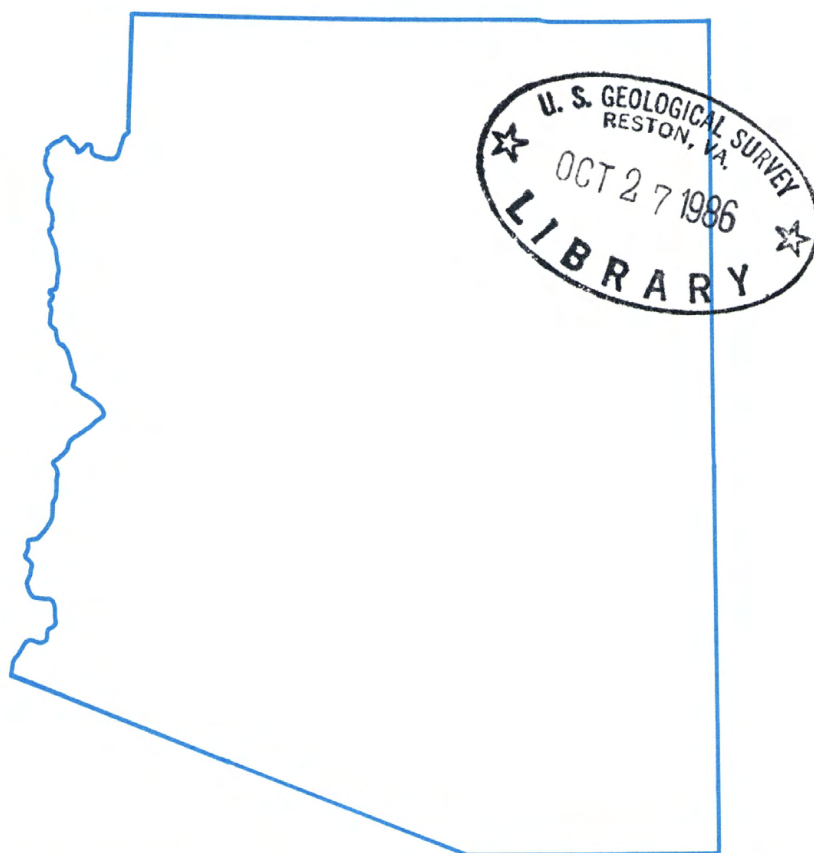


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Water Resources Data Arizona Water Year 1983



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-83-1
Prepared in cooperation with the State of Arizona
and with other agencies

CALENDAR FOR WATER YEAR 1983

1982

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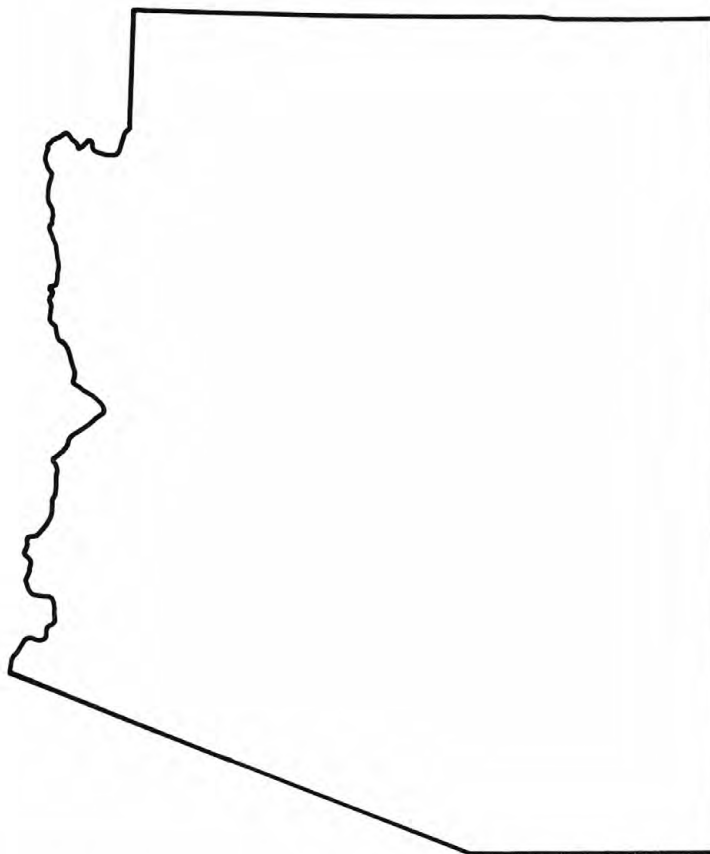
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Water Resources Data Arizona

Water Year 1983

by Natalie D. White, and W.B. Garrett



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-83-1
Prepared in cooperation with the State of Arizona
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD P. HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Arizona write to
District Chief, Water Resources Division
U.S. Geological Survey
300 W. Congress Street
Tucson, Arizona 85701-1393

1986

PREFACE

This volume of the annual hydrologic data report of Arizona is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

T. W. Anderson
George W. Hill

Edmund G. Nassar
Howard F. McCormack

Carlena R. Smith typed the text of the report.

This report was prepared in cooperation with the State of Arizona and with other agencies under the general supervision of R. D. MacNish, District Chief, Arizona.

REPORT DOCUMENTATION PAGE		1. REPORT NO. USGS/WRD/HD-86/233	2.	3. Recipient's Accession No.
4. Title and Subtitle Water Resources Data for Arizona, 1983				5. Report Date May 1986
7. Author(s)				6.
9. Performing Organization Name and Address U.S. Geological Survey Federal Building, 300 West Congress Street Tucson, Arizona 85701-1393				8. Performing Organization Rept. No. USGS-WDR-AZ-83-1
12. Sponsoring Organization Name and Address U.S. Geological Survey Federal Building, 300 West Congress Street Tucson, Arizona 85701-1393				10. Project/Task/Work Unit No.
				11. Contract(C) or Grant(G) No. (C) (G)
				13. Type of Report & Period Covered Annual--Oct. 1, 1982 to Sept. 30, 1983
				14.
15. Supplementary Notes Prepared in cooperation with the State of Arizona and with other agencies.				
16. Abstract (Limit: 200 words) Water resources data for the 1983 water year for Arizona consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; water levels of observation wells; and quality of ground water. This report contains discharge records for 208 gaging stations, annual peaks for 24 crest-stage partial-record stations, and discharge measurements at 18 miscellaneous sites; contents only records for 8 lakes and reservoirs; stage and contents for 1 lake; elevation only for 1 streamflow station; 16 supplementary records, included with gaging-station records, consisting of monthend or monthly stage, contents, and evaporation of lakes and reservoirs, diversions, and return flows; water-quality records for 54 continuous-record stations and 3 miscellaneous sites; water levels for 97 observation wells; and water-quality data for water from 132 wells. The data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal and State Agencies in Arizona.				
17. Document Analysis a. Descriptors *Arizona, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Sampling sites, Water levels, Water analyses.				
b. Identifiers/Open-Ended Terms				
c. COSATI Field/Group				
18. Availability Statement: No restriction on distribution This report may be purchased from: National Technical Information Service Springfield, VA 22161		19. Security Class (This Report) UNCLASSIFIED		21. No. of Pages 399
		20. Security Class (This Page) UNCLASSIFIED		22. Price

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GAGING STATIONS AND WATER-QUALITY STATIONS,
IN DOWNSTREAM ORDER, FOR WHICH
RECORDS ARE PUBLISHED

VII

[Letters after station name designate type of data: (c) chemical; (d) discharge; (e) elevation; (g) gage height; (m) microbiological (bacteria); (p) pesticide; (q) specific conductance (daily); (r) radiochemical; (s) suspended sediment; (t) water temperature (daily); (v) contents]

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WATER RESOURCES DATA FOR ARIZONA, WATER YEAR 1983

INTRODUCTION

Water resources data for the 1983 water year for Arizona consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; measurements of ground-water levels; and quality of water from selected wells. Also included are discharge data for crest-stage partial-record stations and water-quality data for partial-record stations. Locations of the gaging stations are shown in figures 4, 6, and 7, and of water-quality stations in figures 5 and 6. Additional water data were collected at various sites, which are not part of the systematic data-collection program, and are published as miscellaneous measurements or miscellaneous water-quality analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Arizona.

Records of discharge or stage of streams and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." These water-supply papers were in an annual series through water year 1960 and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, Virginia 22304.

For water years 1961-74, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. For water years 1964-74, water-quality records were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report AZ-83-1." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephone (602) 629-6671.

COOPERATION

The U.S. Geological Survey and organizations of the State of Arizona have had cooperative agreements for the systematic collection of surface-water records since 1912, for ground-water levels since 1939, and for water-quality records since 1969. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Arizona Department of Health Services, R. L. Miller, chief, Bureau of Water Quality Control.
Arizona Department of Water Resources, W. E. Steiner, director.
City of Nogales, M. T. Montano, city engineer.
City of Tucson, Lewis Murphy, mayor, J. D. Valdez, manager, and James Turner, acting city engineer.
Flood Control District of Maricopa County, D. E. Sagramoso, chief engineer and general manager.
Gila Valley Irrigation District, S. L. Pace, president.
Maricopa County Municipal Water Conservation District No. 1, J. C. Wetzler, president, and J. A. Falbo, secretary-manager.
Metropolitan Water District of Southern California, E. L. Griffith, general manager, and C. E. Hildebrand, principal engineer.
Navajo County Parks Commission, Larry Harmon, Director.
Pima County Board of Supervisors, E. S. Walker, chairman.
Salt River Valley Water Users' Association, John R. Lassen, president, and R. W. Teeples, associate general manager, Water Resources Operations.
San Carlos Irrigation and Drainage District, E. R. Wildermuth, president, and N. M. Soma, district manager.
Show Low Irrigation Company, Chester Adams, secretary-treasurer.
University of Arizona, Sol Resnick, director, Water Resources Research Center.

Assistance in the form of funds or services was given by the Bureau of Land Management, Bureau of Reclamation, and National Park Service, U.S. Department of the Interior; by the Corps of Engineers, U.S. Army; by the Forest Service, U.S. Department of Agriculture; by the International Boundary and Water Commission, U.S. Department of State; and by the Federal Power Commission. Assistance in collecting records was furnished by the Arizona Public Service Co. Organizations that supplied data are acknowledged in station descriptions.

HYDROLOGIC CONDITIONS

As is common in Arizona, streamflow varied greatly in the 1983 water year—from month to month throughout the year and from place to place in the State. The variations are related to differences in precipitation, temperature, topography, and geology. The yearly mean discharge at six key gaging stations ranged from 117 to 436 percent of the median of yearly mean discharges. The median of the yearly mean discharges is defined as the middle value of discharge when arranged in order of size. For the index stations, the median is computed from the yearly mean discharges for the 1951-80 period of record.

The yearly mean discharge for the 1983 water year was excessive at five index stations and within the normal range at one station. Excessive discharge is defined as a discharge greater than the 75 percent quartile, i.e., greater than 75 percent of the values arranged in order of magnitude; deficient discharge is less than the 25 percent quartile.

The yearly mean discharge for the 1983 water year and the relation to the median of yearly mean discharges for the period 1951-80 for the six index gaging stations are given below.

<u>Station</u>	<u>Discharge (acre-feet)</u>	<u>Percent of median</u>
Little Colorado River near Cameron	323,300	*217
Virgin River at Littlefield	504,600	*436
Gila River at head of Safford Valley, near Solomon	775,100	*391
San Pedro River at Charleston	29,870	117
Salt River near Roosevelt	1,326,000	*363
Verde River below Tangle Creek, above Horseshoe Dam	945,400	*309

*Excessive

The discharge of the Colorado River near Grand Canyon was 17,680,000 acre-ft; the flow of the Colorado River at this point is affected by storage in upstream reservoirs, and this gaging station is no longer used as an index station.

The discharge of the Santa Cruz River at Continental was 24,210 acre-ft for the 1983 water year, which is about 367 percent of the median flow for the period of record, 1952-83. The Santa Cruz River is an intermittent stream that is subject to large variations in flow—from place to place along the river and from time to time. For example, the flow for 1965 was only about 3 percent of median but for 1979 was about 1,330 percent of median.

During the the period September 27 to October 3, 1983 an unusual storm event occurred that brought widespread flooding into the first part of the 1984 water year. The significant features of this storm period were the amounts of precipitation that occurred during the months prior to September 27 and the duration of the precipitation in the six days that followed. Both August and September were exceptionally wet over much of the central, southern, and eastern parts of the State during the normally dry fall season. For several stations in the affected parts of the State, maximum discharge for the 1983 water year occurred on September 29 or 30. However, these discharges were not considered independent peak discharges because a higher peak occurred on October 1 or 2 in the 1984 water year. A few stations experienced the maximum discharge for the 1983 water year on a rising stage at 2400 hours September 30, with the peak discharge occurring in early October. These occurrences have been noted in the tables of peaks above base for the stations.

Storage increased in all of the major reservoirs during the 1983 water year. Change in contents during the year and percentage of average contents on September 30 for the period of record for several reservoirs are given below.

<u>Reservoir</u>	<u>Change in contents, 1983 water year (acre-feet)</u>	<u>Average contents on September 30 (percent)</u>
Lake Powell	+1,812,000	---
Lakes Mead-Mohave.....	+3,066,000	135
San Carlos Reservoir	+476,000	383
Salt-Verde system	+368,500	225
Lake Pleasant	+63,600	319

Diversions of streamflow for irrigation of Arizona lands in the 1983 water year was 2,886,000 acre-ft. About 1,459,000 acre-ft was diverted from the Colorado River for use by the Colorado River Indian Reservation, the Gila Project, and the Yuma Project. About 715,000 acre-ft of the water diverted from the Colorado River was returned to the river or was discharged across the Arizona-Sonora international boundary. About 1,427,000 acre-ft of streamflow was diverted from the Gila River basin for use in Safford Valley, the San Carlos Project, and the Salt River Project.

Figure 1 shows the discharge for the 1983 water year compared with the median runoff for the period 1951-80 at three representative gaging stations for which long-term records are available.

DEFINITION OF TERMS

Terms related to streamflow, water quality, and other hydrologic data, as used in this report, are defined below. See also the table "Factors for conversion of inch-pound units to International System (SI) Units" on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons, or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria, which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms that produce colonies within 24 hours when incubated at 35°C±1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5°C±0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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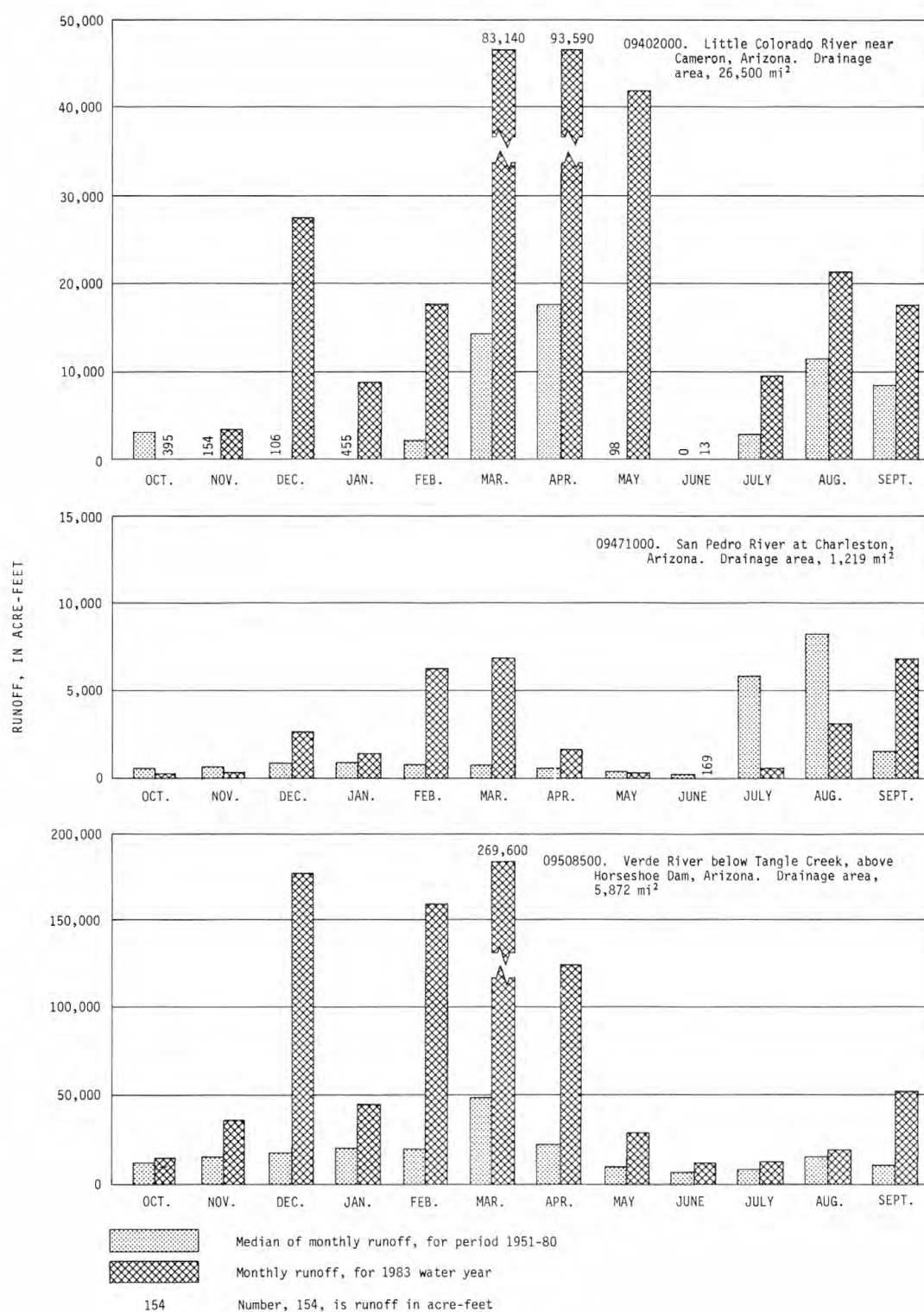


Figure 1.--Runoff during 1983 water year compared with median runoff for period 1951-80 for three representative gaging stations.

Fecal streptococcal bacteria are bacteria found also in the intestines of warmblooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth in the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as numbers of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for the ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism that are counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

Chemical oxygen demand (COD) 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.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second, and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

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

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$d = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area are given herein include all closed basins, or noncontributing areas within the area unless otherwise noted.

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

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO_3).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L , $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L , mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L , and is based on the mass of sediment per liter of water-sediment mixture.

Miscellaneous site is a location other than continuous- or partial-record stations where random discharge measurements are made or samples are collected to give better areal coverage of unusual flow events or water-quality conditions in a river basin.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined either by sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-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 particles in transport in the stream. Most of the organic material 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.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants, respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the

unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

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

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or

by volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Seston is the total suspended particulate matter in water. The concentration of particulate matter has a profound effect upon the optical properties of the water, and upon the concentration of dissolved materials in the water. Their concentrations are expressed as number of colonies per 100 mL of sample.

Sodium-adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. 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.

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

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may even vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

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

Substrate is the physical surface upon which an organism lives.

Natural substrates refers to any naturally occurring emerged or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the

fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom	Animal
Phylum.....	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	<u>Hexagenia</u>
Species	<u>Hexagenia limbata</u>

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

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

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

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent

present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

WRD is used as an abbreviation for "Water Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 09402500, which appears just to the left of the station name, includes the 2-digit part number "09" plus the 6-digit downstream order number "402500."

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid (see fig. 2). In addition to the well number based on latitude and longitude, a local well number is given based on the Gila and Salt River meridian and base line (see fig. 3). A different numbering system is used on the Navajo and Hopi Indian Reservations. The Navajo Indian Reservation is divided into 17 administrative districts, numbered 1 to 5 and 7 to 18, and the Hopi Indian Reservation comprises district 6. The area is further divided into 15-minute quadrangles arbitrarily numbered from 1 to 151 starting in the northeast corner of the area and numbering consecutively in rows from east to west. Within the 15-minute quadrangle the well is located in miles south and west from the northeast corner of the quadrangle. The first two numbers in the well number represent the district, the next three numbers are the quadrangle, the decimal numbers are miles west by (X) miles south of the northeast corner of the quadrangle. Thus, the number 02 021-05.28X10.68 states that the well is in district 2, quadrangle 21, and is 5.28 miles west by 10.68 miles south of the northeast corner of the quadrangle.

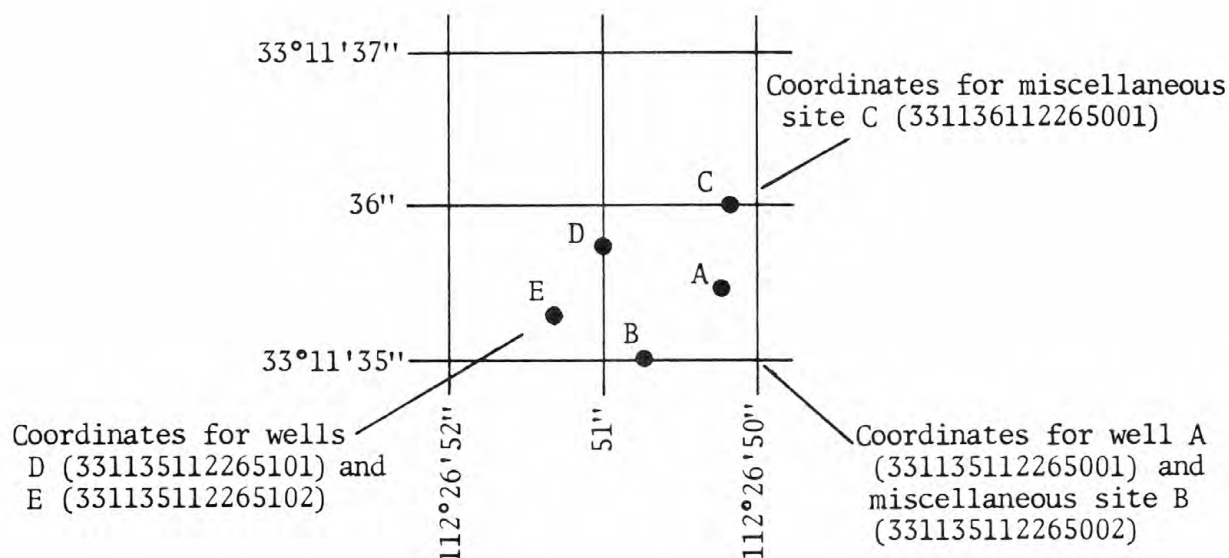
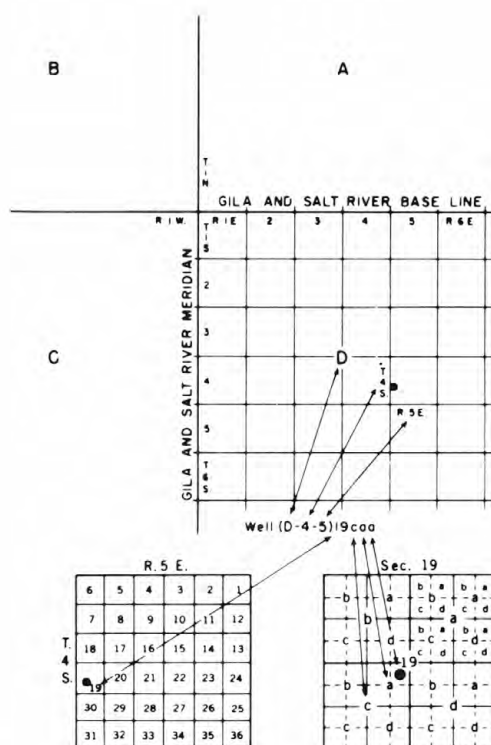


Figure 2.--System for numbering wells and miscellaneous sites (latitude and longitude).



The well numbers used by the Geological Survey in Arizona are in accordance with the Bureau of Land Management's system of land subdivision. The land survey in Arizona is based on the Gila and Salt River meridian and base line, which divide the State into four quadrants. These quadrants are designated counter-clockwise by the capital letters A, B, C, and D. All land north and east of the point of origin is in A quadrant, that north and west in B quadrant, that south and west in C quadrant, and that south and east in D quadrant. The first digit of a well number indicates the township, the second the range, and the third the section in which the well is situated. The lowercase letters a, b, c, and d after the section number indicate the well location within the section. The first letter denotes a particular 160-acre tract, the second the 40-acre tract, and the third the 10-acre tract. These letters also are assigned in a counterclockwise direction, beginning in the northeast quarter. If the location is known within the 10-acre tract, three lowercase letters are shown in the well number. In the example shown, well number (D-4-5)19caa designates the well as being in the $NE\frac{1}{4}NE\frac{1}{4}SW\frac{1}{4}$ sec. 19, T. 4 S., R. 5 E. Where more than one well is within a 10-acre tract, consecutive numbers beginning with 1 are added as suffixes.

Figure 3.--Well-numbering system in Arizona.

SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report 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 that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin. Included in this program in Arizona is station 09508300, Wet Bottom Creek near Childs.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated in the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality. The stations included in this network in Arizona are labeled in the text of this report.

Arizona fixed station network is part of the State water-pollution control program and includes a network of water-quality stations that build upon the NASQAN network. This network provides essential data for State water-quality assessment programs including the biennial report required by the Federal Clean Water Act. Included in this network of eighteen stations are five NASQAN stations with expanded parametric coverage. The stations are: 09383400, Little Colorado River at Greer; 09384000, Little Colorado River above Lyman Lake; 09401200, Little Colorado River at Cameron (expanded NASQAN); 09427520, Colorado River below Parker Dam; 09444600, San Francisco River near Clifton; 09448500, Gila River at head of Safford Valley; 09466500, Gila River at Calva (expanded NASQAN); 09470000, Gila River at Winkelman; 09473500, San Pedro River at Winkelman (expanded NASQAN); 09474000, Gila River at Kelvin (expanded NASQAN); 09498400, Pinal Creek at Inspiration Dam near Globe; 09498500, Salt River near Roosevelt; 09504000, Verde River near Clarkdale; 09504440, Oak Creek at Red Rock Crossing near Sedona; 09506000, Verde River near Camp Verde; 09508500, Verde River below Tangle Creek above Horseshoe Dam; 09515500, Hassayampa River at Box Damsite near Wickenburg; 09518000, Gila River above diversions at Gillespie Dam (expanded NASQAN).

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity. Included in this network in Arizona are stations 09380000, Colorado River at Lees Ferry; 09401200, Little Colorado River at Cameron; 09426600, Bill Williams River near Planet; 09518000, Gila River above diversions, at Gillespie Dam; and 09522000, Colorado River at northerly international boundary above Morelos Dam, near Andrade, CA.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States. Included in this network in Arizona is station 09522000, Colorado River at Northerly International Boundary above Morelos Dam, near Andrade, CA.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States. Included in this network in Arizona is station 09429490, Colorado River above Imperial Dam, AZ-CA.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A-6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If

extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrologists and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other

reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

Publication of data

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes or reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or the stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge were affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the

drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum of 1929; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum of 1929 is explained in "Definition of Terms."

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a non-recording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair", within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft³/s; to tenths between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures above 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for change in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other
than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of records of discharge not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling

techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small daily temperature change; 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 recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. 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.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

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

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection and publication of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude (see figure 2) and (2) a local number that is provided for local needs (see figure 3).

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum referenced to National Geodetic Vertical Datum of 1929 (NGVD) is given. National Geodetic Vertical Datum of 1929 is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehle, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

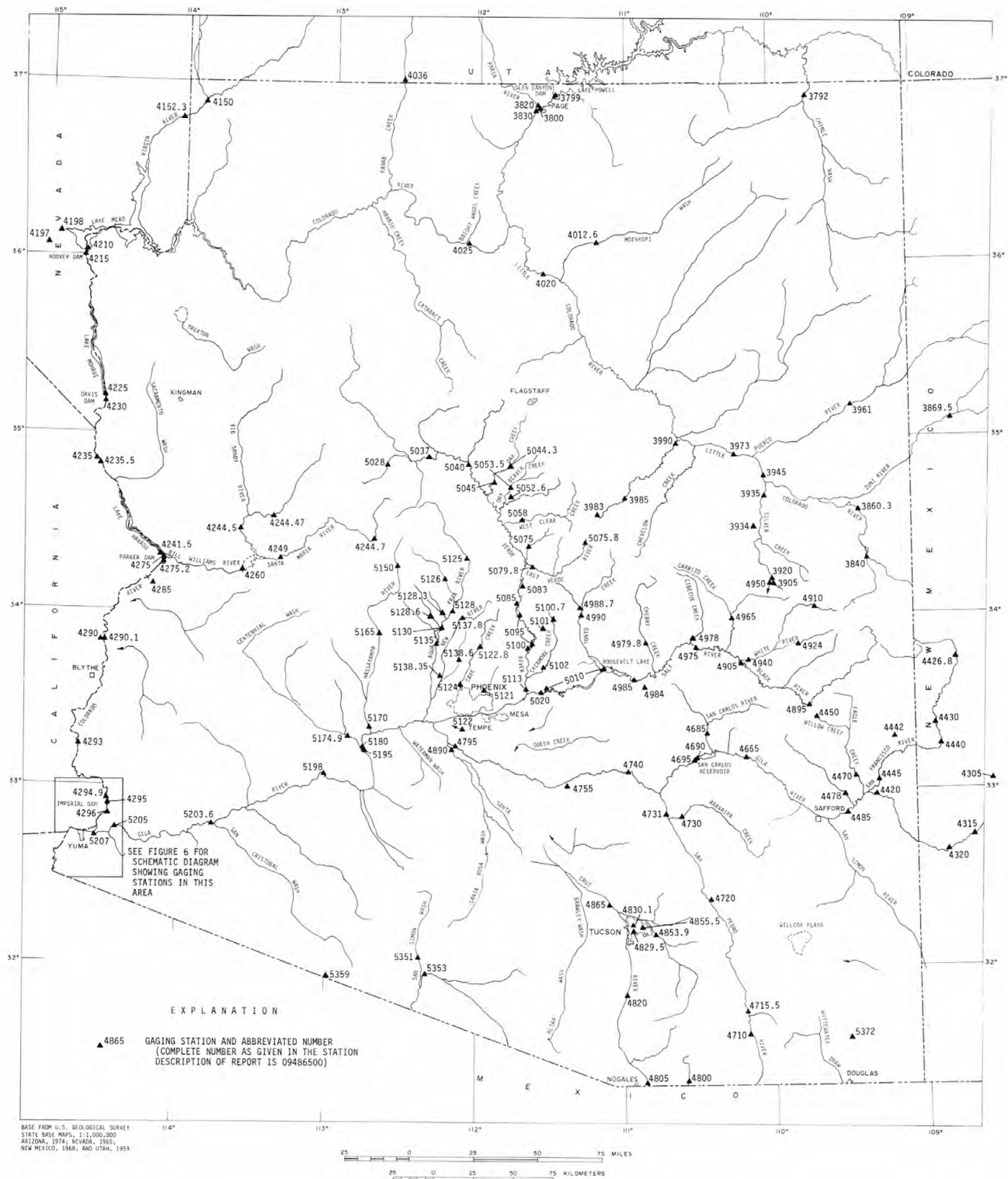


Figure 4.--Map of Arizona showing location of gaging stations.

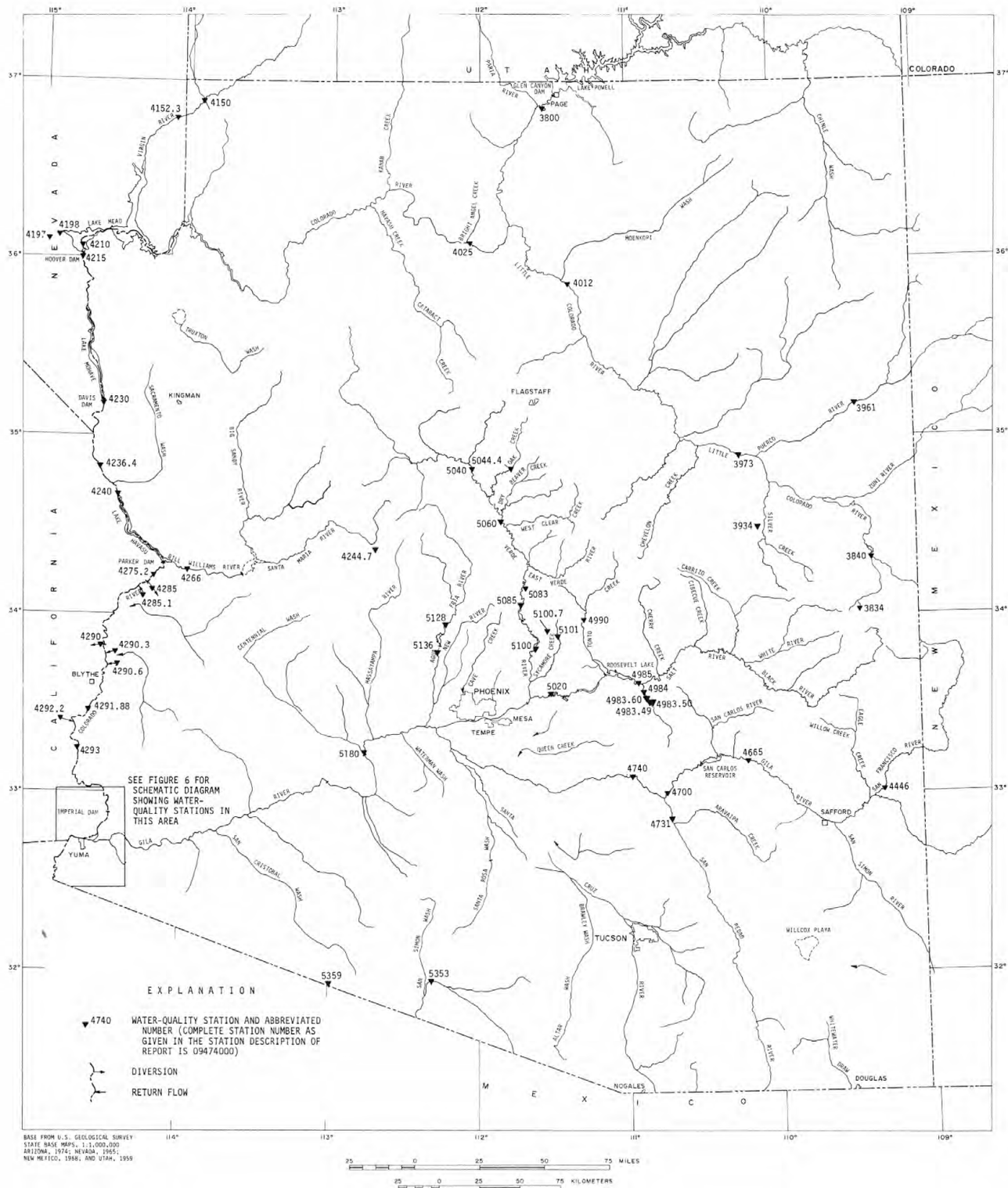


Figure 5.--Map of Arizona showing location of water-quality stations.

HYDROLOGIC-DATA STATION RECORDS

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SAN JUAN RIVER BASIN

09379200 CHINLE CREEK NEAR MEXICAN WATER, AZ

LOCATION.--Lat 36°56'38", long 109°42'36", in sec.19, T.41 N., R.25 E. (unsurveyed), Apache County, Hydrologic Unit 14080204, in Navajo Indian Reservation, on right bank 150 ft upstream from bridge on U.S. Highway 160, 3 mi upstream from Walker Creek, 4 mi southwest of Mexican Water, 5 mi downstream from confluence of Chinle Wash and Laguna Creek, and 6 mi upstream from Arizona-Utah State line.

DRAINAGE AREA.--3,660 mi², approximately, of which 360 mi² is noncontributing.

PERIOD OF RECORD.--October 1964 to current year (monthly discharge only for 1979). Prior to October 1970 published as Chinle Wash near Mexican Water.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,720 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for periods of no gage-height record, which are poor. Some diversions upstream for irrigation, stock tanks, and domestic use. Many Farms Reservoir, about 25 mi upstream, was built in 1939 with an original capacity of 25,000 acre-ft. The reservoir provides off-channel storage for irrigation of about 1,600 acres.

AVERAGE DISCHARGE.--19 years, 28.8 ft³/s, 20,870 acre-ft/yr; median of yearly mean discharges, 14 ft³/s, 10,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Aug. 24, 1982, gage height, 13.87 ft, from rating curve extended above 3,100 ft³/s on basis of slope-area measurement at gage height 12.50 ft; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), and peak discharges above base of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 2	1000	653	a4.65	bJuly 28	unknown	*3,650	a8.22
May 10	1600	579	4.50				

No flow for many days during year.

a From outside high-water mark.

b Date from comparison with downstream station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	3.0	8.0	8.0	76	217	367	360	112	.35	20	.00
2	80	3.0	30	4.8	56	236	356	307	46	.30	8.0	.00
3	40	3.0	12	5.3	32	211	257	263	33	.20	4.0	.00
4	20	3.0	8.0	5.7	28	198	254	251	26	.10	2.0	.00
5	10	3.0	4.0	5.7	46	284	185	338	23	.10	1.0	.00
6	8.0	3.0	4.0	4.4	127	254	133	413	21	.10	.40	.00
7	8.0	4.0	4.0	4.4	190	188	121	453	18	.38	.20	.00
8	8.0	4.0	4.0	5.3	198	168	96	397	18	.71	.10	.00
9	8.0	4.0	6.0	2.5	193	190	82	413	15	.87	.00	.00
10	6.0	6.0	12	4.1	148	254	76	496	12	150	.00	.00
11	6.0	4.0	30	6.2	77	288	93	492	8.4	200	.00	.00
12	6.0	4.0	25	8.0	52	297	137	462	6.2	180	.00	.00
13	6.0	4.0	20	20	41	317	137	331	4.4	80	.00	.00
14	6.0	4.0	18	17	41	307	137	248	1.4	40	.00	.00
15	6.0	4.0	16	17	55	314	133	231	1.4	30	.00	.00
16	6.0	4.0	14	18	62	324	119	201	1.0	20	.00	.00
17	6.0	4.0	14	4.0	71	245	127	222	.36	10	.00	.00
18	6.0	4.0	12	43	74	173	198	240	.20	9.0	.00	.00
19	6.0	8.0	12	160	69	159	212	200	.10	9.0	.00	.00
20	6.0	16	10	160	60	166	225	220	.10	4.0	.00	.00
21	6.0	12	10	140	65	157	214	280	.00	2.0	.00	1.0
22	5.0	10	11	140	69	173	203	240	.00	1.0	.00	.40
23	4.0	18	26	120	69	173	242	200	.00	60	.00	.20
24	4.0	26	166	120	72	157	195	180	.38	10	.00	.10
25	4.0	20	95	150	138	159	164	180	1.2	3.0	.00	.00
26	3.0	12	25	150	193	157	228	171	.60	1.0	.00	.00
27	3.0	8.0	8.0	124	211	155	304	171	.30	50	.00	.00
28	3.0	6.0	5.7	166	180	139	304	173	.30	1500	.00	.00
29	3.0	4.0	8.8	288	---	142	352	164	1.0	200	.00	.00
30	3.0	4.0	12	171	---	166	352	166	1.5	60	.00	70
31	3.0	---	8.0	125	---	291	---	148	---	30	.00	---
TOTAL	389.0	212.0	638.5	2197.4	2693	6659	6003	8611	352.84	2738.24	35.70	71.70
MEAN	12.5	7.07	20.6	70.9	96.2	215	200	278	11.8	88.3	1.15	2.39
MAX	100	26	166	288	211	324	367	496	112	1500	20	70
MIN	3.0	3.0	4.0	2.5	28	139	76	148	.00	.10	.00	.00
AC-FT	772	421	1270	4360	5340	13210	11910	17080	700	5430	71	142

CAL YR 1982 TOTAL 34139.60 MEAN 93.5 MAX 6000 MIN .00 AC-FT 67720
 WTR YR 1983 TOTAL 30601.38 MEAN 83.8 MAX 1500 MIN .00 AC-FT 60700

NOTE.--No gage-height record Oct. 1 to Dec. 22 and July 10 to Sept. 30.

COLORADO RIVER MAIN STEM

09379900 LAKE POWELL AT GLEN CANYON DAM, AZ

LOCATION.--Lat 36°56'12", long 111°29'00", in sec.24, T.41 N., R.8 E., Coconino County, Hydrologic Unit 14070006, at Glen Canyon Dam on Colorado River, 900 ft upstream from bridge on U.S. Highway 89, 1.4 mi downstream from Wahweap Creek, 2 mi northwest of Page, and 12 mi downstream from Utah-Arizona State line.

DRAINAGE AREA.--111,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-arch gravity dam; storage began Mar. 13, 1963; dam completed September 1963. Total capacity, 27,000,000 acre-ft consisting of the following: dead storage, 1,998,000 acre-ft below elevation 3,370 ft - sill of outlet gates; usable contents, 25,002,000 acre-ft between elevations 3,370 ft and 3,700 ft - top of conservation pool. Reservoir is used for power development, to provide storage replacement for upstream irrigation development, and to meet downstream requirements under the Colorado River Compact of 1922. Figures given herein represent usable contents; prior to Oct. 1, 1968, figures of total contents were published (prior to sealing of diversion tunnel July 7, 1965, all storage was usable).

COOPERATION.--Records furnished by U.S. Bureau of Reclamation.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 26,373,000 acre-ft July 14, 1983, elevation, 3,708.34 ft; minimum since power pool level was reached (Aug. 16, 1964), 4,166,000 acre-ft Mar. 18, 1965, elevation, 3,490.76 ft.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 26,373,000 acre-ft July 14, elevation, 3,708.34 ft; minimum, 22,213,000 acre-ft Feb. 25, elevation, 3,682.01 ft.

Capacity table (elevation, in feet, and usable contents, in acre-feet)

3,680	21,916,000	3,700	25,002,000
3,685	22,662,000	3,705	25,818,000
3,690	23,424,000	3,710	26,653,000
3,695	24,204,000		

RESERVOIR STORAGE, IN THOUSANDS OF ACRE FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23017	23061	22830	22603	22398	22225	22618	22829	24350	26192	26202	25690
2	23037	23047	22827	22581	22384	22232	22626	22868	24485	26209	26192	25662
3	23049	23040	22825	22564	22363	22238	22661	22904	24606	26231	26186	25628
4	23060	23032	22821	22546	22334	22247	22671	22929	24712	26226	26166	25598
5	23081	23014	22812	22534	22322	22268	22682	22953	24803	26217	26151	25565
6	23079	23002	22797	22518	22308	22280	22683	22979	24883	26217	26132	25541
7	23069	22994	22782	22506	22290	22286	22692	23026	24941	26232	26117	25503
8	23073	22986	22775	22507	22277	22299	22703	23066	25019	26258	26114	25480
9	23081	22983	22765	22512	22262	22307	22706	23099	25065	26271	26091	25444
10	23087	22971	22751	22509	22256	22319	22704	23131	25127	26299	26072	25416
11	23081	22958	22751	22519	22250	22334	22701	23179	25189	26328	26077	25394
12	23079	22944	22757	22510	22249	22350	22686	23236	25244	26346	26071	25364
13	23083	22951	22750	22497	22249	22368	22665	23280	25319	26365	26072	25337
14	23081	22942	22739	22494	22244	22378	22653	23326	25382	26373	26067	25302
15	23081	22938	22720	22492	22244	22386	22647	23377	25448	26366	26051	25273
16	23076	22933	22701	22491	22234	22405	22643	23408	25492	26358	26047	25237
17	23078	22926	22683	22491	22226	22423	22644	23446	25523	26345	26041	25202
18	23072	22909	22683	22485	22229	22446	22640	23476	25556	26333	26026	25179
19	23083	22912	22683	22479	22228	22465	22638	23494	25588	26314	25998	25158
20	23076	22909	22670	22465	22238	22494	22640	23516	25626	26303	25978	25103
21	23067	22912	22665	22452	22237	22512	22629	23556	25680	26303	25956	25067
22	23070	22912	22664	22434	22237	22533	22634	23576	25736	26296	25936	25033
23	23076	22915	22653	22429	22235	22531	22643	23609	25791	26281	25918	25001
24	23089	22904	22671	22419	22229	22549	22643	23632	25844	26281	25892	24973
25	23090	22900	22665	22405	22213	22555	22656	23671	25916	26271	25872	24943
26	23087	22892	22671	22405	22222	22566	22665	23722	25976	26258	25849	24912
27	23089	22882	22671	22402	22231	22584	22697	23791	26047	26271	25824	24880
28	23081	22871	22667	22399	22231	22594	22729	23878	26096	26268	25797	24858
29	23067	22854	22650	22407	---	22596	22756	23975	26131	26263	25773	24819
30	23060	22851	22628	22411	---	22605	22782	24096	26171	26242	25750	24817
31	23063	---	22622	22408	---	22603	---	24216	---	26224	25722	---
MAX	23090	23061	22830	22603	22398	22605	22782	24216	26171	26373	26202	25690
MIN	23017	22851	22622	22399	22213	22225	22618	22829	24350	26192	25722	24817
(*)	3687.65	3686.26	3684.74	3683.32	3682.13	3684.62	3685.80	3695.08	3707.13	3707.45	3704.42	3698.86
(**)	+58000	-212000	-229000	-214000	-177000	+372000	+179000	+1434000	+1955000	+53000	-502000	-905000

CAL YR 1982 MAX 23090 MIN 19353 ** +2503000
WTR YR 1983 MAX 26373 MIN 22213 ** +1812000

* Elevation, in feet, at end of month.

** Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

35

09380000 COLORADO RIVER AT LEES FERRY, AZ
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 36°51'53", long 111°35'15", in NE¼SE¼ sec.13, T.40 N., R.7 E., Coconino County, Hydrologic Unit 14070006, in Navajo Indian Reservation, on left bank at head of Marble Gorge at Lees Ferry, just upstream from Paria River, 16 mi downstream from Glen Canyon Dam, 28 mi downstream from Utah-Arizona State line, and 61.5 mi upstream from Little Colorado River.

DRAINAGE AREA.--111,800 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1895 to current year. Estimates of monthly and annual discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 859: 1921-23. WSP 1313: 1914-21.

GAGE.--Water-stage recorder. Datum of gage is 3,106.16 ft, National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1923, nonrecording gages or reference points within 400 ft of present gage, at different datums.

REMARKS.--Records excellent. Flow regulated since Mar. 13, 1963, by Lake Powell, 16 mi upstream. Many diversions above Lake Powell for irrigation, municipal, and industrial use. No diversions or inflow between Lake Powell and the gage.

AVERAGE DISCHARGE.--51 years (water years 1912-62), 17,850 ft³/s, 12,923,000 acre-ft/yr; 19 years (water years 1965-83), 12,800 ft³/s, 9,274,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1895-1962: Maximum discharge, 220,000 ft³/s June 18, 1921, gage height, 26.5 ft, from floodmarks, from rating curve extended above 120,000 ft³/s on basis of discharge computed for station near Grand Canyon; minimum, 750 ft³/s Dec. 27, 1924.
1963-83: Maximum discharge, 97,300 ft³/s June 29, 1983, gage height, 18.14 ft; minimum daily, 700 ft³/s Jan. 23, 24, 1963, result of closing coffer dam at Glen Canyon Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1868, about 300,000 ft³/s July 7, 1884, gage height, 31.5 ft, present site and datum, from floodmark at mouth of Paria River, from rating curve extended above 120,000 ft³/s on basis of discharge computed for flood of June 18, 1921, for station near Grand Canyon.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 97,300 ft³/s June 29, gage height, 18.14 ft; minimum daily, 5,110 ft³/s Mar. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8100	15900	18800	13800	17500	14400	9170	15400	22600	85600	39800	27100
2	6560	17700	17600	18500	21300	12900	7560	17600	27400	84100	36600	26900
3	7700	16900	13400	14600	22700	13200	5790	18400	32800	83100	36500	26800
4	9110	18300	15500	14600	22400	12800	8470	19200	36200	83500	36400	27000
5	8170	20500	16200	15000	20100	10500	11400	18600	39700	81500	36200	26900
6	11000	16600	19900	16200	19000	9180	12300	17200	43000	73900	36000	25700
7	13100	14900	20800	14400	20400	14500	10400	13200	47200	69000	35900	27200
8	12000	17500	19400	10600	19200	13700	10100	12200	47100	58600	34200	27300
9	10200	18400	18600	10600	17900	12200	10700	17700	48500	51500	35700	26800
10	8260	19200	18800	12500	17300	10000	16100	19300	48600	51400	33500	25600
11	14900	20800	13100	9540	16200	8880	17900	20100	48800	52900	29400	25200
12	13500	19700	10100	14600	13700	7680	21900	19700	48100	54800	26800	25600
13	14600	15400	16700	18000	9220	6310	22700	22400	48800	55200	26600	26300
14	14200	13400	17000	16800	14200	12200	21600	20200	51400	55200	26500	26600
15	15600	16000	20800	13500	14500	11400	18900	17000	52600	55500	26500	26400
16	16400	14200	20800	11900	16500	7500	17900	21100	59700	55600	26600	26000
17	12500	15500	22000	13200	16200	8310	16100	23500	58800	53900	26900	26500
18	16300	18800	14800	16300	14200	9500	17400	24000	60700	50800	26900	26500
19	12600	16100	13000	17200	8640	7600	18500	24000	61100	48000	26900	26400
20	14300	11800	17000	17000	8690	5110	17100	25100	60600	42500	26800	26700
21	17400	11300	15400	19300	12800	9410	18000	19500	60600	40200	26800	27300
22	13500	14100	15500	22900	12500	11800	19100	17600	63000	40000	26500	27400
23	11200	12300	16200	16700	13900	11900	17500	21500	69000	40700	26800	27000
24	8050	16100	15800	18800	14900	12600	15900	23900	67100	42800	26800	26500
25	12000	13400	8050	19500	16900	11800	18700	24300	67300	41000	25400	26900
26	12500	15600	7460	16500	8390	10700	19300	25400	67100	42600	26800	27700
27	18100	17500	10900	15700	8700	7220	19800	25100	67900	40300	26900	27300
28	18300	16300	13500	11200	15900	11300	19400	23500	86000	40200	27100	27300
29	17400	18900	16900	10600	---	12600	20500	22300	92600	41400	26800	27400
30	18000	18400	18000	7280	---	11700	19400	22100	86400	41500	26700	26700
31	13900	---	10200	13300	---	14100	---	23500	---	41500	27000	---
TOTAL	399450	491500	492210	460620	433840	333000	479590	634600	1670700	1698800	924300	801000
MEAN	12890	16380	15880	14860	15490	10740	15990	20470	55690	54800	29820	26700
MAX	18300	20800	22000	22900	22700	14500	22700	25400	92600	85600	39800	27700
MIN	6560	11300	7460	7280	8390	5110	5790	12200	22600	40000	25400	25200
AC-FT	792300	974900	976300	913600	860500	660500	951300	1259000	3314000	3370000	1833000	1589000
CAL YR 1982	TOTAL	4545870	MEAN	12450	MAX	22000	MIN	2910	AC-FT	9017000		
WTR YR 1983	TOTAL	8819610	MEAN	24160	MAX	92600	MIN	5110	AC-FT	17490000		

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to July 1926, October 1926 to June 1927, October 1928 to December 1933, November 1942 to October 1945, October 1947 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1981, February 1982 to current year.

WATER TEMPERATURE: July 1949 to September 1981, February 1982 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1928 to December 1933, November 1942 to September 1944, October 1947 to September 1965.

INSTRUMENTATION.--Specific conductance and water temperature recorder March 1977 to September 1981, February 1982 to current year.

REMARKS.--Unpublished daily specific conductance measurements for period November 1942 to October 1945, October 1947 to September 1964 available from district office in Tucson, Ariz.

Because of the permanent change in stream characteristics owing to the regulation of flow by Glen Canyon Dam since Mar. 13, 1963, and the subsequent initial filling of Lake Powell, extreme values for the period of daily record now include only those obtained after July 31, 1965, at which time a normal flow release pattern was begun.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (August 1965 to September 1981, February 1982 to current year): Maximum, 1,260 micromhos Apr. 20, 21, 1967; minimum, 460 micromhos Aug. 10, 1965.

WATER TEMPERATURES (August 1965 to September 1981, February 1982 to current year): Maximum, 21.0°C on several days during August, September, and October, 1965, 1967, 1968; minimum, 2.0°C on Jan. 29, 30, 1970.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 953 micromhos Feb. 14, 19; minimum, 741 micromhos Aug. 17.

WATER TEMPERATURE: Maximum, 13.5°C July 5, 6; minimum, 7.0°C Feb. 19, 20, Mar. 9, July 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 02...	1700	19900	870	7.6	13.5	9.0	.90	7.7	692	74	<1	--
JAN 06...	1400	20400	770	8.0	4.0	9.0	1.0	9.1	692	87	<1	--
MAR 02...	1300	17200	870	8.0	7.5	8.0	1.0	8.2	677	78	<1	<1
MAY 04...	1445	21400	830	8.2	21.5	9.0	.50	9.3	679	91	--	--
JUN 08...	1630	50000	885	8.1	22.5	9.5	1.8	11.4	680	112	--	--
SEP 01...	1115	28500	837	8.0	36.0	10.5	4.5	6.8	686	68	--	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV 02...	270	150	68	24	75	2	3.6	121	240	51	.30	7.7
JAN 06...	250	130	60	24	69	2	3.5	120	200	49	.30	7.3
MAR 02...	300	160	77	27	84	2	3.7	140	240	59	.30	8.1
MAY 04...	290	0	71	27	80	2	3.4	340	250	57	.30	7.9
JUN 08...	280	150	70	25	75	2	3.4	130	230	53	.30	7.6
SEP 01...	260	130	64	23	67	2	3.4	130	210	44	.30	7.3

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

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09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
NOV 02...	565	540	.77	.38	<.060	.70	.020	<.010	<.010	--	10
JAN 06...	518	490	.70	.25	.110	.60	.040	.030	<.010	--	--
MAR 02...	599	580	.81	.41	.110	.60	.010	.020	.020	.06	20
MAY 04...	592	700	.81	.40	.100	.50	.040	.040	.020	.06	20
JUN 08...	566	540	.77	.42	.110	.90	.030	.020	<.010	--	--
SEP 01...	508	500	.69	.32	.050	.40	.010	.010	.010	.03	<10

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 02...	2	94	<.5	<1	<1	<3	3	<3	1	39	2
JAN 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 02...	1	100	<.5	3	<1	<3	2	12	<1	39	8
MAY 04...	1	96	<.5	2	<1	<3	2	6	2	42	3
JUN 08...	--	--	--	--	--	--	--	--	--	--	--
SEP 01...	1	92	1.5	2	<1	<3	7	<3	5	42	3

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 02...	<.1	10	2	4	<1	860	<6	22	42	10	2260
JAN 06...	--	--	--	--	--	--	--	--	16	32	881
MAR 02...	<.1	<10	4	3	<1	910	<6	200	13	34	604
MAY 04...	1.0	<10	3	3	<1	850	<6	12	58	26	3350
JUN 08...	--	--	--	--	--	--	--	--	220	11	29700
SEP 01...	<.1	10	3	3	<1	770	<6	11	--	--	--

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEC. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	884	854	861	821	---	---	865	825	893	873
2	---	---	873	843	852	812	---	---	837	827	900	880
3	886	856	864	834	842	822	---	---	839	829	900	890
4	905	885	854	834	883	813	---	---	841	831	910	880
5	---	---	865	834	834	814	---	---	844	834	930	900
6	---	---	855	845	845	825	---	---	856	836	910	880
7	901	871	856	836	860	825	782	762	848	838	920	880
8	900	870	856	836	886	866	784	764	850	830	920	890
9	899	869	857	847	---	---	786	776	893	863	910	890
10	888	838	888	848	---	---	788	778	911	881	920	900
11	897	847	888	848	---	---	791	771	899	880	920	910
12	896	886	897	857	---	---	793	773	897	877	---	---
13	905	885	886	846	---	---	795	785	905	865	---	---
14	894	864	866	846	---	---	797	777	953	893	---	---
15	893	863	855	845	---	---	799	779	921	891	920	900
16	881	861	865	855	---	---	801	781	919	889	---	---
17	870	850	865	845	---	---	803	783	917	887	930	910
18	889	859	874	854	---	---	805	795	905	885	930	910
19	878	861	873	853	---	---	807	797	953	893	---	---
20	887	877	873	833	---	---	810	800	951	911	---	---
21	896	866	863	833	---	---	812	802	929	899	910	880
22	885	855	862	832	---	---	814	804	918	887	920	900
23	874	854	851	841	---	---	816	806	905	885	920	900
24	873	843	861	841	---	---	818	808	903	883	930	900
25	862	842	861	841	---	---	850	810	891	871	930	910
26	870	850	861	841	---	---	822	812	---	---	940	910
27	879	857	861	841	---	---	834	814	907	877	930	920
28	898	868	850	830	---	---	827	817	886	866	930	910
29	897	857	870	839	---	---	829	819	---	---	920	900
30	866	846	850	820	---	---	831	821	---	---	910	900
31	865	855	---	---	---	---	---	---	---	---	910	900
MONTH	905	838	897	820	886	812	850	762	953	825	940	873

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SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.5	8.5	9.0	8.5			---	---	8.5	8.0	8.0	7.5
2	---	---	9.0	8.5			---	---	8.5	8.0	8.0	7.5
3	10.0	9.0	9.0	8.5			---	---	8.0	8.0	8.5	8.0
4	10.0	9.0	9.5	8.5			---	---	8.5	8.0	8.0	7.5
5	10.0	9.0	9.0	9.0			---	---	8.5	8.0	8.0	8.0
6	9.5	7.5	9.0	8.5			---	---	8.5	8.0	8.5	8.0
7	9.5	8.5	9.5	9.0			9.0	9.0	8.5	8.0	8.0	8.0
8	9.5	9.0	9.0	9.0			9.0	8.5	8.5	8.0	8.0	8.0
9	9.5	8.5	9.0	9.0			9.0	8.5	8.0	7.5	8.5	7.0
10	10.0	9.0	9.0	9.0			9.0	8.5	8.0	7.5	8.5	7.5
11	10.0	9.0	9.0	8.5			9.0	8.0	8.0	7.5	8.5	8.0
12	10.0	9.0	9.0	8.5			9.0	8.5	8.0	7.5	8.5	8.0
13	9.5	9.0	9.5	9.0			9.0	8.5	8.0	7.5	8.5	8.0
14	9.5	9.0	9.5	9.0			9.0	8.5	8.0	7.5	8.5	8.0
15	9.5	9.0	9.5	9.0			9.0	8.5	8.0	7.5	8.5	8.0
16	9.5	9.0	9.5	9.0			9.0	8.5	8.0	7.5	8.5	8.0
17	9.5	9.0	9.5	9.5			9.0	8.5	8.0	7.5	8.5	8.0
18	9.5	9.0	10.0	9.5			9.0	8.5	8.0	7.5	8.0	7.5
19	9.0	8.5	10.0	9.5			9.0	8.5	7.5	7.0	8.5	8.0
20	9.0	8.5	10.0	9.0			8.5	8.5	8.0	7.0	---	---
21	9.5	8.5	10.0	9.5			8.5	8.5	8.0	7.5	8.5	8.0
22	9.5	9.0	10.0	9.5			8.5	8.0	8.0	7.5	8.5	8.0
23	9.5	9.0	10.0	9.5			9.0	8.5	8.0	7.5	8.5	8.0
24	9.0	9.0	---	---			8.5	8.5	8.0	7.5	8.5	8.0
25	9.5	9.0	---	---			8.5	8.0	8.0	7.5	8.5	8.0
26	9.0	9.0	---	---			8.5	8.0	8.0	7.5	8.5	8.0
27	9.0	8.5	---	---			8.5	8.0	8.0	7.5	8.5	8.0
28	9.0	8.5	---	---			8.5	8.0	8.0	7.5	8.5	8.0
29	9.0	8.5	---	---			8.5	8.0	---	---	8.5	8.0
30	9.5	9.0	---	---			8.5	8.0	---	---	8.5	8.0
31	9.5	9.0	---	---			8.5	8.0	---	---	8.5	8.0
MONTH	10.0	7.5	10.0	8.5			9.0	8.0	8.5	7.0	8.5	7.0

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

PARIA RIVER BASIN

09382000 PARIA RIVER AT LEES FERRY, AZ

LOCATION.--Lat 36°52'20", long 111°35'38", in NW¼NE¼ sec.13, T.40 N., R.7 E., Coconino County, Hydrologic Unit 14070007, on left bank 0.6 mi northwest of Lees Ferry, and 1.1 mi upstream from mouth.

DRAINAGE AREA.--1,410 mi².

PERIOD OF RECORD.--October 1923 to current year.

REVISED RECORDS.--WSP 1925: 1958(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,123.68 ft, National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1925, nonrecording gage at site 2,000 ft upstream at different datum. Oct. 13, 1925, to Sept. 11, 1929, nonrecording gage at present site and datum.

REMARKS.--Records fair. Diversions above station for irrigation of about 3,300 acres.

AVERAGE DISCHARGE.--60 years, 30.0 ft³/s, 21,740 acre-ft/yr; median of yearly mean discharges, 26 ft³/s, 18,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s Oct. 5, 1925, gage height, 16.3 ft, from floodmark, from rating curve extended above 2,000 ft³/s on basis of float-area measurement of peak flow; maximum gage height, 16.65 ft Sept. 9, 1980; minimum daily discharge, 1 ft³/s in most years prior to 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,950 ft³/s July 25, 1000 hours, gage height, 11.80 ft, base discharge, 1,400 ft³/s; minimum daily, 2.9 ft³/s July 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	25	183	15	35	100	83	50	20	3.6	206	10
2	26	20	42	15	30	76	51	40	15	3.3	25	9.6
3	20	19	26	15	32	86	49	29	15	3.3	12	9.3
4	15	19	24	15	34	229	52	26	15	3.2	12	8.0
5	12	20	25	21	38	121	39	29	15	3.2	112	8.3
6	15	19	28	25	35	66	38	28	15	3.5	69	8.0
7	12	19	33	29	35	76	36	27	15	3.6	123	10
8	12	21	38	46	50	69	34	25	15	5.1	50	9.6
9	15	23	45	50	109	68	33	24	14	5.7	55	11
10	15	36	49	43	74	69	30	23	14	4.0	61	12
11	12	31	51	30	54	75	34	21	14	4.5	35	11
12	12	29	46	28	50	86	37	22	13	3.5	39	10
13	12	23	46	30	48	74	40	21	14	3.1	54	10
14	12	23	42	30	53	74	36	20	16	3.2	48	9.9
15	12	22	33	34	52	138	33	26	16	3.1	41	11
16	12	21	30	37	53	66	28	22	15	2.9	40	11
17	12	23	35	43	54	38	27	20	13	3.1	44	10
18	12	24	36	50	55	49	31	20	10	3.1	183	139
19	12	24	38	50	57	59	40	20	10	3.2	221	45
20	12	38	32	45	57	50	41	20	8.0	3.6	35	20
21	12	28	32	40	44	58	46	20	7.0	3.9	30	17
22	12	25	36	36	48	76	42	20	6.3	4.4	25	16
23	12	20	121	32	53	64	40	20	6.6	4.7	21	110
24	12	20	80	39	56	81	43	20	6.8	6.2	17	205
25	12	20	25	40	59	85	47	20	7.3	623	16	61
26	35	20	20	41	63	66	47	20	7.1	87	18	25
27	35	20	20	40	62	67	42	20	5.9	104	17	22
28	30	20	25	40	75	67	36	20	4.6	42	16	22
29	30	25	20	40	---	62	35	20	4.2	13	14	23
30	25	32	20	40	---	61	39	20	3.7	12	12	96
31	25	---	15	35	---	75	---	20	---	109	10	---
TOTAL	570	709	1296	1074	1465	2431	1209	733	341.5	1081.0	1661	969.7
MEAN	18.4	23.6	41.8	34.6	52.3	78.4	40.3	23.6	11.4	34.9	53.6	32.3
MAX	68	38	183	50	109	229	83	50	20	623	221	205
MIN	12	19	15	15	30	38	27	20	3.7	2.9	10	8.0
AC-FT	1130	1410	2570	2130	2910	4820	2400	1450	677	2140	3290	1920

CAL YR 1982 TOTAL 9054.2 MEAN 24.8 MAX 359 MIN 3.1 AC-FT 17960
WTR YR 1983 TOTAL 13540.2 MEAN 37.1 MAX 623 MIN 2.9 AC-FT 26860

COLORADO RIVER MAIN STEM

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09383000 COLORADO RIVER AT COMPACT POINT, NEAR LEES FERRY, AZ

LOCATION.--Lat 36°51'05", long 111°36'21", in NE¼SE¼ sec.23, T.40 N., R.7 E., Coconino County, Hydrologic Units 14070006, 15010001, (see REMARKS), 1.0 mi downstream from Paria River, 1.4 mi downstream from gage on Colorado River at Lees Ferry, and 29 mi downstream from Utah-Arizona State line.

DRAINAGE AREA.--112,000 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--October 1913 to current year (monthly discharge only). Prior to October 1950, published in WSP 1313.

DETERMINATION OF DISCHARGE.--There is no gage. Monthly and yearly discharge computed as the sum of flow at stations on Colorado River and Paria River at Lees Ferry.

REMARKS.--This point on the Colorado River is the dividing point between the Upper Basin and Lower Basin, as defined in the Colorado River Compact of 1922. Flow substantially regulated by Lake Powell beginning Mar. 13, 1963. (See elsewhere in this report.)

AVERAGE DISCHARGE.--49 years (water years 1914-62), 17,760 ft³/s, 12,870,000 acre-ft/yr; 19 years (water years 1965-83), 12,830 ft³/s, 9,295,000 acre-ft/yr.

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Mean	Runoff in acre-feet
October	12,900	793,400
November	16,410	976,300
December	15,920	978,900
CAL YR 1982	12,480	9,035,000
January	14,890	915,800
February	15,550	863,400
March	10,820	665,300
April	16,030	953,700
May	20,490	1,260,000
June	55,700	3,315,000
July	54,830	3,372,000
August	29,870	1,837,000
September	26,730	1,591,000
WTR YR 1983	24,200	17,520,000

NOTE.--Record shown is sum of flow at stations on Colorado River and Paria River at Lees Ferry.

LITTLE COLORADO RIVER BASIN

09383400 LITTLE COLORADO RIVER AT GREER, AZ

WATER-QUALITY RECORDS

PERIOD OF RECORD---January 1976 to September 1979, October 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 20...	1130	3.7	80	6.9	--	6.5	9.0	570	98	17	K2
NOV 16...	1630	2.5	85	7.2	--	5.0	9.1	565	96	13	K4
DEC 15...	0915	3.9	24	7.3	--	5.5	10.5	--	--	10	K4
JAN 17...	1700	5.2	80	7.3	--	2.5	9.6	--	--	<10	K13
FEB 23...	0800	2.5	38	7.4	--	.0	10.4	--	--	<10	K1
MAR 16...	0950	9.0	75	7.2		1.0	10.4			16	<1
APR 18...	1800	1.5	85	7.3	6.0	8.5	8.6	564	100	18	K2
MAY 25...	0845	58	55	6.8	20.5	6.0	9.2	569	99	14	K11
JUN 29...	1630	30	43	5.8	21.0	16.5	7.1	567	98	11	--
JUL 27...	1000	13	71	6.8	18.5	14.5	7.3	572	96	16	83
AUG 23...	0900	12	70	7.3	22.5	9.5	8.3	572	97	13	23
SEP 13...	1645	11	115	7.1	18.5	16.0	7.6	572	103	20	33

DATE	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CaCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)
OCT 20...	29	0	7.4	2.5	--	--	--	33	<5.0	--
NOV 16...	30	0	7.5	2.7	4.6	.4	2.0	41	5.0	1.4
DEC 15...	37	0	9.7	3.1	--	--	--	49	5.0	--
JAN 17...	31	0	8.1	2.7	--	--	--	43	5.0	--
FEB 23...	36	0	9.2	3.1	5.1	.4	1.8	47	6.0	1.0
MAR 16...	36	0	8.8	3.3	--	--	--	45	10	--
APR 18...	32	3	8.2	2.9	--	--	--	29	11	--
MAY 25...	17	0	4.3	1.4	2.6	.3	1.5	18	9.0	1.3
JUN 29...	15	0	3.9	1.3	--	--	--	18	6.0	--
JUL 27...	25	22	6.4	2.1	--	--	--	3	<5.0	--
AUG 23...	24	0	6.1	2.2	3.8	.3	1.8	35	4.4	1.1
SEP 13...	24	0	6.1	2.1	--	--	--	32	<5.0	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

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09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT										
20...	--	--	64	--	.09	<1	<.10	--	.50	.040
NOV										
16...	<.10	29	79	77	.11	5	<.10	<.10	.70	.040
DEC										
15...	--	--	92	--	.13	1	<.10	--	.20	.060
JAN										
17...	--	--	86	--	.12	4	<.10	--	.40	.050
FEB										
23...	.10	30	87	85	.12	15	<.10	.13	.40	.040
MAR										
16...	--	--	84	--	.11	1	.10	--	.70	.070
APR										
18...	--	--	75	--	.10	56	<.10	--	18	.170
MAY										
25...	<.10	17	50	48	.07	1	.10	<.10	1.1	.050
JUN										
29...	--	--	44	--	.06	6	<.10	--	.80	.060
JUL										
27...	--	--	38	--	.05	11	<.10	--	.70	.060
AUG										
23...	<.10	26	63	67	.09	<1	<.10	<.10	.30	.060
SEP										
13...	--	--	61	--	.08	24	<.10	--	.70	.060

DATE	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT										
20...	.12	--	--	--	1	--	1	--	6	.06
NOV										
16...	.12	.020	.06	<10	<1	290	<1	45	11	.07
DEC										
15...	.18	--	--	--	<1	--	2	--	41	.43
JAN										
17...	.15	--	--	--	<1	--	<1	--	6	.08
FEB										
23...	.12	.020	.06	<10	1	250	<1	59	5	.03
MAR										
16...	.21	--	--	--	1	--	<1	--	16	.02
APR										
18...	.52	--	--	--	<1	--	--	--	59	.24
MAY										
25...	.15	.020	.06	<10	--	190	2	16	17	2.7
JUN										
29...	.18	--	--	--	<1	--	1	--	11	.89
JUL										
27...	.18	--	--	--	<2	--	<1	--	773	27
AUG										
23...	.18	.020	.06	<10	<1	180	<1	17	52	1.7
SEP										
13...	.18	--	--	--	<1	--	1	--	7	.21

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°18'52", long 109°21'42", in SW¼SE¼ sec.27, T.11 N., R.28 E., Apache County, Hydrologic Unit 15020001, on left bank 0.75 mi downstream from Coyote Creek, 6 mi upstream from Lyman Dam, and 15 mi south of St. Johns. Prior to Dec. 7, 1976, at site 0.4 mi downstream.

DRAINAGE AREA.--747 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1940 to current year. Prior to October 1975 published as "above Lyman Reservoir."

GAGE.--Water-stage recorder and crest-stage gage. Altitude of gage is 6,010 ft, from topographic map. Prior to December 7, 1976, water-stage recorder at site 0.4 mi downstream at datum approximately 20 ft lower, reactivated March 21, 1980. See WSP 1313 for history of changes prior to 1950.

REMARKS.--Records good. Flow regulated by many small reservoirs - combined capacity, about 15,500 acre-ft. Diversions for irrigation of about 6,700 acres above station.

AVERAGE DISCHARGE.--43 years, 22.2 ft³/s, 16,080 acre-ft/yr; median of yearly mean discharges, 15 ft³/s, 10,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s July 25, 1940, gage height, 17.1 ft, datum then in use, from floodmarks, by slope-area measurement of peak flow and reservoir inflow studies; maximum gage height, 18.6 ft, Sept. 12, 1975, at previous site (from graph recorded to 18.4 ft; no flow at times).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 930 ft³/s on basis of slope-area measurement at gage height 6.90 ft) and peak discharges above base of 400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	1100	567	4.53	Aug. 3	1930	*1,340	5.76
July 26	0300	510	4.40				

Minimum daily, 1.4 ft³/s Oct. 4, 6-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	3.0	5.4	14	17	13	104	399	46	19	38	25
2	1.6	3.1	5.1	12	15	14	102	316	45	20	95	19
3	1.5	2.9	5.1	11	15	16	100	255	40	20	195	17
4	1.4	3.0	5.2	12	14	17	81	274	32	19	126	14
5	1.5	2.9	5.7	13	16	16	62	311	31	14	43	13
6	1.4	2.6	5.7	13	16	15	58	257	37	15	33	14
7	1.4	2.9	6.1	12	14	15	54	232	37	15	25	13
8	1.4	3.3	7.2	11	15	15	44	234	34	17	22	14
9	1.4	2.9	7.7	10	14	14	41	236	31	18	22	13
10	1.5	3.2	9.0	12	14	16	40	202	28	17	21	17
11	1.5	3.9	11	11	13	18	39	164	30	15	30	13
12	1.5	3.6	8.8	13	12	23	41	125	30	15	145	12
13	1.6	3.3	7.4	14	12	36	39	103	31	15	28	12
14	1.7	3.2	6.3	13	13	42	38	83	31	15	28	10
15	1.7	3.3	5.9	14	13	49	36	68	32	15	42	10
16	1.8	4.1	6.8	15	13	46	36	59	28	15	49	10
17	1.9	4.5	9.8	15	13	40	39	49	31	15	31	12
18	1.9	4.8	10	17	12	38	53	45	36	15	22	11
19	2.2	4.2	9.6	16	12	116	83	40	36	15	16	11
20	2.3	4.4	10	15	12	122	128	40	33	30	16	13
21	2.6	4.2	9.8	13	12	116	147	35	33	40	17	14
22	2.4	4.2	10	13	11	116	127	35	35	30	16	10
23	2.4	4.2	11	13	12	118	137	30	33	50	16	6.1
24	2.2	4.6	10	14	12	113	214	25	36	30	19	6.1
25	2.1	4.8	10	16	12	67	386	25	32	30	16	10
26	2.4	4.8	10	15	13	61	484	23	28	131	13	11
27	2.2	4.9	11	14	13	61	484	21	27	62	13	15
28	2.5	4.6	12	15	13	59	488	23	28	38	24	19
29	2.5	4.5	9.4	14	---	73	466	24	24	28	35	41
30	2.3	4.5	10	16	---	83	432	44	20	27	30	140
31	2.5	---	16	17	---	96	---	50	---	41	33	---
TOTAL	58.9	114.4	267.0	423	373	1644	4583	3827	975	846	1259	545.2
MEAN	1.90	3.81	8.61	13.6	13.3	53.0	153	123	32.5	27.3	40.6	18.2
MAX	2.6	4.9	16	17	17	122	488	399	46	131	195	140
MIN	1.4	2.6	5.1	10	11	13	36	21	20	14	13	6.1
AC-FT	117	227	530	839	740	3260	9090	7590	1930	1680	2500	1080
CAL YR 1982	TOTAL	4014.6	MEAN	11.0	MAX	189	MIN	1.0	AC-FT	7960		
WTR YR 1983	TOTAL	14915.5	MEAN	40.9	MAX	488	MIN	1.4	AC-FT	29580		

LITTLE COLORADO RIVER BASIN

47

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 21...	0830	2.5	695	8.4	6.5	6.5	10.0	622	100	<10	K380
NOV 17...	1030	4.8	678	8.5	7.5	8.0	9.7	615	102	19	80
DEC 15...	1315	6.1	580	8.8	7.5	3.0	--	--	--	21	K5
JAN 18...	1030	18	385	7.9	2.5	3.0	10.4	--	--	18	3
FEB 23...	1200	11	425	8.4	13.5	9.0	--	--	--	10	<1
MAR 16...	1700	47	--	8.1	9.0	10.5	9.2	613	103	40	230
APR 19...	1000	87	208	8.1	7.0	10.5	9.0	615	99	40	460
MAY 25...	1345	25	358	8.2	26.5	19.5	7.6	616	104	18	27
JUN 30...	1230	22	292	--	33.0	25.0	6.9	614	105	20	150
JUL 26...	1115	68	244	7.9	26.0	19.5	6.8	622	91	170	39000
AUG 23...	1400	16	370	8.3	31.5	25.0	6.7	620	101	28	K62
SEP 14...	1000	11	470	8.1	23.0	16.5	7.5	620	95	21	190

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 21...	270	0	57	32	--	--	--	310	32	--	--
NOV 17...	270	0	57	30	56	2	3.7	320	35	20	.40
DEC 15...	230	0	52	25	--	--	--	300	23	--	--
JAN 18...	160	0	36	16	--	--	--	200	13	--	--
FEB 23...	160	0	38	16	31	1	2.1	200	21	11	.30
MAR 16...	110	0	27	11	--	--	--	140	12	--	--
APR 19...	96	4	24	8.7	--	--	--	92	14	--	--
MAY 25...	140	0	33	13	22	.8	2.6	160	16	9.3	.20
JUN 30...	130	0	31	12	--	--	--	--	11	--	--
JUL 26...	83	0	20	8.0	--	--	--	110	12	--	--
AUG 23...	150	0	35	16	30	1	2.8	200	11	10	.30
SEP 14...	160	0	38	16	--	--	--	180	11	--	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 21...	--	386	--	.53	22	<.10	--	1.1	.050	.15	--
NOV 17...	23	417	420	.57	18	<.10	<.10	.70	.070	.21	.040
DEC 15...	--	344	--	.47	24	<.10	--	.40	.170	.52	--
JAN 18...	--	226	--	.31	71	<.10	--	.70	.140	.43	--
FEB 23...	22	251	260	.34	51	<.10	<.10	1.8	.150	.46	.070
MAR 16...	--	--	--	--	234	<.10	--	1.7	.420	1.3	--
APR 19...	--	142	--	.19	400	<.10	--	1.3	.390	1.2	--
MAY 25...	22	223	210	.30	26	.10	<.10	1.1	.140	.43	.080
JUN 30...	--	179	--	.24	26	<.10	--	.90	.110	.34	--
JUL 26...	--	164	--	.22	2290	.50	--	12	2.20	6.7	--
AUG 23...	22	236	250	.32	37	<.10	<.10	.80	.200	.61	.090
SEP 14...	--	233	--	.32	82	<.10	--	.70	.150	.46	--

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS TOTAL (UG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 21...	--	--	<1	--	<1	--	--	--	--	--
NOV 17...	.12	70	<1	32	1	37	4.5	2	51	.66
DEC 15...	--	--	1	--	2	--	--	--	34	.56
JAN 18...	--	--	<1	--	<1	--	--	--	91	4.4
FEB 23...	.21	30	1	96	<1	16	3.3	5	58	1.8
MAR 16...	--	--	<1	--	<1	--	--	--	598	76
APR 19...	--	--	<1	--	<1	--	--	--	562	132
MAY 25...	.25	30	<1	44	<1	23	5.2	3	48	3.2
JUN 30...	--	--	<1	--	2	--	--	--	29	1.7
JUL 26...	--	--	<1	--	1	--	--	--	2050	376
AUG 23...	.28	50	<1	27	<1	6	--	14	58	2.5
SEP 14...	--	--	2	--	<1	--	--	--	69	2.0

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

49

09386030 LITTLE COLORADO RIVER ABOVE ZION RESERVOIR, NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°35'01", long 109°24'23", in SE¼SE¼ sec.30, T.14 N., R.28 E., Apache County, Hydrologic Unit 15020002, on downstream side of center pier of bridge on private road, 1.5 mi upstream from Carrizo Creek, 4 mi upstream from Zion Reservoir, and 5.8 mi northwest of St. Johns.

DRAINAGE AREA.--975 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,560 ft, from topographic map.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. Diversions above station for irrigation of about 10,200 acres, including 1,500 acres served by Lyman Canal. Regulation by many reservoirs above station (combined capacity, 46,900 acre-ft), the largest of which is Lyman Lake.

AVERAGE DISCHARGE.--8 years, 8.86 ft³/s, 6,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 582 ft³/s Aug. 4, 1983, gage height, 3.66 ft; minimum daily, 0.04 ft³/s Aug. 2, Sept. 7, Oct. 16-20, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 582 ft³/s Aug. 4, gage height, 3.66 ft; minimum daily, 0.13 ft³/s June 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	7.3	12	21	16	10	6.7	3.4	.74	.14	11	2.0
2	4.2	6.5	11	15	14	10	6.2	5.1	.60	.18	9.2	2.1
3	4.2	6.5	11	14	13	12	6.4	5.1	.60	.43	18	2.3
4	4.5	3.9	12	13	12	11	8.0	5.1	.60	.48	197	2.9
5	4.8	4.5	12	12	12	9.9	9.3	4.8	.60	.63	41	2.9
6	4.2	5.4	11	11	11	10	9.1	3.1	.60	1.9	21	2.7
7	5.1	5.8	11	10	11	11	10	.62	.60	3.0	13	2.0
8	6.8	6.1	13	10	10	11	10	.62	.60	.96	12	3.9
9	5.1	6.5	15	10	10	9.7	10	2.2	.60	2.8	11	4.9
10	5.1	6.2	22	10	10	10	10	2.9	.60	2.9	10	5.1
11	6.1	6.7	30	10	9.0	9.9	10	1.1	.60	1.5	9.2	3.4
12	6.8	6.2	17	10	9.0	11	10	.74	.60	.93	8.8	3.2
13	7.2	6.0	13	10	9.0	14	13	.74	.60	.68	8.8	2.8
14	9.6	5.8	12	10	9.0	12	12	2.0	.60	.21	8.4	1.9
15	8.4	5.8	11	14	9.0	11	10	2.9	.60	.23	8.4	3.2
16	7.6	6.3	11	14	9.0	10	10	2.7	.60	.30	8.0	3.2
17	5.8	11	11	14	9.0	8.4	9.0	3.9	.60	.42	11	3.4
18	5.8	13	11	14	9.0	8.9	9.0	3.9	.60	.30	58	3.9
19	6.1	12	11	13	9.0	11	8.8	3.7	.60	1.5	15	2.8
20	5.4	11	10	13	9.0	11	8.4	7.2	.60	3.3	11	2.2
21	5.8	9.6	10	13	9.0	9.2	5.8	5.4	.60	.55	6.0	2.0
22	5.3	9.3	11	12	8.5	9.3	6.5	2.7	.60	.53	4.2	1.9
23	6.4	9.6	13	11	8.6	9.7	6.8	.69	13	.62	4.4	1.8
24	6.9	10	16	11	8.8	11	4.8	1.7	10	.59	5.4	2.1
25	5.6	11	16	10	8.2	14	4.5	2.7	7.0	.35	7.9	2.3
26	4.5	10	14	10	10	15	4.5	1.3	4.0	12	3.9	2.6
27	.94	10	14	10	10	13	5.4	1.8	2.0	69	3.8	7.2
28	.87	10	14	10	11	12	5.1	1.6	1.0	80	4.2	4.9
29	2.1	10	15	10	---	11	5.8	1.8	.21	26	4.3	6.5
30	3.5	9.6	15	10	---	9.3	4.8	2.9	.13	18	3.9	26
31	4.3	---	17	18	---	7.0	---	3.1	---	15	2.5	---
TOTAL	163.81	241.6	422	373	283.1	332.3	239.9	87.51	50.68	245.43	540.3	118.1
MEAN	5.28	8.05	13.6	12.0	10.1	10.7	8.00	2.82	1.69	7.92	17.4	3.94
MAX	9.6	13	30	21	16	15	13	7.2	13	80	197	26
MIN	.87	3.9	10	10	8.2	7.0	4.5	.62	.13	.14	2.5	1.8
AC-FT	325	479	837	740	562	659	476	174	101	487	1070	234

CAL YR 1982 TOTAL 3126.20 MEAN 8.56 MAX 191 MIN .09 AC-FT 6200
WTR YR 1983 TOTAL 3097.73 MEAN 8.49 MAX 197 MIN .13 AC-FT 6140

NOTE.--No gage-height record Jan. 22 to Feb. 22.

LITTLE COLORADO RIVER BASIN

09386030 LITTLE COLORADO RIVER ABOVE ZION RESERVOIR, NEAR ST. JOHNS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT 21...	1230	5.6	3050	8.6	11.0	670	390	160	66	400	7	19
APR 06...	1700	9.2	3040	8.7	7.5	800	430	190	78	410	7	19

DATE	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 21...	280	710	400	2.0	18	1900	2.6	.38	.320	780	30
APR 06...	370	750	420	2.1	18	2100	2.9	<.10	.020	760	110

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

51

09386950 ZUNI RIVER ABOVE BLACK ROCK RESERVOIR, NM

LOCATION.--Lat 35°06'03", long 108°45'03", in NE¼ sec.17, T.10 N., R.18 W., McKinley County, Hydrologic Unit 15020004, on Zuni Indian Reservation, on left bank downstream from highway bridge on State Highway 36, 0.8 mi upstream from flow line of Black Rock Reservoir, 2.3 mi northeast of Black Rock, and 5.9 mi northeast of Zuni Pueblo.

DRAINAGE AREA.--810 mi², approximately.

PERIOD OF RECORD.--October 1969 to current year. Prior to October 1974 published as "above Zuni Reservoir."

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,480 ft, from topographic map.

REMARKS.--Water-discharge records good except those for winter periods, which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years, 14.1 ft³/s, 10,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s Aug. 4, 1974, gage height, 6.61 ft, from rating curve extended above 670 ft³/s on basis of slope-area measurements at gage heights, 4.05 ft, 3.94 ft, 5.16 ft, and 6.61 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 150 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 15	1300	378	4.26	Aug. 3	2045	180	3.78
Apr. 1	1630	1,220	4.95	Aug. 13	1500	432	4.19
Apr. 20	1500	486	4.38	Aug. 18	0130	*2,560	5.66
Aug. 2	2100	170	3.73				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.96	3.3	.60	4.1	4.0	840	52.0	.49	.0	3.00	5.90
2	.00	.90	3.0	.60	2.5	3.6	1000	47.0	.22	.0	7.00	5.40
3	.00	.90	3.0	.60	2.9	9.0	739	42.0	.14	.0	67.00	3.90
4	.00	.90	3.0	.65	3.2	27.0	605	22.0	.10	.0	24.00	2.30
5	.00	1.60	3.0	.70	3.1	67.0	410	18.0	.08	.0	7.20	1.20
6	.00	2.20	3.2	.70	3.1	80.0	277	11.0	.07	.0	5.00	.72
7	.00	1.30	3.5	.80	3.4	83.0	207	9.6	.05	.0	1.20	.70
8	.00	1.20	2.2	.85	6.6	84.0	156	9.0	.06	.0	5.10	.72
9	.00	1.70	2.0	.90	8.6	71.0	122	6.0	.04	.0	6.00	.27
10	.00	1.90	3.2	1.00	28.0	78.0	95	5.4	.02	.0	5.70	.05
11	.00	2.20	4.6	1.20	30.0	87.0	84	4.6	.01	.0	5.10	.00
12	.00	3.00	5.0	1.40	17.0	100.0	117	4.0	.00	.0	5.00	.00
13	.01	2.80	5.0	1.70	16.0	155.0	137	3.4	.00	.0	16.00	.00
14	.16	2.80	4.5	2.00	7.2	269.0	126	2.8	.00	.0	13.00	.00
15	.17	2.20	4.5	2.40	12.0	334.0	114	2.6	.00	.0	3.60	.00
16	.10	2.60	3.2	2.90	8.5	299.0	99	2.2	.00	.0	1.40	.00
17	.06	1.80	5.6	7.10	7.1	234.0	97	1.9	.00	.0	.86	.00
18	.03	2.80	4.4	17.00	5.4	203.0	168	1.8	.00	.0	91.00	.00
19	.09	3.00	4.1	12.00	4.3	189.0	343	1.8	.00	.0	21.00	.00
20	.42	2.60	3.0	5.80	11.0	157.0	458	1.8	.00	.0	6.00	.00
21	.63	2.20	3.5	3.00	6.0	143.0	375	2.0	.00	.0	2.30	.00
22	.67	2.00	2.2	2.00	3.2	137.0	288	2.6	.00	.0	1.60	.00
23	.71	1.80	2.9	2.50	3.2	147.0	240	2.2	.00	.0	1.30	.00
24	.87	1.80	2.4	2.50	3.5	141.0	207	1.8	.00	.0	1.10	.00
25	.77	2.60	2.0	2.50	3.6	142.0	171	1.4	.00	4.1	1.10	.00
26	.97	2.80	1.6	2.70	4.0	141.0	147	1.3	.00	5.0	.83	.00
27	1.10	2.20	1.3	3.20	4.3	127.0	124	1.1	.00	23.0	.74	.00
28	1.10	2.00	1.0	3.50	4.0	115.0	92	1.4	.00	11.0	.68	.00
29	1.10	2.00	.8	3.80	---	110.0	72	3.2	.00	6.7	.72	.00
30	1.00	2.10	.5	6.10	---	145.0	56	2.2	.00	1.7	.46	1.30
31	.96	---	.5	4.90	---	279.0	---	1.6	---	2.3	5.00	---
TOTAL	10.92	60.86	92.0	97.60	215.8	4160.6	7966	269.7	1.28	53.8	309.99	22.46
MEAN	.35	2.03	2.97	3.15	7.71	134	266	8.70	.043	1.74	10.0	.75
MAX	1.1	3.0	5.6	17	30	334	1000	52	.49	23	91	5.9
MIN	.00	.90	.50	.60	2.5	3.6	56	1.1	.00	.00	.46	.00
AC-FT	22	121	182	194	428	8250	15800	535	2.5	107	615	45
CAL YR 1982	TOTAL	2337.98	MEAN	6.41	MAX	371	MIN	.00	AC-FT	4640		
WTR YR 1983	TOTAL	13261.01	MEAN	36.3	MAX	1000	MIN	.00	AC-FT	26300		

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ

LOCATION.--Lat 34°10'46", long 109°59'14", in SW¼NW¼ sec.14, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on left bank 1 mi upstream from pumping plant on Show Low Lake, 1.9 mi northwest of Lakeside, 2.2 mi upstream from Jaques Dam, and 6 mi southeast of Show Low.

DRAINAGE AREA.--68.6 mi².

PERIOD OF RECORD.--May 1953 to current year.

REVISED RECORDS.--WSP 1513: 1954-56. WSP 1926: Drainage area. WRD Ariz. 1971: 1970(M).

GAGE.--Water-stage recorder and concrete-dam control with V-notch sharp-crested weir. Altitude of gage is 6,610 ft, from topographic map.

REMARKS.--Records good. Record shows inflow to Show Low Lake. Flow partly regulated by several small reservoirs, largest of which are Rainbow Lake and Scott Reservoir, combined capacity, 2,400 acre-ft. Diversions for irrigation of about 250 acres above station.

AVERAGE DISCHARGE.--30 years, 13.6 ft³/s, 9,850 acre-ft/yr; median of yearly mean discharges, 8.9 ft³/s, 6,450 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,550 ft³/s Dec. 18, 1978, gage height, 9.16 ft, from rating curve extended above 2,500 ft³/s; maximum gage height, 9.53 ft Dec. 26, 1971; no flow Oct. 5, 6, Dec. 10-19, 1964, Jan. 4-15, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	2045	321	3.62	Mar. 3	2315	196	3.32
Feb. 25	0330	126	3.10	Mar. 30	2345	*442	3.88

Minimum, 1.6 ft³/s Oct. 9-10, gage height, 0.83 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.7	20	7.2	58	58	167	9.9	4.3	8.2	5.4	6.2
2	2.1	3.6	20	6.9	41	84	84	8.7	4.0	8.2	5.7	6.4
3	2.0	3.9	13	7.0	35	112	63	8.1	4.2	8.4	5.9	5.9
4	2.0	4.2	8.2	6.3	32	148	50	8.4	4.3	8.4	5.5	5.5
5	2.0	4.4	6.5	5.5	25	123	45	7.9	3.8	8.6	5.1	5.4
6	1.9	4.2	6.0	5.0	21	120	40	7.7	3.4	9.3	4.9	5.5
7	1.8	4.1	5.9	4.7	26	98	37	7.0	3.4	9.7	4.8	5.5
8	1.7	4.0	6.5	4.5	41	78	31	6.8	3.1	9.3	5.0	5.2
9	1.6	7.9	11	4.4	47	66	26	6.9	3.3	9.4	5.8	5.0
10	1.6	6.5	67	4.2	45	62	25	6.9	7.6	9.0	6.1	5.0
11	2.0	6.1	69	4.2	41	64	28	6.5	7.7	8.4	6.4	5.0
12	2.8	3.7	51	4.0	39	63	31	5.9	7.7	8.4	5.2	6.2
13	2.8	2.4	36	4.0	45	54	26	5.8	7.7	8.5	4.9	6.8
14	2.6	1.9	27	4.0	55	48	22	5.5	7.8	8.1	5.0	5.6
15	2.7	1.9	16	4.0	49	52	28	5.2	9.1	7.8	5.1	5.4
16	2.6	1.9	12	4.0	50	48	33	5.3	8.7	7.5	6.6	5.4
17	2.4	2.2	9.0	65	53	38	33	5.1	10	7.7	8.0	5.1
18	2.3	4.1	7.8	35	57	40	34	5.1	9.5	8.1	5.5	4.7
19	2.2	5.1	6.6	30	65	58	35	5.0	8.9	11	4.6	4.8
20	2.1	5.5	5.5	35	54	81	35	5.3	8.9	13	4.8	5.6
21	1.9	3.8	4.8	28	49	116	37	5.5	8.9	11	5.2	5.2
22	1.7	2.7	4.8	21	52	125	42	5.4	9.1	11	6.0	5.1
23	1.6	2.4	130	18	61	103	41	5.7	9.2	9.0	6.1	5.3
24	1.6	2.1	115	17	78	132	32	6.0	9.2	8.8	4.4	6.1
25	2.5	2.0	55	16	103	165	20	5.6	9.4	9.8	8.0	5.6
26	4.5	2.0	38	16	81	103	17	5.0	9.1	11	7.7	5.3
27	4.4	2.0	24	16	65	106	14	4.8	8.4	8.1	6.9	5.9
28	3.9	1.9	16	18	70	186	12	4.3	8.2	7.6	7.0	7.6
29	3.8	1.9	11	19	---	253	11	4.9	8.5	7.3	7.2	13
30	3.9	4.6	8.9	20	---	254	11	4.9	8.5	7.1	7.7	36
31	3.8	---	7.8	85	---	229	---	4.6	---	5.7	6.9	---
TOTAL	76.9	106.7	819.3	518.9	1438	3267	1110	189.7	215.9	273.4	183.4	205.3
MEAN	2.48	3.56	26.4	16.7	51.4	105	37.0	6.12	7.20	8.82	5.92	6.84
MAX	4.5	7.9	130	85	103	254	167	9.9	10	13	8.0	36
MIN	1.6	1.9	4.8	4.0	21	38	11	4.3	3.1	5.7	4.4	4.7
AC-FT	153	212	1630	1030	2850	6480	2200	376	428	542	364	407

CAL YR 1982 TOTAL 4211.8 MEAN 11.5 MAX 405 MIN 1.6 AC-FT 8350
WTR YR 1983 TOTAL 8404.5 MEAN 23.0 MAX 254 MIN 1.6 AC-FT 16670

LITTLE COLORADO RIVER BASIN

09392000 SHOW LOW CREEK BELOW JAKUES DAM, NEAR SHOW LOW, AZ

LOCATION.--Lat 34°11'47", long 110°00'13", in NW¼ sec.10, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on right bank just downstream from Jaques Dam, 3.5 mi northwest of Lakeside, and 4.5 mi southeast of Show Low.

DRAINAGE AREA.--73.0 mi².

PERIOD OF RECORD.--November 1941 to January 1945, June 1953 to September 1955 (monthly discharge only), October 1955 to current year. Monthly discharge only November 1941 to January 1945, published in WSP 1313. Published as "at Jaques damsite, near Lakeside" 1941-45.

REVISED RECORDS.--WSP 1926: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir, with periodic supplementary lake elevation readings for flow over concrete spillway. Altitude of gage is 6,530 ft, from topographic map. November 1941 to January 1945 nonrecording gage at site 100 ft upstream at different datum.

REMARKS.--Records good. Record since 1953 shows release from Show Low Lake. Flow regulated by several reservoirs, largest of which are Show Low Lake, completed in 1953; Rainbow Lake, completed prior to 1941; and Scott Reservoir, completed in 1946 (combined capacity, 8,800 acre-ft). Diversions for irrigation of about 250 acres above Show Low Lake and diversion by pumping of floodwater stored in Show Low Lake to Forestdale Creek in Salt River basin (see record for Forestdale Creek diversion from Show Low Creek, near Show Low, elsewhere in this report).

AVERAGE DISCHARGE.--30 years (water years 1954-83), 7.85 ft³/s, 5,690 acre-ft/yr; median of yearly mean discharges, 3.1 ft³/s, 2,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,410 ft³/s, spillway flow entering 0.2 mi downstream from station, Dec. 18, 1978, lake elevation, 6,573.7 ft from rating curve extended above 270 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 18, 1952, discharge, 6,250 ft³/s at site 5 mi downstream at Show Low, is the largest since at least 1940.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 236 ft³/s Mar. 29-30, lake elevation, 6,570.6; minimum daily, 0.19 ft³/s Nov. 17 to Dec. 21.

09391000. SHOW LOW LAKE.--A lake on Show Low Creek, formed by Jaques Dam, in NW¼ sec.10, T.9 N., R.22 W., Navajo County, 4.5 mi southeast of Show Low; dam completed and storage began in spring of 1953. Total capacity to spillway, 6,176 acre-ft, consisting of 1,070 acre-ft dead storage below elevation 6,535.0 ft, sill of outlet structure, and 5,106 acre-ft usable storage between elevation 6,535.0 and 6,570.0 ft, sill of overflow spillway. Capacity table prepared by Leeds, Hill, and Jewett, consulting engineers, from surveys by the firm. Water cannot be pumped when lake elevation is below 6,538.5 ft, sill of intake to pumping plant, but can be released to river channel down to elevation 6,535.0 ft. Partial listing of periodic observations made by Navapache Electric Co. and Geological Survey were as follows:

Date	Elevation (feet)	Usable contents (acre-feet)	Date	Elevation (feet)	Usable contents (acre-feet)
Oct. 1, 1982	6,550.1	2,840	May 2, 1983	6,570.0	6,180
Oct. 15	6,548.8	2,660	May 25	6,569.5	6,080
Nov. 1	6,548.5	2,620	June 1	6,567.6	5,720
Nov. 15	6,545.0	2,160	June 15	6,563.6	4,980
Dec. 1	6,540.8	1,660	July 1	6,559.5	4,280
Dec. 15	6,542.2	1,820	July 15	6,556.4	3,780
Mar. 1, 1983	6,569.9	6,160	Aug. 2	6,552.4	3,160
Apr. 5	6,570.2	6,220	Aug. 15	6,548.5	2,620

LITTLE COLORADO RIVER BASIN

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09392000 SHOW LOW CREEK BELOW JAQUES DAM, NEAR SHOW LOW, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	2.0	.19	.89	.89	1.2	166	8.0	6.2	6.9	6.6	7.1
2	4.7	2.0	.19	.89	.89	46	81	7.9	6.2	6.9	6.9	7.1
3	4.7	2.0	.19	.89	.95	76	63	5.3	5.4	6.9	6.9	7.1
4	4.7	2.0	.19	.89	.96	154	46	2.7	5.2	6.8	6.9	7.1
5	4.7	2.0	.19	.89	.89	116	28	1.5	5.2	6.8	6.9	7.1
6	4.7	1.9	.19	.89	.89	116	28	1.5	5.1	6.7	6.9	7.1
7	4.7	1.8	.19	.89	.90	91	28	5.3	5.1	6.6	6.7	7.1
8	4.7	1.9	.19	.89	.99	67	25	8.0	5.1	6.6	6.6	7.1
9	4.7	1.8	.19	.88	1.0	58	25	6.3	6.0	6.6	6.6	7.1
10	4.7	1.8	.19	.85	1.0	54	26	6.3	7.1	6.6	6.6	7.1
11	4.7	1.8	.19	.82	1.0	50	26	6.3	7.2	6.6	6.6	7.1
12	4.7	1.4	.19	.82	1.0	54	26	6.2	7.2	6.6	6.6	7.1
13	4.7	.24	.19	.83	1.1	42	22	6.2	7.1	6.6	6.6	7.1
14	4.7	.24	.19	.84	1.1	31	22	6.2	7.1	6.6	6.9	7.1
15	4.7	.23	.19	.85	1.0	35	25	6.2	7.1	6.6	7.1	7.1
16	4.6	.22	.19	.89	1.1	31	25	6.2	7.1	6.8	7.1	7.1
17	4.6	.19	.19	.89	1.1	28	28	6.2	7.1	7.8	7.1	7.1
18	4.6	.19	.19	.89	1.1	31	28	6.2	7.1	7.8	7.1	7.1
19	4.6	.19	.19	.86	1.1	46	28	6.2	7.1	7.8	7.1	7.1
20	4.5	.19	.19	.88	1.1	81	28	6.2	7.1	7.8	7.1	7.1
21	4.5	.19	.19	.79	1.1	116	28	6.2	7.1	7.8	7.1	7.1
22	4.4	.19	.52	.79	1.1	116	28	6.2	7.0	7.8	7.1	7.1
23	4.4	.19	.79	.80	1.1	101	25	6.2	6.9	7.7	7.1	7.1
24	4.4	.19	.89	.83	1.1	116	22	6.2	6.9	7.6	7.1	7.1
25	4.4	.19	.89	.88	1.1	166	16	6.2	6.9	7.6	7.1	7.1
26	3.1	.19	.89	.84	1.1	96	14	6.2	6.9	7.6	7.1	7.1
27	2.0	.19	.89	.89	1.1	96	12	6.2	6.9	6.8	7.1	7.1
28	2.0	.19	.89	.89	1.1	166	9.3	6.2	6.9	6.2	7.1	7.1
29	2.0	.19	.89	.89	---	236	8.0	6.2	6.9	6.2	7.1	7.1
30	2.0	.19	.89	.89	---	236	8.0	6.2	6.9	6.2	7.1	7.1
31	2.0	---	.89	.89	---	216	---	6.2	---	6.2	7.1	---
TOTAL	128.6	25.99	12.42	26.80	28.86	2869.2	944.3	183.1	197.1	216.1	215.0	213.0
MEAN	4.15	.87	.40	.86	1.03	92.6	31.5	5.91	6.57	6.97	6.94	7.10
MAX	4.7	2.0	.89	.89	1.1	236	166	8.0	7.2	7.8	7.1	7.1
MIN	2.0	.19	.19	.79	.89	1.2	8.0	1.5	5.1	6.2	6.6	7.1
AC-FT	255	52	25	53	57	5690	1870	363	391	429	426	422
CAL YR 1982	TOTAL	1044.20	MEAN	2.86	MAX	6.9	MIN	.09	AC-FT	2070		
WTR YR 1983	TOTAL	5060.47	MEAN	13.9	MAX	236	MIN	.19	AC-FT	10040		

LITTLE COLORADO RIVER BASIN

09393400 COTTONWOOD WASH AT SNOWFLAKE, AZ

LOCATION.--Lat 34°30'20", long 110°05'28", in NW¼SW¼ sec.23, T.13 N., R.21 E., Navajo County, Hydrologic Unit 15020005, on right bank 0.7 mi upstream from bridge on State Highway 277, 0.8 mi southwest of Snowflake and 1.8 mi upstream from mouth.

DRAINAGE AREA.--262 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,580 ft from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 445 ft³/s, from rating curve extended above 97 ft³/s, Mar. 25, 1983, gage height, 3.05 ft, no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 97 ft³/s, and peak discharges above base of 300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1930	348	3.25	Mar. 6	1000	390	2.97
Dec. 24	a0300	370	3.28	Mar. 25	1100	*445	3.05
Feb. 9	1530	328	2.87				

No flow for most of year.

a About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	25	7.1	19	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	17	6.9	6.5	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	17	15	2.7	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	14	212	1.1	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	11	240	.26	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	14	290	.13	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	14	167	.10	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	19	130	.08	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	214	84	.00	.00	.00	.00	.00	.00
10	.00	.00	101	.00	193	22	.00	.00	.00	.00	.00	.00
11	.00	.00	182	.00	100	11	.00	.00	.00	.00	.00	.00
12	.00	.00	50	.00	120	6.0	.00	.00	.00	.00	.00	.00
13	.00	.00	32	.00	100	2.5	.00	.00	.00	.00	.00	.00
14	.00	.00	14	.00	100	1.4	.00	.00	.00	.00	.00	.00
15	.00	.00	4.7	.00	120	1.7	.00	.00	.00	.00	.00	.00
16	.00	.00	1.4	.00	140	1.0	.00	.00	.00	.00	.00	.00
17	.00	.00	2.5	.00	160	.78	.00	.00	.00	.00	.00	.00
18	.00	.00	3.5	.00	140	.74	.00	.00	.00	.00	.00	.00
19	.00	.00	.50	.00	120	2.7	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	70	12	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	3.8	40	75	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	5.1	21	134	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	2.1	12	148	.00	.00	.00	.00	.00	.00
24	.00	.00	181	.00	11	171	.00	.00	.00	.00	.00	.00
25	.00	.00	82	.00	9.8	302	.00	.00	.00	.00	.00	.00
26	.00	.00	35	.00	11	124	.00	.00	.00	.00	.00	3.2
27	.00	.00	25	.00	10	63	.00	.00	.00	.00	.00	10
28	.00	.00	7.4	.00	8.7	114	.00	.00	.00	.00	.00	.90
29	.00	.00	2.0	1.2	---	154	.00	.00	.00	.00	.00	25
30	.00	.00	1.2	17	---	94	.00	.00	.00	.00	.00	7.0
31	.00	---	.00	45	---	44	---	.00	---	.00	.00	---
TOTAL	.00	.00	725.20	74.20	1831.5	2636.82	29.87	.00	.00	.00	.00	46.10
MEAN	.000	.000	23.4	2.39	65.4	85.1	1.00	.000	.000	.000	.000	1.54
MAX	.00	.00	182	.45	214	302	.19	.00	.00	.00	.00	.25
MIN	.00	.00	.00	.00	8.7	.74	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	1440	147	3630	5230	59	.00	.00	.00	.00	91
CAL YR 1982	TOTAL	1744.23	MEAN	4.78	MAX	187	MIN	.00	AC-FT	3460		
WTR YR 1983	TOTAL	5343.69	MEAN	14.6	MAX	302	MIN	.00	AC-FT	10600		

LITTLE COLORADO RIVER BASIN

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09393400 COTTONWOOD WASH AT SNOWFLAKE, AZ--Continued

PERIOD OF RECORD.--October 1981 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1981 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,730 mg/L Sept. 4, 1982; minimum daily mean, no flow on many days each year.

SEDIMENT LOADS: Maximum daily, 741 tons Mar. 6, 1983; minimum daily, 0 ton on many days.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 945 mg/L Mar. 6; minimum daily mean, no flow on many days during year.

SEDIMENT LOADS: Maximum daily, 741 tons Mar. 6; minimum daily, 0 ton on many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	STREAM- FLOW, INSTAN- TANEOUS	SPE- CIFIC CON- DUCT- ANCE (CFS)	PH (STAND- ARD (UMHOS)	TEMPER- ATURE (UNITS)	COLOR (PLAT- INUM- COBALT (DEG C)	TUR- BID- ITY (UNITS)	OXYGEN, DIS- SOLVED (NTU)	BARO- METRIC PRES- SURE (MM OF (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- HG)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ (MG/L)
DEC 14...	15	129	8.0	6.0	600	1.0	9.5	--	--	55	K80
FEB 02...	9.5	130	6.8	4.0	--	100	11.0	622	103	--	--
MAR 15...	1.5	47	8.6	14.0	--	40	9.2	620	110	--	K20

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)
DEC 14...	400	540	60	3	20	2.4	57	12	2.3	102	169	334
FEB 02...	--	--	--	--	--	--	58	--	--	126	29	176
MAR 15...	54	--	--	--	--	--	130	--	--	181	23	--

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHENOLS TOTAL (UG/L)
DEC 14...	.14	<.020	<.10	.200	.110	.69	.80	.200	.61	<.010	24
FEB 02...	.17	--	--	.070	<.060	--	--	.090	.28	--	--
MAR 15...	.25	--	--	.100	--	--	--	.110	.34	--	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09393400 COTTONWOOD WASH AT SNOWFLAKE, AZ--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	0	.00	0	.00	0	.00	0	.00	168	11	18	.34
2	0	.00	0	.00	0	.00	0	.00	275	14	150	3.0
3	0	.00	0	.00	0	.00	0	.00	430	20	345	14
4	0	.00	0	.00	0	.00	0	.00	290	12	357	203
5	0	.00	0	.00	0	.00	0	.00	59	1.8	910	589
6	0	.00	0	.00	0	.00	0	.00	59	2.2	945	741
7	0	.00	0	.00	0	.00	0	.00	60	2.3	330	149
8	0	.00	0	.00	0	.00	0	.00	57	2.9	270	95
9	0	.00	0	.00	0	.00	0	.00	452	307	260	71
10	0	.00	0	.00	526	233	0	.00	588	298	88	5.2
11	0	.00	0	.00	500	246	0	.00	106	29	128	3.8
12	0	.00	0	.00	154	21	0	.00	104	34	154	2.5
13	0	.00	0	.00	87	7.5	0	.00	64	17	92	.62
14	0	.00	0	.00	193	7.3	0	.00	58	16	64	.24
15	0	.00	0	.00	233	3.0	0	.00	102	33	73	.34
16	0	.00	0	.00	238	.90	0	.00	108	41	62	.17
17	0	.00	0	.00	242	1.6	0	.00	111	48	31	.06
18	0	.00	0	.00	227	2.1	0	.00	62	23	27	.05
19	0	.00	0	.00	82	.22	0	.00	65	21	38	.28
20	0	.00	0	.00	0	.00	0	.00	23	4.3	44	1.6
21	0	.00	0	.00	0	.00	50	1.2	98	11	524	129
22	0	.00	0	.00	0	.00	112	1.5	137	7.8	669	240
23	0	.00	0	.00	0	.00	87	.58	119	3.5	430	172
24	0	.00	0	.00	390	198	0	.00	58	1.7	385	178
25	0	.00	0	.00	79	18	0	.00	46	1.2	528	440
26	0	.00	0	.00	63	5.9	0	.00	32	.95	532	179
27	0	.00	0	.00	45	3.1	0	.00	32	.85	105	18
28	0	.00	0	.00	37	.75	0	.00	19	.45	54	17
29	0	.00	0	.00	17	.09	17	.34	---	---	340	158
30	0	.00	0	.00	31	.10	110	6.6	---	---	307	78
31	0	.00	---	---	0	.00	173	21	---	---	315	37
TOTAL	---	0.00	---	0.00	---	748.56	---	31.22	---	964.95	---	3526.20

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SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

LITTLE COLORADO RIVER BASIN

09393500 SILVER CREEK NEAR SNOWFLAKE, AZ

LOCATION.--Lat 34°40'00", long 110°02'30", in SW¼NW¼ sec.29, T.15 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on left bank 6 mi upstream from mouth and 11 mi north of Snowflake.

DRAINAGE AREA.--886 mi².

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,204.1 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions for irrigation above station of about 6,600 acres. Flow regulated by several reservoirs - combined capacity, about 13,700 acre-ft, excluding Lone Pine Reservoir, but including 6,176 acre-ft in Show Low Lake.

AVERAGE DISCHARGE.--33 years, 18.8 ft³/s, 13,620 acre-ft/yr; median of yearly mean discharges, 14 ft³/s, 10,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s Jan. 19, 1952, gage height, 18.0 ft, from rating curve extended above 4,400 ft³/s on basis of peak discharge for former station near Woodruff; no flow for several days in water years 1971, 1974-78, 1980-82.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,510 ft³/s Sept. 29, 2100 hours, gage height, 6.98 ft, base discharge, 1,000 ft³/s; minimum daily, 0.20 ft³/s Nov. 4, July 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	.60	35	13	27	8.8	96	1.8	6.8	.80	7.9	31
2	6.5	.40	11	13	19	7.3	79	2.2	5.0	.50	10	23
3	7.6	.30	6.8	13	14	7.0	66	5.2	3.4	1.1	6.5	23
4	11	.20	4.5	13	12	54	68	4.0	2.2	1.1	10	21
5	8.2	.40	3.2	13	11	127	75	2.4	1.6	.70	6.5	17
6	6.2	1.5	3.6	13	9.1	148	73	1.6	1.4	.40	33	19
7	8.8	1.9	3.8	13	9.1	111	68	2.7	.70	.20	4.7	22
8	6.5	1.9	5.2	13	8.8	80	68	4.7	.70	7.9	2.5	17
9	2.8	2.2	4.0	13	8.8	63	66	5.0	1.4	6.0	4.7	16
10	1.4	1.6	6.8	12	105	59	54	4.7	1.4	6.2	3.0	16
11	1.1	3.4	140	12	79	52	57	2.2	1.5	7.9	52	14
12	1.3	3.4	75	11	56	49	54	2.7	1.0	5.0	84	12
13	4.0	2.8	41	9.7	42	44	57	4.0	.60	6.5	14	15
14	2.5	1.9	26	9.1	68	42	53	3.4	1.1	3.6	7.9	22
15	1.6	2.2	19	8.2	81	41	49	2.5	1.0	2.7	9.1	14
16	.70	2.4	14	6.8	56	37	44	2.7	1.4	2.5	7.0	8.8
17	.90	8.3	11	6.2	52	31	39	3.4	1.1	.70	6.0	10
18	1.4	11	9.7	6.5	58	28	35	5.5	.50	.30	13	12
19	.80	10	8.2	5.7	52	22	26	3.2	.70	.60	6.5	13
20	.70	7.6	7.3	4.3	54	20	15	5.5	1.0	98	7.9	17
21	.90	5.2	6.5	4.3	31	63	11	7.0	.40	17	4.7	17
22	2.8	2.5	6.2	4.3	24	107	8.2	5.2	2.4	12	4.3	15
23	2.7	1.6	6.0	4.3	20	133	8.5	7.3	2.8	6.0	8.8	13
24	2.8	1.6	109	5.0	15	134	14	7.3	1.8	31	6.7	19
25	2.2	1.9	68	5.0	13	206	15	3.2	2.4	46	4.5	18
26	1.1	2.0	28	5.7	13	167	14	1.6	1.9	11	17	60
27	.70	1.4	20	5.2	11	124	11	2.5	1.4	7.3	13	56
28	.40	1.0	16	5.7	10	150	5.2	4.3	1.0	10	18	16
29	.60	.70	13	5.7	---	180	2.8	5.2	.70	5.0	17	352
30	.70	1.9	13	5.5	---	148	2.5	3.0	1.4	5.0	36	329
31	.70	---	13	18	---	117	---	4.3	---	3.6	26	---
TOTAL	94.60	83.80	733.8	277.2	958.8	2560.1	1234.2	120.3	50.70	306.60	452.2	1237.8
MEAN	3.05	2.79	23.7	8.94	34.2	82.6	41.1	3.88	1.69	9.89	14.6	41.3
MAX	11	11	140	18	105	206	96	7.3	6.8	98	84	352
MIN	.40	.20	3.2	4.3	8.8	7.0	2.5	1.6	.40	.20	2.5	8.8
AC-FT	188	166	1460	550	1900	5080	2450	239	101	608	897	2460
CAL YR 1982	TOTAL	4468.10	MEAN	12.2	MAX	1350	MIN	.00	AC-FT	8860		
WTR YR 1983	TOTAL	8110.10	MEAN	22.2	MAX	352	MIN	.20	AC-FT	16090		

LITTLE COLORADO RIVER BASIN

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09394500 LITTLE COLORADO RIVER AT WOODRUFF, AZ

LOCATION.--Lat 34°46'58", long 110°02'37", in NE¼SW¼ sec.17, T.16 N., R.22 E., Navajo County, Hydrologic Unit 15020002, on left bank at abandoned county road bridge in Woodruff, 3.7 mi downstream from Silver Creek.

DRAINAGE AREA.--8,100 mi², approximately.

PERIOD OF RECORD.--March to May 1905; June to July 1905 (gage heights only); August 1905 to May 1907; July 1907 to April 1908, July to October 1908, December 1908, and December 1915 to September 1916 (gage heights only); October 1916 to August 1917 (monthly discharge only); September 1917 to March 1918, December 1918 to December 1919, April 1929 to December 1933, September 1935 to current year. Published as "near Woodruff" 1916-19, 1929-48.

REVISED RECORDS.--WSP 1049: 1917. WSP 1213: 1906, 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 5,130.3 ft National Geodetic Vertical Datum of 1929. See WSP 1733 for history of changes prior to Sept. 22, 1949.

REMARKS.--Records fair. Diversions above station for irrigation of about 22,000 acres including a pump installation 1,000 ft upstream installed in spring of 1973. Some regulation by reservoirs above station; combined capacity, about 73,000 acre-ft, excluding Lone Pine Reservoir.

AVERAGE DISCHARGE.--54 years (water years 1906, 1917, 1930-33, 1936-83), 51.8 ft³/s, 37,500 acre-ft/yr; median of yearly mean discharges, 44 ft³/s, 31,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred Jan. 19, 1916; maximum discharge recorded, 25,000 ft³/s Dec. 5, 1919; maximum gage height, 22.9 ft from high-water mark in gage well, Dec. 19, 1978; no flow at times in most years prior to 1960 and in 1974, 1976, and 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,860 ft³/s Sept. 30, 0745 hours, gage height, 12.76 ft, base discharge, 1,900 ft³/s; no flow June 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	9.4	181	4.0	54	16	197	113	3.6	3.8	20	80
2	6.0	8.9	112	4.0	39	14	158	110	4.6	3.4	15	70
3	6.0	8.7	40	4.0	30	14	136	99	2.0	2.5	10	70
4	6.0	8.8	22	4.0	26	26	132	56	.10	3.6	214	60
5	6.0	8.5	14	4.0	32	163	158	46	3.0	3.5	50	50
6	7.0	9.1	11	4.0	28	181	212	36	.84	3.4	60	40
7	7.0	10	12	4.0	25	146	312	30	.09	9.1	30	30
8	7.0	9.5	12	4.0	24	111	405	28	.45	4.6	15	19
9	7.0	11	12	4.0	21	74	419	27	1.1	5.8	10	16
10	8.0	11	35	4.0	125	62	353	26	3.4	3.5	5.0	15
11	8.0	9.9	237	4.0	101	63	289	26	1.0	11	60	14
12	8.0	11	93	4.0	76	55	232	25	1.9	20	439	14
13	8.0	11	40	4.0	60	51	194	25	1.0	5.7	150	15
14	9.0	9.8	16	4.0	63	48	170	24	1.7	3.6	70	45
15	9.1	9.2	8.0	4.0	106	47	150	23	2.2	1.8	30	24
16	7.8	8.9	8.0	4.0	75	46	140	21	2.9	1.5	15	10
17	8.0	12	8.0	4.0	66	41	130	20	1.3	1.4	10	8.0
18	8.5	25	8.0	54	70	36	110	17	.32	1.1	400	9.9
19	8.3	14	8.0	53	66	34	100	15	1.9	1.1	200	27
20	8.0	12	8.0	40	67	31	90	13	1.2	246	100	67
21	7.9	8.3	30	20	48	47	80	11	1.8	93	50	19
22	8.8	5.7	16	20	38	153	68	9.0	.74	205	30	17
23	8.1	3.9	40	20	34	235	80	7.0	1.5	156	20	218
24	6.0	3.6	84	86	27	243	148	5.0	.06	213	15	90
25	11	3.8	65	30	22	322	245	3.6	.26	123	208	52
26	10	4.4	40	20	19	307	257	.58	.03	113	198	157
27	9.3	4.7	20	15	17	240	214	3.3	.00	405	100	276
28	8.6	4.9	7.0	10	17	262	174	2.4	2.7	200	50	114
29	9.0	4.9	6.0	10	---	313	147	4.4	3.2	100	50	624
30	8.8	17	5.0	20	---	286	124	1.9	2.9	50	100	2140
31	9.4	---	4.0	50	---	243	---	.69	---	25	70	---
TOTAL	245.6	278.9	1202.0	516.0	1376	3910	5624	828.87	47.79	2019.4	2794.0	4390.9
MEAN	7.92	9.30	38.8	16.6	49.1	126	187	26.7	1.59	65.1	90.1	146
MAX	11	25	237	86	125	322	419	113	4.6	405	439	2140
MIN	6.0	3.6	4.0	4.0	17	14	68	.58	.00	1.1	5.0	8.0
AC-FT	487	553	2380	1020	2730	7760	11160	1640	95	4010	5540	8710
CAL YR 1982	TOTAL	13707.80	MEAN	37.6	MAX	2350	MIN	1.6	AC-FT	27190		
WTR YR 1983	TOTAL	23233.46	MEAN	63.7	MAX	2140	MIN	.00	AC-FT	46080		

LITTLE COLORADO RIVER BASIN

09396100 PUERCO RIVER NEAR CHAMBERS, AZ

LOCATION.--Lat 35°10'42", long 109°27'15", in SW¼NW¼ sec.35, T.21 N., R.27 E., Apache County, Hydrologic Unit 15020007, on upstream side of right abutment of Atchison, Topeka, and Santa Fe Railway Co. bridge, 1.5 mi southwest of Chambers.

DRAINAGE AREA.--2,160 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Water years 1971-72 (annual maximums only), January 1973 to current year (discharge above 500 ft³/s only).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,705 ft, from topographic map.

REMARKS.--Records poor. Only daily discharges above 500 ft³/s are published. Small diversions above station for irrigation and livestock. Red Lake, near the headwaters of Black Creek, was built in 1954; the capacity was 9,700 acre-ft, but capacity may have been reduced by silting.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s Sept. 30, 1971, gage height, 9.65 ft; no flow observed on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 4	unknown	*11,500	b6.96
Aug. 19	a0300	8,170	b5.42

No flow for several days.

a About

b From inside high-water mark.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---		---				---	---	
2				---		---				---	---	
3				---		---				---	1400	
4				---		---				---	4600	
5				---		590				---	1500	
6				---		---				---	---	
7				---		---				---	---	
8				---		---				---	---	
9				---		---				---	---	
10				---		---				---	---	
11				---		---				---	---	
12				---		---				---	800	
13				---		---				---	---	
14				---		---				---	---	
15				---		700				---	---	
16				---		---				---	---	
17				---		---				---	---	
18				---		---				---	---	
19				920		560				---	850	
20				---		---				---	---	
21				---		---				---	---	
22				---		---				---	---	
23				---		---				---	---	
24				---		---				---	---	
25				---		540				1150	---	
26				---		800				600	---	
27				---		---				2000	---	
28				---		---				1200	---	
29				---		---				800	---	
30				---		---				---	---	
31				---		---				---	---	
TOTAL				---		---				---	---	
MEAN				---		---				---	---	
MAX				---		---				---	---	
MIN				---		---				---	---	
AC-FT				---		---				---	---	

NOTE--No gage-height record Aug. 3-5, 13, 19.

LITTLE COLORADO RIVER BASIN
09396100 PUERCO RIVER NEAR CHAMBERS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	TEMPER- ATURE (DEG C)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)
JAN 17...	1615	6.0	79	82	120	<770	50	510
MAR 16...	1700	13.0	291	18	26	<650	14	560
AUG 15...	1615	24.0	39	--	--	<2200	--	1000

DATE	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM NATURAL TOTAL (UG/L AS U)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JAN 17...	48	480	--	--	--	--	--
MAR 16...	14	530	--	--	--	20900	16400
AUG 15...	--	950	36	85	.2	--	--

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09397300 LITTLE COLORADO RIVER NEAR JOSEPH CITY, AZ

LOCATION.--Lat 34°54'04", long 110°15'17", in NE¼SE¼ sec.6, T.17 N., R.20 E., Navajo County, Hydrologic Unit 15020008, on left bank (prior to Jan. 9, 1980, on right bank) just upstream from diversion dam, 5.4 mi west of Holbrook, 5.7 mi southeast of Joseph City, and 8.5 mi downstream from Puerco River.

DRAINAGE AREA.--12,200 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1973 to current year (daily discharge only for those days on which instantaneous discharge exceeds 500 ft³/s).

GAGE.--Water-stage recorder and concrete diversion dam. Datum of gage is 5,031.10 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Jan. 9, 1980, on right bank at same datum.

REMARKS.--Records poor. Published record includes only those days when instantaneous discharge over the crest of the dam exceeds 500 ft³/s. Diversions above station for irrigation of about 23,000 acres, diversions at dam on right bank of most low flows for irrigation of about 1,500 acres in vicinity of Joseph City. Some regulation by reservoirs; combined capacity of principal reservoirs, about 83,000 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,400 ft³/s Dec. 19, 1978, gage height, 7.64 ft, from rating curve extended above 7,400 ft³/s on basis of slope-area measurement at gage height, 6.82 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 60,000 ft³/s was determined for peak of Sept. 19, 1923, at Holbrook (see prior records for sta 09397000, Little Colorado River at Holbrook, for this peak and other peaks 1905-6, 1949-73).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 5,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	unknown	*8,540	a6.72	Aug. 3	unknown	5,890	a5.62
July 27	1500	6,770	a5.97				

a From crest-stage gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			875	---	---	---	771	420		---	---	---
2			690	---	---	510	771	---		---	---	---
3			---	---	---	380	467	---		---	900	---
4			---	---	---	517	393	---		---	4000	220
5			---	---	217	870	295	---		---	1600	---
6			---	---	---	754	517	---		---	---	600
7			---	---	---	420	467	---		---	---	300
8			---	---	---	---	492	---		---	---	---
9			---	---	680	---	---	---		---	---	---
10			2900	---	385	---	---	---		---	---	---
11			2100	---	---	350	370	---		---	---	---
12			400	---	---	---	365	---		---	1220	---
13			---	---	---	420	---	---		---	---	---
14			---	---	---	440	---	---		---	---	---
15			---	---	400	350	---	---		---	---	---
16			---	---	420	540	---	---		---	---	---
17			---	---	---	450	---	---		---	---	---
18			---	850	---	---	---	---		---	1340	---
19			---	270	---	479	---	---		---	930	---
20			---	520	---	544	---	---		---	532	---
21			---	---	---	---	---	---		---	---	---
22			---	---	---	---	230	---		---	---	---
23			919	---	---	450	---	---		---	---	---
24			691	---	---	570	---	---		---	---	---
25			---	---	---	870	---	---		832	---	---
26			---	---	---	1200	---	---		635	---	200
27			---	---	---	820	---	---		1300	---	394
28			---	---	---	499	---	---		827	---	---
29			---	---	---	636	528	---		565	---	992
30			---	---	---	640	406	---		---	---	3280
31			---	---	---	570	---	---		264	---	---
TOTAL			---	---	---	---	---	---		---	---	---
MEAN			---	---	---	---	---	---		---	---	---
MAX			---	---	---	---	---	---		---	---	---
MIN			---	---	---	---	---	---		---	---	---
AC-FT			---	---	---	---	---	---		---	---	---

NOTE--No gage-height record Dec.10-12, July 27-29, Aug. 3-5.

LITTLE COLORADO RIVER BASIN

65

09397300 LITTLE COLORADO RIVER NEAR JOSEPH CITY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since October 1981.

REMARKS.--Suspended-sediment load computed from load-discharge relation. Published record includes only those days on which instantaneous discharge exceeds 500 ft³/s. See remarks for water-discharge records.

EXTREMES FOR PERIOD OF RECORD.--

SEDIMENT LOADS: Maximum daily, 933,000 tons Aug. 25, 1982.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT LOADS: Maximum daily, 740,000 tons Aug. 4.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			53000	---	---	---	52000	21000		---	---	---
2			40000	---	---	27000	48000	---		---	---	---
3			---	---	---	19000	25000	---		---	130000	---
4			---	---	---	28000	14000	---		---	740000	---
5			---	---	9300	53000	14000	---		---	250000	---
6			---	---	---	44000	38000	---		---	---	---
7			---	---	---	21000	31000	---		---	---	---
8			---	---	---	---	33000	---		---	---	---
9			---	---	39000	---	---	---		---	---	---
10		240000	---	---	19000	---	---	---		---	---	---
11		160000	---	---	---	19000	18000	---		---	---	---
12		20000	---	---	---	---	18000	---		---	180000	---
13		---	---	---	---	21000	---	---		---	---	---
14		---	---	---	---	23000	---	---		---	---	---
15		---	---	---	20000	17000	---	---		---	---	---
16		---	---	---	21000	43000	---	---		---	---	---
17		---	---	---	---	26000	---	---		---	---	---
18		---	---	51000	---	---	---	---		---	200000	---
19		---	---	12000	---	21000	---	---		---	130000	---
20		---	---	28000	---	29000	---	---		---	69000	---
21		---	---	---	---	---	---	---		---	---	---
22		---	---	---	---	---	10000	---		---	---	---
23		57000	---	---	---	23000	---	---		---	---	---
24		40000	---	---	---	31000	---	---		---	---	---
25		---	---	---	---	51000	---	---		120000	---	---
26		---	---	---	---	75000	---	---		84000	---	22000
27		---	---	---	---	52000	---	---		200000	---	48000
28		---	---	---	---	24000	---	---		120000	---	---
29		---	---	---	---	26000	28000	---		74000	---	140000
30		---	---	---	---	32000	20000	---		---	---	59000
31		---	---	---	---	22000	---	---		30000	---	---
TOTAL			610000	91000	108300	727000	349000	21000		628000	1699000	269000

TOTAL LOAD FOR YEAR: 4,502,300 TONS.

LITTLE COLORADO RIVER BASIN

09398300 BLUE RIDGE RESERVOIR NEAR PINE, AZ

LOCATION.--Lat 34°33'19", long 111°11'00", in NE¼SE¼ sec.33, T.14 N., R.11 E., Coconino County, Hydrologic Unit 15020008, in Coconino National Forest, on upstream side of left end of spillway structure of Blue Ridge Dam on East Clear Creek, at mouth of General Springs Canyon, 7.3 mi east of Clints Well and 20 mi northeast of Pine.

DRAINAGE AREA.--71.1 mi².

PERIOD OF RECORD.--December 1964 to March 1965 (periodic elevations only), April 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,620 ft, National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. Prior to Apr. 2, 1965, nonrecording-gage readings (at intervals of 3 to 8 days) at NGVD.

REMARKS.--Reservoir is formed by a concrete arch dam. Dam completed and storage began in December 1964. Total capacity is 19,500 acre-ft at elevation 6,735 ft, of which 15,000 acre-ft is usable storage below 6,720 ft, the spillway crest. Drawdown below 6,646.3 ft, 2,620 acre-ft restricted by sill at mouth of diversion tunnel since November 1981. Reservoir serves as a basin from which water is pumped to the East Verde River. (See records for East Verde River diversion from East Clear Creek, near Pine.) Release is possible through valve in base of dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,200 acre-ft Feb. 19, 1980, elevation, 6,724.12 ft; minimum since reservoir filled (April 1965), 1,450 acre-ft Nov. 18-27, 1981, elevation, 6,630.75 ft Nov. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 15,300 acre-ft sometime in March, elevation, 6,721.04 ft (from outside high-water marks), of which 300 acre-ft was uncontrolled storage; minimum, 2,590 acre-ft Nov. 8, elevation, 6,645.88 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on surveys by Leeds, Hill, and Jewett, Inc., January 1962)

6,640	2,120	6,700	10,260
6,660	3,920	6,720	15,000
6,680	6,580	6,730	17,960

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4420	2600	5810	---	---	---	---	---	14500	12500	10800	8830
2	4360	2600	6080	---	---	---	---	---	14500	12400	10800	8760
3	4290	2600	6230	---	---	---	---	---	14400	12400	10800	8680
4	4230	2600	6340	---	---	---	---	---	14400	12300	10600	8610
5	4170	2600	6430	---	---	---	---	---	14300	12200	10600	8540
6	4110	2600	6510	---	---	---	---	---	14200	12200	10500	8470
7	4040	2600	6590	---	---	---	---	---	14100	12100	10400	8400
8	3970	2600	6650	---	---	---	---	---	14000	12000	10400	8340
9	3900	2670	6720	---	---	---	---	---	14000	12000	10400	8270
10	3850	2790	7160	---	---	---	---	---	13900	12000	10300	8200
11	3790	2900	7480	---	---	---	---	---	13800	11900	10300	8140
12	3730	2950	7690	---	---	---	---	---	13800	11800	10200	8070
13	3680	2980	7870	---	---	---	---	---	13700	11800	10100	8010
14	3620	3010	7990	---	---	---	---	---	13600	11800	10100	7940
15	3560	3030	8080	---	---	---	---	---	13600	11700	10000	7870
16	3500	3050	8150	---	---	---	---	---	13500	11600	9940	7810
17	3440	3270	8200	---	---	---	---	---	13500	11600	9870	7740
18	3380	4110	8250	---	---	---	---	---	13400	11500	9800	7680
19	3320	4530	8290	---	---	---	---	---	13300	11500	9730	7610
20	3260	4710	8310	---	---	---	---	---	13300	11400	9670	7530
21	3200	4820	8360	---	---	---	---	---	13200	11400	9600	7470
22	3140	4890	8640	---	---	---	---	---	13100	11300	9530	7400
23	3070	4930	10700	---	---	---	---	---	13000	11300	9460	7340
24	3010	4960	11300	---	---	---	---	---	13000	11200	9390	7290
25	2940	4970	---	---	---	---	---	---	12900	11200	9320	7220
26	2880	4990	---	---	---	---	---	---	12800	11100	9250	7170
27	2830	4990	---	---	---	---	---	---	12800	11100	9180	7100
28	2780	4970	---	---	15200	---	---	---	12700	11000	9110	7040
29	2720	4910	---	---	---	---	---	---	12600	11000	9040	7000
30	2670	5160	---	---	---	---	15200	---	12600	10900	8970	7270
31	2620	---	12600	14200	---	15300	---	14700	---	10900	8900	---
MAX	4420	5160	---	---	---	---	---	---	14500	12500	10800	8830
MIN	2620	2600	---	---	---	---	---	---	12600	10900	8900	7000
(*)	6646.28	6669.85	---	---	---	---	---	6718.72	6710.29	6702.88	6693.19	6684.34
(**)	-1870	+2540	+7440	+1600	+1000	+100	-100	-500	-2100	-1700	-2000	-1630

CAL YR 1982 ** +10600
WTR YR 1983 ** +2780

* Elevation, in feet, at end of month.

** Change in contents, in acre-feet.

Note.--No gage-height record on days when no values of contents are listed except at monthend, when contents are estimated.

LITTLE COLORADO RIVER BASIN

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09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ

LOCATION.--Lat 34°40'03", long 111°00'25", in SW¼SE¼ sec.19, T.15 N., R.13 E., Coconino County, Hydrologic Unit 15020008, in Apache-Sitgreaves National Forest, on right bank 2 mi downstream from Willow Creek and 30 mi southwest of Winslow.

DRAINAGE AREA.--321 mi².

PERIOD OF RECORD.--June 1947 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,957 ft, from Topographic Division by photogrammetry.

REMARKS.--Records good. Flow is partially controlled by Blue Ridge Reservoir (usable capacity, 15,000 acre-ft about 20 mi upstream. (See sta 09398300.) Diversion to East Verde River from Blue Ridge Reservoir. (See sta 09507580.)

AVERAGE DISCHARGE (unadjusted for diversion or storage).--36 years, 87.6 ft³/s, 63,470 acre-ft/yr; median of yearly mean discharges, 63 ft³/s, 45,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,700 ft³/s Dec. 18, 1978, gage height, 22.32 ft, from rating curve extended above 6,000 ft³/s; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 19	0245	1,340	8.76	Apr. 1	0900	1,780	9.56
Dec. 23	1430	1,810	9.62	Apr. 25	0745	*2,020	9.96
Mar. 12	1030	1,410	8.90				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	136	80	57	504	1560	1630	26	.00	.00	.00
2	.00	.00	155	70	47	693	1080	807	17	.00	.00	.00
3	.00	.00	101	70	48	818	945	635	11	.00	.00	.00
4	.00	.00	87	60	49	735	810	793	7.9	.00	.00	.00
5	.00	.00	73	60	45	524	560	978	5.6	.00	.00	.00
6	.00	.00	74	55	48	421	397	872	4.1	.00	.00	.00
7	.00	.00	78	55	47	475	298	718	3.0	.00	.00	.00
8	.00	.00	76	50	47	481	237	718	2.1	.00	.00	.00
9	.00	.00	72	50	56	578	200	758	1.6	.00	.00	.00
10	.00	.00	105	50	56	723	220	676	1.3	.00	.00	.00
11	.00	.00	223	45	59	963	373	580	1.1	.00	.00	.00
12	.00	1.1	168	45	66	1270	407	451	.80	.00	.00	.00
13	.00	7.7	133	45	71	1180	318	346	.50	.00	.00	.00
14	.00	4.4	115	45	72	1090	245	274	.40	.00	.00	.00
15	.00	7.5	83	45	76	1220	213	213	.30	.00	.00	.00
16	.00	8.4	76	45	82	818	224	184	.30	.00	.00	.00
17	.00	8.4	69	44	88	575	345	190	.10	.00	.00	.00
18	.00	284	55	60	98	482	799	165	.00	.00	.00	.00
19	.00	750	47	137	114	389	1040	141	.00	.00	.00	.00
20	.00	345	47	138	114	317	1200	129	.00	.00	.00	.00
21	.00	222	47	109	112	275	1430	114	.00	.00	.00	.00
22	.00	139	57	82	115	257	939	107	.00	.00	.00	.00
23	.00	93	1010	84	130	232	1040	103	.00	.00	.00	.00
24	.00	66	844	69	198	213	1320	94	.00	.00	.00	.00
25	.00	49	428	58	331	185	1750	80	.00	.00	.00	.00
26	.00	37	250	49	354	177	1680	66	.00	.00	.00	.00
27	.00	27	200	49	293	174	1220	53	.00	.00	.00	.00
28	.00	20	150	55	242	187	1090	42	.00	.00	.00	.00
29	.00	16	120	62	---	274	1210	32	.00	.00	.00	.00
30	.00	17	110	61	---	446	1420	31	.00	.00	.00	6.3
31	.00	---	100	63	---	944	---	36	---	.00	.00	---
TOTAL	.00	2102.50	5289	1990	3115	17620	24570	12016	83.10	.00	.00	6.30
MEAN	.000	70.1	171	64.2	111	568	819	388	2.77	.000	.000	.21
MAX	.00	750	1010	138	354	1270	1750	1630	26	.00	.00	6.3
MIN	.00	.00	47	44	45	174	200	31	.00	.00	.00	.00
AC-FT	.00	4170	10490	3950	6180	34950	48730	23830	165	.00	.00	12

CAL YR 1982	TOTAL	42259.21	MEAN 116	MAX 3220	MIN .00	AC-FT 83820
WTR YR 1983	TOTAL	66791.90	MEAN 183	MAX 1750	MIN .00	AC-FT 132500

LITTLE COLORADO RIVER BASIN

09399000 CLEAR CREEK NEAR WINSLOW, AZ

LOCATION.--Lat 34°58'10", long 110°38'40", in SE¼SE¼ sec.9, T.18 N., R.16 E., Navajo County, Hydrologic Unit 15020008, on right bank 10 ft downstream from bridge on State Highway 99, 1.5 mi upstream from mouth, and 5 mi southeast of Winslow.

DRAINAGE AREA.--607 mi².

PERIOD OF RECORD.--June to December 1906, January 1907 to January 1909 (gage heights only), March 1929 to February 1934, September 1935 to December 1982 (discontinued).

REVISED RECORDS.--WSP 859: 1929.

GAGE.--Water-stage recorder with concrete control and submerged orifice about 3,300 ft downstream; prior to Nov. 20, 1982, control was diversion dam 1,200 ft downstream. Datum of gage is 4,861.32 ft National Geodetic Vertical Datum of 1929. See WSP 1713, 1733, or 1926 for history of changes prior to July 10, 1931.

REMARKS.--Records good prior to Nov. 20 and poor thereafter. Records show discharge over spillway and through outlet tube. Prior to Nov. 20, 1982, records show discharge over dam but do not show leakage through dam. Storage in and diversion from Blue Ridge Reservoir near Pine, about 50 mi upstream, since December 1964. (See sta 09398300.)

AVERAGE DISCHARGE.--51 years (water years 1930-33, 1936-82), 83.5 ft³/s, 60,500 acre-ft/yr; median of yearly mean discharges, 60 ft³/s, 43,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s Apr. 4, 1929, gage height, 18.1 ft, present datum, from rating curve extended above 13,500 ft³/s on basis of velocity-area studies and verified by slope-area measurement at gage height 13.4 ft; no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floodmarks 3 ft higher than stage of flood of Apr. 4, 1929, were found 1,850 ft downstream from gage in 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge for period October to December 31, 1,400 ft³/s Dec. 24, 1545 hours, gage height, 10.56 ft, base discharge 500 ft³/s; minimum daily, 3.8 ft³/s Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	4.8	50									
2	4.2	4.2	30									
3	4.2	4.2	101									
4	4.2	4.2	101									
5	4.2	4.8	105									
6	4.2	4.8	106									
7	4.2	4.8	106									
8	4.2	4.2	104									
9	4.2	4.8	103									
10	4.2	4.2	105									
11	4.2	4.2	108									
12	4.2	4.2	114									
13	4.2	4.2	222									
14	4.2	4.2	192									
15	4.2	4.2	166									
16	4.2	4.2	148									
17	4.2	4.8	128									
18	4.2	4.8	117									
19	4.2	4.2	112									
20	4.2	128	110									
21	4.2	227	106									
22	4.2	297	102									
23	4.2	212	99									
24	4.2	160	576									
25	4.2	134	729									
26	4.2	120	410									
27	4.2	111	311									
28	4.2	106	200									
29	4.2	101	200									
30	4.2	80	150									
31	4.2	---	150									
TOTAL	129.8	1760.0	5361									
MEAN	4.19	58.7	173									
MAX	4.2	297	729									
MIN	3.8	4.2	30									
AC-FT	257	3490	10630									

STATION DISCONTINUED
DECEMBER 1982

CAL YR 1982 TOTAL 45034.0 MEAN 123 MAX 3650 MIN 3.0 AC-FT 89320

LITTLE COLORADO RIVER BASIN

69

09401200 LITTLE COLORADO RIVER AT CAMERON, AZ
(National stream-quality accounting network)

LOCATION.--Lat 35°52'40", long 111°24'40", in NE¼SE¼ sec.22, T.29 N., R.9 E. (unsurveyed), Coconino County, Hydrologic Unit 15020016, at bridge on U.S. Highway 89 at Cameron, in Navajo Indian Reservation, 2.5 mi upstream from Moenkopi Wash, 12 mi upstream from gaging station 09402000 Little Colorado River near Cameron, and 57.5 mi upstream from mouth.

DRAINAGE AREA.--24,000 mi², approximately.

PERIOD OF RECORD.--October 1947 to September 1970, October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1970.

WATER TEMPERATURE: October 1951 to September 1970.

SUSPENDED-SEDIMENT DISCHARGE: October 1947 to September 1970.

REMARKS.--Streamflow ungaged.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 13...	1500	26	540	8.0	6.5	3.5	450	11.9	668	102	K1	K200
MAR 31...	1515	1060	455	8.2	21.0	15.0	12000	9.1	655	105	K200	K150
MAY 20...	1215	168	383	8.0	19.5	17.5	1100	8.7	663	105	E62	K290
AUG 04...	1330	169	1270	7.6	27.0	22.5	66000	5.9	665	79	29000	150000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN 13...	86	14	27	4.3	76	4	1.8	72	32	94	.10	5.5
MAR 31...	56	0	17	3.3	72	4	2.2	95	56	42	.40	9.7
MAY 20...	77	17	23	4.5	45	2	2.0	60	24	62	.10	6.5
AUG 04...	380	280	110	25	150	3	6.7	101	500	49	.90	13

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEd (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
JAN 13...	294	280	.40	572	.21	.070	1.0	.340	<.010	.010	.03	20
MAR 31...	263	260	.36	9040	.34	.160	10	5.80	.050	.050	.15	80
MAY 20...	210	200	.29	1080	<.10	.150	1.7	.640	.050	.030	.09	40
AUG 04...	970	920	1.3	5970	3.8	.160	140	--	.070	.050	.15	40

K Based on non-ideal colony count.

E Estimated

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09401200 LITTLE COLORADO RIVER AT CAMERON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PR)
JAN 13...	1	91	.7	<1	<1	<1	<1	<3	30	4	23	3
MAR 31...	2	32	.7	1	8	3	<1	<3	150	6	140	1
MAY 20...	1	91	.5	1	<1	<1	<1	<3	40	4	26	<1
AUG 04...	5	180	.9	3	<1	<1	<1	<3	960	14	14	<1

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 13...	13	16	.2	<.1	<10	2	1	1	<1	600	<6	48
MAR 31...	9	68	.2	<.1	<10	3	7	2	<1	60	8	90
MAY 20...	8	21	.7	.1	<10	2	1	<1	<1	520	<6	18
AUG 04...	38	4	.7	.1	20	<1	12	3	<1	1600	<6	13

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JAN 13...	<6.2	--	30	20	<3.6	26	<3.4	25	840	76	59
MAR 31...	17	12	<430	--	6.2	410	6.0	390	14900	--	42600
MAY 20...	<9.7	--	<99	--	<5.5	140	<5.2	120	1960	80	889
AUG 04...	<33	--	13000	8800	13	5600	11	5400	--	--	--

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

71

09401260 MOENKOPI WASH AT MOENKOPI, AZ

LOCATION.--Lat 36°06'18", long 111°12'04", in NW¼NE¼ sec.3, T.31 N., R.11 E. (unsurveyed); Coconino County, Hydrologic Unit 15020018, in Navajo Indian Reservation on left bank 100 ft upstream from bridge on State Highway 264, 1.3 mi southeast of Moenkopi, 2.5 mi downstream from former gaging station 09401250, and 12.5 mi downstream from Begashibito Wash.

DRAINAGE AREA.--1,660 mi², approximately.

PERIOD OF RECORD.--July 1976 to current year. Records for October 1973 to July 1976 at site 2.5 mi upstream, not equivalent below 1.5 ft³/s due to channel losses.

GAGE.--Water-stage recorder. Altitude of gage is 4,610 ft, from topographic map.

AVERAGE DISCHARGE.--7 years, 10.2 ft³/s, 7,390 acre-ft/yr.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s, Sept. 30, 1983, gage height, 15.10 ft, from rating curve extended above 220 ft³/s on basis of step-backwater computation at gage heights 12.2 ft, 15.0 ft, and 17.8 ft. No flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 15,100 ft³/s occurred Aug. 4, 1929, at former gaging station site 3.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 220 ft³/s as explained above) and peak discharges above base of 1,200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 25	0400	1,680	7.00	Sept. 30	2000	*10,100	15.1
Aug. 12	0400	11,900	unknown				

No flow for several days.
a From high-water mark.
b Estimated

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	3.5	4.8	3.0	3.0	3.5	1.1	1.6	.10	.00	70	.00
2	6.0	3.1	4.4	3.0	3.0	3.5	.95	1.6	.10	.00	50	.00
3	6.0	2.3	1.6	3.0	3.0	3.5	.95	1.6	.00	.00	20	.00
4	5.0	2.3	2.3	3.0	3.0	3.5	.80	1.1	.00	.00	250	.00
5	5.0	3.5	1.6	3.0	3.0	6.4	.95	.95	.00	.00	50	.00
6	5.0	4.0	1.6	3.0	3.0	5.6	1.1	.95	.00	.00	80	.00
7	4.0	4.0	2.0	3.0	3.0	3.5	2.0	1.3	.00	.00	100	.00
8	4.0	4.4	2.0	3.0	3.0	3.1	2.0	1.6	.00	.00	160	.00
9	4.0	4.8	1.6	3.0	3.0	1.6	1.3	1.1	.00	.00	100	.00
10	3.0	5.2	3.1	3.0	3.0	1.1	.80	1.3	.00	.00	50	.00
11	3.0	5.2	2.3	3.0	3.0	1.1	.95	1.6	.00	.00	20	.00
12	3.0	4.8	2.0	3.0	3.0	1.1	.95	2.3	.00	.00	400	.00
13	2.0	4.4	2.0	3.0	3.0	1.1	.95	2.0	.00	.00	50	.00
14	2.0	4.0	1.6	3.0	3.0	1.3	2.0	1.3	.00	.00	20	.00
15	2.0	4.0	1.6	3.0	3.0	2.7	2.0	1.1	.00	.00	7.0	.00
16	2.0	4.0	1.6	3.0	3.0	2.3	1.6	1.1	.00	.00	2.0	.00
17	2.0	4.4	2.7	3.0	3.0	1.3	1.3	2.0	.00	.00	.00	.00
18	2.0	4.8	2.7	3.0	3.0	2.3	1.1	1.3	.00	.00	.00	.00
19	2.3	4.4	2.0	3.0	3.0	2.7	1.3	1.1	.00	.00	20	.00
20	2.3	4.4	2.0	3.0	3.0	2.3	1.3	1.3	.00	.00	5.0	.00
21	2.3	4.0	2.0	3.0	3.0	2.3	1.6	1.3	.00	.00	.00	.00
22	2.3	4.0	2.0	3.0	3.0	3.1	2.7	.80	.00	.00	.00	.00
23	2.3	3.1	2.0	3.0	3.5	3.5	2.3	.80	.00	.00	.00	50
24	2.7	2.3	2.0	3.0	3.5	2.7	1.6	.70	.00	46	.00	20
25	2.7	2.0	2.0	3.0	3.5	2.0	1.1	.60	.00	500	.00	5.0
26	2.3	1.6	2.0	3.0	3.5	2.3	1.3	.52	.00	50	.00	2.0
27	2.3	1.6	2.0	3.0	3.5	2.7	1.3	.52	.00	20	.00	20
28	2.3	1.6	2.0	3.0	3.5	1.3	1.3	.10	.00	10	.00	10
29	2.3	2.0	2.0	3.0	---	1.3	1.1	.10	.00	10	.00	400
30	2.3	4.4	2.0	3.0	---	2.0	1.3	.20	.00	10	.00	3500
31	3.1	---	2.0	3.0	---	4.4	---	.20	---	20	.00	---
TOTAL	98.5	108.1	67.5	93.0	87.0	81.1	41.00	34.04	.20	666.00	1454.00	4007.00
MEAN	3.18	3.60	2.18	3.00	3.11	2.62	1.37	1.10	.007	21.5	46.9	134
MAX	7.0	5.2	4.8	3.0	3.5	6.4	2.7	2.3	.10	500	400	3500
MIN	2.0	1.6	1.6	3.0	3.0	1.1	.80	.10	.00	.00	.00	.00
AC-FT	195	214	134	184	173	161	81	68	.4	1320	2880	7950

CAL YR 1982 TOTAL 3036.20 MEAN 8.32 MAX 600 MIN .00 AC-FT 6020
WTR YR 1983 TOTAL 6737.44 MEAN 18.5 MAX 3500 MIN .00 AC-FT 13360

NOTE.--No gage-height record Dec. 20 to Feb. 21, July 26 to Sept. 30.

LITTLE COLORADO RIVER BASIN

09402000 LITTLE COLORADO RIVER NEAR CAMERON, AZ

LOCATION.--Lat 35°55'35", long 111°34'00", in NW¼ sec.5, T.29 N., R.8 E. (unsurveyed), Coconino County, Hydrologic Unit 15020016, in Navajo Indian Reservation, on left bank 3 mi downstream from Coconino damsite, 9.5 mi downstream from Moenkopi Wash, 9.5 mi northwest of Cameron, and 45 mi upstream from mouth.

DRAINAGE AREA.--26,500 mi², approximately.

PERIOD OF RECORD.--June 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,979.2 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions above station for irrigation of about 32,000 acres. Some regulation by reservoirs above station (combined capacity of principal reservoirs, about 127,000 acre-ft).

AVERAGE DISCHARGE.--36 years, 243 ft³/s, 176,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s Jan. 21, 1952, gage height, 20.7 ft; no flow at times in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 120,000 ft³/s occurred on Sept. 19 or 20, 1923, based on discharge at Grand Falls.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft³/s Sept. 30, 1400 hours, gage height, 13.30 ft, base discharge 4,000 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	.1	124	100	40	880	1330	1880	5.5	0	380.0	16.0
2	48.0	1.3	71	80	30	694	2050	1850	.9	0	256.0	12.0
3	48.0	1.0	890	70	207	530	2670	2300	.0	0	120.0	8.0
4	27.0	.7	576	60	260	1340	3010	1780	.0	0	380.0	8.0
5	15.0	.6	302	80	226	1610	2800	1220	.0	0	417.0	11.0
6	8.6	.5	210	90	200	1900	2100	1020	.0	0	1290.0	12.0
7	6.0	.5	177	110	467	2040	1640	1120	.0	0	772.0	8.0
8	4.9	.8	167	120	492	1610	1220	1120	.0	0	462.0	9.2
9	4.1	1.4	167	85	242	1390	992	1060	.0	0	640.0	7.3
10	3.6	2.4	170	60	200	1250	978	1020	.0	0	401.0	5.5
11	3.1	2.1	170	40	530	1240	856	1000	.0	0	960.0	14.0
12	2.8	1.9	1990	27	476	1530	712	1000	.0	0	834.0	27.0
13	2.6	1.6	1460	19	352	1870	610	800	.0	0	350.0	10.0
14	2.4	1.5	740	12	316	2230	999	700	.0	0	858.0	5.0
15	2.1	1.4	500	9	250	2430	943	600	.0	0	400.0	1.0
16	1.8	1.3	320	6	200	2410	820	500	.0	0	250.0	.1
17	1.6	1.4	190	5	100	2330	652	400	.0	0	150.0	1.7
18	1.3	1.6	110	4	298	2190	520	340	.0	0	80.0	1.2
19	1.1	1.8	70	4	320	1450	470	270	.0	0	20.0	1.0
20	.8	1.9	45	329	276	1080	1170	220	.0	0	279.0	.4
21	.5	2.1	27	520	343	900	1800	180	.0	0	465.0	.2
22	.0	27.0	17	633	356	800	2160	145	.0	0	517.0	.1
23	.0	390.0	9	470	352	700	2160	115	.0	0	250.0	320.0
24	.0	352.0	50	380	320	662	1840	90	.0	0	100.0	1140.0
25	.0	236.0	838	284	264	766	1740	78	.0	727	50.0	100.0
26	.0	177.0	1960	236	252	808	2000	66	.0	284	30.0	136.0
27	.0	137.0	1130	257	444	996	2280	50	.0	627	15.0	316.0
28	.0	111.0	670	150	814	1170	2440	38	.0	459	8.0	252.0
29	.0	87.0	300	100	---	1110	2290	29	.0	1190	6.0	1500.0
30	.0	79.0	200	70	---	992	1930	22	.0	992	5.2	4690.0
31	.0	---	140	50	---	1010	---	12	---	492	27.0	---
TOTAL	199.3	1623.9	13790	4460	8627	41918	47182	21025	6.4	4771	10772.2	8612.7
MEAN	6.43	54.1	445	144	308	1352	1573	678	.21	154	347	287
MAX	48	390	1990	633	814	2430	3010	2300	5.5	1190	1290	4690
MIN	.00	.10	9.0	4.0	30	530	470	12	.00	.00	5.2	.10
AC-FT	395	3220	27350	8850	17110	83140	93590	41700	13	9460	21370	17080
CAL YR 1982	TOTAL	116550.00	MEAN	319	MAX	4810	MIN	.00	AC-FT	231200		
WTR YR 1983	TOTAL	162987.50	MEAN	447	MAX	4690	MIN	.00	AC-FT	323300		

09402500 COLORADO RIVER NEAR GRAND CANYON, AZ

LOCATION.--Lat 36°06'05", long 112°05'08", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, Hydrologic Unit 15010001, in Grand Canyon National Park, on left bank 0.2 mi upstream from Kaibab Bridge, 0.4 mi upstream from Bright Angel Creek, 4.5 mi northeast of village of Grand Canyon, 26 mi downstream from Little Colorado River, and 267 mi upstream from Hoover Dam.

DRAINAGE AREA.--141,600 mi² approximately, including 3,959 mi² in Great Divide basin in southern Wyoming which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1922 to current year. Prior to 1944, published as "Colorado River at Bright Angel Creek, near Grand Canyon." Gage-height records collected 1.5 mi downstream 1908-13, published in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder with supplementary water-stage recorder on right bank 700 ft downstream (prior to Oct. 1, 1934, supplementary gage was the only gage). Datum of both gages is 2,418.7 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Flow completely regulated by Lake Powell, 104 mi upstream, since Mar. 13, 1963. (See elsewhere in this report.) Many diversions above station for irrigation, municipal, and industrial uses.

AVERAGE DISCHARGE (unadjusted for storage in Lake Powell).--40 years (water years 1923-62), 16,930 ft³/s, 12,260,000 acre-ft/yr; 19 years (water years 1965-83) 13,330 ft³/s, 9,658,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1922-62: Maximum discharge, 127,000 ft³/s July 2, 1927, gage height, 29.25 ft; minimum, 700 ft³/s Dec. 28, 1924, gage height, -0.70 ft.
1963-83: Maximum discharge, 96,200 ft³/s June 29, 1983, gage height, 26.26 ft; minimum, 850 ft³/s Jan. 26, 1963, gage height, -0.55 ft, result of closing coffer dam at Glen Canyon Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1884, 300,000 ft³/s about July 8, 1884 (computed on basis of flood studies at Lees Ferry). Crest discharge of flood of June 19, 1921, was 220,000 ft³/s, gage height, 37.5 ft from floodmarks, from rating curve extended above 120,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96,200 ft³/s June 29, gage height, 26.26 ft; minimum daily, 6,110 ft³/s Mar. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8550	13500	18300	9700	14000	17100	14200	21000	23600	86400	40500	26900
2	7810	15800	18500	15100	22100	15100	10000	16000	24400	84700	36200	26800
3	6310	17100	16000	16400	23600	16500	9350	20000	30500	84300	35500	26500
4	7570	16800	14200	14000	23000	15000	7500	20800	38500	83800	35500	26600
5	8470	18500	16000	14300	21600	14300	11000	20500	40000	84400	36000	26600
6	7730	18900	16000	14900	20400	12800	13200	19500	44600	78200	35800	26700
7	10800	15800	20700	16400	19100	11000	13200	17900	49500	72000	36200	25400
8	12700	13800	19600	13200	19900	17000	11000	14400	49500	66300	35100	26900
9	11300	17800	18100	9810	19500	14900	10400	13600	48100	53000	34300	26700
10	9370	17900	18300	10700	18900	13500	11400	19800	49200	52300	35800	26100
11	7980	19600	18300	12100	17800	10900	15500	21100	48900	53100	30000	24700
12	14600	20200	12400	9110	16300	10000	19400	21000	49400	55600	27300	25900
13	12800	18500	12500	15200	14400	9440	22800	21500	48300	55900	26200	25800
14	12800	14500	17800	17300	9840	8080	21600	24200	50400	54800	25900	25900
15	14200	13700	17600	16200	15600	15000	21300	19000	51600	54900	26100	26400
16	15200	15000	21200	12600	14500	13600	18700	17500	56700	55300	25600	25900
17	16000	13800	21000	11900	17100	9640	17900	24100	59000	54800	25900	26100
18	11600	16100	20300	14400	16800	10700	15800	23700	62100	51500	26000	26600
19	15300	17500	14200	17300	14400	11400	16700	24500	61900	49300	26600	26500
20	12300	15100	12800	17400	8460	8770	18200	25500	62300	44500	27000	26300
21	14400	11100	16300	19000	9420	6110	17700	23300	62200	39400	27100	26300
22	16300	11500	15000	21700	13700	10800	19300	19700	62100	39300	26900	26600
23	13000	13800	15300	21200	13100	12600	20700	18500	69600	39300	27000	26500
24	10800	12200	16900	15800	14300	12200	18100	24300	69100	41500	26900	27700
25	7780	16200	14000	21900	15400	13800	16900	24300	69200	41200	26300	26400
26	11500	12600	8480	18100	17700	12700	20100	26100	68900	43300	26000	26900
27	13900	16100	8780	15900	7750	11500	20900	25700	69200	42100	27000	26600
28	16900	16500	12000	15800	10000	8220	17800	25700	78900	38500	26800	26900
29	17600	16400	14200	11300	---	12900	22600	22900	92200	40100	26800	26900
30	18100	18400	17500	10700	---	13800	22800	22700	86700	41200	26500	28800
31	15500	---	16100	7760	---	12600	---	22700	---	41000	26900	---
TOTAL	379170	474700	498360	457180	448670	381960	496050	661500	1676600	1722000	921700	794900
MEAN	12230	15820	16080	14750	16020	12320	16540	21340	55890	55550	29730	26500
MAX	18100	20200	21200	21900	23600	17100	22800	26100	92200	86400	40500	28800
MIN	6310	11100	8480	7760	7750	6110	7500	13600	23600	38500	25600	24700
AC-FT	752100	941600	988500	906800	889900	757600	983900	1312000	3326000	3416000	1828000	1577000
CAL YR 1982	TOTAL	4706550	MEAN	12890	MAX	22600	MIN	4440	AC-FT	9335000		
WTR YR 1983	TOTAL	8912790	MEAN	24420	MAX	92200	MIN	6110	AC-FT	17680000		

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1925 to November 1942, September 1943 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to March 1974, April 1983 to current year.

WATER TEMPERATURES: October 1940 to October 1942, September 1943 to September 1976, April 1983 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1925 to November 1942, September 1943 to September 1972.

INSTRUMENTATION.--Water-temperature recorder from October 1952 to September 1976. Specific conductance and water temperature recorder April 1983 to current year.

REMARKS.--Unpublished chemical analyses for period October 1930 to September 1940, daily specific conductance measurements for period October 1937 to November 1942, September 1943 to September 1964, and daily water temperatures for period October 1936 to September 1940, available from district office in Tucson, Ariz.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (April 1983 to September 1983): Maximum, 940 micromhos on May 10, Aug. 11, 1983; minimum, 740 micromhos on June 22, 1983.

WATER TEMPERATURE (April 1983 to September 1983): Maximum, 14.0°C on July 1-4, Sept. 22, 23; minimum 8.5°C on May 19, 20, 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	HARD- NESS AS CACO3
OCT 13...	1330	14400	895	7.9	--	12.0	--	--	--	--	290
FEB 14...	1345	9060	1030	8.3	--	9.0	--	706	--	--	270
MAY 18...	1520	22000	955	7.8	20.0	10.0	10.9	701	105	16	280
JUN 18...	1400	62300	880	--	44.5	11.5	--	--	--	--	280
JUL 13...	1130	57400	860	8.0	32.0	12.5	--	--	--	--	260

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 13...	160	72	26	91	2	3.9	130	230	73	.30
FEB 14...	120	68	25	100	3	3.6	150	220	91	.30
MAY 18...	140	69	25	83	2	3.6	140	230	68	.30
JUN 18...	140	69	25	77	2	3.2	--	220	57	.30
JUL 13...	140	64	24	72	2	3.4	120	220	52	.30

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 13...	7.9	609	580	.83	.36	<.010	100	5	594	23100
FEB 14...	7.7	639	610	.87	.47	.030	100	15	1130	27600
MAY 18...	7.6	600	570	.82	.38	.030	90	22	1040	61800
JUN 18...	7.7	565	540	.77	.28	<.010	100	14	2940	495000
JUL 13...	7.5	538	520	.73	.32	.010	90	15	--	--

< Actual value is known to be less than value shown.

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SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) PERIOD APRIL 1983 TO SEPTEMBER 1983

[illegible]

TEMPERATURE, WATER (DEG. C), PERIOD APRIL 1983 TO SEPTEMBER 1983

[illegible]

KANAB CREEK BASIN

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09403600 KANAB CREEK NEAR KANAB, UT

LOCATION.--Lat 37°06'02", long 112°32'50", in NE¼NE¼SW¼ sec.5, T.43 S., R.6 W., Kane County, Hydrologic Unit 15010003, at upstream edge of left bridge pier on U.S. Highway 89, 300 ft upstream from Tiny Canyon and 3.5 mi north of Kanab.

DRAINAGE AREA.--198 mi².

PERIOD OF RECORD.--July 1959 to September 1968 (annual maximum only). January 1979 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,060 ft, from topographic map. A crest-stage gage was in operation at this site from July 22, 1959 to Sept. 30, 1968, at different datum.

REMARKS.--Records poor. No diversion above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,060 ft³/s Apr. 6, 1980, maximum gage height, 7.63 ft Aug. 14, 1982; minimum recorded, 0.90 ft³/s June 23, 26, 29, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge recorded by crest-stage gage, 3,030 ft³/s Sept. 8, 1961, gage height, 19.80 ft at different datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 148 ft³/s Mar. 12, gage height, 6.47 ft, no peak above base of 200 ft³/s; minimum recorded, 0.90 ft³/s June 23, 26, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	19	16	14	18	79	54	30	11	4.4	11	10
2	8.6	16	18	14	19	97	53	21	11	4.4	11	10
3	8.2	15	20	15	19	116	52	17	11	4.4	11	10
4	8.0	15	18	15	18	87	52	14	9.5	4.4	11	10
5	8.2	15	14	15	17	81	51	12	10	4.4	11	10
6	8.3	15	14	15	18	83	51	12	9.8	4.4	11	10
7	8.7	17	15	15	19	85	51	12	9.6	4.4	11	11
8	9.2	20	16	15	20	84	50	12	9.6	4.3	10	10
9	9.8	18	16	16	21	93	50	11	9.5	4.3	10	10
10	11	24	14	15	24	96	49	11	9.4	4.3	10	10
11	12	22	14	15	26	96	52	11	9.2	4.3	10	10
12	13	21	14	17	27	90	53	11	9.0	4.3	10	10
13	13	20	14	14	30	92	51	11	8.9	4.3	10	10
14	13	18	14	14	30	105	50	11	8.6	4.3	10	10
15	12	15	14	19	31	70	49	10	8.4	4.1	10	10
16	12	12	14	18	35	60	49	9.6	7.6	4.1	10	10
17	11	12	14	16	35	62	48	9.2	5.6	4.1	12	10
18	11	12	14	15	41	60	52	10	6.3	4.1	14	10
19	12	12	14	17	43	58	49	8.8	6.4	4.1	11	10
20	13	14	14	20	41	58	47	8.5	5.6	4.1	11	10
21	14	10	14	20	48	58	47	7.2	9.0	6.3	11	10
22	14	12	20	20	55	54	47	8.0	4.9	7.8	11	10
23	14	12	24	19	58	55	47	8.8	6.4	7.8	11	11
24	14	11	22	19	62	56	52	8.8	5.0	7.1	11	10
25	15	10	21	19	62	53	54	8.8	7.2	7.8	11	10
26	16	11	21	18	64	50	48	9.6	3.8	7.0	11	10
27	16	12	21	19	65	51	47	8.0	4.7	8.2	11	10
28	18	12	21	20	72	50	40	8.0	4.7	7.6	11	10
29	18	13	20	19	---	55	34	8.5	4.4	7.6	11	10
30	18	15	17	18	---	55	33	8.5	4.4	7.6	11	12
31	20	---	14	17	---	55	---	9.3	---	13	10	---
TOTAL	388.0	450	516	522	1018	2244	1462	345.6	230.5	173.3	335	304
MEAN	12.5	15.0	16.6	16.8	36.4	72.4	48.7	11.1	7.68	5.59	10.8	10.1
MAX	20	24	24	20	72	116	54	30	11	13	14	12
MIN	8.0	10	14	14	17	50	33	7.2	3.8	4.1	10	10
AC-FT	770	893	1020	1040	2020	4450	2900	685	457	344	664	603
CAL YR 1982	TOTAL	4740.2	MEAN	13.0	MAX	43	MIN	3.2	AC-FT	9400		
WTR YR 1983	TOTAL	7988.4	MEAN	21.9	MAX	116	MIN	3.8	AC-FT	15840		

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ

LOCATION.--Lat 36°53'30", long 113°55'25", in SW¼SW¼ sec.4, T.40 N., R.15 W., Mohave County, Hydrologic Unit 15010010, on right bank 0.5 mi downstream from Beaver Dam Wash, 0.4 mi upstream from Littlefield, and 36 mi upstream from waterline of Lake Mead at altitude 1,221 ft, National Geodetic Vertical Datum of 1929.

DRAINAGE AREA.--5,090 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 959: 1932. WSP 979: 1930-31, 1933-37. WSP 1313: 1940 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,763.68 ft, National Geodetic Vertical Datum of 1929. Prior to May 28, 1933, nonrecording gage at site 300 ft upstream and May 28, 1933, to Nov. 7, 1939, at same site, both at datum 2.53 ft higher. Nov. 8, 1939, to Mar. 31, 1942, nonrecording gage at same site at datum 2.00 ft higher. Apr. 1, 1942, to Sept. 30, 1970, water-stage recorder at same site at same datum. Oct. 1, 1970, to Aug. 7, 1979, at site 300 ft upstream at same datum.

REMARKS.--Records fair except those for periods of no gage-height record, Jan. 27 to Feb. 21, which are poor.

AVERAGE DISCHARGE.--54 years, 243 ft³/s, 176,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,200 ft³/s Dec. 6, 1966, gage height, 15.66 ft, for site then in use, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement of peak flow; minimum, 38 ft³/s May 1, 10, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	1400	*6,200	9.35	May 30	1200	3,390	7.93
Dec. 23	1400	4,600	8.55	Aug. 18	0100	3,510	8.22
Mar. 3	0800	3,400	9.33				

Minimum daily discharge, 70 ft³/s, Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240	259	2100	291	300	740	1300	1700	2570	308	386	104
2	217	210	661	291	300	831	1090	1500	2350	296	376	109
3	207	200	492	296	300	3170	1060	1370	1910	300	340	145
4	207	193	430	296	300	2430	1000	1380	1760	308	186	117
5	193	200	430	291	300	2240	942	1530	1590	275	154	120
6	179	200	430	296	300	2190	927	1540	1590	251	207	122
7	179	196	410	296	300	2130	905	1450	1590	243	267	122
8	186	207	390	300	320	2010	890	1580	1530	255	410	116
9	200	344	390	300	340	1960	862	1940	1610	279	287	110
10	200	461	630	291	320	1830	848	2090	1540	321	321	104
11	203	476	526	291	310	1810	890	2130	1480	300	487	98
12	179	344	430	287	310	1910	934	1810	1480	280	300	92
13	183	279	386	279	310	1810	898	1740	1530	270	296	86
14	193	259	386	279	310	1670	862	1630	1260	260	279	80
15	193	247	353	283	310	1990	792	1660	1080	250	443	74
16	189	225	339	283	310	1720	765	1830	942	245	425	70
17	189	225	339	300	310	1740	745	1590	883	240	637	78
18	183	228	335	330	310	1840	862	1660	840	240	2190	80
19	163	232	330	304	310	1720	1030	1770	772	240	1060	87
20	173	678	326	291	310	1520	987	1830	725	235	386	92
21	173	321	321	271	310	1350	1260	1980	649	235	287	101
22	179	296	330	263	313	1290	1380	2220	577	235	291	96
23	189	283	1780	267	330	1160	1270	2310	548	235	267	101
24	200	287	765	275	330	1520	1450	2340	487	235	255	609
25	207	275	390	308	344	1360	1700	2460	455	235	283	1020
26	200	263	308	300	371	1200	1630	2630	455	245	275	612
27	232	263	335	310	371	1190	1590	2440	395	283	236	317
28	255	259	353	300	1180	1110	1540	2520	344	317	210	279
29	200	267	335	290	---	1080	1640	2570	321	296	179	251
30	193	643	313	290	---	1090	2010	2660	308	247	145	313
31	203	---	287	290	---	1380	---	2660	---	300	120	---
TOTAL	6087	8820	15630	9039	9729	50991	34059	60520	33571	8259	11985	5705
MEAN	196	294	504	292	347	1645	1135	1952	1119	266	387	190
MAX	255	678	2100	330	1180	3170	2010	2660	2570	321	2190	1020
MIN	163	193	287	263	300	740	745	1370	308	235	120	70
AC-FT	12070	17490	31000	17930	19300	101100	67560	120000	66590	16380	23770	11320
CAL YR 1982	TOTAL	96306	MEAN	264	MAX	2100	MIN	68	AC-FT	191000		
WTR YR 1983	TOTAL	254395	MEAN	697	MAX	3170	MIN	70	AC-FT	504600		

VIRGIN RIVER BASIN

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09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1947 to current year.

CHEMICAL ANALYSES: July 1949 to September 1969, once daily (composited); October 1969 to current year, monthly.

SPECIFIC CONDUCTANCES AND WATER TEMPERATURES: October 1947 to current year, once daily.

BIOLOGICAL DATA: October 1977 to September 1979, twice yearly.

MICROBIOLOGICAL DATA: November 1977 to October 1979, monthly.

SEDIMENT DATA: October 1947 to September 1968, once daily; September 1977 to November 1979, monthly.

REMARKS.--Streamflow is not completely homogenous chemically from bank to bank. Flow adjacent to north bank is generally somewhat more dilute than average; monthly data collected during June 1975-September 1976 indicate that specific conductance off north bank was 93 to 100 percent of stream-wide average (range of discharge, 60-230 ft³/s). This doubtless affects specific conductance of daily samples, which are collected off north bank. Water temperature characteristically shows little or no variation from bank to bank. Much of day-to-day fluctuation in water temperature prior to August 1975 was due to measurement at different times of day (rather than at about the same time each day). Detailed sampling information for period since June 1975 is available from U.S. Geological Survey, Carson City, Nev.

EXTREMES MEASURED FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCES: Maximum, 4,650 micromhos Aug. 21, 1966; minimum, 615 micromhos May 27, 28, 30, 31, 1983.

FECAL STREPTOCOCCI: Maximum, 46,000 colonies/100 mL (non-ideal colony count) Jan. 25, 1978; minimum, 110 colonies/100 mL Aug. 28, 1979.

WATER TEMPERATURES: Maximum, 33.5°C July 7, 1953; minimum, 2.0°C Jan. 4, 1949, Jan. 4, 1950, Jan. 4, 5, 1971.

SUSPENDED--SEDIMENT CONCENTRATIONS: Maximum, 247,000 mg/L Aug. 14, 1964; minimum, 40 mg/L June 16, 20, 1962.

EXTREMES FOR CURRENT YEAR (MEASUREMENTS AT LEAST ONCE DAILY).--

SPECIFIC CONDUCTANCES: Maximum, 3,210 micromhos Oct. 16-18; minimum, 615 micromhos May 27, 28, 30, 31.

WATER TEMPERATURES: Maximum, 29.5°C July 23; minimum, 7.0°C Dec. 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (FT ³ /S)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CaCO ₃)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO
OCT 27...	1030	211	2860	8.0	16.0	8.6	93	980	260	81	280	4.0
NOV 23...	1045	301	2350	8.0	12.5	9.8	98	820	220	66	210	3.3
DEC 23...	0945	1640	1850	8.1	8.5	11.1	103	620	170	48	170	3.1
JAN 27...	0915	309	2250	8.0	11.5	9.8	97	790	210	65	200	3.2
FEB 21...	1100	308	2100	7.9	12.5	10.0	100	760	200	64	170	2.8
MAR 30...	1030	1180	1550	8.1	14.0	10.1	104	600	150	55	120	2.2
APR 27...	0915	1610	1000	8.1	13.0	10.0	102	380	98	33	61	1.4
MAY 26...	0730	2380	690	8.2	16.0	9.0	98	270	76	19	36	1.0
JUN 29...	0930	308	1900	8.0	22.0	7.8	96	680	180	56	160	2.8
JUL 27...	0900	241	2300	7.9	23.0	8.0	101	890	260	59	180	2.7
AUG 24...	0930	255	--	8.0	23.0	8.1	101	850	230	68	200	3.1
SEP 15...	1030	82	3000	7.9	25.5	8.4	111	1300	340	100	260	3.3

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)
OCT 27...	22	250	820	380	.70	19	1940	2010	1110	<.020	.80
NOV 23...	18	276	650	290	.60	18	1660	1640	1350	--	--
DEC 23...	15	216	480	220	.50	15	1300	1250	5760	--	--
JAN 27...	17	268	620	260	.60	17	1590	1550	1330	--	.70
FEB 21...	15	260	540	240	.60	17	1390	1400	1160	--	--
MAR 30...	9.9	171	460	120	.40	15	976	1030	3110	--	--
APR 27...	6.1	190	220	74	.40	13	632	619	2750	--	--
MAY 26...	4.7	157	130	45	.20	11	433	416	2780	--	--
JUN 29...	14	237	520	220	.60	18	1350	1310	1120	--	--
JUL 27...	18	221	730	240	.60	17	--	1640	1070	<.020	.60
AUG 24...	25	200	730	260	.60	20	1660	1650	1140	--	--
SEP 15...	26	237	1100	380	.90	21	2430	2370	538	--	--

[illegible]

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	17.0	12.0	9.0	13.0	12.0	16.0	12.0	20.0	27.0		
2	21.0	16.0	11.0	10.0	11.0	11.0	15.0	13.0	19.0	26.0		
3	21.0	16.0	11.0	10.0	12.0	11.0	15.0	13.0	20.0	26.0		
4	21.0	15.0	11.0	11.0	12.0	13.0	---	13.5	19.5	29.0		
5	21.0	15.0	12.0	11.0	14.0	13.0	---	14.0	21.0	28.0		
6	21.0	15.0	12.0	12.0	13.0	15.0	---	17.0	21.5	29.0		
7	21.0	15.5	10.0	12.0	13.0	15.0	---	19.5	---	28.5		
8	19.0	15.0	11.0	12.0	14.0	15.0	---	20.5	---	28.0		
9	18.0	14.0	12.0	11.0	11.5	17.0	---	17.0	---	26.0		
10	19.0	13.0	12.0	11.0	14.0	18.0	---	16.0	23.0	25.0		
11	19.0	13.0	12.0	12.0	14.0	18.0	---	14.0	22.0	26.0		
12	22.0	12.5	12.5	13.0	14.0	17.0	---	14.0	22.0	28.0		
13	21.0	14.0	12.5	14.0	13.0	17.0	---	15.0	20.5	28.0		
14	21.0	13.0	11.0	14.0	15.0	15.0	---	16.0	22.0	28.0		
15	21.0	13.0	11.0	13.0	14.0	14.0	---	18.0	22.0	27.5		
16	21.5	13.0	12.0	14.0	14.0	14.0	---	18.0	23.0	26.0		
17	21.0	15.0	12.0	14.0	15.0	12.0	---	17.0	24.0	26.0		
18	21.0	15.0	12.0	12.0	15.0	11.0	---	16.0	24.0	25.0		
19	18.0	15.0	12.0	12.0	13.0	15.0	12.0	16.5	24.0	26.0		
20	19.0	13.0	12.0	11.0	14.0	16.0	13.0	16.0	23.0	27.5		
21	19.0	13.5	12.0	11.0	16.0	17.0	14.0	19.0	23.0	25.0		
22	19.0	13.0	12.0	10.5	16.0	13.0	13.0	19.0	24.0	26.0		
23	20.5	14.0	8.0	11.0	16.0	14.0	13.0	19.0	24.5	29.5		
24	18.0	14.0	7.0	12.0	16.0	13.0	13.0	18.0	24.5	27.0		
25	20.5	14.0	9.0	13.0	15.5	13.0	11.5	17.0	26.0	27.5		
26	19.0	14.0	9.0	13.5	14.0	---	11.0	17.0	27.0	25.0		
27	17.5	14.0	9.0	13.0	14.0	---	13.0	17.0	27.0	27.0		
28	17.0	14.0	8.0	14.0	13.0	---	13.0	18.0	27.0	26.0		
29	17.0	14.0	8.0	13.0	---	---	13.0	18.0	26.0	28.0		
30	17.0	13.0	8.0	13.0	---	17.0	12.0	19.0	24.5	25.0		
31	18.0	---	8.0	12.0	---	14.0	---	18.5	---	25.5		
MEAN	19.5	14.0	10.5	12.0	14.0	14.5	13.0	16.5	23.0	27.0		
MAX	22.0	17.0	12.5	14.0	16.0	18.0	16.0	20.5	27.0	29.5		
MIN	17.0	12.5	7.0	9.0	11.0	11.0	11.0	12.0	19.0	25.0		
WTR YR 1983	MEAN	16.5	MAX	29.5	MIN	7.0						

SPECIFIC CONDUCTANCE (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2600	2340	2220	2350	2300	963	1540	997	820	2310		
2	2690	2640	2220	2350	2300	650	1520	1060	820	2230		
3	2600	2640	2260	---	2380	627	1540	1120	840	2310		
4	2730	2600	2260	2300	2380	1120	---	1040	840	2450		
5	2820	2730	2260	2260	2300	1120	---	1040	780	2510		
6	2860	2690	2220	2300	2250	1280	---	934	760	2390		
7	2730	2690	2170	2300	2300	1570	1600	---	820	2390		
8	2820	2690	2260	2260	2170	1570	1660	912	820	2700		
9	2860	2250	1750	2260	---	1640	1600	743	880	2760		
10	2860	1780	1730	2300	1820	1570	1620	743	880	2630		
11	2930	1730	2260	2220	1820	1570	1710	849	860	2740		
12	3100	1990	2260	2280	1910	1500	1710	828	880	2700		
13	3060	2250	2260	2350	1990	1460	1640	828	880	2780		
14	3060	2340	2300	2350	1990	1480	1710	849	---	2900		
15	3120	2380	2300	2350	2080	1500	1710	806	---	2840		
16	3210	2510	2440	2300	2080	1460	---	828	---	2780		
17	3210	2510	2440	2300	2100	1460	---	806	---	2820		
18	3210	2490	2440	2320	2100	1480	---	828	---	2820		
19	3120	2490	2440	2170	2080	1030	---	785	---	2860		
20	3080	1430	2480	2220	2040	986	---	849	---	2800		
21	3170	2080	2480	2280	2120	986	---	700	---	2800		
22	3080	2300	2390	2350	2080	739	---	679	---	2880		
23	3120	2430	1240	2350	2080	739	---	679	---	2700		
24	2990	2430	1440	2300	2020	739	---	679	---	2630		
25	2950	2430	1990	2220	2020	739	---	679	---	2390		
26	2880	2430	2220	2220	1910	1610	---	700	---	2450		
27	2820	2430	2220	2220	1890	1610	---	615	---	2530		
28	2730	2430	2130	2260	1910	1640	---	615	---	2780		
29	2750	2380	2220	2130	---	1610	---	658	---	2820		
30	2750	2100	2350	2130	---	---	---	615	2240	2880		
31	2820	---	2480	2320	---	---	---	615	---	2880		
MEAN	2930	2350	2200	2280	2090	1260	1630	803	937	2660		
MAX	3210	2730	2480	2350	2380	1640	1710	1120	2240	2900		
MIN	2600	1430	1240	2130	1820	627	1520	615	760	2230		
WTR YR 1983	MEAN	2000	MAX	3210	MIN	615						

VIRGIN RIVER BASIN

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV
(National stream-quality accounting network station)

LOCATION.--Lat 36°40'28", long 114°17'54", in NE¼SW¼NE¼ sec.32, T.14 S., R.69 E., Clark County, Hydrologic Unit 15010010, on left bank, 1.3 mi upstream from Halfway Wash, 6.1 mi southeast of Riverside, and 7.5 mi upstream from waterline of Lake Mead at altitude 1,221 ft, National Geodetic Vertical Datum of 1929.

DRAINAGE AREA.--5,980 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft, from topographic map. Prior to Sept. 27, 1979, at site 0.5 mi downstream at different datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years, 361 ft³/s, 261,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 16,000 ft³/s Mar. 5, 1978, gage height, 6.60 ft, maximum gage height, 7.58 ft Mar. 3, 1983; no flow several days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 5,800 ft³/s Dec. 1, gage height, about 7.2 ft, maximum gage height, 7.58 ft Mar. 3; minimum daily, 66 ft³/s Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	269	1980	294	321	592	897	1220	2340	228	297	104
2	245	216	628	294	321	582	752	1100	2140	219	293	98
3	234	206	467	299	321	2220	731	1010	1720	222	265	130
4	234	197	408	299	321	1700	680	1040	1580	230	145	105
5	216	204	408	297	321	1570	641	1160	1420	210	122	108
6	200	202	413	302	321	1530	630	1190	1400	190	164	111
7	200	198	394	302	321	1490	606	1130	1400	190	214	111
8	206	207	374	306	346	1410	596	1250	1330	200	328	106
9	222	344	374	306	367	1370	578	1530	1400	215	232	101
10	222	456	605	300	346	1280	560	1670	1320	235	260	96
11	225	471	510	300	335	1270	587	1730	1260	225	394	90
12	197	337	417	296	335	1340	616	1480	1260	215	246	86
13	201	273	374	287	335	1270	584	1440	1290	205	243	80
14	212	251	374	287	335	1170	560	1370	1060	200	232	74
15	210	240	342	294	335	1390	515	1410	896	188	368	69
16	206	216	332	294	338	1200	490	1570	772	188	357	66
17	206	216	332	312	338	1220	477	1380	724	188	535	73
18	199	217	328	343	338	1290	552	1460	680	188	1860	75
19	176	220	323	316	338	1200	649	1580	625	188	901	83
20	187	619	319	306	338	1060	622	1650	580	180	328	87
21	187	302	318	284	338	945	794	1780	513	180	247	96
22	192	275	326	276	341	903	883	2020	456	180	250	91
23	202	263	1770	280	360	812	826	2130	427	180	232	97
24	214	267	757	289	360	1060	957	2180	380	180	218	585
25	221	256	386	326	375	952	1140	2310	350	180	213	979
26	212	247	308	318	404	840	1110	2500	346	180	211	588
27	246	247	335	329	404	833	1080	2290	300	225	211	304
28	270	243	353	318	1180	777	1060	2370	258	238	207	268
29	210	250	335	307	---	756	1150	2390	241	225	202	241
30	203	596	313	307	---	763	1430	2470	228	188	200	300
31	211	---	290	310	---	966	---	2450	---	231	196	---
TOTAL	6637	8505	15193	9378	10433	35761	22753	52260	28696	6291	10171	5402
MEAN	214	284	490	303	373	1154	758	1686	957	203	328	180
MAX	271	619	1980	343	1180	2220	1430	2500	2340	238	1860	979
MIN	176	197	290	276	321	582	477	1010	228	180	122	66
AC-FT	13160	16870	30140	18600	20690	70930	45130	103700	56920	12480	20170	10710
CAL YR 1982	TOTAL	89501	MEAN	245	MAX	1980	MIN	12	AC-FT	177500		
WTR YR 1983	TOTAL	211480	MEAN	579	MAX	2500	MIN	66	AC-FT	419500		

NOTE.--No gage-height record May 31 to June 29, July 17 to Sept. 14.

VIRGIN RIVER BASIN

83

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1977 to current year.

CHEMICAL ANALYSES, MICROBIOLOGICAL AND SEDIMENT DATA: January 1978 to September 1980, monthly;

October 1980 to current year, every 2 months.

SPECIFIC CONDUCTANCES AND WATER TEMPERATURES: December 1977 to April 1978, monthly; May 1978 to September 1982, once daily; October 1982 to current year, every two months.

BIOLOGICAL DATA: March 1978 to September 1980, monthly (seasonal); October 1980 to September 1981, every 2 months.

REMARKS.--Listed frequencies of measurement apply except during summer periods of no flow.

EXTREMES MEASURED FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCES: Maximum, 5,260 micromhos Sept. 16, 1978; minimum, 770 micromhos May 26, 1983.

PHYTOPLANKTON: Maximum, 8,200 cells/mL May 28, 1981; minimum, 27 cells/mL Mar. 30, 1978.

FECAL STREPTOCOCCI: Maximum, 41,000 colonies/100 mL (non-ideal colony count) July 29, 1982; minimum, 100 colonies/100 mL (non-ideal colony count) June 28, 1979.

WATER TEMPERATURES: Maximum, 36.5°C July 31, 1982; minimum, 3.5°C Jan. 1, 1979.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 12,000 mg/L July 29, Sept. 29, 1982; minimum, 166 mg/L Sept. 27, 1978.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (FT ³ /S)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
NOV 23...	1300	279	2500	8.3	14.0	340	9.9	101	46	K350	K2100
JAN 27...	1200	328	2400	8.3	9.5	650	11.0	103	37	--	--
MAR 30...	1330	714	1650	8.3	21.0	900	8.9	105	45	1200	4500
MAY 26...	1100	E2500	770	8.2	20.5	1000	8.3	98	92	460	4400
JUL 27...	1130	180	2550	8.1	26.5	3000	8.0	106	110	--	--
SEP 15...	1345	E30	3350	8.0	32.5	--	7.0	103	24	K120	4100

E: ESTIMATED.

K: NON-IDEAL COLONY COUNT.

VIRGIN RIVER BASIN

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	HARD- NESS (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINIT- Y (MG/L AS CaCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV 23...	910	230	80	240	3.6	20	232	760	340	.60	18
JAN 27...	850	220	73	220	3.4	16	234	700	290	.60	18
MAR 30...	640	160	58	130	2.3	11	213	500	150	.40	16
MAY 26...	300	82	22	43	1.1	5.1	153	180	57	.20	11
JUL 27...	1100	300	76	210	2.9	20	178	890	280	.60	18
SEP 15...	1400	340	130	340	4.1	31	158	1200	470	.70	24

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 23...	1840	1830	1390	.68	.060	1.10	.480	.040	<.010	20	5
JAN 27...	1700	1680	1510	.65	.130	1.40	.600	.040	.030	--	--
MAR 30...	1160	1160	2240	.47	.130	.90	.900	.020	.020	20	4
MAY 26...	500	493	--	.22	.140	2.60	1.10	.030	.030	40	3
JUL 27...	2000	1900	972	.46	.070	4.70	4.10	.020	<.010	--	--
SEP 15...	2770	2640	--	.24	.070	.80	.110	.010	<.010	10	3

DATE	BARIUM, DIS- SOLVED (UG/L AS Ba)	BERYL- LIUM, DIS- SOLVED (UG/L AS Be)	CADMIUM DIS- SOLVED (UG/L AS Cd)	CHRO- MIUM, DIS- SOLVED (UG/L AS Cr)	COPALT, DIS- SOLVED (UG/L AS Co)	COPPER, DIS- SOLVED (UG/L AS Cu)	IRON, DIS- SOLVED (UG/L AS Fe)	LEAD, DIS- SOLVED (UG/L AS Pb)	LITHIUM DIS- SOLVED (UG/L AS Li)	MANGA- NESE, DIS- SOLVED (UG/L AS Mn)	MERCURY DIS- SOLVED (UG/L AS Hg)
NOV 23...	200	<10	1	<1	3	1	40	1	330	10	<.1
JAN 27...	--	--	--	--	--	--	--	--	--	--	--
MAR 30...	95	<1	<1	<1	<3	1	12	3	170	10	.2
MAY 26...	79	<1	<1	<1	<3	1	18	<1	70	7	<.1
JUL 27...	--	--	--	--	--	--	--	--	--	--	--
SEP 15...	<100	<10	<1	<1	1	<1	50	<1	540	20	.1

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS Mo)	NICKEL, DIS- SOLVED (UG/L AS Ni)	SELE- NIUM, DIS- SOLVED (UG/L AS Se)	SILVER, DIS- SOLVED (UG/L AS Ag)	STRON- TIUM, DIS- SOLVED (UG/L AS Sr)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS Zn)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 23...	3	3	1	<1	2900	4.3	10	4250	3200	38
JAN 27...	--	--	--	--	--	--	--	2650	2350	57
MAR 30...	<10	2	3	1	2000	<6.0	9	3560	6860	58
MAY 26...	<10	1	1	<1	920	<6.0	4	4450	--	82
JUL 27...	--	--	--	--	--	--	--	5150	2500	95
SEP 15...	5	2	1	<1	4800	8.8	10	777	--	35

LAS VEGAS VALLEY

85

09419700 LAS VEGAS WASH NEAR HENDERSON, NV

LOCATION.--Lat 36°05'20", long 114°59'05", in SE¼SW¼ sec.30, T.21 S., R.63 E., Clark County, Hydrologic Unit 15010015, on right bank at upstream end of 4.5-ft pipe culvert on road, 3.5 mi north of Henderson, and 6.0 mi upstream from high waterline of Lake Mead at altitude 1,221.4 ft, National Geodetic Vertical Datum of 1929.

DRAINAGE AREA.--2,125 mi², of which 1,518 mi² contribute directly to surface runoff. Prior to Apr. 4, 1961, 2,179 mi², of which 1,571 mi² contributed directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1957 to current year.

REVISED RECORDS.--WSP 1926: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,540 ft, from topographic map. Prior to Apr. 4, 1961, at site 2.5 mi downstream at various datums.

REMARKS.--Records fair. In a closed basin above station, 2,150 acres are irrigated, mostly by pumping from ground water. Discharge includes waste water from industrial plants and sewage effluent.

AVERAGE DISCHARGE.--26 years, 46.6 ft³/s, 33,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,510 ft³/s July 4, 1975, gage height, 10.67 ft, from floodmarks, from rating curve extended above 3,340 ft³/s on basis of area-velocity computation to determine peak flow, maximum gage height, 12.15 ft Aug. 11, 1983; minimum daily, 4.8 ft³/s Aug. 17, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,200 ft³/s Aug. 11, gage height, 12.15 ft; minimum daily, 73 ft³/s July 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	108	379	108	100	94	81	99	86	78	84	114
2	107	108	119	108	98	104	82	101	86	76	84	116
3	104	112	110	108	100	447	82	98	94	75	81	115
4	107	111	107	103	99	231	91	97	80	77	81	113
5	106	110	106	102	93	103	95	96	80	79	81	112
6	106	107	107	102	97	101	96	98	79	79	82	110
7	104	108	111	101	96	103	94	96	83	78	82	109
8	101	113	98	100	96	91	97	95	79	77	81	108
9	99	115	107	101	98	103	95	93	79	74	83	105
10	105	115	127	101	97	100	96	90	81	73	106	104
11	107	112	111	100	97	103	96	91	79	75	760	105
12	109	112	105	100	97	102	92	92	81	76	177	106
13	110	115	104	95	98	103	96	91	82	76	110	106
14	110	113	104	96	99	102	95	87	75	76	105	106
15	112	109	103	95	99	102	93	88	75	76	105	107
16	113	106	102	98	97	101	93	83	78	74	110	106
17	112	107	101	98	93	103	97	82	80	76	120	108
18	111	109	100	98	92	100	98	85	83	76	397	107
19	115	107	101	98	94	96	92	85	84	77	110	107
20	114	104	102	98	95	98	95	77	84	77	105	105
21	115	103	102	96	95	100	100	88	83	78	105	107
22	110	107	101	97	91	102	133	88	81	80	116	108
23	110	107	134	101	87	97	95	89	83	79	116	106
24	112	107	133	100	89	92	94	89	80	80	116	112
25	111	110	103	104	88	91	93	88	78	80	115	115
26	110	110	100	100	91	91	94	86	77	79	113	114
27	106	110	101	98	93	96	96	84	80	80	112	131
28	105	110	102	104	97	96	96	84	78	78	113	121
29	99	116	101	103	---	88	98	84	77	79	114	113
30	101	117	105	110	---	86	99	86	78	80	117	140
31	107	---	104	102	---	86	---	86	---	81	113	---
TOTAL	3346	3298	3590	3125	2666	3512	2854	2776	2423	2399	4194	3336
MEAN	108	110	116	101	95.2	113	95.1	89.5	80.8	77.4	135	111
MAX	115	117	379	110	100	447	133	101	94	81	760	140
MIN	99	103	98	95	87	86	81	77	75	73	81	104
AC-FT	6640	6540	7120	6200	5290	6970	5660	5510	4810	4760	8320	6620
CAL YR 1982	TOTAL	38730	MEAN	106	MAX	379	MIN	77	AC-FT	76820		
WTR YR 1983	TOTAL	37519	MEAN	103	MAX	760	MIN	73	AC-FT	74420		

LAS VEGAS VALLEY

09419700 LAS VEGAS WASH NEAR HENDERSON, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1957 to October 1961, September and October 1962, May 1963 to June 1965, and December 1965 to current year.

CHEMICAL ANALYSES: January 1964 to January 1965, twice monthly; October 1967 to January 1969, weekly; February 1969 to January 1970 and July 1970 to current year, monthly.

SPECIFIC CONDUCTANCES: January 1964 to January 1965, twice monthly; October to November 1967 and April 1968 to January 1969, weekly; February 1969 to January 1970 and July 1970 to current year, monthly.

WATER TEMPERATURES: February 1957 to October 1961, September and October 1962, May 1963 to June 1965, and December 1965 to current year, monthly.

SEDIMENT DATA: January 1977 to current year, monthly.

REMARKS.--Discharge includes sewage effluent and some wastewater from industrial plants. City and County sewage treatment plants implemented chemical removal of phosphorus from effluent during water year 1981.

COOPERATION.--All water-quality sampling and analyses prior to July 1970, plus nutrient analyses for period July 1970 to September 1972, from U.S. Environmental Protection Agency. Data in addition to those listed under "Period of Record" for January 1964 to June 1970 may exist in files of U.S. Environmental Protection Agency.

EXTREMES MEASURED FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCES: Maximum, 6,960 micromhos Sept. 19, 1968; minimum, 1,660 micromhos Feb. 13, 1979.

WATER TEMPERATURES: Maximum, 28.0°C July 30, Sept. 3, 1958; minimum, 2.0°C Jan. 31, 1972.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 347 mg/L July 11, 1978 (questionable value not verified by duplicate determination; second-highest value for period of record, 73 mg/L); minimum, 1 mg/L Aug. 1, 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (FT ³ /S)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CaCO ₃)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)
OCT 06...	1000	110	2200	7.2	18.0	1.8	20	588	130	64	240
NOV 01...	1230	105	2470	7.1	16.5	1.6	17	--	--	--	--
DEC 01...	0945	710	3050	7.2	10.0	3.0	29	--	--	--	--
JAN 05...	1300	100	2900	7.2	11.0	2.0	19	952	200	110	300
FEB 01...	1330	94	2400	7.2	11.5	1.6	16	--	--	--	--
MAR 02...	1530	98	2650	7.0	15.5	.8	9	--	--	--	--
APR 05...	1030	99	2800	7.2	14.5	3.5	37	882	190	99	300
MAY 03...	0830	101	2800	7.1	17.0	1.7	19	--	--	--	--
JUN 07...	1000	83	2600	7.3	22.5	2.0	25	--	--	--	--
JUL 06...	0700	86	--	7.2	24.5	2.5	32	597	140	60	250
AUG 01...	0945	85	--	7.1	25.0	3.1	40	--	--	--	--
SEP 14...	0845	110	2400	7.3	24.0	2.5	32	--	--	--	--

LAS VEGAS VALLEY

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09419700 LAS VEGAS WASH NEAR HENDERSON, NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
OCT 06...	4.4	17	152	610	270	.80	21	1480	1444	440	.52
NOV 01...	--	--	--	--	--	--	--	--	--	--	1.2
DEC 01...	--	--	--	--	--	--	--	--	--	--	6.3
JAN 05...	4.3	21	141	930	400	.90	25	2120	2071	572	2.0
FEB 01...	--	--	--	--	--	--	--	--	--	--	1.8
MAR 02...	--	--	--	--	--	--	--	--	--	--	.43
APR 05...	4.5	20	148	890	370	.90	26	2030	1985	543	.90
MAY 03...	--	--	--	--	--	--	--	--	--	--	.49
JUN 07...	--	--	--	--	--	--	--	--	--	--	.19
JUL 06...	4.6	16	144	640	290	.70	20	1490	1503	346	--
AUG 01...	--	--	--	--	--	--	--	--	--	--	.10
SEP 14...	--	--	--	--	--	--	--	--	--	--	.04

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 06...	.180	.70	12.0	4.0	16.0	17	.900	.830	3	.89
NOV 01...	.210	1.4	8.50	2.5	11.0	12	.680	--	50	14
DEC 01...	.660	7.0	3.70	2.3	6.00	13	.350	--	37	71
JAN 05...	.270	2.3	9.20	3.8	13.0	15	.750	.740	10	2.7
FEB 01...	.220	2.0	9.60	2.4	12.0	14	.640	--	4	1.0
MAR 02...	.170	.60	6.30	6.7	13.0	14	.970	--	3	.79
APR 05...	.300	1.2	8.50	1.3	9.80	11	.620	.590	4	1.1
MAY 03...	.210	.70	9.20	3.8	13.0	14	.740	--	4	1.1
JUN 07...	.210	.40	11.0	8.0	19.0	19	1.00	--	4	.90
JUL 06...	--	--	--	--	--	--	--	.740	6	1.4
AUG 01...	.100	.20	12.0	--	--	--	.970	--	1	.23
SEP 14...	.060	.10	11.0	3.0	14.0	14	.700	--	3	.89

LAS VEGAS VALLEY

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV

LOCATION.--Lat 36°07'20", long 114°54'15", in NE¼SE¼ sec.14, T.21 S., R.63 E., Clark County, Hydrologic Unit 15010015, in Lake Mead Recreation Area, on left bank near mouth, on upstream side of North Shore Road, about 0.8 mi upstream from high waterline of Lake Mead at altitude 1,221.4 ft, National Geodetic Vertical Datum of 1929, and 11 mi north-northwest of Boulder City.

DRAINAGE AREA.--2,193 mi², of which 1,586 mi² contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft, from topographic map. Prior to June 5, 1978, water-stage recorder at site 50 ft upstream at different datum.

REMARKS.--Records poor, state-discharge relation indefinite Dec. 5 to May 23, no gage-height record Aug. 12 to Sept. 20. In closed basin above station, 2,150 acres are irrigated, mostly by pumping from ground water. Discharge includes sewage effluent.

AVERAGE DISCHARGE.--14 years, 80.2 ft³/s, 58,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,430 ft³/s July 4, 1975, gage height, 12.32 ft, from indirect measurement of peak flow, site and datum then in use; minimum, 14 ft³/s July 7, 8, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 26, 1964, reached a stage of 7.5 ft, from floodmarks, discharge, 1,050 ft³/s, from indirect measurement of peak flow, and another flood between 1964 and 1969 reached a stage of about 10 ft, from floodmarks, discharge, about 1,700 ft³/s, from rating curve extended above 300 ft³/s on basis of theoretical weir and culvert formulas, datum prior to June 5, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft³/s Aug. 11, gage height, 10.44 ft; minimum daily, 86 ft³/s July 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	111	287	120	125	107	104	120	103	94	104	123
2	107	113	192	126	120	116	103	120	106	92	107	125
3	108	116	154	118	120	350	104	120	103	89	102	123
4	109	116	143	117	118	388	111	118	98	90	101	122
5	108	114	118	117	108	116	121	116	97	97	101	121
6	107	112	111	114	111	100	116	118	95	101	101	120
7	108	111	118	114	109	102	121	118	101	98	101	118
8	106	114	120	109	111	101	123	116	101	96	101	117
9	101	121	96	112	112	96	122	114	97	88	107	114
10	103	121	120	112	109	101	122	110	98	86	134	113
11	106	120	147	116	109	103	122	110	98	87	943	114
12	108	117	112	116	109	102	121	112	98	93	179	115
13	113	116	113	109	112	101	122	112	101	94	115	115
14	113	120	112	110	113	97	123	108	94	94	110	116
15	117	118	112	112	117	98	122	106	88	94	119	116
16	118	117	109	109	113	97	120	106	93	92	132	115
17	118	111	111	108	107	97	122	106	96	92	173	117
18	118	116	107	108	108	102	120	106	98	94	417	117
19	120	116	109	112	111	97	116	105	98	95	134	117
20	121	111	111	113	112	102	118	100	98	95	136	114
21	122	109	111	114	112	106	117	102	98	97	138	117
22	117	112	112	117	107	109	159	108	95	100	125	118
23	116	114	109	120	100	107	135	108	94	100	125	115
24	116	112	165	122	102	106	120	107	98	100	125	122
25	117	114	115	124	101	109	118	107	90	100	124	124
26	116	114	108	120	102	112	118	103	87	100	122	124
27	113	114	109	113	106	114	118	101	90	101	121	141
28	112	114	111	122	109	118	118	98	94	100	122	127
29	103	120	111	118	---	117	118	98	93	101	123	119
30	103	123	115	132	---	109	120	102	94	100	126	145
31	106	---	119	130	---	108	---	103	---	101	122	---
TOTAL	3455	3457	3887	3604	3093	3788	3594	3378	2894	2961	4890	3604
MEAN	111	115	125	116	110	122	120	109	96.5	95.5	158	120
MAX	122	123	287	132	125	388	159	120	106	101	943	145
MIN	101	109	96	108	100	96	103	98	87	86	101	113
AC-FT	6850	6860	7710	7150	6130	7510	7130	6700	5740	5870	9700	7150

CAL YR 1982 TOTAL 39800 MEAN 109 MAX 346 MIN 76 AC-FT 78940
WTR YR 1983 TOTAL 42605 MEAN 117 MAX 943 MIN 86 AC-FT 84510

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1964 to January 1965, September 1966 to current year.

CHEMICAL ANALYSES: January 1964 to January 1965, twice monthly; September 1966 to January 1969, weekly; February to October 1969, monthly; November 1969 to January 1970, twice monthly; February 1970 to July 1974, monthly; August 1974 to September 1980, twice monthly; October 1980 to current year, monthly.

SPECIFIC CONDUCTANCES: January 1964 to January 1965, twice monthly; September 1966 to December 1967 and May 1968 to January 1969, weekly; February to October 1969, monthly; November 1969 to January 1970, twice monthly; February 1970 to July 1974, monthly; August 1974 to May 1975, twice monthly; June 1975 to March 1976, 4 times per hour (incomplete record due to recorder malfunctions) and twice monthly; April to October 1976, twice monthly; November 1976 to September 1977, 4 times per hour (incomplete record due to recorder malfunctions) and twice monthly; October 1977 to May 1978, 2-4 times per month; June 1978 to January 1979, 3-5 times per week; February to August 1979, twice monthly; September and October 1979, 4 times per hour; November 1979 to current year, hourly.

MICROBIOLOGICAL DATA: October 1977 to September 1980, twice monthly (data prior to October 1977 unpublished); October 1980 to current year, monthly.

WATER TEMPERATURES: January to December 1968, weekly; August 1969 to July 1974, monthly; August 1974 to May 1978, twice monthly; June 1978 to January 1979, 3-5 times per week; February to October 1979, twice monthly; November 1979 to current year, hourly.

SEDIMENT DATA: January 1974 to December 1976, monthly; January 1977 to August 1979, twice monthly; September 1979 to December 1980, monthly; January 1981 to September 1981, twice monthly; October 1981 to current year, monthly.

INSTRUMENTATION.--Specific-conductance recorder from June 1975 to March 1976, November 1976 to April 1978, and August 1979 to current year. Temperature recorder from November 1979 to current year.

REMARKS.--Discharge includes sewage effluent and wastewater from industrial plants. City and county sewage treatment plants implemented chemical removal of phosphorus from effluent during water year 1981. Periods of no record for daily specific conductance and temperature are due to loss of recorder probes resulting from high flow in August 1983, malfunctions of the recorder, and periodic burial of the probes by sediment deposits.

COOPERATION.--Microbiological analyses prior to October 1978 by Nevada Bureau of Laboratories and Research. All water-quality sampling and analyses to October 1969, plus nutrient and trace-metal analyses for period October 1969 to September 1972, from U.S. Environmental Protection Agency. Data in addition to those listed under "Period of Record" for January 1964 to September 1969 may exist in files of U.S. Environmental Protection Agency.

EXTREMES MEASURED FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCES: Maximum, 9,120 micromhos Sept. 8, 1964; minimum, 1,780 micromhos Mar. 11, 1982.

FECAL STREPTOCOCCI: Maximum, 22,000 colonies/100 mL (non-ideal colony count) Dec. 1, 1982; minimum, 55 colonies/100 mL Jan. 10, 1977.

WATER TEMPERATURES: Maximum, 28.5°C on several days in July 1981, and July 29-31, 1982; minimum, 3.0°C Jan. 7, 1970.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 113,000 mg/L Aug. 11, 1983 (hand-dipped sample; not depth integrated); minimum, 111 mg/L Jan. 28, 1975.

EXTREMES FOR CURRENT YEAR (MEASUREMENTS AT LEAST ONCE DAILY).--

SPECIFIC CONDUCTANCES: Maximum, 4,150 micromhos Mar. 3; minimum, 2,350 micromhos Jan. 2.

WATER TEMPERATURES: Maximum, 27.5°C July 5, 8, 22-24; minimum, 9.5°C Dec. 26-Jan. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (FT ³ /S)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)
OCT 06...	1145	114	2760	7.7	17.5	7.8	86	19	K72	4100	825	200
NOV 01...	1545	114	3000	7.8	17.0	8.2	90	24	K36	2900	--	--
DEC 01...	0900	187	3400	7.8	13.0	9.2	93	78	580	K22000	--	--
JAN 05...	1430	123	3000	7.9	12.0	10.2	99	19	K28	K700	1011	240
FEB 01...	1215	132	2900	7.8	12.0	9.0	88	32	K13	1000	--	--
MAR 03...	1530	502	4150	7.6	13.5	9.2	96	890	K1000	3200	1991	550
APR 05...	1215	101	3100	8.0	15.5	8.7	93	36	K19	1200	1077	250
MAY 03...	1000	137	2900	7.8	17.0	8.6	93	22	K21	2400	--	--
JUN 07...	0845	109	2900	7.9	20.5	7.5	89	24	--	6500	--	--
JUL 06...	0900	109	2550	7.7	23.5	7.4	93	25	530	14000	763	190
AUG 01...	1130	108	2600	7.6	24.0	7.1	89	35	K140	11000	--	--
11...	1100	344	3800	7.6	25.5	8.6	111	1400	--	--	2009	590
SEP 14...	1000	97	--	7.8	23.0	7.6	93	47	570	4900	--	--

K: NON-IDEAL COLONY COUNT.

LAS VEGAS VALLEY

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT 06...	79	290	4.5	23	142	860	350	.80	28	1980	1916	609
NOV 01...	--	--	--	--	120	--	--	--	--	2110	--	649
DEC 01...	--	--	--	--	--	--	--	--	--	2600	--	1310
JAN 05...	100	290	4.1	25	129	1000	350	.80	28	2180	2111	724
FEB 01...	--	--	--	--	--	--	--	--	--	2110	--	752
MAR 03...	150	320	3.2	45	129	1900	380	.70	26	3580	3449	4850
APR 05...	110	310	4.2	24	144	1100	390	.90	30	2350	2301	641
MAY 03...	--	--	--	--	--	--	--	--	--	2120	--	784
JUN 07...	--	--	--	--	--	--	--	--	--	2070	--	609
JUL 06...	70	280	4.6	20	129	840	330	.70	25	1810	1833	533
AUG 01...	--	--	--	--	--	--	--	--	--	1890	--	551
11...	130	290	2.9	50	118	2000	310	1.0	26	--	3468	3220
SEP 14...	--	--	--	--	--	--	--	--	--	2140	--	560

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 06...	2.1	1.00	3.1	2.80	2.2	5.00	8.1	1.00	.600	610	188	49
NOV 01...	2.7	1.20	3.9	2.30	2.7	5.00	8.9	.960	--	428	132	58
DEC 01...	2.3	.680	3.0	4.20	3.5	7.70	11	1.50	--	4660	2350	64
JAN 05...	3.1	.510	3.6	5.00	1.5	6.50	10	.840	.540	830	276	55
FEB 01...	3.5	.480	4.0	4.20	1.9	6.10	10	.890	--	582	207	55
MAR 03...	4.2	.290	4.5	1.80	11	13.0	18	28.0	.400	91800	124000	60
APR 05...	2.4	.580	3.0	3.40	3.0	6.40	9.4	1.00	.470	868	237	52
MAY 03...	1.8	.670	2.5	4.40	1.0	5.40	7.9	.630	--	654	242	48
JUN 07...	1.6	1.10	2.7	4.50	5.5	10.0	13	.800	--	263	77	--
JUL 06...	1.3	1.90	3.2	5.30	6.7	12.0	15	.880	.610	201	59	62
AUG 01...	1.6	2.20	3.8	4.90	--	--	--	.830	--	184	54	--
11...	4.7	.520	5.2	1.60	3.4	5.00	10	69.0	.240	113000	105000	66
SEP 14...	.60	1.20	1.8	7.00	3.0	10.0	12	1.10	--	1420	372	44

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.5	16.5	17.0	15.0	---	---	10.5	9.5	12.5	11.0	15.5	14.5
2	19.5	16.5	16.5	14.5	---	---	11.0	9.5	11.5	10.5	15.0	14.5
3	19.0	16.5	16.0	14.0	---	---	11.0	9.5	11.5	11.0	---	---
4	19.5	16.5	15.0	13.0	---	---	11.5	10.0	13.0	11.5	---	---
5	19.5	17.0	15.0	13.0	---	---	12.0	10.5	13.0	11.5	---	---
6	19.5	16.5	14.5	13.0	---	---	12.5	11.0	13.0	12.0	16.5	13.0
7	19.5	16.5	14.5	12.5	---	---	13.0	11.0	13.5	13.0	17.5	14.0
8	18.5	16.0	15.5	14.0	---	---	13.5	11.5	15.0	13.0	18.0	14.5
9	18.5	16.0	16.0	14.5	---	---	13.0	11.5	14.5	13.0	18.0	14.5
10	17.5	15.0	16.0	14.5	---	---	13.0	11.5	15.0	13.0	18.5	15.0
11	17.5	14.5	15.5	14.0	14.0	12.5	12.5	11.0	14.5	12.5	18.0	15.5
12	17.5	14.5	14.5	13.0	13.5	12.0	13.0	11.0	14.5	12.5	18.5	15.0
13	18.0	15.0	14.0	12.5	13.0	12.0	13.0	11.0	15.0	12.5	18.0	15.0
14	18.5	15.5	14.0	12.5	13.0	11.5	12.5	10.5	14.5	12.5	17.5	14.5
15	18.5	16.0	13.5	12.0	12.5	11.5	12.5	10.5	14.0	12.0	17.0	14.0
16	19.0	16.0	13.0	12.0	12.5	11.0	12.0	11.0	14.5	12.0	16.5	13.0
17	18.5	16.0	14.0	12.5	12.0	11.0	13.5	12.0	14.5	12.0	16.0	13.5
18	19.0	16.0	14.0	12.5	12.5	11.0	13.5	11.5	14.5	12.5	16.0	13.5
19	17.5	16.0	15.0	13.0	12.0	10.5	13.0	12.0	14.5	12.0	16.5	13.5
20	17.5	15.0	15.0	13.5	12.0	10.5	12.5	11.0	14.5	12.0	16.0	12.5
21	17.5	15.0	14.0	12.5	12.5	11.0	12.0	10.5	14.5	12.0	16.0	13.5
22	17.5	15.5	13.0	12.0	13.0	12.0	11.5	10.5	15.0	12.0	16.0	13.0
23	18.0	16.0	14.5	13.0	13.0	12.0	12.5	11.5	14.5	12.5	16.5	13.0
24	17.5	16.0	14.5	13.0	12.0	10.0	13.0	12.0	15.0	12.5	16.5	13.5
25	18.0	16.5	14.0	12.5	10.5	10.0	13.0	11.5	15.0	13.5	16.5	13.0
26	19.5	17.5	14.0	12.5	11.0	9.5	13.5	12.0	15.5	13.5	16.5	12.5
27	18.0	16.0	13.5	12.0	11.0	9.5	13.0	12.0	14.5	13.5	16.5	13.0
28	17.0	15.0	13.5	12.0	10.5	9.5	13.5	12.0	16.5	14.0	17.0	14.0
29	16.0	14.0	14.5	13.0	11.0	9.5	13.5	12.0	---	---	18.5	14.5
30	16.0	15.0	14.0	13.0	10.0	9.5	13.0	11.5	---	---	19.0	14.5
31	17.5	15.5	---	---	10.5	9.5	12.5	11.0	---	---	19.0	14.5
MONTH	19.5	14.0	17.0	12.0	14.0	9.5	13.5	9.5	16.5	10.5	19.0	12.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18.0	14.0	17.5	15.0	24.0	18.5	25.5	20.5				
2	17.0	13.5	19.5	14.5	23.5	18.5	26.0	20.5				
3	16.0	13.0	20.5	15.0	23.5	18.5	26.5	21.0				
4	16.0	12.5	20.0	16.0	23.5	18.5	27.0	21.5				
5	16.0	12.5	---	---	24.5	19.0	27.5	22.0				
6	16.5	12.5	---	---	25.0	19.0	---	---				
7	16.5	12.5	---	---	20.5	19.5	27.0	23.0				
8	16.5	12.0	---	---	25.0	20.0	27.5	23.0				
9	18.0	13.0	---	---	25.0	19.5	26.5	21.5				
10	18.0	14.5	---	---	25.0	20.0	26.0	20.5				
11	17.0	13.5	---	---	24.5	20.0	26.0	20.5				
12	15.5	13.0	---	---	25.0	20.0	26.5	20.0				
13	16.5	12.5	---	---	24.0	19.0	26.5	20.5				
14	16.5	12.5	---	---	24.5	19.0	26.5	21.5				
15	17.5	13.0	---	---	24.0	18.5	26.5	21.5				
16	18.0	13.0	---	---	25.5	19.5	26.0	21.0				
17	18.5	13.5	---	---	25.5	20.5	26.0	20.5				
18	18.0	15.0	---	---	26.0	21.0	25.5	20.5				
19	19.5	15.0	21.0	16.5	26.0	20.5	26.5	20.5				
20	16.5	15.5	22.0	16.5	25.5	20.5	26.5	21.5				
21	19.0	15.5	22.0	16.5	25.5	20.0	25.5	22.5				
22	18.5	15.0	23.0	17.5	25.5	20.0	27.5	22.5				
23	20.0	15.0	23.5	18.0	25.5	20.0	27.5	22.5				
24	19.5	15.0	24.0	18.5	25.5	20.0	27.5	22.5				
25	19.5	14.5	24.5	19.0	25.5	20.0	27.0	22.5				
26	19.0	15.0	25.0	19.5	25.5	20.0	26.5	21.5				
27	19.0	15.5	25.5	19.5	25.5	20.5	26.0	21.0				
28	19.0	16.0	25.5	20.0	26.0	20.5	26.0	21.0				
29	19.0	16.0	25.0	20.5	25.5	20.5	26.5	21.0				
30	19.0	15.0	25.5	20.0	25.0	20.5	24.5	22.0				
31	---	---	24.5	19.5	---	---	27.0	23.0				
MONTH	20.0	12.0	25.5	14.5	26.0	18.5	27.5	20.0				
YEAR	27.5	9.5										

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV

LOCATION.--Lat 36°00'58", long 114°44'13", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River meridian, Mohave-Clark Counties, Hydrologic Unit 15010005, in center of Hoover Dam on Colorado River.

DRAINAGE AREA.--171,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, that is noncontributing.

RESERVOIR-CONTENTS RECORDS

PERIOD OF RECORD.--Contents: February 1935 to current year. Evaporation: March 1952 to current year. Diversions (monthly totals only): to Boulder City area, since October 1935; to Henderson and Las Vegas areas, since April 1942; combined diversions since October 1968. Prior to 1946 published as "at Boulder Dam."

REVISED RECORDS.--WSP 899: 1935-39.

GAGE.--Water-stage indicator read once daily at midnight, with supplementary water-stage recorder. Datum of gage is 0.00 ft relative to Local Powerhouse datum and 0.40 ft below sea level (National Geodetic Vertical Datum of 1929; datum originally was sea level, prior to settling that accompanied construction and impoundment).

REMARKS.--Reservoir is formed by concrete arch-gravity dam; storage began Feb. 1, 1935; dam completed Mar. 1, 1936. Total capacity (based on resurvey in 1963-64 by U.S. Coast and Geodetic Survey; capacity table put into use Apr. 1, 1967), 29,755,000 acre-ft, consisting of the following: Dead storage, 2,378,000 acre-ft below gage height 895.0 ft (gate sills in outlet towers); usable contents, 26,159,000 acre-ft between gage heights 895.0 ft and 1,221.4 ft (top of automatic spillway gates in raised position); and uncontrolled storage, 1,218,000 acre-ft between gage heights 1,221.4 ft and 1,229.0 ft (maximum water surface). Reservoir is used to store water for flood control, irrigation, municipal water supply, and power development. Figures given herein represent usable contents.

DIVERSIONS FROM LAKE MEAD.--Diversions to Boulder City area at dam; diversions to Henderson and Las Vegas areas from intakes 6 mi upstream. Diversions measured by Venturi meters. Water used for municipal and industrial purposes.

COOPERATION.--Records of gage height and contents furnished by U.S. Bureau of Reclamation. Records of diversions from Lake Mead furnished by U.S. Bureau of Reclamation and Colorado River Commission of Nevada.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 27,790,000 acre-ft July 29, 30, 1941 (on basis of original bathymetry), gage height, 1,220.45 ft; maximum gage height, 1,225.85 ft July 24, 1983 (equivalent to 26,868,000 acre-ft on basis of resurveyed bathymetry of 1963-64); minimum contents (since 1940), 10,695,000 acre-ft Apr. 26, 1956, gage height, 1,083.21 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,868,000 acre-ft July 24, gage height, 1,225.85 ft; minimum, 22,772,000 acre-ft Oct. 1, gage height, 1,198.96 ft.

COLORADO RIVER MAIN STEM

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09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

RESERVOIR STORAGE, IN THOUSANDS OF ACRE FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22773	23085	23637	24163	23922	24427	24635	24614	24743	26067	26787	26262
2	22780	23093	23660	24156	23924	24451	24638	24630	24740	26149	26787	26241
3	22790	23105	23678	24148	23941	24456	24641	24617	24734	26235	26778	26217
4	22789	23115	23706	24141	23970	24476	24620	24608	24755	26315	26763	26194
5	22790	23128	23726	24124	24000	24513	24598	24597	24790	26387	26759	26167
6	22790	23152	23742	24105	24037	24536	24576	24586	24815	26478	26749	26140
7	22793	23175	23755	24084	24061	24556	24560	24597	24842	26528	26755	26115
8	22796	23188	23784	24082	24087	24568	24541	24611	24873	26579	26743	26089
9	22809	23200	23803	24069	24109	24592	24538	24594	24904	26615	26719	26067
10	22824	23214	23822	24057	24135	24614	24535	24574	24930	26640	26706	26044
11	22831	23242	23851	24046	24156	24629	24510	24571	24985	26658	26690	26019
12	22839	23263	23877	24033	24181	24644	24495	24557	25048	26683	26669	25993
13	22854	23295	23889	24012	24208	24656	24491	24554	25085	26714	26659	25971
14	22861	23316	23898	24007	24222	24668	24501	24568	25116	26731	26650	25952
15	22871	23332	23916	24018	24225	24665	24515	24598	25146	26759	26624	25932
16	22884	23348	23931	24027	24243	24675	24539	24600	25173	26781	26619	25916
17	22902	23365	23949	24018	24261	24684	24562	24586	25213	26808	26595	25893
18	22919	23376	23979	24006	24281	24679	24551	24589	25265	26831	26576	25872
19	22920	23401	24009	23988	24303	24691	24551	24592	25343	26850	26559	25858
20	22932	23435	24030	23973	24324	24705	24559	24595	25395	26855	26549	25835
21	22939	23455	24036	23959	24333	24706	24554	24611	25450	26850	26530	25811
22	22957	23474	24042	23949	24342	24688	24553	24643	25490	26842	26501	25792
23	22980	23486	24046	23947	24358	24682	24571	24643	25532	26855	26471	25771
24	22996	23501	24070	23953	24368	24673	24589	24640	25585	26864	26441	25755
25	23006	23518	24099	23940	24385	24662	24591	24643	25636	26848	26415	25741
26	23000	23539	24114	23956	24400	24671	24577	24647	25689	26832	26393	25719
27	23015	23557	24127	23946	24427	24679	24582	24661	25746	26821	26373	25705
28	23015	23579	24121	23950	24435	24675	24579	24681	25802	26803	26352	25685
29	23031	23597	24126	23947	---	24665	24577	24713	25885	26781	26327	25671
30	23047	23613	24133	23937	---	24650	24588	24742	25981	26792	26306	25658
31	23070	---	24151	23921	---	24638	---	24751	---	26802	26281	---
MAX	23070	23613	24151	24163	24435	24706	24641	24751	25981	26864	26787	26262
MIN	22773	23085	23637	23921	23922	24427	24491	24554	24734	26067	26281	25658
(1)	1201.06	1204.76	1208.37	1206.83	1210.25	1211.59	1211.26	1212.33	1220.27	1225.44	1222.17	1218.21
(2)	+304000	+543000	+538000	-230000	+514000	+203000	-50000	+163000	+1.230000	+821000	-521000	-623000
(3)	11380	9340	8430	7820	7720	9730	11080	14290	16640	17840	13800	14350
(4)	6.6	6.4	4.9	2.4	2.4	3.6	5.6	7.2	8.5	10.3	7.3	5.6
(5)	80000	77900	60900	30100	30400	45900	71100	91600	109600	136900	96900	73800
CAL YR 1982	MAX	24151	MIN	22377	(2)	+1,483,000	(3)	136,190	(4)	66.2	(5)	795,800
WTR YR 1983	MAX	26864	MIN	22773	(2)	+2,892,000	(3)	142,420	(4)	70.8	(5)	905,100

1 Gage height, in feet, at end of month.

2 Change in contents, in acre-feet.

3 Diversions, in acre-feet.

4 Gross evaporation, in inches, from Lake Mead.

5 Gross evaporation, in acre-feet, from Lake Mead.

NOTE.--Figures of gross evaporation are based on data obtained on Lake Mead by the U.S. Bureau of Reclamation and Las Vegas by National Weather Service, and are computed by the Geological Survey. Only the mass-transfer method described in Geological Survey Professional Paper 298 is used. "Gross" denotes the total evaporation from the lake without deduction for precipitation on the lake surface or for natural losses that would have occurred in the area now occupied by the lake. Starting February 1976, coefficient changes to 0.00179.

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1940 to September 1962, October 1963 to current year.

CHEMICAL ANALYSES, SPECIFIC CONDUCTANCES, AND WATER TEMPERATURES: October 1940 to September 1962 and October 1963 to current year, monthly.

COOPERATION.--Samples and field data collected by U.S. Bureau of Reclamation. Non-nutrient samples analyzed by Metropolitan Water District of Southern California.

EXTREMES MEASURED FOR PERIOD OF RECORD (at 5-ft depth to September 1962; at water surface from October 1963 to current year).--

SPECIFIC CONDUCTANCES: Maximum, 1,250 micromhos Oct. 4, Nov. 1, 1965; minimum, 688 micromhos Nov. 1, 1957.

WATER TEMPERATURES: Maximum, 31.5°C Aug. 30, 1967; minimum, 11.0°C Jan. 28, 1949.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963

		DATE		TRANSPARENCY, SECCHI DISK (FEET)			
		NOV					
		29...		31			
		JAN					
		03...		42			
		FEB					
		28...		46			
		APR					
		01...		38			
		MAY					
		02...		56			
		JUNE					
		01...		15			
		SEP					
		29...		29			
DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CaCO3)
NOV							
29...	0930	.00	1100	8.2	16.0	7.6	--
29...	0932	5.00	1100	--	16.0	--	--
29...	0935	10.0	1100	8.2	16.0	7.5	327
29...	0942	15.0	1100	--	16.0	--	--
29...	0949	20.0	1100	--	16.0	--	--
29...	0956	25.0	1100	8.2	16.0	7.5	--
29...	1003	30.0	1100	--	16.0	--	--
29...	1011	40.0	1100	--	16.0	--	--
29...	1019	50.0	1100	--	16.0	--	--
29...	1027	60.0	1100	--	16.0	--	--
29...	1035	70.0	1100	--	16.0	--	--
29...	1043	75.0	1100	8.2	16.0	7.5	327
29...	1051	80.0	1100	--	16.0	--	--
29...	1059	90.0	1100	--	16.0	--	--
29...	1107	100	1060	--	16.0	--	--
29...	1115	125	1050	8.0	15.5	7.0	--
29...	1123	150	1050	--	14.5	--	--
29...	1131	175	1050	8.0	14.0	6.2	--
29...	1139	200	1060	--	13.5	--	--
29...	1147	225	1060	8.0	13.5	6.2	--
29...	1155	250	1060	--	13.5	--	--
29...	1203	275	1060	8.0	13.0	6.2	328
29...	1211	293	1060	8.0	13.0	6.2	--
29...	1219	300	1060	--	12.5	--	--
29...	1227	325	1060	8.0	12.5	6.2	--
29...	1235	350	1060	--	12.0	--	--
29...	1243	375	1060	8.0	12.0	6.0	--
29...	1251	400	1070	--	12.0	--	--
29...	1259	425	1070	8.0	12.0	5.5	--
29...	1307	475	1070	8.0	12.0	5.5	328
29...	1315	487	1070	7.8	12.0	5.4	--

COLORADO RIVER MAIN STEM

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09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
NOV											
29...	0930	.00	--	--	--	--	--	130	0	110	--
29...	0935	10.0	80	31	100	2.5	5.0	140	0	110	300
29...	0956	25.0	--	--	--	--	--	150	0	120	--
29...	1043	75.0	80	31	100	2.5	4.0	150	0	120	300
29...	1115	125	--	--	--	--	--	150	0	120	--
29...	1131	175	--	--	--	--	--	160	0	130	--
29...	1147	225	--	--	--	--	--	160	0	130	--
29...	1203	275	82	30	98	2.4	4.0	160	0	130	280
29...	1211	293	--	--	--	--	--	160	0	130	--
29...	1227	325	--	--	--	--	--	160	0	130	--
29...	1243	375	--	--	--	--	--	160	0	130	--
29...	1259	425	--	--	--	--	--	160	0	130	--
29...	1307	475	82	30	100	2.5	4.0	160	0	130	290
29...	1315	487	--	--	--	--	--	160	0	130	--

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
NOV											
29...	96	--	--	--	--	--	--	--	--	--	--
29...	96	.3	9.4	692	.28	<.020	.20	<.060	1.00	1.2	.010
29...	91	--	--	--	--	--	--	--	--	--	--
29...	91	.3	9.4	691	.28	--	--	--	--	--	--
29...	85	--	--	--	--	--	--	--	--	--	--
29...	85	--	--	--	--	--	--	--	--	--	--
29...	85	--	--	--	--	--	--	--	--	--	--
29...	85	.3	9.5	669	.44	--	--	--	--	--	--
29...	85	--	--	--	--	--	--	--	--	--	--
29...	85	--	--	--	--	--	--	--	--	--	--
29...	86	--	--	--	--	--	--	--	--	--	--
29...	85	--	--	--	--	--	--	--	--	--	--
29...	86	.3	9.7	682	.35	--	--	--	--	--	--
29...	86	--	--	--	--	<.020	.40	<.060	.80	1.2	.030

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
JAN							
03...	1005	.00	1060	8.0	14.0	7.6	--
03...	1012	10.0	1060	8.1	13.5	7.6	332
03...	1019	15.0	1080	--	13.5	--	--
03...	1026	20.0	1080	--	13.5	--	--
03...	1033	25.0	1080	8.1	13.5	7.6	--
03...	1040	30.0	1080	--	13.5	--	--
03...	1047	40.0	1080	--	13.0	--	--
03...	1054	50.0	1080	--	13.0	--	--
03...	1101	60.0	1080	--	13.0	--	--
03...	1108	70.0	1080	--	13.0	--	--
03...	1115	75.0	1080	8.2	13.0	7.6	--
03...	1122	80.0	1080	--	13.0	--	--
03...	1129	90.0	1080	--	13.0	--	--
03...	1136	100	1080	--	13.0	--	--
03...	1143	125	1100	8.1	13.0	7.6	--
03...	1150	150	1100	--	13.0	--	--
03...	1157	175	1100	8.2	13.0	7.6	--
03...	1204	200	1100	--	13.0	--	--
03...	1211	225	1100	8.2	13.0	7.6	--
03...	1218	275	1100	8.2	13.0	7.8	--
03...	1226	298	1060	8.0	13.0	6.1	--
03...	1234	300	1060	--	13.0	--	--
03...	1242	325	1060	8.0	13.0	5.8	328
03...	1250	350	1060	--	13.0	--	--
03...	1258	375	1060	7.9	13.0	5.8	--
03...	1306	400	1060	--	13.0	--	--
03...	1314	425	1060	7.9	13.0	5.6	--
03...	1322	475	1060	7.8	12.5	4.9	--
03...	1330	493	1080	7.7	12.0	3.2	--

DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)
JAN								
03...	1005	.00	--	--	--	--	--	150
03...	1012	10.0	82	31	99	2.4	5.0	150
03...	1033	25.0	--	--	--	--	--	150
03...	1115	75.0	--	--	--	--	--	150
03...	1143	125	--	--	--	--	--	150
03...	1157	175	--	--	--	--	--	150
03...	1211	225	--	--	--	--	--	160
03...	1218	275	--	--	--	--	--	160
03...	1226	298	--	--	--	--	--	160
03...	1242	325	82	30	95	2.4	4.0	160
03...	1258	375	--	--	--	--	--	160
03...	1314	425	--	--	--	--	--	160
03...	1322	475	--	--	--	--	--	160
03...	1330	493	--	--	--	--	--	160

DATE	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
JAN								
03...	0	120	--	86	--	--	--	--
03...	0	120	300	86	.3	8.8	687	.29
03...	0	130	--	87	--	--	--	--
03...	0	120	--	87	--	--	--	--
03...	0	120	--	87	--	--	--	--
03...	0	120	--	87	--	--	--	--
03...	0	130	--	86	--	--	--	--
03...	0	130	--	86	--	--	--	--
03...	0	130	--	82	--	--	--	--
03...	0	130	280	82	.3	9.0	663	.35
03...	0	130	--	83	--	--	--	--
03...	0	130	--	83	--	--	--	--
03...	0	130	--	84	--	--	--	--
03...	0	130	--	84	--	--	--	--

COLORADO RIVER MAIN STEM

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09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
FEB							
28...	0915	.00	1080	8.1	13.5	7.8	--
28...	0921	5.00	1080	--	12.0	--	--
28...	0927	10.0	1080	8.2	12.0	7.6	331
28...	0933	15.0	1080	--	12.0	--	--
28...	0939	20.0	1080	--	12.0	--	--
28...	0945	25.0	1080	8.1	12.0	7.6	--
28...	0951	30.0	1080	--	12.0	--	--
28...	0957	40.0	1080	--	12.0	--	--
28...	1003	50.0	1080	--	12.0	--	--
28...	1010	60.0	1080	--	12.0	--	--
28...	1017	70.0	1080	--	12.0	--	--
28...	1024	75.0	1080	8.1	12.0	7.6	--
28...	1031	80.0	1080	--	12.0	--	--
28...	1038	90.0	1080	--	12.0	--	--
28...	1045	100	1080	--	12.0	--	--
28...	1052	125	1080	8.1	12.0	7.6	--
28...	1059	150	1080	--	12.0	--	--
28...	1106	175	1080	8.1	12.0	7.5	--
28...	1113	200	1080	--	12.0	--	--
28...	1120	225	1080	8.1	12.0	7.6	--
28...	1127	275	1080	8.1	11.5	7.6	328
28...	1134	300	1080	8.1	11.5	8.3	--
28...	1141	325	1070	8.1	12.0	8.0	--
28...	1148	350	1060	--	12.0	--	--
28...	1155	375	1060	8.1	12.0	8.0	--
28...	1202	400	1060	--	12.0	--	--
28...	1209	425	1060	8.1	11.5	8.0	--
28...	1216	450	1060	--	11.5	--	--
28...	1223	475	1060	8.2	11.5	8.0	331
28...	1230	496	1060	8.2	11.5	7.7	--

DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)
FEB								
28...	0915	.00	--	--	--	--	--	150
28...	0927	10.0	83	30	98	2.4	5.0	150
28...	0945	25.0	--	--	--	--	--	160
28...	1024	75.0	--	--	--	--	--	160
28...	1052	125	--	--	--	--	--	160
28...	1106	175	--	--	--	--	--	160
28...	1120	225	--	--	--	--	--	160
28...	1127	275	82	30	99	2.5	5.0	160
28...	1134	300	--	--	--	--	--	160
28...	1141	325	--	--	--	--	--	160
28...	1155	375	--	--	--	--	--	160
28...	1209	425	--	--	--	--	--	160
28...	1223	475	83	30	99	2.4	5.0	160
28...	1230	496	--	--	--	--	--	160

DATE	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
FEB								
28...	0	120	--	87	--	--	--	--
28...	0	130	290	87	.3	8.9	677	.29
28...	0	130	--	88	--	--	--	--
28...	0	130	--	88	--	--	--	--
28...	0	130	--	87	--	--	--	--
28...	0	130	--	87	--	--	--	--
28...	0	130	--	88	--	--	--	--
28...	0	130	290	86	.3	9.0	681	.23
28...	0	130	--	87	--	--	--	--
28...	0	130	--	87	--	--	--	--
28...	0	130	--	87	--	--	--	--
28...	0	130	--	87	--	--	--	--
28...	0	130	--	87	--	--	--	--
28...	0	130	290	86	.3	8.9	682	.23
28...	0	130	--	87	--	--	--	--

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
APR							
01...	1030	.00	1060	8.1	15.0	10.5	--
01...	1036	5.00	1060	--	15.0	--	--
01...	1042	10.0	1080	8.2	15.0	10.5	331
01...	1048	20.0	1080	--	15.0	--	--
01...	1054	25.0	1080	8.2	14.5	10.5	--
01...	1100	30.0	1100	--	14.5	--	--
01...	1106	40.0	1100	--	14.5	--	--
01...	1112	50.0	1100	--	14.5	--	--
01...	1118	60.0	1100	--	14.5	--	--
01...	1124	70.0	1100	--	14.5	--	--
01...	1130	75.0	1100	8.2	14.5	10.5	--
01...	1136	80.0	1100	--	14.5	--	--
01...	1142	90.0	1100	--	14.5	--	--
01...	1148	100	1100	--	14.5	--	--
01...	1154	125	1100	8.2	14.5	9.2	--
01...	1200	150	1100	--	14.0	--	--
01...	1207	175	1100	8.1	13.5	9.2	--
01...	1214	200	1100	--	13.5	--	--
01...	1221	225	1100	8.1	13.5	8.3	--
01...	1228	250	1100	--	13.0	--	--
01...	1235	300	1100	--	13.0	--	--
01...	1242	325	1100	8.0	12.0	8.6	331
01...	1249	350	1100	--	12.0	--	--
01...	1256	375	1100	8.0	12.0	8.6	--
01...	1303	400	1100	--	12.0	--	--
01...	1310	425	1100	8.0	12.0	9.1	--
01...	1317	450	1100	--	11.5	--	--
01...	1324	475	1100	--	11.5	--	--
01...	1330	498	1100	8.2	11.5	9.1	--

DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)
APR								
01...	1042	10.0	83	30	100	2.5	5.0	150
01...	1054	25.0	--	--	--	--	--	160
01...	1130	75.0	--	--	--	--	--	160
01...	1154	125	--	--	--	--	--	150
01...	1207	175	--	--	--	--	--	150
01...	1221	225	--	--	--	--	--	150
01...	1242	325	83	30	100	2.5	5.0	160
01...	1256	375	--	--	--	--	--	160
01...	1310	425	--	--	--	--	--	160
01...	1324	475	--	--	--	--	--	160

DATE	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
APR								
01...	0	120	290	88	.4	9.0	681	.33
01...	0	130	--	89	--	--	--	--
01...	0	130	--	89	--	--	--	--
01...	0	130	--	89	--	--	--	--
01...	0	130	--	89	--	--	--	--
01...	0	130	--	89	--	--	--	--
01...	0	130	280	89	.4	8.9	677	.36
01...	0	130	--	88	--	--	--	--
01...	0	130	--	87	--	--	--	--
01...	0	130	--	87	--	--	--	--

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09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
MAY							
02...	1020	.00	1090	8.4	16.5	8.4	--
02...	1025	5.00	--	--	16.0	--	--
02...	1030	10.0	1090	8.3	16.0	8.3	338
02...	1035	15.0	--	--	16.0	--	--
02...	1040	20.0	--	--	16.0	--	--
02...	1045	25.0	1100	8.3	16.0	8.3	--
02...	1050	30.0	--	--	16.0	--	--
02...	1055	40.0	--	--	15.5	--	--
02...	1100	50.0	--	--	15.5	--	--
02...	1105	60.0	--	--	14.5	--	--
02...	1110	70.0	--	--	14.5	--	--
02...	1115	75.0	1100	8.2	14.0	8.0	--
02...	1120	80.0	--	--	14.0	--	--
02...	1125	90.0	--	--	14.0	--	--
02...	1130	100	--	--	14.0	--	--
02...	1135	125	1080	8.2	14.0	7.7	--
02...	1140	150	--	--	13.5	--	--
02...	1145	175	1090	8.1	13.5	7.4	--
02...	1150	200	--	--	13.0	--	--
02...	1155	225	1080	8.1	13.0	7.4	--
02...	1201	250	--	--	12.0	--	--
02...	1207	275	1080	8.1	12.0	7.3	328
02...	1213	300	1070	8.1	12.0	7.3	--
02...	1219	325	1060	8.1	11.5	7.2	--
02...	1225	350	--	--	11.5	--	--
02...	1231	375	1080	8.1	11.5	7.4	--
02...	1237	400	--	--	11.5	--	--
02...	1243	425	1080	8.1	11.5	7.2	--
02...	1249	450	--	--	11.5	--	--
02...	1255	475	1070	8.1	11.5	7.2	325
02...	1300	498	1070	8.1	11.5	7.2	--

DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)
MAY								
02...	1020	.00	--	--	--	--	--	--
02...	1030	10.0	86	30	98	2.4	4.0	150
02...	1045	25.0	--	--	--	--	--	150
02...	1115	75.0	--	--	--	--	--	150
02...	1135	125	--	--	--	--	--	150
02...	1145	175	--	--	--	--	--	160
02...	1155	225	--	--	--	--	--	160
02...	1207	275	85	28	96	2.4	4.0	160
02...	1213	300	--	--	--	--	--	160
02...	1219	325	--	--	--	--	--	160
02...	1231	375	--	--	--	--	--	160
02...	1243	425	--	--	--	--	--	160
02...	1255	475	84	28	96	2.4	4.0	160
02...	1300	498	--	--	--	--	--	160

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
MAY								
02...	--	130	--	87	--	--	--	--
02...	0	130	290	87	.4	8.5	679	.21
02...	0	130	--	87	--	--	--	--
02...	0	130	--	87	--	--	--	--
02...	0	130	--	87	--	--	--	--
02...	0	130	--	88	--	--	--	--
02...	0	130	--	85	--	--	--	--
02...	0	130	280	84	.3	8.5	666	.28
02...	0	130	--	84	--	--	--	--
02...	0	130	--	84	--	--	--	--
02...	0	130	--	85	--	--	--	--
02...	0	130	--	85	--	--	--	--
02...	0	130	280	84	.3	8.5	664	.21
02...	0	140	--	84	--	--	--	--

COLORADO RIVER MAIN STEM

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09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)					
DATE	TIME											
JUN												
01...	0930	.00	1070	8.4	19.0	10.0	--					
01...	0937	5.00	--	--	19.0	--	--					
01...	0944	10.0	1080	8.6	19.0	10.0	336					
01...	0951	20.0	--	--	18.5	--	--					
01...	0958	25.0	1080	8.6	18.5	10.0	--					
01...	1005	30.0	--	--	18.5	--	--					
01...	1013	40.0	--	--	18.0	--	--					
01...	1021	50.0	--	--	18.0	--	--					
01...	1029	60.0	--	--	17.0	--	--					
01...	1037	70.0	--	--	16.5	--	--					
01...	1045	75.0	1090	8.2	16.5	8.7	--					
01...	1053	80.0	--	--	15.5	--	--					
01...	1101	90.0	--	--	15.0	--	--					
01...	1109	100	--	--	14.5	--	--					
01...	1117	125	1080	8.3	14.5	8.5	341					
01...	1125	150	--	--	14.5	--	--					
01...	1133	175	1080	8.2	14.0	8.5	--					
01...	1141	200	--	--	13.5	--	--					
01...	1149	225	1080	8.1	13.5	8.3	--					
01...	1157	275	1070	8.0	12.5	8.3	--					
01...	1205	300	1060	8.0	12.0	8.3	--					
01...	1212	325	1060	8.2	12.0	8.4	333					
01...	1219	350	--	--	11.5	--	--					
01...	1226	375	1080	8.0	11.5	8.1	--					
01...	1233	400	--	--	11.5	--	--					
01...	1240	425	1060	8.1	11.5	8.1	--					
01...	1247	450	--	--	11.5	--	--					
01...	1254	475	1060	8.0	11.5	7.8	--					
01...	1300	498	1060	8.1	11.5	7.8	--					
DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	
JUN												
01...	0930	.00	--	--	--	--	--	--	--	120	--	
01...	0944	10.0	85	30	100	2.5	4.0	--	--	120	300	
01...	0958	25.0	--	--	--	--	--	--	--	120	--	
01...	1045	75.0	--	--	--	--	--	160	0	130	--	
01...	1117	125	87	30	100	2.4	4.0	160	0	130	300	
01...	1133	175	--	--	--	--	--	160	0	130	--	
01...	1149	225	--	--	--	--	--	160	0	130	--	
01...	1157	275	--	--	--	--	--	160	0	130	--	
01...	1205	300	--	--	--	--	--	160	0	130	--	
01...	1212	325	87	28	100	2.5	4.0	160	0	130	280	
01...	1226	375	--	--	--	--	--	160	0	130	--	
01...	1240	425	--	--	--	--	--	160	0	130	--	
01...	1254	475	--	--	--	--	--	160	0	130	--	
01...	1300	498	--	--	--	--	--	160	0	140	--	
DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
JUN												
01...	88	--	--	--	--	--	--	--	--	--	--	--
01...	89	.3	8.8	690	.20	<.020	.10	<.060	.70	.80	.020	
01...	88	--	--	--	--	--	--	--	--	--	--	
01...	87	--	--	--	--	--	--	--	--	--	--	
01...	87	.3	8.7	697	.32	--	--	--	--	--	--	
01...	87	--	--	--	--	--	--	--	--	--	--	
01...	88	--	--	--	--	--	--	--	--	--	--	
01...	86	--	--	--	--	--	--	--	--	--	--	
01...	86	--	--	--	--	--	--	--	--	--	--	
01...	85	.3	8.7	673	.34	--	--	--	--	--	--	
01...	86	--	--	--	--	--	--	--	--	--	--	
01...	85	--	--	--	--	--	--	--	--	--	--	
01...	85	--	--	--	--	--	--	--	--	--	--	
01...	85	--	--	--	--	--	--	--	--	--	--	
01...	85	--	--	--	--	<.020	.30	<.060	.40	.70	.010	

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

				SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)				
DATE	TIME	SAM- PLING DEPTH (FEET)	TIME	DEPTH (FEET)	CON- DUCT- ANCE LAB (UMHOS)	TEMPER- ATURE, WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)				
SEP												
29...	0820	.00	--	7.9	26.0	7.9	--					
29...	0828	10.0	1060	8.2	26.0	8.0	333					
29...	0836	20.0	--	--	25.0	--	--					
29...	0844	25.0	1070	8.7	25.0	7.9	--					
29...	0852	30.0	--	--	25.0	--	--					
29...	0900	40.0	--	--	25.0	--	--					
29...	0908	50.0	--	--	24.0	--	--					
29...	0916	60.0	--	--	22.0	--	--					
29...	0924	70.0	--	--	21.0	--	--					
29...	0932	75.0	945	8.4	19.5	7.1	--					
29...	0940	80.0	--	--	19.0	--	--					
29...	0948	90.0	--	--	18.5	--	--					
29...	0956	100	--	--	18.0	--	--					
29...	1004	125	946	8.1	18.0	6.5	303					
29...	1008	150	--	--	17.0	--	--					
29...	1016	175	1010	8.1	16.5	6.6	320					
29...	1024	200	--	--	16.0	--	--					
29...	1032	225	1060	8.2	15.5	7.3	--					
29...	1040	275	1050	8.2	14.5	7.2	--					
29...	1048	300	--	8.3	13.5	7.6	--					
29...	1056	325	1050	8.2	13.0	7.2	327					
29...	1104	350	--	--	12.5	--	--					
29...	1108	375	1050	8.2	12.0	7.3	--					
29...	1116	400	--	--	12.0	--	--					
29...	1124	425	1030	8.2	12.0	7.4	322					
29...	1132	450	--	--	12.0	--	--					
29...	1140	475	1050	8.3	11.5	7.2	--					
29...	1148	498	--	--	11.5	--	--					
29...	1200	505	--	7.7	11.5	6.2	--					
DATE	TIME	SAM- PLING DEPTH (FEET)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE, FET-LAB (MG/L AS HCO3)	CAR- BONATE, FET-LAB (MG/L AS CO3)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
SEP												
29...	0828	10.0	84	30	98	2.4	4.5	140	0	110	310	84
29...	0844	25.0	--	--	--	--	--	--	--	110	--	83
29...	0932	75.0	--	--	--	--	--	--	--	140	--	68
29...	1004	125	77	27	87	2.2	3.3	170	0	140	250	67
29...	1016	175	81	29	96	2.4	4.2	160	0	130	280	79
29...	1032	225	--	--	--	--	--	--	--	130	--	84
29...	1040	275	--	--	--	--	--	--	--	140	--	84
29...	1056	325	83	29	95	2.4	4.3	160	0	130	280	83
29...	1108	375	--	--	--	--	--	--	--	140	--	83
29...	1124	425	82	29	98	2.5	4.0	160	0	130	280	80
29...	1140	475	--	--	--	--	--	--	--	140	--	83
29...	1200	505	--	--	--	--	--	--	--	--	--	--
DATE	TIME	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
SEP												
29...	.3	8.2	689	.35	<.020	<.10	.040	.36	.40	--	.050	
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.3	7.7	609	1.45	--	--	--	--	--	--	--	--
29...	.3	8.2	662	1.30	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.3	8.6	668	1.30	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	.3	8.2	665	1.20	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	<.020	.30	.010	.59	.60	.90	.040

COLORADO RIVER MAIN STEM

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09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV
(National stream-quality accounting 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, or SW¼NE¼ sec.29, T.22 S., R.65 E., Mount Diablo meridian, Mohave-Clark Counties, Hydrologic Unit 15030101, in powerhouse at downstream side of Hoover Dam.

DRAINAGE AREA.--171,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1933 to current year (prior to April 1934, monthly discharge only, published in WSP 1313). Published as "near Willow Beach" 1933-39 and as "below Boulder Dam" 1939-45.

GAGE.--Acoustical velocity meters on each turbine in Hoover Dam. Prior to Nov. 1, 1939, water-stage recorder at site 9 mi downstream at datum 594.8 ft, National Geodetic Vertical Datum of 1929. Nov. 1, 1939, to June 30, 1958, water-stage recorder at site 0.8 mi downstream at datum 600.35 ft, National Geodetic Vertical Datum of 1929. July 1, 1958, to Nov. 7, 1979, totalizing flowmeter on each turbine.

REMARKS.--Flow regulated by Lake Mead since Feb. 1, 1935. Many diversions above station for irrigation, industrial, and municipal use.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation.

AVERAGE DISCHARGE.--49 years (water years 1935-83), 13,250 ft³/s, 9,600,000 acre-ft/yr, unadjusted for storage in Lake Mead.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 50,800 ft³/s July 29, 1983; no flow at Hoover Dam part of Feb. 10, 1935; minimum daily, 152 ft³/s Feb. 10, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 50,800 ft³/s July 29; minimum daily, 1,550 ft³/s Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4940	8750	8910	10300	9660	15300	15300	11600	26800	38800	45700	36900
2	3010	7830	7900	13500	10600	13000	11900	22100	28100	38900	42000	38100
3	3250	9320	8680	18200	9990	17400	9210	23900	28800	39100	43800	37500
4	6950	10200	3910	22400	8270	7730	20000	23900	23300	40700	41000	37800
5	6460	10300	4170	23400	5960	3700	20400	25300	17700	42700	41500	38500
6	6580	6930	7670	24300	4650	4450	22400	22300	27700	43500	34400	38500
7	5410	6330	8540	25100	9110	5360	23200	15800	27900	44400	36200	38300
8	6070	8880	8560	19500	8460	3780	23100	11600	33200	42800	45500	38000
9	2170	10500	8970	18800	7860	4900	11300	24500	32700	41700	44900	38300
10	1550	8090	7420	16400	7600	4670	9720	23900	34500	40400	44900	37700
11	5130	7220	5860	17800	7260	6390	24600	24100	20200	40200	45500	38200
12	4980	6590	5110	19400	5140	4000	24600	26700	16700	38300	43100	38300
13	6380	5250	6500	19900	4390	3300	21500	26100	31100	39900	32400	37500
14	8180	6010	7970	17200	6580	5310	18100	12100	30600	40900	32200	35100
15	8400	7190	8380	12700	7920	9910	13800	10400	34900	39300	40300	35100
16	6710	5070	9300	13700	5210	8660	8730	21000	38800	40900	39600	35200
17	5360	5550	10600	17200	6120	10100	9410	23300	38200	40100	39000	35500
18	8910	5620	6650	19100	5570	12200	19600	23000	30600	40900	39000	35500
19	8410	4310	4870	20900	4490	6170	19400	23800	17800	41300	37300	35000
20	9230	2700	6070	24600	3530	5300	19600	22800	31900	45100	32300	35200
21	8280	3640	8200	25300	4950	12900	19700	15500	32000	44100	35800	35300
22	5020	3000	11800	23800	5170	11700	21900	11400	38600	44900	38900	35400
23	5970	5660	13100	20000	6280	17500	11200	21700	38100	33100	42100	36500
24	3690	4590	5910	23500	6600	19400	8510	22900	39300	36200	42000	36700
25	6560	3380	4080	19200	6720	17600	18900	23600	38400	48100	38400	36900
26	8840	4710	3750	16800	4750	10500	21800	23700	37700	48200	36800	36700
27	6920	4320	6750	20700	3500	8480	24100	23300	39000	48200	35700	36300
28	11000	3200	8540	16200	7510	16000	22100	15200	38700	49700	35300	36300
29	8550	7220	8320	17800	---	15200	24900	10200	38900	50800	38600	35900
30	9230	8880	10000	16400	---	18900	15400	10800	38800	36900	38500	36200
31	5770	---	7320	18900	---	19500	---	16500	---	37800	38300	---
TOTAL	197910	191290	233810	593000	183850	319410	534380	613000	951000	1297900	1221000	1102400
MEAN	6384	6376	7542	19130	6566	10300	17810	19770	31700	41870	39390	36750
MAX	11000	10500	13100	25300	10600	19500	24900	26700	39300	50800	45700	38500
MIN	1550	2700	3750	10300	3500	3300	8510	10200	16700	33100	32200	35000
AC-FT	392600	379400	463800	1176000	364700	633500	1060000	1216000	1886000	2574000	2422000	2187000
CAL YR 1982	TOTAL	3757980	MEAN	10300	MAX	23200	MIN	1390	AC-FT	7454000		
WTR YR 1983	TOTAL	7438950	MEAN	20380	MAX	50800	MIN	1550	AC-FT	14760000		

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1939 to current year.

CHEMICAL ANALYSES: October 1939 to September 1944, once daily (composited); October 1944 to July 1946 and November 1948 to July 1950, occasional (composited); October 1950 to September 1957, once daily (composited); October 1957 to September 1962, twice monthly (composited); October 1963 to September 1967, three times per month (composited); October 1967 to March 1970, once daily (composited); April 1970 to September 1981, monthly; October 1981 to current year, every 2 months.

SPECIFIC CONDUCTANCES: October 1939 to July 1957, once daily; August 1957 to September 1962 and October 1963 to March 1970, variable frequency of measurement; April 1970 to September 1977, monthly; October 1977 to current year, hourly.

BIOLOGICAL DATA: November 1974 to September 1977, monthly; October 1977 to September 1981, monthly (seasonal).

MICROBIOLOGICAL DATA: November 1974 to September 1981, monthly; October 1981 to current year, every 2 months.

WATER TEMPERATURES: October 1941 to July 1957, once daily; August 1957 to March 1970, variable frequency of measurement; April 1970 to September 1977, monthly; October 1977 to current year, hourly.

SEDIMENT DATA: August 1975 to September 1981, monthly; October 1981 to current year, every 2 months.

INSTRUMENTATION.--Specific-conductance and water-temperature recorder October 1977 to current year.

REMARKS.--Samples collected 0.3 mi downstream from gaging station in Hoover Dam powerhouse. Unpublished chemical analyses for period October 1939 to September 1940 available from the U.S. Geological Survey in Tucson, Ariz. Periods of no record for daily specific conductance and/or water temperature are due to probes which were not submerged (Oct. 1-Dec. 14), non-representative data collection due to recorder location upstream from spillway discharges to river (July 3-Aug. 5), and recorder which malfunctioned (Aug. 6-Sept. 30).

EXTREMES MEASURED FOR PERIOD OF RECORD SINCE OCTOBER 1970.--

SPECIFIC CONDUCTANCES: Maximum, 1,230 micromhos Jan. 18, 1972; minimum, 950 micromhos Sept. 23, 1983.

PHYTOPLANKTON: Maximum, 3,800 cells/mL Nov. 5, 1974; minimum, 5 cells/mL Aug. 9, 1977.

FECAL STREPTOCOCCI: Maximum, 45 colonies/100 mL Mar. 9, 1977; minimum, <1 colony/100 mL several times during period of record.

WATER TEMPERATURES: Maximum, 21.5°C July 23, 1983; minimum, 9.0°C Feb. 12, 1975, and Jan. 10, 1978.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 24 mg/L July 7, 1982; minimum, <1 mg/L on several days in 1976, Oct. 16, 1979, several days in 1980, Sept. 16, 1981, and Mar. 9, 1982.

EXTREMES FOR CURRENT YEAR (MEASUREMENTS AT LEAST ONCE DAILY).--

SPECIFIC CONDUCTANCES: Maximum, 1,110 micromhos on many days; minimum, 950 micromhos Sept. 23.

WATER TEMPERATURES: Maximum, 21.5°C July 23; minimum, 11.0°C on several days in April and May.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (FT ³ /S)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH, FIELD (STAND- ARD UNITS)	TEMPER- ATURE, WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
NOV 03...	1200	8690	1080	7.8	13.0	.50	8.3	80	16	<2	<2
JAN 07...	1500	25600	1100	8.2	12.5	.30	8.8	84	11	K2	K26
MAR 05...	1500	2470	1090	8.1	12.0	1.0	10.9	104	17	<2	K4
MAY 05...	1130	32900	1090	8.0	11.5	.50	8.8	83	<10	<2	K5
JUL 23...	1200	35000	1100	8.2	21.5	.60	11.3	132	20	K2	K2
SEP 23...	1030	36400	950	7.9	14.0	.70	9.6	96	13	<2	K3

K: NON-IDEAL COLONY COUNT

COLORADO RIVER MAIN STEM

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09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1902 TO SEPTEMBER 1903

DATE	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
NOV 03...	309	77	20	96	2.5	4.3	133	300	84	.30	8.7
JAN 07...	321	79	30	100	2.5	4.7	129	300	91	.30	8.7
MAR 05...	322	79	30	100	2.5	4.6	134	280	90	.40	8.7
MAY 05...	321	80	29	100	2.5	4.3	133	290	88	.30	8.9
JUL 23...	321	79	30	100	2.5	4.9	126	290	90	.30	8.4
SEP 23...	323	81	29	98	2.5	4.4	135	290	82	.30	8.6

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 03...	701	679	16400	.35	<.060	.40	<.010	<.010	<.010	<10	3
JAN 07...	710	691	49000	.27	<.060	.50	.010	.010	<.010	--	--
MAR 05...	676	675	4510	.27	.100	.40	.010	.020	.020	10	3
MAY 05...	685	682	60800	.30	.100	.30	.010	.010	<.010	10	3
JUL 23...	--	678	64100	.16	.090	.70	.040	.030	.010	--	--
SEP 23...	681	676	66900	.33	.090	.30	.010	.010	.020	<10	2

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CORALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 03...	100	1	<1	<1	<3	1	<3	<1	63	<1
JAN 07...	--	--	--	--	--	--	--	--	--	--
MAR 05...	110	1	<1	<1	<3	1	0	1	57	<1
MAY 05...	110	<1	<1	<1	<3	1	<3	2	60	2
JUL 23...	--	--	--	--	--	--	--	--	--	--
SEP 23...	110	<1	<1	<1	<3	1	3	<1	52	1

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV 03...	.2	<10	2	3	<1	1100	<6.0	6	18	422
JAN 07...	--	--	--	--	--	--	--	--	6	414
MAR 05...	<.1	<10	4	3	<1	1200	<6.0	9	2	13
MAY 05...	.1	<10	2	4	<1	1100	<6.0	6	--	--
JUL 23...	--	--	--	--	--	--	--	--	6	567
SEP 23...	.9	<10	3	3	<1	1100	<6.0	5	2	197

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BFLOW HOOVER DAM,AZ-NV--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1932 TO SEPTEMBER 1933

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1					---	---	1100	1090	1100	1090	1110	1100
2					---	---	1100	1090	1100	1090	1110	1090
3					---	---	1100	1090	1100	1090	1100	1090
4					---	---	1110	1100	1100	1090	1100	1090
5					---	---	1110	1090	1100	1090	1100	1090
6					---	---	1110	1090	1100	1090	1100	1090
7					---	---	1110	1100	1100	1080	1100	1090
8					---	---	1110	1100	1090	1080	1100	1080
9					---	---	1110	1100	1100	1080	1100	1090
10					---	---	1110	1100	1100	1090	1100	1090
11					---	---	1110	1100	1100	1090	1100	1080
12					---	---	1110	1100	1100	1090	1100	1080
13					---	---	1110	1100	1100	1080	1100	1080
14					---	---	1110	1100	1100	1080	1100	1080
15					1070	1060	1110	1100	1100	1090	1100	1080
16					1070	1060	1110	1100	1100	1090	1100	1080
17					1070	1060	1110	1100	1100	1090	1090	1080
18					1070	1060	1110	1100	1110	1090	1100	1080
19					1070	1050	1110	1100	1110	1090	1110	1090
20					1070	1050	1110	1100	1110	1090	1100	1090
21					1080	1060	1110	1100	1110	1100	1100	1080
22					1070	1060	1110	1100	1100	1090	1100	1080
23					1090	1060	1110	1100	1110	1090	1100	1090
24					1100	1070	1110	1100	1100	1090	1100	1090
25					1090	1070	1100	1090	1100	1090	1100	1090
26					1080	1060	1100	1090	1100	1080	1100	1090
27					1080	1070	1100	1090	1090	1080	1100	1090
28					1100	1080	1100	1090	1100	1090	1100	1090
29					1100	1080	1100	1090	---	---	1100	1090
30					1100	1080	1100	1090	---	---	1100	1090
31					1110	1090	1100	1090	---	---	1100	1080
MONTH					1110	1050	1110	1090	1110	1080	1110	1080

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1100	1080	1100	1090	1100	1090	1100	1080				
2	1100	1080	1100	1090	1100	1090	1100	1090				
3	1100	1090	1100	1090	1100	1090	1100	1080				
4	1100	1090	1100	1080	1100	1090	1090	1090				
5	1100	1090	1100	1080	1100	1090	1100	1080				
6	1100	1090	1100	1080	1100	1090	1100	1080				
7	1100	1090	1100	1080	1100	1090	1090	1080				
8	1100	1090	1100	1090	1100	1090	1090	1080				
9	1100	1090	1100	1080	1100	1090	1090	1080				
10	1100	1090	1100	1080	1100	1090	1090	1080				
11	1100	1090	1100	1090	1100	1090	1090	1080				
12	1100	1090	1100	1090	1100	1080	1090	1080				
13	1100	1090	1100	1090	1100	1090	1090	1080				
14	1100	1080	1100	1080	1100	1090	1090	1080				
15	1100	1090	1100	1090	1100	1090	1090	1080				
16	1100	1090	1100	1090	1100	1090	1110	1080				
17	1100	1090	1100	1090	1100	1090	1100	1080				
18	1100	1090	1100	1090	1100	1090	1100	1080				
19	1100	1090	1100	1090	1100	1090	1090	1080				
20	1100	1090	1100	1090	1100	1090	1090	1080				
21	1100	1090	1100	1090	1100	1090	1100	1080				
22	1100	1090	1100	1090	1100	1090	1100	1080				
23	1100	1080	1100	1090	1100	1090	1110	1080				
24	1100	1090	1100	1090	1100	1090	1110	1080				
25	1100	1080	1100	1090	1100	1090	1090	1080				
26	1110	1090	1100	1090	1100	1090	1090	1070				
27	1100	1090	1100	1090	1100	1090	1090	1080				
28	1100	1090	1100	1090	1100	1090	1090	1080				
29	1090	1080	1100	1090	1100	1090	1090	1080				
30	1100	1090	1100	1090	1100	1080	1090	1080				
31	---	---	1100	1090	---	---	1090	1070				
MONTH	1110	1080	1100	1080	1100	1080	1110	1070				
YEAR	1110	1050										

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1932 TO SEPTEMBER 1933

[illegible]

COLORADO RIVER MAIN STEM

09422500 LAKE MOHAVE AT DAVIS DAM, AZ-NV

LOCATION.--Lat 35°11'50", long 114°34'07", in SW¼SW¼ sec.18, T.21 N., R.21 W., Gila and Salt River meridian, Mohave County, Hydrologic Unit 15030101, on forebay structure on Arizona side of Davis Dam on Colorado River, 29 mi west of Kingman, Ariz., and 67 mi downstream from Hoover Dam.

DRAINAGE AREA.--173,300 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--January 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill and rockfill dam; dam completed in April 1949 and storage began Jan. 17, 1950. Usable capacity, 1,810,000 acre-ft between elevations 533.39 ft - lowest point of penstock outlet - and 647.0 ft - top of spillway gates. A small amount of additional storage is available through use of splashboards on the spillway gates. Dead storage, 8,530 acre-ft below elevation 533.39 ft. Lake is used for power development, reregulation for irrigation demand, and to satisfy requirements of the Treaty of 1944 with Mexico. Figures given herein represent usable contents.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,811,000 acre-ft May 24, 1958, May 29, 1963, May 29, 1982; maximum elevation, 647.04 ft May 29, 1963, May 29, 1982; minimum contents (since 1952), 1,168,000 acre-ft Sept. 8, 1953, elevation, 622.15 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,802,000 acre-ft June 25, elevation, 646.72 ft; minimum, 1,361,000 acre-ft Oct. 25, elevation, 630.08 ft.

Capacity table (elevation, in feet, and usable contents, in acre-feet)

630	1,359,000	641	1,644,000
632	1,409,000	644	1,726,000
635	1,486,000	647	1,810,000
638	1,564,000		

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1420000	1407000	1519000	1641000	1700000	1662000	1718000	1631000	1643000	1777000	1763000	1747000
2	1408000	1413000	1526000	1645000	1695000	1685000	1709000	1634000	1654000	1768000	1764000	1744000
3	1404000	1419000	1530000	1646000	1698000	1713000	1704000	1641000	1662000	1760000	1768000	1738000
4	1399000	1428000	1525000	1653000	1692000	1722000	1708000	1647000	1660000	1754000	1766000	1732000
5	1397000	1432000	1525000	1661000	1691000	1724000	1715000	1658000	1649000	1753000	1767000	1728000
6	1391000	1433000	1525000	1672000	1689000	1728000	1719000	1664000	1654000	1753000	1753000	1727000
7	1393000	1435000	1535000	1688000	1700000	1735000	1726000	1658000	1657000	1755000	1745000	1726000
8	1389000	1441000	1536000	1691000	1710000	1737000	1732000	1643000	1673000	1754000	1753000	1723000
9	1384000	1450000	1546000	1701000	1720000	1735000	1719000	1652000	1689000	1754000	1766000	1720000
10	1376000	1459000	1551000	1698000	1729000	1726000	1702000	1663000	1709000	1750000	1775000	1717000
11	1375000	1470000	1555000	1697000	1736000	1717000	1709000	1670000	1701000	1745000	1787000	1714000
12	1370000	1478000	1556000	1698000	1738000	1704000	1720000	1683000	1688000	1737000	1795000	1713000
13	1368000	1480000	1562000	1701000	1743000	1696000	1726000	1697000	1699000	1732000	1783000	1711000
14	1368000	1481000	1568000	1698000	1743000	1685000	1725000	1686000	1709000	1728000	1766000	1703000
15	1370000	1485000	1575000	1686000	1744000	1680000	1714000	1672000	1727000	1723000	1770000	1694000
16	1367000	1484000	1584000	1677000	1744000	1667000	1695000	1678000	1753000	1721000	1770000	1688000
17	1368000	1484000	1597000	1674000	1740000	1662000	1675000	1682000	1780000	1716000	1773000	1680000
18	1370000	1486000	1603000	1675000	1733000	1657000	1675000	1688000	1796000	1713000	1777000	1673000
19	1371000	1489000	1603000	1678000	1725000	1640000	1675000	1699000	1783000	1711000	1777000	1666000
20	1374000	1487000	1607000	1689000	1722000	1630000	1675000	1702000	1783000	1717000	1767000	1657000
21	1375000	1485000	1616000	1701000	1709000	1634000	1677000	1693000	1792000	1723000	1763000	1649000
22	1370000	1486000	1631000	1711000	1699000	1637000	1683000	1677000	1800000	1729000	1766000	1641000
23	1366000	1490000	1653000	1715000	1689000	1647000	1668000	1682000	1800000	1714000	1774000	1636000
24	1364000	1491000	1660000	1723000	1683000	1664000	1647000	1689000	1801000	1704000	1783000	1632000
25	1362000	1493000	1658000	1726000	1670000	1676000	1648000	1700000	1800000	1715000	1785000	1627000
26	1371000	1494000	1655000	1713000	1658000	1671000	1650000	1702000	1797000	1728000	1781000	1623000
27	1374000	1496000	1662000	1722000	1652000	1667000	1654000	1701000	1796000	1738000	1776000	1616000
28	1386000	1496000	1666000	1717000	1647000	1674000	1649000	1685000	1794000	1754000	1768000	1610000
29	1392000	1499000	1665000	1714000	---	1678000	1651000	1665000	1789000	1770000	1768000	1606000
30	1401000	1508000	1664000	1709000	---	1694000	1644000	1644000	1784000	1763000	1763000	1600000
31	1402000	---	1646000	1707000	---	1716000	---	1634000	---	1756000	1756000	---
MAX	1420000	1508000	1666000	1726000	1744000	1737000	1732000	1702000	1801000	1777000	1795000	1747000
MIN	1362000	1407000	1519000	1641000	1647000	1630000	1644000	1631000	1643000	1704000	1745000	1600000
(*)	631.74	635.87	641.06	643.31	641.11	643.62	640.99	640.60	646.08	645.09	645.08	639.34
(**)	-24000	+106000	+138000	+61000	-60000	+69000	-72000	-10000	+150000	-28000	0	-156000
CAL YR 1982	MAX	1806000	MIN	1362000	**	+68000						
WTR YR 1983	MAX	1801000	MIN	1362000	**	+174000						

* Elevation, in feet, at end of month.

** Change in storage, in acre-feet.

COLORADO RIVER MAIN STEM

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09423000 COLORADO RIVER BELOW DAVIS DAM, AZ-NV

LOCATION.--Lat 35°11'30", long 114°34'17", in SE¼NE¼ sec.1, T.32 S., R.66 E., Mount Diablo meridian, in Nevada, Clark County, Hydrologic Unit 15030101, on right bank 0.5 mi downstream from Davis Dam, 29 mi west of Kingman, Ariz., and 68 mi downstream from Hoover Dam.

DRAINAGE AREA.--173,300 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1905 to September 1907 (published as "at Hardyville"), March 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 490.00 ft, National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD since Oct. 1, 1967. 1905-7, nonrecording gage at site 4.8 mi downstream at datum about 3.4 ft lower. Mar. 16 to May 3, 1949, water-stage recorder at site 0.5 mi downstream at datum 10.00 ft higher. May 4, 1949, to Feb. 24, 1956, water-stage recorder at site 400 ft upstream at datum 10.00 ft higher. Feb. 25, 1956, to Sept. 30, 1967, water-stage recorder at present site at datum 10.00 ft higher.

REMARKS.--Records good. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950. Many diversions upstream for irrigation, industrial, and municipal uses.

AVERAGE DISCHARGE.--34 years (water years 1950-83), 12,650 ft³/s, 9,165,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1905-7: Maximum daily discharge, 116,000 ft³/s June 20, 1906; minimum daily, 2,850 ft³/s Jan. 5, 1906.
1949-83: Maximum discharge, 46,200 ft³/s July 2, 1983, elevation, 509.48 ft, maximum elevation, 513.91 ft Apr. 22, 1952; no flow at Davis Dam parts of several days July to September 1950 and Dec. 27, 1950, when gates in dam were closed; minimum daily discharge, 285 ft³/s Aug. 3, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 46,200 ft³/s July 2, elevation, 509.48 ft, maximum elevation, 509.54 ft July 6; minimum daily, 1,960 ft³/s Nov. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8720	5330	4000	12000	15600	7180	13800	19800	21900	43900	43600	41600
2	9230	4850	3930	10100	13100	3630	15800	20100	22400	45100	43900	40900
3	5190	5290	6390	17800	10400	3700	11900	20100	24900	45000	43800	40300
4	8670	5300	6190	18300	10500	3200	17900	20100	24900	45000	43700	40100
5	8640	7180	3840	18500	7510	2190	19000	20100	24900	44800	43700	40300
6	7680	6810	6550	18500	5560	2210	19400	19900	24900	44800	43500	39500
7	5880	4880	5740	18400	3410	2220	19400	20000	24900	44900	41300	38900
8	7720	5410	5650	18400	3410	2200	19500	20100	24900	44800	41100	39000
9	5090	5410	3780	14200	3300	6230	19500	19900	24800	43900	41100	39000
10	5070	3110	3840	18400	3330	8980	19600	20000	24800	43200	41000	39000
11	5120	2010	3820	18400	3300	10800	19600	19800	24700	43300	41100	39000
12	7450	1960	2850	18500	3310	11600	19700	19800	24700	43400	39400	39000
13	7880	4750	3820	19000	3300	7370	19600	19700	24600	43500	39300	39100
14	7890	3990	3840	19000	6210	12700	19600	17700	24700	43700	41300	39100
15	7740	5180	3820	19000	6580	13400	19500	17900	24800	43600	41400	39500
16	7820	5270	3800	19000	6210	13600	19500	19600	24700	43400	41400	39400
17	5120	4480	3780	19100	7890	13800	19700	19600	24600	43300	40300	39500
18	7780	3070	3540	19100	8700	15100	19900	19700	24400	43200	38500	39500
19	8130	3950	3780	19200	9280	15900	19900	19600	24300	42700	38500	39500
20	7640	3950	3470	19200	5380	10400	19800	20600	28300	42400	38400	39400
21	7650	3940	2800	19100	10700	11900	19800	20700	30600	42400	38300	39500
22	7730	3330	3270	19000	11200	10400	19700	20600	33800	41800	38400	39600
23	7870	3290	2880	18900	10900	10900	19700	18200	37800	42200	38300	39600
24	5200	2970	2890	19100	10900	11300	19800	19500	38600	42100	38200	39700
25	6940	2990	3620	19700	13200	11400	19900	18000	38900	42100	38100	39600
26	5050	3000	3690	19700	11200	12700	20000	22300	39500	42500	39000	39600
27	4930	2410	3770	19800	7280	11200	22800	25000	40100	42800	39300	39600
28	4890	2910	4460	19800	9530	13100	25600	24900	41000	42900	39000	39600
29	4890	3960	8800	19800	---	12000	25600	21900	41600	43100	39700	39700
30	5390	5060	10700	19700	---	10500	19800	21800	42700	43100	41000	39600
31	4960	---	16100	19700	---	10100	---	22100	---	43300	41900	---
TOTAL	209960	126040	149410	568400	221190	291910	585300	629100	877700	1346200	1257500	1187700
MEAN	6773	4201	4820	18340	7900	9416	19510	20290	29260	43430	40560	39590
MAX	9230	7180	16100	19800	15600	15900	25600	25000	42700	45100	43900	41600
MIN	4890	1960	2800	10100	3300	2190	11900	17700	21900	41800	38100	38900
AC-FT	416500	250000	296400	1127000	438700	579000	1161000	1248000	1741000	2670000	2494000	2356000

CAL YR 1982 TOTAL 3735120 MEAN 10230 MAX 21200 MIN 1960 AC-FT 7409000
WTR YR 1983 TOTAL 7450410 MEAN 20410 MAX 45100 MIN 1960 AC-FT 14780000

COLORADO RIVER MAIN STEM

09423000 COLORADO RIVER BELOW DAVIS DAM, AZ-NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT 06...	1130	8260	1090	7.8	29.0	19.0	320	190	78	30	110	3
NOV 02...	1215	5100	1090	7.8	20.0	17.0	320	200	79	31	110	3
DEC 01...	1130	4670	1120	7.8	15.0	14.0	320	190	78	30	110	3
JAN 04...	1500	19200	1120	7.9	15.0	10.0	330	200	80	31	110	3
FEB 01...	1430	18700	1090	8.0	14.0	10.5	330	200	82	30	110	3
MAR 01...	1520	4790	1100	7.9	22.0	12.5	320	190	80	30	100	2
APR 05...	1230	19200	1110	8.0	--	14.0	330	200	84	30	110	3
MAY 02...	1410	20100	1100	7.8	27.0	15.0	320	190	81	29	100	3
JUN 01...	1130	25200	1100	--	25.0	15.0	330	200	83	30	100	2
JUL 06...	1145	44800	1100	--	42.0	18.5	330	200	83	30	110	3
AUG 02...	1045	43600	1100	--	32.0	22.0	320	180	79	29	110	3
SEP 02...	1210	42800	1100	--	36.0	20.0	330	200	85	29	100	2

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 06...	4.8	125	300	97	.40	8.9	717	700	.98	.11	150	4
NOV 02...	5.0	121	300	94	.40	9.1	724	700	.98	.19	150	11
DEC 01...	4.9	124	310	93	.30	8.7	718	710	.98	.16	160	4
JAN 04...	4.9	129	310	95	.30	9.1	753	720	1.0	.17	150	11
FEB 01...	4.9	133	300	93	.40	8.8	709	710	.96	.23	140	13
MAR 01...	4.7	131	290	92	.40	8.8	729	680	.99	.25	140	<3
APR 05...	4.4	138	290	92	.30	8.8	695	700	.95	.19	150	16
MAY 02...	4.7	130	290	90	.30	8.4	711	680	.97	.23	140	4
JUN 01...	4.4	131	290	88	.30	8.9	683	680	.93	.24	150	14
JUL 06...	4.4	133	280	90	.30	8.6	708	690	.96	.24	140	5
AUG 02...	5.0	133	300	97	.30	8.7	784	710	1.1	.21	140	5
SEP 02...	4.5	128	300	94	.30	8.6	701	700	.95	.17	130	6

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

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09423500 COLORADO RIVER AT NEEDLES, CA

LOCATION.--Lat 34°51'06", long 114°36'33", in SE¼SE¼ sec.19, T.9 N., R.23 E., San Bernardino meridian, San Bernardino County, Hydrologic Unit 15030101, on right bank at Needles, 15 mi upstream from gaging station near Topock, Ariz., 30 mi downstream from Davis Dam, and 97 mi downstream from Hoover Dam.

DRAINAGE AREA.--174,500 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--April 1931 to current year (elevations only).

REVISED RECORDS.--WSP 1119: 1931-47.

GAGE.--Water-stage recorder. Datum of gage is 392.79 ft, National Geodetic Vertical Datum of 1929. Prior to May 15, 1942, at site 550 ft downstream and May 15, 1942, to Feb. 16, 1969, at site 200 ft upstream; at datum 73.44 ft higher prior to Jan. 12, 1952, and at datum 7.21 ft higher Jan. 12, 1952, to Sept. 30, 1980.

REMARKS.--Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 475.77 ft Nov. 30, 1944; minimum, 457.84 ft Feb. 26, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 470.58 ft June 21; minimum, 458.19 ft Mar. 9.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462.01	---	459.44	464.27	466.27	462.12	463.75	467.22	468.18	---	---	466.61
2	462.07	---	459.24	463.57	463.86	460.39	465.85	468.19	468.32	---	---	466.55
3	461.81	---	459.96	465.49	463.56	458.59	463.39	467.53	469.24	---	466.16	466.37
4	460.52	---	460.77	466.79	462.97	459.04	466.07	467.51	469.36	---	466.21	466.31
5	461.92	460.39	460.21	466.82	462.33	458.55	466.82	467.50	469.36	---	466.25	466.34
6	461.96	461.27	459.89	466.79	460.63	458.21	467.22	467.47	469.35	---	466.25	466.26
7	461.23	460.69	460.94	466.75	460.02	458.20	467.23	467.01	469.35	---	466.03	466.03
8	460.85	460.13	460.52	466.77	458.80	458.20	467.27	467.53	469.39	---	465.95	466.08
9	461.00	460.18	460.15	465.02	458.82	458.51	467.26	467.42	469.36	---	466.01	466.05
10	460.11	460.16	459.17	466.52	458.76	461.17	467.26	467.36	469.34	---	465.96	466.08
11	460.12	458.67	459.30	466.86	458.72	463.03	467.28	467.34	469.31	---	465.97	466.09
12	460.34	458.37	459.22	466.80	458.68	463.11	467.29	467.34	469.34	---	465.83	466.12
13	461.39	458.50	458.77	466.89	458.66	462.55	467.32	467.34	469.30	---	465.62	466.10
14	461.67	459.73	459.27	466.87	459.06	462.49	467.30	466.53	469.29	466.35	466.16	466.05
15	461.55	459.50	459.28	466.88	460.31	464.26	467.27	466.44	469.34	466.35	466.14	466.04
16	461.51	460.09	459.29	466.89	460.55	464.37	467.27	467.19	469.31	466.21	466.10	466.03
17	461.06	460.05	459.28	466.98	460.49	464.56	467.30	467.26	469.27	466.16	466.29	466.05
18	460.66	459.46	459.20	467.08	461.85	464.78	467.35	467.26	469.20	466.11	465.80	466.00
19	461.62	458.86	459.20	467.11	461.39	465.83	467.39	467.25	469.17	466.09	465.84	466.00
20	461.61	459.31	459.17	467.12	461.95	463.77	467.42	467.51	469.62	466.09	465.85	465.97
21	---	---	459.07	467.09	460.52	464.11	467.45	467.67	470.53	466.23	465.79	465.94
22	---	---	458.64	467.07	463.43	462.83	467.42	467.66	---	466.19	465.79	466.03
23	---	---	458.62	467.03	463.45	462.87	467.38	467.24	---	466.27	465.82	466.10
24	---	---	458.65	467.02	462.76	462.82	467.39	467.26	---	466.24	465.80	466.09
25	---	---	458.68	467.29	464.32	463.20	467.45	466.64	---	466.22	465.79	466.04
26	---	---	459.17	467.31	463.59	463.85	467.46	467.54	---	466.27	465.89	466.02
27	---	---	459.20	467.32	462.23	463.35	467.74	469.17	---	---	466.10	466.08
28	---	---	459.31	467.34	461.80	464.10	469.37	469.27	---	---	466.08	466.09
29	---	---	460.83	467.36	---	463.66	469.42	468.25	---	---	466.05	466.18
30	---	459.97	462.51	467.36	---	463.64	467.66	468.12	---	---	466.41	466.09
31	---	---	465.31	467.35	---	462.25	---	468.17	---	---	466.61	---
MEAN	---	---	459.75	466.70	461.42	462.21	467.14	467.52	---	---	---	466.13
MAX	---	---	465.31	467.36	466.27	465.83	469.42	469.27	---	---	---	466.61
MIN	---	---	458.62	463.57	458.66	458.20	463.39	466.44	---	---	---	465.94

NOTE.--Elevations not available for periods: Oct. 21 to Nov. 4, Nov. 21-29, June 22 to July 13, July 27 to Aug. 2.

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09423550 TOPOCK MARSH INLET NEAR NEEDLES, CA

LOCATION.--Lat 34°50'10", long 114°35'03", in NE¼NW¼ sec.33, T.9 N., R.23 E., San Bernardino meridian, in Arizona, Mohave County, Hydrologic Unit 15030101, on left bank of Colorado River on north side of intake structure, 1.3 mi east of Needles.

PERIOD OF RECORD.--January 1967 to current year.

GAGE.--Water-stage recorders above and below intake gates to record head; recorder to show gate opening. Datum of gages is 400.00 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Topock Marsh inlet diverts water from the Colorado River into Topock Marsh, an area of 4,260 acres. This water flows through the marsh and returns to the Colorado River through the Topock Marsh outlet. The Bureau of Sport Fisheries and Wildlife maintains two other gates to the same opening as the recording gate. Monthly total return flows through the outlet, sta 09423650, Topock Marsh Outlet near Topock, AZ, are shown in the table below. Prior to June 1978, daily flows for this station were published separately.

AVERAGE DISCHARGE.--16 years, 60.0 ft³/s, 43,470 acre-ft/yr. For outlet, sta 09423650: 16 years, 8.04 ft³/s, 5,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 249 ft³/s Mar. 5, 1976; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	3.1	1.6	92	58	26	31	51	76	.00	.00	.00
2	49	5.6	1.5	81	41	7.0	40	62	77	.00	.00	.00
3	42	3.6	6.9	112	40	.84	26	67	82	.00	.00	.00
4	11	6.1	25	131	34	.00	41	68	81	.00	.00	.00
5	46	8.1	21	130	26	.00	43	68	82	.00	.00	.00
6	24	34	4.9	130	12	.00	45	68	82	.00	.00	.00
7	35	27	26	129	5.6	.00	45	66	82	.00	.00	.00
8	17	4.5	15	130	1.0	.00	45	68	82	.00	.00	.00
9	32	7.0	12	108	.86	.22	45	68	82	.00	.00	.00
10	3.8	8.1	1.7	128	.86	12	45	67	82	.00	.00	.00
11	3.4	1.2	.73	131	.95	27	41	72	82	.00	.00	.00
12	5.0	.97	.97	130	.00	28	41	72	82	.00	.00	.00
13	35	.24	.00	132	.00	19	41	71	81	.00	.00	.00
14	41	3.7	1.5	132	.81	18	41	67	81	.00	.00	.00
15	38	.00	1.3	132	10	32	41	67	82	.00	.00	.00
16	38	5.5	.97	132	12	32	41	71	82	.00	.00	.00
17	33	4.9	1.8	132	11	33	41	71	127	.00	.00	.00
18	9.5	1.7	1.7	132	23	34	41	71	165	.00	.00	.00
19	41	3.4	2.5	96	18	38	41	72	165	.00	.00	.00
20	39	2.2	1.9	62	21	30	41	73	171	.00	.00	.00
21	37	2.4	2.7	62	9.1	32	41	74	188	.00	.00	.00
22	38	2.0	.00	62	38	22	41	74	190	.00	.00	.00
23	39	3.9	.00	62	41	24	41	71	204	.00	.00	.00
24	33	.97	.00	62	36	24	41	72	208	.00	.00	.00
25	6.9	3.7	.00	63	47	26	41	69	205	.00	.00	.00
26	27	.24	4.6	63	42	31	52	73	203	.00	.00	.00
27	2.6	.00	2.8	63	21	28	53	81	42	.00	.00	.00
28	3.5	.73	1.5	63	24	32	58	81	.00	.00	.00	.00
29	3.2	.49	16	63	---	30	58	76	.00	.00	.00	.00
30	2.2	3.9	57	63	---	30	52	76	.00	.00	.00	.00
31	6.3	---	110	63	---	20	---	76	---	.00	.00	---
TOTAL	787.4	149.24	323.57	3071	574.18	636.06	1294	2183	3166.00	.00	.00	.00
MEAN	25.4	4.97	10.4	99.1	20.5	20.5	43.1	70.4	106	.000	.000	.000
MAX	49	34	110	132	58	38	58	81	208	.00	.00	.00
MIN	2.2	.00	.00	62	.00	.00	26	51	.00	.00	.00	.00
AC-FT	1560	296	642	6090	1140	1260	2570	4330	6280	.00	.00	.00
(*)	0	0	0	0	0	0	0	0	0	0	0	0
CAL YR 1982	TOTAL	21227.51	MEAN	58.2	MAX	174	MIN	.00	AC-FT	42100	*	0
WTR YR 1983	TOTAL	12184.45	MEAN	33.4	MAX	208	MIN	.00	AC-FT	24170	*	0

* Return flow, in acre-feet, to Colorado River.

DIVERSIONS FROM LAKE HAVASU

09424150 COLORADO RIVER AQUEDUCT NEAR PARKER DAM, AZ-CA

LOCATION.--Lat 34°18'58", long 114°09'23", in NW¼SW¼ sec.28, T.3 N., R.27 E., San Bernardino meridian, in California, San Bernardino County, Hydrologic Unit 15030101, at intake pumping plant of Metropolitan Water District of Southern California on Lake Havasu, 1.8 mi upstream from Parker Dam and 149 mi downstream from Hoover Dam.

PERIOD OF RECORD.--January 1939 to current year (monthly diversions only since October 1942). Published as a supplement to records for Colorado River below Parker Dam, 1942-50. Percolation return flow (monthly flow only) October 1964 to September 1973; prior to October 1964 miscellaneous measurements only.

GAGE.--Venturi meters in pressure lines at intake pumping plant.

REMARKS.--Pumping began Jan. 7, 1939. Figures of monthly diversion shown represent water pumped from Lake Havasu less return surface flow from Gene and Copper Basin Reservoirs. No water returned as surface flow from these reservoirs this year. Percolation return flow from Gene and Copper Basin Reservoirs is estimated by the U.S. Bureau of Reclamation as 10 acre-ft/day for a yearly total of 3,650 acre-ft, which is used for accounting purposes.

COOPERATION.--Diversion records furnished by Metropolitan Water District of Southern California.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily diversion, 3,986 acre-ft, 2,010 ft³/s Oct. 25, 1970 and Oct. 29, 1977; no diversion at times.

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Diversions			
	Maximum	Minimum	Mean	Total
October.....	1,516	135	1,114	34,538
November.....	1,436	493	1,033	31,000
December.....	1,870	920	1,262	39,130
CAL YR 1982.....	3,504	135	1,963	716,536
January.....	2,636	2,390	2,588	80,216
February.....	1,898	0	1,040	29,125
March.....	1,873	0	1,303	40,396
April.....	2,553	1,291	1,998	59,940
May.....	2,955	1,028	1,716	53,189
June.....	3,376	1,029	2,233	66,980
July.....	3,415	2,755	3,244	100,577
August.....	3,395	3,020	3,304	102,415
September.....	3,402	3,090	3,345	100,355
WTR YR 1983.....	3,415	0	2,022	737,861

09424447 BURRO CREEK AT OLD U.S. 93 BRIDGE NEAR BAGDAD, AZ

LOCATION.--Lat 34°32'30", long 113°26'40", in SW¼ sec.19, T.14 N., R.11 W., Mohave County; Hydrologic Unit 15030202, on left bank 15 mi upstream from confluence with Big Sandy River, and 15 mi southwest of Bagdad.

DRAINAGE AREA.--612 mi².

PERIOD OF RECORD.--August 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,880 ft from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft³/s Mar. 3, 1983, gage height, 13.70 ft; minimum daily, 0.28 ft³/s Aug. 17, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 47,400 ft³/s Feb. 14, 1980, from slope-area measurement of peak flow at present site and datum, gage height, 15.6 ft (revised), from high-water mark in vicinity of gage.

EXTREMES FOR CURRENT Year.--Maximum discharge (*) and peak discharges above base of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	unknown	2,160	6.49	Feb. 8	1600	10,700	10.29
Dec. 11	0300	2,520	6.76	Mar. 3	0900	*30,600	13.70
Dec. 23	1200	7,420	9.20	Mar. 25	unknown	unknown	unknown
Jan. 30	0300	2,660	6.86	Sept. 24	0500	11,900	9.89
Feb. 4	2000	1,380	5.80	Sept. 30	0930	4,680	7.77

Minimum daily, 0.36 ft³/s Oct. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.84	1130	32	156	319	86	14	2.8	1.1	1.6	1.6
2	.51	1.1	204	29	80	1680	75	14	2.8	1.1	.84	1.6
3	.51	.84	72	27	62	17500	64	14	2.2	1.2	.73	1.5
4	.51	.95	28	24	802	6450	58	14	1.6	1.2	.62	1.4
5	.51	1.1	16	22	803	3080	52	13	1.6	1.2	.84	1.4
6	.51	1.1	14	20	569	1700	43	12	1.5	1.2	.73	1.4
7	.51	.95	15	18	2170	840	40	12	1.5	1.2	.73	1.3
8	.62	1.1	12	18	5250	500	38	12	1.4	1.3	.73	1.3
9	.62	1.3	12	18	2200	305	36	12	1.3	1.3	.73	1.3
10	.62	1.8	1380	17	810	250	30	10	1.2	1.2	1.1	1.3
11	.73	2.0	1410	16	710	200	27	9.1	.95	1.2	1.6	1.2
12	.62	1.4	378	15	611	160	25	8.7	1.2	1.3	1.1	1.2
13	.40	1.3	175	15	512	120	25	8.7	1.1	1.3	.95	1.2
14	.40	1.3	114	14	412	89	23	8.7	.95	1.4	.84	1.2
15	.40	1.3	82	14	313	71	22	8.7	.95	1.2	.95	1.3
16	.40	1.2	66	13	213	52	21	8.4	.95	1.2	.95	1.4
17	.40	1.5	52	13	114	41	21	8.7	.95	1.4	2.0	1.5
18	.40	2.7	43	13	97	30	19	8.7	.95	1.5	49	2.0
19	.36	2.0	37	13	68	25	18	7.7	1.1	1.5	110	2.1
20	.36	1.8	32	14	60	24	18	6.9	.95	1.6	36	8.4
21	.40	1.7	28	14	54	180	20	6.1	1.1	1.8	17	2.2
22	.40	1.8	26	13	28	600	21	5.8	1.1	1.6	10	1.8
23	.51	1.8	2550	13	21	1710	21	5.5	1.1	1.5	6.4	54
24	.51	2.4	1770	13	20	1850	21	5.3	1.2	2.6	4.4	8780
25	.62	4.0	332	13	20	2840	18	5.0	1.2	2.6	2.8	1160
26	.73	4.6	165	12	20	800	18	4.6	1.2	1.4	2.2	292
27	.84	4.6	105	13	20	400	16	4.2	1.2	1.2	1.8	77
28	.62	4.6	84	14	20	260	16	3.8	1.2	1.2	1.6	50
29	.62	4.8	68	29	---	190	15	3.4	1.2	1.3	1.5	40
30	.73	8.7	49	1550	---	140	15	3.2	1.2	1.3	1.5	1610
31	.84	---	38	288	---	100	---	3.0	---	2.6	1.5	---
TOTAL	16.61	66.58	10487	2337	16215	42506	922	261.2	39.65	44.7	262.74	12102.6
MEAN	.54	2.22	338	75.4	579	1371	30.7	8.43	1.32	1.44	8.48	403
MAX	.84	8.7	2550	1550	5250	17500	86	14	2.8	2.6	110	8780
MIN	.36	.84	12	12	20	24	15	3.0	.95	1.1	.62	1.2
AC-FT	33	132	20800	4640	32160	84310	1830	518	79	89	521	24010

CAL YR 1982 TOTAL 28267.68 MEAN 77.4 MAX 2550 MIN .28 AC-FT 56070
WTR YR 1983 TOTAL 85261.08 MEAN 234 MAX 17500 MIN .36 AC-FT 169100

NOTE.--No gage-height record Mar. 6 to Apr. 5.

09424450 BIG SANDY RIVER NEAR WIKIEUP, AZ

LOCATION.--Lat 34°27'45", long 113°37'25", in SE¼ sec.16, T.13 N., R.13 W., Mohave County, Hydrologic Unit 15030201, on left bank 7 mi downstream from Burro Creek, 15 mi upstream from confluence with Santa Maria River, and 17 mi south of Wikieup.

DRAINAGE AREA.--2,800 mi², approximately.

PERIOD OF RECORD.--March 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft, from topographic map. Prior to Oct. 1, 1970, at datum 3.06 ft, corrected, higher. Oct. 1, 1970, to Oct. 10, 1973, at datum 2.06 ft higher. Supplementary water-stage recorder for low flows at site 75 ft upstream at same datum from Apr. 10, 1975 to Mar. 1, 1978; Mar. 28 to Dec. 7, 1966, Apr. 2, 1969, to Apr. 9, 1975, at site 0.8 mi downstream at different datum.

REMARKS.--Records fair. Diversions above station for irrigation of about 3,800 acres, mostly by pumping from ground water.

AVERAGE DISCHARGE.--17 years, 91.6 ft³/s, 66,360 acre-ft/yr; median of yearly mean discharges, 48 ft³/s, 34,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft³/s Feb. 20, 1980, gage height, 12.51 ft, from high-water mark in gage well; minimum daily, 1.3 ft³/s July 13, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0845	1,730	4.05	Mar. 25	0100	6,850	6.13
Dec. 23	unknown	8,570	6.65	Sept. 24	0730	12,900	7.78
Feb. 8	1730	10,800	7.26	Sept. 30	1345	4,900	5.63
Mar. 3	1100	*25,000	10.29				

Minimum daily, 2.7 ft³/s Aug. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	5.8	276	40	202	200	185	23	6.2	4.9	4.6	5.8
2	4.9	5.8	186	35	149	1500	168	21	6.1	4.9	4.8	5.4
3	4.9	5.8	84	35	139	13500	143	20	6.5	5.2	4.9	5.6
4	4.9	6.1	28	30	247	6120	115	19	6.6	5.2	4.9	5.6
5	4.9	6.1	14	30	487	1430	108	17	6.7	5.1	4.8	5.6
6	4.6	6.1	6.6	30	330	612	97	17	6.7	4.9	4.5	5.6
7	4.9	6.2	4.9	28	918	269	88	16	7.0	4.7	4.1	5.8
8	4.9	6.4	5.2	28	4300	147	83	16	6.8	4.6	3.5	6.0
9	4.6	6.4	7.4	26	2300	102	77	15	6.3	4.6	2.7	6.3
10	4.6	6.6	340	25	1100	91	72	15	6.5	4.6	2.9	6.3
11	4.3	6.6	1140	24	600	85	66	15	6.8	4.6	3.5	6.2
12	4.3	6.3	308	23	350	72	59	15	7.0	4.9	3.7	5.7
13	4.3	5.9	149	23	250	70	55	15	6.8	4.9	3.7	5.3
14	4.3	5.9	80	22	190	57	51	14	6.4	4.9	3.9	4.8
15	4.3	5.6	44	21	150	47	46	14	6.3	4.9	4.2	4.4
16	4.3	5.6	25	20	110	40	44	13	6.6	4.9	20	4.0
17	4.3	5.9	18	20	80	35	41	12	6.6	4.9	65	4.0
18	4.3	6.2	16	19	60	30	38	11	7.0	4.9	37	3.9
19	4.3	6.2	11	19	45	30	37	11	6.8	4.9	20	3.8
20	4.3	6.6	10	20	35	25	36	11	6.3	4.9	15	4.4
21	4.3	6.6	7.0	19	30	81	39	12	6.4	5.2	10	4.0
22	4.6	6.6	5.2	19	25	97	37	11	6.6	5.2	9.0	3.5
23	4.9	7.0	2700	19	20	1150	34	11	6.2	5.0	8.5	13
24	4.9	7.4	1900	17	15	1290	34	9.5	6.0	4.9	8.0	4780
25	4.9	7.4	400	17	15	2310	31	8.9	5.7	4.4	7.0	727
26	5.2	7.8	220	17	14	649	28	8.8	5.6	4.0	6.5	109
27	4.9	7.8	140	18	13	477	27	8.8	5.6	4.0	6.0	69
28	4.8	7.8	110	19	13	269	26	7.6	5.4	4.0	5.5	60
29	5.2	8.2	60	19	---	228	25	7.6	5.2	4.4	5.5	55
30	5.4	8.6	50	444	---	202	24	7.4	5.1	4.4	5.0	854
31	5.4	---	40	313	---	185	---	6.3	---	4.4	5.0	---
TOTAL	145.6	197.3	8385.3	1439	12187	31400	1914	408.9	189.8	147.3	293.7	6779.0
MEAN	4.70	6.58	270	46.4	435	1013	63.8	13.2	6.33	4.75	9.47	226
MAX	5.4	8.6	2700	444	4300	13500	185	23	7.0	5.2	65	4780
MIN	4.3	5.6	4.9	17	13	25	24	6.3	5.1	4.0	2.7	3.5
AC-FT	289	391	16630	2850	24170	62280	3800	811	376	292	583	13450

CAL YR 1982	TOTAL	31142.0	MEAN	85.3	MAX	2780	MIN	4.0	AC-FT	61770
WTR YR 1983	TOTAL	63486.9	MEAN	174	MAX	13500	MIN	2.7	AC-FT	125900

09424470 KIRKLAND CREEK NEAR KIRKLAND, AZ

LOCATION.--Lat 34°23'38", long 112°43'19", in SW¼ sec.7, T.12 N., R.4 W., Yavapai County, Hydrologic Unit 15030203, on right bank 1.3 mi upstream from Skull Valley Wash and 1.7 mi southwest of Kirkland.

DRAINAGE AREA.--109 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1973 to Mar. 31, 1983 (discontinued).

REVISED RECORDS.--WDR AZ-77-1: 1976.

GAGE.--Water-stage recorder. Altitude of gage is 3,900 ft, from topographic map.

REMARKS.--Records poor. No known diversions above station.

AVERAGE DISCHARGE.--9 years, 10.7 ft³/s, 7,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft³/s Nov. 11, 1978, gage height, 11.85 ft, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement at gage height 10.53 ft; minimum daily, 1.1 ft³/s Oct. 2 to Nov. 1, 1974, Aug. 29, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 190 ft³/s on basis of slope-area measurement at gage height 9.40 ft, and peak discharges above base of 200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2115	422	2.93	Feb. 8	1930	227	2.37
Dec. 10	0815	214	2.27	Mar. 3	0715	*2,980	6.21
Dec. 23	1015	616	3.38	Mar. 4	0745	461	3.03

Minimum daily, 2.0 ft³/s Oct. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	4.1	77	7.3	5.9	14						
2	2.2	4.3	28	4.3	4.8	16						
3	2.2	5.0	24	3.2	22	843						
4	2.2	4.3	23	3.4	117	314						
5	2.2	4.3	22	3.0	63	113						
6	2.2	4.3	22	3.1	46	56						
7	2.2	4.3	21	2.9	60	32						
8	2.0	5.3	20	3.0	103	22						
9	2.0	6.2	52	2.9	69	18						
10	2.0	6.2	170	2.9	37	14						
11	2.2	5.2	68	2.6	23	11						
12	2.2	4.3	36	2.8	12	10						
13	2.2	4.3	22	3.2	6.2	8.9						
14	2.2	4.3	13	3.0	7.7	7.6						
15	2.2	4.3	8.4	3.0	7.0	7.3						
16	2.2	3.9	7.4	3.6	7.9	7.2						
17	2.2	4.7	7.9	3.6	8.5	7.4						
18	2.2	4.1	8.5	3.4	9.7	7.4						
19	2.2	3.0	9.2	4.1	12	7.3						
20	2.3	3.4	8.3	3.2	14	7.5						
21	2.5	3.9	8.6	3.2	16	6.4						
22	2.6	3.7	8.8	2.9	18	18						
23	2.4	3.6	142	3.0	19	21						
24	2.8	3.6	62	2.8	19	33						
25	2.5	3.6	35	3.0	16	45						
26	3.6	3.3	29	3.0	16	16						
27	3.2	3.0	23	4.3	15	6.9						
28	2.9	3.0	17	4.5	14	6.0						
29	3.0	3.0	13	13	---	5.6						
30	3.1	59	11	26	---	4.5						
31	3.8	---	8.1	9.2	---	4.7						
TOTAL	75.9	179.5	1005.2	143.4	768.7	1690.7						
MEAN	2.45	5.98	32.4	4.63	27.5	54.5						
MAX	3.8	59	170	26	117	843						
MIN	2.0	3.0	7.4	2.6	4.8	4.5						
AC-FT	151	356	1990	284	1520	3350						

CAL YR 1982 TOTAL 3959.6 MEAN 10.8 MAX 229 MIN 1.7 AC-FT 7850

BILL WILLIAMS RIVER BASIN

09424470 KIRKLAND CREEK NEAR KIRKLAND, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--1976 to February 1983 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	
FEB 17...	1040	8.1	423	8.2	11.0	9.1	667	95	180	0	50	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB 17...	14	16	.5	2.3	184	18	15	.20	39	269	270	
DATE		SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, HEXA- VALENT, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)
FEB 17...	.37	.92	.100	.31	10	4	30	<1	<1	1	2	
DATE		IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
FEB 17...	5	2	20	3	<.1	<1	1	1	5	0	.00	

< Actual value is known to be less than value shown.

BILL WILLIAMS RIVER BASIN

121

09424900 SANTA MARIA RIVER NEAR BAGDAD, AZ

LOCATION.--Lat 34°18'21", long 113°20'47", in SE¼ sec.12, T.11 N., R.11 W., Mohave County; Hydrologic Unit 15030203, on right bank 4.0 mi east of Palmerita Ranch, 12 mi upstream from confluence with Big Sandy River, and 21 mi southwest of Bagdad.

DRAINAGE AREA.--1,210 mi², approximately.

PERIOD OF RECORD.--April 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,360 ft, from topographic map.

REMARKS.--Records fair. Diversions above station for irrigation of about 5,300 acres, most of which is by pumping from ground water.

AVERAGE DISCHARGE.--17 years, 72.1 ft³/s, 52,240 acre-ft/yr; median of yearly mean discharges, 38 ft³/s, 27,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,600 ft³/s Mar. 1, 1978, gage height, 7.82 ft, from rating curve extended above 5,000 ft³/s on basis of step-backwater computations and slope-area measurements at gage heights 5.50 and 7.82 ft; no flow for most of time in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 5,000 ft³/s as explained above, and peak discharges above base of 200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0300	4,680	3.65	Mar. 3	1115	11,800	5.25
Dec. 11	0315	4,380	3.58	Mar. 26	0215	3,290	3.33
Dec. 23	1300	9,320	4.69	Aug. 18	0500	2,140	3.04
Jan. 30	0030	4,170	3.53	Sept. 24	0300	*15,200	6.01
Feb. 8	1515	8,720	4.55	Sept. 30	2330	7,170	4.20

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	1720	45	198	18	100	26	1.9	.00	.00	.00
2	.00	.00	397	38	138	33	52	24	1.9	.00	.00	.00
3	.00	.00	189	38	142	6280	69	25	1.3	.00	.00	.00
4	.00	.00	116	38	1110	3570	63	26	.64	.00	.00	.00
5	.00	.00	64	34	1730	1320	65	23	.64	.00	.00	.00
6	.00	.00	68	34	993	745	79	20	.00	.00	.00	.00
7	.00	.00	54	38	2170	327	94	20	.00	.00	.00	.00
8	.00	.00	42	41	3670	452	132	20	.00	.00	.00	.00
9	.00	.00	41	41	1170	333	80	17	.00	.00	.00	.00
10	.00	.00	244	34	412	235	56	20	.00	.00	.00	.00
11	.00	.00	1930	34	211	187	67	20	.00	.00	.00	.00
12	.00	.00	537	38	159	185	47	20	.00	.00	.00	.00
13	.00	.00	347	31	117	140	55	20	.00	.00	.00	.00
14	.00	.00	252	28	119	135	55	17	.00	.00	.00	.00
15	.00	.00	197	28	50	107	54	17	.00	.00	.00	.00
16	.00	.00	167	26	42	97	53	17	.00	.00	.00	.00
17	.00	.00	148	26	46	91	54	17	.00	.00	3.6	.00
18	.00	.00	149	26	40	90	39	13	.00	.00	758	.00
19	.00	.00	147	20	33	87	44	13	.00	.00	119	.00
20	.00	.00	115	23	29	235	36	13	.00	.00	28	.00
21	.00	.00	123	17	27	275	32	13	.00	.00	20	.00
22	.00	.00	118	23	26	330	43	11	.00	.00	13	.00
23	.00	.00	1490	31	24	738	96	11	.00	.00	7.4	1760
24	.00	.00	903	31	23	476	76	11	.00	.00	1.9	6130
25	.00	.00	282	31	22	2160	55	9.9	.00	.00	.00	1210
26	.00	.00	150	31	20	2080	43	8.6	.00	.00	.00	544
27	.00	.00	104	34	19	1110	35	7.4	.00	.00	.00	134
28	.00	.00	79	38	18	643	25	6.4	.00	.00	.00	30
29	.00	.00	64	268	---	433	26	5.8	.00	.00	.00	10
30	.00	.00	54	1780	---	315	26	3.8	.00	.00	.00	833
31	.00	---	49	416	---	224	---	3.2	---	.00	.00	---
TOTAL	.00	.00	10340	3361	12758	23451	1751	479.1	6.38	.00	950.90	10651.00
MEAN	.000	.000	334	108	456	756	58.4	15.5	.21	.000	30.7	355
MAX	.00	.00	1930	1780	3670	6280	132	26	1.9	.00	758	6130
MIN	.00	.00	41	17	18	18	25	3.2	.00	.00	.00	.00
AC-FT	.00	.00	20510	6670	25310	46520	3470	950	13	.00	1890	21130
CAL YR 1982	TOTAL	29457.93	MEAN	80.7	MAX	1930	MIN	.00	AC-FT	58430		
WTR YR 1983	TOTAL	63748.38	MEAN	175	MAX	6280	MIN	.00	AC-FT	126400		

BILL WILLIAMS RIVER BASIN

09426000 BILL WILLIAMS RIVER BELOW ALAMO DAM, AZ

LOCATION.--Lat 34°13'51", long 113°36'29", in SE¼SE¼ sec.4, T.10 N., R.13 W., La Paz County, Hydrologic Unit 15030204, on left bank 0.6 mi downstream from Alamo Dam, 3.7 mi downstream from Bullard Wash, and 8 mi downstream from confluence of Santa Maria and Big Sandy Rivers.

DRAINAGE AREA.--4,730 mi², approximately, of which 400 mi² is below confluence of Santa Maria and Big Sandy Rivers.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October and November 1939, published in WSP 1313. Prior to October 1943, published as "Williams River near Alamo." October 1943 to September 1967, published as "Bill Williams River near Alamo."

REVISED RECORDS.--WSP 1213: 1939(M). 1941(P).

GAGE.--Water-stage recorder. Altitude of gage is 967 ft, from construction data. Prior to Apr. 9, 1968, at site 1.7 mi upstream at datum 1,002.95 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions above station for irrigation of about 9,100 acres, mostly by pumping from ground water. Flow regulated by Alamo Lake, beginning Mar. 28, 1969. Temporary storage and slight regulation of releases through uncontrolled rectangular conduit through Alamo Dam June 23, 1968, to Mar. 27, 1969. Alamo Lake is formed by an earthfill and rockfill dam, completed in 1968. Total capacity of lake is 1,043,000 acre-ft. See table below for monthend contents. Maximum contents during year was 205,500 acre-ft Apr. 13-20.

AVERAGE DISCHARGE (adjusted for storage in Alamo Lake).--44 years, 117 ft³/s, 84,770 acre-ft/yr; median of yearly mean discharges, 48 ft³/s, 34,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1939-68: Maximum discharge, 65,100 ft³/s Aug. 29, 1951, gage height, 30.8 ft, site and datum then in use; minimum daily, 1.1 ft³/s Sept. 4, 1958.
1968-83: Maximum discharge, 4,950 ft³/s Jan. 26, 1969, gage height, 10.20 ft; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--The history of floods that occurred prior to October 1939 is published in WSP 1683. The peak discharges have been correlated with those for Bill Williams River at Planet. The peak discharge for February 1937 has been determined as 105,000 ft³/s at a stage of 46 ft - site and datum then in use - from rating curve extended above 50,000 ft³/s on basis of slope-area measurement for flood of Sept. 6, 1939, at a stage of 39.6 ft, discharge of 86,000 ft³/s and known stable high-water control.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,930 ft³/s Mar. 30; minimum daily, 8.4 ft³/s Apr. 9-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10	12	10	10	755	1300	8.8	8.8	9.2	10	80
2	11	10	12	10	10	759	770	8.8	8.8	9.2	10	84
3	11	11	12	10	10	253	790	8.8	8.8	9.2	10	84
4	10	11	12	10	10	1040	410	8.8	8.8	9.2	10	84
5	11	11	12	10	10	1680	81	8.8	8.8	9.2	10	84
6	10	11	12	10	10	1860	11	8.8	8.8	9.2	10	85
7	10	11	12	10	10	1840	11	8.8	8.8	9.2	10	85
8	10	11	12	10	10	1790	11	8.8	8.8	9.2	10	85
9	11	11	12	10	10	1790	8.4	9.2	8.8	9.6	10	84
10	11	11	12	10	10	1770	8.4	9.8	8.8	9.6	10	85
11	10	11	12	10	10	1800	8.4	9.6	8.8	9.6	10	85
12	10	11	12	10	10	1800	8.4	9.6	8.8	9.6	43	84
13	10	11	12	10	10	1790	9.2	9.2	8.8	9.6	65	84
14	10	11	12	10	10	1790	9.2	9.2	8.8	9.6	67	84
15	10	11	12	10	10	1790	9.6	9.2	8.8	9.6	94	85
16	10	11	12	10	10	1840	9.6	9.2	8.8	9.6	98	90
17	10	11	12	10	10	1920	10	9.2	8.8	9.6	83	90
18	11	11	12	10	10	1920	10	9.2	8.8	9.6	83	90
19	11	11	12	10	10	1900	10	8.8	8.8	9.6	82	90
20	11	11	12	10	10	1900	11	8.8	8.8	9.6	82	92
21	11	11	12	10	10	1920	11	8.8	8.8	9.6	82	90
22	10	11	12	10	10	1900	10	8.8	8.8	9.6	82	88
23	10	11	12	10	10	1920	10	8.8	8.8	9.6	82	88
24	10	11	12	10	10	1920	9.6	8.8	8.8	10	82	92
25	10	11	12	10	32	1900	9.2	8.8	8.8	10	82	95
26	10	11	12	10	63	1920	8.8	8.8	8.8	10	83	88
27	11	11	12	10	63	1920	8.8	8.8	8.8	10	83	88
28	11	11	12	10	271	1920	8.8	8.8	8.8	10	83	88
29	11	11	12	10	---	1920	8.8	8.8	8.8	10	83	86
30	11	11	12	10	---	1930	8.8	8.8	8.8	10	83	85
31	10	---	12	10	---	1920	---	8.8	---	10	80	---
TOTAL	323	328	372	310	669	53077	3590.0	278.2	264.0	297.6	1712	2602
MEAN	10.4	10.9	12.0	10.0	23.9	1712	120	8.97	8.80	9.60	55.2	86.7
MAX	11	11	12	10	271	1930	1300	9.8	8.8	10	98	95
MIN	10	10	12	10	10	253	8.4	8.8	8.8	9.2	10	80
AC-FT	641	651	738	615	1330	105300	7120	552	524	590	3400	5160
(*)	192800	192600	212300	216800	265100	319100	318100	314900	310400	306400	300800	339300

CAL YR 1982	TOTAL	3954.20	MEAN	10.8	MAX	25	MIN	.80	AC-FT	7840	**	+55800
WTR YR 1983	TOTAL	63822.80	MEAN	175	MAX	1930	MIN	8.4	AC-FT	126600	**	+143900

* Monthend contents, in acre-feet, in Alamo Lake, furnished by Corps of Engineers.

** Change in contents, in acre-feet.

BILL WILLIAMS RIVER BASIN

123

09426600 BILL WILLIAMS RIVER AT MINERAL WASH NEAR PLANET, AZ
(National stream-quality accounting network)

LOCATION.--Lat 34°15'18", long 114°00'32", in SE¼NE¼ sec.34, T.11 N., R.17 W., (revised), on boundary between Mohave and La Paz Counties, Hydrologic Unit 15030204, at convergence with Mineral Wash, 4.0 mi west of Planet Ranch, 6.1 mi upstream from waterline of Havasu Lake at elevation 450 ft above National Geodetic Vertical Datum of 1929, and approximately 30 mi downstream from Alamo Dam.

DRAINAGE AREA.--5,140 mi² approximately, of which approximately 410 mi² is below Alamo Dam.

PERIOD OF RECORD.--January 1970 to January 1972, October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURES: October 1974 to September 1981.

REMARKS.--Streamflow ungaged.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 16...	1300	14	760	7.9	20.0	20.0	2.7	9.2	749	103	110	350
FEB 09...	1115	13	750	8.0	16.0	18.0	1.7	8.3	753	89	--	--
APR 19...	1120	22	750	7.8	28.0	25.0	1.2	7.3	749	90	K16	230
AUG 23...	1230	14	880	7.8	31.0	28.5	12	6.8	759	88	<1	1000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV 16...	190	0	51	16	86	3	5.8	209	76	79	1.3
FEB 09...	200	0	52	17	88	3	5.7	212	78	80	1.3
APR 19...	200	0	53	17	87	3	6.3	212	92	74	1.4
AUG 23...	210	0	55	17	93	3	6.6	217	90	84	1.4

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
NOV 16...	32	470	470	.64	.75	.50	.050	.020	.020	.06	10
FEB 09...	32	439	480	.60	.68	.60	.050	.050	.030	.09	10
APR 19...	30	474	490	.64	.59	.60	.110	.100	.080	.25	10
AUG 23...	30	516	510	.70	.77	.70	.010	<.010	.020	.06	20

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER AT MINERAL WASH NEAR PLANET, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 16...	8	91	.5	<1	<1	<3	1	3	<1	46	30
FEB 09...	8	92	.8	<1	<1	<3	1	5	<1	53	24
APR 19...	8	89	<.5	<1	<1	<3	2	4	<1	50	11
AUG 23...	8	98	<.5	<1	<1	<3	1	6	<1	58	20

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SUSP. SIEVE DIAM. % FINER THAN .062 MM	MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 16...	<.1	<10	<1	<1	<1	640	9	<3	29	76	1.1
FEB 09...	<.1	<10	<1	<1	<1	660	9	5	11	90	.39
APR 19...	<.1	<10	3	1	<1	650	8	5	19	43	1.1
AUG 23...	<.1	10	2	<1	<1	670	8	5	38	86	1.4

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

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09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA

LOCATION.--Lat 34°18'58", long 114°09'23", in NW¼SW¼ sec.28, T.3 N., R.27 E., San Bernardino meridian, in California, San Bernardino County, Hydrologic Unit 15030101, at intake pumping plant for Colorado River aqueduct of Metropolitan Water District of Southern California, 1.8 mi upstream from Parker Dam on Colorado River, and 149 mi downstream from Hoover Dam.

DRAINAGE AREA.--182,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--July 1938 to current year. Published as "Parker Reservoir near Parker Dam" 1938.

REVISED RECORDS.--WRD Ariz. 1975: 1974 (elevation).

GAGE.--Water-stage recorder. Datum of gage is 400.54 ft National Geodetic Vertical Datum of 1929. Gage readings have been reduced to elevations NGVD.

REMARKS.--Lake is formed by concrete-arch dam; dam was completed and storage began July 1, 1938. Usable capacity - based on April 1957 re-survey by Bureau of Reclamation between elevations 430.54 ft and 450.54 ft - 619,400 acre-ft between elevations 400.54 ft, sill of regulating gates, and 450.54 ft, top of regulating gates. Prior to Oct. 1, 1956, different capacity table used. Dead storage, 28,600 acre-ft below elevation 400.54 ft, based on original survey. About 0.07 ft fall indicated between gage and Parker Dam under normal operating conditions. Drawdown below elevation 440.54 ft not legally permissible except by consent of the Metropolitan Water District of Southern California or in an emergency affecting the safety of the dam. Lake is used for flood control, power development, re-regulation of river for irrigation demand, and as a basin from which water is pumped by Metropolitan Water District of Southern California to Colorado River aqueduct. Figures given herein represent usable contents. For record of diversion to Colorado River aqueduct, see record for Colorado River aqueduct near Parker Dam elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 693,000 acre-ft, by temporary use of flashboards, Apr. 18, 1943, June 4, 1953; maximum elevation, 451.13 ft June 1, 1982, affected by wind; minimum contents, 71,400 acre-ft June 25, 1942, elevation, 412.09 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, not determined, maximum elevation, 450.67 ft June 7, affected by wind; minimum, 527,200 acre-ft Jan. 4, elevation, 445.68 ft.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	563300	556700	554100	538400	535300	561800	564200	577300	613000	545000	573400	538900
2	562000	556200	553700	539100	531200	570300	561800	579200	611400	547400	572800	542700
3	562700	554100	547400	528500	535500	576200	554600	580800	611600	552600	572000	545000
4	558100	553000	547700	528500	541800	574700	554600	593800	614600	557900	571500	547000
5	559600	550600	547700	531000	551200	571600	547000	606000	618000	562700	571600	548100
6	566100	553300	543400	533500	556700	569200	547700	607000	621000	566500	573000	549200
7	571800	555800	545600	534200	563300	565800	549500	606800	621600	568400	571300	549900
8	568800	554800	547000	535000	564200	559400	549000	607600	621000	571600	570100	549400
9	569400	556000	553300	538400	564400	553000	548300	608800	620400	574900	566300	549200
10	563900	559800	557500	534200	565200	555600	548100	610600	619600	576800	564000	548300
11	559400	562500	560900	533700	564800	555000	547600	610600	618000	576400	561600	547200
12	554800	557100	564400	535000	561100	553500	548300	611800	618200	575300	560500	545800
13	556500	550600	566100	536600	557100	554300	550600	612200	617600	574900	556900	545900
14	560300	549700	567700	538000	551200	545800	552600	611000	616200	574300	549200	545200
15	559000	548300	571300	537700	552100	543100	553900	607200	614400	574300	549500	544500
16	559600	550100	574300	538700	555400	540200	555400	605200	613600	575600	549900	544900
17	560300	553500	576600	537700	557500	544100	555800	604800	611400	577200	553900	544700
18	554600	556900	578500	536600	554300	541100	555400	605800	609000	578100	556000	544500
19	554500	554500	579800	538700	551200	541600	555000	606800	607000	578100	554600	543600
20	557300	553100	580400	540900	549500	544900	554300	608800	596000	577500	552600	546100
21	561600	553700	581700	542000	540500	544700	554300	609800	587000	577900	549700	545900
22	562700	556700	581500	541300	542700	548300	554600	612200	575400	577300	547000	544500
23	562700	558400	583800	541600	549400	550400	554500	613200	562700	576600	544100	544900
24	563900	560000	583800	540400	552200	559200	554500	610000	556700	576400	541300	546300
25	560500	558300	579100	539800	549900	559600	554600	606000	553300	576400	538600	546500
26	560900	557700	573900	539800	553000	560700	554800	601400	551500	576200	536200	546300
27	561500	556200	569900	540500	556400	560000	555400	603400	551700	576200	534200	546500
28	561800	552800	563100	538200	557500	561100	559200	609400	549700	576200	533000	545800
29	559200	550800	550300	537100	---	564200	568200	613400	545900	576000	532600	545200
30	558800	552400	547700	537800	---	567300	576200	614200	544100	575300	533200	545800
31	557700	---	540900	536200	---	572000	---	613600	---	574300	535000	---
MAX	571800	562500	583800	542000	565200	576200	576200	614200	621600	578100	573400	549900
MIN	554500	548300	540900	528500	531200	540200	547000	577300	544100	545000	532600	538900
(**)	-7500	-5300	-11500	-4700	+21300	+14500	+4200	+37400	-69500	+30200	-39300	+10800

CAL YR 1982 MAX 626200 MIN 533700 ** -1800
WTR YR 1983 MAX 621600 MIN 528500 ** -19400

** Change in storage, in acre-feet.

COLORADO RIVER MAIN STEM

09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447.66	447.31	447.17	446.30	446.13	447.58	447.71	448.40	450.22	446.67	448.19	446.33
2	447.59	447.28	447.15	446.34	445.90	448.03	447.58	448.50	450.14	446.80	448.16	446.54
3	447.63	447.17	446.80	445.75	446.14	448.34	447.20	448.58	450.15	447.09	448.12	446.67
4	447.38	447.11	446.82	445.75	446.49	448.26	446.84	449.26	450.30	447.37	448.09	446.78
5	447.46	446.98	446.82	445.89	447.01	448.10	446.78	449.87	450.47	447.63	448.10	446.84
6	447.81	447.13	446.58	446.03	447.31	447.97	446.82	449.92	450.62	447.83	448.17	446.90
7	448.11	447.26	446.70	446.07	447.66	447.79	446.92	449.91	450.65	447.93	448.08	446.94
8	447.95	447.21	446.78	446.11	447.71	447.45	446.89	449.95	450.62	448.10	448.02	446.91
9	447.98	447.27	447.13	446.30	447.72	447.11	446.85	450.01	450.59	448.27	447.82	446.90
10	447.69	447.47	447.35	446.07	447.76	447.25	446.84	450.10	450.55	448.37	447.70	446.85
11	447.45	447.62	447.53	446.04	447.74	447.22	446.81	450.10	450.47	448.35	447.57	446.79
12	447.21	447.33	447.72	446.11	447.54	447.14	446.85	450.16	450.48	448.29	447.51	446.71
13	447.30	446.98	447.81	446.20	447.33	447.18	446.98	450.18	450.45	448.27	447.32	446.72
14	447.50	446.93	447.89	446.28	447.01	446.71	447.09	450.12	450.38	448.24	446.90	446.68
15	447.43	446.85	448.08	446.26	447.06	446.56	447.16	449.93	450.29	448.24	446.92	446.64
16	447.46	446.95	448.24	446.32	447.24	446.40	447.24	449.83	450.25	448.31	446.94	446.66
17	447.50	447.14	448.36	446.26	447.35	446.62	447.26	449.81	450.14	448.39	447.16	446.65
18	447.20	447.32	448.46	446.20	447.18	446.45	447.24	449.86	450.02	448.44	447.27	446.64
19	447.19	447.19	448.53	446.32	447.01	446.48	447.22	449.91	449.92	448.44	447.20	446.59
20	447.34	447.12	448.56	446.44	446.92	446.66	447.18	450.01	449.37	448.41	447.09	446.73
21	447.57	447.15	448.63	446.50	446.42	446.65	447.18	450.06	448.91	448.43	446.93	446.72
22	447.63	447.31	448.62	446.46	446.54	446.85	447.20	450.18	448.30	448.40	446.78	446.64
23	447.63	447.40	448.74	446.48	446.91	446.97	447.19	450.23	447.63	448.36	446.62	446.66
24	447.69	447.48	448.74	446.41	447.07	447.44	447.19	450.07	447.31	448.35	446.46	446.74
25	447.51	447.39	448.49	446.38	446.94	447.46	447.20	449.87	447.13	448.35	446.31	446.75
26	447.53	447.36	448.22	446.38	447.11	447.52	447.21	449.64	447.03	448.34	446.18	446.74
27	447.56	447.28	448.01	446.42	447.29	447.48	447.24	449.74	447.04	448.34	446.07	446.75
28	447.58	447.10	447.65	446.29	447.35	447.54	447.44	450.04	446.93	448.34	446.00	446.71
29	447.44	446.99	446.96	446.23	---	447.71	447.92	450.24	446.72	448.33	445.98	446.68
30	447.42	447.08	446.82	446.27	---	447.87	448.34	450.28	446.62	448.29	446.01	446.71
31	447.36	---	446.44	446.18	---	448.12	---	450.25	---	448.24	446.11	---
MAX	448.11	447.62	448.74	446.50	447.76	448.34	448.34	450.28	450.65	448.44	448.19	446.94
MIN	447.19	446.85	446.44	445.75	445.90	446.40	446.78	448.40	446.62	446.67	445.98	446.33
CAL YR 1982	MAX	450.88	MIN	446.04								
WTR YR 1983	MAX	450.65	MIN	445.75								

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA

LOCATION.--Lat 34°17'44", long 114°08'22", in NW¼ sec.3, T.2 N., R.27 E., San Bernardino meridian, in California, San Bernardino County, Hydrologic Unit 15030104, on north end of powerplant at Parker Dam, 13 mi northeast of Parker, Ariz., and 14 mi upstream from Headgate Rock Dam.

DRAINAGE AREA.--182,700 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to September 1934 (gage heights and fragmentary discharge records), October 1934 to current year. Prior to October 1937, published as "near Parker, Ariz."

REVISED RECORDS.--WSP 1313: 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 300.54 ft, National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1967, at site 3.8 mi downstream at datum 346.23 ft, NGVD.

REMARKS.--Records excellent. Flow regulated by Lake Mead since Feb. 1, 1935, by Lake Mohave since Jan. 17, 1950, and by Lake Havasu since July 1, 1938. Many diversions above station. For record of diversion to Colorado River aqueduct and return flows, see record for Colorado River aqueduct near Parker Dam, elsewhere in this report.

AVERAGE DISCHARGE.--49 years, 12,000 ft³/s, 8,694,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,400 ft³/s Feb. 8, 1937; no flow at Parker Dam for parts of several days in 1942 when gates in dam were closed; minimum daily discharge, 920 ft³/s Jan. 11, 1978.
An unregulated discharge of probably less than 1,350 ft³/s occurred Aug. 18, 1934 (lowest unregulated discharge since 1917 and probably since a much earlier date).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,900 ft³/s July 20, Aug. 11-14; maximum gage height, 77.29 ft June 29; minimum daily discharge, 1,760 ft³/s Nov. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8980	4520	4020	14300	17500	6420	14100	18700	21600	39600	39200	38200
2	8330	4460	3880	10400	15500	3630	16100	18500	22000	39400	39500	38300
3	8230	5220	6640	15900	10500	2230	16500	18400	22300	39200	39600	38200
4	7550	4490	5850	15100	6630	3900	17000	11700	22300	39200	39700	38300
5	6500	5680	5530	15000	5080	4260	17700	11200	22400	39100	39800	38300
6	4750	4720	6080	15000	4030	4160	17200	18000	22400	39100	39900	38200
7	4600	4740	5940	15900	2010	4700	17200	17900	23600	39600	40000	38200
8	6950	4690	4290	16000	2630	6300	18200	18000	24300	39700	40100	38200
9	6200	4210	2880	13600	2990	6150	18200	18000	24200	39700	40100	38200
10	6880	2200	1820	16000	2500	5260	18200	18000	24000	39700	40300	38200
11	6760	1760	1860	16100	3340	9880	18200	18100	24000	39800	40400	38200
12	6510	4230	1850	15800	4530	11400	18200	18100	23700	39800	39300	38200
13	5400	4760	2130	15800	4870	11400	17100	18100	23500	39800	39200	38100
14	4830	4310	2480	16500	5480	12800	17100	18100	23300	39900	40400	38100
15	7750	3630	1940	17100	4620	13600	17100	18100	23200	40000	40500	38100
16	6810	3260	1980	16600	4240	14600	17100	18100	23200	39900	40500	38100
17	6760	2560	2460	17700	3930	12400	17100	18100	23200	40000	39600	38100
18	7490	1800	2690	17600	8180	15900	18100	18100	22100	40000	38900	38100
19	6640	4470	2680	16100	9210	15700	18100	18100	21600	40200	38900	38000
20	5800	4150	2700	16000	9680	13800	18200	18200	25800	40300	39000	38000
21	4290	3390	2030	16700	9860	11700	18100	18800	28900	40300	38900	38000
22	6570	2300	2150	17300	8800	10600	18100	18800	32100	40200	38900	38000
23	6710	2380	2480	17300	7920	10100	18200	19400	35400	40000	38600	38000
24	6620	2150	2590	17500	8830	7590	18200	19700	35300	39900	38800	37600
25	6170	3310	3950	17600	12800	11000	18300	20200	34600	39800	38700	38000
26	5860	3130	5400	17500	10600	11300	18300	20200	34500	39600	38700	37900
27	4290	3280	5140	17600	9250	13300	18400	20200	34500	39500	38700	37900
28	3250	4080	6550	18700	7030	12000	18400	20300	36700	39300	38700	37900
29	5060	3540	10400	18700	---	11600	18500	20300	39000	39300	38700	37900
30	4420	3150	9340	17600	---	11100	18600	20400	39300	39100	38700	37900
31	4720	---	13300	18700	---	9390	---	20500	---	39000	38800	---
TOTAL	191680	110570	133030	507700	202540	298170	529800	568300	813000	1230000	1221100	1142400
MEAN	6183	3686	4291	16380	7234	9618	17660	18330	27100	39680	39390	38080
MAX	8980	5680	13300	18700	17500	15900	18600	20500	39300	40300	40500	38300
MIN	3250	1760	1820	10400	2010	2230	14100	11200	21600	39000	38600	37600
AC-FT	380200	219300	263900	1007000	401700	591400	1051000	1127000	1613000	2440000	2422000	2266000
CAL YR 1982	TOTAL	3209830	MEAN	8794	MAX	17100	MIN	1760	AC-FT	6367000		
WTR YR 1983	TOTAL	6948290	MEAN	19040	MAX	40500	MIN	1760	AC-FT	13780000		

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1963 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1954 to August 1970; September 1982 to current year.

SPECIFIC CONDUCTANCE: September 1982 to current year.

EXTREMES FOR PERIOD OF DAILY RECORDS.--

WATER TEMPERATURE: Maximum recorded, 28.5°C Aug. 12, 13, 18, 1955; minimum recorded, 7.5°C Jan. 11, 1983.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,170 micromhos Jan. 17, 1983; minimum recorded, 966 micromhos Apr. 5, 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	1030	9120	1110	23.5	706	.96
12...	0955	4700	1110	21.0	714	.97
18...	1100	4600	1130	19.5	724	.98
20...	1100	4560	1130	20.0	722	.98
25...	0900	4600	1120	20.5	716	.97
NOV						
01...	1220	4640	1120	18.5	724	.98
08...	1130	4600	1120	19.0	724	.98
15...	1040	4620	1120	16.5	722	.98
17...	0900	4600	1090	16.0	733	1.0
22...	1145	3000	1130	16.0	708	.96
29...	1030	1980	1140	15.5	734	1.0
DEC						
06...	1015	4510	1130	15.5	744	1.0
13...	1030	1910	1130	14.5	732	1.0
14...	1035	1790	1090	13.0	724	.98
20...	0930	2000	1130	14.5	760	1.0
27...	1210	4790	1130	14.0	728	.99
JAN						
03...	1025	17900	1130	10.5	740	1.0
10...	1000	18200	1130	8.5	762	1.0
17...	1000	18200	1120	11.0	740	1.0
19...	1200	18200	1110	10.5	730	.99
24...	1040	18200	1110	9.5	724	.98
31...	1040	18700	1110	11.0	720	.98
FEB						
07...	1015	2020	1110	11.5	728	.99
09...	1330	3680	1090	12.0	721	.98
14...	1000	2340	1110	11.5	708	.96
22...	1100	12600	1110	14.0	712	.97
28...	0935	4920	1110	13.5	712	.97
MAR						
07...	1300	4620	1110	14.5	700	.95
14...	1410	13800	1060	14.0	696	.95
16...	1300	18100	1060	17.0	636	.87
21...	1300	13900	1080	14.5	716	.97
28...	1030	18000	1000	16.5	664	.90
APR						
04...	1155	18200	1050	16.5	700	.95
11...	1315	18200	1100	17.0	696	.95

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 26.0°C Aug. 11-14, 16; minimum recorded, 7.5°C Jan. 11.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,170 micromhos Jan. 17; minimum recorded, 966 micromhos Apr. 5.

INSTRUMENTATION.--Water temperature recorder from February 1954 to August 1970. Specific conductance and water temperature recorder from September 1982 to current year.

REMARKS.--Prior to October 1968, published as 09428000.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
APR						
18...	1000	18200	1100	16.5	696	.95
19...	1400	18200	1100	17.0	669	.91
25...	1220	18300	1100	18.5	700	.95
MAY						
02...	1200	18300	1100	19.5	696	.95
09...	1320	18600	1100	19.0	696	.95
16...	1115	18700	1100	21.0	696	.95
18...	1100	19400	1090	19.5	732	1.0
23...	0920	19700	1110	19.5	720	.98
31...	1020	20400	1100	21.0	720	.98
JUN						
06...	1020	22400	1090	21.0	712	.97
13...	0950	23500	1100	28.0	712	.97
15...	1100	23200	1100	22.5	712	.97
20...	0950	25300	1100	28.5	708	.96
27...	0900	34800	1100	21.5	708	.96
JUL						
05...	1452	39300	1090	21.5	700	.95
11...	1100	39800	1090	22.0	700	.95
18...	0920	40000	1090	23.5	700	.95
21...	1210	40400	1100	22.0	634	.86
25...	1000	40100	1090	23.5	680	.92
AUG						
01...	1135	38800	1100	25.5	684	.93
08...	1015	40100	1090	25.0	680	.92
15...	1330	40500	1090	25.5	680	.92
24...	0830	38000	1110	24.0	687	.93
29...	0920	38900	1080	25.5	672	.91
SEP						
06...	1120	38200	1080	26.0	672	.91
13...	1245	39100	1100	24.0	705	.96

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)				
OCT 20...	1100	4560	1130	8.3	24.0	20.0	7.6	760	84	<10	
NOV 17...	0900	4600	1090	8.0	14.5	16.0	9.2	749	95	16	
DEC 14...	1035	1790	1090	8.1	11.5	13.0	9.5	759	91	34	
JAN 19...	1200	18200	1110	8.1	13.5	10.5	10.6	755	96	10	
FEB 09...	1330	3680	1090	8.1	21.0	12.0	10.4	758	97	20	
MAR 16...	1300	18100	1060	7.9	18.5	17.0	9.5	755	100	19	
APR 19...	1400	18200	1100	8.1	29.0	17.0	9.3	751	98	<10	
MAY 18...	1100	19400	1090	8.1	22.5	19.5	8.9	755	98	13	
JUN 15...	1100	23200	1100	8.2	38.5	22.5	8.4	762	97	100	
JUL 21...	1210	40400	1100	8.0	37.0	22.0	11.0	764	126	22	
AUG 24...	0830	38000	1110	8.3	30.0	24.0	8.9	754	107	17	
SEP 13...	1245	39100	1100	7.8	37.0	24.0	9.4	753	114	15	
DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 20...	<1	320	200	79	31	120	3	4.9	124	310	91
NOV 17...	K3	320	190	79	30	110	3	4.8	127	310	95
DEC 14...	<1	320	200	79	31	110	3	4.9	125	310	96
JAN 19...	<1	330	200	82	30	110	3	4.5	129	300	95
FEB 09...	--	320	190	80	30	110	3	4.7	133	310	94
MAR 16...	<1	290	160	71	28	100	3	5.1	134	260	88
APR 19...	<1	330	190	82	30	110	3	4.6	143	300	91
MAY 18...	K6	330	200	82	30	110	3	4.7	132	280	94
JUN 15...	<1	340	200	85	30	100	2	4.7	138	300	93
JUL 21...	<1	330	200	84	30	100	2	4.5	135	310	90
AUG 24...	K1	310	180	76	28	100	3	4.7	124	290	88
SEP 13...	<1	320	200	82	29	100	2	4.6	127	300	91

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)
OCT 20...	.40	8.5	722	720	.98	1	<.10	<.10	1.4	--	--
NOV 17...	.40	8.9	733	710	1.0	3	<.10	<.10	.70	--	--
DEC 14...	.30	9.2	724	720	.98	5	<.10	<.10	.70	--	--
JAN 19...	.40	8.7	730	710	.99	4	<.10	<.10	.60	--	--
FEB 09...	.40	8.7	721	720	.98	<1	.20	.21	.80	1.0	4.4
MAR 16...	.40	10	636	640	.87	<1	.20	.18	.80	1.0	4.4
APR 19...	.30	8.6	669	710	.91	16	.20	.16	.60	.80	3.5
MAY 18...	.40	8.5	732	690	1.0	<1	.20	.16	<.10	--	--
JUN 15...	.40	8.5	712	700	.97	204	.20	.22	.30	.50	2.2
JUL 21...	.30	8.7	634	710	.86	6	.20	.18	.30	.50	2.2
AUG 24...	.30	8.8	687	670	.93	6	.20	.16	.60	.80	3.5
SEP 13...	.30	8.4	705	690	.96	13	.20	.17	.70	.90	4.0

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 20...	<.010	--	<.010	--	180	150	<1	<3	--	--
NOV 17...	.030	.09	<.010	--	190	150	<1	<3	<1	3
DEC 14...	.030	.09	<.010	--	170	150	<1	<3	1	--
JAN 19...	.030	.09	<.010	--	200	150	1	5	2	--
FEB 09...	.020	.06	.010	.03	190	140	<2	4	<1	10
MAR 16...	.050	.15	.020	.06	--	150	--	5	--	--
APR 19...	.060	.18	.050	.15	170	150	<1	15	<1	<10
MAY 18...	.020	.06	<.010	--	180	140	<1	5	1	--
JUN 15...	.010	.03	.030	.09	190	140	<1	<3	1	--
JUL 21...	.040	.12	<.010	--	170	150	<1	<3	5	--
AUG 24...	.080	.25	<.010	--	130	130	<1	50	<1	10
SEP 13...	<.010	--	<.010	--	160	130	<1	<3	<1	--

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS TOTAL (UG/L)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)
OCT 20...	--	--	--	--	--	--	--	--	6	74
NOV 17...	<18	<.4	<10	1.3	<9.6	1.3	4.9	+9	6	75
DEC 14...	--	--	--	--	--	--	--	--	4	19
JAN 19...	--	--	--	--	--	--	--	--	3	147
FEB 09...	<17	<.4	12	.4	12	.4	3.7	2	3	30
MAR 16...	--	--	--	--	--	--	--	--	6	293
APR 19...	<14	<.4	<8.8	.8	<8.4	.8	3.0	3	6	295
MAY 18...	--	--	--	--	--	--	--	--	4	210
JUN 15...	--	--	--	--	--	--	--	--	4	251
JUL 21...	--	--	--	--	--	--	--	--	6	654
AUG 24...	<19	<.5	<8.6	1.2	<8.2	1.2	2.8	+14	8	821
SEP 13...	--	--	--	--	--	--	--	--	6	633

< Actual value is known to be less than value shown.

+ Value verified.

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1110	---	1110	---	1120	---	1140	1130	1120	1110	1110	1100
2	1110	---	1110	---	1140	---	1140	1130	1120	1110	1110	1090
3	1110	---	1110	---	1130	---	1140	1130	1110	1080	1100	1100
4	1110	---	1110	---	1130	---	1140	1130	1110	1080	1100	1100
5	1110	---	1110	---	1130	---	1140	1130	1110	1100	1100	1090
6	1120	---	1110	---	1130	---	1140	1130	1110	1020	1110	1090
7	1110	---	1110	---	1130	---	1140	1130	1110	1100	1100	1090
8	1110	---	1110	1100	1120	---	1140	1130	1120	1110	1090	1070
9	1110	---	1110	---	1130	---	1140	1130	1110	1100	1090	1080
10	1110	---	1110	---	1120	---	1140	1130	1120	1120	1090	1070
11	1110	---	1110	---	1130	---	1140	1130	1120	1110	1080	1050
12	1110	---	1110	---	1120	---	1140	1130	1120	1120	1090	1040
13	1110	---	1110	1090	1130	---	1130	1120	1120	1110	1080	1050
14	1110	---	1110	---	1130	---	1130	1120	1120	1110	1090	1060
15	1110	---	1110	---	1130	1120	1130	1120	1120	1110	1080	1050
16	1110	---	1110	---	1130	1120	1130	1120	1120	1110	1070	1020
17	1110	---	1120	---	1130	1120	1170	1120	1120	1120	1060	1020
18	1110	---	1120	---	1140	1130	1140	1120	1120	1100	1090	1050
19	1110	---	1120	1110	1140	1130	1130	1110	1100	1090	1080	1020
20	1130	---	1120	---	1140	1130	1120	1110	1100	1090	1090	1070
21	1110	---	1120	1090	1140	1130	1120	1110	1100	1090	1090	1040
22	1110	---	1120	---	1140	---	1120	1110	1100	1090	1070	1000
23	1110	---	1120	---	1140	---	1120	1110	1100	1090	1070	1050
24	1110	---	1120	---	1140	1130	1120	1110	1100	1090	1070	1040
25	1110	---	1120	---	1140	1130	1120	1110	1100	1090	1050	1000
26	1110	---	1120	---	1140	1130	1120	1110	1100	1090	1060	992
27	1110	---	1120	---	1140	1130	1120	1110	1100	1090	1060	1020
28	1110	---	1120	1090	1140	1130	1120	1110	1110	1100	1080	1010
29	1110	---	1130	---	1140	1130	1120	1100	---	---	1060	1010
30	1110	---	1120	---	1140	1130	1120	1110	---	---	1070	994
31	1110	---	---	---	1140	1130	1120	1110	---	---	1070	1000
MONTH	1130	---	1130	---	1140	---	1170	1100	1120	1020	1110	992

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	23.0	17.5	18.5	14.5	15.0	12.5	9.5	9.5	9.5	9.0	11.5	11.0
2	23.0	17.0	18.5	15.0	15.0	11.5	9.5	9.5	9.5	9.0	12.0	11.5
3	23.0	17.5	18.0	14.5	14.5	11.0	9.5	9.0	9.0	9.0	12.5	11.5
4	22.5	17.0	18.0	13.5	14.5	11.5	9.0	8.5	9.5	9.0	12.0	11.5
5	22.5	17.0	17.5	13.5	14.5	12.5	8.5	8.5	10.0	9.0	12.0	11.5
6	22.5	16.0	17.5	14.0	14.5	12.5	8.5	8.5	10.0	9.5	12.5	12.0
7	22.5	15.5	17.5	14.5	14.5	12.0	8.5	8.0	10.0	10.0	12.5	12.0
8	22.0	16.5	17.5	15.0	14.0	11.5	8.5	8.0	10.0	9.5	13.0	12.0
9	21.5	15.0	17.0	16.0	14.0	12.0	8.5	8.0	10.0	9.5	13.5	13.0
10	21.0	15.5	17.0	14.5	14.0	12.0	8.0	8.0	10.5	9.5	13.5	13.0
11	20.5	14.5	16.5	13.5	13.5	12.0	8.0	7.5	10.5	10.0	13.5	13.0
12	20.5	14.5	17.0	13.0	13.5	11.5	8.0	8.0	11.0	10.5	13.5	13.0
13	20.5	14.5	16.5	14.0	13.5	11.5	8.5	8.0	11.0	10.0	13.5	13.0
14	20.5	15.0	16.5	13.5	13.5	10.5	8.5	8.0	11.0	10.5	14.0	13.0
15	20.0	16.0	16.5	12.0	13.5	13.5	8.5	8.5	11.0	10.5	15.0	14.0
16	20.5	14.5	16.5	13.5	13.5	13.5	9.0	8.5	11.5	10.5	15.0	14.5
17	20.5	16.5	16.5	14.0	13.5	13.0	9.0	9.0	11.5	11.0	14.5	14.5
18	20.0	15.5	16.0	14.0	13.5	13.0	9.0	9.0	11.5	10.5	14.5	14.0
19	19.5	13.5	16.0	15.5	13.0	12.5	8.5	8.5	11.0	10.0	14.5	14.5
20	19.5	13.0	16.0	14.0	13.0	12.5	8.5	8.5	11.0	10.0	15.0	14.5
21	19.5	13.5	16.0	12.5	13.0	13.0	8.5	8.5	11.0	10.0	14.5	14.5
22	19.5	15.0	16.0	12.5	13.0	12.0	8.5	8.5	11.0	10.5	14.5	14.5
23	19.5	14.0	16.0	14.0	13.5	12.5	9.0	8.5	11.5	10.5	15.0	14.5
24	19.5	15.0	15.5	13.5	12.5	12.0	9.0	8.5	11.5	10.5	15.0	14.5
25	19.5	17.0	15.5	13.0	12.5	11.5	9.0	8.5	11.0	10.5	15.5	14.5
26	19.0	16.0	15.5	12.0	12.0	11.0	9.0	9.0	11.0	11.0	15.5	15.0
27	19.0	14.0	15.5	13.0	12.0	11.0	9.0	9.0	11.0	11.0	15.5	15.0
28	18.5	13.0	15.0	14.0	11.5	10.5	9.0	9.0	11.5	11.0	15.5	15.0
29	18.5	14.0	15.5	13.5	11.0	10.5	9.0	9.0	---	---	15.5	15.0
30	18.5	14.0	15.0	14.0	10.5	10.0	9.0	9.0	---	---	15.5	15.5
31	18.0	15.5	---	---	10.0	9.5	9.5	9.0	---	---	15.5	15.5
MONTH	23.0	13.0	18.5	12.0	15.0	9.5	9.5	7.5	11.5	9.0	15.5	11.0

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

137

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, AZ

LOCATION.--Two gages, lat 34°10'04", long 114°16'33", in SE¼NW¼ sec.31, T.10 N., R.19 W., Gila and Salt River meridian, La Paz County, Hydrologic Unit 15030104. Forebay gage, on left wall of canal intake, 90 ft upstream from diversion gates at Arizona end of Headgate Rock Dam. Tailrace gage, on right bank of canal 250 ft downstream from gates. Both gages are on Colorado River Indian Reservation 1.7 mi northeast of Parker and 14 mi downstream from Parker Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1915 to current year (prior to January 1937, fiscal year diversions only; January 1937 to September 1954, monthly diversions only).

REVISED RECORDS.--WSP 1513: 1915-36.

GAGE.--Water-stage recorders above and below intake gates to record head and recorder to show gate openings (since Oct. 1, 1972), with supplementary tape gages read daily and at time of each gate change (prior to Oct. 1, 1972, tape gages only). Datum of gages is 350.00 ft, datum in use locally, or 350.51 ft, National Geodetic Vertical Datum of 1929. Normal operating level of forebay is 364.3 ft; prior to July 9, 1962, normal operating level of forebay was 362.9 ft, datum in use locally. Prior to October 1954, discharge computed by various methods as described in WSP 1313.

REMARKS.--Records excellent. Daily diversions computed on basis of head on intake gates and gate openings. Records show water diverted to project and surface return flows to Colorado River through two wasteways and two drains; three of these are equipped with water-stage recorders.

COOPERATION.--Log of canal intake gate opening (supplementary record) furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,940 ft³/s May 26, 1982; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	734	311	224	532	727	559	1130	710	1130	1460	1260	1020
2	652	447	225	445	764	370	1040	766	1120	1410	1260	1030
3	527	428	228	480	548	156	976	697	1240	1270	1190	1020
4	611	354	255	628	259	157	1010	.00	1200	1090	1180	1010
5	621	341	220	729	226	156	1200	49	1080	1090	1210	1000
6	497	324	243	781	226	156	1190	711	1140	1260	1230	878
7	520	275	262	495	370	186	1010	755	1160	1350	1170	1100
8	545	308	178	.00	375	354	932	1010	1270	1400	1180	1240
9	505	330	47	.00	334	384	925	1180	1310	1370	1190	1230
10	443	287	.00	.00	360	418	919	1310	1370	1220	1120	1120
11	466	247	.00	.00	362	482	1120	1340	1260	1270	1090	1020
12	594	372	.00	.00	344	518	1260	1270	1090	1300	1010	1050
13	626	318	.00	.00	357	530	1370	926	1170	1330	907	1090
14	610	232	54	.00	508	531	1350	1040	1210	1370	846	1170
15	524	301	142	.00	562	586	1160	927	1210	1380	875	1160
16	470	307	141	.00	635	804	918	1000	1220	1350	865	1020
17	390	273	141	.00	586	1030	831	1040	1370	1240	286	954
18	443	270	141	.00	505	882	958	1040	1310	1220	.00	969
19	514	225	142	.00	472	737	1030	828	1160	1260	.00	969
20	524	199	142	.00	476	661	1100	986	1090	1250	.00	775
21	461	243	181	.00	541	608	1180	1080	1180	1220	56	698
22	369	287	218	.00	769	697	1170	1090	1300	1200	401	694
23	364	303	218	.00	890	783	1070	1230	1350	1140	478	603
24	364	322	211	.00	858	785	917	1280	1340	1090	618	530
25	440	276	155	.00	762	866	971	1340	1340	1090	558	420
26	480	319	205	.00	692	969	992	1130	1200	1140	596	256
27	509	338	328	.00	616	888	990	1280	1110	1230	633	469
28	429	287	433	217	585	849	915	1380	1240	1280	610	597
29	271	270	503	425	---	978	861	1330	1300	1280	769	765
30	281	303	564	224	---	1030	789	1140	1380	1270	983	607
31	245	---	552	525	---	1070	---	1080	---	1210	1020	---
TOTAL	15029	9097	6353.00	5481.00	14709	19180	31284	30945.00	36850	39040	24591.00	26464
MEAN	485	303	205	177	525	619	1043	998	1228	1259	793	882
MAX	734	447	564	781	890	1070	1370	1380	1380	1460	1260	1240
MIN	245	199	.00	.00	226	156	789	.00	1080	1090	.00	256
AC-FT	29810	18040	12600	10870	29180	38040	62050	61380	73090	77440	48780	52490
(*)	22810	17680	14620	13670	15130	18140	22280	21270	24780	31580	25720	23750
CAL YR 1982	TOTAL	285269.00	MEAN	782	MAX	1940	MIN	.00	AC-FT	565800	*	244600
WTR YR 1983	TOTAL	259023.00	MEAN	710	MAX	1460	MIN	.00	AC-FT	513800	*	251400

* Return surface flow, in acre-feet, to Colorado River.

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1969 to current year.

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	1000	625	1110	23.5	716	.97
12...	0900	600	1100	20.5	714	.97
18...	1010	450	1110	19.5	714	.97
25...	0825	340	1110	19.5	714	.97
NOV						
01...	1140	374	1120	18.0	720	.98
08...	1055	300	1110	18.0	714	.97
15...	1000	350	1120	16.5	724	.98
22...	1110	246	1130	16.0	716	.97
29...	1000	269	1130	15.5	732	1.0
DEC						
06...	0945	251	1170	17.0	778	1.1
20...	0830	143	1130	13.5	766	1.0
27...	1130	344	1130	13.5	728	.99
JAN						
03...	0945	525	1140	11.5	764	1.0
31...	1000	635	1120	12.0	724	.98
FEB						
07...	0945	275	1120	13.5	740	1.0
14...	0930	490	1160	13.0	744	1.0
22...	1025	887	1120	14.0	712	.97
28...	0900	585	1110	14.5	712	.97
MAR						
07...	1220	155	1110	16.5	716	.97
14...	1030	520	1080	16.0	720	.98
21...	1225	598	1090	14.5	724	.98
28...	0945	840	1070	16.5	720	.98
APR						
04...	1125	976	1080	16.5	688	.94
11...	1245	1200	1110	17.0	740	1.0
18...	0930	941	1110	18.0	740	1.0
25...	1200	1060	1110	19.0	740	1.0
MAY						
02...	1130	800	1110	19.5	732	1.0
09...	1245	1160	1110	20.0	708	.96
16...	1045	1030	1110	21.0	708	.96
23...	0830	1110	1110	21.0	708	.96
31...	0950	816	1110	23.0	700	.95
JUN						
06...	0945	1220	1100	22.0	724	.98
13...	0915	1230	1100	28.0	704	.96
20...	0915	1080	1090	28.5	700	.95
27...	0830	1100	1100	23.0	708	.96
JUL						
11...	1030	1320	1090	23.5	688	.94
18...	0850	1200	1090	23.5	696	.95
25...	0925	1110	1090	24.0	680	.92
AUG						
01...	1115	1320	1100	25.5	684	.93
08...	0940	1120	1090	25.5	676	.92
15...	1115	914	1090	25.5	672	.91
29...	0945	773	1090	27.0	680	.92
SEP						
06...	1015	952	1080	24.5	672	.91

09428510 COLORADO RIVER INDIAN RESERVATION POSTON WASTEWAY NEAR POSTON, AZ

LOCATION.--Lat 33°59'58", long 114°26'41", in SW¼SE¼ sec.28, T.8 N., R.21 W., La Paz County, Hydrologic Unit 15030104, at gaging station 0.8 mi upstream from mouth, 2.5 mi west of Poston, and 14 mi southwest of Parker.

PERIOD OF RECORD.--October 1968 to September 1983 (discontinued).

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	0910	103	1680	21.0	1090	1.5
12...	0800	133	1950	18.5	1260	1.7
18...	1150	102	1910	20.5	1240	1.7
25...	1000	90	2000	20.0	1290	1.8
29...	0900	121	1850	20.5	1190	1.6
NOV						
01...	1110	95	2020	19.0	1310	1.8
05...	0935	91	1960	18.0	1260	1.7
08...	0950	152	2010	19.0	1300	1.8
12...	1500	91	1990	19.0	1270	1.7
15...	1130	82	2020	18.0	1200	1.6
19...	1045	97	2040	18.0	1310	1.8
22...	1245	78	1910	16.5	1240	1.7
26...	1010	109	2050	17.0	1320	1.8
29...	0915	76	2000	18.0	1300	1.8
DEC						
06...	1110	72	1980	--	1320	1.8
13...	1130	67	2080	16.5	1380	1.9
20...	1020	62	2000	13.5	1400	1.9
27...	1000	60	2000	13.5	1360	1.8
JAN						
03...	1120	59	1870	13.5	1230	1.7
10...	1100	60	2060	13.5	1340	1.8
17...	1100	54	2190	16.5	1500	2.0
24...	1130	40	2220	12.0	1560	2.1
31...	1140	44	1910	13.5	1330	1.8
FEB						
07...	1130	64	1900	14.0	1300	1.8
14...	1120	64	1850	13.5	1270	1.7
22...	1200	64	2040	18.0	1410	1.9
28...	1245	96	1920	16.5	1330	1.8
MAR						
07...	1135	64	2020	20.0	1400	1.9
14...	1115	120	1760	17.0	1170	1.6
21...	1140	70	1820	16.5	1220	1.7
28...	1115	76	1980	20.0	1300	1.8
APR						
04...	1030	85	1920	16.5	1310	1.8
11...	1155	84	1920	19.0	1300	1.8
18...	1120	90	1830	18.5	1240	1.7
25...	1110	254	1480	19.5	972	1.3
MAY						
02...	1045	96	1980	19.5	1360	1.8
09...	1145	102	2000	22.0	1370	1.9
16...	1010	107	1860	22.0	1260	1.7
23...	1020	104	1930	22.0	1310	1.8
31...	0900	386	1320	23.0	836	1.1
JUN						
06...	0905	129	1850	25.5	1250	1.7
13...	0825	136	1780	29.5	1200	1.6
20...	0840	128	1770	30.0	1200	1.6
27...	1030	212	1390	25.0	904	1.2
JUL						
05...	1540	225	1890	29.5	1290	1.8
11...	1000	227	1890	28.0	1280	1.7
18...	0805	228	1810	25.5	1230	1.7
25...	0840	243	1870	28.5	1270	1.7
AUG						
01...	1015	235	1870	29.5	1260	1.7
08...	0900	126	1590	25.5	1030	1.4
15...	1045	130	1590	28.0	1020	1.4
29...	1030	121	1690	30.0	1110	1.5
SEP						
06...	0820	125	1850	26.5	1220	1.7

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

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09429000 PALO VERDE CANAL NEAR BLYTHE, CA

LOCATION.--Lat 33°43'55", long 114°30'40", in NW¼NE¼ sec.19, T.5 S., R.24 E., San Bernardino meridian, Riverside County, Hydrologic Unit 15030104, at canal intake structure on west side of Palo Verde diversion dam, 10 mi northeast of Blythe and 44 mi downstream from Headgate Rock Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1922 to December 1923, January 1925 to current year (prior to October 1950, monthly discharge only).

REVISED RECORD.--WSP 1213: 1946-48.

GAGE.--Recording gages above and below intakes to record head. Since May 18, 1964, recorder to show gate openings. Datum of gage is: Forebay gage, National Geodetic Vertical Datum of 1929; tailrace gage, 274.13 ft, NGVD. Aug. 7, 1950, to Nov. 30, 1952, water-stage recorder on tailrace and auxiliary recorder 0.5 mi downstream and Dec. 1, 1952, to Oct. 28, 1957, recording gage above and below former intake structure 0.2 mi upstream, at different datums.

REMARKS.--Records good. Daily diversions computed on basis of head on intake gates and gate openings. Records published herein represent flow diverted from Colorado River for irrigation of 101,652 acres during the 1982 calendar year. Return flows to Colorado River are measured by 11 wasteways and drains extending throughout the project; 5 of these are equipped with water stage recorder and Parshall flume, 3 are equipped with Sparling flowmeters. Return flows have not been subtracted; combined monthly return flows are given in table below.

AVERAGE DISCHARGE.--33 years (water years 1951-83), 1,218 ft³/s, 882,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,360 ft³/s July 30, 1981; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1300	722	563	991	595	1130	1580	1070	1430	1450	1740	1680
2	1070	784	539	186	634	717	1530	1230	1380	1420	1780	1830
3	980	850	472	.00	522	485	1290	1380	1310	1280	1760	1620
4	1010	771	508	.00	407	461	1320	1470	1350	1360	1760	1470
5	1060	806	434	.00	390	465	1310	1570	1220	1490	1600	1600
6	1080	710	609	.00	379	466	1600	1650	1410	1650	1600	1610
7	1040	660	607	.00	416	478	1720	1470	1570	1740	1330	1630
8	1160	785	575	.00	476	594	1580	1160	1740	1640	1220	1670
9	878	760	478	.00	594	600	1340	1150	1820	1610	1200	1680
10	738	778	400	.00	650	736	1220	1230	1780	1480	1200	1800
11	871	654	366	224	664	923	1350	1490	1710	1610	1220	1650
12	854	620	358	119	663	991	1390	1520	1630	1540	1440	1690
13	1080	585	355	204	665	929	1480	1510	1510	1590	1330	1770
14	918	566	337	525	770	1160	1410	1470	1460	1540	1310	1800
15	897	640	328	606	783	1200	1420	1160	1510	1480	1520	1810
16	763	655	390	749	825	1260	1360	1330	1530	1440	1360	1840
17	726	651	337	984	973	1310	1220	1530	1540	1320	666	1820
18	934	604	305	1180	1070	1590	1330	1530	1660	1330	547	1560
19	987	617	299	1210	980	1370	1520	1320	1490	1330	547	1520
20	965	516	315	1130	917	1130	1620	1230	1700	1620	501	1210
21	994	495	317	1040	1190	1280	1570	1230	1660	1620	457	1120
22	895	582	438	922	1290	1290	1610	1250	1610	1530	499	1040
23	719	561	450	784	1180	1210	1380	1430	1580	1600	568	863
24	685	525	434	898	1230	1270	1270	1380	1600	1580	718	544
25	819	469	323	1080	1240	1350	1430	1480	1620	1680	880	514
26	883	515	362	933	1210	1140	1460	1550	1400	1790	950	482
27	950	497	515	891	1020	1070	1490	1540	1520	1770	1070	577
28	821	518	674	775	1100	1310	1440	1410	1600	1690	1100	697
29	800	622	1060	608	---	1420	1410	1390	1660	1670	1360	755
30	784	538	1290	549	---	1660	1170	1460	1590	1520	1480	787
31	750	---	1150	541	---	1600	---	1440	---	1450	1580	---
TOTAL	28411	19056	15588	17129.00	22833	32595	42820	43030	46590	47820	36293	40639
MEAN	916	635	503	553	815	1051	1427	1388	1553	1543	1171	1355
MAX	1300	850	1290	1210	1290	1660	1720	1650	1820	1790	1780	1840
MIN	685	469	299	.00	379	461	1170	1070	1220	1280	457	482
AC-FT	56350	37800	30920	33980	45290	64650	84930	85350	92410	94850	71990	80610
(*)	43490	36480	36530	30130	28060	34130	37970	40080	40700	41800	46780	47000
CAL YR 1982	TOTAL	474905.00	MEAN	1301	MAX	2310	MIN	.00	AC-FT	942000	*	485300
WTR YR 1983	TOTAL	392804.00	MEAN	1076	MAX	1840	MIN	.00	AC-FT	779100	*	463200

* Return flows, in acre-feet, to Colorado River.

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

PERIOD OF RECORD.--March 1970 to September 1983 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT												
04...	0820	978	1120	7.8	--	22.0	320	200	79	31	110	3
12...	0715	833	1160	--	--	19.5	--	--	--	--	--	--
18...	1000	990	1180	--	--	21.0	--	--	--	--	--	--
25...	1130	811	1130	--	--	21.0	--	--	--	--	--	--
NOV												
01...	1350	870	1190	8.0	--	17.0	340	210	83	32	120	3
08...	0800	775	1190	--	--	17.0	--	--	--	--	--	--
15...	1240	768	1160	--	--	16.5	--	--	--	--	--	--
22...	1345	641	1180	--	--	16.0	--	--	--	--	--	--
29...	0830	660	1170	--	--	15.5	--	--	--	--	--	--
DEC												
06...	1205	702	1160	8.0	--	16.0	330	200	80	32	110	3
13...	1300	356	1210	--	--	14.5	--	--	--	--	--	--
20...	0740	330	1170	--	--	12.0	--	--	--	--	--	--
27...	0915	500	1160	--	--	11.5	--	--	--	--	--	--
JAN												
17...	1240	1010	1140	--	--	11.5	--	--	--	--	--	--
21...	1000	1050	1120	7.9	9.0	11.0	320	190	79	30	110	3
24...	1230	897	1140	--	--	10.5	--	--	--	--	--	--
27...	1030	1010	990	8.5	16.0	11.0	320	180	81	28	96	2
31...	1235	544	1190	--	--	11.0	--	--	--	--	--	--
FEB												
07...	1220	392	1190	--	--	12.0	--	--	--	--	--	--
14...	1205	860	1250	--	--	12.0	--	--	--	--	--	--
22...	1000	1500	1110	8.0	20.0	11.0	330	190	81	30	110	3
22...	1315	1500	1110	--	--	14.5	--	--	--	--	--	--
28...	1345	1160	1160	--	--	15.0	--	--	--	--	--	--
MAR												
07...	1050	470	1180	--	--	17.0	--	--	--	--	--	--
14...	1200	1250	1120	--	--	16.0	--	--	--	--	--	--
21...	1055	1360	1090	--	--	14.0	--	--	--	--	--	--
22...	0900	1280	1080	7.9	13.5	14.5	330	180	81	30	110	3
28...	1220	1380	1060	--	--	18.0	--	--	--	--	--	--
APR												
04...	0950	1490	1050	--	--	16.5	--	--	--	--	--	--
11...	1100	1420	1110	--	--	18.0	--	--	--	--	--	--
18...	1215	1410	1110	--	--	18.0	--	--	--	--	--	--
20...	1010	1750	1100	8.0	19.0	17.0	340	200	84	31	110	3
25...	1015	1470	1110	--	--	19.0	--	--	--	--	--	--
MAY												
02...	1000	1250	1110	--	--	19.0	--	--	--	--	--	--
09...	1055	1250	1110	--	--	21.0	--	--	--	--	--	--
16...	0920	1400	1110	--	--	22.0	--	--	--	--	--	--
17...	0930	1540	1100	--	27.0	19.0	330	200	83	30	110	3
23...	1110	1670	1130	--	--	24.5	--	--	--	--	--	--
31...	1135	1450	1140	--	--	23.0	--	--	--	--	--	--
JUN												
06...	0740	1300	1110	--	--	23.0	--	--	--	--	--	--
13...	0740	1500	1110	--	--	28.5	--	--	--	--	--	--
20...	0755	2700	1110	--	--	28.5	--	--	--	--	--	--
27...	1130	1620	1190	--	--	23.5	--	--	--	--	--	--
JUL												
05...	1630	1660	1100	--	--	24.5	--	--	--	--	--	--
08...	0915	1830	1100	--	37.0	23.0	330	200	84	30	110	3
11...	0845	1670	1100	--	--	23.0	--	--	--	--	--	--
18...	0720	1400	1100	--	--	23.5	--	--	--	--	--	--
25...	0753	1650	1100	--	--	24.0	--	--	--	--	--	--
AUG												
01...	0930	2100	1100	--	--	26.5	--	--	--	--	--	--
01...	1400	1760	1100	--	39.0	26.0	320	190	80	30	110	3
08...	0800	1240	1100	--	--	24.5	--	--	--	--	--	--
15...	1000	1750	1090	--	--	26.5	--	--	--	--	--	--
29...	1120	1420	1090	--	--	27.0	--	--	--	--	--	--
SEP												
06...	0750	1610	1090	--	--	25.5	--	--	--	--	--	--
06...	0930	1600	1090	--	38.0	25.5	330	210	84	30	100	2

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

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09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation for residue at 180°C and by U.S. Geological Survey for other analyses

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT												
04...	5.1	124	310	98	.40	8.8	722	720	.98	.14	170	5
12...	--	--	--	--	--	--	754	--	1.0	--	--	--
18...	--	--	--	--	--	--	766	--	1.0	--	--	--
25...	--	--	--	--	--	--	724	--	.98	--	--	--
NOV												
01...	4.9	134	320	100	.40	9.3	772	750	1.0	.16	160	<3
08...	--	--	--	--	--	--	770	--	1.0	--	--	--
15...	--	--	--	--	--	--	754	--	1.0	--	--	--
22...	--	--	--	--	--	--	730	--	.99	--	--	--
29...	--	--	--	--	--	--	760	--	1.0	--	--	--
DEC												
06...	5.0	129	310	100	.40	9.5	762	720	1.0	.18	150	5
13...	--	--	--	--	--	--	800	--	1.1	--	--	--
20...	--	--	--	--	--	--	796	--	1.1	--	--	--
27...	--	--	--	--	--	--	744	--	1.0	--	--	--
JAN												
17...	--	--	--	--	--	--	748	--	1.0	--	--	--
21...	4.8	130	300	97	.40	8.6	732	710	1.0	.18	140	7
24...	--	--	--	--	--	--	736	--	1.0	--	--	--
27...	4.4	141	280	83	.30	7.8	--	670	.90	.28	120	7
31...	--	--	--	--	--	--	780	--	1.1	--	--	--
FEB												
07...	--	--	--	--	--	--	784	--	1.1	--	--	--
14...	--	--	--	--	--	--	816	--	1.1	--	--	--
22...	4.8	132	300	91	.40	8.6	--	710	.96	.21	140	<3
22...	--	--	--	--	--	--	724	--	.98	--	--	--
28...	--	--	--	--	--	--	760	--	1.0	--	--	--
MAR												
07...	--	--	--	--	--	--	788	--	1.1	--	--	--
14...	--	--	--	--	--	--	708	--	.96	--	--	--
21...	--	--	--	--	--	--	696	--	.95	--	--	--
22...	5.0	145	290	96	.40	8.8	--	710	.96	.20	140	8
28...	--	--	--	--	--	--	660	--	.90	--	--	--
APR												
04...	--	--	--	--	--	--	640	--	.87	--	--	--
11...	--	--	--	--	--	--	720	--	.98	--	--	--
18...	--	--	--	--	--	--	732	--	1.0	--	--	--
20...	5.0	141	290	89	.40	8.3	--	700	.96	.16	150	6
25...	--	--	--	--	--	--	708	--	.96	--	--	--
MAY												
02...	--	--	--	--	--	--	720	--	.98	--	--	--
09...	--	--	--	--	--	--	724	--	.98	--	--	--
16...	--	--	--	--	--	--	720	--	.98	--	--	--
17...	5.1	133	300	94	.40	15	--	720	.98	.18	150	58
23...	--	--	--	--	--	--	748	--	1.0	--	--	--
31...	--	--	--	--	--	--	732	--	1.0	--	--	--
JUN												
06...	--	--	--	--	--	--	696	--	.95	--	--	--
13...	--	--	--	--	--	--	692	--	.94	--	--	--
20...	--	--	--	--	--	--	692	--	.94	--	--	--
27...	--	--	--	--	--	--	752	--	1.0	--	--	--
JUL												
05...	--	--	--	--	--	--	688	--	.94	--	--	--
08...	4.5	134	290	91	.30	8.5	--	700	.95	.34	140	7
11...	--	--	--	--	--	--	692	--	.94	--	--	--
18...	--	--	--	--	--	--	692	--	.94	--	--	--
25...	--	--	--	--	--	--	680	--	.92	--	--	--
AUG												
01...	--	--	--	--	--	--	680	--	.92	--	--	--
01...	4.8	135	300	95	.30	8.8	--	710	.97	.18	140	4
08...	--	--	--	--	--	--	728	--	.99	--	--	--
15...	--	--	--	--	--	--	688	--	.94	--	--	--
29...	--	--	--	--	--	--	694	--	.94	--	--	--
SEP												
06	--	--	--	--	--	--	684	--	.93	--	--	--
06...	4.5	127	310	96	.30	8.6	--	711	.97	.16	140	6

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09429010 COLORADO RIVER AT PALO VERDE DAM, AZ-CA

LOCATION.--Lat 33°43'55", long 114°30'40", in NW¼NE¼ sec.19, T.5 S., R.24 E., San Bernardino meridian, in California, Riverside County, Hydrologic Unit 15030104, on west side of Palo Verde Diversion Dam, 10 mi northeast of Blythe, Calif., and 44 mi downstream from Headgate Rock Dam.

DRAINAGE AREA.--186,200 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--April 1969 to current year. If records (available in files of Tucson District office) for the two Colorado River Indian Reservation drains entering below Palo Verde Dam are added to records for this station, records equivalent to those published 1956-69 as "Colorado River below Palo Verde Dam" can be obtained.

GAGE.--Two water-stage recorders, one above and one below dam, to record head on gates, and water-stage recorder to record gate opening. Supplementary water-stage recorder above dam operated by Geological Survey and supplementary water-stage recorder below dam operated by Palo Verde Irrigation District. Datum of gages is National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Many diversions above station for irrigation, municipal, and industrial uses. Flow regulated by Lake Mead, Lake Mohave, and Lake Havasu.

AVERAGE DISCHARGE.--14 years, 8,330 ft³/s, 6,035,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 42,300 ft³/s June 30, 1983; minimum daily, 1,060 ft³/s Nov. 25, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 42,300 ft³/s June 30; minimum daily, 1,670 ft³/s Nov. 12, 19, Dec. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4310	4080	2590	11600	16300	5700	7750	15600	17200	34500	35700	33800
2	6760	3890	3260	12000	14200	4830	11500	15600	18000	34400	35500	34000
3	6030	3400	3310	13000	13900	3370	13100	15400	18200	34900	35500	34200
4	6220	4150	5380	14000	6560	2600	13500	16200	18600	35100	35800	34400
5	5700	3750	4950	14000	6040	3510	14100	9890	18900	34900	36400	34400
6	4890	4580	4660	14000	4740	3960	13900	9710	18800	35200	36700	34500
7	3680	3970	4910	14200	3530	3910	13400	14700	18500	35200	37200	34500
8	3470	3970	4970	14500	2030	4830	14500	15000	19200	35500	37900	34200
9	5290	3750	4080	13500	2180	5350	14900	14900	19400	35600	38300	34300
10	4830	3380	2820	14000	2430	5100	15000	14700	19500	35500	38700	34400
11	5580	2000	1990	15000	1990	5560	14900	14400	19900	35700	39100	34500
12	5510	1670	1930	15000	2590	8510	14700	14500	19600	35700	38800	34300
13	5040	3440	1880	14900	3570	9550	14000	14700	19800	35800	37800	34100
14	4200	3920	2030	15000	3740	9160	13800	14900	20000	35900	38300	34000
15	3970	3620	2300	15200	4060	10800	13800	15000	19400	36000	38900	34000
16	6150	3090	1820	15100	3390	11400	14000	14800	19800	36100	38200	34000
17	5570	2750	1830	15200	2990	11900	14400	14700	19900	36200	40300	34000
18	5270	2190	2200	15400	2700	11400	14900	14500	19500	36300	39200	34100
19	5850	1670	2360	14800	6870	13900	15000	14800	19600	36400	38400	34100
20	5190	3360	2330	14200	6930	12600	14800	15000	20000	36400	38000	34600
21	4500	3570	2360	14300	7440	11400	14800	15200	24000	36500	37800	34700
22	3460	2890	1680	15300	7290	9110	14700	15400	25400	36800	37600	34800
23	5380	2080	1670	15600	6430	8550	14900	15500	26800	36800	37200	34900
24	5630	2050	1880	15400	5580	7220	15200	15600	28300	36200	36800	35400
25	5540	1950	2280	15500	7280	6090	15200	15800	29100	36100	36400	35200
26	5020	2780	3280	15700	9080	8650	15100	15800	29900	35800	36200	35500
27	4890	2640	4080	15700	8520	9860	14900	15700	30200	35500	35900	35300
28	3450	2730	3820	16400	6450	10700	15100	16200	32600	35600	35400	34800
29	2770	3230	5510	16700	---	9400	15200	16200	35500	35500	34700	34800
30	4210	2840	7030	16100	---	8980	15400	16300	42300	35700	34100	34800
31	3890	---	7500	16600	---	8200	---	16500	---	35700	33800	---
TOTAL	152250	93390	102690	457900	168810	246100	426450	463200	687900	1107500	1150600	1034600
MEAN	4911	3113	3313	14770	6029	7939	14220	14940	22930	35730	37120	34490
MAX	6760	4580	7500	16700	16300	13900	15400	16500	42300	36800	40300	35500
MIN	2770	1670	1670	11600	1990	2600	7750	9710	17200	34400	33800	33800
AC-FT	302000	185200	203700	908200	334800	488100	845900	918800	1364000	2197000	2282000	2052000
CAL YR 1982	TOTAL	2501870	MEAN	6854	MAX	13900	MIN	1670	AC-FT	4962000		
WTR YR 1983	TOTAL	6091390	MEAN	16690	MAX	42300	MIN	1670	AC-FT	12080000		

09429030 PALO VERDE DRAIN NEAR PARKER, AZ

LOCATION.--Lat 33°45'25", long 114°29'48", in NE¼SW¼ sec.24, T.5 N., R.22 W., La Paz County, Hydrologic Unit 15030104, at bridge, 0.5 mi above mouth, 0.5 mi northeast of Palo Verde Dam, 9 mi north of Ehrenberg, and 31 mi southwest of Parker.

PERIOD OF RECORD.--October 1968 to September 1983 (discontinued).

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz. Formerly published as 09429030 C.R.I.R. Levee Drain near Parker, AZ.

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	0835	48	2060	20.0	1330	1.8
12...	0730	44	2100	18.0	1360	1.8
18...	1240	28	1970	21.0	1270	1.7
25...	1115	40	2040	20.0	1310	1.8
NOV						
01...	0140	40	2000	18.5	1290	1.8
08...	0810	24	1970	18.0	1270	1.7
15...	1225	30	1950	18.0	1240	1.7
22...	1330	30	1910	16.5	1230	1.7
29...	0840	30	1950	16.5	1250	1.7
DEC						
06...	1155	21	1920	16.5	1320	1.8
13...	1245	33	1900	16.5	1240	1.7
20...	0750	33	1780	14.5	1160	1.6
27...	0925	28	1810	14.5	1200	1.6
29...	0840	30	1950	16.5	1250	1.7
JAN						
03...	1150	23	1820	13.5	1220	1.7
10...	1200	23	1860	13.0	1230	1.7
17...	1215	24	2000	17.0	1320	1.8
24...	1210	24	2090	10.5	1430	1.9
31...	1215	25	2140	14.5	1420	1.9
FEB						
07...	1210	25	2140	14.0	1470	2.0
14...	1155	30	1900	15.5	1290	1.8
22...	1300	35	1770	19.0	1180	1.6
28...	1335	30	1900	18.5	1280	1.7
MAR						
07...	1100	27	1900	20.0	1290	1.8
14...	1150	27	1890	18.0	1250	1.7
21...	1105	26	1880	15.5	1260	1.7
28...	1210	31	1870	19.0	1220	1.7
APR						
04...	0955	33	1930	18.0	1250	1.7
11...	1115	35	1830	19.0	1240	1.7
18...	1200	35	1990	18.5	1360	1.8
25...	1025	35	2030	20.0	1390	1.9
MAY						
02...	1010	30	2120	19.0	1480	2.0
09...	1110	36	2150	22.0	1460	2.0
16...	0940	32	1970	22.0	1330	1.8
23...	1050	32	2300	25.0	1580	2.1
31...	1130	33	2160	24.5	1470	2.0
JUN						
06...	0800	35	2310	23.0	1620	2.2
13...	0800	37	2250	28.5	1560	2.1
20...	0810	37	2430	29.0	1710	2.3
27...	1000	37	2380	24.5	1680	2.3
JUL						
05...	1615	35	2570	28.0	1830	2.5
11...	0910	35	2600	25.0	1850	2.5
18...	0735	35	2640	24.0	1910	2.6
25...	0812	52	2710	28.0	1930	2.6
AUG						
01...	0945	52	2720	28.5	1950	2.7
08...	0820	52	2590	25.5	1790	2.4
15...	1010	40	2540	28.0	1750	2.4
29...	1110	30	2590	28.5	1800	2.4
SEP						
06...	0825	24	2520	26.5	1740	2.4

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429060 COLORADO RIVER INDIAN RESERVATION LOWER MAIN DRAIN NEAR PARKER, AZ

LOCATION.--Lat 33°45'40", long 114°29'05", in SW¼NW¼ sec.19, T.5 N., R.21 W., La Paz County, Hydrologic Unit 15030104, at gaging station, 2.8 mi above outlet to Colorado River, and 31 mi south of Parker.

PERIOD OF RECORD.--October 1968 to September 1983 (discontinued).

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	0845	263	2130	21.0	1370	1.9
12...	0740	178	2870	19.0	1850	2.5
18...	1230	194	2430	20.5	1570	2.1
25...	1100	180	2500	20.0	1620	2.2
NOV						
01...	0130	180	2570	19.0	1670	2.3
08...	0915	140	2920	18.5	1890	2.6
15...	1215	147	3020	18.0	1950	2.7
22...	1320	168	2330	16.5	1510	2.1
29...	0845	136	2740	17.0	1770	2.4
DEC						
06...	1145	153	2700	18.0	1850	2.5
13...	1230	102	3370	18.0	2350	3.2
20...	0805	112	2910	15.0	2020	2.7
27...	0935	142	2180	11.5	1420	1.9
JAN						
03...	1140	160	2180	14.5	1420	1.9
10...	1115	115	3000	14.0	2050	2.8
17...	1225	115	3280	18.5	2180	3.0
24...	1220	109	3350	11.5	2310	3.1
31...	1225	128	2860	13.5	1950	2.7
FEB						
07...	1200	125	1940	13.0	1290	1.8
14...	1145	149	2090	15.0	1360	1.8
22...	1250	118	2920	18.5	1960	2.7
28...	1325	172	2000	17.0	1300	1.8
MAR						
07...	1110	157	2490	20.0	1660	2.3
14...	1140	168	2510	18.5	1660	2.3
21...	1110	200	2000	15.5	1300	1.8
28...	1200	181	2330	19.5	1550	2.1
APR						
04...	1005	168	2530	17.0	1700	2.3
11...	1125	194	2490	19.0	1680	2.3
18...	1150	181	2660	19.5	1800	2.4
25...	1035	184	2440	21.0	1640	2.2
MAY						
02...	1015	211	2050	20.0	1370	1.9
09...	1115	162	2640	23.5	1800	2.4
16...	0930	189	2210	22.0	1480	2.0
23...	1100	192	2180	24.0	1480	2.0
31...	1122	194	2300	24.5	1550	2.1
JUN						
06...	0750	210	2020	24.0	1330	1.8
13...	0755	168	2090	29.5	1370	1.9
20...	0805	108	2480	30.0	1670	2.3
27...	1115	241	2110	25.0	1410	1.9
JUL						
05...	1620	190	2200	29.0	1460	2.0
11...	0905	183	2380	24.5	1590	2.2
18...	0730	199	2110	24.5	1380	1.9
25...	0807	208	2170	28.0	1440	2.0
AUG						
01...	0940	214	2240	28.0	1500	2.0
08...	0815	232	2060	25.5	1340	1.8
15...	1015	270	2250	28.0	1490	2.0
29...	1100	186	2390	29.5	1580	2.1
SEP						
06...	0810	175	2810	26.5	1900	2.6

COLORADO RIVER MAIN STEM

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09429188 COLORADO RIVER AT TAYLOR FERRY, NEAR BLYTHE, CA

LOCATION.--Lat 33°26'03", long 114°37'35", in SE¼ sec.36, T.8 S., R.22 E., San Bernardino meridian, Riverside County, Hydrologic Unit 15030104, at gaging station, at site of old Taylor Ferry, 2.5 mi upstream from Cibola Bridge, 12 mi south of Blythe, Calif., 28 mi downstream from Palo Verde Dam, and 62 mi upstream from Imperial Dam.

DRAINAGE AREA.--187,700 mi² approximately, including 3,959 mi² in Great Divide basin in southern Wyoming which is noncontributing.

PERIOD OF RECORD.--April 1970 to current year.

REMARKS.--Gaging station operated by, and water samples collected by, U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	1030	--	1210	19.5	782	1.1
12...	0940	4420	1220	19.0	790	1.1
18...	0830	4150	1200	20.5	774	1.1
25...	1030	4240	1210	19.0	772	1.0
NOV						
01...	1110	3290	1260	19.0	818	1.1
08...	0900	3450	1230	16.5	790	1.1
16...	1130	3110	1270	15.5	816	1.1
22...	1125	3340	1260	20.0	786	1.1
29...	1130	2590	1270	17.0	822	1.1
DEC						
06...	1010	3980	1210	14.0	800	1.1
13...	1130	2360	1410	15.5	942	1.3
20...	0900	2580	1300	12.0	880	1.2
27...	1410	2380	1240	10.5	806	1.1
JAN						
03...	0910	9610	1170	11.0	784	1.1
10...	1125	12200	1170	11.5	768	1.0
17...	1145	14400	1160	11.5	760	1.0
24...	1230	16000	1130	11.0	760	1.0
31...	1100	15900	1130	11.0	768	1.0
FEB						
07...	1100	4110	1200	14.0	780	1.1
15...	0830	2910	1240	13.0	824	1.1
22...	1125	7160	1190	14.0	780	1.1
28...	1045	8080	1150	15.5	748	1.0
MAR						
07...	1135	2880	1250	14.5	820	1.1
14...	1130	9630	1110	18.5	692	.94
21...	1145	12200	1090	16.0	684	.93
28...	0925	8850	1080	18.0	676	.92
APR						
04...	1135	12900	1050	15.0	680	.92
11...	1145	15400	1120	16.5	704	.96
18...	1120	14100	1130	19.0	716	.97
25...	1000	15800	1140	18.0	724	.98
MAY						
02...	1030	16500	1130	16.5	724	.98
09...	0945	15300	1130	18.5	720	.98
16...	1050	15300	1140	18.0	720	.98
23...	0815	16300	1130	23.5	704	.96
31...	0800	16400	1120	23.5	696	.95
JUN						
06...	0745	21700	1110	24.0	704	.96
13...	1115	24500	1120	24.5	712	.97
21...	1115	26800	1120	24.0	708	.96
27...	0810	30000	1110	24.0	708	.96
JUL						
05...	1030	35300	1110	25.0	708	.96
11...	1055	35500	1110	24.0	708	.96
18...	1030	23800	1110	24.0	720	.98
25...	1000	36000	1110	24.5	688	.94
AUG						
08...	0900	23200	1100	27.0	712	.97
15...	0900	22800	1100	28.0	692	.94
29...	1400	23000	1100	26.5	688	.94
SEP						
06...	0750	23100	1100	26.0	686	.93

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA

LOCATION.--Lat 33°21'41", long 114°43'20", in SE¼SE¼ sec.26, T.9 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030104, at gaging station, at State Highway 78 bridge, 3.3 mi upstream from mouth, and 5 mi south of Palo Verde.

PERIOD OF RECORD.--October 1968 to September 1983 (discontinued).

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	0755	685	2350	21.5	1520	2.1
12...	0750	621	2580	21.0	1660	2.3
18...	1120	581	2580	21.5	1660	2.3
25...	0750	544	2520	22.0	1630	2.2
NOV						
01...	0850	535	2710	21.0	1750	2.4
08...	1130	513	2660	18.5	1730	2.4
16...	0825	507	2550	18.0	1650	2.2
22...	0900	528	2470	20.5	1590	2.2
29...	0930	492	2590	19.5	1680	2.3
DEC						
06...	1245	508	2480	16.5	1640	2.2
13...	0915	456	2590	18.0	1700	2.3
20...	1115	375	2600	15.5	1740	2.4
27...	1340	362	2600	15.5	1670	2.3
JAN						
03...	1115	542	1980	13.0	1280	1.7
10...	0910	358	2980	14.5	1970	2.7
17...	0915	398	2480	15.5	1600	2.2
24...	1250	380	2510	15.5	1630	2.2
31...	1300	375	2730	15.5	1800	2.4
FEB						
07...	1310	349	2660	14.0	1740	2.4
15...	1050	392	2650	16.0	1700	2.3
22...	0900	406	2790	17.0	1800	2.4
28...	1400	422	2410	20.0	1560	2.1
MAR						
07...	0910	409	2540	17.0	1640	2.2
14...	0900	414	2600	21.0	1690	2.3
21...	0920	469	2490	19.0	1600	2.2
28...	1145	489	2230	20.0	1440	2.0
APR						
04...	0900	510	2320	17.0	1500	2.0
11...	0900	528	2300	19.0	1480	2.0
18...	1340	526	2370	22.0	1520	2.1
25...	0750	597	2440	21.0	1600	2.2
MAY						
02...	0830	544	2650	19.5	1730	2.4
09...	0720	544	2420	21.0	1580	2.1
16...	0815	509	2530	20.5	1660	2.3
23...	1015	544	2590	25.5	1700	2.3
31...	1000	588	2280	23.5	1490	2.0
JUN						
06...	1115	530	2610	25.5	1700	2.3
13...	0800	590	2390	26.5	1550	2.1
21...	0900	632	2350	26.0	1540	2.1
27...	1135	640	2390	30.0	1560	2.1
JUL						
05...	0830	563	2350	26.5	1550	2.1
11...	0820	546	2590	28.0	1700	2.3
18...	0810	533	2510	28.0	1640	2.2
25...	0755	602	2380	27.0	1540	2.1
AUG						
02...	0946	570	2500	27.0	1630	2.2
08...	0830	634	2390	26.5	1520	2.1
15...	1000	668	2520	27.0	1610	2.2
22...	1030	630	2270	26.0	1460	2.0
29...	1550	564	2500	29.0	1600	2.2
SEP						
06...	1105	634	2440	28.0	1560	2.1

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

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09429280. CIBOLA LAKE INLET NEAR CIBOLA, AZ.

LOCATION.--Lat 33°15'11", long 114°40'05", in SW¼NE¼ sec.18, T.2 S., R.23 W., La Paz County, Hydrologic Unit 15030104, in Cibola National Wildlife Refuge, below levee on left bank Colorado River at north end of Cibola Lake, 4.4 mi south of Cibola.

PERIOD OF RECORD.--December 1974 to current year (monthly discharge only).

GAGE.--None. Prior to July 30, 1982, two water-stage recorders; one recorded stage and the other recorded deflection-meter readings from deflection vane located in concrete flume.

REMARKS.--Records poor. Records computed on the basis of flow through weir in flume at outlet and change in lake contents since Oct. 1, 1981. Record shows amount of water diverted from Colorado River to Cibola Lake.

09429290. CIBOLA LAKE OUTLET NEAR CIBOLA, AZ.

LOCATION.--Lat 33°13'19", long 114°40'16", in NW¼SE¼ sec.30, T.2 S., R.23 W., La Paz County, Hydrologic Unit 15030104, in Cibola National Wildlife Refuge, at south end of Cibola Lake outlet to Colorado River, 6.5 mi south of Cibola.

PERIOD OF RECORD.--December 1974 to current year (monthly discharge only).

GAGE.--Water-stage recorder and cippolletti weir or stop logs in 6-ft concrete flume. Datum of gage is 204.17 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Record shows amount of water returned to Colorado River through controlled outlet. Leakage of about 1 ft³/s through adjustable weir or stop logs, or reverse flow of about 1 ft³/s through flap gates are not included in record. In water years 1976, 1977, and 1979 part of the return flow included in the record was from local runoff.

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Cibola Lake Inlet 09429280	Cibola Lake Outlet 09429290
October	375	251
November	11	0
December	210	0
CAL YR 1982	4,450	1,100
January	1,890	543
February	278	299
March	801	16
April	2,390	1,520
May	1,780	1,630
June	0	0
July	0	0
August	0	0
September	0	0
WTR YR 1983	7,740	4,260

COLORADO RIVER MAIN STEM

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ

LOCATION.--Lat 33°13'16", long 114°40'18", in NE¼SW¼ sec.30, T.2 S., R.23 W., Gila and Salt River meridian, La Paz County, Hydrologic Unit 15030104, on left bank 6.7 mi south of Cibola, 38 mi upstream from Imperial Dam, 39.7 mi downstream from Ehrenberg, Ariz., 52.1 mi downstream from Palo Verde diversion dam near Blythe, Calif., and at mile 620 on Colorado River Profile Survey map.

DRAINAGE AREA.--187,800 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 200.00 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Flow regulated by Lakes Mead, Mohave, and Havasu. Many diversions above station for irrigation, municipal, and industrial uses. See sta 09429000 for return flows from Palo Verde Irrigation District, which enter between sta 09429010 and this station. A portion of the return flows from Colorado River Indian Reservation also enters between these two stations.

AVERAGE DISCHARGE.--27 years, 9,211 ft³/s, 6,673,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,700 ft³/s Aug. 18, 1983, gage height, 16.57ft; minimum daily discharge, 1,900 ft³/s Jan. 18, 1974; minimum gage height, about 4.1 ft, Jan. 18, 1974, based on minimum observed gage height of 4.25 ft Jan. 14, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,700 ft³/s Aug. 18, gage height, 16.57 ft; minimum daily, 2,880 ft³/s Dec. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6840	5150	3670	8260	17200	7400	8570	16400	18000	34400	36200	34100
2	6080	5150	3520	11300	16900	6250	9000	16600	18300	34800	36200	33600
3	7600	5050	3820	12000	15000	5860	11700	16700	19000	35000	36400	34300
4	7530	4860	4050	12000	14100	4970	13200	16500	19500	35000	36500	34800
5	7340	5230	5570	13900	9340	4710	13700	16700	19600	35300	36600	35000
6	6830	5000	5450	13500	8450	4730	14300	11800	19700	35500	36700	35400
7	6240	5530	5180	13500	7160	4990	14100	12300	19600	35300	36800	35500
8	5290	5200	5500	13900	6500	4890	14100	15600	19500	35600	37100	35400
9	5080	5020	5630	15000	5890	5260	15000	16100	20200	36000	37100	35500
10	6310	4890	4940	13800	5280	5640	15300	15900	20400	36100	37300	35500
11	6080	4640	3910	14100	4770	5430	15500	15700	20500	36100	37100	35400
12	6530	3740	3400	14900	4520	6190	15300	15700	20600	35400	37000	35500
13	6250	3060	3280	14900	4740	8310	15300	15800	20900	35200	36400	35600
14	5970	3590	3260	14800	5450	9260	14600	16100	20800	35400	35700	35800
15	5510	4580	3260	15100	5470	9010	14500	16200	20800	35900	37400	35700
16	5410	4700	3320	15400	5630	10400	14600	16400	20600	35900	38400	35200
17	6790	4300	3180	15400	5140	11200	14800	16300	20600	35800	39900	34700
18	6550	3930	3020	15700	4860	11500	15000	16200	20700	36300	40200	34000
19	6410	3620	3180	16000	4780	11200	15500	16200	20800	36400	38500	33800
20	6670	3430	3360	15400	7540	13500	15600	16300	21200	36700	37700	33800
21	6240	4200	3300	14800	7980	12600	15500	16600	22000	37000	37500	34300
22	5720	4360	3290	14900	8360	11400	15500	16800	24600	37100	37300	34000
23	5090	3890	3040	15900	8070	9600	15500	17100	26100	37200	36700	34300
24	6290	3570	2880	16300	7460	9090	15700	17200	28300	37200	36200	34700
25	6570	3350	2890	16100	6720	7760	16000	17400	30800	36900	36300	34600
26	6430	3230	3160	16200	8270	7530	16000	17500	31600	36800	35700	34700
27	6050	3570	4000	16300	9780	9050	16000	17800	31500	36400	35800	35300
28	5710	3680	4690	16500	9040	10400	15900	18000	31500	36400	35700	35200
29	4950	3700	4640	17100	---	10800	16000	18000	31800	36100	35600	34700
30	4480	3910	6050	17400	---	9940	16100	18100	33400	35900	35400	34600
31	5230	---	7420	16800	---	9510	---	18100	---	36000	34900	---
TOTAL	190070	128130	125860	457160	224400	258380	437870	508100	692900	1115100	1142300	1045000
MEAN	6131	4271	4060	14750	8014	8335	14600	16390	23100	35970	36850	34830
MAX	7600	5530	7420	17400	17200	13500	16100	18100	33400	37200	40200	35800
MIN	4480	3060	2880	8260	4520	4710	8570	11800	18000	34400	34900	33600
AC-FT	377000	254100	249600	906800	445100	512500	868500	1008000	1374000	2212000	2266000	2073000
CAL YR 1982	TOTAL	2704460	MEAN	7409	MAX	13600	MIN	2880	AC-FT	5364000		
WTR YR 1983	TOTAL	6325270	MEAN	17330	MAX	40200	MIN	2880	AC-FT	12550000		

COLORADO RIVER MAIN STEM

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09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1969 to September 1983 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT						
04...	0850	8360	1290	20.0	812	1.1
13...	0850	7380	1310	20.0	836	1.1
18...	0950	7360	1340	21.0	844	1.1
25...	0845	7500	1240	19.5	796	1.1
NOV						
01...	0920	5550	1320	19.5	852	1.2
08...	1015	5720	1300	16.5	844	1.1
16...	0930	5150	1300	15.5	836	1.1
22...	1000	4820	1340	19.0	842	1.1
29...	1015	3790	1340	18.5	858	1.2
DEC						
06...	1130	6180	1260	14.0	844	1.1
13...	1000	3340	1610	16.0	1090	1.5
20...	1030	3360	1500	12.0	1010	1.4
27...	0950	4200	1350	12.0	888	1.2
JAN						
03...	1015	12300	1200	11.0	816	1.1
10...	0945	13600	1210	12.0	814	1.1
17...	1010	15400	1190	13.0	802	1.1
18...	1200	15700	1160	12.5	768	1.0
24...	1330	16200	1160	11.0	758	1.0
31...	1200	16600	1180	11.0	764	1.0
FEB						
07...	1230	6710	1430	14.0	924	1.3
15...	0915	6210	1350	13.5	872	1.2
22...	0945	8630	1270	15.0	816	1.1
28...	1215	8910	1330	15.5	848	1.2
MAR						
07...	1000	5160	1410	15.0	900	1.2
14...	0935	8940	1230	18.0	788	1.1
21...	1050	12200	1190	16.5	768	1.0
28...	1030	10200	1250	18.5	800	1.1
APR						
04...	0945	13200	1190	15.5	760	1.0
11...	1000	15500	1200	16.0	772	1.0
18...	1230	15000	1220	19.0	784	1.1
25...	0940	16000	1200	18.5	788	1.1
MAY						
02...	0915	16500	1190	18.0	760	1.0
09...	0820	16200	1180	19.5	760	1.0
16...	0910	16300	1190	19.0	768	1.0
23...	0915	17100	1160	23.5	748	1.0
31...	0900	18000	1160	24.5	744	1.0
JUN						
06...	0900	19600	1140	24.0	720	.98
13...	0910	20800	1150	25.5	740	1.0
21...	1000	21500	1150	23.5	720	.98
27...	0945	31400	1120	29.5	712	.97
JUL						
05...	0930	35400	1110	--	680	.92
11...	0915	36200	1120	24.5	708	.96
18...	0920	36000	1120	26.0	700	.95
25...	0850	36900	1120	24.5	692	.94
AUG						
02...	0930	36200	1110	26.5	688	.94
10...	0900	37300	1110	27.0	672	.91
15...	0900	37400	1110	26.0	668	.91
29...	1445	35400	1110	26.5	700	.95
SEP						
06...	1015	35600	1100	27.0	708	.96

COLORADO RIVER MAIN STEM

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ--Continued

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1956 to December 1966.

INSTRUMENTATION.--Water temperature recorder from March 1956 to December 1966.

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 04...	0850	8360	1290	7.9	20.0	350	210	86	33	140
NOV 01...	0920	5550	1320	8.0	19.5	350	210	87	33	140
DEC 06...	1130	6180	1260	7.8	14.0	350	210	84	33	130
JAN 18...	1200	15700	1160	7.7	12.5	330	190	80	31	110

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	3	5.2	142	350	130	.40	9.9	840	190	<3
NOV 01...	3	5.0	143	350	130	.40	10	840	200	<3
DEC 06...	3	4.9	139	330	120	.40	10	800	170	3
JAN 18...	3	5.2	134	310	100	.40	8.7	730	150	8

< Actual Value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA

(National stream-quality accounting network, pesticide, radiochemical, and tritium network station)

LOCATION.--Lat 32°52'59", long 114°27'55", at Imperial Dam. The Arizona end of the dam is in SW¼NW¼ sec.30, T.6 S., R.21 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030104; the California end is in NW¼SW¼ sec.9, T.15 S., R.24 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030104. Imperial Dam is 5 mi upstream from Laguna Dam, 15 mi northeast of Yuma, Ariz., 90 mi downstream from Palo Verde Dam, and 147 mi downstream from Parker Dam.

DRAINAGE AREA.--188,500 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1903-34 (yearly discharge only, published in WSP 1313), July 1934 to current year (monthly discharge only October 1942 to September 1979). Prior to October 1942 published as "near Picacho, Calif." October 1942 to September 1971 published as "at Imperial Dam" (monthly discharge shown as "flow reaching Imperial Dam," listed as supplement to "flow passing Imperial Dam").

GAGE.--None. This record is synthesized from records of several other stations (see REMARKS). July 13, 1934, to Sept. 30, 1942, water-stage recorder at site 14.5 mi upstream at datum 167.38 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records show flow of Colorado River reaching Imperial Dam, and are based on combined daily total flow of Colorado River below Imperial Dam (sta 09429500), All-American Canal near Imperial Dam (sta 09523000), Gila Gravity Main Canal at Imperial Dam (sta 09522500), and diversions to Mittry Lake (sta 09522400). Records for 1903-34 and for October 1942 to September 1960 were computed as combined flow of Colorado River at Yuma (sta 09521000) and the canals diverting at Imperial and Laguna Dams, less the flow of Gila River near Dome (sta 09520500); for some of these periods drainage and waste return flows and channel losses between the gaging stations and Imperial Dam were considered, and for other periods they were neglected. Records for October 1960 to September 1979 are based on combined monthly total flow of same stations on which daily flows are currently based. Records for July 1934 to September 1942 show daily discharge of Colorado River at gaging station near Picacho, Calif. water withdrawals, and diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas. Diversions to Mittry Lake, which began June 23, 1970, are included in river records in table below. Additional regulation, beginning Jan. 31, 1966, to equalize supplies for downstream water users, is provided by pumped storage in reservoir on Senator Wash, about 2 mi upstream from Imperial Dam. Monthend contents of Senator Wash Reservoir - capacity, 13,840 acre-ft - is given in table below.

COOPERATION.--Records of Sparling meter readings of diversion to Mittry Lake and contents of Senator Wash Reservoir furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--49 years (water years 1935-83), 10,970 ft³/s, 7,948,000 acre-ft/yr.

EXTREMES FOR PERIOD OF 1934-83.--Maximum discharge, 40,800 ft³/s Sept. 5, 1939; minimum, 538 ft³/s Aug. 3, 1934; minimum daily since regulation of Hoover Dam began, 1,450 ft³/s Feb. 17, 1935.

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued
(National stream-quality accounting network, pesticide, radiochemical, and tritium network station)

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7330	5030	3980	7240	16900	8340	9320	16100	17100	35700	37000	34500
2	6740	5250	4050	7780	17100	6680	8890	16100	17400	35600	37800	34600
3	6370	5300	3850	9640	17300	5750	9250	16200	17300	35400	37500	34700
4	6630	4640	3920	10100	16400	4980	10900	16400	17500	35500	37000	34700
5	6680	4420	4440	10900	14900	4060	12100	16200	18200	36000	37100	35300
6	6550	4500	4910	12100	10700	3860	12900	16200	19000	36400	37500	35700
7	6530	4470	5250	13600	8330	4420	13400	14000	19300	35900	37800	35700
8	6080	5210	4890	14100	6610	5280	13800	12200	19300	35800	37700	35600
9	5680	5070	5080	13600	5400	5250	13900	13500	19500	35800	37700	35400
10	5480	4920	5680	14300	3960	5840	14200	14700	19300	36200	37500	35200
11	5950	3870	4820	14400	3660	6140	14500	15300	20500	36700	38000	35000
12	6180	4110	3530	14200	3900	6000	15000	15500	20600	36700	37900	35000
13	6450	3430	2900	14500	3520	5980	15300	15500	20800	36400	37700	35200
14	6210	3190	2800	14800	3900	8280	15200	15300	20800	36100	37100	35200
15	5890	4130	2650	15000	4490	9510	15100	15500	21000	35800	37200	35300
16	5430	4430	2740	15200	5090	10200	14800	15300	20900	36100	38400	35000
17	5570	4380	2910	15200	5200	11200	14700	15600	20700	36300	39700	35200
18	6230	3860	2780	15400	4940	11300	14600	15700	20500	36700	40700	35000
19	6430	3650	2750	15400	4820	10800	14800	15800	20700	36700	40700	35700
20	6340	3250	2970	15700	4440	10600	15000	15400	20400	36500	40500	36000
21	6340	3190	3240	15400	6390	11900	15200	15300	20700	36500	39400	37200
22	5980	4250	3180	15300	7540	11700	15500	15600	21100	36300	38600	37000
23	5250	4500	3310	15000	8340	11200	15600	15600	22500	36500	38600	37300
24	5080	4030	2730	15100	8940	10500	15500	15800	25300	36600	37000	37800
25	5730	3360	2490	15500	8200	9550	15400	16100	28000	36600	36800	37800
26	6160	3460	2990	15900	7990	8460	15600	16100	33700	36800	36600	37900
27	6040	3170	4420	15800	8430	7890	15600	16100	32200	36800	36700	37600
28	5630	3650	4790	15400	8450	8890	16000	16500	33300	36000	36300	37900
29	5200	3600	5170	15700	---	9740	15700	16700	33800	35900	37100	37800
30	4560	4060	4970	16000	---	9910	15800	16900	33700	35900	35800	37400
31	4280	---	5740	16500	---	10400	---	17000	---	36100	34200	---
TOTAL	185000	124380	119930	434760	225840	254610	423560	484200	675100	1122300	1169600	1079700
MEAN	5968	4146	3869	14020	8066	8213	14120	15620	22500	36200	37730	35990
MAX	7330	5300	5740	16500	17300	11900	16000	17000	33800	36800	40700	37900
MIN	4280	3170	2490	7240	3520	3860	8890	12200	17100	35400	34200	34500
AC-FT	366900	246700	237900	862300	448000	505000	840100	960400	1339000	2226000	2320000	2142000
(*)	8290	6360	8050	13390	6130	11160	7300	7020	7280	6040	9320	11710
(**)	566	362	467	633	550	584	547	861	833	861	861	833
CAL YR 1982	TOTAL	2725550	MEAN	7467	MAX	13000	MIN	2490	AC-FT	5406000	**	6160
WTR YR 1983	TOTAL	6298980	MEAN	17260	MAX	40700	MIN	2490	AC-FT	12490000	**	7960

* Monthend contents, in acre-feet, in Senator Wash Reservoir.

** Diversion, in acre-feet, to Mittry Lake (09522400).

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

LOCATION.--Water samples collected above trash racks at All-American Canal headworks at west end of Imperial Dam.

PERIOD OF RECORD.--August 1969 to current year.

Prior to October 1971, published as sta 09429500, Colorado River at Imperial Dam, Ariz.-Calif.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to current year.

WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Replaces water-quality station 09525500 Yuma Main Canal below Colorado River Siphon, at Yuma, Ariz. Stream discharges reported with analyses represent total flow reaching Imperial Dam.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 04...	1200	6630	1330	8.0	--	--	--	--	--	--	--
NOV 01...	1200	5030	1460	8.1	--	--	--	--	--	--	--
18...	0830	3950	1400	8.0	10.0	15.0	2.6	9.6	757	96	29
DEC 06...	1200	4910	1340	8.0	--	--	--	--	--	--	--
JAN 03...	1240	9400	1200	7.9	24.0	9.5	--	10.2	760	90	--
18...	1400	15400	1230	7.9	23.0	11.5	12	9.9	761	91	15
FEB 07...	0925	8750	1220	7.8	18.0	13.5	6.2	9.8	761	95	--
APR 11...	1030	14200	1190	7.9	20.0	18.0	13	8.6	759	92	20
JUN 14...	0945	20800	1200	7.5	30.0	24.0	3.4	--	764	--	25
AUG 15...	1255	36900	1150	7.7	33.0	28.5	15	5.9	763	76	74

DATE	STREP- TOCOC- CI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 04...	--	370	220	87	36	150	3	5.9	--	350	120
NOV 01...	--	390	220	95	36	170	4	6.0	--	390	140
18...	K10	370	220	93	34	160	4	4.9	156	370	150
DEC 06...	--	380	230	95	34	150	3	5.0	--	340	130
JAN 07...	--	350	210	87	33	130	3	4.9	147	330	130
APR 11...	120	330	190	82	31	120	3	4.7	148	300	110
JUN 14...	4900	350	210	88	32	120	3	4.9	141	330	110
AUG 15...	200	320	190	78	30	110	3	4.8	134	290	97

K Based on non-ideal colony count.

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

EXTREMES FOR PERIOD OF DAILY RECORD.--

1976.

WATER TEMPERATURES: Maximum observed, 33.0°C Aug. 20, 1977, Aug. 28, 29, 1981; minimum recorded, 7.5°C Dec. 31, 1982.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,650 micromhos Nov. 15; minimum recorded, 1,010 micromhos Aug. 9.

WATER TEMPERATURES: Maximum recorded, 29.0°C Aug. 13, 14, 15; minimum recorded, 7.5°C Dec. 31.

INSTRUMENTATION.--Specific conductance and water temperature recorder October 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
OCT 04...	.40	14	862	850	1.2	--	--	--	--	--	--
NOV 01...	.60	12	936	940	1.3	--	--	--	--	--	--
18...	.50	11	955	920	1.3	.14	.80	.020	<.010	<.010	--
DEC 06...	.50	12	868	850	1.2	--	--	--	--	--	--
JAN 03...	.40	9.6	803	780	1.1	.17	--	--	--	--	--
18...	.40	9.4	813	770	1.1	.14	.60	.070	<.010	<.010	--
FEB 07...	.40	11	819	820	1.1	.19	.60	.040	.010	<.010	--
APR 11...	.40	9.9	766	750	1.0	.15	.60	.070	.010	.030	.09
JUN 14...	.40	9.2	766	780	1.0	.10	.40	.050	.010	.020	.06
AUG 15...	.40	8.8	740	700	1.0	<.10	.70	.180	.030	.010	.03

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 04...	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--
18...	10	2	110	.8	<1	<1	<3	1	3	<1
DEC 06...	--	--	--	--	--	--	--	--	--	--
JAN 03...	--	--	--	--	--	--	--	--	<3	--
18...	--	--	--	--	--	--	--	--	--	--
FEB 07...	10	3	110	.6	<1	<1	<3	1	5	<1
APR 11...	20	3	110	<.5	<1	<1	<3	2	<3	<1
JUN 14...	--	--	--	--	--	--	--	--	--	--
AUG 15...	10	2	120	<.5	<1	<1	<3	1	4	<1

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 04...	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--
18...	76	3	<.1	<10	2	2	<1	1400	<6	5
DEC 06...	--	--	--	--	--	--	--	--	--	--
JAN 03...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
FEB 07...	68	8	<.1	10	2	3	<1	1300	<6	20
APR 11...	66	6	<.1	10	<1	3	<1	1100	<6	3
JUN 14...	--	--	--	--	--	--	--	--	--	--
AUG 15...	59	7	<.1	<10	1	3	<1	1200	<6	5

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1430	1260	1510	1390	1480	1400	1310	1210	1210	1190	1280	1190
2	1400	1310	1450	1400	1490	1400	1270	1190	1220	1190	1310	1220
3	1450	1350	1440	1380	1470	1420	1220	1180	1220	1190	1310	1250
4	1380	1280	1460	1380	1470	1390	1260	1180	1230	1200	1340	1280
5	1360	1270	1460	1420	1430	1380	1230	1160	1270	1210	1350	1320
6	1370	1260	1470	1370	1410	1280	1200	1180	1320	1250	1510	1360
7	1400	1280	1420	1380	1370	1280	1230	1190	1330	1230	1460	1410
8	1430	1320	1430	1340	1370	1280	1250	1200	1380	1260	1450	1350
9	1450	1380	1410	1360	1370	1270	1230	1200	1370	1300	1390	1330
10	1480	1440	1450	1390	1330	1240	1230	1210	1420	1370	1400	1320
11	1490	1330	1450	1380	1350	1300	1260	1210	1430	1380	1350	1300
12	1430	1330	1460	1420	1390	1360	1220	1200	1460	1410	1360	1290
13	1420	1330	1510	1430	1490	1400	1230	1210	1450	1420	1360	1200
14	1420	1300	1610	1520	1550	1490	1230	1210	1490	1400	1280	1160
15	1420	1340	1650	1490	1590	1560	1230	1180	1470	1350	1260	1160
16	1440	1380	1480	1360	1600	1580	1220	1180	1400	1320	1290	1200
17	1450	1400	1410	1370	1580	1550	1210	1140	1420	1310	1280	1230
18	1450	1300	1450	1400	1550	1510	1220	1150	1400	1310	1260	1130
19	1410	1300	1470	1410	1570	1520	1220	1140	1360	1320	1210	1130
20	1410	1300	1480	1440	1610	1560	1210	1150	1470	1350	1180	1100
21	1410	1290	1570	1470	1580	1520	1220	1160	1480	1230	1160	1100
22	1420	1300	1630	1500	1520	1480	1220	1190	1300	1210	1190	1130
23	1440	1350	1480	1390	1500	1490	1220	1200	1310	1200	1230	1160
24	1450	1400	1430	1390	1510	1480	1210	1080	1350	1200	1280	1170
25	1470	1330	1500	1410	1580	1480	1220	1180	1310	1280	1270	1170
26	1410	1290	1540	1490	1600	1570	1220	1190	1330	1270	1250	1160
27	1400	1290	1580	1520	1600	1520	1220	1200	1290	1210	1270	1190
28	1400	1310	1590	1550	1520	1410	1210	1190	1330	1190	1250	1150
29	1420	1340	1550	1490	1410	1310	1210	1190	---	---	1190	1090
30	1440	1400	1510	1450	1380	1320	1200	1190	---	---	1220	1090
31	1510	1420	---	---	1400	1250	1200	1180	---	---	1270	1120
MONTH	1510	1260	1650	1340	1610	1240	1310	1080	1490	1190	1510	1090

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.5	21.5	19.0	18.0	15.5	14.0	9.0	8.0	12.0	11.0	15.5	15.0
2	22.0	21.0	19.0	18.0	14.0	13.5	9.0	8.0	11.5	11.0	15.5	15.0
3	22.5	21.5	18.0	17.0	13.5	13.0	9.5	9.0	11.0	10.5	15.5	14.5
4	23.0	22.0	17.0	16.0	13.0	12.5	9.5	9.0	11.0	10.5	16.0	15.0
5	23.0	22.5	16.5	15.5	13.0	12.5	10.0	9.5	12.0	11.0	16.5	15.0
6	23.0	22.0	16.5	15.5	13.5	12.5	10.5	9.5	13.0	11.5	17.0	16.0
7	23.0	22.0	16.5	16.0	14.0	13.0	10.5	10.0	13.5	12.5	18.0	16.5
8	22.5	21.0	16.5	16.0	13.5	13.0	11.0	10.0	14.5	13.0	19.0	17.0
9	20.5	19.5	17.0	16.0	13.0	13.0	11.0	10.5	14.5	14.0	19.5	16.5
10	19.5	18.5	16.5	16.0	13.5	13.0	11.0	10.5	15.5	14.0	19.5	17.0
11	19.0	18.0	16.0	15.5	14.0	13.5	11.0	10.5	15.5	14.5	19.5	18.5
12	19.5	18.0	15.5	15.0	14.5	14.0	10.5	10.0	16.0	15.0	19.0	18.0
13	19.5	19.0	15.0	14.5	15.0	14.0	11.0	10.0	16.5	15.5	20.0	19.0
14	20.5	19.0	15.0	14.5	14.5	14.0	11.0	10.0	15.5	15.0	19.0	18.0
15	21.0	19.5	15.0	14.5	14.0	13.5	11.0	10.5	15.0	14.5	18.0	17.0
16	21.0	20.0	15.5	14.5	13.5	13.0	11.5	10.5	15.0	14.0	17.5	16.5
17	21.5	20.5	16.0	15.5	13.0	12.5	11.5	11.0	15.5	14.0	17.0	16.5
18	22.0	21.0	16.0	15.5	13.0	12.0	11.5	11.0	15.0	14.0	16.5	15.5
19	22.0	21.0	17.0	16.0	13.0	12.0	11.5	11.0	15.0	13.5	16.0	15.0
20	21.5	20.5	16.5	16.0	13.0	12.0	11.0	10.5	14.5	13.5	16.0	15.5
21	21.0	20.0	16.5	16.0	13.0	12.0	11.0	10.5	14.0	13.5	16.0	15.5
22	20.5	20.0	16.5	15.5	13.5	12.5	10.5	10.0	14.5	13.5	16.0	15.0
23	20.5	20.0	15.5	15.0	13.5	13.0	11.0	10.0	15.0	13.5	16.5	15.5
24	20.5	20.0	15.0	14.5	13.0	11.5	11.5	10.5	15.5	14.5	16.5	16.0
25	21.0	20.5	15.0	14.5	11.5	10.0	12.0	11.0	15.0	14.0	16.5	15.5
26	21.0	20.5	15.0	14.5	10.0	9.0	12.0	11.5	15.5	14.5	17.0	15.5
27	20.5	19.0	15.5	14.5	10.0	9.0	12.0	11.5	15.5	14.5	17.5	16.0
28	18.5	18.0	15.0	14.5	10.0	9.5	12.0	11.5	15.5	14.5	17.5	16.5
29	18.0	17.5	15.5	14.5	9.5	9.5	11.5	11.5	---	---	18.5	17.0
30	18.0	17.0	15.5	15.0	9.5	8.5	11.5	11.0	---	---	19.0	17.5
31	18.5	17.5	---	---	8.5	7.5	12.0	11.0	---	---	20.0	18.5
MONTH	23.0	17.0	19.0	14.5	15.5	7.5	12.0	8.0	16.5	10.5	20.0	14.5

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

[illegible]

COLORADO RIVER MAIN STEM

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09429500 COLORADO RIVER BELOW IMPERIAL DAM, AZ-CA

LOCATION.--Forebay gage: Lat 32°52'59", long 114°27'57", in NW¼SW¼ sec.9, T.15 S., R.24 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, near All-American Canal headworks at west end of Imperial Dam, 5 mi upstream from Laguna Dam, 15 mi northeast of Yuma, 90 mi downstream from Palo Verde Dam, and 147 mi downstream from Parker Dam.

DRAINAGE AREA.--188,500 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1971 published as "at Imperial Dam." Records of flow reaching Imperial Dam, formerly published with this station, are now published separately as sta 09429490, "Colorado River above Imperial Dam."

GAGE.--Water-stage recorder in forebay, 12 calibrated gates on California sluiceway, 8 calibrated gates on Gila sluiceway, and calibrated manometer on each discharge pipe from desilting basin. Datum of forebay gage is 162.00 ft, U.S. Bureau of Reclamation datum.

REMARKS.--Records good. Records of daily discharge show flow of Colorado River passing Imperial Dam, and include water released to river through California and Gila sluiceways, sludge from desilting basins returned to river, and leakage through dam. For records of flow reaching Imperial Dam see sta 09429490.
Flow of Colorado River regulated by many reservoirs, principally Lake Mead, since 1935. Many diversions from Colorado River and tributaries above station. Diversion to Mitty Lake and monthend contents of Senator Wash Reservoir also are now published with sta 09429490.

COOPERATION.--Records of gate openings furnished by U.S. Bureau of Reclamation. Records of sludge return flow from desilting basins furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 30,200 ft³/s Aug. 18, 19, 1983; minimum daily, 27 ft³/s Dec. 15-18, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 30,200 ft³/s Aug. 18, 19; minimum daily, 247 ft³/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	247	251	1200	4770	1300	347	2270	2340	24400	24600	20300
2	467	247	251	1200	5360	1290	347	2290	2400	25100	24900	20000
3	468	247	249	1760	6350	1560	664	2290	2310	25400	24900	20400
4	341	247	247	2250	6370	1160	1170	2300	2170	25200	24600	20500
5	327	352	302	2450	5730	696	1430	2280	3130	25400	24900	20600
6	283	353	426	2630	2750	480	1470	2280	3350	25400	25800	20300
7	300	351	443	2940	2240	396	1370	1590	3460	24600	26000	20600
8	257	409	443	3090	605	339	1650	1320	3490	24400	25500	20800
9	257	247	1370	3100	573	274	1900	1320	3670	24600	25800	20900
10	257	247	1450	3090	580	247	2120	1830	3660	25500	26000	21100
11	257	247	1440	3090	680	247	2220	2260	5230	25300	26800	21400
12	257	247	1070	3000	387	247	2220	2260	5880	25000	26800	20200
13	257	247	271	2960	387	247	2280	2330	4720	24700	26600	20500
14	257	247	247	2720	247	247	2220	2270	4910	24400	25900	19900
15	257	247	247	2710	247	247	2280	2260	5040	23800	25400	19800
16	257	352	372	2710	345	247	2220	2280	5120	24300	26500	20000
17	257	456	448	2710	247	347	2220	2290	5360	24700	28600	20800
18	257	247	448	2710	247	347	2280	2300	5850	24500	30200	21000
19	257	247	368	2720	247	347	2320	2260	6430	24100	30200	21000
20	257	247	247	2710	247	347	2260	2300	5330	24000	29600	21400
21	257	247	247	2720	446	446	2320	2270	5450	23900	28400	22900
22	467	247	247	3150	323	942	2260	2270	5700	23800	27100	22800
23	257	247	322	3290	346	462	2260	2250	6810	24200	27100	23100
24	257	247	448	2780	247	347	2260	2280	11000	24300	25100	24900
25	257	247	373	2710	247	347	2300	2260	17700	23800	24900	24600
26	441	247	247	3010	247	347	2300	2280	24200	24500	24500	24600
27	439	247	247	3990	247	347	2290	2290	21900	24500	24800	24700
28	257	458	247	4360	465	347	2270	2330	23000	23900	24900	24700
29	362	252	377	4630	---	625	2280	2350	23000	23700	24800	24300
30	257	252	255	5250	---	347	2270	2260	22600	24100	23100	24600
31	257	---	1120	4770	---	347	---	2260	---	24300	19900	---
TOTAL	9497	8422	14720	92410	41177	15516	57798	67680	245210	759800	804200	652700
MEAN	306	281	475	2981	1471	501	1927	2183	8174	24510	25940	21760
MAX	468	458	1450	5250	6370	1560	2320	2350	24200	25500	30200	24900
MIN	257	247	247	1200	247	247	347	1320	2170	23700	19900	19800
AC-FT	18840	16710	29200	183300	81670	30780	114600	134200	486400	1507000	1595000	1295000

CAL YR 1982 TOTAL 173102 MEAN 474 MAX 2490 MIN 245 AC-FT 343300
WTR YR 1983 TOTAL 2769130 MEAN 7587 MAX 30200 MIN 247 AC-FT 5493000

COLORADO RIVER MAIN STEM

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA

LOCATION.--Lat 32°48'44", long 114°30'51", in SE¼NE¼ sec.35, T.15 S., R.24 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on right bank 1.4 mi downstream from Laguna Dam, 2.8 mi northeast of Bard, Calif., and 10 mi northeast of Yuma, Ariz.

DRAINAGE AREA.--188,600 mi², approximately, including 3,959 mi² in Great Divide basin in southern Wyoming, which is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 120.84 ft, National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good. Natural flow of Colorado River at this point is affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas. Flow past station consists mainly of water released through Imperial Dam, sludge from the desilting basins at Imperial Dam, seepage through Imperial Dam, and seepage from the All-American Canal and the Gila Gravity Main Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 30,900 ft³/s Aug. 19, 1983; minimum daily, 71 ft³/s May 29, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 30,900 ft³/s Aug. 19; minimum daily, 258 ft³/s Nov. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	311	276	259	1280	4450	713	362	2200	2330	22600	24200	24200
2	288	298	346	1300	5240	1200	362	2220	2380	23800	24700	23500
3	273	411	517	1590	6460	1760	674	2170	2330	23900	24800	21600
4	274	434	501	2270	6480	1580	1200	2160	2320	23600	24400	21700
5	308	370	472	2370	6150	1050	1320	2180	2970	23700	24700	21800
6	284	307	543	2630	3250	686	1440	2180	3230	23700	25900	21400
7	285	309	556	2810	2340	600	1410	1890	3380	23300	25900	21700
8	271	327	523	3070	1190	483	1500	1520	3420	23700	25300	22000
9	260	330	626	3090	747	573	1740	1360	3770	25000	25800	22100
10	445	368	1270	3110	712	567	2010	1700	3910	25000	26000	21800
11	432	403	1390	3140	607	344	2150	2230	4590	24800	27000	22300
12	359	406	1250	3040	373	308	2170	2240	5210	24800	27200	21000
13	304	401	558	3080	379	306	2200	2200	5080	24900	27100	21300
14	300	389	408	2840	384	312	2200	2220	5000	24800	26300	20800
15	288	365	369	2780	379	303	2210	2300	5010	24100	25200	20400
16	278	319	341	2770	341	349	2170	2310	5140	24500	26700	20700
17	280	316	382	2750	322	457	2170	2280	5210	25100	29300	21500
18	279	321	505	2760	305	420	2210	2270	5530	24900	30700	21800
19	278	298	495	2750	459	399	2210	2230	5710	24400	30900	21800
20	277	280	366	2740	492	398	2170	2190	5660	24300	29900	22100
21	276	289	351	2730	349	403	2190	2160	5680	24200	28700	22500
22	287	296	348	2970	349	399	2200	2240	5560	24200	27000	22400
23	292	295	342	3240	338	498	2170	2280	6800	24600	27100	22700
24	285	291	357	2910	428	399	2220	2280	11000	24800	26000	24400
25	281	280	464	2750	679	351	2250	2260	17700	23900	25700	24300
26	296	261	352	2820	357	394	2220	2290	24000	24800	25200	24200
27	330	264	542	3870	317	577	2220	2230	21900	25000	25500	24500
28	314	263	699	4560	390	364	2170	2280	22900	24200	25600	24400
29	283	258	478	4620	---	347	2140	2300	22600	24600	24900	24000
30	271	265	343	4780	---	420	2130	2350	22600	25200	24900	24200
31	275	---	900	4590	---	390	---	2360	---	25300	24300	---
TOTAL	9264	9690	16853	92010	44267	17350	55788	67080	242920	755700	816900	673100
MEAN	299	323	544	2968	1581	560	1860	2164	8097	24380	26350	22440
MAX	445	434	1390	4780	6480	1760	2250	2360	24000	25300	30900	24500
MIN	260	258	259	1280	305	303	362	1360	2320	22600	24200	20400
AC-FT	18380	19220	33430	182500	87800	34410	110700	133100	481800	1499000	1620000	1335000
GAL YR 1982	TOTAL	181103	MEAN	496	MAX	2010	MIN	254	AC-FT	359200		
WTR YR 1983	TOTAL	2800922	MEAN	7674	MAX	30900	MIN	258	AC-FT	5556000		

COLORADO RIVER MAIN STEM

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09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1972 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1981.

WATER TEMPERATURE: October 1980 to September 1981.

COOPERATION.--Water samples collected by, U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,870 micromhos Nov. 19, 1976; minimum, 1,050 Mar. 24, 1980.

WATER TEMPERATURE: Maximum, 33.0°C Aug. 21-23, 1981; minimum, 10.5°C Dec. 11, 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 04...	1015	274	1390	8.1	21.0	380	230	90	38
NOV 01...	1025	276	1480	8.1	21.5	380	230	96	35
DEC 06...	1125	501	1480	8.2	--	390	230	99	35
JAN 03...	1200	1390	1200	8.1	9.5	340	200	82	32

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE FET-FLD (MG/L AS HCO3)	CAR- BONATE FET-FLD (MG/L AS CO3)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 04...	150	3	5.8	180	0	151	340	140	.50
NOV 01...	170	4	6.0	190	0	157	390	150	1.0
DEC 06...	170	4	5.0	190	0	159	370	160	.60
JAN 03...	130	3	4.7	--	--	--	320	120	.40

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	13	902	860	1.2	.14	.62	--	--
NOV 01...	14	962	960	1.3	.07	.31	--	--
DEC 06...	14	960	940	1.3	.07	.31	--	--
JAN 03...	9.2	808	780	1.1	--	--	170	>3

09430500 GILA RIVER NEAR GILA, NM

LOCATION.--Lat 33°03'40", long 108°32'12", in NE¼NW¼ sec.30, T.14 S., R.16 W., Grant County, Hydrologic Unit 15040001, on left bank at Hooker damsite, 1.6 mi upstream from Mogollon Creek, 7 mi northeast of Gila, and at mile 572.5.

DRAINAGE AREA.--1,864 mi².

PERIOD OF RECORD.--April to December 1914, December 1927 to current year. Monthly discharge only December 1927 to September 1930, published in WSP 1313.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1944(M), 1949(M). WDR NM-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 4,655.8 ft National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Dec. 31, 1928, at site 5 mi upstream at different datum. Dec. 31, 1928, to Jan. 7, 1942, at site 200 ft upstream at same datum.

REMARKS.--Records good. Diversions for irrigation of about 500 acres above station. Several observations of water temperature were made during the year. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--56 years (water years 1928-83), 141 ft³/s, 102,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,400 ft³/s Dec. 18, 1978, gage height, 12.5 ft, from floodmark, from rating curve extended above 7,000 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 17.2 ft from floodmark, Sept. 29, 1941; minimum, 14 ft³/s July 15, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Other major floods occurred in November 1905, December 1906, and January 1916.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	2200	992	2.90	Apr. 1	2230	1,800	3.70
Feb. 5	0015	775	2.63	July 23	2215	632	2.32
Mar. 4	1330	*1,830	3.72				

Minimum discharge, 34 ft³/s July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	51	144	138	416	512	1710	463	323	65	78	119
2	51	52	217	130	359	563	1580	444	313	59	185	103
3	51	55	177	120	337	728	1210	396	298	56	121	89
4	51	54	151	115	623	1620	1010	353	266	53	151	91
5	50	55	142	112	666	1460	874	323	234	50	131	91
6	49	45	133	112	586	1140	735	317	213	53	104	90
7	50	48	127	112	557	1060	611	331	201	54	86	91
8	50	55	123	113	508	971	542	330	185	54	74	93
9	49	63	138	114	661	872	478	335	172	50	64	95
10	49	65	492	115	655	873	448	360	173	50	61	98
11	49	70	692	116	550	943	496	383	170	51	60	100
12	50	75	402	119	494	1080	534	376	162	51	74	131
13	49	80	315	117	493	1170	517	351	153	53	67	100
14	50	76	250	117	571	1160	469	332	146	52	68	99
15	49	70	221	117	558	1100	423	308	139	53	63	97
16	49	70	192	117	504	976	387	279	132	51	59	96
17	50	99	171	119	520	751	371	257	125	43	55	94
18	50	127	156	129	566	632	412	258	119	39	54	90
19	47	133	148	149	626	629	520	254	113	38	51	90
20	49	151	145	174	646	587	630	241	108	44	47	89
21	49	131	146	179	560	541	683	238	103	51	46	99
22	49	131	142	172	500	564	622	235	99	61	41	101
23	49	121	148	159	482	586	552	234	96	84	39	99
24	49	113	210	149	496	570	531	256	97	133	39	106
25	51	113	241	149	532	804	575	297	98	81	40	111
26	52	108	210	142	593	890	664	336	94	63	68	125
27	54	101	189	138	585	1000	660	348	88	76	135	138
28	54	101	174	140	535	1070	601	351	80	78	123	252
29	54	96	155	138	---	1230	560	347	77	76	121	424
30	54	91	142	192	---	1470	505	327	70	86	121	375
31	54	---	142	429	---	1540	---	315	---	79	140	---
TOTAL	1565	2600	6435	4442	15179	29092	19910	9975	4647	1887	2566	3776
MEAN	50.5	86.7	208	143	542	938	664	322	155	60.9	82.8	126
MAX	54	151	692	429	666	1620	1710	463	323	133	185	424
MIN	47	45	123	112	337	512	371	234	70	38	39	89
AC-FT	3100	5160	12760	8810	30110	57700	39490	19790	9220	3740	5090	7490
CAL YR 1982	TOTAL	52898	MEAN	145	MAX	882	MIN	22	AC-FT	104900		
WTR YR 1983	TOTAL	102074	MEAN	280	MAX	1710	MIN	38	AC-FT	202500		

09431500 GILA RIVER NEAR REDROCK, NM

LOCATION.--Lat 32°43'37", long 108°40'30", in W½ sec.23, T.18 S., R.18 W., Grant County, Hydrologic Unit 15040002, on left bank 0.2 mi downstream from Copper Canyon, 0.2 mi upstream from lower end of box canyon, 4.7 mi north-east of Redrock, 14 mi downstream from Mangas Creek, and at mile 539.2.

DRAINAGE AREA.--2,829 mi².

PERIOD OF RECORD.--September 1904 to February 1905 (gage heights only). May 1905 to December 1906, January to December 1907 and July to October 1908 (gage heights only). November 1908 to December 1910, January 1911 to January 1912 and May to June 1912 (gage heights only). August 1912 to September 1955, October 1962 to current year. Monthly or annual discharge only for some periods, published in WSP 1313. Published as "near Cliff" 1904-7.

REVISED RECORDS.--WSP 1213: 1906, 1911-15, 1931, 1936-37, 1939, 1941, 1944, 1945(P), 1946(M), 1947. WSP 1283: Drainage area. WSP 1926: 1955. WDR NM-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 4,090 ft, from plane table survey. Prior to Dec. 31, 1907, nonrecording gage at site 13.5 mi upstream at different datum. May 14, 1908, to July 16, 1909, nonrecording gage at site 0.2 mi downstream at different datum.

REMARKS.--Records good except those for October, which are poor. Diversions for irrigation of about 5,000 acres above station.

AVERAGE DISCHARGE.--67 years (water years 1906, 1909-10, 1913-55, 1963-83), 202 ft³/s, 146,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,800 ft³/s Dec. 19, 1978, gage height, 29.8 ft in gage well, 34.1 ft from floodmarks, from rating curve extended above 9,500 ft³/s on basis of slope-area measurement of peak flow; minimum, 2.2 ft³/s Aug. 5, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 4	Unknown	*10,800	12.6
Sept. 17	0145	3,770	9.24

Minimum discharge, 18 ft³/s July 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	52	110	184	872	676	2160	616	343	39	47	205
2	63	54	157	199	573	764	1990	573	351	37	159	198
3	64	53	148	160	520	958	1510	516	339	33	207	133
4	64	52	133	141	4890	1850	1310	472	311	22	347	78
5	63	52	120	132	2360	2310	1150	444	272	19	192	70
6	58	53	118	117	1850	1630	990	434	239	26	152	56
7	53	54	115	103	1650	1440	830	453	222	34	114	54
8	48	56	115	108	1340	1330	723	453	200	38	103	51
9	42	62	108	165	1680	1230	637	472	168	37	94	47
10	40	60	497	175	1440	1250	562	487	144	41	64	42
11	40	59	1380	184	1180	1320	616	511	123	32	70	67
12	39	52	624	208	1040	1480	723	492	123	28	62	73
13	39	50	430	189	1040	1580	690	472	126	26	84	124
14	39	67	365	175	1150	1540	605	429	130	41	83	118
15	38	87	292	175	1160	1450	520	386	123	39	74	89
16	39	89	264	180	1020	1320	492	357	105	40	63	120
17	39	95	224	184	1000	1020	468	324	73	34	61	699
18	39	105	199	208	1040	839	501	314	64	29	54	242
19	40	148	193	247	1080	794	712	309	60	27	46	143
20	42	142	184	300	1110	767	937	295	64	27	35	147
21	43	139	181	338	979	707	947	285	67	33	36	113
22	43	118	178	338	819	735	787	290	62	51	37	86
23	43	112	184	314	776	812	680	290	50	95	38	74
24	42	101	252	290	725	777	658	304	53	425	62	79
25	42	89	320	285	768	1060	787	333	43	238	64	94
26	41	85	304	276	827	1450	904	372	45	153	142	105
27	42	85	280	266	831	1570	883	386	42	97	363	128
28	43	83	244	256	743	1570	819	367	40	88	250	273
29	44	71	224	252	---	1650	776	362	41	83	236	591
30	48	73	211	300	---	1900	680	352	41	81	219	706
31	50	---	202	616	---	2000	---	335	---	55	235	---
TOTAL	1430	2398	8356	7065	34463	39779	26047	12485	4064	2048	3793	5005
MEAN	46.1	79.9	270	228	1231	1283	868	403	135	66.1	122	167
MAX	64	148	1380	616	4890	2310	2160	616	351	425	363	706
MIN	38	50	108	103	520	676	468	285	40	19	35	42
AC-FT	2840	4760	16570	14010	68360	78900	51660	24760	8060	4060	7520	9930

CAL YR 1982	TOTAL	61967	MEAN	170	MAX	1380	MIN	21	AC-FT	122900
WTR YR 1983	TOTAL	146933	MEAN	403	MAX	4890	MIN	19	AC-FT	291400

GILA RIVER BASIN

09432000 GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN, NM

LOCATION.--Lat 32°38'53", long 108°50'43", in SE¼SW¼ sec.18, T.19 S., R.19 W., Grant County, Hydrologic Unit 15040002, on left bank at head of canyon, 1.4 mi downstream from Blue Creek, 10 mi east of Virden, and 16 mi upstream from New Mexico-Arizona State line.

DRAINAGE AREA.--3,203 mi², excluding Animas River basin.

PERIOD OF RECORD.--May to November 1914, March to September 1915, July 1927 to current year. July 1927 to May 1931 monthly discharge only, published in WSP 1313, computed as sum of flow at Virden Bridge, 9 mi downstream, and in Sunset Canal. Published as "Gila River near Duncan, Ariz.," 1914-15 and as "Gila River at Fuller's Ranch, near Duncan, Ariz.," 1931-38.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1929, 1931-32(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,875 ft, from river-profile map. May 11, 1914, to Sept. 30, 1915, at site 6 mi downstream, 1,000 ft upstream from intake of Sunset Canal. June 1 to July 7, 1931, non-recording gage at present site and datum. Since April 18, 1980, supplementary gage on left bank 800 ft downstream at same datum. Since June 1980, crest-stage gages at supplementary gage site.

REMARKS.--Records good except those above 1,500 ft³/s, which are fair. Station is above all Duncan Valley diversions. Diversions for irrigation of about 6,200 acres above station.

AVERAGE DISCHARGE.--56 years (water years 1928-83), 187 ft³/s, 135,500 acre-ft/yr; median of yearly mean discharges, 140 ft³/s, 101,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,700 ft³/s Dec. 19, 1978, gage height, 29.00 ft, from rating curve extended above 38,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 1 ft³/s July 14, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,900 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 4	0330	*5,870	11.89
Mar. 5	1700	2,300	6.15

Minimum daily, 26 ft³/s July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	58	158	211	884	709	1760	716	352	62	94	123
2	68	58	176	201	786	730	1850	688	349	60	108	120
3	68	64	191	196	735	849	1560	606	346	58	159	105
4	66	66	184	186	4690	1210	1490	534	329	51	233	83
5	64	69	179	174	2800	2070	1340	458	298	59	180	71
6	58	70	169	172	1510	1800	1190	422	264	60	149	64
7	54	73	165	160	1320	1620	1040	434	242	45	117	58
8	42	77	162	153	1250	1560	941	438	228	47	103	59
9	38	82	187	160	1320	1470	821	446	203	46	90	56
10	37	84	508	172	1250	1440	723	474	188	44	124	78
11	36	84	880	172	1150	1480	702	510	172	45	86	66
12	33	81	737	174	994	1520	737	510	166	40	73	68
13	32	77	552	176	948	1630	751	486	162	40	72	76
14	33	77	430	177	986	1630	688	450	162	35	84	80
15	34	108	332	179	1030	1560	606	390	157	30	79	89
16	37	113	284	181	948	1450	522	346	144	30	73	83
17	42	118	248	182	898	1290	478	314	132	30	65	321
18	40	121	220	184	905	1130	458	302	118	28	62	172
19	46	158	228	194	912	1050	552	296	111	26	54	128
20	46	172	203	210	970	994	758	278	102	28	47	106
21	46	174	201	230	891	891	905	272	102	32	43	109
22	47	165	199	240	779	849	849	270	99	58	39	97
23	48	158	199	238	723	891	793	268	90	110	36	90
24	47	150	211	226	702	898	765	281	85	154	37	86
25	45	147	258	218	730	1090	814	302	79	190	48	89
26	46	140	272	216	765	1440	912	338	74	137	72	97
27	46	136	260	211	779	1480	956	402	71	123	137	108
28	47	130	250	208	758	1430	912	398	66	160	144	144
29	57	124	236	206	---	1470	877	386	64	157	135	274
30	57	116	222	289	---	1530	800	378	65	275	127	358
31	57	---	220	618	---	1600	---	350	---	112	128	---
TOTAL	1482	3250	8721	6514	32413	40761	27550	12743	5020	2372	2998	3458
MEAN	47.8	108	281	210	1158	1315	918	411	167	76.5	96.7	115
MAX	68	174	880	618	4690	2070	1850	716	352	275	233	358
MIN	32	58	158	153	702	709	458	268	64	26	36	56
AC-FT	2940	6450	17300	12920	64290	80850	54650	25280	9960	4700	5950	6860

CAL YR 1982	TOTAL	66257	MEAN 182	MAX 920	MIN 25	AC-FT 131400
WTR YR 1983	TOTAL	147282	MEAN 404	MAX 4690	MIN 26	AC-FT 292100

09442000 GILA RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 32°57'57", long 109°18'35", in NE¼SE¼ sec.25, T.5 S., R.29 E., Greenlee County, Hydrologic Unit 15040002, on right bank 60 ft upstream from bridge on county road, 6 mi upstream from San Francisco River, and 6 mi south of Clifton. Prior to Feb. 6, 1979, at site 500 ft downstream.

DRAINAGE AREA.--4,010 mi².

PERIOD OF RECORD.--November 1910 to July 1918 (published as "at Guthrie"), October 1927 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1059: 1911-12, 1915, 1917. WSP 1179: 1929(M), 1934(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,336.38 ft National Geodetic Vertical Datum of 1929 (adjusted). Nov. 6, 1910, to July 11, 1918, non-recording gage or water-stage recorder at two sites about 6 mi upstream at Guthrie at different datums. March 1928 to June 1948 water-stage recorder at present site at datum 0.91 ft lower. June 1948 to Oct. 17, 1967, water-stage recorder at site 0.2 mi upstream at datum 3.12 ft higher. Oct. 18, 1967, to June 23, 1974, Apr. 10, 1978, to Feb. 6, 1979, at site 500 ft downstream at datum 0.44 ft higher. June 24, 1974 to Apr. 9, 1978, at present site and datum.

REMARKS.--Records good. Diversions for irrigation of about 14,300 acres above station. Station is below all Duncan Valley diversions.

AVERAGE DISCHARGE.--62 years (water years 1912-17, 1928-83), 191 ft³/s, 138,400 acre-ft/yr; median of yearly mean discharges, 140 ft³/s, 101,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft³/s Dec. 19, 1978, gage height, 23.80 ft, from rating curve extended above 28,000 ft³/s; minimum daily, 5 ft³/s Aug. 24, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 4	1630	*4,980	8.00	Sept. 29	2100	**8,480	9.70
Sept. 27	1900	3,950	7.42				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."
Minimum daily, 31 ft³/s Oct. 20-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	35	420	185	441	610	1640	600	306	52	126	74
2	50	36	155	178	487	570	1800	540	303	53	114	67
3	51	36	149	170	460	630	1690	480	297	48	121	62
4	51	37	157	166	3160	760	1410	450	294	46	118	62
5	53	42	155	159	3240	1460	1270	400	282	44	159	55
6	50	45	151	147	1820	1910	1170	410	255	42	134	49
7	46	48	144	144	1460	1510	1030	420	231	42	114	48
8	42	50	136	134	1170	1400	904	430	207	46	104	46
9	39	62	144	131	1070	1290	808	440	194	67	94	46
10	37	61	294	133	1130	1190	742	450	178	39	81	46
11	36	61	529	136	968	1180	675	470	168	39	83	83
12	36	60	706	134	820	1180	685	450	149	50	83	62
13	36	60	460	136	760	1290	706	420	138	46	93	62
14	34	60	369	138	754	1360	690	400	123	41	71	72
15	34	56	306	134	820	1360	650	380	120	39	70	62
16	34	68	276	138	820	1310	605	360	109	38	67	62
17	34	79	246	142	760	1200	555	340	106	36	60	62
18	35	109	222	138	766	1020	526	320	101	36	52	156
19	34	86	204	138	796	947	512	303	91	34	49	110
20	31	104	192	149	826	892	600	294	86	36	46	94
21	31	117	187	163	844	862	700	285	79	38	42	72
22	31	120	178	174	766	826	670	273	70	486	39	69
23	31	120	181	183	706	814	640	267	71	81	37	68
24	33	115	183	181	675	820	600	261	72	83	41	76
25	33	112	192	172	660	934	718	264	70	135	43	69
26	34	117	249	168	665	1210	760	276	67	199	45	65
27	32	122	249	157	665	1340	820	312	60	200	57	329
28	32	118	234	151	655	1390	780	335	57	122	74	94
29	34	114	217	142	---	1390	700	350	53	190	96	881
30	34	114	209	183	---	1430	640	350	52	748	92	732
31	34	---	194	312	---	1550	---	323	---	196	84	---
TOTAL	1170	2364	7688	4916	28164	35635	25696	11653	4389	3352	2489	3835
MEAN	37.7	78.8	248	159	1006	1150	857	376	146	108	80.3	128
MAX	53	122	706	312	3240	1910	1800	600	306	748	159	881
MIN	31	35	136	131	441	570	512	261	52	34	37	46
AC-FT	2320	4690	15250	9750	55860	70680	50970	23110	8710	6650	4940	7610

CAL YR 1982	TOTAL	53520	MEAN 147	MAX 1030	MIN 16	AC-FT 106200
WTR YR 1983	TOTAL	131351	MEAN 360	MAX 3240	MIN 31	AC-FT 260500

GILA RIVER BASIN

09442680 SAN FRANCISCO RIVER NEAR RESERVE, NM

LOCATION.--Lat 33°44'12", long 108°46'14", in NE¼NW¼SE¼ sec.35, T.6 S., R.19 W., Catron County, Hydrologic Unit 15040004, on left bank 1,300 ft downstream from Rainbow Bridge Canyon, 1.7 mi northwest of Reserve, and at mile 563.1.

DRAINAGE AREA.--350 mi², approximately.

PERIOD OF RECORD.--March 1959 to current year.

REVISED RECORDS.--WDR NM-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 5,820 ft, from topographic map. Prior to Dec. 15, 1972, at site 1,800 ft upstream at different datum.

REMARKS.--Records good. Possible minor regulation by Luna Lake, 27 mi upstream. Diversions for irrigation of about 280 acres above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--24 years, 25.5 ft³/s, 18,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s Oct. 20, 1972, gage height, 7.47 ft in gage well, 8.05 ft, from outside floodmarks, site and datum then in use, from rating curve extended above 9,000 ft³/s on basis of velocity-area study; maximum gage height, 9.40 ft, Nov. 25, 1978; minimum, 1.0 ft³/s Mar. 16, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, about 15 ft, as determined in 1962 from old floodmarks. Major floods of Nov. 26, 1905 and Dec. 3, 1906, exceeded 20,000 ft³/s at Alma (downstream). See WSP 1313.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 450 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0015	525	3.80	Sept. 21	1700	*998	3.92
Apr. 1	0215	921	3.88	Sept. 30	1315	**7,870	9.63

** Maximum discharge for 1984 water year, not independent of the peak discharge that occurred Oct. 1, 1983. See section "Hydrologic Conditions."
Minimum discharge, 1.8 ft³/s Oct. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	3.7	4.3	6.4	14	53	478	57	9.9	4.3	20	13
2	3.4	3.7	13	5.6	12	71	295	53	8.2	4.8	17	13
3	3.0	3.6	8.9	5.9	13	136	248	49	8.5	4.5	58	10
4	3.2	3.6	8.4	6.2	18	162	200	42	8.1	4.8	33	11
5	3.2	3.6	8.5	6.7	17	120	161	34	7.7	4.5	16	11
6	3.2	3.7	8.0	6.7	18	91	142	33	8.1	4.9	11	11
7	3.3	3.8	7.7	6.9	17	91	139	30	8.0	5.0	10	11
8	3.3	3.9	7.9	7.1	26	97	114	29	7.5	4.1	9.5	12
9	3.3	6.0	8.8	6.4	27	118	96	28	5.3	4.4	9.1	11
10	3.2	26	26	6.1	23	153	94	28	7.4	4.9	9.7	15
11	3.0	12	16	6.4	21	204	93	27	7.4	5.4	11	33
12	3.4	7.7	12	6.3	20	305	86	26	7.4	6.3	10	13
13	3.5	6.5	10	6.1	22	280	86	24	7.5	7.8	9.3	13
14	3.5	6.0	9.3	6.1	24	300	85	23	7.1	9.1	9.3	10
15	3.5	5.7	7.7	6.3	22	285	78	22	6.7	7.0	9.2	9.1
16	3.5	5.5	7.5	6.4	26	186	71	22	6.5	5.1	9.2	9.6
17	3.7	6.4	7.5	14	28	154	71	20	6.7	5.5	8.7	9.7
18	3.6	24	7.2	13	29	154	78	19	6.9	5.5	8.2	10
19	3.5	9.1	6.9	11	33	159	87	18	5.7	6.2	7.2	9.5
20	3.5	7.6	6.9	12	29	145	103	17	5.4	5.5	5.5	10
21	3.6	6.9	6.9	9.2	27	143	115	15	5.6	8.6	6.4	46
22	3.6	6.7	7.4	7.6	28	146	103	14	5.4	7.7	6.7	37
23	3.6	6.5	35	8.5	31	145	83	13	5.6	7.6	6.8	62
24	3.3	7.5	18	8.5	33	152	79	13	7.5	9.9	18	129
25	3.1	7.4	11	8.6	40	185	81	13	7.7	8.1	11	76
26	2.1	7.4	8.8	7.5	45	162	81	13	6.6	12	14	31
27	1.9	7.6	8.4	7.8	43	160	77	12	6.2	20	11	28
28	2.5	7.3	6.3	8.0	46	185	71	12	5.6	22	9.9	30
29	3.3	7.2	5.8	7.8	---	238	68	13	5.1	21	9.9	172
30	3.5	8.6	7.2	21	---	311	62	12	3.8	25	14	4300
31	3.6	---	7.1	18	---	399	---	11	---	37	16	---
TOTAL	101.5	225.2	353.1	264.1	732	5490	3625	742	205.1	288.5	404.6	5155.9
MEAN	3.27	7.51	11.4	8.52	26.1	177	121	23.9	6.84	9.31	13.1	172
MAX	3.7	26	43	21	46	399	478	57	9.9	37	58	4300
MIN	1.9	3.6	5.8	5.6	12	53	62	11	3.8	4.1	5.5	9.1
AC-FT	201	447	700	524	1450	10890	7190	1470	407	572	803	10230
CAL YR 1982	TOTAL	2420.8	MEAN	6.63	MAX	54	MIN	1.4	AC-FT	4800		
WTR YR 1983	TOTAL	17587.0	MEAN	48.2	MAX	4300	MIN	1.9	AC-FT	34880		

09443000 SAN FRANCISCO RIVER NEAR ALMA, NM

LOCATION.--Lat 33°22'05", long 108°54'35", in SW¼SE¼ sec.4, T.11 S., R.20 W., Catron County, Hydrologic Unit 15040004, on right bank 1.2 mi downstream from Alma, 4 mi northwest of Glenwood, 6 mi upstream from Whitewater Creek, and at mile 523.5.

DRAINAGE AREA.--1,546 mi².

PERIOD OF RECORD.--September 1904 to January 1914, fragmentary (see WSP 1313), January 1964 to current year. Prior to October 1911, published as "at Alma."

REVISED RECORDS.--WDR NM-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 4,842 ft, from topographic map. Prior to Aug. 11, 1912, nonrecording gages at various sites, within 500 ft of each other, 0.8 mi upstream, at different datums. Aug. 11, 1912, to Feb. 2, 1914, nonrecording gage at approximately present site and datum. Jan. 10, 1964, to Nov. 1, 1972, at datum 3.00 ft higher.

REMARKS.--Records good except those for June through September, which are poor. Diversions for irrigation of about 1,600 acres above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1965-83), 75.1 ft³/s, 54,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft³/s Oct. 20, 1972, gage height, 18.16 ft, present datum, from floodmarks in well, from rating curve extended above 9,000 ft³/s on basis of slope-area measurement of peak flow; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 60,000 ft³/s were computed at Clifton, AZ.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1445	1,130	5.21	Aug. 12	1915	*4,380	6.30
Feb. 4	1800	1,070	5.00	Sept. 30	----	**15,800	----
Mar. 25	0130	2,300	6.12				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."
No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	.00	281	21	351	265	1440	263	72	5.0	33	45
2	3.6	.00	84	19	195	325	1070	232	68	4.0	40	40
3	3.2	.00	39	16	184	439	907	197	54	3.8	100	35
4	3.6	.00	25	15	657	845	789	170	46	3.4	130	30
5	3.6	.00	21	15	401	695	657	161	35	3.0	150	25
6	3.6	.00	19	15	327	516	522	159	31	2.8	117	25
7	3.6	.00	18	15	317	438	436	162	20	2.6	82	25
8	3.2	.00	17	15	401	432	400	165	18	2.4	72	25
9	3.2	.00	135	15	436	461	337	179	14	2.2	75	24
10	3.9	43	655	14	323	529	323	190	12	2.0	70	30
11	3.9	59	367	14	226	635	345	192	11	3.0	141	35
12	3.6	26	159	14	206	760	339	184	10	3.0	200	40
13	2.4	18	95	13	198	732	335	165	10	4.0	300	45
14	.60	16	48	13	224	652	316	156	10	5.0	100	40
15	.40	15	32	13	215	668	305	129	9.0	4.0	60	35
16	.40	14	22	13	198	564	303	107	9.0	5.0	300	30
17	.40	15	18	16	198	454	312	96	8.0	4.0	100	25
18	.40	53	16	38	200	431	349	93	8.0	4.0	50	20
19	.00	24	14	40	216	468	439	95	8.0	6.0	40	15
20	.00	17	13	40	219	503	507	85	7.0	10	30	18
21	.00	15	13	42	197	502	502	82	7.0	20	22	16
22	.00	14	12	36	189	547	475	77	6.0	20	12	34
23	.00	14	81	32	189	544	380	77	7.0	22	20	144
24	.00	14	182	32	202	502	363	87	7.0	21	25	168
25	.00	14	82	31	228	1260	394	94	6.0	20	30	261
26	.00	14	62	29	263	860	418	93	5.0	20	40	196
27	.00	14	50	28	258	759	376	87	5.0	20	40	215
28	.00	15	39	28	240	810	344	85	6.0	21	40	143
29	.00	15	26	28	---	1040	318	89	7.0	20	42	156
30	.00	18	24	223	---	1210	294	84	6.0	24	40	2100
31	.00	---	23	487	---	1510	---	76	---	28	44	---
TOTAL	47.80	447.00	2672	1370	7458	20356	14295	4111	522.0	315.2	2545	4040
MEAN	1.54	14.9	86.2	44.2	266	657	477	133	17.4	10.2	82.1	135
MAX	4.2	59	655	487	657	1510	1440	263	72	28	300	2100
MIN	.00	.00	12	13	184	265	294	76	5.0	2.0	12	15
AC-FT	95	887	5300	2720	14790	40380	28350	8150	1040	625	5050	8010

CAL YR 1982 TOTAL 8945.87 MEAN 24.5 MAX 655 MIN .00 AC-FT 17740
WTR YR 1983 TOTAL 58179.00 MEAN 159 MAX 2100 MIN .00 AC-FT 115400

GILA RIVER BASIN

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, NM

LOCATION.--Lat 33°14'48", long 108°52'47", in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, Hydrologic Unit 15040004, on left bank 0.2 mi upstream from hot springs, 5 mi south of Glenwood, 6 mi downstream from Whitewater Creek, and at mile 511.5.

DRAINAGE AREA.--1,653 mi².

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1213: 1931, 1934, 1936-37, 1940-42, 1943-44(M), 1945-47. WSP 1283: Drainage area. WDR NM-78-1: 1977. WDR NM-79-1: 1973, 1975-77 (P).

GAGE.--Water-stage recorder. Altitude of gage is 4,560 ft, from topographic map; prior to Feb. 15, 1934, at site 4.5 mi upstream at datum 98.82 ft higher.

REMARKS.--Records good. Diversions for irrigation of about 2,000 acres above station. Gage height satellite telemeter at station.

AVERAGE DISCHARGE.--56 years, 76.6 ft³/s, 55,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft³/s, Oct. 20, 1972, gage height, 16.61 ft, from rating curve extended above 6,500 ft³/s on basis of slope-area measurements at gage heights, 10.74 ft and 15.6 ft; minimum, 1.5 ft³/s Aug. 6, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 60,000 ft³/s or greater were computed for station at Clifton, AZ. On Nov. 26, 1905, a peak of 25,000 ft³/s was measured (by float-area method) at station at Alma (about 12 mi upstream, drainage area, 1,560 mi²); a similar measurement of 21,000 ft³/s was made at the Alma station for peak of Dec. 3, 1906.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 800 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1600	1,370	4.49	Mar. 25	0415	2,540	5.77
Feb. 4	2245	1,160	4.00	Aug. 17	2000	*2,900	6.09
Mar. 12	1745	894	3.91	Sept. 30	----	**10,800	----

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983.
See section "Hydrologic Conditions."
Minimum discharge, 14 ft³/s Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	19	328	48	400	415	1460	432	199	29	67	59
2	15	19	150	44	264	455	1080	400	191	28	70	53
3	16	20	77	42	215	650	843	355	172	27	93	47
4	17	20	53	40	714	850	767	309	147	28	96	41
5	18	20	46	39	544	600	651	299	133	28	103	33
6	20	19	40	38	406	500	535	300	123	29	81	32
7	21	18	37	38	406	440	445	299	111	26	62	31
8	22	19	34	38	495	410	400	297	109	25	61	30
9	22	23	137	38	613	460	345	319	102	24	54	31
10	21	41	702	37	480	488	329	337	87	24	54	28
11	22	116	491	37	378	574	353	332	80	28	52	26
12	21	63	211	37	347	728	359	317	71	29	89	38
13	21	43	127	36	341	766	353	293	64	29	157	58
14	19	39	87	36	383	711	332	276	56	28	79	46
15	17	40	60	35	375	694	316	242	51	25	62	44
16	17	38	44	35	341	616	310	212	49	25	54	41
17	20	37	36	37	344	453	315	196	51	24	409	37
18	19	104	32	52	356	400	369	192	48	27	127	35
19	18	76	29	60	381	464	465	184	44	28	48	34
20	18	52	27	64	399	502	573	177	43	27	42	34
21	17	43	25	67	358	519	593	172	41	24	39	35
22	17	39	25	64	342	559	545	171	41	36	36	35
23	17	36	50	57	351	603	498	182	41	42	33	59
24	19	38	240	56	373	584	507	206	38	43	35	66
25	20	38	150	55	395	1290	579	239	40	43	37	99
26	19	38	105	52	430	817	627	253	39	43	41	71
27	19	36	85	51	427	687	589	245	36	55	46	101
28	20	34	71	51	401	696	540	233	33	48	45	94
29	20	35	58	50	---	892	498	219	28	49	47	114
30	20	37	52	127	---	1110	462	215	30	55	46	4670
31	20	---	51	490	---	1350	---	209	---	58	46	---
TOTAL	589	1200	3660	1951	11259	20283	16038	8112	2298	1034	2311	6122
MEAN	19.0	40.0	118	62.9	402	654	535	262	76.6	33.4	74.5	204
MAX	22	116	702	490	714	1350	1460	432	199	58	409	4670
MIN	15	18	25	35	215	400	310	171	28	24	33	26
AC-FT	1170	2380	7260	3870	22330	40230	31810	16090	4560	2050	4580	12140
CAL YR 1982	TOTAL	17773	MEAN	48.7	MAX	702	MIN	13	AC-FT	35250		
WTR YR 1983	TOTAL	74857	MEAN	205	MAX	4670	MIN	15	AC-FT	148500		

GILA RIVER BASIN

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09444200 BLUE RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 33°17'27", long 109°11'44", in sec.6, T.2 S., R.31 E. (unsurveyed), Greenlee County, Hydrologic Unit 15040004, in Apache National Forest, on right bank 0.1 mi downstream from county road crossing, 0.9 mi upstream from Clear Creek, 8 mi upstream from mouth, and 17 mi northeast of Clifton.

DRAINAGE AREA.--506 mi².

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,160 ft, from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years (water years 1969-83), 75.6 ft³/s, 54,770 acre-ft/yr; median of yearly mean discharges, 39 ft³/s, 28,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s Oct. 20, 1972, gage height, 22.56 ft, from rating curve extended above 960 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.4 ft³/s Oct. 18-20, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 800 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0015	1,970	9.07	Mar. 19	1800	824	7.53
Dec. 23	1745	928	7.68	Mar. 25	0115	1,730	8.77
Jan. 30	1830	1,240	8.17	Mar. 31	0915	922	7.67
Feb. 4	1645	1,110	7.97	July 27	1645	*2,040	9.16
Mar. 3	2130	1,340	8.30	Sept. 30	1200	**7,300	13.68

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 1, 1983.
See section "Hydrologic Conditions."
Minimum daily, 1.8 ft³/s Oct. 2-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	4.5	464	67	427	274	900	360	86	12	39	25
2	1.8	4.5	116	60	276	299	734	340	79	11	34	11
3	1.8	4.7	72	56	394	641	689	330	73	10	46	10
4	1.8	5.1	53	53	715	999	589	320	64	9.1	67	8.6
5	1.8	5.1	46	51	543	791	550	310	62	8.8	43	7.6
6	1.8	5.2	41	49	448	582	550	300	55	8.8	46	6.7
7	1.8	5.2	40	54	373	524	540	290	50	7.8	31	6.3
8	1.9	5.5	37	49	413	475	530	280	50	9.1	26	6.9
9	1.9	14	423	49	437	462	530	260	50	8.3	43	6.5
10	2.0	104	1010	47	370	470	530	250	50	19	14	7.8
11	2.0	22	465	47	311	524	520	240	45	28	55	8.8
12	2.0	9.2	242	46	297	604	500	220	40	29	71	8.1
13	2.1	7.5	190	46	299	593	490	210	30	110	29	24
14	2.1	6.9	140	45	324	564	480	200	30	91	27	23
15	2.2	6.8	120	44	297	557	470	190	30	90	55	9.3
16	2.3	6.8	100	44	285	447	460	170	25	85	35	7.6
17	2.3	84	83	117	296	372	450	160	25	71	70	15
18	2.4	152	68	162	290	383	430	150	20	61	64	22
19	2.5	37	63	122	309	713	420	140	20	98	35	14
20	2.5	25	60	136	285	542	410	122	20	42	32	11
21	2.8	22	58	126	259	500	391	115	20	34	31	10
22	2.8	20	56	102	251	464	353	116	20	139	30	10
23	3.1	18	301	93	252	450	344	128	20	52	30	20
24	3.1	32	345	88	266	476	369	142	15	35	155	35
25	3.2	28	198	85	299	1210	414	147	15	57	50	43
26	3.5	23	150	80	318	763	428	139	15	92	22	29
27	3.5	23	122	77	286	652	420	132	10	441	22	27
28	3.9	21	106	82	271	617	400	124	10	228	31	21
29	4.2	19	85	79	---	641	390	115	10	80	17	246
30	4.3	82	81	662	---	683	370	107	8.8	179	26	4370
31	4.5	---	75	707	---	826	---	92	---	56	44	---
TOTAL	79.9	803.0	5410	3525	9591	18098	14651	6199	1047.8	2201.9	1320	5050.2
MEAN	2.58	26.8	175	114	343	584	488	200	34.9	71.0	42.6	168
MAX	4.5	152	1010	707	715	1210	900	360	86	441	155	4370
MIN	1.8	4.5	37	44	251	274	344	92	8.8	7.8	14	6.3
AC-FT	158	1590	10730	6990	19020	35900	29060	12300	2080	4370	2620	10020
CAL YR 1982	TOTAL	19419.5	MEAN	53.2	MAX	1010	MIN	1.8	AC-FT	38520		
WTR YR 1983	TOTAL	67976.8	MEAN	186	MAX	4370	MIN	1.8	AC-FT	134800		

GILA RIVER BASIN

09444500 SAN FRANCISCO RIVER AT CLIFTON, AZ

LOCATION.--Lat 33°02'58", long 109°17'43", in SW¼SE¼ sec.30, T.4 S., R.30 E., Greenlee County, Hydrologic Unit 15040004, on downstream side of right pier at Railroad Boulevard Bridge (U.S. Highway 666), at Clifton, 9.9 mi upstream from mouth.

DRAINAGE AREA.--2,766 mi².

PERIOD OF RECORD.--October 1910 to March 1911, July 1911 to June 1912, September 1912, November 1912 to March 1913, May 1913 to July 1918, July 1927 to current year. Monthly discharge only for some periods, published in WSP 1313. Published as "San Francisco River at dam above Clifton" in 1911 and under both names in 1912.

REVISED RECORDS.--WSP 1049: 1911, 1913-15, 1917. WSP 1283: Drainage area. WSP 1313: 1927-30(M), 1932(M), 1934(M). WRD Ariz. 1972: 1917(M).

GAGE.--Water-stage recorder. Datum of gage is 3,436.16 ft, National Geodetic Vertical Datum of 1929. See WSP 1713 or 1733 for history of changes prior to Apr. 7, 1959. Apr. 7, 1959, to Mar. 23, 1961, at site 1,140 ft downstream at datum 5.37 ft lower. July 18, 1980 to July 28, 1983, supplementary water-stage recorder 0.4 mi upstream on right bank at same datum and June 15, 1981 to Sept. 30, 1983, crest-stage gages at site. Since Aug. 4, 1983, supplementary water-stage recorder on right bank at main gage site at same datum.

REMARKS.--Records good. Diversions for mining, municipal use, and for irrigation of about 2,700 acres above station.

AVERAGE DISCHARGE.--59 years (water years 1914-15, 1917, 1928-83) 202 ft³/s, 146,300 acre-ft/yr; median of yearly mean discharges, 130 ft³/s, 94,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,000 ft³/s Oct. 20, 1972, gage height, 17.0 ft, from high-water mark, from rating curve extended above 30,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 6.1 ft³/s June 21, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0600	2,940	4.92	Feb. 4	0200	4,600	6.00
Dec. 10	1600	4,150	5.80	Mar. 25	0600	*6,060	a15.2
Jan. 30	2130	2,020	4.80	Sept. 30	--	**17,200	--

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."

Minimum daily, 35 ft³/s Oct. 6.

a At supplementary gage.

GILA RIVER BASIN

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09444500 SAN FRANCISCO RIVER AT CLIFTON, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	44	1280	158	1200	610	2640	862	355	55	139	107
2	40	44	651	152	854	666	2200	790	340	50	120	109
3	38	37	365	136	923	953	1890	694	322	53	119	100
4	36	36	239	134	3770	1940	1710	592	279	50	213	92
5	36	39	192	126	2470	1940	1360	532	246	50	190	80
6	35	44	167	124	1630	1640	1180	544	220	53	166	68
7	38	44	155	121	1410	1340	1050	544	206	56	144	67
8	39	46	139	129	1390	1140	1000	544	185	59	128	71
9	40	56	961	126	1530	1060	894	580	161	58	162	70
10	36	103	2660	126	1180	1110	806	624	158	53	134	65
11	36	289	2110	126	937	1160	822	631	139	113	140	80
12	41	134	1020	121	774	1370	846	610	121	83	150	90
13	39	97	694	119	701	1640	822	556	119	71	279	103
14	40	78	502	117	701	1620	782	514	114	83	223	141
15	40	71	370	114	687	1540	729	455	112	74	150	122
16	38	68	279	114	631	1380	701	405	110	73	130	121
17	36	68	220	121	604	1100	694	375	110	66	117	108
18	38	446	185	395	598	937	758	380	100	59	357	159
19	39	176	161	322	624	1260	919	355	100	63	162	133
20	38	119	147	345	631	1440	1060	336	90	83	112	94
21	38	93	139	385	586	1360	1110	331	90	73	92	88
22	38	89	134	300	550	1310	1060	318	85	99	72	85
23	37	85	136	250	538	1330	991	336	80	136	62	82
24	38	83	738	220	550	1330	964	385	74	97	146	152
25	38	103	598	209	604	4040	1040	430	71	99	126	193
26	39	93	400	196	680	2600	1110	465	62	97	88	223
27	39	91	305	176	680	1830	1090	445	53	310	89	218
28	40	87	250	173	624	1790	1040	430	59	376	91	220
29	42	81	213	185	---	1820	991	415	58	189	93	370
30	44	85	182	774	---	1970	919	390	59	328	210	10500
31	44	---	176	1610	---	2300	---	370	---	196	117	---
TOTAL	1201	2929	15768	7704	28057	47526	33178	15238	4278	3305	4521	14111
MEAN	38.7	97.6	509	249	1002	1533	1106	492	143	107	146	470
MAX	44	446	2660	1610	3770	4040	2640	862	355	376	357	10500
MIN	35	36	134	114	538	610	694	318	53	50	62	65
AC-FT	2380	5810	31280	15280	55650	94270	65810	30220	8490	6560	8970	27990
CAL YR 1982	TOTAL	52952	MEAN	145	MAX	2660	MIN	19	AC-FT	105000		
WTR YR 1983	TOTAL	177816	MEAN	487	MAX	10500	MIN	35	AC-FT	352700		

GILA RIVER BASIN

09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 33°01'33", long 109°18'06", in NE¼NW¼ sec.6, T.5 S., R.30 E., Greenlee County, Hydrologic Unit 15040004, 0.9 mi downstream from Clifton sewage treatment facility, 1.2 mi south of Clifton, and 7.7 mi upstream from mouth.

DRAINAGE AREA.--2,770 mi², approximately.

PERIOD OF RECORD.--January 1976 to September 1979, October 1980 to current year.

REMARKS.--Streamflow ungaged. Gaging station 09444500 San Francisco River at Clifton located 2.2 mi upstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 06...	1230	35	1900	8.1	31.0	22.5	7.8	--	--	21	27
NOV 08...	1230	43	1650	7.8	20.0	14.0	9.2	683	100	<10	21
DEC 06...	1200	160	910	8.6	18.0	10.5	10.2	688	102	24	48
JAN 10...	1200	125	900	8.0	14.0	9.5	10.0	689	97	<10	K5
FEB 10...	1130	1160	340	7.9	11.0	8.0	10.6	686	100	35	K4
MAR 08...	1200	1130	288	8.1	18.0	11.0	10.0	684	101	32	K7
APR 06...	1130	1000	314	8.5	9.0	8.0	10.6	685	100	37	K29
MAY 18...	1030	382	470	8.2	31.0	16.0	10.2	774	102	16	20
JUN 14...	1100	117	920	7.3	30.0	21.0	7.7	667	99	--	K12
JUL 12...	1300	84	1030	7.5	33.0	29.0	6.2	689	90	--	K7600
AUG 09...	1100	105	1020	7.4	38.0	29.0	7.2	689	104	120	--
SEP 14...	1130	164	680	8.0	34.0	25.0	7.0	690	94	190	11000

DATE	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CaCO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)
OCT 06...	310	140	100	14	--	--	--	--	2.6	31	--
NOV 08...	280	110	89	13	210	6	13	--	5.0	31	420
DEC 06...	210	48	62	13	--	--	--	--	.8	27	--
JAN 10...	210	46	63	13	--	--	--	--	3.2	28	--
FEB 10...	140	58	38	11	21	.8	2.4	--	2.0	79	24
MAR 08...	120	24	34	9.2	--	--	--	--	1.5	40	--
APR 06...	110	8	31	7.9	--	--	--	--	.6	24	--
MAY 18...	130	27	37	8.2	48	2	3.2	99	1.2	23	73
JUN 14...	170	52	53	9.5	--	--	--	120	12	31	--
JUL 12...	190	81	59	10	--	--	--	108	6.6	31	--
AUG 09...	200	55	62	12	120	4	7.7	150	12	28	220
SEP 14...	160	0	49	9.6	--	--	--	170	3.3	25	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS PO4)	PHOS- PHORUS, TOTAL (MG/L AS P)
OCT 06...	--	--	1070	--	1.5	18	--	--	--	--	--
NOV 08...	.90	40	962	920	1.3	7	<.10	<.10	.40	.18	.060
DEC 06...	--	--	505	--	.69	76	--	--	--	--	--
JAN 10...	--	--	574	--	.78	10	--	--	--	--	--
FEB 10...	.50	33	251	260	.34	330	.20	.15	.70	2.0	.660
MAR 08...	--	--	221	--	.30	23	--	--	--	--	--
APR 06...	--	--	196	--	.27	424	--	--	--	--	--
MAY 18...	.40	33	277	290	.38	98	<.10	<.10	.50	.40	.130
JUN 14...	--	--	527	--	.72	6	--	--	--	--	--
JUL 12...	--	--	660	--	.90	1200	--	--	--	--	--
AUG 09...	.70	40	598	580	.81	196	.20	.15	1.0	1.2	.390
SEP 14...	--	--	409	--	.56	5030	--	--	--	--	--

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 06...	--	--	--	<1	10	--	4	--	33	39	3.7
NOV 08...	.070	.21	130	<1	<10	6	1	49	16	10	1.2
DEC 06...	--	--	--	<1	10	--	1	--	7	96	41
JAN 10...	--	--	--	<1	40	--	2	--	5	20	6.8
FEB 10...	.010	.03	20	9	*10000	<3	1	*280	600	753	2360
MAR 08...	--	--	--	*14	*3700	--	<1	--	150	994	3030
APR 06...	--	--	--	2	60	--	<1	--	12	--	--
MAY 18...	.090	.28	30	<1	20	20	<1	5	6	102	105
JUN 14...	--	--	--	<1	<10	--	1	--	10	18	5.7
JUL 12...	--	--	--	2	170	--	<1	--	29	2000	454
AUG 09...	.090	.28	80	1	120	10	1	12	70	233	66
SEP 14...	--	--	--	<1	200	--	1	--	25	4080	1810

< Actual value is known to be less than value shown.
 * Value verified.

GILA RIVER BASIN

09445000 WILLOW CREEK DIVERSION FROM BLACK RIVER, NEAR MORENCI, AZ

LOCATION.--Lat 33°24'46", long 109°43'08", in SW¼ sec.23, T.1 N., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, on left bank just downstream from end of diversion pipeline, 3.6 mi northeast of Point of Pines, 5.0 mi southeast of pumping plant on Black River, and 29 mi northwest of Morenci.

PERIOD OF RECORD.--April 1945 to current year.

GAGE.--Water-stage recorder and steel-edged rectangular weir. Datum of gage is 5,957.16 ft, National Geodetic Vertical Datum of 1929. Prior to June 26, 1946, at end of pipeline at that time, 3.5 mi upstream at datum about 50 ft higher.

REMARKS.--Records excellent. The entire flow consists of Black River (head of Salt River) water which is pumped into headwater of Willow Creek (tributary of Eagle Creek) for industrial and municipal supply in vicinity of Morenci.

AVERAGE DISCHARGE.--38 years, 11.1 ft³/s, 8,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s May 18, 19, 21-26, 1970; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	.00	22	21	23	16	19	22	24	24	24
2	24	23	.00	21	22	23	21	19	23	23	24	24
3	24	23	.00	21	23	20	21	19	23	24	24	24
4	24	23	.00	23	23	21	22	20	23	24	24	24
5	24	23	9.7	23	23	20	22	21	23	24	24	24
6	24	23	17	23	11	22	21	21	23	24	24	24
7	24	23	17	23	.00	22	20	22	23	24	24	24
8	23	23	17	23	.00	22	22	22	23	22	17	24
9	23	23	13	23	13	22	22	22	23	22	.00	24
10	23	23	5.3	23	18	22	22	22	23	23	6.4	23
11	23	17	4.4	23	17	21	22	22	22	23	16	23
12	23	16	5.0	23	17	20	13	22	23	23	17	24
13	23	17	12	23	17	20	8.8	22	23	24	17	24
14	23	17	20	23	17	19	21	22	23	24	16	24
15	23	17	21	23	17	20	22	22	23	24	17	24
16	23	17	22	23	17	21	23	21	23	24	17	24
17	23	17	23	21	17	21	23	21	23	24	17	24
18	23	17	18	20	20	22	22	13	23	24	17	24
19	23	17	22	22	14	1.2	22	21	23	24	17	24
20	23	17	23	15	21	.00	22	21	23	24	21	23
21	23	17	23	22	23	.00	22	21	21	24	24	24
22	23	17	23	20	23	.00	22	22	21	24	24	24
23	23	17	23	23	23	5.3	22	22	22	24	24	24
24	22	17	21	23	22	20	22	22	23	24	24	24
25	20	17	11	23	20	12	22	22	24	24	24	24
26	23	17	.00	23	22	2.8	22	22	23	24	24	23
27	23	17	.00	23	23	20	21	23	24	24	24	24
28	23	17	15	23	23	21	22	23	24	23	24	23
29	23	17	16	23	---	22	20	23	24	22	24	22
30	23	15	22	11	---	18	20	22	24	23	24	13
31	23	---	22	13	---	20	---	22	---	24	24	---
TOTAL	713	566	425.40	668	507.00	523.30	622.8	658	688	732	627.40	702
MEAN	23.0	18.9	13.7	21.5	18.1	16.9	20.8	21.2	22.9	23.6	20.2	23.4
MAX	24	23	23	23	23	23	23	23	24	24	24	24
MIN	20	15	.00	11	.00	.00	8.8	13	21	22	.00	13
AC-FT	1410	1120	844	1320	1010	1040	1240	1310	1360	1450	1240	1390
CAL YR 1982	TOTAL	4054.80	MEAN	11.1	MAX	24	MIN	.00	AC-FT	8040		
WTR YR 1983	TOTAL	7432.90	MEAN	20.4	MAX	24	MIN	.00	AC-FT	14740		

GILA RIVER BASIN

09447000 EAGLE CREEK ABOVE PUMPING PLANT, NEAR MORENCI, AZ

LOCATION.--Lat 33°04'18", long 109°27'10", in SE¼NE¼ sec.22, T.4 S., R.28 E., Greenlee County, Hydrologic Unit 15040005, on left bank 3 mi upstream from Phelps Dodge Corp. pumping plant, 5 mi west of Morenci, and 13 mi upstream from mouth.

DRAINAGE AREA.--613 mi².

PERIOD OF RECORD.--April 1944 to current year.

REVISED RECORDS.--WSP 1850-C: 1966.

GAGE.--Water-stage recorder. Datum of gage is 3,701 ft unadjusted. Jan. 30, 1978 to Sept. 1, 1980, water-stage recorder, Parshall flume and weir 200 ft downstream at same datum. April 1944 to Jan. 30, 1978, Sept. 1, 1980 to July 31, 1981, at site 1,200 ft downstream at datum 6.37 ft lower.

Nov. 4, 1980 to Aug. 1, 1981, supplementary water-stage recorder at present site and datum. Nov. 15, 1952 to Nov. 4, 1980, supplementary water-stage recorder 1,100 ft downstream on right bank at datum 6.37 ft lower. Aug. 23, 1950 to Nov. 15, 1952, supplementary water-stage recorder at site 1,300 ft downstream at different datum.

REMARKS.--Records good below 100 ft³/s and poor above. Diversions above station for irrigation of about 500 acres, mostly above Willow Creek. Water from Black River was pumped into Eagle Creek basin, 52 mi upstream from this station, for the entire year (see sta 09445000) and water was pumped from wells into Eagle Creek near Double Circle Ranch below Willow Creek for 7 months. The monthly quantities pumped are shown in table below. Diversion by pumping for industrial and municipal use in and near Morenci and Clifton are made from Eagle Creek, 3 mi downstream from this station and from San Francisco River near Clifton. Monthly quantities diverted are shown in the table below; 98 percent of the pumpage was from Eagle Creek.

AVERAGE DISCHARGE (unadjusted).--39 years, 54.4 ft³/s, 39,410 acre-ft/yr; median of yearly mean discharges, 37 ft³/s, 26,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Dec. 18, 1978, gage height, 12.5 ft, at supplementary gage then in use, on basis of slope-area measurement of peak flow; minimum, 2.9 ft³/s June 25, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 800 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0145	1,160	5.52	Feb. 9	0330	2,580	6.15
Dec. 9	1530	2,780	6.55	Mar. 5	0745	1,060	5.08
Dec. 10	1130	2,680	6.20	Mar. 22	0445	3,280	6.65
Jan. 30	1700	4,890	7.15	Mar. 25	0330	*6,210	7.77
Feb. 4	0100	3,480	6.60	Sept. 18	1915	867	5.23

Minimum daily, 16 ft³/s Dec. 6.

GILA RIVER BASIN

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09447000 EAGLE CREEK ABOVE PUMPING PLANT, NEAR MORENCI, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	19	28	289	59	767	112	795	109	48	32	49	36		
2	19	29	75	53	349	98	610	103	47	33	45	31		
3	23	33	38	50	392	167	474	97	47	34	44	28		
4	25	39	28	45	1840	747	391	91	47	34	74	27		
5	25	42	21	44	1030	896	320	85	47	34	59	26		
6	25	39	16	44	799	564	267	84	46	35	47	25		
7	26	38	17	42	695	456	229	87	45	36	44	27		
8	25	36	31	42	929	403	216	84	44	39	42	28		
9	26	52	959	42	1750	334	196	83	43	40	39	27		
10	26	52	1800	41	1030	290	176	84	43	37	39	26		
11	28	45	975	41	579	260	163	83	42	38	24	27		
12	28	41	326	39	442	246	159	84	41	38	25	27		
13	28	32	181	41	382	234	156	81	41	39	25	27		
14	26	29	122	39	382	214	139	78	40	37	36	27		
15	26	28	98	39	348	201	140	74	40	35	25	28		
16	26	28	80	39	291	171	133	70	39	33	24	36		
17	25	36	71	49	262	137	132	67	38	34	25	45		
18	25	67	65	263	250	120	133	65	37	36	23	115		
19	24	38	57	245	249	305	139	63	37	37	21	53		
20	24	32	55	192	229	774	149	56	36	37	20	41		
21	29	29	55	153	201	1530	154	57	36	37	19	36		
22	32	29	53	125	179	2220	146	55	35	42	22	30		
23	35	28	63	109	170	1460	135	54	35	41	24	28		
24	36	28	216	101	160	800	129	51	35	38	27	43		
25	38	31	212	98	157	3980	127	51	34	88	32	36		
26	33	32	140	91	167	1270	133	50	34	59	30	32		
27	34	32	101	82	163	899	131	49	33	63	29	31		
28	31	31	80	82	140	709	122	50	33	48	39	33		
29	29	29	63	98	---	687	119	50	33	61	51	97		
30	33	52	63	2710	---	671	113	49	33	85	50	893		
31	31	---	65	2170	---	734	---	46	---	58	47	---		
TOTAL	860	1085	6415	7268	14332	21689	6426	2190	1189	1338	1100	1966		
MEAN	27.7	36.2	207	234	512	700	214	70.6	39.6	43.2	35.5	65.5		
MAX	38	67	1800	2710	1840	3980	795	109	48	88	74	893		
MIN	19	28	16	39	140	98	113	46	33	32	19	25		
AC-FT	1710	2150	12720	14420	28430	43020	12750	4340	2360	2650	2180	3900		
(*)	130	284	44	0	0	0	542	540	523	520	217	0		
(**)	1360	1600	1150	1740	1370	1600	1710	1770	1700	1760	1310	1430		
CAL YR 1982	TOTAL	18182.0	MEAN	49.8	MAX	1800	MIN	3.2	AC-FT	36060	*	2880	**	12690
WTR YR 1983	TOTAL	65858.0	MEAN	180	MAX	3980	MIN	16	AC-FT	130600	*	2800	**	18500

* Pumpage, in acre-feet, into Eagle Creek from Eagle Creek Wells.

** Pumpage, in acre-feet, to Clifton and Morenci, from San Francisco River and Eagle Creek.

GILA RIVER BASIN

09447800 BONITA CREEK NEAR MORENCI, AZ

LOCATION.--Lat 32°57'20", long 109°31'50", in SE¼NW¼ sec.36, T.5 S., R.27 E., Graham County, Hydrologic Unit 15040005, on left bank 2.0 mi upstream from intake of City of Safford water supply, 6.3 mi upstream from mouth, and 12.8 mi southwest of Morenci, Arizona.

DRAINAGE AREA.--302 mi².

PERIOD OF RECORD.--August 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft, from topographic map. Two crest-stage gages 440 ft upstream on right and left banks.

REMARKS.--Records good below 500 ft³/s and poor above.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,200 ft³/s Aug. 10, 1981, gage height, 5.40 ft; minimum, 0.68 ft³/s Dec. 20-23, 1982, gage height, 1.50 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 20, 1972, 10,000 ft³/s from slope-area measurement made by City of Safford at site about 2 mi downstream. Flood of June 27, 1981, 1,340 ft³/s from slope-area measurement at present site, gage height, 5.6 ft from floodmark.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge (*) and peak discharges above base of 300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	1000	720	4.60	Mar. 21	0230	309	3.66
Jan. 30	1715	705	4.57	Mar. 25	0215	710	4.58
Feb. 4	0100	*950	5.00				

Minimum, 0.68 ft³/s Dec. 20-23, gage height, 1.50 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.0	28	1.1	71	2.2	11	3.3	2.4	2.0	6.5	3.7
2	4.6	5.0	8.1	1.2	27	2.2	8.7	3.3	2.4	1.9	7.2	3.6
3	4.6	5.1	7.1	1.2	32	2.4	7.0	3.3	2.4	1.8	4.9	3.5
4	4.4	5.3	6.3	1.2	486	2.7	5.2	3.3	2.4	1.8	3.9	3.4
5	4.4	5.4	6.0	1.2	215	33	3.9	3.3	2.5	1.9	3.1	3.4
6	4.5	5.4	5.9	1.3	137	28	2.9	2.9	2.5	1.9	2.9	4.4
7	4.4	5.4	7.8	1.4	106	22	2.5	2.8	2.2	1.9	2.7	4.0
8	4.5	5.5	7.8	1.4	90	15	2.0	2.8	2.2	1.9	3.1	3.6
9	4.7	6.0	330	1.4	96	11	2.0	2.7	2.2	1.9	3.4	7.0
10	4.7	6.2	350	1.4	66	7.5	2.0	2.7	2.2	1.8	3.5	20
11	4.7	5.5	105	1.4	39	4.8	2.0	2.7	2.2	1.7	2.6	18
12	4.7	5.4	15	1.4	30	3.6	2.5	2.7	2.3	1.7	3.4	20
13	4.6	5.4	6.5	1.4	24	3.6	3.0	2.7	2.4	1.7	20	11
14	4.6	5.2	3.5	1.4	22	3.8	3.0	2.5	2.5	1.7	28	10
15	4.5	5.2	1.5	1.4	19	4.3	3.0	2.5	2.5	1.7	6.7	9.8
16	4.4	5.3	1.0	1.7	15	3.7	3.0	2.5	2.5	1.7	5.2	9.7
17	4.4	5.7	.85	1.6	11	3.7	3.0	2.5	2.5	1.7	4.7	9.4
18	4.3	6.2	.85	1.5	8.0	3.8	3.0	2.5	2.5	1.7	4.4	9.2
19	4.4	5.4	.85	1.5	6.6	28	3.1	2.5	2.5	1.7	4.2	9.1
20	4.5	5.3	.85	1.5	5.0	98	3.0	2.5	2.4	1.7	4.0	9.0
21	4.6	5.3	.68	1.5	5.0	201	3.1	2.5	2.2	1.7	3.9	9.2
22	4.5	5.3	.68	1.5	4.0	112	3.2	2.5	2.3	1.7	3.8	8.5
23	4.5	5.3	5.7	1.5	3.0	65	3.3	2.5	2.2	1.7	3.8	8.2
24	4.5	5.6	5.4	1.5	3.0	35	3.3	2.5	2.2	1.7	3.8	12
25	4.4	5.9	3.4	1.5	2.2	418	3.3	2.5	2.2	17	3.7	9.9
26	4.5	6.4	1.7	1.5	2.2	139	3.3	2.5	2.1	7.2	3.7	9.4
27	4.5	5.8	1.6	1.5	2.2	47	3.3	2.5	2.1	17	3.6	9.1
28	4.8	5.7	1.5	1.6	2.2	32	3.3	2.5	2.0	27	3.5	9.9
29	5.0	5.7	1.4	1.6	---	24	3.3	2.5	2.0	10	4.4	15
30	5.0	6.4	1.2	363	---	18	3.3	2.5	2.0	7.7	4.0	68
31	5.0	---	1.1	226	---	15	---	2.5	---	6.8	4.0	---
TOTAL	141.6	166.3	917.26	630.3	1529.4	1389.3	108.5	83.5	69.0	135.3	166.6	331.0
MEAN	4.57	5.54	29.6	20.3	54.6	44.8	3.62	2.69	2.30	4.36	5.37	11.0
MAX	5.0	6.4	350	363	486	418	11	3.3	2.5	27	28	68
MIN	4.3	5.0	.68	1.1	2.2	2.2	2.0	2.5	2.0	1.7	2.6	3.4
AC-FT	281	330	1820	1250	3030	2760	215	166	137	268	330	657

CAL YR 1982	TOTAL	2672.56	MEAN	7.32	MAX	350	MIN	.68	AC-FT	5300
WTR YR 1983	TOTAL	5668.06	MEAN	15.5	MAX	486	MIN	.68	AC-FT	11240

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ

LOCATION.--Lat 32°52'06", long 109°30'38", in SE¼NE¼ sec.31, T.6 S., R.28 E., Graham County, Hydrologic Unit 15040005, on left bank 0.6 mi downstream from intake of Brown Canal, 8 mi northeast of Solomon, and 17 mi downstream from San Francisco River. Records include flow of Brown Canal, which is measured 2,000 ft downstream from intake.

DRAINAGE AREA.--7,896 mi².

PERIOD OF RECORD.--April 1914 to current year. Monthly discharge only for some periods, published in WSP 1313. Prior to October 1932 and October 1940 to September 1949 published as "near Solomonsville" and October 1932 to October 1933 and May 1935 to September 1940 as "below Bonita Creek near Solomonsville."

REVISED RECORDS.--WSP 1059: 1914, 1916-17, 1923(M), 1924-25, 1927, 1929-31(M). WSP 1179: 1915, 1918-19(M). WSP 1313: 1934. WSP 1733: 1923.

GAGE.--Water-stage recorder. Datum of gage is 3,059.92 ft, National Geodetic Vertical Datum of 1929. Prior to July 8, 1980, at datum 4.96 ft higher. See WSP 1733 for history of changes prior to Jan. 1, 1941. Supplementary water-stage recorder and Parshall flume on Brown Canal.

REMARKS.--Records good except those for periods of no gage-height record May 5-24, June 11-26 and Sept. 30, which are poor. Records show water reaching head of Safford Valley. Diversions above station for mining, municipal use, and for irrigation of about 17,500 acres, much of it by pumping from ground water.

COOPERATION.--Record for Brown Canal furnished by Gila Water Commissioner.

AVERAGE DISCHARGE.--69 years, 461 ft³/s, 334,000 acre-ft/yr; median of yearly mean discharges, 310 ft³/s, 225,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 100,000 ft³/s Jan. 19, 1916 and Dec. 19, 1978; maximum gage height, 15.89 ft Jan. 19, 1916, from rating curve extended above 52,000 ft³/s on basis of slope-area measurement of peak flow of Dec. 19, 1978; minimum, 11 ft³/s June 25, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	1130	4,450	9.80	Mar. 5	1600	4,430	9.68
Dec. 10	1700	7,730	11.05	Mar. 25	1230	*11,300	12.10
Jan. 31	0300	5,800	10.35	Sept. 30	2400	**22,300	13.6
Feb. 5	0400	10,100	11.80				

** Maximum for 1983 water year, stage rising, peak occurred Oct. 2, 1983. See section "Hydrologic Conditions."
Minimum daily, 78 ft³/s Oct. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	92	1600	566	2920	1560	4320	1710	763	132	461	357
2	107	90	948	527	2000	1550	4300	1610	718	126	328	331
3	102	87	633	489	1610	1700	3750	1500	708	121	325	306
4	102	83	463	472	7010	3140	3440	1420	658	118	408	284
5	102	88	404	440	7550	4030	3040	1380	602	117	526	270
6	101	94	368	427	4380	4000	2680	1340	541	119	435	248
7	96	100	334	414	4060	3460	2250	1310	490	121	346	230
8	94	104	320	391	3630	3130	2060	1290	434	124	286	223
9	90	118	1500	364	3980	2890	1810	1260	410	136	283	220
10	90	147	4670	366	3500	2690	1690	1250	383	119	319	227
11	83	324	4710	360	2690	2710	1640	1200	360	113	260	286
12	83	240	2610	355	2210	2880	1670	1190	340	178	270	271
13	84	218	1720	347	1990	3060	1670	1150	330	138	289	266
14	80	190	1290	347	1950	3060	1610	1130	310	138	512	321
15	82	171	1050	341	1950	3080	1550	1100	300	136	307	308
16	82	167	871	341	1880	2950	1470	1080	280	129	263	291
17	79	188	745	341	1800	2610	1420	1050	270	120	230	284
18	80	444	672	481	1740	2280	1450	1010	250	115	400	410
19	81	327	616	673	1830	2530	1590	990	240	112	372	503
20	79	280	571	603	1840	3100	1810	950	230	124	248	280
21	78	260	528	616	1800	3680	1980	900	220	141	220	215
22	78	245	506	568	1690	3860	1950	890	210	613	220	183
23	80	240	501	519	1590	3360	1860	860	190	394	190	174
24	82	235	943	496	1550	2970	1790	840	180	307	180	221
25	84	230	1130	479	1550	7630	1830	815	170	335	266	309
26	89	242	967	451	1670	6240	1950	858	160	472	197	329
27	89	242	876	427	1670	4640	2000	886	147	583	200	398
28	86	238	785	414	1620	4090	1950	933	145	709	200	543
29	88	228	709	419	---	3870	1870	900	143	586	279	808
30	90	230	648	2240	---	3910	1810	890	137	1180	424	13000
31	92	---	620	4570	---	4120	---	829	---	842	424	---
TOTAL	2746	5942	34308	19844	73660	104780	64210	34521	10319	8698	9668	22096
MEAN	88.6	198	1107	640	2631	3380	2140	1114	344	281	312	737
MAX	113	444	4710	4570	7550	7630	4320	1710	763	1180	526	13000
MIN	78	83	320	341	1550	1550	1420	815	137	112	180	174
AC-FT	5450	11790	68050	39360	146100	207800	127400	68470	20470	17250	19180	43830

CAL YR 1982	TOTAL	137766	MEAN	377	MAX	4710	MIN	61	AC-FT	273300
WTR YR 1983	TOTAL	390792	MEAN	1071	MAX	13000	MIN	78	AC-FT	775100

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°11'08", long 110°13'10", in SW¼ sec.8, T.3 S., R.21 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, on Southern Pacific Railroad bridge at head of San Carlos Reservoir, 2.0 mi west of Calva.

DRAINAGE AREA.--11,470 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,517.29 ft, National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1954, and Aug. 25, 1958, to Dec. 31, 1962, at datum 2.52 ft lower. Oct. 1, 1954, to Aug. 24, 1958, at datum 5.52 ft lower. Dec. 31, 1962, to Oct. 20, 1972, at site 530 ft downstream at datum 3.65 ft lower. Oct. 20, 1972, to Sept. 30, 1974, supplementary gage at bridge on U.S. Highway 70, 6.2 mi upstream at datum 2,560.19 ft, NGVD.

REMARKS.--Records fair except those above 1,000 ft³/s, which are poor. Diversion above station for irrigation of about 69,000 acres, metallurgical treatment of ores, and municipal uses.

AVERAGE DISCHARGE.--54 years, 296 ft³/s, 214,500 acre-ft/yr; median of yearly mean discharges, 190 ft³/s, 138,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s Dec. 19, 1978, gage height, 15.20 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1914, probably in excess of 100,000 ft³/s Jan. 20, 1916, determined on basis of peak discharge at stations near Solomon and at Kelvin.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	0230	4,670	10.24	Mar. 6	1800	3,890	7.40
Feb. 1	0900	4,440	9.76	Mar. 26	1130	7,210	10.50
Feb. 6	0200	*10,260	11.58				

Minimum daily, 20 ft³/s Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	57	396	520	3800	1430	4150	1680	582	60	432	49
2	29	59	1190	480	2390	1380	4220	1540	573	59	303	55
3	28	59	786	476	1540	1420	4170	1400	550	54	261	40
4	27	60	553	448	1720	1560	3820	1320	550	48	238	34
5	26	63	427	427	7150	2390	3320	1230	528	51	210	32
6	24	65	415	375	8490	3600	2900	1100	497	48	190	32
7	23	68	365	345	5360	3560	2540	1050	449	44	160	32
8	21	72	345	345	4110	3080	2140	1030	432	44	140	33
9	21	83	385	335	3710	2760	1890	1050	402	46	120	30
10	20	91	1020	315	4000	2580	1650	1020	381	44	100	27
11	23	97	2720	275	3400	2440	1470	1030	334	44	82	25
12	25	153	3290	249	2580	2460	1410	1040	287	41	82	25
13	27	152	2020	260	2140	2540	1410	1040	261	41	72	33
14	26	152	1630	263	1920	2820	1430	977	235	42	76	38
15	26	139	1300	232	1840	2780	1410	935	190	40	111	34
16	26	135	918	232	1800	2700	1360	921	170	36	122	36
17	27	145	810	238	1690	2460	1330	837	153	34	85	35
18	27	158	730	246	1640	2010	1320	790	138	32	64	51
19	29	253	670	302	1580	2280	1320	720	123	31	57	39
20	29	249	641	560	1630	2680	1420	668	116	32	76	62
21	29	235	623	511	1590	3000	1740	645	109	32	86	116
22	32	225	596	511	1520	3300	2010	640	100	44	58	92
23	32	214	578	497	1460	3250	1950	630	97	64	50	66
24	34	214	578	483	1450	3040	1810	596	97	137	46	76
25	35	188	851	476	1430	3130	1720	596	92	162	40	109
26	36	194	786	455	1440	5990	1810	625	86	243	38	129
27	34	210	690	441	1460	4870	1980	630	78	281	47	165
28	37	204	650	434	1470	4040	1960	650	73	284	49	314
29	40	200	596	427	---	3860	1840	692	64	377	39	327
30	46	214	546	652	---	3750	1710	686	62	381	53	2300
31	51	---	532	1610	---	3930	---	635	---	607	45	---
TOTAL	924	4408	27637	13420	74310	91090	63210	28403	7809	3483	3532	4436
MEAN	29.8	147	892	433	2654	2938	2107	916	260	112	114	148
MAX	51	253	3290	1610	8490	5990	4220	1680	582	607	432	2300
MIN	20	57	345	232	1430	1380	1320	596	62	31	38	25
AC-FT	1830	8740	54820	26620	147400	180700	125400	56340	15490	6910	7010	8800

CAL YR 1982	TOTAL	80015.80	MEAN	219	MAX	3290	MIN	.00	AC-FT	158700
WTR YR 1983	TOTAL	322662.00	MEAN	884	MAX	8490	MIN	20	AC-FT	640000

GILA RIVER BASIN

185

09466500 GILA RIVER AT CALVA, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

									BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)			
OCT 20...	1100	29	5500	8.5	21.0	15.0	4.5	8.8	631	108	41
DEC 08...	0930	347	1400	8.8	11.0	9.5	250	9.4	629	100	42
FEB 11...	1230	3320	514	8.3	17.0	10.5	750	10.4	710	100	73
APR 07...	1300	2550	760	8.4	18.0	11.0	750	10.2	706	100	56
JUN 10...	1130	386	1960	8.0	27.0	24.0	38	8.6	707	111	130
AUG 10...	0930	100	3380	8.2	30.0	25.0	180	6.8	710	90	40
DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOC- CI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
OCT 20...	120	110	740	490	190	65	980	16	13	--	1.5
DEC 08...	280	3500	310	100	89	21	230	6	5.5	--	.6
FEB 11...	70	1200	130	31	36	9.3	50	2	2.0	--	.9
APR 07...	120	300	140	27	41	10	76	3	2.3	--	.9
JUN 10...	130	160	320	100	89	23	280	7	7.3	215	4.1
AUG 10...	550	3200	500	190	140	37	550	11	9.4	310	3.8
DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE- D (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT 20...	640	1400	1.8	32	3460	3500	4.7	24	.30	.30	.100
DEC 08...	150	330	1.4	35	992	990	1.3	644	.70	.66	<.060
FEB 11...	64	54	.70	30	300	310	.41	1530	.30	.31	<.060
APR 07...	61	92	.80	31	359	380	.49	1460	.30	.31	.120
JUN 10...	190	380	1.6	38	1130	1100	1.5	124	.80	.99	.200
AUG 10...	340	750	1.7	40	2030	2100	2.8	353	1.8	1.8	.080

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT 20...	1.5	1.8	8.0	.080	.020	.010	.03	.25	30	3	100
DEC 08...	5.5	6.2	27	.530	.110	.070	.21	1.6	--	--	--
FEB 11...	3.6	3.9	17	3.20	.120	.110	.34	9.8	140	2	31
APR 07...	1.9	2.2	9.7	.180	.100	.080	.25	.55	--	--	--
JUN 10...	1.3	2.1	9.3	.110	.090	.080	.25	.34	20	4	70
AUG 10...	1.4	3.2	14	.550	.210	.120	.37	1.7	20	7	100

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 20...	<10	1100	<1	<5	<1	20	10	50	*70	560	40
DEC 08...	--	--	<1	--	--	--	--	--	<1	--	--
FEB 11...	<.5	60	<1	<1	<1	<3	56	88	<1	37	13
APR 07...	--	--	<1	--	--	--	--	--	<1	--	--
JUN 10...	<.5	330	<1	<1	<1	<3	8	3	1	220	5
AUG 10...	<10	630	<1	<1	<1	1	10	30	1	310	10

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 20...	.1	13	40	1	5	2200	21	20	64	72	5.0
DEC 08...	--	--	--	--	--	--	--	--	780	77	731
FEB 11...	<.1	<10	<1	<1	<1	260	10	12	3080	68	27600
APR 07...	--	--	--	--	--	--	--	--	3980	44	27400
JUN 10...	<.1	10	1	1	<1	820	13	6	258	45	269
AUG 10...	.2	10	5	2	<1	1400	27	20	571	88	154

< Actual value is known to be less than value shown.

* Value verified.

09468500 SAN CARLOS RIVER NEAR PERIDOT, AZ

LOCATION.--Lat 33°17'47", long 110°27'03", in SE¼ sec.36, T.1 S., R.18 E. (unsurveyed), Gila County, Hydrologic Unit 15040007, in San Carlos Indian Reservation, on U.S. Highway 70 bridge, 0.9 mi south of Peridot.

DRAINAGE AREA.--1,026 mi².

PERIOD OF RECORD.--August 1910 to January 1911 (gage heights only), April 1914 to July 1915, August to September 1915 (monthly discharge only), October 1929 to current year. Prior to October 1929 published as "at San Carlos."

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder since Apr. 26, 1914. Datum of gage is 2,542.29 ft Arizona Highway Department datum. See WSP 1713 or 1733 for history of changes prior to Feb. 1, 1942. Feb. 1, 1942, to Aug. 13, 1970, at sites 1.9 mi upstream at different datums. Aug 14, 1970, to Sept. 30, 1980, at site 1.8 mi upstream at datum 2,578.90 ft, National Geodetic Vertical Datum of 1929. Supplementary water-stage recorder Dec. 21, 1967, to July 2, 1968, at site 2.2 mi downstream at datum in use prior to Feb. 1, 1942; Jan. 31, 1979, to Sept. 30, 1980, at present site and datum.

REMARKS.--Records fair except those above 1,000 ft³/s, which are poor. Diversions above station for irrigation of about 600 acres. Small inflow from sewage treatment system about 3.6 mi upstream. Flow regulated to some extent since June 15, 1979, by Talkalai Reservoir; capacity of reservoir is about 6,000 acre-ft.

AVERAGE DISCHARGE.--54 years (water years 1930-83), 54.1 ft³/s, 39,200 acre-ft/yr; median of yearly mean discharges, 30 ft³/s, 21,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,600 ft³/s Mar. 14, 1941, gage height, 11.4 ft, site and datum then in use, from rating curve extended above 23,000 ft³/s on basis of rate of change in storage in San Carlos Reservoir; maximum gage height 14.8 ft, Dec. 22, 1965, site and datum then in use; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0100	2,410	6.82	Mar. 5	0030	2,740	7.10
Dec. 23	1800	2,480	6.86	Mar. 20	2200	5,380	7.55
Jan. 30	0400	3,120	7.20	Mar. 25	0400	*6,260	7.90
Feb. 4	0030	3,500	7.40				

Minimum daily, 3.0 ft³/s June 16, 17, June 23 to July 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	10	1120	60	1530	41	190	25	34	3.0	7.2	36
2	7.2	10	650	40	1350	36	170	23	36	3.0	8.7	38
3	7.2	8.7	280	32	1150	62	137	23	32	3.0	13	38
4	7.2	8.7	150	32	2060	1060	110	23	25	3.0	21	41
5	7.2	10	120	32	1220	1660	92	21	25	10	8.7	38
6	7.2	10	110	30	972	700	80	21	27	60	7.2	36
7	5.7	12	90	30	960	275	75	19	33	58	5.7	36
8	5.7	12	70	27	1010	211	65	21	56	58	5.7	34
9	5.7	16	60	27	1070	175	55	19	18	58	5.7	34
10	7.2	19	373	25	660	142	52	19	13	62	94	34
11	8.7	18	1030	25	342	110	46	19	12	55	60	34
12	7.2	15	416	23	256	96	46	19	10	62	21	28
13	7.2	13	137	19	205	85	55	18	5.7	13	38	41
14	10	10	78	18	170	78	58	16	4.7	12	38	34
15	10	10	65	16	160	71	55	18	3.8	5.7	21	13
16	8.7	8.7	55	10	132	58	55	19	3.0	4.7	19	12
17	7.2	27	49	15	110	49	49	18	3.0	4.7	15	12
18	7.2	43	43	16	92	55	55	16	4.7	5.7	15	15
19	8.7	102	43	19	78	2920	52	15	5.7	5.7	15	15
20	8.7	65	43	62	74	3410	46	15	5.7	7.2	10	13
21	8.7	52	30	78	65	3210	38	16	7.2	7.2	10	7.2
22	8.7	49	13	160	58	2680	41	16	3.8	15	10	5.7
23	7.2	49	614	137	52	1080	38	16	3.0	7.2	7.2	5.7
24	10	55	972	99	49	650	36	16	3.0	4.7	7.2	5.7
25	12	55	624	96	46	3510	34	16	3.0	3.8	10	5.7
26	13	62	378	78	46	2000	30	21	3.0	15	16	227
27	12	58	262	74	46	1160	30	19	3.0	7.2	16	228
28	12	62	190	81	46	633	27	21	3.0	5.7	16	974
29	10	55	146	582	---	440	27	19	3.0	5.7	16	860
30	12	41	100	1800	---	342	25	21	3.0	7.2	15	2090
31	10	---	80	1510	---	234	---	27	---	7.2	19	---
TOTAL	266.7	966.1	8391	5253	14009	27233	1869	595	392.3	579.6	571.3	4991.0
MEAN	8.60	32.2	271	169	500	878	62.3	19.2	13.1	18.7	18.4	166
MAX	13	102	1120	1800	2060	3510	190	27	56	62	94	2090
MIN	5.7	8.7	13	10	46	36	25	15	3.0	3.0	5.7	5.7
AC-FT	529	1920	16640	10420	27790	54020	3710	1180	778	1150	1130	9900

CAL YR 1982	TOTAL	29652.50	MEAN	81.2	MAX	2710	MIN	.10	AC-FT	58820
WTR YR 1983	TOTAL	65117.00	MEAN	178	MAX	3510	MIN	3.0	AC-FT	129200

09469000 SAN CARLOS RESERVOIR AT COOLIDGE DAM, AZ

LOCATION.--Lat 33°10'32", long 110°31'38", in NW¼ sec.17, T.3 S., R.18 E. (unsurveyed), Gila County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, at right intake tower of Coolidge Dam on Gila River.

DRAINAGE AREA.--12,886 mi².

REVISED RECORDS.--WSP 1049: 1929, 1934, 1937-38. WSP 1283: Drainage area.

PERIOD OF RECORD.--November 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1937, series of stakes with tops at known elevations for reference points on right bank about 1,000 ft upstream from dam. Jan. 15, 1937, to Dec. 31, 1947, water-stage recorder at present site at datum 0.72 ft lower.

REMARKS.--Reservoir is formed by concrete multiple-dome dam. Dam completed Oct. 25, 1928; storage began Nov. 15, 1928. Usable capacity (from capacity table computed by San Carlos Irrigation District, based on an estimate of sediment deposited since 1966; used since Jan. 1, 1982) 935,000 acre-ft between elevations 2,382.63 ft, sill of lowest outlet gate, and 2,512.3 ft crest of spillway. No dead storage. Figures given herein represent usable contents. Reservoir is used to store water for irrigation of San Carlos project and for power development, dependent on irrigation demands. Spill over Coolidge Dam because of capacity storage has occurred April 22 to May 5, 1979, Feb. 24 to Mar. 13, 1980.

COOPERATION.--Wire-weight gage readings furnished by U.S. Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,090,000 acre-ft Feb. 26 to Mar. 6, 1980; maximum elevation observed, 2,520.3 ft Feb. 28, 1980; no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 698,000 acre-ft May 18-31, elevation, 2,497.6 ft; minimum, 82,000 acre-ft Oct. 9 to Nov. 14, elevation, 2,429.6 ft Oct. 15 to Nov. 14.

Capacity table (elevation, in feet, and usable contents, in acre-ft)

2,425	64,000	2,460	266,000
2,430	83,000	2,470	359,000
2,435	105,000	2,480	468,000
2,440	130,000	2,490	592,000
2,450	190,000	2,500	734,000

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84000	82000	95000	152000	197000	364000	586000	682000	697000	662000	618000	578000
2	84000	82000	97000	153000	204000	368000	595000	685000	697000	660000	614000	577000
3	83000	82000	99000	154000	212000	371000	604000	685000	696000	659000	612000	574000
4	83000	82000	100000	155000	223000	375000	611000	688000	696000	658000	611000	573000
5	83000	82000	101000	155000	239000	384000	615000	690000	694000	656000	610000	572000
6	83000	82000	102000	156000	256000	391000	621000	690000	694000	655000	608000	572000
7	83000	82000	102000	156000	268000	398000	625000	691000	694000	654000	607000	570000
8	83000	82000	103000	157000	279000	405000	628000	693000	693000	652000	604000	568000
9	82000	82000	104000	158000	288000	411000	630000	693000	693000	649000	603000	565000
10	82000	82000	106000	158000	297000	415000	634000	694000	691000	648000	603000	564000
11	82000	82000	111000	159000	303000	420000	636000	694000	691000	647000	602000	563000
12	82000	82000	118000	160000	309000	423000	638000	696000	690000	645000	602000	561000
13	82000	82000	123000	160000	314000	429000	640000	696000	688000	643000	600000	559000
14	82000	82000	124000	160000	319000	433000	643000	697000	687000	641000	599000	558000
15	82000	83000	128000	161000	323000	438000	645000	697000	685000	638000	598000	556000
16	82000	83000	130000	162000	327000	442000	647000	697000	684000	637000	596000	555000
17	82000	84000	131000	162000	330000	446000	649000	697000	682000	636000	595000	552000
18	82000	85000	133000	162000	335000	451000	651000	698000	681000	633000	595000	551000
19	82000	87000	134000	163000	338000	460000	652000	698000	679000	632000	593000	551000
20	82000	88000	135000	163000	341000	479000	654000	698000	678000	630000	592000	550000
21	82000	88000	136000	164000	343000	490000	658000	698000	676000	628000	591000	550000
22	82000	89000	137000	165000	347000	496000	660000	698000	676000	626000	590000	550000
23	82000	89000	139000	167000	350000	502000	663000	698000	675000	625000	588000	550000
24	82000	90000	141000	168000	353000	510000	665000	698000	672000	622000	588000	549000
25	82000	90000	143000	169000	355000	521000	668000	698000	671000	621000	588000	547000
26	82000	90000	144000	170000	357000	536000	671000	698000	669000	619000	587000	547000
27	82000	91000	146000	171000	360000	549000	672000	698000	669000	618000	586000	547000
28	82000	91000	147000	172000	363000	558000	675000	698000	668000	617000	584000	550000
29	82000	92000	148000	173000	---	569000	676000	698000	665000	617000	583000	551000
30	82000	93000	150000	182000	---	577000	679000	698000	663000	615000	582000	560000
31	82000	---	151000	189000	---	579000	---	698000	---	615000	581000	---
MAX	84000	93000	151000	189000	363000	579000	679000	698000	697000	662000	618000	578000
MIN	82000	82000	95000	152000	197000	364000	586000	682000	663000	615000	581000	547000
(*)	2429.6	2432.2	2443.6	2449.7	2470.4	2489.0	2496.3	2497.6	2495.2	2491.7	2498.1	2487.5
(**)	-2000	+11000	+58000	+38000	+174000	+216000	+100000	+19000	-35000	-48000	-34000	-21000

CAL YR 1982 MAX 278000 MIN 82000 **a -92000
WTR YR 1983 MAX 698000 MIN 82000 ** +476000

* Elevation in feet, at end of month.

** Change in contents, in acre-feet.

a Based on new capacity table effective Jan. 1, 1982.

GILA RIVER BASIN

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09469500 GILA RIVER BELOW COOLIDGE DAM, AZ

LOCATION.--Lat 33°10'10", long 110°31'50", in SW¼ sec.17, T.3 S., R.18 E. (unsurveyed), Pinal County, Hydrologic Unit 15050100, on left bank 2,200 ft downstream from Coolidge Dam.

DRAINAGE AREA.--12,886 mi².

PERIOD OF RECORD.--July to October 1899, April 1900 to March 1902, July to September 1902, December 1902 to December 1904; January to May 1905 (gage heights only); June to November 1905; August 1910 to February 1911 (gage heights only); April 1914 to current year. Published as "at San Carlos" 1899-1911, as "near San Carlos" 1914-26, and as "at Coolidge Dam" 1927-38.

REVISED RECORDS.--WSP 629: 1915-16. WSP 1049: 1899-1904. WSP 1149: 1917(M), 1921, 1922(M), 1923, 1924(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 2,309.33 ft, National Geodetic Vertical Datum of 1929. Prior to Feb. 5, 1911, nonrecording gage at various sites and datums upstream from mouth of San Carlos River. Apr. 29, 1914, to Mar. 8, 1937, water-stage recorder at various sites within 1 mi upstream from present site at different datums. Mar. 27, 1979 to Oct. 10, 1980, supplementary water-stage recorder at site on left bank 1,000 ft upstream at datum 2,309.5 ft, NGVD.

REMARKS.--Records excellent except those below 20 ft³/s, which are fair. Flow regulated by San Carlos Reservoir since Nov. 15, 1928. (See sta 09469000.) Record includes flow of Warm Springs, which enters between dam and gage. Large diversions above San Carlos Reservoir for irrigation, metallurgical treatment of ore, and municipal supply; about 69,000 acres of land was irrigated, a considerable portion by pumping from ground water.

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir).--71 years (water years 1901, 1904, 1915-83) 362 ft³/s, 262,300 acre-ft/yr; median of yearly mean discharges, 210 ft³/s, 152,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1914-28: Maximum discharge, 130,000 ft³/s Jan. 20, 1916, estimated on basis of peak discharge near Solomon and at Kelvin; no flow at times.
1928-83: Maximum discharge, 2,700 ft³/s Mar. 10, 1980, gage height, 8.95 ft, at supplementary gage; no flow at times prior to 1938; minimum daily since 1938, 0.40 ft³/s in several years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 937 ft³/s July 18; minimum daily, 1.9 ft³/s Oct. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	4.8	12	19	85	117	39	380	574	779	851	854
2	102	4.5	12	17	66	117	95	380	596	769	848	853
3	105	5.5	13	18	59	110	100	382	650	769	838	842
4	100	6.5	14	22	39	70	105	385	652	770	843	813
5	98	3.4	15	26	7.2	40	119	391	652	777	828	795
6	97	3.3	15	28	8.6	44	153	388	643	809	842	791
7	96	3.7	15	29	8.3	42	160	385	625	855	836	768
8	98	3.7	15	30	9.9	30	179	382	623	866	786	757
9	101	4.9	16	31	10	7.1	203	388	621	897	771	740
10	100	5.3	18	27	11	7.2	206	394	621	895	749	721
11	96	5.2	20	22	13	7.2	220	435	639	908	684	723
12	96	5.3	22	23	13	80	236	453	677	912	619	728
13	97	43	22	31	14	124	241	462	677	909	621	725
14	97	66	22	50	14	143	234	471	677	899	621	724
15	71	66	23	51	14	209	217	444	677	905	620	723
16	3.6	66	24	51	15	226	213	432	677	904	620	699
17	3.5	66	26	51	15	243	213	444	677	925	582	596
18	3.0	67	33	49	15	274	210	436	677	937	469	565
19	2.5	31	32	67	15	207	217	429	658	875	423	525
20	2.8	7.3	40	90	14	128	231	444	624	875	423	456
21	2.7	6.6	53	90	4.9	103	258	477	633	875	433	423
22	1.9	6.6	55	90	4.8	102	278	476	649	875	467	330
23	2.1	6.6	58	90	27	45	280	494	649	871	472	277
24	2.2	6.6	51	90	83	8.4	280	476	649	859	499	230
25	4.7	7.3	50	90	104	8.7	280	490	649	867	571	192
26	11	8.0	50	90	124	9.0	280	537	649	872	200	167
27	7.4	8.8	51	91	124	9.7	293	525	649	874	480	148
28	8.2	9.6	51	92	118	10	317	525	573	872	694	142
29	7.6	10	51	93	---	11	341	525	721	870	730	134
30	7.0	12	32	94	---	12	366	534	788	872	844	62
31	7.1	---	22	94	---	12	---	561	---	866	856	---
TOTAL	1530.3	550.5	933	1736	1035.7	2556.3	6564	13925	19526	26808	20120	16503
MEAN	49.4	18.4	30.1	56.0	37.0	82.5	219	449	651	865	649	550
MAX	105	67	58	94	124	274	366	561	788	937	856	854
MIN	1.9	3.3	12	17	4.8	7.1	39	380	573	769	200	62
AC-FT	3040	1090	1850	3440	2050	5070	13020	27620	38730	53170	39910	32730
CAL YR 1982	TOTAL	141057.8	MEAN	386	MAX	942	MIN	1.9	AC-FT	279800		
WTR YR 1983	TOTAL	111787.8	MEAN	306	MAX	937	MIN	1.9	AC-FT	221700		

GILA RIVER BASIN

09470000 GILA RIVER AT WINKELMAN, AZ

LOCATION.--Lat 32°59'05", long 110°46'18", in NW¼SW¼ sec.24, T.5 S., R.15 E., Gila County, Hydrologic Unit 15050100, at old Winkelman road bridge (formerly State Highway 77) at Winkelman, Ariz, 0.5 mi upstream from San Pedro River, 30 mi downstream from Coolidge Dam, and 1.5 mi downstream from discontinued surface-water gage 09470000.

DRAINAGE AREA.--13,268 mi², of which 382 mi² is below Coolidge Dam.

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 22...	1315	17	1370	8.4	30.0	17.0	10.0	720	110	<10	40	--
NOV 22...	1250	27	1440	8.1	21.0	14.0	10.9	715	113	17	45	--
DEC 21...	1110	35	1520	8.2	18.5	10.0	11.4	720	107	<10	26	--
JAN 12...	1015	16	1420	8.1	16.5	9.0	11.3	726	103	14	23	--
FEB 25...	1400	180	1430	8.5	21.5	16.0	11.2	715	122	10	47	--
APR 01...	1110	130	920	8.3	23.5	16.5	9.1	720	99	16	57	--
29...	1030	340	1170	8.1	24.0	15.0	12.2	717	129	19	120	--
MAY 17...	1010	410	945	8.2	22.5	15.0	9.5	717	101	19	47	--
JUN 23...	1345	590	865	8.3	34.5	16.5	7.8	718	85	35	38	--
JUL 28...	1010	750	760	8.4	34.0	17.0	8.7	721	95	23	40	--
AUG 23...	1000	225	850	8.3	28.0	18.5	8.2	719	93	33	42	430
SEP 20...	1430	546	925	8.2	23.5	20.0	8.7	720	102	27	46	--

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 22...	310	92	78	28	--	--	--	--	1.7	150	--	--
NOV 22...	320	99	79	30	180	5	5.4	--	3.4	160	240	.90
DEC 21...	310	90	75	29	--	--	--	--	2.6	170	--	--
JAN 12...	300	80	72	28	--	--	--	--	3.3	160	--	--
FEB 25...	300	94	76	27	190	5	5.8	--	1.2	160	250	1.0
APR 01...	320	66	82	27	--	--	--	250	2.4	160	--	--
29...	220	38	56	19	--	--	--	180	2.8	120	--	--
MAY 17...	190	41	50	16	120	4	4.0	150	1.8	96	150	.80
JUN 23...	180	28	48	14	--	--	--	150	1.4	86	--	--
JUL 28...	170	43	46	14	--	--	--	130	1.0	78	--	--
AUG 23...	180	85	49	14	110	4	3.6	95	.9	83	140	.80
SEP 20...	180	30	49	14	--	--	--	150	1.8	76	--	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09470000 GILA RIVER AT WINKELMAN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
OCT 22...	--	785	--	1.1	<1	<.10	--	.70	--	<.010	--	--
NOV 22...	17	850	850	1.2	1	<.10	<.10	.50	--	.050	<.010	--
DEC 21...	--	895	--	1.2	10	<.10	--	1.0	--	.050	--	--
JAN 12...	--	864	--	1.2	9	<.10	--	.60	--	.020	--	--
FEB 25...	24	809	860	1.1	84	.20	.10	1.4	1.6	.090	--	--
APR 01...	--	592	--	.81	63	.40	--	.90	1.3	.120	--	--
29...	--	643	--	.87	90	.40	--	1.1	1.5	.220	--	--
MAY 17...	25	538	550	.73	65	.30	.33	1.0	1.3	.170	.070	.21
JUN 23...	--	490	--	.67	50	.30	--	.80	1.1	.180	--	--
JUL 28...	--	471	--	.64	39	.20	--	1.1	1.3	.200	--	--
AUG 23...	23	479	480	.65	23	.10	<.10	.80	.90	.160	.040	.12
SEP 20...	--	487	--	.66	--	.30	--	.70	1.0	.230	--	--

DATE	PHOS- PHORUS TOTAL (MG/L AS PO4)	BORON, TOTAL RECOVERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 22...	--	--	--	1	<10	--	<1	--	12	30	1.4
NOV 22...	.15	--	210	<1	<10	7	1	61	3	8	.58
DEC 21...	.15	260	--	1	<10	--	3	--	24	26	2.5
JAN 12...	.06	230	--	<1	20	--	2	--	10	12	.52
FEB 25...	.09	--	240	<1	20	<3	<1	17	50	103	50
APR 01...	.37	210	--	1	10	--	1	--	10	110	39
29...	.67	180	--	<1	30	--	<1	--	9	135	124
MAY 17...	.52	--	130	<1	40	9	1	5	5	136	151
JUN 23...	.55	170	--	<1	<10	--	3	--	13	130	207
JUL 28...	.61	150	--	<1	30	--	<1	--	9	111	225
AUG 23...	.49	--	110	1	40	6	<1	1	<3	297	180
SEP 20...	.71	--	--	--	--	--	2	--	17	109	161

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09471000 SAN PEDRO RIVER AT CHARLESTON, AZ

LOCATION.--Lat 31°37'33", long 110°10'26", in NE¼NE¼ sec.11, T.21 S., R.21 E., Cochise County, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, at downstream side of pier near center of highway bridge, 0.3 mi south of Charleston, 1.5 mi upstream from Charleston damsite, and 9 mi upstream from Babocomari River.

DRAINAGE AREA.--1,219 mi², of which 696 mi² is in Mexico.

PERIOD OF RECORD.--January and February 1904 (gage heights only); March 1904 to August 1906; November 1910 to December 1911 (gage heights only); September 1912 to current year. Monthly discharge only October 1926 to May 1928 and December 1933 to April 1935, published in WSP 1313. Published as "near Lewis Springs" 1910-11, and as "near Fairbank" 1911-26.

REVISED RECORDS.--WSP 1119: 1939(M). WSP 1213: 1914, 1916(M), 1918(M), 1919, 1920(M), 1922-23(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,954.01 ft, National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1942, nonrecording gage or water-stage recorder at various sites within 6.5 mi downstream at different datums.

REMARKS.--Records good. Diversions above station, mostly by pumping from ground water, for irrigation of 3,200 acres in 1978, excluding an unknown amount in Mexico. Record shows flow available at Charleston damsite.

AVERAGE DISCHARGE.--72 years (water years 1905, 1913-83), 58.9 ft³/s, 42,670 acre-ft/yr; median of yearly mean discharges, 48 ft³/s, 34,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 98,000 ft³/s Sept. 28, 1926, gage height, 21.9 ft, site and datum then in use, by slope-area measurement of peak flow; minimum since 1928, 0.30 ft³/s July 14-16, 1982, gage height, 1.83 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,900 ft³/s Sept. 30, 2400 hours, stage rising, peak occurred Oct. 3, 1983; maximum peak discharge, 3,100 ft³/s Sept. 12, 2200 hours, gage height, 6.28 ft, base discharge, 3,000 ft³/s; minimum, 1.2 ft³/s June 27, July 3, gage height, 2.23 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	4.6	7.0	22	214	23	38	10	4.0	2.0	86	14
2	4.6	4.6	16	20	122	23	36	10	3.8	2.0	28	11
3	4.3	4.6	19	19	90	31	34	9.5	3.4	1.6	30	10
4	3.8	4.9	10	18	865	346	34	9.0	3.4	1.6	11	9.5
5	3.6	4.9	8.0	18	672	699	35	8.5	3.4	2.0	5.5	9.5
6	3.6	4.9	6.7	19	195	439	34	7.5	3.4	2.2	4.0	14
7	3.4	5.2	6.4	19	90	274	34	7.5	3.4	2.2	4.0	16
8	3.2	5.2	6.1	19	70	154	35	7.5	3.4	2.6	3.0	12
9	3.4	5.5	6.1	19	65	90	38	7.0	3.4	2.6	19	9.5
10	3.4	5.5	239	19	60	80	36	7.0	3.4	2.2	512	111
11	3.4	5.5	302	19	55	70	34	7.0	3.4	2.2	166	38
12	3.6	5.5	132	19	55	60	32	7.0	3.4	2.6	66	238
13	3.6	5.5	86	18	50	50	31	7.0	3.2	2.8	47	100
14	3.8	6.1	64	18	50	50	28	7.0	3.2	2.6	20	28
15	3.6	6.1	47	17	48	50	24	7.0	3.0	2.8	16	27
16	3.6	6.1	35	16	46	50	24	6.7	2.8	2.8	167	34
17	3.6	6.4	29	17	44	48	23	6.1	2.8	2.2	56	18
18	3.6	6.4	24	16	40	44	23	6.1	2.6	2.4	41	12
19	3.4	6.4	22	16	38	48	22	6.1	2.4	2.4	28	9.0
20	3.6	5.8	19	18	35	91	22	5.8	2.2	2.6	20	12
21	3.6	5.8	18	16	36	105	22	5.8	2.2	4.1	12	10
22	4.0	5.8	17	14	35	84	20	5.8	2.2	7.0	9.5	523
23	4.0	5.8	18	14	34	66	19	5.2	2.2	4.0	7.0	65
24	4.0	5.8	16	14	32	60	18	5.5	2.2	54	6.4	75
25	3.8	6.4	16	16	31	58	17	4.9	2.2	33	4.3	38
26	4.0	6.1	18	16	28	54	16	4.9	2.2	6.7	4.3	22
27	4.0	5.8	17	16	26	58	14	5.2	1.8	28	4.3	27
28	4.3	6.1	17	17	23	54	13	5.2	2.0	5.8	4.3	665
29	4.0	6.1	17	16	---	50	12	4.9	2.0	19	61	577
30	4.3	6.1	17	23	---	47	11	4.3	2.0	24	63	630
31	4.3	---	23	209	---	41	---	3.8	---	12	26	---
TOTAL	118.3	169.5	1278.3	737	3149	3397	779	204.8	85.0	244.0	1531.6	3364.5
MEAN	3.82	5.65	41.2	23.8	112	110	26.0	6.61	2.83	7.87	49.4	112
MAX	4.9	6.4	302	209	865	699	38	10	4.0	54	512	665
MIN	3.2	4.6	6.1	14	23	23	11	3.8	1.8	1.6	3.0	9.0
AC-FT	235	336	2540	1460	6250	6740	1550	406	169	484	3040	6670

CAL YR 1982 TOTAL 9335.20 MEAN 25.6 MAX 1830 MIN .30 AC-FT 18520
WTR YR 1983 TOTAL 15058.00 MEAN 41.3 MAX 865 MIN 1.6 AC-FT 29870

GILA RIVER BASIN

193

09471550 SAN PEDRO RIVER NEAR TOMBSTONE, AZ

LOCATION.--Lat 31°45'03", long 110°12'02", in SE¼ sec.28, T.19 S., R.21 E. (unsurveyed), Cochise County, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, on right bank 0.5 mi downstream from Willow Wash, 2.6 mi north of Fairbank, and 8 mi northwest of Tombstone.

DRAINAGE AREA.--1,740 mi² approximately, of which 696 mi² is in Mexico.

PERIOD OF RECORD.--April 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,780 ft, from topographic map.

REMARKS.--Records fair. Diversions above station, mostly by pumping from ground water, for irrigation of 3,200 acres in 1978, excluding an unknown amount in Mexico.

AVERAGE DISCHARGE.--16 years, 48.2 ft³/s, 34,920 acre-ft/yr; median of yearly mean discharges, 41 ft³/s, 29,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,200 ft³/s Oct. 9, 1977, gage height, 11.40 ft, from rating curve extended above 4,900 ft³/s on basis of slope-area measurements at gage heights 8.89 ft and 11.40 ft. No flow at times during most summers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 10	2300	*4,720	6.40
Sept. 22	1645	3,500	5.86

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	2.3	8.8	16	494	27	36	13	1.9	.00	44	11
2	3.2	2.4	5.4	15	267	27	34	12	1.8	.00	28	6.9
3	3.1	2.4	64	15	180	33	30	11	1.6	.00	71	4.9
4	2.9	2.6	51	17	937	443	28	12	1.0	.00	28	.36
5	2.8	2.8	32	18	1370	1230	27	11	.48	.00	13	.00
6	2.6	2.9	25	19	648	932	27	10	.00	.00	11	2.3
7	2.5	2.9	20	19	456	548	27	10	.00	.00	10	7.6
8	2.3	3.0	18	19	333	331	27	9.7	.00	.00	15	5.3
9	2.4	3.4	17	18	242	234	28	8.2	.00	.00	12	.16
10	2.6	3.3	17	18	177	182	29	6.9	.00	.00	520	225
11	2.7	3.3	16	18	131	151	26	7.0	.00	.00	253	208
12	2.7	3.2	15	18	104	124	25	6.6	.00	.00	98	8.3
13	2.7	3.3	16	18	80	106	23	6.3	.00	.00	43	353
14	2.7	3.5	15	18	64	91	23	6.4	.00	.00	24	18
15	2.7	3.5	15	17	53	83	21	6.4	.00	.00	23	10
16	2.6	3.5	15	17	47	70	20	6.3	.00	.00	185	10
17	2.6	3.9	15	17	42	60	19	6.6	.00	.00	68	8.0
18	2.4	3.9	15	17	37	54	18	6.6	.00	.00	25	8.0
19	2.2	3.7	15	17	35	55	18	6.5	.00	.00	17	5.2
20	2.2	3.7	15	19	35	77	18	6.8	.00	.00	15	104
21	2.3	3.7	15	16	35	132	18	6.7	.00	.00	10	18
22	2.3	5.4	15	15	34	93	18	6.6	.00	.00	5.0	432
23	2.3	5.4	15	15	34	77	18	6.8	.00	.00	2.0	127
24	2.4	5.5	500	15	33	63	17	4.5	.00	145	1.0	70
25	2.2	6.0	50	15	31	55	16	2.9	.00	12	.66	25
26	1.9	5.5	20	15	30	52	15	2.8	.00	6.0	.00	25
27	1.8	5.5	15	15	28	50	15	2.7	.00	9.8	.00	152
28	1.9	5.5	14	16	28	48	16	2.6	.00	6.6	.00	1040
29	2.1	5.5	14	15	---	45	15	2.7	.00	4.0	79	1160
30	2.3	5.6	14	29	---	40	13	2.4	.00	16	168	839
31	2.2	---	20	265	---	39	---	2.2	---	9.4	15	---
TOTAL	76.9	117.1	1102.2	781	5985	5552	665	212.2	6.78	208.80	1783.66	4884.02
MEAN	2.48	3.90	35.6	25.2	214	179	22.2	6.85	.23	6.74	57.5	163
MAX	3.3	6.0	500	265	1370	1230	36	13	1.9	145	520	1160
MIN	1.8	2.3	5.4	15	28	27	13	2.2	.00	.00	.00	.00
AC-FT	153	232	2190	1550	11870	11010	1320	421	13	414	3540	9690
CAL YR 1982	TOTAL	12191.40	MEAN 33.4	MAX 1610	MIN .00	AC-FT 24180						
WTR YR 1983	TOTAL	21374.66	MEAN 58.6	MAX 1370	MIN .00	AC-FT 42400						

GILA RIVER BASIN

09472000 SAN PEDRO RIVER NEAR REDINGTON, AZ

LOCATION.--Lat 32°22'50", long 110°26'45", in NE¼NW¼ sec.19, T.12 S., R.19 E., Cochise County, Hydrologic Unit 15050203, on left bank, 0.3 mi upstream from Cochise-Pima County line, 4.3 mi southeast of Redington, and 30 mi north of Benson.

DRAINAGE AREA.--2,939 mi², of which 696 mi² is in Mexico.

PERIOD OF RECORD.--June 1943 to June 1947, July 1950 to current year (monthly discharge only, July 1954 to March 1955). Also extremes for water years 1948-50, published in WSP 1179.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder, and, since Aug. 26, 1981, crest-stage gage. Datum of gage is 2,930.04 ft, National Geodetic Vertical Datum of 1929. June 1943 to June 1947, and Oct. 1, 1962, to June 27, 1963, at present site at datum 7.49 ft higher. July 1950 to Sept. 30, 1962, at site 400 ft upstream at datum 10.47 ft higher. Supplementary water-stage recorder 50 ft upstream at same datum since June 29, 1977.

REMARKS.--Records poor. Diversions above station for irrigation of about 10,800 acres in 1978, excluding an unknown amount in Mexico. Diversion above gage into formerly used ditch on right bank was placed in operation in January 1972; diversion was observed Nov. 3, Jan. 24, May 24, and July 12.

AVERAGE DISCHARGE.--36 years (water years 1944-46, 1951-83), 44.9 ft³/s, 32,530 acre-ft/yr; median of yearly mean discharges, 28 ft³/s, 20,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,600 ft³/s Aug. 2, 1951, gage height, 20.2 ft, present site and datum, from rating curve extended above 16,000 ft³/s on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1906, about 90,000 ft³/s Sept. 28, 1926, gage height, 29.0 ft, present site and datum, from floodmark, computed on basis of peak discharge of same flood for station at Charleston and for Gila River at Kelvin.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,880 ft³/s Sept. 28, 0130 hours, gage height, 13.90 ft, was not independent of the peak discharge that occurred Oct. 2, 1983; maximum independent peak discharge, 1,990 ft³/s, Feb. 4, gage height 10.50 ft, no independent peak above base of 3,000 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.00	.00	12	34	.00	64	.00	.00	.00	5.5	1.7
2	.20	.00	.00	10	160	.00	54	.00	.00	.00	6.7	1.7
3	.00	.00	.00	10	188	.70	50	.00	.00	.00	17	1.8
4	.00	.00	.00	10	1080	134	44	.00	.00	.00	30	1.8
5	.00	.00	.00	8.6	1130	586	38	.00	.00	.00	25	1.4
6	.00	.00	.00	8.2	980	692	31	.00	.00	.00	12	23
7	.00	.00	.00	8.0	387	370	31	.00	.00	.00	17	44
8	.00	.00	.00	2.1	275	190	32	.00	.00	.00	11	3.0
9	.00	.00	.00	.00	228	134	14	.00	.00	.00	32	4.4
10	.00	.00	66	.00	178	130	4.4	.00	.00	.00	18	4.3
11	.00	.00	79	.00	121	116	4.6	.00	.00	.00	73	21
12	.00	.00	134	.00	80	96	4.9	.00	.00	.00	15	2.3
13	.00	.00	43	.00	70	96	5.8	.00	.00	.00	10	1.2
14	.00	.00	24	.00	39	96	4.8	.00	.00	.00	10	.60
15	.00	.00	10	.00	22	83	4.6	.00	.00	.00	7.5	1.2
16	.00	.00	16	.00	16	88	3.7	.00	.00	.00	29	1.7
17	.00	.00	13	.00	12	52	3.7	.00	.00	.00	28	3.0
18	.00	.00	11	.00	8.2	40	3.6	.00	.00	.00	8.3	2.9
19	.00	.00	11	.00	6.1	292	3.6	.00	.00	.00	.50	3.0
20	.00	.00	10	.00	4.9	130	3.6	.00	.00	.00	.60	3.0
21	.00	.00	13	.00	4.4	178	4.4	2.4	.00	15	1.8	2.2
22	.00	.00	17	.00	3.6	581	4.6	1.1	.00	2.6	2.1	.80
23	.00	.00	20	.00	3.5	190	4.5	.20	.00	40	14	28
24	.00	.00	21	.00	3.4	128	4.5	.00	.00	12	1.0	61
25	.00	.00	11	.00	1.8	451	2.2	.00	.00	32	1.1	18
26	.00	.00	10	.00	.60	345	1.1	.00	.00	6.9	1.2	6.9
27	.00	.00	13	.00	.00	238	.00	.00	.00	8.8	1.2	161
28	.00	.00	13	.00	.00	208	.00	.00	.00	6.6	1.8	1280
29	.00	.00	13	.00	---	148	.00	.00	.00	6.7	3.3	1440
30	.00	.00	20	445	---	101	.00	.00	.00	7.3	56	1480
31	.00	---	20	305	---	76	---	.00	---	5.3	3.3	---
TOTAL	.30	.00	588.00	818.90	5036.50	5969.70	426.60	3.70	.00	143.20	442.90	4604.90
MEAN	.010	.000	19.0	26.4	180	193	14.2	.12	.000	4.62	14.3	153
MAX	.20	.00	134	445	1130	692	64	2.4	.00	40	73	1480
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.60
AC-FT	.6	.00	1170	1620	9990	11840	846	7.3	.00	284	878	9130
CAL YR 1982	TOTAL	8248.70	MEAN	22.6	MAX	2610	MIN	.00	AC-FT	16360		
WTR YR 1983	TOTAL	18034.70	MEAN	49.4	MAX	1480	MIN	.00	AC-FT	35770		

GILA RIVER BASIN

195

09473000 ARAVAIPA CREEK NEAR MAMMOTH, AZ

LOCATION.--Lat 32°50'37", long 110°37'07", in NW¼NW¼ sec.9, T.7 S., R.17 E., Pinal County, Hydrologic Unit 15050203, on right bank 6 mi upstream from mouth and 9 mi north of Mammoth.

DRAINAGE AREA.--541 mi².

PERIOD OF RECORD.--May 1931 to December 1942 (published as "near Feldman"), May 1966 to current year. Monthly discharge only July 1941 to December 1942, published in WSP 1313.

REVISED RECORDS.--WDR AZ-68-1: 1967. WDR AZ-82-1: 1968, 1969, 1973, 1979 (M).

GAGE.--Water-stage recorder and since March 1980, crest-stage gage. Altitude of gage is 2,349 ft, from topographic map. Prior to Oct. 1, 1981, at datum 1.00 ft higher. May 1931 to December 1942 at site 0.3 mi downstream at different datum.

REMARKS.--Records fair. Diversions for irrigation of several hundred acres above station.

AVERAGE DISCHARGE.--28 years, 31.4 ft³/s, 22,750 acre-ft/yr; median of yearly mean discharges, 21 ft³/s, 15,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge since at least 1931, 16,200 ft³/s Dec. 18, 1978, from slope-area measurement of peak flow, gage height, 13.3 ft from high-water mark in gage well and 14.4 ft, from floodmark on bank; minimum, 0.3 ft³/s Aug. 30, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 20,000 ft³/s occurred Aug. 2, 1919, at site of former gaging station 6 mi downstream, operated April 1919 to September 1921, gage height, 6.3 ft, from floodmark, site and datum then in use, from rating curve extended above 5,100 ft³/s on basis of velocity-area study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,920 ft³/s Mar. 19, 0200 hours, gage height, 7.5 ft, from rating curve extended above 400 ft³/s on basis of step-back water method and slope-area measurements at gage heights 8.09 ft and 13.3 ft, base discharge, 2,500 ft³/s; minimum daily, 6.7 ft³/s Oct. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	16	176	17	99	49	51	23	18	10	20	30
2	12	16	39	17	26	49	50	25	17	10	33	29
3	12	15	25	17	185	51	46	26	16	11	93	28
4	13	15	21	17	1340	231	44	24	17	13	107	27
5	13	13	19	17	940	581	42	22	17	13	24	26
6	14	12	19	17	1200	124	41	15	18	15	21	36
7	14	9.6	19	17	650	70	39	12	17	16	25	50
8	12	11	20	16	300	64	38	11	11	19	21	29
9	8.2	18	21	16	200	60	37	14	11	23	51	26
10	8.5	19	39	16	120	54	36	18	11	21	50	32
11	12	28	50	16	67	51	36	21	11	24	33	40
12	9.1	21	28	17	63	46	40	22	11	24	29	28
13	9.7	20	24	17	59	44	40	22	11	21	28	29
14	10	19	21	16	57	40	36	22	16	24	27	27
15	10	19	19	16	55	33	35	21	17	20	27	26
16	11	19	18	16	54	32	34	21	16	15	25	26
17	12	34	17	20	52	32	32	22	16	19	105	26
18	12	45	16	18	51	97	32	21	14	18	57	31
19	12	21	17	17	51	2000	33	22	14	17	43	27
20	13	19	17	28	50	1100	34	21	13	18	39	62
21	14	18	17	22	49	350	35	20	13	23	35	31
22	6.7	18	18	19	49	900	32	19	12	39	33	26
23	8.1	17	26	17	49	500	27	18	12	29	30	24
24	12	17	40	17	49	200	32	18	12	27	30	29
25	12	17	25	17	49	1100	32	17	12	23	28	27
26	14	18	22	17	49	850	30	17	11	22	23	25
27	13	18	20	17	49	400	28	13	11	20	27	37
28	13	18	19	28	49	230	27	12	10	19	27	137
29	14	18	18	77	---	130	24	13	10	20	28	67
30	16	19	18	1330	---	95	26	17	10	63	37	537
31	15	---	17	384	---	67	---	17	---	21	33	---
TOTAL	366.3	567.6	865	2293	6011	9630	1069	586	405	657	1189	1575
MEAN	11.8	18.9	27.9	74.0	215	311	35.6	18.9	13.5	21.2	38.4	52.5
MAX	16	45	176	1330	1340	2000	51	26	18	63	107	537
MIN	6.7	9.6	16	16	26	32	24	11	10	10	20	24
AC-FT	727	1130	1720	4550	11920	19100	2120	1160	803	1300	2360	3120

CAL YR 1982 TOTAL 8505.9 MEAN 23.3 MAX 435 MIN 3.6 AC-FT 16870
WTR YR 1983 TOTAL 25213.9 MEAN 69.1 MAX 2000 MIN 6.7 AC-FT 50010

NOTE.--No gage-height record Feb. 5-10, Mar. 19-31.

GILA RIVER BASIN

09473100 SAN PEDRO RIVER BELOW ARAVAIPA CREEK NEAR MAMMOTH, AZ

LOCATION.--Lat 32°51'03", long 110°43'27", in SE¼NE¼SE¼ sec.5, T.7 S., R.16 E., Pinal County, Hydrologic Unit 15050203, on left bank 1.0 mi downstream from mouth of Aravaipa Creek, 10 mi north of Mammoth, and 11 mi upstream from mouth.

DRAINAGE AREA.--4,360 mi²; of which 696 mi² is in Mexico.

PERIOD OF RECORD.--October 1979 to September 1983 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder and crest-stage gage. Altitude of gage is 2,125 ft, from topographic map.

REMARKS.--Records poor. Diversions above station, mostly by pumping from ground water, for municipal and industrial use, and for irrigation of about 14,700 acres in 1978, excluding an unknown amount in Mexico.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,730 ft³/s Jan. 30, 1983, gage height, 7.83 ft, from rating curve extended above 700 ft³/s on basis of slope-conveyance estimate at gage height 7.83 ft and slope-area measurement at 17.7 ft, maximum gage height, 9.3 ft, Sept. 12, 1982, from crest-stage gage; minimum daily, 2.4 ft³/s June 22, July 3, 15, 16, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended as explained above, and peak discharges above base of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 30	1630	*6,730	7.83	Mar. 19	0300	5,780	7.43
Feb. 4	1100	5,710	7.45				

Minimum daily, 3.4 ft³/s July 17, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	5.2	129	11	154	15	47	13	13	5.4	12	22
2	6.6	5.3	43	10	70	15	42	14	13	5.5	14	12
3	6.4	5.2	22	11	142	15	38	14	13	5.9	21	7.9
4	6.4	5.1	16	10	4310	86	31	14	13	5.9	73	5.8
5	6.1	5.5	14	10	2400	1030	28	14	13	5.9	22	5.4
6	6.0	5.5	13	10	2850	1200	26	14	12	5.9	18	11
7	5.5	5.5	11	10	875	650	26	14	12	5.9	95	33
8	5.1	5.5	11	9.6	304	333	26	13	11	8.3	102	26
9	5.1	5.4	11	8.1	208	168	23	13	11	8.8	194	10
10	5.2	5.7	15	8.1	81	79	23	13	10	7.3	236	7.1
11	5.0	8.0	40	8.1	31	58	22	13	10	6.3	180	14
12	5.0	7.7	26	8.1	15	33	21	13	9.9	6.3	79	17
13	4.8	7.7	39	7.3	15	22	20	13	9.9	5.4	45	30
14	4.8	7.1	27	7.3	15	16	18	12	9.3	5.0	27	13
15	4.9	7.1	22	7.2	15	13	16	12	8.8	4.6	21	22
16	4.7	7.1	15	7.3	15	10	16	12	8.8	3.8	18	81
17	4.6	8.0	12	8.9	15	9.3	18	12	8.8	3.4	69	48
18	4.6	25	10	9.0	15	13	16	14	8.3	3.4	52	42
19	4.4	11	9.6	7.9	15	2330	18	16	8.3	3.4	25	51
20	4.5	8.0	8.7	11	15	1000	16	16	7.8	3.8	22	120
21	4.3	6.6	8.4	13	15	328	16	16	7.8	4.3	18	61
22	4.3	6.9	8.4	11	15	1280	16	20	7.8	5.4	13	50
23	4.3	7.1	10	9.4	15	631	16	21	8.8	7.3	11	53
24	4.3	7.1	30	8.5	15	183	18	20	6.8	8.3	10	186
25	4.4	7.7	27	8.1	15	1460	18	20	5.4	49	10	113
26	4.3	8.4	18	8.1	15	937	18	18	5.4	12	9.1	88
27	4.4	8.0	17	8.0	15	438	18	16	5.0	7.8	8.8	72
28	4.7	7.1	15	11	15	243	18	16	5.0	7.3	8.9	599
29	5.0	6.6	13	14	---	139	16	16	5.4	9.9	11	872
30	5.2	23	12	3080	---	88	14	16	5.4	24	9.0	2610
31	5.1	---	12	976	---	66	---	14	---	13	24	---
TOTAL	157.0	239.1	665.1	4327.0	11680	12888.3	659	462	273.7	258.5	1457.8	5282.2
MEAN	5.06	7.97	21.5	140	417	416	22.0	14.9	9.12	8.34	47.0	176
MAX	7.0	25	129	3080	4310	2330	47	21	13	49	236	2610
MIN	4.3	5.1	8.4	7.2	15	9.3	14	12	5.0	3.4	8.8	5.4
AC-FT	311	474	1320	8580	23170	25560	1310	916	543	513	2890	10480

CAL YR 1982	TOTAL	9402.9	MEAN	25.8	MAX	1950	MIN	2.4	AC-FT	18650
WTR YR 1983	TOTAL	38349.7	MEAN	105	MAX	4310	MIN	3.4	AC-FT	76070

GILA RIVER BASIN

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09473100 SAN PEDRO RIVER BELOW ARAVAIPA CREEK NEAR MAMMOTH, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 22...	1050	7.0	1270	8.0	19.5	18.0	5.4	8.8	--	--	240
JAN 12...	1430	7.8	1360	8.4	21.0	21.0	2.6	8.3	--	--	K5
APR 01...	1415	43	1020	8.4	23.5	24.5	12	6.9	715	89	K3
MAY 17...	1430	12	1320	8.1	26.5	24.0	.90	8.4	712	108	130
JUL 28...	1215	9.3	1300	8.2	37.5	30.5	12	6.4	725	90	300
SEP 20...	0930	135	482	7.9	26.5	22.0	7800	7.1	716	87	--

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
NOV 22...	300	360	120	110	21	150	4	5.3	--	4.7
JAN 12...	680	340	130	100	22	170	4	5.7	--	1.6
APR 01...	210	310	90	94	18	100	3	6.2	220	1.7
MAY 17...	79	390	130	120	23	170	4	5.9	260	4.0
JUL 28...	430	360	130	110	20	160	4	5.5	230	2.8
SEP 20...	--	180	80	58	9.3	29	1	3.8	--	2.5

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
NOV 22...	370	51	2.5	36	904	890	1.2	3	.68	<.060
JAN 12...	430	56	2.4	34	960	950	1.3	18	.29	.350
APR 01...	270	36	1.7	36	707	700	.96	40	.82	.120
MAY 17...	430	59	2.5	38	915	1000	1.2	12	.65	.080
JUL 28...	390	51	2.7	38	896	920	1.2	32	.84	.080
SEP 20...	130	9.6	.60	24	326	330	.44	17700	.99	.120

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09473100 SAN PEDRO RIVER BELOW ARAVAIPA CREEK NEAR MAMMOTH, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
NOV 22...	.40	1.0	4.4	.130	.050	.020	.06	10	5	82
JAN 12...	.90	1.2	5.3	.040	.020	<.010	--	--	--	--
APR 01...	.80	1.6	7.1	.100	.070	.060	.18	20	4	93
MAY 17...	.70	1.3	5.8	.040	.030	.010	.03	--	--	--
JUL 28...	.80	1.6	7.1	.110	.060	.030	.09	50	5	68
SEP 20...	27	28	120	6.90	.140	.130	.40	160	5	52
DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
NOV 22...	<.5	210	1	<1	<1	<3	2	5	3	180
JAN 12...	--	--	<1	--	--	--	--	--	2	--
APR 01...	<.5	160	1	<1	<1	<3	3	7	2	130
MAY 17...	--	--	<1	--	--	--	--	--	<1	--
JUL 28...	1	220	1	<1	<1	<3	7	10	<1	190
SEP 20...	.6	50	--	<1	<1	<3	17	120	1	22
DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 22...	*220	<.1	<.1	20	2	1	<1	1300	<6	7
JAN 12...	--	.1	--	--	--	--	--	--	--	--
APR 01...	14	.2	<.1	10	3	1	<1	1000	6	8
MAY 17...	--	.1	--	--	--	--	--	--	--	--
JUL 28...	24	.1	<.1	20	3	1	<1	1300	7	7
SEP 20...	6	*6.6	.2	30	6	1	<1	330	8	4

< Actual value is known to be less than value shown.
 * Value verified.

GILA RIVER BASIN

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09473100 SAN PEDRO RIVER BELOW ARAVAIPA CREEK NEAR MAMMOTH, AZ--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT					
22...	0850	7.0	23	88	.43
NOV					
22...	1050	7.0	60	48	1.1
DEC					
21...	1310	8.5	100	90	2.3
JAN					
12...	1430	7.8	58	85	1.2
FEB					
11...	1130	26	377	82	26
MAY					
17...	1430	12	36	41	1.2
JUN					
23...	1102	9.0	25	24	.61
JUL					
28...	1215	9.3	79	77	2.0
SEP					
20...	0930	135	19000	96	6930

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°06'10", long 110°58'33", in NE¼ sec.12, T.4 S., R.13 E., Pinal County, Hydrologic Unit 15050100, on left bank at Kelvin, 500 ft downstream from Mineral Creek, 18 mi downstream from San Pedro River, and 19 mi upstream from Ashurst-Hayden Dam.

DRAINAGE AREA.--18,011 mi², of which 5,125 mi² is below Coolidge Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1911 to current year.

REVISED RECORDS.--WSP 329: 1911. WSP 609: 1916(M). WSP 629: 1914-17. WSP 1119: 1913, 1915, 1917(M), 1921(M), 1922-23, 1927(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,745.02 ft, National Geodetic Vertical Datum of 1929. Prior to June 15, 1914, and Dec. 1, 1914, to Aug. 31, 1915, nonrecording gages at several sites within 2 mi of present site at different datums. Sept. 1, 1915, to Sept. 30, 1963, water-stage recorder at site 900 ft downstream at datum 1.80 ft lower.

REMARKS.--Records good. Large diversions above station for irrigation, of which about 90 percent is above Coolidge Dam. About 82,000 acres irrigated, a considerable portion by pumping from ground water. Flow regulated by San Carlos Reservoir 49 mi upstream since Nov. 15, 1928. (See sta 09469000.) San Pedro River contributes major portion of unregulated inflow.

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir).--72 years, 482 ft³/s, 349,200 acre-ft/yr; median of yearly mean discharges, 320 ft³/s, 232,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1911-28: Maximum discharge, about 132,000 ft³/s Jan. 20, 1916, gage height, 19.5 ft, site and datum then in use from rating curve extended above slope-area measurement at gage height, 16.2 ft for flood of Sept. 28, 1926; no flow Feb. 25, 1913.
1929-83: Maximum discharge, 42,800 ft³/s Aug. 8, 1930, gage height, 12.6 ft, site and datum then in use; minimum daily, 0.1 ft³/s June 25, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,490 ft³/s Mar. 19, 1500 hours, gage height, 10.85 ft, base discharge, 4,000 ft³/s; minimum daily, 26 ft³/s Nov. 1-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	26	405	85	773	194	322	434	559	758	809	895
2	109	26	227	82	320	195	298	445	569	755	810	891
3	108	26	120	77	409	232	335	445	601	751	806	873
4	178	26	90	76	2700	718	326	446	656	753	846	851
5	122	26	77	76	2790	1660	316	443	665	753	809	819
6	102	27	69	77	2850	1660	319	440	667	756	793	809
7	101	28	67	79	1970	1330	339	434	656	792	827	839
8	95	28	66	79	1160	695	339	429	640	824	1010	820
9	95	38	64	79	806	369	345	426	636	847	856	780
10	95	36	92	79	544	257	358	422	631	857	1400	751
11	95	38	174	78	308	207	358	433	632	849	1360	754
12	95	36	125	73	243	176	372	464	652	859	766	764
13	94	35	114	71	214	179	395	475	676	861	714	802
14	92	35	108	71	198	230	380	485	677	851	688	754
15	91	62	90	80	186	242	367	483	676	841	673	778
16	90	74	83	90	176	289	347	464	677	844	665	797
17	70	91	81	97	175	305	339	448	678	838	804	740
18	35	270	79	99	172	421	334	448	676	874	753	641
19	34	215	79	97	170	3290	331	451	677	854	554	633
20	33	119	79	97	167	2700	334	440	651	818	514	654
21	33	80	79	130	166	1420	354	457	622	821	503	544
22	32	63	90	133	162	1800	376	476	635	827	503	460
23	31	56	195	133	156	1620	386	476	653	827	524	405
24	30	52	231	132	153	841	380	490	649	824	535	535
25	29	49	181	132	152	2310	379	477	646	816	558	361
26	29	47	140	132	165	1940	376	490	645	829	600	308
27	27	47	124	133	189	1080	373	521	643	819	289	276
28	27	47	114	167	193	734	380	510	644	819	558	587
29	27	47	108	235	---	586	398	508	567	819	700	1150
30	27	56	106	1650	---	459	416	508	717	837	769	2020
31	27	---	102	2610	---	380	---	514	---	828	868	---
TOTAL	2163	1806	3759	7229	17667	28519	10672	14382	19373	25401	22864	22291
MEAN	69.8	60.2	121	233	631	920	356	464	646	819	738	743
MAX	178	270	405	2610	2850	3290	416	521	717	874	1400	2020
MIN	27	26	64	71	152	176	298	422	559	751	289	276
AC-FT	4290	3580	7460	14340	35040	56570	21170	28530	38430	50380	45350	44210
CAL YR 1982	TOTAL	160697	MEAN	440	MAX	2900	MIN	26	AC-FT	318700		
WTR YR 1983	TOTAL	176126	MEAN	483	MAX	3290	MIN	26	AC-FT	349300		

GILA RIVER BASIN

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09474000 GILA RIVER AT KELVIN, AZ--Continued

WATER-QUALITY RECORDS

LOCATION.--Water samples collected at Florence-Kelvin road bridge 200 ft upstream from Mineral Creek, and 700 ft upstream from gaging station.

PERIOD OF RECORD.--December 1950 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1976.

WATER TEMPERATURES: December 1950 to September 1976.

SUSPENDED-SEDIMENT DISCHARGE: January 1958 to September 1976, daily; October 1976 to current year, monthly.

REMARKS.--No inflow from Mineral Creek between sampling point and gaging station except during infrequent periods of heavy local rains. Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from district office in Tucson, Ariz.

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT				
22...	1045	32	50	4.3
NOV				
03...	1320	25	68	4.6
DEC				
03...	1230	116	352	110
JAN				
04...	1225	76	51	10
FEB				
02...	1300	306	348	288
25...	1100	151	190	77
MAY				
04...	1330	449	514	623
JUL				
06...	1122	782	517	1090
AUG				
02...	1210	798	366	789

GILA RIVER BASIN

DIVERSION FROM GILA RIVER

09475500 FLORENCE-CASA GRANDE CANAL, NEAR FLORENCE, AZ

LOCATION.--Lat 33°05'15", long 111°17'10", in NE¼NE¼ sec.14, T.4 S., R.10 E., Pinal County, Hydrologic Unit 15050100, on left bank at China Wash, 2.6 mi downstream from head of Ashurst-Hayden Dam and 7.5 mi northeast of Florence.

PERIOD OF RECORD.--January 1928 to current year (monthly diversions only). Published as a supplement to records for Gila River at Ashurst-Hayden Dam, 1928-80.

GAGE.--Water-stage recorder and Parshall flume. Prior to Jan. 12, 1937, water-stage recorder 900 ft downstream from Ashurst-Hayden Dam.

REMARKS.--Records show monthly diversions from the Gila River at Ashurst-Hayden Dam, supplemented by pumping from ground water for irrigation of land under the 100,000-acre San Carlos Project. Records are adjusted for sluicing through dam or from the canal but not natural losses. This shows water available at dam, except for pumpage and flow through dam or spill over dam during times of flood runoff.

MONTHLY DIVERSIONS, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Discharge, in cubic feet per second			Diversions in acre-feet	Water sluiced above flume (acre-feet)
	Maximum	Minimum	Mean		
October.....	164	0	50.0	3,080	0
November.....	282	0	40.4	2,400	0
December.....	299	57	110	6,770	0
CAL YR 1982.....	1,060	0	401	291,500	1,660
January.....	1,080	59	140	8,620	*139
February.....	1,030	100	282	15,660	*1,700
March.....	736	178	347	21,320	*706
April.....	358	214	311	18,510	0
May.....	474	386	423	25,980	0
June.....	587	482	559	33,260	0
July.....	810	658	747	45,900	0
August.....	958	303	634	39,000	*1,250
September.....	806	246	619	36,840	*661
WTR YR 1983.....	1,080	0	355	257,340	4,460

* Included in first four columns of table.

09479500 GILA RIVER NEAR LAVERN, AZ

LOCATION.--Lat 33°15'25", long 112°09'59", in SW¼NW¼ sec.16, T.2 S., R.2 E., Pinal County, Hydrologic Unit 15050100, in Gila River Indian Reservation, on left abutment of highway bridge, 2.1 mi upstream from Santa Cruz River, 2.6 mi south of Komatke, and 7.3 mi south of Laveen.

DRAINAGE AREA.--20,615 mi², of which 696 mi² is in Mexico.

PERIOD OF RECORD.--January 1940 to September 1946, December 1947 to current year.

GAGE.--Water-stage recorder above concrete diversion dam. Datum of gage is 1,018.90 ft, National Geodetic Vertical Datum of 1929. Since July 9, 1969, supplementary water-stage recorder on overflow channel at highway bridge 0.2 mi south at same datum. Oct. 16, 1940, to July 8, 1969, supplementary staff gage or water-stage recorder on overflow channel at datum 0.23 ft lower.

REMARKS.--Records fair. Records include flow over dam and in overflow channel. Large diversions above station for irrigation. Most low flow is waste water from irrigated lands and from Chandler, Arizona treatment plant (1979-83). Flow partly regulated by storage in San Carlos Reservoir. (See elsewhere in this report.)

AVERAGE DISCHARGE.--41 years (water years 1941-46, 1949-83), 25.4 ft³/s, 18,400 acre-ft/yr; median of yearly mean discharges, 11 ft³/s, 8,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s Jan. 2, 1941, gage height, 9.33 ft; maximum gage height, 10.20 ft Dec. 21, 1978; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 385 ft³/s, gage height, 6.85 ft, Feb. 9; no flow for many days June through September.

REVISIONS.--Revised figures of discharge, in cubic feet per second, for part of the 1982 water year, superseding those published in the report for 1982 are given below.

Dec. 1	4.6	Dec. 5	3.6	Dec. 8	4.6	Dec. 11	8.6	Dec. 14	8.6
2	3.6	6	3.6	9	5.8	12	7.1	15	7.1
3	3.6	7	4.6	10	5.8	13	8.6	16	5.8
4	3.6								

Month	Total	Mean	Max	Min	Ac-Ft
December 1982	181.5	5.85	8.6	3.6	360
WTR YR 1982	1658.26	4.54	194	.00	3290

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.1	5.9	1.9	.18	14	.62	1.1	2.5	.00	.00	.00
2	1.8	2.0	4.2	1.6	.00	12	.42	.28	1.2	.00	.00	.00
3	1.3	4.5	3.1	1.3	18	21	.25	.00	1.4	.00	.00	.00
4	.00	1.5	2.5	1.3	20	40	.06	.00	.64	.00	.00	.00
5	.00	1.5	2.7	1.2	6.0	18	.30	.00	.00	.00	.00	.00
6	.55	.10	1.3	1.8	.21	4.2	1.6	2.1	.00	.00	.00	.00
7	.55	2.9	1.1	1.5	270	2.0	2.6	1.1	.00	.00	.00	.00
8	3.6	2.0	1.9	1.2	365	2.2	1.8	.96	.00	.00	.00	.00
9	2.7	3.9	3.5	1.3	378	21	.11	.21	.00	.00	.00	.00
10	1.6	7.4	10	1.3	343	33	.20	.04	.00	.00	.00	.00
11	.99	8.2	5.8	1.3	53	15	.23	.00	.00	.00	.00	.00
12	1.2	2.7	1.9	1.3	8.7	5.5	.58	.61	.00	.00	.00	.00
13	.14	1.1	1.2	.89	1.3	5.3	2.0	.62	.00	.00	.00	.00
14	.32	4.2	1.1	.93	.81	2.4	1.5	.39	.00	.00	.00	.00
15	.77	3.4	1.9	6.4	.00	2.9	.84	.00	.00	.00	.00	.00
16	.00	2.3	1.8	4.5	1.4	3.8	.66	.00	.00	.00	2.0	1.0
17	.00	1.7	1.7	7.5	2.5	4.1	.99	.61	9.0	.00	4.0	6.0
18	.00	5.0	1.6	7.1	4.0	9.8	2.7	.39	7.5	.00	10	3.5
19	.51	3.5	1.5	4.7	7.9	10	2.3	.00	8.5	.00	.00	1.9
20	1.2	2.1	1.4	5.2	10	8.7	1.1	.00	10	.00	.00	5.8
21	.25	.83	1.3	6.0	9.9	6.2	.67	.28	.37	.00	.00	7.1
22	.00	.44	1.3	5.3	11	11	.94	2.5	.00	.00	.00	5.4
23	1.8	1.2	1.3	5.5	12	205	2.6	2.6	.00	.00	.00	2.0
24	3.1	1.6	1.3	6.9	12	132	1.4	.67	.00	.00	.00	.92
25	3.1	.41	1.3	5.1	16	21	.84	.00	.00	.00	.00	2.5
26	2.2	.00	1.2	6.2	20	31	.21	4.6	.00	.00	.00	2.5
27	1.4	2.1	.09	3.7	20	9.9	.95	1.7	.00	.00	.00	4.6
28	2.7	5.6	.00	11	13	95	1.5	1.3	.00	.00	.00	4.3
29	4.6	6.5	1.4	8.0	---	279	1.4	1.7	.00	.00	.00	10
30	4.6	6.3	2.3	12	---	93	.35	1.1	.00	.00	.00	9.8
31	2.9	---	1.9	4.4	---	2.0	---	1.2	---	.00	.00	---
TOTAL	45.58	87.08	69.49	128.32	1603.90	1120.0	31.72	26.06	41.11	.00	16.00	67.32
MEAN	1.47	2.90	2.24	4.14	57.3	36.1	1.06	.84	1.37	.000	.52	2.24
MAX	4.6	8.2	10	12	378	279	2.7	4.6	10	.00	10	10
MIN	.00	.00	.00	.89	.00	2.0	.06	.00	.00	.00	.00	.00
AC-FT	90	173	138	255	3180	2220	63	52	82	.00	32	134
CAL YR 1982	TOTAL	1430.91	MEAN	3.92	MAX	194	MIN	.00	AC-FT	2840		
WTR YR 1983	TOTAL	3236.58	MEAN	8.87	MAX	378	MIN	.00	AC-FT	6420		

GILA RIVER BASIN

09480000 SANTA CRUZ RIVER NEAR LOCHIEL, AZ

LOCATION.--Lat 31°21'19", long 110°35'20", in SW¼ sec.11, T.24 S., R.17 E. (unsurveyed), Santa Cruz County, Hydrologic Unit 15050301, on southern border of Spanish land grant of San Rafael, near left bank on downstream side of pier of bridge on county road, 1.7 mi upstream from international boundary and 2.5 mi northeast of Lochiel.

DRAINAGE AREA.--82.2 mi².

PERIOD OF RECORD.--January 1949 to current year.

REVISED RECORDS.--WSP 1733: 1951.

GAGE.--Water-stage recorder. Altitude of gage is 4,620 ft, from topographic map.

REMARKS.--Records fair. Small diversions for irrigation of 200 acres above station, mostly by pumping from ground water.

AVERAGE DISCHARGE.--34 years, 3.33 ft³/s, 2,410 acre-ft/yr; median of yearly mean discharges, 1.8 ft³/s, 1,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Oct. 9, 1977, gage height, 10.21 ft, from rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 3	2300	613	5.09	Sept. 22	1700	563	5.00
Mar. 4	2000	*1,120	5.91	Sept. 29	2100	**2,020	6.88

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983.
See section "Hydrologic Conditions."
Minimum daily, 0.14 ft³/s July 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.22	.43	.30	.30	1.7	5.7	4.9	.81	.16	.54	.49
2	.17	.22	.30	.33	.33	1.7	5.7	4.8	.73	.16	2.5	.46
3	.16	.20	.28	.33	.45	20	5.5	5.2	.64	.18	19	.43
4	.16	.20	.28	.33	222	434	5.2	5.4	.65	.18	13	.41
5	.16	.20	.26	.30	8.1	291	5.1	5.1	.68	.16	.71	.46
6	.16	.22	.26	.30	1.9	67	5.2	4.9	.69	.14	.56	.52
7	.16	.22	.26	.33	1.1	27	6.4	5.0	.65	.14	2.6	.52
8	.17	.22	.26	.33	.95	16	5.3	4.7	.63	.43	7.0	.49
9	.18	.28	.28	.33	.86	12	4.4	4.8	.63	.49	.87	22
10	.18	.24	.52	.33	.78	9.9	4.3	4.5	.60	.24	21	7.4
11	.19	.24	.28	.33	.73	9.2	4.1	4.0	.55	.25	14	2.2
12	.18	.24	.26	.35	.73	8.8	4.5	3.6	.49	.23	1.0	.79
13	.18	.24	.26	.35	.64	8.7	4.1	2.9	.47	.24	.80	4.9
14	.18	.24	.26	.35	.64	8.6	3.8	2.5	.46	.21	.76	1.2
15	.18	.24	.26	.33	.64	8.7	3.4	2.2	.44	.22	33	1.1
16	.19	.24	.26	.33	.60	8.2	3.3	1.9	.42	.20	12	1.1
17	.19	.26	.26	.33	.57	8.6	3.2	1.6	.40	.20	.78	1.0
18	.18	.26	.24	.30	.52	8.8	3.0	1.6	.37	.21	.64	1.1
19	.18	.24	.24	.30	.54	13	2.9	1.6	.37	.22	.64	1.0
20	.17	.24	.24	.33	.52	11	2.8	1.5	.36	.75	.64	1.2
21	.16	.24	.24	.30	.50	8.9	2.8	1.5	.32	.92	.56	3.6
22	.16	.24	.26	.30	.57	8.5	2.7	1.4	.25	3.2	.52	110
23	.18	.24	.28	.30	.95	8.1	2.9	1.4	.24	.47	.56	16
24	.17	.24	.26	.30	1.3	8.2	3.1	1.3	.25	.40	.52	3.2
25	.18	.26	.26	.30	1.5	9.8	3.1	1.3	.20	.37	.52	1.8
26	.19	.26	.26	.30	1.6	8.1	3.0	1.3	.19	1.4	.60	1.2
27	.20	.26	.26	.28	1.6	7.7	3.4	1.2	.18	.73	.52	1.1
28	.20	.26	.26	.33	1.7	7.4	3.8	1.1	.16	.51	.56	144
29	.21	.26	.26	.30	---	6.9	4.1	.94	.16	.66	.52	243
30	.21	.26	.28	2.7	---	6.4	4.4	.91	.16	.48	.46	603
31	.21	---	.35	.38	---	6.2	---	.88	---	.49	.46	---
TOTAL	5.56	7.18	8.66	12.30	297.17	1060.1	121.2	85.93	13.15	14.64	137.84	1175.67
MEAN	.18	.24	.28	.40	10.6	34.2	4.04	2.77	.44	.47	4.45	39.2
MAX	.21	.28	.52	2.7	222	434	6.4	5.4	.81	3.2	33	603
MIN	.16	.20	.24	.28	.30	1.7	2.7	.88	.16	.14	.46	.41
AC-FT	11	14	17	24	589	2100	240	170	26	29	273	2330
CAL YR 1982	TOTAL	539.03	MEAN 1.48	MAX 280	MIN .00	AC-FT 1070						
WTR YR 1983	TOTAL	2939.40	MEAN 8.05	MAX 603	MIN .14	AC-FT 5830						

GILA RIVER BASIN

205

09480500 SANTA CRUZ RIVER NEAR NOGALES, AZ

LOCATION.--Lat 31°20'40", long 110°51'03", in NW¼ sec.18, T.24 S., R.15 E. (unsurveyed), Santa Cruz County, Hydrologic Unit 15050301, in Spanish land grant of Maria Santisima del Carmen, on left bank 0.8 mi downstream from international boundary and 5.5 mi east of Nogales.

DRAINAGE AREA.--533 mi², of which 348 mi² is in Mexico.

PERIOD OF RECORD.--March to November 1907 and April 1909 to December 1912 (discharge measurements and fragmentary gage-height record), January 1913 to June 1922 (October 1915 to September 1916 monthly discharge only), May 1930 to December 1933, July 1935 to current year. Water-year estimates for 1913, 1915-16, 1920-22, 1930, 1934-35, published in WSP 1733.

REVISED RECORDS.--WSP 959: 1935(M). WSP 1213: 1915-16, 1930-32(M), 1934(M), 1936-37(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,702.54 ft, National Geodetic Vertical Datum of 1929 (levels by International Boundary and Water Commission). Prior to June 30, 1922, nonrecording gage or water-stage recorder at various sites 5 to 6 mi downstream at different datums.

REMARKS.--Records poor. Diversions above station of about 4,300 acre-ft/yr for irrigation of about 2,150 acres in Mexico in 1977. Diversion 19 mi upstream for municipal supply of city of Nogales, Sonora, began in 1949; diversion in 1968 totaled 3,500 acre-ft/yr.

AVERAGE DISCHARGE.--64 years (water years 1913-22, 1930-83), 26.2 ft³/s, 18,980 acre-ft/yr; median of yearly mean discharges, 19 ft³/s, 13,800 acre-ft/yr.

EXTREMES FOR PERIOD 1930-83.--Maximum discharge, 31,000 ft³/s Oct. 9, 1977, gage height, 15.5 ft, from rating curve extended above 1,660 ft³/s on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0800	4,440	7.44	Feb. 4	0015	*6,410	8.86
Jan. 30	1215	3,840	6.99	Mar. 4	0930	4,460	7.50

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	27	214	49	80	26	5.0	.06	10	18
2	.00	.00	1.8	29	185	48	76	26	4.4	.03	38	17
3	.00	.00	2.4	31	1140	576	71	24	3.8	.03	26	17
4	.00	.00	1.7	26	3450	3340	65	25	3.5	.05	19	17
5	.00	.00	2.7	25	531	1970	63	25	3.5	.02	16	17
6	.00	.00	3.3	26	399	412	64	24	3.2	.00	9.8	22
7	.00	.00	2.4	23	350	312	74	23	3.3	.00	8.8	20
8	.00	.00	2.7	22	262	270	69	23	2.9	.04	11	17
9	.00	.00	197	22	199	240	63	23	2.0	.35	12	17
10	.00	.00	1830	20	146	190	58	22	1.7	.00	43	17
11	.00	.00	279	20	141	170	56	21	1.5	3.8	97	19
12	.00	.00	149	19	136	132	52	20	1.3	1.4	37	19
13	.00	.00	117	19	132	115	53	19	1.0	1.1	107	18
14	.00	.00	92	19	117	115	50	19	1.0	30	42	17
15	.00	.00	68	17	88	115	51	18	.95	6.1	34	76
16	.00	.00	56	18	76	108	47	17	.76	2.2	61	50
17	.00	.00	46	18	73	105	46	16	.91	1.6	145	24
18	.00	.00	37	18	70	104	45	16	.83	1.3	54	21
19	.00	.00	33	19	68	138	43	15	.70	1.2	36	14
20	.00	.00	29	25	65	164	42	15	.66	8.1	30	14
21	.00	.00	25	19	62	138	40	15	.67	137	25	63
22	.00	.00	24	16	59	124	39	14	.72	333	21	47
23	.00	.00	24	17	58	113	37	12	.63	106	18	296
24	.00	.00	44	17	58	107	35	11	.53	31	17	90
25	.00	.00	32	16	56	112	33	8.8	.65	27	15	50
26	.00	.00	27	16	54	117	29	7.9	.60	70	15	33
27	.00	.00	25	16	52	108	28	8.0	.63	48	14	25
28	.00	.00	24	17	52	103	28	6.9	.40	14	46	180
29	.00	.00	21	16	---	98	27	7.0	.26	10	31	1130
30	.00	.00	22	1840	---	90	26	6.9	.13	10	19	2390
31	.00	---	30	453	---	86	---	5.5	---	10	20	---
TOTAL	.00	.00	3248.00	2886	8293	9869	1490	520.0	48.13	853.38	1077.6	4755
MEAN	.000	.000	105	93.1	296	318	49.7	16.8	1.60	27.5	34.8	159
MAX	.00	.00	1830	1840	3450	3340	80	26	5.0	333	145	2390
MIN	.00	.00	.00	16	52	48	26	5.5	.13	.00	8.8	14
AC-FT	.00	.00	6440	5720	16450	19580	2960	1030	.95	1690	2140	9430

CAL YR 1982	TOTAL	4338.28	MEAN	11.9	MAX	1830	MIN	.00	AC-FT	8600
UTR YR 1983	TOTAL	33040.11	MEAN	90.5	MAX	3450	MIN	.00	AC-FT	65540

09482000 SANTA CRUZ RIVER AT CONTINENTAL, AZ

LOCATION.--Lat 31°52'17", long 110°58'46", in SE¼SE¼ sec.11, T.18 S., R.13 E. (unsurveyed), Pima County, Hydrologic Unit 15050301, in Spanish land grant of San Ignacio de la Canoa, on right bank 0.8 mi northeast of Green Valley Post Office, and 1.5 mi north of Continental. Prior to Feb. 13, 1981, at site 1.5 mi upstream.

DRAINAGE AREA.--1,682 mi², revised, of which 395 mi² is in Mexico.

PERIOD OF RECORD.--May 1940 to December 1946, October 1951 to current year. Low-flow records not equivalent prior to Feb. 13, 1981, due to undetermined amount of underflow between sites.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 2,819.07 ft, National Geodetic Vertical Datum of 1929. Prior to Feb. 13, 1981, at site 1.5 mi upstream. July 21, 1940 to Sept. 8, 1965 at datum 17.28 ft higher; Sept. 8, 1965 to present at datum 13.21 ft higher. Old site now used as supplementary gage.

REMARKS.--Records fair above 200 ft³/s and poor below. Irrigation above station of about 12,500 acres including about 2,300 acres in Mexico, mostly by pumping from ground water.

AVERAGE DISCHARGE.--38 years, 21.6 ft³/s, 15,650 acre-ft/yr; median of yearly mean discharges, 9.1 ft³/s, 6,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,500 ft³/s Oct. 9, 1977, gage height, 16.70 ft site and datum then in use, from rating curve extended above 18,000 ft³/s on basis of velocity-area study and runoff comparison with downstream station; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 4	0930	*4,800	8.39	Sept. 22	1730	3,950	7.66
Mar. 4	1545	3,960	7.67	Sept. 30	0215	**5,600	9.04

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."
No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	8.8	.00	2.0	.00	3.0	.00	.00	.00	.00	1.0
2	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	18	.40	2.0	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	2290	2450	2.0	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	728	1940	2.0	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	457	524	1.0	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	232	247	1.0	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	134	158	1.0	.00	.00	.00	40	.00
9	.00	.00	.00	.00	.63	96	1.0	.00	.00	.00	17	.00
10	.00	.00	183	.00	.00	38	1.0	.00	.00	.00	51	5.7
11	.00	.00	210	.00	.00	8.6	1.0	.00	.00	.00	.00	.00
12	.00	.00	50	.00	.00	4.3	1.0	.00	.00	.00	.00	.00
13	.00	.00	10	.00	.00	4.3	1.0	.00	.00	.00	.00	19
14	.00	.00	.00	.00	.00	4.3	.50	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	4.3	.50	.00	.00	.00	25	8.3
16	.00	.00	.00	.00	.00	7.1	.50	.00	.00	.00	15	1.1
17	.00	.00	.00	.00	.00	2.9	.00	.00	.00	.00	.00	.70
18	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	4.3	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	44	.00	.00	.00	.00	.00	1.7
21	.00	.00	.00	.00	.00	13	.00	.00	.00	100	.00	.57
22	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	.00	217
23	.00	.00	.00	.00	.00	8.0	.00	.00	.00	.00	.00	34
24	.00	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	17
25	.00	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	8.6	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	7.0	.00	.00	.00	20	.00	.00
28	.00	.00	.00	.00	.00	5.0	.00	.00	.00	3.0	.00	.00
29	.00	.00	.00	.00	---	4.0	.00	.00	.00	.00	20	190
30	.00	4.8	.00	25	---	4.0	.00	.00	.00	.00	10	1420
31	.00	---	.00	3.3	---	3.0	---	.00	---	.00	.00	---
TOTAL	.00	4.80	461.80	28.30	3861.63	5611.50	20.50	.00	.00	123.00	178.00	1916.07
MEAN	.000	.16	14.9	.91	138	181	.68	.000	.000	3.97	5.74	63.9
MAX	.00	4.8	210	25	2290	2450	3.0	.00	.00	100	51	1420
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	9.5	916	56	7660	11130	41	.00	.00	244	353	3800

CAL YR 1982	TOTAL	1504.02	MEAN	4.12	MAX	308	MIN	.00	AC-FT	2980
WTR YR 1983	TOTAL	12205.60	MEAN	33.4	MAX	2450	MIN	.00	AC-FT	24210

GILA RIVER BASIN

207

09482950 RAILROAD WASH AT TUCSON, AZ

LOCATION.--Lat 32°12'50", long 110°56'45", in NE¼SE¼ sec.18, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050301, on center of culvert on upstream side of Winsett Street in Tucson. Prior to Dec. 11, 1978, at site 200 ft upstream.

DRAINAGE AREA.--2.3 mi².

PERIOD OF RECORD.--October 1975 to September 1983 (publication by U.S. Geological Survey discontinued; records available from cooperator listed below).

GAGE.--Water-stage recorder. Altitude of gage is 2,425 ft, from topographic map. Prior to Dec. 11, 1978, at site 200 ft upstream at different datum.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

AVERAGE DISCHARGE.--8 years, 0.21 ft³/s, 152 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 421 ft³/s July 25, 1982, gage height, 5.62 ft; no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 29	2115	*106	2.82	Sept. 29	2000	**152	3.30
Sept. 15	2200	105	2.81				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 1, 1983. See section "Hydrologic Conditions."
No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	5.8	.66	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.96	4.6	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	3.5	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	7.3	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.6
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24	.00
19	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00	.20	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00
21	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19
24	.00	.00	.00	.00	.00	.12	.00	.00	.00	1.8	.00	.27
25	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.04
29	.00	.00	.00	8.0	---	.00	.00	.00	.00	.00	.00	17
30	.00	.00	.00	11	---	.00	.00	.00	.00	.00	.00	7.7
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	7.32	19.00	11.66	6.20	.00	.00	.00	1.97	.45	30.45
MEAN	.000	.000	.24	.61	.42	.20	.000	.000	.000	.064	.015	1.02
MAX	.00	.00	7.3	11	5.8	4.6	.00	.00	.00	1.8	.24	17
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	15	38	23	12	.00	.00	.00	3.9	.9	60

CAL YR 1982	TOTAL	156.67	MEAN	.43	MAX	38	MIN	.00	AC-FT	311
WTR YR 1983	TOTAL	77.05	MEAN	.21	MAX	17	MIN	.00	AC-FT	153

GILA RIVER BASIN

09483010 HIGH SCHOOL WASH AT TUCSON, AZ

LOCATION.--Lat 32°13'28", long 110°56'48", in SE¼SE¼ sec.7, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050301, on right bank 200 ft upstream from Cherry Avenue in Tucson.

DRAINAGE AREA.--0.95 mi².

PERIOD OF RECORD.--October 1973 to September 1983 (publication by U.S. Geological Survey discontinued; records available from cooperator listed below).

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 2,415 ft, from topographic map.

REMARKS.--Entire drainage basin is an urban residential area.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

AVERAGE DISCHARGE.--10 years, 0.109 ft³/s, 79.0 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 464 ft³/s July 25, 1982, gage height, 5.00 ft; no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 80 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 9	0030	116	2.44
Aug. 16	1515	*153	2.83

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.10	3.6	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00
10	.00	.11	3.1	.00	.00	.00	.00	.00	.00	1.0	.00	.00
11	.00	.02	.01	.00	.00	.00	.00	.00	.00	.09	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.23	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.07	.42
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	.52
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.01
17	.00	.87	.00	.00	.00	.00	.00	.00	.00	.00	.39	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
19	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.02	.00
20	.00	.00	.00	.81	.00	.00	.00	.00	.00	.36	.00	.00
21	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
23	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.50	.00	.00	.00	.02	.00	.00
25	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5
29	.00	.00	.00	3.2	---	.00	.00	.00	.00	.00	.00	5.7
30	.00	3.6	.13	3.1	---	.00	.00	.00	.00	.00	.00	2.7
31	.00	---	.01	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	4.82	4.42	7.11	.10	8.04	.00	.00	.00	1.72	8.60	10.85
MEAN	.000	.16	.14	.23	.004	.26	.000	.000	.000	.055	.28	.36
MAX	.00	3.6	3.1	3.2	.10	3.6	.00	.00	.00	1.0	4.6	5.7
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	9.6	8.8	14	.2	16	.00	.00	.00	3.4	17	22
CAL YR 1982	TOTAL	79.87	MEAN	.22	MAX	16	MIN	.00	AC-FT	158		
WTR YR 1983	TOTAL	45.66	MEAN	.13	MAX	5.7	MIN	.00	AC-FT	91		

GILA RIVER BASIN

209

09485390 ATTERBURY WASH TRIBUTARY AT TUCSON, AZ

LOCATION.--Lat 32°11'09", long 110°49'17", in SW¼NW¼ sec.28, T.14 S., R.15 E., Pima County, Hydrologic Unit 15050302, on left bank 500 ft downstream from Stella Road in Tucson.

DRAINAGE AREA.--4.97 mi².

PERIOD OF RECORD.--October 1975 to September 1983 (Publication by U.S. Geological Survey discontinued; records available from cooperator listed below).

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 2,710 ft, from topographic map.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

AVERAGE DISCHARGE.--8 years, 0.23 ft³/s, 167 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 390 ft³/s, Aug. 11, 1977, gage height, 3.70 ft; no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 50 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 29	2130	88	1.79	Sept. 22	2245	*281	2.99
Feb. 3	1930	51	1.39				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	5.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	7.5	3.4	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	6.0	2.4	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	6.2	.56	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	4.3	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00	.38	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	3.9	.00	.00	.00	.00	.00	.00	.00	2.4	.00
10	.00	.00	.11	.00	.00	.00	.00	.00	.00	2.6	1.8	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.61	1.0	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.1	.19	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	1.1
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.7	.25
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.4	.00
18	.00	.00	.00	.00	.00	3.8	.00	.00	.00	.00	2.3	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.74
20	.00	.00	.00	.13	.00	.00	.00	.00	.00	2.2	.00	.35
21	.00	.00	.00	.00	.00	.57	.00	.00	.00	.48	.00	.00
22	.00	.00	.00	.00	.00	.34	.00	.00	.00	.00	.00	13
23	.00	.00	.38	.00	.00	.00	.00	.00	.00	.23	.00	5.0
24	.00	.00	.00	.00	.00	.65	.00	.00	.00	.40	.00	.00
25	.00	.00	.00	.00	.00	3.1	.00	.00	.00	.27	.00	.00
26	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	5.7	---	.00	.00	.00	.00	.00	.00	.92
30	.00	10	.00	24	---	.00	.00	.00	.00	.00	.00	5.5
31	.00	---	.00	.84	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	10.00	9.39	30.67	24.11	14.86	.00	.00	.00	10.39	14.72	26.86
MEAN	.000	.33	.30	.99	.86	.48	.000	.000	.000	.34	.47	.90
MAX	.00	10	5.0	24	7.5	3.8	.00	.00	.00	2.6	2.7	13
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	20	19	61	48	29	.00	.00	.00	21	29	53

CAL YR 1982	TOTAL	182.61	MEAN	.50	MAX	64	MIN	.00	AC-FT	362
WTR YR 1983	TOTAL	141.00	MEAN	.39	MAX	24	MIN	.00	AC-FT	280

GILA RIVER BASIN

09485550 ARCADIA WASH AT TUCSON, AZ

LOCATION.--Lat 32°14'37", long 110°53'05", in SE¼NW¼ sec.2, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050302, on right bank 150 ft downstream from Pima Street in Tucson.

DRAINAGE AREA.--2.72 mi².

PERIOD OF RECORD.--October 1975 to September 1983 (Publication by U.S. Geological Survey discontinued; records available from cooperator listed below).

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 2,485 ft, from topographic map.

REMARKS.--Entire drainage basin is an urban, residential area.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

AVERAGE DISCHARGE.--8 years, 0.36 ft³/s, 261 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 836 ft³/s, Sept. 11, 1982, gage height, 5.36 ft; no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2130	*157	2.20	Mar. 4	0245	110	1.80
Jan. 29	2000	131	1.99	Sept. 29	1930	**250	2.84
Feb. 2	1830	131	1.99				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 1, 1983. See section "Hydrologic Conditions."
No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.34	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.35	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	13	8.0	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	10	.00	.00	.00	.00	.00	.00	.15
6	.00	.00	.00	.00	3.5	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00
8	.00	.64	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	6.1	.00	.00	.00	.00	.00	.00	.00	.00	4.0	.00
10	.00	.00	4.7	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.15	1.6
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.4
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.2	.01
17	.00	1.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00
19	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.09	1.9
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	5.4	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00
23	.00	.00	1.7	.00	.00	.00	.00	.00	.00	3.0	.00	4.5
24	.00	.00	.00	.00	.00	2.6	.00	.00	.00	1.5	.00	3.1
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3
29	.00	.00	.00	9.4	---	.00	.00	.00	.00	.00	.00	22
30	.00	4.9	2.5	17	---	.00	.00	.00	.00	.00	.00	17
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	13.34	9.24	26.40	26.85	42.54	.00	.00	.00	4.57	8.10	53.96
MEAN	.000	.44	.30	.85	.96	1.37	.000	.000	.000	.15	.26	1.80
MAX	.00	6.1	4.7	17	13	14	.00	.00	.00	3.0	4.0	22
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	26	18	52	53	84	.00	.00	.00	9.1	16	107
CAL YR 1982	TOTAL	282.96	MEAN	.78	MAX	69	MIN	.00	AC-FT	561		
WTR YR 1983	TOTAL	185.00	MEAN	.51	MAX	22	MIN	.00	AC-FT	367		

GILA RIVER BASIN

211

09486500 SANTA CRUZ RIVER AT CORTARO, AZ

LOCATION.--Lat 32°21'04", long 111°05'38", in NW¼NW¼ sec.35, T.12 S., R.12 E., Pima County, Hydrologic Unit 15050302, on downstream side of right bridge pier 0.5 mi southwest of Cortaro, 2.6 mi downstream from Canada del Oro, and 3.7 mi downstream from Rillito Creek.

DRAINAGE AREA.--3,503 mi², of which 395 mi² is in Mexico.

PERIOD OF RECORD.--October 1939 to June 1947 (published as "at Rillito"), July 1950 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,132.53 ft, National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Prior to June 30, 1947, at site 5.5 mi downstream at different datum. July 8, 1950, to Jan. 20, 1966, at present site at datum 4.00 ft higher. Supplementary water-stage recorder on downstream side of left bridge pier at same datum since Aug. 29, 1969.

REMARKS.--Records poor. Only daily discharges greater than 200 ft³/s are published. Many diversions above station, mostly by pumping from ground water, for irrigation of about 34,000 acres. Wastewater from irrigation and from sewage-disposal plants is included in flow past station in water years 1951, 1952, and 1970-82.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s Oct. 10, 1977, gage height, 15.6 ft; no natural flow for most of each year. (See REMARKS.)

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 2,700 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 30	1230	3,680	8.24	Aug. 16	1830	2,950	8.00
Feb. 4	1830	*7,620	10.53	Sept. 22	2230	2,770	7.88
Mar. 4	2200	6,150	9.82	Sept. 24	0430	2,700	7.83
Aug. 7	1900	6,220	9.75	Sept. 30	0800	**10,400	11.80
Aug. 9	1900	4,850	9.10				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 1, 1983. See section "Hydrologic Conditions."
No natural flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			306	---	343	---					---	---
2			---	---	---	---					---	---
3			---	---	351	---					---	---
4			---	---	4020	2670					---	---
5			---	---	2410	4070					---	---
6			---	---	1410	1350					---	---
7			---	---	454	582					643	---
8			---	---	---	337					---	---
9			---	---	---	---					1080	---
10			297	---	---	---					665	---
11			242	---	---	---					384	---
12			---	---	---	---					---	---
13			---	---	---	---					---	---
14			---	---	---	---					---	---
15			---	---	---	---					---	---
16			---	---	---	---					491	---
17			---	---	---	---					467	---
18			---	---	---	---					---	---
19			---	---	---	247					---	---
20			---	---	---	321					---	---
21			---	---	---	---					---	---
22			---	---	---	518					---	306
23			---	---	---	---					---	260
24			---	---	---	---					---	610
25			---	---	---	371					---	---
26			---	---	---	267					---	---
27			---	---	---	---					---	---
28			---	---	---	---					---	---
29			---	---	---	---					---	960
30			---	2240	---	---					---	3520
31			---	1300	---	---					---	---
TOTAL			---	---	---	---					---	---
MEAN			---	---	---	---					---	---
MAX			---	---	---	---					---	---
MIN			---	---	---	---					---	---
AC-FT			---	---	---	---					---	---

GILA RIVER BASIN

09489000 SANTA CRUZ RIVER NEAR LAVEEN, AZ

LOCATION.--Lat 33°13'56", long 112°10'08", in NE¼NE¼ sec.29, T.2 S., R.2 E., Pinal County, Hydrologic Unit 15050303, in Gila River Indian Reservation, on downstream side of highway bridge, 3.4 mi upstream from mouth, 4.3 mi south of Komatke, and 9 mi south of Laveen.

DRAINAGE AREA.--8,581 mi².

PERIOD OF RECORD.--January 1940 to September 1946, December 1947 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,020.86 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair, except those for periods of no gage-height record, which are poor. Many diversions above station, mostly by pumping from ground water, for municipal uses and for irrigation of about 240,000 acres, not including San Carlos Project. Much of the low flow passing this station is drainage and wasteway return from irrigated lands upstream and pumpage from ground water; such flow is excluded when it can be identified.

AVERAGE DISCHARGE.--41 years (water years 1941-46, 1949-83), 19.0 ft³/s, 13,770 acre-ft/yr; median of yearly mean discharges, 11 ft³/s, 7,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft³/s Sept. 29, 1962, gage height, 17.50 ft; no flow for most of time in recent years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 380 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	0415	406	10.96	Feb. 7	2245	1,620	14.01
Feb. 3	0330	553	11.47	Mar. 4	1900	485	11.23
Feb. 4	0530	458	11.15	Mar. 8	2100	*1,910	14.44

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	48	.00	2.7	.00	2.2	.00	.00	.00	.00	.00
2	.00	.00	68	.00	274	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	11	.00	417	118	.00	.00	.00	.00	.00	.00
4	3.5	.00	3.8	.00	293	417	.00	.00	.00	.00	164	.00
5	5.9	.00	1.6	.00	77	209	.00	.00	.00	.00	1.1	.00
6	6.6	.00	.47	.00	209	86	.00	.00	.00	.00	.30	.00
7	6.0	.00	.11	.00	1200	740	.00	.00	.00	.00	.17	.00
8	6.1	.00	.10	.00	1500	1730	.00	.00	.00	.00	.11	.00
9	5.7	3.6	43	.00	916	1130	.00	.00	.00	.00	1.5	.00
10	1.9	5.1	282	.00	280	266	.00	.00	.00	.00	16	.00
11	.93	.50	285	.00	38	35	.00	.00	.00	.00	34	.00
12	.19	4.5	338	.00	9.0	5.5	.00	.00	.00	.00	41	.00
13	.06	.00	196	.00	3.4	.80	.00	.00	.00	.00	54	.00
14	.05	.00	96	.00	1.1	1.0	.00	.00	.00	.00	41	.00
15	.05	.00	13	.00	.38	.60	.00	.00	.00	.00	7.8	.00
16	.04	.00	2.1	.00	.17	.31	.00	.00	.00	.00	18	.00
17	.03	.00	.45	.00	.00	.31	.00	.00	.00	.00	36	.00
18	.01	7.7	.12	.00	.00	2.3	.00	.00	.00	.00	87	.00
19	.00	2.4	.00	.00	.00	4.5	.00	.00	.00	.00	27	.00
20	.00	.15	.00	.00	.00	.60	.00	.00	.00	.00	76	.00
21	.00	4.0	.00	.00	.00	1.6	.00	.00	.00	.00	24	.00
22	.00	7.0	.00	.00	.00	2.7	.00	.00	.00	.00	.00	.00
23	.00	6.9	.00	.00	.00	1.0	.00	.00	.00	.00	.00	37
24	.00	3.6	.00	.00	.00	21	.00	.00	.00	.00	.00	288
25	.00	.27	.00	.00	.00	92	.00	.00	.00	.00	.00	86
26	.00	.00	.00	.00	.00	17	.00	.00	.00	.00	.00	69
27	.00	.00	.00	2.8	.00	1.4	.00	.00	.00	.00	.00	94
28	.00	.00	.00	13	.00	43	.00	.00	.00	.00	.00	19
29	.00	.00	.00	7.6	---	14	.00	.00	.00	.00	.00	351
30	.00	3.4	.00	31	---	1.4	.00	.00	.00	.00	.00	604
31	.00	---	.00	12	---	4.3	---	.00	---	.00	.00	---
TOTAL	37.06	49.12	1388.75	66.40	5220.75	4946.32	2.20	.00	.00	.00	628.98	1548.00
MEAN	1.20	1.64	44.8	2.14	186	160	.073	.000	.000	.000	20.3	51.6
MAX	6.6	7.7	338	31	1500	1730	2.2	.00	.00	.00	164	604
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	74	97	2750	132	10360	9810	4.4	.00	.00	.00	1250	3070

CAL YR 1982	TOTAL	4378.93	MEAN	12.0	MAX	474	MIN	.00	AC-FT	8690
WTR YR 1983	TOTAL	13887.58	MEAN	38.0	MAX	1730	MIN	.00	AC-FT	27550

NOTE.--No gage-height record Apr. 26 to May 31, Aug. 21 to Sept. 20.

09489500 BLACK RIVER BELOW PUMPING PLANT, NEAR POINT OF PINES, AZ

LOCATION.--Lat 33°28'36", long 109°45'48", in W½ sec.32, T.2 N., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15060101, in San Carlos Indian Reservation on left bank 0.9 mi downstream from Phelps Dodge Corp. pumping plant, 1.3 mi downstream from Freezeout Creek, 8 mi northwest of Point of Pines, and 63 mi upstream from confluence with White River.

DRAINAGE AREA.--560 mi².

PERIOD OF RECORD.--June 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,725 ft, from topographic map.

REMARKS.--Records good. Water is diverted at pumping plant 0.9 mi upstream and pumped into headwaters of Willow Creek (tributary of Eagle Creek) for mining, metallurgical treatment of ores, and domestic supply in vicinity of Morenci. (See sta 09445000.)

AVERAGE DISCHARGE (adjusted for diversion to Willow Creek).--30 years, 216 ft³/s, 156,500 acre-ft/yr; median of yearly mean discharges, 150 ft³/s, 109,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,900 ft³/s Oct. 19, 1972, gage height, 18.0 ft, from flood-marks, from rating curve extended above 5,000 ft³/s; minimum daily, 2.6 ft³/s July 5, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1900	930	4.61	Mar. 24	2200	2,320	6.19
Jan. 17	2000	794	4.5	Apr. 1	0545	3,880	6.97
Jan. 30	0130	2,260	6.10	Apr. 26	0600	*3,020	7.12
Feb. 8	2000	719	4.35	Sept. 30		**4,330	
Mar. 15	0530	2,160	5.97				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."
Minimum daily, 15 ft³/s Nov. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	19	160	110	335	553	2590	2370	573	56	60	85
2	23	19	139	93	254	580	2090	2070	543	51	69	68
3	22	18	122	93	228	790	2150	1840	498	47	88	57
4	21	15	114	100	237	1230	1920	1820	440	45	147	51
5	20	15	105	105	224	944	1420	2000	395	40	120	41
6	19	15	94	85	261	741	1270	1980	362	35	104	36
7	18	16	94	79	266	785	1080	1930	334	40	86	33
8	17	16	96	79	440	781	906	1960	312	52	83	34
9	16	36	227	81	411	862	800	2030	290	58	103	34
10	16	51	618	81	319	1050	834	2000	271	53	87	31
11	17	60	488	80	282	1340	965	1890	256	52	86	39
12	17	58	350	81	292	1680	921	1700	238	62	96	61
13	17	38	286	83	312	1680	841	1520	221	56	125	57
14	17	32	241	82	341	1760	793	1260	209	60	121	53
15	16	33	190	86	334	1890	827	1110	192	49	167	53
16	16	27	152	95	336	1360	897	944	179	45	169	62
17	17	36	139	286	354	1100	1150	919	164	40	152	58
18	18	81	126	257	371	1020	1630	856	156	35	134	57
19	18	127	117	230	416	978	2050	779	146	35	111	74
20	19	124	105	253	400	928	2250	730	134	49	84	89
21	19	101	103	208	392	1100	2050	695	125	67	66	155
22	18	77	98	171	419	1110	1910	679	116	73	56	114
23	18	63	268	163	457	894	1990	691	112	58	53	88
24	19	56	312	179	525	990	2280	710	110	64	68	84
25	23	58	271	159	608	1070	2670	720	117	54	111	101
26	20	56	252	150	584	847	2650	694	106	60	80	110
27	19	56	222	139	545	821	2650	669	91	99	72	98
28	19	52	178	157	554	824	2640	649	80	75	71	129
29	18	49	124	204	---	1000	2520	630	71	75	79	528
30	19	56	129	948	---	1390	2490	663	63	65	83	2670
31	18	---	132	445	---	2090	---	615	---	66	88	---
TOTAL	582	1460	6052	5362	10497	34188	51234	39123	6904	1716	3019	5150
MEAN	18.8	48.7	195	173	375	1103	1708	1262	230	55.4	97.4	172
MAX	28	127	618	948	608	2090	2670	2370	573	99	169	2670
MIN	16	15	94	79	224	553	793	615	63	35	53	31
AC-FT	1150	2900	12000	10640	20820	67810	101600	77600	13690	3400	5990	10220
MEAN*	41.8	67.5	209	195	393	1120	1729	1283	253	79.0	118	195
AC-FT*	2570	4020	12850	11960	21830	68850	102860	78910	15060	4860	7230	11610

CAL YR 1982	TOTAL	77291.5	MEAN	212	MAX	1470	MIN	7.9	AC-FT	153300	MEAN *	223	AC-FT *	161400
WTR YR 1983	TOTAL	165287.0	MEAN	453	MAX	2670	MIN	15	AC-FT	327800	MEAN *	473	AC-FT *	342600

* Adjusted for Willow Creek Diversion from Black River near Morenci, Ariz.

09490500 BLACK RIVER NEAR FORT APACHE, AZ

LOCATION.--Lat 33°42'46", long 110°12'40", in NW¼ sec.12, T.4 N., R.20 E. (unsurveyed), Gila County, Hydrologic Unit 15060101, on downstream side of first pier from right on highway bridge, 5 mi upstream from confluence with White River and 14 mi west of Fort Apache.

DRAINAGE AREA.--1,232 mi².

PERIOD OF RECORD.--October 1912 to December 1915, September 1916, October 1917 to January 1918, April 1918, October 1957 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1313: 1914-15, drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,345 ft, from river-profile map. November 1912 to July 1918, nonrecording gages or water-stage recorders at several sites within 1 mi of present site at various datums.

REMARKS.--Records good. One transbasin diversion for industrial and municipal use (see record of Willow Creek diversion from Black River, near Morenci). Negligible storage in several small recreational lakes.

AVERAGE DISCHARGE.--29 years (water years 1913-15, 1958-83), 409 ft³/s, 296,300 acre-ft/yr; median of yearly mean discharges, 290 ft³/s, 210,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s Dec. 18, 1978, gage height, 24.05 ft, from rating curve then in use, extended above 8,900 ft³/s on basis of slope-area measurements at gage heights 14.70 ft and 22.33 ft; minimum daily, 11 ft³/s July 6, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0330	1,650	5.53	Feb. 9	0145	5,090	9.07
Dec. 10	2200	4,510	8.56	Mar. 5	0245	3,710	7.86
Dec. 23	2130	3,880	8.02	Mar. 20	2130	8,190	11.25
Jan. 18	1230	1,000	4.52	Mar. 25	0230	11,700	13.37
Jan. 30	0500	*12,000	13.55				

Minimum discharge, 33 ft³/s Oct. 10, gage height, 1.57 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	36	848	227	1380	858	4140	3200	952	104	110	146
2	42	36	458	186	990	878	3550	2820	894	96	131	150
3	41	36	341	164	793	1070	3180	2460	803	89	198	127
4	38	36	272	156	2230	2510	3000	2300	685	83	164	112
5	37	36	266	152	1910	3130	2380	2440	602	80	182	96
6	36	36	272	166	1600	1820	1890	2560	540	75	439	85
7	36	36	277	160	1380	1500	1630	2460	396	80	184	76
8	35	36	277	152	2140	1460	1420	2460	462	78	148	72
9	35	41	380	150	2900	1400	1240	2560	432	82	186	70
10	34	42	1660	152	2270	1500	1180	2580	410	102	215	68
11	35	64	2870	150	984	1750	1280	2490	383	137	180	68
12	35	75	1100	148	818	2060	1380	2300	357	106	160	68
13	36	72	722	146	769	2230	1350	2070	334	100	170	80
14	36	65	540	146	823	2240	1240	1830	316	94	289	102
15	36	58	450	148	784	2370	1240	1580	295	96	239	92
16	36	55	366	143	694	2050	1350	1380	272	89	224	94
17	36	60	307	176	704	1630	1550	1320	249	73	249	102
18	36	72	269	439	731	1710	2010	1290	230	67	230	137
19	36	146	242	576	760	3270	2640	1200	213	61	207	168
20	36	193	218	508	769	4580	3200	1120	201	67	176	170
21	35	175	207	496	685	4460	3170	1050	186	90	156	215
22	36	146	193	432	676	4590	2780	1010	178	135	127	246
23	36	126	1180	386	727	3200	2650	1050	170	139	110	198
24	35	112	1680	572	798	2630	3030	1110	166	108	106	172
25	35	102	848	469	894	6290	3710	1140	160	104	162	156
26	35	98	610	428	968	2810	4000	1130	158	104	166	158
27	36	98	512	354	915	2230	3890	1060	152	119	180	174
28	36	94	400	443	853	1910	3790	1030	135	184	152	383
29	35	89	322	838	---	2040	3570	984	123	162	156	699
30	36	112	277	7320	---	2450	3400	974	114	135	158	5180
31	36	---	263	2690	---	3260	---	1040	---	121	158	---
TOTAL	1126	2383	18627	18673	31945	75886	74840	53998	10568	3160	5712	9664
MEAN	36.3	79.4	601	602	1141	2448	2495	1742	352	102	184	322
MAX	43	193	2870	7320	2900	6290	4140	3200	952	184	439	5180
MIN	34	36	193	143	676	858	1180	974	114	61	106	68
AC-FT	2230	4730	36950	37040	63360	150500	148400	107100	20960	6270	11330	19170
CAL YR 1982	TOTAL	144274	MEAN	395	MAX	5300	MIN	28	AC-FT	286200		
WTR YR 1983	TOTAL	306582	MEAN	840	MAX	7320	MIN	34	AC-FT	608100		

09491000 NORTH FORK WHITE RIVER NEAR McNARY, AZ

LOCATION.--Lat 34°02'47", long 109°44'02", in E½ sec.31, T.8 N., R.25 E. (unsurveyed), Apache County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on left bank 1.9 mi downstream from Paradise Creek and 7 mi southeast of McNary.

DRAINAGE AREA.--66 mi², approximately.

PERIOD OF RECORD.--June 1945 to June 1947, May 1948 to June 1949, May 1950 to September 1954 (monthly discharge only, July to September 1954), June 1957 to current year. Maximum discharge only for water years 1955-56, published in WSP 1513. Prior to Oct. 1, 1963, published as White River near McNary.

REVISED RECORDS.--WSP 1243: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,723 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of no gage-height record and those affected by backwater from ice, which are poor. No storage above station. Water diverted about 5 mi upstream from station for use at McNary.

AVERAGE DISCHARGE.--31 years (water years 1946, 1951-53, 1958-83), 46.5 ft³/s, 33,690 acre-ft/yr; median of yearly mean discharges, 38 ft³/s, 27,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s Sept. 19, 1946, gage height, 5.36 ft, from rating curve extended above 350 ft³/s; minimum recorded, 4 ft³/s Nov. 19, 1948, and Nov. 29, 1950, caused by ice jam upstream.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 180 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	2045	457	3.55	June 1	unknown	*552	3.81
May 10	unknown	unknown	unknown	Sept. 30	1645	**1,170	5.09

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 1, 1983. See section "Hydrologic Conditions."
Minimum daily, 13.0 ft³/s Oct. 3, 5-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	18	19	15	17	31	72	280	430	70	49	75
2	14	18	19	15	17	32	74	246	400	66	54	67
3	13	19	19	15	18	33	75	237	342	62	57	60
4	16	22	19	15	18	35	76	256	298	60	51	58
5	13	20	19	15	19	36	78	291	273	61	45	54
6	13	19	19	15	19	37	79	286	253	59	42	51
7	13	18	18	15	20	39	71	298	239	55	39	49
8	13	19	18	15	20	40	63	350	242	55	39	47
9	13	30	18	15	21	41	58	350	242	52	37	44
10	14	25	18	15	21	43	61	370	230	57	57	42
11	14	19	18	15	22	44	64	360	213	55	69	43
12	14	31	18	16	22	45	57	340	211	51	59	44
13	14	35	18	16	23	47	58	320	211	51	57	41
14	15	35	18	16	23	48	56	300	197	48	73	40
15	15	36	17	16	24	49	55	280	184	45	69	41
16	15	31	17	16	24	51	63	260	177	41	67	36
17	15	38	17	16	25	52	85	240	167	37	60	41
18	15	46	17	16	26	53	114	220	161	36	58	46
19	15	42	17	16	26	55	155	200	157	40	54	42
20	15	35	17	16	27	56	179	190	145	41	51	73
21	15	32	17	16	27	58	159	220	138	38	47	48
22	16	31	17	16	28	59	141	240	136	37	43	43
23	16	29	17	16	28	60	171	280	124	37	67	41
24	16	29	16	16	29	62	244	320	117	41	76	41
25	16	23	16	16	29	63	320	370	108	39	70	40
26	18	21	16	16	30	64	344	400	97	48	69	39
27	19	22	16	17	30	66	350	410	90	40	63	52
28	17	21	16	17	31	67	342	420	84	39	86	117
29	18	21	16	17	---	68	339	440	79	41	91	155
30	18	22	16	17	---	70	328	450	74	56	93	694
31	18	---	16	17	---	71	---	470	---	43	83	---
TOTAL	470	807	539	490	664	1575	4331	9694	5819	1501	1875	2264
MEAN	15.2	26.9	17.4	15.8	23.7	50.8	144	313	194	48.4	60.5	75.5
MAX	19	46	19	17	31	71	350	470	430	70	93	694
MIN	13	18	16	15	17	31	55	190	74	36	37	36
AC-FT	932	1600	1070	972	1320	3120	8590	19230	11540	2980	3720	4490

CAL YR 1982 TOTAL 16689 MEAN 45.7 MAX 268 MIN 11 AC-FT 33100
WTR YR 1983 TOTAL 30029 MEAN 82.3 MAX 694 MIN 13 AC-FT 59560

NOTE.--No gage-height record Dec. 1 to Apr. 16, May 7 to June 2.

09492400 EAST FORK WHITE RIVER NEAR FORT APACHE, AZ

LOCATION.--Lat 33°49'20", long 109°48'50", in SE¼ sec.16, T.5 N., R.24 E. (unsurveyed), Apache County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on left bank 600 ft downstream from highway bridge, 0.1 mi upstream from Rock Creek and 10 mi east of Fort Apache.

DRAINAGE AREA.--38.8 mi².

PERIOD OF RECORD.--August 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,050 ft, by barometer. Prior to Dec. 29, 1960, at site 600 ft upstream at datum 12.78 ft higher. Dec. 29, 1960, to Sept. 28, 1962, at site 600 ft upstream at datum 12.92 ft higher.

REMARKS.--Records good except those for periods of no gage-height record, which are fair.

AVERAGE DISCHARGE.--26 years, 36.0 ft³/s, 26,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,110 ft³/s Sept. 30, 1983, gage height, 4.09 ft; minimum daily discharge, 4.0 ft³/s Nov. 29, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 31	1845	123	2.06	June 1	2045	*388	2.94
Apr. 20	0115	163	2.24	Aug. 14	1845	116	2.03
Apr. 27	0030	236	2.51	Sept. 20	0645	116	2.01
May 10	2045	293	2.69	Sept. 30	1345	**1,110	4.09

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 1, 1983. See section "Hydrologic Conditions."
Minimum daily, 8.7 ft³/s Nov. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	9.5	9.9	19	19	30	100	158	348	49	28	53
2	13.0	9.1	13.0	18	17	30	91	143	326	46	51	47
3	12.0	8.7	17.0	18	17	36	91	129	263	42	46	42
4	12.0	9.1	19.0	18	17	37	80	139	236	40	42	39
5	12.0	9.5	17.0	18	17	33	66	172	219	40	39	35
6	12.0	9.1	16.0	17	16	33	58	184	202	39	34	33
7	11.0	9.5	16.0	17	16	35	51	197	197	37	32	30
8	11.0	9.9	16.0	17	19	34	44	233	208	38	36	28
9	11.0	14.0	21.0	17	19	40	42	270	213	36	39	25
10	11.0	13.0	39.0	16	18	52	46	276	200	33	40	27
11	11.0	12.0	28.0	16	17	67	51	270	179	33	51	30
12	11.0	10.0	22.0	16	18	74	49	242	187	29	51	38
13	11.0	11.0	20.0	17	20	74	44	227	187	28	47	33
14	11.0	10.0	19.0	17	22	73	44	197	170	28	66	30
15	11.0	9.9	16.0	18	21	65	44	160	158	24	80	30
16	10.0	10.0	16.0	19	23	52	49	167	154	22	71	28
17	10.0	15.0	16.0	31	24	46	64	184	145	20	65	34
18	10.0	23.0	16.0	30	28	44	89	174	143	21	61	44
19	10.0	25.0	17.0	25	30	42	116	174	141	21	56	42
20	9.9	19.0	17.0	24	28	39	141	165	131	25	49	89
21	9.9	17.0	17.0	22	28	38	110	163	130	25	42	74
22	9.5	16.0	18.0	23	31	35	93	205	120	25	39	60
23	9.5	15.0	25.0	22	34	33	100	251	110	22	39	51
24	9.5	15.0	22.0	18	37	37	145	290	100	24	53	44
25	9.9	14.0	20.0	17	37	35	202	300	90	20	48	40
26	9.5	13.0	20.0	17	33	32	208	286	80	30	50	36
27	9.9	13.0	20.0	17	31	33	200	279	70	25	58	40
28	9.9	12.0	20.0	18	30	40	197	290	60	22	70	69
29	9.5	13.0	19.0	22	---	49	192	283	56	20	65	147
30	9.9	16.0	19.0	28	---	69	192	311	52	29	60	659
31	9.5	---	19.0	20	---	91	---	340	---	24	57	---
TOTAL	329.4	390.3	589.9	612	667	1428	2999	6859	4875	917	1565	1977
MEAN	10.6	13.0	19.0	19.7	23.8	46.1	100	221	163	29.6	50.5	65.9
MAX	13	25	39	31	37	91	208	340	348	49	80	659
MIN	9.5	8.7	9.9	16	16	30	42	129	52	20	28	25
AC-FT	653	774	1170	1210	1320	2830	5950	13600	9670	1820	3100	3920
CAL YR 1982	TOTAL	13966.2	MEAN	38.3	MAX	263	MIN	7.4	AC-FT	27700		
WTR YR 1983	TOTAL	23208.6	MEAN	63.6	MAX	659	MIN	8.7	AC-FT	46030		

09494000 WHITE RIVER NEAR FORT APACHE, AZ

LOCATION.--Lat 33°44'11", long 110°09'58", in SE¼ sec.32, T.4½ N., R.21 E. (unsurveyed), Gila County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on right bank 2,200 ft downstream from highway bridge, 4.5 mi upstream from confluence with Black River, and 11 mi west of Fort Apache.

DRAINAGE AREA.--632 mi².

PERIOD OF RECORD.--October 1917 to September 1918 (published as "at Wanslee's Ranch"), October 1957 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WRD Ariz. 1971: 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 4,365.99 ft National Geodetic Vertical Datum of 1929. Oct. 12, 1917, to Aug. 31, 1918, nonrecording gage at site 2,100 ft upstream at different datum.

REMARKS.--Records good. Small diversions above station for irrigation of about 1,460 acres. Negligible storage above station in several small recreational lakes.

AVERAGE DISCHARGE.--27 years, 199 ft³/s, 144,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s Dec. 18, 1978, gage height, 15.71 ft, from rating curve extended above 7,800 ft³/s on basis of slope-area measurement of peak flow; no flow July 18-21, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*) and peak discharges above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 30	0530	1,050	5.03	Aug. 3	1815	1,550	5.86
Mar. 25	0115	1,060	5.06	Sept. 11	1800	1,650	6.00
Apr. 1	0330	1,330	5.52	Sept. 30	1530	**5,620	10.10
Apr. 26	0700	*1,870	6.31				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred on Oct. 1, 1983. See section "Hydrologic Conditions."
Minimum, 39 ft³/s Nov. 4, 5, gage height, 2.07 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	47	233	109	199	269	1150	1420	1160	165	123	219
2	60	47	109	100	170	298	980	1220	1150	154	182	184
3	55	46	94	94	172	368	996	1080	986	141	314	163
4	55	46	98	93	249	459	912	1090	866	137	194	148
5	50	47	109	98	212	423	689	1180	791	123	196	133
6	50	50	100	102	191	444	624	1190	734	127	161	123
7	50	47	96	100	179	455	531	1190	689	123	165	117
8	50	49	100	98	278	423	473	1250	685	131	161	109
9	49	68	113	98	292	433	441	1350	685	139	179	104
10	49	94	246	96	260	492	451	1360	676	115	159	98
11	50	86	365	96	177	591	507	1320	620	129	204	192
12	51	68	233	96	172	689	492	1230	603	127	246	148
13	51	62	189	96	177	711	451	1150	599	113	204	143
14	50	67	170	96	201	720	433	1040	566	115	192	141
15	50	67	137	98	179	748	433	907	534	113	329	145
16	50	67	127	100	177	612	477	871	511	104	266	133
17	49	83	127	125	191	550	562	881	481	93	246	131
18	49	168	117	179	199	550	821	840	459	78	255	145
19	46	233	109	175	214	612	1030	811	448	84	214	161
20	45	170	109	175	201	685	1280	777	419	127	192	314
21	45	135	107	145	196	667	1160	739	385	127	165	252
22	45	115	111	127	212	680	1040	767	362	170	148	196
23	46	103	225	152	233	603	1010	876	355	154	148	187
24	45	96	257	148	260	558	1230	986	320	125	255	184
25	45	94	177	135	292	716	1570	1050	298	121	204	179
26	45	86	161	127	295	455	1700	1040	263	137	189	177
27	46	81	148	127	289	430	1630	1030	238	168	179	179
28	50	74	129	141	283	496	1630	1040	217	117	199	333
29	50	74	100	189	---	637	1560	1000	194	115	235	698
30	47	96	129	603	---	725	1530	1050	179	139	241	2430
31	49	---	109	266	---	970	---	1130	---	141	222	---
TOTAL	1532	2566	4634	4384	6150	17469	27793	32865	16473	3952	6367	7866
MEAN	49.4	85.5	149	141	220	564	926	1060	549	127	205	262
MAX	60	233	365	603	295	970	1700	1420	1160	170	329	2430
MIN	45	46	94	93	170	269	433	739	179	78	123	98
AC-FT	3040	5090	9190	8700	12200	34650	55130	65190	32670	7840	12630	15600
CAL YR 1982	TOTAL	79982	MEAN	219	MAX	1660	MIN	13	AC-FT	158600		
WTR YR 1983	TOTAL	132051	MEAN	362	MAX	2430	MIN	45	AC-FT	261900		

GILA RIVER BASIN

09495000 FORESTDALE CREEK DIVERSION FROM SHOW LOW CREEK, NEAR SHOW LOW, AZ

LOCATION.--Lat 34°10'40", long 110°00'56", in SE¼NW¼ sec.16, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, in Sitgreaves National Forest, on right bank 170 ft downstream from terminal structure of Show Low Creek diversion works, 4,350 ft west of pumping plant on Show Low Lake, and 5 mi south of Show Low.

PERIOD OF RECORD.--May 1953 to current year.

GAGE.--Water-stage recorders and V-notch sharp-crested weir. Datum of gage is 6,621.57 ft National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records excellent. Entire flow consists of water pumped from Show Low Lake, in Little Colorado River basin, into headwaters of Forestdale Creek in Gila River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s June 2, 3, 5, 1973, Mar. 17-25, 27-30, Apr. 2-15, Apr. 18 to May 5, 1975; no flow for most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	11	18	.00	.00	.00	.00	.00	21	20	11	.00
2	.00	19	18	.00	.00	.00	.00	.00	21	20	13	.00
3	.00	19	18	.00	.00	.00	.00	.00	21	20	20	.00
4	.00	19	18	.00	.00	.00	.00	.00	21	20	20	.00
5	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
6	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
7	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
8	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
9	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
10	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
11	.00	19	18	.00	.00	.00	.00	.00	21	20	19	.00
12	.00	19	18	.00	.00	.00	.00	.00	21	9.2	19	.00
13	.00	19	18	.00	.00	.00	.00	.00	21	.00	19	.00
14	.00	19	18	.00	.00	.00	.00	.00	21	12	19	.00
15	.00	19	18	.00	.00	.00	.00	.00	21	20	6.3	.00
16	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
17	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
18	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
19	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
20	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
21	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
22	.00	19	18	.00	.00	.00	.00	.00	20	20	.00	.00
23	.00	19	7.4	.00	.00	.00	.00	.00	20	20	.00	.00
24	.00	19	.00	.00	.00	.00	.00	.00	20	20	.00	.00
25	.00	19	.00	.00	.00	.00	.00	10	20	20	.00	.00
26	.00	19	.00	.00	.00	.00	.00	21	20	20	.00	.00
27	.00	18	.00	.00	.00	.00	.00	21	20	12	.00	.00
28	.00	18	.00	.00	.00	.00	.00	21	20	14	.00	.00
29	.00	18	.00	.00	---	.00	.00	21	17	20	.00	.00
30	.00	18	.00	.00	---	.00	.00	21	20	20	.00	.00
31	.00	---	.00	.00	---	.00	---	21	---	20	.00	---
TOTAL	.00	558	403.40	.00	.00	.00	.00	136.00	612	567.20	260.30	.00
MEAN	.000	18.6	13.0	.000	.000	.000	.000	4.39	20.4	18.3	8.40	.000
MAX	.00	19	18	.00	.00	.00	.00	21	21	20	20	.00
MIN	.00	11	.00	.00	.00	.00	.00	.00	17	.00	.00	.00
AC-FT	.00	1110	800	.00	.00	.00	.00	270	1210	1130	516	.00
CAL YR 1982	TOTAL	1876.50	MEAN	5.14	MAX	24	MIN	.00	AC-FT	3720		
WTR YR 1983	TOTAL	2536.90	MEAN	6.95	MAX	21	MIN	.00	AC-FT	5030		

09496500 CARRIZO CREEK NEAR SHOW LOW, AZ

LOCATION.--Lat 33°59'09", long 110°16'52", in sec.24, T.7 N., R.19 E. (unsurveyed), Gila County, Hydrologic Unit 15060104, in Fort Apache Indian Reservation, on right bank 500 ft upstream from bridge on U.S. Highway 60, 1 mi downstream from Corduroy Creek, 23 mi southwest of Show Low, and 24 mi upstream from mouth. Prior to June 1976 at site on bridge pier 400 ft downstream.

DRAINAGE AREA.--439 mi².

PERIOD OF RECORD.--June 1951 to June 1961, June 1967 to June 1976, October 1975 to June 1976 (monthly discharges only), April 1977 to current year.

REVISED RECORDS.--WRD Ariz. 1968: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,749.52 ft, National Geodetic Vertical Datum of 1929. Prior to June 1976 at site on bridge pier 400 ft downstream at same datum.

REMARKS.--Records fair. Diversions for irrigation above station of less than 300 acres. Records include trans-basin diversion from Show Low Creek. (See sta 09495000.)

AVERAGE DISCHARGE.--23 years (water years 1952-60, 1968-75, 1978-83), 54.9 ft³/s, 39,780 acre-ft/yr; median of yearly mean discharges, 31 ft³/s, 22,500 acre-ft/yr, unadjusted for transbasin diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,500 ft³/s Jan. 18, 1952, gage height, 12.08 ft, at site then in use, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow, maximum gage height, 15.1 ft Dec. 18, 1978, from high-water mark; minimum daily discharge, 0.2 ft³/s July 12, 1951, Sept. 21, 1959, at site then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1951, about 23,000 ft³/s Dec. 30, 1965, gage height, 13.0 ft, from floodmark at site then in use, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement at gage height 12.08 ft at site then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	1730	1,300	4.48	July 12	1545	1,250	4.42
Feb. 8	2100	1,520	4.74	Aug. 3	1630	1,360	4.55
Mar. 24	2400	*2,060	5.30				

Minimum daily, 4.3 ft³/s Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	6.3	376	25	132	80	376	37	34	21	23	6.3
2	5.5	6.3	129	24	104	80	215	36	33	20	24	6.3
3	5.2	17	78	24	113	270	170	35	34	21	72	6.0
4	5.2	22	63	24	201	694	140	34	33	21	34	5.2
5	5.2	24	56	24	184	552	124	33	33	20	27	4.7
6	5.2	24	49	24	195	547	117	31	33	21	27	4.7
7	5.0	24	46	24	260	409	113	31	33	21	24	5.5
8	5.0	24	45	23	822	305	100	30	32	22	29	5.2
9	5.0	41	51	22	809	237	89	28	31	22	63	4.7
10	5.2	33	385	22	600	176	80	29	30	22	37	4.3
11	5.5	31	508	22	399	140	75	28	30	22	31	15
12	5.5	27	224	21	309	119	76	28	29	64	27	6.3
13	5.5	27	145	22	287	100	85	27	28	18	25	6.0
14	5.7	26	104	21	324	87	78	27	27	8.1	25	10
15	6.0	25	76	20	247	87	73	27	27	8.1	25	18
16	5.7	25	64	20	209	73	73	26	27	20	17	6.6
17	5.7	37	56	25	201	64	73	25	27	20	9.2	8.5
18	5.5	41	51	46	189	115	64	25	27	20	7.8	8.8
19	5.5	57	45	54	192	324	57	24	24	22	6.9	8.8
20	5.5	45	42	48	151	508	53	24	24	44	6.3	9.6
21	5.7	35	42	38	119	600	57	24	24	28	6.0	7.2
22	5.7	31	41	32	104	634	69	22	24	33	5.7	6.0
23	5.7	28	424	29	104	652	70	22	24	30	54	6.0
24	5.7	29	455	31	106	694	58	20	24	24	18	6.6
25	5.7	28	187	32	104	1110	49	20	24	24	22	6.6
26	5.7	27	98	32	102	657	46	22	23	23	12	6.0
27	6.3	28	50	31	92	513	42	38	22	22	8.1	7.8
28	5.7	27	40	56	80	524	40	39	22	18	8.1	11
29	6.0	27	35	80	---	570	38	38	22	15	8.1	204
30	6.0	151	30	385	---	508	37	38	18	26	8.5	332
31	6.0	---	25	221	---	491	---	37	---	23	7.8	---
TOTAL	172.5	973.6	4020	1502	6739	11920	2737	905	823	723.2	698.5	743.7
MEAN	5.56	32.5	130	48.5	241	385	91.2	29.2	27.4	23.3	22.5	24.8
MAX	6.3	151	508	385	822	1110	376	39	34	64	72	332
MIN	5.0	6.3	25	20	80	64	37	20	18	8.1	5.7	4.3
AC-FT	342	1930	7970	2980	13370	23640	5430	1800	1630	1430	1390	1480
CAL YR 1982	TOTAL	15637.6	MEAN	42.8	MAX	850	MIN	2.0	AC-FT	31020		
WTR YR 1983	TOTAL	31957.5	MEAN	87.6	MAX	1110	MIN	4.3	AC-FT	63390		

GILA RIVER BASIN

09497500 SALT RIVER NEAR CHRYSOTILE, AZ

LOCATION.--Lat 33°47'53", long 110°29'57", in sec.25, T.5 N., R.17 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in San Carlos Indian Reservation, on left bank 1,200 ft upstream from bridge on U.S. Highway 60, 5.7 mi northeast of Chrysotile, 8 mi upstream from Cibecue Creek, and 33 mi downstream from confluence of Black and White Rivers.

DRAINAGE AREA.--2,849 mi².

PERIOD OF RECORD.--September 1924 to current year (monthly discharge only July to December 1954).

REVISED RECORDS.--WSP 859: 1926-27, 1929-30, 1934, 1936. WSP 899: 1927, 1932, 1937, 1938(M). WSP 1313: 1925-26(M), 1929-30(M), 1935-36(M), 1944(M). WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,354.57 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several diversions for irrigation above station of about 3,100 acres, one diversion into the basin (see record of Forestdale Creek diversion from Show Low Creek, near Show Low), and one diversion out of the basin (see record of Willow Creek diversion from Black River, near Morenci).

AVERAGE DISCHARGE.--59 years, 641 ft³/s, 464,400 acre-ft/yr; median of yearly mean discharges, 500 ft³/s, 362,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,400 ft³/s Dec. 18, 1978, gage height, 17.35 ft, from rating curve extended above 52,000 ft³/s; minimum, 49 ft³/s July 6, 7, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood peak of 74,000 ft³/s occurred prior to 1924 and is believed to be the peak of the flood of Jan. 19, 1916, gage height, 18 ft, from floodmarks, from rating curve extended above 52,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	unknown	6,430	a6.45	Mar. 21	0330	10,500	7.87
Dec. 24	0600	5,070	5.86	Mar. 25	0745	*15,700	9.30
Jan. 30	1030	14,000	8.87	Apr. 1	1700	6,670	6.55
Feb. 5	0300	4,900	5.78	Apr. 20	2115	5,140	5.89
Feb. 9	0600	8,050	7.07	Apr. 26	1945	6,450	6.46
Mar. 5	0645	5,780	6.18	May 10	0130	4,160	5.41
Mar. 15	2145	3,500	5.05				

Minimum daily, 149 ft³/s Oct. 21, 23, 26.

a From inside high-water mark.

GILA RIVER BASIN

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09497500 SALT RIVER NEAR CHRYSOTILE, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172	151	1500	429	2130	1230	5740	4860	2100	398	316	396
2	174	151	740	389	1500	1230	5190	4280	2000	387	321	365
3	171	150	530	359	1150	1920	4460	3730	1800	369	407	340
4	170	150	470	341	2700	4430	4170	3400	1640	354	611	307
5	168	160	448	338	3370	5030	3480	3600	1450	340	412	280
6	168	164	443	344	2520	3350	2770	3850	1320	325	604	263
7	165	166	429	343	2070	2530	2420	3750	1230	340	457	243
8	162	165	432	337	3040	2320	2130	3750	1160	345	385	234
9	165	186	550	330	5590	2110	1840	3950	1130	345	391	225
10	162	234	2300	321	3190	2140	1700	4060	1110	340	618	219
11	159	238	3700	321	1870	2380	1790	3940	1030	340	524	216
12	159	245	1550	311	1420	2800	1980	3680	971	407	452	337
13	159	229	1050	311	1290	3070	1940	3350	946	391	429	245
14	159	226	850	307	1350	3070	1790	3010	909	321	499	245
15	156	222	690	311	1340	3220	1720	2600	855	298	583	269
16	156	212	620	321	1160	3020	1830	2290	810	289	537	270
17	153	226	537	345	1130	2360	2080	2200	771	263	563	248
18	153	284	489	606	1140	2280	2650	2150	732	243	493	287
19	150	448	447	936	1160	4610	3520	2040	705	228	457	305
20	150	480	422	779	1190	6320	4460	1900	676	247	412	578
21	149	431	400	746	1070	7340	4560	1790	639	325	370	469
22	163	373	391	676	1020	7310	4040	1730	610	625	325	447
23	149	332	1240	582	1080	5560	3750	1840	596	391	293	425
24	150	306	3270	718	1140	4190	4220	2020	576	355	391	373
25	150	286	1600	706	1250	9540	5310	2180	554	298	401	340
26	149	276	1040	648	1360	4980	6060	2200	521	293	370	324
27	150	268	835	579	1340	3710	5910	2100	497	330	401	379
28	150	260	687	562	1250	3100	5730	2100	464	340	375	512
29	153	255	559	1020	---	3300	5480	2000	440	365	380	2120
30	151	280	478	8510	---	3670	5240	2100	418	330	457	6700
31	150	---	485	4540	---	4620	---	2200	---	345	577	---
TOTAL	4895	7554	29182	27366	49820	116740	107960	88650	28660	10567	13811	17961
MEAN	158	252	941	883	1779	3766	3599	2860	955	341	446	599
MAX	174	480	3700	8510	5590	9540	6060	4860	2100	625	618	6700
MIN	149	150	391	307	1020	1230	1700	1730	418	228	293	216
AC-FT	9710	14980	57880	54280	98820	231600	214100	175800	56850	20960	27390	35630
CAL YR 1982	TOTAL	254873	MEAN	698	MAX	6350	MIN	108	AC-FT	505500		
WTR YR 1983	TOTAL	503166	MEAN	1379	MAX	9540	MIN	149	AC-FT	998000		

NOTE.--No gage-height record Dec. 1-4, 9-15.

GILA RIVER BASIN

09497800 CIBECUE CREEK NEAR CHRYSOTILE, AZ

LOCATION.--Lat 33°50'35", long 110°33'25", in E½ sec.8, T.5 N., R.17 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Fort Apache Indian Reservation, on right bank 0.5 mi upstream from mouth and 7 mi north of Chrysotile.

DRAINAGE AREA.--295 mi².

PERIOD OF RECORD.--May 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft, from topographic map.

REMARKS.--Records fair. Small diversions for irrigation in the vicinity of the village of Cibecue.

AVERAGE DISCHARGE.--24 years, 46.1 ft³/s, 33,400 acre-ft/yr; median of yearly mean discharges, 32 ft³/s, 23,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,200 ft³/s Sept. 2, 1977, gage height, 17.3 ft, on basis of slope-area measurement of peak flow; minimum daily, 4.1 ft³/s Aug. 17-19, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 1,900 ft³/s on basis of slope-area measurement at gage height 17.3 ft, and peak discharge above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2230	*5,150	7.65	Mar. 24	1900	1,040	4.22
Feb. 8	2030	1,170	4.38	Aug. 23	2145	2,510	5.70
Mar. 19	1715	1,050	4.23				

Minimum daily, 16 ft³/s Oct. 8, 23-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	18	323	46	50	115	377	81	30	20	20	22
2	18	18	62	43	46	118	254	81	29	19	25	22
3	18	17	53	41	76	214	239	76	30	19	22	21
4	17	18	46	38	246	473	217	72	29	19	81	20
5	17	18	42	37	128	303	196	67	29	19	28	20
6	17	18	41	35	91	262	180	63	29	18	31	21
7	17	18	42	34	87	286	161	62	27	18	30	21
8	16	18	42	32	365	266	144	59	25	23	37	22
9	17	44	46	32	270	265	130	56	25	21	115	22
10	17	34	280	35	183	243	122	54	25	20	100	22
11	17	41	170	37	149	231	120	53	25	21	65	22
12	17	20	90	37	135	231	122	51	24	19	63	32
13	17	18	80	35	133	214	115	50	24	19	63	27
14	17	18	70	35	141	203	99	48	24	19	62	46
15	17	18	65	32	135	193	91	47	24	19	60	34
16	17	18	60	32	135	180	89	46	24	19	56	25
17	18	23	54	36	135	167	99	44	23	18	95	25
18	18	34	50	37	138	291	108	43	23	18	44	25
19	17	24	47	47	144	605	115	43	23	19	41	59
20	17	34	44	59	138	382	120	41	23	21	37	40
21	17	37	44	57	130	258	122	40	23	28	36	37
22	17	31	44	53	122	341	130	38	23	36	35	37
23	16	28	320	47	130	354	122	37	23	24	79	36
24	16	28	113	44	122	523	120	36	23	22	74	36
25	16	30	115	43	128	523	118	35	22	22	27	35
26	17	24	97	41	128	345	110	35	23	20	24	56
27	18	25	89	40	125	274	104	34	21	20	23	74
28	17	22	77	46	118	246	95	34	21	20	23	76
29	18	22	62	101	---	282	87	34	21	23	27	99
30	18	620	56	110	---	315	81	34	20	21	26	593
31	18	---	50	54	---	406	---	34	---	20	24	---
TOTAL	532	1336	2774	1396	3928	9109	4187	1528	735	644	1473	1627
MEAN	17.2	44.5	89.5	45.0	140	294	140	49.3	24.5	20.8	47.5	54.2
MAX	18	620	323	110	365	605	377	81	30	36	115	593
MIN	16	17	41	32	46	115	81	34	20	18	20	20
AC-FT	1060	2650	5500	2770	7790	18070	8300	3030	1460	1280	2920	3230
CAL YR 1982	TOTAL	16242	MEAN	44.5	MAX	620	MIN	12	AC-FT	32220		
WTR YR 1983	TOTAL	29269	MEAN	80.2	MAX	620	MIN	16	AC-FT	58060		

GILA RIVER BASIN

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09497980 CHERRY CREEK NEAR GLOBE, AZ

LOCATION.--Lat 33°49'40", long 110°51'20", in SW¼ sec.30, T.6 N., R.15 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Tonto National Forest, on right bank 0.2 mi upstream from Devils Chasm, 13 mi upstream from mouth, and 30 mi north of Globe. Prior to Jan. 17, 1979, on left bank at site 125 ft downstream.

DRAINAGE AREA.--200 mi².

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft, from topographic map. Prior to Jan. 17, 1979, at site 125 ft downstream at datum 2.95 ft lower.

REMARKS.--Records good.

AVERAGE DISCHARGE.--18 years, 42.5 ft³/s, 30,790 acre-ft/yr; median of yearly mean discharges, 22 ft³/s, 15,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Jan. 17, 1979, gage height, unknown, from slope-area measurement of peak flow; minimum daily, 2.4 ft³/s Sept. 17, 22, 25, 29, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 390 ft³/s on basis of slope-conveyance computations, and peak discharges above base of 750 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0030	*2,800	7.90	Feb. 8	2345	1,620	6.59
Dec. 10	1830	1,020	5.69	Mar. 3	2045	1,230	6.05
Dec. 23	1145	1,330	6.20	Mar. 19	1915	998	5.66
Jan. 29	2200	1,400	6.30	Mar. 24	2100	1,390	6.28
Feb. 4	1800	846	5.38	Mar. 26	1830	1,020	5.69

Minimum daily, 5.9 ft³/s Oct. 3-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	6.9	851	41	201	49	298	44	14	8.7	9.1	8.0
2	6.2	6.9	226	36	141	48	173	42	14	8.7	11	7.6
3	5.9	6.9	128	35	205	325	141	39	14	8.7	10	7.6
4	5.9	6.9	90	33	608	720	121	37	13	8.7	10	7.6
5	5.9	6.9	87	30	460	535	105	35	13	8.3	9.5	7.6
6	5.9	6.9	79	29	396	366	93	34	13	8.3	9.1	7.6
7	5.9	6.9	66	29	396	255	87	33	12	8.7	8.7	9.5
8	5.9	9.5	57	30	725	181	80	32	12	8.7	8.7	7.6
9	5.9	24	295	34	638	141	75	30	12	10	10	7.6
10	6.2	12	669	34	424	113	70	29	12	11	10	7.2
11	6.2	17	471	30	310	97	69	27	12	13	16	7.6
12	6.2	12	221	27	243	84	68	26	12	12	11	7.6
13	6.2	11	143	26	216	75	68	26	11	9.5	9.5	9.1
14	6.2	9.5	105	24	212	69	62	25	11	9.1	45	8.0
15	6.2	9.1	82	22	167	66	64	25	11	8.7	48	10
16	6.2	8.7	69	21	154	59	80	24	11	8.3	19	8.7
17	6.2	31	60	22	145	52	75	23	11	8.3	26	8.0
18	6.2	52	50	28	137	263	68	22	10	8.0	51	8.0
19	6.2	52	44	44	123	697	62	22	10	8.0	16	8.0
20	6.2	45	40	37	100	587	56	21	9.9	9.9	12	8.3
21	6.2	30	36	32	84	420	62	21	9.9	9.9	10	8.0
22	6.2	23	36	28	79	520	73	20	9.9	36	9.1	7.6
23	6.2	19	579	26	75	563	79	19	10	22	8.7	7.6
24	6.2	17	310	24	72	656	68	18	9.9	16	8.7	8.0
25	6.2	15	158	23	70	683	60	18	9.9	17	8.7	8.0
26	6.6	14	103	22	64	579	55	18	9.5	12	8.3	8.0
27	6.9	14	80	23	59	489	52	17	9.5	10	9.5	7.6
28	6.6	14	69	86	52	392	50	17	9.5	9.5	9.5	9.5
29	6.9	12	56	369	---	372	44	16	9.1	11	9.1	42
30	6.9	688	51	583	---	359	43	16	9.1	11	8.7	79
31	6.9	---	46	281	---	389	---	16	---	9.5	8.3	---
TOTAL	193.7	1187.1	5357	2109	6556	10204	2501	792	334.2	348.5	448.2	346.5
MEAN	6.25	39.6	173	68.0	234	329	83.4	25.5	11.1	11.2	14.5	11.6
MAX	6.9	688	851	583	725	720	298	44	14	36	51	79
MIN	5.9	6.9	36	21	52	48	43	16	9.1	8.0	8.3	7.2
AC-FT	384	2350	10630	4180	13000	20240	4960	1570	663	691	889	687

CAL YR 1982	TOTAL	18823.9	MEAN	51.6	MAX	1100	MIN	5.9	AC-FT	37340
WTR YR 1983	TOTAL	30377.2	MEAN	83.2	MAX	851	MIN	5.9	AC-FT	60250

GILA RIVER BASIN

09498349 MIAMI WASH TRIBUTARY AT HIGHWAY 88, NEAR CLAYPOOL, AZ

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
MAR											
15...	1315	.00	604	5.8	21.0	8.6	674	110	23	250	250
31...	1120	.01	1460	7.2	19.5	7.6	679	94	18	760	720
APR											
07...	1045	.01	1720	6.9	16.0	7.6	678	87	16	880	820
21...	1045	.00	2510	6.8	15.5	6.7	677	76	20	1700	1500
28...	1030	.00	3270	6.9	18.0	4.6	677	56	22	1800	1600

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
MAR											
15...	67	21	20	.6	4.3	7	260	17	1.2	27	454
31...	240	40	49	.8	5.4	44	730	62	.50	27	1240
APR											
07...	280	45	59	.9	5.0	50	790	83	.50	26	1480
21...	540	85	110	1	7.7	190	1400	150	.50	24	2820
28...	570	91	110	1	8.6	200	1600	160	.50	24	2930

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
MAR										
15...	420	.00	<1	.59	<.010	--	<1	40	2	<1
31...	1200	.03	1	.69	.020	.06	<1	80	3	<1
APR										
07...	1300	--	22	.57	.020	.06	<1	90	2	<1
21...	2400	.00	20	.24	.050	.15	1	180	1	<1
28...	2700	.00	18	.21	.020	.06	1	200	1	<1

DATE	CHRO- MIUM, HEXA- VALENT, DIS- (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
MAR										
15...	<1	--	1700	14	2	860	1	160	--	--
31...	<1	370	610	20	2	670	2	150	0	.00
APR										
07...	<1	400	540	4	<1	540	3	120	--	--
21...	<1	42	230	50	<1	250	3	40	--	--
28...	<1	43	180	50	1	320	3	40	--	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

225

09498350 MIAMI WASH AT STATE HIGHWAY 88, NEAR CLAYPOOL, AZ

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB 08...	1315	14	308	7.2	12.0	13.5	9.1	675	99	42	<1
MAR 15...	1250	2.0	386	7.9	13.5	16.0	8.4	674	97	37	K2
31...	1140	15	320	8.0	21.0	19.0	8.2	679	100	22	K12
APR 07...	1110	4.2	420	7.9	9.0	13.5	9.0	678	97	15	K1
21...	1020	.16	610	6.0	15.0	13.5	6.9	677	75	<10	<1
28...	1010	.20	1340	6.9	23.0	18.5	6.5	677	79	12	K5
MAY 26...	1535	.04	512	5.8	33.0	19.5	6.0	675	74	<10	K69
JUN 14...	1300	E.01	244	5.9	30.0	20.0	4.5	677	56	18	K64

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
FEB 08...	110	84	26	11	14	.6	2.1	26	110	5.5	.90
MAR 15...	150	62	36	15	20	.7	2.5	90	110	7.4	.90
31...	110	37	29	10	16	.7	2.0	77	71	5.8	.50
APR 07...	170	69	42	15	20	.7	2.3	--	110	8.6	.60
21...	250	230	74	15	24	.7	3.8	12	250	15	.80
28...	740	710	240	35	44	.7	12	30	740	49	1.1
MAY 26...	180	160	53	11	19	.6	4.2	22	190	13	<.10
JUN 14...	160	140	47	9.9	18	.6	3.9	15	170	12	.60

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
FEB 08...	23	212	210	.29	113	.16	.040	.12	<1	<10	<1
MAR 15...	21	266	270	.36	57	<.10	<.010	--	<1	10	<1
31...	23	205	200	.28	60	<.10	.020	.06	1	10	<1
APR 07...	23	269	280	.37	45	.18	.010	.03	<1	10	1
21...	29	488	420	.66	<1	1.2	.040	.12	<1	40	5
28...	33	1230	1200	1.7	46	1.3	.010	.03	1	40	5
MAY 26...	33	337	340	.46	<1	2.3	<.010	--	<1	50	4
JUN 14...	35	312	310	.42	<1	2.6	.020	.06	<1	60	5

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

E Estimated

GILA RIVER BASIN

09498350 MIAMI WASH AT STATE HIGHWAY 88, NEAR CLAYPOOL, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SELE- NIUM, TOTAL (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
FEB 08...	<1	<1	--	2100	<3	<1	430	1	29	258	9.8
MAR 15...	<1	<1	--	2200	<3	<1	300	1	11	74	.40
31...	<1	<1	29	650	13	<1	130	1	7	65	2.6
APR 07...	<1	<1	100	980	4	<1	260	1	42	33	.37
21...	<1	<1	910	1200	12	<1	1700	2	240	5	.00
28...	<1	<1	360	860	<3	1	1700	6	150	44	.02
MAY 26...	<1	<1	670	1000	6	3	1300	1	220	8	.00
JUN 14...	<1	<1	560	1100	4	1	1200	1	180	4	.00

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09498360 MIAMI WASH TRIBUTARY NO. 2 (EAST SIDE) NEAR CLAYPOOL, AZ

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1983 to July 1983 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	HARD- NESS (MG/L AS CACO3)
APR											
20...	1445	1.0	3490	3.7	16.0	19.0	6.5	674	80	73	1800
29...	1120	1.0	3500	3.5	23.5	25.0	6.2	677	86	84	1800
MAY											
27...	1215	.54	3570	3.2	35.5	32.0	5.8	676	91	74	2000
JUN											
15...	1345	.28	3650	2.6	35.0	34.5	4.7	677	77	73	1800
28...	0905	.15	3650	3.0	30.0	22.5	--	681	--	79	1900
JUL											
14...	1230	E.05	3800	2.6	38.0	37.0	4.8	765	72	81	2100

DATE	ACIDITY (MG/L AS H)	ACIDITY (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
APR										
20...	0.3	15	540	120	190	2	6.6	<1.0	2100	76
29...	9.0	447	540	120	88	.9	6.5	<1.0	2300	86
MAY										
27...	9.0	447	600	110	89	.9	6.4	<1.0	2400	93
JUN										
15...	<.1	--	540	120	87	.9	6.6	<1.0	2300	110
28...	9.2	457	560	110	89	.9	6.2	<1.0	2300	96
JUL										
14...	9.6	477	640	130	100	1	7.0	<1.0	2500	100

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
APR										
20...	6.9	77	3590	28	4.9	<.020	.10	.11	.050	.15
29...	6.7	75	3490	84	4.7	<.020	<.10	<.10	.040	.12
MAY										
27...	7.0	83	3290	25	4.5	<.020	<.10	<.16	.020	.06
JUN										
15...	6.8	84	3570	<1	4.9	<.020	<.10	<.10	.050	.15
28...	6.8	81	3510	23	4.8	<.020	<.10	<.10	.010	.03
JUL										
14...	6.8	82	3760	12	5.1	<.020	<.10	<.10	.040	.12

< Actual value is known to be less than value shown.
E Estimated

GILA RIVER BASIN

09498360 MIAMI WASH TRIBUTARY NO. 2 (EAST SIDE) NEAR CLAYPOOL, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
APR											
20...	<1	80	520	17000	13000	110000	39000	2100	1900	167	.46
29...	<1	100	590	16000	15000	110000	41000	1900	1900	198	.53
MAY											
27...	3	120	530	16000	15000	110000	42000	2000	1900	146	.21
JUN											
15...	<1	80	450	16000	17000	100000	41000	1900	2000	77	.06
28...	<1	80	440	16000	16000	90000	41000	1900	1900	38	.02
JUL											
14...	<1	80	530	16000	16000	65000	43000	1900	1900	17	.00

< Actual value is known to be less than value shown.

09498400 PINAL CREEK AT INSPIRATION DAM NEAR GLOBE, AZ

LOCATION.--Lat 33°34'23", long 110°54'02", in NE¼NW¼SE¼ sec.26, T.3 N., R.14 E., Gila County, Hydrologic Unit 15060103, in Tonto National Forest, on right bank 20 ft upstream from Inspiration Dam, 3.8 mi upstream from mouth, and 14 mi northeast of the town of Globe.

DRAINAGE AREA.--195 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 24, 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is about 2,800 ft from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,920 ft³/s July 9, 1981 (from weather records), gage height, 5.05 ft, from high-water mark by the gage; minimum daily, 1.5 ft³/s Mar. 10-14, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2330	567	2.23	a	unknown	660	2.38
Dec. 23	1400	311	1.75	Mar. 24	2330	466	2.05
Jan. 30	0100	390	1.91	Aug. 9	unknown	*673	b2.40
Feb. 3	2330	278	1.68				

Minimum daily, 4.5 ft³/s Jan. 5-7, 10.

a Sometime between Mar. 18-20.

b From outside high-water mark.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.5	54	10	9.5	8.0	20	14	9.5	9.5	8.0	6.0
2	7.0	7.5	9.5	10	9.0	20	19	14	9.5	9.0	8.0	6.0
3	7.0	7.0	9.5	7.0	39	100	18	14	9.5	9.0	8.0	6.0
4	7.0	7.0	9.5	5.0	108	30	17	14	9.5	8.5	8.0	6.0
5	7.0	7.0	9.5	4.5	28	10	16	14	9.5	8.5	8.0	6.0
6	7.0	7.0	9.5	4.5	32	8.0	14	14	9.5	8.5	8.5	7.0
7	7.0	7.0	9.5	4.5	9.0	8.0	14	15	9.5	8.5	8.5	7.0
8	7.5	7.0	9.5	5.0	9.0	8.0	12	15	9.5	8.5	8.5	7.0
9	7.5	50	21	5.0	9.0	8.0	12	14	9.5	8.5	68	7.0
10	7.5	30	10	4.5	9.0	8.0	10	13	9.5	8.5	18	7.0
11	7.5	20	10	5.0	9.0	8.0	10	13	9.5	8.5	11	7.5
12	7.5	7.0	10	8.0	9.0	8.0	11	17	9.5	8.5	8.5	7.5
13	7.5	7.0	10	10	9.0	8.0	11	18	9.5	8.5	12	7.5
14	7.5	7.0	10	15	9.0	8.0	12	16	9.5	8.5	13	7.5
15	8.0	6.5	10	15	9.0	8.0	12	15	9.5	8.5	14	7.5
16	8.0	20	9.5	15	9.0	8.0	12	15	9.5	8.5	21	8.0
17	8.0	50	9.0	15	8.0	10	12	15	9.5	8.5	12	8.0
18	8.0	30	8.5	11	8.0	30	12	14	9.5	8.5	9.0	8.0
19	8.0	6.5	8.0	10	8.0	200	12	14	9.5	8.5	7.0	8.0
20	8.0	6.5	7.0	10	8.0	100	12	13	9.5	8.5	7.0	8.0
21	8.0	6.5	6.0	9.0	8.0	60	12	12	9.5	8.5	7.0	8.0
22	8.5	6.5	5.0	9.0	8.0	30	13	12	9.5	8.5	7.0	8.0
23	8.5	6.5	51	8.4	8.0	55	13	11	9.5	8.5	7.0	8.0
24	8.5	6.5	30	8.4	8.0	113	13	11	9.5	8.5	7.0	8.0
25	8.5	6.5	16	9.0	8.0	215	14	10	9.5	7.5	7.0	8.0
26	8.5	6.5	14	9.5	8.0	118	14	10	9.5	6.5	6.5	10
27	8.5	6.5	10	14	8.0	51	14	9.5	9.5	6.5	6.5	8.5
28	8.5	6.5	10	18	8.0	27	14	9.5	9.5	6.5	6.5	14
29	8.0	6.0	10	44	---	24	14	9.0	9.5	10	6.0	160
30	7.5	25	10	89	---	16	14	8.5	9.5	10	6.0	118
31	7.5	---	10	12	---	16	---	9.0	---	8.5	6.0	---
TOTAL	240.0	380.5	415.5	404.3	411.5	1321.0	403	402.5	285.0	261.5	338.5	493.0
MEAN	7.74	12.7	13.4	13.0	14.7	42.6	13.4	13.0	9.50	8.44	10.9	16.4
MAX	8.5	50	54	89	108	215	20	18	9.5	10	68	160
MIN	7.0	6.0	5.0	4.5	8.0	8.0	10	8.5	9.5	6.5	6.0	6.0
AC-FT	476	755	824	802	816	2620	799	798	565	519	671	978

CAL YR 1982 TOTAL 3335.6 MEAN 9.14 MAX 80 MIN 4.9 AC-FT 6620
WTR YR 1983 TOTAL 5356.3 MEAN 14.7 MAX 215 MIN 4.5 AC-FT 10620

NOTE.--No gage-height record Feb. 27 to Mar. 24, Aug. 9, Sept. 29-30.

GILA RIVER BASIN

09498400 PINAL CREEK AT INSPIRATION DAM NEAR GLOBE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 28...	1230	8.5	3100	8.0	19.0	20.5	8.6	695	106	2200	2100
NOV 29...	1235	6.2	3050	7.9	13.0	16.0	8.6	689	98	2000	1900
DEC 27...	1315	10	2980	8.1	--	16.0	8.2	692	93	2000	1800
JAN 26...	1500	9.5	3020	--	--	18.5	7.9	691	94	2000	1900
FEB 24...	1500	7.9	3030	7.2	23.0	22.0	7.2	685	93	2000	1900
MAR 24...	1350	63	--	7.8	16.0	17.5	8.4	694	97	840	750
MAY 06...	1300	14	2970	8.1	23.5	26.0	6.1	690	84	1800	1700
31...	1615	9.3	2990	7.8	33.0	23.5	7.2	682	96	2000	1900
JUN 28...	1330	9.4	2980	8.0	32.0	28.0	6.6	691	95	1900	1800
JUL 28...	1050	6.3	2900	7.9	32.5	28.5	6.4	694	92	1900	1800
AUG 29...	1255	6.1	2940	7.6	34.0	33.0	6.4	691	100	2000	1900
SEP 23...	1300	8.1	2990	7.5	30.5	28.5	6.5	693	93	1400	1300

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT 28...	640	140	69	.7	4.2	122	2000	69	.20	46	3130
NOV 29...	590	140	68	.7	4.4	122	1900	69	.20	45	3140
DEC 27...	570	130	68	.7	4.4	--	1900	72	.30	42	3110
JAN 26...	600	130	66	.7	4.2	--	2000	68	.20	42	3070
FEB 24...	590	130	65	.7	4.5	--	1900	71	.30	43	3070
MAR 24...	250	52	37	.6	3.7	92	760	32	.50	15	1310
MAY 06...	530	120	65	.7	4.8	129	1800	71	.20	21	2920
31...	620	120	66	.7	4.5	--	1800	76	<.10	9.6	2910
JUN 28...	580	120	65	.7	4.3	--	1900	72	.20	45	2950
JUL 28...	560	120	68	.7	4.3	114	1800	81	.30	16	3040
AUG 29...	590	130	62	.6	4.9	105	1800	78	.40	48	3020
SEP 23...	340	130	67	.8	4.5	106	1300	84	.20	48	3000

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09498400 PINAL CREEK AT INSPIRATION DAM NEAR GLOBE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS PO4)
OCT 28...	3100	4.3	40	<.10	<.10	.80	--	.070	.030	.09	.21
NOV 29...	2900	4.3	5	<.10	<.10	.60	--	.050	<.010	--	.15
DEC 27...	2900	4.2	86	.20	.20	1.1	1.3	.190	.040	.12	.58
JAN 26...	3000	4.2	29	<.10	1.1	.60	--	.100	.030	.09	.31
FEB 24...	2900	4.2	34	.10	.12	.70	.80	.130	.040	.12	.40
MAR 24...	1200	1.8	294	.30	.30	1.2	1.5	.660	.020	.06	2.0
MAY 06...	2700	4.0	69	.10	.12	.90	1.0	.220	.030	.09	.67
MAY 31...	2800	4.0	11	.10	<.10	.80	.90	.110	.030	.09	.34
JUN 28...	2900	4.0	8	<.10	<.10	.50	--	.060	.040	.12	.18
JUL 28...	2700	4.1	77	<.10	<.10	.80	--	.120	.040	.12	.37
AUG 29...	2800	4.1	55	<.10	<.10	.40	--	.070	.040	.12	.21
SEP 23...	2000	4.1	71	<.10	<.10	.30	--	.100	.020	.06	.31

DATE	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SELE- NIUM, TOTAL (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 28...	60	1	90	40	<1	9400	1	20	163	3.7
NOV 29...	60	1	20	50	7	9800	<1	30	5	.08
DEC 27...	60	2	170	60	1	8800	1	30	400	11
JAN 26...	50	1	40	40	<1	8700	1	20	35	.90
FEB 24...	60	2	120	30	<1	8100	1	20	166	3.5
MAR 24...	30	1	930	150	<1	2700	1	23	1120	191
MAY 06...	60	2	450	70	<1	9300	1	40	182	6.9
MAY 31...	60	2	100	40	2	8900	<1	20	138	3.5
JUN 28...	60	2	<40	40	1	9800	1	20	24	.61
JUL 28...	60	1	120	20	<1	10000	1	20	107	1.8
AUG 29...	60	<1	100	110	<1	4600	1	20	106	1.7
SEP 23...	60	--	--	50	1	7600	<1	20	140	3.1

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09498500 SALT RIVER NEAR ROOSEVELT, AZ

LOCATION.--Lat 33°37'10", long 110°55'15", in SE¼NE¼ sec.9, T.3 N., R.14 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Tonto National Forest on left bank 100 ft downstream from bridge on State Highway 288, 0.3 mi downstream from Pinal Creek, 1 mi upstream from diversion dam for power canal, 14 mi east of village of Roosevelt, and 17 mi upstream from Roosevelt Dam.

DRAINAGE AREA.--4,306 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1913 to current year (monthly discharge only January to September 1913) see WSP 1313.

REVISED RECORDS.--WSP 1049: 1914, 1916, 1918-19, 1926. WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,177.14 ft National Geodetic Vertical Datum of 1929. Prior to 1925, nonrecording gage at diversion dam about 1 mi downstream at different datum. Nonrecording gage at present site and datum 1925 to Jan. 17, 1935. May 20, 1955, to July 30, 1959, supplementary water-stage recorder at diversion dam.

REMARKS.--Records good. Several small diversions for irrigation of about 4,000 acres above station and two trans-basin diversions above station, one into basin from Show Low Creek and one out of basin to Willow Creek. Records show inflow to Roosevelt Lake. Tonto Creek also contributes to Roosevelt Lake; see records elsewhere in this report.

AVERAGE DISCHARGE.--70 years, 886 ft³/s, 641,900 acre-ft/yr; median of yearly mean discharges, 680 ft³/s, 493,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 117,000 ft³/s Mar. 14, 1941, gage height, 24.4 ft, from rating curve extended above 55,000 ft³/s on basis of velocity-area studies and float-area measurements at 66,000 ft³/s and 102,000 ft³/s; maximum gage height, 29.35 ft Dec. 19, 1978; minimum discharge, 59 ft³/s all or part of each day, July 1-4, 7-12, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 42 ft³/s was reported Aug. 5, 1911.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0445	16,000	14.50	Feb. 9	0100	10,800	12.93
Dec. 11	1100	8,150	12.03	Mar. 5	0200	7,990	11.92
Dec. 24	unknown	8,410	12.08	Mar. 25	1515	*17,600	14.94
Jan. 30	1730	13,200	13.70	Apr. 27	0330	6,580	11.60

Minimum, 183 ft³/s Oct. 26-29, Nov. 4, 5, gage height, 6.96 ft.

GILA RIVER BASIN

233

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	270	191	7790	811	3800	1620	6880	5320	2370	543	426	580
2	251	191	2760	730	2560	1620	6530	4720	2340	514	407	479
3	251	184	1330	644	2110	1950	5580	4190	2250	493	426	445
4	242	183	927	602	4410	6840	5200	3690	1990	479	664	407
5	238	183	753	579	5910	7380	4680	3740	1770	459	595	370
6	224	195	720	567	4380	5240	3860	4120	1610	432	500	347
7	219	202	688	569	3670	4100	3360	4020	1490	419	688	358
8	210	210	656	559	4520	3280	2920	3950	1370	432	507	313
9	201	229	704	557	8750	2970	2630	4080	1300	432	528	297
10	196	300	2100	556	5540	2790	2370	4210	1250	432	680	286
11	196	357	6700	548	3760	2870	2370	4140	1220	445	618	286
12	201	340	3710	539	2620	3200	2580	3950	1130	452	610	270
13	196	327	2110	532	2240	3580	2610	3800	1060	459	535	419
14	196	309	1560	526	2180	3620	2500	3600	1050	450	543	329
15	201	298	1290	521	2210	3640	2400	3350	1030	450	656	324
16	201	291	1100	521	1990	3690	2450	3030	1030	440	803	352
17	196	291	953	528	1850	2860	2680	2840	1000	440	770	341
18	201	386	843	595	1820	2970	3090	2760	964	430	704	329
19	201	716	762	1160	1800	6820	3810	2650	946	430	625	400
20	201	764	691	1160	1780	8460	4630	2410	918	420	572	514
21	196	715	648	1030	1690	8890	5140	2210	890	420	507	696
22	192	629	626	984	1560	8730	4880	2070	846	560	459	572
23	192	543	1900	890	1530	8020	4520	2070	829	640	413	543
24	192	477	5780	837	1570	6990	4680	2220	812	390	587	507
25	192	445	2750	1010	1650	11700	5400	2370	786	360	521	452
26	188	416	1730	899	1720	8550	6230	2410	761	360	486	445
27	183	402	1380	881	1760	6750	6260	2370	736	370	452	595
28	183	387	1230	863	1680	5610	6050	2310	704	380	486	595
29	183	371	1110	1040	---	5500	6000	2310	632	410	459	1950
30	188	446	920	7670	---	5630	5670	2240	602	466	479	6690
31	192	---	870	7180	---	6240	---	2310	---	407	580	---
TOTAL	6373	10978	57091	36088	81060	162110	127960	99460	35686	13814	17286	20491
MEAN	206	366	1842	1164	2895	5229	4265	3208	1190	446	558	683
MAX	270	764	7790	7670	8750	11700	6880	5320	2370	640	803	6690
MIN	183	183	626	521	1530	1620	2370	2070	602	360	407	270
AC-FT	12640	21770	113200	71580	160800	321500	253800	197300	70780	27400	34290	40640
CAL YR 1982	TOTAL	350912	MEAN	961	MAX	9440	MIN 112	AC-FT	696000			
WTR YR 1983	TOTAL	668397	MEAN	1831	MAX	11700	MIN 183	AC-FT	1326000			

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1958 to October 1967, January 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: April 1958 to October 1967.

INSTRUMENTATION.--Water temperature recorder from April 1958 to October 1967.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT 27...	1130	186	3850	8.3	21.5	17.5	8.8	707	101	13	K10	400
NOV 24...	1100	466	1550	8.2	10.5	11.0	10.0	710	98	12	26	220
DEC 23...	1230	634	1750	8.2	--	10.0	10.5	698	102	<10	29	250
JAN 26...	1130	910	1120	8.6	--	12.0	--	708	--	12	K1	180
FEB 23...	1745	1470	750	7.1	18.0	12.0	9.3	699	94	<10	83	160
MAR 23...	1435	8250	282	7.9	16.0	9.5	11.2	705	106	44	150	94
APR 27...	1540	6270	275	8.4	28.0	14.5	9.0	701	97	13	K36	72
MAY 25...	1745	2360	512	8.1	29.0	21.0	7.6	698	93	11	K26	89
JUN 29...	1110	605	1550	8.7	31.0	21.5	7.8	703	97	<10	K9	210
AUG 02...	1335	426	1850	8.3	34.0	29.0	7.1	706	101	28	K86	240
26...	1300	510	2050	8.4	35.5	26.5	6.8	708	92	45	380	250
SEP 22...	1305	580	2000	8.0	33.5	24.0	7.8	707	101	68	1300	240

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT 27...	240	100	37	--	--	--	166	200	--	--	--	2070
NOV 24...	58	59	17	230	7	5.9	160	100	380	.20	17	868
DEC 23...	94	67	19	--	--	--	--	100	--	--	--	850
JAN 26...	62	50	14	--	--	--	--	65	--	--	--	631
FEB 23...	52	44	12	95	3	2.9	--	54	150	.20	18	432
MAR 23...	14	26	7.0	23	1	--	80	27	--	--	--	178
APR 27...	15	21	4.8	--	--	--	57	19	--	--	--	146
MAY 25...	23	25	6.5	62	3	2.2	--	29	97	<.10	17	260
JUN 29...	79	59	16	--	--	--	--	85	--	--	--	878
AUG 02...	77	62	20	--	--	--	156	90	--	--	--	1060
26...	110	70	18	310	9	7.0	142	95	500	.30	22	1120
SEP 22...	100	65	19	--	--	--	136	88	--	--	--	1110

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS PO4)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)
OCT 27...	--	2.8	15	<.10	--	.70	.010	--	--	.03	--
NOV 24...	910	1.2	47	<.10	<.10	.70	.060	<.010	--	.18	170
DEC 23...	--	1.2	26	<.10	--	.60	.090	--	--	.28	--
JAN 26...	--	.86	19	<.10	--	.20	.060	--	--	.18	--
FEB 23...	440	.59	9	<.10	<.10	.50	.070	.040	.12	.21	90
MAR 23...	--	.24	161	<.10	--	.60	.300	--	--	.92	--
APR 27...	--	.20	223	<.10	--	1.1	.420	--	--	1.3	--
MAY 25...	280	.35	1	<.10	<.10	.70	.080	.030	.09	.25	180
JUN 29...	--	1.2	7	<.10	--	.60	.030	--	--	.09	--
AUG 02...	--	1.4	124	<.10	--	1.3	.110	--	--	.34	--
26...	1100	1.5	684	<.10	<.10	.60	.070	.020	.06	.21	240
SEP 22...	--	1.5	966	<.10	--	1.9	.500	--	--	1.5	--

DATE	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS TOTAL (UG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 27...	--	<1	<10	--	12	--	10	--	2	16	8.0
NOV 24...	140	1	<10	17	8	49	<3	3.6	<1	45	57
DEC 23...	--	1	50	--	4	--	8	2.6	3	29	50
JAN 26...	--	<1	<10	--	<1	--	14	2.7	<1	15	37
FEB 23...	60	<1	30	34	<1	26	18	3.0	4	152	603
MAR 23...	--	<1	40	--	2	--	33	8.6	<1	481	10700
APR 27...	--	1	--	--	1	--	4	7.7	2	450	7620
MAY 25...	40	<1	30	37	2	12	6	3.0	3	1020	6500
JUN 29...	--	<1	1600	--	2	--	34	1.5	4	4	6.1
AUG 02...	--	<1	30	--	<1	--	54	3.6	2	121	133
26...	170	<1	20	60	<1	30	<10	7.3	1	680	936
SEP 22...	--	1	100	--	<1	--	20	15	3	879	1430

< Actual value is known to be less than value shown.

09498870 RYE CREEK NEAR GISELA, AZ

LOCATION.--Lat 34°01'57", long 111°17'26", in SW¼ sec.13, T.8 N., R.10 E., Gila County, Hydrologic Unit 15060105, in Tonto National Forest, on right bank, 0.5 mi upstream from mouth, 0.8 mi downstream from bridge on county road, and 4.8 mi south of Gisela.

DRAINAGE AREA.--122 mi².

PERIOD OF RECORD.--December 1965 to current year.

REVISED RECORDS.--WRD Ariz. 1969: 1967.

GAGE.--Water-stage recorder. Altitude of gage is 2,730 ft, from topographic map. Prior to Dec. 19, 1967, at datum 1.00 ft higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years, 27.1 ft³/s, 19,630 acre-ft/yr; median of yearly mean discharges, 11 ft³/s, 8,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,400 ft³/s Sept. 5, 1970, gage height, 14.1 ft, in gage well, 18.7 ft, from profile past gage, from rating curve extended above 850 ft³/s on basis of slope-area measurements at gage heights 9.0 and 14.1 ft, present datum; minimum daily, 0.20 ft³/s July 5, 6, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 14.1 ft) and peak discharges above base of 600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	1930	3,410	5.00	Feb. 8	1730	1,910	3.75
Dec. 10	0330	806	2.40	Mar. 3	1500	769	2.34
Dec. 23	1230	1,310	3.10	Mar. 24	1630	957	2.63
Jan. 29	1930	1,550	3.38	Sept. 30	0430	*4,280	5.58
Feb. 4	1200	1,260	3.03				

Minimum daily, 1.0 ft³/s Jan. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.4	414	12	158	23	181	19	9.0	3.5	3.2	3.2
2	1.8	1.4	131	8.6	120	23	120	19	8.0	3.5	3.9	3.2
3	1.8	1.4	57	8.6	306	341	100	18	8.0	3.5	2.6	3.2
4	1.8	1.6	34	8.1	922	532	87	18	8.0	3.5	2.6	3.2
5	1.8	1.6	23	4.3	413	358	73	18	7.0	3.5	2.6	3.2
6	1.8	1.6	17	3.2	293	268	57	17	7.0	3.8	2.6	3.2
7	1.8	1.6	7.6	3.2	441	204	49	17	7.0	3.8	3.2	3.2
8	1.8	1.8	2.9	3.2	830	178	40	17	6.0	3.9	3.2	3.2
9	1.8	2.1	168	2.7	569	146	40	16	6.0	4.3	3.2	3.2
10	1.8	2.1	660	2.6	315	112	35	16	6.0	3.9	3.2	3.2
11	1.8	1.9	416	2.4	220	100	35	16	5.0	4.3	4.0	3.2
12	1.8	1.9	223	2.4	165	82	35	15	5.0	4.0	3.2	3.2
13	1.8	1.8	149	2.2	131	62	30	15	5.0	3.9	3.2	11
14	1.8	1.8	115	2.0	115	49	30	15	4.6	4.8	3.2	3.2
15	1.8	1.8	82	1.8	90	46	30	14	4.6	4.0	2.6	3.2
16	1.8	1.8	64	1.7	73	37	25	14	4.6	4.0	4.3	3.2
17	1.8	1.9	49	1.5	60	34	20	14	4.4	4.0	4.9	3.2
18	1.8	89	38	1.5	57	90	20	13	4.4	4.0	4.0	3.2
19	1.8	95	25	1.3	53	178	20	13	4.3	4.0	3.9	3.2
20	1.8	29	13	1.3	41	191	15	13	4.0	3.9	3.2	3.2
21	1.8	4.6	12	1.3	33	194	15	12	4.0	3.9	2.6	3.2
22	1.6	2.7	7.6	1.3	31	240	15	12	4.0	4.3	2.6	3.0
23	1.6	2.4	406	1.3	27	217	50	12	4.3	3.9	3.0	3.0
24	1.6	2.4	262	1.3	27	462	30	11	4.0	3.9	3.0	3.2
25	1.6	2.4	143	1.0	27	466	25	11	4.0	3.9	3.0	3.2
26	1.6	2.4	92	1.0	23	331	25	11	3.9	3.2	3.2	30
27	1.6	2.4	62	1.3	21	250	20	10	3.8	2.6	3.2	9.6
28	1.4	2.4	44	65	19	233	20	10	3.8	2.6	3.0	8.6
29	1.4	2.4	31	423	---	217	20	10	3.8	2.6	3.2	123
30	1.4	479	29	492	---	220	19	9.0	3.5	2.6	3.2	587
31	1.4	---	19	220	---	220	---	9.0	---	2.6	3.2	---
TOTAL	53.0	745.6	3796.1	1283.1	5580	6104	1281	434.0	157.0	114.2	100.0	845.6
MEAN	1.71	24.9	122	41.4	199	197	42.7	14.0	5.23	3.68	3.23	28.2
MAX	1.8	479	660	492	922	532	181	19	9.0	4.8	4.9	587
MIN	1.4	1.4	2.9	1.0	19	23	15	9.0	3.5	2.6	2.6	3.0
AC-FT	105	1480	7530	2550	11070	12110	2540	861	311	227	198	1680

CAL YR 1982 TOTAL 14082.98 MEAN 38.6 MAX 1020 MIN .98 AC-FT 27930
WTR YR 1983 TOTAL 20493.60 MEAN 56.1 MAX 922 MIN 1.0 AC-FT 40650

NOTE.--No gage-height record Apr. 7 to June 14.

09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ

LOCATION.--Lat 33°58'48", long 111°18'10", in SW¼NE¼ sec.2, T.7 N., R.10 E., Gila County, Hydrologic Unit 15060105, in Tonto National Forest, on left bank 600 ft upstream from Gun Creek, 17 mi upstream from high-water line of Roosevelt Lake, and 24 mi northwest of Roosevelt.

DRAINAGE AREA.--675 mi².

PERIOD OF RECORD.--December 1940 to current year.

REVISED RECORDS.--WSP 1283: Drainage area. WDR AZ-80-1: 1978-79 (M).

GAGE.--Water-stage recorder. Datum of gage is 2,523.14 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--42 years (water years 1942-83), 153 ft³/s, 110,800 acre-ft/yr; median of yearly mean discharges, 89 ft³/s, 64,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,400 ft³/s Jan. 17, 1979 and Feb. 15, 1980, gage height, 17.0 ft, maximum gage height, 18.2 ft Sept. 5, 1970; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,700 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2300	*32,800	13.17	Feb. 4	1800	6,520	8.55
Dec. 10	2000	6,430	7.32	Feb. 8	2030	17,000	11.31
Dec. 23	1330	23,800	11.46	Mar. 5	0030	6,240	8.83
Jan. 29	2230	12,900	9.02	Mar. 24	2100	9,700	10.25

Minimum daily, 5.8 ft³/s Oct. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	14	7080	228	936	233	1250	420	63	28	29	23
2	8.3	15	1750	187	348	243	750	286	57	28	41	23
3	8.3	14	809	182	459	785	705	248	55	27	53	21
4	7.4	15	355	162	4160	3940	554	228	53	26	45	19
5	8.3	14	223	151	2730	3380	451	228	52	25	35	19
6	8.3	14	140	151	2100	2070	390	213	48	23	35	20
7	7.8	14	92	147	2500	1480	342	200	48	23	34	19
8	7.8	16	63	147	5310	1090	316	195	45	26	33	18
9	6.2	33	880	147	3760	896	275	191	44	29	69	19
10	7.8	73	4160	144	2230	727	248	182	42	30	108	18
11	6.6	174	3600	120	1400	641	275	166	42	30	213	17
12	5.8	158	1840	111	1020	611	286	158	41	27	162	16
13	7.4	92	1120	108	821	492	275	144	35	25	82	25
14	7.4	67	694	106	797	435	253	130	34	26	174	20
15	8.3	53	427	100	611	412	248	127	33	26	170	18
16	8.8	48	323	97	563	335	304	120	33	25	103	20
17	8.8	52	243	95	554	281	292	114	34	24	127	24
18	9.3	592	209	108	509	427	316	103	34	22	97	26
19	8.8	1010	170	114	483	2200	329	97	33	23	65	21
20	8.8	316	151	117	376	2500	383	95	32	24	52	21
21	9.3	191	133	106	310	1650	545	95	32	24	42	19
22	8.8	130	120	95	292	2640	846	92	33	44	38	19
23	8.8	108	8620	84	275	2800	527	90	33	53	34	18
24	9.3	95	3240	84	281	3810	475	82	33	42	29	19
25	10	87	1550	84	286	3600	475	78	32	35	29	20
26	10	82	884	84	264	2830	420	75	30	38	29	29
27	11	75	582	90	259	1940	420	71	32	42	28	44
28	13	71	420	443	218	1400	323	69	29	33	26	27
29	15	67	316	3260	---	1200	316	65	29	30	27	100
30	15	5490	281	4220	---	1170	335	67	27	29	27	1860
31	15	---	264	1690	---	1440	---	63	---	30	26	---
TOTAL	284.2	9180	40739	12962	33852	47658	12924	4492	1168	917	2062	2562
MEAN	9.17	306	1314	418	1209	1537	431	145	38.9	29.6	66.5	85.4
MAX	15	5490	8620	4220	5310	3940	1250	420	63	53	213	1860
MIN	5.8	14	63	84	218	233	248	63	27	22	26	16
AC-FT	564	18210	80810	25710	67150	94530	25630	8910	2320	1820	4090	5080

CAL YR 1982	TOTAL	125289.7	MEAN	343	MAX	8620	MIN	5.8	AC-FT	248500
WTR YR 1983	TOTAL	168800.2	MEAN	462	MAX	8620	MIN	5.8	AC-FT	334800

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to September 1979, October 1982 to September 1983 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT 26...	1210	9.8	568	8.4	24.0	17.0	10.0	699	113	<10
NOV 23...	1130	111	303	7.9	14.0	11.0	9.9	695	99	20
DEC 22...	1130	120	316	8.4	--	9.5	10.3	695	99	<10
JAN 25...	1300	85	340	8.2	--	11.0	--	697	--	<10
FEB 22...	1700	300	298	7.2	19.5	12.0	9.1	694	93	<10
MAR 22...	1435	2200	142	7.9	16.0	10.0	9.2	695	89	24
APR 26...	1305	456	188	8.7	22.0	16.0	8.9	693	99	26
MAY 24...	1845	80	362	8.3	29.0	23.5	6.2	692	81	<10
JUN 30...	1020	28	421	8.9	33.0	24.5	10.0	694	132	--
AUG 03...	1145	59	425	8.5	34.5	29.0	7.8	698	111	13
AUG 24...	1125	31	404	8.4	31.0	26.5	7.3	698	100	14
SEP 21...	1135	19	452	8.2	29.5	24.0	8.1	700	105	16

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 26...	K5	170	18	46	14	47	2	2.0	155	16
NOV 23...	20	110	12	31	8.4	17	.7	1.4	100	12
DEC 22...	K13	130	4	36	8.6	16	.6	1.3	--	13
JAN 25...	K2	140	0	39	9.5	17	.7	1.3	--	15
FEB 22...	K14	140	3	40	9.2	9.4	.4	1.2	--	13
MAR 22...	43	64	0	18	4.7	4.5	.3	1.0	66	10
APR 26...	K3	110	0	31	7.6	6.7	.3	1.1	107	11
MAY 24...	K13	160	17	46	11	17	.6	1.5	--	16
JUN 30...	K9	160	10	44	13	29	1	2.0	--	14
AUG 03...	30	150	17	39	12	31	1	2.0	130	12
AUG 24...	31	150	12	41	12	26	1	1.8	138	11
SEP 21...	K10	150	24	40	13	34	1	1.8	128	12

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

239

09499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 26...	75	.40	11	292	300	.40	<1	<.10	<.10	.70
NOV 23...	25	.30	12	170	170	.23	7	<.10	<.10	.40
DEC 22...	25	.30	14	179	190	.24	<1	.10	.12	.60
JAN 25...	23	.30	12	189	200	.26	15	<.10	<.10	.60
FEB 22...	12	.20	13	175	180	.24	5	<.10	<.10	.70
MAR 22...	3.2	.20	10	105	91	.14	25	<.10	<.10	.50
APR 26...	6.6	.20	10	113	140	.15	14	<.10	<.10	.60
MAY 24...	22	<.10	11	197	210	.27	3	<.10	<.10	.70
JUN 30...	42	.40	11	242	250	.33	14	<.10	<.10	.60
AUG 03...	46	.40	17	236	240	.32	12	<.10	<.10	.70
24...	38	.40	16	225	230	.31	3	<.10	<.10	.60
SEP 21...	51	.40	13	251	240	.34	15	<.10	<.10	.30

DATE	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 26...	--	.060	.020	.06	70	<3	5	2	.05
NOV 23...	--	.060	<.010	--	30	40	4	8	2.4
DEC 22...	.70	.060	.020	.06	30	20	3	1	.32
JAN 25...	--	.020	.020	.06	30	15	2	2	.46
FEB 22...	--	.040	.020	.06	20	22	2	3	2.4
MAR 22...	--	.090	.030	.09	<10	<3	<1	90	535
APR 26...	--	.030	.020	.06	10	59	<1	5	6.2
MAY 24...	--	.020	.010	.03	30	17	3	4	.86
JUN 30...	--	.030	.010	.03	50	6	6	4	.30
AUG 03...	--	.030	<.010	--	50	6	2	5	.80
24...	--	.020	<.010	--	50	9	9	9	.75
SEP 21...	--	.010	.010	.03	60	4	5	6	.31

< Actual value is known to be less than value shown.

09501000 RESERVOIR SYSTEM ON SALT RIVER AT AND BELOW ROOSEVELT DAM, AZ

LOCATION.--This system comprises four storage reservoirs created by four separate dams on Salt River, Hydrologic Unit 15060106: Roosevelt Lake, formed by Roosevelt Dam in sec.20, T.4 N., R.12 E. (unsurveyed), on State Highway 88; Apache Lake, formed by Horse Mesa Dam, 17 mi downstream from Roosevelt Dam; Canyon Lake, formed by Mormon Flat Dam, 27 mi downstream from Roosevelt Dam; Saguaro Lake, formed by Stewart Mountain Dam, 37 mi downstream from Roosevelt Dam. Contents given herein are combined contents of the four reservoirs.

DRAINAGE AREA.--6,211 mi², at Stewart Mountain Dam.

PERIOD OF RECORD.--April 1910 to current year. Prior to October 1934, monthend contents only, published in WSP 1313. Evaporation: April 1958 to June 1963.

REVISED RECORDS.--WSP 1283: Drainage area. WRD Ariz. 1975: 1974.

GAGES.--Roosevelt Lake, water-stage indicator in powerplant connected to long distance transmitter on lake (water-stage recorder prior to Jan. 1, 1967); Apache Lake, water-stage indicator in powerplant connected to long distance transmitter on lake since April 1949 (prior to that date, nonrecording gage or reference mark); Canyon and Saguaro Lakes, mercury column gages.

REMARKS.--Total capacity of the four reservoirs is 1,710,000 acre-ft, divided as follows: Roosevelt Lake, 1,337,000 acre-ft; Apache Lake, 245,000 acre-ft; Canyon Lake, 58,000 acre-ft; Saguaro Lake, 70,000 acre-ft. Dead storage negligible. Dams forming these reservoirs were built as follows: Roosevelt 1905-11; Horse Mesa 1924-27; Mormon Flat 1923-26; Stewart Mountain 1928-30. The four dams forming these reservoirs completely develop the fall in the Salt River from Roosevelt Lake to Stewart Mountain Dam. Elevation of water surface varies from 1,422.0 ft, sill of lowest outlet in Stewart Mountain Dam, to 2,136 ft, top of spillway gates in raised position on Roosevelt Dam. See 1978 to 1980 reports for dates of spill prior to 1981 water year. Records given herein represent usable contents. Water from this system is used for irrigation of Salt River Valley and for generation of power.

COOPERATION.--Records of daily contents furnished by Salt River Valley Water Users' Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents of system, 1,764,000 acre-ft May 22, 1941; minimum, 20,680 acre-ft Sept. 16, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system, 1,702,000 acre-ft May 12; minimum, 1,232,000 acre-ft Oct. 14-16.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1252000	1235000	1289000	1445000	1492000	1514000	1652000	1666000	1698000	1658000	1588000	1545000
2	1250000	1235000	1307000	1444000	1501000	1515000	1655000	1669000	1699000	1656000	1587000	1543000
3	1248000	1235000	1314000	1441000	1507000	1516000	1656000	1673000	1700000	1655000	1585000	1541000
4	1246000	1235000	1319000	1439000	1503000	1528000	1655000	1676000	1700000	1653000	1582000	1540000
5	1244000	1235000	1322000	1438000	1545000	1553000	1654000	1679000	1699000	1651000	1580000	1538000
6	1243000	1235000	1324000	1436000	1560000	1565000	1651000	1682000	1698000	1650000	1579000	1537000
7	1240000	1235000	1327000	1434000	1571000	1567000	1649000	1685000	1696000	1647000	1577000	1536000
8	1238000	1235000	1328000	1435000	1576000	1567000	1650000	1689000	1695000	1645000	1575000	1535000
9	1237000	1238000	1332000	1435000	1584000	1568000	1650000	1693000	1695000	1643000	1573000	1532000
10	1236000	1238000	1339000	1436000	1580000	1572000	1648000	1697000	1690000	1641000	1571000	1530000
11	1235000	1239000	1355000	1435000	1567000	1576000	1648000	1700000	1688000	1640000	1571000	1528000
12	1234000	1239000	1372000	1436000	1551000	1579000	1648000	1702000	1685000	1638000	1569000	1527000
13	1233000	1240000	1380000	1435000	1536000	1583000	1650000	1701000	1682000	1636000	1569000	1526000
14	1232000	1241000	1385000	1434000	1528000	1587000	1651000	1700000	1680000	1635000	1566000	1525000
15	1232000	1242000	1389000	1434000	1523000	1592000	1651000	1701000	1679000	1631000	1565000	1524000
16	1232000	1242000	1391000	1433000	1518000	1594000	1650000	1700000	1678000	1630000	1564000	1523000
17	1233000	1243000	1394000	1432000	1512000	1595000	1651000	1701000	1677000	1625000	1564000	1521000
18	1233000	1246000	1397000	1432000	1508000	1598000	1651000	1701000	1676000	1622000	1567000	1518000
19	1233000	1248000	1398000	1432000	1508000	1612000	1652000	1701000	1675000	1619000	1568000	1515000
20	1233000	1251000	1400000	1433000	1509000	1634000	1654000	1701000	1674000	1617000	1567000	1514000
21	1233000	1253000	1402000	1433000	1510000	1646000	1654000	1700000	1673000	1613000	1567000	1512000
22	1233000	1255000	1403000	1434000	1511000	1642000	1655000	1700000	1672000	1610000	1566000	1510000
23	1234000	1257000	1405000	1434000	1512000	1639000	1655000	1699000	1671000	1609000	1565000	1509000
24	1234000	1258000	1423000	1434000	1512000	1634000	1654000	1698000	1669000	1607000	1563000	1509000
25	1234000	1258000	1437000	1433000	1512000	1633000	1653000	1698000	1668000	1605000	1560000	1509000
26	1234000	1259000	1444000	1434000	1512000	1639000	1654000	1698000	1667000	1603000	1559000	1509000
27	1235000	1260000	1448000	1435000	1513000	1634000	1656000	1698000	1665000	1600000	1557000	1509000
28	1235000	1261000	1449000	1436000	1514000	1635000	1659000	1698000	1663000	1597000	1554000	1509000
29	1234000	1262000	1449000	1438000	---	1639000	1661000	1697000	1662000	1594000	1549000	1510000
30	1235000	1263000	1449000	1453000	---	1644000	1663000	1697000	1660000	1593000	1549000	1518000
31	1235000	---	1447000	1478000	---	1650000	---	1697000	---	1591000	1547000	---
MAX	1252000	1263000	1449000	1478000	1584000	1650000	1663000	1702000	1700000	1658000	1588000	1545000
MIN	1232000	1235000	1289000	1432000	1492000	1514000	1648000	1666000	1660000	1591000	1547000	1509000
(*)	-17000	+54000	+156000	+47000	+22000	+138000	+14000	+32000	-40000	-70000	-43000	-6000
CAL YR 1982	MAX	1564000	MIN	1033000	*	+412000						
WTR YR 1983	MAX	1702000	MIN	1232000	*	+287000						

* Change in contents, in acre-feet (from 0800 first of month).

NOTE.--Contents at 0800 Oct 1, 1983, 1,539,000 acre-feet. Prior to Oct. 1, 1972 contents were given at 2400.

GILA RIVER BASIN

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09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°33'10", long 111°34'33", in NW¼NW¼ sec.6, T.2 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060106, on left bank 3.5 mi downstream from Stewart Mountain Dam and 6 mi upstream from Verde River.

DRAINAGE AREA.--6,232 mi² of which 21 mi² is below Stewart Mountain Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year. Monthly discharge only for some periods, published in WSP 1313. Published as "at Stewart Mountain Dam" 1934-41.

REVISED RECORDS.--WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,370 ft, from topographic map. Prior to Sept. 27, 1934, at site 3.2 mi upstream at different datum. Sept. 27, 1934, to Jan. 20, 1950, at site 2.8 mi upstream at datum 1,396.33 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by four reservoirs above station. (See elsewhere in this report.) Entire flow (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam, 10 mi downstream, for irrigation in Salt River Valley and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE.--53 years, 944 ft³/s, 683,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,200 ft³/s Feb. 15, 1980, gage height, 25.0 ft, from highwater mark inside gage well, from rating curve extended above 10,000 ft³/s defined by known release rates from Stewart Mountain Dam and recorded gage heights; maximum daily discharge, 64,000 ft³/s Feb. 16, 1980; no flow at times in recent years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 14,100 ft³/s Mar. 22; no flow Oct. 23-31, Nov. 5, 6, and portions of Oct. 22, Nov. 1, 4, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	2.1	13	1850	12	1900	6880	3800	972	1220	1590	1450
2	1150	4.6	9.4	1850	11	1900	7070	3440	1580	1140	1610	1370
3	1130	1.5	6.4	1860	11	2220	6660	2760	1790	1140	1610	1220
4	1010	.70	5.8	1850	1030	3350	6070	2470	2240	1160	1540	1180
5	1140	.00	5.2	1850	1830	4190	6070	2470	2260	1250	1490	1080
6	1240	.00	5.2	1420	1850	5850	5300	2480	2300	1370	1510	1180
7	1200	.70	4.0	615	2740	5950	3900	2220	2290	1490	1600	1100
8	846	15	5.8	526	6210	5400	3230	2240	2550	1490	1430	1120
9	614	16	8.2	682	12800	2210	3200	2330	2730	1440	1520	1170
10	513	11	9.4	609	12900	2240	3150	2430	2410	1070	1470	1160
11	474	8.2	7.0	579	12800	2210	2640	2930	2330	1140	1440	990
12	407	6.4	6.4	735	12200	2210	2220	3850	2250	1200	1460	830
13	407	5.2	5.8	800	8290	2210	2220	4210	2240	1390	1420	882
14	335	5.2	5.8	792	6410	2210	2360	3630	2060	1530	1440	873
15	21	4.6	5.8	821	5590	2560	2760	3210	1360	1670	1500	847
16	16	4.0	5.8	806	5590	2870	2670	2760	1380	1690	1480	882
17	15	9.4	5.8	795	5000	2650	2510	2370	1140	1640	1310	1640
18	13	11	5.2	878	3870	2300	2510	2340	1290	1620	1120	1620
19	9.0	7.0	5.2	880	1860	1990	2960	2380	1250	1710	944	1490
20	6.0	6.4	5.2	923	1880	4480	4490	2550	1220	1720	918	1530
21	3.0	6.4	4.6	895	1880	9920	5190	2540	1220	1660	953	1450
22	.20	5.8	5.2	954	1880	14100	5260	2480	1220	1630	1100	1260
23	.00	5.8	5.2	867	1880	13200	5340	2630	1260	1660	1330	674
24	.00	6.4	5.2	734	1880	13200	5380	2570	1270	1680	1440	580
25	.00	3.3	5.2	789	1900	13100	5400	2520	1220	1620	1580	559
26	.00	4.0	4.0	862	1900	12500	5320	2520	1240	1680	1580	553
27	.00	4.6	168	813	1870	9290	5070	2520	1160	1700	1670	539
28	.00	3.3	1810	728	1880	5490	4830	2520	1240	1700	1590	559
29	.00	4.0	1810	549	---	4220	4890	2480	1220	1580	1540	572
30	.00	15	1810	52	---	3830	4420	2240	1220	1660	1610	559
31	.00	---	1810	27	---	4960	---	1740	---	1660	1550	---
TOTAL	11679.20	177.60	7567.8	28391	117954	164710	129970	83630	49912	46310	44345	30919
MEAN	377	5.92	244	916	4213	5313	4332	2698	1664	1494	1430	1031
MAX	1240	16	1810	1860	12900	14100	7070	4210	2730	1720	1670	1640
MIN	.00	.00	4.0	27	11	1900	2220	1740	972	1070	918	539
AC-FT	23170	352	15010	56310	234000	326700	257800	165900	99000	91860	87960	61330

CAL YR 1982 TOTAL 256587.94 MEAN 703 MAX 1950 MIN .00 AC-FT 508900
WTR YR 1983 TOTAL 715565.60 MEAN 1960 MAX 14100 MIN .00 AC-FT 1419000

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

WATER-QUALITY RECORDS

LOCATION.--Daily record of specific conductance and water temperature collected at Stewart Mountain Dam, 3.5 mi upstream from gaging station.

PERIOD OF RECORD.--December 1950 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1982. March 1983 to current year.

WATER TEMPERATURES: December 1950 to September 1982. March 1983 to current year.

REMARKS.--No inflow between sampling point and gaging station except during infrequent periods of heavy local rains. Unpublished daily specific conductance measurements for period December 1950 to September 1964, available from district office in Tucson, Ariz.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 2,490 micromhos Aug. 20, 1951; minimum observed, 470 micromhos Feb. 10, 1980.

WATER TEMPERATURES: Maximum observed, 29.0°C Aug. 24, 26, 27, 1951, Sept. 11, 12, 1969; minimum, 9.0°C Feb. 1, 1979.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 1,140 micromhos Oct. 1; minimum observed, 722 micromhos Sept. 29.

WATER TEMPERATURES: Maximum observed, 26.0°C Aug. 6; minimum observed, 11.0°C May 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 27...	1545	E3.0	1020	8.2	--	24.0	1.0	12.2	726	153	--	--
DEC 21...	1230	3.0	1050	8.2	--	14.0	.60	--	725	--	K6	270
MAR 02...	1245	1920	1000	8.5	--	12.5	2.5	12.4	720	124	K1	22
APR 25...	1500	5000	817	8.2	27.0	14.0	3.5	11.5	720	119	--	--
JUN 28...	1630	2100	802	7.1	32.0	19.0	3.4	9.2	722	105	--	--
SEP 02...	1345	1330	710	7.9	40.0	24.0	2.5	7.9	722	100	34	250

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 27...	190	70	50	15	140	5	4.7	--	70	230	.30	14
DEC 21...	200	67	52	16	130	4	4.5	--	68	210	.30	9.3
MAR 02...	180	55	50	13	130	4	4.0	124	61	210	.40	15
APR 25...	160	44	43	12	100	4	3.3	--	49	160	.20	15
JUN 28...	150	37	42	11	96	4	3.2	--	47	150	.20	15
SEP 02...	150	52	41	11	88	3	3.0	96	43	140	.20	16

K Based on non-ideal colony count.

E Estimated

GILA RIVER BASIN

243

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
OCT 27...	578	590	.79	<.10	.090	.60	.040	.040	<.010	.06	.12	20
DEC 21...	564	570	.77	<.10	.070	.70	.060	.040	<.010	--	.18	--
MAR 02...	552	560	.75	<.10	.090	.70	.030	.010	.020	.06	.09	<10
APR 25...	430	450	.58	<.10	.100	.50	.030	.030	.060	.18	.09	--
JUN 28...	426	430	.58	--	--	--	--	--	--	--	--	<10
SEP 02...	405	400	.55	<.10	.040	.30	.050	.030	.020	.06	.15	<10

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS RE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 27...	3	51	<.5	<1	<1	<3	5	9	5	99	7
DEC 21...	--	--	--	--	--	--	--	--	--	--	--
MAR 02...	3	68	.5	<1	<1	<3	4	<3	<1	91	5
APR 25...	--	--	--	--	--	--	--	--	--	--	--
JUN 28...	3	54	<.5	<1	<1	<3	3	6	1	68	7
SEP 02...	2	52	<.5	<1	<1	<3	5	4	<1	59	10

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 27...	1.2	<10	1	<1	1	420	<6	9	3	47	.02
DEC 21...	--	--	--	--	--	--	--	--	2	81	.02
MAR 02...	<.1	<10	2	<1	<1	380	<6	20	4	98	21
APR 25...	--	--	--	--	--	--	--	--	33	42	446
JUN 28...	<.1	<10	1	<1	<1	320	<6	9	97	77	550
SEP 02...	<.1	<10	1	<1	<1	300	<6	8	10	84	36

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140					1040	885	838	799	790	---	760
2	1110					1040	888	858	780	820	---	765
3	1140					1020	863	860	780	820	---	760
4	1120					1020	865	838	791	810	---	760
5	---					1040	886	840	788	810	---	750
6	---					1020	900	839	805	811	774	750
7	---					950	864	852	790	815	780	740
8	---					950	852	850	792	805	780	760
9	---					950	860	840	795	805	805	750
10	---					965	863	830	800	820	800	760
11	---					935	850	830	787	800	790	750
12	---					935	850	830	780	835	755	740
13	---					910	820	845	800	810	780	750
14	---					920	848	827	770	800	767	745
15	---					970	875	793	787	795	760	740
16	---					905	863	820	765	805	760	760
17	---					905	850	826	817	800	780	760
18	---					900	840	800	820	837	770	760
19	---					910	852	803	818	800	765	755
20	---					910	860	810	820	805	765	750
21	---					920	840	810	835	800	755	733
22	---					870	895	795	815	800	740	730
23	---					865	857	800	825	---	755	735
24	---					865	880	792	820	---	740	740
25	---					880	835	790	825	---	765	758
26	---					893	844	785	815	---	755	740
27	---					900	835	810	817	---	767	740
28	---					---	830	789	805	---	760	730
29	---					---	850	787	805	---	750	722
30	---					---	860	792	803	---	775	730
31	---					---	---	800	---	---	740	---
MEAN	1130					940	859	819	802	809	767	747
MAX	1140					1040	900	860	835	837	805	765
MIN	1110					865	820	785	765	790	740	722
WTR YR 1983	MEAN	826		MAX	1140	MIN	722					

GILA RIVER BASIN

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09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0					14.0	14.0	16.0	16.0	20.0	---	22.0
2	22.0					14.0	14.0	15.0	16.0	19.0	---	22.0
3	22.0					14.0	14.0	15.0	19.0	20.0	---	23.0
4	22.0					14.0	14.0	16.0	19.0	20.0	---	23.0
5	---					14.0	14.0	15.0	19.0	20.0	---	23.0
6	---					14.0	14.0	15.0	19.0	20.0	26.0	23.0
7	---					15.0	14.0	15.0	20.0	20.0	23.0	23.0
8	---					15.0	14.0	15.0	20.0	20.0	24.0	24.0
9	---					13.0	14.0	15.0	20.0	22.0	24.0	23.0
10	---					13.0	14.0	15.0	20.0	22.0	24.0	23.0
11	---					14.0	14.0	15.0	21.0	22.0	24.0	23.0
12	---					15.0	14.0	15.0	20.0	22.0	24.0	24.0
13	---					15.0	14.0	15.0	20.0	22.0	23.0	23.0
14	---					14.0	14.0	18.0	21.0	22.0	24.0	23.0
15	---					14.0	14.0	18.0	21.0	23.0	23.0	23.0
16	---					14.0	15.0	18.0	21.0	22.0	23.0	23.0
17	---					14.0	15.0	19.0	21.0	22.0	23.0	23.0
18	---					14.0	14.0	18.0	20.0	21.0	23.0	23.0
19	---					18.0	15.0	19.0	19.0	22.0	23.0	23.0
20	---					17.0	15.0	19.0	20.0	22.0	21.0	23.0
21	---					15.0	16.0	17.0	20.0	22.0	21.0	23.0
22	---					16.0	16.0	17.0	20.0	22.0	22.0	23.0
23	---					16.0	15.0	17.0	19.0	---	23.0	23.0
24	---					15.0	15.0	17.0	19.0	---	23.0	22.0
25	---					15.0	15.0	17.0	20.0	---	23.0	23.0
26	---					15.0	15.0	18.0	20.0	---	23.0	22.0
27	---					15.0	15.0	18.0	20.0	---	21.0	23.0
28	---					---	15.0	11.0	20.0	---	22.0	22.0
29	---					---	15.0	16.0	20.0	---	22.0	25.0
30	---					---	16.0	16.0	20.0	---	22.0	25.0
31	---					---	---	16.0	---	---	22.0	---
MEAN	22.0					14.5	14.5	16.5	19.5	21.0	23.0	23.0
MAX	22.0					18.0	16.0	19.0	21.0	23.0	26.0	25.0
MIN	22.0					13.0	14.0	11.0	16.0	19.0	21.0	22.0
WTR YR 1983	MEAN	19.0	MAX	26.0	MIN	11.0						

09502800 WILLIAMSON VALLEY WASH NEAR PAULDEN, AZ

LOCATION.--Lat 34°52'00", long 112°36'45", in SE¼SE¼ sec.7, T.17 N., R.3 W., Yavapai County, Hydrologic Unit 15060201, on left bank 3.6 mi north of Simmons and 8.5 mi west of Paulden.

DRAINAGE AREA.--255 mi².

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,455 ft, National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 1.00 ft higher. Datum of 4,447 ft published in WRD Ariz. 1971-76 was in error.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--18 years, 15.9 ft³/s, 11,520 acre-ft/yr; median of yearly mean discharges, 5.8 ft³/s, 4,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s Sept. 23, 1983, gage height, 9.96 ft from rating curve extended above 2,200 ft³/s on basis of slope-area measurements at gage heights 6.38 ft, 8.22 ft, 8.93 ft, and 9.96 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 2,200 ft³/s as explained above, and peak discharges above base of 300 ft³/s (revised):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	1045	1,560	4.86	Mar. 25	2000	575	3.78
Jan. 29	2015	513	3.71	Sept. 23	0945	a5,970	7.61
Feb. 8	1400	1,890	5.19	Sept. 23	1915	*14,800	9.96
Mar. 3	1115	2,110	5.37	Sept. 30	0900	1,440	4.79
Mar. 24	1800	710	3.95				

No flow July 17-21.

a Upstream culvert failure.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	1.8	103	4.3	33	18	13	2.1	.86	.19	.50	.36
2	.47	1.8	29	4.3	23	38	9.6	1.9	1.1	.17	.62	.36
3	.56	1.8	12	4.3	24	1500	9.6	2.1	1.1	.17	.56	.32
4	.56	2.0	7.9	4.3	38	694	5.4	2.3	.95	.17	.56	.28
5	.66	2.2	6.6	5.4	77	269	3.8	2.1	.82	.15	.69	.25
6	.66	2.3	6.2	6.1	101	127	2.9	1.9	.70	.12	.62	.24
7	.66	2.3	6.1	5.4	263	65	2.9	1.9	.62	.15	.69	.27
8	.66	2.7	6.6	3.8	1020	44	2.3	1.7	.62	.29	.62	.30
9	.66	4.8	9.1	3.8	326	22	2.1	1.5	.50	.50	.56	.28
10	.77	3.8	15	3.3	153	12	2.1	1.5	.56	.45	.56	.27
11	.77	5.5	132	3.3	80	8.6	1.7	1.3	.45	.36	.62	.34
12	.77	3.9	37	3.3	48	6.9	1.7	1.3	.40	.26	.56	.36
13	.90	3.5	14	3.3	35	5.4	1.7	1.3	.50	.21	.50	.40
14	.90	3.4	7.9	3.3	28	4.8	1.7	1.3	.50	.15	.45	.42
15	.90	3.4	6.2	3.8	22	3.8	1.7	1.2	.50	.08	.50	.48
16	.90	3.6	5.8	3.8	20	2.1	1.5	1.2	.50	.02	.50	.52
17	1.0	4.6	5.7	4.3	15	2.1	1.5	1.3	.45	.00	.69	.56
18	1.0	8.3	5.9	4.3	12	4.8	1.3	1.2	.45	.00	.86	.50
19	1.0	5.6	6.2	4.3	9.6	37	1.3	1.3	.36	.00	.77	.50
20	1.0	4.6	6.0	5.4	6.9	77	1.5	1.2	.36	.00	.69	.49
21	1.2	4.5	6.1	5.4	6.1	28	3.8	1.3	.33	.00	.62	.50
22	1.2	4.4	7.0	4.3	6.1	138	9.9	1.5	.29	.08	.56	.50
23	1.2	4.6	477	5.4	6.1	160	9.6	1.5	.36	.24	.56	4200
24	1.4	4.6	169	5.4	5.4	307	5.4	1.7	.45	.36	.50	1800
25	1.5	4.7	61	5.4	5.4	410	2.9	1.7	.45	.69	.50	235
26	1.7	5.3	26	5.4	6.1	296	2.1	1.7	.36	.56	.45	131
27	1.8	5.4	15	6.9	6.1	173	2.1	1.7	.33	.40	.40	31
28	1.8	5.9	6.1	13	8.6	92	1.7	1.5	.29	.33	.36	13
29	1.8	7.1	6.1	106	---	52	1.7	1.5	.29	.29	.50	29
30	1.8	29	5.4	168	---	31	2.2	1.3	.24	.33	.50	557
31	1.8	---	4.3	60	---	24	---	1.2	.40	.40	.50	---
TOTAL	32.40	147.4	1211.2	469.3	2384.4	4652.5	110.7	48.2	15.69	7.12	17.57	7004.50
MEAN	1.05	4.91	39.1	15.1	85.2	150	3.69	1.55	.52	.23	.57	233
MAX	1.8	29	477	168	1020	1500	13	2.3	1.1	.69	.86	4200
MIN	.40	1.8	4.3	3.3	5.4	2.1	1.3	1.2	.24	.00	.36	.24
AC-FT	64	292	2400	931	4730	9230	220	96	31	14	35	13890

CAL YR 1982	TOTAL	3379.47	MEAN	9.26	MAX	477	MIN	.00	AC-FT	6700
WTR YR 1983	TOTAL	16100.98	MEAN	44.1	MAX	4200	MIN	.00	AC-FT	31940

GILA RIVER BASIN

09503700 VERDE RIVER NEAR PAULDEN, AZ

LOCATION.--Lat 34°53'40", long 112°20'32", in SW¼SE¼ sec.39, T.18 N., R.1 W. (revised), Yavapai County, Hydrologic Unit 15060202, in Prescott National Forest, on right bank 0.3 mi upstream from Verde Valley Ranch, 7 mi east of Paulden, 8 mi upstream from Hell Canyon, 8 mi downstream from Granite Creek, and 10 mi downstream from Sullivan Lake.

DRAINAGE AREA.--2,530 mi², approximately (includes 373 mi² in Aubrey Valley Playa, a closed basin).

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,117 ft, from topographic map.

REMARKS.--Records good. Diversions and storage above station for irrigation and municipal use. Several observations of water temperature and specific conductance were made during the year. Recording rain gage and satellite telemeter at station.

AVERAGE DISCHARGE.--20 years, 44.8 ft³/s, 32,460 acre-ft/yr; median of yearly mean discharges, 28 ft³/s, 20,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Feb. 20, 1980, gage height, 12.72 ft from rating curve extended above 7,600 ft³/s on basis of slope-conveyance and step-backwater analysis, maximum gage height, 12.89 ft Sept. 24, 1983; minimum daily, 15 ft³/s May 13-23, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 7,600 ft³/s as explained above, and peak discharges above base of 300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 24	0145	628	4.44	Sept. 23	1300	6,760	9.50
Feb. 8	2300	2,130	6.42	Sept. 24	0100	*15,600	12.89
Mar. 3	1800	3,100	7.17	Sept. 30	1530	4,050	7.98
Mar. 25	1030	813	4.85				

Minimum daily, 24 ft³/s on many days.

REVISIONS.--Revised daily discharge, in cubic feet per second, for parts of August and September 1981 are given below. These figures supersede those published in the report for 1981.

Aug. 9....70	Aug. 16....26	Aug. 23....25	Aug. 30....25
10....27	17....26	24....25	31....25
11....26	18....26	25....25	Sept. 1....40
12....26	19....26	26....25	2....28
13....26	20....26	27....25	3....28
14....26	21....25	28....25	4....28
15....26	22....25	29....25	5....38

	TOTAL	MEAN	MAX	MIN	AC-FT
August 1981	824	26.6	70	23	1630
September 1981	875	29.2	61	26	1740
WTR YR 1981	9798	26.8	70	23	19430
CAL YR 1981	10117	27.7	140	23	20070

AVERAGE DISCHARGE 1981 WTR YR 43.4 ft³/s; 31,440 acre-ft/yr
 1982 WTR YR 42.8 ft³/s; 31,010 acre-ft/yr

MEDIAN OF YEARLY MEAN DISCHARGES 1981 WTR YR 27 ft³/s; 19,600 acre-ft/yr
 1982 WTR YR 28 ft³/s; 20,300 acre-ft/yr

GILA RIVER BASIN

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09503700 VERDE RIVER NEAR PAULDEN, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	24	27	25	44	26	51	28	26	24	26	25
2	24	24	25	25	31	27	37	28	26	24	28	25
3	24	24	25	25	29	928	31	28	26	25	26	25
4	24	25	25	25	29	1670	29	28	26	24	26	25
5	24	25	25	25	27	611	29	27	26	24	26	24
6	24	25	25	25	38	288	29	27	25	24	26	25
7	24	25	25	25	63	151	28	27	25	25	27	25
8	24	26	25	25	558	89	28	27	25	25	26	25
9	24	26	26	25	790	59	28	27	25	25	26	25
10	24	25	27	25	218	41	28	27	25	25	26	25
11	24	25	26	25	114	32	28	27	25	25	26	25
12	24	24	25	25	70	28	28	27	25	25	25	25
13	24	24	25	25	49	26	29	27	25	25	25	25
14	24	24	24	25	38	25	28	27	25	25	25	25
15	24	24	24	25	33	25	28	27	25	24	26	25
16	24	24	24	25	29	25	28	27	25	24	30	25
17	24	25	25	25	28	25	28	27	25	24	28	25
18	24	25	25	25	27	26	28	27	25	25	27	25
19	24	24	25	25	27	26	28	27	25	25	26	25
20	24	24	25	25	27	25	28	27	25	25	25	25
21	24	24	25	25	27	38	29	27	25	26	25	25
22	24	24	25	25	26	44	28	27	25	26	25	25
23	24	24	27	25	26	122	28	27	25	26	25	2720
24	24	24	332	25	26	108	28	27	25	26	24	6550
25	24	24	83	25	26	566	28	27	25	30	25	1510
26	24	24	43	25	27	556	28	27	25	27	25	387
27	24	24	30	26	27	353	28	27	25	25	24	118
28	24	24	27	26	27	193	28	27	25	25	25	45
29	24	25	26	26	---	139	28	26	25	25	26	30
30	24	28	26	68	---	100	28	26	25	25	25	1300
31	24	---	26	79	---	76	---	26	---	26	25	---
TOTAL	744	737	1173	875	2481	6448	880	838	755	779	800	13209
MEAN	24.0	24.6	37.8	28.2	88.6	208	29.3	27.0	25.2	25.1	25.8	440
MAX	24	28	332	79	790	1670	51	28	26	30	30	6550
MIN	24	24	24	25	26	25	28	26	25	24	24	24
AC-FT	1480	1460	2330	1740	4920	12790	1750	1660	1500	1550	1590	26200
CAL YR 1982	TOTAL	11590	MEAN	31.8	MAX	398	MIN	21	AC-FT	22990		
WTR YR 1983	TOTAL	29719	MEAN	81.4	MAX	6550	MIN	24	AC-FT	58950		

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ

LOCATION.--Lat 34°51'08", long 112°03'55", in NW¼SE¼ sec.17, T.17 N., R.3 E., Yavapai County, Hydrologic Unit 15060202, in Prescott National Forest, on left bank 1.7 mi downstream from Sycamore Creek and 5.6 mi north of Clarkdale.

DRAINAGE AREA.--3,520 mi², approximately (includes 373 mi² in Aubrey Valley Playa, a closed basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD (REVISED).--June 1915 to October 1916, May 1917 to July 1921, April 1965 to current year.

REVISED RECORDS.--WSP 1213: 1917, 1920.

GAGE.--Water-stage recorder. Altitude of gage is 3,500 ft, from bench mark at gage. June 1915 to June 1921 at site 2.5 mi downstream at different datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--22 years (water years 1916, 1918-20, 1966-83), 207 ft³/s, 150,000 acre-ft/yr; median of yearly mean discharges, 170 ft³/s, 123,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,600 ft³/s Feb. 21, 1920, gage height, 19.1 ft, site and datum then in use, from rating curve extended above 2,500 ft³/s on basis of float-area measurement at 35,000 ft³/s; minimum daily, 55 ft³/s Aug. 31, Sept. 1, 1920.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2000	4,680	6.50	Mar. 3	2330	6,580	7.86
Dec. 23	unknown	4,800	6.60	Mar. 31	0230	2,950	4.95
Feb. 8	2000	3,280	5.27	Sept. 24	0600	*14,400	11.95
Feb. 28	2130	3,780	5.72	Sept. 30	1230	12,800	11.17

Minimum daily, 74 ft³/s July 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	81	914	90	139	2150	1330	88	83	76	83	78
2	77	81	270	88	116	1330	634	87	83	76	83	78
3	77	81	163	87	107	4130	433	87	83	77	83	80
4	77	81	123	86	104	4480	319	86	83	77	81	79
5	77	81	113	85	135	2620	210	86	83	77	81	77
6	77	83	109	85	127	1430	157	85	83	76	81	76
7	77	83	109	85	145	996	133	85	83	79	80	79
8	77	83	107	85	1370	1100	111	85	83	83	81	81
9	77	95	177	85	2030	720	103	85	83	85	85	79
10	77	95	1190	85	914	634	95	85	83	82	81	78
11	75	93	750	85	669	646	91	85	83	79	83	76
12	75	91	400	85	527	582	92	85	81	77	83	76
13	75	91	230	85	477	492	98	85	81	77	82	76
14	75	89	170	85	468	423	95	85	81	77	79	79
15	75	89	127	85	438	486	92	85	81	76	80	82
16	75	89	107	85	424	320	90	84	81	75	81	90
17	75	89	97	85	438	210	89	83	81	74	603	93
18	75	91	93	85	493	183	89	83	81	74	313	81
19	75	91	91	85	506	193	89	83	81	75	163	80
20	75	89	91	85	419	305	89	83	81	75	109	79
21	75	89	89	85	377	380	97	83	81	79	90	78
22	75	89	90	85	414	384	275	83	81	81	84	78
23	75	89	2260	85	483	719	411	83	81	83	82	778
24	75	89	1300	85	554	1120	242	83	81	83	79	8490
25	77	89	506	85	566	1100	152	83	81	210	78	2400
26	79	87	251	85	442	1010	119	83	79	120	78	750
27	79	87	163	86	340	919	104	83	79	90	77	247
28	79	87	130	94	2410	1130	94	81	79	85	77	143
29	79	87	107	92	---	1570	89	83	77	79	80	206
30	79	710	99	124	---	1890	90	83	77	79	81	5330
31	79	---	93	171	---	2010	---	83	---	79	79	---
TOTAL	2371	3249	10519	2788	15632	35662	6112	2611	2438	2615	3380	20097
MEAN	76.5	108	339	89.9	558	1150	204	84.2	81.3	84.4	109	670
MAX	79	710	2260	171	2410	4480	1330	88	83	210	603	8490
MIN	75	81	89	85	104	183	89	81	77	74	77	76
AC-FT	4700	6440	20860	5530	31010	70740	12120	5180	4840	5190	6700	39860
CAL YR 1982	TOTAL	81165	MEAN 222	MAX 8890	MIN 73	AC-FT 161000						
WTR YR 1983	TOTAL	107474	MEAN 294	MAX 8490	MIN 74	AC-FT 213200						

GILA RIVER BASIN

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09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1976 to October 1979, January 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 27...	1755	80	493	--	15.0	17.0	8.8	678	103	<10	K4
DEC 01...	1620	E579	166	8.0	7.0	6.0	11.2	686	100	37	260
29...	1730	101	465	8.0	-5	7.5	11.8	665	113	12	K6
FEB 01...	1330	133	407	8.1	9.5	11.0	10.8	674	111	18	K24
MAR 10...	1330	667	138	6.9	19.5	11.0	10.1	675	104	15	K2
30...	1335	1780	126	7.7	21.5	10.0	10.2	680	101	25	K12
APR 26...	1150	121	397	8.2	20.0	17.5	9.3	674	110	<10	K1
MAY 25...	1755	82	516	8.2	35.5	25.0	7.5	674	103	<10	13
JUN 28...	1400	82	483	8.2	37.0	25.0	8.9	676	122	<10	K2
JUL 28...	1340	86	516	8.1	33.0	27.0	7.6	679	108	15	120
AUG 31...	1700	82	483	8.2	29.5	27.0	7.4	677	105	20	K4

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 27...	230	0	51	26	--	--	--	--	9.0	--	--
DEC 01...	76	0	19	7.0	6.9	.4	1.4	78	10	3.4	<.10
29...	210	0	48	21	--	--	--	223	9.0	11	--
FEB 01...	190	0	45	19	--	--	--	200	10	--	--
MAR 10...	80	0	20	7.2	6.1	.3	1.2	86	6.6	3.0	.10
30...	58	6	16	4.5	--	--	--	53	5.0	--	--
APR 26...	190	0	44	19	--	--	--	201	8.0	--	--
MAY 25...	220	0	50	24	24	.7	2.2	238	11	13	.20
JUN 28...	220	0	48	24	--	--	--	228	8.0	12	--
JUL 28...	230	0	53	23	--	--	--	237	9.0	12	--
AUG 31...	210	0	45	24	24	.7	2.1	223	8.7	12	.20

E Estimated

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 27...	--	252	--	.34	43	.10	--	.80	.90	.030	--
DEC 01...	12	105	110	.14	28	<.10	<.10	2.4	--	.180	.050
29...	--	265	--	.36	1	.30	--	.30	.60	.060	--
FEB 01...	--	248	--	.34	53	.20	--	.60	.80	.080	--
MAR 10...	16	112	110	.15	3	<.10	.10	.50	--	.080	.040
30...	--	77	--	.10	30	<.10	--	.50	--	.140	--
APR 26...	--	228	--	.31	17	<.10	--	.30	--	.040	--
MAY 25...	19	273	290	.37	3	<.10	<.10	.50	--	.030	.010
JUN 28...	--	244	--	.33	3	<.10	--	.60	--	.010	--
JUL 28...	--	263	--	.36	82	.20	--	1.1	1.3	.160	--
AUG 31...	19	232	270	.32	6	<.10	<.10	.20	--	.030	.010

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS TOTAL (UG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 27...	--	210	--	<1	--	3	--	1.1	2	26	5.6
DEC 01...	.15	70	30	1	300	2	20	12	18	86	134
29...	--	390	--	<1	--	1	--	2.8	3	16	4.4
FEB 01...	--	160	--	<1	--	<1	--	3.7	5	94	34
MAR 10...	.12	80	40	<1	19	2	3	4.9	10	25	45
30...	--	60	--	<1	--	7	--	8.7	8	--	--
APR 26...	--	220	--	<1	--	<1	--	3.2	2	7	2.3
MAY 25...	.03	260	160	<1	13	2	5	.60	26	21	4.6
JUN 28...	--	210	--	<1	--	1	--	.70	21	5	1.1
JUL 28...	--	190	--	<1	--	<1	--	1.6	10	124	29
AUG 31...	.03	200	170	<1	30	1	10	1.0	9	11	2.4

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09504430 OAK CREEK AT SEDONA, AZ

LOCATION.--Lat 34°51'42", long 111°45'40", in NE¼NE¼ sec.18, T.17 N., R.6 E., Coconino County, Hydrologic Unit 15060202, on left bank 290 ft downstream from State Highway 179 bridge, 28 mi southwest of Flagstaff, and 35.1 mi upstream from mouth.

DRAINAGE AREA.--233 mi².

PERIOD OF RECORD.--1951-53, 1955-58, 1972, annual discharge measurements only. October 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,169.20 ft Arizona Department of Transportation Datum.

REMARKS.--Records good. Several small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,700 ft³/s Mar. 12, 1982, gage height, 15.64 ft from outside floodmark, from rating curve extended above 5,000 ft³/s on the basis of slope-conveyance study; minimum daily, 20 ft³/s June 8, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended as explained above) and peak discharges above base of 900 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 18	0645	1,630	6.42	Mar. 3	0645	2,140	6.95
Nov. 30	1800	*9,460	11.59	Mar. 15	0115	1,080	5.72
Dec. 10	0745	1,560	6.34	Mar. 31	2200	2,860	7.58
Dec. 23	0615	7,880	10.83	Apr. 21	2045	1,130	5.79
Feb. 8	1330	1,510	6.28	Apr. 30	0945	1,870	6.67
Feb. 28	2000	2,200	7.01	Sept. 30	1015	5,000	9.16

Minimum daily, 20 ft³/s June 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	51	1350	48	74	911	1200	428	28	27	24	32
2	35	51	408	45	63	605	637	187	28	27	24	31
3	35	50	183	42	71	1640	532	128	28	28	24	31
4	35	52	152	42	89	953	291	103	28	28	28	31
5	34	52	157	42	76	820	186	93	28	28	26	31
6	34	52	142	41	74	567	142	84	28	28	27	32
7	34	52	120	40	276	575	118	74	28	30	27	32
8	34	56	106	39	949	430	103	67	28	31	29	33
9	34	125	158	40	522	406	96	64	28	30	28	32
10	34	192	1060	40	367	425	121	60	30	30	28	32
11	35	167	669	39	308	397	164	57	28	28	31	32
12	35	102	217	39	266	397	153	53	27	29	28	31
13	35	91	145	37	262	397	127	49	27	29	28	32
14	35	93	104	37	268	441	148	47	27	28	28	32
15	35	80	72	36	255	654	176	45	28	27	46	32
16	35	78	57	36	268	303	188	43	28	27	33	32
17	35	174	49	43	285	216	196	41	28	28	32	32
18	35	1130	44	162	298	203	240	40	28	28	34	31
19	37	262	41	136	294	245	210	39	27	28	63	32
20	35	192	40	92	241	242	225	38	27	28	74	36
21	38	118	37	65	235	270	578	36	26	30	107	33
22	39	87	507	51	255	222	739	34	26	32	109	30
23	39	69	3700	45	282	283	593	34	27	48	103	110
24	39	60	1020	41	320	316	371	33	26	34	100	98
25	39	56	230	44	311	252	293	31	25	32	93	52
26	40	58	126	52	226	228	220	31	27	30	34	41
27	48	51	92	50	193	289	165	29	27	29	43	38
28	49	51	71	94	1390	403	145	29	27	28	52	35
29	50	52	58	167	---	783	134	28	27	28	35	135
30	50	2040	60	134	---	1310	957	28	27	29	33	1890
31	50	---	54	90	---	1690	---	28	---	32	32	---
TOTAL	1177	5744	11229	1909	8518	16873	9448	2081	822	919	1403	3101
MEAN	38.0	191	362	61.6	304	544	315	66.9	25.8	29.6	45.3	103
MAX	50	2040	3700	167	1390	1690	1200	428	30	48	109	1890
MIN	34	50	37	36	63	203	96	24	20	27	24	30
AC-FT	2330	11390	22270	3790	16900	33470	18740	4120	1530	1820	2780	6150

CAL YR 1982	TOTAL	56116	MEAN	154	MAX	6500	MIN	23	AC-FT	111300
WTR YR 1983	TOTAL	63224	MEAN	173	MAX	3700	MIN	20	AC-FT	125300

GILA RIVER BASIN

09504440 OAK CREEK AT RED ROCK CROSSING NEAR SEDONA, AZ

LOCATION.--Lat 34°49'28", long 111°48'20", NE¼SW¼ sec.26, T.17 N., R.5 E., Yavapai County, Hydrologic Unit 15060202 in Coconino National Forest, at Red Rock (Baldwins) crossing, 5.0 mi downstream from Sedona and 31 mi upstream from mouth.

DRAINAGE AREA.--252 mi².

PERIOD OF RECORD.--October 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)
OCT 27...	1300	28	296	--	18.0	14.0	9.4	667	104	10
NOV 30...	1550	E5700	77	8.1	9.5	5.5	--	650	--	83
DEC 28...	1445	62	213	8.0	10.5	4.5	11.6	669	102	14
JAN 31...	1555	86	168	8.1	7.0	7.0	11.8	661	112	11
MAR 08...	1355	E402	118	6.9	18.0	8.0	11.6	667	112	13
28...	1635	358	147	7.9	14.0	8.5	10.3	664	101	21
APR 25...	1600	E272	113	8.1	21.0	14.0	9.0	660	101	11
MAY 23...	1300	24	296	8.4	32.5	21.5	8.0	666	104	<10
JUN 30...	1255	16	305	8.3	29.0	22.0	8.3	664	110	<10
JUL 27...	1245	24	306	8.4	31.0	24.5	7.7	667	106	10
AUG 29...	1600	22	291	8.4	31.0	24.5	7.9	667	109	11
DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 27...	K30	--	--	--	--	--	--	--	--	--
NOV 30...	1100	35	0	8.9	3.2	2.0	.2	1.1	140	7.0
DEC 28...	K3	--	--	--	--	--	--	--	105	--
JAN 31...	K5	--	--	--	--	--	--	--	94	--
MAR 08...	K8	53	0	12	5.7	2.1	.1	.80	56	5.6
28...	K96	--	--	--	--	--	--	--	70	--
APR 25...	K4	--	--	--	--	--	--	--	59	--
MAY 23...	K2	150	4	34	17	5.4	.2	1.2	151	2.4
JUN 30...	K3	--	--	--	--	--	--	--	154	--
JUL 27...	120	--	--	--	--	--	--	--	156	--
AUG 29...	26	150	10	33	17	5.2	.2	1.0	143	2.7

E Estimated

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

GILA RIVER BASIN

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09504440 OAK CREEK AT RED ROCK CROSSING NEAR SEDONA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 27...	--	--	--	--	--	--	23	<.10	--	.50
NOV 30...	1.2	<.10	8.1	58	120	.08	1190	<.10	<.10	2.9
DEC 28...	2.3	--	--	--	--	--	1	<.10	--	.40
JAN 31...	--	--	--	--	--	--	4	<.10	--	.40
MAR 08...	1.2	<.10	13	74	74	.10	<1	<.10	.11	.50
28...	1.6	--	--	--	--	--	2	<.10	--	.30
APR 25...	--	--	--	--	--	--	22	<.10	--	1.1
MAY 23...	3.0	<.10	14	160	170	.22	7	<.10	<.10	.40
JUN 30...	3.3	--	--	--	--	--	<1	<.10	--	.60
JUL 27...	3.5	--	--	--	--	--	6	<.10	--	.90
AUG 29...	3.5	<.10	16	159	160	.22	2	<.10	<.10	.30

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, DIS-SOLVED (UG/L AS MN)	SEDIMENT, SUS-PENDED (MG/L)	SEDIMENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT 27...	.010	--	--	--	<1	--	5	--	15	1.1
NOV 30...	.700	.030	.09	<10	<1	50	2	10	2400	--
DEC 28...	.050	--	--	--	1	--	<1	--	8	1.3
JAN 31...	.030	--	--	--	<1	--	--	--	12	2.8
MAR 08...	.060	.030	.09	<10	<1	23	<1	4	6	--
28...	.050	--	--	--	<1	--	5	--	16	15
APR 25...	.070	--	--	--	<1	--	<1	--	10	--
MAY 23...	.010	.020	.06	20	1	30	<1	<10	3	.19
JUN 30...	.030	--	--	--	<1	--	2	--	3	.13
JUL 27...	.040	--	--	--	<1	--	<1	--	7	.45
AUG 29...	.020	.010	.03	10	<1	30	1	10	3	.18

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09504500 OAK CREEK NEAR CORNVILLE, AZ

LOCATION.--Lat 34°45'52", long 111°53'25", in NW¼SW¼ sec.23, T.16 N., R.4 E., Yavapai County, Hydrologic Unit 15060202, on right bank 250 ft downstream from county highway bridge, 0.2 mi upstream from Page Springs, 4 mi northeast of Cornville, and 15 mi upstream from mouth. Prior to March 18, 1981, at site 250 ft upstream.

DRAINAGE AREA.--357 mi².

PERIOD OF RECORD.--July 1940 to September 1945, April 1948 to current year.

REVISED RECORDS.--WSP 1149: 1948(M). WRD Ariz. 1974: 1973.

GAGE.--Water-stage recorder and auxiliary water-stage recorder. Altitude of gage is 3,470 ft, from topographic map.

REMARKS.--Records good. Regulation during low flow by several small diversions for irrigation above station.

AVERAGE DISCHARGE.--40 years, 91.8 ft³/s, 66,510 acre-ft/yr; median of yearly mean discharges, 75 ft³/s, 54,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft³/s Feb. 19, 1980, gage height, 16.30 ft, maximum gage height, 16.48 ft, Sept. 5, 1970; minimum discharge, 6 ft³/s July 27, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1885, 23 ft in March 1938, from floodmarks (upstream side of bridge).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 18	1800	1,340	5.03	Feb. 28	a2200	a2,000	unknown
Nov. 30	2030	*14,100	12.64	Mar. 3	a0800	a1,800	unknown
Dec. 10	1630	1,310	5.26	Mar. 31	2400	2,290	6.40
Dec. 23	0900	8,820	10.40	Apr. 30	1400	1,410	5.40
Feb. 8	1700	2,830	6.88	Sept. 30	unknown	5,070	8.40

Minimum daily, 13 ft³/s June 20, 21.

a About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	32	1650	53	113	1000	1180	560	19	16	19	21
2	24	34	462	52	82	600	663	230	20	15	17	21
3	24	34	262	46	90	1500	587	146	19	14	17	21
4	25	37	189	45	177	1000	341	117	18	15	18	21
5	25	32	177	45	166	1000	233	98	18	16	26	21
6	25	30	172	42	106	500	164	90	20	15	23	19
7	26	30	136	42	410	500	136	71	19	14	22	18
8	26	30	129	42	1410	400	124	61	18	16	22	21
9	27	115	172	41	751	400	110	59	18	21	23	22
10	27	200	778	42	474	450	115	50	15	21	23	21
11	27	150	608	39	390	470	169	49	15	19	24	22
12	28	80	330	39	326	479	186	38	15	16	23	21
13	28	70	199	41	304	399	161	34	15	16	19	20
14	29	60	136	35	311	373	151	29	15	16	19	20
15	29	40	94	35	304	584	198	29	15	16	18	20
16	29	80	76	30	304	357	210	26	15	15	23	21
17	30	200	62	40	318	236	204	26	17	16	20	21
18	30	1160	52	150	349	204	259	26	14	16	20	22
19	30	650	52	180	349	252	233	24	14	15	50	22
20	30	326	49	150	296	259	246	23	13	16	70	25
21	31	236	45	60	276	296	437	26	13	16	100	24
22	31	115	42	50	289	272	696	23	14	21	100	23
23	31	67	4180	40	311	357	680	19	15	23	100	50
24	32	52	663	40	382	400	500	21	14	64	30	100
25	32	46	289	50	373	400	400	23	15	42	20	60
26	32	43	174	50	289	300	249	19	15	42	21	40
27	32	46	141	50	246	400	183	20	19	29	20	30
28	32	41	106	100	1400	450	158	18	17	21	17	40
29	30	43	76	150	---	633	141	18	16	20	21	100
30	28	2770	73	150	---	994	596	19	17	20	23	2000
31	28	---	59	129	---	1400	---	21	---	19	23	---
TOTAL	882	6849	11633	2058	10596	16865	9710	2013	487	641	971	2887
MEAN	28.5	228	375	66.4	378	544	324	64.9	16.2	20.7	31.3	96.2
MAX	32	2770	4180	180	1410	1500	1180	560	20	64	100	2000
MIN	24	30	42	30	82	204	110	18	13	14	17	18
AC-FT	1750	13580	23070	4080	21020	33450	19260	3990	966	1270	1930	5730
CAL YR 1982	TOTAL	58334	MEAN 160	MAX 7210	MIN 10	AC-FT 115700						
WTR YR 1983	TOTAL	65592	MEAN 180	MAX 4180	MIN 13	AC-FT 130100						

GILA RIVER BASIN

257

09505260 MONTEZUMA WELL OUTLET NEAR RIMROCK, AZ

LOCATION.--Lat 34°38'53", long 111°45'02", in NE¼, sec.31, T.15 N., R.6 E., Yavapai County, Hydrologic Unit 15060202, in Montezuma Castle National Monument, on left bank 100 ft downstream from outlet of Montezuma Well, and 2.5 mi northeast of Rimrock.

PERIOD OF RECORD.--1948-59, 1961, 1976 (three or less discharge measurements each year); April 1977 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 3,560 ft, from topographic map.

REMARKS.--Records good. No diversions between outlet and gage since June 1977 when gate was removed.

AVERAGE DISCHARGE.--6 years (water years 1978-83), 2.41 ft³/s, 1,746 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3.2 ft³/s Apr. 4, 8-20, July 17-23, 26-31, Aug. 6, 7, 13-16, 21, 1979; minimum daily, 1.3 ft³/s Nov. 11-13, Nov. 19 to Dec. 9, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2.9 ft³/s May 14-18, 20-23, 26; minimum daily, 1.3 ft³/s Nov. 11-13, Nov. 19 to Dec. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.4	1.3	1.5	1.8	1.9	2.6	2.6	2.6	2.2	2.3	1.8
2	1.4	1.4	1.3	1.5	1.8	1.9	2.6	2.6	2.6	2.2	2.3	1.8
3	1.4	1.4	1.3	1.5	1.8	1.9	2.6	2.6	2.6	2.3	2.2	1.7
4	1.4	1.4	1.3	1.5	1.8	1.9	2.7	2.6	2.6	2.3	2.2	1.7
5	1.4	1.4	1.3	1.5	1.8	1.9	2.7	2.6	2.5	2.2	2.1	1.7
6	1.4	1.4	1.3	1.5	1.9	1.9	2.5	2.6	2.5	2.2	2.1	1.7
7	1.4	1.4	1.3	1.6	1.8	1.9	2.5	2.7	2.5	2.1	2.1	1.7
8	1.4	1.4	1.3	1.6	1.9	1.9	2.5	2.7	2.5	2.1	2.2	1.6
9	1.4	1.4	1.3	1.6	1.9	1.9	2.5	2.8	2.4	2.1	2.2	1.6
10	1.4	1.4	1.4	1.6	1.9	1.9	2.5	2.8	2.5	2.1	2.1	1.6
11	1.4	1.3	1.4	1.6	1.9	1.9	2.6	2.8	2.4	2.2	2.1	1.6
12	1.4	1.3	1.4	1.6	1.9	1.9	2.6	2.8	2.3	2.3	2.1	1.6
13	1.4	1.3	1.4	1.6	1.8	1.9	2.6	2.8	2.3	2.3	2.0	1.5
14	1.4	1.4	1.4	1.6	1.8	1.9	2.6	2.9	2.3	2.2	2.0	1.5
15	1.4	1.4	1.4	1.7	1.8	1.9	2.6	2.9	2.3	2.2	2.0	1.6
16	1.4	1.4	1.4	1.7	1.8	1.9	2.6	2.9	2.3	2.2	2.0	1.6
17	1.4	1.4	1.4	1.8	1.8	1.9	2.7	2.9	2.3	2.2	2.0	1.5
18	1.4	1.4	1.4	1.8	1.8	1.9	2.7	2.9	2.3	2.2	1.9	1.5
19	1.4	1.3	1.4	1.8	1.8	1.9	2.7	2.8	2.3	2.3	1.9	1.5
20	1.4	1.3	1.4	1.8	1.8	1.9	2.6	2.9	2.3	2.4	1.9	1.5
21	1.4	1.3	1.4	1.8	1.8	2.0	2.7	2.9	2.3	2.4	1.9	1.4
22	1.4	1.3	1.4	1.8	1.8	2.0	2.7	2.9	2.3	2.5	1.9	1.4
23	1.4	1.3	1.4	1.8	1.8	2.2	2.6	2.9	2.3	2.4	1.9	1.5
24	1.4	1.3	1.4	1.8	1.8	2.4	2.6	2.8	2.3	2.4	1.9	1.5
25	1.4	1.3	1.4	1.8	1.8	2.5	2.6	2.8	2.3	2.4	1.9	1.4
26	1.4	1.3	1.4	1.8	1.9	2.5	2.6	2.9	2.3	2.4	1.9	1.4
27	1.4	1.3	1.4	1.8	1.9	2.5	2.6	2.8	2.3	2.3	1.9	1.4
28	1.4	1.3	1.4	1.8	1.9	2.5	2.6	2.7	2.3	2.3	1.9	1.4
29	1.4	1.3	1.4	1.8	---	2.5	2.6	2.7	2.3	2.3	1.9	1.4
30	1.4	1.3	1.4	1.8	---	2.5	2.6	2.6	2.3	2.3	1.8	1.4
31	1.4	---	1.4	1.8	---	2.5	---	2.6	---	2.3	1.8	---
TOTAL	43.4	40.5	42.5	52.2	51.3	64.1	78.2	85.8	71.4	70.3	62.4	46.5
MEAN	1.40	1.35	1.37	1.68	1.83	2.07	2.61	2.77	2.38	2.27	2.01	1.55
MAX	1.4	1.4	1.4	1.8	1.9	2.5	2.7	2.9	2.6	2.5	2.3	1.8
MIN	1.4	1.3	1.3	1.5	1.8	1.9	2.5	2.6	2.3	2.1	1.8	1.4
AC-FT	86	80	84	104	102	127	155	170	142	139	124	92
CAL YR 1982	TOTAL 675.3											
WTR YR 1983	TOTAL 708.6											
	MEAN	1.85	MAX	2.6	MIN	1.3	AC-FT	1340				
		1.94	MAX	2.9	MIN	1.3	AC-FT	1410				

GILA RIVER BASIN

09505350 DRY BEAVER CREEK NEAR RIMROCK, AZ

LOCATION.--Lat 34°43'43", long 111°46'30", in NE¼NW¼ sec.1, T.15 N., R.5 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on left upstream abutment of abandoned highway bridge, 400 ft upstream from present State Highway 179 and 5.5 mi north of Rimrock.

DRAINAGE AREA.--142 mi².

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WRD Ariz. 1969: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,694.38 ft National Geodetic Vertical Datum of 1929 (Arizona Highway Department bench mark).

REMARKS.--Records fair. No known diversions above station.

AVERAGE DISCHARGE.--23 years, 49.9 ft³/s, 36,150 acre-ft/yr; median of yearly mean discharges, 36 ft³/s, 26,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s Sept. 5, 1970, gage height, 14.35 ft, from rating curve extended above 6,000 ft³/s on basis of computation of peak flow over weir at gage height 9.07 ft and 9.69 ft and slope-area measurement at gage height 14.35 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), and peak discharges above base of 600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 18	0945	1,320	4.99	Feb. 8	1730	1,960	5.55
Nov. 30	1915	*8,190	8.99	Mar. 4	1830	1,400	5.06
Dec. 10	1500	1,200	4.87	Mar. 31	2000	2,010	5.58
Dec. 23	0745	6,560	8.22	Apr. 21	1700	1,640	5.27
Jan. 29	1700	1,810	5.42	Sept. 30	1100	7,630	8.74

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.00	638.0	7.40	72	534	746	417.00	0	0	0	.0
2	0	.00	257.0	5.10	54	400	503	154.00	0	0	0	.0
3	0	.00	135.0	3.70	66	920	455	99.00	0	0	0	.0
4	0	.00	127.0	2.70	135	658	253	91.00	0	0	0	.0
5	0	.00	161.0	1.90	111	716	130	79.00	0	0	0	.0
6	0	.00	135.0	1.20	119	574	97	59.00	0	0	0	.0
7	0	.00	95.0	.79	515	473	68	41.00	0	0	0	.0
8	0	.00	76.0	.51	1190	327	57	30.00	0	0	0	.0
9	0	.00	119.0	.29	522	300	56	23.00	0	0	0	.0
10	0	10.00	770.0	.90	342	318	124	18.00	0	0	0	.0
11	0	93.00	287.0	5.50	257	394	206	12.00	0	0	0	.0
12	0	43.00	121.0	5.10	199	400	124	9.30	0	0	0	.0
13	0	18.00	70.0	3.80	210	347	74	6.00	0	0	0	.0
14	0	18.00	52.0	3.00	225	352	97	3.50	0	0	0	.0
15	0	12.00	30.0	2.70	199	352	221	2.20	0	0	0	.0
16	0	12.00	18.0	3.10	214	170	245	1.20	0	0	0	.0
17	0	127.00	12.0	27.00	233	127	274	.63	0	0	0	.0
18	0	1010.00	8.0	257.00	241	106	378	.35	0	0	0	.0
19	0	332.00	6.0	135.00	236	170	378	.31	0	0	0	.0
20	0	164.00	4.8	76.00	167	270	406	.29	0	0	0	.0
21	0	76.00	3.3	46.00	164	257	920	.27	0	0	0	.0
22	0	35.00	121.0	27.00	196	233	754	.20	0	0	0	.0
23	0	18.00	2410.0	20.00	217	357	534	.20	0	0	0	167.0
24	0	8.60	347.0	15.00	257	389	541	.10	0	0	0	665.0
25	0	4.80	157.0	12.00	241	300	497	.10	0	0	0	70.0
26	0	2.40	83.0	22.00	173	323	383	.00	0	0	0	19.0
27	0	1.30	59.0	22.00	154	352	287	.00	0	0	0	14.0
28	0	.72	40.0	157.00	785	439	287	.00	0	0	0	3.2
29	0	.37	21.0	497.00	---	638	236	.00	0	0	0	206.0
30	0	1880.00	18.0	287.00	---	929	777	.00	0	0	0	3920.0
31	0	---	12.0	114.00	---	1030	---	.00	---	0	0	---
TOTAL	0	3866.19	6393.1	1761.69	7494	13155	10108	1047.65	0	0	0	5064.2
MEAN	.000	129	206	56.8	268	424	337	33.8	.000	.000	.000	169
MAX	.00	1880	2410	497	1190	1030	920	417	.00	.00	.00	3920
MIN	.00	.00	3.3	.29	54	106	56	.00	.00	.00	.00	.00
AC-FT	.00	7670	12680	3490	14860	26090	20050	2080	.00	.00	.00	10040

CAL YR 1982	TOTAL	37514.47	MEAN	103	MAX	4060	MIN	.00	AC-FT	74410
WTR YR 1983	TOTAL	48889.83	MEAN	134	MAX	3920	MIN	.00	AC-FT	96970

GILA RIVER BASIN

259

09505800 WEST CLEAR CREEK NEAR CAMP VERDE, AZ

LOCATION.--Lat 34°32'19", long 111°41'36", in NW¼NW¼ sec.11, T.13 N., R.6 E., Yavapai County, Hydrologic Unit 15060203, in Coconino National Forest, on left bank at Bull Pen Ranch, 11 mi upstream from mouth, and 9 mi east of Camp Verde.

DRAINAGE AREA.--241 mi².

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,630 ft, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--18 years, 72.9 ft³/s, 52,820 acre-ft/yr; median of yearly mean discharges, 58 ft³/s, 42,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s Dec. 18, 1978, gage height, 11.6 ft, from floodmarks and rating curve extended above 2,700 ft³/s, on basis of slope-area measurements at gage heights 8.3 ft and 10.15 ft, minimum daily, 12 ft³/s at times during some months in 1966, 1968-70, 1974, 1977, 1980, 1981, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 2,700 ft³/s as explained above) and peak discharges above base of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2000	*6,700	8.37	Mar. 5	1800	1,520	5.84
Dec. 10	0430	1,350	5.70	Mar. 23	1900	1,180	5.55
Dec. 23	0830	3,510	7.10	Mar. 29	unknown	unknown	unknown
Jan. 29	1900	1,130	5.50	Apr. 23	0030	2,360	6.45
Feb. 8	1500	2,020	6.22	Sept. 30	1800	4,550	7.58

Minimum daily, 12 ft³/s July 3-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	22	541	26	67	641	500	131	20	14	16	20
2	18	22	207	23	60	481	300	107	20	13	17	20
3	18	22	99	22	46	848	200	83	19	12	17	20
4	18	22	74	20	61	1060	150	71	19	12	18	20
5	18	22	88	18	58	1050	128	65	18	12	19	19
6	18	22	60	18	72	785	92	60	18	12	18	19
7	18	22	44	28	374	656	78	56	18	13	19	20
8	18	24	41	45	1060	547	67	51	18	14	22	20
9	18	38	521	53	508	443	60	50	17	19	41	20
10	19	41	970	37	383	380	53	46	17	15	24	20
11	19	45	534	29	321	380	63	44	17	14	24	20
12	19	37	254	26	259	368	87	42	16	14	24	20
13	20	33	138	24	259	330	78	40	16	13	20	20
14	20	34	94	34	259	275	67	37	16	13	18	22
15	20	33	69	36	225	397	92	36	16	14	23	20
16	20	29	50	37	221	275	156	33	16	14	25	28
17	20	30	38	50	212	145	128	32	15	14	29	31
18	20	87	32	189	249	115	138	31	15	13	27	19
19	20	68	27	235	249	183	134	29	15	13	24	18
20	20	34	24	138	216	225	152	27	14	14	22	17
21	20	26	20	81	163	335	634	27	14	15	20	16
22	20	24	20	61	178	441	1140	26	14	20	20	16
23	20	22	1460	53	225	575	1210	25	14	20	19	20
24	20	22	639	44	294	491	525	24	14	20	19	43
25	20	22	335	40	309	350	299	23	14	22	18	26
26	22	23	166	45	249	373	216	23	14	19	18	25
27	22	23	94	51	178	500	156	23	13	15	17	20
28	22	23	72	75	268	600	121	22	13	15	18	19
29	22	24	42	307	---	800	107	22	13	16	20	191
30	22	1270	46	200	---	1000	102	23	13	16	20	2610
31	22	---	36	89	---	800	---	23	---	15	20	---
TOTAL	611	2166	6835	2134	7023	15849	7233	1332	476	465	656	3399
MEAN	19.7	72.2	220	68.8	251	511	241	43.0	15.9	15.0	21.2	113
MAX	22	1270	1460	307	1060	1060	1210	131	20	22	41	2610
MIN	18	22	20	18	46	115	53	22	13	12	16	16
AC-FT	1210	4300	13560	4230	13930	31440	14350	2640	944	922	1300	6740
CAL YR 1982	TOTAL	43187	MEAN 118	MAX 5690	MIN 15	AC-FT 85660						
WTR YR 1983	TOTAL	48179	MEAN 132	MAX 2610	MIN 12	AC-FT 95560						

GILA RIVER BASIN

09506000 VERDE RIVER NEAR CAMP VERDE, AZ

LOCATION.--Lat 34°26'54", long 111°47'21", NW¼ sec.11, T.12 N., R.5 E. (unsurveyed), Yavapai County, Hydrologic Unit 15060203, in Prescott National Forest, 600 ft upstream from Chasm Creek, 9.0 mi southeast of Camp Verde and 9.7 mi downstream from West Clear Creek.

DRAINAGE AREA.--5,024 mi² (includes 344 mi² in Aubrey Valley Playa, a closed basin).

PERIOD OF RECORD.--October 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 28...	1515	182	690	--	20.0	15.0	10.7	694	117	<10	--
DEC 07...	1450	604	379	7.9	17.0	9.5	10.4	686	101	29	18
JAN 12...	1335	269	560	8.1	17.5	8.5	11.3	698	106	<10	K1
FEB 02...	1245	511	391	8.3	7.0	8.0	11.2	691	104	13	K14
MAR 09...	1415	2570	180	6.4	21.0	11.0	10.1	694	101	18	K10
29...	1605	4020	175	7.8	21.5	12.5	9.8	694	101	27	K13
APR 27...	1235	994	268	8.2	24.0	16.5	9.0	692	102	10	K9
MAY 26...	1535	119	863	8.3	37.0	26.0	8.1	688	111	--	K2
JUN 29...	1345	83	979	8.2	34.5	25.0	8.6	687	116	<10	K1
JUL 29...	1445	160	783	8.2	31.5	27.0	8.1	693	113	13	K19
AUG 30...	1245	145	777	8.3	32.0	26.5	8.4	693	116	15	K13

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 28...	330	62	60	43	--	--	--	--	110	--
DEC 07...	170	13	35	19	17	.6	1.7	153	36	10
JAN 12...	280	45	56	34	--	--	--	235	57	--
FEB 02...	180	14	39	21	--	--	--	170	28	--
MAR 09...	80	0	19	7.9	5.8	.3	1.2	80	10	3.2
29...	80	8	20	7.3	--	--	--	72	10	--
APR 27...	120	11	25	13	--	--	--	105	20	--
MAY 26...	340	91	66	43	54	1	3.7	251	150	35
JUN 29...	370	111	68	49	--	--	--	261	180	43
JUL 29...	300	55	55	39	--	--	--	243	110	30
AUG 30...	310	69	57	40	49	1	3.4	238	120	31

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

261

09506000 VERDE RIVER NEAR CAMP VERDE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT 28...	--	--	435	--	.59	24	<.10	--	1.0	--
DEC 07...	.20	18	238	230	.32	15	.10	.13	.70	.80
JAN 12...	--	--	354	--	.48	11	<.10	--	.50	--
FEB 02...	--	--	250	--	.34	22	<.10	--	.30	--
MAR 09...	.10	15	113	110	.15	42	<.10	<.10	.50	--
29...	--	--	93	--	.13	149	<.10	--	.80	--
APR 27...	--	--	151	--	.21	28	<.10	--	.70	--
MAY 26...	.30	24	516	530	.70	6	<.10	<.10	1.1	--
JUN 29...	--	--	572	--	.78	5	<.10	--	.80	--
JUL 29...	--	--	442	--	.60	17	<.10	--	.80	--
AUG 30...	.30	29	439	470	.60	40	<.10	<.10	.30	--

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHODIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHODIS- SOLVED (MG/L AS PO4)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 28...	.020	--	--	--	<1	--	3	--	21	10
DEC 07...	.070	.020	.06	80	1	9	1	4	25	41
JAN 12...	.030	--	--	--	<1	--	<1	--	23	17
FEB 02...	.060	--	--	--	<1	--	<1	--	31	43
MAR 09...	.120	.040	.12	30	1	15	2	4	87	604
29...	.280	--	--	--	<1	--	6	--	271	2940
APR 27...	.070	--	--	--	<1	--	<1	--	16	43
MAY 26...	.030	.010	.03	220	<1	12	2	4	12	3.9
JUN 29...	.030	--	--	--	<1	--	1	--	11	2.5
JUL 29...	.050	--	--	--	1	--	<1	--	46	20
AUG 30...	.040	<.010	--	230	<1	40	1	<10	75	29

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09507500 FOSSIL CREEK DIVERSIONS TO CHILDS POWERPLANT, NEAR CAMP VERDE, AZ

LOCATION.--Lat 34°22'06", long 111°39'56", in NE¼SW¼ sec.20, T.11½ N., R.7 E., Yavapai County, Hydrologic Unit 15060203, at head of Stehr Lake, 2.3 mi northeast of Childs powerplant, 4.4 mi by flume downstream from Irving powerplant, and 17 mi southeast of Camp Verde.

PERIOD OF RECORD.--January 1952 to current year.

GAGE.--Water-stage recorder and weir in concrete flume. Datum of gage is 3,716.2 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Record is obtained at the head of Stehr Lake, a regulatory basin, and shows the water used by Childs powerplant. Most of the flow originates at Fossil Springs, which are fairly constant. Diversion is made from Fossil Creek 8 mi upstream from this station and is first used by Irving powerplant. A second diversion from Fossil Creek enters the flume below Irving powerplant. Based on estimates and records for previous years, the flow through the Irving powerplant is estimated to be about 99 percent of the record published herewith.

AVERAGE DISCHARGE.--31 years, 43.1 ft³/s, 31,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 58 ft³/s Aug. 1, 2, 1982; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	48	27	46	44	46	46	48	48	46	48	48
2	49	48	30	46	47	46	44	48	48	46	46	52
3	48	48	29	46	47	46	45	47	48	47	46	51
4	50	48	32	48	48	44	43	47	48	47	46	51
5	49	47	44	48	46	44	44	48	47	47	46	51
6	49	47	47	47	47	45	46	49	47	47	48	50
7	49	48	48	48	47	47	46	48	47	47	47	51
8	49	48	47	48	44	47	46	48	47	47	47	51
9	49	46	48	49	46	46	46	48	47	47	47	51
10	49	46	47	48	47	46	46	47	47	47	47	51
11	49	47	46	46	47	46	46	47	47	47	47	50
12	49	46	46	47	48	45	46	48	47	46	48	49
13	49	45	46	48	48	46	46	48	47	47	48	49
14	49	46	45	49	48	45	46	48	47	47	47	50
15	49	47	45	48	47	46	46	48	47	47	46	50
16	49	45	46	48	47	45	46	49	47	47	48	49
17	49	44	47	48	47	47	46	49	46	47	48	50
18	49	45	47	39	48	47	46	34	47	47	47	48
19	48	45	46	38	47	47	46	48	47	47	48	48
20	49	45	45	45	47	45	47	49	47	47	48	49
21	49	45	45	47	48	45	46	49	47	47	47	49
22	48	34	46	48	46	46	46	49	47	47	48	49
23	48	29	43	46	46	45	46	49	47	47	48	49
24	48	46	24	47	45	45	47	49	47	47	48	49
25	48	45	47	47	46	45	47	49	47	47	47	49
26	48	45	45	47	44	45	46	49	47	47	47	43
27	48	45	46	48	46	46	39	49	47	47	47	47
28	48	46	43	47	47	47	47	48	46	48	47	48
29	48	46	43	46	---	46	48	48	46	48	47	48
30	48	46	46	45	---	46	48	48	47	47	46	47
31	48	---	46	46	---	46	---	48	---	48	41	---
TOTAL	1508	1356	1332	1444	1305	1418	1373	1481	1411	1457	1456	1477
MEAN	48.6	45.2	43.0	46.6	46.6	45.7	45.8	47.8	47.0	47.0	47.0	49.2
MAX	50	48	48	49	48	47	48	49	48	48	48	52
MIN	48	29	24	38	44	44	39	34	46	46	41	43
AC-FT	2990	2690	2640	2860	2590	2810	2720	2940	2800	2890	2890	2930
CAL YR 1982	TOTAL	15925.00	MEAN 43.6	MAX 58	MIN .00	AC-FT 31590						
WTR YR 1983	TOTAL	17018.00	MEAN 46.6	MAX 52	MIN 24	AC-FT 33760						

GILA RIVER BASIN

263

09507580 EAST VERDE RIVER DIVERSION FROM EAST CLEAR CREEK, NEAR PINE, AZ

LOCATION.--Lat 34°25'10", long 111°15'50", in NW¼NE¼ sec.23, T.12 N., R.10 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, at confluence of Mail Creek and East Verde River, 0.9 mi southeast of Washington Park, and 11 mi east of Pine.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and weir in concrete flume. Altitude of gage is 5,774 ft, from Phelps Dodge Corporation reference mark.

REMARKS.--Records good. Diversion is 9.5 mi northeast, from Blue Ridge Reservoir on East Clear Creek, in the Little Colorado River basin, to the East Verde River in the Gila River basin.

AVERAGE DISCHARGE.--17 years (water years 1967-83) 14.1 ft³/s, 10,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 34 ft³/s Apr. 19, 29, May 5-7, 10, 12, 15, 18, June 2, 1969; no flow for long periods each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	2.9	.00	.00	.00	.00	.00	.00	25	26	20	31
2	27	.00	.00	.00	.00	.00	.00	.00	25	26	19	31
3	28	.00	.00	.00	.00	.00	.00	.00	26	26	23	30
4	27	.04	.00	.00	.00	.00	.00	.00	25	26	30	30
5	23	.43	.00	.00	.00	.00	.00	.00	25	26	30	29
6	27	.00	.00	.00	.00	.00	.00	.00	25	26	30	29
7	27	.00	.00	.00	.00	.00	.00	.00	25	24	30	30
8	27	.00	8.8	.00	.00	.00	.00	.00	26	22	29	30
9	28	.00	13	.00	.00	.00	.00	.00	26	22	29	30
10	28	.00	.00	.00	.00	.00	.00	.00	24	22	30	30
11	27	.00	.00	.00	.00	.00	.00	.00	25	15	30	30
12	27	.00	.00	.00	.00	.00	.00	.00	22	18	30	30
13	27	.00	1.0	.00	.00	.00	.00	.00	21	21	30	30
14	27	.00	.00	.00	.00	.00	.00	.00	21	21	30	30
15	27	.00	.00	.00	.00	.00	.00	.00	21	21	30	29
16	27	.00	.00	.00	.00	.00	.00	.00	23	21	30	30
17	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	30
18	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	30
19	27	.00	.00	.00	.00	.00	.00	.00	25	20	30	30
20	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	29
21	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	30
22	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	30
23	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	30
24	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	30
25	27	.00	.00	.00	.00	.00	.00	.00	25	21	30	29
26	27	.00	.00	.00	.00	.00	.00	12	25	21	31	30
27	27	.00	.00	.00	.00	.00	.00	29	25	20	30	28
28	27	10	.00	.00	.00	.00	.00	30	25	21	30	28
29	27	23	.00	.00	---	.00	.00	29	25	18	31	26
30	27	15	.00	.00	---	.00	.00	29	25	21	30	27
31	25	---	.00	.00	---	.00	---	27	---	21	31	---
TOTAL	836	51.37	22.80	.00	.00	.00	.00	156.00	735	673	903	886
MEAN	27.0	1.71	.74	.000	.000	.000	.000	5.03	24.5	21.7	29.1	29.5
MAX	29	23	13	.00	.00	.00	.00	30	26	26	31	31
MIN	23	.00	.00	.00	.00	.00	.00	.00	21	15	19	26
AC-FT	1660	102	45	.00	.00	.00	.00	309	1460	1330	1790	1760
CAL YR 1982	TOTAL	5596.47	MEAN	15.3	MAX	31	MIN	.00	AC-FT	11100		
WTR YR 1983	TOTAL	4263.17	MEAN	11.7	MAX	31	MIN	.00	AC-FT	8460		

GILA RIVER BASIN

09507980 EAST VERDE RIVER NEAR CHILDS, AZ

LOCATION.--Lat 34°17'00", long 111°38'50", in sec.21, T.11 N., R.7 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, in Tonto National Forest, on left bank 1.3 mi upstream from mouth and 6 mi southeast of Childs.

DRAINAGE AREA.--328 mi².

PERIOD OF RECORD.--September 1961 to December 1965, May 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,500 ft, from topographic map. Sept. 1, 1961, to Dec. 15, 1965, at site 1 mi upstream at altitude 2,600 ft, datum raised 0.38 ft Oct. 4, 1963. May 25, 1967, to July 20, 1972, at present site at datum 1.29 ft higher.

REMARKS.--Records good. Since September 30, 1965, records include transbasin diversions from East Clear Creek to headwaters of East Verde River. (See sta 09507580 and 09398300.)

AVERAGE DISCHARGE.--16 years (water years 1968-83), 79.8 ft³/s, 57,820 acre-ft/yr; median of yearly mean discharges, 66 ft³/s, 47,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft³/s Sept. 5, 1970, gage height, 20.5 ft, present datum, from profile past gage, from rating curve extended above 960 ft³/s on basis of slope-area measurements at gage heights 10.11 and 20.5 ft, present datum; minimum daily, 0.20 ft³/s June 19 to July 8, 1963, July 21-28, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 960 ft³/s as explained above, and peak discharges above base of 600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2400	*6,250	9.66	Feb. 8	1945	2,780	6.46
Dec. 10	1515	1,680	5.09	Mar. 5	0030	2,350	5.97
Dec. 23	1230	5,460	9.04	Mar. 24	2030	1,790	5.24
Jan. 29	2230	2,160	5.75	Apr. 21	1600	1,390	4.65
Feb. 4	1330	888	3.81	Sept. 30	0930	1,770	5.22

Minimum daily, 8.1 ft³/s Nov. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	34	1780	66	169	153	408	163	54	41	31	40
2	29	30	356	58	131	165	314	139	52	40	35	38
3	29	23	188	52	174	660	274	123	52	40	33	38
4	29	16	115	49	659	1450	242	114	52	39	38	38
5	29	12	88	45	482	1160	213	109	53	37	42	36
6	27	9.4	65	44	551	715	188	104	53	36	43	38
7	24	8.1	51	42	861	479	171	98	52	38	42	43
8	27	8.2	43	40	1510	393	154	91	51	62	42	42
9	30	23	392	39	1040	346	135	85	51	50	47	40
10	30	29	1380	37	619	316	127	81	50	48	45	39
11	31	71	776	35	494	301	126	76	50	41	61	39
12	31	56	263	32	411	286	137	72	45	37	64	41
13	31	34	156	30	372	254	136	67	47	32	45	44
14	32	23	110	29	357	229	126	64	44	32	49	39
15	32	18	84	26	306	215	117	60	44	32	48	40
16	32	16	65	26	287	189	115	57	43	31	52	42
17	32	17	51	25	274	164	115	52	43	30	115	48
18	32	154	42	26	262	174	124	51	42	29	93	45
19	32	202	36	31	247	278	132	48	41	26	61	43
20	32	78	30	31	224	378	144	47	40	27	55	42
21	33	45	26	29	194	267	617	46	40	29	49	42
22	32	33	25	26	180	398	567	44	41	39	48	39
23	32	27	1850	25	175	455	306	43	42	40	44	42
24	32	22	636	23	173	866	259	40	43	36	43	55
25	33	20	287	25	178	965	227	38	43	43	43	56
26	33	18	189	22	175	687	205	37	42	68	42	47
27	36	17	145	22	165	555	179	35	41	43	42	48
28	35	15	117	110	149	445	163	57	41	36	40	49
29	34	15	96	583	---	390	153	63	40	33	43	106
30	34	900	88	606	---	357	153	51	40	34	42	714
31	34	---	80	229	---	398	---	54	---	30	43	---
TOTAL	966	1973.7	9610	2463	10819	14088	6327	2209	1372	1179	1520	2013
MEAN	31.2	65.8	310	79.5	386	454	211	71.3	45.7	38.0	49.0	67.1
MAX	36	900	1850	606	1510	1450	617	163	54	68	115	714
MIN	24	8.1	25	22	131	153	115	35	40	26	31	36
AC-FT	1920	3910	19060	4890	21460	27940	12550	4380	2720	2340	3010	3990
CAL YR 1982	TOTAL	33104.7	MEAN	90.7	MAX	2040	MIN	6.2	AC-FT	65660		
WTR YR 1983	TOTAL	54539.7	MEAN	149	MAX	1850	MIN	8.1	AC-FT	108200		

GILA RIVER BASIN

265

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ
(Hydrologic bench mark station)

LOCATION.--Lat 34°09'39", long 111°41'32", in sec.36, T.9½ N., R.6 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1.4 mi upstream from mouth and 13 mi south of Childs.

DRAINAGE AREA.--36.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1967 to current year.

REVISED RECORDS.--WRD Ariz. 1970: 1968(M).

GAGE.--Water-stage recorder. Altitude of gage is 2,320 ft, from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years, 16.1 ft³/s, 11,700 acre-ft/yr; median of yearly mean discharges, 9.5 ft³/s, 6,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,830 ft³/s Feb. 19, 1980, gage height, 16.0 ft, from high-water mark in gage well, from rating curve extended above 3,000 ft³/s on basis of slope-area measurements at gage heights 9.77, 14.18, and 15.66 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 11	0630	158	5.44	Feb. 7	1700	702	6.75
Nov. 18	1500	393	6.17	Feb. 8	1615	1,560	7.91
Nov. 30	2000	*3,220	9.66	Mar. 4	1400	1,200	7.49
Dec. 9	1400	768	6.86	Mar. 24	1730	999	7.21
Dec. 23	1045	1,050	7.28	Apr. 21	1900	249	5.77
Jan. 29	1845	1,350	7.67	Sept. 30	0945	634	6.63
Feb. 4	1415	844	6.97				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.51	.63	381	13	95	5.8	32	6.5	.43	.00	.00	.11
2	.46	.63	116	11	64	5.8	23	5.7	.43	.00	.03	.09
3	.46	.63	65	9.6	93	117	18	5.1	.48	.00	.01	.07
4	.46	.63	41	8.5	510	606	15	4.5	.45	.00	.02	.06
5	.46	.63	30	7.5	272	291	13	4.0	.43	.00	.06	.05
6	.38	.63	22	7.0	231	153	11	3.4	.48	.00	.03	.05
7	.38	.69	17	6.2	426	93	9.3	3.2	.43	.00	.02	.07
8	.38	.86	13	5.8	588	69	8.2	3.0	.47	.00	.04	.07
9	.38	1.7	274	5.1	309	50	7.2	2.8	.43	.00	.07	.05
10	.38	1.0	500	4.2	153	37	6.2	2.6	.44	.04	.05	.04
11	.38	109	293	3.7	99	29	5.6	2.5	.35	.01	.05	.03
12	.38	55	107	3.4	69	23	5.7	2.4	.26	.00	.03	.04
13	.46	23	61	3.2	53	19	6.2	2.1	.26	.00	.01	.10
14	.47	13	39	3.0	43	16	5.4	1.9	.26	.00	.00	.07
15	.48	8.1	28	2.7	33	14	4.8	1.7	.18	.00	.01	.07
16	.46	5.8	21	2.5	27	12	4.3	1.4	.18	.00	.08	.08
17	.46	5.3	16	2.5	22	10	3.8	1.2	.18	.00	.48	.10
18	.46	178	12	2.4	19	11	3.5	1.0	.18	.00	.48	.08
19	.46	105	9.3	2.1	17	43	3.4	1.0	.12	.00	.31	.08
20	.47	43	7.5	2.1	15	86	3.5	.91	.10	.00	.26	.10
21	.52	26	6.2	2.4	12	71	56	.97	.10	.00	.21	.08
22	.53	17	5.4	1.9	10	153	82	.85	.10	.00	.17	.07
23	.55	11	345	1.7	8.9	165	40	.74	.12	.00	.14	.07
24	.55	8.4	161	1.6	8.0	348	25	.75	.14	.00	.23	.18
25	.57	7.0	73	1.6	7.4	280	18	.65	.10	.00	.26	.14
26	.57	5.1	46	1.6	7.1	170	13	.70	.06	.00	.21	.12
27	.57	4.0	33	1.4	7.1	118	10	.59	.04	.00	.18	.12
28	.57	3.4	25	51	6.5	80	8.4	.52	.04	.00	.18	.10
29	.57	3.2	19	373	---	60	7.0	.54	.03	.00	.20	.86
30	.63	470	17	302	---	48	6.2	.47	.00	.00	.17	203
31	.63	---	16	126	---	41	---	.41	---	.00	.13	---
TOTAL	14.99	1108.33	2799.4	969.7	3205.0	3224.6	454.7	64.10	7.27	.05	4.12	206.15
MEAN	.48	36.9	90.3	31.3	114	104	15.2	2.07	.24	.002	.13	6.87
MAX	.63	470	500	373	588	606	82	6.5	.48	.04	.48	203
MIN	.38	.63	5.4	1.4	6.5	5.8	3.4	.41	.00	.00	.00	.03
AC-FT	30	2200	5550	1920	6360	6400	902	127	14	.10	8.2	409

CAL YR 1982	TOTAL	9341.06	MEAN	25.6	MAX	609	MIN	.00	AC-FT	18530
WTR YR 1983	TOTAL	12058.41	MEAN	33.0	MAX	606	MIN	.00	AC-FT	23920

GILA RIVER BASIN

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)
NOV 16...	1255	5.9	134	8.1	21.0	13.0	5.6	9.8	699	102	K15	180
FEB 10...	1220	147	41	7.6	15.0	8.0	15	11.2	702	103	K1	K44
MAY 17...	1130	1.4	220	8.3	--	18.5	.50	8.1	700	95	K10	250
AUG 09...	1355	.21	362	8.0	34.5	28.5	.60	8.1	700	114	K64	230

DATE	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV 16...	45	12	3.7	9.3	.6	.80	56	10	4.4	1.0	23
FEB 10...	20	5.2	1.7	2.7	.3	.70	21	10	1.5	.20	14
MAY 17...	75	20	6.2	13	.7	1.2	93	7.0	5.7	1.1	28
AUG 09...	130	33	11	27	1	1.8	163	3.8	14	1.9	41

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS PO4)
NOV 16...	104	98	.14	<.10	.90	.070	.010	.010	<.010	--	.03
FEB 10...	50	49	.07	<.10	.40	.110	.030	.010	<.010	--	.09
MAY 17...	136	140	.19	<.10	.60	<.060	.040	.040	.010	.03	.12
AUG 09...	218	230	.30	<.10	.60	<.010	.050	.040	.010	.03	.15

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
NOV 16...	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	130	1	17	<.5	<1	<1	<3	11	78	<1	5
MAY 17...	--	--	--	--	--	--	--	--	--	--	--
AUG 09...	<10	18	31	.5	<1	<1	<3	4	22	3	40

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)
NOV 16...	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	2	<.1	<10	<1	<1	<1	28	<6	4	3.0	2.0
MAY 17...	--	--	--	--	--	--	--	--	--	--	--
AUG 09...	1	<.1	<10	<1	<1	<1	200	<6	4	--	--

DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 16...	--	--	--	--	--	--	--	--	2	100	.03
FEB 10...	1.5	1.0	1.9	1.1	1.8	1.1	.05	.11	2	100	.79
MAY 17...	--	--	--	--	--	--	--	--	7	75	.03
AUG 09...	--	--	--	--	--	--	--	--	4	53	.00

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09508500 VERDE RIVER BELOW TANGLE CREEK, ABOVE HORSESHOE DAM, AZ

LOCATION.--Lat 34°04'23", long 111°42'56", in sec.35, T.9 N., R.6 E. (unsurveyed), Yavapai County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1.3 mi downstream from Tangle Creek and 9 mi upstream from Horseshoe Dam.

DRAINAGE AREA.--5,872 mi², includes 373 mi² in Aubrey Valley Playa, a closed basin.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1945 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,029.0 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. About 12,500 acres above station are irrigated by surface water and ground water. Low flow slightly regulated by powerplant 32 mi above station, using water from Fossil Creek. This station is above all major reservoirs on Verde River.

AVERAGE DISCHARGE.--38 years, 566 ft³/s, 410,100 acre-ft/yr; median of yearly mean discharges, 394 ft³/s, 285,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,800 ft³/s Feb. 15, 1980, gage height, 21.41 ft; minimum discharge, 48 ft³/s June 17, 1956, July 18, 19, 1958, caused by power regulation on Fossil Creek; minimum daily, 61 ft³/s July 18, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1924, 100,000 ft³/s Mar. 3, 1938, gage height, 19.0 ft, from floodmarks, based on comparison with peak discharge at other stations on Verde River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0700	22,300	14.51	Mar. 1	1330	8,810	11.16
Dec. 10	2130	10,800	11.90	Mar. 4	1400	16,300	13.35
Dec. 23	1930	*22,400	14.53	Mar. 31	1500	8,910	11.20
Jan. 30	0015	7,550	10.62	Apr. 22	0630	7,840	10.75
Feb. 4	1530	6,100	9.87	Sept. 24	2030	15,300	13.11
Feb. 9	0300	12,800	12.47				

Minimum daily, 166 ft³/s July 19-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	253	250	15200	620	1360	6260	6940	1950	221	188	221	231
2	247	264	5190	559	1030	4490	4840	1860	219	186	226	234
3	239	259	2410	522	1340	5220	3150	1170	221	179	231	216
4	234	242	1490	500	4250	14300	2500	862	216	174	372	206
5	224	239	1140	475	2970	12100	1760	716	211	172	279	199
6	224	239	1050	458	2420	8480	1390	616	211	172	239	209
7	211	239	970	444	3490	5270	1130	552	221	170	226	209
8	209	253	802	430	7870	4450	955	548	211	186	236	192
9	192	360	1710	430	10000	3710	820	444	201	186	239	183
10	190	342	7080	437	6130	3010	740	418	199	190	264	181
11	201	600	8510	434	4080	2800	745	399	194	186	288	183
12	206	578	3820	424	3050	2950	877	384	190	197	282	214
13	204	511	2080	411	2480	2810	891	369	194	188	264	209
14	204	405	1410	426	2360	2450	806	345	201	183	256	201
15	211	366	1040	430	2240	2340	716	330	204	177	250	206
16	214	348	796	429	2040	2710	824	315	211	174	247	221
17	211	357	647	430	2010	1880	1030	294	211	172	297	282
18	211	566	550	430	2080	1480	1030	282	197	170	508	224
19	214	2680	490	702	2150	1440	1240	279	190	166	676	221
20	214	1690	457	896	2090	1770	1300	264	186	166	515	226
21	216	872	444	724	1780	2000	2180	264	186	166	424	242
22	226	664	442	597	1600	2370	6110	264	190	188	348	231
23	226	526	8790	500	1690	3030	5700	253	186	211	320	226
24	216	448	10800	458	1870	4720	3980	245	186	194	297	4200
25	221	390	4340	448	2120	5710	2810	236	183	211	273	7240
26	226	357	2230	458	2110	4320	2190	231	179	273	250	2780
27	211	348	1450	461	1780	4010	1780	226	179	384	221	1490
28	226	336	1080	510	1460	3390	1450	219	186	342	209	872
29	236	320	850	1270	---	3830	1300	234	188	303	209	815
30	239	3380	743	4950	---	5450	1180	229	188	273	219	3460
31	239	---	694	2060	---	7150	---	226	---	242	231	---
TOTAL	6795	18429	88705	22323	79850	135900	62364	15024	5960	6369	9117	25803
MEAN	219	614	2861	720	2852	4384	2079	485	199	205	294	860
MAX	253	3380	15200	4950	10000	14300	6940	1950	221	384	676	7240
MIN	190	239	442	411	1030	1440	716	219	179	166	209	181
AC-FT	13480	36550	175900	44280	158400	269600	123700	29800	11820	12630	18080	51180
CAL YR 1982	TOTAL	374897	MEAN	1027	MAX	20700	MIN	105	AC-FT	743600		
WTR YR 1983	TOTAL	476639	MEAN	1306	MAX	15200	MIN	166	AC-FT	945400		

GILA RIVER BASIN

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09508500 VERDE RIVER BELOW TANGLE CREEK ABOVE HORSESHOE DAM, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT 13...	1400	199	650	8.1	29.0	17.5	9.5	711	107	<10	K2	--
NOV 16...	1540	340	568	8.1	20.0	14.5	9.9	701	105	<10	K9	240
DEC 14...	1440	1400	302	7.6	18.5	10.0	10.6	712	101	21	20	--
JAN 12...	1400	412	550	8.5	--	10.5	11.6	713	111	11	K1	--
FEB 10...	1530	5560	200	8.0	12.0	9.0	11.1	708	103	58	140	96
MAR 09...	1500	3420	217	7.6	--	13.0	10.1	709	103	20	K5	--
APR 19...	1330	1180	359	8.6	22.0	17.5	8.2	705	93	<10	K21	--
MAY 17...	1400	295	587	8.5	23.0	21.0	8.2	707	99	14	K1	240
JUN 09...	1405	201	664	8.7	30.0	26.5	7.4	705	100	11	K6	--
JUL 13...	1500	189	675	8.7	37.5	30.0	7.6	705	109	12	K54	--
AUG 09...	1615	238	646	8.5	33.0	30.5	7.0	705	102	16	--	250
SEP 14...	1230	189	609	7.7	34.0	28.0	7.8	708	108	13	450	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT 13...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 16...	6	47	30	32	.9	2.5	235	57	19	.30	20	317
DEC 14...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 12...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	0	24	8.8	6.3	.3	1.5	101	12	3.2	.20	15	126
MAR 09...	--	--	--	--	--	--	--	--	--	--	--	--
APR 19...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 17...	11	52	27	27	.8	2.5	230	59	17	.30	21	343
JUN 09...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 09...	31	46	32	41	1	3.6	216	80	25	.40	25	372
SEP 14...	--	--	--	--	--	--	--	--	--	--	--	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09508500 VERDE RIVER BELOW TANGLE CREEK ABOVE HORSESHOE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)
OCT 13...	--	--	<1	<.10	--	.50	--	.050	--	--	--
NOV 16...	350	.43	13	<.10	<.10	1.0	--	.020	<.010	--	210
DEC 14...	--	--	19	<.10	--	.40	--	.110	--	--	--
JAN 12...	--	--	1	<.10	--	.40	--	.030	--	--	--
FEB 10...	130	.17	504	<.10	<.10	1.5	--	.970	.030	.09	70
MAR 09...	--	--	56	.30	--	.50	.80	.350	--	--	--
APR 19...	--	--	6	<.10	--	.40	--	.100	--	--	--
MAY 17...	340	.47	<1	<.10	<.10	.60	--	.030	.020	.06	150
JUN 09...	--	--	0	<.10	--	.30	--	.040	--	--	--
JUL 13...	--	--	11	<.10	--	.90	--	.030	--	--	--
AUG 09...	380	.51	13	<.10	<.10	.70	--	.060	.050	.15	250
SEP 14...	--	--	20	<.10	--	.30	--	.020	--	--	--

DATE	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS TOTAL (UG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 13...	--	<1	10	--	<1	--	10	1.2	3	14	7.5
NOV 16...	150	<1	<10	8	<1	4	5	--	5	22	20
DEC 14...	--	1	30	--	2	--	20	4.9	4	--	--
JAN 12...	--	<1	<10	--	3	--	10	1.5	<1	5	5.6
FEB 10...	30	<1	40	74	3	5	30	6.8	5	645	9680
MAR 09...	--	<1	10	--	<1	--	10	6.0	<1	160	1480
APR 19...	--	<1	10	--	1	--	20	2.6	5	47	150
MAY 17...	130	<1	<10	6	<1	4	17	1.8	11	9	7.2
JUN 09...	--	<1	<10	--	1	--	10	1.3	2	4	2.2
JUL 13...	--	<1	20	--	7	--	10	1.8	3	5	2.6
AUG 09...	190	1	30	8	1	4	10	1.9	<1	15	9.6
SEP 14...	--	<1	<10	--	<1	--	20	.60	21	21	11

< Actual value is known to be less than value shown.

09509500 RESERVOIR SYSTEM ON VERDE RIVER AT AND BELOW HORSESHOE DAM, AZ

LOCATION.--This system comprises two storage reservoirs created by Horseshoe and Bartlett Dams on Verde River, Hydrologic Unit 15060203. Gages on Horseshoe Reservoir, formed by Horseshoe Dam, lat 33°59'05", long 111°42'35", in sec.2, T.7 N., R.6 E. (unsurveyed); and Bartlett Reservoir, formed by Bartlett Dam, lat 33°49'05", long 111°37'52", in sec.34, T.6 N., R.7 E. (unsurveyed).

DRAINAGE AREA.--6,185 mi², at Bartlett Dam.

PERIOD OF RECORD.--July 1939 to current year. Prior to 1946 published as Bartlett Reservoir at Bartlett Dam.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorders on dam structures. Datum of gage on Horseshoe Reservoir is 1,900.00 ft and on Bartlett Reservoir 1,599.46 ft, National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1964, Bartlett Reservoir gage datum was 10.00 ft higher.

REMARKS.--Horseshoe Reservoir is formed by earthfill and rockfill dam; dam completed and storage began Nov. 15, 1945. Bartlett Reservoir is formed by concrete multiple-arch dam; dam completed May 1939 and storage began Feb. 5, 1939. Total capacity of the two reservoirs (capacity tables dated 1978, based on survey in 1977-78) is 309,600 acre-ft divided as follows: Horseshoe Reservoir, 131,400 acre-ft between elevations 1,915.0 ft - sill of outlet gage - and 2,026.0 ft - top of spillway gates; Bartlett Reservoir, 178,200 acre-ft between elevations 1,619.46 ft - 10 ft above sill of outlet gates - and 1,797.46 ft - top of spillway gates. No dead storage. There was no spillage over Bartlett Dam during 1983 water year. Records given herein represent usable contents. Water is used for irrigation of Salt River Valley and for municipal supply.

COOPERATION.--Capacity tables furnished by Salt River Valley Water Users' Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents of system, 318,000 acre-ft May 9, 1973; no storage at times when natural flow of river was passed through reservoir system.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system, 308,000 acre-ft May 10; minimum, 94,260 acre-ft Nov. 11.

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114000	103000	147000	185000	224000	201000	297000	306000	294000	247000	203000	180000
2	115000	102000	160000	185000	226000	205000	297000	307000	294000	245000	202000	178000
3	116000	102000	164000	185000	229000	208000	298000	306000	294000	243000	201000	175000
4	116000	101000	166000	186000	236000	222000	299000	307000	294000	241000	200000	173000
5	117000	101000	168000	187000	238000	230000	300000	308000	294000	239000	199000	171000
6	117000	99900	170000	187000	237000	233000	300000	308000	294000	237000	198000	169000
7	118000	99200	171000	187000	236000	233000	300000	308000	294000	235000	197000	166000
8	118000	97800	172000	188000	241000	234000	300000	308000	294000	233000	196000	163000
9	118000	96800	176000	189000	235000	236000	302000	308000	294000	230000	194000	159000
10	119000	94800	188000	189000	222000	238000	303000	308000	292000	228000	193000	157000
11	119000	94300	200000	189000	211000	241000	304000	307000	291000	224000	193000	155000
12	119000	94700	202000	190000	202000	244000	304000	308000	290000	224000	193000	153000
13	119000	94900	200000	190000	198000	247000	304000	307000	289000	222000	192000	150000
14	118000	94800	197000	190000	196000	250000	304000	307000	287000	221000	192000	147000
15	117000	94700	193000	191000	196000	253000	304000	307000	283000	220000	191000	145000
16	116000	94700	189000	192000	196000	257000	304000	307000	281000	218000	191000	143000
17	115000	95100	187000	193000	196000	260000	304000	307000	278000	216000	190000	142000
18	114000	96400	188000	193000	196000	263000	305000	307000	276000	215000	190000	142000
19	113000	101000	188000	195000	196000	266000	305000	307000	274000	214000	191000	142000
20	112000	105000	189000	196000	195000	269000	303000	307000	272000	212000	191000	143000
21	111000	106000	190000	197000	195000	273000	304000	307000	270000	211000	191000	143000
22	110000	107000	190000	198000	195000	273000	304000	307000	268000	210000	190000	142000
23	109000	107000	207000	199000	195000	274000	304000	307000	266000	209000	190000	140000
24	108000	107000	223000	200000	195000	280000	303000	307000	263000	208000	190000	150000
25	107000	108000	224000	200000	196000	280000	303000	306000	261000	207000	189000	164000
26	107000	108000	223000	201000	197000	280000	303000	304000	258000	207000	188000	167000
27	106000	109000	218000	202000	197000	283000	304000	302000	256000	206000	187000	168000
28	105000	109000	209000	203000	197000	288000	305000	301000	254000	205000	186000	168000
29	105000	109000	199000	208000	---	291000	306000	299000	252000	204000	185000	169000
30	104000	122000	190000	216000	---	294000	306000	297000	250000	203000	183000	195000
31	104000	---	185000	221000	---	296000	---	295000	---	202000	181000	---
MAX	119000	122000	224000	221000	241000	296000	306000	308000	294000	247000	203000	195000
MIN	104000	94300	147000	185000	195000	201000	297000	295000	250000	202000	181000	140000
(**)	-9900	+18000	+63000	+36000	-24000	+99000	+10000	-11000	-45000	-48000	-21000	+14000

CAL YR 1982 MAX 304000 MIN 83700 ** +101900
WTR YR 1983 MAX 308000 MIN 94300 ** +81100

** Change in contents, in acre-feet.

GILA RIVER BASIN

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ
(National stream-quality accounting network station)

LOCATION (revised).--Lat 33°48'30", long 111°39'46", in NW¼ sec.5, T.5 N., R.7 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 2.1 mi downstream from Bartlett Dam, 4.0 mi upstream from Camp Creek, and 16 mi east of town of Cave Creek.

DRAINAGE AREA.--6,188 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1888 to current year. (Monthly discharge only August 1888 to December 1903, and January 1910 to September 1913. For some periods prior to December 1903 gage heights, discharge measurements, and daily discharge hydrograph are published in reports of the Geological Survey.) Prior to October 1941, published under different names as follows: "near Fort McDowell," "at mouth," "above Salt River," "at McDowell," "at McDowell near Lehi," "near McDowell," and "above Camp Creek, near McDowell."

REVISED RECORDS.--WSP 1049: 1893, 1913-14, 1917-18, 1926-27, 1929. WSP 1213: 1915-16. WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,572.34 ft National Geodetic Vertical Datum of 1929. Gage at present site and datum Jan. 1, 1942, to Sept. 30, 1961, Dec. 30, 1965, to Mar. 10, 1971, and Oct. 1, 1978, to the present; Mar. 2 to Sept. 30, 1978, used as supplementary gage, and Feb. 18, 1975, to Feb. 28, 1978, supplementary water-stage recorder at site 30 ft upstream at same datum. Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973, water-stage recorder at site 1.9 mi upstream at datum 1,600 ft, from topographic map; at same site at datum 2.00 ft higher, Oct. 1, 1973, to Mar. 3, 1975, and 3.00 ft higher, Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973. Feb. 17, 1925, to Dec. 31, 1941, water-stage recorder at two sites within 0.5 mi upstream from Camp Creek, at various datums. Prior to Feb. 17, 1925, nonrecording gages at several sites about 20 mi downstream from present location at various datums.

REMARKS.--Records good. About 12,500 acres above station are irrigated by surface water and ground water. Flow completely regulated by Bartlett Reservoir since Feb. 5, 1939, and Horseshoe Reservoir since Nov. 15, 1945 (see preceding page), except during periods of spill. Water diverted downstream for municipal supply of city of Phoenix, and for irrigation in Fort McDowell Indian Reservation. Remainder (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam on Salt River 27 mi downstream for irrigation in Salt River Valley, and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE (adjusted for storage in Bartlett and Horseshoe Reservoirs).--95 years, 686 ft³/s, 497,000 acre-ft/yr; median of yearly mean discharge, 550 ft³/s, 398,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1888-1939: Maximum discharge not determined, probably over 150,000 ft³/s Feb. 24, 1891; minimum daily, 29 ft³/s July 11, 13, 1901. Floods of Nov. 27, 1903, and Mar. 4, 1938, reached maximum discharges of 96,000 ft³/s and 95,000 ft³/s, respectively.
1939-83: Maximum discharge, 101,000 ft³/s Mar. 2, 1978; no flow at Bartlett Dam at times when gates in dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 13,300 ft³/s Feb. 9; minimum daily, 8.0 ft³/s Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	597	117	836	465	2270	6310	1520	628	1370	433	925
2	21	625	334	821	495	2880	4590	1480	130	1290	483	1070
3	21	625	394	483	433	3700	2750	1300	80	1270	719	1190
4	21	646	334	296	1630	8910	1800	590	159	1270	807	1170
5	19	676	268	385	3200	8320	1370	306	159	1080	807	1110
6	16	625	228	385	3200	6470	1150	379	159	998	777	1180
7	14	767	250	358	3200	5600	1410	711	220	1110	829	1300
8	12	1070	323	326	5370	4610	865	533	260	1260	814	1330
9	10	848	211	326	13300	2810	128	427	337	1290	741	1300
10	9.0	724	983	326	11900	1940	159	483	770	1290	628	1270
11	8.0	570	2880	301	9050	1400	363	514	770	1290	527	1430
12	62	473	3050	260	7470	1290	711	454	770	1200	521	1520
13	194	499	3050	260	4590	1290	925	385	814	952	514	1540
14	499	525	3050	328	3350	1150	970	326	1190	843	521	1550
15	684	486	3050	148	2340	1010	898	321	1740	873	521	1640
16	676	466	3050	109	2340	379	792	274	1540	943	527	1230
17	653	313	1660	109	2270	137	792	238	1390	858	521	406
18	625	223	597	106	2210	137	898	390	1190	770	533	347
19	660	219	533	106	2210	137	1150	212	1110	865	533	128
20	625	219	180	106	2210	134	1890	216	1140	916	533	70
21	732	206	142	104	2050	489	2550	216	1230	843	527	68
22	785	190	411	104	1860	2450	4740	220	1270	763	502	443
23	692	190	1250	104	1610	1980	5010	363	1300	616	508	1220
24	632	174	3050	104	1500	2800	4220	689	1330	559	514	1150
25	544	170	3050	104	1500	4950	2800	843	1290	559	546	961
26	577	170	3050	104	1500	5130	1760	961	1270	590	641	873
27	597	170	3960	104	1810	2640	1040	1040	1240	748	777	865
28	564	190	5680	163	1950	1580	1140	1040	1210	814	821	970
29	505	250	5630	315	---	2430	719	1040	1210	682	814	682
30	570	273	5560	315	---	3310	814	1040	1270	609	889	283
31	538	---	2640	342	---	5270	---	952	---	470	889	---
TOTAL	11586.0	13179	58965	8238	95013	87603	54714	19463	27176	28991	19717	29221
MEAN	374	439	1902	266	3393	2826	1824	628	906	935	636	974
MAX	785	1070	5680	836	13300	8910	6310	1520	1740	1370	889	1640
MIN	8.0	170	117	104	433	134	128	212	80	470	433	68
AC-FT	22980	26140	117000	16340	188500	173800	108500	38600	53900	57500	39110	57960
CAL YR 1982	TOTAL	331304.0	MEAN	908	MAX	10700	MIN	8.0	AC-FT	657100		
WTR YR 1983	TOTAL	453866.0	MEAN	1243	MAX	13300	MIN	8.0	AC-FT	900200		

GILA RIVER BASIN

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09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1950 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to December 1981. March 1982 to September 1982. April 1983 to current year.

WATER TEMPERATURES: December 1950 to December 1981. March 1982 to September 1982. April 1983 to current year.

REMARKS.--Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from district office in Tucson, Ariz.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 958 micromhos Nov. 10, 1956; minimum observed, 160 micromhos Feb. 29, 1980.

WATER TEMPERATURES: Maximum observed, 32.0°C July 18, Aug. 14, 1951; minimum observed, 5.0°C Jan. 30, 1952.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 389 micromhos Sept. 28; minimum observed, 225 micromhos Apr. 11.

WATER TEMPERATURES: Maximum observed, 25.0°C Sept. 19-27; minimum observed, 11.0°C Apr. 9-11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)
OCT 26...	1700	597	518	7.6	23.0	20.0	4.0	8.3	722	97	K31	K10
JAN 27...	1400	104	318	8.2	20.0	10.5	23	12.2	714	117	--	380
MAY 23...	1330	347	230	8.4	36.0	17.5	24	9.9	716	110	K4	94
SEP 01...	1530	917	304	7.8	39.0	22.0	1.8	9.2	719	112	K6	K10

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 26...	210	17	42	26	31	1	3.2	--	58	16	.30	20
JAN 27...	130	0	29	15	15	.6	1.9	--	25	8.3	.30	15
MAY 23...	110	0	25	11	8.7	.4	1.4	--	13	4.4	.20	16
SEP 01...	140	21	33	14	12	.5	1.5	120	19	6.8	.30	16

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS PO4)
OCT 26...	306	320	.42	<.10	.110	1.1	.050	.030	.020	.06	.15
JAN 27...	195	190	.27	<.10	.060	.70	.080	.050	.020	.06	.25
MAY 23...	195	140	.27	<.10	.070	.40	.090	.020	.030	.09	.28
SEP 01...	182	180	.25	<.10	.040	.40	.040	.020	.020	.06	.12

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued
 WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 26...	14	52	<.5	<1	<1	<3	4	9	2	31	24
JAN 27...	9	30	<.5	<1	<1	10	5	19	<1	15	3
MAY 23...	7	32	.5	<1	<1	<3	3	12	1	11	11
SEP 01...	9	38	<.5	<1	<1	<3	4	8	1	14	47

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (US/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 26...	<.1	<10	<1	1	1	660	10	12	14	97	23
JAN 27...	<.1	<10	1	1	<1	350	<6	13	15	100	4.2
MAY 23...	<.1	<10	4	<1	<1	210	<6	14	31	91	29
SEP 01...	<.1	<10	2	<1	<1	310	<6	7	9	82	22

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
 ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	239	250	281	315
2							---	---	246	252	280	310
3							---	---	241	255	281	315
4							---	---	245	257	290	282
5							---	---	272	258	289	319
6							---	---	267	258	289	321
7							---	---	248	271	297	323
8							---	---	241	275	292	319
9							233	---	245	273	293	325
10							233	---	243	274	293	327
11							225	---	241	273	292	329
12							255	---	243	274	302	330
13							256	---	242	272	307	330
14							240	---	246	272	307	338
15							238	242	248	272	312	370
16							237	238	245	274	310	320
17							234	237	250	275	303	369
18							239	231	248	263	310	345
19							237	237	247	270	311	365
20							239	236	249	268	312	343
21							242	238	249	274	318	376
22							240	240	248	272	312	372
23							---	247	248	275	320	370
24							---	238	249	271	311	372
25							---	240	250	273	305	350
26							---	240	249	272	315	366
27							248	230	250	274	325	387
28							247	---	248	273	327	389
29							---	---	249	276	323	---
30							---	---	250	280	325	---
31							---	---	---	282	315	---
MEAN							240	238	248	270	305	342
MAX							256	247	272	282	327	389
MIN							225	230	239	250	280	282

WTR YR 1983 MEAN 280 MAX 389 MIN 225

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	19.0	16.0	20.0	20.0
2							---	---	19.0	16.0	20.0	21.0
3							---	---	19.0	16.0	20.0	22.0
4							---	---	20.0	16.0	20.0	22.0
5							---	---	20.0	16.0	20.0	22.0
6							---	---	15.0	17.0	20.0	22.0
7							---	---	15.0	17.0	20.0	22.0
8							---	---	15.0	17.0	20.0	22.0
9							11.0	---	15.0	17.0	20.0	22.0
10							11.0	---	15.0	17.0	20.0	22.0
11							11.0	---	16.0	18.0	20.0	22.0
12							13.0	---	16.0	18.0	20.0	22.0
13							13.0	---	17.0	18.0	21.0	22.0
14							13.0	---	17.0	18.0	20.0	22.0
15							13.0	14.0	17.0	18.0	20.0	22.0
16							13.0	14.0	15.0	18.0	20.0	22.0
17							13.0	14.0	15.0	18.0	20.0	24.0
18							13.0	14.0	15.0	18.0	20.0	24.0
19							12.0	15.0	15.0	18.0	20.0	25.0
20							12.0	15.0	15.0	18.0	20.0	25.0
21							12.0	15.0	16.0	18.0	20.0	25.0
22							12.0	15.0	16.0	18.0	20.0	25.0
23							---	15.0	16.0	18.0	20.0	25.0
24							---	16.0	16.0	19.0	20.0	25.0
25							---	16.0	17.0	19.0	20.0	25.0
26							---	16.0	17.0	19.0	20.0	25.0
27							16.0	16.0	17.0	20.0	20.0	25.0
28							16.0	---	18.0	20.0	20.0	---
29							---	---	18.0	20.0	20.0	---
30							---	---	15.0	20.0	20.0	---
31							---	---	---	20.0	20.0	---
MEAN							13.0	15.0	16.5	18.0	20.0	23.0
MAX							16.0	16.0	20.0	20.0	21.0	25.0
MIN							11.0	14.0	15.0	16.0	20.0	20.0
WTR YR 1983	MEAN	18.0	MAX	25.0	MIN	11.0						

GILA RIVER BASIN

09510070 WEST FORK SYCAMORE CREEK ABOVE MCFARLAND CANYON, NEAR SUNFLOWER, AZ

LOCATION.--Lat 33°57'38", long 111°29'12", in SE¼SW¼ sec.12, T.7 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on left bank 0.2 mi upstream from McFarland Canyon and 6.8 mi. north of Sunflower.

DRAINAGE AREA.--4.58 mi².

PERIOD OF RECORD.--October 1965 to September 1974, October 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,380 ft, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--10 years (water years 1966-74, 1983) 1.22 ft³/s, 884 acre-ft/yr; median of yearly mean discharges, 0.54 ft³/s, 390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft³/s Sept. 5, 1970, gage height, 5.50 ft, from rating curve extended above 68 ft³/s on basis of slope-area measurement of peak flow; no flow for several days each year.

EXTREMES FOR CURRENT YEAR.-- Maximum discharge (*), and peak discharges above base of 10 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2015	*178	3.61	Feb. 8	1600	155	3.53
Dec. 10	2030	36	2.83	Mar. 4	1600	48	2.95
Dec. 23	1000	35	2.82	Mar. 24	1745	47	2.94
Jan. 29	1700	115	3.36				

No flow Oct. 1-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	26	1.8	9.1	1.8	5.5	1.9	.49	.09	.08	.05
2	.00	.02	9.1	1.5	7.6	1.7	5.0	2.0	.45	.08	.09	.05
3	.00	.02	5.9	1.4	7.8	6.2	4.4	2.0	.43	.08	.08	.05
4	.00	.02	4.6	1.2	20	34	4.0	1.9	.39	.08	.09	.04
5	.00	.02	3.9	1.1	16	33	3.6	1.8	.37	.08	.10	.04
6	.00	.02	3.2	1.0	15	24	3.4	1.7	.35	.07	.09	.04
7	.00	.03	2.7	1.0	35	16	3.1	1.6	.32	.08	.10	.04
8	.00	.04	2.4	.95	77	12	2.8	1.5	.31	.08	.11	.04
9	.00	.04	6.4	.85	52	8.5	2.7	1.4	.29	.08	.10	.03
10	.00	.04	30	.76	29	6.6	2.6	1.3	.26	.08	.10	.04
11	.00	.04	23	.67	21	5.7	2.5	1.2	.23	.09	.11	.04
12	.00	.02	12	.60	15	4.9	2.5	1.2	.22	.09	.10	.04
13	.00	.02	6.7	.55	11	4.3	2.3	1.1	.21	.10	.09	.03
14	.00	.02	4.4	.49	8.8	3.8	2.2	1.2	.19	.09	.09	.03
15	.00	.02	3.0	.46	7.2	3.4	2.1	1.2	.18	.09	.10	.04
16	.00	.02	2.5	.44	5.9	3.0	2.0	1.1	.16	.08	.21	.03
17	.00	.06	2.0	.45	5.2	3.0	1.8	1.1	.15	.08	.17	.03
18	.00	3.0	1.6	.41	4.6	4.8	1.8	1.1	.14	.07	.13	.03
19	.00	3.6	1.3	.43	4.1	6.8	1.8	1.1	.13	.07	.11	.03
20	.00	2.1	1.1	.41	3.6	10	1.8	1.0	.13	.07	.10	.04
21	.00	1.4	.98	.37	3.2	10	3.1	.97	.12	.07	.10	.03
22	.00	1.0	1.0	.34	2.8	11	2.7	.92	.12	.10	.09	.03
23	.00	.74	18	.34	2.6	20	2.4	.88	.12	.08	.09	.03
24	.00	.49	13	.32	2.5	32	2.4	.84	.11	.10	.08	.04
25	.00	.36	8.0	.31	2.3	32	2.4	.76	.11	.10	.08	.03
26	.00	.28	5.9	.29	2.2	19	2.2	.68	.11	.09	.07	.09
27	.01	.23	4.5	.47	2.1	14	2.1	.66	.10	.09	.07	.06
28	.02	.20	3.5	2.6	1.9	11	1.9	.68	.10	.09	.07	.05
29	.02	.19	2.7	35	---	8.8	1.9	.63	.09	.09	.06	.10
30	.02	33	2.3	29	---	7.2	2.1	.56	.09	.08	.06	4.4
31	.02	---	2.0	13	---	6.3	---	.54	---	.08	.06	---
TOTAL	.09	47.06	213.68	98.51	374.5	364.8	81.1	36.52	6.47	2.60	2.98	5.62
MEAN	.003	1.57	6.89	3.18	13.4	11.8	2.70	1.18	.22	.084	.096	.19
MAX	.02	.33	.30	.35	.77	.34	5.5	2.0	.49	.10	.21	4.4
MIN	.00	.02	.98	.29	1.9	1.7	1.8	.54	.09	.07	.06	.03
AC-FT	.2	93	424	195	743	724	161	72	13	5.2	5.9	11

WTR YR 1983 TOTAL 1233.93 MEAN 3.38 MAX 77 MIN .00 AC-FT 2450

09510100 EAST FORK SYCAMORE CREEK NEAR SUNFLOWER, AZ

LOCATION.--Lat 33°56'58", long 111°27'39", in NE¼SE¼ sec. 18, T.7 N., R.9 E., Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on left bank 1.7 mi upstream from confluence with West Fork and 6.0 mi north of Sunflower.

DRAINAGE AREA.--4.49 mi².

PERIOD OF RECORD.--July 1961 to current year. Low-flow records not equivalent prior to Nov. 10, 1964, owing to undetermined amount of underflow between sites.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,140 ft, from topographic map. Prior to Nov. 10, 1964, at site 0.2 mi downstream at different datum.

REMARKS.--Records good except those for periods of no gage-height record, which are fair. No storage or diversion above station.

AVERAGE DISCHARGE.--22 years, 0.992 ft³/s, 719 acre-ft/yr; median of yearly mean discharges, 0.41 ft³/s, 300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,940 ft³/s Sept. 5, 1970, gage height, 9.50 ft, from profile past gage, from rating curve extended above 130 ft³/s on basis of slope-area measurements at gage heights 5.07 and 9.50 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 20 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	1830	*157	3.58	Mar. 4	1300	83	2.85
Dec. 10	1700	39	2.48	Mar. 24	1800	67	2.70
Dec. 23	0830	80	2.97	July 22	0145	21	2.16
Jan. 29	1545	84	2.99	Aug. 16	0030	33	2.39
Feb. 4	0400	54	2.68	Sept. 26	1345	27	2.27
Feb. 8	1445	146	3.51				

Minimum daily, 0.01 ft³/s Oct. 1-25, Oct. 28 to Nov. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	17	1.7	6.2	2.1	5.5	1.6	.60	.14	.18	.05
2	.01	.01	5.0	1.6	5.4	2.0	4.9	1.5	.60	.13	.31	.04
3	.01	.01	3.7	1.5	7.7	13	4.4	1.4	.60	.13	.89	.03
4	.01	.01	2.7	1.4	41	56	4.3	1.4	.60	.12	.46	.03
5	.01	.01	2.0	1.2	19	39	3.8	1.4	.60	.11	.27	.02
6	.01	.01	1.5	1.2	15	21	3.6	1.4	.60	.10	.21	.03
7	.01	.01	1.1	1.2	41	13	3.3	1.3	.60	.21	.17	.03
8	.01	.05	1.1	1.1	60	9.8	3.1	1.3	.50	.35	.27	.02
9	.01	.10	11	1.1	36	7.4	3.0	1.3	.50	.51	.19	.02
10	.01	.84	29	1.0	22	6.0	2.8	1.2	.50	.31	.14	.03
11	.01	.34	16	.94	15	5.1	2.7	1.2	.50	.74	.23	.03
12	.01	.04	6.2	.88	11	4.4	2.8	1.1	.50	.49	.15	.02
13	.01	.02	4.2	.88	8.2	4.0	2.7	1.1	.40	.30	.10	.02
14	.01	.02	3.2	.82	6.7	3.8	2.4	1.1	.40	.24	.08	.02
15	.01	.02	2.5	.82	5.6	3.4	2.2	1.1	.40	.20	.10	.02
16	.01	.02	2.1	.76	4.9	3.1	2.1	1.0	.36	.18	1.5	.02
17	.01	.51	1.8	.82	4.3	3.2	2.0	1.0	.33	.16	.67	.02
18	.01	5.8	1.6	.76	3.8	6.0	2.0	.90	.31	.13	.43	.02
19	.01	1.7	1.4	.76	3.5	11	1.9	.90	.29	.12	.27	.02
20	.01	.83	1.3	.82	3.2	11	2.1	.90	.27	.12	.21	.02
21	.01	.68	1.2	.76	3.0	10	4.3	.90	.26	.15	.18	.02
22	.01	.60	1.4	.71	2.8	12	3.1	.90	.25	.25	.15	.02
23	.01	.56	26	.71	2.6	23	2.4	.80	.28	.38	.12	.02
24	.01	.50	9.5	.66	2.5	41	2.1	.80	.25	.37	.11	.03
25	.01	.52	5.4	.66	2.4	37	2.0	.80	.23	.38	.10	.02
26	.02	.60	3.7	.66	2.3	20	1.9	.70	.21	.29	.09	1.9
27	.02	.57	3.0	.71	2.3	14	1.8	.70	.20	.21	.08	.24
28	.01	.52	2.5	2.4	2.2	11	1.7	.70	.19	.18	.07	.10
29	.01	.53	2.2	25	---	8.6	1.6	.70	.17	.18	.07	.87
30	.01	33	2.2	17	---	7.2	1.9	.70	.16	.19	.06	10
31	.01	---	1.8	7.5	---	6.2	---	.70	---	.16	.06	---
TOTAL	.33	48.44	173.3	78.03	339.6	414.3	84.4	32.50	11.66	9.38	7.92	13.73
MEAN	.011	1.61	5.59	2.52	12.1	13.4	2.81	1.05	.39	.30	.26	.46
MAX	.02	33	29	25	60	56	5.5	1.6	.60	2.1	1.5	10
MIN	.01	.01	1.1	.66	2.2	2.0	1.6	.70	.16	.10	.06	.02
AC-FT	.7	96	344	155	674	822	167	64	23	19	16	27

CAL YR 1982 TOTAL 505.23 MEAN 1.38 MAX 33 MIN .01 AC-FT 1000
WTR YR 1983 TOTAL 1213.59 MEAN 3.32 MAX 60 MIN .01 AC-FT 2410

NOTE.--No gage-height record May 5 to June 15.

GILA RIVER BASIN

09510200 SYCAMORE CREEK NEAR FORT MCDOWELL, AZ

LOCATION.--Lat 33°41'39", long 111°32'28", in sec.16, T.4 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 0.7 mi southwest of Sugarloaf Mountain, 9 mi northeast of Fort McDowell, 10 mi upstream from mouth, and 25 mi northeast of Scottsdale.

DRAINAGE AREA.--164 mi².

PERIOD OF RECORD.--December 1960 to current year. Prior to Oct. 1, 1963, published as "near McDowell."

REVISED RECORDS.--WRD Ariz. 1970: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,759.33 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 0.16 ft lower.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--22 years (water years 1962-83), 32.2 ft³/s, 23,330 acre-ft/yr; median of yearly mean discharges, 12 ft³/s, 8,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,200 ft³/s Sept. 5, 1970, gage height, 19.7 ft, from profile past gage, from rating curve extended above 3,600 ft³/s on basis of slope-area measurements at gage heights 15.0, 16.0, and 19.7 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 18	1815	484	2.45	Feb. 8	1745	2,620	5.26
Nov. 30	2100	*7,440	9.38	Mar. 4	2145	3,860	6.47
Dec. 10	1815	1,960	4.53	Mar. 19	1430	1,180	3.56
Dec. 23	1300	1,210	3.60	Mar. 22	0115	1,040	3.36
Jan. 29	1900	3,590	6.22	Mar. 24	1845	1,680	4.20
Feb. 4	1515	4,010	6.60				

Minimum daily, 0.17 ft³/s Oct. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.23	803	35	238	35	92	42	12	3.9	3.4	.40
2	.48	.24	200	32	178	38	84	42	12	4.4	5.7	17
3	.42	.22	108	29	289	338	79	40	12	3.9	3.9	4.4
4	.40	.21	66	27	2190	1950	76	38	13	4.4	5.0	1.4
5	.34	.23	45	29	774	962	74	38	13	3.9	3.9	.92
6	.34	.29	32	25	494	393	74	36	12	3.9	3.9	5.0
7	.32	.37	30	22	750	253	75	35	12	3.0	3.4	7.2
8	.26	.74	28	20	978	196	74	33	11	3.4	32	1.7
9	.23	6.2	360	19	664	151	67	33	11	5.7	14	1.2
10	.20	7.2	929	17	396	115	65	30	11	3.9	3.4	1.9
11	.24	26	567	16	291	96	59	27	9.7	2.6	3.0	11
12	.29	6.3	224	14	225	85	59	27	9.7	3.0	3.0	3.9
13	.28	2.7	133	13	183	76	59	27	8.8	2.6	7.2	2.2
14	.28	2.2	90	12	153	101	57	29	8.8	2.6	8.8	.92
15	.27	1.9	65	11	129	93	54	30	8.0	2.2	1.4	1.1
16	.23	1.7	51	11	112	68	54	27	6.4	2.6	.55	1.5
17	.37	3.1	42	12	100	65	52	25	5.7	3.0	1.1	1.1
18	.22	202	36	13	87	194	51	25	5.7	2.2	2.6	1.5
19	.22	101	31	12	80	605	50	25	5.7	2.2	1.7	1.5
20	.19	28	27	12	67	388	48	23	5.0	3.0	.92	1.1
21	.21	15	25	11	61	306	67	21	5.0	3.4	.78	1.4
22	.19	11	22	10	56	464	72	20	4.4	3.9	.66	.80
23	.18	11	291	9.7	53	395	52	19	4.4	3.9	.66	.65
24	.17	10	160	8.9	48	607	46	17	3.9	3.0	.66	.89
25	.23	8.4	92	8.6	45	522	43	16	3.9	3.0	.66	.64
26	.28	7.2	72	8.0	43	303	41	16	3.9	3.0	.66	.82
27	.35	7.2	62	14	41	228	42	16	3.9	3.0	.47	.91
28	.39	7.2	53	110	37	181	45	15	3.9	3.4	.55	1.5
29	.34	7.2	45	808	---	151	39	14	3.9	3.4	.55	59
30	.32	981	41	649	---	127	40	14	4.4	3.4	.55	135
31	.27	---	38	270	---	108	---	12	---	3.0	.47	---
TOTAL	8.87	1456.03	4768	2288.2	8762	9594	1790	812	234.1	102.8	115.54	268.55
MEAN	.29	48.5	154	73.8	313	309	59.7	26.2	7.80	3.32	3.73	8.95
MAX	.48	981	929	808	2190	1950	92	42	13	5.7	32	135
MIN	.17	.21	22	8.0	37	35	39	12	3.9	2.2	.47	.40
AC-FT	18	2890	9460	4540	17380	19030	3550	1610	464	204	229	533

CAL YR 1982	TOTAL	12445.21	MEAN	34.1	MAX	981	MIN	.11	AC-FT	24690
WTR YR 1983	TOTAL	30200.09	MEAN	82.7	MAX	2190	MIN	.17	AC-FT	59900

GILA RIVER BASIN

279

09511300 VERDE RIVER NEAR SCOTTSDALE, AZ

LOCATION.--Lat 33°33'34", long 111°40'09", in NW¼NE¼SE¼ sec.31, T.3 N., R.7 E., Maricopa County, Hydrologic Unit 15060203, in Salt River Indian Reservation, on right bank, at downstream side of Verde Plant intake structure, 1.5 mi downstream from State Highway 87 (Beeline highway) 0.75 mi north of city of Phoenix water treatment plant, 1.1 mi upstream from mouth and 16 mi northeast of the city of Scottsdale.

DRAINAGE AREA.--6,600 mi², approximately.

PERIOD OF RECORD.--February 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,320.31 ft, National Geodetic Vertical Datum of 1929. Prior to October 1, 1980 at site 1.6 mi upstream on State Highway 87 bridge at different datum.

REMARKS.--Records good. Flow regulated by Bartlett and Horseshoe Reservoirs (see sta 09509500) except during periods of spill or floodflow below Bartlett Dam. About 12,500 acres above reservoirs are irrigated by surface water and ground water. Below reservoirs water is diverted for municipal supply of city of Phoenix, and for irrigation of an undetermined acreage in Fort McDowell Indian Reservation. Remainder (except during infrequent period of extreme flooding) is diverted at Granite Reef Dam on Salt River, 6 mi downstream, for irrigation in Salt River Valley and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE.--22 years, 692 ft³/s, 501,400 acre-ft/yr; median of yearly mean discharges, 480 ft³/s, 348,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,000 ft³/s Feb. 16, 1980, on basis of flood routing, gage height, not determined; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 14,800 ft³/s Feb. 9; minimum daily, 1.2 ft³/s Oct. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	469	841	1310	418	2320	6300	1410	580	1310	361	851
2	4.5	494	294	956	462	3460	4500	1350	355	1270	414	903
3	3.7	510	330	771	497	4170	2700	1250	75	1210	519	1050
4	3.7	500	323	268	2840	11600	1800	550	59	1210	743	1060
5	3.7	565	289	275	4070	11600	1510	270	72	1110	797	1030
6	3.7	521	262	281	3880	8910	1480	340	66	955	732	1050
7	3.1	532	253	268	3880	7060	1460	670	53	969	797	1180
8	2.3	1070	289	215	5150	6460	1540	480	81	1050	770	1210
9	2.3	960	325	189	14800	3400	457	385	145	1110	732	1200
10	2.0	829	773	189	14200	2760	317	440	434	1110	647	1140
11	1.6	605	2760	186	10400	1740	350	470	703	1110	508	1200
12	1.2	420	2910	165	9450	1540	583	410	730	1040	473	1280
13	1.2	382	2870	143	5310	1540	906	345	746	897	473	1300
14	89	434	2870	136	4300	1470	977	290	896	727	488	1280
15	494	429	2860	124	2500	1160	971	285	1660	685	483	1310
16	559	356	2850	98	2500	816	844	278	1590	770	483	1360
17	605	330	2410	84	2480	83	829	209	1470	748	483	547
18	565	218	577	79	2470	102	864	257	1300	644	473	409
19	571	163	492	76	2530	493	1020	267	1170	644	458	256
20	611	147	305	74	2570	493	1620	185	1180	748	458	111
21	559	142	187	73	2490	250	2220	179	1240	685	458	50
22	795	132	206	72	2230	2450	5110	177	1280	685	434	54
23	728	122	557	71	1980	1980	5340	188	1280	530	449	871
24	653	117	2740	70	1750	2800	5560	456	1310	487	449	984
25	521	113	2800	72	1750	4900	4240	726	1310	459	454	889
26	505	108	2800	72	1750	5100	3240	924	1280	442	534	798
27	543	108	3340	75	1940	2600	1330	1070	1270	512	663	753
28	521	108	5930	77	2270	1500	1900	1100	1210	644	770	920
29	444	127	6030	246	---	2400	1070	1120	1180	586	716	640
30	459	340	6030	914	---	3300	1080	1130	1180	512	824	240
31	459	---	4740	461	---	6200	---	1120	---	459	835	---
TOTAL	9718.5	11351	60243	8090	110867	104657	62118	18331	25905	25318	17878	25926
MEAN	314	378	1943	261	3960	3376	2071	591	864	817	577	864
MAX	795	1070	6030	1310	14800	11600	6300	1410	1660	1310	835	1360
MIN	1.2	108	187	70	418	83	317	177	53	442	361	50
AC-FT	19280	22510	119500	16050	219900	207600	123200	36360	51380	50220	35460	51420

CAL YR 1982 TOTAL 306935.7 MEAN 841 MAX 9000 MIN 1.2 AC-FT 608800
WTR YR 1983 TOTAL 480402.5 MEAN 1316 MAX 14800 MIN 1.2 AC-FT 952900

GILA RIVER BASIN

09512100 INDIAN BEND WASH AT SCOTTSDALE, AZ

LOCATION.--Lat 33°32'08", long 111°54'50", in NW¼NE¼ sec.11, T.2 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on right bank 100 ft downstream from Arizona Canal.

DRAINAGE AREA.--62 mi² approximately, since October 1975. Prior to October 1975, 139 mi²; reduction caused by cutoff of upper portion of basin by Central Arizona Canal and detention dike (also see REMARKS).

PERIOD OF RECORD.--January 1961 to current year. Prior to October 1972 published as "near Scottsdale."

REVISED RECORDS.--WRD Ariz., 1972: 1968, 1970 (revised figures of daily discharge for water years 1968 and 1970 were inadvertently omitted from WSP 2126).

GAGE.--Water-stage recorder. Datum of gage is 1,275 ft from topographic map. Prior to July 31, 1981, at site 0.25 mi upstream at different datum.

REMARKS.--Records poor. Natural flow of wash affected by urbanization and partly regulated by artificial lakes upstream. Upper portion of basin (about 77 mi²) cut off by Central Arizona Canal and detention dike in October 1975. Release of excess flood waters may occasionally pass canal into lower portion of basin. Records at present site may include water spilled over emergency spillway along north side of Arizona Canal but do not include water released through the control structure on south side of canal, which enters Indian Bend Wash downstream from the gage.

AVERAGE DISCHARGE.--14 years (water years 1962-75), 2.67 ft³/s, 1,930 acre-ft/yr, representing flow from 139 mi²; median of yearly mean discharges, 0.30 ft³/s, 220 acre-ft/yr. 8 years (water years 1976-83), 2.07 ft³/s, 1,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--1962-1975: Maximum discharge, 21,000 ft³/s June 22, 1972, gage height, 4.90 ft, at site and datum then in use, from rating curve extended above 7,000 ft³/s on basis of partial discharge measurement at gage height, 4.2 ft and slope-conveyance method at gage height, 4.90 ft; no flow for most of time each year. Flood of June 22, 1972, which originated mainly downstream from the Central Arizona Canal is the largest known since at least 1922.
1976-83: Maximum discharge, 3,830 ft³/s, Aug. 16, 1983, gage height, 4.03 ft at new site and datum currently in use, from rating curve extended above 96 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), from rating curve extended above 96 ft³/s, and peak discharges above base of 20 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 17	unknown	unknown	unknown	Mar. 2	2330	1,480	3.10
Nov. 30	unknown	unknown	unknown	Mar. 22	0300	37	1.55
Jan. 29	2100	75	1.70	Aug. 16	1930	*3,830	4.03
Feb. 3	2200	253	2.08	Sept. 6	2230	21	1.46
Feb. 6	1600	91	1.75	Sept. 29	1800	1,540	3.13

No flow for most of year.

GILA RIVER BASIN

281

09512100 INDIAN BEND WASH AT SCOTTSDALE, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	50	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	20	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	1.0	.00	34	261	.00	.00	.00	.00	.00	.00
4	.00	.00	1.0	.00	85	234	.00	.00	.00	.00	3.0	.00
5	.00	.00	1.0	.00	5.4	12	.00	.00	.00	.00	2.3	.00
6	.00	.00	1.0	.00	18	.00	.00	.00	.00	.00	.90	2.2
7	.00	.00	1.0	.00	10	.00	.00	.00	.00	.00	.00	3.1
8	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	10	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	5.0	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	582	.00
17	.00	60	.00	.00	.00	.00	.00	.00	.00	.00	150	.00
18	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	5.8	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	6.4	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	11	---	.00	.00	.00	.00	.00	.00	330
30	.00	70	.00	7.8	---	.00	.00	.00	.00	.00	.00	153
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	175.00	81.00	18.80	152.40	513.40	.00	.00	.00	.00	744.00	488.30
MEAN	.000	5.83	2.61	.61	5.44	16.6	.000	.000	.000	.000	24.0	16.3
MAX	.00	70	50	11	85	261	.00	.00	.00	.00	582	330
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	347	161	37	302	1020	.00	.00	.00	.00	1480	969

CAL YR 1982 TOTAL 362.00 MEAN .99 MAX 70 MIN .00 AC-FT 718
WTR YR 1983 TOTAL 2172.90 MEAN 5.95 MAX 582 MIN .00 AC-FT 4310

NOTE.--No gage-height record Oct. 1 to Jan. 13.

GILA RIVER BASIN

09512200 SALT RIVER TRIBUTARY IN SOUTH MOUNTAIN PARK, AT PHOENIX, AZ

LOCATION.--Lat 33°20'49", long 112°05'03", in NE¼NE¼ sec.18, T.1 S., R.3 E., Maricopa County, Hydrologic Unit 15060106, in South Mountain Park, on left bank 6.5 mi south of Phoenix main post office.

DRAINAGE AREA.--1.75 mi².

PERIOD OF RECORD.--January 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,405.20 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. No storage or diversion above station.

AVERAGE DISCHARGE.--22 years, 0.008 ft³/s, 5.8 acre-ft/yr; median of yearly mean discharges, 0.00 ft³/s, 0.0 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 670 ft³/s Sept. 4, 1965, gage height, 9.70 ft, from floodmarks, from rating curve extended above 31 ft³/s on basis of measurements of peak flow through culvert at gage heights 5.80, 9.09, and 9.52 ft; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44 ft³/s Nov. 30, 1800 hours, gage height, 3.36 ft, base discharge, 20 ft³/s; no flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.72	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.72	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00
MEAN	.000	.024	.000	.000	.000	.009	.000	.000	.000	.000	.000	.000
MAX	.00	.72	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	1.4	.00	.00	.00	.6	.00	.00	.00	.00	.00	.00
CAL YR 1982	TOTAL	0.74	MEAN	.002	MAX	.72	MIN	.00	AC-FT	1.5		
WTR YR 1983	TOTAL	1.01	MEAN	.003	MAX	.72	MIN	.00	AC-FT	2.0		

GILA RIVER BASIN

283

09512280 CAVE CREEK BELOW COTTONWOOD WASH NEAR CAVE CREEK, AZ

LOCATION.--Lat 33°53'14", long 111°57'12", in SE¼SE¼SW¼ sec.4, T.6 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on left bank 1,500 ft downstream from Cottonwood Creek and 3.7 mi north of Cave Creek.

DRAINAGE AREA.--82.7 mi².

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,280 ft, from topographic map.

REMARKS.--Records fair. No regulation or diversion above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,720 ft³/s Nov. 30, 1982, gage height, 6.86 ft; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 19, 1980, reached a stage of 10.4 ft present datum, from flood-marks, discharge, 7,020 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,720 ft³/s Nov. 30, 1982, gage height, 6.86 ft; no flow Oct. 4 to Nov. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.00	165	4.6	40	10	17	8.9	3.2	1.4	.70	.70
2	.02	.00	60	4.4	25	10	17	8.4	3.0	1.4	.70	.70
3	.01	.00	55	4.4	194	347	17	8.4	3.0	1.6	.80	.60
4	.00	.00	45	4.4	800	990	16	8.4	3.0	1.4	2.7	.60
5	.00	.01	40	4.2	170	152	16	8.4	3.0	1.1	2.4	.60
6	.00	.17	40	3.7	75	69	15	7.5	3.0	1.0	2.2	.60
7	.00	.27	25	4.0	130	47	15	7.5	3.0	.90	1.6	.60
8	.00	.44	25	4.0	370	38	15	7.5	2.7	.80	28	1.3
9	.00	7.2	110	4.0	125	31	13	7.5	2.4	1.4	4.4	.80
10	.00	3.5	325	4.0	65	27	13	7.5	2.4	1.6	1.0	.70
11	.00	4.2	120	3.5	44	25	14	7.5	2.0	1.3	.80	.70
12	.00	3.0	55	3.3	36	22	13	7.1	1.8	.90	.70	.60
13	.00	1.9	37	3.0	29	20	13	7.1	1.8	.70	.70	.90
14	.00	1.3	34	3.0	25	26	12	7.1	1.8	1.0	1.8	.70
15	.00	1.2	29	3.0	22	20	12	7.1	1.6	1.8	.90	.60
16	.00	1.1	28	3.0	20	18	11	6.6	1.8	1.0	41	.60
17	.00	1.9	26	3.0	17	17	11	6.6	1.6	.80	17	.60
18	.00	10	26	2.9	17	19	11	6.6	1.4	.70	7.1	.60
19	.00	8.4	24	2.4	15	22	11	6.6	1.4	.70	3.5	.70
20	.00	3.5	24	1.5	14	19	12	6.2	1.4	.70	2.2	.70
21	.00	2.7	23	1.4	13	21	30	6.2	1.4	.70	1.6	1.1
22	.00	1.9	23	1.3	13	42	25	6.2	1.6	.70	1.4	.90
23	.00	1.4	75	1.3	13	33	15	5.8	2.0	1.4	1.3	.80
24	.00	1.4	30	1.3	12	152	13	5.5	2.2	2.0	1.1	1.4
25	.00	1.2	20	1.4	12	90	12	5.5	2.0	1.8	1.1	1.6
26	.00	1.2	9.2	1.4	11	40	11	4.8	1.8	1.8	1.1	1.3
27	.00	1.2	5.3	1.7	11	29	10	4.4	1.8	1.4	1.0	.90
28	.00	1.1	5.1	3.7	11	26	9.9	4.4	1.8	1.0	.90	.70
29	.00	1.1	4.8	150	---	23	9.9	4.1	1.6	.80	.90	37
30	.00	324	4.8	100	---	21	8.9	3.8	1.6	.80	.90	157
31	.00	---	4.8	80	---	20	---	3.5	---	.80	.80	---
TOTAL	.13	385.29	1498.0	413.8	2329	2426	418.7	202.7	63.1	35.40	132.30	216.60
MEAN	.004	12.8	48.3	13.3	83.2	78.3	14.0	6.54	2.10	1.14	4.27	7.22
MAX	.10	324	325	150	800	990	30	8.9	3.2	2.0	41	157
MIN	.00	.00	4.8	1.3	11	10	8.9	3.5	1.4	.70	.70	.60
AC-FT	.3	764	2970	821	4620	4810	830	402	125	70	262	430
CAL YR 1982	TOTAL	3536.85	MEAN	9.69	MAX	325	MIN	.00	AC-FT	7020		
WTR YR 1983	TOTAL	8121.02	MEAN	22.2	MAX	990	MIN	.00	AC-FT	16110		

GILA RIVER BASIN

09512400 CAVE CREEK AT PHOENIX, AZ

LOCATION.--Lat 33°34'56", long 112°06'43", in SW¼ sec.24, T.3 N., R.2 E., Maricopa County, Hydrologic Unit 15060106, on downstream side of bridge at Peoria Avenue in Phoenix, 0.7 mi upstream from Arizona Canal.

DRAINAGE AREA.--252 mi².

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,236.37 ft National Geodetic Vertical Datum of 1929 (from Salt River Valley Water Users' Association temporary bench mark). Prior to July 31, 1974, at site 60 ft upstream at datum 6.93 ft higher.

REMARKS.--Records poor. Peak flow regulated from 161 mi² by Cave Creek Dam 12 mi upstream. Small amounts of irrigation waste water that may flow into the channel and pass the gage are not included in this record.

AVERAGE DISCHARGE.--26 years, 4.07 ft³/s, 2,950 acre-ft/yr; median of yearly mean discharges, 0.87 ft³/s, 630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft³/s - including 345 ft³/s released from Cave Creek Dam - Dec. 19, 1967, gage height, 11.23 ft, present datum; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 429 ft³/s, Feb. 6, gage height, 4.89 ft; no flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	58	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	34	.00	.00	56	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	77	76	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	176	215	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	204	222	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	153	190	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	120	159	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	65	77	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	107	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	89	.00	46	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	98	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	10	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.5
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	20
31	.00	---	.00	37	---	.00	---	.00	---	.00	.00	60
TOTAL	.00	15.00	289.00	37.00	948.00	995.00	.45	.00	.00	.00	.00	82.50
MEAN	.000	.50	9.32	1.19	33.9	32.1	.015	.000	.000	.000	.000	2.75
MAX	.00	15	98	37	204	222	.45	.00	.00	.00	.00	60
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	30	573	73	1880	1970	.9	.00	.00	.00	.00	164
CAL YR 1982	TOTAL	374.00	MEAN	1.02	MAX	98	MIN	.00	AC-FT	742		
WTR YR 1983	TOTAL	2366.95	MEAN	6.48	MAX	222	MIN	.00	AC-FT	4690		

GILA RIVER BASIN

285

09512500 AGUA FRIA RIVER NEAR MAYER, AZ

LOCATION.--Lat 34°18'55", long 112°03'48", in NW¼SE¼ sec.20, T.11 N., R.3 E., Yavapai County, Hydrologic Unit 15070102, on left bank at Sycamore damsite, 700 ft downstream from Big Bug Creek and 12 mi southeast of Mayer.

DRAINAGE AREA.--588 mi².

PERIOD OF RECORD.--January 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,434 ft, levels by Maricopa County Municipal Water Conservation District No. 1.

REMARKS.--Records good except those for periods of missing gage-height record, which are fair. Diversions above station for mining and irrigation of about 600 acres. Perry Canal, which previously headed 300 ft above the gage, was washed out on July 11, 1977, and was not rebuilt.

AVERAGE DISCHARGE.--43 years, 22.9 ft³/s, 16,590 acre-ft/yr; median of yearly mean discharges, 12 ft³/s, 8,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft³/s Feb. 19, 1980, from rating curve extended above 3,400 ft³/s on basis of slope-area measurement of peak flow, gage height, 15.76 ft, from mean of surge, inside high-water mark 16.03 ft, floodmark 18.97 ft; negligible flow at times during the summer months in most previous years when entire flow was diverted to Perry Canal above station and flow past gage was seepage only.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	1945	7,690	8.51	Feb. 8	1830	2,820	6.12
Dec. 10	1630	2,910	6.18	Mar. 4	1200	3,760	6.68
Dec. 23	0945	8,140	8.70	Sept. 23	1545	*9,940	9.41

Minimum daily, 3.0 ft³/s, Oct. 3, 5-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	3.7	603	40	63	56	156	43	5.5	4.0	5.0	5.0
2	3.2	3.7	100	30	44	57	131	38	5.5	4.0	5.0	5.0
3	3.0	3.7	10	30	370	857	96	36	5.5	3.8	5.0	4.0
4	3.2	3.7	10	20	802	1970	80	32	5.5	3.7	4.0	4.0
5	3.0	3.8	10	20	324	580	68	28	5.5	3.7	4.0	4.0
6	3.0	3.8	10	20	244	395	56	26	5.3	3.7	4.0	4.0
7	3.0	3.7	10	20	412	306	48	23	5.3	3.8	4.0	4.0
8	3.2	4.4	400	10	1220	266	38	22	5.1	4.0	4.0	4.0
9	3.2	8.9	879	10	550	201	30	20	5.1	4.2	4.0	4.0
10	3.2	15	1600	10	334	173	25	19	5.1	3.7	5.0	4.0
11	3.2	73	883	9.0	257	152	23	17	5.0	3.3	6.2	4.0
12	3.2	23	821	9.0	208	100	22	16	4.8	3.7	5.9	4.0
13	3.2	11	354	7.7	189	90	20	16	4.8	3.7	5.9	6.8
14	3.3	9.4	23	7.3	168	80	17	16	4.6	3.4	5.9	30
15	3.3	8.1	18	7.3	130	70	16	16	4.4	3.3	5.9	11
16	3.3	7.0	16	7.3	112	60	15	15	4.4	3.3	11	8.1
17	3.3	8.1	15	7.7	96	50	14	16	4.4	3.3	23	8.1
18	3.4	69	14	7.3	84	40	14	14	4.2	3.3	7.7	7.7
19	3.4	19	12	7.3	78	50	14	14	4.4	3.3	6.0	7.7
20	3.5	14	9.8	7.7	64	60	13	12	4.2	3.3	6.0	7.7
21	3.5	12	8.9	7.3	52	70	248	11	4.2	3.3	6.0	7.7
22	3.5	11	8.5	7.3	45	90	306	9.4	4.2	3.4	6.0	7.7
23	3.5	9.8	1780	7.0	42	160	140	8.9	4.2	3.7	5.0	1640
24	3.5	8.5	338	7.0	40	216	103	8.9	4.2	3.7	5.0	939
25	3.5	8.1	157	7.3	39	346	83	7.7	4.0	3.6	5.0	110
26	3.5	8.1	132	7.3	37	295	65	7.0	4.0	8.9	5.0	107
27	3.5	8.5	100	8.1	37	248	51	6.6	4.2	7.0	5.0	103
28	3.5	8.1	80	8.9	47	206	46	6.6	4.0	7.0	5.0	110
29	3.7	8.5	70	207	---	196	41	6.3	4.0	5.0	5.0	497
30	3.7	1480	60	234	---	182	41	5.9	4.0	5.0	5.0	1560
31	3.7	---	50	101	---	178	---	5.7	---	5.0	5.0	---
TOTAL	103.4	1858.6	8582.2	889.8	6088	7800	2020	523.0	139.6	160.5	184.5	5218.5
MEAN	3.34	62.0	277	28.7	217	252	67.3	16.9	4.65	5.18	5.95	174
MAX	3.7	1480	1780	234	1220	1970	306	43	5.5	36	23	1640
MIN	3.0	3.7	8.5	7.0	37	40	13	5.7	4.0	3.3	4.0	4.0
AC-FT	205	3690	17020	1760	12080	15470	4010	1040	277	318	366	10350

CAL YR 1982	TOTAL	18619.08	MEAN	51.0	MAX	1780	MIN	.60	AC-FT	36930
WTR YR 1983	TOTAL	33568.10	MEAN	92.0	MAX	1970	MIN	3.0	AC-FT	66580

GILA RIVER BASIN

09512600 TURKEY CREEK NEAR CLEATOR, AZ

LOCATION.--Lat 34°16'56", long 112°12'25", in SW¼SW¼SE¼ sec.36, T.11 N., R.1 E. (unsurveyed), Yavapai County, Hydrologic Unit 15070102, in Prescott National Forest, on right bank 0.7 mi upstream from Forest Route 259, 1.5 mi east of Cleator, and 9.3 mi south of Mayer.

DRAINAGE AREA.--89.4 mi².

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,140 ft from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,230 ft³/s Feb. 19, 1980, gage height, 11.51 ft, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement of peak flow; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 5, 1970, reached a stage of about 16 ft, from floodmarks, discharge, about 9,000 ft³/s, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement at gage height 11.51 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2030	688	4.36	Feb. 8	1600	1,420	5.07
Dec. 9	1400	*1,840	5.90	Mar. 4	1745	428	3.39
Dec. 23	0930	1,300	4.88	Mar. 24	1830	356	3.22

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	58	35	40	48	90	26	5.9	.30	.00	.00
2	.00	.00	14	30	34	42	71	24	5.6	.20	.00	.00
3	.00	.00	8.5	26	26	318	60	22	5.6	.20	.00	.00
4	.00	.00	7.4	26	37	379	52	20	5.1	.20	.00	.00
5	.00	.00	6.9	25	55	302	46	20	4.9	.10	.00	.00
6	.00	.00	6.9	24	92	213	42	20	4.4	.10	.00	.00
7	.00	.00	7.4	21	297	177	39	19	4.0	.00	.00	.00
8	.00	.00	8.5	22	730	143	37	18	3.6	.00	.00	.00
9	.00	.40	837	20	535	94	30	17	3.3	.20	.00	.00
10	.00	.40	604	20	171	90	29	16	3.1	.10	.00	.00
11	.00	.30	234	18	128	77	27	16	2.9	.00	.00	.00
12	.00	.30	95	13	94	67	27	16	2.4	.00	.00	.00
13	.00	.20	58	11	84	58	27	14	2.4	.00	.00	.00
14	.00	.20	43	10	74	56	25	14	1.9	.00	.00	.00
15	.00	.20	31	8.5	60	52	24	13	1.9	.00	.00	50
16	.00	.10	24	7.9	53	45	22	12	1.6	.00	.00	30
17	.00	.30	20	7.9	48	42	22	12	1.5	.00	10	20
18	.00	.30	16	7.9	46	58	22	11	1.4	.00	8.0	15
19	.00	.20	14	7.4	43	58	22	11	1.1	.00	6.0	10
20	.00	.20	13	7.9	35	55	22	11	.90	.00	4.0	9.0
21	.00	.20	12	7.4	32	61	62	11	.80	.00	3.0	9.0
22	.00	.20	11	6.9	31	80	76	10	.70	.00	2.0	8.0
23	.00	.10	483	6.4	31	97	70	10	.70	.00	1.0	60
24	.00	.00	221	6.6	32	160	46	9.7	.70	.00	.00	40
25	.00	.00	112	6.6	31	196	36	9.1	.60	.00	.00	8.7
26	.00	.00	80	6.9	27	137	31	8.5	.50	.00	.00	4.2
27	.00	.00	65	6.4	26	126	28	8.5	.40	.00	.00	2.7
28	.00	.00	50	6.9	53	115	26	8.2	.40	.00	.00	2.4
29	.00	.00	42	16	---	124	24	7.6	.40	.00	.00	3.4
30	.00	94	42	37	---	115	27	6.7	.30	.00	.00	87
31	.00	---	46	52	---	121	---	6.4	---	.00	.00	---
TOTAL	.00	97.60	3270.6	507.6	2945	3706	1162	427.7	69.00	1.40	34.00	359.40
MEAN	.0000	3.25	106	16.4	105	120	38.7	13.8	2.30	.045	1.10	12.0
MAX	.00	94	837	52	730	379	90	26	5.9	.30	10	87
MIN	.00	.00	6.9	6.4	26	42	22	6.4	.30	.00	.00	.00
AC-FT	.00	194	6490	1010	5840	7350	2300	848	137	2.8	67	713

CAL YR 1982 TOTAL 7296.60 MEAN 20.0 MAX 837 MIN .00 AC-FT 14470
WTR YR 1983 TOTAL 12580.30 MEAN 34.5 MAX 837 MIN .00 AC-FT 24950

NOTE.--No gage-height record Aug. 7 to Sept. 24.

09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, AZ

LOCATION.--Lat 34°00'56", long 112°10'02", in NW¼NW¼ sec.28, T.8 N., R.2 E., Yavapai County, Hydrologic Unit 15070102, on right bank 2.5 mi southwest of Rock Springs and 10 mi upstream from Lake Pleasant.

DRAINAGE AREA.--1,130 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1970 to current year (monthly discharge only, October 1973 to September 1974). Low-flow records not equivalent prior to Oct. 1, 1974, due to spring flow in streambed between sites in use.

GAGE.--Water-stage recorder. Altitude of gage is 1,800 ft, from topographic map. Prior to Oct. 1, 1974, at site 600 ft upstream at datum 10.00 ft higher (now used as supplementary gage).

REMARKS.--Records good.

AVERAGE DISCHARGE.--13 years, 105 ft³/s, 76,070 acre-ft/yr; median of yearly mean discharges, 60 ft³/s, 43,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,500 ft³/s Feb. 19, 1980, gage height, 21.08 ft recorded, 28.15 ft from floodmark, from rating curve extended above 21,000 ft³/s on basis of slope-area measurement at gage height 27.2 ft; no flow at times each year prior to October 1974; since October 1974, no flow May 27 to July 12, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,800 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2015	*10,200	15.12	Feb. 8	2130	3,980	11.45
Dec. 9	1800	4,870	12.10	Mar. 4	1530	4,590	11.90
Dec. 23	1345	7,300	13.62	Sept. 23	2045	4,160	11.56
Feb. 4	unknown	unknown	unknown	Sept. 30	1700	2,620	10.14

Minimum, 1.8 ft³/s Aug. 13, 14, gage height, 4.08 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.1	2190	117	50	188	354	97	17	4.0	4.0	3.4
2	2.3	2.1	729	103	150	165	307	87	17	4.0	3.6	3.4
3	2.3	2.1	377	94	1000	1250	268	82	16	4.3	3.4	3.2
4	2.3	2.1	192	89	1700	3860	232	74	15	4.3	3.4	2.8
5	2.2	2.0	123	83	1530	1780	210	69	15	4.6	3.2	2.8
6	2.2	2.0	92	81	985	1260	183	64	14	4.6	3.0	2.6
7	2.2	2.0	75	81	1120	1000	165	62	14	4.6	2.6	2.4
8	2.2	2.2	68	79	2010	826	152	57	13	4.6	2.4	2.4
9	2.2	4.6	1470	75	1820	701	137	50	12	4.8	2.4	2.3
10	2.2	5.2	3300	69	1040	582	125	46	12	5.1	2.4	2.1
11	2.2	270	1900	65	787	493	106	44	11	4.6	2.4	2.0
12	2.2	90	755	61	655	427	104	42	11	4.0	2.4	2.0
13	2.1	30	415	58	577	371	101	42	10	3.6	2.3	3.0
14	2.1	12	275	55	512	332	95	41	9.8	4.8	2.0	2.6
15	2.1	7.0	218	52	442	302	89	40	9.4	4.0	2.1	2.3
16	2.1	6.0	167	52	390	268	82	39	8.9	4.3	26	55
17	2.1	5.9	143	52	348	246	77	38	8.4	4.6	122	28
18	2.1	29	113	51	311	245	73	36	8.0	4.6	78	10
19	2.1	134	91	50	281	273	70	35	7.6	4.8	39	6.5
20	2.1	58	75	51	244	254	76	31	7.2	4.8	22	5.5
21	2.0	28	65	50	211	247	83	30	6.8	5.1	13	5.1
22	2.0	18	59	47	192	355	90	28	6.5	5.8	8.9	4.3
23	2.0	13	1700	47	178	398	90	27	6.1	7.2	6.1	516
24	2.0	13	1500	46	170	499	97	26	5.8	7.2	5.5	1340
25	2.0	11	771	46	167	882	97	24	5.5	7.2	5.1	309
26	2.1	9.6	467	46	155	737	104	22	5.1	90	4.8	91
27	2.2	9.1	309	45	149	618	104	21	4.8	30	4.6	45
28	2.1	8.4	218	45	144	537	112	20	4.6	12	4.3	30
29	2.1	7.9	169	45	---	488	112	19	4.3	6.8	3.8	327
30	2.1	581	152	45	---	444	95	19	4.0	5.1	4.3	2000
31	2.1	---	138	45	---	416	---	18	---	4.6	3.8	---
TOTAL	66.3	1367.3	18316	1925	17318	20444	3990	1330	289.8	270.0	392.8	4811.7
MEAN	2.14	45.6	591	62.1	619	659	133	42.9	9.66	8.71	12.7	160
MAX	2.3	581	3300	117	2010	3860	354	97	17	90	122	2000
MIN	2.0	2.0	59	45	50	165	70	18	4.0	3.6	2.0	2.0
AC-FT	132	2710	36330	3820	34350	40550	7910	2640	575	536	779	9540

CAL YR 1982 TOTAL 41342.8 MEAN 113 MAX 3300 MIN 1.4 AC-FT 82000
WTR YR 1983 TOTAL 70520.9 MEAN 193 MAX 3860 MIN 2.0 AC-FT 139900

NOTE.--No gage-height record Jan. 29 to Feb. 6.

GILA RIVER BASIN

09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD---January 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

									BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)			
OCT 29...	1055	2.1	720	8.5	22.0	17.0	.90	10.2	719	112	49
NOV 23...	1200	15	634	7.8	--	17.5	1.4	8.4	714	94	28
DEC 22...	0930	54	510	8.1	14.0	13.0	1.0	--	715	--	K9
JAN 26...	1500	50	555	8.5	19.0	15.0	1.2	11.7	717	123	110
MAR 01...	1005	188	462	8.3	19.0	12.0	6.0	10.2	714	101	K19
23...	1500	447	515	8.3	18.0	14.0	38	9.5	715	98	67
APR 27...	1410	144	546	8.6	27.0	21.5	1.1	8.5	714	103	K15
MAY 24...	0800	26	632	8.5	24.5	20.5	.80	8.1	711	97	K3
JUN 30...	1545	4.0	650	7.9	36.0	28.0	.60	8.9	711	123	K110
JUL 26...	1600	95	497	8.0	38.0	28.5	550	6.3	714	87	--
AUG 24...	1000	5.3	665	8.4	34.0	27.0	1.6	8.4	715	113	83
SEP 21...	1000	6.8	645	8.5	29.0	23.0	1.1	10.0	720	124	K43
DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 29...	22	260	65	60	26	53	1	2.6	192	110	50
NOV 23...	62	240	25	54	25	45	1	2.3	--	81	36
DEC 22...	72	190	29	46	18	35	1	2.0	160	66	29
JAN 26...	--	210	18	50	21	39	1	1.9	194	--	--
MAR 01...	170	190	27	46	18	28	.9	1.7	162	59	22
23...	420	200	18	48	19	28	.9	1.5	180	58	17
APR 27...	110	210	41	51	20	34	1	1.8	169	68	22
MAY 24...	110	230	28	53	23	43	1	2.2	199	87	30
JUN 30...	460	230	24	52	24	48	1	2.6	205	97	33
JUL 26...	--	190	51	50	15	29	1	3.1	136	91	25
AUG 24...	77	230	38	54	23	45	1	3.5	192	93	36
SEP 21...	K30	240	8	58	24	49	1	2.6	236	90	35

K Based on non-ideal colony count.

GILA RIVER BASIN

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09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 29...	.40	25	436	440	.59	<.10	<.10	.90	--	.080	.110
NOV 23...	.40	27	385	400	.52	.20	.16	.40	.60	.080	.090
DEC 22...	.40	23	318	320	.43	.30	.30	.60	.90	.110	.090
JAN 26...	.40	21	337	--	.46	<.10	<.10	.20	--	.050	.050
MAR 01...	.40	21	287	290	.39	<.10	<.10	.40	--	.060	.040
23...	.30	24	303	300	.41	<.10	<.10	.70	--	.220	.060
APR 27...	.40	25	322	320	.44	<.10	<.10	.40	--	.070	.060
MAY 24...	.40	23	380	380	.52	.10	<.10	.30	.40	.060	.040
JUN 30...	.40	25	387	410	.53	<.10	<.10	.50	--	.080	.070
JUL 26...	.40	19	313	310	.43	.60	.61	4.3	4.9	6.50	.140
AUG 24...	.50	27	401	400	.55	<.10	<.10	.20	--	.050	.060
SEP 21...	.40	29	404	430	.55	<.10	<.10	.40	--	.070	.040

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 29...	.060	.18	19	100	230	190	<1	<1	4	110	5
NOV 23...	<.010	--	17	<100	190	150	<1	<1	6	120	<3
DEC 22...	.060	.18	13	100	130	110	<1	<1	6	110	7
JAN 26...	.040	.12	14	<100	140	120	1	4	6	40	<3
MAR 01...	.040	.12	9	100	90	60	<1	2	12	3100	11
23...	.050	.15	9	200	80	50	<1	8	28	4700	8
APR 27...	.050	.15	11	100	100	70	1	<1	9	300	8
MAY 24...	.040	.12	14	200	200	120	<1	<1	9	140	6
JUN 30...	.060	.18	17	<100	180	140	<1	2	12	230	4
JUL 26...	.140	.43	260	2600	300	90	1	27	1400	350000	81
AUG 24...	.060	.18	20	<100	180	160	<1	3	9	400	4
SEP 21...	.080	.25	16	<100	210	170	<1	9	6	160	<3

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 29...	<1	20	.1	1	<1	30	1.4	.20	<.01	6	.03
NOV 23...	4	10	.1	1	<1	20	2.8	.20	<.01	2	.08
DEC 22...	1	10	.1	1	<1	10	4.0	<.10	<.01	1	.15
JAN 26...	<1	10	2.5	1	<1	10	3.3	.20	<.01	2	.27
MAR 01...	<1	90	<.1	1	<1	20	3.4	.50	<.01	20	10
23...	9	140	<.1	1	<1	40	3.7	1.2	<.01	190	229
APR 27...	7	10	.1	1	<1	20	2.6	.20	<.01	23	8.9
MAY 24...	1	10	<.1	1	<1	20	--	.10	<.01	13	.91
JUN 30...	<1	10	<.1	1	<1	10	1.7	.10	<.01	1	.01
JUL 26...	930	12000	5.2	1	10	2900	4.0	>8.0	<.01	7580	1940
AUG 24...	2	20	<.1	1	<1	30	2.2	.30	<.01	7	.10
SEP 21...	1	20	<.1	1	<1	30	2.3	.30	<.01	3	.06

< Actual value is known to be less than value shown.

> Actual value is known to be greater than value shown.

GILA RIVER BASIN

291

09512830 BOULDER CREEK NEAR ROCK SPRINGS, AZ

LOCATION.--Lat 33°59'55", long 112°12'57", in SE¼NW¼NW¼ sec.36, T.8 N., R1 E., Yavapai County, Hydrologic Unit 15070102, on left bank 2.2 mi. upstream from Agua Fria River and 7.1 mi. northwest of New River.

DRAINAGE AREA.--37.8 mi².

PERIOD OF RECORD.--May to September 1983.

GAGE.--Water-stage recorder. Altitude of gage is 1,890 ft from topographic map.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period May to September, 38 ft³/s Sept. 30, gage height 1.93 ft, was not independent of the peak discharge that occurred Oct. 2, 1983; minimum daily, 0.10 ft³/s, for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								6.5	.20	.20	.10	.40
2								6.5	.20	.20	.10	.30
3								6.0	.20	.20	.10	.30
4								5.8	.20	.20	.10	.20
5								5.0	.10	.20	.10	.20
6								4.8	.10	.20	.10	.20
7								4.6	.20	.10	.10	.20
8								4.4	.30	.10	.10	.20
9								4.0	.30	.20	.10	.20
10								3.8	.30	.20	.10	.20
11								3.5	.30	.10	.10	.20
12								3.3	.20	.10	.10	.10
13								3.1	.20	.10	.10	.10
14								3.0	.20	.10	.20	.10
15								2.7	.20	.10	.30	.10
16								2.5	.20	.10	.30	.10
17								2.0	.20	.10	.70	.80
18								2.0	.20	.10	.70	.40
19								1.8	.20	.10	.30	.20
20								1.8	.20	.10	.30	.20
21								1.7	.20	.10	.30	.20
22								1.7	.20	.10	.30	.20
23								1.6	.20	.10	.30	.20
24								1.4	.20	.10	.30	.20
25								1.2	.20	.10	.30	.20
26								.90	.20	.10	.30	.20
27								.70	.20	.10	.30	.20
28								.60	.20	.10	.30	.20
29								.50	.20	.10	.30	.70
30								.40	.20	.10	.40	15
31								.30	---	.10	.40	---
TOTAL								88.10	6.20	3.90	7.60	22.00
MEAN								2.84	.21	.13	.25	.73
MAX								6.5	.30	.20	.70	.15
MIN								.30	.10	.10	.10	.10
AC-FT								175	12	7.7	15	44

GILA RIVER BASIN

09512860 HUMBUGH CREEK NEAR CASTLE HOT SPRINGS, AZ

LOCATION.--Lat 33°58'02", long 112°17'34", in NW¼SE¼NE¼ sec.7, T.7 N., R.1 E., Yavapai County, Hydrologic Unit 15070102, on right bank, 0.5 mi downstream from mouth of Cow Creek, 3 mi upstream from Lake Pleasant, 4 mi southeast of Castle Hot Springs and 24 mi north of Sun City.

DRAINAGE AREA.--59.9 mi².

PERIOD OF RECORD.--May 17 to September 1983.

GAGE.--Water-stage recorder. Altitude of gage is 1,790 ft, from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period May to September, 1,050 ft³/s, Aug. 16, 1800 hours, gage height 6.60 ft from rating curve extended above 9.3 ft³/s on basis of slope-area measurement at gage height 7.36 ft; minimum daily, 0.20 ft³/s Sept. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	1.2	.41	.31	.27
2								---	1.2	.41	.27	.20
3								---	1.4	.41	.31	.23
4								---	1.4	.41	.70	.23
5								---	1.4	.36	.47	.23
6								---	1.4	.36	.41	.23
7								---	1.2	.41	.36	.30
8								---	1.0	.47	.41	.31
9								---	1.0	.60	.41	.31
10								---	1.0	.47	.41	.31
11								---	1.1	.36	.47	.31
12								---	.91	.36	.47	.36
13								---	.91	.36	.53	.36
14								---	.82	.31	.67	.27
15								---	.74	.31	.67	.82
16								---	.67	.36	.92	.41
17								6.0	.53	.36	.94	.41
18								4.8	.53	.36	3.2	.36
19								4.8	.41	.36	.31	.36
20								3.7	.41	.41	.30	.36
21								3.7	.36	.47	.30	.36
22								3.7	.36	.53	.30	.31
23								3.2	.41	.50	.30	.96
24								2.7	.47	.41	.30	2.9
25								2.2	.47	.36	.30	1.0
26								2.0	.47	.31	.30	.74
27								1.8	.47	.31	.30	.60
28								1.7	.47	.31	.30	.60
29								1.4	.47	.31	.30	10
30								1.2	.41	.31	.30	14
31								1.2	---	.31	.30	---
TOTAL								---	23.59	11.99	199.98	64.84
MEAN								---	.79	.39	6.45	2.16
MAX								---	1.4	.60	.94	.27
MIN								---	.36	.31	.27	.20
AC-FT								---	.47	.24	.397	129

GILA RIVER BASIN

293

09513000 AGUA FRIA RIVER AT WADDELL DAM, AZ

LOCATION.--Lat 33°51'20", long 112°15'58", in SW¼ sec.16, T.6 N., R.1 E., Maricopa County, Hydrologic Unit 15070102, at left upstream end of Waddell Dam, and 22 mi northwest of Glendale.

DRAINAGE AREA.--1,459 mi².

PERIOD OF RECORD.--November 1910 to September 1914 (gage heights only), October 1914 to September 1919, October 1919 to September 1924 (gage heights only), October 1933 to current year (monthly discharge only). Published as "near Glendale" prior to 1920, and as "at Lake Pleasant Dam" 1920 to September 1962.

REVISED RECORDS.--WSP 1213: 1915-16, 1918-19. WSP 1343: Drainage area. WSP 1513: 1956.

GAGE.--Nonrecording gage on Lake Pleasant read once daily. Datum of gage is 1,431.2 ft, National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1924, nonrecording gage or water-stage recorder at several sites in the vicinity of diversion dam 1.5 mi downstream from Waddell Dam, at different datum.

REMARKS.--Records good. Figures given herein represent flow into Lake Pleasant. Inflow computed on basis of three factors as follows: 1. Change in contents of Lake Pleasant and in contents of small reservoir behind diversion dam 1.5 mi downstream from Lake Pleasant. 2. (a) Release from Lake Pleasant, computed from twice-daily readings by Clausen-Pierce weir rule in Beardsley Canal, checked by current-meter measurements by U.S. Geological Survey. (b) Spill from Lake Pleasant, measured over diversion dam based on staff-gage readings. See tables of diversions and spill below. 3. Effect of rainfall and evaporation on lake; evaporation assumed as 0.85 of that measured once daily in 3-ft-square land pan buried 1½ ft in ground near left end of Waddell Dam. Effect of bank storage and bank release in Lake Pleasant is not taken into account. For months when inflow to lake is small and other factors relatively large, discordant figures of runoff may appear. Such discrepancies that may be attributed to inaccuracies in the capacity table, or to the fact that bank storage and bank release are not taken into account, result in quantities too large for periods of falling stage, but tend to be compensated for by quantities too small for periods of rising stage. Inaccuracies in figures of release and evaporation, which may be within reasonable limits within themselves, may result in disproportionately large inaccuracies in small figures of inflow computed as residuals. Diversions for irrigation above Lake Pleasant of probably not over 1,000 acres. Spill occurred in 1941, 1966, 1968, 1978, 1979, 1980, and 1983 water years.

COOPERATION.--Records collected and prepared in cooperation with Maricopa County Municipal Water Conservation District No. 1.

AVERAGE DISCHARGE.--55 years (water years 1915-19, 1934-83), 100 ft³/s, 72,450 acre-ft/yr; median of yearly mean discharges, 40 ft³/s, 29,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 105,000 ft³/s Jan. 28, 1916, gage height, 30 ft, same datum as in 1919, from floodmarks, Nov. 27, 1919, gage height, 33 ft, datum then in use, from floodmarks, from rating curve extended above 13,000 ft³/s on basis of velocity-area studies (on basis of comparative gage heights, the flood of Nov. 27, 1919, is believed to have been the greater); no flow during spring and summer of several years.

MONTHLY INFLOW TO LAKE PLEASANT; SPILL AND DIVERSIONS BELOW LAKE PLEASANT,
WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Inflow to Lake Pleasant		Diversions in acre-feet	Spill in acre-feet
	Mean (cfs)	Runoff in acre-feet		
October.....	0	0	0	0
November	42.3	2,520	0	0
December	978	60,120	0	0
CAL YR 1982	154	111,400	38,800	0
January	134	8,210	0	0
February	989	54,950	2,320	25,940
March	977	60,090	5,060	50,390
April	270	16,040	8,560	6,200
May	72.9	4,480	6,640	0
June	18.0	1,070	8,170	0
July	27.2	1,670	11,240	0
August	61.8	3,800	9,540	0
September	154	9,170	8,100	0
WTR YR 1983	307	222,120	59,630	82,530

09513500 LAKE PLEASANT AT WADDELL DAM, AZ

LOCATION.--Lat 35°51'20", long 112°15'58", in SW¼ sec.16, T.6 N., R.1 E., Maricopa County, Hydrologic Unit 15070102, at left upstream end of Waddell Dam on Agua Fria River.

DRAINAGE AREA.--1,459 mi².

PERIOD OF RECORD.--February 1928 to current year (annual figures only prior to 1939). Prior to October 1963 published as "at Lake Pleasant Dam."

GAGE.--Nonrecording gage read once daily. Datum of gage is 1,431.2 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Lake is formed by concrete multiple-arch dam; dam completed and storage began in 1927. Capacity, 157,200 acre-ft, of which 84,300 acre-ft is between gage heights 66 ft - 32 ft above centerline of outlet works - and 146.0 ft, crest of spillway, and 72,900 acre-ft between 146.0 ft and 170.0 ft, top of spillway gates. At times, capacity is greater due to trash build-up on top of spillway gates. This condition is known to have occurred in water years 1978, 1979, 1980, and 1983. There is no storage below gage height 66 ft because of accumulated sediment. Water released from reservoir flows down river channel 1.5 mi to diversion dam where it is diverted for irrigation near Beardsley. Figures given herein represent usable contents in Lake Pleasant (based on 1979 capacity table). Contents of small reservoir formed by diversion dam is not included.

COOPERATION.--Gage-height record furnished by Maricopa County Municipal Water Conservation District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 178,500 acre-ft, Apr. 19, 1941, of which 500 acre-ft was uncontrolled storage; maximum gage height, 170.92 ft Mar. 28, 1979; no storage Sept. 5, 1933, July 19 to Aug. 13, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 159,000 acre-ft Apr. 22, gage height, 170.40 ft; minimum, 56,100 acre-ft Nov. 3-8; gage height, 133.23 ft.

Capacity table (gage height, in feet, and usable contents, in acre-feet)

130	50,250	160	123,200
140	70,350	170	157,200
150	94,450	170.4	158,600

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
INSTANTANEOUS OBSERVATIONS AT 1700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57500	56400	71500	119000	127000	152000	157000	157000	152000	142000	129000	121000
2	57500	56300	73300	119000	128000	152000	157000	157000	151000	141000	129000	121000
3	57500	56100	74000	119000	129000	153000	157000	157000	151000	141000	128000	121000
4	57400	56100	74400	119000	136000	156000	157000	157000	151000	140000	128000	120000
5	57400	56100	74600	120000	143000	152000	157000	157000	150000	140000	127000	120000
6	57300	56100	74800	120000	146000	150000	157000	157000	150000	140000	127000	119000
7	57300	56100	74900	120000	148000	151000	158000	157000	150000	139000	127000	119000
8	57200	56100	75100	120000	152000	151000	158000	157000	150000	139000	126000	118000
9	57100	56500	77000	120000	154000	151000	158000	157000	150000	138000	126000	118000
10	57000	56600	86700	120000	152000	151000	158000	157000	149000	138000	125000	117000
11	57000	56700	95700	120000	150000	150000	158000	156000	149000	138000	125000	117000
12	56900	57100	98200	120000	151000	150000	158000	156000	149000	137000	124000	117000
13	56900	57300	99400	121000	151000	150000	158000	156000	148000	137000	124000	116000
14	56900	57300	100000	121000	151000	151000	158000	156000	148000	136000	123000	116000
15	56800	57300	101000	121000	151000	152000	158000	156000	148000	136000	123000	116000
16	56800	57300	101000	121000	151000	152000	157000	156000	147000	135000	123000	115000
17	56800	57300	101000	121000	152000	152000	157000	155000	147000	135000	125000	115000
18	56800	57800	102000	121000	152000	153000	157000	155000	147000	135000	125000	115000
19	56700	58000	102000	121000	152000	153000	157000	155000	146000	134000	125000	114000
20	56700	58200	102000	121000	152000	154000	157000	155000	146000	134000	124000	114000
21	56700	58200	102000	121000	152000	154000	158000	155000	145000	133000	125000	114000
22	56600	58300	102000	121000	152000	155000	159000	154000	145000	133000	125000	114000
23	56600	58300	107000	121000	152000	156000	157000	154000	145000	133000	125000	114000
24	56600	58400	113000	121000	152000	156000	158000	154000	144000	132000	125000	117000
25	56600	58400	115000	122000	152000	157000	157000	154000	144000	132000	124000	118000
26	56600	58400	116000	122000	152000	158000	157000	154000	143000	131000	124000	118000
27	56600	58400	117000	122000	152000	158000	158000	153000	143000	131000	124000	118000
28	56500	58400	117000	122000	152000	158000	158000	153000	143000	131000	123000	118000
29	56500	58400	118000	122000	---	158000	157000	153000	142000	130000	123000	118000
30	56400	58800	118000	125000	---	158000	157000	153000	142000	130000	122000	121000
31	56400	---	119000	126000	---	158000	---	152000	---	129000	122000	---
MAX	57500	58800	119000	126000	154000	158000	159000	157000	152000	142000	129000	121000
MIN	56400	56100	71500	119000	127000	150000	157000	152000	142000	129000	122000	114000
(*)	133.37	134.52	158.49	160.89	168.66	170.12	170.02	168.60	165.67	161.91	159.54	159.43
(**)	-1400	+2400	+60200	+7000	+26000	+6000	-1000	-5000	-10000	-13000	-7000	-1000
CAL YR 1982	MAX	126000	MIN	56100	**	+60800						
WTR YR 1983	MAX	159000	MIN	56100	**	+63200						

* Gage height, in feet, at 1700 hour on last day of month.

** Change in contents, in acre-feet.

09513600 AGUA FRIA RIVER BELOW WADDELL DAM, AZ

WATER-QUALITY RECORDS

LOCATION.--Lat 33°49'55", long 112°16'24", in SE¼ sec.29, T.6 N., R.1 E., Maricopa County Hydrologic Unit 15070102, 1.5 mi downstream from Lake Pleasant.

PERIOD OF RECORD.--Water-quality samples collected from December 1950 through September 1958, and March 1982 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	TUR- BID- ITY (NTU)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
FEB 12...	1250	445	342	8.2	23.0	11.0	10.2	731	97	31	28
MAR 24...	1530	59	370	8.4	16.0	13.0	9.9	720	100	13	K85
APR 28...	1250	154	381	8.2	27.0	14.5	10.6	722	109	6.8	K12
MAY 25...	0730	114	392	8.4	25.0	18.0	9.9	721	111	5.8	28
JUL 01...	1410	161	391	7.2	36.0	15.0	9.2	722	96	5.7	K85
27...	1330	224	416	8.1	37.0	15.5	10.0	724	105	3.4	K100
AUG 25...	1000	144	413	7.6	35.0	25.0	7.6	730	96	2.4	K740
SEP 21...	1500	114	435	7.4	33.0	29.0	10.0	723	138	3.3	K18

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
FEB 12...	560	130	14	31	12	23	.9	2.3	113	40	16
MAR 24...	--	140	4	33	13	23	.9	2.2	132	45	16
APR 28...	--	140	0	34	13	24	.9	2.3	138	46	16
MAY 25...	740	150	16	36	14	25	.9	2.3	132	48	18
JUL 01...	130	150	14	36	14	25	.9	2.1	134	47	17
27...	180	150	0	38	14	25	.9	2.3	169	46	18
AUG 25...	93	160	0	40	14	26	.9	2.7	158	46	19
SEP 21...	K27	160	15	40	15	26	.9	2.2	147	51	19

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
FEB 12...	.30	19	217	210	.30	.20	.13	.70	.90	.140
MAR 24...	.30	19	234	230	.32	<.10	<.10	.70	--	.080
APR 28...	.30	20	225	240	.31	.10	.14	.40	.50	.100
MAY 25...	.20	20	233	240	.32	.10	<.10	.50	.60	.070
JUL 01...	.30	20	238	240	.32	.10	.11	.60	.70	.120
27...	.30	20	240	270	.33	<.10	<.10	.60	--	.090
AUG 25...	.40	21	248	260	.34	<.10	<.10	.70	--	.040
SEP 21...	.30	21	255	260	.35	<.10	<.10	.80	--	.090

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09513600 AGUA FRIA RIVER BELOW WADDELL DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
FEB 12...	.080	.050	.15	8	7	<100	40	80	60	<1
MAR 24...	.040	.040	.12	8	8	100	43	90	60	<1
APR 28...	.070	.060	.18	8	9	<100	44	80	60	<1
MAY 25...	.040	.040	.12	9	8	<100	39	90	60	<1
JUL 01...	.090	.080	.25	12	11	<100	38	110	60	<1
JUL 27...	.080	.050	.15	10	8	<100	44	90	60	1
AUG 25...	.030	.050	.15	12	9	<100	47	90	70	<1
SEP 21...	.040	.060	.18	10	9	100	46	90	70	<1

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB 12...	<1	4	<10	17	13	1200	<1	<1	70	7
MAR 24...	<1	<1	<10	10	5	710	2	4	90	3
APR 28...	<1	<1	<10	10	6	640	<1	2	90	6
MAY 25...	<1	<1	<10	12	4	350	1	3	100	4
JUL 01...	<1	3	<10	8	4	510	<1	<1	190	17
JUL 27...	<1	<1	<10	11	5	290	<1	<1	170	19
AUG 25...	<1	3	10	13	17	270	1	2	210	130
SEP 21...	<1	<1	<10	7	10	250	1	3	320	190

DATE	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	CYANIDE DIS- SOLVED (MG/L AS CN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
FEB 12...	<1	<1	30	17	6.6	.40	<.01	<.01	28	34
MAR 24...	<1	<1	10	9	6.7	1.4	<.01	<.01	16	2.5
APR 28...	<1	<1	20	10	4.8	.20	<.01	<.01	29	12
MAY 25...	<1	<1	30	10	4.7	.30	<.01	<.01	8	2.5
JUL 01...	<1	<1	10	8	5.0	.20	<.01	<.01	10	4.3
JUL 27...	<1	<1	20	12	4.9	.30	<.01	--	7	4.2
AUG 25...	<1	<1	30	28	--	.50	<.01	<.01	6	2.3
SEP 21...	<1	<1	40	7	5.5	.60	<.01	<.01	6	1.8

< Actual value is known to be less than value shown.

GILA RIVER BASIN

297

09513780 NEW RIVER NEAR ROCK SPRINGS, AZ

LOCATION.--Lat 33°58'27", long 112°05'54", in SW¼SW¼ sec.6, T.7 N., R.3 E., Maricopa County, Hydrologic Unit 15070102, on right bank 180 ft upstream from road crossing and 6 mi southeast of Rock Springs.

DRAINAGE AREA.--67.3 mi².

PERIOD OF RECORD.--Water years 1962-65 (annual maximums only), October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,310 ft, from topographic map. Jan. 2, 1964, to Sept. 30, 1965, crest-stage gage, and Oct. 28, 1965, to Nov. 16, 1967, water-stage recorder, at same site at datum 1.00 ft higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--18 years, 15.9 ft³/s, 11,500 acre-ft/yr; median of yearly mean discharges, 7.4 ft³/s, 5,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,600 ft³/s Sept. 5, 1970, gage height, 13.5 ft, from profile past gage, from rating curve extended above 380 ft³/s on basis of slope-area measurements at gage heights 3.6, 4.73, 7.3, 10.7, and 13.5 ft; no flow for most of time most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 200 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 18	1100	591	4.02	Feb. 3	1800	2,290	5.60
Nov. 30	unknown	*12,500	a8.64	Feb. 4	1030	4,330	6.60
Dec. 10	0230	1,780	5.25	Feb. 7	1130	465	3.90
Dec. 23	1130	653	4.19	Feb. 8	1630	1,780	5.25
Jan. 29	1600	3,520	6.25				

No flow for about 3 months of the year.
a Gage height from crest-stage gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	224	12	86	10	20	9.9	1.1	.00	.00	.20
2	.00	.00	87	11	39	10	18	9.2	1.0	.00	.00	.20
3	.00	.00	43	10	614	751	17	8.4	.96	.00	.00	.20
4	.00	.00	28	9.7	1920	1740	16	7.7	.96	.00	.00	.20
5	.00	.00	21	8.8	302	262	15	7.2	.92	.00	.00	.20
6	.00	.00	17	8.2	157	131	14	6.7	.90	.00	.00	.20
7	.00	.00	14	7.8	280	85	14	6.4	.82	.00	.00	.20
8	.00	.00	13	7.3	457	69	14	6.1	.71	.00	.00	.20
9	.00	7.6	210	6.8	187	52	12	5.7	.64	.00	.00	.20
10	.00	9.8	989	6.0	109	43	11	5.2	.56	.00	.00	.20
11	.00	49	333	5.6	78	35	11	4.8	.48	.00	.00	.20
12	.00	26	104	5.2	57	31	11	4.4	.42	.00	.00	.20
13	.00	7.2	66	4.9	43	27	10	4.3	.35	.00	.00	.20
14	.00	4.2	47	4.7	35	25	9.7	4.0	.30	.00	.00	.20
15	.00	3.0	35	4.4	29	23	9.1	3.8	.25	.00	.00	.10
16	.00	2.4	27	4.2	25	20	8.6	3.5	.20	.00	1.3	.30
17	.00	3.4	22	4.0	22	18	8.2	3.4	.16	.00	2.3	.30
18	.00	130	18	3.9	21	19	8.1	3.3	.11	.00	.20	.30
19	.00	29	15	3.9	19	22	8.0	3.0	.08	.00	.20	.20
20	.00	8.9	13	4.1	17	18	8.8	2.8	.07	.00	.20	.20
21	.00	4.9	11	3.8	16	19	28	2.8	.05	.00	.20	.20
22	.00	3.2	10	3.5	15	44	68	2.6	.05	.00	.20	.10
23	.00	2.4	166	3.4	14	38	23	2.4	.04	.00	.20	.10
24	.00	1.9	51	3.4	13	231	17	2.2	.01	.00	.20	.30
25	.00	1.6	27	3.3	12	129	14	2.1	.00	.00	.20	.20
26	.00	1.4	21	3.1	12	63	12	2.0	.00	.00	.20	.10
27	.00	1.2	17	3.1	12	46	11	1.8	.00	.00	.20	.00
28	.00	1.1	16	17	11	37	10	1.7	.00	.00	.20	.00
29	.00	1.0	13	565	---	31	9.7	1.4	.00	.00	.20	4.2
30	.00	783	15	127	---	26	10	1.4	.00	.00	.20	34
31	.00	---	14	96	---	23	---	1.2	---	.00	.20	---
TOTAL	.00	1082.20	2687	961.1	4602	4078	446.2	131.4	11.14	.00	6.40	43.40
MEAN	.000	36.1	86.7	31.0	164	132	14.9	4.24	.37	.000	.21	1.45
MAX	.00	783	989	565	1920	1740	68	9.9	1.1	.00	2.3	.34
MIN	.00	.00	10	3.1	11	10	8.0	1.2	.00	.00	.00	.00
AC-FT	.00	2150	5330	1910	9130	8090	885	261	22	.00	13	86

CAL YR 1982 TOTAL 7620.72 MEAN 20.9 MAX 989 MIN .00 AC-FT 15120
WTR YR 1983 TOTAL 14048.84 MEAN 38.5 MAX 1920 MIN .00 AC-FT 27870

NOTE.--No gage-height record Nov. 30, Dec. 1, Aug. 17 to Sept. 13.

GILA RIVER BASIN

09513835 NEW RIVER AT BELL ROAD, NEAR PEORIA, AZ

LOCATION.--Lat 33°38'18", long 112°14'22", in NE¼NE¼ sec.3, T.3 N., R.1 E., Maricopa County, Hydrologic Unit 15070102, on downstream side of bridge at Bell Road, 1.6 mi upstream from Skunk Creek, 3.1 mi north of Peoria, and 9 mi upstream from mouth.

DRAINAGE AREA.--187 mi².

PERIOD OF RECORD.--Water years 1963, 1965-67 (annual maximums only), October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,190.00 ft, National Geodetic Vertical Datum of 1929 (Arizona State Highway Department bench mark). Oct. 1, 1965, to Sept. 30, 1967, crest-stage gage at present site and at site 50 ft upstream, at datum 5.00 ft higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--16 years, 12.5 ft³/s, 9,060 acre-ft/yr; median of yearly mean discharges, 3.5 ft³/s, 2,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s Dec. 19, 1967, gage height, 13.5 ft, from rating curve extended above 680 ft³/s on basis of slope-area measurement of peak flow; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 1	0100	*4,240	5.90	Feb. 8	0830	2,640	5.23
Dec. 11	0230	1,330	4.32	Mar. 5	0030	3,540	5.57
Jan. 29	1100	651	3.90	Mar. 28	0900	350	3.99
Feb. 4	2330	3,400	5.50				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	858	.00	42	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	33	.00	20	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	10	.00	8.0	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	1630	780	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	1340	1270	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	190	356	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	421	113	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	888	56	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	278	41	.00	.00	.00	.00	.00	.00
10	.00	.00	462	.00	64	28	.00	.00	.00	.00	.00	.00
11	.00	.00	670	.00	35	16	.00	.00	.00	.00	.00	.00
12	.00	.00	90	.00	22	4.0	.00	.00	.00	.00	.00	.00
13	.00	.00	38	.00	17	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	16	.00	15	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	4.0	.00	14	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	12	.00	.00	.00	.00	.00	13	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	35	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	39	---	44	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	44	---	22	.00	.00	.00	.00	.00	11
31	.00	---	.00	26	---	5.0	---	.00	---	.00	.00	---
TOTAL	.00	.00	2181.00	109.00	4996.00	2770.00	.00	.00	.00	.00	26.00	11.00
MEAN	.000	.000	70.4	3.52	178	89.4	.000	.000	.000	.000	.84	.37
MAX	.00	.00	858	44	1630	1270	.00	.00	.00	.00	13	11
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	4330	216	9910	5490	.00	.00	.00	.00	52	22

CAL YR 1982	TOTAL	3474.60	MEAN	9.52	MAX	858	MIN	.00	AC-FT	6890
WTR YR 1983	TOTAL	10093.00	MEAN	27.7	MAX	1630	MIN	.00	AC-FT	20020

GILA RIVER BASIN

299

09513860 SKUNK CREEK NEAR PHOENIX, AZ

LOCATION.--Lat 33°43'44", long 112°07'12", in SE¼ sec.35, T.5 N., R.2 E., Maricopa County, Hydrologic Unit 15070102, on downstream side of right end of bridge on east frontage road of Interstate Highway 17, 3 mi north of Adobe and 20 mi north of City Hall in Phoenix.

DRAINAGE AREA.--64.6 mi².

PERIOD OF RECORD.--Water years 1960-67 (annual maximums only), October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,459.95 ft, National Geodetic Vertical Datum of 1929. May 1961 to Sept. 30, 1967, crest-stage gage at site 100 ft downstream at datum 5.99 ft higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years, 1.82 ft³/s, 1,320 acre-ft/yr; median of yearly mean discharges, 0.76 ft³/s, 550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Aug. 1, 1964, gage height, 10.48 ft, present datum, from rating curve extended above 6,200 ft³/s; maximum gage height, 12.24 ft Sept. 5, 1970; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 8	unknown	2,570	4.26	Dec. 10	1330	2,180	4.12
Nov. 30	2130	*6,170	5.31	Dec. 23	1000	1,460	3.84
Dec. 1	0900	1,730	3.95	Sept. 29	1230	484	3.36

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	817	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	696	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	15	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	683	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	73	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	272	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1.4	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	28
30	.00	547	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	1243.00	1861.40	.00	.00	.00	.00	.00	.00	.00	.00	28.00
MEAN	.000	41.4	60.0	.000	.000	.000	.000	.000	.000	.000	.000	.93
MAX	.00	696	817	.00	.00	.00	.00	.00	.00	.00	.00	28
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	2470	3690	.00	.00	.00	.00	.00	.00	.00	.00	56
CAL YR 1982	TOTAL	3153.65	MEAN	8.64	MAX	817	MIN	.00	AC-FT	6260		
WTR YR 1983	TOTAL	3132.40	MEAN	8.58	MAX	817	MIN	.00	AC-FT	6210		

09515000 HASSAYAMPA RIVER AT WALNUT GROVE NEAR WAGONER, AZ

LOCATION.--Lat 34°16'32", long 112°32'49" in SW¼ sec.23, T.11 N., R.3 W., Yavapai County, Hydrologic Unit 15070103, on right bank 300 ft upstream from road crossing, 2.5 mi upstream from Milk Creek, 4.5 mi upstream from Wagoner, 0.7 mi south of Walnut Grove School.

DRAINAGE AREA.--90.8 mi².

PERIOD OF RECORD.--December 1912 to May 1918 (monthly discharge only). October 1980 to September 1983 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 3,550 ft from topographic map; Apr. 21 (1300), 1982, to June 11 (1200), 1982, at datum 1.00 ft higher; June 11 (1200), 1982, to the present, at datum 3.0 ft higher.

REMARKS.--Records poor. Small diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,010 ft³/s Sept. 30, 1983, gage height, 7.60 ft, from rating curve extended above 171 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 3,760 ft³/s Feb. 19, 1980, gage height, 8.08 ft, from slope-area measurement at present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 171 ft³/s) and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	2215	236	4.30	Aug. 16	1930	819	5.50
Dec. 9	2030	114	3.84	Sept. 15	1500	283	4.25
Dec. 23	1400	190	4.15	Sept. 24	0400	150	3.74
Feb. 8	1930	184	4.13	Sept. 30	0630	*3,010	7.60
Mar. 3	1200	163	4.05				

Minimum daily, 0.91 ft³/s Oct. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.4	71	17	35	32	39	28	7.0	5.0	3.5	2.0
2	1.3	2.0	9.0	16	32	35	36	27	7.0	5.0	3.5	2.0
3	1.3	2.2	7.7	15	43	165	33	26	7.0	5.0	3.5	2.0
4	1.3	2.4	7.3	13	43	126	31	25	7.0	5.0	3.5	2.0
5	1.4	2.4	6.8	9.9	38	83	29	24	7.0	5.0	3.4	2.0
6	1.3	2.1	6.6	9.6	38	73	27	23	7.0	5.0	3.4	1.5
7	1.2	1.8	6.6	9.3	57	69	26	22	7.0	5.0	3.4	1.5
8	1.2	2.6	6.6	9.2	136	66	26	21	7.0	5.0	3.0	1.5
9	1.3	3.6	34	9.3	126	65	25	20	7.0	5.0	3.0	1.5
10	1.4	2.8	99	8.8	102	64	25	19	7.0	5.0	3.0	1.5
11	1.5	2.8	60	8.5	73	63	24	18	7.0	5.0	2.5	1.5
12	1.5	2.7	25	8.3	57	63	24	17	7.0	5.0	2.5	1.3
13	1.6	2.3	11	8.2	50	62	23	16	6.0	5.0	2.5	1.3
14	1.6	1.9	7.7	8.2	46	61	23	15	6.0	5.0	2.0	1.3
15	1.7	2.0	7.2	8.0	43	61	22	15	6.0	4.0	2.0	26
16	1.7	2.1	6.9	8.4	41	60	22	14	6.0	4.0	74	2.5
17	1.7	2.8	6.6	8.2	37	60	21	14	6.0	4.0	34	2.0
18	1.7	3.1	6.6	7.9	34	60	21	13	6.0	4.0	5.0	1.5
19	1.7	2.8	6.4	8.3	32	60	20	13	6.0	4.0	3.0	1.5
20	1.7	2.7	6.2	8.6	31	60	32	12	6.0	4.0	3.0	1.5
21	2.1	2.6	6.2	8.2	31	60	43	12	6.0	4.0	2.0	1.5
22	2.1	2.7	6.2	7.7	29	60	40	11	6.0	4.0	2.0	1.5
23	2.1	2.7	100	7.5	28	60	37	11	6.0	4.0	2.0	1.5
24	2.2	2.3	93	7.4	27	63	35	10	6.0	4.0	2.0	28
25	2.1	2.1	59	7.4	28	60	33	10	6.0	4.0	2.0	1.5
26	2.2	2.2	42	7.5	28	57	32	9.0	6.0	4.0	2.0	1.5
27	2.2	2.1	34	8.4	28	54	32	9.0	6.0	4.0	2.0	1.5
28	1.6	2.1	28	8.4	29	51	31	8.0	6.0	4.0	2.0	1.5
29	.91	1.9	22	14	---	48	30	8.0	6.0	4.0	2.0	1.5
30	1.2	63	23	33	---	45	29	7.0	6.0	4.0	2.0	353
31	1.4	---	18	36	---	42	---	7.0	---	4.0	2.0	---
TOTAL	49.51	132.2	829.6	345.2	1322	1988	871	484.0	192.0	138.0	185.7	450.9
MEAN	1.60	4.41	26.8	11.1	47.2	64.1	29.0	15.6	6.40	4.45	5.99	15.0
MAX	2.2	63	100	36	136	165	43	28	7.0	5.0	74	353
MIN	.91	1.4	6.2	7.4	27	32	20	7.0	6.0	4.0	2.0	1.3
AC-FT	98	262	1650	685	2620	3940	1730	960	381	274	368	894
CAL YR 1982	TOTAL	4755.54	MEAN	13.0	MAX	210	MIN	.26	AC-FT	9430		
WTR YR 1983	TOTAL	6988.11	MEAN	19.1	MAX	353	MIN	.91	AC-FT	13860		

GILA RIVER BASIN

301

09516500 HASSAYAMPA RIVER NEAR MORRISTOWN, AZ

LOCATION.--Lat 33°53'06", long 112°39'41", in SW¼SE¼ sec.3, T.6 N., R.4 W., Maricopa County, Hydrologic Unit 15070103, on left bank 600 ft downstream from mouth of San Domingo Wash, 3.0 mi northwest of Morristown and 7 mi southeast of Wickenburg.

DRAINAGE AREA.--774 mi².

PERIOD OF RECORD.--October 1938 to June 1947 (continuous-record station), 1954, 1956, 1964-81 (partial-record station). October 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,831.16 ft, National Geodetic Vertical Datum of 1929. 1954, 1956, and 1964-81 crest-stage gage at same site and datum.

REMARKS.--Records poor. Only daily discharge above 500 ft³/s are published.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft³/s Sept. 5, 1970, gage height, 19.0 ft, from high-water profile past gage and on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,520 ft³/s Mar. 3, 1983, gage height, 10.18 ft, from peak indicator.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---			---						
2			---			---						
3			---			1070						
4			---			568						
5			---			---						
6			---			---						
7			---			---						
8			---			---						
9			---			---						
10			---			---						
11			---			---						
12			---			---						
13			---			---						
14			---			---						
15			---			---						
16			---			---						
17			---			---						
18			---			---						
19			---			---						
20			---			---						
21			---			---						
22			---			---						
23			---			---						
24			624			---						
25			---			---						
26			---			---						
27			---			---						
28			---			---						
29			---			---						
30			---			---						
31			---			---						
TOTAL			---			---						
MEAN			---			---						
MAX			---			---						
MIN			---			---						
AC-FT			---			---						

LOCATION.--Lat 33°20'50", long 112°43'30", in NW¼ sec.13, T.1 S., R.5 W., Maricopa County, Hydrologic Unit 15070104, at former U.S. Highway 80, 1.8 mi upstream from mouth and 2.8 mi northeast of Arlington.

PERIOD OF RECORD.--Water years 1961-77 (annual maximums only), October 1977 to current year (discharge above 500 ft³/s only).

REMARKS.--Records poor. Only daily discharges above 500 ft³/s are published. Records do not include irrigation return flow past station except where it cannot be separated from natural flow. Small diversions above station for irrigation and livestock.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft³/s Sept. 30, gage height, 0.10 ft, result of slope-conveyance computation; no natural flow for most of year.

[illegible]

GILA RIVER BASIN

303

09517490 CENTENNIAL WASH AT SOUTHERN PACIFIC RAILROAD BRIDGE,
NEAR ARLINGTON, AZ

LOCATION.--Lat 33°18'37", long 112°52'52", in SW¼NW¼SW¼ sec.28, T.1 S., R.6 W., Maricopa County, Hydrologic Unit 15070104, on downstream side of bridge, 9.0 mi upstream from Gillespie Dam and 7.2 mi southwest of Arlington.

DRAINAGE AREA.--1,800 mi², approximately.

PERIOD OF RECORD.--May 15, 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 841.06 ft, National Geodetic Vertical Datum of 1929 (Maricopa County flood control bench mark).

REMARKS.--Records poor. Flow regulated by several small retention dams in upper end of basin. Small diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 193 ft³/s Aug. 24, 1980, gage height, 7.89 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 103 ft³/s Dec. 1, 0030 hours, gage height, 6.67 ft, base discharge, 50 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	12	.00	.00	.00	.00	.50	.00	.00	.00	.00
2	.00	.00	.02	.00	.00	.00	.00	.50	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.20	.20	.00	.00	2.0
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.1
8	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.80
9	.00	9.5	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.70	2.3	.00	.00	.00	.00	.00	.00	.00	.30	.00
11	.00	.20	.00	.00	.00	.00	.00	.00	.20	.00	.30	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00	.20	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00	.20	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.1	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.20	.00	.00	.00	.00	.00
30	.00	20	.00	.00	---	.00	.50	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	31.30	14.37	.00	.00	.00	.70	4.00	.90	.00	5.70	5.90
MEAN	.000	1.04	.46	.000	.000	.000	.023	.13	.030	.000	.18	.20
MAX	.00	20	12	.00	.00	.00	.50	1.2	.30	.00	4.1	3.1
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	62	29	.00	.00	.00	1.4	7.9	1.8	.00	11	12
CAL YR 1982	TOTAL	602.98	MEAN	1.65	MAX	45	MIN	.00	AC-FT	1200		
WTR YR 1983	TOTAL	62.87	MEAN	.17	MAX	20	MIN	.00	AC-FT	125		

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 33°13'45", long 112°46'00", in SE¼NE¼ sec.28, T.2 S., R.5 W., Maricopa County, Hydrologic Unit 15070101, at Gillespie Dam, 8 mi downstream from Hassayampa River. Gila Bend Canal diverts from left end, and Enterprise Canal diverts from right end of Gillespie Dam.

DRAINAGE AREA.--49,650 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1935 to November 1939 (monthly discharge only published in WSP 1313), December 1939 to September 1971 (published with records for sta 09519500, Gila River below Gillespie Dam), 1972 and 1973 (water year estimates only, listed in REMARKS for sta 09519500), October 1973 to current year. Low-flow records prior to October 1970 are not equivalent as leakage less than 5 ft³/s is not included.

09518500. Gila Bend Canal: May 1935 to September 1971, October 1973 to current year (since October 1941, monthly discharge only).

09519000. Enterprise Canal: June 1935 to September 1939 (discharge measurements and monthly estimates only), October 1939 to September 1971, April 1974 to current year (since October 1941, monthly discharge only). Published as "Gillespie Canal" prior to 1951.

GAGE.--Gila Bend Canal: Water-stage recorder 200 ft downstream from headgates.

Enterprise Canal: Water-stage recorder 600 ft downstream from intake at dam.

REMARKS.--Records good except those below 1,000 ft³/s, which are fair. Record is obtained by combining, on a daily basis, the flows of Gila Bend Canal, Enterprise Canal, and Gila River below Gillespie Dam (see sta 09519500).

Many large diversions above station for irrigation, municipal, and industrial use. Flow of Gila River and tributaries above this station is regulated by San Carlos Reservoir on Gila River - capacity, 1,073,600 acre-ft; by a series of reservoirs on Salt River - capacity, 1,755,000 acre-ft; by Bartlett and Horseshoe Reservoirs on Verde River - capacity, 317,700 acre-ft; and by Lake Pleasant on Agua Fria River - capacity, 157,600 acre-ft.

AVERAGE DISCHARGE.--48 years, 367 ft³/s, 265,900 acre-ft/yr; median of yearly mean discharges, 78 ft³/s, 56,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 124,000 ft³/s Feb. 17, 1980; no flow except for possible leakage of less than 5 ft³/s Nov. 24-27, 1966, July 14, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 34,400 ft³/s Feb. 10; minimum daily, 33 ft³/s Nov. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	127	143	7020	304	2160	7670	2740	200	90	139	102
2	89	135	94	2940	304	2200	12500	2330	193	100	112	92
3	109	150	64	1620	305	2250	11200	2770	196	126	88	94
4	134	135	103	1600	516	4830	9590	2340	190	130	93	106
5	129	136	128	1410	981	14700	7440	2280	194	115	109	108
6	129	137	132	1190	2940	14700	6940	826	202	100	132	108
7	129	139	131	1040	5910	12700	6180	201	208	90	146	97
8	129	139	133	595	4360	10700	4640	565	198	89	154	95
9	129	139	67	507	10200	10600	3400	877	167	113	139	97
10	129	273	43	391	34400	4610	2680	711	157	144	138	86
11	129	241	303	423	32300	3870	2180	631	150	156	153	87
12	129	220	403	426	29000	2790	2000	557	132	150	156	93
13	129	218	1210	409	27200	2460	813	445	123	134	120	101
14	129	202	1820	403	18100	2490	1910	995	121	117	124	130
15	129	187	1870	399	8500	2170	2090	1340	125	109	143	68
16	129	179	1870	398	5000	2150	1990	647	158	115	91	99
17	129	159	1900	394	3200	2220	1900	546	155	117	310	169
18	129	134	1530	393	2500	2140	1790	575	131	98	208	179
19	129	119	1170	390	2510	2140	1820	447	117	77	130	190
20	129	101	696	261	2580	2180	2150	352	115	90	175	220
21	128	84	289	228	2610	2140	2280	285	89	78	132	177
22	128	67	295	230	2610	8170	5200	296	89	92	122	154
23	128	48	332	227	2110	14400	7740	307	105	111	112	175
24	128	34	360	235	1930	13600	8360	228	94	120	113	213
25	128	33	300	239	1930	14800	8790	225	89	146	93	231
26	128	38	1330	240	1930	17100	7230	220	122	154	99	259
27	128	75	1920	224	1940	17400	6160	225	134	158	106	285
28	128	70	3150	214	1950	12200	4360	224	126	136	107	331
29	120	68	2800	258	---	5710	3720	218	135	115	119	764
30	126	72	6210	304	---	4050	3110	215	115	128	107	1170
31	127	---	6200	327	---	5790	---	205	---	134	98	---
TOTAL	3902	3859	36996	24935	208120	219420	147833	24823	4330	3632	4068	6080
MEAN	126	129	1193	804	7433	7078	4928	801	144	117	131	203
MAX	134	273	6210	7020	34400	17400	12500	2770	208	158	310	1170
MIN	89	33	43	214	304	2140	813	201	89	77	88	68
AC-FT	7740	7650	73380	49460	412800	435200	293200	49240	8590	7200	8070	12060
(*)	38	662	4510	7350	2140	7600	13170	13160	8020	6700	5840	4260
(**)	1080	800	928	957	191	425	497	438	389	352	341	344

CAL YR 1982 TOTAL 86171 MEAN 236 MAX 6210 MIN 29 AC-FT 170900 *61250 **8660
WTR YR 1983 TOTAL 687998 MEAN 1885 MAX 34400 MIN 33 AC-FT 1365000 *73460 **6750

* Diversions, in acre-feet, to Gila Bend Canal (sta 09518500). See remarks above. For records prior to 1972, see sta 09519500.

** Diversions, in acre-feet to Enterprise Canal (sta 09519000). For records prior to 1972, see sta 09519500.

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1950 to September 1971, March 1974 to current year.

Prior to October 1967, published as 09519500, Gila River below Gillespie Dam, Ariz.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1971, April 1974 to September 1981.

WATER TEMPERATURES: December 1950 to September 1971, April 1974 to September 1981.

REMARKS.--Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from district office in Tucson, Ariz.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 13,200 micromhos July 10, 11, 1966; minimum observed, 236 micromhos Dec. 28, 1967.

WATER TEMPERATURES: Maximum observed, 36.5°C July 8, 1958, July 22, 1959, Aug. 5, 8, 1966; minimum observed, 1.5°C Jan. 1, 1951.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 28...	1400	128	4300	7.7	22.0	18.0	32	9.0	745	99	37	580
NOV 24...	1030	227	5240	--	--	15.0	--	9.3	745	96	30	1100
DEC 23...	1245	324	3180	7.9	17.0	14.5	32	--	737	--	12	1000
JAN 25...	1615	238	3670	7.9	23.0	15.0	--	10.4	745	107	29	950
MAR 03...	1100	1850	1230	8.0	14.0	16.0	32	7.8	729	83	31	270
22...	1730	14800	1020	7.8	20.0	16.0	--	8.7	742	91	44	280
APR 26...	1445	7440	796	8.1	28.5	19.5	80	8.9	740	100	22	96
MAY 26...	0830	246	3850	8.9	32.0	26.0	--	13.6	739	175	47	K47
JUN 29...	1700	135	3000	9.2	39.0	28.0	17	--	737	--	83	--
AUG 01...	1600	141	2850	9.1	41.5	32.0	--	7.9	740	113	78	K140
26...	1000	98	3800	7.7	31.0	27.5	35	5.3	745	70	43	67
SEP 20...	1030	173	3200	8.2	30.5	29.0	--	7.1	744	96	43	K45

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 28...	690	780	530	180	80	650	10	11	256	590	1000	2.3
NOV 24...	1400	--	--	--	--	--	--	--	--	--	1300	--
DEC 23...	6100	560	320	130	58	430	8	9.5	249	370	650	1.6
JAN 25...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 03...	940	240	90	57	23	160	5	5.2	149	110	240	.60
22...	K1700	--	--	--	--	--	--	--	--	--	--	--
APR 26...	1000	170	49	44	15	93	3	3.2	123	56	140	.30
MAY 26...	K93	--	--	--	--	--	--	--	--	--	--	--
JUN 29...	--	610	420	140	62	520	9	9.1	188	480	770	1.7
AUG 01...	510	--	--	--	--	--	--	--	--	--	--	--
26...	500	640	430	150	64	530	9	12	216	480	770	2.2
SEP 20...	340	--	--	--	--	--	--	--	--	--	--	--

K Based on non-ideal colony count.

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
OCT 28...	31	2740	2700	3.7	54	12	2.70	13	2.80	2.70	2.50	7.7
NOV 24...	--	--	--	--	15	--	--	--	--	--	--	--
DEC 23...	26	1940	1800	2.6	91	6.0	4.20	4.2	2.70	2.60	2.00	6.1
JAN 25...	--	--	--	--	13	--	--	--	--	--	--	--
MAR 03...	17	704	710	.96	84	1.9	1.00	2.0	.790	.620	.580	1.8
MAR 22...	--	--	--	--	186	--	--	--	--	--	--	--
APR 26...	17	431	440	.59	140	.54	.820	1.0	.540	.300	.250	.77
MAY 26...	--	--	--	--	42	--	--	--	--	--	--	--
JUN 29...	6.4	2150	2100	2.9	77	6.0	<.060	8.1	1.70	.340	.290	.89
AUG 01...	--	--	--	--	84	--	--	--	--	--	--	--
AUG 26...	26	2150	2200	2.9	73	7.6	1.20	3.2	1.70	1.70	1.20	3.7
SEP 20...	--	--	--	--	42	--	--	--	--	--	--	--

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 28...	10	100	<10	2000	2000	1	1	<1	<1	10	7	30
NOV 24...	--	--	--	--	--	1	--	--	--	20	--	--
DEC 23...	--	--	--	--	--	<1	--	--	--	30	--	--
JAN 25...	--	--	--	--	--	1	--	--	--	30	--	--
MAR 03...	7	52	.5	360	310	<1	<1	4	<3	20	13	4
MAR 22...	--	--	--	--	--	1	--	--	--	50	--	--
APR 26...	--	--	--	--	--	1	--	--	--	30	--	--
MAY 26...	--	--	--	--	--	<1	--	--	--	30	--	--
JUN 29...	9	<100	<10	1600	--	<1	<1	1	1	<10	3	10
AUG 01...	--	--	--	--	--	<2	--	--	--	20	--	--
AUG 26...	9	200	<10	1600	1500	<1	<1	<1	1	20	10	100
SEP 20...	--	--	--	--	--	<1	--	--	--	30	--	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)
OCT 28...	<1	60	.1	<.1	10	15	5	5	<1	3000	29
NOV 24...	1	--	.1	--	--	--	7	--	--	--	--
DEC 23...	<1	--	.2	--	--	--	3	--	--	--	--
JAN 25...	<1	--	.1	--	--	--	3	--	--	--	--
MAR 03...	<1	43	.1	<.1	<10	25	1	1	<1	700	6
MAR 22...	1	--	.1	--	--	--	1	--	--	--	--
APR 26...	<1	--	.1	--	--	--	1	--	--	--	--
MAY 26...	2	--	<.1	--	--	--	4	--	--	--	--
JUN 29...	<1	20	3.1	1.6	8	8	3	4	<1	2200	25
AUG 01...	<1	--	.1	--	--	--	5	--	--	--	--
AUG 26...	<1	60	.1	<.1	7	7	4	4	<1	2300	26
SEP 20...	<1	--	.1	--	--	--	3	--	--	--	--

DATE	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 28...	50	<97	2.7	<48	1.8	<46	4.0	4.2	55	97	19
NOV 24...	--	<100	4.6	<51	3.1	<49	9.3	9.7	--	--	--
DEC 23...	--	<54	3.2	<31	2.2	<30	5.3	5.5	116	95	101
JAN 25...	--	<75	1.1	<37	.7	<35	3.1	3.2	22	85	14
MAR 03...	20	<20	5.9	<12	4.0	<11	4.3	4.5	177	67	884
MAR 22...	--	<11	32	7.1	22	6.8	250	--	937	62	37400
APR 26...	--	<11	8.5	<6.3	5.8	<6.0	6.2	6.7	294	47	5910
MAY 26...	--	<52	1.7	<35	1.2	<33	2.4	2.8	36	93	24
JUN 29...	10	<75	2.4	<37	1.6	<31	3.7	4.3	49	94	18
AUG 01...	--	<81	3.4	<28	2.3	<27	4.2	4.9	49	86	19
AUG 26...	10	<80	4.9	<39	3.3	<38	6.9	8.0	100	1000	26
SEP 20...	--	<82	5.1	<35	3.5	<30	7.0	8.2	36	96	17

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09519500 GILA RIVER BELOW GILLESPIE DAM, AZ

LOCATION.--Lat 33°13'45", long 112°46'00", in SE¼NE¼ sec.28, T.2 S., R.5 W., Maricopa County, Hydrologic Unit 15070101, at left end of Gillespie Dam, 8 mi downstream from Hassayampa River.

DRAINAGE AREA.--49,650 mi².

PERIOD OF RECORD.--August 1921 to current year. Low-flow records prior to October 1970 are not equivalent as leakage of less than 5 ft³/s not included, and from October 1971 to September 1973, when no leakage was included. Annual estimate of leakage was listed in REMARKS for the 1972 water year. Prior to 1939, published as "at Gillespie Dam."

REVISED RECORDS.--WSP 1213: 1939. WSP 1243: 1924(M). WSP 1926: Drainage area.

GAGE.--Water-stage recorder since July 28, 1924. Datum of gage is 9.95 ft below average elevation of crest of dam, which is 753.46 ft, National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1924, depth of water read on crest at left end of dam. Nov. 11, 1924, to July 22, 1932, datum of gage was at average elevation of dam crest. July 23, 1932, to Apr. 27, 1955, datum of gage was 5.00 ft below average elevation of crest of dam. Since Apr. 2, 1974, supplementary water-stage recorder and concrete control 70 ft downstream from crest of dam at datum 5.64 ft lower than datum of base gage.

REMARKS.--Records fair. Flow consists of water passing over the dam, and through the dam, but does not include water diverted to Gila Bend or Enterprise Canals. See sta 09518000, Gila River above diversions, at Gillespie Dam, for records of flow reaching dam, and of diversions to Gila Bend and Enterprise Canals. For diversions and regulation above station, see REMARKS for sta 09518000.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178,000 ft³/s Feb. 16, 1980, gage height, 18.81 ft, present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1891, 250,000 ft³/s, estimated, in February 1891.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,800 ft³/s Feb. 10, 1000 hours, gage height, 13.33 ft; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	110	10	6940	300	2000	7510	2490	3.6	2.1	1.6	.00
2	70	118	20	2870	300	2040	12400	2080	3.6	2.4	1.8	.00
3	90	133	40	1530	300	2090	11100	2520	3.6	2.6	1.6	.00
4	115	118	50	1510	511	4690	9430	2080	3.6	2.5	1.6	.00
5	110	118	50	1310	976	14600	7250	2030	3.6	2.2	1.7	.00
6	110	119	50	1070	2930	14600	6730	608	3.6	2.5	1.6	.00
7	110	121	50	905	5900	12600	5970	450	3.6	2.5	1.5	.00
8	110	121	40	446	4350	10600	4430	375	3.5	2.7	1.4	.00
9	110	121	30	290	10200	10500	3180	654	3.0	2.6	1.4	.00
10	110	260	40	152	34400	4470	2450	490	2.6	2.2	1.4	.00
11	110	236	300	182	32300	3710	1930	412	2.8	1.7	18	.00
12	110	216	400	183	29000	2640	1750	339	3.0	1.5	40	.00
13	110	214	1200	167	27200	2310	583	241	2.7	1.6	3.7	23
14	110	198	1800	158	18100	2340	1670	787	2.7	1.7	2.8	58
15	110	180	1840	153	8500	2020	1840	1130	3.1	2.1	50	12
16	110	160	1840	153	5000	2000	1730	450	3.5	2.7	12	20
17	110	140	1860	150	3200	2080	1650	339	2.9	2.7	245	62
18	110	120	1400	150	2500	2010	1540	339	2.7	2.7	200	77
19	110	100	1010	150	2500	2010	1570	211	2.7	2.3	120	99
20	110	80	502	150	2500	2040	1900	131	2.8	1.9	119	134
21	110	60	100	150	2500	1990	2020	87	2.8	2.2	61	115
22	110	40	100	150	2500	8020	4950	87	2.7	2.2	45	92
23	110	20	153	150	2000	14300	7490	87	2.8	2.6	20	128
24	110	10	150	150	1800	13500	8110	.00	2.8	2.6	1.0	169
25	110	5.0	150	150	1800	14700	8540	.00	3.2	2.5	1.0	185
26	110	2.0	1200	150	1800	17100	6980	.00	3.3	2.4	1.0	215
27	110	1.0	1800	150	1800	17300	5910	.00	3.1	1.8	1.0	240
28	110	.50	3050	200	1800	12100	4110	.00	2.5	1.5	1.0	283
29	110	.50	2710	250	---	5560	3460	.00	2.0	1.3	1.0	711
30	110	.50	6130	300	---	3900	2850	.00	2.2	1.2	1.0	1130
31	110	---	6130	323	---	5030	---	.00	---	1.6	1.0	---
TOTAL	3335	3122.50	34205	20742	206967	214850	141033	18417.00	90.6	67.1	960.1	3753.00
MEAN	108	104	1103	669	7392	6931	4701	594	3.02	2.16	31.0	125
MAX	115	260	6130	6940	34400	17300	12400	2520	3.6	2.7	245	1130
MIN	70	.50	10	150	300	1990	583	.00	2.0	1.2	1.0	.00
AC-FT	6610	6190	67850	41140	410500	426200	279700	36530	180	133	1900	7440

CAL YR 1982 TOTAL 50872.57 MEAN 139 MAX 6130 MIN .00 AC-FT 100900
WTR YR 1983 TOTAL 647542.30 MEAN 1774 MAX 34400 MIN .00 AC-FT 1284000

GILA RIVER BASIN

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09519800 GILA RIVER BELOW PAINTED ROCK DAM, AZ

LOCATION.--Lat 33°04'30", long 113°00'50", in SE¼ sec.18, T.4 S., R.7 W., Maricopa County, Hydrologic Unit 15070201, on left bank 0.3 mi downstream from Painted Rock Dam and 19 mi northeast of Sentinel.

DRAINAGE AREA.--50,910 mi², approximately.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 518.69 ft, National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Auxiliary gage May 5, 1969, to Mar. 30, 1973, at site 0.3 mi upstream, at datum 2.87 ft higher; Feb. 8, 1979 to current year, at site 0.3 mi upstream, at same datum.

REMARKS.--Records poor. Many diversions above station for irrigation. Flow above station regulated by many reservoirs, the largest of which is Painted Rock Reservoir - capacity, 2,492,000 acre-ft. (See REMARKS for sta 09518000, Gila River above diversions, at Gillespie Dam.)

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,190 ft³/s, result of a discharge measurement May 3, 1983, gage height, 9.36 ft, maximum gage height, 10.57 ft Feb. 9, 1979; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,190 ft³/s, result of a discharge measurement May 3, gage height, 9.36 ft; no flow Dec. 30 to Jan. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.60	1.6	.00	157	250	3180	3420	4470	820	780	860
2	.90	.60	1.6	.00	155	600	3180	3460	4500	800	770	1030
3	.80	.60	1.3	63	155	610	3190	3510	4480	780	870	1050
4	.70	.60	1.2	168	155	770	3200	3260	4470	760	940	1070
5	.60	.60	1.1	164	155	760	3290	3260	4440	740	1090	1090
6	.60	.60	1.0	160	155	770	3220	3260	4410	723	1070	1110
7	.60	.60	1.0	157	153	1120	3220	3260	4490	725	1070	1130
8	.60	.60	1.2	157	155	1380	3220	3260	4520	720	1080	1230
9	.60	.60	1.5	159	155	1100	3220	3630	4500	715	1110	1320
10	.60	.60	1.6	160	155	1590	3220	3820	4550	711	1030	1250
11	.60	.60	1.5	160	155	1980	3220	3810	4460	706	1000	1160
12	.60	.60	1.3	162	155	1980	3210	3800	4400	701	1070	1280
13	.60	.60	1.1	162	155	1990	3210	3790	4340	696	1070	1360
14	.60	.50	.90	162	155	2290	3210	3780	4410	691	1070	1340
15	.60	.50	.80	164	155	2440	3250	3770	4000	686	1070	1320
16	.60	.50	.70	164	155	2440	3300	2510	3600	682	1160	1360
17	.60	.50	.60	164	100	2440	3300	3220	2830	677	1200	1360
18	.60	.50	.60	164	40	2760	3290	3980	2500	706	1130	1340
19	.60	.50	.50	164	9.0	2930	3290	3960	2500	742	1060	1310
20	.60	.40	.50	162	5.0	2930	3280	3980	2040	736	1080	1340
21	.60	.40	.60	162	2.0	2930	3280	3980	1730	725	1080	1290
22	.60	.40	.60	160	5.0	2890	3270	3970	1000	736	1180	1290
23	.60	.40	.70	159	110	3010	3260	3960	980	742	1110	966
24	.60	.40	.40	159	210	3040	3260	3950	960	739	1110	695
25	.60	.40	.30	157	215	3060	3400	3930	940	736	1110	657
26	.60	.40	.20	155	200	3090	3560	3920	920	732	1060	220
27	.60	.40	.40	155	170	3120	3270	4300	900	724	1020	75
28	.60	.40	.40	153	150	3150	3280	4500	880	722	1030	120
29	.60	.40	.10	157	---	3160	3320	4470	860	951	1050	90
30	.60	.80	.00	155	---	3170	3370	4440	840	770	1070	67
31	.60	---	.00	149	---	3170	---	4420	---	740	960	---
TOTAL	19.90	15.60	25.30	4537.00	3696.0	66920	97970	116580	89920	22834	32500	29780
MEAN	.64	.52	.82	146	132	2159	3266	3761	2997	737	1048	993
MAX	1.3	.80	1.6	168	215	3170	3560	4500	4550	951	1200	1360
MIN	.60	.40	.00	.00	2.0	250	3180	2510	840	677	770	67
AC-FT	39	31	50	9000	7330	132700	194300	231200	178400	45290	64460	59070
(*)	0	0	1420	17100	284000	552000	554000	355000	176000	136000	81700	28400
CAL YR 1982	TOTAL	4373.10	MEAN	12.0	MAX	144	MIN	.00	AC-FT	8670		
WTR YR 1983	TOTAL	464797.80	MEAN	1273	MAX	4550	MIN	.00	AC-FT	921900		

* Contents, in acre-feet at end of month, in Painted Rock Reservoir. Figures furnished by Corps of Engineers and rounded in accordance with Geological Survey standard practice.

GILA RIVER BASIN

09520360 GILA RIVER NEAR MOHAWK, AZ

LOCATION.--Lat 32°47'18", long 113°45'48", on section line between sec.25 and 26, T.7 S., R.15 W., Yuma County, Hydrologic Unit 15070201, in center of channel at culvert outlet at Avenue 51E, and 4.0 mi north of Mohawk.

DRAINAGE AREA.--55,430 mi², approximately.

PERIOD OF RECORD.--February to April 1966 (published in WSP 1850-C), April 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 295 ft, from topographic map. Prior to March 1983 at site 70 ft upstream at datum 6.45 ft higher.

REMARKS.--Records good. Flow regulated by Painted Rock Dam; capacity of reservoir at Painted Rock Dam is 2,492,000 acre-ft, (see REMARKS for sta 09519800).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,270 ft³/s Apr. 30, 1980, gage height, 11.28 ft, site and datum then in use; maximum gage height, 14.20 ft June 7, 8, 1983, present site and datum; no flow most of time most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,600 ft³/s June 7, 8, gage height, 14.20 ft; no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	2360	2850	3370	685	448	720
2	.00	.00	.00	.00	.00	.00	2400	2820	3360	645	444	695
3	.00	.00	.00	.00	.00	.00	2420	2810	3330	615	448	595
4	.00	.00	.00	.00	.00	.00	2400	2830	3400	590	448	645
5	.00	.00	.00	.00	.00	.00	2430	2830	3490	575	448	675
6	.00	.00	.00	.00	.00	.00	2480	2870	3550	561	498	680
7	.00	.00	.00	.00	.00	.00	2540	2860	3570	543	530	670
8	.00	.00	.00	.00	.00	.00	2600	2820	3560	530	552	775
9	.00	.00	.00	.00	.00	.00	2650	2800	3540	548	750	885
10	.00	.00	.00	.00	.00	.00	2700	2780	3490	561	895	765
11	.00	.00	.00	.00	.00	.00	2720	2750	3550	561	855	745
12	.00	.00	.00	.00	.00	.00	2730	2880	3540	548	780	735
13	.00	.00	.00	.00	.00	.00	2700	3010	3520	534	725	700
14	.00	.00	.00	.00	.00	.00	2710	3020	3540	525	680	690
15	.00	.00	.00	.00	.00	.00	2740	3020	3540	507	760	735
16	.00	.00	.00	.00	.00	.00	2760	3010	3540	489	705	755
17	.00	.00	.00	.00	.00	.00	2820	3000	3540	476	795	760
18	.00	.00	.00	.00	.00	160	2860	2940	3380	462	755	765
19	.00	.00	.00	.00	.00	461	2890	2620	3100	448	710	775
20	.00	.00	.00	.00	.00	722	2900	2700	2510	444	690	820
21	.00	.00	.00	.00	.00	965	2890	2990	2190	484	650	785
22	.00	.00	.00	.00	.00	1190	2870	3060	2060	502	645	790
23	.00	.00	.00	.00	.00	1420	2880	3070	1780	498	610	785
24	.00	.00	.00	.00	.00	1610	2880	3080	1550	484	620	805
25	.00	.00	.00	.00	.00	1660	2850	3090	1280	489	610	750
26	.00	.00	.00	.00	.00	1820	2820	3120	1100	480	600	620
27	.00	.00	.00	.00	.00	1940	2810	3130	963	458	595	543
28	.00	.00	.00	.00	.00	2080	2830	3110	855	440	570	471
29	.00	.00	.00	.00	---	2150	2910	3090	790	431	650	367
30	.00	.00	.00	.00	---	2230	2890	3170	730	423	715	313
31	.00	---	.00	.00	---	2320	---	3330	---	423	730	---
TOTAL	.00	.00	.00	.00	.00	20728.00	81440	91460	81718	15959	19911	20814
MEAN	.000	.000	.000	.000	.000	669	2715	2950	2724	515	642	694
MAX	.00	.00	.00	.00	.00	2320	2910	3330	3570	685	895	885
MIN	.00	.00	.00	.00	.00	.00	2360	2620	730	423	444	313
AC-FT	.00	.00	.00	.00	.00	41110	161500	181400	162100	31650	39490	41280
CAL YR 1982	TOTAL	1.00	MEAN	.003	MAX	1.0	MIN	.00	AC-FT	2		
WTR YR 1983	TOTAL	332030.00	MEAN	910	MAX	3570	MIN	.00	AC-FT	658600		

GILA RIVER BASIN

311

09520500 GILA RIVER NEAR DOME, AZ

LOCATION.--Lat 32°45'39", long 114°25'11", in SW¼ sec.4, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, on right bank 440 ft upstream from McPhal bridge on old route of State Highway 95, 3 mi west of Dome, and 12 mi upstream from mouth.

DRAINAGE AREA.--57,850 mi², approximately - includes 373 mi² in Aubrey Valley Playa, a closed basin, but excludes all other closed basins.

PERIOD OF RECORD.--January 1903 to current year. Monthly total, maximum, and minimum daily discharges only for January 1903 to December 1904 and January 1906 to July 1929 in WSP 918 or WSP 1313. Published as "at Yuma and Gila City" 1903, as "near Dome" 1904, and as "at Dome (Gila City)" 1905-6. Records for 1907-29 are published in WSP 918 as "at Yuma and at and near Dome."

REVISED RECORDS.--WSP 918: 1905. WSP 1733: July 1942. WSP 1926: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 139.18 ft, National Geodetic Vertical Datum of 1929. Prior to October 1903 and January 1907 to April 1929, no gage; discharge estimated. October 1903 to December 1906, principal nonrecording gage 4 mi upstream at datum 19.19 ft higher, supplemented by many nonrecording gages at different datums. May 1929 to May 31, 1981, at datum 9.00 ft higher.

REMARKS.--Records good. Many diversions above station for irrigation. Flow above station regulated by reservoirs at and above Painted Rock Dam; capacity of reservoir at Painted Rock Dam is 2,492,000 acre-ft. Painted Rock Reservoir, which is for flood control only, was completed in October 1959 (see also REMARKS for sta 09518000).

EXTREMES FOR PERIOD OF RECORD.--1903-29: Maximum daily discharge, 200,000 ft³/s, roughly estimated, Jan. 22, 1916. 1929-59: Maximum discharge, 20,700 ft³/s Feb. 15, 1932, gage height, 25.75 ft, present datum; no flow for part or all of most years. 1959-83: Maximum discharge, 4,820 ft³/s Sept. 18, 1963, gage height, 25.20 ft, present datum; no flow for part or all of most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,360 ft³/s June 20, gage height, 16.75 ft; minimum daily, 0.59 ft³/s Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	1.9	1.6	3.2	2.3	.76	1560	2550	2680	635	408	703
2	3.5	2.0	1.5	4.6	2.4	1.0	1630	2580	2900	597	396	703
3	2.9	1.6	1.4	3.3	2.0	1.2	1700	2540	3060	565	419	691
4	2.7	1.6	1.3	1.6	1.8	2.8	1770	2550	3170	536	406	624
5	2.7	1.6	1.3	1.8	1.5	1.4	1820	2430	3210	513	411	589
6	3.7	1.6	1.4	2.3	1.1	.81	1830	2420	3230	490	406	643
7	3.1	2.6	1.8	2.7	.59	.76	1900	2390	3220	490	450	666
8	2.6	1.9	4.9	4.5	.75	.76	1960	2420	3030	477	511	685
9	2.6	1.5	5.4	3.3	.77	.74	2020	2400	3020	476	584	697
10	2.6	1.8	5.2	4.6	.73	.74	2110	2330	3060	500	651	890
11	2.7	3.7	4.0	2.2	.75	.72	2220	2280	3040	512	880	808
12	2.4	2.4	2.9	1.5	.72	.70	2260	2210	3040	534	883	786
13	2.3	1.4	4.4	1.5	.83	.64	2290	2170	3050	536	811	775
14	2.7	1.4	3.0	1.6	1.4	.62	2330	2140	3120	544	750	757
15	2.4	1.4	2.8	1.3	1.5	.62	2360	2140	3030	565	862	727
16	2.3	1.4	3.4	1.3	1.1	1.4	2340	2220	3050	523	1050	782
17	2.1	2.5	3.6	2.3	1.9	1.1	2350	2470	3050	506	796	871
18	2.1	2.3	6.2	3.0	1.8	.98	2330	2550	3090	483	885	843
19	2.1	1.7	5.8	1.4	1.2	.87	2380	2450	3160	462	954	854
20	2.1	1.4	6.1	1.4	.96	1.8	2390	2340	3170	452	818	872
21	2.0	1.4	6.2	1.2	2.4	4.9	2440	1990	2940	438	786	890
22	2.0	2.0	5.5	1.2	5.6	.82	2490	2030	2660	452	734	862
23	2.0	2.2	3.6	1.2	2.3	250	2520	2250	2320	500	706	859
24	2.0	2.3	2.1	3.9	2.5	568	2500	2450	2070	473	655	910
25	2.3	1.7	4.5	2.8	2.2	727	2520	2530	1670	447	630	1190
26	2.4	1.8	4.6	2.1	1.1	897	2490	2760	1430	444	635	941
27	1.9	1.5	5.1	6.7	.84	1050	2530	2770	1210	444	622	681
28	3.1	1.4	4.6	2.3	.76	1230	2530	2760	1050	423	603	642
29	2.4	1.3	2.4	3.2	---	1370	2510	2680	867	406	580	554
30	1.7	1.5	1.4	1.7	---	1480	2490	2670	714	389	585	470
31	1.9	---	1.7	1.3	---	1510	---	2620	---	373	676	---
TOTAL	76.9	54.8	109.7	77.0	43.80	9189.32	66570	75090	78311	15185	20543	22965
MEAN	2.48	1.83	3.54	2.48	1.56	296	2219	2422	2610	490	663	766
MAX	3.7	3.7	6.2	6.7	5.6	1510	2530	2770	3230	635	1050	1190
MIN	1.7	1.3	1.3	1.2	.59	.62	1560	1990	714	373	396	470
AC-FT	153	109	218	153	87	18230	132000	148900	155300	30120	40750	45550
CAL YR 1982	TOTAL	2406.70	MEAN	6.59	MAX	461	MIN	.77	AC-FT	4770		
WTR YR 1983	TOTAL	288215.52	MEAN	790	MAX	3230	MIN	.59	AC-FT	571700		

GILA RIVER BASIN

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 32°42'38", long 114°33'06", in NW¼NE¼ sec.30, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, on left bank just upstream from South Gila Pump Outlet Channel No. 1, 0.6 mi upstream from mouth, and 4 mi east of Yuma.

DRAINAGE AREA.--57,950 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1975 to June 30, 1983 (discontinued).

GAGE.--Water-stage recorder and weir. Datum of gage is 122.01 ft, U.S. Bureau of Reclamation datum.

REMARKS.--Records good. Flow above station regulated by reservoirs at and above Painted Rock Dam; capacity of reservoir at Painted Rock Dam is 2,492,000 acre-ft, (see also REMARKS for sta 09518000). Return flows from North and South Gila Valley (stas 09529050 to 09529250), and M.O.D.E. 1 (sta 09529300) that enter the Gila River between sta 09520500 and this station are shown elsewhere in this report. Daily discharge is obtained by combining flow past gage with flow for South Gila Pump Outlet Channel No. 1 (see sta 09529360) to give total flow of Gila River at mouth.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,720 ft³/s Sept. 24, 1980; minimum daily, 24 ft³/s Nov. 10, 11, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during period October 1982 to June 30, 1983, 3,240 ft³/s June 11; minimum daily, 24 ft³/s Nov. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	53	75	69	101	90	1300	2220	2420			
2	60	50	74	70	101	87	1360	2290	2550			
3	58	52	73	70	101	77	1400	2260	2630			
4	57	57	72	69	101	76	1590	2210	2670			
5	57	67	72	65	101	78	1720	2200	2920			
6	53	66	86	66	101	79	1830	2230	3140			
7	60	66	97	77	101	76	1800	2150	3150			
8	69	46	87	97	100	79	1790	2020	3030			
9	66	26	148	67	83	83	1840	1980	3060			
10	67	24	116	67	80	93	1950	1950	3100			
11	65	24	82	77	81	94	2010	2140	3240			
12	66	33	78	74	81	97	2020	2150	3100			
13	70	43	76	75	80	93	2010	2100	3090			
14	68	44	79	75	79	93	2040	2130	3090			
15	67	79	81	75	80	93	2030	2270	3090			
16	67	76	78	75	70	92	2050	2360	3090			
17	72	61	75	75	75	92	2060	2370	3090			
18	69	62	74	76	80	93	2070	2360	3090			
19	70	64	78	75	80	93	2100	2340	3190			
20	71	64	76	67	78	105	2110	2330	3140			
21	66	62	78	65	76	118	2170	2330	3190			
22	71	66	78	67	82	134	2190	2330	2890			
23	71	76	77	69	82	243	2190	2300	2580			
24	73	72	81	72	84	523	2190	2370	2330			
25	55	72	78	77	84	716	2230	2420	1930			
26	53	73	75	77	89	878	2210	2520	1680			
27	47	77	75	80	89	1010	2230	2500	1470			
28	44	99	81	77	89	1150	2220	2520	1270			
29	35	143	79	77	---	1290	2170	2510	1060			
30	38	80	81	77	---	1380	2150	2530	866			
31	57	---	73	77	---	1330	---	2480	---			
TOTAL	1900	1877	2533	2276	2429	10535	59030	70870	79146			
MEAN	61.3	62.6	81.7	73.4	86.8	340	1968	2286	2638			
MAX	73	143	148	97	101	1380	2230	2530	3240			
MIN	35	24	72	65	70	76	1300	1950	866			
AC-FT	3770	3720	5020	4510	4820	20900	117100	140600	157000			
CAL YR 1982	TOTAL	31545	MEAN	86.4	MAX	220	MIN	24	AC-FT	62570		

GILA RIVER BASIN

313

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1979 to September 1982 (discontinued).

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 18...	1100	63	4000	8.0	22.0	16.5	1.1	10.7	760	111	K72	110
FEB 07...	1115	87	3350	7.9	18.5	21.0	1.2	8.4	763	95	--	--
APR 13...	1245	1990	1150	8.0	21.5	17.0	75	8.0	762	83	43	1800

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV 18...	890	620	210	87	540	8	7.8	264	580	870	.70
FEB 07...	620	350	150	58	460	8	6.2	270	520	600	1.0
APR 13...	230	71	57	20	140	4	4.7	155	110	200	.50

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
NOV 18...	20	2520	2500	3.4	.37	1.2	.040	.010	.020	.06	10
FEB 07...	23	2010	2000	2.7	1.2	.70	.070	.050	.030	.09	10
APR 13...	14	643	640	.87	.36	1.1	.340	.160	.130	.40	10

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 18...	6	100	<10	1	<1	<1	1	50	<1	190	+290
FEB 07...	11	<100	<10	<2	<1	2	2	10	2	160	+700
APR 13...	8	64	<.5	<1	<1	<3	8	19	<1	78	32

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

+ Value verified.

GILA RIVER BASIN

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 18...	<.1	11	2	3	<1	2600	15	430	8	72	1.4
FEB 07...	<.1	12	2	8	<2	1600	13	<10	9	94	2.1
APR 13...	<.1	>10	4	2	<1	610	9	8	504	27	2710

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

315

09521100 COLORADO RIVER BELOW YUMA MAIN CANAL
WASTEWAY, AT YUMA, AZ

LOCATION.--Lat 32°43'54", long 114°37'55", in SW¼SW¼ sec.26, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on right bank 1,000 ft downstream from Yuma Main Canal wasteway, 0.6 mi downstream from former gaging station on Colorado River at Yuma, 1.1 mi northwest of downtown post office in Yuma, 5.2 mi downstream from Gila River, and 6.4 mi upstream from northerly international boundary.

DRAINAGE AREA.--246,500 mi², approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² in Great Divide basin in southern Wyoming.

PERIOD OF RECORD.--October 1963 to current year. If records for Yuma Main Canal wasteway at Yuma (sta 09525000) and Reservation Main Drain No. 4 (sta 09530000) are subtracted from records at this station, records equivalent to those published 1902-64 as "Colorado River at Yuma" (sta 09521000) can be obtained.

GAGE.--Water-stage recorder. Datum of gage is 101.99 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas.

AVERAGE DISCHARGE.--20 years, 1,485 ft³/s, 1,076,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,600 ft³/s Aug. 19, 1983, gage height, 26.67 ft; maximum gage height, 27.67 ft July 4, 1983; minimum daily discharge, 260 ft³/s Jan. 17, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height since at least 1878, 34.0 ft Jan. 22, 1916, discharge, 250,000 ft³/s, at former gaging station at Yuma.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,600 ft³/s Aug. 19, gage height, 26.67 ft; maximum gage height, 27.67 ft July 4; minimum daily discharge, 482 ft³/s Nov. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	679	491	962	1030	4790	626	2110	4740	5300	23600	26400	22700
2	656	482	968	1230	4770	1120	2080	4880	5320	25500	25900	22600
3	656	552	1120	1370	5540	1630	2150	4840	5520	26600	26100	22100
4	665	606	1080	2030	6380	1590	2450	4760	5520	26500	26000	22000
5	693	591	1090	2270	6230	1200	2780	4760	5790	27000	25900	21900
6	688	629	1220	2470	5300	806	3100	4770	6540	27200	26500	21800
7	647	681	1210	2640	3400	714	3150	4710	6650	26900	27200	21700
8	652	684	1210	2910	2100	637	3180	4350	6650	26100	27100	21700
9	665	676	1310	3050	1150	695	3340	4110	6770	25900	27000	22100
10	661	687	1390	3090	1050	788	3700	4070	6910	26500	27500	22500
11	652	735	1370	3120	980	623	4110	4540	7060	27300	28100	22800
12	652	716	1380	3130	810	566	4330	4740	7850	27200	28800	22200
13	697	701	790	3100	765	568	4500	4740	8610	27100	28600	21500
14	720	681	575	3050	675	562	4640	4720	8330	27100	27900	21500
15	706	700	546	2910	650	562	4660	4850	8250	26700	26500	20600
16	697	747	517	2880	622	564	4680	5030	8250	26600	26300	20700
17	693	756	505	2880	598	685	4620	5030	8340	27500	28400	20900
18	720	746	576	2880	582	650	4690	5040	8540	28200	30100	21800
19	738	688	601	2870	626	624	4710	5010	8970	27300	31300	21800
20	738	686	524	2860	750	626	4710	4940	9630	26500	31300	21800
21	733	707	496	2860	565	635	4700	4750	9200	26100	30200	22500
22	733	784	493	2940	562	637	4790	4660	8200	25900	28900	22800
23	724	803	495	3210	563	800	4780	4870	7860	26200	27600	22600
24	729	808	493	3280	574	1000	4800	5020	8180	26700	27100	24200
25	711	825	550	3020	830	1120	4860	5100	11300	26500	26200	25800
26	711	810	504	2970	624	1410	4840	5140	15700	26200	26000	25400
27	720	822	524	3260	558	1570	4820	5250	21000	26700	25600	26100
28	724	777	735	4020	576	1540	4800	5220	21900	26600	26300	26000
29	675	801	633	4470	---	1600	4750	5340	23100	26100	26500	25500
30	679	836	485	4770	---	1740	4700	5340	23500	26200	25900	24900
31	675	---	486	5070	---	1840	---	5350	---	26600	24500	---
TOTAL	21489	21208	24838	91640	52620	29728	121530	150670	294740	823100	847700	682500
MEAN	693	707	801	2956	1879	959	4051	4860	9825	26550	27350	22750
MAX	738	836	1390	5070	6380	1840	4860	5350	23500	28200	31300	26100
MIN	647	482	485	1030	558	562	2080	4070	5300	23600	24500	20600
AC-FT	42620	42070	49270	181800	104400	58970	241100	298900	584600	1633000	1681000	1354000

CAL YR 1982 TOTAL 316088 MEAN 866 MAX 2180 MIN 482 AC-FT 627000
WTR YR 1983 TOTAL 3161763 MEAN 8662 MAX 31300 MIN 482 AC-FT 6271000

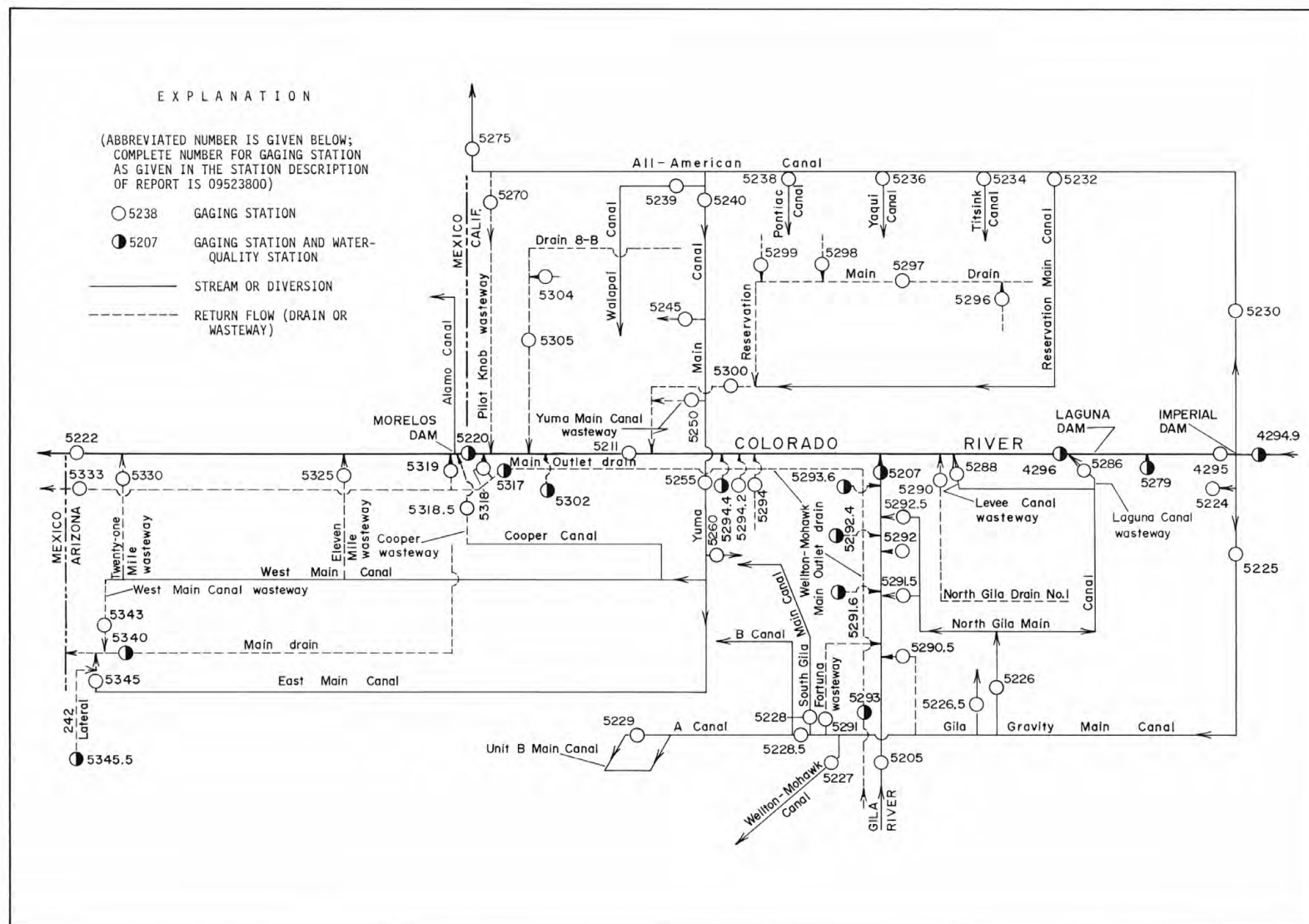


Figure 6.--Schematic diagram showing gaging stations and water-quality stations on streams, diversions, and return flows between Imperial Dam and the southerly international boundary.

COLORADO RIVER MAIN STEM

317

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY
ABOVE MORELOS DAM, NEAR ANDRADE, CA
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 32°43'07", long 114°43'05", in NE¼SE¼ sec.21, T.8 S., R.24 W., Gila and Salt River meridian, in Arizona, Yuma County, Hydrologic Unit 15030108, on left bank at northerly international boundary, 0.5 mi east of Andrade, 1.1 mi upstream from Morelos Dam, 1.1 mi downstream from Rockwood Gate, and 6.4 mi downstream from gaging station on Colorado River below Yuma Main Canal wasteway.

DRAINAGE AREA.--246,700 mi², approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² in Great Divide basin in southern Wyoming.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1950 to current year. Prior to October 1958 published as "at international boundary."

GAGE.--Water-stage recorder. Datum of gage is mean sea level, National Geodetic Vertical Datum of 1929. Supplementary water-stage recorder 1,680 ft upstream at same datum.

REMARKS.--This record shows water passing northerly international boundary. Minor diversions to the United States below this station by pumping from ground water for irrigation in the floodway between river and Yuma levee.

COOPERATION.--Records furnished by International Boundary and Water Commission, U.S. Section (discharge figures rounded in accordance with Geological Survey standard practice).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,600 ft³/s Aug. 20, 1983; maximum elevation, 115.65 ft Aug. 18, 19, 1983; minimum discharge, 495 ft³/s Sept. 28, 1970; minimum elevation, 101.72 ft, Nov. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,600 ft³/s Aug. 20, maximum elevation, 115.65 ft Aug. 18, 19; minimum discharge, 640 ft³/s Nov. 2, minimum elevation, 101.84 ft, Nov. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	799	696	1090	4550	13900	2810	4080	11500	11800	27000	30300	29100
2	720	687	1110	5820	14000	3240	4010	11100	12200	28000	29700	30600
3	730	730	1290	6200	15300	3660	4130	10900	13100	29600	29400	30700
4	730	728	1280	6310	16400	3770	4900	10800	14400	30400	28700	30500
5	735	740	1300	7090	15500	3440	5630	10600	15100	30500	28800	30600
6	740	748	1410	7830	13900	3040	6070	11100	16000	30200	30000	30300
7	750	750	1420	9630	9560	3030	6470	10900	15600	30100	31500	29100
8	720	757	1400	10800	7650	3270	7310	9360	14800	30200	32000	29700
9	730	743	2300	10900	5090	3420	7940	8950	14200	30200	32500	31500
10	720	741	4720	10400	3080	3510	9340	9430	14900	30600	33700	31700
11	710	795	4020	9950	2520	3560	8820	9610	15600	31000	34300	32100
12	725	770	3010	9690	2740	3550	8930	10000	16200	30800	34300	31400
13	750	780	2470	9870	2350	3590	9040	10100	17200	30600	34500	30100
14	800	767	1870	10900	1870	3800	9660	10800	16200	30500	34200	29800
15	777	781	1740	11000	1810	3750	10200	11300	16800	30600	32800	28700
16	770	759	1710	11500	1790	3710	10400	10100	17200	30600	33100	29500
17	760	762	1690	11500	1940	3800	10700	10000	17400	31100	34900	29700
18	795	784	1750	11000	1950	4030	10300	10200	17700	31200	37500	30800
19	807	790	1790	10900	2060	4070	10000	10600	17400	30800	39200	30900
20	813	780	1780	11500	2050	4040	9960	10500	17400	30300	38500	30600
21	810	800	1800	11700	2340	4050	10100	11000	17000	30000	35800	31600
22	825	900	1790	11800	2670	3960	10800	11500	16100	30500	35100	31700
23	815	904	1810	12000	2940	4200	11400	11200	15900	31200	34200	31500
24	830	905	1970	11800	3120	4080	11400	11000	16100	31500	33700	32900
25	810	930	1970	11400	2990	4100	10800	11100	14200	31500	32300	34200
26	798	920	1960	11600	2970	4220	10700	11100	18800	30400	31300	32700
27	805	940	1920	12200	3050	4170	10300	11300	24300	30200	30700	34100
28	810	886	1940	12900	2940	4210	10600	12700	25600	30600	30900	33000
29	770	929	1950	13600	---	4090	10800	13600	26000	30400	30900	33000
30	750	943	2080	13800	---	4200	11100	13400	26600	30500	30600	32300
31	788	---	2250	13900	---	4240	---	12400	---	30600	30600	---
TOTAL	23892	24145	60590	324040	158480	116610	265890	338150	511800	941700	1016000	934400
MEAN	771	805	1955	10450	5660	3762	8863	10910	17060	30380	32770	31150
MAX	830	943	4720	13900	16400	4240	11400	13600	26600	31500	39200	34200
MIN	710	687	1090	4550	1790	2810	4010	8950	11800	27000	28700	28700
AC-FT	47390	47890	120200	642700	314300	231300	527400	670700	1015000	1868000	2015000	1853000
CAL YR 1982	TOTAL	726467	MEAN	1990	MAX	4720	MIN	687	AC-FT	1441000		
WTR YR 1983	TOTAL	4715697	MEAN	12920	MAX	39200	MIN	687	AC-FT	9354000		

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to September 1983 (discontinued).

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT												
04...	0830	730	1730	7.8	--	22.0	--	--	--	--	--	--
NOV												
01...	0830	696	1770	7.9	--	18.0	--	--	--	--	--	--
15...	0900	730	1750	7.9	14.5	14.5	4.5	8.5	766	83	200	120
DEC												
06...	0830	1360	1700	8.2	--	--	--	--	--	--	--	--
JAN												
03...	0830	5990	1280	7.8	--	11.0	--	--	--	--	--	--
18...	1000	11600	1240	7.9	7.5	11.5	13	10.0	765	92	K8	100
FEB												
08...	0930	7650	1360	7.8	15.0	13.5	3.7	9.2	761	89	--	--
APR												
13...	1030	8950	1200	8.1	17.0	16.0	15	8.8	772	88	31	390
JUN												
13...	1200	17300	1210	7.5	32.5	25.5	12	5.8	765	71	39	4100
AUG												
18...	1115	38200	1180	7.7	24.0	27.0	50	6.4	762	81	800	3400

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT												
04...	440	260	110	40	190	4	5.9	--	370	200	.50	16
NOV												
01...	440	250	110	39	210	5	6.0	--	390	210	1.0	18
15...	440	250	110	39	210	5	5.2	192	410	240	.60	16
DEC												
06...	420	240	110	38	210	5	5.6	--	390	200	.70	16
JAN												
03...	350	220	86	34	140	3	4.7	140	350	130	.40	10
18...	350	210	84	33	130	3	4.9	136	330	120	.40	9.5
FEB												
08...	370	220	93	34	150	3	5.1	157	340	140	.50	11
APR												
13...	320	180	79	29	130	3	4.9	147	260	130	.40	11
JUN												
13...	330	190	84	30	130	3	5.2	146	300	130	.40	10
AUG												
18...	340	200	86	29	110	3	5.3	133	290	110	.40	9.1

K Based on non-ideal colony count.

COLORADO RIVER MAIN STEM

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09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 2,230 micromhos Dec. 9, 1969; minimum observed, 1,010 micromhos Mar. 6, 1980.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 1,980 micromhos Nov. 29; minimum observed, 1,150 micromhos Aug. 17, Apr. 5, 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT												
04...	1120	1000	1.5	--	--	--	--	--	--	--	--	--
NOV												
01...	1140	1100	1.6	--	--	--	--	--	--	--	--	--
15...	1190	1100	1.6	.24	.90	.090	.080	.070	.21	20	3	99
DEC												
06...	1100	1100	1.5	--	--	--	--	--	--	--	--	--
JAN												
03...	842	840	1.1	.18	--	--	--	--	--	--	--	--
18...	812	790	1.1	.16	.60	.050	<.010	.010	.03	--	--	--
FEB												
08...	899	870	1.2	.22	.70	.040	.040	.050	.15	<10	2	120
APR												
13...	764	730	1.0	.17	.50	.080	.040	.060	.18	20	4	100
JUN												
13...	775	780	1.1	<.10	.40	.060	.040	.040	.12	--	--	--
AUG												
18...	737	720	1.0	.18	.70	.050	.050	.010	.03	10	2	120

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
01...	--	--	--	--	--	--	--	--	--	--	--	--
15...	.5	<1	<1	<3	1	4	<1	97	37	<.1	<10	1
DEC												
06...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	<3	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	<.5	<1	<1	<3	1	5	1	80	12	<.1	10	1
APR												
13...	<.5	<1	<1	<3	3	9	<1	68	7	<.1	<10	2
JUN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
18...	<.5	<1	<1	<3	5	5	<1	55	5	<.1	<10	8

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 04...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 01...	--	--	--	--	--	--	--	--	--	--	--	--
15...	2	1	1500	<6	12	--	--	--	--	12	94	24
DEC 06...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 03...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	<20	<1.5	<12	2.7	--	--	--
FEB 08...	3	<1	1400	<6	6	--	--	--	--	--	--	--
APR 13...	3	<1	1100	<6	12	--	--	--	--	--	--	--
JUN 13...	--	--	--	--	--	--	--	--	--	172	45	8030
AUG 18...	3	1	1200	<6	5	<23	11	<10	5.6	298	45	30700

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

321

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ

LOCATION.--Lat 32°29'48", long 114°48'48", in Mexico, on right bank about 1,000 ft upstream from southerly international boundary, 2 mi west of San Luis, Ariz., and 21.9 mi, downstream from Morelos Dam.

DRAINAGE AREA.--246,700 mi², approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² in Great Divide basin in southern Wyoming.

PERIOD OF RECORD.--January 1950 to current year. Prior to October 1960, monthly discharge only published in WSP 1733.

GAGE.--Water-stage recorder. Datum of gage is mean sea level, National Geodetic Vertical Datum of 1929. Prior to June 24, 1954, at site 1,100 ft downstream at same datum. August 1956 to September 1966, supplementary water-stage recorders at various sites within 6 mi upstream used to compute discharge during periods of backwater from diversion dike downstream.

REMARKS.--This record shows water passing southerly international boundary. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for municipal use and irrigation, and return flow from irrigated areas.

COOPERATION.--Records furnished by International Boundary and Water Commission, U.S. Section (discharge figures rounded in accordance with Geological Survey standard practice).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft³/s Aug. 19, 20, 1983, elevation 83.30 ft, maximum elevation, 84.84 ft Nov. 29, 1957; no flow at times 1956-58, 1964-69, 1971-72, 1975, 1977-79, 1981-83.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,100 ft³/s Aug. 19, 20, elevation, 83.30 ft; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	44	10400	15	.0	7110	9100	21100	25900	24700
2	.00	.00	.00	1650	10400	13	.0	7060	9580	20700	24400	24600
3	.00	.00	.00	3110	11700	75	.0	6630	9950	21100	24000	24900
4	.00	.00	.00	3560	13200	561	.0	7200	11200	23400	23400	24500
5	.00	.00	.00	3990	13200	564	.0	6890	12200	24600	22700	24100
6	.00	.00	.00	4600	12300	278	11	7080	12500	24000	23100	23800
7	.00	.00	.00	5320	10400	105	678	7550	12600	23600	24200	23200
8	.00	.00	.00	6040	6680	40	1300	6170	12400	23400	25100	23500
9	.00	.00	.00	6170	4410	18	1460	5650	12400	23500	25600	24700
10	.00	.00	103	6310	2240	11	2520	5810	12800	23900	27000	25400
11	.00	.00	1070	6110	1220	7.0	3120	6500	13500	23400	28700	25500
12	.00	.00	761	5960	785	4.0	2650	6810	13700	23400	30300	25800
13	.00	.00	56	6020	903	3.0	2870	6570	14100	24000	31300	25400
14	.00	.00	.00	6240	352	1.5	3230	6970	14300	24500	30800	25600
15	.00	.00	.00	6520	446	.10	3900	7490	14300	24100	29000	25100
16	.00	.00	.00	6640	530	.00	4090	7440	14100	24700	27800	25500
17	.00	.00	.00	6910	401	.00	4160	6710	14200	24700	29800	26000
18	.00	.00	.00	6860	362	.00	4360	7160	14200	25100	32100	26500
19	.00	.00	.00	6790	132	.00	4130	7290	14100	24700	32900	27300
20	.00	.00	.00	7010	78	.00	4230	7190	14400	24000	33000	27400
21	.00	.00	.00	6940	66	.00	4470	7460	14500	23500	32600	28500
22	.00	.00	.00	6930	58	.00	4920	8100	13900	24200	31400	28800
23	.00	.00	.00	7040	49	.00	5710	8640	13200	24200	27900	28200
24	.00	.00	.00	7160	42	.00	6320	8450	13700	25400	27400	29000
25	.00	.00	.00	6940	30	.00	6470	8790	11800	25600	26100	30600
26	.00	.00	.00	6960	23	.00	6090	8760	13200	24300	26300	30800
27	.00	.00	.00	7390	19	.00	5960	8730	18600	24400	26500	31300
28	.00	.00	.00	7830	17	.00	5770	10600	20700	24700	27300	30400
29	.00	.00	.00	8050	---	.00	6500	11600	20700	25200	28000	29500
30	.00	.00	.00	9930	---	.00	6810	11400	21300	25300	28000	29200
31	.00	---	.00	10600	---	.00	---	9970	---	26000	27100	---
TOTAL	.00	.00	1990.00	191624	100443	1695.60	101729.0	239780	417230	744700	859700	799800
MEAN	.000	.000	64.2	6181	3587	54.7	3391	7735	13910	24020	27730	26660
MAX	.00	.00	1070	10600	13200	564	6810	11600	21300	26000	33000	31300
MIN	.00	.00	.00	44	17	.00	.00	5650	9100	20700	22700	23200
AC-FT	.00	.00	3950	380100	199200	3360	201800	475600	827600	1477000	1705000	1586000
CAL YR 1982	TOTAL	4824.60	MEAN	13.2	MAX	1070	MIN	.00	AC-FT	9570		
WTR YR 1983	TOTAL	3458691.60	MEAN	9476	MAX	33000	MIN	.00	AC-FT	6860000		

Diversions for irrigation in the Gila Project in Arizona are made at Imperial Dam by the Gila Gravity Main Canal. Diversions for irrigation in the Yuma Project in Arizona and California are made at Imperial Dam by the All-American Canal. Between Imperial Dam and the international boundary secondary diversions from these principal canals are made to divisions of the Gila and Yuma Projects.

Between Imperial Dam and the international boundary return surface flows from irrigated areas enter the Colorado River through many drains and wasteways in Arizona and California. Other return flows enter the Gila River below the gaging station near Dome (09520500). In addition, return flows collected by the Main Drain and East Main Canal are delivered across the international boundary for use in Mexico.

See figure 6 on p. 316 for a schematic diagram showing location of diversions and return flows.

Diversions at and below Imperial Dam, AZ-CA

09522500. GILA GRAVITY MAIN CANAL AT IMPERIAL DAM.--See p. 325.

09522600. NORTH GILA MAIN CANAL.

LOCATION.--Water-stage recorder and sharp-crested weir in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.23, T.7 S., R.22 W., Hydrologic Unit 15030107, about 700 ft downstream from turnout from Gila Gravity Main Canal and 1.2 mi south of Laguna Dam.

PERIOD OF RECORD.--October 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in North Gila Valley.

09522650. NORTH GILA MAIN CANAL NO. 2.

LOCATION.--Water-stage recorder in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.11, T.8 S., R.22 W., Hydrologic Unit 15070201, at turnout from Gila Gravity Main Canal and 3.5 mi downstream from turnout to North Gila Main Canal.

PERIOD OF RECORD.--June 1969 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation of land in North Gila Valley.

09522700. WELLTON-MOHAWK CANAL.

LOCATION.--Two water-stage recorders to record forebay and tailrace elevations and gate openings since June 1, 1974, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.17, T.8 S., R.21 W., Hydrologic Unit 15070201, at turnout from Gila Gravity Main Canal.

PERIOD OF RECORD.--October 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation of 59,928 acres in 1982, in the Dome, Wellton, and Mohawk areas of the lower Gila Valley.

COOPERATION.--Supplementary record of gate openings furnished by U.S. Bureau of Reclamation.

09522800. SOUTH GILA MAIN CANAL.

LOCATION.--Sparling flowmeter in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.36, T.8 S., R.22 W., Hydrologic Unit 15070201, 110 ft downstream from turnout from Gila Gravity Main Canal.

PERIOD OF RECORD.--October 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in South Gila Valley; additional diversions are made from Gila Gravity Main Canal to supply other portions of this same acreage.

COOPERATION.--Daily discharge figures furnished by Yuma Irrigation District.

09522850. GILA GRAVITY MAIN CANAL AT PUMPING PLANT.

LOCATION.--Intake consisting of 4 pumps in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.1, T.9 S., R.22 W., Hydrologic Unit 15070201, at end of Gila Gravity Main Canal and head of Yuma Mesa canals.

PERIOD OF RECORD.--October 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation on Yuma Mesa and in Yuma Auxiliary Division of Yuma Valley.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation and Yuma Mesa Irrigation and Drainage District.

09522900. UNIT B MAIN CANAL.

LOCATION.--Two Sparling flowmeters in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.9 S., R.23 W., Hydrologic Unit 15030108, 5 mi northeast of Somerton.

PERIOD OF RECORD.--October 1965 to current year (monthly discharge only).

REMARKS.--Record shows water available for irrigation in Yuma Auxiliary Division of the Yuma Project.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation and Unit B Irrigation and Drainage District.

09523000. ALL-AMERICAN CANAL NEAR IMPERIAL DAM.--See p. 326.

Diversion at and below Imperial Dam, AZ-CA--Continued

09523200. RESERVATION MAIN CANAL.

LOCATION.--Water-stage recorder and, since Sept. 5, 1975, gate-opening recorder, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.35, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, at turnout from All-American Canal and 5.8 mi. downstream from Imperial Dam.

PERIOD OF RECORD.--August 1950 to current year (monthly discharge only). Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record computed from rated gate on turnout from All-American Canal and shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

COOPERATION.--Record of gate openings furnished by Bard Water District (prior to January 1983 by U.S. Bureau of Reclamation); these are used for comparison to recorder and for determining missing record on gate recorder.

09523400. TITSINK CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.27, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 0.6 mi. downstream from turnout from All-American Canal and 7.2 mi. downstream from Imperial Dam.

PERIOD OF RECORD.--August 1950 to current year (monthly discharge only). Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523600. YAQUI CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 700 ft downstream from turnout from All-American Canal and 11.1 mi. downstream from Imperial Dam.

PERIOD OF RECORD.--June 1950 to current year (monthly discharge only). Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523800. PONTIAC CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 500 ft downstream from turnout from All-American Canal and 13.1 mi. downstream from Imperial Dam.

PERIOD OF RECORD.--August 1950 to current year (monthly discharge only). Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523900. WALAPAI CANAL.

LOCATION.--Water-stage recorder and sharp-crested weir in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 100 ft downstream from siphon-drop powerplant forebay and 4.3 mi. north of Yuma.

PERIOD OF RECORD.--October 1946 to current year (monthly discharge only). Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09524000. YUMA MAIN CANAL AT SIPHON-DROP POWERPLANT.--See p. 327.

09524500. DIVERSIONS FROM YUMA MAIN CANAL BETWEEN SIPHON-DROP POWERPLANT AND YUMA MAIN CANAL WASTEWAY.

LOCATION.--Turnouts for several canals diverting from Yuma Main Canal between siphon-drop powerplant, 4 mi. north of Yuma, and Yuma Main Canal wasteway, 1,600 ft upstream from Colorado River siphon.

PERIOD OF RECORD.--October 1940 to current year (monthly discharge only). Prior to October 1947 published in WSP 1313. October 1947 to September 1965 published as supplemental table with records for Yuma Main Canal at siphon-drop powerplant.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

COOPERATION.--Record furnished by U.S. Bureau of Reclamation.

09525500. YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON.--See p. 329.

09526000. DIVERSION FROM YUMA MAIN CANAL FOR MUNICIPAL SUPPLY FOR YUMA.

LOCATION.--Sparling and Venturi flowmeters, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.35, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, on two pipelines, respectively, about 1,000 ft downstream from intake, which is at outlet of Colorado River siphon of Yuma Main Canal, on Arizona side of Colorado River at Yuma.

PERIOD OF RECORD.--June 1945 to current year (monthly discharge only). Prior to October 1973 published as a supplemental table with records for Yuma Main Canal below Colorado River siphon.

REMARKS.--Record shows water for Yuma municipal supply; prior to 1962 was supplement only to total Yuma municipal supply. Figures shown in table herewith are also included in record for Yuma Main Canal below Colorado River siphon (sta 09525500).

COOPERATION.--Records furnished by Yuma County Water Users' Association.

09527500. ALL-AMERICAN CANAL BELOW PILOT KNOB WASTEWAY.--See p. 331.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Diversions at and below Imperial Dam, AZ-CA--Continued

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	North Gila Main Canal 09522600	North Gila Main Canal No. 2 09522650	Wellton-Mohawk Canal 09522700	South Gila Main Canal 09522800	Gila Gravity Main Canal at pumping plant 09522850
October	3,620	334	21,100	3,450	16,490
November	2,510	1,040	15,040	2,510	11,020
December	1,480	109	8,880	1,050	6,510
CAL YR 1982	39,460	7,040	384,100	34,400	221,610
January	2,320	422	15,960	1,480	10,280
February	2,480	398	16,060	1,740	8,680
March	3,820	386	29,730	2,370	16,490
April	3,820	537	36,230	2,540	19,240
May	4,620	630	39,230	3,590	25,030
June	4,290	711	49,080	3,110	29,280
July	3,410	759	44,600	3,240	31,610
August	1,720	406	28,110	1,970	21,020
September	1,550	407	33,100	4,210	26,790
WIR YR 1983	35,660	6,200	337,100	31,260	222,440

Month	Unit B Main Canal 09522900	Reservation Main Canal 09523200	Titsink Canal 09523400	Yaqui Canal 09523600	Pontiac Canal 09523800
October	2,270	3,140	31	273	1,090
November	1,680	2,140	12	291	490
December	782	1,070	5.2	157	29
CAL YR 1982	28,862	51,750	475	8,340	7,000
January	1,500	2,070	5.8	401	350
February	1,070	2,860	5.6	505	210
March	2,120	3,600	8.4	689	274
April	2,230	4,220	43	845	301
May	3,370	4,410	34	685	306
June	3,960	4,800	38	833	500
July	3,950	5,210	32	910	431
August	2,970	3,570	6.6	702	381
September	3,320	2,460	0	804	286
WIR YR 1983	29,222	39,560	222	7,090	4,640

Month	Walapai Canal 09523900	Diversions from Yuma Main Canal 09524500	Diversions from Yuma Main Canal for Yuma supply 09526000
October	1,420	628	1,294
November	384	75	1,003
December	382	61	825
CAL YR 1982	13,160	6,630	14,565
January	492	28	935
February	333	161	799
March	820	403	1,036
April	887	342	1,174
May	784	444	1,509
June	513	493	1,653
July	514	417	1,767
August	540	377	1,369
September	425	495	1,518
WIR YR 1983	7,530	3,920	14,882

Note.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, AZ-CA

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, Hydrologic Unit 15030107, on right bank 3,200 ft downstream from intake at east end of Imperial Dam.

PERIOD OF RECORD.--August 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 160.00 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 500 ft³/s, which are fair. Gila Gravity Main Canal diverts water from Colorado River at left end of Imperial Dam for irrigation of lands in the Gila Project area in Arizona. Diversions to this canal began Aug. 17, 1943. Diversions to North Gila Valley from this canal began Dec. 16, 1954.

AVERAGE DISCHARGE.--24 years (water years 1960-83), 1,165 ft³/s, 844,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,240 ft³/s May 25, 1965; no flow at canal intake at times in several years when intake gates were closed.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	1050	.00	393	385	1200	968	600	1760	1550	1490	1650
2	851	1170	.00	263	471	969	689	1440	1680	1090	1870	1510
3	716	1100	.00	720	212	642	576	1570	1610	779	1810	1100
4	1180	893	380	851	32	597	1280	1670	1490	1320	1720	992
5	1200	562	677	720	30	270	1310	1610	1320	1620	1400	1290
6	1110	392	918	581	33	315	1470	1270	1870	1800	953	1560
7	1100	386	1160	382	137	731	1320	1040	1940	1740	957	1480
8	864	898	853	278	304	925	1040	684	1810	1600	1230	1350
9	598	993	334	230	405	1040	741	1460	1870	1390	1130	1150
10	470	942	29	858	470	949	542	1560	1790	806	707	1000
11	932	784	62	1020	343	632	1380	1570	1540	1310	416	701
12	901	538	105	878	210	417	1450	1500	1210	1760	620	1800
13	1000	359	247	776	240	411	1540	1280	1920	1780	649	1620
14	810	357	290	487	717	1250	1390	843	1710	1760	628	1870
15	640	883	290	439	658	1290	1110	330	1710	1610	1000	1790
16	440	772	279	328	846	1370	700	1380	1710	1150	944	1330
17	536	701	193	758	766	1250	429	1540	1540	929	384	919
18	1080	416	271	769	660	860	1330	1590	906	1640	237	730
19	1280	378	403	696	376	514	1350	1530	680	1680	135	1200
20	1190	342	544	567	321	472	1340	1570	1410	1690	135	1190
21	889	343	476	474	1120	1470	1210	1040	1440	1730	29	1100
22	668	840	512	355	1340	1290	785	755	1340	1530	700	1310
23	383	893	181	188	1320	1250	511	1460	1450	1040	705	994
24	282	830	68	848	1240	1050	618	1650	1680	853	903	643
25	900	562	52	792	996	883	1420	1500	1090	1630	902	600
26	999	452	52	728	581	673	1490	1590	740	1640	1190	1010
27	1000	27	675	623	753	623	1590	1640	1670	1580	1030	1140
28	868	.00	893	449	1140	1080	1380	1200	1510	1530	740	1130
29	530	.00	901	199	---	1130	1090	1070	1560	1480	1270	1060
30	398	.00	633	149	---	1110	865	1470	1580	1200	1340	669
31	355	---	370	506	---	1270	---	1700	---	951	1780	---
TOTAL	25400	17863.00	11848.00	17305	16106	27933	32914	41112	45536	44168	29004	35888
MEAN	819	595	382	558	575	901	1097	1326	1518	1425	936	1196
MAX	1280	1170	1160	1020	1340	1470	1590	1700	1940	1800	1870	1870
MIN	282	.00	.00	149	30	270	429	330	680	779	29	600
AC-FT	50380	35430	23500	34320	31950	55410	65280	81550	90320	87610	57530	71180
CAL YR 1982	TOTAL	374935.00	MEAN	1027	MAX	1990	MIN	.00	AC-FT	743700		
WTR YR 1983	TOTAL	345077.00	MEAN	945	MAX	1940	MIN	.00	AC-FT	684500		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09523000 ALL-AMERICAN CANAL NEAR IMPERIAL DAM, CA-AZ

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, Hydrologic Unit 15030107, on left bank 6,000 ft downstream from intake at west end of Imperial Dam and 13.7 mi upstream from turnout to Yuma Main Canal.

PERIOD OF RECORD.--October 1938 to current year. Prior to October 1939 monthly discharge only, published in WSP 1313.

GAGE.--Water-stage recorder. Datum of gage is 150.00 ft, National Geodetic Vertical Datum of 1929 (subject to undetermined changes caused by earthquake of May 18, 1940). Since Aug. 21, 1952, auxiliary water-stage recorder 18.5 mi downstream from base gage.

REMARKS.--Records excellent. All-American Canal diverts water from Colorado River at Imperial Dam. Water is used for power development and for irrigation in Yuma, Coachella, and Imperial Valleys. Water can be released back to the river through Pilot Knob powerplant and wasteway for power, regulatory purposes, or for downstream use in Mexico. First diversion to All-American Canal began October 1938, but prior to October 1940 was used only for priming canal.

COOPERATION.--Daily discharge figures furnished by Imperial Irrigation District (discharge figures reviewed in accordance with Geological Survey standard practice).

AVERAGE DISCHARGE.--42 years (water years 1942-83), 7,020 ft³/s, 5,086,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 14,400 ft³/s, Apr. 17, July 15, 16, 1980; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5630	3720	3730	5640	11700	5830	8000	13200	13000	9660	10900	12500
2	5410	3820	3800	6310	11300	4410	7840	12400	13300	9360	11000	13100
3	5180	3940	3600	7150	10700	3540	8000	12300	13400	9240	10800	13200
4	5100	3490	3290	6980	10000	3210	8450	12400	13800	8950	10700	13200
5	5140	3500	3460	7740	9110	3080	9390	12300	13700	9020	10800	13400
6	5150	3750	3560	8870	7900	3050	9930	12600	13800	9210	10700	13800
7	5120	3720	3640	10300	5940	3280	10700	11400	13900	9550	10800	13600
8	4950	3890	3580	10700	5690	4010	11100	10200	14000	9830	11000	13400
9	4820	3820	3370	10300	4410	3930	11200	10700	13900	9810	10800	13300
10	4740	3720	4200	10300	2900	4630	11500	11300	13800	9890	10800	13100
11	4750	2830	3320	10300	2630	5250	10900	11500	13700	10100	10800	12900
12	5010	3320	2350	10300	3290	5330	11300	11700	13500	9880	10500	13000
13	5180	2820	2380	10700	2880	5310	11500	11900	14100	9910	10500	13100
14	5130	2580	2260	11600	2930	6770	11600	12200	14200	9920	10600	13400
15	4980	2990	2110	11800	3570	7960	11700	12900	14200	10400	10800	13700
16	4720	3300	2080	12100	3890	8580	11900	11600	14100	10600	11000	13700
17	4770	3210	2260	11700	4180	9560	12000	11800	13800	10700	10700	13500
18	4880	3190	2060	11900	4020	10100	11000	11800	13700	10600	10300	13300
19	4880	3010	1970	12000	4190	9880	11100	12000	13600	10900	10400	13500
20	4880	2660	2170	12400	3860	9760	11400	11500	13600	10800	10800	13400
21	5180	2600	2500	12200	4810	10000	11700	12000	13800	10900	11000	13200
22	4830	3160	2410	11800	5870	9460	12400	12600	14000	11000	10800	12900
23	4600	3360	2790	11500	6660	9490	12800	11900	14200	11300	10800	13200
24	4530	2950	2200	11500	7440	9060	12600	11900	12600	11400	11000	12300
25	4560	2550	2050	12000	6950	8310	11700	12300	9150	11200	11000	12600
26	4710	2760	2680	12100	7150	7430	11800	12200	8790	10700	10900	12300
27	4590	2900	3490	11200	7420	6910	11700	12200	8590	10700	10900	11800
28	4500	3190	3640	10600	6830	7450	12300	13000	8770	10600	10700	12100
29	4300	3350	3880	10900	---	7970	12300	13300	9190	10700	11000	12400
30	3900	3810	4070	10600	---	8440	12600	13200	9510	10600	11400	12100
31	3660	---	4240	11200	---	8760	---	13000	---	10800	12500	---
TOTAL	149780	97910	93140	324690	168220	210750	332410	375300	383700	318230	336700	391000
MEAN	4832	3264	3005	10470	6008	6798	11080	12110	12790	10270	10860	13030
MAX	5630	3940	4240	12400	11700	10100	12800	13300	14200	11400	12500	13800
MIN	3660	2550	1970	5640	2630	3050	7840	10200	8590	8950	10300	11800
AC-FT	297100	194200	184700	644000	333700	418000	659300	744400	761100	631200	667800	775500
CAL YR 1982	TOTAL	2174070	MEAN	5956	MAX	11000	MIN	1970	AC-FT	4312000		
WTR YR 1983	TOTAL	3181830	MEAN	8717	MAX	14200	MIN	1970	AC-FT	6311000		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09524000 YUMA MAIN CANAL AT SIPHON-DROP POWERPLANT, NEAR YUMA, AZ

LOCATION.--Lat 32°46'36", long 114°38'05", in SE¼SE¼ sec.10, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on right bank at downstream end of powerplant, 500 ft from turnout from All-American Canal to Yuma Main Canal, 4.0 mi north of Yuma, and 14.9 mi downstream from intake of All-American Canal at Imperial Dam.

PERIOD OF RECORD.--July 1926 to current year. Prior to October 1938, monthly discharge only published in WSP 1313. Diversions from All-American Canal and Yuma Main Canal previously published with this record are listed separately in this report.

GAGE.--Water-stage recorders on two rated by-pass gates to record gate openings. Datum of gage is 136.8 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those between 100 and 300 ft³/s, which are fair, and those below 100 ft³/s, which are poor. Discharge through bypass gates determined from relationship of forebay elevation and gate openings. Flow to Yuma Main Canal regulated by opening and closing bypass gates. Gates on All-American Canal open and close automatically to maintain a constant forebay elevation. Records of daily discharge show quantity of water diverted from All-American Canal to Yuma Main Canal, except that diverted from forebay of powerplant to Walapai Canal. (See sta 09523900.) Flow through turbines of powerplant was discontinued Dec. 8, 1972.

COOPERATION.--Gate opening changes and forebay elevations furnished by Yuma County Water Users' Association.

EXTREMES.--1930 to current year: Maximum daily discharge, 2,040 ft³/s Nov. 11, 1943; no flow for several days in 1937-39, 1945.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	21	831	105	202	383	624	241	505	508	216	511
2	600	21	913	57	231	383	442	286	464	435	217	523
3	601	21	900	207	293	199	112	507	399	335	334	432
4	723	21	711	330	44	276	137	654	389	335	734	322
5	793	232	646	294	31	230	141	621	290	311	839	344
6	784	697	804	290	31	86	251	491	370	526	684	405
7	710	593	772	260	31	90	683	402	428	698	512	461
8	682	529	853	252	31	180	725	122	491	655	497	525
9	652	515	792	153	67	306	609	220	467	507	564	498
10	484	442	175	149	129	617	463	261	453	460	603	487
11	446	362	28	248	72	629	542	347	406	562	497	385
12	532	421	57	379	54	497	646	698	290	687	347	353
13	719	472	55	352	86	355	687	693	461	713	266	405
14	725	420	62	295	184	463	690	447	543	694	180	508
15	768	382	79	277	459	653	652	273	539	708	229	497
16	629	382	66	260	593	702	581	428	526	690	200	415
17	530	376	40	190	596	707	229	583	424	536	190	462
18	574	286	34	336	557	588	171	612	370	479	243	488
19	745	277	25	448	445	387	331	603	274	571	178	530
20	799	355	57	427	140	184	411	520	332	627	155	540
21	820	376	81	259	194	167	596	343	467	611	108	524
22	702	517	100	223	238	255	614	158	609	601	163	591
23	678	584	130	130	334	318	552	189	662	599	295	534
24	654	589	59	136	646	580	370	323	553	568	413	470
25	719	478	27	330	652	577	342	423	424	557	496	420
26	787	436	42	404	612	448	540	662	319	684	469	493
27	783	593	206	315	387	275	614	722	402	714	417	467
28	763	552	308	144	313	381	609	498	478	668	336	516
29	651	477	287	72	---	546	538	332	535	611	415	512
30	580	693	167	45	---	672	428	220	582	441	500	451
31	88	---	121	53	---	721	---	404	---	172	482	---
TOTAL	20330	12120	9428	7420	7652	12855	14330	13283	13452	17263	11779	14069
MEAN	656	404	304	239	273	415	478	428	448	557	380	469
MAX	820	697	913	448	652	721	725	722	662	714	839	591
MIN	88	21	25	45	31	86	112	122	274	172	108	322
AC-FT	40320	24040	18700	14720	15180	25500	28420	26350	26680	34240	23360	27910
CAL YR 1982	TOTAL	215252	MEAN	590	MAX	1420	MIN	21	AC-FT	427000		
WTR YR 1983	TOTAL	153981	MEAN	422	MAX	913	MIN	21	AC-FT	305400		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09525000 YUMA MAIN CANAL WASTEWAY AT YUMA, AZ

LOCATION.--Lat 32°44'00", long 114°37'20", in SW¼ sec.26, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, 45 ft downstream from wasteway gates from Yuma Main Canal which are 1,645 ft upstream from intake of Colorado River siphon on Yuma Main Canal, 0.5 mi north of Yuma, and 3.2 mi downstream from siphon-drop powerplant on Yuma Main Canal.

PERIOD OF RECORD.--April 1913 to current year. Monthly discharge only for some periods, published in WSP 1313.

GAGE.--Water-stage recorder for low flows only, with supplementary recorder on wasteway gate. Datum of gage is 122.51 ft, National Geodetic Vertical Datum of 1929. Prior to Apr. 1, 1968, gate-opening record used for low flows only.

REMARKS.--Records good except those below 150 ft³/s, which are fair. The wasteway discharges into Colorado River in SW¼ sec.26, T.16 S., R.22 E., 1,000 ft upstream from station on Colorado River below Yuma Main Canal wasteway at Yuma. Discharges above 100 ft³/s are generally computed as difference between discharge of Yuma Main Canal at siphon-drop powerplant and Yuma Main Canal below Colorado River siphon, with deductions for small irrigation diversions from canal between these stations. Discharges below 100 ft³/s are generally computed from stage-discharge relation. Records do not include flow of Reservation Main Drain No. 4.

EXTREMES.--1930 to current year: Maximum daily discharge, 2,020 ft³/s Dec. 24, 25, 1948; no flow for several days in 1937-39, 1945, 1950, 1971.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	7.3	577	13	10	7.7	8.0	6.7	6.2	6.0	6.0	6.0
2	125	7.7	617	4.6	8.5	10	8.0	6.5	8.7	6.0	6.0	6.0
3	140	4.8	595	4.6	154	7.5	8.0	6.5	6.3	6.0	6.0	6.0
4	165	2.1	561	5.4	25	6.7	6.4	6.4	7.6	6.0	6.0	6.0
5	199	3.1	576	5.4	8.3	7.3	13	6.2	19	6.0	6.0	6.0
6	205	137	689	5.4	8.1	9.6	4.4	5.9	8.0	6.0	6.0	6.0
7	175	165	637	5.3	8.4	7.6	4.0	6.1	7.7	6.0	6.0	6.0
8	147	168	681	5.2	8.9	7.4	3.9	6.2	7.7	6.0	6.0	6.0
9	175	182	661	9.1	9.0	7.7	3.9	6.0	7.7	6.0	6.0	6.0
10	67	181	164	6.0	9.1	7.7	6.6	6.2	7.7	6.0	6.0	6.0
11	17	163	4.6	6.3	9.5	7.7	5.4	5.9	12	6.0	6.0	6.0
12	72	163	18	5.9	9.7	7.1	4.6	5.4	7.7	6.0	6.0	6.0
13	193	140	12	11	9.7	11	4.6	5.7	7.5	6.0	6.0	6.0
14	186	125	5.4	17	9.4	7.6	7.6	6.9	7.1	6.0	6.0	6.0
15	211	130	6.2	6.2	8.9	6.6	5.0	8.0	7.3	6.0	6.0	6.0
16	184	104	26	6.5	8.8	6.2	4.6	6.2	7.3	6.0	6.0	6.0
17	184	126	6.9	6.9	8.3	8.0	5.3	5.4	10	6.0	6.0	6.0
18	211	139	6.9	6.9	7.9	8.0	5.4	8.8	11	6.0	6.0	6.0
19	243	132	7.7	7.2	7.6	8.0	6.0	9.1	8.0	6.0	6.0	6.0
20	260	181	8.5	7.8	11	8.0	7.2	12	8.0	6.0	6.0	6.0
21	277	215	8.5	8.9	13	8.0	7.6	6.2	9.2	6.0	6.0	6.0
22	249	313	12	13	7.0	8.0	6.7	6.2	6.4	6.0	6.0	6.0
23	235	324	9.3	17	6.9	8.0	6.9	11	6.0	6.0	6.0	6.0
24	226	343	8.5	13	6.9	8.0	8.8	6.2	6.0	6.0	6.0	6.0
25	244	331	8.5	11	7.2	8.0	9.8	6.3	6.0	6.0	6.0	6.0
26	263	318	8.5	8.8	7.3	8.0	7.2	6.6	6.0	6.0	6.0	6.0
27	245	358	8.5	8.9	13	8.0	6.7	7.2	6.0	6.0	6.0	6.0
28	259	306	11	20	7.7	8.0	6.7	7.0	6.0	6.0	6.0	6.0
29	206	259	19	9.7	---	8.0	6.8	7.0	6.0	6.0	6.0	6.0
30	209	418	8.5	8.9	---	8.0	6.9	7.0	6.0	6.0	6.0	6.0
31	24	---	13	8.5	---	8.0	---	7.0	---	6.0	6.0	---
TOTAL	5741	5446.0	5975.5	273.4	409.1	245.4	196.0	213.8	236.1	186.0	186.0	180.0
MEAN	185	182	193	8.82	14.6	7.92	6.53	6.90	7.87	6.00	6.00	6.00
MAX	277	418	689	20	154	11	13	12	19	6.0	6.0	6.0
MIN	17	2.1	4.6	4.6	6.9	6.2	3.9	5.4	6.0	6.0	6.0	6.0
AC-FT	11390	10800	11850	542	811	487	389	424	468	369	369	357
CAL YR 1982	TOTAL	63103.9	MEAN	173	MAX	966	MIN	2.1	AC-FT	125200		
WTR YR 1983	TOTAL	19288.3	MEAN	52.8	MAX	689	MIN	2.1	AC-FT	38260		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

329

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, AZ

LOCATION.--Two gages, one at each end of canal siphon passing under Colorado River. At intake, lat 32°43'49", long 114°37'09", in NE¼NE¼ sec.35, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on left bank 1,645 ft downstream from center of Yuma Main Canal wasteway gates and 3.5 mi downstream from siphon-drop power-plant. At outlet, in NW¼NE¼ sec.35, T.16 S., R.22 E., San Bernardino meridian, in Arizona, Yuma County, on right bank. Siphon crossing is 1,300 ft upstream from 4th Avenue bridge over Colorado River at Yuma.

PERIOD OF RECORD.--January 1924 to current year. Prior to October 1938, monthly discharge only published in WSP 1313. Diversion from Yuma Main Canal for municipal supply for Yuma (sta 09526000), published with this record prior to October 1973, is listed separately in this report.

REVISED RECORDS.--WSP 1713: 1958, 1959 (Yuma municipal supply).

GAGE.--Water-stage recorder at each end of siphon. Datum of each gage is 100.62 ft, National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1963, at datum 0.05 ft lower. Elevation of sill of inlet is 125.5 ft, NGVD. Prior to Oct. 29, 1938, nonrecording gages at approximately same sites, read simultaneously.

REMARKS.--Records good except those below 100 ft³/s, which are poor. Daily discharge computed from relation between discharge and head on siphon, which is the difference between intake and outlet gages. Records show quantity of water delivered through Colorado River siphon for irrigation in the Valley Division of the Yuma Project and for supplementary municipal supply for city of Yuma (see sta 09526000).

AVERAGE DISCHARGE.--59 years, 460 ft³/s, 333,300 acre-ft/yr.

EXTREMES.--1930 to current year: Maximum daily discharge, 948 ft³/s Aug. 16, 1962; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	439	.00	256	111	217	360	604	256	518	469	224	476
2	455	.00	309	58	246	359	445	297	434	415	236	497
3	451	.00	299	176	109	223	150	489	368	344	329	411
4	547	.00	117	295	30	287	143	588	374	316	677	327
5	569	56	50	288	10	241	161	555	274	321	750	338
6	569	554	89	270	10	127	252	459	379	512	642	396
7	525	428	112	252	10	126	649	384	438	639	485	430
8	525	361	136	241	10	180	671	148	497	625	487	487
9	469	333	134	155	50	286	563	218	469	491	528	465
10	412	256	22	154	175	580	437	262	451	447	572	465
11	426	199	26	240	127	587	504	326	418	541	474	381
12	460	250	49	324	114	468	600	632	311	650	339	352
13	496	332	58	311	137	321	636	610	427	670	274	391
14	502	295	62	276	218	435	641	406	503	638	205	492
15	537	252	64	259	425	607	602	276	519	670	255	489
16	438	278	55	234	529	648	540	379	527	648	217	415
17	346	240	43	190	526	643	230	534	423	507	211	460
18	363	141	36	305	476	549	163	557	380	447	258	474
19	497	145	13	399	391	366	328	544	291	545	183	515
20	539	174	46	381	178	203	396	484	325	603	172	525
21	543	161	71	253	212	198	567	341	469	581	129	516
22	453	204	91	224	258	251	576	181	582	581	188	550
23	443	260	128	146	319	294	512	206	597	575	291	500
24	428	246	46	153	569	536	356	320	520	533	375	435
25	475	147	14	305	563	541	326	413	410	542	460	390
26	520	118	25	371	521	438	505	643	340	641	422	474
27	538	235	186	301	353	278	564	687	405	683	398	445
28	474	246	297	156	304	356	558	519	515	636	329	473
29	405	218	262	116	---	531	508	330	522	582	408	492
30	364	275	178	98	---	625	411	210	567	431	499	433
31	64	---	141	99	---	677	---	394	---	169	476	---
TOTAL	14272	6404.00	3415	7141	7087	12321	13598	12648	13253	16452	11493	13494
MEAN	460	213	110	230	253	397	453	408	442	531	371	450
MAX	569	554	309	399	569	677	671	687	597	683	750	550
MIN	64	.00	13	58	10	126	143	148	274	169	129	327
AC-FT	28310	12700	6770	14160	14060	24440	26970	25090	26290	32630	22800	26770
CAL YR 1982	TOTAL	147011.00	MEAN	403	MAX	850	MIN	.00	AC-FT	291600		
WTR YR 1983	TOTAL	131578.00	MEAN	360	MAX	750	MIN	.00	AC-FT	261000		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09527000 PILOT KNOB POWERPLANT AND WASTEWAY NEAR PILOT KNOB, CA

LOCATION.--Lat 32°44'15", long 114°42'56", in NW¼SW¼ sec.25, T.16 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 2 mi east of summit of Pilot Knob, 6 mi west of Yuma, AZ, and 20.8 mi downstream from intake of All-American Canal at Imperial Dam.

PERIOD OF RECORD.--February 1939 to current year. Prior to October 1943 monthly discharge only, published in WSP 1313. Prior to October 1956, published as Pilot Knob wasteway near Pilot Knob.

GAGE.--Water-stage recorder in forebay on right bank of All-American Canal (also used as auxiliary gage for sta 09527500); tailrace gage with remote recorder logged hourly in control house; calibrated wicket gates for turbine flow and calibrated bypass gates for wasteway flow which are logged for each change. Datum of forebay staff gage is 150.00 ft; that of tailrace staff gage is 0.00 ft; elevation of sill of bypass gates is 147.88 ft, National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent above 1,200 ft³/s and good below. Daily discharge computed from head and gate openings on wicket gates. Records show water released through Pilot Knob powerplant and wasteway from All-American Canal and returned to Colorado River through Rockwood gates. Pilot Knob wasteway completed in summer of 1938 and first flow occurred Feb. 5, 1939. Pilot Knob powerplant was completed in January 1957 and first flow occurred Jan. 14, 1957. See table below for monthly return flow by Pilot Knob wasteway only.

COOPERATION.--Daily discharge figures furnished by Imperial Irrigation District (discharge figures reviewed in accordance with Geological Survey standard practice).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 9,600 ft³/s Feb. 4, 1983; no flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	168	.00	3450	8720	1890	1830	6890	6480	3350	4330	6500
2	.00	171	.00	4550	8790	1850	1780	6230	6780	3140	4410	7640
3	.00	159	.00	4710	9500	1840	1930	6070	7410	3690	3930	8060
4	.00	87	.00	4220	9600	1840	2310	5940	8430	3720	3330	7910
5	.00	100	.00	4730	8320	1850	2640	5600	8650	3350	3450	8080
6	.00	99	.00	5450	7540	1860	2800	6310	8250	3080	3950	8030
7	.00	.00	.00	6990	5270	1990	3080	6020	8050	2720	4280	7580
8	.00	.00	.00	7510	5000	2400	3690	4890	7780	3100	5040	7650
9	.00	.00	874	7510	3540	2450	4120	4720	7400	3660	5360	8490
10	.00	.00	3240	6970	1730	2400	5370	5260	7830	4100	5810	8400
11	.00	.00	2720	6440	1310	2610	4100	4980	8220	3580	6300	8330
12	.00	.00	1540	6300	1800	2690	4140	4950	7850	3190	6510	8380
13	.00	.00	1520	6560	1310	2680	4130	5200	7870	3090	6950	8340
14	.00	.00	1180	7460	996	2940	4900	5980	7590	3140	6790	8060
15	.00	20	1050	7730	996	2970	5570	6450	7950	3610	6280	8080
16	.00	.00	1050	8210	996	2910	5930	4960	8110	4380	6870	8580
17	.00	.00	1050	8110	1270	2850	6500	5060	8240	4640	7270	8510
18	.00	.00	1050	7730	1260	3130	5550	5180	8250	4120	7970	8280
19	.00	.00	1050	7710	1320	3100	5140	5480	7640	3990	8220	8350
20	.00	.00	1070	8160	1150	3100	5060	5440	7390	3770	8000	8210
21	.00	.00	1180	8290	1600	3130	5170	6170	7570	3890	8160	8400
22	.00	.00	1210	8340	1940	3170	6030	6720	7070	4280	7440	8400
23	.00	.00	1210	8190	2280	3330	6740	6200	7240	4810	6970	8560
24	.00	.00	1340	7840	2500	3010	6700	5990	6900	4920	6440	8310
25	.00	.00	1300	7830	2020	2900	5960	6000	3440	4800	6050	7890
26	.00	.00	1320	8170	2160	2890	5790	5860	3570	4010	5820	7490
27	.00	.00	1270	8410	2370	2460	5240	6070	3400	4030	5390	7960
28	.00	.00	976	8390	2210	2590	5710	7310	3110	4240	5320	7570
29	.00	.00	1110	8770	---	2470	5920	7800	3200	4610	5180	7860
30	.00	.00	1410	8960	---	2380	6380	7650	3320	4730	5310	7940
31	25	---	1600	8440	---	2290	---	6780	---	4890	6450	---
TOTAL	25.00	804.00	31320.00	222130	97498	79970	140210	184160	204990	120630	183580	241840
MEAN	.81	26.8	1010	7165	3482	2580	4674	5941	6833	3891	5922	8061
MAX	25	171	3240	8960	9600	3330	6740	7800	8650	4920	8220	8580
MIN	.00	.00	.00	3450	996	1840	1780	4720	3110	2720	3330	6500
AC-FT	50	1590	62120	440600	193400	158600	278100	365300	406600	239300	364100	479700
(*)	50	1590	83	0	89	0	0	0	0	0	0	28

CAL YR 1982 TOTAL 380962.00 MEAN 1044 MAX 3340 MIN .00 AC-FT 755600 * 1730
WTR YR 1983 TOTAL 1507157.00 MEAN 4129 MAX 9600 MIN .00 AC-FT 2989000 * 1840

* Return flow, in acre-feet, by Pilot Knob wasteway (included in daily discharge table).

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

331

09527500 ALL-AMERICAN CANAL BELOW PILOT KNOB WASTEWAY, CA

LOCATION.--Lat 32°44'07", long 114°43'23", in NW¼SE¼ sec.26, T.16 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, on left bank 0.4 mi downstream from Pilot Knob wasteway, 6 mi west of Yuma, Ariz., 15 mi upstream from turnout to Coachella Canal, and 21.2 mi downstream from intake at Imperial Dam.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 150.00 ft, National Geodetic Vertical Datum of 1929. Auxiliary water-stage recorder on right bank 0.4 mi upstream used to determine head on Pilot Knob check gates (also used as forebay gage for sta 09527000, Pilot Knob powerplant and wasteway). Datum of auxiliary gage is 150.00 ft, NGVD.

REMARKS.--Records excellent. Water is used for power development at four sites below station, and for irrigation in Coachella and Imperial Valleys.

COOPERATION.--Daily discharge figures furnished by Imperial Irrigation District (discharge figures reviewed in accordance with Geological Survey standard practice).

AVERAGE DISCHARGE.--22 years, 4,622 ft³/s, 3,349,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,610 ft³/s Apr. 27, 28, 1976; no flow Jan. 4, 1967.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4940	3380	2640	1800	2580	3510	5300	5530	5510	5070	5750	5230
2	4730	3450	2770	1540	2040	1990	5290	5630	5620	5020	5900	4700
3	4510	3610	2620	1970	1090	1130	5470	5540	5180	4530	5990	4440
4	4390	3190	2440	2180	651	722	5630	5550	4600	4430	6120	4650
5	4370	2960	2710	2380	535	642	6200	5660	4400	4820	6070	4410
6	4370	2770	2730	2900	215	819	6440	5440	4540	5140	5610	4750
7	4340	2940	2830	2740	551	837	6600	4950	4710	5610	5500	5280
8	4170	3160	2710	2670	477	1110	6380	4740	5100	5580	5450	4970
9	4000	3120	1680	2300	579	939	6130	5270	5480	5130	4910	4130
10	4100	3070	852	2760	787	1350	5530	5340	5000	4830	4440	4030
11	4110	2310	580	3310	993	1730	5900	5650	4410	5400	4270	3850
12	4290	2680	684	3350	1150	1930	6050	5760	4700	5610	3800	4020
13	4330	2190	659	3460	1150	1960	6230	5660	4830	5710	3190	3980
14	4310	1950	873	3510	1400	3020	5730	5380	5290	5680	3350	4390
15	4150	2400	819	3380	1710	4080	5360	5720	4970	5700	4160	4770
16	3990	2690	772	3120	1970	4830	5280	5950	4790	5300	3880	4410
17	4120	2620	1070	2960	2110	5800	5070	5770	4440	5360	3030	4250
18	4130	2710	869	3560	1970	6230	5160	5690	4250	5530	1630	4240
19	4010	2490	817	3700	2130	6250	5330	5580	4860	5770	1580	4130
20	3980	2030	835	3550	2170	6320	5510	5250	5140	5890	2010	4290
21	4240	1960	1110	3340	2540	6320	5630	5090	5000	5890	2050	3830
22	4000	2350	879	2840	3270	5850	5510	5200	5580	5690	2780	3440
23	3740	2510	972	2700	3780	5710	5310	5210	5680	5410	3210	3640
24	3690	2160	565	3230	4250	5380	5240	5310	5010	5360	3930	2970
25	3710	1810	592	3640	4260	4780	5150	5570	4730	5440	4390	3720
26	3790	2000	1150	3520	4300	4180	5210	5550	4370	5650	4590	4040
27	3650	2040	1760	2380	4600	4060	5490	5220	4200	5580	4960	3050
28	3580	2430	2010	1640	4370	4300	5610	4840	4530	5380	4840	3750
29	3480	2630	2090	1650	---	4740	5530	4690	4800	5180	4930	3860
30	3170	2700	2080	1400	---	5180	5400	4840	4960	5040	5090	3580
31	3370	---	1970	2290	---	5520	---	5350	---	5230	5200	---
TOTAL	125760	78310	47138	85770	57628	111219	168670	166930	146680	165960	132610	124800
MEAN	4057	2610	1521	2767	2058	3588	5622	5385	4889	5354	4278	4160
MAX	4940	3610	2830	3700	4600	6320	6600	5950	5680	5890	6120	5280
MIN	3170	1810	565	1400	215	642	5070	4690	4200	4430	1580	2970
AC-FT	249400	155300	93500	170100	114300	220600	334600	331100	290900	329200	263000	247500
CAL YR 1982	TOTAL	1505248	MEAN	4124	MAX	7030	MIN	565	AC-FT	2986000		
WTR YR 1983	TOTAL	1411475	MEAN	3867	MAX	6600	MIN	215	AC-FT	2800000		

Return surface flows below Imperial Dam, AZ-CA

09525000. YUMA MAIN CANAL WASTEWAY.--See p. 328.

09527000. PILOT KNOB POWERPLANT AND WASTEWAY.--See p. 330.

09527900. MITTRY LAKE OUTLET CHANNEL.

LOCATION.--Water-stage recorder and sharp-crested weir, in NW¼SE¼ sec.14, T.7 S., R.22 W., Hydrologic Unit 15030107, 1,000 ft upstream from outlet to Colorado River and Laguna Dam.

PERIOD OF RECORD.--October 1974 to current year (monthly discharge only).

REMARKS.--Record shows return flow to Colorado River from Mittry Lake. Prior to Nov. 6, 1974, records furnished by Bureau of Reclamation. No discharge record, June 24 to September 30, 1983, gage inundated by Colorado River.

09528600. LAGUNA CANAL WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE¼SW¼ sec. 14, T.7 S., R.22 W., Hydrologic Unit 15030107, 1,000 ft downstream from Laguna Dam and 0.7 mi upstream from outlet to Colorado River.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Colorado River.

09528800. LEVEE CANAL WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE¼SW¼ sec.4, T.8 S., R.22 W., Hydrologic Unit 15030107, 1,000 ft upstream from outlet to Colorado River.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Colorado River.

09529000. NORTH GILA DRAIN NO. 1.

LOCATION.--Water-stage recorder, in SE¼SW¼ sec.4, T.8 S., R.22 W., Hydrologic Unit 15030107, 0.25 mi upstream from outlet to Colorado River and 5.5 mi downstream from Laguna Dam.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Colorado River.

09529050. NORTH GILA DRAIN NO. 3.

LOCATION.--Drain enters wasteway to Gila River in NE¼NE¼ sec.18, T.8 S., R.21 W., Hydrologic Unit 15070201, 1,000 ft upstream from Gila River.

PERIOD OF RECORD.--April 1962 to current year (monthly discharge only).

REMARKS.--Record shows seepage from Gila Gravity Main Canal.

09529100. FORTUNA WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in NE¼ sec.30, T.8 S., R.21 W., Hydrologic Unit 15070201, 1.3 mi upstream from Gila River.

PERIOD OF RECORD.--October 1960 to September 1963, October 1964 to current year (monthly discharge only).

REMARKS.--Record shows waste water spilled from Gila Gravity Main Canal; flow rarely reaches Gila River.

09529150. NORTH GILA MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder in NE¼NW¼ sec.22, T.8 S., R.22 W., Hydrologic Unit 15070201, 1,000 ft upstream from outlet to Gila River.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District. Prior to July 1966 record shows waste water less flow diverted for irrigation between gage and Gila River.

09529160. SOUTH GILA PUMP OUTLET CHANNEL NO. 3.

LOCATION.--In NW¼SE¼ sec.22, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.5 mi upstream from outlet to Gila River. Aug. 1, 1965, to Aug. 31, 1981, water-stage recorder at present site.

PERIOD OF RECORD.--January 1965 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells in South Gila Valley Unit and conveyed by concrete channel to Gila River.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation since Sept. 1, 1981.

Return surface flows below Imperial Dam, AZ-CA--Continued

09529200. BRUCE CHURCH DRAIN.

LOCATION.--At culvert in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.2 mi upstream from outlet to Gila River.

PERIOD OF RECORD.--April 1962 to current year (monthly discharge only).

REMARKS.--Record shows seepage water from parts of secs. 15, 16, and 21 (Bruce Church Ranch). Flow generally computed by interpolation between discharge measurements; prior to Nov. 30, 1970, and May to Sept. 1979, flow determined from pump rating.

09529240. SOUTH GILA PUMP OUTLET CHANNEL NO. 2.

LOCATION.--In SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.6 mi upstream from outlet to Gila River; prior to Oct. 18, 1965, outlet was to Wellton-Mohawk Main Outlet Drain.

PERIOD OF RECORD.--January 1962 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells in South Gila Valley Unit and conveyed by concrete channel to the Gila River.

COOPERATION.--Record furnished by U.S. Bureau of Reclamation since Sept. 1, 1981.

09529250. BRUCE CHURCH WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.20, T.8 S., R.22 W., Hydrologic Unit 15070201, 500 ft upstream from outlet to Gila River.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Gila River.

09529300. WELLTON-MOHAWK MAIN OUTLET DRAIN (CONVEYANCE CHANNEL).

LOCATION.--Water-stage recorder and Parshall flume in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.17, T.8 S., R.21 W., Hydrologic Unit 15070201, 7.8 mi upstream from outlet to Gila River (M.O.D.E. 1), which is 0.6 mi upstream from mouth of Gila River.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from numerous wells in Wellton-Mohawk Irrigation and Drainage District to lower the water table. Flow can be discharged to the Gila River or Colorado River by any one of or combination of five outlets. These outlets are: M.O.D.E. 1 (release to Gila River about 7.8 mi or below station); an overflow flume about 11.3 mi below station releases water to Colorado River; M.O.D.E. 2 (see sta 09531800) releases water to Colorado River above Morelos Dam; and M.O.D.E. 3 (see sta 09531900) releases water to Colorado River below Morelos Dam. Since June 1977 discharge of drain has been released to Wellton-Mohawk Bypass Drain and measured at Arizona-Sonora boundary (see sta 09533300). For water year 1983, in January, 79 acre-feet of water was released into the Gila River through M.O.D.E. 1 and in July, 307 acre-feet of water was pumped into the Gila River at M.O.D.E. 1 (discharge estimated by U.S. Bureau of Reclamation).

09529360. SOUTH GILA PUMP OUTLET CHANNEL NO. 1.

LOCATION.--In SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.30, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.2 mi upstream from outlet to Gila River, which is 0.6 mi upstream from mouth of Gila River.

PERIOD OF RECORD.--August 1961 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells in South Gila Valley Unit and conveyed by concrete channel to Gila River.

COOPERATION.--Record furnished by U.S. Bureau of Reclamation since Sept. 1, 1981.

09529400. SOUTH GILA DRAIN NO. 2.

LOCATION.--Near center of sec.24, T.8 S., R.23 W., Hydrologic Unit 15030107, at outlet to Colorado River.

PERIOD OF RECORD.--October 1960 to current year (monthly discharge only).

REMARKS.--Record shows ground-water drainage and occasional waste water from South Gila Valley Unit returned to Colorado River.

09529420. SOUTH GILA TERMINAL WASTEWAY.

LOCATION.--Water-stage recorder and Parshall flume in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.8 S., R.23 W., Hydrologic Unit 15030107, 2.0 mi upstream from outlet to Colorado River.

PERIOD OF RECORD.--March 1965 to current year (monthly discharge only).

REMARKS.--Record shows waste water from South Gila Canal of South Gila Valley Unit returned to Colorado River.

09529440. SOUTH GILA PUMP OUTLET CHANNEL NO. 4.

LOCATION.--In NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.26, T.8 S., R.23 W., Hydrologic Unit 15030107, 1.5 mi upstream from outlet to Colorado River.

PERIOD OF RECORD.--July 1965 to current year (monthly discharge only).

REMARKS.--Records show water pumped from wells in South Gila Valley Unit and conveyed by buried pipe and some open unlined channel to Colorado River.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation since Sept. 1, 1981.

Return surface flows below Imperial Dam, AZ-CA--Continued

09529600. RESERVATION DRAIN NO. 7.

LOCATION.--At downstream end of culvert on State Road 24 (formerly Avenue C), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.33, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 0.5 mi upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--March 1966 to current year (monthly discharge only).

REMARKS.--Record shows drainage water from sec.34, T.15 S., R.23 E., and is used with sta 09529700 to determine seepage from All-American Canal.

09529700. RESERVATION MAIN DRAIN NO. 6.

LOCATION.--Nonrecording gage on upstream right piling of Stallnacker Road Bridge (formerly 9th Street Bridge), in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.32, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian.

PERIOD OF RECORD.--March 1966 to current year (monthly discharge only).

REMARKS.--Record shows waste and drainage water from the Reservation Division, and is used with sta 09529600 to determine seepage from All-American Canal, which parallels drain for 4 mi.

09529800. RESERVATION DRAIN NO. 2.

LOCATION.--At upstream side of bridge on White Road, in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.6, T.16 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 0.9 mi upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--March 1966 to current year (monthly discharge only).

REMARKS.--Record used to compute seepage from All-American Canal in sec.31, T.15 S., R.22 E.

09529900. RESERVATION DRAIN NO. 3.

LOCATION.--At Jackson Road Bridge (formerly 5th Street Bridge), in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 1.0 mi upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--March 1966 to current year (monthly discharge only).

REMARKS.--Record used to compute seepage from All-American Canal upstream from Yuma Main Canal.

09530000. RESERVATION MAIN DRAIN NO. 4.

LOCATION.--Water-stage recorder in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.26, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 500 ft upstream from railroad culvert.

PERIOD OF RECORD.--January 1913 to April 1920, October 1921 to March 1925, January 1934 to current year (monthly discharge only) (calendar year discharge only 1934-36). Prior to October 1955, published as California drainage canal.

REMARKS.--Record shows waste and drainage water from area east of Yuma Main Canal on Reservation Division. Since 1939, seepage from All-American Canal has caused large increase. Flow is not included in the record of Yuma Main Canal wasteway.

09530200. YUMA MESA OUTLET DRAIN.

LOCATION.--Venturi meter with recorder in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.16 S., R.22 E., Hydrologic Unit 15030108, San Bernardino meridian, in Arizona, Yuma County, 0.3 mi from outlet to Colorado River.

PERIOD OF RECORD.--July 1970 to current year (monthly discharge only).

REMARKS.--Record shows water pumped from wells on the Yuma Mesa and conveyed by underground conduit to Colorado River.

COOPERATION.--Records furnished by Bureau of Reclamation prior to July 21, 1972.

09530400. RESERVATION DRAIN NO. 11.

LOCATION.--At outlet to Drain 8-B (Araz Drain), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.19, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian.

PERIOD OF RECORD.--March 1966 to current year (monthly discharge only).

REMARKS.--Record shows drainage from sec.20, T.16 S., R.22 E. Flow at this station, with that at sta 09530500, is used to determine seepage from All-American Canal.

09530500. DRAIN 8-B.

LOCATION.--Enters Colorado River in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.19, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 4 mi downstream from outlet of Yuma Main Canal wasteway.

PERIOD OF RECORD.--March 1948 to current year (monthly discharge only). Prior to October 1955, published as Araz Drain.

REMARKS.--Record shows seepage from All-American Canal and waste and drainage water west of Yuma Main Canal on the Reservation Division. Flow at this station, with that at sta 09530400, is used to determine seepage from All-American Canal.

09531800. MAIN OUTLET DRAIN EXTENSION ABOVE MORELOS DAM (M.O.D.E. 2).

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.16 S., R.21 E., Hydrologic Unit 15030107, San Bernardino meridian, at outlet to Colorado River, 1.7 mi upstream from Morelos Dam.

PERIOD OF RECORD.--November 1965 to current year (monthly discharge only).

REMARKS.--Record shows water conveyed to Colorado River 1.7 mi above Morelos Dam, from numerous drainage wells in Wellton-Mohawk Irrigation and Drainage District.

Return surface flows below Imperial Dam, AZ-CA--Continued

09531850. COOPER WASTEWAY.

LOCATION.--Water-stage recorder and weir, in NE¼NE¼ sec.28, T.8 S., R.24 W., Hydrologic Unit 15030108, 0.6 mi upstream from Morelos Dam. Prior to July 14, 1971, at site 1 mi downstream.

PERIOD OF RECORD.--January 1934 to current year (monthly discharge only).

REMARKS.--Record shows waste water from Valley Division returned to Colorado River.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09531900. MAIN OUTLET DRAIN EXTENSION BELOW MORELOS DAM (M.O.D.E. 3).

LOCATION.--Water-stage recorder and Parshall flume in NW¼SE¼ sec.28, T.8 S., R.24 W., Hydrologic Unit 15030108, at outlet to Colorado River just downstream from Morelos Dam.

PERIOD OF RECORD.--November 1965 to current year (monthly discharge only).

REMARKS.--Record shows water conveyed to Colorado River below Morelos Dam, from numerous drainage wells in Wellton-Mohawk Irrigation and Drainage District.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09532500. ELEVEN MILE WASTEWAY.

LOCATION.--Water-stage recorder and regulating gate in SE¼NW¼ sec.8, T.9 S., R.24 W., Hydrologic Unit 15030108, 3.2 mi downstream from Morelos Dam.

PERIOD OF RECORD.--January 1924 to current year (monthly discharge only).

REMARKS.--Record shows waste water from Valley Division returned to Colorado River.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09533000. TWENTY-ONE MILE WASTEWAY.

LOCATION.--Water-stage recorder and weir in NE¼NW¼ sec.35, T.10 S., R.25 W., Hydrologic Unit 15030108, 0.6 mi upstream from outlet to Colorado River, which is 2.4 mi upstream from southerly international boundary and 2.6 mi northwest of San Luis, Ariz.

PERIOD OF RECORD.--March 1939 to current year (monthly discharge only).

REMARKS.--Record shows waste water from Valley Division returned to Colorado River.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09533300. WELLTON-MOHAWK BYPASS DRAIN AT ARIZONA-SONORA BOUNDARY.

LOCATION.--Water-stage recorder and Parshall flume in NW¼NE¼ sec.10, T.11 S., R.25 W., Hydrologic Unit 15030108, on right bank 80 ft upstream from the Arizona boundary, 550 ft east of the thalweg of Colorado River, and 1.8 mi west of San Luis, Ariz.

PERIOD OF RECORD.--June 1977 to current year (monthly discharge only).

REMARKS.--Record shows water conveyed to the Santa Clara Slough, from numerous drainage wells in Wellton-Mohawk Irrigation and Drainage District.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09534000. MAIN DRAIN.

LOCATION.--Flowmeters in discharge pipes at pumping plant in SE¼NE¼ sec.11, T.11 S., R.25 W., Hydrologic Unit 15030108, 0.4 mi west of San Luis, Ariz.

PERIOD OF RECORD.--January 1919 to current year (monthly discharge only).

REMARKS.--Record shows flow which consists mostly of drainage water from the Valley Division which is pumped across the Arizona-Sonora boundary for use in Mexico.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09534300. WEST MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder and weir, in NW¼NE¼ sec.11, T.11 S., R.25 W., Hydrologic Unit 15030108, 0.3 mi upstream from outlet to Main Drain, and 0.4 mi west of San Luis, Ariz.

PERIOD OF RECORD.--February 1971 to current year (monthly discharge only).

REMARKS.--Record shows waste water from Valley Division which is discharged across the Arizona-Sonora boundary for use in Mexico.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Return surface flows below Imperial Dam, AZ-CA--Continued

09534500. EAST MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder and weir, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.12, T.11 S., R.25 W., Hydrologic Unit 15030108, 0.3 mi upstream from outlet to Main Drain, and 0.2 mi west of San Luis, Ariz.

PERIOD OF RECORD.--January 1924 to June 1928, January 1932 to December 1933, April 1935 to current year (monthly discharge only).
Calendar year estimates 1934 and 1935, published in WSP 1313.

REMARKS.--Record shows amount of unused water at the extreme end of the Valley Division which is discharged across the Arizona-Sonora boundary for use in Mexico.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09534550. TWO-FORTY-TWO WELL FIELD LATERAL NEAR SAN LUIS, AZ.

LOCATION.--Water-stage recorder and Parshall flume, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.11 S., R.25 W., Hydrologic Unit 15030108, 100 ft north of international boundary and 0.3 mi west of San Luis, Ariz.

PERIOD OF RECORD.--October 1978 to current year (monthly discharge only).

REMARKS.--Records show pumped ground water from two-forty-two well field, east of San Luis, Ariz.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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Return surface flows below Imperial Dam, AZ-CA--Continued

MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Mittry Lake Outlet Channel 09527900	Laguna Canal wasteway 09528600	Levee Canal wasteway 09528800	North Gila Drain No. 1 09529000	North Gila Drain No. 3 09529050	Fortuna wasteway 09529100
October	515	0	507	375	0	37
November	427	3.1	290	340	0	35
December	451	3.1	187	207	0	34
CAL YR 1982	7,050	14	3,130	3,570	0	622
January	479	.7	244	224	0	34
February	538	7.1	193	329	0	30
March	680	0	289	403	0	35
April	631	0	306	349	0	31
May	801	0	258	369	0	31
June	---	0	128	357	0	31
July	---	0	12	615	0	46
August	---	0	6.0	694	0	76
September	---	0	0	893	0	144
WTR YR 1983	---	14	2,420	5,150	0	573

Month	North Gila Main Canal wasteway 09529150	South Gila Pump Outlet Channel No. 3 09529160	Bruce Church Drain 09529200	South Gila Pump Outlet Channel No. 2 09529240	Bruce Church wasteway 09529250
October	230	430	0	297	113
November	252	504	0	278	89
December	42	104	0	664	276
CAL YR 1982	1,400	10,170	0	11,240	1,110
January	76	1,010	0	895	270
February	71	785	0	1,470	109
March	67	1,180	0	1,540	86
April	0	1,620	0	1,430	58
May	227	1,920	0	1,700	94
June	312	1,800	0	1,560	60
July	111	1,970	0	1,950	58
August	110	1,380	184	684	72
September	75	1,410	179	1,690	26
WTR YR 1983	1,570	13,920	363	14,150	1,310

Month	Wellton-Mohawk Main Outlet Drain 09529300	South Gila Pump Outlet Channel No. 1 09529360	South Gila Drain No. 2 09529400	South Gila Terminal wasteway 09529420	South Gila Pump Outlet Channel No. 4 09529440
October	12,890	2,150	43	50	0
November	13,210	1,680	42	55	0
December	12,590	2,720	49	35	0
CAL YR 1982	149,100	27,140	495	572	3,600
January	11,310	1,680	49	37	631
February	9,420	2,000	39	39	300
March	11,240	2,210	37	36	685
April	11,140	2,260	115	18	833
May	12,030	2,220	246	23	861
June	11,890	1,920	238	73	833
July	11,790	1,110	246	283	864
August	11,640	1,330	246	329	841
September	10,140	1,780	238	281	785
WTR YR 1983	139,300	23,070	1,590	1,260	6,630

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Return surface flows below Imperial Dam, AZ-CA--Continued

MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Month	Reservation Drain No. 7 09529600	Reservation Main Drain No. 6 09529700	Reservation Drain No. 2 09529800	Reservation Drain No. 3 09529900	Reservation Main Drain No. 4 09530000	Yuma Mesa Outlet Drain 09530200
October.....	123	837	6.1	296	3,330	2,440
November.....	119	803	6.0	298	2,850	1,990
December.....	123	799	6.1	307	2,330	1,750
CAL YR 1982	1,100	10,390	100	3,670	40,530	27,300
January.....	123	793	6.1	284	2,700	1,030
February.....	111	831	5.6	278	2,480	1,260
March.....	123	861	6.1	262	3,420	1,620
April.....	119	865	12	298	3,000	1,760
May.....	123	984	12	307	3,160	1,690
June.....	119	1,170	12	298	1,760	1,110
July.....	123	1,230	12	307	2,000	1,010
August.....	123	1,290	12	307	3,080	1,440
September.....	119	1,310	18	298	3,220	1,550
WIR YR 1983	1,450	11,770	115	3,540	33,330	18,640

Month	Reservation Drain No. 11 09530400	Drain 8-B 09530500	M.O.D.E. 2 (above Morelos Dam) 09531800	Cooper wasteway 09531850	M.O.D.E. 3 (below Morelos Dam) 09531900	Eleven Mile wasteway 09532500
October.....	154	446	0	87	0	102
November.....	60	360	0	83	0	108
December.....	31	248	0	32	0	178
CAL YR 1982	661	3,530	0	693	0	1,340
January.....	25	246	0	81	0	27
February.....	22	222	0	19	0	167
March.....	18	215	0	102	0	175
April.....	18	194	0	17	0	186
May.....	18	307	0	32	0	165
June.....	18	298	0	42	1,130	16
July.....	18	430	0	83	1,740	151
August.....	18	553	0	26	0	65
September.....	18	655	0	90	936	16
WIR YR 1983	418	4,180	0	694	3,810	1,360

Month	Twenty-one Mile wasteway 09533000	Wellton-Mohawk Bypass Drain 09533300	Main Drain 09534000	West Main Canal wasteway 09534300	East Main Canal wasteway 09534500	242 Well Field Lateral near San Luis, AZ 09534550
October.....	6.3	13,140	7,300	247	407	1,580
November.....	27	13,230	6,400	299	352	1,010
December.....	47	13,310	5,740	230	296	413
CAL YR 1982	408	149,700	75,940	3,010	3,470	23,600
January.....	0	11,980	5,590	447	271	446
February.....	60	10,390	4,840	534	163	525
March.....	25	11,820	6,190	517	210	423
April.....	15	11,200	6,290	336	228	285
May.....	0	12,690	6,150	429	234	367
June.....	0	14,390	5,950	332	172	193
July.....	2.2	18,030	7,040	513	196	428
August.....	16	16,740	7,210	378	195	183
September.....	0	19,080	8,030	275	435	93
WIR YR 1983	199	166,000	76,730	4,540	3,160	5,950

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09527900 MITTRY LAKE OUTLET CHANNEL NEAR YUMA, AZ

LOCATION.--Lat 32°48'09", long 114°28'05", in NW¼SE¼ sec.14, T.7 S., R.22 W., Yuma County, Hydrologic Unit 15030107, at water-stage recorder and sharp-crested weir, 1,000 ft upstream from outlet into Colorado River above Laguna Dam, and 12 mi northeast of Yuma.

PERIOD OF RECORD.--September 1974 to January 1983 (discontinued).

COOPERATION.--Water samples collected by U.S. Bureau of Reclamation.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	
OCT 04...	0925	8.2	1770	8.0	25.0	390	250	88	42	240	
NOV 01...	0935	10	1760	7.9	23.5	390	240	87	42	220	
DEC 06...	1030	3.7	1740	7.8	13.0	410	240	93	42	220	
JAN 03...	1410	12	1680	8.1	10.0	400	220	93	40	210	
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	5		6.8	147	460	220	1.9	20	1200	340	<3
NOV 01...	5		7.5	149	450	200	1.8	18	1100	330	<3
DEC 06...	5		7.6	167	450	190	1.7	17	1100	300	<3
JAN 03...	5		7.3	178	430	190	1.6	16	1100	300	<3

< Actual value is known to be less than value shown.

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DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529160 SOUTH GILA PUMP OUTLET CHANNEL NO. 3 NEAR YUMA, AZ

LOCATION.--Lat 32°43'04", long 114°30'12", in NW¼SE¼ sec.22, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at gaging station 0.5 mi upstream from outlet to Gila River, and 6 mi east of Yuma.

PERIOD OF RECORD.--October 1968 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to September 1982.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE FET-FLD (MG/L AS HCO3)
DEC 06...	0945	8.0	4030	8.2	860	640	210	84	530	8	7.8	260
DATE	AS CO3)	CACO3)	AS SO4)	AS CL)	AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	
DEC 06...	0	217	400	980	.70	25	2590	2400	3.5	.00	.00	

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, AZ

LOCATION.--Lat 32°42'31", long 114°31'45", in NW¼SW¼ sec.28, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at gaging station 0.6 mi upstream from outlet to Gila River, and 4 mi east of Yuma.

PERIOD OF RECORD.--October 1968 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1982 (discontinued).

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

COOPERATION.--Daily specific conductance record furnished by, and water samples collected by, U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 4,520 micromhos May 29, 1982; minimum observed, 1,990 micromhos Jan. 25, 1979.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 3,880 micromhos Jan. 3; minimum observed, 2,190 micromhos Oct. 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 04...	0830	7.0	2200	8.0	25.5	320	88	78	30
DEC 06...	0930	15	2440	8.3	--	360	130	90	34
JAN 04...	1110	8.4	3850	7.7	22.0	620	360	140	65

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE FET-FLD (MG/L AS HCO3)	CAR- BONATE FET-FLD (MG/L AS CO3)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 04...	370	9	5.6	280	0	231	440	270	1.1
DEC 06...	400	9	5.5	290	0	235	430	360	1.2
JAN 04...	590	11	6.4	--	--	--	370	920	.90

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	26	1420	1400	1.9	2.5	11	--	--
DEC 06...	30	1540	1500	2.1	2.7	12	--	--
JAN 04...	26	2230	2300	3.0	--	--	820	10

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ

LOCATION (Revised).--Lat 32°44'33", long 114°26'10", in NE¼NW¼ sec.17, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, at gaging station, 7.8 mi upstream from outlet to Gila River, and 11 mi east of Yuma.

PERIOD OF RECORD.--October 1968 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1982.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz. Prior to Dec. 1, 1974, samples collected at gage site 1,000 ft upstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 04...	0910	202	4800	7.8	23.5	820	470	190	84
NOV 01...	0915	216	4820	7.7	19.0	820	480	190	84
DEC 06...	1005	210	4800	8.1	19.0	790	470	190	80
JAN 04...	1000	217	4900	7.9	18.0	880	530	210	87

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE FET-FLD (MG/L AS HCO3)	CAR- BONATE FET-FLD (MG/L AS CO3)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 04...	790	12	8.9	430	0	351	940	860	2.2
NOV 01...	780	12	9.2	420	0	342	920	860	4.0
DEC 06...	800	13	9.0	400	0	326	950	860	2.2
JAN 04...	800	12	7.8	--	--	--	910	1000	2.3

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	25	3120	3100	4.2	2.0	8.9	--	--
NOV 01...	26	3120	3100	4.2	1.8	8.0	--	--
DEC 06...	26	3110	3100	4.2	2.1	9.3	--	--
JAN 04...	26	3280	3300	4.5	--	--	1400	20

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, AZ

LOCATION.--Lat 32°42'24", long 114°33'19", in SW¼NE¼ sec.30, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at gaging station, 0.2 mi upstream from outlet to Gila River, and 4 mi east of Yuma.

PERIOD OF RECORD.--October 1968 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1982.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 04...	0825	27	2730	7.9	24.5	450	210	110	44
NOV 02...	0915	22	3220	7.8	18.0	560	320	140	54
DEC 06...	0840	26	2760	8.3	--	460	220	120	42
JAN 04...	1200	46	2750	8.1	22.0	450	210	110	42

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE FET-FLD (MG/L AS HCO3)	CAR- BONATE FET-FLD (MG/L AS CO3)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 04...	430	9	6.2	290	0	241	500	430	1.1
NOV 02...	500	9	7.2	300	0	250	570	590	1.0
DEC 06...	430	9	5.9	290	0	239	490	430	1.1
JAN 04...	430	9	5.0	--	--	--	480	470	1.2

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	22	1730	1700	2.4	1.2	5.3	--	--
NOV 02...	27	2030	2000	2.8	1.2	5.3	--	--
DEC 06...	26	1760	1700	2.4	1.4	6.2	--	--
JAN 04...	24	1700	1700	2.3	--	--	640	10

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09530200 YUMA MESA OUTLET DRAIN AT YUMA, AZ

LOCATION.--Lat 32°43'48", long 114°39'27", in SE¼SW¼ sec.28, T.16 S., R.22 E., San Bernardino meridian, in Arizona, Yuma County, Hydrologic Unit 15030107, at gaging station, 0.3 mi from outlet to Colorado River, and 0.5 mi west of Joe Henry Memorial Park in Yuma, Ariz.

PERIOD OF RECORD.--July 1972 to current year.

COOPERATION.--Water samples collected by International Boundary and Water Commission (U.S. section).

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT 04...	1400	42	2180	7.7	--	--	420	210	110	35	330	7
NOV 01...	0900	34	2230	7.6	--	26.0	380	170	97	34	340	8
DEC 06...	1100	42	2220	7.5	--	24.5	430	220	110	38	320	7
JAN 04...	1300	18	2200	7.7	19.0	26.0	370	160	99	29	330	8

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 04...	4.4	208	420	320	.70	25	1340	1400	1.8	1.6	460	20
NOV 01...	4.7	208	430	340	.80	26	1390	1400	1.9	1.1	460	30
DEC 06...	5.1	209	410	350	.70	25	1370	1400	1.9	.97	420	20
JAN 04...	4.6	209	460	300	1.0	24	1340	1400	1.8	.64	480	10

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09531700 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ

LOCATION.--Lat 32°43'54", long 114°39'58", in SE¼SE¼ sec.29, T.16 S., R.22 E., San Bernardino Meridian, in Arizona, Yuma County, Hydrologic Unit 15030107, 1.1 mi west of Joe Henry Memorial Park in Yuma, Arizona.

PERIOD OF RECORD.--October 1982 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1982 to current year.

WATER TEMPERATURE: October 1982 to current year.

INSTRUMENTATION:--Specific conductance and water temperature recorder October 1982 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 5,750 micromhos on Apr. 26, 1983; minimum, 4,310 micromhos on Nov. 17, 1982.

WATER TEMPERATURE: Maximum, 28.5°C on May 29, 1983; minimum, 14.5°C on Dec. 25, 1982.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	22.5	20.5	17.5	16.0	18.5	16.5	19.5	17.5	23.0	21.5
2	24.0	21.0	21.5	19.5	18.5	16.0	18.5	17.0	18.5	16.5	21.5	20.5
3	24.0	21.5	20.0	18.5	18.5	17.0	18.5	17.0	17.5	16.0	22.0	20.0
4	24.5	21.5	20.5	18.5	19.0	17.5	18.5	17.0	19.5	17.5	22.0	21.0
5	24.5	22.0	21.0	19.0	19.5	18.0	19.5	18.0	21.0	19.0	22.5	20.0
6	24.5	22.0	21.0	19.5	19.5	18.5	19.5	18.5	21.0	19.5	23.5	21.5
7	24.5	22.0	20.5	19.5	20.0	18.5	19.5	18.5	21.5	20.0	24.0	22.0
8	22.5	21.0	21.0	20.5	19.0	17.5	20.0	18.5	21.5	20.0	24.0	22.0
9	21.5	19.0	22.0	20.0	18.0	17.5	19.5	18.5	20.5	19.0	24.5	22.0
10	21.5	19.0	21.0	19.0	20.5	17.5	18.5	17.0	21.5	19.5	25.0	22.5
11	22.5	20.0	20.0	18.0	21.0	19.5	19.0	17.5	21.5	19.0	---	---
12	22.5	20.0	20.0	18.0	20.5	19.5	20.0	18.5	22.0	20.0	---	---
13	23.0	20.5	19.5	18.5	20.5	19.0	20.5	19.0	21.5	20.0	---	---
14	23.5	21.0	20.0	18.0	19.5	18.5	20.0	18.5	20.5	19.0	---	---
15	24.0	21.5	20.0	18.5	19.0	17.5	20.5	19.0	19.5	18.0	---	---
16	24.0	21.5	21.0	19.0	19.5	18.0	20.5	19.0	---	---	---	---
17	24.0	21.5	21.0	20.5	19.5	18.0	20.5	19.0	22.5	20.5	---	---
18	24.0	21.5	21.5	19.5	19.5	18.0	20.5	18.5	22.0	20.5	---	---
19	24.0	21.5	22.0	21.0	19.5	18.0	20.0	19.0	22.0	19.5	---	---
20	23.0	21.5	21.5	20.0	19.5	18.0	19.0	18.0	21.0	19.0	---	---
21	23.0	20.5	20.5	19.0	19.5	18.5	19.0	17.0	22.0	19.5	---	---
22	23.0	21.0	20.0	19.0	21.0	19.0	19.0	17.0	22.5	20.5	---	---
23	23.0	21.0	20.0	19.0	20.0	16.5	20.0	18.5	23.0	20.5	---	---
24	23.0	21.5	20.5	18.5	16.5	15.0	20.5	19.0	23.0	21.5	---	---
25	23.5	21.5	20.0	18.5	16.0	14.5	20.5	19.0	22.5	20.5	---	---
26	23.0	22.0	19.5	18.5	17.5	15.5	20.5	18.5	22.5	20.5	---	---
27	22.0	20.5	20.5	18.5	18.5	17.0	20.0	18.5	22.0	21.0	---	---
28	21.0	18.5	20.5	19.0	18.5	17.0	19.5	17.0	23.5	21.0	---	---
29	21.5	19.0	21.0	19.5	18.0	16.5	19.5	19.0	---	---	---	---
30	21.5	20.0	20.5	18.0	17.5	16.5	19.5	18.5	---	---	---	---
31	23.0	21.0	---	---	17.0	15.5	20.0	18.0	---	---	---	---
MONTH	24.5	18.5	22.5	18.0	21.0	14.5	20.5	16.5	23.5	16.0	25.0	20.0

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09531700 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	4880	4790	5020	4720	5020	4910	4970	4630	5090	4890
2	---	---	4990	4740	5100	4720	5080	4990	4950	4830	4890	4790
3	---	---	4880	4770	4850	4800	5080	5020	5060	4710	4900	4690
4	4790	4650	4900	4800	4820	4690	5060	4980	4960	4680	4830	4710
5	4790	4580	4900	4780	4800	4680	5020	4900	4910	4820	4880	4530
6	4860	4570	4860	4750	4800	4750	5100	4720	4830	4790	5000	4730
7	4900	4760	4820	4740	4840	4770	5410	4900	4860	4770	4990	4810
8	4830	4730	4820	4650	4830	4680	5440	5250	4860	4810	5020	4820
9	4890	4740	4870	4590	4700	4560	5300	5010	4830	4730	5080	4770
10	4920	4800	4750	4580	4740	4490	5430	5270	4900	4530	4990	4820
11	4880	4780	4660	4550	4900	4760	5420	5240	4620	4580	---	---
12	4890	4780	4600	4500	4920	4850	5400	4940	4610	4530	---	---
13	4940	4780	4580	4480	4930	4830	5320	5190	4520	4450	---	---
14	4960	4870	4530	4390	4960	4790	5220	5040	4510	4420	---	---
15	4970	4870	4590	4340	4860	4730	5190	5070	4570	4490	---	---
16	5010	4890	4590	4410	4850	4680	5150	4920	---	---	---	---
17	4990	4870	4600	4310	4910	4760	5150	5090	5010	4710	---	---
18	4950	4640	4600	4480	4940	4810	5150	5070	4950	4770	---	---
19	4960	4820	4930	4610	4910	4790	5070	5000	4860	4670	---	---
20	4990	4840	4940	4880	4810	4730	5080	4880	4830	4600	---	---
21	5000	4830	4950	4750	4880	4770	5120	5050	4970	4720	---	---
22	4980	4830	4890	4720	4850	4780	5090	4960	4990	4820	---	---
23	4970	4800	4860	4780	4830	4630	5080	5020	5030	4850	---	---
24	4950	4770	4860	4720	4810	4700	5110	5050	5040	4910	---	---
25	4900	4770	4870	4790	4860	4740	5070	4920	4980	4800	---	---
26	4910	4540	4820	4740	4800	4750	4920	4870	4950	4790	---	---
27	4900	4820	4800	4730	4810	4760	4920	4770	5060	4860	---	---
28	4860	4760	4740	4630	4930	4800	4870	4740	5150	4850	---	---
29	4850	4760	4720	4670	4970	4840	4830	4750	---	---	---	---
30	4850	4730	4800	4680	5010	4930	4950	4690	---	---	---	---
31	4900	4750	---	---	5020	4950	4990	4920	---	---	---	---
MONTH	5010	4540	4990	4310	5100	4490	5440	4690	5150	4420	5090	4530

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEC. C) WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER
1	---	---	5060	4790	4940	4590					
2	---	---	5070	4890	4830	4560					
3	---	---	5240	4880	4860	4580					
4	---	---	5250	4980	5130	4680					
6	---	---	5060	4690	5250	4970					
7	---	---	5160	4840	5280	5000					
8	---	---	5240	4880	5160	4890					
9	---	---	5190	4940	5260	4910					
10	---	---	5200	4870	5130	4910					
11	---	---	5040	4780	5140	4910					
12	---	---	5090	4790	5090	4820					
13	---	---	5180	4840	5040	4850					
14	---	---	5220	4940	5020	4660					
15	5210	5120	5270	4990	5030	4710					
16	5180	4920	5270	5000	5200	4770					
17	5160	4980	5140	4890	5260	4870					
18	5170	4870	5230	4880	5190	4860					
19	5220	4940	5200	4910	5250	4860					
20	5120	4920	5210	4940	5240	4950					
21	5050	4880	5380	4990	---	---					
22	5300	4930	5380	5040	---	---					
23	5380	5100	5370	5070	---	---					
24	5360	5120	5330	5030	---	---					
25	5220	4990	5230	4990	---	---					
26	5750	5080	5130	4890	---	---					
27	5440	5170	5150	4860	---	---					
28	5280	4910	5300	4880	---	---					
29	5160	4930	5360	4940	---	---					
30	5150	4880	5220	4930	---	---					
31	---	---	5110	4860	---	---					
MONTH	5750	4870	5380	4690	5280	4560					
YEAR	5750	4310									

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09534000 MAIN DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ

LOCATION.--Lat 32°29'17", long 114°47'16", in SE¼NE¼ sec.11, T.11 S., R.25 W., Yuma County, Hydrologic Unit 15030108, at gaging station at pumping plant, 0.1 mi upstream from international boundary, and 0.4 mi west of San Luis.

PERIOD OF RECORD.--October 1968 to January 1983 (discontinued).

REMARKS.--Unpublished chemical analyses (continuing record) from October 1961 to September 1968 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT 19...	1020	131	2390	8.0	27.0	22.0	8.2	760	95
NOV 15...	1345	80	2400	8.0	25.5	18.0	9.4	765	100
DEC 13...	1205	79	2610	7.9	19.5	17.5	8.7	759	92
JAN 20...	0940	131	2450	7.9	12.0	16.0	8.7	762	89

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 19...	570	340	140	53	310	5.6	228	530	350
NOV 15...	560	320	140	50	320	5.4	232	520	350
DEC 13...	610	360	150	56	330	6.0	244	530	390
JAN 20...	550	330	140	49	310	5.3	226	500	370

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 19...	.50	21	1610	1500	2.2	.57	390	20
NOV 15...	.50	21	1590	1500	2.2	.70	390	20
DEC 13...	.50	24	1660	1600	2.3	.91	420	20
JAN 20...	.60	21	1610	1500	2.2	.39	390	10

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09534550 TWO-FORTY-TWO WELL FIELD LATERAL NEAR SAN LUIS, AZ.

LOCATION--At gaging stations, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.11 S., R.25 W., Hydrologic Unit 15030108, 100 ft north of international boundary and 0.3 mi west of San Luis, Ariz.

PERIOD OF RECORD--1983 water year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE FET-FLD (MG/L AS HCO3)
OCT 05...	0850	1410	8.0	290	130	80	22	180	5	5.1	200
DATE	CAR- BONATE FET-FLD (MG/L AS CO3)	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)
OCT 05...	0	165	130	250	.20	18	862	780	1.2	.00	.00

RIO SONOYTA BASIN

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SAN SIMON WASH BASIN

09535100 SAN SIMON WASH NEAR PISINIMO, AZ

LOCATION.--Lat 32°02'39", long 112°22'13", in SE¼ sec.9, T.16 S., R.1 W. (unsurveyed), Pima County, Hydrologic Unit 15080101, in Papago Indian Reservation, on the right bank about 100 ft downstream from road, just upstream from Gu Vo Wash, and 3.2 mi west of Pisinimo.

DRAINAGE AREA.--569 mi².

PERIOD OF RECORD.--February 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,830 ft, from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--11 years, 3.60 ft³/s, 2,610 acre-ft/yr; median of yearly mean discharges, 2.6 ft³/s, 1,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s Sept. 24, 1976, gage height, 10.82 ft, from rating curve extended above 1,700 ft³/s on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 688 ft³/s Sept. 29, 1315 hours, gage height, 6.68 ft, was not independent of the peak discharge that occurred Oct. 2, 1983; maximum independent peak discharge, 392 ft³/s, Aug. 8, gage height 5.89 ft, no independent peak above base of 500 ft³/s; no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	9.2	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	7.5	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	85	117	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	16	96	.00	.00	.00	.00	.57	.00
5	.00	.00	.00	.00	59	1.0	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	3.0	.05	.00	.00	.00	.00	12	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	53	.00
8	.00	.00	24	.00	.00	.00	.00	.00	.00	.00	102	.00
9	.00	.00	94	.00	.00	.00	.00	.00	.00	.00	11	.00
10	.00	.00	122	.00	.00	.00	.00	.00	.00	.00	5.0	.00
11	.00	.00	.17	.00	.00	.00	.00	.00	.00	.00	.05	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	23	.00
18	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.33	.00
19	.00	.00	.00	.00	.00	36	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.20	.00	.46	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	28	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00	1.1
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	.00
27	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	1.5	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	31	---	.00	.00	.00	.00	.00	.00	283
30	.00	40	.00	62	---	.00	.00	.00	.00	.00	.00	40
31	.00	---	.00	.22	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	40.00	277.62	93.45	170.50	263.61	.00	.00	.00	.00	246.45	324.10
MEAN	.000	1.33	8.96	3.01	6.09	8.50	.000	.000	.000	.000	7.95	10.8
MAX	.00	40	122	62	85	117	.00	.00	.00	.00	102	283
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	79	551	185	338	523	.00	.00	.00	.00	489	643

CAL YR 1982 TOTAL 1165.06 MEAN 3.19 MAX 366 MIN .00 AC-FT 2310
WTR YR 1983 TOTAL 1415.73 MEAN 3.88 MAX 283 MIN .00 AC-FT 2810

NOTE.--No gage-height record Mar. 22 to June 23.

RIO SONOYTA BASIN

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ

LOCATION.--Lat 31°57'04", long 112°20'50", in NW¼ sec.14, T.17 S., R.1 W (unsurveyed), Pima County, Hydrologic Unit 15080101, in Papago Indian Reservation, on right bank 200 ft downstream from road crossing, 0.6 mi south of Kom Vo (Santa Cruz Village) and 5 mi upstream from mouth.

DRAINAGE AREA.--1,250 mi², approximately, of which about 250 mi² is in Mexico.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,770 ft, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--11 years, 9.30 ft³/s, 6,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft³/s Oct. 20, 1972, gage height, 9.44 ft, from rating curve extended above 630 ft³/s; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 5	1145	436	7.88	July 23	1230	*982	9.05
Feb. 6	1645	458	7.99	Aug. 9	0500	480	8.10
Mar. 5	1245	406	7.72	Aug. 10	0900	504	8.21
July 22	1830	781	8.78				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	40	.00	15	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	24	.00	.98	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	35	.00	24	32	.00	.00	.00	.00	36	.00
4	.00	.00	8.9	.00	51	163	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	331	358	.00	.00	.00	.00	7.4	.00
6	.00	.00	.00	.00	316	229	.00	.00	.00	.00	31	.00
7	.00	.00	.00	.00	112	60	.00	.00	.00	.00	8.0	.00
8	.00	.00	12	.00	53	13	.00	.00	.00	.00	52	.00
9	.00	.00	46	.00	19	7.2	.00	.00	.00	.00	329	.00
10	.00	.00	113	.00	4.4	.01	.00	.00	.00	.00	307	.00
11	.00	.00	189	.00	.00	.00	.00	.00	.00	.00	193	.00
12	.00	.00	280	.00	.00	.00	.00	.00	.00	27	158	.00
13	.00	.00	44	.00	.00	.00	.00	.00	.00	1.2	38	.00
14	.00	.00	9.9	.00	.00	.00	.00	.00	.00	.00	.14	1.1
15	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00	6.2
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	34	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	53	16
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	192	33
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	60	6.2
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.79	4.2
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	299	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	648	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	334	.00	61
25	.00	.00	13	.00	.00	.00	.00	.00	.00	36	.00	224
26	.00	.00	2.4	.00	.00	.00	.00	.00	.00	.63	.00	123
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	61
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8
29	.00	.00	.00	4.3	---	.00	.00	.00	.00	.00	.00	24
30	.00	9.9	.00	14	---	.00	.00	.00	.00	7.0	.00	15
31	.00	---	.00	40	---	.00	---	.00	---	1.9	.00	---
TOTAL	.00	9.90	817.38	58.30	926.38	862.21	.00	.00	.00	1354.73	1499.33	576.50
MEAN	.000	.33	26.4	1.88	33.1	27.8	.000	.000	.000	43.7	48.4	19.2
MAX	.00	9.9	280	40	331	358	.00	.00	.00	648	329	224
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	20	1620	116	1840	1710	.00	.00	.00	2690	2970	1140
CAL YR 1982	TOTAL	4498.25	MEAN	12.3	MAX	453	MIN	.00	AC-FT	8920		
WTR YR 1983	TOTAL	6104.73	MEAN	16.7	MAX	648	MIN	.00	AC-FT	12110		

RIO SONOYTA BASIN

353

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1978 to current year.

INSTRUMENTATION.--Automatic pumping sampler October 1980 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JAN 31...	1305	56	150	8.1	26.5	11.5	30	9.2	720	89	5200	K26000
MAR 07...	1320	39	158	8.0	20.5	17.5	450	7.8	724	86	400	2200
AUG 09...	1240	307	136	8.3	33.5	25.0	390	5.3	723	68	31000	68000
SEP 26...	1400	139	205	8.2	33.0	26.5	380	6.2	722	82	17000	48000

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN 31...	57	0	18	2.9	5.5	.3	6.8	--	1.0	12	2.7	.10
MAR 07...	65	0	20	3.6	5.7	.3	5.8	--	1.5	6.4	1.9	.20
AUG 09...	45	0	14	2.4	6.9	.5	8.0	77	.7	7.0	2.1	.10
SEP 26...	79	0	24	4.6	5.2	.3	11	94	1.1	7.3	2.4	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
JAN 31...	8.0	117	97	.16	1.6	.260	3.7	1.80	.290	.240	.74	660
MAR 07...	10	104	100	.14	.10	.230	1.1	.740	.260	.280	.86	240
AUG 09...	6.9	85	95	.12	.28	.040	1.7	.790	.170	.130	.40	160
SEP 26...	14	126	130	.17	.13	.120	2.2	.780	.350	.350	1.1	80

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN 31...	3	44	<.5	<1	<1	<3	8	120	<1	9	10
MAR 07...	2	52	<.5	<1	<1	<3	11	110	1	9	8
AUG 09...	5	46	.5	<1	<1	<3	7	65	<1	15	5
SEP 26...	3	74	1	<1	<1	<3	8	26	1	13	3

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

RIO SONOYTA BASIN

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JAN 31...	<.1	<10	2	<1	<1	210	<6	40	1140	91	172
MAR 07...	<.1	<10	<1	<1	<1	280	<6	10	438	--	46
AUG 09...	<.1	<10	13	<1	<1	190	14	3	1250	55	1040
SEP 26...	.1	<10	6	<1	<1	370	8	3	425	80	160

< Actual value is known to be less than value shown.

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LOCATION.--Lat 31°56'37", long 113°01'10", in SE¼, sec.18, T.17 S., R.7 W. (unsurveyed), Pima County, Hydrologic Unit 15080102, in Organ Pipe Cactus National Monument, in spring outlet channel 50 ft downstream from first source, 500 ft downstream from second source, and 12.8 mi northwest of Lukeville.

PERIOD OF RECORD.--September 1917 (one discharge measurement, published in WSP 499), October 1981 to current year. Gage-heights and discharge measurements collected at this site, January 1974 to May 1976, are in the files of the National Park Service.

REMARKS.--Records good. Record is for flow from the two principal spring openings. Numerous small spring openings in the area discharge downstream from the gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 0.33 ft³/s Sept. 29, 1983, gage height, 1.51 ft, includes local runoff; minimum discharge, 0.02 ft³/s Aug. 18, 1983, gage height, 1.25 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.33 ft³/s Sept. 29, gage height, 1.51 ft, includes local runoff; minimum, 0.02 ft³/s Aug. 18, gage height, 1.25 ft.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.06	.07	.08	.08	.09	.08	.07	.06	.05	.05	.05
2	.06	.06	.07	.08	.08	.09	.07	.07	.06	.05	.05	.07
3	.06	.06	.07	.08	.08	.09	.07	.07	.06	.05	.05	.07
4	.06	.06	.07	.08	.08	.09	.07	.07	.06	.05	.05	.07
5	.06	.06	.07	.08	.09	.09	.07	.07	.06	.05	.05	.07
6	.06	.06	.07	.08	.09	.09	.07	.07	.06	.05	.06	.08
7	.06	.06	.07	.08	.08	.09	.07	.07	.06	.05	.06	.05
8	.06	.06	.07	.08	.08	.09	.07	.07	.06	.05	.07	.07
9	.06	.06	.08	.08	.08	.09	.07	.07	.06	.05	.07	.07
10	.06	.07	.08	.08	.08	.09	.07	.07	.06	.05	.07	.07
11	.06	.07	.08	.08	.08	.09	.07	.07	.06	.05	.06	.07
12	.06	.07	.08	.08	.08	.09	.07	.07	.06	.05	.06	.07
13	.06	.07	.08	.08	.08	.09	.07	.07	.06	.05	.06	.07
14	.06	.07	.08	.08	.09	.09	.07	.07	.06	.05	.06	.07
15	.06	.07	.09	.07	.09	.08	.07	.06	.06	.05	.06	.07
16	.07	.07	.09	.07	.09	.08	.07	.06	.06	.05	.05	.07
17	.06	.07	.09	.07	.09	.08	.07	.06	.06	.05	.04	.07
18	.06	.07	.09	.07	.09	.08	.07	.06	.06	.05	.03	.07
19	.06	.07	.08	.07	.09	.08	.07	.06	.06	.05	.04	.07
20	.07	.07	.08	.07	.09	.08	.07	.06	.06	.05	.04	.07
21	.07	.07	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
22	.07	.07	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
23	.07	.07	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
24	.07	.07	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
25	.07	.07	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
26	.07	.06	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
27	.06	.06	.08	.07	.09	.08	.07	.06	.06	.06	.04	.07
28	.06	.06	.07	.07	.09	.08	.07	.06	.06	.06	.04	.07
29	.06	.06	.07	.07	---	.08	.07	.06	.06	.06	.04	.09
30	.06	.06	.07	.08	---	.08	.07	.06	.06	.05	.04	.08
31	.96	---	.07	.08	---	.08	---	.06	---	.05	.04	---
TOTAL	1.94	1.96	2.40	2.33	2.41	2.62	2.11	2.00	1.80	1.64	1.52	2.10
MEAN	.063	.065	.077	.075	.086	.085	.070	.065	.060	.053	.049	.070
MAX	.07	.07	.09	.08	.09	.09	.08	.07	.06	.06	.07	.09
MIN	.06	.06	.07	.07	.08	.08	.07	.06	.06	.05	.03	.05
AC-FT	3.8	3.9	4.8	4.6	4.8	5.2	4.2	4.0	3.6	3.3	3.0	4.2
CAL YR 1982	TOTAL	22.30	MEAN	.061	MAX	.09	MIN	.03	AC-FT	44		
WTR YR 1983	TOTAL	24.83	MEAN	.068	MAX	.09	MIN	.03	AC-FT	49		

SULPHUR SPRING VALLEY

WHITEWATER DRAW BASIN

09537200 LESLIE CREEK NEAR McNEAL, AZ

LOCATION.--Lat 31°35'24", long 109°30'30", in SE¼ sec.20, T.21 S., R.28 E., Cochise County, Hydrologic Unit 15080301, on right bank 10 mi east of McNeal.

DRAINAGE AREA.--79.1 mi².

PERIOD OF RECORD.--October 1969 to September 1977, July 1982 to current year.

GAGE.--Water-stage recorder and concrete control with shallow sharp-crested V-notch weir. Altitude of gage is 4,620 ft, from topographic map.

REMARKS.--Records good except those for period of no gage-height record and flows above 10 ft³/s, which are poor.

AVERAGE DISCHARGE.--9 years (water years 1970-77, 1983), 0.77 ft³/s, 558 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,760 ft³/s Aug. 12, 1971, gage height, 5.78 ft, from rating curve extended above 5.7 ft³/s on basis of slope-area measurement of peak flow; no flow for many days in 1976 and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, October 1977 to July 1982, 468 ft³/s, gage height, 4.76 ft in gage well.

EXTREMES FOR CURRENT YEAR.--Maximum independent discharge (*), from rating curve extended above 5.7 ft³/s on basis of slope-area measurement at gage height, 5.78 ft, and peak discharges above base of 100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 4	0830	*322	4.55	Sept. 30	1800	**872	5.16
Aug. 10	1630	225	4.37				

** Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."
Minimum daily, 0.10 ft³/s Jan. 24-27, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.15	.29	.16	.13	.22	.46	.46	.41	.33	.41	.65
2	.15	.15	.25	.16	.12	.23	.46	.46	.42	.32	.40	.65
3	.15	.15	.22	.16	.16	.27	.46	.46	.41	.32	.40	.67
4	.15	.15	.22	.16	.77	.27	.50	.46	.41	.32	.41	.71
5	.15	.15	.22	.16	6.6	.33	.50	.46	.41	.34	.39	.73
6	.15	.15	.20	.14	.25	.33	.50	.46	.41	.34	.37	.74
7	.15	.15	.20	.14	.20	.34	.53	.46	.41	.35	.37	.75
8	.15	.15	.22	.14	.18	.30	.54	.46	.40	.37	.38	.74
9	.15	.20	.23	.14	.16	.30	.54	.54	.40	.39	.39	.75
10	.15	.20	.31	.14	.16	.30	.54	.50	.41	.37	36	.81
11	.15	.20	.25	.13	.16	.30	.55	.50	.40	.36	11	.84
12	.15	.20	.23	.14	.16	.27	.57	.51	.40	.36	.65	.87
13	.15	.20	.20	.14	.16	.28	.53	.50	.40	.35	.57	.91
14	.15	.20	.19	.13	.16	.30	.53	.50	.39	.35	.53	.88
15	.15	.20	.18	.12	.18	.30	.54	.50	.40	.34	.69	.93
16	.15	.20	.18	.12	.18	.30	.54	.50	.38	.34	.63	1.0
17	.15	.22	.18	.12	.18	.32	.54	.50	.37	.34	.65	.96
18	.15	.22	.18	.12	.18	.34	.54	.50	.37	.34	.60	.93
19	.15	.22	.18	.12	.20	.38	.54	.50	.36	.35	.61	.91
20	.15	.22	.18	.12	.20	.36	.54	.50	.36	.44	.61	.87
21	.15	.22	.16	.12	.20	.38	.54	.50	.36	.42	.62	.88
22	.15	.22	.16	.11	.20	.40	.54	.50	.38	.40	.64	.91
23	.15	.22	.18	.12	.20	.41	.54	.48	.40	.39	.67	.94
24	.15	.22	.18	.10	.20	.45	.54	.45	.38	.39	.69	.99
25	.15	.23	.17	.10	.20	.42	.46	.45	.37	.37	.63	.99
26	.15	.22	.16	.10	.21	.40	.46	.45	.35	.42	.58	1.0
27	.15	.22	.16	.10	.22	.43	.46	.45	.34	.43	.59	.83
28	.15	.22	.16	.11	.22	.43	.46	.44	.34	.46	.60	1.4
29	.15	.22	.16	.10	---	.43	.46	.45	.34	.49	.61	1.1
30	.15	.22	.16	.19	---	.44	.46	.44	.33	.45	.66	123
31	.15	---	.16	.15	---	.46	---	.43	---	.41	.67	---
TOTAL	4.65	5.89	6.12	4.06	88.37	10.69	15.37	14.77	11.51	11.65	63.02	148.34
MEAN	.15	.20	.20	.13	3.16	.34	.51	.48	.38	.38	2.03	4.94
MAX	.15	.23	.31	.19	.77	.46	.57	.54	.42	.49	.36	123
MIN	.15	.15	.16	.10	.12	.22	.46	.43	.33	.32	.37	.65
AC-FT	9.2	12	12	8.1	175	21	30	29	23	23	125	294

WTR YR 1983 TOTAL 384.44 MEAN 1.05 MAX 123 MIN .10 AC-FT 763

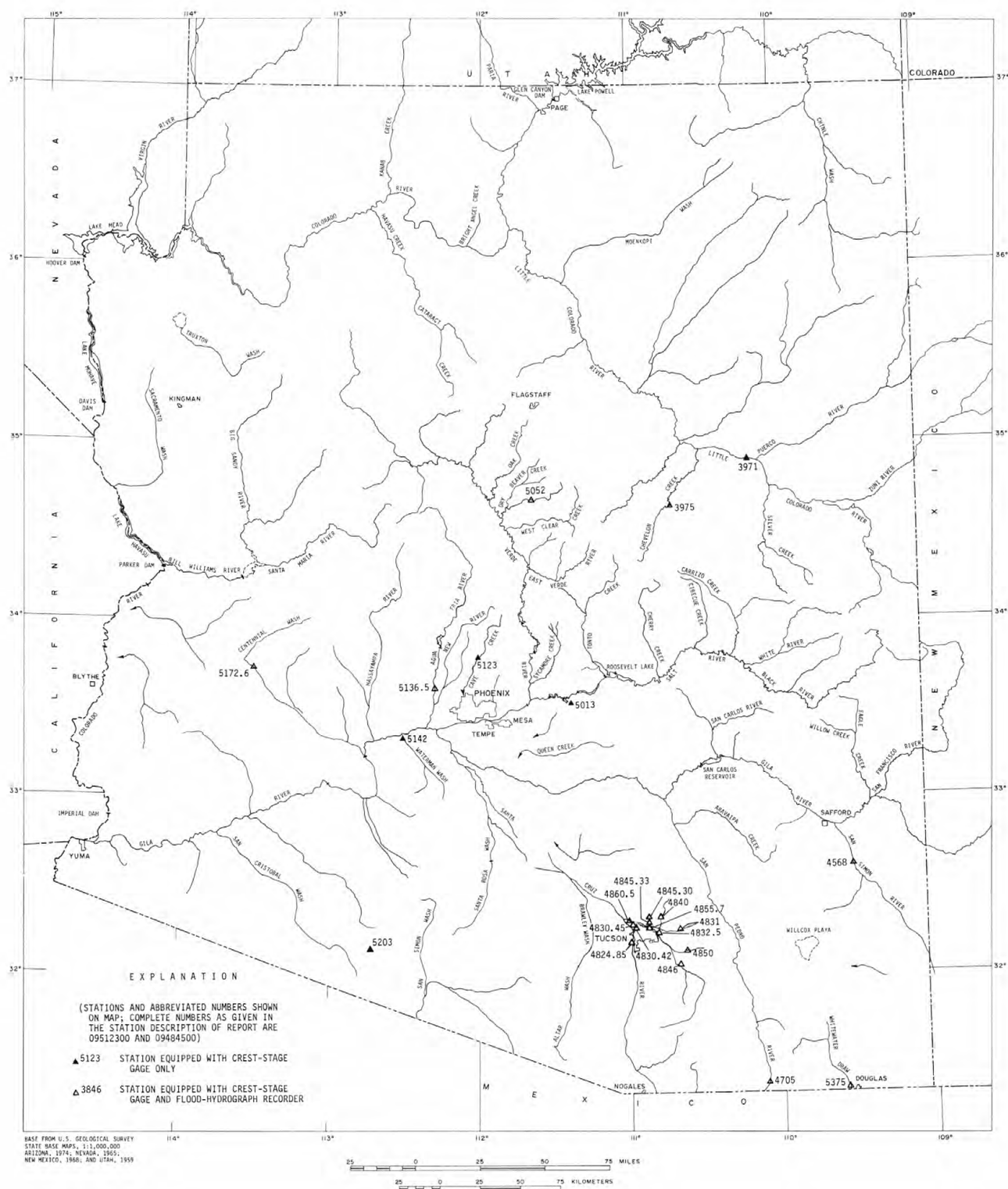


Figure 7.--Map of Arizona showing location of partial-record gaging stations.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Crest-stage partial-record stations

The following table contains annual maximum discharges of independent peaks for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1983

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Little Colorado River basin							
09397100	Leroux Wash near Holbrook, AZ	Lat 34°54'18", long 110°12'03", in SE¼NE¼ sec.3, T.17 N., R.20 E., Navajo County, near center of bridge in east-bound lane of Interstate Highway 40, 0.5 mi upstream from mouth and 2.5 mi west of Holbrook.	809	1980-83	12-10-82	10.38	4,650
09397500	Chevelon Creek below Wildcat Canyon near Winslow, AZ	Lat 34°38'11", long 110°42'49", in SW¼ sec.36, T.15 N., R.15 E., Navajo County, Sitgreaves National Forest, on right bank 0.4 mi downstream from Wildcat Canyon and 25 mi south of Winslow.	275	1947-70*, 1982-83	4- 1-83	7.36	1,950
Gila River basin							
09456800	San Simon River at Tanque, AZ	Lat 32°36'30", long 109°32'00", in NW¼SE¼ sec.36, T.9 S., R.27 E., Graham County, on left bank 0.1 mi east of Tanque and 15 mi southeast of Solomon.	1,953	1957-59*, 1981-83	8-13-83 9-27-83	5.03 5.46	767 933a
09470500	San Pedro River at Palominas, AZ	Lat 31°22'48", long 110°06'38", in SW¼SE¼ sec.33, T.23 S., R.22 E., Cochise County, near left bank on downstream side of pier of bridge on State Highway 92, 0.7 mi east of Palominas, 2.5 mi upstream from Green Brush Draw, 4.5 mi downstream from international boundary, and 12 mi southwest of Bisbee.	741	1930-33*, 1935-41*, 1950-81*, 1982-83	2- 4-83 9-30-83	7.50 12.2	1,940 7,400a
09482485	Cholla Wash at Tucson, AZ	Lat 32°12'00", long 110°59'45", in SE¼SE¼NE¼ sec.22, T.14 S., R.13 E., Pima County, 30 ft upstream from culvert on Mission Road, at the northwest corner of the intersection of Mission Road and Silverlake Road.	1.27	1982-83	8-16-83	1.00	165
09483042	Cemetery Wash at Tucson, AZ	Lat 32°15'50", long 110°58'42", in NE¼NE¼ sec.35, T.13 S., R.13 E., Pima County, 270 ft west of U.S. Highway 89, 300 ft south of projection of Ft. Lowell Road in Tucson.	1.17	1966-83	8-15-83	2.45	209
09483045	Flowing Wells Wash at Tucson, AZ	Lat 32°15'55", long 110°59'40", in SW¼SW¼ sec.26, T.13 S., R.13 E., Pima County, at intersection of Ft. Lowell Road and Flowing Wells Road in Tucson city limits.	3.53	1971-83	8- 9-83	6.58	943
09483100	Tanque Verde Creek near Tucson, AZ	Lat 32°14'48", long 110°40'46", in NE¼NW¼ sec.2, T.14 S., R.16 E., Pima County, 4.4 mi east of Tanque Verde School, 7.4 mi upstream from Agua Caliente Wash, and 17.5 mi east of Tucson city hall.	43.0	1959-74*, 1975-83	2- 3-83 9-30-83	3.55 3.64	1,100 1,180a
09483250	Rob Wash at Tucson, AZ	Lat 32°14'08", long 110°48'58", in NE¼NW¼ sec.9, T.14 S., R.15 E., Pima County, at Speedway Blvd., 0.4 mi east of Pantano Road, and 1 mi north of East Broadway in Tucson city limits.	2.08	1971-83	9-23-83	1.86	156

See footnotes at end of the table.

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Gila River basin--Continued							
09484000	Sabino Creek near Tucson, AZ	Lat 32°19'00", long 110°48'35", in SE¼NE¼ sec.9, T.13 S., R.15 E., Pima County, 0.5 mi north of Coronado National Forest boundary, and 12 mi northeast of Tucson city hall.	35.5	1932-74*, 1975-83	2- 3-83	3.08	1,340
09484530	Craycroft Wash Tributary near Tucson, AZ	Lat 32°18'05", long 110°52'13", in NW¼ sec.13, T.13 S., R.14 E., Pima County, at Paseo Arenal, 0.4 mi south of Sunrise Drive and 0.25 mi east of Craycroft Road.	0.038	1982-83	8- 9-83	0.97	7.6
09484533	Craycroft Wash near Tucson, AZ	Lat 32°17'24", long 110°52'23", in SW¼NW¼ sec.24, T.13 S., R.14 E., Pima County, at Center Village Drive, 0.2 mi east of Craycroft Road and 2.2 mi north of Tucson city limits.	2.37	1982-83	9-23-83	1.17	158
09484600	Pantano Wash near Vail, AZ	Lat 32°02'09", long 110°40'37", in SW¼SE¼ sec.14, T.16 S., R.16 E., Pima County, 60 ft upstream from dam, 2.2 mi southeast of Vail, and 20 mi southeast of Tucson city hall.	457	1959-74*, 1975-83	8- 3-83	7.62	1,840
09485000	Rincon Creek near Tucson, AZ	Lat 32°07'46", long 110°37'32", in NW¼NE¼ sec.17, T.15 S., R.17 E., Pima County, 9 mi upstream from mouth, and 22 mi southeast of Tucson city hall.	44.8	1952-74*, 1975-83	1-30-83	4.98	688
09485570	Alamo Wash at Tucson, AZ	Lat 32°15'34", long 110°53'02", in SE¼SE¼NW¼ sec.35, T.13 S., R.14 E., Pima County, 600 ft downstream from Glenn Street, 0.5 mi east of the intersection of Glenn Street and Swan Road.	9.56	1979-83	9-23-83	2.80	714
09486050	Roller Coaster Wash near Tucson, AZ	Lat 32°18'09", long 111°00'12", in SE¼SE¼NW¼ sec.15, T.13 S., R.13 E., Pima County, at Oracle-Jaynes Road, 0.3 mi upstream from the mouth and 1.4 mi north of Tucson city limits.	1.75	1982-83	8- 9-83	5.90	960
09501300	Tortilla Creek at Tortilla Flat, AZ	Lat 33°31'38", long 111°23'13", in NW¼ sec.13, T.2 N., R.9 E. (unsurveyed), Maricopa County, 600 ft upstream from State Highway 88 and Tortilla Flat Store, and 3.7 mi southeast of Mormon Flat Dam.	24.3	1966-83	9-30-83	9.45	3,800
09505200	Wet Beaver Creek near Rimrock, AZ	Lat 34°40'29", long 111°40'17", in NW¼SW¼ sec.24, T.15 N., R.6 E., Yavapai County, in Coconino National Forest, on right bank 4.5 mi northeast of Rimrock and 5.7 mi upstream from Red Tank Draw.	111	1961-82*, 1983	11-30-82	11.32	5,480
09512300	Cave Creek near Cave Creek, AZ	Lat 33°47'10", long 112°04'00", in SW¼ sec.12, T.5 N., R.3 E., Maricopa County, on left bank 200 ft upstream from Prescott to Mesa transmission line, 4.8 mi southwest of town of Cave Creek, and 5.0 mi upstream from Cave Creek Dam.	121	1958-67*, 1968-79, 1981-83	3- 3-83	4.20	1,420
09513650	Agua Fria River at El Mirage, AZ	Lat 33°36'24", long 112°18'14", in NW¼NW¼ sec.18, T.3 N., R.1 E., Maricopa County, at Grand Avenue, 0.75 mi southeast of El Mirage.	61,637	1963-79, 1981-83	3- 5-83	6.43	6,140
09514200	Waterman Wash near Buckeye, AZ	Lat 33°19'49", long 112°30'33", in SW¼NE¼ sec.24, T.1 S., R.3 W., Maricopa County, 2.4 mi above mouth, 5.2 mi southeast of Buckeye.	403	1964-83	9-27-82c 12-10-82	5.22 4.55	1,660 985
09517260	Centennial Wash at Narrows Dam near Salome, AZ	Lat 33°43'29", long 113°30'46", in SW¼SE¼ sec.33, T.5 N., R.12 W., La Paz County, on left bank end of Narrows Dam, 7.4 mi southeast of Salome.	684	1982-83	8-12-82c d	13.47 16.9	486 546
09520300	Alamo Wash tributary near Ajo, AZ	Lat 32°06'00", long 112°46'15", in SW¼ sec.22, T.15 S., R.5 W. (unsurveyed), Pima County, at State Highway 85, 20 mi southeast of Ajo.	.90	1963-75, 1978e, 1980f, 1982-83	10- 6-77c 1980c 10- 1-81c 7-21-83	2.26 1.82 1.98 1.92	135 92 104 98

See footnotes at end of the table.

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Whitewater Draw basin							
09537500	Whitewater Draw near Douglas, AZ	Lat 31°21'08", long 109°35'04", in SW¼SE¼ sec.10, T.24 S., R.27 E., Cochise County, on downstream side of pier of bridge on U.S. Highway 80, 1.5 mi upstream from international boundary and 2 mi west of Douglas.	1,023	1947-82*, 1983	9-30-83	9.68	891

* Operated as a continuous-record gaging station.

a Maximum discharge for 1983 water year, not independent of the peak discharge that occurred Oct. 2, 1983. See section "Hydrologic Conditions."

b Includes 1,459 square miles above Lake Pleasant that is non-contributing except during occasional periods of spill from Waddell Dam; does not include the area tributary to McMicken Dam from which water is diverted to the Agua Fria River. Diversions from McMicken Dam have negligible effect on peak flows of the Agua Fria River.

c Data not previously published.

d Sometime between Aug. 10 and 14, 1983.

e Highest since 1976.

f Highest since 1978.

Discharge measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by two asterisks (**).

Discharge measurements made at miscellaneous sites during water year 1983

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Colorado River basin						
Palo Verde drain	Colorado River	Lat 33°57'03", long 114°30'09", in SE¼NE¼ sec.14, T.7 N., R.22 W., La Paz County, 15 mi north of Palo Verde Dam and 6.6 mi southwest of Poston.	-----	-----	10-21-82	0
Palo Verde drain	Colorado River	Lat 33°55'35", long 114°30'58", in NW¼NE¼ sec.26, T.7 N., R.22 W., La Paz County, at the Peterson Road bridge, 13.35 mi north of Palo Verde Dam, and 8.1 mi southwest of Poston.	-----	-----	10- 7-82 10-21-82 3- 3-83	1.53 0.62 1.23
Palo Verde drain	Colorado River	Lat 33°53'51", long 114°29'56", in NW¼NE¼ sec.1, T.6 N., R.22 W., La Paz County, at the Navajo Road bridge, 11.35 mi north of Palo Verde Dam, and 8.65 mi southwest of Poston.	-----	-----	10-21-82	2.86
Palo Verde drain	Colorado River	Lat 33°51'16", long 114°30'34", in SW¼SE¼ sec.14, T.6 N., R.22 W., La Paz County, at the Tsosie Road bridge, 8.35 mi north of Palo Verde Dam, and 11.4 mi southwest of Poston.	-----	-----	10-21-82	5.55
Palo Verde drain	Colorado River	Lat 33°48'38", long 114°30'42", in SE¼SW¼ sec.35, T.6 N., R.22 W., La Paz County, at the Beeson Road bridge, 5.35 mi north of Palo Verde Dam, and 14 mi southwest of Poston.	-----	-----	10-21-82	11.8
Palo Verde drain	Colorado River	Lat 33°46'01", long 114°29'59", in SW¼SW¼ sec.13, T.5 N., R.22 W., La Paz County, at the Welsh Road bridge, 2.4 mi north of Palo Verde Dam, and 16.65 mi southwest of Poston.	-----	-----	10-21-82	21.3
Palo Verde drain	Colorado River	Lat 33°44'00", long 114°30'11", in SE¼NE¼ sec.35, T.5 N., R.22 W., La Paz County, 2.4 mi downstream from Welsh Road, 0.35 mi east of Palo Verde Dam, and 18.7 mi southwest of Poston.	-----	-----	10-21-82	28.0
Bright Angel Creek basin						
Bright Angel Creek	Colorado River	Lat 36°06'11", long 112°05'44", in sec.5, T.31 N., R.3 E., unsurveyed, Coconino County, in Grand Canyon National Park, 0.4 mi upstream from mouth and 4 mi northeast of Grand Canyon.	101	a	6-25-83	79.7
San Juan River basin						
Laguna Creek	Chinle Wash	Lat 36°44'57", long 110°08'08", unsurveyed, Navajo County, about 7 mi east of Kayenta.	229	1981-82	5-25-83 6-16-83	2.23 1.18
Little Colorado River basin						
Little Colorado River	Colorado River	Lat 34°25'18", long 109°24'07", in NE¼SW¼ sec.20, T.12 N., R.28 E., Apache County, at Road crossing 1.2 mi upstream from Salado Springs, 6.5 mi south of St. Johns.	-----	1975-82	10-19-82 4- 6-83	2.56 2.62
-----Do-----	-----do-----	Lat 34°26'00", long 109°22'40", in SE¼SE¼ sec.16, T.12 N., R.28 E., Apache County, 2.0 mi downstream from Salado Springs, 5.0 mi southwest of St. Johns.	-----	1940-41, 1975-82	10-19-82	9.24
Concho Spring	Little Colorado River	Lat 34°25'51", long 109°37'45", in NW¼NE¼ sec.19, T.12 N., R.26 E., Apache County, 3 mi southwest of Concho.	-----	1942, 1946-61, 1966-68, 1976-82	10-19-82 4- 5-83	3.25 2.36

See footnotes at end of the table.

Discharge measurements made at miscellaneous sites during water year 1983--Continued

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Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Gila River basin						
Bottleneck Wash	Granite Creek	Lat 34°39'20", long 112°26'08", in NW¼NE¼ sec.26, T.15 N., R.2 W., Yavapai County, about 4.2 mi upstream from confluence with Granite Creek, and about 9.2 mi north-northwest of Prescott.	8.8	-----	9-23-83	**9,830 ^b
Willow Creek	Granite Creek	Lat 34°35'36", long 112°28'54", in SE¼NE¼ sec.17, T.14 N., R.2 W., Yavapai County, about 2.4 mi upstream from Willow Creek Reservoir and 4 mi north of Prescott.	15.9	-----	9-23-83	**15,600
Montezuma Well Outlet	Wet Beaver Creek	Lat 34°58'53", long 111°45'02", in sec.31, T.15 N., R.6 E., Yavapai County, upstream from gage (sta 09505260).	-----	1981-82	4-26-83 6-27-83 8-25-83	2.53 2.18 1.82
Salt River	Gila River	Lat 33°27'15", long 111°51'24", in sec.5, T.1 N., R.5 E., at Alma School Road bridge in Mesa.	-----	-----	12-15-82 12-28-82 1- 7-83 2- 7-83 2- 8-83 2- 9-83	2,260 6,820 54 4,750 8,980 27,300
Salt River	Gila River	Lat 33°24'56", long 112°01'45", in sec.22, T.1 N., R.3 E., at 24th Street bridge in Phoenix.	13,263	-----	12-15-82 12-30-82 1- 7-83 2- 8-83 2- 9-83 3-22-83	1,810 6,000 388 8,270 29,100 16,000
Gila River	Colorado River	Lat 33°20'03", long 112°37'22", in SW¼SW¼SW¼ sec.13, T.1 S., R.4 W., on right bank 3 ft downstream from U.S. Highway 80, 3.4 mi southwest of town of Buckeye.	-----	1979-81	12-17-82 12-30-82 2-17-83	1,510 4,790 6,930

a Operated as a continuous-record gaging station October 1923 to March 1974.

b Outflow peak, not adjusted for storage upstream from site.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09423640 TOPOCK MARSH OUTLET NEAR NEEDLES, CA.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	TEMPER- ATURE (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT					
06...	1410	2170	23.0	1400	1.9
18...	1400	2190	21.0	1420	1.9
NOV					
02...	1445	2230	16.0	1440	2.0
15...	1150	2230	14.0	1430	1.9
DEC					
01...	1542	2220	18.0	1440	2.0
20...	1010	2170	9.0	1410	1.9
JAN					
05...	1450	2110	9.0	1440	2.0
17...	1010	2190	9.0	1450	2.0
FEB					
02...	1050	2190	12.0	1470	2.0
18...	1140	2100	13.5	1500	2.0
MAR					
02...	1020	2160	14.0	1480	2.0
14...	1025	2090	18.5	1470	2.0
APR					
01...	1340	1160	17.0	718	.98
19...	1330	2100	20.0	1420	1.9
MAY					
03...	1115	2110	22.0	1440	2.0
16...	1010	2120	22.0	1440	2.0
JUN					
01...	1540	1980	25.0	1350	1.8
20...	0950	1830	25.5	1230	1.7
AUG					
17...	1450	1200	26.0	758	1.0
SEP					
02...	1000	1250	30.0	788	1.1
15...	0830	1260	28.0	800	1.1

AREAS AND ABBREVIATIONS

AGF	=	Agua Fria basin	LSC	=	Lower Santa Cruz basin
ALT	=	Altar Valley	LVR	=	Lower Verde River
ARA	=	Aravaipa Valley	MMJ	=	McMullen Valley
AVR	=	Avra Valley	MNV	=	Monument Valley
BIC	=	Big Chino Valley	N-C	=	New River-Cave Creek
BIS	=	Big Sandy Valley	PSC	=	Peach Springs Canyon
BWM	=	Bill Williams	PRZ	=	Puerco-Zuni
BLM	=	Black Mesa	RAN	=	Ranegras Plain
BRB	=	Black River basin	SAC	=	Sacramento Valley
BOD	=	Bodaway Mesa	SAF	=	Safford basin
BUT	=	Butler Valley	SRV	=	Salt River Valley
CDI	=	Canyon Diablo	SBV	=	San Bernardino Valley
CHV	=	Chevelon	SFP	=	San Francisco Peaks
CHN	=	Chinle	SFR	=	San Francisco River basin
COP	=	Coconino Plateau	SSI	=	San Simon basin
CHI	=	Colorado River, Hoover Dam to Imperial Dam	SSW	=	San Simon Wash
CON	=	Concho	SHV	=	Shivwits
DOU	=	Douglas basin	SNO	=	Snowflake
DUN	=	Duncan basin	STJ	=	St. Johns
GIL	=	Gila Bend basin	TON	=	Tonto basin
GRD	=	Gila River from Painted Rock Dam to Texas Hill	TUB	=	Tuba City
GSK	=	Gila River from head of San Carlos Reservoir to Kelvin	USR	=	Upper Salt River basin
GTD	=	Gila River from Texas Hill to Dome	USP	=	Upper San Pedro basin
GWA	=	Grand Wash	USC	=	Upper Santa Cruz basin
HAR	=	Harquahala Plains	VER	=	Upper Verde River
HAS	=	Hassayampa basin	VRG	=	Virgin River
HOL	=	Holbrook	WAT	=	Waterman Wash
HOP	=	Hopi	WMD	=	Western Mexican drainage
HOU	=	House Rock	WHM	=	White Mountains
HUA	=	Hualapai Valley	WRB	=	White River basin
KAI	=	Kaibito	WIL	=	Willcox basin
KAN	=	Kanab	WMN	=	Williamson Valley
LIC	=	Little Chino Valley	YUM	=	Yuma
LHA	=	Lower Hassayampa			
LSP	=	Lower San Pedro basin			

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD <u>a</u> /)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
AGUA FRIA BASIN											
343157N1121354.1 (15070102)	(A-13-1)2cac	200	4,603	Stock	1973-83	82.3	4- 1-80	93.4	2- 6-81	85.6	2-23
ALTAR VALLEY											
312900N1113232.1 (15080200)	(D-22-8)29dba	---	3,598	Unused	1964-83	141.9	3- 6-73	152.5	12-16-70	142.5	1- 2
ARAVAIPA VALLEY											
323753N1100806.1 (15050203)	(D-9-22)19dec	---	4,280	Stock	1949, 1951-78, 1980-83	10.5	1-24-75	103.4	2-20-81	95.9	1-27
AVRA VALLEY											
320850N1111459.1 (15050304)	(D-15-11)5ccd	712	2,368	Unused	1953-57, 1959-60, 1962-83	281.1	3- 6-53	346.2	1- 2-83	346.2	1- 2
BIG CHINO VALLEY											
345608N1123323.1 (15060201)	(B-18-3)23bbc	61	4,420	Unused	1952-67, 1969-83	8.9	2-10-66	18.5	5-31-55	15.8	2-15
BIG SANDY VALLEY											
351119N1133708.1 (15030201)	(B-21-13)24bcd	404	3,620	Stock	1961-62, 1964-80, 1982-83	370.3	2- 3-78	395.2	1-28-64	374.8	2-17
BILL WILLIAMS											
341650N1124315.1 (15030203)	(B-11-4)19bcc	---	4,449	Unused	1946, 1948-49, 1951-57, 1959-61, 1964-66, 1968-72, 1974-79, 1981-83	16.5	7- 3-46	32.7	2- 5-65	18.0	2-15
342828N1125318.1 (15030203)	(B-13-6)9dcd	52	2,500	Irrigation	1945-49, 1951-57, 1959-83	14.0	1-17-45	19.9	1-19-77	15.3	2-16
BLACK MESA											
360055N1103040.1 (15020012)	04 075-00.61X16.21 Navajo Indian Res.	1,683	5,858	Unused	1972-83	323.9	2- 1-73	351.0	6-10-82	350.6	3-31
BUTLER VALLEY											
335823N1134715.1 (15030105)	(B-7-15)2dde	552	1,425	Irrigation	1967-76, 1978-83	148.3	2-16-72	165.3	1-25-82	164.3	2- 7
CANYON DIABLO											
345603N1104503.1 (15020008)	(A-18-15)28aad	500	5,180	Observation	1969-74, 1976-83	265.5	2-12-74	268.7	1- 3-79	265.7	3-17

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD <u>a</u> /)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
CHEVELON											
344106N1102806.1 (15020010)	(A-15-18)19aaa	940	6,115	Test	1973, 1976-83	838.3	1-14-77	845.1	1-23-81	839.4	4-19
355223N1105223.1 (15020008)	(A-17-14)17add	600	5,540	Stock	1964, 1968, 1970-71, 1974, 1977-78, 1980-83	405.7	4- 6-71	407.3	10-16-68	406.1	4-26
CHINLE											
361317N1093558.1 (14080204)	10 071-05.55X01.98	200	5,425	Observation	1966-67, 1969-83	16.5	2-15-83	29.4	7-12-66	16.5	2-15
COLORADO RIVER, HOOVER DAM TO IMPERIAL DAM											
333829N1141348.1 (15030106)	(B-4-19)33cca	---	917	Domestic	1974, 1976-83	26.2	1-10-79	33.2	2- 3-76	32.6	2- 7
CONCHO											
342817N1093336.1 (15020002)	(A-12-26)2bda	100	6,295	Stock	1975-83	68.3	5- 6-75	106.8	4-14-81	85.2 85.2	4- 5 10-12
342555N1093216.1 (15020002)	(A-12-26)13dcd	300	5,970	Unused	1975-83	45.2	4-14-76	59.0	9-24-81	48.0 55.1	4- 6 10-12
343226N1093131.1 (15020002)	(A-13-26)12dda	75	6,105	Stock	1976-83	29.3	9-25-81	49.1	4-30-80	37.7 37.8	4- 7 10-13
343432N1095004.1 (15020001)	(A-14-24)29dcc	335	5,640	Stock	1975-83	231.1	4- 5-83	280.5	9-22-80	231.1	4- 5
343716N1093857.1 (15020002)	(A-14-25)E12cdd2	452	5,430	Irrigation	1953-58, 1960-83	11.7	5- 1-62	32.6	1-11-77	30.9	3- 1
343623N1094032.1 (15020002)	(A-14-25)14ccd	350	5,600	Stock	1975-83	172.4	3- 5-75	226.9	9-25-81	197.4 206.6	4- 7 10-14
343601N1093558.1 (15020002)	(A-14-26)21bcc	345	5,475	Stock, Irrigation	1950, 1955, 1975-83	9.0	11- 1-50	37.1	9-24-80	24.6 28.1	4- 7 10-14
DOUGLAS BASIN											
315042N1094143.1 (15080301)	(D-18-26)28aaa2	390	4,268	Irrigation	1965-76, 1978-83	89.0	2-11-65	170.6	1- 6-82	170.5	2-16
313826N1094023.1 (15080301)	(D-21-26)2baa	121	4,130	Unused	1947-83	36.6	8-26-47	110.5	2-16-83	110.5	2-16
313332N1094300.1 (15080301)	(D-21-26)32dad	400	4,075	Irrigation	1946, 1954-64, 1966-76, 1978-79, 1981-83	41.2	5- 1-46	81.9	2-20-75	74.7	2-16
312527N1093957.1 (15080301)	(D-23-26)13ccc	---	4,010	Unused	1954-69, 1971-72, 1974-75, 1978-83	53.3	1- 9-56	68.4	1-24-72	63.1	2- 3
DUNCAN BASIN											
325114N1091058.1 (15040002)	(D-7-31)4bcc	75	3,544.4	Irrigation	1939-43, 1945-83	21.9	2-19-68	41.0	8- 8-56	25.7	1-18

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD <u>a</u> /)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
GILA BEND BASIN											
330258N1123859.1 (15070101)	(C-4-4)27daa	880	745	Irrigation	1966-83	182.0	1- 9-74	214.0	1-11-77	190.6	1-25
325650N1125527.1 (15070101)	(C-5-6)31cbb	1,875	718	Irrigation	1972, 1974-75, 1977, 1979-83	173.0	1-26-83	208.9	1-12-77	173.0	1-26
GILA RIVER DRAINAGE FROM PAINTED ROCK DAM TO TEXAS HILL											
330422N1131643.1 (15070210)	(C-4-10)22abb	500	608	Irrigation	1954, 1957-83	101.1	1-14-83	145.5	1-12-78	101.1	1-14
325353N1133211.1 (15070201)	(C-6-12)19bba	1,352	383	Unused	1945-50, 1952-83	26.0	2- 7-80	44.9	3-16-50	29.9	1-18
GILA RIVER FROM HEAD OF SAN CARLOS RESERVOIR TO KELVIN											
332102N1102802.1 (15040007)	(D-1-18)11dcc	---	2,662	Domestic, Irrigation	1967-83	24.1	1-18-83	38.7	3- 2-67	24.1	1-18
330858N1104951.1 (15050100)	(D-3-15)29aba	300	2,740	Irrigation	1952-78, 1980-83	81.6	2-25-60	102.2	9-10-57	90.5	1- 7
GILA RIVER FROM TEXAS HILL TO DOME											
324625N1135406.1 (15070201)	(C-7-16)33daa	---	278	Observation	1964-83	7.4	1-16-76	21.2	1-29-64	11.8	1-18
HARQUAHALA PLAINS											
334326N1133034.1 (15070104)	(B-4-12)5ada	730	1,638	Irrigation	1958-59, 1963, 1965-83	364.6	1-17-77	451.9	1- 2-78	442.0	1-25
HASSAYAMPA BASIN											
340147N1124923.1 (15070103)	(B-8-5)18ccc	450	2,455	Domestic	1978-83	324.7	1-10-83	332.4	2-27-80	324.7	1-10
HOLBROOK											
345310N1100625.1 (15020002)	(A-17-21)10cba	285	5,165	Unused	1952-58, 1960-83	49.5	2-24-82	53.6	1-21-81	53.5	4-21
HOPI											
350002N1103555.1 (15020008)	(A-19-16)36dbb	610	4,890	Unused	1976-83	30.9	2- 9-79	37.4	2-10-76	34.5	1- 4
HOUSE ROCK											
365942N1112925.1 (14070006)	(A-42-8)36cbc	655	3,735	Observation	1968-83	56.8	1- 2-83	235.0	4-30-68	56.8	1- 2
HUALAPAI VALLEY											
352740N1133555.1 (15010007)	(B-24-12)17cbc	440	4,255	Unused	1953-64, 1967-83	141.7	3-27-79	147.5	6-22-55	144.3	2-17
KANAB											
365403N1124528.1 (15010003)	(B-40-4)6aac	202	5,140	Irrigation	1975-76, 1978-83	79.2	1- 7-81	83.4	1- 2-83	83.4	1- 2

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD ±/)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
LITTLE CHINO VALLEY											
344846N1122714.1 (15060201)	(B-17-2)N34acc	420	4,500	Unused	1950-83	3.7	4- 1-80	13.7	11-18-80	13.6	2-23
LOWER HASSAYAMPA											
332934N1125728.1 (15070104)	(B-2-7)27aab	350	1,146	Irrigation	1953, 1956, 1958-83	162.8	12- 3-53	287.7	1- 6-83	287.7	1- 6
LOWER SAN PEDRO BASIN											
325526N1104338.1 (15050203)	(D-6-16)8dac5	54	2,040	Unused	1968-75, 1977-83	35.6	3- 8-68	41.0	1-31-81	36.1	1- 7
323644N1104612.1 (15050203)	(D-9-15)36bbc	92	4,500	Domestic	1949-83	19.4	2- 6-79	83.0	5-13-57	29.2	1- 6
LOWER SANTA CRUZ BASIN											
330435N1120858.1 (15050303)	(D-4-2)15ccb	372	1,229	Unused	1951-83	109.5	2-12-51	368.7	1-10-78	347.0	1- 4
324917N1113536.1 (15050303)	(D-7-7)11cdd	600	1,494	Irrigation	1942-57, 1959-64, 1967-83	85.9	3-11-42	299.1	3- 6-75	279.1	1- 6
324035N1114123.1 (15050303)	(D-8-6)35ddd2	770	1,545	Irrigation	1949, 1951-64, 1966-83	100.8	2- 7-49	200.3	1-18-82	180.8	1- 6
324312N1113330.1 (15050303)	(D-8-8)18cddl	600	1,596	Irrigation	1942, 1949, 1952-57, 1959-60, 1962-64, 1967-83	135.5	3- 5-42	397.4	1-14-77	339.1	1- 6
323753N1112046.1 (15050303)	(D-9-10)19aaa	600	1,835	Unused	1953-64, 1966-83	181.1	3-28-55	226.7	1-17-68	209.8	1- 7
323942N1110302.1 (15050100)	(D-9-13)7cbc	275	3,115	Stock	1952-79, 1981-83	43.0	9-23-55	111.5	1- 6-53	49.6	1-12
323437N1115958.1 (15050306)	(D-10-3)12aab	255	1,631	Domestic	1956-57, 1964-75, 1977-83	206.8	2-11-57	219.6	9-27-56	213.9	1- 2
LOWER VERDE RIVER											
341551N1111842.1 (15060203)	(A-11-10)27ddb	400	5,052	Public Supply	1975, 1979-83	95.5	3-27-80	128.7	4-12-79	114.3	3-15
McMULLEN VALLEY											
335727N1130451.1 (15070104)	(B-7-8)15baa	1,812	2,257	Irrigation	1962-65, 1967-83	479.4	1- 2-64	578.4	1-28-83	578.4	1-28
NEW RIVER - CAVE CREEK											
335033N1121114.1 (15070102)	(A-6-2)30aaa	230	1,721	Stock	1976, 1979-83	200.8	1- 5-83	214.0	3- 5-81	200.8	1- 5
PUERCO - ZUNI											
345620N1091040.1 (15020004)	(A-18-30)20cdd	420	6,450	Stock, Domestic	1971-83	359.2	2-22-78	366.8	1-29-76	360.3	3-16

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD <u>a</u> /)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
RANEGRAS PLAIN											
334839N1135141.1 (15030105)	(B-5-15)6baa2	---	1,156	---	1979-83	227.7	1-10-79	251.4	2-12-81	231.3	2- 8
SACRAMENTO VALLEY											
350937N1140442.1 (15030103)	(B-21-17)34ddb	80	3,050	Unused	1952-78, 1982-83	57.9	1-18-73	62.6	2-13-53	58.2	2-10
SAFFORD BASIN											
330240N1100311.1 (15040005)	(D-4-22)35ada	75	2,859.5	Stock	1939-44, 1946-83	7.2	1-20-81	41.6	1-28-58	13.9	1-17
325230N1094428.1 (15040005)	(D-6-25)25cdd	50	2,873	Irrigation	1958-61, 1968-83	13.8	5- 9-68	28.0	1-13-58	15.7	1-17
324855N1094033.1 (15040005)	(D-7-26)22bab	90	2,951.2	Irrigation	1940-83	20.3	5-25-42	68.2	7- 1-57	27.7	1-17
324113N1094154.1 (15040005)	(D-8-26)33ccc1	400	3,340	Irrigation	1950-83	17.0	3-13-50	83.5	3-14-75	43.1	1-17
SALT RIVER VALLEY											
332427N1114646.1 (15050100)	(A-1-6)30baa	400	1,246	Irrigation	1956, 1958-63, 1965-83	203.7	1-16-56	305.6	1- 2-79	222.3	2- 8
333217N1115123.1 (15060106)	(A-2-5)8aaa	1,000	1,300	Unused	1972-83	281.7	1-23-73	311.0	5-10-78	296.8	1-13
333520N1115358.1 (15060106)	(A-3-4)24caa	700	1,375	Irrigation	1957, 1962-66, 1969, 1973-76, 1978-83	205.2	2-12-57	287.9	1-12-83	287.9	1-12
334011N1121043.1 (15070102)	(A-4-2)20cdd	528	1,290	Irrigation	1963-67, 1969-74, 1976-83	394.6	1-25-66	444.6	1- 2-83	444.6	1- 2
332416N1123901.1 (15070101)	(B-1-4)27abb	350	988	Irrigation	1956-68, 1970, 1972-83	120.3	1- 2-83	159.5	1-14-72	120.3	1- 2
333052N1122024.1 (15070102)	(B-2-1)14cbb	708	1,057	Unused	1960-66, 1968-83	130.1	12-21-65	218.8	1-16-80	207.6	1- 2
331314N1113040.1 (15050100)	(D-2-8)27ddd	614	1,552	Unused	1949-54, 1957, 1964-69, 1971-72, 1976-78, 1980-83	231.7	1-19-49	505.6	2- 2-76	486.3	1- 2
SAN BERNARDINO VALLEY											
312006N1091806.1 (15080302)	(D-24-30)16ccc	100	3,800	---	1977, 1980-83	29.0	2-18-83	29.8	1-26-77	29.0	2-18
SAN FRANCISCO PEAKS											
352823N1115013.1 (15020016)	(A-24-5)11cdb	292	7,386	Stock	1964-65, 1967-73, 1975-78, 1980-83	261.4	1- 2-81	284.4	11- 3-67	262.7	4-25

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD a/)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
SAN SIMON BASIN											
322110N1093627.1 (15040006)	(D-12-27)32aab	250	3,980	Stock	1952-57, 1959-64, 1967-75, 1977-83	132.5	12-20-56	137.2	12-12-55	133.8	2- 1
321200N1090945.1 (15040006)	(D-14-31)22adc	800	3,690	Irrigation	1973-83	92.6	4- 5-78	131.0	3- 5-80	124.5	2-17
SAN SIMON WASH											
315444N1115503.1 (15080101)	(D-17-4)34abd	201	2,301.4	Irrigation	1954-57, 1968-83	117.9	3-21-79	147.3	6-27-56	120.3	1- 2
SNOWFLAKE											
342811N1100612.1 (15020005)	(A-13-21)34dcc2	254	5,658	Domestic	1964-69, 1971-83	98.8	12- 4-64	136.8	2-16-82	125.3	3- 2
ST. JOHNS											
342700N1092512.1 (15020002)	(A-12-28)7cdb	720	5,925	Irrigation	1956-57, 1966-83	28.6	4- 6-57	55.2	9-12-75	38.6	1-18
TONTIO BASIN											
340458N1112118.1 (15060105)	(A-9-10)32bdb	---	3,030	Stock	1972-78, 1981-83	23.5	3- 1-73	44.0	1-31-75	26.1	3-15
TUBA CITY											
360918N1110807.1 (15020018)	03 077-7.55X6.55 Navajo Indian Res.	705	5,108	Industrial	1966, 1973-83	58.5	2-16-83	85.6	10-13-66	58.5	2-16
UPPER SALT RIVER BASIN											
332658N1104932.1 (15060103)	(A-1-15)9aad2	---	3,237	---	1970-83	8.8	2-28-79	65.5	1-19-77	44.2	1-18
332055N1104555.1 (15060103)	(D-1-15)13bda	105	3,800	Domestic, Irrigation	1946-55, 1957, 1959-83	3.5	5- 5-49	39.5	2-14-61	9.6	1-18
UPPER SAN PEDRO BASIN											
320005N1101709.1 (15050202)	(D-16-20)34acd2	117	3,525	Irrigation	1969-83	75.8	2-13-79 1- 2-80	90.1	1-26-76	80.2	1- 2
315508N1101334.1 (15050202)	(D-17-21)32bab	520	3,705	Stock	1944-83	16.9	12- 9-46	47.8	1-22-75	39.2	1-10
315335N1100901.1 (15050202)	(D-18-21)1dca	396	4,140	Stock	1961-63, 1966, 1968, 1970-83	360.5	4-20-66	367.1	2-10-71	364.4	1-10
312250N1100639.1 (15050202)	(D-23-22)33dcd2	91.5	4,225	Observation	1954-63, 1966-83	11.5	8-24-55	23.8	2-13-81	16.6	1-13

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD <u>a</u> /)	TYPE OF WELL	RECORDS AVAILABLE (Years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1983	Date
UPPER SANTA CRUZ BASIN											
320824N1105930.1 (15050301)	(D-15-13)11cba	224	2,457	Observation	1931-41, 1946-83	30.5	2-15-32	155.3	12-28-81	146.5	11-30
315511N1105452.1 (15050301)	(D-17-14)21acd	230	2,800	Irrigation	1971-78, 1980-83	179.8	1- 2-71	195.0	1- 6-83	195.0	1- 6
312848N1105732.1 (15050301)	(D-22-13)25ddd	105	3,482	Stock	1939-45, 1947-51, 1953-61, 1963-66, 1968-70, 1972-73, 1975-79, 1981-83	51.9	12- 3-79	100.7	3-11-55	66.8	1- 6
312119N1103517.1 (15050301)	(D-24-17)11cda	23	4,650	Observation	1949-83	1.8	12-30-55	14.6	7-24-64	5.0	1- 5
UPPER VERDE RIVER											
344307N1115527.1 (15060202)	(A-15-4)4ddcl	250	3,355	Domestic	1959-83	36.8	8-18-59	60.4	1-25-77	57.2	4- 1
VIRGIN RIVER											
365434N1135547.1 (15010010)	(B-41-15)33cab	98	1,910	Domestic	1976, 1978-83	54.2	3- 3-82	74.6	11- 3-76	54.9	1- 2
WATERMAN WASH											
331435N1122302.1 (15070101)	(C-2-1)20bad	800	1,130	Unused	1960-61, 1965, 1967, 1969-76, 1978-83	300.4	1-18-61	399.0	1-21-82	381.3	1- 3
WHITE MOUNTAINS											
341429N1100252.1 (15020005)	(A-10-22)30aba	750	6,485	Municipal	1969-83	523.2	3-27-69	532.0	2-13-74	521.7	3- 1
WILLOOX BASIN											
321834N1095430.1 (15050201)	(D-13-24)16bbb	1,356	4,209	Observation	1942, 1944-83	29.7	5-13-42	130.7	8-31-62	121.3	1-28
321413N1095729.1 (15050201)	(D-14-23)12bbb1	225	4,359	Stock	1953-69, 1971-77, 1979-83	170.0	2- 5-53	252.7	2- 2-77 1-28-83	252.7	1-28
321115N1095552.1 (15050201)	(D-14-24)30dba	---	4,187	Stock	1942, 1944-57, 1963-83	16.0	10-21-55	33.9	1-14-74	31.3	1-27
320236N1094750.1 (15050201)	(D-16-25)16add	65	4,190	Stock	1942, 1944-57, 1959-83	27.0	2-18-69	45.2	6-12-47	39.1	1-18
YUMA											
323840N1143201.1 (15030108)	(C-9-22)17dca	191	205	Observation	1945-58, 1960-83	52.5	11-15-60	97.6	9- 5-46	65.9	1-14

a/NGVD, National Geodetic Vertical Datum of 1929.

QUALITY OF GROUND WATER

WATER-QUALITY, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

LOCAL IDENT- I- FIER	SITE	DATE OF SAMPLE	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)
BLACK MESA										
KEAMS CYN2 0609403231105	GW	83-08-23	1120	9.1	19.0	3	0	.99	.14	250
KITSILLIE PHS WELL	GW	83-08-16	505	9.3	27.5	15	0	3.8	1.4	100
ORAIPI PM4 0609506340854	GW	83-08-15	400	9.6	22.0	2	0	.50	.16	87
PINON PM6 0407312261009	GW	83-08-16	505	9.7	24.5	2	0	.56	.07	110
4M-60 0405702621251	SP	83-08-17	580	6.5	14.5	230	131	64	17	24
CONCHO										
A-12-26 19ABA	SP	82-10-19	120	8.1	15.0	65	0	13	7.9	7.5
	SP	83-04-05	160	8.2	14.5	70	0	14	8.4	8.0
A-13-24 22BBD	GW	82-10-19	440	8.0	14.0	210	85	54	18	16
	GW	83-04-05	480	7.6	15.5	230	73	62	19	16
A-13-26 12DDA	GW	82-10-21	1580	8.4	15.5	340	119	45	56	260
	GW	83-04-07	164	7.9	19.0	320	59	45	50	250
A-14-24 29DCC	GW	82-10-18	610	7.8	21.0	250	115	62	23	23
A-14-25 14CCD	GW	82-10-25	720	8.1	17.0	280	0	66	28	36
GILA RIVER FROM TEXAS HILL TO DOME										
C-16-07 23BD	GW	83-07-06	610	7.4	25.5	210	0	60	14	44
HUALAPAI VALLEY										
B-22-15 33DAD	GW	83-05-24	575	8.1	32.5	--	--	--	--	--
B-22-16 27DDD	GW	83-05-24	345	7.8	29.0	--	--	--	--	--
B-22-16 33CDC	GW	83-05-24	370	7.8	30.0	--	--	--	--	--
B-22-16 34CBC	GW	83-05-24	365	7.8	31.0	--	--	--	--	--
LOWER PASSAYANPA										
C-01-05 01PCC	GW	83-08-16	5600	7.3	24.0	1900	1760	540	130	570
LOWER SANTA CRUZ BASIN										
D-03-04 34CBB	GW	83-01-07	1820	7.4	23.0	370	171	110	23	240
D-03-05 31ABR2	GW	83-04-20	1550	7.3	23.0	400	199	120	24	190
D-04-03 24DDD	GW	82-11-02	1880	8.0	27.5	510	442	180	15	180
D-04-05 07BBC	GW	83-01-07	2430	7.4	25.0	690	527	220	34	290
D-04-05 10AAA	GW	83-01-07	2030	7.7	21.5	730	583	230	38	170
D-05-08 10BAD	GW	82-10-06	1620	6.8	24.5	360	197	110	21	190
D-06-06 30DCC	GW	83-04-20	2240	7.6	22.5	180	0	54	12	440
D-07-04 24BAD	GW	83-04-22	489	7.7	27.5	110	0	33	7.6	63
D-07-06 29DDD1	GW	83-04-22	2940	7.2	24.5	1100	781	340	51	270
D-07-08 10DCC	GW	82-11-02	1040	7.9	27.0	340	191	110	16	75
D-08-01 31CBD	GW	82-12-14	--	--	--	140	0	31	14	54
D-08-06 14DDD	GW	82-11-02	515	8.1	28.0	51	0	17	2.0	82
D-08-08 09BDD2	GW	83-04-21	1270	8.5	31.0	60	0	21	1.8	240
D-09-01 11BDD2 SV-11(OB1)	GW	83-06-14	690	8.5	--	41	0	13	2.0	140
D-09-01 11BDD4 SV-11(X2)	GW	83-06-14	1550	8.3	--	110	33	36	5.0	340
D-09-07 03ADD	GW	83-04-22	522	7.7	26.0	140	0	46	5.7	61
D-09-07 27DDD	GW	83-04-21	390	9.2	34.0	6	0	2.3	.01	82
D-09-08 05CAA	GW	83-04-21	870	7.5	26.0	270	135	88	11	77
D-09-08 36DCD2	GW	82-11-02	605	7.8	29.5	130	0	44	5.0	71
LOWER SAN PEDRO BASIN										
D-11-17 18FACA	GW	82-10-24	--	--	--	130	0	37	8.6	9.1
LOWER VERDE RIVER										
A-03-06 15ABB	GW	83-08-11	700	7.4	31.5	240	40	72	14	53
A-05-06 31DDD	GW	83-07-13	990	7.7	34.0	250	106	74	16	89
A-07-05 09CA UNSURV	SP	83-06-01	515	7.3	22.5	230	0	62	19	15
NEW RIVER-CAVE CREEK										
A-04-02 23CDB	GW	83-07-14	475	7.8	29.0	140	0	29	17	40
A-05-01 10AAB	GW	83-06-09	405	8.0	28.5	140	--	30	15	31
A-05-02 03DBC	GW	83-06-09	510	8.0	32.0	76	0	15	9.2	84
A-05-03 04ADD	GW	83-06-02	440	7.6	31.0	170	0	37	19	29
A-06-02 15BDB	GW	83-06-02	465	7.6	24.5	200	0	50	18	22
A-06-03 09ABB	GW	83-06-13	555	7.7	26.5	230	19	50	25	23
A-06-04 26DCC	GW	83-08-25	440	7.9	26.0	140	0	25	18	40
A-07-02 29BAB	GW	83-06-13	1420	7.2	28.0	580	291	130	63	71
A-07-02 35DDB	GW	83-06-13	1070	7.2	29.0	460	0	82	61	59

QUALITY OF GROUND WATER

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WATER-QUALITY, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DATE OF SAMPLE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
BLACK MESA												
83-08-23	65	1.0	330	42	120	1.5	12	630	<.10	730	37	<1
83-08-16	12	1.2	180	37	4.4	.20	20	280	1.1	60	37	7
83-08-15	28	.50	180	9.8	4.1	.20	23	230	1.2	40	46	2
83-08-16	38	.50	210	5.3	3.6	.20	27	270	1.4	50	32	1
83-08-17	.7	5.1	99	140	19	<.10	20	350	3.0	40	4	1
CONCHO												
82-10-19	.4	2.7	118	<5.0	3.2	.10	28	--	.40	<10	5	2
83-04-05	.4	2.8	91	4.1	3.4	<.10	29	120	.38	<10	12	2
82-10-19	.5	2.6	124	84	14	.20	12	280	<.10	20	2500	32
83-04-05	.5	2.7	160	89	16	.20	13	310	<.10	20	680	13
82-10-21	6	1.9	224	260	280	1.5	31	1100	3.1	670	16	23
83-04-07	6	1.6	260	240	230	1.6	39	1000	2.9	70	88	4
82-10-18	.7	3.6	135	120	24	.30	9.8	350	<.10	40	680	52
82-10-25	1	4.8	350	120	47	.40	10	520	<.10	60	1000	23
GILA RIVER FROM TEXAS HILL TO DOME												
83-07-06	1	.70	--	18	16	.50	42	360	1.3	100	<3	<1
HUALAPAI VALLEY												
83-05-24	--	--	--	--	--	--	--	--	--	--	--	--
83-05-24	--	--	--	--	--	--	--	--	--	--	--	--
83-05-24	--	--	--	--	--	--	--	--	--	--	--	--
83-05-24	--	--	--	--	--	--	--	--	--	--	--	--
LOWER HASSAYAMPA												
83-08-16	6	7.1	--	1100	1300	.40	23	3800	26	2400	40	10
LOWER SANTA CRUZ BASIN												
83-01-07	6	4.9	--	210	340	2.0	40	1100	3.9	370	4	<1
83-04-20	4	4.6	200	180	320	1.1	35	990	2.4	220	11	<1
82-11-02	4	3.0	--	460	250	3.4	26	1200	7.8	660	18	1
83-01-07	5	4.7	--	640	370	2.3	45	1700	7.5	1400	30	20
83-01-07	3	3.7	--	510	280	.80	43	1400	11	1200	30	10
82-10-06	5	5.8	--	200	260	.80	31	920	5.8	190	4	1
83-04-20	15	2.1	310	350	320	3.0	61	1400	8.1	870	30	<10
83-04-22	3	2.1	140	58	33	.70	31	310	2.0	150	35	<1
83-04-22	4	6.2	280	770	360	.30	42	2000	19	1300	40	10
82-11-02	2	3.2	150	120	150	.60	32	600	4.0	110	4	<1
82-12-14	2	1.8	--	25	24	.80	47	310	4.4	210	30	7
82-11-02	5	1.5	110	61	40	1.1	23	290	2.0	130	4	<1
83-04-21	14	1.9	88	52	310	1.7	28	710	1.2	130	32	8
83-06-14	10	3.0	--	28	87	--	--	--	--	300	--	--
83-06-14	15	10	--	75	350	--	--	--	--	900	--	--
83-04-22	2	2.6	150	65	32	.50	32	330	5.7	90	<3	<1
83-04-21	16	.80	96	59	24	2.7	20	250	.78	170	4	<1
83-04-21	2	3.2	130	160	87	.40	32	540	9.2	90	25	<1
82-11-02	3	2.5	140	75	38	.60	32	350	5.5	100	<3	<1
LOWER SAN PEDRO BASIN												
82-10-24	.4	2.6	--	14	4.8	.20	29	190	1.0	<10	31	17
LOWER VERDE RIVER												
83-08-11	2	2.4	--	34	91	1.6	27	420	1.3	80	29	<1
83-07-13	3	4.8	--	140	130	1.4	32	580	3.1	130	7	<1
83-06-01	.4	1.3	--	7.9	8.5	.30	69	330	1.3	20	<3	<1
NEW RIVER-CAVE CREEK												
83-07-14	1	3.2	--	10	37	.90	39	270	6.0	80	<3	<1
83-06-09	1	--	--	--	--	--	51	--	--	--	<3	2
83-06-09	4	3.5	--	18	17	3.5	51	320	3.9	150	<32	2
83-06-02	1	2.3	--	7.7	17	.30	39	270	1.0	40	<3	<1
83-06-02	.7	1.8	--	16	13	.50	37	290	1.3	30	7	<2
83-06-13	.7	2.1	--	14	30	.50	68	340	6.3	50	<5	<3
83-08-25	2	2.8	--	16	24	.90	40	280	4.0	80	<3	<1
83-06-13	1	1.0	--	140	190	.40	47	820	16	140	10	13
83-06-13	1	2.0	--	47	55	.50	32	620	.89	150	16	23

QUALITY OF GROUND WATER

WATER-QUALITY, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

LOCAL IDENT- I- FIER	SITE	DATE OF SAMPLE	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	NESS NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)
PUERCO-ZUNI										
A-14-29 35CDC1	GW	82-10-20	1560	6.9	19.5	670	150	200	42	150
A-14-29 35CDC2	GW	83-04-06	1690	7.4	19.0	670	123	200	42	150
SALT RIVER VALLEY										
A-01-01 36AAD	GW	83-07-27	3920	7.2	21.5	700	329	160	72	570
A-01-02 14BBC	GW	83-06-13	1990	7.3	22.0	400	51	99	38	270
A-01-03 09ADA	GW	83-06-14	1470	7.3	24.5	280	8	70	26	210
A-01-04 11ABA	GW	83-08-12	1270	7.6	26.5	270	103	55	33	160
A-01-04 15DCC	GW	83-08-12	1510	7.4	24.0	320	45	69	36	200
A-01-05 15DCB	GW	83-08-12	680	7.7	28.0	150	41	40	12	78
A-01-06 01CCC2	GW	83-07-08	1460	7.5	32.0	240	88	63	21	190
A-01-07 31DAC	GW	83-07-08	520	8.1	35.0	34	0	12	1.0	91
A-01-08 03CDB1	GW	83-07-26	1120	7.4	24.5	480	280	130	37	58
A-02-01 33CDD2	GW	83-06-14	2320	7.5	27.5	720	613	140	90	160
A-02-02 16DDC	GW	83-08-16	1400	7.7	26.0	550	437	99	72	43
A-02-03 22ABA	GW	83-06-16	2110	7.7	24.0	190	0	29	29	390
A-02-04 02ACB	GW	83-07-06	430	7.8	36.0	150	0	19	24	37
A-02-05 14AAA	GW	83-07-06	1450	7.5	25.5	260	101	64	24	180
A-03-01 09BBC	GW	83-06-09	565	7.9	27.5	190	--	44	19	38
A-03-01 31ABB	GW	83-06-08	615	7.9	27.5	200	--	36	27	40
A-03-02 04DAA	GW	83-08-02	595	7.8	37.0	150	24	30	18	64
A-03-02 24BAB2	GW	83-06-08	720	7.9	32.0	230	--	45	28	53
A-03-04 02BBB	GW	83-08-01	560	7.5	36.5	180	0	29	27	44
A-03-04 09CCD	GW	83-06-15	440	7.9	35.5	130	0	17	22	44
A-03-04 23ACD	GW	83-08-11	350	8.0	27.0	81	0	14	11	45
A-04-01 05ACD	GW	83-08-24	475	7.6	25.0	180	0	47	15	31
A-04-02 11ADB	GW	83-06-02	415	7.8	29.0	140	0	28	16	37
A-04-03 25DBD	GW	83-06-15	355	7.9	27.5	120	0	15	21	26
A-05-04 34DCD	GW	83-08-01	540	7.6	33.0	170	0	45	15	49
B-01-01 25ADA	GW	83-05-31	5200	7.2	23.5	870	533	200	89	770
B-01-02 25BBC2	GW	83-08-02	2350	7.9	37.0	130	47	44	5.7	410
B-01-03 30AAA	GW	83-05-31	6300	7.4	24.5	920	706	220	89	>1100
B-01-04 19DAD2	GW	83-08-16	2490	7.3	22.0	620	409	150	59	270
B-01-04 31BCD	GW	83-08-22	4130	7.3	24.0	810	597	220	62	610
B-02-01 03BRA2	GW	83-07-05	880	7.5	25.5	320	210	73	32	44
B-02-01 19DBB2	GW	83-08-16	1550	7.8	28.0	330	232	71	36	180
B-02-02 05AAB	GW	83-07-05	715	7.8	30.0	160	27	47	8.9	74
B-04-01 15ABB	GW	83-07-06	610	7.5	31.0	190	7	47	17	53
B-05-03 33BDA	GW	83-03-04	405	7.7	24.0	140	--	36	12	32
	GW	83-08-04	405	7.7	24.0	140	0	36	12	32
B-06-01 27CAC	GW	83-08-24	530	7.7	26.5	170	0	34	21	49
B-06-02 31BDD	GW	83-08-03	1390	7.7	28.0	310	219	99	16	180
B-06-03 05ADD	GW	83-08-03	575	7.7	25.0	110	0	30	8.8	86
B-06-03 33DCB	GW	83-08-03	660	7.8	30.0	150	2	37	14	80
B-07-03 24CCA	GW	83-08-03	1680	7.4	22.0	710	422	180	64	100
C-01-02 22RBB	GW	83-07-28	375	7.4	25.0	150	0	50	5.8	18
C-01-03 14DDD2	GW	83-05-31	1900	7.4	26.5	170	0	56	7.5	300
C-01-04 02CBC	GW	83-08-16	6600	7.4	24.0	1100	941	290	100	1100
C-01-04 27BRC1	GW	83-05-31	8200	7.1	23.5	2100	1900	560	170	>1100
D-01-02 19AAA	GW	83-06-15	4300	--	--	--	--	--	--	--
D-01-02 20DAA	GW	83-07-11	3070	7.4	27.0	650	491	160	60	350
D-01-02 31ACA	GW	83-06-19	5530	--	--	--	--	--	--	--
D-01-03 04ACC	GW	83-07-11	2300	7.4	24.0	220	0	51	23	380
D-01-03 36DDD1	GW	83-07-13	4250	7.3	23.0	930	616	230	86	610
D-01-04 09CAC	GW	83-07-14	2600	7.4	24.0	520	311	130	46	320
D-01-06 27CDD	GW	83-07-12	1180	7.6	30.0	310	223	85	24	100
D-01-07 22CBA	GW	83-04-12	330	8.7	35.0	10	0	3.5	.23	64
D-01-09 07BDC2	GW	83-01-19	510	8.9	43.0	5	--	1.8	.04	110
	GW	83-07-19	510	8.9	43.0	4	0	1.4	.01	110
D-01-10 35DBC	GW	83-07-19	985	7.4	22.5	420	206	120	29	36
D-02-02 16BBB	GW	83-06-19	4200	--	--	--	--	--	--	--
D-02-05 08DAD	GW	83-08-12	3500	7.0	24.0	1100	913	310	82	280
D-02-06 18CCC	GW	83-06-19	1850	--	--	--	--	--	--	--
D-02-07 12DDA2	GW	83-08-23	760	7.6	26.0	180	0	54	12	72
D-02-07 36ADA	GW	83-07-12	785	7.7	31.0	160	58	50	8.7	87
D-02-08 34DAA	GW	83-07-26	1120	7.4	24.5	220	103	66	13	69
D-02-09 01ABB	GW	83-07-27	360	7.9	35.0	79	0	25	4.1	47
D-02-10 16DCB	GW	83-07-19	535	7.7	26.0	180	0	53	11	48
D-02-10 31ABB	GW	83-07-27	440	7.8	32.0	89	0	25	6.3	60
D-02-12 07ABA	GW	83-07-19	1610	7.3	22.0	660	386	180	52	90
D-03-08 25AAA	GW	83-06-19	890	--	--	--	--	--	--	--
D-03-09 28BBC	GW	83-07-26	1280	7.5	25.5	300	169	89	18	140
D-04-09 04DDD	GW	83-07-26	1100	7.5	22.5	270	111	79	17	120
D-04-09 06AAA2	GW	83-06-15	1650	--	--	--	--	--	--	--

DATE OF SAMPLE	SODIUM AD-SORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
PUERTO-ZUNI												
82-10-20	3	19	523	300	110	3.4	10	1200	<.10	510	3800	57
83-04-06	3	19	550	300	120	3.1	10	1200	<.10	500	3100	47
SALT RIVER VALLEY												
83-07-27	10	6.8	--	350	880	.40	27	2300	16	1800	40	<10
83-06-13	6	6.1	--	140	350	.30	27	1100	6.5	760	20	<10
83-06-14	6	5.3	--	110	240	.30	26	850	7.2	750	120	6
83-08-12	4	5.0	--	99	240	.40	28	720	3.5	200	5	8
83-08-12	5	4.7	--	100	250	.30	19	850	5.9	260	7	<1
83-08-12	3	2.9	--	46	120	.30	21	390	<.10	60	4	<1
83-07-08	5	5.7	--	82	310	2.6	30	800	2.4	360	12	7
83-07-08	7	2.6	--	31	89	.60	29	310	1.4	110	4	<1
83-07-26	1	1.7	--	340	54	.50	46	790	2.4	60	28	9
83-06-14	3	7.1	--	93	570	.20	24	1200	17	190	40	<10
83-08-16	8	4.3	--	55	300	.20	24	670	22	40	13	3
83-06-16	12	2.7	--	120	380	4.8	25	1200	6.1	900	30	<10
83-07-06	1	2.4	--	9.7	19	.40	29	260	1.4	60	<4	<2
83-07-06	5	4.8	--	59	300	.20	30	760	5.8	160	10	<1
83-06-09	1	--	--	--	--	--	30	--	--	--	5	2
83-06-08	1	--	--	--	--	--	23	--	--	--	<3	<1
83-08-02	2	4.5	--	54	76	1.0	32	360	1.5	240	16	1
83-06-08	2	--	--	--	--	--	30	--	--	--	6	2
83-08-01	1	3.1	--	14	55	.50	33	320	.84	70	3	<2
83-06-15	2	2.7	--	9.6	20	.50	28	260	1.1	70	<3	<1
83-08-11	2	2.2	--	5.7	8.0	.60	21	210	1.3	80	<3	<1
83-08-24	1	2.4	--	22	24	.20	34	300	1.8	70	4	2
83-06-02	1	3.1	--	9.5	13	1.0	39	260	<.10	70	6	1
83-06-15	1	2.7	--	7.6	16	.50	23	210	1.5	60	11	6
83-08-01	2	2.3	--	19	41	.50	39	340	1.1	60	5	2
83-05-31	12	6.6	--	500	1300	.20	25	3100	6.1	2700	30	10
83-08-02	16	5.7	--	150	570	5.3	26	1300	3.8	810	40	<10
83-05-31	--	8.4	--	1400	1200	3.4	28	--	18	7100	40	<10
83-08-16	5	3.2	--	260	510	1.5	39	1400	8.5	830	50	10
83-08-22	10	4.2	--	640	880	.90	26	2600	19	2100	70	<10
83-07-05	1	3.1	--	59	160	.50	28	470	5.8	70	10	<3
83-08-16	4	4.5	--	180	300	1.1	19	850	7.2	220	14	2
83-07-05	3	4.3	--	20	120	.30	25	380	1.8	70	<3	<2
83-07-06	2	2.4	--	66	42	1.0	31	370	1.5	140	10	<1
83-03-04	1	--	--	--	--							

QUALITY OF GROUND WATER

WATER-QUALITY, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

LOCAL IDENT- I- FIER	SITE	DATE OF SAMPLE	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAO3)	HARD- NESS NONCAR- BONATE (MG/L AS CAO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
SAINT JOHNS										
A-13-27 13A SPRGS E OF B	SP	82-10-21	1540	8.8	16.0	180	0	42	18	320
	SP	83-04-07	1530	8.3	2.5	190	185	46	18	300
A-14-27 35BDC	GW	82-10-25	1860	7.8	16.5	130	0	36	9.6	360
UPPER SANTA CRUZ BASIN										
D-23-13 01ACC	GW	83-01-11	660	7.4	--	210	0	69	10	58
D-23-13 01DCB	GW	83-01-11	620	7.1	--	230	0	72	11	36
D-23-13 01DCD	GW	83-01-11	645	7.5	--	220	13	69	12	47
D-23-13 12AAA	GW	83-01-11	360	7.8	--	93	0	32	3.2	21
D-23-13 12ABA	GW	83-01-11	415	7.5	--	150	0	50	6.2	26
D-23-13 12ADB	GW	83-01-11	640	7.4	--	240	24	75	13	45
UPPER SALT RIVER BASIN										
A-03-07 35CCC	GW	83-08-11	1390	7.3	20.0	190	0	53	15	220
WILCOX BASIN										
D-17-25 23DAD	GW	83-05-29	600	7.8	--	110	0	36	4.7	80
WESTERN MEXICAN DRAINAGE										
C-17-07 24CDD	GW	83-07-07	1400	8.4	24.5	--	--	--	--	--
C-17-07 17CCD	SP	83-06-22	--	7.7	25.0	150	0	40	11	210
C-17-08 09ADD UNSURV	GW	83-07-07	1850	7.5	31.0	--	--	--	--	--
	GW	83-07-07	1850	7.5	31.0	160	0	48	10	330
C-17-08 11DCD UNSURV	GW	83-07-07	2350	7.9	23.5	110	0	29	10	540

QUALITY OF GROUND WATER

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WATER-QUALITY, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983--Continued

DATE OF SAMPLE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY FIELD (MG/L AS CAO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SAINT JOHN'S												
82-10-21	11	5.6	398	300	89	2.4	16	1000	.35	1000	8	5
83-04-07	10	5.8	4	290	89	2.1	19	770	.96	820	220	76
82-10-25	14	7.7	280	420	160	2.2	8.3	1200	2.6	240	14	6
UPPER SANTA CRUZ BASIN												
83-01-11	2	5.4	--	68	35	.40	30	410	.33	80	20	--
83-01-11	1	3.9	--	54	15	.40	30	360	3.6	60	<3	--
83-01-11	1	4.5	--	56	47	.40	27	390	<.10	80	3	--
83-01-11	1	1.5	--	11	6.2	.90	40	180	.28	170	22	--
83-01-11	1	1.9	--	11	20	.60	35	250	2.4	50	<3	--
83-01-11	1	4.9	--	58	39	.40	31	400	1.6	80	14	--
UPPER SALT RIVER BASIN												
83-08-11	7	5.1	--	98	250	.40	92	870	.46	200	15	<1
WILLOX BASIN												
83-05-29	3	7.0	--	110	18	4.8	33	390	--	170	1100	94
WESTERN MEXICAN DRAINAGE												
83-07-07	--	--	--	--	--	--	--	--	--	--	--	--
83-06-22	8	8.5	--	110	160	4.9	40	750	2.7	770	33	4
83-07-07	--	--	--	--	--	--	--	--	--	--	--	--
83-07-07	12	7.0	--	200	280	6.0	37	1100	8.7	1000	15	30
83-07-07	23	5.2	--	240	350	10	61	1600	1.4	1900	20	<10

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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