.50	100	266	50	.7	C595	C8.1	18

C FIELD DETERMINATION.

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
JUNE 3, 1969	1510	15.[illegible]	539	50	73

10039500 BEAR RIVER AT BORDER, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	567	541	542	564	529	545	364	495	440	731	673	559
2	580	543	544	562	539	534	364	484	456	743	669	576
3	574	537	522	538	534	517	312	466	485	768	667	603
4	566	539	548	537	532	515	358	449	485	756	659	570
5	555	539	537	539	563	519	377	439	485	761	641	593
6	596	543	537	522	571	520	403	430	472	--	602	598
7	593	537	537	521	557	513	426	426	483	756	629	585
8	580	539	542	510	562	509	476	431	489	770	621	574
9	549	529	546	525	554	540	532	435	505	725	588	590
10	555	532	529	544	551	541	567	416	547	747	649	598
11	534	531	537	536	566	588	602	410	562	753	615	586
12	572	536	536	529	539	566	621	408	--	747	636	667
13	578	556	531	534	534	541	641	401	--	741	619	635
14	561	525	552	531	525	546	644	396	725	739	603	588
15	551	537	544	533	530	585	636	396	715	777	618	614
16	536	529	533	524	542	589	641	393	675	717	621	585
17	538	541	542	537	529	574	650	414	707	725	613	556
18	575	547	542	537	538	577	659	414	724	737	627	600
19	583	522	541	537	532	532	669	411	717	741	583	599
20	575	514	552	517	544	523	682	427	706	756	619	594
21	585	505	551	513	521	540	654	421	727	752	616	617
22	563	521	555	540	526	535	615	412	751	740	603	627
23	580	526	553	540	524	508	580	424	753	722	575	623
24	576	533	550	544	518	506	535	420	754	732	578	623
25	585	524	534	544	516	500	530	418	740	728	580	623
26	586	529	525	540	511	482	520	416	742	718	601	617
27	595	562	537	551	524	480	511	396	735	710	591	615
28	575	562	534	551	532	477	508	425	734	698	624	615
29	565	583	536	557	--	476	507	416	732	697	623	561
30	546	594	540	558	--	477	496	435	737	673	615	612
31	552	--	548	562	--	401	--	431	--	668	617	--
AVG	568	538	540	537	537	524	536	424	635	734	618	600

10039500 BEAR RIVER AT BORDER, WYO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	5.0	1.0	1.0	0.0	2.0	2.0	11.0	15.0	19.0	21.0	20.0
2	13.0	4.0	2.0	1.0	1.0	2.0	4.0	10.0	14.0	20.0	19.0	21.0
3	12.0	4.0	2.0	1.0	1.0	2.0	4.0	11.0	16.0	16.0	20.0	14.0
4	11.0	5.0	1.0	2.0	0.0	1.0	4.0	13.0	16.0	19.0	22.0	17.0
5	12.0	4.0	0.0	1.0	0.0	1.0	5.0	12.0	20.0	18.0	20.0	17.0
6	10.0	4.0	1.0	1.0	1.0	2.0	7.0	10.0	19.0	--	22.0	12.0
7	7.0	2.0	1.0	2.0	1.0	1.0	6.0	10.0	16.0	18.0	20.0	15.0
8	8.0	2.0	1.0	1.0	1.0	1.0	9.0	10.0	16.0	19.0	20.0	17.0
9	8.0	3.0	1.0	2.0	0.0	1.0	8.0	10.0	16.0	20.0	16.0	18.0
10	8.0	3.0	1.0	--	1.0	1.0	9.0	11.0	14.0	19.0	20.0	16.0
11	6.0	3.0	1.0	1.0	1.0	2.0	10.0	10.0	13.0	20.0	22.0	18.0
12	8.0	4.0	1.0	--	1.0	1.0	9.0	10.0	--	19.0	20.0	17.0
13	9.0	3.0	1.0	1.0	1.0	1.0	8.0	10.0	--	18.0	20.0	15.0
14	8.0	1.0	1.0	1.0	1.0	1.0	8.0	10.0	16.0	20.0	21.0	20.0
15	7.0	2.0	2.0	2.0	0.0	1.0	8.0	10.0	14.0	20.0	21.0	15.0
16	6.0	1.0	1.0	1.0	1.0	2.0	8.0	11.0	12.0	22.0	20.0	16.0
17	4.0	3.0	1.0	1.0	2.0	1.0	8.0	10.0	16.0	22.0	20.0	15.0
18	7.0	1.0	1.0	1.0	1.0	1.0	8.0	10.0	16.0	22.0	20.0	15.0
19	7.0	2.0	1.0	2.0	1.0	1.0	9.0	10.0	18.0	22.0	19.0	16.0
20	6.0	2.0	2.0	1.0	2.0	1.0	8.0	10.0	17.0	22.0	20.0	16.0
21	7.0	3.0	1.0	2.0	1.0	1.0	11.0	10.0	18.0	20.0	20.0	14.0
22	6.0	1.0	1.0	1.0	1.0	1.0	10.0	15.0	16.0	21.0	18.0	14.0
23	7.0	1.0	1.0	0.0	2.0	1.0	12.0	17.0	16.0	21.0	19.0	14.0
24	8.0	1.0	1.0	1.0	1.0	2.0	8.0	18.0	14.0	20.0	22.0	12.0
25	8.0	2.0	2.0	2.0	2.0	2.0	7.0	16.0	12.0	16.0	20.0	15.0
26	7.0	1.0	0.0	1.0	1.0	2.0	8.0	16.0	12.0	20.0	20.0	16.0
27	6.0	2.0	1.0	1.0	2.0	2.0	8.0	15.0	14.0	22.0	21.0	13.0
28	7.0	1.0	1.0	1.0	1.0	2.0	10.0	16.0	14.0	22.0	20.0	12.0
29	8.0	2.0	1.0	0.0	--	1.0	10.0	14.0	10.0	20.0	22.0	16.0
30	5.0	1.0	0.0	0.0	--	2.0	9.0	14.0	18.0	22.0	20.0	12.0
31	3.0	--	1.0	1.0	--	3.0	--	13.0	--	20.0	19.0	--
AVG	7.7	2.4	1.0	1.1	1.0	1.4	7.8	12.0	15.2	19.9	20.1	15.6

10136500 WEBER RIVER AT GATEWAY, UTAH

LOCATION.--Lat 41°08'15", long 111°49'55", in NW¼SW¼ sec.27, T.5 N., R.1 E., Morgan County, at gaging station on left bank, 400 ft downstream from tailrace of Gateway powerplant, 500 ft upstream from Union Pacific Railroad bridge, 1,200 ft downstream from Strawberry Creek, and 3,200 ft east of section house at Gateway.

DRAINAGE AREA.--1,610 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: May 1958 to September 1969.
Water temperatures: October 1958 to September 1959.

REMARKS.--Flow regulated by Rockport, Echo, and East Canyon Reservoirs.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
NOV.											
21...	121	--	--	--	--	--	25	276	0	45	29
JAN.											
24...	596	10	59	17	14	2.4	--	234	0	33	19
FEB.											
20...	374	--	--	--	--	--	29	286	0	31	24
MAR.											
18...	1450	--	--	--	--	--	15	235	0	26	20
APR.											
14...	1530	8.3	42	13	11	2.1	--	170	0	24	16
MAY											
20...	1860	--	--	--	--	--	13	184	0	21	15
JUNE											
02...	741	7.5	55	13	12	2.4	--	212	0	25	15
24...	723	--	--	--	--	--	14	211	0	27	19
AUG.											
19...	515	--	--	--	--	--	11	223	0	18	19
SEPT.											
22...	406	8.3	61	17	14	2.4	--	251	0	25	18

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
NOV.										
21...	--	--	329	.45	107	260	34	.7	572	7.8
JAN.										
24...	.2	2.3	277	.38	446	214	22	.4	462	7.9
FEB.										
20...	--	--	281	.38	284	238	3	.8	485	7.9
MAR.										
18...	--	--	266	.36	1040	215	22	.4	441	7.8
APR.										
14...	.4	1.9	212	.29	876	156	17	.4	347	8.0
MAY										
20...	--	--	220	.30	1110	166	15	.5	352	7.1
JUNE										
02...	.3	1.6	240	.33	480	190	16	.4	406	7.8
24...	--	--	241	.33	470	197	24	.4	420	7.0
AUG.										
19...	--	--	250	.34	348	204	21	.3	417	7.4
SEPT.										
22...	.2	.8	274	.37	300	220	14	.4	463	8.1

10172200 RED BUTTE CREEK AT FORT DOUGLAS, NEAR SALT LAKE CITY, UTAH
(Hydrologic bench-mark station)

LOCATION.--Lat 40°46'48", long 111°48'19", in NW¼ sec.35, T.1 N., R.1 E., Salt Lake County, at gaging station 0.3 mile upstream from spillway of Red Butte Reservoir, 1.5 miles northeast of Fort Douglas, and 5 miles northeast of Salt Lake City.

DRAINAGE AREA.--7.25 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1964 to September 1966, August 1967 to September 1969.
Water temperatures: April 1964 to September 1969.
Sediment records: October 1966 to September 1969.

EXTREMES.--1968-69:
Water temperatures: Maximum, 24.0°C July 29, 31, Aug. 1, 3, 4; minimum, freezing point on many days during winter periods.

Period of record:
Water temperatures: Maximum, 24.0°C July 29, 31, Aug. 1, 3, 4, 1969; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	TOTAL MAN-GANESE (MN) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.											
02...	1.8	12	--	81	31	13	1.2	288	0	98	13
NOV.											
06...	1.9	10	--	77	32	12	1.0	264	0	100	13
DEC.											
11...	1.9	9.7	--	82	29	12	.8	272	0	98	13
JAN.											
16...	2.5	9.6	--	87	28	12	.8	272	0	102	13
FEB.											
12...	2.4	9.5	--	76	32	12	.7	272	0	105	15
MAR.											
19...	2.6	9.1	--	82	25	11	.7	267	0	98	15
APR.											
24...	20	9.7	0	63	19	8.8	.9	239	0	39	11
MAY											
22...	7.8	10	--	71	24	11	.9	274	0	57	13
JULY											
09...	3.3	11	--	73	26	12	1.0	271	0	73	13
AUG.											
20...	1.7	12	--	78	28	13	1.2	277	0	86	13
SEPT.											
21...	1.3	12	--	83	30	14	1.2	308	0	92	16

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.											
02...	.6	.0	.10	394	.54	1.91	328	92	.3	627	7.9
NOV.											
06...	.4	.3	.07	383	.52	1.96	324	108	.3	616	8.0
DEC.											
11...	.4	.9	.02	403	.55	2.07	324	101	.3	614	8.0
JAN.											
16...	.4	.4	.02	407	.55	2.75	332	109	.3	638	8.1
FEB.											
12...	.3	.6	.08	397	.54	2.57	321	98	.3	610	8.0
MAR.											
19...	.2	.5	.09	386	.52	2.71	308	89	.3	594	8.1
APR.											
24...	.4	.4	.01	276	.38	14.9	234	38	.2	452	7.9
MAY											
22...	.3	1.0	.08	324	.44	6.82	276	52	.3	533	8.1
JULY											
09...	.2	.5	.03	355	.48	3.19	290	68	.3	557	6.7
AUG.											
20...	.2	.4	.11	380	.52	1.84	311	84	.3	585	7.5
SEPT.											
21...	.3	.1	.06	410	.56	1.54	332	79	.3	630	7.9

10172200 RED BUTTE CREEK AT FORT DOUGLAS, NEAR SALT LAKE CITY, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	14	14	14	14	14	13	12	10	10	12	12	13	10	10	9	8	8	9	9	10	9	9	9	10	10	10	9	9	10	8	8	11
MINIMUM	9	9	8	10	9	8	8	6	5	6	8	10	10	10	8	8	6	4	4	4	5	5	4	5	5	6	5	5	6	7	6	7
NOVEMBER																																
MAXIMUM	9	8	8	8	7	6	6	5	6	6	6	4	4	2	2	2	3	4	5	4	3	4	4	3	0	0	0	0	0	0	--	4
MINIMUM	5	4	6	6	4	5	4	3	2	3	3	4	2	1	2	1	2	2	4	1	0	1	1	0	0	0	0	0	0	0	--	2
DECEMBER																																
MAXIMUM	0	0	0	0	0	0	--	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0
MINIMUM	0	0	0	0	0	0	--	--	--	--	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
JANUARY																																
MAXIMUM	1	2	2	2	4	4	4	4	2	2	2	2	2	2	4	3	4	2	3	4	4	4	2	1	1	4	2	1	0	0	0	2
MINIMUM	1	1	1	1	2	2	2	2	2	2	1	1	1	2	1	2	2	1	2	3	4	2	1	1	1	1	1	0	0	0	0	1
FEBRUARY																																
MAXIMUM	0	0	0	0	0	0	1	0	0	2	2	4	2	0	1	0	2	2	2	2	2	3	3	2	2	2	4	4	--	--	--	2
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	--	--	--	0
MARCH																																
MAXIMUM	3	4	5	4	4	4	2	1	1	1	1	1	2	2	3	5	6	7	5	6	7	9	2	6	6	8	8	8	10	10	8	5
MINIMUM	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	2	2	1	6	2	2	1	1	0	1	2	2	2	4	4	1
APRIL																																
MAXIMUM	9	10	8	10	11	6	4	8	0	11	10	10	7	8	6	9	10	6	10	11	12	11	12	6	8	6	11	12	12	13	--	9
MINIMUM	4	3	4	4	4	2	2	2	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	3	3	4	4	4	6	5	--	4
MAY																																
MAXIMUM	14	13	14	14	15	14	15	15	16	16	15	16	14	15	13	15	16	14	15	14	16	16	16	17	17	17	18	18	18	16	16	15
MINIMUM	6	6	6	7	7	8	8	7	7	7	7	7	8	8	8	6	6	8	8	8	8	8	9	9	10	10	10	10	10	10	10	8
JUNE																																
MAXIMUM	16	17	18	20	18	18	17	18	19	14	17	17	18	17	16	14	17	18	17	19	16	18	16	14	12	15	15	16	17	19	--	17
MINIMUM	9	10	10	11	12	12	12	12	12	12	10	10	12	12	12	12	11	11	12	13	12	12	13	10	10	10	10	11	10	10	--	11
JULY																																
MAXIMUM	20	21	--	--	--	--	--	--	20	21	21	22	21	20	22	23	20	23	22	23	23	23	23	21	23	23	23	23	24	23	24	22
MINIMUM	12	13	--	--	--	--	--	--	12	13	14	14	14	14	15	15	14	15	15	15	15	15	15	16	16	16	16	14	16	17	16	16
AUGUST																																
MAXIMUM	24	23	24	24	23	22	23	23	23	23	23	22	21	22	23	20	21	22	22	22	22	22	21	22	22	22	22	22	20	21	20	20	22
MINIMUM	16	16	16	16	16	16	14	15	14	16	16	17	14	14	16	16	16	15	15	15	14	14	14	14	16	16	16	15	15	13	13	15
SEPTEMBER																																
MAXIMUM	20	20	17	18	18	18	19	15	20	17	18	18	18	18	17	17	17	17	15	14	14	15	16	16	16	16	15	16	16	--	17	
MINIMUM	14	14	14	13	10	12	12	13	13	13	13	12	13	12	12	12	12	12	12	12	12	9	9	10	10	10	11	11	10	12	--	12

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
OCT 4, 1968	1335	12	1.7	76	.35
NOV 6.....	1345	6	1.9	6	.03
DEC 11.....	1315	0	1.8	25	.12
JAN 16, 1969	1200	2	2.4	84	.54
FEB 12.....	1330	4	2.4	56	.36
MAR 19.....	1410	4	2.6	48	.34
APR 25.....	1800	12	18	98	4.8
MAY 22.....	0955	9	8.0	95	2.1
AUG 20.....	1600	22	1.7	67	.31
SEP 21.....	1310	12	1.3	58	.20

10191500 SEVIER RIVER BELOW PIUTE DAM, NEAR MARYSVALE, UTAH
(Irrigation network station)

LOCATION.--Lat 38°19'55", long 112°11'15", in NW¼SE¼ sec.34, T.28 S., R.3 W., Piute County, at gaging station 0.8 mile downstream from Piute Dam and 8 miles south of Marysvale.

DRAINAGE AREA.--2,440 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: March 1958 to September 1959, February 1961 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	SODIUM PLUS PO-TAS-SIUM (NA+K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT.											
24...	126	--	--	--	--	--	36	280	0	41	16
DEC.											
02...	52	26	45	24	34	3.8	--	276	0	34	13
JAN.											
03...	6.5	--	--	--	--	--	32	296	0	30	16
FEB.											
19...	137	--	--	--	--	--	32	304	0	27	15
MAR.											
14...	306	--	47	26	--	--	25	279	0	28	13
APR.											
23...	509	--	--	--	24	3.3	--	259	0	24	12
MAY											
16...	479	--	--	--	--	--	30	262	0	21	15
JUNE											
16...	536	18	42	18	18	3.2	--	248	0	16	9.0
JULY											
10...	734	--	--	--	--	--	24	255	0	16	12
AUG.											
15...	610	--	--	--	--	--	27	276	0	16	14
SEPT.											
16...	130	20	44	22	27	4.3	--	272	0	24	12

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.										
24...	--	--	322	.44	110	216	0	1.1	518	8.1
DEC.										
02...	.3	1.9	317	.43	44.5	213	0	1.0	506	8.1
JAN.										
03...	--	--	323	.44	5.67	226	0	.9	509	8.2
FEB.										
19...	--	--	410	.56	152	228	0	.9	502	7.7
MAR.										
14...	--	--	309	.42	255	222	0	.7	494	7.9
APR.										
23...	.4	.7	284	.39	390	198	0	.7	455	7.8
MAY										
16...	--	--	283	.38	366	192	0	.4	444	8.0
JUNE										
16...	.3	.7	252	.34	365	180	0	.6	410	7.9
JULY										
10...	--	--	254	.35	503	191	0	.7	422	7.7
AUG.										
15...	--	--	288	.39	474	204	0	.8	462	7.5
SEPT.										
16...	.4	1.3	288	.39	101	200	0	.8	476	8.2

10224000 SEVIER RIVER NEAR LYNNDYL, UTAH
(Irrigation network station)

LOCATION.--Lat 39°30', long 112°24', in SE¼ sec.23, T.15 S., R.5 W., Millard County, at bridge on county road, 1.5 miles upstream from gaging station and about 2 miles south of Lynndyl.
DRAINAGE AREA.--6,270 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1969.
Water temperatures: March 1951 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 1,660 mg/l Jan. 24-31; minimum, 762 mg/l Nov. 6-8.
Hardness: Maximum, 725 mg/l Jan. 24-31; minimum, 384 mg/l Nov. 6-8.
Specific conductance: Maximum daily, 2,540 micromhos Nov. 16; minimum daily, 1,260 micromhos Nov. 8.
Water temperatures: Maximum, 29.0°C Aug. 1; minimum, 1.0°C on many days during winter periods.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	SODIUM PLUS POTASSIUM (NA+K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.											
01-23	46	--	--	--	--	--	318	308	0	385	415
24-31	44	--	--	--	--	--	216	288	0	274	300
NOV.											
01-05	107	--	--	--	--	--	329	320	0	411	415
06-08	81	--	--	--	--	--	137	294	0	166	190
09-18	115	--	--	--	--	--	310	320	0	386	385
19-30	42	--	--	--	--	--	224	310	0	298	305
DEC.											
01-31	24	--	--	--	--	--	197	318	0	272	315
JAN.											
01-14	30	--	--	--	--	--	200	293	0	277	285
15-23	37	--	--	--	--	--	231	274	0	355	335
24-31	44	--	--	--	--	--	298	294	0	525	415
FEB.											
01-28	41	--	--	--	--	--	208	304	0	332	310
MAR.											
01-31	43	--	--	--	--	--	211	303	0	338	345
APR.											
01-30	327	--	--	--	--	--	250	340	0	322	330
MAY											
01-31	704	16	74	81	--	--	276	372	0	288	262
JUNE											
01-30	340	--	--	--	--	--	251	348	0	280	320
JULY											
01-30	374	--	--	--	--	--	236	322	0	265	300
AUG.											
01-31	234	--	--	--	--	--	224	324	0	249	285
SEPT.											
01-07	95	--	--	--	--	--	241	320	0	268	315
08-30	111	--	--	--	--	--	265	324	0	310	340
WTD. AVG. TIME	--	--	--	--	--	--	253	342	0	291	301
WTD. AVG. TONS PER DAY	197	--	--	--	--	--	242	322	0	308	322
	--	--	--	--	--	--	135	182	0	155	160

ANALYSES OF ADDITIONAL SAMPLES

FEB.											
20...	A440	14	86	94	232	4.7	--	316	0	342	383
MAY											
14...	A728	18	76	82	269	6.0	--	370	0	345	322
AUG.											
14...	A423	15	60	70	218	6.3	--	335	0	286	258

A DISCHARGE AT TIME OF SAMPLING.

10224000 SEVIER RIVER NEAR LYNNDYL, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 5,980 mg/l Dec. 25-27, 1962; minimum, 275 mg/l Feb. 3-11, 1962.
Hardness: Maximum, 1,970 mg/l Dec. 29, 30, 1962; minimum, 188 mg/l Feb. 3-11, 1962.
Specific conductance: Maximum daily, 8,300 micromhos Dec. 27, 1962; minimum daily, 431 micromhos Feb. 4, 1962.
Water temperatures: Maximum, 29.5°C July 21-23, 1956, Aug. 9, 10, 1963; minimum, 1.0°C on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Discharges are adjusted to compensate for inflow from deep well discharging to the river between the sampling point and the gaging station.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.										
01-23	--	--	1460	1.99	181	548	295	5.9	2280	8.1
24-31	--	--	1070	1.46	127	474	238	4.3	1730	8.1
NOV.										
01-05	--	--	1530	2.08	442	560	298	6.0	2370	8.1
06-08	--	--	762	1.04	167	384	143	3.0	1280	8.1
09-18	--	--	1400	1.90	435	532	270	5.9	--	8.1
19-30	--	--	1140	1.55	129	508	254	4.3	1820	8.2
DEC.										
01-31	--	--	1190	1.62	77.1	560	299	3.6	1880	8.1
JAN.										
01-14	--	--	1100	1.50	89.1	495	255	3.9	1720	8.2
15-23	--	--	1300	1.77	130	565	340	4.2	1950	8.2
24-31	--	--	1660	2.26	197	725	484	4.8	2440	8.2
FEB.										
01-28	--	--	1280	1.74	142	580	331	3.8	1940	8.2
MAR.										
01-31	--	--	1290	1.75	150	630	382	3.7	2000	8.0
APR.										
01-30	--	--	1280	1.74	1130	535	256	4.7	1980	8.1
MAY										
01-31	--	--	1340	1.74	2550	516	211	5.3	2060	8.1
JUNE										
01-30	--	--	1180	1.60	1080	480	197	5.0	1870	7.5
JULY										
01-30	--	--	1120	1.52	1130	450	186	4.8	1770	7.2
AUG.										
01-31	-	--	1120	1.52	708	440	174	4.6	1740	8.1
SEPT.										
01-07	--	--	1170	1.59	300	462	200	4.9	1820	8.0
08-30	--	--	1260	1.71	378	492	226	5.2	1990	8.1
WTD. AVG. TIME	--	--	1240	1.71	662	499	219	--	1930	7.9
WTD. AVG. TONS PER DAY	--	--	1250	1.73	--	524	261	4.6	1930	8.0
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

FEB.										
20...	.4	2.4	1320	1.78	145	600	341	4.1	2060	8.0
MAY										
14...	.5	2.3	1320	1.77	2600	528	225	5.1	2050	8.1
AUG.										
14...	.6	.8	1100	1.50	1260	438	163	4.5	1730	7.7

10224000 SEVIER RIVER NEAR LYNNDYL, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2290	2370	1860	1740	1730	2310	1780	2100	1990	1840	1730	2080
2	2310	2340	1860	1700	1760	2310	1780	2120	1960	1840	1630	2090
3	2390	2400	1860	1410	2130	2240	1770	2070	1960	1840	1620	2080
4	2390	2400	1860	1710	2160	2240	1790	2100	1950	1790	1640	2080
5	2390	2380	1860	1730	1740	2240	1710	2050	1930	1780	1650	1490
6	2370	1320	1850	1730	1730	2240	1710	2070	1960	1790	1580	1490
7	2390	1270	1830	1700	1970	2200	1710	2070	1950	1790	1540	1500
8	2470	1260	1840	1760	2000	2080	1710	2010	1920	1790	1560	1990
9	2480	1900	2050	1750	1940	2080	2060	2070	1930	1790	1720	2000
10	2340	1900	2050	1750	2010	2090	2070	2070	1930	1790	1730	2010
11	2320	1920	2060	1740	2010	2030	2070	2070	1930	1780	1730	2010
12	2060	1870	2050	1730	1990	2090	2130	2080	1930	1680	1740	2000
13	2060	1920	2070	1760	1990	1930	2130	2050	1830	1770	1730	2010
14	2070	2440	2020	1770	2000	1970	2030	2040	1820	1770	1730	2010
15	2050	2500	1940	1920	2000	1980	2020	2050	1820	1740	1700	2010
16	2070	2540	1960	1960	2010	1890	2030	2050	1780	1750	1720	2000
17	2390	2500	1960	1970	2010	1880	2030	2040	1790	1740	1720	2010
18	2370	2530	1950	1880	2010	1850	2030	2040	1830	1750	1730	2010
19	2390	1880	1950	1970	1920	1920	2040	2040	1820	1740	1720	2010
20	2490	1870	1860	1910	1920	1920	2090	2050	1760	1850	1720	1950
21	2490	1360	1900	1970	1970	1900	2100	2050	1810	1840	1720	1940
22	2130	1870	1740	1970	1920	1890	2080	2030	1820	1860	1770	1950
23	2130	1740	1730	1970	1780	1890	2080	2050	1820	1850	1770	1950
24	1900	1750	1700	2510	1760	1850	2090	2030	1820	1860	1770	1950
25	1910	1730	1660	2510	1730	1820	2090	2020	1820	1870	1770	1950
26	1820	1750	1740	2510	1750	1820	2070	2010	1820	1850	1760	1990
27	1810	1810	1690	2520	1740	1800	2070	2020	1820	1740	1780	1990
28	1810	1790	1680	2520	2300	1800	2070	2010	1820	1740	1780	2000
29	1810	1930	1740	2520	--	1830	2110	2010	1820	1740	2080	1990
30	1400	1930	1710	2150	--	1830	2110	2010	1830	1740	2080	2000
31	1380	--	1680	2150	--	1790	--	2010	--	1740	2080	--
AVG	2150	1990	1860	1960	1930	1990	1990	2050	1870	1790	1740	1950

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVERAGE
OCTOBER..	19	19	19	18	19	19	19	17	15	16	16	14	14	12	12	9	13	13	13	13	13	13	13	14	14	13	13	13	12	10	10	14
NOVEMBER.	10	10	10	10	10	9	8	7	7	7	7	6	5	7	7	7	7	7	7	7	7	5	6	6	4	3	3	1	1	--		7
DECEMBER.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
JANUARY..	1	1	1	1	1	1	1	1	1	1	1	2	3	4	4	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1		2
FEBRUARY.	1	1	1	1	1	1	2	2	2	2	3	3	4	4	4	4	6	7	6	6	6	6	6	6	6	6	6	8	--	--	--	4
MARCH....	7	8	6	6	7	6	7	6	6	7	7	8	9	9	10	11	12	12	12	12	11	10	8	10	12	12	13	14	16	18	18	10
APRIL....	18	18	18	18	17	13	14	17	17	14	14	14	14	13	13	12	13	12	13	14	16	15	14	9	8	8	13	14	14	14	--	14
MAY.....	14	14	14	14	16	16	17	17	17	17	17	17	17	18	18	18	18	18	18	18	18	18	19	19	19	19	19	19	19	19	19	17
JUNE.....	19	20	20	20	20	20	20	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	20	20	20	20	20	--	19
JULY.....	24	24	24	21	21	21	21	22	22	22	23	22	24	24	24	26	26	26	26	26	26	26	26	27	27	27	27	27	27	28	28	25
AUGUST...	29	24	24	23	28	27	27	27	27	27	27	24	24	24	24	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	24
SEPTEMBER	22	22	22	22	22	22	22	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	19	19	19	--	21

10244950 STEPTOE CREEK NEAR ELY, NEV.
(Hydrologic bench-mark station)

LOCATION.--Lat 39°12'05", long 114°41'15", in NW¼SW¼ sec.32, T.16 N., R.65 E., White Pine County, at gaging station on left bank, 0.1 mile downstream from Clear Creek, 0.8 mile upstream from Cave Creek, and 11 miles east-southeast of Ely.

DRAINAGE AREA.--11.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969.
Water temperatures: October 1966 to September 1969.
Sediment records: February 1968 to September 1969 (partial record).

EXTREMES.--1968-69:
Water temperatures: Maximum, 11.0°C on several days during July and August; minimum, 4.0°C on many days during December to March.

Period of record:
Water temperatures: Maximum, 11.0°C on many days during May, July and August of most years; minimum, 3.0°C Jan. 31, Apr. 5, 1967, Feb. 21, 1968.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
23...	1440	8	5.1	6.9	49	11	2.0	.4	195	0	7.0	1.7
DEC.												
04...	1115	5	4.1	6.8	50	11	1.5	.5	199	0	7.0	.8
JAN.												
10...	1130	6	3.7	6.6	48	11	1.5	.6	193	0	7.0	1.0
FEB.												
11...	1400	6	3.6	6.9	49	11	1.6	.4	194	0	8.0	.5
MAR.												
17...	0830	5	3.5	6.8	51	11	1.6	.4	197	0	7.0	.4
APR.												
02...	1330	8	9.2	7.8	66	9.3	2.1	.8	234	0	11	1.2
MAY												
21...	1610	9	28	7.3	65	7.2	2.2	.6	218	0	12	.9
JUNE												
23...	1505	7	24	6.8	56	7.5	1.5	.4	198	0	9.0	.6
JULY												
23...	1535	10	14	6.9	51	9.0	1.6	.5	193	0	7.0	.6
AUG.												
21...	1040	8	9.7	6.5	48	9.9	1.9	.5	192	0	9.0	.7
SEPT.												
23...	1325	9	7.7	6.9	45	10	1.8	.4	187	0	8.0	.8

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	AMMONIA (NH4) (MG/L)	TOTAL NITROGEN (N) (MG/L)	ORTHO PHOSPHATE (PO4) (MG/L)	TOTAL PHOSPHATE (PO4) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
OCT.											
23...	.1	--	--	--	--	--	60	175	168	304	8.0
DEC.											
04...	.3	.9	.09	.40	.03	.07	0	177	170	318	7.8
JAN.											
10...	.1	--	--	--	--	--	0	172	165	311	7.8
FEB.											
11...	.0	.7	.03	.38	.01	.15	0	174	168	307	7.8
MAR.											
17...	.1	.6	.06	.50	.02	.10	20	175	172	312	7.9
APR.											
02...	.1	--	--	--	--	--	0	213	203	382	7.9
MAY											
21...	.1	.9	.17	.57	.09	.36	0	202	196	365	8.0
JUNE											
23...	.2	.7	.26	.65	.59	.82	0	180	170	322	7.8
JULY											
23...	.1	.6	.04	.13	.03	.04	0	172	164	315	8.0
AUG.											
21...	.1	.6	.00	.43	.06	.06	20	172	160	313	8.0
SEPT.											
23...	.1	.5	.20	.53	.50	.68	20	165	154	301	7.9

10244950 STEPTOE CREEK NEAR ELY, NEV.--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ALDRIN (UG/L)	DDD (UG/L)	DDE IN BOTTOM DEPOSITS (UG/KG)	DDT (UG/L)	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR (UG/L)	HEPTACHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	SILVEX (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)
OCT. 21...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	--	.00
JUNE 23...	.00	.00	.00	.03	.00	.00	.00	--	.00	.00	.00	.00

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE OF COLLECTION	DISSOLVED URANIUM (ug/l)	DISSOLVED RADIUM (pc/l)	DISSOLVED GROSS α (ug/l)	DISSOLVED GROSS β (pc/l)	IN SUSPENDED SEDIMENTS GROSS α	IN SUSPENDED SEDIMENTS GROSS β
MAY 21.....	.6	.06	5.7	2.4	1.3	1.3

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

MONTH	DAY 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	AVERAGE
OCTOBER																																
MAXIMUM	8	9	8	8	8	8	7	7	8	8	8	8	7	7	7	7	7	9	9	8	8	8	8	8	8	8	8	8	8	7	7	8
MINIMUM	6	6	7	7	7	7	6	6	6	7	7	7	7	6	6	6	6	6	6	6	6	6	6	7	7	7	6	7	6	6	6	6
NOVEMBER																																
MAXIMUM	7	7	8	7	7	7	7	7	8	7	7	7	6	6	6	6	6	7	7	7	7	7	7	7	6	6	6	6	6	6	--	7
MINIMUM	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	--	6
DECEMBER																																
MAXIMUM	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	4	5	5	6	6	6	6	5	6	6	5	6	6
MINIMUM	4	5	4	5	5	5	5	6	6	6	4	4	4	5	6	4	4	4	4	4	4	4	5	6	4	4	4	5	5	5	5	5
JANUARY																																
MAXIMUM	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	6	5	6
MINIMUM	6	5	6	5	6	6	6	4	4	5	5	6	6	6	5	5	5	5	5	6	4	5	4	5	6	6	5	4	4	4	4	5
FEBRUARY																																
MAXIMUM	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	6	6	6	6	--	--	--	6
MINIMUM	5	4	4	4	5	4	4	4	5	5	5	5	4	4	5	5	4	5	5	5	4	4	4	4	5	4	4	4	--	--	--	4
MARCH																																
MAXIMUM	5	6	6	5	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	6	7	7	7	6	7	7	8	8	8	8	7	7
MINIMUM	4	4	5	4	4	5	4	4	4	4	4	4	4	4	4	5	6	5	4	5	6	6	5	4	5	5	6	6	6	6	6	5
APRIL																																
MAXIMUM	8	8	8	8	8	6	7	8	9	8	9	8	9	7	6	8	9	7	9	9	9	9	9	6	8	8	9	9	9	9	--	8
MINIMUM	6	6	6	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	6	6	6	6	6	6	6	6	--	6
MAY																																
MAXIMUM	9	9	8	8	9	9	10	10	10	10	10	8	10	9	9	10	10	10	9	9	9	9	8	9	9	9	9	9	9	9	8	9
MINIMUM	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
JUNE																																
MAXIMUM	9	9	9	9	8	8	8	9	8	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	9	--	8
MINIMUM	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	--	7
JULY																																
MAXIMUM	9	9	9	9	9	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	10	9	11	9
MINIMUM	7	7	7	7	7	7	7	7	7	7	7	7	8	8	8	7	7	8	8	8	8	9	9	8	8	8	8	9	9	8	9	8
AUGUST																																
MAXIMUM	11	10	11	11	11	11	11	10	10	10	10	10	10	10	10	10	10	11	11	10	10	10	10	10	11	11	11	11	10	10	10	10
MINIMUM	8	9	9	9	8	8	8	8	8	8	8	8	8	8	8	9	9	8	8	8	9	8	8	9	9	8	8	8	8	8	8	8
SEPTEMBER																																
MAXIMUM	10	10	10	10	10	10	10	11	10	10	10	10	10	10	9	10	10	10	9	9	9	9	9	10	10	10	10	10	9	9	9	10
MINIMUM	8	8	8	8	8	8	8	9	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	8	8	8	8	8	8	8	--	8

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JAN 10, 1969	1135	6	3.7	8	.08	--	--	--	--	--	--	--	--	--	--	--	
FEB 11.....	1400	6	3.6	10	.10	--	--	--	--	--	--	--	--	--	--	--	
MAR 17.....	0810	6	3.5	14	.13	--	--	--	--	--	--	--	--	--	--	--	
APR 2.....	1330	8	9.2	140	3.5	--	--	--	--	--	--	--	--	--	--	--	
APR 21.....	1130	9	14	133	5.0	23	29	38	49	61	86	92	97	99	100	--	SBWC
MAY 21.....	1610	9	28	94	7.1	--	--	--	--	--	--	--	--	--	--	--	
JUL 23.....	1530	10	14	30	1.1	--	--	--	--	--	--	--	--	--	--	--	

10249300 SOUTH TWIN RIVER NEAR ROUND MOUNTAIN, NEV.
(Hydrologic bench-mark station)

LOCATION.--Lat 38°53'00", long 117°14'35", in SE¼ sec.22. T.12 N., R.42 E., Nye County, at gaging station on right bank, 600 ft upstream from diversion, 3 miles west of State Highway 8A, and 15 miles northwest of Round Mountain.

DRAINAGE AREA.--20 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1969.
Water temperatures: April 1966 to September 1969.
Sediment records: October 1967 to September 1969 (partial record).

EXTREMES.--1966-68:
Water temperatures: Maximum, 17.0°C July 25, 29, 1966; minimum, freezing point on several days during February 1968.

REMARKS.--Temperature records (from thermograph) for current water year were found to be unreliable and will not be published.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
22...	1550	6	1.9	20	18	1.6	6.5	.8	73	0	6.0	1.7
DEC.												
03...	1045	0	1.2	19	20	1.7	6.2	.8	70	0	7.0	1.8
JAN.												
09...	1030	0	1.5	18	18	1.4	6.0	.7	66	0	7.0	1.5
FEB.												
12...	1430	3	2.6	18	18	1.5	5.8	.7	64	0	7.0	1.3
MAR.												
18...	1100	3	4.8	17	18	1.7	5.9	.8	65	0	9.0	1.1
APR.												
19...	1200	5	14	18	18	1.6	6.1	.8	62	0	8.0	2.5
MAY												
23...	1000	7	51	18	10	1.0	4.7	1.0	42	0	5.0	1.0
JUNE												
25...	0945	8	22	19	12	1.1	5.0	.8	47	0	5.0	1.0
JULY												
25...	0930	12	6.3	19	16	1.3	5.9	.9	62	0	5.0	1.4
AUG.												
22...	1030	12	3.4	19	19	1.6	6.3	.9	71	0	7.0	1.2
SEPT.												
24...	1110	9	2.7	20	21	1.7	6.4	.9	74	0	6.0	2.0

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	AMMONIA (NH4) (MG/L)	TOTAL NITROGEN (N) (MG/L)	ORTHO PHOSPHATE (PO4) (MG/L)	TOTAL PHOSPHATE (PO4) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DISSOLVED OXYGEN (MG/L)
OCT.												
22...	.2	.0	.00	.11	.04	.16	0	91	52	131	8.0	9.3
DEC.												
03...	.3	.2	.05	.15	.03	.05	0	91	57	136	A7.7	11.8
JAN.												
09...	.2	.4	.06	.55	.04	.22	0	86	51	130	A7.6	12.8
FEB.												
12...	.1	.3	.03	.28	.00	.16	0	85	51	122	A7.9	10.4
MAR.												
18...	.2	.5	.06	1.0	.04	.21	40	86	52	129	7.7	7.2
APR.												
19...	.2	.5	.01	.54	.01	--	0	86	52	130	7.4	10.4
MAY												
23...	.1	1.6	.12	.89	.18	.39	0	62	29	82	7.2	10.4
JUNE												
25...	.2	.7	.30	.43	.30	.33	0	67	34	97	A8.4	9.4
JULY												
25...	.2	.6	.28	.37	.05	.09	0	81	46	118	7.8	8.2
AUG.												
22...	.2	.1	.00	.11	.04	.05	10	90	54	134	7.9	8.8
SEPT.												
24...	.2	.0	.08	.14	.37	.36	0	94	60	138	A8.2	9.8

A FIELD DETERMINATION.

10249300 SOUTH TWIN RIVER NEAR ROUND MOUNTAIN, NEV.--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ALDRIN (UG/L)	DDD (UG/L)	DDE IN BOTTOM DEPOSITS (UG/KG)	DDT (UG/L)	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR (UG/L)	HEPTACHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	SILVEX (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)
OCT.												
22...	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
JUNE												
25...	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE OF COLLECTION	DISSOLVED URANIUM (ug/l)	DISSOLVED RADIUM (pc/l)	DISSOLVED GROSS α (ug/l)	DISSOLVED GROSS (pc/l)	IN SUSPENDED SEDIMENTS GROSS α	IN SUSPENDED SEDIMENTS GROSS
OCT.						
22.....	1.5	.02	5.7	1.6	< .4	.6
MAY						
23.....	.7	.06	3.1	2.0	22	7.9

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JAN 5, 1969	1045	1	1.5	8	.03	--	--	--	--	--	--	--	--	--	--	--	
FEB 12.....	1345	3	2.6	5	.04	--	--	--	--	--	--	--	--	--	--	--	
MAR 18.....	1030	3	4.8	13	.17	--	--	--	--	--	--	--	--	--	--	--	
APR 19.....	1240	6	14	9	.34	--	--	--	--	--	--	--	--	--	--	--	
MAY 23.....	0940	7	51	1050	145	3	4	5	6	8	10	13	21	40	64	90	SBWC
JUL 25.....	1040	12	6.3	4	.07	--	--	--	--	--	--	--	--	--	--	--	
AUG 22.....	1000	12	3.4	2	.02	--	--	--	--	--	--	--	--	--	--	--	
SEP 24.....	1110	9	2.7	6	.04	--	--	--	--	--	--	--	--	--	--	--	

QUANTITATIVE SPECTROGRAPHIC ANALYSES IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME (24 hr)	Aluminum (Al)	Beryllium (Be)	Bismuth (Bi)	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Gallium (Ga)	Germanium (Ge)	Iron (Fe)	Lead (Pb)	Manganese (Mn)	Molybdenum (Mo)	Nickel (Ni)	Titanium (Ti)	Vanadium (V)	Zinc (Zn)
Oct.																		
22...	1550	4.9	<1.3	<0.7	<3.3	<3.3	<3.3	<3.3	<13	<0.7	8.7	<3.3	<3.3	<0.7	<0.7	<1.3	<0.7	<13
May																		
23...	1000	257	<0.6	<0.3	<1.4	<1.4	<1.4	<1.4	<5.7	<0.3	106	<1.4	<1.4	0.7	1.3	<0.6	<0.3	<5.7

10256000 WHITEWATER RIVER AT WHITE WATER, CALIF.

LOCATION (revised).--Lat 33°55'30", long 116°38'07", in NE¼NE¼SE¼ sec.11, T.3 S., R.3 E., Riverside County, at gaging station on Whitewater River cut-off bridge, 0.1 mile east of White Water and 2.0 miles upstream from San Gorgonia River.

DRAINAGE AREA.--57.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1969.

REMARKS.--Prior to August 1969, sampling site 1.5 miles upstream. Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DISS-OLVED OXYGEN (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
DEC.												
16...	1130	8.5	14	10.0	46	14	13	4.0	190	0	35	4.0
MAR.												
17...	1225	115	17	9.3	42	12	10	4.0	171	0	30	3.0
JUNE												
23...	1015	142	20	8.3	31	9.0	8.0	3.0	137	0	17	2.0
SEPT.												
22...	1045	46	20	8.5	40	12	11	4.0	174	0	24	3.0

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	PH (UNITS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
DEC.												
16...	.9	1.7	0	239	.33	172	16	14	.4	156	8.0	375
MAR.												
17...	.8	1.6	0	189	.26	154	14	12	.4	140	8.3	329
JUNE												
23...	.6	.6	0	132	.18	114	2	13	.3	112	8.3	254
SEPT.												
22...	.9	1.6	0	163	.22	149	6	13	.4	143	8.3	321

10261100 MOJAVE RIVER AT THE FORKS, NEAR CEDAR SPRINGS, CALIF.

LOCATION.--Lat 34°20'35", long 117°14'01", in SW¼ sec.18, T.3 N., R.3 W., San Bernardino County, 100 ft downstream from confluence of Deep Creek and West Fork Mojave River and 12 miles south of Apple Valley.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1969.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey. Water discharge estimated from the discharge of Deep Creek near Hesperia and that of West Fork Mojave River near Hesperia.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DIS-SOLVED DXYGEN (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT. 16...	1130	6.0	11	9.6	20	5.0	42	2.0	107	0	56	9.0
JAN. 15...	1400	58	8	10.4	13	1.0	11	2.0	48	0	13	10
APR. 23...	1030	529	10	10.5	9.0	3.0	5.0	1.0	45	0	3.0	3.0
JULY 26...	1030	20	22	9.0	23	6.0	20	2.0	116	0	14	7.0

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	PH (UNITS)	SPECI-FIC CONDUCTANCE (MICRO-MHOS)
OCT. 16...	2.6	.0	130	224	.30	70	0	56	2.2	88	7.7	336
JAN. 15...	.6	.0	40	94	.13	37	0	38	.8	39	7.5	142
APR. 23...	.1	.0	0	46	.06	35	0	23	.4	37	7.6	88
JULY 26...	.9	2.0	40	146	.20	82	0	34	1.0	95	8.0	245

10261500 MOJAVE RIVER AT LOWER NARROWS, NEAR VICTORVILLE, CALIF.

LOCATION (revised).--Lat 34°34'23", long 117°19'11", in SW¼SW¼SE¼ sec.29, T.6 N., R.4 W., San Bernardino County, at gaging station 650 ft upstream from bridge on county road, formerly U.S. Highway 66, 0.6 mile downstream from Atchison, Topeka and Santa Fe Railroad bridge, and 3 miles northwest of Victorville.

DRAINAGE AREA.--514 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1969.
Water temperatures: March 1962 to September 1965.

REMARKS.--Prior to July 1969, sampling site 350 ft upstream. Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DIS-SOLVED DXYGEN (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
OCT. 16...	1015	25	13	7.7	40	12	46	5.0	201	0	40	28
JAN. 15...	1250	43	16	7.9	44	9.0	48	8.0	195	0	45	31
APR. 23...	1145	350	16	8.6	16	4.0	11	4.0	79	0	12	5.0
JULY 26...	0930	33	27	6.4	37	8.0	40	14	204	0	35	21

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	PH (UNITS)	SPECI-FIC CONDUCTANCE (MICRO-MHOS)
OCT. 16...	.5	4.5	120	311	.42	149	0	39	1.6	165	7.6	493
JAN. 15...	.5	4.0	70	316	.43	147	0	40	1.7	160	7.8	533
APR. 23...	.2	1.0	10	107	.15	56	0	28	.6	65	7.9	165
JULY 26...	.6	2.2	90	291	.40	125	0	38	1.6	167	8.1	441

10263500 BIG ROCK CREEK NEAR VALYERMO, CALIF.

LOCATION.--Lat 34°25'15", long 117°50'19", in NW¼SE¼NE¼ sec.20, T.4 N., R.9 W., Los Angeles County, temperature recorder at gaging station 0.1 mile upstream from Punchbowl Canyon and 1.9 miles southeast of Valyermo.

DRAINAGE AREA.--22.9 sq mi.

PERIOD OF RECORD.--Water temperatures: January 1962 to September 1969.

EXTREMES.--1968-69:
Water temperatures: Minimum, 1.0°C Feb. 1-4.

Period of record:
Water temperatures: Maximum (1962-68), 21.0°C on many days in 1967 and 1968; minimum, 1.0°C Feb. 1-4, 1969.

REMARKS.--Probe damaged during flood and thermograph record from Feb. 10 to end of water year is unreliable and will not be published. Where no maximum or minimum is reported, temperatures reported are from actual observations.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

MONTH	DAY 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	AVERAGE
OCTOBER..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	16	16	17	17	17	17	16	15	14	16	16	16	16	16	14	13	14	14	14	15	15	16	15	15	16	16	16	16	15	14	13	15
MINIMUM	12	12	12	13	13	12	12	11	11	12	12	12	11	12	11	10	11	11	11	11	11	11	11	11	11	11	11	11	11	12	10	11
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	13	14	13	13	13	13	13	12	14	13	13	13	12	12	13	12	13	13	14	13	13	13	13	13	11	11	12	11	11	12	--	13
MINIMUM	10	10	11	10	10	9	11	10	11	11	11	11	9	9	10	11	10	11	10	10	10	10	11	9	9	9	8	8	8	9	--	10
DECEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	11	10	10	11	12	12	11	12	11	12	10	10	10	10	--	--	--	--	--	--	10	10	10	11	10	10	11	11	11	11	11	11
MINIMUM	9	8	8	8	8	8	8	8	8	9	8	7	7	7	--	--	--	--	--	--	7	7	8	8	9	8	8	8	8	8	8	8
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	12	12	12	12	12	13	13	11	10	11	12	12	11	12	12	12	11	11	11	9	8	8	8	9	9	9	8	7	7	4	5	10
MINIMUM	8	9	9	9	9	9	9	9	8	9	9	10	10	9	9	8	9	10	8	8	8	8	8	8	9	9	8	7	4	2	2	8
FEBRUARY.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	7	7	7	6	7	4	6	7	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	1	1	1	1	2	3	2	2	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APRIL....	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	--	--	14	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JUNE.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUGUST...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

10278300 LOS ANGELES AQUEDUCT AT OUTLET, AT SAN FERNANDO, CALIF.

LOCATION.--Lat 34°18'46", long 118°29'32" (unsurveyed), Los Angeles County, in Mission de San Fernando substation at Los Angeles Aqueduct outlet at upper end of Van Norman Lake at San Fernando.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1969.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey. Records of discharge furnished by Los Angeles Department of Water and Power.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)
OCT.												
22...	494	15	9.8	21	29	8.0	38	4.0	128	0	34	16
NOV.												
19...	413	13	10.8	24	25	7.0	35	5.0	114	0	28	16
DEC.												
17...	444	10	11.8	22	23	7.0	36	3.0	111	0	33	14
JAN.												
21...	456	7	12.0	20	22	7.0	35	3.0	106	0	28	14
FEB.												
18...	498	7	11.8	18	22	8.0	33	4.0	90	0	57	17
MAR.												
18...	482	7	11.8	20	27	8.0	68	7.0	123	0	76	35
APR.												
22...	488	15	10.0	19	30	8.0	88	8.0	138	0	113	47
MAY												
20...	486	17	9.6	24	30	7.0	72	6.0	155	0	55	36
JUNE												
17...	520	20	9.0	21	26	6.0	49	5.0	126	0	38	24
JULY												
22...	520	22	8.0	14	20	5.0	31	4.0	73	0	45	15
AUG.												
19...	568	22	8.4	16	20	6.0	28	4.0	85	0	27	14
SEPT.												
16...	677	18	8.8	18	25	6.0	30	3.0	103	0	30	9.0

DATE	FLUORIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3 (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICROMHOS)
OCT.												
22...	.5	1.0	500	215	.29	105	0	43	1.6	105	8.3	354
NOV.												
19...	.5	1.1	460	199	.27	91	0	44	1.6	94	8.2	308
DEC.												
17...	.5	1.1	400	195	.27	86	0	47	1.7	91	8.1	333
JAN.												
21...	.5	3.3	470	186	.25	84	0	47	1.7	87	8.2	304
FEB.												
18...	.4	1.4	460	206	.28	88	14	44	1.5	74	7.7	332
MAR.												
18...	.5	2.1	640	305	.41	100	0	58	3.0	101	7.6	546
APR.												
22...	.9	.5	890	384	.52	108	0	62	3.7	113	7.9	635
MAY												
20...	1.0	.6	890	309	.42	104	0	58	3.1	127	8.2	529
JUNE												
17...	.7	.6	720	233	.32	90	0	53	2.3	103	8.0	408
JULY												
22...	.4	.5	400	172	.23	70	10	47	1.6	60	7.6	299
AUG.												
19...	.4	.9	320	159	.22	75	5	43	1.4	70	7.9	276
SEPT.												
16...	.4	2.2	370	175	.24	87	3	42	1.4	84	8.2	310

10293000 EAST WALKER RIVER NEAR BRIDGEPORT, CALIF.

LOCATION.--Lat 38°19'40", long 119°12'50", in SW¼NE¼ sec.34, T.6 N., R.25 E., Mono County, at gaging station on right bank, 1,500 ft downstream from Bridgeport Reservoir, 5 miles north of Bridgeport, and 10 miles upstream from Sweetwater Creek.

DRAINAGE AREA.--359 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1963, October 1963 to September 1968 (miscellaneous), October 1968 to September 1969.

REMARKS.--Flow regulated by Bridgeport Reservoir.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	CALCIUM (CA) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CHLORIDE (CL) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
NOV.												
14...	14	6	10.9	26	14	119	0	2.6	85	0	222	8.3
JAN.												
08...	8.4	5	11.2	30	13	130	0	2.7	113	6	294	8.2
MAR.												
12...	446	1	10.5	24	21	121	0	4.0	84	0	251	8.2
MAY												
26...	594	16	8.2	11	6.4	54	0	.7	37	0	106	7.5
JULY												
08...	651	16	7.9	11	4.6	50	0	1.2	37	0	80	7.8
SEPT.												
08...	361	18	6.7	19	7.3	84	0	1.8	65	0	143	8.0

10296000 WEST WALKER RIVER BELOW LITTLE WALKER RIVER, NEAR COLEVILLE, CALIF.

LOCATION.--Lat 38°22'45", long 119°27'00", in NE¼SE¼ sec.9, T.6 N., R.23 E., Mono County, on left bank 300 ft downstream from U.S. Highway 395 bridge, 500 ft downstream from gaging station, 700 ft downstream from confluence of Little Walker River, and 13 miles southeast of Coleville.

DRAINAGE AREA.--180 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1963, October 1963 to September 1968 (miscellaneous), October 1968 to September 1969.

REMARKS.--Flow very slightly regulated by Poor Lake Reservoir.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	CALCIUM (CA) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CHLORIDE (CL) (MG/L)	HARDNESS (CA,MG) (MG/L)	NONCARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
NOV.												
14...	56	0	11.9	7.0	4.0	36	0	1.5	32	32	71	7.9
JAN.												
08...	54	0	12.8	10	4.8	48	0	1.6	36	0	96	7.7
MAR.												
12...	63	0	11.5	12	5.7	58	0	1.8	45	0	113	7.7
MAY												
26...	2390	5	10.4	5.1	1.6	21	0	.7	16	0	42	7.3
JULY												
08...	1090	6	10.1	4.0	1.3	19	0	.7	19	3	38	7.3
SEPT.												
08...	177	15	8.1	8.1	3.2	39	0	1.5	31	0	72	7.8

10301500 WALKER RIVER NEAR WABUSKA, NEV.
(Irrigation network station)

LOCATION.--Lat 39°09'10", long 119°05'50", in SE¼NW¼ sec.20, T.15 N., R.26 E., Lyon County, at gaging station on left bank, 600 ft upstream from timber bridge at Julian Ranch, 1.8 miles downstream from Southern Pacific Railroad bridge, 4.6 miles east of Wabuska, and 16 miles upstream from Weber Dam.
DRAINAGE AREA.--2,600 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1968 to September 1969.
Water temperatures: October 1968 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 468 mg/l Dec. 11-14; minimum, 128 mg/l June 1-30.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	BORON (B) (UG/L)
OCT.												
01-31	42	25	43	10	78	6.2	224	6	89	23	1.2	540
NOV.												
01-20	43	26	43	10	69	6.3	230	0	79	19	1.0	490
21-30	36	27	45	10	82	6.2	242	0	87	26	1.3	560
DEC.												
01-10	47	21	36	11	83	6.0	178	14	92	28	1.2	570
11-14	49	30	47	11	89	6.0	226	11	102	28	1.3	570
15-19	47	28	44	10	74	5.4	236	0	77	22	1.0	510
20-23	32	29	28	11	84	5.8	175	11	87	26	1.3	660
24-31	52	26	43	10	70	5.0	212	8	71	22	1.0	490
JAN.												
01-23	91	31	41	9.7	72	5.5	208	6	80	20	.9	440
24-31	285	22	32	7.5	55	6.3	162	2	56	20	.9	430
FEB.												
01-10	272	18	31	7.2	44	4.5	152	6	46	14	.7	360
11-22	394	13	28	6.6	36	3.8	147	0	34	11	.7	380
23-28	693	15	25	5.6	29	3.5	129	2	25	7.7	.6	220
MAR.												
01-31	780	14	25	5.6	29	3.3	135	0	25	8.2	.6	240
APR.												
01-30	802	26	25	5.6	28	4.4	128	2	27	8.2	.6	230
MAY												
01-17	970	20	21	5.0	25	4.3	114	0	23	7.3	.5	190
18-31	1620	16	19	4.3	22	4.1	100	0	18	6.0	.6	180
JUNE												
01-30	2130	12	16	3.8	20	3.1	88	0	20	6.7	.4	110
JULY												
01-31	737	17	19	4.3	20	3.4	101	0	19	4.5	.4	140
AUG.												
01-07	328	19	24	5.2	24	3.6	121	0	25	5.4	.4	130
08-31	134	24	33	7.0	38	4.7	158	5	41	8.0	.7	230
SEPT.												
01-03	140	24	33	7.0	36	4.7	164	3	32	9.8	.6	220
04-10	115	26	38	8.1	43	5.2	186	4	43	12	.6	270
11-19	156	24	35	7.4	39	4.8	172	3	36	10	.6	200
20-30	109	26	38	8.1	45	4.7	182	5	40	12	.6	270
WTD. AVG. TIME	--	17	22	5.0	26	3.7	114	1	25	7.7	.5	189
WTD. AVG. TONS PER DAY	557	21	31	7.1	44	4.6	157	3	46	13	.7	312
	--	25	32	7.5	40	5.6	172	1	38	12	.8	284
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
15...	49	29	43	10	73	7.5	234	0	79	22	1.1	460
NOV.												
15...	40	28	45	11	82	6.7	246	0	96	24	1.3	530
DEC.												
15...	51	28	44	10	71	5.4	222	6	77	20	1.1	430
JAN.												
15...	70	28	44	10	68	5.3	230	0	75	18	1.0	370
FEB.												
15...	316	14	28	6.6	37	3.7	148	0	33	12	.7	310
MAR.												
15...	900	14	24	5.6	29	3.3	132	0	25	9.3	.6	300
APR.												
15...	816	19	25	5.8	31	4.8	132	0	33	9.1	.5	200
MAY												
15...	1280	18	19	4.6	24	4.5	108	0	20	7.8	.5	180
JUNE												
15...	2120	14	18	4.0	20	3.2	93	0	15	4.0	.5	250
JULY												
15...	832	15	19	4.2	19	3.3	100	0	18	3.8	.4	130
AUG.												
15...	135	23	33	6.9	36	4.7	164	0	40	9.0	.6	180
SEPT.												
15...	132	22	36	7.7	40	4.9	187	0	35	12	.6	260

10301500 WALKER RIVER NEAR WABUSKA, NEV.--Continued

EXTREMES.--1968-69:--Continued
Hardness: Maximum, 162 mg/l Dec. 11-14; minimum, 56 mg/l June 1-30.
Specific conductance: Maximum daily, 729 micromhos Dec. 13; minimum daily, 183 micromhos June 26.
Water temperatures: Maximum, 29.0°C Aug. 7, 26; minimum, freezing point on several days during December to March.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.
Minimum observed during water year: Dissolved solids, 109 mg/l June 15.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	COLOR (PLATI-NUM-COBALT UNITS)
OCT.											
01-31	394	393	148	0	602	8.4	.54	52	2.8	194	5
NOV.											
01-20	376	368	148	0	569	8.1	.51	49	2.5	189	5
21-30	422	406	154	0	649	7.7	.57	52	2.9	198	5
DEC.											
01-10	386	382	135	0	607	8.7	.52	56	3.1	169	5
11-14	468	439	162	0	681	8.5	.64	53	3.0	203	10
15-19	386	379	151	0	597	8.2	.52	50	2.6	194	10
20-23	372	371	115	0	592	8.5	.51	60	3.4	162	5
24-31	366	363	148	0	578	8.5	.50	50	2.5	187	5
JAN.											
01-23	358	370	142	0	568	8.4	.49	51	2.6	180	10
24-31	300	284	111	0	467	8.3	.41	50	2.3	136	16
FEB.											
01-10	260	247	107	0	407	8.5	.35	46	1.9	135	7
11-22	216	206	97	0	353	8.2	.29	43	1.6	121	7
23-28	184	178	86	0	293	8.3	.25	41	1.4	109	7
MAR.											
01-31	180	178	86	0	291	8.1	.24	41	1.4	111	6
APR.											
01-30	195	190	86	0	295	8.3	.27	40	1.3	108	15
MAY											
01-17	157	160	73	0	257	8.1	.21	41	1.3	94	16
18-31	140	140	65	0	224	8.1	.19	40	1.2	82	20
JUNE											
01-30	128	126	56	0	202	8.0	.17	42	1.2	72	15
JULY											
01-31	144	138	65	0	222	8.0	.20	39	1.1	83	10
AUG.											
01-07	177	168	82	0	270	8.1	.24	38	1.2	99	8
08-31	254	240	112	0	387	8.3	.35	41	1.6	138	12
SEPT.											
01-03	248	231	112	0	374	8.5	.34	40	1.5	139	12
04-10	286	273	128	0	431	8.5	.39	41	1.7	159	12
11-19	250	245	118	0	395	8.5	.34	41	1.6	146	12
20-30	280	270	128	0	436	8.5	.38	42	1.7	157	12
WTD. AVG. TIME	167	163	74	0	263	7.2	.23	--	--	95	--
WTD. AVG. TONS PER DAY	254	236	105	0	395	7.6	.35	45	1.8	134	--
	--	--	--	--	--	--	--	--	--	143	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
15...	398	381	148	0	596	7.7	.54	50	2.6	192	10
NOV.											
15...	420	417	158	0	644	7.7	.57	52	2.8	202	5
DEC.											
15...	360	375	151	0	579	8.4	.49	49	2.5	192	5
JAN.											
15...	356	364	151	0	578	7.9	.48	48	2.4	189	5
FEB.											
15...	204	209	97	0	353	8.0	.28	44	1.6	121	5
MAR.											
15...	184	178	83	0	295	7.4	.25	42	1.4	108	25
APR.											
15...	--	194	86	0	310	8.2	.26	42	1.5	108	16
MAY											
15...	167	152	66	0	243	7.2	.23	42	1.3	89	16
JUNE											
15...	109	126	62	0	210	7.2	.15	40	1.1	76	25
JULY											
15...	140	132	65	0	214	7.5	.19	37	1.0	82	10
AUG.											
15...	241	235	111	0	375	7.6	.33	40	1.5	135	15
SEPT.											
15...	256	250	122	0	414	7.6	.35	41	1.6	153	10

10301500 WALKER RIVER NEAR WABUSKA, NEV.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	521	558	619	559	426	292	297	262	215	214	252	378
2	548	542	650	568	412	296	288	263	204	223	253	378
3	619	560	650	563	399	298	293	264	202	231	272	382
4	562	580	675	569	397	296	295	276	208	237	274	400
5	573	608	641	560	393	293	303	296	201	267	276	447
6	548	580	559	556	397	299	333	278	197	247	304	457
7	551	588	643	554	403	301	310	269	202	241	319	451
8	568	629	648	548	403	298	296	268	199	233	360	450
9	565	622	634	560	398	295	296	257	212	244	362	438
10	556	665	630	557	398	297	305	249	225	233	381	417
11	586	677	677	575	--	292	308	244	222	232	384	404
12	604	678	668	572	369	298	311	241	234	223	361	391
13	609	658	729	562	363	291	320	260	221	225	435	391
14	608	657	648	558	370	288	314	250	211	232	582	411
15	597	647	583	568	353	291	313	--	--	214	369	416
16	562	637	616	575	334	284	309	260	187	202	374	388
17	552	613	609	577	339	285	301	248	227	207	370	385
18	561	616	574	566	393	288	302	236	207	221	375	400
19	549	596	582	565	321	286	299	238	233	226	359	404
20	571	608	--	538	328	288	293	236	203	225	352	425
21	580	629	--	598	321	287	296	239	212	211	400	429
22	594	631	--	561	--	284	295	244	201	208	399	432
23	610	645	--	508	290	285	285	229	196	207	403	424
24	596	601	588	552	292	288	315	234	185	207	417	446
25	569	638	540	552	290	306	255	228	188	208	433	448
26	560	641	541	536	294	319	254	236	183	203	407	445
27	558	674	593	432	293	316	256	230	189	215	389	470
28	555	610	591	433	292	319	251	220	198	213	409	464
29	555	691	590	486	--	311	280	220	204	219	380	471
30	562	648	558	483	--	310	304	258	214	226	358	479
31	562	--	558	493	--	--	--	211	--	230	379	--
AVG	571	624	614	544	355	296	295	248	206	223	367	424

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVER-AGE
OCTOBER..	16	17	14	18	20	16	13	14	12	13	14	16	14	13	13	14	13	8	12	15	11	11	11	10	9	15	12	14	12	13	15	13
NOVEMBER.	9	8	8	10	8	8	9	9	12	12	11	10	8	14	7	8	7	4	10	12	10	10	10	4	5	4	5	4	3	4	--	8
DECEMBER.	2	3	1	2	2	1	4	5	4	--	4	0	0	1	1	2	6	1	1	1	0	1	1	1	1	1	1	4	3	1	0	2
JANUARY..	2	3	6	5	4	5	5	5	1	--	9	6	5	8	4	3	3	5	6	8	6	4	1	6	6	4	2	0	0	0	0	4
FEBRUARY.	3	2	2	3	3	2	2	3	5	7	--	2	5	--	2	4	4	--	--	--	4	4	0	0	0	0	0	0	--	--	--	2
MARCH....	3	3	4	4	2	4	0	3	0	0	0	0	0	0	2	6	8	7	5	4	6	7	9	8	8	10	10	9	12	14	--	5
APRIL....	12	8	12	12	10	8	8	8	10	10	12	15	12	10	6	10	9	11	14	15	15	14	13	11	11	--	9	11	12	14	--	11
MAY.....	8	10	9	12	12	16	12	17	18	18	16	12	11	--	--	12	19	18	18	18	18	20	19	19	19	19	19	15	19	18	20	16
JUNE.....	22	21	22	--	22	21	20	18	11	17	16	20	19	13	--	15	16	16	18	16	19	20	19	20	17	19	15	15	17	18	--	18
JULY.....	22	19	22	21	17	19	22	21	22	23	24	23	25	24	20	21	21	21	23	23	21	24	21	21	24	24	20	24	24	24	22	22
AUGUST...	23	25	25	21	22	22	29	26	15	25	20	22	24	25	24	22	26	19	22	26	20	25	25	22	21	20	21	21	22	22	22	23
SEPTEMBER	16	24	21	22	22	24	20	25	24	23	21	18	23	19	18	18	20	19	18	19	18	19	19	19	20	18	19	19	19	19	--	20

10305500 *EAST FORK CARSON RIVER NEAR MARKLEEVILLE, CALIF.*

LOCATION.--Lat 38°41'20", long 119°45'44", in sec.27, T.10 N., R.20 E., Alpine County, at bridge on State Highway 4, 2.5 miles southeast of Markleeville.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1963, October 1963 to September 1968 (miscellaneous), October 1968 to September 1969.

REMARKS.--No discharge records available. Chemical data furnished by California Department of Water Resources. Reported as station 10308200 East Fork Carson River below Markleeville for period October 1965 to September 1968.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	CALCIUM (CA) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CHLORIDE (CL) (MG/L)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
NOV.												
14...	0900	0	12.6	11	8.6	59	0	3.5	42	0	122	8.0
JAN.												
08...	0900	0	13.2	14	8.6	62	0	3.4	50	0	140	7.9
MAR.												
12...	1000	0	12.3	19	9.6	83	0	3.3	80	12	188	8.1
MAY												
26...	0845	5	10.6	6.0	2.5	28	0	1.3	21	0	55	7.5
JULY												
08...	0745	8	10.0	5.7	2.7	30	0	1.2	20	0	54	7.7
SEPT.												
08...	1200	15	8.1	9.3	5.6	49	0	2.1	35	0	91	7.8

10309000 EAST FORK CARSON RIVER NEAR GARDNERVILLE, NEV.

LOCATION.--Lat 38°50'50", long 119°42'10", in SW¼NE¼ sec.2, T.11 N., R.20 E., Douglas County, temperature recorder at gaging station on left bank, 0.1 mile downstream from Horseshoe Bend, 2 miles east of Mud Lake Reservoir, 4.5 miles downstream from Bryant Creek, and 7 miles southeast of Gardnerville.

DRAINAGE AREA.--341 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1955 to September 1969.

EXTREMES.--1968-69:
Water temperatures: Maximum, 22.0°C Aug. 11, 14-16; minimum, freezing point Feb. 26, 27.

Period of record:
Water temperatures: Maximum (1955-65, 1966-69), 29.5°C Aug. 7, 1960; minimum (1955-63, 1963-67, 1968-69), freezing point on many days during winter periods.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	DAY																													
MONTH	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	AVERAGE
OCTOBER																																
MAXIMUM	11	11	12	13	13	12	12	11	10	9	10	10	9	9	9	8	8	8	9	9	9	9	8	8	8	9	9	9	9	8	8	10
MINIMUM	10	11	11	12	12	12	10	9	8	8	9	9	9	9	8	7	7	8	8	8	8	7	7	7	7	8	8	8	8	7	7	9
NOVEMBER																																
MAXIMUM	7	7	7	7	6	6	6	6	7	7	7	7	6	6	4	4	4	5	5	5	4	6	6	6	5	4	2	2	2	2	--	5
MINIMUM	6	7	7	4	5	5	5	4	6	6	6	6	6	3	3	3	4	4	4	4	4	4	5	5	4	2	1	1	2	2	--	4
DECEMBER																																
MAXIMUM	2	2	2	2	2	2	2	2	3	3	3	2	1	2	2	2	2	2	2	3	3	2	2	2	2	3	2	2	3	3		2
MINIMUM	2	1	1	1	1	1	1	2	2	2	3	2	1	1	1	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2		2
JANUARY																																
MAXIMUM	3	3	4	4	4	5	5	5	4	3	3	4	4	4	4	4	3	3	3	4	4	2	2	1	1	1	1	1	1	1	1	3
MINIMUM	2	3	3	3	3	3	4	5	3	3	3	3	4	3	3	3	2	2	2	3	2	1	1	1	1	1	1	1	1	1	1	2
FEBRUARY																																
MAXIMUM	1	1	1	1	2	2	2	2	2	3	4	3	2	1	2	1	1	1	1	2	2	2	2	2	1	1	1	1	--	--	--	2
MINIMUM	1	1	1	1	2	1	1	1	2	2	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	0	0	1	--	--	--	1
MARCH																																
MAXIMUM	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	4	3	5	5	4	4	5	6	7	7	8	7	4
MINIMUM	1	1	1	1	1	2	1	1	2	1	1	2	2	1	2	2	3	3	2	3	3	2	3	3	3	2	4	3	2	2	3	2
APRIL																																
MAXIMUM	7	6	7	8	5	6	7	7	7	9	9	9	8	7	8	9	9	9	10	11	11	10	7	7	8	10	11	11	11	11	--	9
MINIMUM	2	2	3	3	3	2	2	3	4	4	4	4	3	4	4	4	5	5	4	5	6	5	5	4	4	5	5	6	6	5	--	4
MAY																																
MAXIMUM	11	9	10	8	12	12	12	12	11	11	12	11	12	12	12	13	13	13	12	13	13	13	11	11	11	11	10	11	11	11	11	11
MINIMUM	5	6	6	6	7	7	6	7	7	7	7	7	7	7	7	7	8	8	7	8	8	9	8	6	6	6	7	6	6	6	7	7
JUNE																																
MAXIMUM	10	12	12	10	12	12	12	11	9	9	9	11	11	11	11	11	9	11	13	13	12	13	13	13	13	13	13	13	14	14	--	12
MINIMUM	6	7	7	7	7	7	7	8	7	7	7	8	8	8	8	8	8	8	8	8	8	8	9	9	9	8	9	8	9	9	--	8
JULY																																
MAXIMUM	15	15	14	15	15	15	14	14	14	16	17	17	17	17	17	17	17	18	18	18	19	19	18	18	19	19	20	18	19	21	20	19	17
MINIMUM	10	11	10	11	11	12	11	11	10	12	12	13	14	13	13	12	13	14	14	14	15	15	15	16	16	16	16	15	17	16	15	13
AUGUST																																
MAXIMUM	19	21	21	21	20	19	19	20	21	21	22	21	21	22	22	22	21	19	19	20	21	21	20	20	21	19	19	18	18	18	19	20
MINIMUM	15	17	16	16	14	14	14	14	15	17	16	16	14	16	17	17	16	14	13	14	15	15	15	14	14	14	13	13	12	12	14	15
SEPTEMBER																																
MAXIMUM	19	19	21	19	20	19	18	19	21	20	18	19	18	18	17	17	18	18	18	17	17	17	18	18	18	19	18	18	18	18	--	18
MINIMUM	14	15	16	14	14	14	14	14	15	14	14	14	13	12	12	12	12	12	13	13	10	11	12	12	12	13	13	12	13	13	--	13

10310000 WEST FORK CARSON RIVER AT WOODFORDS, CALIF.

LOCATION.--Lat 38°46'10", long 119°49'55", in NW¼SE¼ sec.34, T.11 N., R.19 E., Alpine County, at gaging station on left bank, 0.3 mile downstream from bridge on State Highways 88 and 89, 0.8 mile southwest of Woodfords, and 3.8 miles downstream from Willow Creek.

DRAINAGE AREA.--65.6 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1963, October 1963 to September 1968 (miscellaneous), October 1968 to September 1969.

REMARKS.--Flow slightly regulated by several small reservoirs (total capacity, about 1,500 acre-ft). Chemical data furnished by California Department of Water Resources.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	CAL-CIUM (CA) (MG/L)	SODIUM (NA) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	CHLO-RIDE (CL) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
NOV.												
14...	36	0	12.1	7.8	3.7	40	0	.9	27	0	71	7.9
JAN.												
08...	29	0	12.6	8.0	3.4	40	0	.9	30	0	76	7.8
MAR.												
12...	34	0	--	8.6	2.9	42	0	.8	33	0	77	7.9
MAY												
26...	900	4	11.2	4.2	1.4	20	0	1.3	14	0	36	7.3
JULY												
08...	224	9	9.6	6.9	2.2	23	0	.8	19	0	57	7.4
SEPT.												
08...	91	14	8.3	8.0	4.3	35	0	1.7	27	0	80	7.7

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.
(Irrigation network station)

LOCATION.--Lat 39°17'35", long 119°15'05", in NE¼SE¼ sec.35, T.17 N., R.24 E., Lyon County, on U.S. Highway 95 at Weeks Bridge, 4.5 miles downstream from gaging station at Fort Churchill and approximately 8.5 miles south of Silver Springs.
DRAINAGE AREA.--1,450 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1962 to September 1969.
Water temperatures: October 1962 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 392 mg/l Aug. 1-31; minimum, 80 mg/l May 1-31.
Hardness: Maximum, 182 mg/l July 1-31, Aug. 1-31; minimum, 38 mg/l May 1-31.
Specific conductance: Maximum daily, 585 micromhos Aug 25, 27; minimum daily, 108 micromhos May 2.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	BORON (B) (UG/L)
OCT.												
01-20	.66	--	31	7.0	30	3.0	105	8	65	8.5	.5	460
21-31	4.5	--	31	7.0	30	3.0	102	8	--	--	--	--
NOV.												
01-20	94	--	19	4.9	19	3.8	79	0	--	--	--	--
21-30	159	--	19	4.9	19	3.8	79	0	--	--	--	--
DEC.												
01-24	132	--	19	4.7	19	3.8	80	0	--	--	--	--
25-31	210	--	19	4.8	19	3.3	80	0	--	--	--	--
JAN.												
01-31	680	16	32	8.3	32	4.1	132	0	66	9.0	.4	170
FEB.												
01-28	494	--	32	8.2	32	4.0	126	0	--	--	--	--
MAR.												
01-31	583	--	20	5.0	12	2.2	74	0	--	--	--	--
APR.												
01-30	1250	15	12	2.7	7.9	2.0	54	0	11	2.6	.1	30
MAY												
01-31	2920	--	11	2.6	7.4	1.7	48	0	--	--	--	--
JULY												
01-31	596	29	53	12	48	5.2	164	2	125	12	.5	240
AUG.												
01-31	52	--	53	12	48	5.0	156	8	--	--	--	--
SEPT.												
01-30	11	--	27	6.2	23	4.3	108	0	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
15...	2.0	14	32	7.1	30	2.9	109	4	65	9.0	.4	180
NOV.												
15...	121	--	19	4.9	19	3.6	78	0	--	--	--	--
DEC.												
15...	133	--	19	4.9	19	3.7	79	0	--	--	--	--
FEB.												
15...	502	--	32	8.3	32	4.0	128	0	--	--	--	--
MAR.												
15...	385	--	19	5.0	12	2.2	72	0	--	--	--	--
APR.												
15...	1160	15	10	2.7	6.9	1.7	48	0	12	1.6	.2	40
MAY												
15...	3660	--	10	2.6	7.0	1.7	48	0	--	--	--	--
JULY												
15...	748	26	53	12	48	5.2	166	0	127	10	.5	230
AUG.												
17...	20	--	52	12	48	5.0	168	1	--	--	--	--
SEPT.												
30...	23	--	26	6.2	23	4.1	108	0	--	--	--	--

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.--Continued

Period of record:
Dissolved solids: Maximum, 472 mg/l Nov. 1-31, 1966; minimum, 70 mg/l June 22-30, 1967.
Hardness: Maximum, 224 mg/l Aug. 1-31, 1963; minimum, 28 mg/l June 22-30, 1967.
Specific conductance: Maximum daily, 685 micromhos Aug. 17, 1963; minimum daily, 81 micromhos July 3, 1967.
Water temperatures (1962-68): Maximum, 22.0°C July 24, 25, 27, 1968; minimum (1962-67), freezing point on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Minimum observed during water year: Dissolved solids, 74 mg/l Apr. 15; hardness, 36 mg/l Apr. 15, May 15. Records of discharge given for Carson River near Fort Churchill (station 10312000). No appreciable inflow between gaging station and sampling point.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SOLIDS TONS PER AC-FT	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	COLOR (PLATI-NUM-COBALT UNITS)
OCT.											
01-20	181	--	106	7	343	8.6	.25	37	1.3	99	5
21-31	173	--	106	9	344	8.6	.24	37	1.3	97	--
NOV.											
01-20	162	--	68	3	218	7.9	.22	36	1.0	65	--
21-30	170	--	68	3	217	7.8	.23	36	1.0	65	--
DEC.											
01-24	168	--	67	1	217	7.1	.23	37	1.0	66	--
25-31	174	--	67	1	219	7.9	.24	37	1.0	66	--
JAN.											
01-31	230	234	114	6	371	7.4	.31	37	1.3	108	30
FEB.											
01-28	232	--	114	11	366	8.2	.32	37	1.3	103	--
MAR.											
01-31	126	--	70	9	201	8.1	.17	26	.6	61	--
APR.											
01-30	84	81	41	0	122	7.7	.11	28	.5	44	15
MAY											
01-31	80	--	38	0	114	7.6	.11	29	.5	39	--
JULY											
01-31	384	368	182	44	561	8.4	.52	36	1.5	138	5
AUG.											
01-31	392	--	182	41	566	8.5	.53	36	1.5	141	--
SEPT.											
01-30	198	--	93	4	294	7.8	.27	34	1.0	89	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
15...	212	219	109	13	345	8.3	.30	37	1.2	96	7
NOV.											
15...	179	--	68	4	220	7.4	.24	37	1.0	64	--
DEC.											
15...	171	--	68	3	219	7.0	.23	37	1.0	65	--
FEB.											
15...	232	--	114	9	369	7.8	.32	37	1.3	105	--
MAR.											
15...	131	--	68	9	202	7.8	.18	27	.6	59	--
APR.											
15...	74	74	36	0	113	7.0	.10	28	.5	39	30
MAY											
15...	80	--	36	0	113	7.0	.11	29	.5	39	--
JULY											
15...	385	364	182	46	566	7.7	.52	36	1.5	136	--
AUG.											
17...	384	--	179	40	566	8.3	.52	36	1.6	139	--
SEPT.											
30...	186	--	90	1	292	7.8	.25	34	1.1	89	--

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	345	207	215	360	367	198	124	111	--	561	547	279
2	346	215	219	365	369	201	122	108	--	580	562	288
3	346	216	218	368	367	199	115	111	--	579	568	289
4	346	216	217	364	367	198	115	112	--	572	569	289
5	346	217	218	366	367	198	125	112	--	568	568	288
6	345	217	216	366	369	199	122	112	--	571	565	289
7	346	217	217	365	369	199	121	112	--	568	559	289
8	345	217	218	367	369	202	116	113	--	565	569	290
9	345	216	218	367	369	199	117	112	--	572	566	289
10	346	217	216	366	369	202	121	112	--	571	565	289
11	346	217	216	376	368	202	118	112	--	575	569	289
12	346	216	217	369	369	201	130	112	--	573	569	289
13	345	216	217	368	370	201	120	112	--	575	565	289
14	345	216	218	365	368	201	135	111	--	573	569	289
15	347	215	220	363	369	203	113	111	--	569	568	291
16	346	217	217	366	369	203	118	111	--	571	570	301
17	348	222	216	367	368	202	124	112	--	572	569	289
18	351	217	216	365	368	205	114	111	--	571	569	302
19	346	216	218	368	370	202	118	112	--	567	570	321
20	348	216	217	365	370	201	131	112	--	572	569	305
21	348	216	217	365	368	202	118	112	--	572	569	291
22	349	215	216	365	368	201	121	112	--	570	584	289
23	350	217	218	365	371	201	127	112	--	572	585	289
24	350	216	217	365	369	200	126	111	--	572	584	289
25	348	217	231	365	369	201	124	112	--	569	585	288
26	350	217	216	365	368	202	134	112	--	568	584	289
27	346	215	217	366	369	202	114	112	--	571	585	288
28	351	217	218	365	372	202	119	112	--	567	583	293
29	353	217	217	363	--	202	128	113	--	570	583	289
30	352	218	218	364	--	201	116	112	--	569	583	288
31	346	--	217	362	--	--	--	--	--	564	585	--
AVG	347	216	217	363	368	201	121	111	--	570	572	291

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

	DAY																												AVER-
MONTH	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	AGE
OCTOBER..	11	14	12	11	10	10	9	10	10	9	9	9	9	9	9	9	9	8	8	8	8	9	9	8	8	8	9	8	8	8	8	9
NOVEMBER.	1	1	--	2	1	1	1	2	1	2	2	3	2	2	1	1	2	2	2	2	2	1	1	1	2	2	2	1	1	1	--	2
DECEMBER.	1	1	1	1	1	1	2	1	2	2	3	1	1	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	1	1	1	2	1	1	0	1	1	1	0	2	2	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	--	--	--	1
MARCH....	2	1	2	2	2	3	2	2	3	3	3	3	3	3	3	3	3	2	2	2	3	3	2	2	2	2	2	2	2	2	--	2
APRIL....	2	2	3	3	3	2	3	3	2	3	3	2	3	3	3	3	3	3	3	3	4	4	4	4	5	4	4	4	4	4	--	3
MAY.....	4	4	4	4	4	5	5	6	5	5	6	5	5	5	5	6	5	5	6	6	5	6	6	6	6	6	6	6	6	6	--	5
JUNE.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AUGUST...	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	6	7	6	6	7	6	6	5	7	8	7	8	6	6	6	6	6	6	5	6	5	5	6	6	7	4	5	4	4	--	--	6

10335000 HUMBOLDT RIVER NEAR RYE PATCH, NEV.
(Irrigation network station)

LOCATION.--Lat 40°28'00", long 118°18'20", in SE¼NE¼ sec.18, T.30 N., R.33 E., Pershing County, at gaging station 1,000 ft downstream from Rye Patch Dam and 1.5 miles northwest of Rye Patch.
DRAINAGE AREA.--16,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1951 to September 1958, October 1959 to September 1961, May 1962 to September 1969.
Water temperatures: December 1951 to September 1958, October 1959 to September 1961, May 1962 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 564 mg/l Apr. 1-30; minimum, 504 mg/l Feb. 1-28.
Hardness: Maximum, 174 mg/l Oct. 1-31; minimum, 118 mg/l Apr. 1-30.
Specific conductance: Maximum daily, 1,130 micromhos Apr. 11; minimum daily, 761 micromhos July 10.
Water temperatures: Minimum, 4.0°C on several days in January.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L)	BORON (B) (UG/L)
OCT.												
01-31	95	--	40	18	128	18	282	5	--	--	--	--
DEC.												
01-31	.67	--	31	17	122	9.5	226	7	--	--	--	--
JAN.												
01-31	.76	44	27	16	124	8.5	218	6	69	104	.5	480
FEB.												
01-28	.67	--	31	17	120	7.9	226	5	--	--	--	--
MAR.												
01-31	2.3	--	18	18	135	10	182	8	--	--	--	--
APR.												
01-30	231	34	19	17	149	14	202	4	74	136	1.2	760
MAY												
20-31	782	--	44	13	106	--	246	8	82	82	--	--
JULY												
01-31	461	--	46	14	106	--	262	14	--	--	--	--
AUG.												
01-31	266	--	46	14	106	--	273	15	--	--	--	--
SEPT.												
01-30	286	--	46	14	106	--	273	15	--	--	--	--
WTD. AVG.	--	--	42	14	113	--	255	11	--	--	--	--
TIME												
WTD. AVG.	A177	--	34	16	121	--	239	9	--	--	--	--
TONS												
PER DAY	--	--	20	6.9	54	--	122	5	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
01...	44	--	37	17	114	16	280	0	--	--	--	--
DEC.												
31...	.65	--	50	16	116	8.0	296	0	--	--	--	--
JAN.												
31...	.95	44	50	17	122	7.9	302	0	70	103	.6	470
MAR.												
03...	1.9	--	38	19	136	11	254	0	--	--	--	--
31...	2.3	--	50	19	136	11	300	0	--	--	--	--
MAY												
01...	641	--	44	16	138	14	281	0	--	--	--	0
JUNE												
02...	637	--	45	13	108	15	272	0	--	--	--	--
AUG.												
01...	286	--	46	14	103	--	286	4	--	--	--	--
SEPT.												
02...	167	--	46	15	108	--	288	10	--	--	--	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ALDRIN (UG/L)	DDD (UG/L)	DDT (UG/L)	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR EPOXIDE (UG/L)	HEPTACHLOR (UG/L)	LINDANE UG/L)	SILVEX (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)
OCT.											
01...	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00
NOV.											
01...	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00
DEC.											
02...	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
DEC.											
31...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.07
FEB.											
03...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAR.											
03...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00

A MEAN DISCHARGE BASED ON 286 DAYS OF CHEMICAL ANALYSES; MEAN DISCHARGE FOR 365 DAYS, 199 CFS.

10335000 HUMBOLDT RIVER NEAR RYE PATCH, NEV.--Continued

Period of record:
Dissolved solids: Maximum, 2,190 mg/l Sept. 1-5, 1954; minimum, 253 mg/l June 24, 1956.
Hardness: Maximum, 482 mg/l Sept. 1-5, 1954; minimum, 86 mg/l Jan. 25, 1958.
Specific conductance: Maximum daily, 4,010 micromhos Sept. 2, 1954; minimum daily, 384 micromhos June 24, 1956.
Water temperatures: Maximum (1951-54, 1956-58, 1959-61, 1962-68), 25.5°C Sept. 21, 1958; minimum, 0.5°C on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Dissolved solids, 620 mg/l Mar. 31; hardness, 203 mg/l Mar. 31. Flow completely regulated by Rye Patch Reservoir. No flow Nov. 1-7.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	COLOR (PLATI-INUM-COBALT UNITS)
OCT.											
01-31	552	--	174	0	907	8.3	.75	59	4.2	239	--
DEC.											
01-31	508	--	148	0	826	8.3	.69	62	4.4	197	--
JAN.											
01-31	506	507	134	0	816	8.3	.69	65	4.7	189	3
FEB.											
01-28	504	--	148	0	848	8.3	.69	62	4.3	194	--
MAR.											
01-31	520	--	119	0	887	8.6	.71	69	5.4	162	--
APR.											
01-30	564	549	118	0	956	8.5	.77	71	6.0	172	4
MAY											
20-31	514	--	164	0	792	8.6	.70	59	3.6	215	--
JULY											
01-31	530	--	172	0	799	8.7	.72	57	3.5	238	--
AUG.											
01-31	516	--	172	0	801	8.7	.70	57	3.5	249	--
SEPT.											
01-30	516	--	172	0	801	8.7	.70	57	3.5	249	--
WTD. AVG. TIME	528	--	163	0	826	8.6	.72	--	--	228	--
WTD. AVG. TONS PER DAY	524	--	151	0	846	8.5	.71	62	4.4	210	--
	--	--	--	--	--	--	--	--	--	109	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
01...	510	--	162	0	832	8.2	.69	58	3.9	230	--
DEC.											
31...	542	--	191	0	877	7.7	.74	56	3.7	243	--
JAN.											
31...	576	565	195	0	902	8.2	.78	56	3.8	248	5
MAR.											
03...	570	--	173	0	964	8.2	.78	61	4.5	208	--
31...	620	--	203	0	1020	8.2	.84	58	4.2	246	--
MAY											
01...	608	--	176	0	964	8.1	.83	61	4.5	230	--
JUNE											
02...	514	--	166	0	815	8.0	.70	56	3.6	223	--
AUG.											
01...	556	--	172	0	798	8.4	.76	57	3.4	241	--
SEPT.											
02...	526	--	176	0	923	8.6	.72	57	3.5	253	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ALDRIN (UG/L)	DDD (UG/L)	DDT (UG/L)	DI-ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR (UG/L)	LINDANE (UG/L)	SILVEX (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)
APR.											
01...	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
MAY											
01...	.00	.00	.01	.00	.00	.00	.00	.00	.07	.00	.00
JUNE											
02...	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00
JUNE											
30...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00
AUG.											
01...	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
SEPT.											
02...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00

10335000 HUMBOLDT RIVER NEAR RYE PATCH, NEV.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	852	--	879	870	868	918	1060	--	--	789	784	--
2	857	--	896	885	908	973	1050	--	--	806	809	--
3	858	--	915	897	927	1010	1050	--	--	804	809	--
4	858	--	917	907	921	1040	1060	--	--	814	808	--
5	857	--	916	912	922	895	1060	--	--	814	814	--
6	859	--	900	915	914	1010	1020	--	--	781	814	--
7	870	--	894	890	907	1010	1050	--	--	806	808	--
8	874	--	904	903	931	1000	1040	--	--	805	809	--
9	839	--	908	948	930	1010	1080	--	--	812	814	--
10	880	--	909	927	928	1010	1070	--	--	761	811	--
11	880	--	909	906	929	1000	1130	--	--	796	813	--
12	874	--	916	913	926	1000	1080	--	--	805	811	--
13	857	--	912	906	920	1030	1100	--	--	804	814	--
14	869	--	910	918	931	996	1080	--	--	789	813	--
15	889	--	901	918	919	1010	1080	--	--	808	810	--
16	849	--	915	922	904	1020	1060	--	--	813	812	--
17	898	--	921	920	932	1020	1070	--	--	816	811	--
18	903	--	910	925	938	1030	1080	--	--	817	808	--
19	906	--	908	895	942	981	1080	--	--	817	811	--
20	911	--	912	921	943	1020	1060	811	--	815	814	--
21	914	--	903	883	922	1010	1070	809	--	810	812	--
22	920	--	947	887	933	1000	1070	812	--	812	814	--
23	926	--	909	936	937	1000	1060	813	--	817	813	--
24	940	--	893	903	923	1020	1060	810	--	818	814	--
25	939	--	896	881	950	1000	1060	814	--	814	822	--
26	965	--	868	857	916	1010	1030	812	--	812	824	--
27	967	--	905	877	984	1000	1030	812	--	811	826	--
28	971	--	889	899	984	1010	1020	814	--	765	827	--
29	1000	--	895	962	--	1010	1010	813	--	806	827	--
30	1000	--	878	894	--	1020	1010	815	--	808	830	--
31	937	--	879	903	--	1020	--	813	--	808	830	--
AVG	900	--	903	905	928	1000	1060	--	--	804	814	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVER-AGE
OCTOBER..	14	14	14	14	14	14	14	13	13	13	13	13	13	13	12	13	12	11	11	11	10	10	10	10	10	10	10	10	--	9		12
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--
DECEMBER.	7	7	7	7	7	7	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		6
JANUARY..	4	4	4	4	5	5	5	5	4	5	5	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4		5
FEBRUARY.	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	--	--		6
MARCH....	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	8	7	7	7	7	8	8	8	9	9	7
APRIL....	10	10	10	10	10	10	9	9	10	10	10	10	10	11	10	10	11	11	11	12	12	12	12	12	12	12	12	12	12	--		11
MAY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	17	17	17	17	17	17	17	18	18	18	18	--
JUNE.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--
JULY.....	20	20	20	20	20	20	20	20	20	20	20	20	20	--	--	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
AUGUST...	20	20	20	20	20	20	20	20	20	20	20	20	20	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
SEPTEMBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		--

10337000 LAKE TAHOE AT TAHOE CITY, CALIF.

LOCATION.—Lat 39°10'04", long 120°08'23", in NE¼ sec.7, T.15 N., R.17 E., Placer County, near gaging station on pier, 1,000 ft east of Lake Tahoe outlet dam on Truckee River at Tahoe City.

DRAINAGE AREA.—505 sq mi at lake outlet.

PERIOD OF RECORD: Chemical analyses: October 1958 to September 1963, October 1963 to September 1968 (miscellaneous), October 1968 to September 1969.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	CALCIUM (CA) (MG/L)	SODIUM (NA) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	CHLORIDE (CL) (MG/L)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
NOV.											
13...	8	9.3	9.2	6.2	51	0	1.8	32	0	93	8.0
JAN.											
07...	5	10.7	8.8	5.8	51	0	1.8	33	0	92	7.9
MAR.											
11...	4	10.8	9.2	6.1	55	0	1.9	38	0	98	7.7
MAY											
21...	8	10.0	9.2	5.7	50	0	2.4	32	0	92	7.8
JULY											
07...	15	8.4	8.6	5.6	52	0	1.7	32	0	83	7.6
SEPT.											
08...	18	8.1	9.4	6.1	52	0	1.8	33	0	92	7.8

10343500 SAGEHEN CREEK NEAR TRUCKEE, CALIF.
(Hydrologic bench-mark station)

LOCATION.--Lat 39°25'54", long 120°14'07", in NE¼NE¼ sec.7, T.18 N., R.16 E., Nevada County, at gaging station on left bank, 2.2 miles upstream from bridge on State Highway 89 and 7.5 miles north of Truckee.
DRAINAGE AREA.--10.8 sq mi.
PERIOD OF RECORD.--Chemical analyses: May 1968 to September 1969.
Sediment records: May 1968 to September 1969.
REMARKS.--Additional cooperative studies with University of California, Berkeley, Calif., are being conducted. These include biological sampling of streambed biota, periodic photographic log of stream channel to detect and record changes in morphology and vegetation, and annual survey of monumented stream cross-sections. All data available in district office at Menlo Park, Calif.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)
OCT 1968				
03...	1540	2.4	11	134
10...	1600	2.4	9	133
17...	1530	3.2	9	128
24...	1545	3.0	9	129
NOV				
01...	1545	3.0	5	128
05...	1650	4.6	4	116
08...	1040	3.8	4	121
21...	1600	3.8	4	113
27...	1650	4.0	2	--
DEC				
05...	1315	3.6	2	120
19...	1545	4.0	1	118
27...	1630	5.8	0	118
JAN 1969				
09...	1535	3.9	2	116
14...	1310	6.2	1	106
FEB				
04...	1555	6.9	2	94
10...	1545	5.8	3	103
17...	1610	5.1	2	108
MAR				
18...	1330	5.2	3	110
24...	1615	6.2	3	108
31...	0905	22	2	111
APR				
07...	--	15	3	80
APR 1969				
14...	1630	27	2	69
29...	1430	64	4	51
MAY				
05...	1520	89	4	48
13...	1220	133	6	42
19...	1430	140	9	42
26...	1425	122	11	41
JUN				
02...	1425	89	13	45
10...	0731	67	5	51
14...	0816	78	7	53
30...	1800	22	14	69
JUL				
07...	1335	16	14	74
14...	1345	12	17	82
21...	1535	8.7	18	91
28...	1520	5.0	17	108
AUG				
11...	1500	5.0	17	113
17...	1630	4.3	16	116
26...	1315	3.9	15	119
SEP				
10...	1030	4.1	10	124
16...	1545	3.4	12	125
24...	1530	3.9	12	125
29...	1515	3.6	13	126

10343500 SAGEHEN CREEK NEAR TRUCKEE, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)
APR 1969												
23...	1100	64	1	--	--	--	--	--	--	--	--	--
SEP												
02...	1445	3.9	15	28	12	4.2	5.4	2.1	74	0	1.0	.2
26...	1100	3.7	--	--	--	--	--	--	--	--	--	--

DATE	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTIT-UENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	AMMONIA (NH4) (MG/L)	PHOS-PHATE (PO4) (MG/L)	ORTHO PHOS-PHATE (PO4) (MG/L)	PH (UNITS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	COLI-FORM (COL-ONIES PER 100 ML)
APR 1969												
23...	--	.0	--	--	--	.00	.21	.02	--	--	.5	2
SEP												
02...	.2	.1	0	89	48	--	--	--	7.7	121	--	--
26...	--	.0	--	--	--	.05	.05	.04	--	--	--	--

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)
OCT 7, 1968	1535	9	2.4	3	.02
OCT 14.....	1545	6	4.2	6	.07
OCT 21.....	1445	8	3.2	4	.03
OCT 28.....	1600	8	2.8	3	.02
NOV 4.....	1535	6	4.6	4	.05
NOV 11.....	1640	6	3.3	4	.04
NOV 19.....	0910	1	5.1	4	.06
NOV 26.....	1645	2	4.0	3	.03
DEC 2.....	1540	1	4.0	5	.05
DEC 19.....	1530	3	3.6	3	.03
DEC 23.....	1630	1	3.9	4	.04
JAN 6, 1969	1555	2	4.2	11	.12
FEB 17.....	1610	2	5.1	3	.04
MAR 18.....	1330	3	5.2	3	.04
MAR 24.....	1620	3	5.9	3	.05
MAR 31.....	0905	2	22	9	.53
APR 7.....	1610	3	16	4	.17
APR 17.....	1530	2	27	2	.15
APR 23.....	1125	1	64	10	1.7
APR 29.....	1430	4	64	10	1.7
MAY 5.....	1520	4	89	23	5.5
MAY 13 1969	1220	6	133	13	4.7
MAY 19.....	1430	9	140	13	4.9
MAY 21.....	1100	4	106	5	1.4
MAY 26.....	1425	8	122	6	2.0
JUN 2.....	1425	13	89	8	1.9
JUN 10.....	0730	5	67	8	1.4
JUN 10.....	1440	9	66	4	.71
JUN 16.....	0815	7	58	4	.63
JUN 30.....	1800	14	22	4	.24
JUL 7.....	1335	14	16	2	.09
JUL 14.....	1345	17	12	3	.10
JUL 21.....	1535	18	8.7	2	.05
JUL 29.....	1550	19	6.5	2	.04
AUG 11.....	1500	17	5.0	1	.01
AUG 17.....	1630	16	4.4	1	.01
AUG 26.....	1315	15	3.9	2	.02
SEP 2.....	1445	15	3.9	2	.02
SEP 9.....	1030	10	4.1	2	.02
SEP 16.....	1545	12	3.4	1	.01
SEP 24.....	1530	12	3.9	1	.01

10345900 TRUCKEE RIVER AT FLORISTON, CALIF.
(Irrigation network station)

LOCATION.--Lat 39°23'40", long 120°01'25", in NW¼SW¼ sec.30, T.18 N., R.18 E., Nevada County, at bridge at Floriston, 0.2 mile upstream from flume diversion, 1.8 miles upstream from Farad, and 2.5 miles upstream from gage at Farad.
DRAINAGE AREA.--932 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: January 1964 to September 1969.
Water temperatures: January 1964 to September 1969.
EXTREMES.--1968-69:
Dissolved solids: Maximum, 69 mg/l Jan. 1-17; minimum, 52 mg/l June 1-30.
Hardness: Maximum, 38 mg/l Jan. 1-17; minimum, 24 mg/l June 1-30.
Specific conductance: Maximum daily, 133 micromhos Apr. 18; minimum daily, 52 micromhos May 23.
Water temperatures: Maximum, 18.0°C July 23, 24; minimum, freezing point Jan. 9, 22, 23.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	BORON (B) (UG/L)
OCT.												
01-31	397	17	8.8	2.7	5.3	1.6	50	0	3.0	1.5	.1	0
NOV.												
01-30	439	--	9.2	2.6	5.2	1.5	50	0	4.0	1.1	--	30
DEC.												
01-31	421	16	9.0	3.1	5.4	1.7	49	0	3.0	2.0	--	0
JAN.												
01-17	424	16	9.9	3.2	6.4	1.7	54	0	3.0	3.7	.1	0
18-31	1410	15	7.6	2.6	4.0	1.2	35	0	3.0	3.6	--	0
FEB.												
01-09	1110	--	8.9	2.7	5.9	1.7	49	0	4.0	1.7	--	0
MAR.												
01-30	2160	--	9.2	2.7	5.9	1.7	51	0	3.0	1.0	--	0
APR.												
01-30	3430	17	8.6	2.5	5.5	1.6	47	0	4.0	2.5	.2	40
MAY												
01-31	3740	--	6.8	1.9	3.0	.9	31	0	3.0	.9	--	0
JUNE												
01-30	3650	--	6.6	1.9	3.9	1.2	33	0	2.0	1.2	--	10
JULY												
01-11	1290	15	7.7	2.3	4.1	1.3	39	0	2.0	1.1	.1	0
12-31	610	--	8.5	2.6	4.9	1.5	43	0	3.0	1.7	.2	40
AUG.												
01-31	536	--	9.1	2.8	5.7	1.8	48	0	3.0	2.2	--	0
SEPT.												
01-30	548	--	7.8	2.5	4.1	1.3	40	0	2.0	1.1	--	0
WTD. AVG. TIME	--	--	7.8	2.3	4.5	1.3	40	0	3.0	1.5	--	0
WTD. AVG. TONS PER DAY	A1610	--	8.4	2.5	4.9	1.5	44	0	3.0	1.7	--	10
	--	--	34	10	20	5.8	175	0	13	6.7	--	0

10345900 TRUCKEE RIVER AT FLORISTON, CALIF.--Continued

Period of record:
Dissolved solids: Maximum, 85 mg/l Dec. 1-21, 1964; minimum, 45 mg/l Dec. 22-31, 1964.
Hardness: Maximum, 43 mg/l Mar. 1-31, 1964; minimum, 18 mg/l Dec. 22-31, 1964.
Specific conductance (1964-66, 1967-69): Maximum daily, 141 micromhos Feb. 3, 1964; minimum daily, 39 micromhos Dec. 23, 1964.
Water temperatures: Maximum, 20.0°C July 24, 1964; minimum, freezing point on several days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Minimum observed during water year: Dissolved solids, 48 mg/l May 15; hardness, 20 mg/l May 15. Records of daily discharge given for Truckee River at Farad, Calif. (station 10346000).

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	HARDNESS (CA,MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3 (MG/L)	COLOR (PLATINUM-COBALT UNITS)
OCT.											
01-31	66	67	33	0	92	7.9	.09	25	.4	41	2
NOV.											
01-30	62	--	34	0	93	7.3	.08	24	.4	41	--
DEC.											
01-09	68	69	36	0	100	7.5	.09	24	.4	40	--
JAN.											
01-17	69	74	38	0	108	7.5	.09	26	.5	44	4
18-31	60	57	30	1	83	7.9	.08	22	.3	29	--
FEB.											
01-09	59	--	33	0	96	7.5	.08	27	.4	40	--
MAR.											
01-30	58	--	34	0	98	7.5	.08	26	.4	42	--
APR.											
01-30	66	66	32	0	94	7.8	.09	26	.4	39	5
MAY											
01-31	53	--	25	0	63	7.3	.07	20	.3	25	--
JUNE											
01-30	52	--	24	0	68	7.4	.07	25	.3	27	--
JULY											
01-11	57	53	28	0	78	7.3	.08	23	.3	32	--
12-31	64	--	32	0	87	7.5	.09	24	.4	35	--
AUG.											
01-31	64	--	34	0	96	7.9	.09	25	.4	39	--
SEPT.											
01-30	54	--	30	0	79	7.6	.07	22	.3	33	--
WTD. AVG. TIME	58	--	29	0	81	7.5	.08	--	--	33	--
WTD. AVG. TONS PER DAY	60	--	31	0	87	7.6	.08	24	.4	36	--
	--	--	--	--	--	--	--	--	--	143	--

A MEAN DISCHARGE BASED ON 345 DAYS OF CHEMICAL ANALYSES; MEAN DISCHARGE FOR 365 DAYS, 1541 CFS.

10345900 TRUCKEE RIVER AT FLORISTON, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	BORON (B) (UG/L)
ANALYSES OF ADDITIONAL SAMPLES												
OCT. 15...	416	16	8.6	2.5	4.8	1.5	47	0	4.0	2.0	.1	0
NOV. 15...	379	--	9.5	2.8	5.0	1.5	52	0	4.0	.8	--	0
MAR. 17...	2000	--	9.2	2.7	5.9	1.6	53	0	2.0	1.4	--	0
APR. 17...	3100	16	7.6	2.4	4.5	1.4	42	0	3.0	1.5	.1	30
MAY 15...	3880	--	5.4	1.7	2.6	.8	26	0	2.0	1.1	--	0
JUNE 17...	3750	--	6.9	2.0	4.7	1.7	37	0	2.0	1.8	--	0
JULY 15...	625	16	9.0	2.8	5.9	1.7	48	0	3.0	1.8	.1	20
AUG. 16...	542	--	9.0	2.8	5.8	1.7	46	0	3.0	2.2	--	0

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	98	114	104	94	93	85	69	73	89	--	90
2	85	98	95	106	94	94	84	69	59	--	--	90
3	85	94	96	106	96	95	94	69	59	--	108	91
4	88	94	96	106	94	95	100	69	59	75	104	73
5	88	96	95	106	94	96	109	79	58	75	96	73
6	88	96	95	106	96	95	90	70	65	77	93	73
7	87	94	96	105	96	95	90	92	63	75	93	73
8	87	95	96	106	95	96	110	61	63	76	95	73
9	88	95	96	105	96	95	96	57	63	73	94	73
10	89	95	--	104	--	96	91	62	--	69	94	70
11	89	95	--	112	--	95	82	--	72	72	97	82
12	92	88	--	112	--	95	84	--	77	92	96	82
13	91	95	--	111	--	95	81	60	73	--	--	88
14	90	95	--	--	--	95	92	56	73	--	--	80
15	89	95	--	--	--	97	80	56	72	79	91	80
16	89	95	--	--	--	98	98	83	70	79	97	80
17	90	96	--	--	--	98	108	--	76	81	97	80
18	91	95	--	80	--	98	133	54	77	83	95	81
19	91	92	--	79	--	98	77	54	--	83	97	80
20	91	90	--	79	--	99	83	55	--	84	99	80
21	92	90	--	80	--	99	82	--	--	83	98	81
22	92	91	--	87	--	99	--	--	--	83	115	80
23	91	90	--	84	--	98	--	52	--	88	110	81
24	94	92	--	--	--	100	--	53	80	85	91	--
25	94	92	--	--	--	98	--	53	80	92	93	--
26	95	92	--	--	--	98	--	54	82	92	89	--
27	95	92	--	--	--	97	--	--	--	92	90	--
28	95	--	--	--	--	98	--	--	--	92	--	--
29	96	--	--	--	--	--	--	--	--	101	--	--
30	98	94	--	--	--	--	--	--	--	102	--	--
31	98	--	--	--	--	--	--	--	--	--	--	--
AVG	90	93	--	--	--	96	--	--	--	83	--	--

10345900 TRUCKEE RIVER AT FLORISTON, CALIF.--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	COLOR (PLATI-(NUM-COBALT UNITS)
					ANALYSES OF ADDITIONAL SAMPLES						
OCT.											
15...	61	64	32	0	88	7.4	.08	24	.4	39	0
NOV.											
15...	64	--	35	0	94	7.4	.09	23	.4	43	--
MAR.											
17...	61	--	34	0	98	7.3	.08	26	.4	43	--
APR.											
17...	58	59	29	0	82	7.7	.08	24	.4	34	3
MAY											
15...	48	--	20	0	55	6.8	.07	21	.3	21	--
JUNE											
17...	57	--	25	0	75	7.0	.08	27	.4	30	--
JULY											
15...	68	65	34	0	98	6.7	.09	26	.4	39	--
AUG.											
16...	69	--	34	0	96	7.0	.09	26	.4	38	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 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	AVER-AGE
OCTOBER..	11	15	15	17	11	11	10	10	12	12	12	11	10	8	9	9	9	9	9	8	9	9	9	8	9	10	9	9	9	8	8	10
NOVEMBER.	9	9	8	8	9	8	9	9	9	9	9	8	4	4	4	4	5	6	6	5	5	4	4	5	4	3	3	--	--	1	--	6
DECEMBER.	1	1	2	2	2	2	3	4	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JANUARY..	2	2	2	2	2	2	2	2	0	1	3	3	3	--	--	--	--	1	1	1	1	0	0	--	--	--	--	--	--	--	--	--
FEBRUARY.	7	6	7	7	7	8	8	8	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARCH....	2	3	2	1	2	2	2	1	2	2	3	2	2	2	2	3	3	3	3	3	4	4	4	4	4	4	4	5	--	--	--	3
APRIL....	6	6	7	8	8	9	9	10	10	5	5	6	5	5	5	6	6	7	7	6	6	--	--	--	--	--	--	--	--	--	--	--
MAY.....	8	7	7	7	8	9	9	10	10	10	--	--	9	7	7	8	--	8	8	8	--	--	9	9	10	10	--	--	--	--	--	--
JUNE.....	13	13	13	14	14	11	11	11	11	--	11	13	13	13	13	13	13	14	--	--	--	--	--	12	13	12	--	--	--	--	--	--
JULY.....	12	--	--	13	13	13	14	13	14	14	15	15	--	--	14	15	15	16	16	16	17	17	18	18	17	16	16	15	16	15	--	15
AUGUST...	--	--	15	16	13	14	14	14	--	14	--	14	--	--	16	16	16	16	16	16	16	16	16	16	15	15	14	--	--	--	--	--
SEPTEMBER	16	16	16	14	14	13	13	12	12	12	16	16	15	15	14	14	14	13	12	12	11	11	11	--	--	--	--	--	--	--	--	--

10346000 TRUCKEE RIVER AT FARAD, CALIF.

LOCATION.--Lat 39°25'41", long 120°01'59", in NE¼ sec.12, T.18 N., R.17 E., Nevada County, at gaging station on left bank, 0.5 mile upstream from Mystic Canyon, 0.7 mile downstream from Farad powerplant, 2.5 miles north of Floriston, 3.4 miles downstream from Bronco Creek, and 3.5 miles upstream from California-Nevada State line.

DRAINAGE AREA.--932 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1961, November 1967 to September 1969.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	TUR-BID-ITY (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.												
02...	0915	509	12	9.6	15	8.5	3.5	4.2	1.3	44	0	.0
NOV.												
06...	0910	424	6	10.9	20	9.7	5.5	5.1	1.8	53	0	.8
DEC.												
09...	1115	460	3	11.7	1.0	9.3	2.9	4.5	1.3	50	0	2.3
JAN.												
09...	0850	424	0	--	2.0	9.2	3.6	5.4	1.8	52	0	2.8

DATE	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	PH (UNITS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
OCT.												
02...	2.0	.2	0	61	.08	32	0	20	.3	36	7.6	94
NOV.												
06...	3.1	.0	0	73	.10	41	0	18	.3	43	7.8	106
DEC.												
09...	3.4	.1	0	47	.06	35	0	21	.3	41	7.5	98
JAN.												
09...	3.7	.1	0	59	.08	38	0	23	.4	43	7.7	105

10351650 TRUCKEE RIVER AT WADSWORTH, NEV.

LOCATION.--Lat 39°38'19", long 119°16'09", in SW¼SW¼ sec.34, T.21 N., R.24 E., Washoe County, temperature recorder at gaging station on right bank, 0.2 mile northeast of Wadsworth and 0.5 mile downstream from bridge on U.S. Highway 40.

DRAINAGE AREA.--1,719 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1965 to September 1969.

EXTREMES.--1968-69:
Water temperatures: Maximum, 28.0°C July 22; minimum, 1.0°C Jan. 30.

Period of record:
Water temperatures: Maximum, 28.0°C June 14, Aug. 3, 1966, July 31, 1967, July 28, 1968, July 22, 1969; minimum, 1.0°C on several days during December and January of most years.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	18	19	18	19	19	18	17	16	15	17	16	16	15	14	14	14	15	16	16	16	14	15	16	16	16	17	16	16	14	13	12	16
MINIMUM	13	14	14	15	15	16	13	12	12	12	13	13	13	12	11	11	12	12	12	12	12	11	11	12	12	13	12	12	12	11	10	12
NOVEMBER																																
MAXIMUM	12	12	12	12	12	12	12	12	13	13	13	13	12	9	10	11	11	11	11	11	12	12	12	11	9	9	9	9	9	9	--	11
MINIMUM	10	11	12	9	11	10	10	10	11	11	11	11	9	8	8	9	11	11	11	11	11	11	10	9	9	8	8	8	8	8	--	10
DECEMBER																																
MAXIMUM	9	9	9	9	9	9	10	9	10	9	8	8	9	9	9	9	9	9	9	9	2	3	4	5	4	3	4	4	4	4	4	7
MINIMUM	9	8	8	4	7	8	8	8	7	8	7	7	7	8	8	8	8	7	8	2	2	2	3	4	3	3	3	3	3	4		6
JANUARY																																
MAXIMUM	4	5	6	7	7	7	6	6	4	3	5	6	7	7	6	6	5	4	6	5	5	4	3	3	3	4	3	2	2	2	3	5
MINIMUM	4	4	5	6	6	6	5	4	3	3	3	5	6	6	5	4	4	4	4	5	4	3	2	2	2	3	2	2	2	1	2	4
FEBRUARY																																
MAXIMUM	3	4	4	4	4	4	3	3	6	6	6	7	6	5	6	6	6	6	6	6	5	5	6	4	4	5	6	6	--	--	--	5
MINIMUM	2	3	3	3	3	4	3	3	3	5	6	6	5	5	5	4	4	5	5	5	4	3	5	4	3	3	4	4	--	--	--	4
MARCH																																
MAXIMUM	6	6	6	6	6	6	6	5	5	5	6	6	7	7	7	8	9	8	8	7	7	8	9	8	8	9	9	9	9	9	9	7
MINIMUM	5	5	5	4	5	5	4	4	4	3	4	6	5	5	6	6	7	7	6	7	6	6	7	7	7	7	8	8	8	8	8	6
APRIL																																
MAXIMUM	9	8	8	8	8	7	7	8	8	9	9	9	9	8	7	8	9	9	9	10	11	11	9	8	8	9	10	11	11	11	--	9
MINIMUM	7	7	7	7	7	5	6	7	7	7	8	8	8	7	6	7	8	8	8	9	9	9	8	6	7	8	9	9	10	9	--	8
MAY																																
MAXIMUM	10	10	9	9	11	12	12	12	11	11	11	11	11	11	11	12	12	12	11	12	12	13	13	13	13	13	13	13	14	14	14	12
MINIMUM	9	9	8	8	9	10	11	11	11	10	10	11	10	10	10	11	11	11	11	11	11	12	12	12	12	12	12	12	12	13	13	11
JUNE																																
MAXIMUM	14	16	16	17	15	16	16	15	13	13	13	14	15	16	16	15	14	15	16	16	16	17	17	16	15	15	16	16	16	17	--	15
MINIMUM	13	13	14	15	14	14	14	13	12	13	13	12	14	14	14	14	14	14	14	14	15	16	16	14	14	13	13	14	14	15	--	14
JULY																																
MAXIMUM	18	19	18	19	21	21	22	23	23	23	24	25	24	26	26	26	27	26	26	27	27	28	24	27	27	27	24	25	26	26	26	24
MINIMUM	16	17	16	16	17	17	17	17	17	17	18	18	18	19	18	19	21	19	20	19	19	20	21	20	21	19	19	18	19	18	18	18
AUGUST																																
MAXIMUM	26	26	26	24	24	24	24	24	24	24	24	23	23	24	24	26	24	25	25	26	27	26	26	25	24	24	24	23	22	22	23	24
MINIMUM	18	19	19	18	16	16	17	18	18	19	19	17	17	18	18	18	18	18	17	18	18	19	19	18	17	18	17	17	16	16	17	18
SEPTEMBER																																
MAXIMUM	24	24	24	22	23	23	23	23	23	23	22	22	22	21	21	19	20	21	19	19	19	18	19	19	19	20	20	20	19	18	--	21
MINIMUM	17	18	19	17	17	17	18	18	18	18	18	17	17	16	16	16	15	16	15	16	14	14	15	16	16	16	17	16	17	15	--	17

10356500 SUSAN RIVER AT SUSANVILLE, CALIF.

LOCATION.--Lat 40°25'05", long 120°40'15", in SW¼NE¼ sec.31, T.30 N., R.12 E., Lassen County, at gaging station 0.5 mile west of Susanville and 1.1 miles upstream from Piute Creek.

DRAINAGE AREA.--184 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1969.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by U.S. Geological Survey.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DIS-CHARGE (CFS)	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN (MG/L)	TUR-BID-ITY (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)
OCT.												
08...	1510	4.4	10	10.6	1.0	--	--	6.8	--	115	0	--
NOV.												
15...	1300	14	6	11.0	3.0	--	--	6.0	--	100	0	--
DEC.												
11...	1520	53	1	12.5	35	--	--	5.0	--	71	0	--
JAN.												
22...	0715	512	0	12.0	140	--	--	3.3	--	43	0	--
FEB.												
18...	1520	84	2	12.0	15	--	--	5.0	--	70	0	--
MAR.												
11...	1600	69	2	12.8	10	--	--	4.2	--	79	0	--
APR.												
09...	1630	372	7	10.6	15	--	--	3.2	--	49	0	--
MAY												
14...	0800	1020	8	11.0	60	6.1	1.9	1.8	.8	31	0	.0
JUNE												
10...	1500	208	15	9.3	4.0	--	--	2.8	--	52	0	--
JULY												
08...	1630	49	19	8.5	9.0	--	--	4.2	--	73	0	--
AUG.												
14...	0715	23	15	8.8	25	--	--	3.5	--	56	0	--
SEPT.												
17...	0845	15	12	9.7	8.0	14	7.0	6.0	1.6	86	0	.0

DATE	CHLO-RIDE (CL) (MG/L)	NITRATE (NO3) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3 (MG/L)	PH (UNITS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
OCT.												
08...	1.5	--	0	--	--	84	0	15	.3	94	8.0	181
NOV.												
15...	1.6	--	0	--	--	73	0	15	.3	82	8.2	163
DEC.												
11...	1.9	--	0	--	--	59	1	16	.3	58	8.0	124
JAN.												
22...	1.4	--	0	--	--	32	0	18	.3	35	7.7	78
FEB.												
18...	2.2	--	0	--	--	58	1	16	.3	57	8.0	122
MAR.												
11...	2.2	--	0	--	--	78	13	10	.2	65	8.0	136
APR.												
09...	1.3	--	0	--	--	36	0	16	.2	40	7.5	86
MAY												
14...	2.0	.1	0	44	.06	23	0	14	.2	25	7.2	53
JUNE												
10...	.9	--	0	--	--	37	0	14	.2	43	7.7	85
JULY												
08...	1.4	--	0	--	--	53	0	15	.3	60	8.3	117
AUG.												
14...	1.6	--	0	--	--	42	0	15	.2	46	7.9	97
SEPT.												
17...	1.8	.0	0	91	.12	64	0	15	.3	71	7.6	141

10387100 (revised) CHEWAUCAN RIVER NEAR VALLEY FALLS, OREG.

LOCATION (revised).--Lat 42°30'57", long 120°15'03", in SW¼ sec.21, T.35 S., R.21 E., Lake County, downstream from dam at Clark and Johnson Ranch, downstream from Crooked Creek, 2.7 miles northeast of Valley Falls.

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1969.

REMARKS.--Prior to October 1968, published as station 10386850.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	SODIUM (NA) (MG/L)	CHLORIDE (CL) (MG/L)	SPECIFIC CONDUCTANCE (MICROMHOS)
NOV.			
22...	6.7	2.0	92
JAN.			
03...	11	3.0	124
FEB.			
04...	17	5.0	159
MAR.			
04...	34	11	281
APR.			
10...	--	1.0	120
24...	9.0	2.0	--
MAY			
15...	8.3	1.8	--
JUNE			
21...	--	15	360
AUG.			
25...	--	2.0	190

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	SILICA (SIO2) (MG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NITRATE (NO3) (MG/L)
BEAR RIVER BASIN												
10041000 THOMAS FORK NEAR WYOMING-IDAHO STATE LINE (LAT 42 24 10 LONG 111 01 30)												
SEP 1969 10...	17	6.6	60	19	132	1.2	235	0	51	184	--	--
10046000 RAINBOW INLET CANAL NEAR DINGLE, IDAHO (LAT 42 13 00 LONG 111 17 30)												
FEB 1969 14...	194	8.0	64	26	27	1.2	270	0	59	36	.3	1.2
MAY 08...	1735	7.9	54	19	16	2.0	236	0	27	18	.3	.8
SEP 10...	40	9.5	70	31	40	2.5	298	0	67	45	.3	.1
10059500 BEAR LAKE OUTLET CANAL NEAR PARIS, IDAHO (LAT 42 13 00 LONG 111 20 30)												
FEB 1969 14...	550	9.2	44	49	36	3.3	323	0	67	46	.3	.8
SEP 10...	200	9.3	18	69	45	5.5	325	8	72	56	.4	.1
10079500 BEAR RIVER AT ALEXANDER, IDAHO (LAT 42 38 45 LONG 111 41 55)												
MAY 1969 28...	613	8.0	57	24	13	2.7	274	0	33	15	.3	1.1
10090450 WEST CACHE CANAL AT CORNISH, UTAH (LAT 41 59 10 LONG 111 57 14)												
SEP 1969 03...	128	14	54	54	54	6.9	383	0	73	60	--	--
10092200 BEAR RIVER AT CORNISH, UTAH (LAT 41 58 32 LONG 111 56 10)												
SEP 1969 03...	183	14	55	53	72	10	393	0	72	86	--	--
10098000 CUB RIVER AT FRANKLIN, IDAHO (LAT 42 00 50 LONG 111 49 10)												
SEP 1969 03...	.10	16	42	22	35	8.1	297	0	9.8	22	--	--
10098800 WORM CREEK NEAR FAIRVIEW, IDAHO (LAT 42 00 15 LONG 111 51 00)												
SEP 1969 03...	244	19	46	31	22	9.7	334	0	10	14	--	--
10119000 LITTLE MALAD RIVER ABOVE ELKHORN RESERVOIR, NEAR MALAD CITY, IDAHO (LAT 42 20 00 LONG 112 26 00)												
APR 1969 02...	7.4	24	53	18	19	5.3	219	0	17	40	.4	5.8
10125500 MALAD RIVER AT WOODRUFF, IDAHO (LAT 42 02 00 LONG 112 14 00)												
APR 1969 02...	192	17	76	51	286	31	375	0	168	420	.7	.9
SEP 04...	15	24	126	41	1120	77	418	0	80	1780	--	--
PYRAMID AND WINNEMUCCA LAKES BASIN												
10347800 PEAVINE CREEK NEAR RENO, NEV. (LAT 39 32 35 LONG 119 51 55)												
JAN 1969 20...A	.40	23	20	5.6	9.2	2.7	32	0	64	1.6	.4	--
MAR 30...B	1.6	25	9.1	4.8	7.1	2.5	16	0	40	1.4	--	--

A INCLUDES 0.19 TONS/AC-FT OF DISSOLVED SOLIDS, 21 PERCENT SODIUM, AND 26 MG/L ALKALINITY AS CACO3.
B INCLUDES 25 PERCENT SODIUM AND 13 MG/L ALKALINITY AS CACO3.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	ORTHO PHOS-PHATE (PO4) (MG/L)	PHOS-PHATE (PO4) (MG/L)	BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180°C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SODIUM AD-SORP-TION RATIO (SAR)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	DIS-SOLVED OXYGEN (MG/L)	TEMPER-ATURE (DEG C)
BEAR RIVER BASIN												
10041000 THOMAS FORK NEAR WYOMING-IDAHO STATE LINE (LAT 42 24 20 LONG 111 01 30)												
SEP 1969												
10...	--	--	--	578	26.5	229	36	3.8	1020	8.1	9.7	15
10046000 RAINBOW INLET CANAL NEAR DINGLE, IDAHO (LAT 42 13 00 LONG 111 17 30)												
FEB 1969												
14...	--	.00	70	355	186	264	43	.7	599	8.0	--	0
MAY												
08...	.02	--	80	262	1230	211	17	.5	454	7.7	--	12
SEP												
10...	.01	--	130	429	46.3	300	56	1.0	695	8.2	5.6	14
10059500 BEAR LAKE OUTLET CANAL NEAR PARIS, IDAHO (LAT 42 13 00 LONG 111 20 30)												
FEB 1969												
14...	--	.00	90	415	616	312	47	.9	701	8.1	--	0
SEP												
10...	.00	--	140	452	244	328	48	1.1	745	8.1	7.4	17
10079500 BEAR RIVER AT ALEXANDER, IDAHO (LAT 42 38 45 LONG 111 41 55)												
MAY 1969												
28...	--	.13	80	299	495	240	15	.4	503	7.8	--	15
10090450 WEST CACHE CANAL AT CORNISH, UTAH (LAT 41 59 10 LONG 111 57 14)												
SEP 1969												
03...	--	--	--	507	175	354	40	1.2	850	8.3	8.1	18
10092200 BEAR RIVER AT CORNISH, UTAH (LAT 41 58 32 LONG 111 56 10)												
SEP 1969												
03...	--	--	--	555	274	354	32	1.7	900	8.4	7.9	20
10098000 CUB RIVER AT FRANKLIN, IDAHO (LAT 42 00 50 LONG 111 49 10)												
SEP 1969												
03...	--	--	--	308	.08	196	0	1.1	511	7.9	11.6	19
10098800 WORM CREEK NEAR FAIRVIEW, IDAHO (LAT 42 00 15 LONG 111 51 00)												
SEP 1969												
03...	--	--	--	321	211	242	0	.6	533	7.9	7.8	18
10119000 LITTLE MALAD RIVER ABOVE ELKHORN RESERVOIR, NEAR MALAD CITY, IDAHO (LAT 42 20 00 LONG 112 26 00)												
APR 1969												
02...	--	.05	200	293	5.93	208	18	.6	488	7.9	--	17
10125500 MALAD RIVER AT WOODRUFF, IDAHO (LAT 42 02 00 LONG 112 14 00)												
APR 1969												
02...	--	.02	460	1230	638	400	92	6.2	2110	7.8	--	15
SEP												
04...	--	--	--	3560	144	483	194	22	5920	7.5	11.6	25
PYRAMID AND WINNEMUCCA LAKES BASIN												
10347800 PEAVINE CREEK NEAR RENO, NEV. (LAT 39 32 35 LONG 119 51 55)												
JAN 1969												
20...	--	--	70	C143	--	73	47	.5	208	7.0	--	--
MAR												
30...	--	--	--	--	--	42	29	.5	134	6.5	--	--

C SUM OF CONSTITUENTS.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN THE GREAT BASIN

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
CEDAR CITY VALLEY									
10242000 COAL CREEK NEAR CEDAR CITY, UTAH (LAT 37 40 20 LONG 113 02 02)[A]									
APR 5, 1969	1840	88	7560	1800	MAY 22, 1969	1945	515	4700	6500
APR 9.....	1840	72	5910	1100	MAY 23.....	2045	515	2270	3200
APR 11.....	1830	96	12300	3200	MAY 24.....	0630	360	523	510
APR 15.....	1820	74	1450	290					
APR 17.....	1920	58	8320	1300	MAY 24.....	2120	476	1160	1500
					MAY 25.....	0615	354	741	710
APR 20.....	1915	98	46400	12000	MAY 25.....	1800	479	1230	1600
APR 21.....	1900	241	30000	20000	MAY 25.....	2120	467	1500	1900
APR 22.....	1925	268	11200	8100	MAY 26.....	0615	337	534	490
APR 24.....	1945	168	1390	630					
APR 25.....	1830	110	2730	810	MAY 26.....	2115	450	1520	1800
					MAY 27.....	0620	331	510	460
APR 26.....	1845	89	835	200	MAY 27.....	2150	406	1250	1400
APR 28.....	1950	163	4410	1900	MAY 28.....	0630	316	489	420
APR 29.....	1930	198	7490	4000	MAY 28.....	2105	374	1090	1100
APR 30.....	1600	166	1500	670					
APR 30.....	2040	263	10100	7200	MAY 29.....	0620	296	1080	860
					MAY 29.....	2130	346	1030	960
MAY 1.....	2045	299	7750	6300	MAY 30.....	0620	266	447	320
MAY 2.....	2035	280	5120	3900	MAY 30.....	2135	328	927	820
MAY 3.....	2010	277	2910	2200	MAY 31.....	0625	274	4730	3500
MAY 4.....	2020	249	2520	1700					
MAY 5.....	2045	216	960	560	MAY 31.....	2120	285	639	490
					JUN 1.....	0620	241	6750	4400
MAY 6.....	1910	288	4080	3200	JUN 1.....	2130	252	435	300
MAY 7.....	1115	214	1220	700	JUN 2.....	0615	222	1140	680
MAY 7.....	1945	274	2570	1900	JUN 2.....	2130	241	423	280
MAY 8.....	1910	380	10000	10000					
MAY 9.....	1945	380	3170	3300	JUN 3.....	0615	211	438	250
					JUN 3.....	2140	235	581	370
MAY 10.....	2000	380	4000	4100	JUN 5.....	1045	173	156	73
MAY 11.....	2030	412	2410	2700	JUN 5.....	2115	201	325	180
MAY 12.....	2100	542	8700	13000	JUN 6.....	1030	173	143	67
MAY 13.....	2020	579	29400	46000					
MAY 14.....	2035	589	11500	18000	JUN 6.....	2200	193	798	420
					JUL 19.....	0330	268	16400	12000
MAY 15.....	2040	561	10200	15000	JUL 20.....	1910	122	12100	4000
MAY 16.....	2020	573	16600	26000	JUL 21.....	1900	137	6870	2500
MAY 17.....	2020	620	4800	8000	JUL 22.....	0700	241	5500	3600
MAY 18.....	2045	650	7740	14000					
MAY 19.....	2025	611	7740	13000	JUL 22.....	2100	241	6480	4200
MAY 20.....	1940	561	2690	4100	JUL 24.....	0200	268	37900	27000
MAY 21.....	2025	509	1750	2400					

A SAMPLES COLLECTED BY U.S. SOIL CONSERVATION SERVICE AND ANALYZED BY U.S. GEOLOGICAL SURVEY.

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED: .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
PYRAMID AND WINNEMUCCA LAKES BASIN																	
10347800 PEAVINE CREEK NEAR RENO, NEV. (LAT 39 32 35 LONG 119 51 55)																	
JAN 20 1969	0945	4	.40	1750	1.9	--	--	--	--	--	99	99	100	--	--	--	S
JAN 20.....	1250	6	.80	1320	2.9	--	--	--	--	--	--	--	--	--	--	--	
JAN 20.....	1320	6	.80	1440	3.1	--	--	--	--	--	--	--	--	--	--	--	
JAN 20.....	1900	4	1.2	1070	3.5	88	88	92	97	98	100	--	--	--	--	--	SPWC
JAN 21.....	0815	4	2.1	1280	7.3	--	--	--	--	--	--	--	--	--	--	--	
JAN 21.....	1150	4	2.4	888	5.8	--	--	--	--	--	--	--	--	--	--	--	
JAN 21.....	1845	2	2.5	507	3.4	83	93	97	98	99	100	--	--	--	--	--	SBWC
JAN 22.....	1110	3	2.1	574	3.3	--	--	--	--	--	--	--	--	--	--	--	
JAN 22.....	1745	1	1.6	455	2.0	--	--	--	--	--	--	--	--	--	--	--	
JAN 24.....	1545	2	.40	204	.22	96	99	100	--	--	--	--	--	--	--	--	SBWC
JAN 27.....	1215	1	2.2	110	.65	90	97	99	100	--	--	--	--	--	--	--	SBWC
FEB 1.....	1145	2	.10	54	.01	--	--	--	--	--	--	--	--	--	--	--	
FEB 11.....	1340	2	1.1	66	.20	--	--	--	--	--	--	--	--	--	--	--	
FEB 14.....	1245	2	1.0	63	.17	--	--	--	--	--	--	--	--	--	--	--	
FEB 16.....	1345	3	.50	66	.09	--	--	--	--	--	--	--	--	--	--	--	
FEB 22.....	1030	3	.10	26	.01	--	--	--	--	--	--	--	--	--	--	--	
MAR 8.....	1315	--	.40	32	.03	--	--	--	--	--	--	--	--	--	--	--	
MAR 17.....	1145	6	1.0	206	.56	--	--	--	--	--	--	--	--	--	--	--	
MAR 30.....	1330	15	1.6	39	.17	--	--	--	--	--	--	--	--	--	--	--	
APR 21.....	1500	22	.10	40	.01	--	--	--	--	--	--	--	--	--	--	--	
10351700 TRUCKEE RIVER NEAR NIXON, NEV. (LAT 39 46 40 LONG 119 20 10)																	
AUG 5 1968	1210	22	62	118	20	40	71	91	97	99	100	--	--	--	--	--	SBWC
OCT 3.....	1615	18	61	34	5.6	--	--	--	--	--	--	--	--	--	--	--	
NOV 6.....	0950	11	45	15	1.8	--	--	--	--	--	--	--	--	--	--	--	
DEC 12.....	1150	2	33	4	.36	--	--	--	--	--	--	--	--	--	--	--	
JAN 14 1969	1435	8	502	42	57	--	--	--	--	--	--	--	--	--	--	--	
JAN 19.....	1530	6	526	36	51	--	--	--	--	--	--	--	--	--	--	--	
JAN 20.....	1200	5	2450	1950	12900	19	24	32	38	42	57	73	94	100	--	--	VBWC
JAN 20.....	1530	6	3270	2370	20900	18	23	30	38	49	61	80	95	100	--	--	VPWC
JAN 20.....	1715	5	3460	2400	22400	21	28	35	43	53	62	78	93	100	--	--	VPWC
JAN 21.....	1030	4	4480	1890	22900	15	17	26	33	41	49	64	82	97	100	--	VPWC

SUSPENDED-SEDIMENT DISCHARGE MEASUREMENTS AND PARTICLE-SIZE DISTRIBUTION, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET, S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
PYRAMID AND WINNEMUCCA LAKES BASIN--CONTINUED																	
10351700 TRUCKEE RIVER NEAR NIXON, NEV. (LAT 39 46 40 LONG 119 20 10)--CONTINUED																	
JAN 21 1969	1300	4	4670	1920	24200	--	--	--	--	--	--	--	--	--	--	--	
JAN 21.....	1500	4	4560	1630	20100	17	23	29	38	46	55	72	89	99	100	--	VPWC
JAN 21.....	1700	4	4510	1380	16800	--	--	--	--	--	--	--	--	--	--	--	
JAN 22.....	1130	2	4040	730	7960	21	25	29	40	47	56	72	90	99	100	--	VPWC
JAN 22.....	1330	3	3890	788	8280	--	--	--	--	--	--	--	--	--	--	--	
JAN 22.....	1600	2	3490	738	6950	--	--	--	--	--	--	--	--	--	--	--	
JAN 27.....	1600	1	2920	726	5720	23	29	38	41	48	58	72	86	98	100	--	VPWC
FEB 1.....	1400	3	1150	100	310	--	--	--	--	--	--	--	--	--	--	--	
FEB 14.....	1645	4	1750	200	945	--	--	--	--	--	--	--	--	--	--	--	
FEB 16.....	1600	6	1860	222	1110	--	--	--	--	--	--	--	--	--	--	--	
FEB 18.....	1045	4	1790	183	884	--	--	4	8	13	27	44	70	98	100	--	SBWC
FEB 22.....	1330	4	1770	356	1700	--	--	--	--	--	--	--	--	--	--	--	
MAR 8.....	1645	5	2130	294	1690	--	--	--	--	--	--	--	--	--	--	--	
MAR 16.....	1800	8	2020	360	1960	1	2	4	5	6	10	18	38	80	96	100	SBWC
MAR 28.....	1800	11	2540	446	3060	7	10	14	16	18	26	42	65	95	100	--	SBWC
MAR 30.....	1730	11	3100	827	6920	6	9	13	17	20	31	49	74	99	100	--	VBWC
MAY 2.....	1310	12	3210	300	2600	--	--	--	--	--	--	--	--	--	--	--	
MAY 17.....	1030	13	3470	607	5690	5	7	10	13	16	20	28	42	66	96	100	SBWC
MAY 25.....	1245	14	3160	317	2700	9	12	17	22	28	36	50	76	100	--	--	VBWC
JUN 1.....	1445	16	3110	240	2020	--	--	--	--	--	--	--	--	--	--	--	
JUN 5.....	1340	20	3290	230	2040	--	--	--	--	--	--	--	--	--	--	--	
JUN 12.....	1530	16	4700	262	3320	7	13	17	22	29	38	54	80	100	--	--	VBWC
JUL 1.....	1350	16	2250	150	911	--	--	--	--	--	--	--	--	--	--	--	
JUL 11.....	0945	21	300	22	18	--	--	--	--	--	--	--	--	--	--	--	
AUG 4.....	1310	23	48	20	2.6	--	--	--	--	--	--	--	--	--	--	--	
SEP 3.....	1415	16	55	12	1.8	--	--	--	--	--	--	--	--	--	--	--	

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