

PLEASE DO NOT DESTROY OR THROW AWAY THIS PUBLICATION. If you have no further use for it, write to the Geological Survey at Washington and ask for a frank to return it

UNITED STATES DEPARTMENT OF THE INTERIOR

SURFACE WATER SUPPLY
of the **UNITED STATES**
1933

PART 9
COLORADO RIVER BASIN

Prepared in cooperation with the States of
ARIZONA, NEW MEXICO, UTAH, and WYOMING

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 749



UNITED STATES DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, Secretary
GEOLOGICAL SURVEY
W. C. MENDENHALL, Director

Water-Supply Paper 749

SURFACE WATER SUPPLY
of the UNITED STATES
1933

PART 9
COLORADO RIVER BASIN

NATHAN C. GROVER, Chief Hydraulic Engineer
W. E. DICKINSON, ROBERT FOLLANSBEE, BERKELEY JOHNSON
and A. B. PURTON, District Engineers

Prepared in cooperation with the States of
ARIZONA, NEW MEXICO, UTAH, and WYOMING



Water Resources Branch,
Geological Survey,
Box 3106, Capitol Station
Oklahoma City, Okla.

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1935

CONTENTS

	Page
Authorization and scope of work.....	1
Definition of terms.....	2
Explanation of data.....	2
Accuracy of field data and computed results.....	5
Publications.....	5
Cooperation.....	10
Division of work.....	10
Gaging-station records.....	11
Colorado River Basin.....	11
Colorado River and tributaries above Green River.....	11
Colorado River at Glenwood Springs, Colo.....	11
Colorado River near Palisade, Colo.....	12
Colorado River near Cisco, Utah.....	13
Colorado River at Lees Ferry, Ariz.....	14
Colorado River at Bright Angel Creek, near Grand Canyon Ariz.....	15
Colorado River near Topock, Ariz.....	16
Colorado River at Yuma, Ariz.....	17
Blue River at Dillon, Colo.....	20
Snake River at Dillon, Colo.....	21
Tenmile Creek at Dillon, Colo.....	22
Lake Fork at Lake City, Colo.....	23
Henson Creek at Lake City, Colo.....	24
Uncompahgre River near Colona, Colo.....	25
Green River Basin.....	26
Green River at Warren Bridge, near Daniel, Wyo.....	26
Green River at Green River, Wyo.....	27
Green River near Linwood, Utah.....	28
Green River at Green River, Utah.....	29
Horse Creek near Daniel, Wyo.....	30
New Fork near Boulder, Wyo.....	31
Pine Creek at Pinedale, Wyo.....	32
North Piney Creek near Mason, Wyo.....	33
Labarge Creek near Tulsa, Wyo.....	34
Fontenelle Creek near Fontenelle, Wyo.....	35
Big Sandy Creek near Farson, Wyo.....	36
Hams Fork at Diamondville, Wyo.....	37
Henrys Fork at Linwood, Utah.....	38
Burnt Fork at Burnt fork, Wyo.....	39
Ashley Creek near Vernal, Utah.....	40
North Fork of Duchesne River at Provo River Trail, near Hanna, Utah.....	41
Duchesne River near Tabiona, Utah.....	42
Duchesne River at Duchesne, Utah.....	43
Duchesne River at Myton, Utah.....	44

Gaging-station records—Continued.

Colorado River Basin—Continued.

Green River Basin—Continued.

	Page
Strawberry River at Duchesne, Utah.....	45
West Fork of Lake Fork above Moon Lake, near Mountain Home, Utah.....	46
West Fork of Lake Fork near Mountain Home, Utah.....	47
Lake Fork near Myton, Utah.....	48
Brown Duck Creek near Mountain Home, Utah.....	49
Uinta River near Neola, Utah.....	50
Whiterocks River near Whiterocks, Utah.....	51
Price River near Helper, Utah.....	52
Huntington Creek near Huntington, Utah.....	53
Cottonwood Creek near Orangeville, Utah.....	54
San Juan River Basin.....	55
San Juan River at Rosa, N.Mex.....	55
San Juan River near Blanco, N.Mex.....	56
San Juan River at Farmington, N.Mex.....	57
San Juan River at Shiprock, N.Mex.....	58
San Juan River near Bluff, Utah.....	59
Los Pinos River at Ignacio, Colo.....	60
Animas River at Farmington, N.Mex.....	61
La Plata River at La Plata, N.Mex.....	62
Paria River Basin.....	63
Paria River at Lees Ferry, Ariz.....	63
Little Colorado River Basin.....	64
Little Colorado River at St. Johns, Ariz.....	64
Little Colorado River near Hunt, Ariz.....	65
Little Colorado River near Woodruff, Ariz.....	66
Little Colorado River at Grand Falls, Ariz.....	67
Silver Creek near Woodruff, Ariz.....	68
Chevelon Fork near Winslow, Ariz.....	69
Clear Creek near Winslow, Ariz.....	70
Moenkopi Wash near Tuba, Ariz.....	71
Bright Angel Creek Basin.....	72
Bright Angel Creek near Grand Canyon, Ariz.....	72
Virgin River Basin.....	73
Virgin River at Virgin, Utah.....	73
Virgin River at Littlefield, Ariz.....	74
North Fork of Virgin River near Springdale, Utah.....	75
Williams River Basin.....	77
Williams River at Planet, Ariz.....	77
Gila River Basin.....	78
Gila River near Gila, N.Mex.....	78
Gila River near Red Rock, N.Mex.....	79
Gila River at Fuller's ranch, near Duncan, Ariz.....	80
Gila River near Clifton, Ariz.....	81
Gila River below Bonita Creek, near Solomonsville, Ariz.....	82
Gila River near Ashurst, Ariz.....	83
Gila River at Calva, Ariz.....	84
San Carlos Reservoir at Coolidge Dam, Ariz.....	85
Gila River at Coolidge Dam, Ariz.....	86
Gila River at Winkelman, Ariz.....	87
Gila River at Kelvin, Ariz.....	87

Gaging-station records—Continued.

Colorado River Basin—Continued.

Gila River Basin—Continued.

	Page
Gila River at Ashurst-Hayden Dam, near Florence, Ariz.....	88
Gila River at Gillespie Dam, Ariz.....	89
Gila River near Dome, Ariz.....	90
San Francisco River near Glenwood, N.Mex.....	91
San Francisco River at Clifton, Ariz.....	92
San Simon Creek near San Simon, Ariz.....	93
San Carlos River near Peridot, Ariz.....	94
San Pedro River at Palominas, Ariz.....	95
San Pedro River at Charleston, Ariz.....	96
San Pedro River near Mammoth, Ariz.....	97
San Pedro River at Winkelman, Ariz.....	98
Aravaipa Creek near Feldman, Ariz.....	99
Santa Cruz River near Nogales, Ariz.....	100
Santa Cruz River at Tucson, Ariz.....	101
Nogales Wash at Nogales, Ariz.....	102
Sonoita Creek near Patagonia, Ariz.....	103
Rillito Creek near Tucson, Ariz.....	104
Sabino Creek near Tucson, Ariz.....	105
Salt River near Chrysotile, Ariz.....	106
Salt River near Roosevelt, Ariz.....	107
Tonto Creek near Roosevelt, Ariz.....	108
Verde River above Camp Creek, near McDowell, Ariz.....	109
Granite Creek near Prescott, Ariz.....	110
Willow Creek near Prescott, Ariz.....	111
Whitewater Basin.....	112
Whitewater Draw near Douglas, Ariz.....	112
Miscellaneous discharge measurements.....	113
Index.....	117

ILLUSTRATION

FIGURE 1. Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.

Page
3

SURFACE WATER SUPPLY OF THE COLORADO RIVER BASIN, 1933

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of flow made on streams in the United States during the year ending September 30, 1933.

The data presented in these reports were collected by the United States Geological Survey under the following authority contained in the organic law (20 Stat.L., p. 394):

Provided, That this officer [the director] shall have the direction of the Geological Survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies relating to irrigation. Since the fiscal year ending June 30, 1895, successive appropriation bills passed by Congress have carried the following items:

For gaging the streams and determining the water supply of the United States and for the investigation of underground currents and artesian wells and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ending June 30, 1895-1934

1895-----	\$12, 500. 00	1911-17---	\$150, 000. 00	1928-----	\$147, 000. 00
1896-----	24, 500. 00	1918-----	175, 000. 00	1929-----	270, 500. 00
1897-99----	50, 000. 00	1919-----	148, 244. 10	1930-----	275, 000. 00
1900-----	70, 000. 00	1920-----	175, 000. 00	1931-----	565, 000. 00
1901-2-----	100, 000. 00	1921-23---	180, 000. 00	1932-----	711, 000. 00
1903-6-----	200, 000. 00	1924-25---	170, 000. 00	1933-----	600, 000. 00
1907-----	150, 000. 00	1926-----	165, 000. 00	1934-----	540, 000. 00
1908-10----	100, 000. 00	1927-----	151, 000. 00		

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 10.

Measurements of stream flow have been made at about 6,680 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July 1933, 2,800 gaging stations were being

¹ Only \$340,000 available for expenditure.

maintained by the Geological Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

DEFINITION OF TERMS

The volume of water flowing in a stream—the “run-off” or “discharge”—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, miner’s inches, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, run-off in inches, and acre-feet. They may be defined as follows:

“Second-feet” is an abbreviation for “cubic feet per second.” A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

“Second-feet per square mile” is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

“Run-off in inches” is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An “acre-foot”, equivalent to 43,560 cubic feet, is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

The following terms not in common use are here defined:

“Stage-discharge relation”, an abbreviation for the term “relation of gage height to discharge.”

“Control”, a term used to designate the natural section or stretch of the channel or artificial structure below the gage which determines the stage-discharge relation at the gage.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1932, and ending September 30, 1933. At the beginning of January in most parts of the United States much of the precipitation in

the preceding 3 months is stored in the form of snow or ice, or in ponds, lakes, and swamps, or as underground water, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the

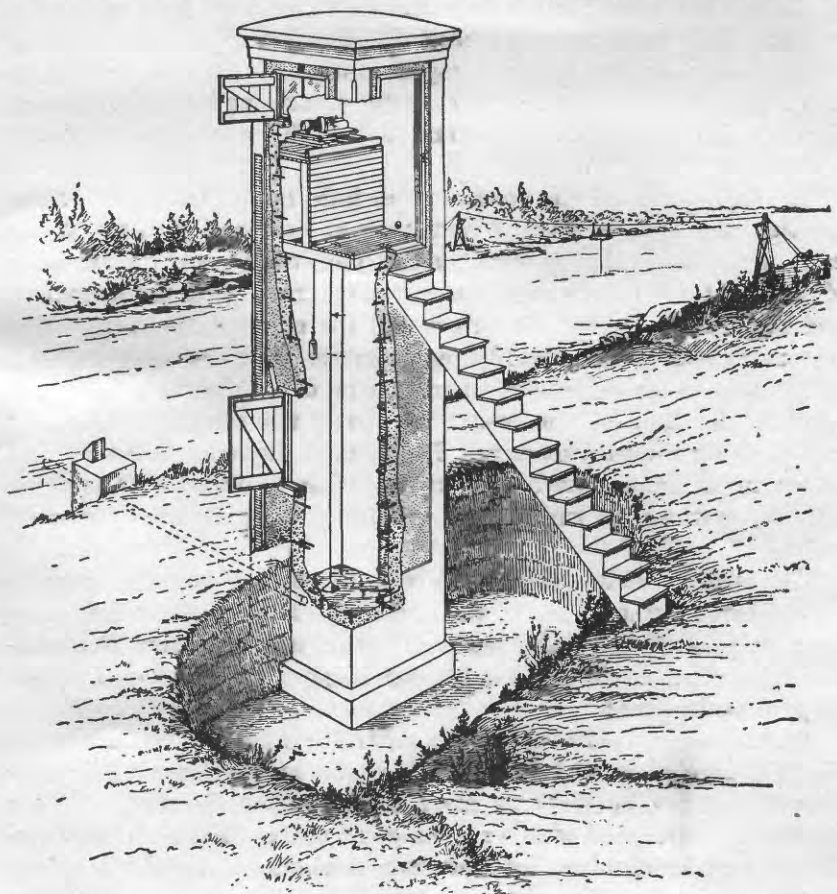


FIGURE 1.—Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.

run-off for the year beginning October 1 is practically all derived from the precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff or chain gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods

outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in figure 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily gage height to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is computed.

The data presented for each gaging station in the area covered by this report comprise a description of the station and a table showing the daily discharge of the stream and the monthly and yearly discharge and run-off.

The description of the station gives information in regard to the location and type of gage, diversions that decrease the flow at the gage, artificial regulation from pondage and storage, and the accuracy of the records. Information under "Discharge" gives the maximum and minimum recorded discharges and the average discharge. The maximum does not necessarily represent the crest discharge unless a water-stage recorder was in operation or a nonrecording gage was read at the time of the crest. Likewise, the minimum may not represent the lowest discharge. The average discharge is the average of the mean annual discharges for the years indicated. It is given only for stations for which there are 10 or more complete years of record.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the daily gage height, which may be a once-daily reading or the mean of twice-daily readings of a non-recording gage, or the mean daily gage height obtained from a water-stage recorder graph.

At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge at regular intervals of the day or by using the discharge integrator, an instrument for obtaining mean daily discharge from a continuous gage-height graph and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the maximum daily discharge and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based computations recorded in the remaining columns, which are defined on page 2.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation, and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that in general the daily records are accurate within 5 percent; "good" within 10 percent; "fair" within 15 percent; and "poor" within 20 percent or more.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable. The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches.

The table of monthly discharge gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the stations must first be satisfied.

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water power, underground waters, and quality of waters. Most of the results of these investigations have been published in the series of water-supply papers, but some have appeared in the bulletins, professional papers, monographs, and annual reports.

The results of stream-flow measurements are now published annually in 12 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

- Part
1. North Atlantic slope basins (St. John River to York River).
 2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
 3. Ohio River Basin.
 4. St. Lawrence River Basin.
 5. Hudson Bay and upper Mississippi River Basins.
 6. Missouri River Basin.
 7. Lower Mississippi River Basin.
 8. Western Gulf of Mexico basins.
 9. Colorado River Basin.
 10. The Great Basin.
 11. Pacific slope basins of California.
 12. North Pacific slope basins, in three parts:
 - A, Pacific slope basins in Washington and upper Columbia River Basin.
 - B, Snake River Basin.
 - C, Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below.

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D.C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Augusta, Maine, Statehouse.
 Boston, Mass., 945 Post Office Building.
 Hartford, Conn., 203 Federal Building.
 Albany, N.Y., 353 Broadway.
 Trenton, N.J., 228 Federal Building.
 Harrisburg, Pa., 492 Education Building.
 Charlottesville, Va., University of Virginia.
 South Charleston, W.Va., Naval Ordnance Plant.
 Asheville, N.C., 220 Post Office Building.
 Columbia, S.C., 801 National Loan & Exchange Bank Building.
 Ocala, Fla., Post Office Building.
 Montgomery, Ala., Post Office Building.
 Chattanooga, Tenn., 217 Post Office Building.
 Columbus, Ohio, Engineering Experiment Station, Ohio State University.
 Indianapolis, Ind., 319 Federal Building.
 Urbana, Ill., 302 University New Agricultural Building.
 Madison, Wis., 337N State Capitol.
 St. Paul, Minn., 808 New Post Office Building.
 Iowa City, Iowa, 402 Hydraulic Laboratory, University of Iowa.
 St. Louis, Mo., 3 Customhouse.
 Rolla, Mo., Missouri Geological Survey Building, Missouri School of Mines and Metallurgy.
 Topeka, Kans., 305 Federal Building.
 Fort Smith, Ark., Post Office Building.
 Austin, Tex., State Highway Building.

Santa Fe., N.Mex., State Capitol.
 Tucson, Ariz., 210 Post Office Building.
 Denver, Colo., 403 Post Office Building.
 Salt Lake City, Utah, 303 Federal Building.
 Idaho Falls, Idaho, 228 Federal Building.
 Boise, Idaho, 429 Federal Building.
 Helena, Mont., 421 Federal Building.
 Tacoma, Wash., 406 Federal Building.
 Portland, Oreg., 606 Post Office Building.
 San Francisco, Calif., 303 Customhouse.
 Los Angeles, Calif., 510 Eighth and Figueroa Building.
 Honolulu, Hawaii, 225 Federal Building.

A list of the Geological Survey publications may be obtained by applying to the Director of the United States Geological Survey, Washington, D.C.

Stream-flow records have been obtained at about 6,680 points in the United States, and the data obtained have been published in the reports tabulated as follows:

Stream-flow data in reports of the United States Geological Survey

[A = Annual Report; B = Bulletin; W = Water-Supply Paper]

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept. 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893-94.
B 141, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years)	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 3	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years)	1895-96.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas River.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte Rivers, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records)	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903.
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907-8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919-20.

Stream-flow data in reports of the United States Geological Survey—Continued

[A=Annual Report; B=Bulletin; W=Water-Supply Paper]

Report	Character of data	Year
W 521 to 534.....	Complete data.....	1921.
W 541 to 554.....	do.....	1922.
W 561 to 574.....	do.....	1923.
W 581 to 594.....	do.....	1924.
W 601 to 614.....	do.....	1925.
W 621 to 634.....	do.....	1926.
W 641 to 654.....	do.....	1927.
W 661 to 674.....	do.....	1928.
W 681 to 694.....	do.....	1929.
W 696 to 709.....	do.....	1930.
W 711 to 724.....	do.....	1931.
W 726 to 739.....	do.....	1932.
W 741 to 754.....	do.....	1933.

The records at most of the stations discussed in these reports extend over a series of years. Miscellaneous measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous measurement" at the end of each report in the same relative order as the regular gaging stations. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1933. The data for any particular station will as a rule be found in the reports covering the years during which the station was maintained. For example, data from 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 383, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

Numbers of water-supply papers containing results of stream measurements, 1899-1933
[For basins included, see p. 6]

Year	1	2	3	4	5	6	7	8	9	10	11	12-A	12-B	12-C
1899 ^a	35	35, 36	36	36	36	36, 37	37	37	37, 38	38, 39	38, 39	38	38	38
1900 ^a	47, 48	48	48, 49	49	49	49, 50	50	50	50, 51	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	65, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	82, 83	83	83	83	83, 84	84	84	84	84	84	84	84	84
1903	97	97, 98	98	98	98	98, 99	99	99	99	99	99	99	99	99
1904	124, 125, 126	126	128	129	130	130, 131	131	132	133	133, 134	134	135	135	135
1905	165, 166, 167	167	169	170	171	172	173	174	175, 177	176, 177	177	178	178	178
1906	201, 202, 203	203	205	206	207	208	209	210	211, 213	212, 213	213	214	214	214
1907-8	241	242	243	244	245	246	247	248	249	250, 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332	332	332
1913	351	352	353	354	355	356	357	358	359	360	361	362	362	362
1914	381	382	383	384	385	386	387	388	389	390	391	392	392	392
1915	401	402	403	404	405	406	407	408	409	410	411	412	412	412
1916	431	432	433	434	435	436	437	438	439	440	441	442	442	442
1917	451	452	453	454	455	456	457	458	459	460	461	462	462	462
1918	471	472	473	474	475	476	477	478	479	480	481	482	482	482
1919-20	501	502	503	504	505	506	507	508	509	510	511	512	512	512
1921	521	522	523	524	525	526	527	528	529	530	531	532	532	532
1922	541	542	543	544	545	546	547	548	549	550	551	552	552	552
1923	561	562	563	564	565	566	567	568	569	570	571	572	572	572
1924	581	582	583	584	585	586	587	588	589	590	591	592	592	592
1925	601	602	603	604	605	606	607	608	609	610	611	612	612	612
1926	621	622	623	624	625	626	627	628	629	630	631	632	632	632
1927	641	642	643	644	645	646	647	648	649	650	651	652	652	652
1928	661	662	663	664	665	666	667	668	669	670	671	672	672	672
1929	681	682	683	684	685	686	687	688	689	690	691	692	692	692
1930	696	697	698	699	700	701	702	703	704	705	706	707	707	707
1931	711	712	713	714	715	716	717	718	719	720	721	722	722	722
1932	726	727	728	729	730	731	732	733	734	735	736	737	737	737
1933	741	742	743	744	745	746	747	748	749	750	751	752	752	752

^a Rating tables and index to Water-Supply Papers 35-39 contained in Water-Supply Paper 33. Tables of monthly discharge for 1899 in Twenty-first Annual Report, pt. 4.

^b James River only.

^c Jallatin River.

^d Green and Gunnison Rivers and Colorado River above Gunnison River.

^e Mojave River only.

^f Kings and Kern Rivers and south Pacific slope basins.

^g Rating tables and index to Water-Supply Papers 47-52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52.

Tables of monthly discharge for 1900 in Twenty-second Annual Report, pt. 4.

^h Wissahickon and Schuylkill Rivers to James River.

ⁱ Scioto River.

^j Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte River.

^k Tributaries of Mississippi River from east.

^l Lake Ontario and tributaries to St. Lawrence River proper.

^m Hudson Bay only.

ⁿ New England rivers only.

^o Hudson River to Delaware River, inclusive.

^p Susquehanna River to Yackin River, inclusive.

^q Platte and Kansas Rivers.

^r The Great Basin in California, except Truckee and Carson River Basins.

^s Below junction with Gila River.

^t Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work in the several States was done under cooperative agreements as follows: In Arizona with the office of the State water commissioner, Frank P. Trott; in New Mexico with the office of the State engineer, George M. Neel, succeeded by Thomas M. McClure; in Utah with the office of the State engineer, George M. Bacon, succeeded by T. H. Humphreys; in Wyoming with the office of the State engineer, John A. Whiting, J. B. True, and E. W. Burritt, successively.

Assistance in collecting the records was rendered by the following organizations and corporations: In Arizona and New Mexico by the United States Indian Service; in Colorado by the State through M. C. Hinderlider, State engineer; in Utah by the National Park Service and the Utah Power & Light Co.; and in Wyoming by the United States Weather Bureau and the Rock Springs Water Co.

DIVISION OF WORK

Data for stations in the several States were collected and prepared for publication as follows: In Arizona, except for the station on Virgin River, at Littlefield, Ariz., by W. E. Dickinson, district engineer, assisted by D. H. Barber, J. S. Gatewood, J. A. Baumgartner, R. E. Marsh, B. C. Colby, R. E. Cook, W. S. Eisenlohr, Jr., W. L. Heckler, H. S. Leak, D. D. Lewis, C. C. McDonald, J. M. Meier, R. H. Monroe, M. B. Scott, K. F. Schurracher, E. J. Tripp, O. R. Clark, J. E. Klorr, L. L. Laine, C. T. Pynchon, Miss C. E. Putz, and Miss Alberta Phelps; in Colorado, except for the station on Los Pinos River at Ignacio, Colo., and in Wyoming and for the stations on Green River near Linwood, Utah, and Henrys Fork at Linwood, Utah, by Robert Follansbee, district engineer, assisted by J. H. Baily, H. P. Eisenhuth, L. F. Hanks, M. C. Boyer, S. C. Moore, F. M. Roush, Miss Nellie L. Esterly, and Mrs. Elsie L. Yeatman; in New Mexico and for the station on Los Pinos River at Ignacio, Colo., by Berkeley Johnson, district engineer, assisted by E. L. Barrows, H. G. Neel, W. G. Bratschi, T. E. Yates, W. C. Smith, Russel Dallas, Mrs. Jean Teague, and Miss Dorothy Harvey; and in Utah with the foregoing exceptions, and for the station on the Virgin River at Littlefield, Ariz., by A. B. Purton, district engineer, assisted by M. T. Wilson, F. M. Bell, F. N. Hansen, B. M. Tanner, V. R. Bennion, C. A. Wheeler, L. R. Margetts, Miss Lysle Christensen, and Mrs. Gladys Hilton.

The records were reviewed and the manuscript assembled by David S. Jenkins.

GAGING-STATION RECORDS

COLORADO RIVER BASIN

COLORADO RIVER AND TRIBUTARIES ABOVE GREEN RIVER

COLORADO RIVER AT GLENWOOD SPRINGS, COLO.

LOCATION.—Water-stage recorder in sec. 9, T. 6 S., R. 89 W., at Glenwood Springs, half a mile above mouth of Roaring Fork. Zero of gage is 5,720.71 feet above mean sea level.

DRAINAGE AREA.—4,560 square miles.

RECORDS AVAILABLE.—January 1900 to September 1933. May to July 1899 at point just above Roaring Fork.

DISCHARGE.—Maximum during year, 20,600 second-feet June 13 (gage height, 10.44 feet); minimum, 83 second-feet Nov. 29 (gage height, 1.62 feet).

1900-33: Maximum, 30,100 second-feet June 14, 15, 1918 (gage height, 12.55 feet); minimum, 80 second-feet Feb. 6, 1921 (gage height, 1.6 feet).

Average, 34 years (1899-1933), 3,120 second-feet.

REMARKS.—Records excellent. Diversions for irrigation above station. Discharge estimated for periods Oct. 20-29, Nov. 6, July 23-25. During low water period flow is regulated by Shoshone power plant 6 miles upstream.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	634	821	892	670	535	709	1,090	2,300	14,800	6,870	1,780	1,010
2	884	956	854	661	614	723	1,120	2,080	17,600	6,120	2,150	1,050
3	695	842	843	702	640	730	1,150	2,080	17,200	5,700	2,150	1,010
4	856	1,060	922	716	602	730	1,250	2,000	16,400	5,980	2,080	1,000
5	737	744	802	751	621	723	1,470	2,000	17,200	6,120	1,920	905
6	758	758	720	688	621	730	1,250	2,220	18,900	5,700	1,780	898
7	730	772	649	688	595	730	1,150	2,380	19,300	5,560	1,780	863
8	709	912	596	695	508	723	1,100	2,150	17,600	6,570	1,710	856
9	654	793	646	723	508	730	1,090	2,000	15,200	5,980	1,640	828
10	772	926	771	614	530	723	1,090	1,850	15,200	5,040	1,640	842
11	905	863	871	723	547	723	972	1,780	17,200	4,680	1,570	948
12	1,060	800	552	681	614	709	870	1,710	19,300	4,460	1,500	1,210
13	1,040	835	362	681	674	723	905	1,640	20,200	4,250	1,400	1,540
14	1,000	835	370	647	608	716	828	1,530	19,300	3,960	1,340	1,400
15	1,120	964	379	647	640	723	842	1,540	18,500	3,600	1,280	1,480
16	1,020	723	588	660	621	751	807	1,570	18,100	3,350	1,200	1,500
17	980	1,110	566	667	621	793	905	1,850	17,200	3,120	1,200	1,400
18	956	772	541	674	628	779	1,060	2,680	16,400	2,980	1,200	1,310
19	996	1,040	636	640	589	765	1,170	3,770	16,800	2,900	1,210	1,280
20	995	751	610	660	589	730	1,640	5,430	16,400	2,750	1,210	1,230
21	995	1,100	644	667	628	723	1,490	7,180	15,600	2,600	1,280	1,130
22	1,000	751	643	634	634	730	1,250	8,780	14,400	2,520	1,300	1,210
23	1,000	814	635	674	628	716	1,200	8,780	13,300	2,370	1,280	1,180
24	1,010	863	625	688	628	730	1,130	7,660	11,800	2,220	1,210	1,140
25	1,010	640	648	640	577	660	1,130	6,720	10,400	2,070	1,110	1,130
26	1,020	640	668	654	589	933	1,160	6,420	10,100	1,920	1,120	1,120
27	1,020	793	694	602	647	758	1,250	7,500	9,260	1,850	1,080	898
28	1,020	702	731	640	667	681	1,780	9,260	8,300	1,780	1,130	933
29	1,030	751	715	654	-----	821	2,150	10,400	7,820	1,710	1,170	1,030
30	1,040	730	700	614	-----	1,140	2,520	11,500	7,500	1,640	1,190	1,240
31	1,020	-----	669	640	-----	1,130	-----	13,300	-----	1,710	1,150	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,120	634	925	56,900
November	1,110	640	835	49,700
December	992	362	663	40,800
January	751	602	668	41,100
February	674	508	604	33,500
March	1,140	660	764	47,000
April	2,520	807	1,230	73,200
May	13,300	1,530	4,580	282,000
June	20,200	7,500	15,200	904,000
July	6,870	1,640	3,810	234,000
August	2,150	1,080	1,440	88,500
September	1,540	828	1,120	66,600
The year	20,200	362	2,650	1,920,000

COLORADO RIVER NEAR PALISADE, COLO.

LOCATION.—Staff gage in sec. 3, T. 11 S., R. 98 W., $2\frac{1}{2}$ miles above Palisade and 4 miles (corrected) below mouth of Plateau Creek. Prior to Mar. 1, 1932, chain gage, located half mile downstream, was used.

DRAINAGE AREA.—8,790 square miles.

RECORDS AVAILABLE.—March 1932 to September 1933. From April 1902 to November 1931 station maintained half a mile downstream, where flow is the same.

DISCHARGE.—Maximum during year, 37,100 second-feet June 2 (gage height, 8.2 feet); minimum, 177 second-feet Sept. 6, 7, 8, 19 (gage height, 0.30 foot). 1902-33: Maximum, 52,400 second-feet June 16, 1921 (gage height, 24.4 feet at former location); minimum, that of Sept. 6, 7, 8, 19, 1933.

REMARKS.—Discharge estimated Jan. 1 to Feb. 29. Diversions for power and irrigation above station. Complete records furnished by United States Bureau of Reclamation.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	840	1,250	1,880	1,250	1,880	1,250	30,100	11,000	1,450	376
2	840	1,450	1,880	1,250	1,660	1,450	37,100	10,500	1,450	376
3	1,010	1,450	1,660	1,020	1,880	1,880	30,800	10,000	1,660	269
4	1,250	1,450	1,660	1,020	2,120	2,120	30,800	10,500	1,660	376
5	840	1,660	1,660	1,250	1,880	2,120	30,800	11,000	1,450	269
6	1,010	1,660	1,660	1,250	2,120	1,880	30,100	11,400	1,450	177
7	840	1,660	1,660	1,450	2,120	1,880	27,700	11,000	1,250	177
8	1,010	1,660	1,660	1,250	1,880	1,660	26,400	11,400	1,010	177
9	1,250	1,660	1,450	1,250	1,880	2,120	26,100	10,500	840	376
10	1,450	1,880	1,250	1,020	1,660	2,360	28,800	9,600	690	376
11	1,250	1,880	1,250	1,020	1,450	2,670	24,200	8,600	550	547
12	1,010	1,880	1,010	1,250	1,250	2,120	35,600	8,240	380	547
13	1,010	1,880	844	1,250	1,020	1,880	34,200	7,420	380	376
14	840	1,880	844	1,450	1,020	2,120	32,100	7,010	270	376
15	1,010	1,880	844	1,660	845	2,360	28,800	5,800	270	269
16	840	2,120	689	1,660	845	2,360	28,800	6,620	270	269
17	840	1,880	844	1,660	815	2,670	28,400	5,800	270	376
18	1,010	1,880	844	1,880	690	3,220	27,700	5,100	270	269
19	1,010	1,880	689	1,660	845	5,880	27,700	4,100	380	177
20	1,010	1,880	689	1,660	1,020	11,000	26,400	3,510	550	269
21	840	2,120	689	1,660	1,040	14,900	25,100	3,810	380	269
22	1,010	2,120	689	1,450	870	18,000	22,600	3,220	270	376
23	1,250	2,120	689	1,660	845	16,000	20,800	2,670	270	547
24	1,010	1,880	689	1,450	870	11,900	19,100	2,300	270	547
25	840	1,880	844	1,450	1,020	11,000	17,400	2,120	380	689
26	1,010	1,880	689	1,660	1,250	11,900	15,400	1,800	270	689
27	1,250	1,880	689	1,880	1,450	14,900	14,900	1,800	380	844
28	1,250	1,880	689	1,880	1,880	19,700	13,400	1,800	550	689
29	1,250	2,120	689	1,660	2,120	22,000	12,800	1,450	380	547
30	1,450	1,880	547	1,880	2,120	23,900	11,400	1,250	270	547
31	1,450		547	1,880		27,000		1,450	380	
Month					Maximum	Minimum	Mean	Run-off in acre-feet		
October					1,450	840	1,060	65,200		
November					2,120	1,250	1,820	108,000		
December					1,880	547	1,050	64,600		
January							1,080	66,400		
February							1,030	57,200		
March					1,880	1,020	1,470	90,400		
April					2,120	690	1,410	83,900		
May					27,000	1,250	7,940	488,000		
June					37,100	11,400	25,500	1,520,000		
July					11,400	1,250	6,240	384,000		
August					1,660	270	655	40,300		
September					844	177	406	24,200		
The year					37,100		4,130	2,990,000		

COLORADO RIVER NEAR CISCO, UTAH

LOCATION.—Water-stage recorder in NW¼ sec. 17, T. 23 S., R. 24 E., 11 miles south of Cisco and 1 mile below mouth of Dolores River.

DRAINAGE AREA.—24,100 square miles.

RECORDS AVAILABLE.—November 1914 to September 1917; October 1922 to September 1933. October 1913 to November 1914 at Moab, 30 miles downstream; flow about same at both places.

DISCHARGE.—Maximum during year, 50,600 second-feet June 3 (gage height, 14.80 feet); minimum, 1,140 second-feet Sept. 8 (gage height, 1.14 feet).
1914-17, 1922-33: Maximum, 76,800 second-feet June 18, 1917 (gage height, 19.7 feet); minimum, 838 second-feet Aug. 27, 1931 (gage height, 0.68 foot).

REMARKS.—Records excellent except those for period of ice effect, Dec. 10 to Mar. 14, which were estimated. Diversions for irrigation and power above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	2,560	3,180	3,000	1,800	2,340	3,200	3,550	5,080	41,300	13,400	3,270	1,520
2-----	2,560	3,180	3,000		2,320	3,200	3,270	4,760	44,500	12,300	3,650	1,500
3-----	2,450	3,000	3,000		2,320	3,100	3,550	4,660	49,200	10,900	3,460	1,420
4-----	2,450	3,090	3,000		2,300	3,000	3,840	4,550	44,000	9,600	3,740	1,380
5-----	2,560	3,090	3,000		2,300	2,900	4,140	5,190	41,800	10,200	3,460	1,390
6-----	2,430	3,180	2,910		2,300	2,850	2,480	5,410	43,100	10,200	3,270	1,300
7-----	2,400	3,090	2,650		2,250	2,800	3,940	5,880	42,200	10,200	3,270	1,250
8-----	2,410	3,090	2,480		2,200	2,850	3,550	6,140	40,000	10,600	3,550	1,190
9-----	2,380	3,000	2,280		2,150	2,900	3,460	6,010	33,300	11,600	3,650	1,350
10-----	2,330	3,180	2,200		2,100	3,000	3,360	5,640	29,400	11,200	3,550	3,090
11-----	2,360	3,000	2,180	2,300	2,100	3,100	3,270	5,300	33,300	10,200	3,360	2,290
12-----	2,560	3,090	2,160		2,100	3,200	3,000	4,970	39,500	9,600	3,090	2,280
13-----	2,650	2,910	2,150		2,100	3,300	2,820	4,760	42,700	9,000	2,910	2,480
14-----	2,650	2,820	2,100		2,120	3,460	2,650	4,340	41,300	8,100	2,910	3,180
15-----	2,650	2,910	2,000		2,150	3,360	2,410	3,940	38,600	7,240	2,280	3,460
16-----	2,650	3,000	1,800		2,200	2,360	2,310	3,650	38,200	6,140	1,820	3,180
17-----	2,650	3,180			2,250	3,270	2,110	3,740	37,700	4,970	1,720	3,180
18-----	2,560	3,000			2,300	2,910	2,190	5,880	36,400	5,190	1,510	3,090
19-----	2,560	3,270			2,300	2,910	2,380	10,600	34,200	5,300	1,380	3,000
20-----	2,560	3,090			2,280	2,740	3,000	15,900	34,200	4,860	1,500	3,090
21-----	2,740	3,180		2,260	2,560	3,360	21,500	33,300	4,440	1,620	3,180	
22-----	2,650	3,000		2,250	2,560	3,550	27,300	30,700	3,740	1,570	3,740	
23-----	3,090	3,090		2,250	2,560	3,000	28,600	27,300	3,000	1,580	4,340	
24-----	3,090	2,910		2,250	2,460	2,560	23,600	26,200	2,740	1,640	3,940	
25-----	3,180	2,910		2,300	2,310	2,380	19,900	22,300	2,740	1,570	3,550	
26-----	3,270	2,820	2,360	2,400	2,290	2,360	19,500	19,900	2,740	1,450	3,360	
27-----	3,180	2,740		2,600	2,280	2,410	21,500	19,100	2,650	1,400	3,180	
28-----	3,180	2,710		2,870	2,480	2,560	26,500	17,500	2,340	1,540	3,180	
29-----	3,180	2,820		2,400	2,480	3,000	31,600	15,600	2,220	1,580	2,820	
30-----	3,180	2,820		2,380	2,650	4,240	34,600	14,400	2,190	1,540	2,560	
31-----	3,180			2,360	3,000		37,300		2,140	1,500		

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	3,270	2,330	2,720	167,000
November.....	3,270	2,710	3,010	179,000
December.....	3,000		2,160	135,000
January.....			2,150	132,000
February.....	2,870	2,100	2,270	126,000
March.....	3,460	2,280	2,870	176,000
April.....	4,240	2,110	3,020	180,000
May.....	37,300	3,650	13,200	812,000
June.....	49,200	14,400	33,700	2,010,000
July.....	13,400	2,140	6,830	420,000
August.....	3,740	1,380	2,400	148,000
September.....	4,340	1,190	2,620	156,000
The year.....	49,200	1,190	6,400	4,640,000

COLORADO RIVER AT LEES FERRY, ARIZ.

LOCATION.—Water-stage recorder in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 13, T. 40 N., R. 7 E., at head of Marble Gorge, at Lees Ferry, a short distance above mouth of Paria River. Zero of gage is 3,106.35 feet above mean sea level.

DRAINAGE AREA.—108,000 square miles.

RECORDS AVAILABLE.—June 1921 to September 1933.

DISCHARGE.—Maximum during year, 82,700 second-feet June 5 (gage height, 16.45 feet); minimum, 1,400 second-feet Feb. 11 (gage height, 4.88 feet).

1921-33: Maximum, about 190,000 second-feet June 18, 1921 (gage height, 26.5 feet); minimum, 750 second-feet Dec. 27, 1924 (gage height, 4.2 feet).

Flood of 1884 at mouth of Paria River, 3,137.1 feet above mean sea level.

REMARKS.—Records excellent. Stage-discharge relation affected by ice Dec. 14 to Feb. 16. Except for Dec. 19, Jan. 26, Feb. 1, 2, discharge estimated for ice period and for Mar. 31 to Apr. 7.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	5,540	6,520	6,060	3,700	5,100	7,580	7,000	10,800	59,200	32,400	5,840	2,810
2-----	5,510	6,420	6,060	3,000	5,040	7,720	7,200	11,800	66,100	29,700	5,330	2,690
3-----	5,220	6,620	6,190	2,900	4,800	8,220	7,500	14,600	70,100	27,400	6,550	2,810
4-----	5,160	6,680	6,260	3,000	4,700	8,330	7,600	16,900	75,200	24,800	6,220	2,810
5-----	5,070	6,680	6,350	3,800	4,700	8,180	7,900	17,700	79,900	22,700	7,790	2,720
6-----	4,880	6,580	6,260	3,200	4,600	8,110	8,200	17,400	77,100	20,700	7,470	2,740
7-----	4,820	6,420	6,160	3,400	4,300	7,820	8,900	16,500	76,000	21,700	6,820	2,850
8-----	4,770	6,450	6,100	3,100	4,000	7,580	9,630	16,600	79,000	25,500	9,140	2,850
9-----	4,740	6,480	5,880	3,200	3,600	7,470	10,000	16,800	78,000	32,400	9,750	3,550
10-----	4,710	6,580	5,910	3,400	2,400	7,580	9,630	17,100	73,100	27,400	9,410	4,360
11-----	4,770	6,520	5,660	4,000	2,600	7,500	9,710	17,400	67,300	27,800	8,150	10,800
12-----	4,880	6,420	5,390	4,600	4,200	7,860	9,520	17,700	65,100	26,000	7,060	10,700
13-----	4,740	6,220	5,130	4,900	3,720	7,930	9,440	17,300	70,900	22,700	6,580	8,040
14-----	4,790	6,190	4,770	4,500	3,990	8,510	9,290	16,100	75,500	20,200	6,450	7,470
15-----	4,820	6,190	4,090	4,500	3,970	8,990	8,730	14,600	76,700	19,200	6,060	7,230
16-----	4,930	6,320	3,320	4,700	4,160	9,070	8,220	13,700	75,400	18,700	5,660	7,190
17-----	5,020	6,130	2,950	4,900	4,420	8,880	7,820	12,800	72,700	16,500	5,020	7,260
18-----	5,020	5,940	2,670	4,900	4,680	9,100	7,440	12,000	72,700	15,000	4,630	7,640
19-----	5,270	5,940	2,360	4,700	4,660	9,940	7,090	11,200	72,200	13,000	4,240	6,790
20-----	5,220	6,060	2,740	4,800	4,680	9,220	6,620	10,800	71,000	14,200	3,970	6,030
21-----	5,360	6,220	2,860	4,800	4,960	8,810	6,650	13,800	69,100	13,500	3,740	8,660
22-----	5,390	6,100	3,340	4,900	4,930	8,620	6,450	25,200	68,600	11,500	3,700	11,100
23-----	5,510	6,320	3,660	5,100	4,990	8,400	6,960	33,300	65,500	10,000	4,120	11,900
24-----	5,600	6,390	3,880	5,300	5,160	8,700	7,640	43,300	63,800	9,710	3,920	7,720
25-----	6,650	6,320	3,590	5,200	5,240	8,510	8,150	46,800	59,000	8,990	3,680	6,680
26-----	6,390	6,260	3,400	5,360	5,390	7,820	8,700	43,700	54,800	8,510	3,420	7,020
27-----	6,750	6,420	3,400	5,390	5,600	7,440	10,300	38,900	48,700	8,800	3,240	7,260
28-----	6,650	6,450	3,400	5,300	6,750	7,130	9,600	39,000	44,100	9,330	3,140	6,580
29-----	6,720	6,320	3,300	5,270	-----	6,650	9,140	39,800	39,500	7,610	3,050	6,130
30-----	6,790	6,100	3,000	5,240	-----	6,580	8,660	46,600	36,400	6,890	2,950	5,780
31-----	6,820	-----	2,600	5,100	-----	6,500	-----	53,300	-----	6,450	2,900	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October-----	6,820	4,710	5,440	334,000
November-----	6,680	5,940	6,340	377,000
December-----	6,350	2,360	4,410	271,000
January-----	5,390	2,900	4,390	270,000
February-----	6,750	2,400	4,550	253,000
March-----	9,940	6,500	8,090	497,000
April-----	10,300	6,450	8,320	495,000
May-----	53,300	10,800	27,300	1,440,000
June-----	79,900	36,400	69,800	3,970,000
July-----	32,400	6,450	17,100	1,110,000
August-----	9,750	2,900	5,480	337,000
September-----	11,900	2,690	6,270	373,000
The year-----	79,900	2,360	13,400	9,730,000

COLORADO RIVER AT BRIGHT ANGEL CREEK, NEAR GRAND CANYON, ARIZ.

LOCATION.—Water-stage recorder at Kaibab Bridge, a quarter of a mile above Bright Angel Creek and 11 miles by trail northeast of Grand Canyon, Coconino County. Zero of gage is 2,420.3 feet above mean sea level.

DRAINAGE AREA.—139,000 square miles.

RECORDS AVAILABLE.—October 1922 to September 1933.

DISCHARGE.—Maximum during year, 81,800 second-feet June 5 (gage height, 23.45 feet); minimum, 2,100 second-feet Feb. 12 (gage height, 0.74 foot).

1922-33: Maximum, 127,000 second-feet July 2, 1927 (gage height, 29.25 feet); minimum, 700 second-feet Dec. 28, 1924 (gage height, -0.7 foot).

REMARKS.—Records excellent. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	6,660	6,900	6,310	2,880	5,470	8,390	7,360	9,220	54,700	34,100	7,000	3,240
2-----	5,960	6,810	6,250	3,990	5,480	8,310	7,830	11,600	62,700	30,900	6,470	3,160
3-----	5,830	6,900	6,300	3,340	5,450	8,250	8,000	12,900	69,500	28,800	6,020	3,080
4-----	5,540	6,970	6,460	3,240	5,140	8,600	8,280	15,600	75,800	26,500	7,070	3,090
5-----	5,520	7,020	6,560	3,340	5,060	8,570	8,460	18,000	80,000	24,000	6,630	3,180
6-----	5,410	7,010	6,730	4,090	5,020	8,410	8,940	18,800	78,800	22,300	8,300	3,090
7-----	5,180	6,860	6,550	3,480	4,930	8,240	8,320	18,000	76,400	20,900	7,840	3,090
8-----	5,140	6,650	6,440	3,690	4,710	7,950	9,940	17,000	78,600	23,200	8,090	3,150
9-----	5,080	6,670	6,390	3,340	4,320	7,920	10,400	17,100	77,400	29,200	11,300	3,200
10-----	5,050	6,770	6,170	3,490	3,980	7,840	10,600	17,000	73,700	30,700	11,800	4,600
11-----	4,970	6,810	6,250	3,730	2,720	7,780	10,300	17,400	67,500	26,400	10,500	6,040
12-----	5,040	6,730	6,090	4,280	2,910	7,720	10,200	17,700	64,900	29,400	9,080	14,600
13-----	5,150	6,590	5,700	4,890	4,510	8,340	9,940	17,800	68,500	24,400	7,660	15,200
14-----	5,010	6,490	5,430	5,180	4,090	8,520	9,890	17,200	75,300	22,000	7,170	9,890
15-----	5,080	6,550	5,060	4,760	4,530	9,390	9,550	15,800	77,000	19,900	6,860	8,580
16-----	5,090	6,510	4,460	4,820	4,610	10,100	9,060	14,700	76,600	19,900	6,360	7,930
17-----	5,210	6,550	3,760	4,980	4,650	9,960	8,500	13,800	73,700	18,300	5,960	7,880
18-----	5,220	6,370	3,400	5,210	4,950	9,550	8,070	12,900	72,600	17,300	5,380	8,050
19-----	5,230	6,180	3,180	5,190	5,130	9,870	7,710	12,200	72,400	15,500	4,990	8,000
20-----	5,540	6,240	2,790	5,000	5,220	10,400	7,360	11,400	71,400	14,500	4,820	7,150
21-----	5,610	6,490	3,030	5,120	5,490	9,700	6,910	11,000	69,700	15,400	4,930	6,700
22-----	5,990	6,670	3,370	5,150	5,740	9,290	6,870	18,500	69,000	13,500	4,730	10,400
23-----	5,920	6,520	3,900	5,240	5,830	9,110	6,830	28,500	67,200	12,100	4,970	13,500
24-----	6,180	6,670	4,080	5,470	5,910	8,870	7,360	37,500	68,000	11,100	4,920	11,200
25-----	6,340	6,660	4,140	5,610	5,830	9,210	7,950	44,600	59,400	9,920	4,530	8,000
26-----	7,070	6,670	3,930	5,560	5,760	8,780	8,160	44,500	54,500	9,370	4,040	7,150
27-----	6,770	6,530	3,730	5,640	5,880	8,240	9,340	41,100	49,600	10,200	3,840	7,420
28-----	7,110	6,660	3,680	5,650	6,180	7,860	10,300	39,400	44,700	9,810	3,560	7,300
29-----	6,870	6,630	3,700	5,620	-----	7,480	9,730	39,100	40,800	9,920	3,410	6,800
30-----	6,910	6,460	3,610	5,480	-----	7,070	9,310	42,500	37,600	8,130	3,360	6,400
31-----	6,950	-----	3,300	5,490	-----	7,120	-----	48,100	-----	7,600	3,300	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October-----	7,110	4,970	5,770	355,000
November-----	7,020	6,180	6,650	396,000
December-----	6,730	2,790	4,860	299,000
January-----	5,650	2,880	4,610	284,000
February-----	6,180	2,720	4,080	277,000
March-----	10,400	7,070	8,610	529,000
April-----	10,600	6,830	8,750	521,000
May-----	48,100	9,220	22,600	1,399,000
June-----	80,000	37,600	66,800	3,970,000
July-----	34,100	7,600	19,200	1,180,000
August-----	11,800	3,300	6,290	387,000
September-----	15,200	3,080	7,040	419,000
The year-----	80,000	2,720	13,800	10,000,000

COLORADO RIVER NEAR TOPOCK, ARIZ.

LOCATION.—Water-stage recorder in NW¼ sec. 13, T. 15 N., R. 21 W., in Mohave Canyon, 3 miles southeast of Topock. Zero of gage is 423.2 feet above mean sea level.

DRAINAGE AREA.—174,000 square miles.

RECORDS AVAILABLE.—February 1917 to September 1933.

DISCHARGE.—Maximum during year, 78,000 second-feet June 18; maximum gage height, 21.63 feet June 10; minimum discharge, 2,700 second-feet Sept. 8; minimum gage height, 6.46 feet Oct. 12.

1917-33: Maximum, 174,000 second-feet June 22, 1921; minimum, 1,800 second-feet Jan. 4, 1925.

REMARKS.—Records excellent. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	8, 110	7, 230	6, 900	3, 980	6, 220	6, 160	7, 660	10, 900	39, 600	46, 070	9, 980	3, 790
2-----	6, 720	7, 200	7, 020	4, 030	6, 160	6, 130	7, 230	10, 100	44, 300	42, 270	8, 490	3, 370
3-----	6, 960	7, 290	7, 170	3, 960	5, 940	6, 330	7, 170	10, 200	47, 800	38, 270	7, 950	3, 320
4-----	7, 260	7, 200	7, 200	3, 860	5, 880	7, 560	7, 320	9, 950	52, 400	33, 570	7, 440	3, 410
5-----	6, 450	7, 170	6, 840	3, 630	5, 740	8, 940	7, 720	10, 800	59, 100	31, 470	6, 960	3, 460
6-----	6, 190	7, 260	6, 660	3, 570	5, 630	8, 810	7, 950	12, 800	63, 300	28, 270	6, 270	3, 170
7-----	5, 800	7, 350	6, 660	3, 980	5, 540	9, 130	8, 080	15, 700	67, 600	26, 370	6, 300	2, 820
8-----	5, 660	7, 020	6, 900	3, 480	5, 330	9, 470	8, 430	18, 700	71, 600	24, 470	7, 350	2, 930
9-----	5, 490	7, 020	6, 900	3, 630	5, 380	9, 340	8, 940	18, 300	74, 600	22, 400	7, 560	2, 970
10-----	5, 570	7, 020	7, 170	4, 030	5, 380	9, 240	9, 340	18, 200	76, 000	22, 000	9, 040	3, 170
11-----	4, 970	6, 840	6, 930	4, 490	5, 170	8, 880	9, 740	17, 500	75, 300	25, 270	8, 430	3, 170
12-----	5, 100	6, 810	7, 320	3, 590	5, 020	8, 430	10, 600	17, 700	72, 000	30, 870	10, 700	3, 630
13-----	5, 070	6, 900	6, 930	3, 590	4, 940	8, 360	11, 300	17, 800	73, 900	27, 000	11, 500	3, 490
14-----	5, 020	6, 870	6, 579	3, 590	4, 540	8, 460	9, 980	18, 300	72, 000	29, 000	10, 800	3, 880
15-----	5, 070	6, 720	6, 810	3, 770	4, 060	8, 270	10, 200	18, 400	68, 100	27, 000	9, 750	13, 300
16-----	5, 200	6, 780	6, 540	4, 150	3, 100	8, 400	9, 980	18, 200	70, 200	23, 270	9, 410	14, 200
17-----	5, 230	6, 540	6, 240	5, 430	4, 390	8, 910	9, 780	17, 600	73, 500	21, 870	7, 850	10, 700
18-----	5, 230	6, 540	5, 940	6, 100	4, 200	9, 640	9, 470	15, 800	76, 800	20, 600	7, 600	9, 000
19-----	5, 200	6, 720	5, 680	5, 430	4, 680	10, 700	9, 070	14, 800	77, 300	20, 400	7, 020	8, 460
20-----	5, 150	6, 690	5, 430	5, 540	5, 150	10, 400	8, 620	14, 000	75, 900	18, 270	6, 750	8, 400
21-----	5, 360	6, 810	4, 630	5, 880	5, 100	10, 100	8, 520	12, 700	74, 500	16, 870	6, 130	7, 980
22-----	5, 410	6, 510	4, 100	5, 630	5, 280	9, 980	7, 980	12, 600	74, 600	15, 400	5, 990	8, 270
23-----	5, 300	6, 330	3, 790	5, 850	5, 490	10, 600	7, 500	11, 800	73, 500	15, 170	6, 300	7, 820
24-----	6, 050	6, 390	3, 460	5, 680	5, 710	10, 100	7, 140	11, 400	69, 100	15, 470	5, 250	7, 110
25-----	6, 080	6, 720	3, 300	5, 710	6, 080	9, 810	6, 960	23, 400	68, 200	13, 700	4, 860	8, 810
26-----	6, 360	6, 840	3, 630	5, 600	6, 050	9, 580	6, 840	33, 000	67, 300	11, 900	5, 040	12, 700
27-----	6, 204	6, 720	4, 200	5, 740	6, 240	9, 370	6, 960	40, 400	64, 600	11, 170	4, 890	11, 30
28-----	6, 660	6, 720	4, 610	5, 850	6, 390	9, 340	7, 690	42, 200	60, 200	10, 170	4, 730	8, 840
29-----	6, 870	6, 840	4, 490	6, 080	-----	9, 240	8, 200	40, 300	55, 600	9, 440	4, 680	7, 600
30-----	7, 290	7, 200	4, 320	6, 100	-----	8, 810	9, 270	39, 000	51, 200	10, 170	4, 010	7, 720
31-----	7, 230	-----	4, 100	6, 130	-----	8, 270	-----	37, 900	-----	9, 780	3, 820	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October-----	8, 110	4, 890	5, 950	366, 000
November-----	7, 350	6, 330	6, 880	409, 000
December-----	7, 320	3, 300	5, 760	354, 000
January-----	6, 130	3, 480	4, 780	294, 000
February-----	6, 390	3, 100	5, 810	295, 000
March-----	10, 700	6, 130	8, 930	649, 000
April-----	11, 300	6, 840	8, 520	507, 000
May-----	42, 200	9, 950	19, 700	1, 210, 000
June-----	77, 300	39, 600	66, 300	3, 950, 000
July-----	46, 000	9, 440	22, 500	1, 380, 000
August-----	11, 500	3, 820	7, 190	442, 000
September-----	14, 200	2, 820	6, 630	394, 000
The year-----	77, 300	2, 820	14, 000	10, 200, 000

COLORADO RIVER AT YUMA, ARIZ.

LOCATION.—Water-stage recorder 1,000 feet below highway bridge at Yuma and 5 miles below Gila River. Zero of gage is 102.79 feet above mean sea level.

DRAINAGE AREA.—245,000 square miles.

RECORDS AVAILABLE.—April 1878 to September 1933. Gage heights only, prior to January 1902.

DISCHARGE.—Maximum during year, 70,700 second-feet June 23; maximum gage height, 26.27 feet June 16; minimum discharge, 291 second-feet Sept. 13 (gage height, 16.36 feet).

1902-33: Maximum mean daily, 240,000 second-feet Jan. 22, 1916; minimum discharge, 58 second-feet Sept. 23, 1931.

REMARKS.—Records for river station excellent; for canal and wasteway fair. Many diversions for irrigation from Colorado River and tributaries. Considerable water diverted around river station on account of power development on main canal of Yuma reclamation project. Water not required for irrigation returned to river below river station. Supplementing records of discharge at river station are records of diversion to Yuma Main Canal at Laguna Dam, 14 miles upstream, and discharge of Yuma Main Canal Wasteway, which returns water from canal to river half a mile downstream from river station. Daily-discharge records for canal and wasteway furnished by United States Bureau of Reclamation.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,710	5,050	4,940	2,610	4,200	3,600	6,200	5,490	34,600	57,000	6,900	2,040
2	5,580	4,690	5,360	2,420	4,160	3,860	5,520	6,170	35,200	49,200	7,080	1,640
3	5,590	4,980	5,030	2,410	4,400	4,180	5,170	7,490	36,300	44,200	7,300	1,490
4	4,940	5,310	4,740	2,290	4,200	3,860	5,000	7,680	38,100	38,700	6,970	1,500
5	4,740	4,560	4,800	2,210	4,220	4,000	4,380	7,720	40,400	34,300	5,030	1,290
6	5,240	4,850	5,050	2,320	4,040	4,500	4,520	6,550	42,800	31,200	5,170	1,060
7	4,820	4,760	4,520	2,040	4,090	6,620	4,870	7,640	43,900	29,000	4,420	934
8	5,850	4,940	4,670	1,740	3,650	6,260	5,050	10,200	46,400	26,300	4,180	1,010
9	5,550	4,760	4,780	2,390	3,790	6,690	5,220	13,600	47,800	24,100	3,390	794
10	6,930	4,960	4,320	2,240	3,700	7,220	5,590	15,900	50,200	22,000	4,220	815
11	5,170	5,240	4,460	1,990	3,580	6,930	5,960	15,600	52,900	19,800	4,710	744
12	3,900	4,690	4,820	1,660	3,380	6,720	6,690	15,100	55,400	20,800	6,390	550
13	3,580	4,800	5,220	2,570	3,290	6,390	6,690	14,600	58,900	25,500	5,100	594
14	3,390	4,460	5,410	1,980	3,200	6,490	7,220	14,800	61,300	26,200	7,330	678
15	3,190	4,780	5,310	1,790	3,020	5,820	8,130	15,000	64,000	25,100	8,950	720
16	3,050	4,480	5,030	1,930	2,780	5,700	7,680	15,200	67,200	26,300	7,000	1,080
17	2,960	4,650	4,650	2,140	2,300	5,960	6,970	15,000	67,500	22,600	6,490	8,700
18	3,200	4,760	4,590	2,350	1,590	5,620	7,450	15,000	67,300	20,100	6,490	9,560
19	3,020	4,400	4,270	3,420	2,020	6,140	7,080	14,600	66,500	18,100	4,670	7,410
20	3,090	4,630	4,350	4,690	2,610	6,550	7,180	13,100	65,700	17,900	4,610	6,110
21	3,160	4,670	3,570	3,840	2,500	7,490	7,330	12,400	67,000	16,200	4,330	5,760
22	2,960	4,940	3,380	3,730	3,010	7,800	6,550	10,900	68,000	14,600	4,140	5,790
23	3,190	4,460	2,960	3,700	2,830	7,720	5,900	11,000	68,600	13,300	3,200	4,710
24	3,340	4,400	2,250	3,730	2,990	7,640	5,650	9,510	67,900	12,300	3,090	5,540
25	3,460	4,460	2,110	4,070	2,890	8,040	5,700	9,270	68,600	12,200	3,200	4,690
26	3,390	4,290	2,000	3,730	3,300	8,170	4,520	11,000	67,700	11,700	3,020	4,440
27	3,730	4,500	1,720	3,870	3,680	7,300	4,250	21,700	68,300	10,300	2,720	5,460
28	3,890	4,870	1,590	3,620	3,890	7,150	4,460	29,400	66,100	9,850	2,700	8,860
29	3,740	5,000	1,990	3,870	-----	6,790	4,270	34,600	63,500	8,510	2,740	7,720
30	3,970	4,740	2,470	3,700	-----	6,790	5,220	35,900	60,800	7,450	2,180	6,080
31	4,220	-----	2,580	4,160	-----	6,970	-----	34,100	-----	7,260	2,140	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	6,930	2,710	4,050	249,000
November	5,310	4,290	4,740	282,000
December	5,410	1,590	3,970	244,000
January	4,690	1,660	2,900	178,000
February	4,400	1,590	3,330	185,000
March	8,170	3,600	6,290	387,000
April	8,130	4,250	5,880	350,000
May	35,900	5,490	14,700	905,000
June	68,600	34,600	57,000	3,390,000
July	57,000	7,260	22,600	1,390,000
August	8,950	2,140	4,830	297,000
September	9,560	550	2,590	214,000
The year	68,600	550	11,200	8,070,000

*Discharge, in second-feet, of Yuma Main Canal at Laguna Dam, near Yuma, Ariz.
1932-33*

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	1,780	1,700	1,920	1,880	1,820	1,850	1,910	2,130	2,030	1,960	2,040	1,520
2.....	1,890	1,890	1,600	1,870	1,920	1,940	1,970	1,740	1,660	2,010	2,040	1,620
3.....	2,080	1,950	1,840	1,580	1,590	1,610	2,110	1,980	1,930	2,190	2,000	1,790
4.....	1,700	1,580	1,920	1,740	1,830	1,810	1,750	2,000	1,980	1,820	1,560	1,780
5.....	1,950	1,830	2,040	1,860	1,920	1,870	1,980	1,660	2,140	2,060	1,880	1,520
6.....	1,940	1,910	1,650	1,530	1,960	2,030	2,000	1,920	1,780	2,070	1,940	1,510
7.....	1,590	2,040	1,860	1,710	1,610	1,680	2,000	1,990	1,980	1,670	2,000	1,730
8.....	1,630	1,640	1,950	1,810	1,860	1,930	1,920	2,160	2,060	1,910	1,640	1,660
9.....	1,430	1,880	1,610	1,920	1,680	1,960	1,990	1,790	1,730	2,020	1,870	1,650
10.....	625	1,930	1,840	1,620	1,620	1,590	2,130	2,010	1,950	2,200	1,970	1,700
11.....	1,540	1,600	1,920	1,700	1,760	1,820	2,120	2,030	2,000	1,850	1,640	1,770
12.....	1,830	1,850	2,020	1,820	1,920	1,900	1,580	1,760	2,170	2,080	1,940	1,440
13.....	1,840	1,910	1,750	1,560	1,780	2,040	1,840	1,930	1,790	2,110	1,970	1,550
14.....	1,530	2,040	1,840	1,740	1,770	1,690	2,010	2,010	2,090	1,730	2,120	1,740
15.....	1,770	1,650	1,920	1,820	1,750	1,920	2,000	2,160	2,080	1,960	1,780	1,430
16.....	1,840	1,900	1,600	1,860	1,730	1,960	2,000	1,830	1,650	2,020	2,000	1,660
17.....	1,900	1,920	1,840	1,550	1,590	1,600	2,190	1,930	1,850	2,210	2,050	1,970
18.....	1,550	1,600	1,920	1,770	1,490	1,820	1,790	2,040	2,000	1,820	1,650	2,160
19.....	1,780	1,840	2,010	1,950	1,800	1,910	2,100	1,670	2,160	2,020	1,990	1,780
20.....	1,870	1,920	1,630	1,600	1,880	2,060	2,100	1,910	1,820	2,100	2,000	1,940
21.....	1,550	2,020	1,840	1,810	1,540	1,700	1,700	2,010	2,070	1,750	2,040	2,030
22.....	1,780	1,640	1,920	1,920	1,760	1,950	1,930	2,170	2,050	1,950	1,670	1,680
23.....	1,880	1,840	1,580	1,760	1,890	2,010	2,010	1,790	1,709	2,016	1,920	1,960
24.....	1,960	1,910	1,780	1,900	1,540	1,600	2,140	2,010	1,946	2,170	1,800	2,030
25.....	1,620	1,590	1,840	1,910	1,780	1,860	1,790	2,060	2,020	1,810	1,570	2,130
26.....	1,870	1,860	1,820	1,920	1,870	1,930	2,010	1,710	2,190	2,110	1,850	1,770
27.....	1,930	1,920	1,540	1,600	1,980	2,080	2,040	1,970	1,810	2,090	1,890	2,050
28.....	1,590	2,020	1,740	1,799	1,620	1,740	1,640	1,980	2,070	1,690	1,970	2,060
29.....	1,820	1,660	1,850	1,920	-----	1,990	1,940	2,180	2,100	1,840	1,630	1,670
30.....	1,910	1,870	1,570	1,950	-----	2,110	2,000	1,790	1,750	1,960	1,700	1,940
31.....	2,040	-----	1,800	1,610	-----	1,680	-----	2,130	-----	1,620	1,840	-----
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October.....						2,080	625	1,740	107,000			
November.....						2,040	1,580	1,830	109,000			
December.....						2,040	1,540	1,810	111,000			
January.....						1,950	1,530	1,770	109,000			
February.....						1,980	1,490	1,760	97,700			
March.....						2,110	1,590	1,860	114,000			
April.....						2,190	1,580	1,940	116,000			
May.....						2,180	1,660	1,950	120,000			
June.....						2,190	1,650	1,950	116,000			
July.....						2,210	1,620	1,960	121,000			
August.....						2,120	1,560	1,870	115,000			
September.....						2,160	1,430	1,770	106,000			
The year.....						2,210	625	1,850	1,340,000			

*Discharge, in second-feet, of Yuma Main Canal Wasteway at Yuma, Ariz.,
1932-33*

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	1,000	1,020	1,280	1,770	1,280	967	1,470	1,270	1,190	1,160	969	1,190
2.....	1,320	997	1,210	1,680	1,410	1,140	1,730	1,150	1,160	1,460	1,110	1,310
3.....	1,140	1,180	1,420	1,080	1,310	1,020	1,170	1,260	1,460	1,850	1,190	1,670
4.....	977	1,110	1,680	1,040	1,360	1,070	995	1,460	1,740	1,620	1,040	1,620
5.....	964	1,200	1,290	1,250	1,490	1,270	1,090	1,360	1,090	911	1,430	751
6.....	1,140	1,420	1,110	1,130	1,340	1,100	1,250	1,560	938	980	1,660	626
7.....	1,030	1,190	1,130	1,310	1,240	878	1,200	1,710	989	907	992	898
8.....	934	1,030	1,320	1,050	1,220	842	1,440	1,440	1,170	987	743	997
9.....	952	1,060	1,220	1,320	1,120	1,030	1,710	1,030	1,180	1,200	851	1,340
10.....	830	1,190	1,400	1,180	1,160	977	1,120	1,120	1,460	1,010	1,170	1,610
11.....	1,560	1,070	1,680	1,100	1,180	1,140	1,140	1,310	1,760	869	1,130	830
12.....	1,370	1,180	1,290	1,270	1,550	1,370	842	1,310	1,150	942	1,380	677
13.....	1,370	1,400	1,240	1,160	1,180	1,090	948	1,530	947	1,130	1,740	798
14.....	1,240	1,220	1,320	1,330	1,020	815	1,350	1,740	942	1,060	1,020	1,130
15.....	1,400	1,130	1,420	1,640	901	863	1,590	1,220	1,050	1,290	964	1,040
16.....	1,670	1,180	1,300	1,240	899	1,060	1,730	1,070	997	1,740	1,030	1,040
17.....	1,270	1,330	1,340	1,150	928	1,020	1,180	1,170	1,470	1,040	1,230	1,470
18.....	1,160	1,200	1,690	1,120	1,070	1,100	1,010	1,310	1,730	915	1,090	1,040
19.....	1,110	1,390	1,290	1,310	1,560	1,220	1,060	1,260	1,000	1,020	1,400	888
20.....	1,320	1,690	1,220	1,240	1,070	979	1,210	1,440	825	1,230	1,740	893
21.....	1,240	1,250	1,190	1,400	870	859	1,110	1,740	958	1,190	1,030	1,160
22.....	1,460	1,140	1,280	1,700	879	885	1,320	1,180	1,470	1,280	812	1,130
23.....	1,700	1,180	1,260	1,280	1,050	1,090	1,630	1,070	1,420	1,730	939	1,240
24.....	1,150	1,330	1,450	1,380	903	1,070	1,200	1,120	1,260	1,030	1,200	1,460
25.....	999	1,190	1,770	1,410	1,060	1,150	1,020	1,260	1,450	840	1,160	1,100
26.....	1,030	1,400	1,650	1,410	1,350	1,370	1,050	1,230	1,070	929	1,360	947
27.....	1,220	1,680	1,080	1,350	1,110	1,070	1,200	1,530	863	1,050	1,680	1,070
28.....	1,140	1,180	912	1,600	916	920	1,200	1,710	916	1,020	1,030	1,300
29.....	1,290	1,060	1,230	1,710	-----	1,090	1,540	1,120	1,060	1,300	801	1,250
30.....	1,490	1,100	1,200	1,380	-----	1,260	1,700	905	1,060	1,710	885	1,270
31.....	1,180	-----	1,280	1,280	-----	1,230	-----	1,050	-----	843	1,200	-----
Month	Maximum					Minimum			Mean		Run-off in acre-feet	
October.....	1,700					830			1,210		74,700	
November.....	1,680					997			1,220		72,800	
December.....	1,770					912			1,330		81,600	
January.....	1,770					1,040			1,350		83,000	
February.....	1,560					870			1,160		64,300	
March.....	1,370					815			1,060		65,200	
April.....	1,730					842			1,270		75,700	
May.....	1,740					905			1,300		80,000	
June.....	1,760					825			1,190		71,000	
July.....	1,850					840			1,170		71,900	
August.....	1,740					743			1,160		71,400	
September.....	1,670					626			1,120		66,900	
The year.....	1,850					626			1,210		878,000	

BLUE RIVER AT DILLON, COLO.

LOCATION.—Water-stage recorder in sec. 18, T. 5 S., R. 77 W., on edge of Dillon, a short distance above mouths of Snake River and Tenmile Creek^b.

DRAINAGE AREA.—129 square miles.

RECORDS AVAILABLE.—October 1910 to September 1933.

DISCHARGE.—Maximum during year, 733 second-feet June 6 (gage height, 3.18 feet); minimum, 7.4 second-feet Mar. 22 (discharge measurement^a).

1910-33: Maximum, 1,180 second-feet June 14, 1924 (gage height, 3.6 feet); minimum, that of Mar. 22, 1933. Average, 13 years (1910-19, 1929-33), 138 second-feet.

REMARKS.—Records good except those for periods Oct. 30 to Nov. 3, Nov. 6, Apr. 23-26, 28, July 10-11 and for the period Nov. 12 to Apr. 16, which were estimated on the basis of four discharge measurements and temperature records. Practically no diversions above station which are not returned to river.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	31						32	499	274	110	53
2	49	32						34	637	259	112	51
3	49	32						35	560	250	112	49
4	49	32						35	511	253	106	48
5	49	35						37	587	250	103	47
6							28					
7	48	32	* 24					38	696	244	103	46
8	48	30						38	674	329	103	44
9	47	32						38	511	344	105	42
10	48	32						37	419	204	105	43
11	49	35						35	455	282	102	47
12												
13	40	32						38	554	270	94	51
14	48	24						44	574	259	87	65
15	47	20					26	46	587	238	81	75
16	47	24						47	547	215	78	78
17	48	26						51	574	207	74	78
18							30	61	560	199	70	75
19	46				* 18		34	78	541	186	68	70
20	46	28		* 21			23	115	528	181	68	64
21	44						35	167	511	167	75	58
22	43						36	228	493	158	81	57
23							36	287	466	155	77	58
24	42					* 7	35	314	455	149	65	56
25	38						30	278	401	142	53	53
26	40	24					28	233	383	140	51	52
27	41						28	204	383	136	47	49
28	41											
29	42						28	209	370	132	46	48
30	41						29	241	353	124	49	48
31	40	26					35	278	329	115	49	47
	38						35	294	314	105	53	46
	36						35	340	290	103	53	44
	32							415		106	53	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	52	32	44.6	2,740
November	35	20	28.0	1,670
December			25	1,540
January			22	1,350
February			20	1,110
March			24	1,480
April	36		29.6	1,760
May	415	32	140	8,610
June	696	290	492	29,300
July	344	103	202	12,400
August	112	46	78.5	4,830
September	78	42	54.7	3,250
The year	696		96.7	70,000

* Discharge measurement.

SNAKE RIVER AT DILLON, COLO.

LOCATION.—Water-stage recorder in sec. 18, T. 5 S., R. 77 W., at highway bridge 100 yards above mouth of river at Dillon.

DRAINAGE AREA.—92 square miles.

RECORDS AVAILABLE.—October 1910 to September 1919; December 1929 to September 1933.

DISCHARGE.—Maximum during year, 1,010 second-feet June 19 (gauge height, 4.07 feet); minimum probably occurred during winter.

1910–19, 1929–33: Maximum, 1,170 second-feet June 15, 1918; minimum, 3 second-feet Nov. 9, 1912. Average, 23 years (1910–33), 127 second-feet.

REMARKS.—Records good except those for Nov. 8 to Apr. 15, which were estimated on basis of four discharge measurements and temperature records. Snake River Ditch diverts about 30 second-feet above station for power development.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	15						17	568	360	62	22
2	11	14						17	544	335	51	20
3	10	14						15	452	310	47	20
4	10	13						15	502	262	45	18
5	10	15						18	580	234	46	18
6	9	15	• 10				14	18	574	272	56	18
7	9	14						16	508	405	52	18
8	9							15	390	325	52	18
9	10	13						14	440	276	45	18
10	10							15	586	258	52	39
11	10							19	670	236	46	32
12	10							19	730	229	39	31
13	10	12					12	20	670	182	35	26
14	10							22	664	159	33	31
15	10							24	676	144	32	32
16	10						11	31	664	130	32	23
17	10				• 12		14	39	640	122	31	21
18	10	14		• 8			20	58	628	110	30	20
19	10						17	78	658	101	46	21
20	10						12	150	676	92	36	18
21	11						14	185	586	86	30	20
22	11					• 17	16	128	502	75	27	20
23	11	11					11	99	479	68	26	20
24	11						10	85	457	61	24	20
25	13						10	84	457	57	24	18
26	11						10	101	425	54	26	18
27	12						11	138	385	52	25	18
28	15	12					15	168	385	49	24	18
29	15						17	213	375	45	24	18
30	15						17	305	380	45	22	17
31	16							457		55	22	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	16	9	11.0	676
November	15		12.8	762
December			9.5	584
January			8.0	492
February			12	666
March			15	922
April	20		13.5	803
May	457	14	83.3	5,120
June	730	375	542	32,300
July	405	45	167	10,300
August	62	22	36.8	2,260
September	39	17	21.7	1,290
The year	730		77.7	56,200

• Discharge measurement.

TENMILE CREEK AT DILLON, COLO.

LOCATION.—Water-stage recorder in sec. 18, T. 5 S., R. 77 W., at highway bridge 300 yards above mouth at Dillon.

DRAINAGE AREA.—113 square miles.

RECORDS AVAILABLE.—October 1910 to September 1919; April 1937 to September 1933.

DISCHARGE.—Maximum during year, 2,010 second-feet June 1 (gage height, 5.82 feet); minimum occurred during winter.

1910-19, 1930-33: Maximum, that of June 1, 1933; minimum, 2 second-feet Feb. 15-17, 20, 1918. Average, 13 years (1910-19, 1929-33), 75.8 second-feet.

REMARKS.—Records good except those for Oct. 22 to Apr. 16, which were estimated on basis of five discharge measurements and temperature records. Small diversions for irrigation above station. No regulation.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	* 31						32	1,300	254	134	43
2	51							31	1,110	240	115	40
3	48						30	29	894	247	107	40
4	45							29	1,090	258	90	39
5	43							33	1,240	247	86	38
6	45		* 25					33	1,160	265	94	36
7	43							32	816	404	86	36
8	42						28	31	568	304	96	36
9	43							30	652	254	88	38
10	44							31	984	244	82	66
11	47							34	1,000	254	75	78
12	47							35	966	237	69	80
13	47						26	35	840	206	64	64
14	46							35	752	193	62	78
15	44							38	744	190	61	69
16	42						32	54	776	171	59	58
17	42				* 23		35	86	776	163	56	51
18	42			* 20			36	134	800	160	56	48
19	40						34	206	752	146	71	46
20	41						36	292	645	141	64	44
21	42						35	427	589	136	55	44
22	40						44	415	520	132	52	44
23	38					* 18	47	304	469	129	51	45
24	36						41	262	457	122	47	45
25	34						33	247	394	118	46	46
26	36						32	373	373	107	46	46
27	36						31	547	330	104	47	45
28	36						37	645	325	100	49	44
29	34						38	728	304	94	46	43
30	32						32	376	276	96	44	41
31	32							1,110		120	44	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	51	32	41.4	2,550
November			28	1,670
December			24	1,480
January			20	1,230
February			22	1,220
March			24	1,480
April	47		32.1	1,910
May	1,110	29	232	14,300
June	1,300	276	730	43,400
July	404	94	188	11,600
August	134	44	68.1	4,250
September	80	36	48.0	2,920
The year	1,300		122	88,000

* Discharge measurement.

LAKE FORK AT LAKE CITY, COLO.

LOCATION.—Water-stage recorder in sec. 34, T. 44 N., R. 4 W., at Lake City just above Wade Gulch.

DRAINAGE AREA.—123 square miles.

RECORDS AVAILABLE.—October 1931 to September 1933. From April 1918 to September 1924 and December 1928 to July 1930 station maintained 600 feet downstream and below Wade Gulch.

DISCHARGE.—Maximum during year, 777 second-feet June 2 (gage height, 3.27 feet); minimum occurred during winter.

1918-24, 1929-30, 1931-33: Maximum, 1,560 second-feet June 12, 15, 1921; minimum, 5.7 second-feet Mar. 10, 1932 (discharge measurement).

REMARKS.—Records good except those estimated Oct. 11-12, and those for period Nov. 1 to Apr. 25, which were estimated on basis of 12 discharge measurements and temperature records. Flow naturally regulated by Lake San Cristobal, 4 miles upstream.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	20	18	20	15	14	14	25	655	310	95	44
2	24							26	694	283	95.	43
3	24							28	576	265	93	41
4	25							28	531	263	89	40
5	25							29	565	273	91	39
6	24	17	18	20	11	12	15	30	477	310	95	38
7	24							30	375	363	108	37
8	24							36	296	351	110	36
9	24							31	375	317	104	36
10	23							31	589	301	97	37
11	23	18	17	20	11	14	16	31	691	291	88	42
12	22							32	704	310	79	49
13	22							33	643	281	76	54
14	22							33	633	243	70	55
15	24							40	619	201	65	54
16	21	20	16	20	12	13	20	52	606	191	62	53
17	20							62	623	181	58	53
18	20							72	592	161	57	52
19	19							132	558	151	59	53
20	18							241	558	131	62	52
21	18	19	18	21	11	12	14	299	541	131	59	49
22	18							292	500	121	58	51
23	18							226	483	111	57	49
24	18							175	453	101	55	47
25	19							165	439	91	54	46
26	20	19	19	18	13	14	21	214	436	91	52	43
27	20							328	402	81	51	43
28	20							25	405	385	71	49
29	21							22	436	368	71	47
30	21							23	497	344	77	46
31	21		20	18				576		71	45	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	25	18	21.5	1,320
November			18.8	1,120
December			17.8	1,090
January			16.7	1,210
February			12.3	683
March			18.1	806
April			18.0	1,070
May	576	25	150	9,220
June	704	296	524	31,200
July	368	70	202	12,400
August	110	45	71.8	4,410
September	55	36	45.3	2,700
The year	704		92.8	67,229

HENSON CREEK AT LAKE CITY, COLO.

LOCATION.—Water-stage recorder in sec. 33, T. 44 N., R. 4 W., 1 mile southwest of Lake City.

DRAINAGE AREA.—82 square miles.

RECORDS AVAILABLE.—December 1928 to July 1930; October 1931 to September 1933. From April 1918 to September 1919 at station 1 mile downstream.

DISCHARGE.—Maximum during year, 1,190 second-feet June 10 (gage height, 3.93 feet); minimum occurred during winter.
1918-19, 1929-30, 1931-33; Maximum, 2,510 second-feet July 25, 1929; minimum, 9.6 second-feet Dec. 22, 1928.

REMARKS.—Records good except those estimated Oct. 10-12 and those for period Nov. 2 to May 15, which were estimated on basis of 11 discharge measurements and temperature records.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	38	37							810	254	111	44
2.....	40								792	226	108	42
3.....	42				17	16	18	30	671	220	100	39
4.....	40	35							698	220	94	38
5.....	38								608	226	100	36
6.....	38		17	20								
7.....	38								475	267	98	36
8.....	38								344	301	100	35
9.....	38	24			12	15	18	35	374	270	100	37
10.....	38								635	226	109	40
									842	223	94	56
11.....	38				13	18			887	235	84	64
12.....	37				14		16	42	802	223	79	63
13.....	36	26	16		15				730	205	75	56
14.....	35				15	18	16	48	712	191	70	52
15.....	34				15			68	730	187	66	48
				21								
16.....	33							88	698	159	64	45
17.....	33						20	108	653	145	62	42
18.....	33	22	15		15	17		188	599	132	64	45
19.....	33							280	594	123	90	43
20.....	33	18						422	550	121	70	39
21.....	34							426	466	114	68	44
22.....	35							311	454	109	64	45
23.....	33		20	22	14	18	22	183	450	103	60	44
24.....	33							170	386	98	57	42
25.....	34				13			248	390	94	55	40
		18										
26.....	35			18		20	25	355	463	92	52	38
27.....	39		20		14	23		450	333	88	57	35
28.....	39			16				496	326	83	50	36
29.....	37			18			24	554	304	79	48	35
30.....	35		20	17				648	290	86	46	34
31.....	34		20	17				734		111	46	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	42	33	36.2	2,230
November.....	37		23.8	1,420
December.....			17.6	1,080
January.....			20.1	1,240
February.....			14.4	800
March.....			18	1,110
April.....			20.4	1,210
May.....	734		201	12,400
June.....	887	290	569	33,900
July.....	301	79	167	10,300
August.....	111	46	75.5	4,640
September.....	64	34	43.1	2,560
The year.....	887		101	72,900

UNCOMPAGHRE RIVER NEAR COLONA, COLO.

LOCATION.—Water-stage recorder in NE¼ sec. 32, T. 47 N., R. 8 W., 3 miles south of Colona and short distance below mouth of Billy Creek.

DRAINAGE AREA.—419 square miles.

RECORDS AVAILABLE.—April 1917 to September 1933.

DISCHARGE.—Maximum during year, 1,900 second-feet June 1 (gage height, 4.12 feet); minimum occurred during winter.

1917-33; Maximum discharge, 4,080 second-feet June 13, 14, 1911; minimum, 16 second-feet Sept. 3, 1918.

REMARKS.—Few small diversions above station. No record Nov. 13 to Mar. 31. Records of daily discharge furnished by Uncompahgre Valley Water Users' Association.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	67	79	175	140	1,410	360	63	80
2	67	79	190	170	1,390	330	62	73
3	67	79	215	178	1,040	345	61	60
4	66	79	200	224	1,050	370	61	56
5	64	71	158	240	1,120	378	90	55
6	66	71	132	228	1,060	360	104	55
7	67	77	129	175	788	480	197	57
8	67	67	130	219	642	530	220	59
9	66	68	127	172	988	437	275	92
10	74	70	123	160	1,250	433	205	285
11	73	63	104	184	1,400	448	174	295
12	74	63	104	158	1,260	340	144	254
13	68	—	96	140	1,010	330	115	230
14	67	—	104	130	1,050	292	102	254
15	67	—	104	144	1,190	228	95	190
16	67	—	120	186	1,190	195	80	180
17	64	—	130	440	1,110	228	74	172
18	67	—	175	664	1,070	210	74	210
19	67	—	195	858	1,050	172	172	180
20	67	—	186	1,010	940	165	115	170
21	67	—	130	1,010	854	165	100	315
22	88	—	130	730	700	140	106	335
23	96	—	127	420	688	115	100	240
24	96	—	132	508	630	90	97	200
25	96	—	145	540	626	80	96	183
26	106	—	144	740	580	75	95	175
27	104	—	180	900	508	70	97	172
28	100	—	215	1,020	470	65	92	158
29	92	—	195	1,100	460	60	86	150
30	88	—	150	1,210	420	55	83	144
31	82	—	—	1,360	—	62	83	—

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	106	64	76.4	4,700
November 1-12	79	63	72.2	1,720
April	215	96	148	8,810
May	1,360	130	475	30,400
June	1,410	420	911	55,400
July	530	55	215	15,100
August	275	61	113	6,950
September	335	55	119	10,100

GREEN RIVER BASIN

GREEN RIVER AT WARREN BRIDGE, NEAR DANIEL, WYO.

LOCATION.—Water-stage recorder in sec. 8, T. 35 N., R. 111 W., at Warren Bridge, 12 miles north of Daniel.

DRAINAGE AREA.—468 square miles.

RECORDS AVAILABLE.—October 1931 to September 1933.

DISCHARGE.—Maximum during year, 2,920 second-feet June 15 (gage height, 4.86 feet); minimum occurred during winter.

1932-33: Maximum, 3,260 second-feet June 26, 1932 (gage height, 5.08 feet); minimum occurred during winter.

REMARKS.—Records good. No record Nov. 8 to Apr. 30. Flow regulated by natural lakes in Green River Basin.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	May	June	July	Aug.	Sept.
1.....	159	135	439	1,560	1,610	587	266
2.....	156	129	406	1,780	1,310	587	262
3.....	154	114	422	1,950	1,200	601	255
4.....	154	106	516	1,890	1,200	567	248
5.....	147	100	406	1,890	1,270	522	244
6.....	135	149	406	1,940	1,330	486	262
7.....	135	124	400	1,820	1,340	445	338
8.....	140	---	291	1,730	1,420	411	385
9.....	154	---	233	1,610	1,480	385	385
10.....	149	---	240	1,690	1,520	380	355
11.....	142	---	248	2,050	1,380	375	336
12.....	144	---	251	2,310	1,270	365	313
13.....	147	---	258	2,500	1,200	355	296
14.....	147	---	266	2,710	1,100	345	279
15.....	142	---	275	2,870	1,010	350	275
16.....	140	---	291	2,850	944	350	296
17.....	140	---	332	2,770	909	360	275
18.....	142	---	385	2,770	864	370	251
19.....	138	---	411	2,780	830	385	237
20.....	131	---	428	2,780	830	400	223
21.....	124	---	486	2,680	935	406	216
22.....	127	---	594	2,440	765	411	207
23.....	129	---	587	2,210	650	417	200
24.....	120	---	574	2,060	600	400	200
25.....	93	---	608	1,960	574	345	200
26.....	140	---	773	1,880	574	327	200
27.....	138	---	917	1,790	574	313	191
28.....	133	---	899	1,820	580	313	188
29.....	127	---	935	1,890	587	296	180
30.....	108	---	1,120	1,850	600	279	174
31.....	89	---	1,410	---	600	266	---

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	159	89	136	8,360
November 1-7.....	149	100	122	1,690
May.....	1,410	233	510	31,490
June.....	2,870	1,560	2,160	129,000
July.....	1,610	574	1,000	61,500
August.....	601	266	400	24,600
September.....	385	174	258	15,400

GREEN RIVER AT GREEN RIVER, WYO.

LOCATION.—Chain gage in sec. 22, T. 18 N., R. 107 W., 100 feet below railroad bridge at Green River. Zero of gage is 6,071.06 feet above mean sea level.

DRAINAGE AREA.—7,670 square miles.

RECORDS AVAILABLE.—May 1895 to October 1906; March 1915 to September 1933.

DISCHARGE.—Maximum during year, 11,700 second-feet June 16 (gage height, 5.40 feet); minimum occurred during winter.

1895–1906, 1915–33: Maximum, 22,200 second-feet June 16, 1918 (gage height, 12.3 feet); minimum, 160 second-feet Nov. 17, 1898. Average, 30 years (1894–99, 1900–1906, 1914–33), 1,930 second-feet.

REMARKS.—Records fair except those for period Dec. 1 to Mar. 31, which were estimated on basis of two discharge measurements and temperature records. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Apr.	May	June	July	Aug.	Sept.
1	570	669	560	260	270	500	1,990	2,180	3,990	1,100	592
2	560	581				520	1,800	3,060	3,770	1,080	510
3	550	625				716	1,670	3,680	3,540	1,040	490
4	560	647				614	1,490	4,330	3,160	1,010	490
5	560	614				764	1,400	4,610	2,820	958	470
6	540	550	450	270	220	878	1,380	4,810	2,610	917	462
7	540	581				930	1,240	5,050	2,560	891	480
8	540	647				958	1,190	5,760	2,540	852	446
9	560	550				716	1,120	5,700	2,760	764	462
10	560	520				581	1,140	5,820	2,820	704	520
11	581	462	270	240	270	430	1,180	5,480	2,820	658	540
12	592	406				603	1,180	6,010	2,760	647	540
13	570	308				625	1,180	7,240	2,490	636	530
14	603	454				581	1,180	8,300	2,400	625	550
15	570	510				560	1,080	9,930	2,340	614	550
16	592	614	300	230	340	592	1,060	11,600	2,220	581	530
17	603	692				550	1,000	10,800	2,110	570	510
18	658	669				1,040	958	10,500	2,010	570	520
19	716	704				1,510	1,040	9,630	1,920	550	470
20	692	699				1,620	1,080	9,090	1,770	570	454
21	636	716	330	250	360	1,570	1,100	8,560	1,620	581	454
22	614	669				1,460	1,070	8,040	1,490	625	422
23	603	480				1,240	1,070	7,270	1,410	592	398
24	658	314				986	1,130	6,410	1,360	560	422
25	669	355				1,040	1,180	5,390	1,270	570	454
26	636	341	250	260	380	1,330	1,120	4,870	1,190	592	438
27	614	462				1,570	1,120	4,610	1,160	581	438
28	636	570				1,720	1,160	4,080	1,120	614	470
29	680	540				1,770	1,400	3,880	1,140	603	454
30	800	520				2,040	1,620	3,850	1,130	636	470
31	680						1,730		1,120	614	
Month						Maximum	Minimum	Mean	Run-off in acre-feet		
October						800	540	611	37,600		
November						716	308	548	32,600		
December								356	21,900		
January								251	15,400		
February								301	16,700		
March								440	27,100		
April						2,040	430	1,000	59,500		
May						1,990	958	1,260	77,500		
June						11,600	2,180	6,350	378,000		
July						3,990	1,120	2,170	133,000		
August						1,100	550	707	43,500		
September						592	398	485	28,900		
The year						11,600		1,200	872,000		

* Discharge measurement.

GREEN RIVER NEAR LINWOOD, UTAH

LOCATION.—Water-stage recorder in SW¼ sec. 29, T. 3 N., R. 21 E., 2 miles south of Wyoming-Utah line and 5 miles southeast of Linwood. Henrys Fork enters a quarter of a mile downstream.

DRAINAGE AREA.—14,300 square miles.

RECORDS AVAILABLE.—October 1928 to September 1933.

DISCHARGE.—Maximum during year, 11,800 second-feet June 17 (gage height, 8.02 feet); minimum occurred during winter.

1928-33: Maximum, 13,400 second-feet Aug. 15, 1930 (gage height, 7.45 feet on former gage); minimum, 242 second-feet Jan. 8, 1932 (discharge measurement).

REMARKS.—Records fair except those for period Sept. 15-30, which were based on frequent gage readings and comparison with Green River at Green River, and period Dec. 5 to Mar. 29, which were estimated on basis of two discharge measurements and temperature records. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	560	724	651	340	310	500	1,120	2,390	2,770	4,510	1,120	598
2.....	560	700	591				1,480	2,540	3,460	4,540	1,120	565
3.....	560	665	732				1,600	2,570	4,470	4,390	1,050	543
4.....	554	651	708				1,510	2,310	5,430	4,000	1,040	538
5.....	543	665	532				1,280	2,150	6,360	3,800	1,040	532
6.....	538	665	500	325	250	550	1,260	2,010	6,860	3,440	910	538
7.....	521	630					1,200	1,940	7,100	3,200	861	538
8.....	532	617					1,180	1,850	7,500	3,170	825	538
9.....	572	624					1,140	1,730	7,820	3,450	772	538
10.....	610	630					1,020	1,640	7,220	3,440	748	532
11.....	617	604	320	340	320	550	930	1,580	7,720	3,410	708	543
12.....	591	578					900	1,540	7,410	3,420	686	538
13.....	598	572					900	1,580	8,190	3,310	658	532
14.....	604	565					880	1,590	9,230	3,170	651	532
15.....	598	548					880	1,560	9,660	2,800	637	530
16.....	578	665	375	260	370	550	880	1,510	10,800	2,500	610	525
17.....	591	716					870	1,400	11,700	2,450	591	520
18.....	630	700					870	1,360	11,200	2,340	578	500
19.....	665	700					990	1,340	10,800	2,230	560	465
20.....	700	756					1,400	1,360	10,200	2,170	543	445
21.....	693	732	400	290	410	600	1,570	1,430	9,540	1,900	548	450
22.....	665	700					1,580	1,520	9,060	1,700	565	442
23.....	708	708					1,570	1,580	8,530	1,640	578	433
24.....	740	644					1,870	1,740	7,970	1,590	572	420
25.....	716	637					1,680	2,030	7,240	1,510	560	416
26.....	700	624	320	300	450	720	1,740	2,020	6,140	1,300	572	450
27.....	708	565					1,820	1,830	5,610	1,310	572	445
28.....	708	548					1,960	1,720	5,250	1,260	637	450
29.....	724	565					2,120	1,910	5,070	1,210	700	475
30.....	732	548					2,230	2,200	4,780	1,210	732	460
31.....	740	-----	-----	-----	-----	1,090	-----	2,470	-----	1,130	630	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	740	521	631	38,800
November.....	756	548	642	38,200
December.....	732	-----	423	26,000
January.....	-----	-----	307	18,900
February.....	-----	-----	346	19,200
March.....	1,090	-----	594	36,500
April.....	2,230	870	1,350	80,300
May.....	2,570	1,340	1,820	112,000
June.....	11,700	2,770	7,520	447,000
July.....	4,540	1,190	2,640	162,000
August.....	1,120	543	722	44,400
September.....	598	416	501	29,800
The year.....	11,700	-----	1,460	1,050,000

* Discharge measurement.

GREEN RIVER AT GREEN RIVER, UTAH

LOCATION.—Water-stage recorder in NW¼SW¼ sec. 15, T. 21 S., R. 16 E., 1 mile southeast of Green River and 22 miles above San Rafael River.

DRAINAGE AREA.—40,600 square miles.

RECORDS AVAILABLE.—October 1894 to October 1899; February 1905 to December 1911; June 1924 to September 1933. December 1910 to June 1924 at Little Valley, 7 miles downstream.

DISCHARGE.—Maximum during year, 27,700 second-feet June 16 (gauge height, 11.23 feet); minimum recorded, 292 second-feet Dec. 12 (gauge height, 4.22 feet), 1894-99; 1905-33: Maximum, 68,800 second-feet May 29, 1897; minimum, 255 second-feet Nov. 26 (gauge height, 4.17 feet).

REMARKS.—Records excellent except those estimated for Dec. 13 to Mar. 9, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	1,580	2,370	2,120	1,100	1,680	2,500	3,260	9,280	19,300	10,200	2,370	1,270
2.....	1,580	2,330	2,080		1,680	2,400	3,380	11,400	19,600	9,510	2,520	1,250
3.....	1,560	2,310	2,050		1,680	2,300	3,500	12,400	22,600	8,830	2,280	1,250
4.....	1,560	2,310	2,120		1,670	2,200	3,620	12,200	25,000	8,160	3,040	1,260
5.....	1,540	2,350	2,220		1,670	2,100	3,750	11,000	26,500	7,720	2,570	1,340
6.....	1,530	2,350	2,210	1,100	1,670	2,050	3,880	10,400	27,100	7,290	2,280	1,370
7.....	1,530	2,330	2,030		1,640	2,000	4,280	9,740	26,800	9,740	2,150	1,230
8.....	1,560	2,310	1,980		1,600	2,050	4,860	9,970	26,500	7,720	2,100	1,400
9.....	1,560	2,280	1,860		1,560	2,100	4,860	10,400	26,800	7,290	2,120	2,030
10.....	1,580	2,280	1,240		1,520	2,130	4,710	11,000	26,200	6,660	2,100	2,150
11.....	1,580	2,280	712	1,100	1,520	2,480	4,420	10,200	25,900	6,070	1,940	2,000
12.....	1,620	2,260	635		1,520	2,730	4,140	8,830	25,300	6,260	1,860	1,580
13.....	1,720	2,190	640		1,510	3,040	4,140	8,160	25,600	5,880	1,780	1,400
14.....	1,770	2,120	650		1,510	3,380	4,140	7,500	25,900	5,700	1,700	1,360
15.....	1,780	2,190	654		1,510	3,880	3,750	7,080	26,500	5,350	1,650	1,270
16.....	1,800	2,210	1,600	1,600	1,580	4,710	3,380	6,660	27,400	4,920	1,670	1,250
17.....	1,800	2,190			1,650	4,420	3,150	6,260	26,800	5,180	1,580	1,240
18.....	1,880	2,220			1,730	4,140	3,040	5,700	26,800	5,520	1,500	1,210
19.....	1,940	2,260			1,730	4,010	3,040	5,520	27,400	4,560	1,620	1,200
20.....	2,050	2,240			1,720	4,420	3,150	5,520	26,800	4,010	1,530	1,200
21.....	2,330	2,210	1,000	1,000	1,710	4,710	3,150	5,880	25,300	3,880	1,360	1,310
22.....	2,330	2,310			1,700	3,880	3,620	9,060	23,800	3,620	1,290	1,290
23.....	2,260	2,370			1,690	3,500	5,180	13,800	22,300	3,260	1,290	1,290
24.....	2,240	2,370			1,700	3,380	6,460	16,000	20,800	3,150	1,270	1,240
25.....	2,220	2,370			1,720	3,260	5,880	17,200	18,700	2,940	1,250	1,180
26.....	2,260	2,350	1,000	1,000	1,800	3,150	5,520	16,300	16,900	2,830	1,210	1,200
27.....	2,300	2,300			1,720	2,000	2,940	5,700	14,000	15,400	2,570	1,170
28.....	2,260	2,240			1,720	2,300	2,940	7,080	13,500	13,800	2,440	1,160
29.....	2,310	2,220			1,700	-----	2,940	7,720	14,600	12,000	2,300	1,140
30.....	2,400	2,130			1,680	-----	3,040	8,380	16,300	11,200	2,240	1,200
31.....	2,400	-----			1,680	-----	3,150	-----	18,100	-----	2,420	1,310

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	2,400	1,530	1,900	117,000
November.....	2,370	2,120	2,280	136,000
December.....	2,220	-----	1,260	77,500
January.....	-----	-----	1,460	89,800
February.....	2,300	1,510	1,680	93,300
March.....	4,710	2,000	3,090	190,000
April.....	8,380	3,040	4,500	268,000
May.....	18,100	5,520	10,800	664,000
June.....	27,400	11,200	23,000	1,370,000
July.....	10,200	2,240	5,430	334,000
August.....	3,040	1,140	1,740	107,000
September.....	2,150	1,130	1,340	79,700
The year.....	27,400	-----	4,870	3,530,000

HORSE CREEK NEAR DANIEL, WYO.

LOCATION.—Water-stage recorder in sec. 10, T. 34 N., R. 112 W., 12 miles northwest of Daniel.

DRAINAGE AREA.—124 square miles.

RECORDS AVAILABLE.—October 1931 to September 1933.

DISCHARGE.—Maximum during year, 798 second-feet June 15 (gauge height, 2.31 feet); minimum occurred during winter.

1932-33: Maximum, that of June 15, 1933; minimum occurred during winter.

REMARKS.—Records good except those for periods Oct. 1-11, May 9-12, July 9-11, Sept. 1-3, 26-30, which were based on comparison with neighboring stations. No records Nov. 6 to Apr. 25. Small diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	23	18	-----	93	382	75	8	14
2	23	14	-----	99	574	69	15	13
3	20	26	-----	96	515	64	15	12
4	18	41	-----	99	428	58	14	12
5	18	56	-----	73	441	48	13	12
6	18	20	-----	69	574	39	12	12
7	18	-----	-----	58	382	39	11	12
8	18	-----	-----	49	396	41	11	11
9	18	-----	-----	48	376	38	10	11
10	17	-----	-----	48	550	36	10	12
11	17	-----	-----	46	582	34	10	11
12	18	-----	-----	46	598	33	10	12
13	16	-----	-----	46	662	31	10	11
14	16	-----	-----	44	670	26	9.3	12
15	16	-----	-----	42	694	21	2.1	12
16	16	-----	-----	42	662	20	1.8	12
17	18	-----	-----	41	630	19	1.8	13
18	21	-----	-----	37	558	13	2.1	12
19	21	-----	-----	36	487	1.8	2.4	11
20	20	-----	-----	37	402	1.8	2.4	13
21	26	-----	-----	39	308	1.5	6.6	12
22	21	-----	-----	64	268	1.5	13	12
23	19	-----	-----	71	217	1.8	12	12
24	37	-----	-----	53	179	1.8	12	14
25	42	-----	-----	48	151	1.8	12	14
26	31	-----	82	71	119	1.5	12	16
27	22	-----	77	99	93	1.5	14	16
28	21	-----	99	82	90	1.5	14	18
29	21	-----	112	101	99	1.5	14	18
30	28	-----	99	179	85	2.1	14	18
31	42	-----	-----	338	-----	3.0	14	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	42	16	21.9	1,350
November 1-6	56	14	29.2	348
April 26-30	112	77	93.8	930
May	338	36	74	4,550
June	694	85	406	24,200
July	75	1.5	23.5	1,440
August	15	1.8	9.95	612
September	18	11	13	774

NEW FORK NEAR BOULDER, WYO.

LOCATION.—Staff gage about sec. 8, T. 32 N., R. 108 W., half a mile southwest of Boulder post office, which was moved during the year, and an eighth of a mile above Boulder Creek.

DRAINAGE AREA.—578 square miles.

RECORDS AVAILABLE.—May 1915 to September 1933.

DISCHARGE.—Maximum during year, 3,930 second-feet June 15, 16 (gage height, 6.15 feet); minimum probably occurred during winter.

1915-33: Maximum, 12,300 second-feet June 17, 1918 (gage height, 8.7 feet); minimum, 42 second-feet Dec. 15-17, 1915. Average, 19 years (1914-33), 403 second-feet.

REMARKS.—Records good. No records Nov. 13 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1.....	101	101	169	172	403	1,470	221	127
2.....	101	104	169	169	613	1,370	215	125
3.....	99	104	164	164	811	1,210	212	118
4.....	97	104	164	153	1,080	1,100	202	113
5.....	97	90	158	140	1,200	1,050	183	113
6.....	99	90	148	135	1,280	979	178	122
7.....	99	95	142	132	1,420	1,010	161	120
8.....	99	95	142	132	1,530	1,070	153	110
9.....	104	99	118	120	1,630	1,070	155	108
10.....	99	104	106	113	1,530	1,070	199	106
11.....	104	99	95	113	1,670	1,030	196	104
12.....	99	104	90	113	2,060	937	186	99
13.....	99	-----	95	113	2,810	958	178	99
14.....	99	-----	99	120	3,740	923	166	95
15.....	99	-----	104	118	3,930	853	172	104
16.....	90	-----	127	122	3,870	714	172	99
17.....	86	-----	166	135	3,600	681	164	99
18.....	106	-----	199	137	3,320	649	161	99
19.....	101	-----	166	120	3,080	577	166	99
20.....	97	-----	158	118	2,910	530	172	97
21.....	101	-----	132	110	2,700	486	166	95
22.....	104	-----	148	104	2,420	433	155	95
23.....	104	-----	150	104	2,110	408	153	95
24.....	95	-----	158	101	1,860	388	150	95
25.....	66	-----	158	99	1,750	364	148	95
26.....	108	-----	148	99	1,590	341	140	99
27.....	106	-----	137	118	1,440	328	142	99
28.....	104	-----	150	142	1,480	315	148	95
29.....	99	-----	145	164	1,570	290	142	97
30.....	99	-----	164	180	1,520	263	130	95
31.....	101	-----	-----	245	-----	249	127	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	108	86	98.8	6,080
November 1-12.....	104	90	97.1	2,360
April.....	199	90	142	8,450
May.....	245	99	132	8,120
June.....	3,930	403	2,030	12,100
July.....	1,470	249	746	45,900
August.....	221	127	168	10,300
September.....	127	95	104	6,190

PINE CREEK AT PINEDALE, WYO.

LOCATION.—Water-stage recorder in sec. 4, T. 33 N., R. 109 W., at Pinedale, 3 miles above mouth. Zero of gage is 7,164.3 feet above mean sea level.

DRAINAGE AREA.—128 square miles.

RECORDS AVAILABLE.—May 1915 to September 1933.

DISCHARGE.—Maximum during year, 1,350 second-feet June 19 (gage height, 3.95 feet); minimum probably occurred during winter.

1915-33: Maximum, 2,310 second-feet June 17, 1918 (gage height, 5.0 feet); minimum, 2 second-feet Apr. 1-26, May 6-8, 1931. Average, 24 years (1903-6, 1910-12, 1914-32), 155 second-feet.

REMARKS.—Records good except those for periods Oct. 8-12, 14-15, Nov. 27-30, Mar. 29-31, Apr. 2-7, 20-21, 26-28, Apr. 30-May 5, May 6-12, which were estimated. No record Dec. 1 to Mar. 27. Diversions for irrigation above station. Flow regulated by Fremont Lake.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.
1	29	11	-----	12	14	8	666	42	38
2	31	11	-----	12	12	12	573	41	34
3	26	11	-----	14	12	34	492	39	29
4	26	10	-----	16	12	70	491	39	29
5	26	10	-----	14	11	98	380	38	31
6	28	10	-----	12	12	162	379	38	30
7	26	10	-----	12	12	246	325	39	29
8	26	10	-----	11	12	325	338	36	29
9	24	10	-----	11	11	370	370	41	24
10	22	10	-----	23	11	421	370	57	20
11	20	13	-----	15	11	550	385	57	15
12	18	12	-----	12	11	666	365	52	15
13	17	11	-----	12	10	860	347	50	15
14	14	10	-----	12	9.2	1,060	329	49	14
15	12	11	-----	13	9.2	1,240	374	50	14
16	11	10	-----	13	10	1,240	291	50	14
17	11	10	-----	12	10	1,230	260	52	14
18	12	10	-----	12	10	1,240	220	61	14
19	12	10	-----	12	11	1,270	176	63	14
20	12	10	-----	12	13	1,240	157	63	14
21	12	10	-----	12	11	1,190	130	61	14
22	12	10	-----	12	12	1,100	115	61	14
23	12	11	-----	12	12	1,000	176	57	14
24	12	12	-----	12	11	940	172	56	14
25	11	10	-----	12	7.4	868	92	47	14
26	11	10	-----	10	6.8	845	84	39	14
27	11	10	-----	10	6.8	815	79	39	14
28	11	10	12	12	6.8	778	72	39	14
29	11	10	12	11	7.0	778	57	39	14
30	11	10	12	11	7.4	736	47	38	14
31	10	-----	12	-----	7.6	-----	50	38	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	31	10	17	1,050
November	13	10	10.4	619
April	23	10	12.5	744
May	14	6.8	10.3	633
June	1,270	8.0	713	42,400
July	666	47	260	16,000
August	63	36	47.5	2,920
September	38	14	19.2	1,140

NORTH PINEY CREEK NEAR MASON, WYO.

LOCATION.—Water-stage recorder in sec. 19, T. 31 N., R. 113 W., 4 miles north-east of Mason.

DRAINAGE AREA.—58 square miles.

RECORDS AVAILABLE.—May 1915 to October 1916; October 1931 to September 1933.

DISCHARGE.—Maximum during year, 366 second-feet June 24 (gage height, 3.48 feet); minimum occurred during winter.

1915-16, 1931-33: Maximum, 613 second-feet June 19, 1916 (gage height, 3.93 feet, present datum); minimum probably occurred during winter.

REMARKS.—Records good except those for periods Oct. 26-31, May 1-24, Sept. 23-27, which were estimated by comparison with neighboring stations. No record Nov. 1 to Apr. 30. Small diversions above station.

Discharge, in second-feet, 1932-33

Day	Oct.	May	June	July	Aug.	Sept.	Day	Oct.	May	June	July	Aug.	Sept.
1-----	27	35	104	158	30	17	16-----	21	23	336	58	25	17
2-----	26		104	140	29	17	17-----	21		350	56	26	16
3-----	24		112	129	27	16	18-----	24		350	50	26	15
4-----	22		132	118	26	15	19-----	23		344	48	28	15
5-----	23		142	110	26	16	20-----	23		308	44	26	15
6-----	22	28	163	106	26	16	21-----	25	65	284	41	24	15
7-----	22		160	110	27	15	22-----	23		268	40	24	15
8-----	23		160	102	35	15	23-----	22		250	39	23	15
9-----	24		155	96	33	16	24-----	22		238	40	22	20
10-----	23		178	89	31	16	25-----	20		89	223	40	21
11-----	23	25	219	82	32	16	26-----	18	90	210	39	23	22
12-----	23		256	76	30	16	27-----	16	96	196	40	24	24
13-----	22		292	70	27	16	28-----	16	97	197	37	24	26
14-----	22		316	68	26	16	29-----	16	99	183	34	22	26
15-----	21		348	62	26	17	30-----	18	102	168	32	20	26
							31-----	24	103	-----	30	19	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October-----	27	16	21.9	1,350
May-----	103	-----	48	2,950
June-----	350	104	225	13,400
July-----	158	30	70.5	4,330
August-----	35	19	26.1	1,600
September-----	26	15	17.6	1,050

SURFACE WATER SUPPLY, 1933, PART 9

LABARGE CREEK NEAR TULSA, WYO.

LOCATION.—Water-stage recorder in sec. 17, T. 26 N., R. 112 W.. 2 miles south of Tulsa.

DRAINAGE AREA.—193 square miles.

RECORDS AVAILABLE.—April 1932 to September 1933.

DISCHARGE.—Maximum during year, 233 second-feet June 2 (gage height, 1.67 feet); minimum recorded, 5 second-feet Aug. 17 (gage height, 0.18 foot).

1932-33: Maximum (estimated), 410 second-feet May 15, 1932; minimum, 3 second-feet July 31, 1932 (gage height, 0.48 foot).

REMARKS.—Records fair except those for periods Oct. 1-9, 18-28, Apr. 1-4, Apr. 21 to May 10, May 12-17, June 2-5, 14-15, 23-30, July 17-18, 28-29, which were based on comparisons with neighboring stations. No record Nov. 6 to Mar. 31. Diversion for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Apr.	May	June	Jul.	Aug.	Sept.
1.....	58	68	36	135	159	6	14	44
2.....	58	68	36	110	200	6	14	44
3.....	54	66	38	105	205	6	15	44
4.....	54	60	42	100	220	6	16	44
5.....	54	56	44	95	225	6	17	42
6.....	56	-----	43	85	220	5	17	44
7.....	56	-----	44	75	220	6	17	43
8.....	60	-----	42	68	207	6	16	42
9.....	62	-----	39	60	203	6	17	51
10.....	64	-----	35	55	220	6	12	53
11.....	64	-----	39	47	220	6	7	55
12.....	64	-----	39	54	214	6	7	56
13.....	64	-----	40	58	211	6	7	58
14.....	62	-----	38	56	215	6	7	60
15.....	62	-----	42	60	200	7	6	62
16.....	62	-----	44	54	181	7	6	66
17.....	62	-----	49	48	167	7	5	55
18.....	64	-----	56	42	154	7	5	43
19.....	66	-----	58	39	137	7	6	42
20.....	70	-----	56	43	117	7	6	42
21.....	78	-----	52	53	88	7	6	40
22.....	78	-----	48	64	64	6	6	39
23.....	78	-----	46	64	58	6	6	39
24.....	78	-----	46	53	48	7	17	42
25.....	70	-----	80	47	38	7	32	42
26.....	72	-----	100	76	32	9	34	60
27.....	72	-----	130	90	28	11	40	42
28.....	72	-----	160	93	20	11	47	43
29.....	72	-----	195	106	16	11	51	40
30.....	70	-----	140	119	11	12	47	40
31.....	64	-----	-----	132	-----	13	44	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	78	54	65.2	4,010
November 1-5.....	68	56	63.6	631
April.....	195	35	61.9	3,680
May.....	135	39	73.7	4,580
June.....	225	11	143	8,510
July.....	13	5	7.3	449
August.....	51	5	17.6	1,080
September.....	66	39	47.2	2,810

FONTENELLE CREEK NEAR FONTENELLE, WYO.

LOCATION.—Staff gage in sec. 3, T. 24 N., R. 113 W., 6 miles west of Fontenelle.
DRAINAGE AREA.—224 square miles.

RECORDS AVAILABLE.—May 1915 to September 1919; October 1931 to September 1933.

DISCHARGE.—Maximum during year, 233 second-feet Apr. 29, June 13-14 (gage height, 1.62 feet); minimum probably occurred during winter.

1915-19, 1931-33: Maximum, 900 second-feet May 22, 1917 (gage height, 2.7 feet); minimum, 1 second-foot July 19-22, 28, Aug. 1 to Sept. 2, 1919.

REMARKS.—Records good except those for periods Nov. 23-30, Apr. 1-2, which were estimated. No records Dec. 1 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	31	30	25	134	174	38	21	28
2	31	34	25	134	174	44	22	28
3	28	33	25	109	186	37	21	28
4	28	32	30	109	183	32	21	28
5	28	39	45	109	199	28	24	28
6	30	51	39	96	212	28	24	32
7	30	51	31	87	209	38	23	30
8	30	30	30	79	212	41	23	28
9	32	42	16	68	206	32	23	28
10	32	57	18	72	206	31	23	28
11	38	54	17	83	212	24	23	26
12	32	48	17	81	223	21	23	26
13	32	41	13	87	233	18	24	26
14	32	45	12	78	233	17	26	27
15	30	60	15	72	226	18	28	30
16	32	38	36	87	199	18	28	31
17	31	55	55	96	180	20	25	31
18	41	34	79	109	168	18	24	28
19	39	31	76	114	168	18	26	28
20	54	32	52	124	134	18	25	30
21	54	28	41	142	119	18	24	31
22	51	26	38	156	105	18	23	30
23	48	22	36	151	91	17	24	27
24	48	20	55	124	72	17	24	27
25	34	22	96	114	66	17	23	28
26	42	22	109	119	55	17	22	28
27	39	24	122	129	45	18	26	28
28	39	28	192	140	49	20	24	28
29	37	24	230	145	49	20	25	27
30	36	24	183	156	46	20	28	26
31	48			168		21	26	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	54	28	36.5	2,240
November	60	20	35.9	2,140
April	230	12	58.6	3,490
May	168	68	112	6,890
June	233	45	154	9,160
July	44	17	24	1,480
August	28	21	24.1	1,480
September	32	26	28.3	1,680

BIG SANDY CREEK NEAR FARSON, WYO.

LOCATION.—Water-stage recorder in sec. 18, T. 27 N., R. 106 W., half a mile above headgate of Eden Canal and 18 miles north of Farson.

DRAINAGE AREA.—322 square miles.

RECORDS AVAILABLE.—May 1915 to September 1917; April 1921 to October 1924; May 1927 to September 1933.

DISCHARGE.—Maximum during year, 1,030 second-feet June 15 (gage height, 5.50 feet); minimum occurred during winter.

1915-17, 1921-24, 1927-33: Maximum, 1,330 second-feet Aug. 14, 1930 (gage height, 5.96 feet); minimum, 1 second-foot Sept. 16-21, 1931. Average, 14 years (1914-17, 1920-24, 1926-33), 92 second-feet.

REMARKS.—Records fair except those for Oct. 1-15, May 1-4, Aug. 14, which were estimated. No records Nov. 8 to Apr. 30. Diversions for irrigation above station. No regulation.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	May	June	July	Aug.	Sept.
1.....	12	18	30	496	268	35	36
2.....	12	26	35	530	172	33	31
3.....	12	29	40	594	158	32	29
4.....	12	18	70	538	144	33	24
5.....	12	31	54	524	146	30	19
6.....	12	26	52	502	138	28	16
7.....	12	25	46	520	132	25	13
8.....	12	—	42	516	144	24	12
9.....	14	—	37	474	164	21	12
10.....	16	—	36	399	149	20	12
11.....	24	—	37	604	131	17	9
12.....	22	—	34	688	110	15	8
13.....	18	—	29	754	100	14	8
14.....	18	—	26	874	101	14	8
15.....	18	—	25	870	87	15	7
16.....	18	—	26	695	95	15	8
17.....	15	—	28	688	80	14	14
18.....	19	—	33	604	84	14	33
19.....	18	—	37	580	79	14	35
20.....	14	—	37	552	76	15	34
21.....	14	—	43	478	71	15	30
22.....	22	—	58	405	70	15	28
23.....	24	—	78	393	66	15	26
24.....	19	—	84	363	64	14	23
25.....	19	—	102	315	58	30	22
26.....	18	—	151	292	53	39	21
27.....	19	—	222	262	48	55	21
28.....	21	—	245	230	44	72	26
29.....	17	—	265	255	44	55	25
30.....	19	—	312	272	48	50	22
31.....	15	—	447	—	42	45	—

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	24	12	16.7	1,030
November 1-7.....	31	18	24.7	343
May.....	447	25	89.1	5,480
June.....	874	230	509	30,300
July.....	208	42	101	6,210
August.....	72	14	26.9	1,650
September.....	36	7	20.4	1,210

HAMS FORK AT DIAMONDVILLE, WYO.

LOCATION.—Staff gage in SW¼ sec. 24, T. 21 N., R. 116 W., at Diamondville.

DRAINAGE AREA.—386 square miles.

RECORDS AVAILABLE.—May 1918 to February 1933 (discontinued).

DISCHARGE.—Maximum during period October 1932 to February 1933, 39 second-feet Nov. 14 (gage height, 1.18 feet); minimum occurred during winter, 1918-33: Maximum discharge, 3,250 second-feet May 11, 1923 (gage height, 4.55 feet); no flow Aug. 29-31, 1919, Aug. 25 to Sept. 30, 1931.

REMARKS.—Records good except those for Nov. 9-11, Dec. 1 to Feb. 28, which were estimated on basis of two discharge measurements and temperature records. Diversions for irrigation above station. No regulation.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Jan.	Feb.	Day	Oct.	Nov.	Jan.	Feb.
1.....	18	29	-----	-----	16.....	24	37	-----	-----
2.....	21	34	-----	-----	17.....	24	34	-----	-----
3.....	21	36	-----	-----	18.....	34	35	-----	-----
4.....	20	24	-----	-----	19.....	36	37	-----	-----
5.....	18	22	-----	-----	20.....	34	37	-----	-----
6.....	16	24	-----	-----	21.....	25	31	-----	-----
7.....	19	36	-----	-----	22.....	26	31	-----	-----
8.....	21	24	-----	-----	23.....	31	18	-----	-----
9.....	25	24	a 13	-----	24.....	35	32	-----	-----
10.....	29	24	-----	-----	25.....	30	39	-----	-----
11.....	31	26	-----	-----	26.....	24	34	-----	-----
12.....	22	30	-----	-----	27.....	31	29	-----	-----
13.....	18	35	-----	-----	28.....	36	21	-----	-----
14.....	18	39	-----	a 12	29.....	36	19	-----	-----
15.....	18	34	-----	-----	30.....	36	22	-----	-----
					31.....	29	-----	-----	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	36	16	26	1,600
November.....	39	18	27.9	1,780
December.....	-----	-----	15	922
January.....	-----	-----	12	738
February.....	-----	-----	14	778
The period.....	-----	-----	-----	5,820

a Discharge measurement.

HENRYS FORK AT LINWOOD, UTAH

LOCATION.—Staff gage in sec. 23, T. 12 N., R. 109 W., 200 feet north of Wyoming-Utah State line at Linwood. Zero of gage is 5,992.57 feet above mean sea level.

DRAINAGE AREA.—531 square miles.

RECORDS AVAILABLE.—October 1928 to September 1933.

DISCHARGE.—Maximum during year, 995 second-feet June 3 (gage height, 3.45 feet); no flow Sept. 20–24.

1929–33: Maximum, 2,590 second-feet Aug. 13, 1930 (gage height, 4.8 feet); no flow Sept. 20–24, 1933.

REMARKS.—Records good except those for Dec. 1 to Mar. 25, which were estimated on basis of two discharge measurements and temperature records. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1.....	16	54	40	15	15	45	51	103	542	5.0	1.5	0.2	
2.....	16	58					58	87	732	4.5	28	.2	
3.....	16	63					67	85	882	5.0	9.0	.2	
4.....	16	58					64	79	849	3.8	2.2	.2	
5.....	17	55	30	15	12	60	62	78	748	3.8	1.1	.2	
6.....	18	69					58	79	575	4.5	1.1	.2	
7.....	18	63					52	79	588	5.6	1.0	.2	
8.....	18	55					54	74	450	336	1.0	.2	
9.....	24	71	10	15	10	80	43	74	480	2.9	.9	.2	
10.....	28	63					36	68	640	62	1.0	.2	
11.....	25	46					33	72	696	42	1.1	.2	
12.....	24	42					33	72	588	53	1.1	.2	
13.....	20	53	12	12	14	25	39	105	498	30	1.1	.1	
14.....	23	60					35	88	385	16	1.1	.1	
15.....	23	67					45	74	322	14	1.0	.1	
16.....	21	75					51	65	280	9.0	.8	.1	
17.....	23	71	18	18	18	80	52	64	253	5.0	.8	.1	
18.....	32	71					58	63	242	3.8	.6	.1	
19.....	36	76					56	67	201	1.8	.5	.1	
20.....	40	68					51	71	156	3.5	.5	0	
21.....	36	65	18	18	18	25	43	79	111	3.0	.5	0	
22.....	48	59					46	87	90	2.4	.4	0	
23.....	63	46					81	96	65	2.2	.3	0	
24.....	53	42					172	84	53	2.1	.3	0	
25.....	51	46	14	16	16	25	201	71	39	1.9	.3	.1	
26.....	55	56					102	186	68	29	1.9	.3	.1
27.....	62	62					107	186	78	26	1.8	.3	.1
28.....	63	65					102	153	96	16	1.8	.3	.1
29.....	63	55	14	16	16	25	111	133	105	9.0	1.1	.3	.1
30.....	56	46					90	118	153	6.5	1.1	.3	.1
31.....	54	-----					64	-----	268	-----	1.1	.2	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	63	16	34.1	2,100
November.....	76	42	59.3	3,530
December.....	-----	-----	20.5	1,260
January.....	-----	-----	15.2	935
February.....	-----	-----	15.0	833
March.....	-----	-----	71.0	4,370
April.....	201	33	77.2	4,590
May.....	268	63	88.1	5,420
June.....	882	6.5	352	20,900
July.....	336	1.1	27.3	1,680
August.....	28	.2	1.9	117
September.....	.2	0	.12	7
The year.....	882	0	63.2	45,700

* Discharge measurement.

BURNT FORK AT BURNTFORK, WYO.

LOCATION.—Chain gage in sec. 11, T. 12 N., R. 112 W., a quarter of a mile west of Burntfork and 1 mile above mouth. Zero of gage is 7,094.82 feet above mean sea level.

DRAINAGE AREA.—73 square miles.

RECORDS AVAILABLE.—July 1929 to September 1933.

DISCHARGE.—Maximum during year, 157 second-feet June 1 (gage height, 3.96 feet); minimum, 1 second-foot June 30, July 1 (gage height, 2.46 feet).

1929-33: Maximum, 445 second-feet Aug. 10, 1930 (gage height, 4.7 feet); minimum, 0.2 second foot Oct. 2-4, 1932 (gage height, 2.54 feet).

REMARKS.—Records good except those for Dec. 1 to Mar. 18, which were estimated on the basis of two discharge measurements and temperature records. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4	6				2	7	120	1	1	1
2	4	6				2	7	115	1	1	1
3	3	6			8	3	7	104	2	1	1
4	3	6				2	7	92	2	1	1
5	3	6				2	6	72	2	1	1
6	4	6				2	6	50	2	1	2
7	3	6	* 5			2	6	50	3	2	2
8	3	6			4	2	6	53	12	2	2
9	3	9				2	5	56	5	2	2
10	3	10				2	6	56	4	2	2
11	3	10				2	6	61	3	2	2
12	4	10				2	5	45	3	2	2
13	4	10			2	2	5	43	3	2	2
14	4	11				2	5	36	3	2	2
15	4	11		* 5		2	5	29	2	2	2
16	5	12				5	5	29	2	2	2
17	6	12			2	5	5	38	2	2	2
18	6	11				5	5	31	2	2	2
19	6	11			2	6	11	16	2	1	1
20	6	11			2	6	18	10	2	1	1
21	6	11			2	5	18	7	2	1	1
22	7	11			2	6	22	8	2	1	2
23	6	11			2	7	16	6	1	1	2
24	6	10			2	8	12	3	1	1	2
25	6	10			2	9	14	3	1	1	2
26	7	10			2	8	22	3	1	2	2
27	7	10			2	7	32	3	2	2	2
28	6	10			2	5	26	2	2	1	2
29	6	10			2	7	24	1	2	1	2
30	6	10			2	8	58	1	1	1	1
31	6				2		70		1		

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	7	3	4.8	295
November	12	6	9.3	553
December			6	369
January			4.2	258
February			7	389
March			3.3	203
April	9	2	4.3	286
May	70	5	14.4	885
June	120	1	38.1	2, 270
July	12	1	2.4	148
August	2	1	1.5	92
September	2	1	1.7	101
The year	120		8.0	5, 820

* Discharge measurement.

ASHLEY CREEK NEAR VERNAL, UTAH

LOCATION.—Water-stage recorder in sec. 1, T. 3 S., R. 20 E., three-quarters of a mile above heading of Utah Power & Light Co.'s canal and 12 miles northwest of Vernal.

DRAINAGE AREA.—101 square miles.

RECORDS AVAILABLE.—June 1914 to September 1933. Fragmentary records March 1900 to December 1904, at station below mouth of Dry Fork, and October 1911 to June 1914 at power plant.

DISCHARGE.—Maximum during year, 1,260 second-feet June 1; minimum recorded, 20 second-feet Mar. 25.

1911-33: Maximum, 2,050 second-feet May 29, 1921; minimum recorded, that of Mar. 25, 1933.

REMARKS.—Records good except those estimated, which are fair. No diversions above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	79	49	* 34	* 25	* 25	22	21	* 29	913	63	* 90	40
2.....	79	49	* 34	* 25	* 25	* 22	21	* 29	829	56	* 80	39
3.....	75	49	* 33	* 25	* 25	* 22	22	* 28	698	53	* 70	39
4.....	75	48	* 33	* 25	25	* 22	22	* 28	* 500	48	63	39
5.....	73	45	* 32	* 25	* 25	* 22	22	* 28	* 325	42	63	39
6.....	70	43	* 31	* 25	* 25	* 21	22	28	* 350	* 90	63	39
7.....	66	43	* 30	25	* 25	* 21	22	26	* 300		63	39
8.....	64	42	* 29	* 25	* 25	* 21	22	26	* 325		63	42
9.....	63	42	* 28	* 25	* 25	* 21	22	26	* 375		63	48
10.....	61	42	* 28	* 25	* 25	* 21	22	26	* 325		63	46
11.....	61	40	* 28	* 25	25	21	22	25	286	* 75	61	43
12.....	59	40	* 28	25	* 25	* 21	22	26	262		59	40
13.....	59	40	* 28	25	* 25	* 21	22	26	229		56	40
14.....	57	40	* 27	* 25	* 25	* 21	22	25	207		54	39
15.....	57	40	* 27	* 25	* 25	* 21	22	25	193		54	37
16.....	56	39	* 27	* 25	* 24	* 22	22	25	172	* 75	54	36
17.....	56	39	* 27	* 25	* 24	* 22	22	29	132		53	36
18.....	56	39	* 27	* 25	24	* 22	22	36	143		51	35
19.....	54	39	* 27	* 25	* 24	* 23	22	43	130		51	35
20.....	54	37	* 26	* 25	* 23	* 23	22	73	122		48	33
21.....	54	37	* 26	25	* 22	* 24	22	128	115	* 75	48	33
22.....	54	36	* 26	* 25	22	25	24	128	115		46	32
23.....	53	36	* 26	* 25	* 22	* 24	24	69	109		45	32
24.....	53	35	* 26	* 25	* 22	* 22	24	130	104		43	30
25.....	53	35	* 26	* 25	* 22	20	24	229	99		45	32
26.....	53	35	* 25	* 25	* 22	21	25	330	91	* 75	46	32
27.....	53	35	* 25	* 25	* 22	21	26	440	85		46	33
28.....	53	35	* 25	25	* 22	21	29	542	83		46	33
29.....	53	35	* 25	* 25	25	21	29	596	75		46	32
30.....	51	35	25	* 25	25	21	* 29	724	68		45	32
31.....	51		* 25	* 25		21		773			40	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	79	51	59.8	3,680
November.....	49	35	40.0	2,380
December.....	34	25	27.9	1,720
January.....	25	25	25.0	1,540
February.....	25	22	23.9	1,330
March.....	25	20	21.7	1,330
April.....	29	21	23.1	1,370
May.....	773	25	152	9,350
June.....	913	68	25.9	15,400
July.....			75.4	4,640
August.....	90	40	55.4	3,610
September.....	48	30	36.8	2,190
The year.....	913	20	66.8	48,500

* Estimated.

NORTH FORK OF DUCHESNE RIVER AT PROVO RIVER TRAIL, NEAR HANNA, UTAH

LOCATION.—Water-stage recorder in SE¼ sec. 27, T. 3 N., R. 9 W. Uinta meridian, 400 feet below Provo River trail bridge, 7 miles above Had's Creek, and 12 miles northwest of Hanna. Altitude, about 8,120 feet.

DRAINAGE AREA.—39 square miles.

RECORDS AVAILABLE.—July 1929 to September 1933.

DISCHARGE.—Maximum during year ending Sept. 30, 1933, 720 second-feet June 10 (gage height, 3.40 feet); minimum not recorded.

1929-33: Maximum, 888 second-feet June 24, 1932; minimum (estimated), 1 second-foot Aug. 30, 31, 1931.

REMARKS.—Records fair. Records show the flow of water at the proposed diversion tunnel to the Provo River. Records for year ending Sept. 30, 1932, supersede those published in Water-Supply Paper 734.

Discharge, in second-feet, 1931-33

Day	Oct.	May	June	July	Aug.	Sept.	Day	Oct.	May	June	July	Aug.	Sept.
1931-32							1932-33						
1.....	5	* 40	251	180	30	22	1.....	* 9	* 6	404	* 70	* 20	* 9
2.....	6		229	170	26	19	2.....	* 9		496		* 19	* 9
3.....	6		277		24	18	3.....	* 9		488		* 18	* 9
4.....	6		360		22	17	4.....	* 9		429		* 17	* 9
5.....	6		372		21	16	5.....	* 9		460		* 17	* 9
6.....	5	* 60	348	* 120	20	15	6.....	* 9	* 10	474	* 50	* 16	* 9
7.....	5		257		19	15	7.....	* 9		483		* 16	* 9
8.....	5		212		19		8.....	* 9		460		* 15	* 9
9.....	5		198		19		9.....	* 9		560		* 15	* 9
10.....	5		206		20		10.....	* 9		626		* 14	* 9
11.....	6	* 150	284	85	19	* 11	11.....	* 9	* 8	616	* 40	14	* 9
12.....	6		396	78	17		12.....	* 9		570		* 13	8
13.....	5		550	78	16		13.....	* 9		595		* 13	* 8
14.....	5		610	74	16		14.....	* 9		545		12	* 8
15.....	5		665	61	16		15.....	* 9		530		* 12	* 8
16.....	5	* 250	610	63	16	* 11	16.....	* 8	* 10	496	* 40	* 12	* 8
17.....	5		525	63	16		17.....			452		* 11	* 8
18.....	5		452	55	15		18.....			384		* 11	* 8
19.....	5		488	50	15		19.....			288		* 11	* 8
20.....	5		545	43	17		20.....			238	* 30	* 11	* 8
21.....	6	400	465	40	16	* 11	21.....	* 8	* 20	209	* 25	* 11	* 7
22.....	6		510	40	15		22.....			* 25		* 11	* 7
23.....	6		420	38	14		23.....			* 30		* 10	* 7
24.....	6		360	40	12		24.....			* 40		* 10	* 7
25.....	5		312	36	12		25.....			* 50	* 130	* 25	* 10
26.....	5	5	284	34	16	* 11	26.....	* 8	* 20	84	* 120	* 24	* 10
27.....			235	32	26		27.....			109		* 23	* 10
28.....			257	34	18		28.....			132		* 100	* 22
29.....	5		352	36	24		29.....			163		* 90	* 25
30.....			372	34	36		30.....			224	* 80	* 30	* 10
31.....			294	33	29		31.....			294	* 25	* 10	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1931-32				
October.....	6		5.3	326
May.....	510		295	12,600
June.....	665		401	23,900
July.....	180	32	76.0	4,670
August.....	36	12	19.4	1,190
September.....	22		12.5	744
1932-33				
October.....			8.5	523
November.....			* 6	357
December.....			* 4	246
January.....			* 3	184
February.....			* 3	167
March.....			* 3	184
April.....			* 4	238
May.....	294		42.9	2,640
June.....	626	80	364	21,700
July.....			49.8	2,510
August.....			12.9	793
September.....			8.0	476
The year.....	626		41.4	30,000

* Estimated.

DUCHESE RIVER NEAR TABIONA, UTAH

LOCATION.—Staff gage in SW¼ sec. 17, T. 2 S., R. 6 W. Uinta meridian, 5½ miles above Rock Creek and 8 miles southeast of Tabiona.

DRAINAGE AREA.—352 square miles.

RECORDS AVAILABLE.—January 1919 to September 1933.

DISCHARGE.—Maximum during year, 975 second-feet June 11 (gage height, 6.38 feet); minimum, 50 second-feet Aug. 22.

1919-33: Maximum, about 2,500 second-feet June 13, 1921; minimum, 37 second-feet July 13, 1931.

REMARKS.—Records fair. Discharge estimated Dec. 11 to Jan. 18, Feb. 1-22, because of ice. Small diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	89	103	115			68	92	128	765	180	100	68
2.....	89	103	109			71	94	125	835	171	86	68
3.....	92	100	112			76	92	121	865	175	76	71
4.....	94	100	106			78	97	121	805	180	71	68
5.....	92	97	112			86	83	112	785	184	68	66
6.....	89	97	109			94	78	115	825	171	68	67
7.....	92	100	103			92	81	121	835	184	68	72
8.....	97	103	109			94	78	112	825	175	71	74
9.....	97	100	106			86	78	118	805	171	66	77
10.....	100	103	109	110		92	78	115	925	163	63	74
11.....	94	97			95	89	78	112	975	159	61	71
12.....	94	106				89	78	112	905	152	59	66
13.....	97	103				83	83	115	835	148	59	63
14.....	94	109				78	81	112	825	141	54	68
15.....	94	112				86	89	112	805	134	54	63
16.....	92	118				81	94	118	825	138	51	63
17.....	92	115				78	103	121	795	131	51	63
18.....	92	118				76	97	125	775	128	51	61
19.....	92	115		118		78	100	134	735	121	53	63
20.....	94	109		118		81	97	156	654	121	56	68
21.....	94	112	100	115		81	103	184	546	97	52	66
22.....	92	112		112		78	109	206	363	94	50	63
23.....	94	109		112	89	83	112	193	343	83	52	59
24.....	100	115		115	86	78	106	184	298	78	52	59
25.....	97	106		109	78	78	115	188	292	73	54	63
26.....	94	109		112	76	83	112	236	247	71	53	66
27.....	100	106		118	76	89	109	301	231	71	53	61
28.....	100	106		121	73	92	118	330	216	68	56	63
29.....	97	112		118		94	121	407	197	68	58	59
30.....	97	112		118		92	128	510	188	73	62	61
31.....	100			121		92		645		188	67	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	100	89	94.5	5,810
November.....	118	97	107	6,370
December.....			103	6,330
January.....			112	6,890
February.....			91.7	5,090
March.....	94	68	83.7	5,150
April.....	128	78	96.1	5,720
May.....	645	112	187	11,500
June.....	975	188	644	38,300
July.....	188	68	132	8,120
August.....	100	50	61.1	3,760
September.....	77	59	65.8	3,920
The year.....	975	50	148	107,000

DUCHESNE RIVER AT DUCHESNE, UTAH

LOCATION.—Staff gage in NE¼NW¼ sec. 1, T. 4 S., R. 5 W. ½ Uinta meridian, in Duchesne, 1 mile above mouth of Strawberry River.

DRAINAGE AREA.—660 square miles.

RECORDS AVAILABLE.—December 1917 to September 1933.

DISCHARGE.—Maximum during year, 2,210 second-feet June 11 (gage height, 3.40 feet); minimum, 42 second-feet Aug. 24, 25, 29, 31.

1918-33: Maximum, 4,420 second-feet June 10, 1922 (gage height, 8.65 feet); minimum, 15 second-feet July 11, 1931.

REMARKS.—Records fair. Discharge estimated Dec. 12 to Mar. 17 because of ice. Diversions for irrigation above and below station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	150	173	182		138	165	1,290	334	150	42
2.....	142	173	192		131	173	1,570	306	150	42
3.....	134	173	192		131	157	1,740	306	114	45
4.....	127	165	173		138	150	2,110	292	107	45
5.....	127	165	157		138	150	1,740	278	79	45
6.....	134	165	150		146	150	1,740	292	74	84
7.....	134	165	142		146	150	1,920	379	74	62
8.....	134	165	134		138	142	1,920	426	79	62
9.....	142	165	127		138	142	1,740	379	84	79
10.....	142	165	120	150	131	150	1,830	364	70	95
11.....	150	173			138	142	2,210	334	70	84
12.....	157	173	100		138	134	2,110	320	66	84
13.....	165	173			131	134	2,110	306	62	90
14.....	165	173			131	142	1,920	232	62	84
15.....	165	173			124	134	1,790	220	58	84
16.....	165	173			124	134	1,740	211	51	84
17.....	173	173			124	134	1,780	192	48	84
18.....	182	182		142	124	142	1,740	192	48	79
19.....	165	182		142	117	142	1,180	182	51	74
20.....	157	173		138	124	157	912	157	51	70
21.....	157	173	150	134	131	220	934	150	48	66
22.....	157	173		130	131	232	726	127	48	70
23.....	165	182		127	131	255	632	120	45	70
24.....	173	192		134	146	243	632	114	42	62
25.....	173	192		127	154	220	543	100	42	58
26.....	182	192		134	154	255	543	90	45	62
27.....	192	192		134	161	442	459	90	45	70
28.....	192	192		134	169	595	442	84	45	74
29.....	192	182		142	201	687	426	70	42	79
30.....	192	182		142	178	837	379	70	45	74
31.....	182			134		1,100		114	42	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	192	127	160	9,840
November.....	192	165	176	10,500
December.....			151	9,280
January.....			170	10,500
February.....			180	8,330
March.....			143	8,790
April.....	201	117	140	8,330
May.....	1,100	134	238	15,900
June.....	2,210	379	1,360	80,900
July.....	426	70	220	13,500
August.....	150	42	65.7	4,040
September.....	95	58	70.1	4,170
The year.....	2,210	42	254	184,000

DUCHESNE RIVER AT MYTON, UTAH

LOCATION.—Chain gage in NW¼ sec. 25, T. 3 S., R. 2 W. Uinta meridian, at Myton, 3 miles below mouth of Lake Fork.

DRAINAGE AREA.—2,750 square miles.

RECORDS AVAILABLE.—October 1899 to November 1910; July 1911 to September 1933.

DISCHARGE.—Maximum during year, 2,480 second-feet June 3, 4 (gage height, 4.50 feet); minimum, 1 second-foot Sept. 4.

1899-1933: Maximum, 12,800 second-feet June 10, 1922 (gage height, 7.94 feet); minimum, less than 1 second-foot on July 16, 1931.

REMARKS.—Records fair. Stage-discharge relation affected by ice Jan. 1 to Mar. 19. Large diversions for irrigation above station. Flow affected by storage in reservoir on Strawberry River.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	164	213		249	371	1,920	370	258	9
2	72	226	217		254	371	2,450	306	366	9
3	72	222	220		258	360	2,480	272	267	5
4	86	193	223		258	320	2,480	235	180	1
5	128	193	226		249	272	2,380	273	164	5
6	118	210	213		240	272	2,360	272	134	5
7	193	226	213		205	250	2,300	275	105	5
8	188	226	226		197	227	2,120	270	43	7
9	180	193	213		201	218	1,950	270	55	13
10	172	201	205	300	205	218	1,950	270	45	17
11	164	201	209		184	262	2,200	305	30	22
12	180	193	213		184	295	2,440	330	30	13
13	193	214	205		184	295	2,420	271	23	13
14	193	235			193	256	2,380	275	16	17
15	184	226			193	218	1,900	235	16	26
16	168	231			199	205	1,720	188	17	24
17	153	235			205	218	1,720	142	14	25
18	172	213			226	226	1,440	98	14	26
19	235	226			193	235	1,160	57	14	26
20	235	226		371	249	249	1,220	47	16	24
21	213	226		371	272	376	996	36	17	18
22	205	213	225	360	263	503	836	28	10	13
23	216	213		291	227	486	758	32	6	13
24	226	226		240	193	480	758	36	100	15
25	226	226		249	184	480	648	12	15	16
26	222	231		284	310	463	539	8	100	13
27	213	233		320	295	418	440	10	20	13
28	222	235		272	272	675	386	18	14	14
29	235	226		249	251	932	360	18	16	13
30	194	226		249	326	1,190	360	18	14	16
31	153			240		1,380		18	12	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	235	72	177	10,900
November	235	164	217	12,900
December			221	13,600
January			250	15,400
February			250	13,900
March			297	18,300
April	326	184	231	13,700
May	1,380	205	410	25,200
June	2,480	360	1,570	93,400
July	340	8	160	9,840
August	366	6	68.7	4,220
September	26	1	14.5	863
The year	2,480	1	321	232,000

* Estimated.

STRAWBERRY RIVER AT DUCHESNE, UTAH

LOCATION.—Staff gage in SW¼NE¼ sec. 2, T. 4 S., R. 5 W. Uinta meridian, three-quarters of a mile west of Duchesne and 1½ miles above mouth.

DRAINAGE AREA.—1,040 square miles.

RECORDS AVAILABLE.—June 1908 to November 1910; March 1914 to September 1933.

DISCHARGE.—Maximum during year, 812 second-feet Sept. 9; minimum recorded, 25 second-feet Dec. 8, 10, and 11.

1908-33: Maximum, 3,230 second-feet May 27, 1922; minimum, 1 second-foot during several days in July 1931.

REMARKS.—Records fair. Discharge estimated Dec. 12 to Mar. 22 because of ice. Diversions for irrigation above station. Flow affected by storage in Strawberry Valley Reservoir, which is diverted to the Great Salt Lake Basin.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	57	57		70	173	640	113	238	34
2	51	57	57		70	163	628	113	117	34
3	47	57	57		70	168	620	113	91	34
4	45	57	57		70	150	580	104	78	34
5	45	57	57		70	145	540	109	67	34
6	45	57	51		70	145	508	123	63	34
7	45	57	34		64	145	465	184	63	34
8	45	57	25		70	145	468	230	63	39
9	45	57	30		60	145	430	142	63	298
10	51	57	25		57	145	430	132	63	55
11	51	57	25	65	57	145	430	158	56	51
12	57	57			57	145	412	128	50	38
13	57	57			57	134	378	113	45	36
14	57	57			57	134	360	104	45	36
15	57	57			57	134	344	95	45	36
16	57	57			57	141	304	90	39	36
17	57	57			57	156	298	78	39	36
18	57	57			67	163	292	78	39	36
19	57	57			70	180	276	78	39	36
20	57	57			70	243	248	78	39	36
21	57	57	50		70	292	243	78	39	36
22	57	57			70	344	213	78	39	36
23	57	57		70	70	328	117	78	39	36
24	57	57		64	70	313	173	71	39	36
25	57	57		70	109	322	156	63	39	36
26	57	57		70	123	354	148	63	39	36
27	57	57		70	138	430	132	63	39	36
28	57	57		78	210	493	132	56	39	36
29	57	57		85	217	548	132	56	39	36
30	57	57		78	200	620	128	63	39	36
31	57			70		620		63	39	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	57	45	53.8	3,310
November	57	57	57.0	3,390
December			47.6	2,930
January			53	3,380
February			50	2,780
March	85		67.2	4,130
April	217	57	83.1	5,060
May	620	134	250	15,400
June	640	128	343	20,400
July	230	56	99.8	6,140
August	238	39	57.1	3,510
September	298	34	45.6	2,710
The year	640		10'	73,100

WEST FORK OF LAKE FORK ABOVE MOON LAKE, NEAR MOUNTAIN HOME, UTAH

LOCATION.—Water-stage recorder in SW¼ sec. 26, T. 3 N., R. 6 W. Uinta meridian, 3 miles above Moon Lake and 19 miles northwest of Mountain Home.

RECORDS AVAILABLE.—April to September 1933.

REMARKS.—No diversions or regulation above station. Daily discharge record furnished by U.S. Indian Service.

Discharge, in second-feet, 1933

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1.....		28	296	137	110	33	16.....	16	26	293	101	24	33
2.....		28	388	145	93	31	17.....	18	23	337	101	21	32
3.....		25	403	163	83	31	18.....	16	27	293	95	21	31
4.....		25	366	163	74	31	19.....	18	39	265	85	48	30
5.....		28	344	145	69	31	20.....	20	49	245	84	47	30
6.....		26	344	145	42	32	21.....	20	70	230	74	47	30
7.....		25	351	173	36	32	22.....	20	74	225	74	44	30
8.....		25	351	204	36	33	23.....	23	70	200	64	42	29
9.....		26	344	167	34	36	24.....	22	63	200	48	39	29
10.....		26	400	152	34	36	25.....	25	80	193	43	39	29
11.....		25	398	141	31	36	26.....	23	106	178	40	39	30
12.....		23	376	131	26	36	27.....	25	130	167	40	39	30
13.....		21	339	122	24	36	28.....	27	158	167	48	36	29
14.....	13	23	339	113	24	36	29.....	29	185	160	39	36	29
15.....	14	26	311	104	24	36	30.....	32	252	145	70	34	29
							31.....		292		93	34	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
April 14-30.....	32	13	21.2	715
May.....	292	21	65.3	4,020
June.....	403	145	288	17,100
July.....	204	39	107	6,580
August.....	110	21	42.9	2,640
September.....	36	29	31.9	1,900
The period.....	403	13	97.8	33,000

WEST FORK OF LAKE FORK NEAR MOUNTAIN HOME, UTAH

LOCATION.—Water-stage recorder in NE¼ sec. 19, T. 2 N., R. 5 W. Uinta meridian, half a mile below Moon Lake and 13 miles northwest of Mountain Home.

DRAINAGE AREA.—108 square miles.

RECORDS AVAILABLE.—September 1921 to September 1933 (fragmentary).

DISCHARGE.—1921-33: Maximum recorded, 2,000 second-feet Sept. 9, 1927 (gage height, 3.85 feet); minimum not determined.

REMARKS.—Records fair. No records Oct. 1 to Apr. 13. No diversions above station. Flow slightly regulated by storage in Brown Duck Lake Reservoir. Daily discharge record furnished by U.S. Indian Service.

Discharge, in second-feet, 1933

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1.....		35	520	162	127	37	16.....	27	28	480	105	48	37
2.....		34	720	155	127	37	17.....	25	30	440	120	45	37
3.....		34	850	165	112	37	18.....	28	31	320	120	45	37
4.....		32	720	185	103	34	19.....	27	36	320	127	45	37
5.....		31	685	175	85	34	20.....	27	36	320	127	45	37
6.....		31	615	165	80	34	21.....	25	46	320	127	45	37
7.....		31	625	180	72	34	22.....	28	55	320	127	45	37
8.....		32	625	215	67	34	23.....	29	64	305	123	43	31
9.....		30	615	215	60	39	24.....	29	64	265	120	41	31
10.....		30	750	195	60	42	25.....	29	70	260	117	40	31
11.....		30	820	175	60	42	26.....	29	90	227	115	40	31
12.....		30	720	155	57	40	27.....	30	135	210	112	40	31
13.....		28	625	150	53	40	28.....	31	150	192	115	40	31
14.....	22	28	605	127	50	40	29.....	31	215	185	110	40	31
15.....	23	28	570	110	49	38	30.....	34	290	170	112	40	31
							31.....		425		123	37	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
April 14-30.....	34	22	27.8	937
May.....	425	28	71.9	4,420
June.....	850	170	480	28,600
July.....	215	105	143	8,790
August.....	127	37	59.4	3,650
September.....	42	31	35.6	2,120
The period.....	850	22	144	48,500

LAKE FORK NEAR MYTON, UTAH

LOCATION.—Staff gage at highway bridge in sec. 21, T. 3 S., R. 2 W. Uinta meridian, half a mile above mouth and 3½ miles northwest of Myton.

DRAINAGE AREA.—468 square miles.

RECORDS AVAILABLE.—July 1900 to December 1903; June 1907 to September 1933.

DISCHARGE.—Maximum recorded during year, 1,070 second-feet June 4 (gage height, 4.90 feet); minimum, 2 second-feet Aug. 19–21, Sept. 1.

1900–1903, 1907–33: Maximum 5,600 second-feet Nov. 24, 1927; probably no flow July 24, 1916, Aug. 15, 1931.

REMARKS.—Records fair. Stage-discharge relation affected by ice Dec. 1 to Mar. 20. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	17	20		45	7	514	21	12	2
2.....	* 17	22		* 41	11	762	* 23	16	4
3.....	17	23		38	13	924	24	12	* 4
4.....	18	22		34	16	1,070	25	10	5
5.....	16	21		44	16	703	18	7	5
6.....	17	* 23		34	22	623	26	* 7	4
7.....	16	25		38	* 24	472	24	7	5
8.....	17	26		32	25	367	20	10	6
9.....	* 16	26		* 21	24	249	* 28	9	10
10.....	16	28		11	24	623	28	10	* 10
11.....	14	28	* 50	13	22	* 515	26	8	10
12.....	17	32		11	33	507	18	10	10
13.....	16	* 28		7	31	334	27	* 10	10
14.....	13	23		3	* 29	276	24	10	11
15.....	12	30		5	27	202	25	8	8
16.....	* 12	28		* 5	26	74	* 22	5	9
17.....	12	31		5	26	38	18	4	* 9
18.....	14	30		4	24	* 39	16	3	8
19.....	21	28		4	21	40	13	2	10
20.....	23	* 30		7	21	32	7	* 2	8
21.....	22	31	73	26	* 23	36	9	2	8
22.....	24	30	64	34	25	38	3	3	8
23.....	* 22	26	58	* 30	26	40	* 4	3	6
24.....	21	27	70	27	21	32	4	4	* 6
25.....	23	31	61	25	23	* 29	5	4	6
26.....	21	32	* 57	20	28	26	3	5	5
27.....	25	* 32	53	16	32	25	6	* 4	5
28.....	22	30	48	5	* 35	18	5	4	5
29.....	23	28	46	5	38	25	4	5	4
30.....	* 23	30	44	* 6	98	17	* 5	3	4
31.....	21	-----	46	-----	278	-----	5	4	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	25	12	18.3	1,120
November.....	32	20	27.4	1,630
December.....	-----	-----	* 35	2,150
January.....	-----	-----	* 40	2,460
February.....	-----	-----	* 40	2,220
March.....	-----	-----	52.3	3,220
April.....	45	3	19.9	1,180
May.....	278	7	34.5	2,120
June.....	1,070	17	288	17,100
July.....	29	3	16.0	984
August.....	16	2	6.5	400
September.....	11	2	6.8	405
The year.....	1,070	2	48.4	35,000

* Estimated.

BROWN DUCK CREEK NEAR MOUNTAIN HOME, UTAH

LOCATION.—Water-stage recorder in NE¼ sec. 13, T. 2 N., R. 6 W. Uinta meridian, a quarter of a mile above Moon Lake and 14 miles northwest of Mountain Home.

RECORDS AVAILABLE.—April to September 1933.

REMARKS.—Flow regulated by storage in Brown Duck Lake Reservoir. Daily discharge record furnished by U.S. Indian Service.

Discharge, in second-feet, 1933

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1		2	35	6	23	2	16	2	2	14	4	4	2
2		2	35	6	16	2	17	2	2	14	36	4	2
3		2	50	6	12	2	18	2	2	17	46	4	2
4		2	40	6	11	2	19	2	2	19	51	4	2
5		2	40	6	10	• 2	20	2	4	18	55	4	2
6		2	35	7	9	2	21	2	4	18	55	4	2
7		2	33	7	9	2	22	2	3	17	55	3	2
8		2	29	7	8	2	23	2	3	10	55	3	2
9		2	27	6	7	2	24	2	3	7	55	3	2
10		2	29	6	6	2	25	2	5	7	54	3	2
11		2	27	5	6	2	26	2	8	7	54	3	2
12		2	23	5	5	2	27	2	8	6	55	3	2
13		2	20	4	5	2	28	2	8	6	55	2	2
14	1	2	18	4	5	2	29	2	10	6	55	2	2
15	2	2	16	4	5	2	30	2	15	6	51	2	2
							31		26		38	2	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
April 14-30	2	1	1.9	65
May	26	2	4.4	267
June	40	6	2.0	1,250
July	55	4	2.7	1,700
August	23	2	6.0	371
September	2	2	2.0	119
The period				3,770

UINTA RIVER NEAR NEOLA, UTAH

LOCATION.—Water-stage recorder in SW¼ sec. 25, T. 2 N., R. 2 W. Uinta meridian, 100 feet below bridge, 1 mile above mouth of Pole Creek, and 7 miles north of Neola.

DRAINAGE AREA.—181 square miles.

RECORDS AVAILABLE.—July 1921 to September 1927 (fragmentary); September 1929 to September 1933.

DISCHARGE.—Maximum during year, 1,370 second-feet June 1 (gage height, 2.80 feet); minimum not recorded.

1929-33: Maximum, 1,390 second-feet May 21, 1932 (gage height, 2.80 feet); minimum not recorded.

REMARKS.—Records fair. Water diverted from Pole Creek and used at Uinta Power & Light Co.'s power plant enters stream 500 feet above gage. Summer flow slightly regulated by storage in several small mountain lakes and reservoirs.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	127	87		50		1,020	203	211	
2.....	130	83		53		1,060	199	166	
3.....	133	80		58		942	211	162	
4.....	119	72		56		741	211	136	
5.....	116	74		58		643	335	127	
6.....	116	78		58		552	385	*120	
7.....	114	74		56		643	510	*115	
8.....	114			53	*55	608	720	108	
9.....	114			53		615	517	114	
10.....	111			55		783	478	114	
11.....	114			56		713	415	108	45
12.....	114		*45	56		650	409	101	42
13.....	111			56		559	351	101	40
14.....	108			58		504	309	101	40
15.....	108			62		458	241	101	39
16.....	106			62	60	445	177	101	39
17.....	108			60	60	478	149	101	39
18.....	114			60	65	478	130	106	39
19.....	114	*70		56	71	464	119	111	39
20.....	108			55	87	385	106	111	39
21.....	116			53	101	346	103	114	40
22.....	116			58	87	329	101	111	45
23.....	111			58	76	304	98	111	47
24.....	98			55	83	288	96	111	52
25.....	98			46	58	124	269	111	53
26.....	103		44	49	187	250	98	124	57
27.....	98		44	36	199	224	111	127	62
28.....	98		49		298	246	111		63
29.....	94		50	*60	427	232	127	*110	65
30.....	87		47		657	216	149		65
31.....	78		50		846		162		

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	133	78	110	6,760
November.....			71.9	4,280
December.....			*45	2,770
January.....			*50	3,070
February.....			*45	2,500
March.....			45.5	2,800
April.....		36	55.9	3,330
May.....	846		137	8,420
June.....	1,060	216	515	30,600
July.....	720	96	240	14,800
August.....	211		118	7,260
September.....		39	56.7	3,370
The year.....	1,060	36	124	90,000

*Estimated.

WHITEROCKS RIVER NEAR WHITEROCKS, UTAH

LOCATION.—Water-stage recorder in SW¼ sec. 18, T. 2 N., R. 1 E. Uinta meridian, 25 feet below bridge, three-quarters of a mile above heading of United States Whiterocks and Farm Creek Canals, and 6½ miles north of Whiterocks.

DRAINAGE AREA.—115 square miles.

RECORDS AVAILABLE.—August 1921 to September 1928; February 1930 to September 1933. September 1899 to August 1904 and April 1907 to November 1910 near present site. November 1917 to June 1921 below diversion of United States Whiterocks Canal and above Farm Creek Canal.

DISCHARGE.—Maximum during year, 1,970 second-feet June 1; minimum not recorded.

1918-33: Maximum recorded, 2,570 second-feet June 21, 1922; minimum, less than 14 second-feet during winter 1920-21.

REMARKS.—Records good except those estimated, which are fair. Station above main diversions. Flow slightly regulated by storage in small mountain lakes.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	45	26		21	26	28	1,240	124	148	42
2	58	42	26		20	28	29	1,290	119	115	41
3	57	43	27		20	29	28	957	129	94	41
4	54	37	26		23	27	27	677	129	82	41
5	53	40	26		24	23	29	571	124	78	40
6	52	40			22	24	29	456	129	70	44
7	52	37			20	23	27	485	215	66	45
8	52	37			19	23	28	433	500	65	55
9	52	41			21	20	24	442	250	71	58
10	52	37			21	23	27	548	196	71	50
11	52	37			22	27	26	460	182	64	48
12	51	38		26	22	23	27	366	215	61	46
13	50	37			23	22	25	313	165	61	45
14	48	36			24	23	26	291	143	59	44
15	47	34			24	24	27	277	129	57	43
16	46	34			25	26	27	233	119	55	42
17	46	34			25	27	28	221	117	53	41
18	49	34			25	25	34	218	111	53	40
19	50	34			26	25	43	208	136	55	40
20	46	34			28	23	57	184	138	53	40
21	51	34			26	26	75	165	138	53	39
22	52	34			28	26	78	151	133	51	39
23	50	36			29	27	70	138	126	49	39
24	43	37			27	27	77	140	117	47	38
25	41	35		22	26	27	104	159	117	45	38
26	46	33		25	23	27	151	148	115	48	43
27	43	32		23	24	26	233	143	113	50	41
28	44	30		21	26	29	324	146	104	50	41
29	43	29			25	33	415	138	91	46	41
30	44	27			23	34	671	131	91	44	40
31	38				25		1,000		100	42	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	58	38	49.0	3,010
November	45	27	35.9	2,140
December			25	1,540
January			30	1,840
February			25	1,390
March	29	19	23.8	1,460
April	34	20	25.8	1,540
May	1,000	24	122	7,500
June	1,290	131	378	22,500
July	500	91	149	9,180
August	148	42	63.1	3,880
September	58	38	42.8	2,550
The year	1,290		80.8	58,500

•Estimated.

PRICE RIVER NEAR HELPER, UTAH

LOCATION.—Chain gage in SE¼ sec. 36, T. 13 S., R. 9 E., three-quarters of a mile above diversion dam of Price River Irrigation Co. and 2 miles south of Helper.

DRAINAGE AREA.—530 square miles.

RECORDS AVAILABLE.—February 1904 to September 1933.

DISCHARGE.—Maximum recorded during year, 324 second-feet May 29 (gage height, 9.60 feet); minimum, 6 second-feet Dec. 18.

1904-33: Maximum between 9,000 and 10,000 second-feet during floods early in September 1927; minimum, 2 second-feet Nov. 18, 1930.

REMARKS.—Records fair. Discharge estimated for periods of ice effect, Dec. 12-15, Dec. 21 to Jan. 4, Feb. 6-13. Main irrigation diversions are below station. Flow affected by storage in reservoir on Fish Creek.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	58	36	22	15	13	41	64	101	272	202	259	138
2.....	58	36	22	15	13	36	70	101	265	202	272	149
3.....	58	33	24	15	13	38	58	135	252	214	259	149
4.....	58	30	24	15	13	43	43	135	233	214	246	149
5.....	58	30	22	15	15	48	40	135	214	190	227	149
6.....	58	30	19	15	14	41	43	135	202	166	214	149
7.....	58	30	19	15	13	46	40	135	208	184	208	149
8.....	54	30	14	16	12	54	36	152	214	138	152	127
9.....	54	30	15	15	12	73	33	152	227	111	138	127
10.....	54	30	12	15	13	64	30	135	239	106	166	160
11.....	46	22	12	15	13	58	33	135	233	91	172	96
12.....	46	24	11	13	14	46	36	135	233	60	169	82
13.....	43	24	10	15	14	45	36	135	233	64	202	64
14.....	43	33	9	15	14	50	30	130	233	48	196	54
15.....	43	28	8	15	14	34	36	135	246	45	190	45
16.....	50	28	8	15	14	22	36	140	246	38	178	45
17.....	50	28	7	15	14	24	46	163	239	56	172	45
18.....	58	31	6	15	16	22	52	166	227	60	190	38
19.....	58	33	9	15	14	21	43	172	227	60	190	73
20.....	62	24	12	15	16	15	43	224	227	127	190	73
21.....	68	19	12	13	22	19	46	275	233	155	211	64
22.....	62	27		12	27	15	56	278	233	155	172	111
23.....	58	24		12	27	17	40	278	202	166	172	138
24.....	58	19		14	24	17	48	243	202	166	166	138
25.....	58	22		13	17	15	54	243	190	166	138	138
26.....	54	24		13	45	22	68	246	196	163	143	138
27.....	54	24	12	13	43	22	94	291	196	178	143	138
28.....	50	22		13	48	40	94	308	202	196	149	138
29.....	50	24		13	-----	50	101	324	202	221	143	127
30.....	40	22		13	-----	54	101	308	202	221	138	127
31.....	36	-----		13	-----	58	-----	295	-----	259	138	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	68	36	53.4	3,280
November.....	36	19	27.2	1,620
December.....	24	-----	13.5	830
January.....	16	12	14.2	873
February.....	48	-----	18.8	1,040
March.....	73	15	37.1	2,280
April.....	101	30	51.7	3,080
May.....	324	101	191	11,700
June.....	272	190	224	13,300
July.....	259	38	143	8,790
August.....	272	138	184	11,300
September.....	160	38	111	6,600
The year.....	324	-----	89.5	64,700

HUNTINGTON CREEK NEAR HUNTINGTON, UTAH

LOCATION.—Water-stage recorder in SE¼ sec. 6, T. 17 S., R. 8 E., about 1 mile above Fish Creek and 7 miles northwest of Huntington.

DRAINAGE AREA.—188 square miles.

RECORDS AVAILABLE.—May 1909 to September 1933.

DISCHARGE.—Maximum during year, 1,030 second-feet June 9 (gage height, 3.75 feet); minimum not recorded.

1909-33: Maximum, about 2,500 second-feet Aug. 2 or 3, 1930 (gage height, 7.5 feet); probably no flow Nov. 5, 1926.

REMARKS.—Records fair. Monthly discharge estimated October to March. Small irrigation diversions above station. Flow slightly regulated by small storage reservoirs.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						33	59	714	98	101	
2						35	62	749	90	99	
3						38	56	749	155	99	
4						40	54	644	• 154	98	
5						36	58	609	• 154	96	
6						34	51	574	• 153	92	• 32
7						39	49	548	153	90	
8	29		34			38	49	595	150	89	
9		34				32	47	714	155	82	
10						35	45	749	168	65	
11						33	44	714	153	63	
12						32	44	714	141	59	30
13						31	44	665	134	58	30
14						31	47	609	132	55	30
15						32	49	609	119	54	29
16			30			37	54	574	117	49	29
17		32				39	65	542	125	41	28
18						41	83	470	117	41	27
19					31	37	111	395	117	55	27
20		34	33			36	147	332	115	40	28
21						34	180	280	117	40	30
22					26	36	172	253	115	35	29
23						39	136	225	111	33	28
24				38		44	152	201	111	32	29
25						51	213	180	111	31	29
26						45	320	165	115		32
27						59	440	148	115		31
28	32		32		33	71	567	136	111	• 32	31
29					34	74	588	123	105		31
30					32	71	679	111	101		30
31					32	714			96		

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October			30	1,840
November			32	1,900
December			30	1,840
January			35	2,150
February			30	1,670
March			32	1,970
April	74	31	41.1	2,450
May	714	44	174	10,700
June	749	111	470	28,000
July	168	98	126	7,750
August	101		57.7	3,550
September		27	30.3	1,800
The year	749		90.6	65,600

• Estimated.

COTTONWOOD CREEK NEAR ORANGEVILLE, UTAH

LOCATION.—Water-stage recorder in SW¼ sec. 10, T. 18 S., R. 7 E., 2 miles upstream from Grimes Wash and 5 miles northwest of Orangeville.

DRAINAGE AREA.—200 square miles.

RECORDS AVAILABLE.—May 1909 to September 1927 (fragmentary); May 1932 to September 1933.

DISCHARGE.—Maximum not recorded; minimum recorded, 4 second-feet Jan. 24, 1909-27, 1932-33: Maximum, about 2,500 second-feet Aug. 23, 1922, Sept. 9, 1927; maximum gage height, 9.2 feet Sept. 9, 1927; minimum discharge recorded, that of Jan. 24, 1933.

REMARKS.—Records fair except those for December to July, which are poor. Small diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	25	27		24	48	575	248	166	30
2.....	27	24		25	50	655	238	210	31
3.....	23	23		30	45	635	229	241	31
4.....	21	20		35		600	226	180	31
5.....	20	24		22		610	223	126	31
6.....	20	27		25		610	223	98	30
7.....	20	22		25		570	229	47	30
8.....	19	22		20		600	248	47	43
9.....	20	26		20		695	232	50	36
10.....	20	18		21	• 40	760	• 500	51	27
11.....	20	19	• 15	20		750	• 300	47	22
12.....	20	25		20		780	• 200	51	27
13.....	21	24		18		755			26
14.....	22	28		28		735			26
15.....	21	• 26		30		720			25
16.....	21	25		33	35	705			25
17.....	21			28	40	660		• 40	24
18.....	22			25	50	625	• 100		24
19.....	20			24	75	570			
20.....	22			25	105	513			
21.....	25			26	110	468			
22.....	25		19	30	98	434		28	
23.....	23		19	36	68	394		27	
24.....	20	• 20	17	45	92	352	60	27	• 22
25.....	19		17	41	112	332	66	27	
26.....	23		17	45	174	321	71	27	
27.....	22		21	58	241	307	70	27	
28.....	22		25	64	290	297	70	28	
29.....	23		27	66	345	280	68	28	
30.....	24		20	55	426	264	68	29	20
31.....	22		20		517		103	30	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	27	19	21.7	1,330
November.....			22.0	1,310
December.....			• 15	922
January.....			• 10	615
February.....			• 10	555
March.....			16.7	1,030
April.....	66	18	32.1	1,910
May.....	517		110	6,760
June.....	780	264	552	32,800
July.....			154	9,470
August.....	241	27	63.0	3,870
September.....	43		26.0	1,550
The year.....	780		85.9	62,100

• Estimated.

SAN JUAN RIVER BASIN

SAN JUAN RIVER AT ROSA, N. MEX.

LOCATION.—Water-stage recorder in sec. 21, T. 32 N., R. 5 W., at Posa, about 300 yards above highway bridge and about a quarter of a mile below mouth of Piedra River.

DRAINAGE AREA.—1,990 square miles.

RECORDS AVAILABLE.—October 1930 to September 1933. Records for 1920–30 published by State engineer.

DISCHARGE.—Maximum during year, 6,410 second-feet June 2 (gage height, 6.31 feet); minimum not determined.

1930–33: Maximum, 9,050 second-feet Apr. 17 and May 20, 1932; maximum gage height, 7.19 feet May 20, 1932; minimum discharge recorded, 109 second-feet Jan. 26, 1931.

REMARKS.—Records good except those estimated, which are poor. Stage-discharge relation affected by ice Dec. 1–3, Dec. 7 to Mar. 10. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	260	240	a 150	a 140	a 250		788	770	4,840	1,120	463	250
2.....	250	235					905	905	5,330	980	439	250
3.....	250	240					990	869	4,480	887	403	240
4.....	260	240	151				1,130	990	4,120	923	391	220
5.....	245	230	147		128		860	1,020	4,120	980	682	205
6.....	235	220	151				708	1,000	3,620	905	610	196
7.....	230	220					698	887	3,300	1,390	650	186
8.....	240	215	a 150				666	851	2,540	1,240	674	230
9.....	322	173					666	833	3,060	1,260	596	397
10.....	355	182		147			618	746	3,870	1,010	534	618
11.....	316	173					554	730	4,300	932	a 450	682
12.....	280	160	a 130	a 145			540	730	4,390	980	a 400	914
13.....	260	168		142			568	658	4,210	830	a 350	650
14.....	245	182	113	a 150			527	634	3,620	754	a 325	1,430
15.....	235	182					514	603	3,540	698	a 300	1,330
16.....	225	168				306	589	618	3,300	620	a 275	869
17.....	220	168				355	642	842	3,380	650	a 250	666
18.....	220	173			a 150	361	730	1,310	3,460	650	255	1,080
19.....	225	173				328	815	2,040	3,540	547	250	1,700
20.....	230	173				311	722	2,760	3,140	514	333	905
21.....	255	151			a 170	333	634	3,380	2,980	603	290	754
22.....	421	147				344	596	3,140	2,840	626	270	1,050
23.....	427	147	a 150			300	575	2,180	2,610	596	270	770
24.....	373	135			a 200	306	568	2,040	2,610	582	245	642
25.....	355	155				361	568	2,320	a 2,200	582	235	561
26.....	295	164				445	575	2,610	a 1,800	547	230	508
27.....	285	168			a 250	596	582	3,300	1,560	500	245	463
28.....	290	168				730	674	3,300	1,510	433	311	421
29.....	290	164			a 150	914	851	3,870	1,390	373	300	385
30.....	275	155				878	815	4,300	1,230	350	255	355
31.....	265					738		4,660		355	255	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	427	220	279	17,100
November.....	240	135	192	10,800
December.....			147	9,030
January.....			156	9,580
February.....			157	8,700
March.....	914		391	24,000
April.....	1,130	514	689	41,000
May.....	4,660	603	1,770	109,000
June.....	5,330	1,230	3,230	192,000
July.....	1,390	350	756	46,500
August.....	682	230	472	22,900
September.....	1,700	186	631	37,500
The year.....	5,330		770	528,000

a Estimated.

SAN JUAN RIVER NEAR BLANCO, N.MEX.

LOCATION.—Water-stage recorder in sec. 18, T. 29 N., R. 9 W., half a mile above highway bridge, 1 mile above mouth of Canyon Largo, and 1½ miles east of Blanco.

DRAINAGE AREA.—3,320 square miles.

RECORDS AVAILABLE.—December 1908 to October 1910; October 1930 to September 1933. Records for 1927–30 published by State engineer.

DISCHARGE.—Maximum during year, 10,800 second-feet June 2 (gage height, 5.88 feet); minimum not determined.

1930–33: Maximum, 17,500 second-feet Aug. 21, 1932 (gage height, 7.65 feet); minimum, 28 second-feet Sept. 1, 1931.

REMARKS.—Records good except those estimated, which are poor. Stagedischarge relation affected by ice Dec. 26 to Feb. 25. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	325	300	} a 200	} a 250	} a 300	436	866	922	7,240	1,320	245	89
2.....	320	276				488	970	877	8,420	1,130	350	a 80
3.....	310	276				570	1,120	1,030	6,800	1,010	340	a 145
4.....	305	280				628	1,230	1,070	5,760	899	280	} a 70
5.....	285	280				546	1,230	1,130	5,760	1,150	345	
6.....	276	266	} a 170	} a 240	} a 250	509	934	1,100	5,010	1,120	877	
7.....	262	258				516	811	1,160	4,490	1,440	602	
8.....	253	253				586	877	1,030	3,900	1,980	770	a 500
9.....	320	235				811	780	1,070	3,930	2,310	682	a 700
10.....	447	192				946	800	1,030	5,200	1,800	570	a 1,650
11.....	398	188	} a 250	} a 300	} a 400	1,030	720	970	5,960	1,440	509	a 1,550
12.....	360	160				994	646	1,020	5,960	1,510	394	a 1,500
13.....	335	136				800	673	958	5,380	1,510	334	a 1,250
14.....	315	148				700	700	899	4,660	982	290	1,830
15.....	300	188				586	594	866	4,320	811	240	2,200
16.....	290	211	} a 300	} a 400	} a 500	516	664	833	4,020	700	204	1,330
17.....	285	207				516	811	1,020	4,090	664	179	888
18.....	276	211				586	811	1,550	4,120	691	179	1,660
19.....	266	211				530	946	2,200	4,220	646	156	2,270
20.....	280	223				488	958	3,280	3,960	523	153	1,230
21.....	305	223	} a 300	} a 400	} a 500	448	844	4,120	3,650	546	290	910
22.....	340	211				474	750	4,090	3,510	655	183	1,190
23.....	566	203				460	700	3,480	3,420	594	187	1,110
24.....	454	181				418	646	2,680	3,280	586	187	899
25.....	422	248				412	628	2,810	2,890	686	126	730
26.....	392	} a 200	} a 250	} a 300	} a 400	474	602	3,280	2,560	619	110	594
27.....	340					610	586	4,160	2,250	523	101	516
28.....	335					740	628	4,490	1,940	424	123	454
29.....	340					855	866	5,200	1,780	318	187	412
30.....	325					934	946	5,960	1,610	275	160	362
31.....	315					899	-----	6,800	-----	245	110	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	566	253	334	20,500
November.....	300	136	217	12,900
December.....	-----	-----	226	13,900
January.....	-----	-----	274	16,900
February.....	-----	-----	316	17,500
March.....	1,030	412	629	38,700
April.....	1,230	586	811	48,300
May.....	6,800	833	2,290	141,000
June.....	8,420	1,610	4,340	258,000
July.....	2,310	245	936	57,600
August.....	877	101	306	18,800
September.....	2,270	-----	878	52,200
The year.....	8,420	-----	962	696,000

a Estimated.

SAN JUAN RIVER AT FARMINGTON, N.MEX.

LOCATION.—Water-stage recorder in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 20, T. 29 N., R. 13 W., 1,500 feet below mouth of Animas River and 1 mile southwest of Farmington.

DRAINAGE AREA.—6,580 square miles.

RECORDS AVAILABLE.—June 1904 to September 1906; September 1912 to December 1914; October 1930 to September 1933. Records for 1915-18, 1921-30 published by State engineer.

DISCHARGE.—Maximum during year, 16,300 second-feet June 2 (gage height, 5.92 feet); minimum not determined; minimum recorded gage height, 0.97 foot Aug. 20, 1933.

1930-33: Maximum, 18,600 second-feet May 23, 1932 (gage height, 6.06 feet); minimum (estimated) 30 second-feet Sept. 1, 1931; minimum recorded gage height, that of Aug. 20, 1933.

REMARKS.—Records fair except those estimated, which are poor. Stage-discharge relation affected by ice Dec. 1 to Mar. 7. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1.....	° 680	594	} ° 450	} ° 450	} ° 450	} ° 1,000	1, 370	1, 270	12, 100	2, 460	° 650	} ° 100	
2.....	° 660	580					1, 370	1, 260	13, 800	2, 290	° 700		
3.....	° 640	574					1, 440	1, 460	13, 200	2, 220	° 700		
4.....	° 610	567					1, 570	1, 480	10, 500	2, 570	° 750		
5.....	° 600	567	} ° 400	} ° 400	} ° 350	} ° 350	1, 740	1, 520	10, 300	2, 710	° 850	} ° 900	
6.....	° 580	567					1, 460	1, 540	9, 490	3, 270	1, 250		
7.....	° 560	° 580					1, 200	1, 520	7, 730	3, 750	1, 450		
8.....	° 550	587					1, 140	1, 420	6, 110	4, 230	1, 110		
9.....	690	587	} ° 450	} ° 450	} ° 350	} ° 350	1, 200	1, 360	5, 680	3, 780	1, 160	} ° 2, 200	
10.....	666	560					1, 410	1, 070	1, 320	8, 470	2, 640		° 1, 000
11.....	706	534					1, 460	954	1, 260	11, 100	2, 240		810
12.....	650	515					° 1, 400	918	1, 240	11, 300	2, 500		° 700
13.....	643	515	348	° 450	° 1, 200	909	1, 360	10, 500	2, 270	° 650	1, 960		
14.....	608	528	° 350	° 450	° 1, 050	954	1, 320	9, 230	1, 830	° 550	3, 050		
15.....	594	567	} ° 600	} ° 600	} ° 550	} ° 550	° 900	1, 000	1, 220	8, 470	1, 780	° 450	
16.....	580	587					° 840	981	1, 120	8, 220	1, 700	° 350	° 2, 000
17.....	574	567					° 840	990	1, 140	8, 220	1, 620	295	° 1, 500
18.....	560	554					° 900	1, 040	1, 570	8, 470	1, 600	° 250	° 2, 500
19.....	560	560	} ° 600	} ° 600	} ° 800	} ° 800	° 850	1, 110	2, 980	8, 470	1, 360	° 230	
20.....	554	560					° 800	1, 190	4, 860	8, 720	1, 110	223	° 3, 240
21.....	560	560					778	1, 050	6, 780	7, 730	1, 060	° 350	° 1, 500
22.....	643	548					° 700	990	7, 020	7, 980	1, 080	} ° 1, 000	
23.....	762	509	° 680	918	5, 260	7, 730	1, 160						
24.....	778	473	666	891	° 4, 500	6, 780	1, 130	} ° 200					
25.....	706	461	629	909	° 4, 000	5, 260	° 1, 120						
26.....	738	455	} ° 500	} ° 500	} ° 800	} ° 800	° 4, 500	4, 630	° 1, 040	} ° 500			
27.....	698	} ° 450					778	837	5, 680		4, 120	° 1, 060	
28.....	666						945	864	7, 020		3, 530	° 1, 000	
29.....	666						1, 100	918	7, 980		3, 320	° 750	} ° 150
30.....	650		° 1, 200	1, 210	9, 490	3, 020	° 600						
31.....	615	° 1, 200	11, 100	° 650									

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	778	550	637	39,200
November.....	594		535	31,800
December.....			479	29,400
January.....			508	31,200
February.....			533	29,600
March.....	1,460	629	978	60,100
April.....	1,740	837	1,100	65,200
May.....	11,100	1,120	3,400	209,000
June.....	13,800	3,020	8,140	484,000
July.....	4,230	600	1,890	116,000
August.....	1,450		523	32,200
September.....	4,020		1,210	72,100
The year.....	13,800		1,660	1,200,000

* Estimated.

SAN JUAN RIVER AT SHIPROCK, N. MEX.

LOCATION.—Water-stage recorder in sec. 25, T. 30 N., R. 18 W., at highway bridge a quarter of a mile south of Shiprock and 3 miles below mouth of Chaco River.

DRAINAGE AREA.—12,800 square miles (revised).

RECORDS AVAILABLE.—January to October 1911; October 1930 to September 1931; October 1932 to September 1933. Records for 1911 and 1915-30 published by State engineer.

DISCHARGE.—Maximum during year, about 23,300 second-feet Sept. 10 (gage height, about 7.4 feet); minimum not determined.

1930-31, 1932-33: Maximum discharge and stage, those of Sept. 10, 1933; minimum not determined.

Stage of about 6.5 feet (discharge, about 73,000 second-feet) occurred Aug. 11, 1929. Greater discharge probably occurred Oct. 6, 1911, when stage of 22.0 feet on old gage (datum unknown) was reached.

REMARKS.—Records poor. Stage-discharge relation affected by ice Dec. 1-17, 21-27, Jan. 1, 2, 4-31, Feb. 1-28, Mar. 1-5. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....		660		500	550		1,100	1,350	13,700	3,000	750	
2.....		650					1,250	1,350	16,000	2,700	900	
3.....	750	630	520	504	513	1,100	1,400	1,550	15,000	2,500	850	150
4.....		620					1,760	1,600	12,000	2,900	950	
5.....	695	620			520		2,320	1,650	11,500	3,200	1,100	152
6.....	725	630			516	1,160	2,000	1,650	10,000	3,740	1,530	145
7.....	665	636				1,360	1,400	1,600	8,330	5,170	2,700	128
8.....	650	630	480		450	1,420	1,240	1,500	7,740	4,840	2,530	128
9.....	610	610		500		1,340	1,200	1,420	6,420	5,520	2,030	1,120
10.....	680	596				1,690	1,100	1,710	10,000	4,840	1,730	8,460
11.....	948	580				2,060	1,050	1,530	11,200	3,410	1,470	1,830
12.....	882	560	450		600	2,160	1,000	1,640	11,600	3,530	1,240	1,880
13.....	833	560				1,980	1,000	1,600	11,200	4,120	1,020	3,260
14.....	755	580				1,160	1,050	1,420	9,520	2,980	800	4,500
15.....	680	600				1,090	1,100	1,440	9,000	2,620	785	6,240
16.....	623	636	700				950	1,100	1,400	8,720	2,300	400
17.....	610	582					950	1,100	1,420	9,120	2,100	274
18.....	600	610	770		650		1,000	1,150	2,060	9,920	1,900	224
19.....	600	610	680				900	1,200	3,210	9,120	1,800	208
20.....	600	582	665	700			850	1,470	6,000	9,720	1,440	201
21.....	600	582				800	1,300	8,140	8,720	1,400	201	1,140
22.....	1,260	556				750	1,070	8,140	9,120	1,450	360	1,570
23.....	932	528			750	740	1,020	7,000	7,170	1,510	320	2,130
24.....	1,140	542	600			665	1,000	6,000	6,420	1,360	300	899
25.....	932	528				665	1,000	5,000	5,520	2,340	292	948
26.....	916	469				665	950	6,000	5,170	1,860	224	1,060
27.....	800	480			900	800	950	7,000	4,840	1,180	200	816
28.....	750	504	556			950	950	8,500	4,120	1,110	224	569
29.....	720	582	569	600		1,100	1,000	9,500	3,560	916	250	515
30.....	700	582	556			1,150	1,300	11,000	3,330	916	200	582
31.....	680	528				1,160		12,500		740	150	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	1,260	600	761	46,800
November.....	660	469	584	34,800
December.....			562	34,600
January.....			584	35,900
February.....			631	35,000
March.....	2,160	665	1,130	69,500
April.....	2,320	950	1,220	72,500
May.....	12,500	1,350	4,060	250,000
June.....	16,000	3,330	8,930	531,000
July.....	5,520	740	2,560	157,000
August.....	2,700	150	784	48,200
September.....	8,460	128	1,680	99,900
The year.....	16,000	128	1,960	1,420,000

• Estimated.

SAN JUAN RIVER NEAR BLUFF, UTAH

LOCATION.—Water-stage recorder in SE¼ sec. 7, T. 42 S., R. 19 E., 2,000 feet below Gypsum Wash and 20 miles southwest of Bluff.

DRAINAGE AREA.—24,000 square miles.

RECORDS AVAILABLE.—October 1914 to September 1917; March 1927 to September 1933.

DISCHARGE.—Maximum during year, 14,500 second-feet June 3 (gauge height, 13.6 feet); minimum recorded, 26 second-feet Dec. 30.

1915-17; 1927-33: Maximum, about 70,000 second-feet Sept. 10, 1927 (gauge height, 32.0 feet); minimum recorded, that of Dec. 30, 1932.

REMARKS.—Records good except those estimated for period of ice effect, Dec. 11 to Feb. 26, and for period Sept. 1-9, which are fair.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	798	769	631	300	800	2,490	1,300	1,260	9,350	2,920	631	118
2.....	762	727	613	290	750	2,370	1,140	1,480	10,300	2,490	655	92
3.....	720	720	607	251	700	2,200	1,060	1,440	11,900	2,140	565	92
4.....	694	727	625	328	700	1,820	1,140	1,400	11,700	2,030	524	94
5.....	734	734	674	308	700	1,400	1,440	1,530	9,540	2,140	441	94
6.....	668	700	655	355	700	1,140	1,770	1,480	8,780	2,550	674	86
7.....	661	681	565	350	650	1,100	1,720	1,530	8,400	3,520	1,820	82
8.....	625	700	530	346	600	1,220	1,350	1,580	7,140	5,000	3,180	100
9.....	776	681	541	304	600	1,300	1,100	1,480	5,800	3,800	2,610	1,260
10.....	741	649	535	320	600	1,350	1,100	1,400	4,840	4,530	1,530	5,960
11.....	727	681	520	355	600	1,480	1,060	1,480	6,800	3,800	1,060	7,320
12.....	741	694	501	373	650	1,620	1,020	1,350	8,970	3,060	842	3,520
13.....	805	643	480	380	700	1,670	880	1,220	9,540	2,920	643	2,430
14.....	776	631	460	343	700	1,530	805	1,220	8,970	3,250	577	2,730
15.....	755	601	450	377	750	1,300	948	1,140	8,220	2,140	452	3,250
16.....	734	577	440	419	800	1,060	948	1,100	7,320	1,720	430	3,660
17.....	694	571	430	404	800	956	865	980	6,970	1,530	357	2,610
18.....	688	589	420	422	800	925	748	776	7,140	1,720	261	1,980
19.....	681	583	411	362	800	842	956	865	7,320	1,770	245	2,920
20.....	649	571	422	400	850	820	1,140	1,920	6,970	1,260	231	3,660
21.....	681	583	431	450	850	790	1,440	3,660	7,320	1,060	308	5,640
22.....	727	595	342	500	850	790	1,480	5,640	7,320	858	375	5,320
23.....	1,620	613	268	550	900	720	1,260	6,460	7,320	895	257	2,730
24.....	1,100	601	280	600	900	688	1,060	5,640	6,970	948	166	2,370
25.....	1,060	601	300	700	1,000	713	980	4,230	5,960	1,580	231	1,870
26.....	1,010	583	330	800	1,500	694	820	3,520	5,160	2,490	172	1,620
27.....	932	595	278	800	1,980	649	783	3,380	4,530	1,480	163	1,440
28.....	910	524	206	800	2,030	649	783	4,530	4,080	980	157	1,260
29.....	828	571	134	800	-----	655	842	6,290	3,520	948	160	1,100
30.....	776	583	26	800	-----	873	842	7,140	3,180	748	182	1,020
31.....	805	-----	310	800	-----	1,100	-----	8,400	-----	619	166	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	1,620	625	802	49,300
November.....	769	524	636	37,800
December.....	674	26	433	26,600
January.....	800	251	471	29,000
February.....	2,030	600	866	48,100
March.....	2,490	649	1,190	73,200
April.....	1,770	748	1,090	64,900
May.....	8,400	776	2,760	170,000
June.....	11,900	3,180	7,380	439,000
July.....	5,000	619	2,160	133,000
August.....	3,180	157	647	39,800
September.....	7,320	82	2,210	132,000
The year.....	11,900	26	1,710	1,240,000

LOS PINOS RIVER AT IGNACIO, COLO.

LOCATION.—Water-stage recorder in sec. 5, T. 33 N., R. 7 W., three-quarters of a mile above Ignacio and about 2 miles above Rock Creek.

DRAINAGE AREA.—448 square miles.

RECORDS AVAILABLE.—April 1899 to October 1903; September 1910 to December 1914; October 1930 to September 1933. Records for 1915-30 published by State engineer of New Mexico.

DISCHARGE.—Maximum during year, 2,800 second-feet June 2 (gage height, 4.71 feet); minimum, 1.2 second-feet Sept. 8.

1930-33: Maximum, 5,570 second-feet Aug. 27, 1932 (gage height, 6.19 feet); minimum, that of Sept. 8, 1933.

REMARKS.—Records good except those estimated, which are poor. Stage-discharge relation affected by ice Dec. 9 to Mar. 8. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	62	42	66	} ° 60	} 55	} ° 105	139	100	1,670	133	5.2	3.9	
2	64	42	66				160	93	2,040	85	5.6	3.4	
3	68	42	61				186	66	1,420	53	5.2	3.9	
4	66	39	57				228	66	1,190	55	5.2	3.4	
5	64	39	51	} ° 70	} 55	} ° 120	220	66	1,290	61	5.2	3.0	
6	64	40	51				200	72	910	55	5.6	2.2	
7	59	39	57				186	72	663	228	45	1.7	
8	66	39	61				182	66	529	458	43	1.3	
9	82	34	} ° 60	} 87	} 55	} ° 105	182	66	761	561	26	10	
10	64	36					61	1,320	370	21	42		
11	57	37					° 130	144	59	1,400	297	17	169
12	55	33					105	144	53	1,250	309	12	257
13	57	31	} ° 80	} ° 60	} ° 130	95	139	45	1,040	206	9.8	153	
14	59	30				89	133	34	859	105	7.0	228	
15	55	33				82	130	29	753	57	6.3	261	
16	55	31				78	139	29	738	36	7.0	186	
17	53	33	} ° 80	} ° 80	} ° 100	78	153	26	850	30	5.6	130	
18	51	33				76	163	64	769	39	6.3	144	
19	53	33				78	182	210	708	23	5.6	261	
20	53	33				76	160	448	753	19	5.2	203	
21	53	30	} ° 90	} ° 90	} ° 100	80	147	700	685	17	3.4	210	
22	62	30				80	141	656	535	16	3.9	253	
23	64	27				76	139	410	738	14	4.7	206	
24	57	27				76	128	293	621	12	4.3	173	
25	51	27	} ° 70	} ° 70	} ° 100	74	122	297	529	14	4.3	147	
26	48	27				76	100	470	470	16	4.3	128	
27	45	30				89	91	876	361	10	4.3	95	
28	47	27				103	85	919	257	6.3	5.2	76	
29	45	29	} ° 70	} ° 70	} ° 100	117	105	1,130	217	5.2	4.7	59	
30	48	33				125	103	1,310	172	5.6	3.9	48	
31	43					128		1,570		5.2	3.9		

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	82	43	57.1	3,510
November	42	27	33.5	2,000
December			65.4	4,020
January			78.9	4,850
February			72.1	4,010
March	130	74	96.0	5,900
April	228	85	150	8,910
May	1,570	26	334	20,500
June	2,040	172	850	50,600
July	561	5.2	106	6,550
August	45	3.4	9.54	587
September	261	1.3	115	6,860
The year	2,040	1.3	163	118,000

° Estimated.

ANIMAS RIVER AT FARMINGTON, N.MEX.

LOCATION.—Water-stage recorder in sec. 21, T. 29 N., R. 13 W., a quarter of a mile above confluence with San Juan River and three-quarters of a mile south of Farmington.

DRAINAGE AREA.—1,360 square miles.

RECORDS AVAILABLE.—September 1912 to December 1914; October 1930 to September 1933. June 1904 to October 1905 from gage about half a mile above present site. Records for 1915–30 published by State engineer.

DISCHARGE.—Maximum during year, 6,750 second-feet June 2 (gage height, 5.99 feet); minimum estimated, 40 second-feet Sept. 4–7.

1930–33: Maximum, 7,530 second-feet Aug. 28, 1932 (gage height, 6.41 feet); minimum recorded, 10 second-feet Aug. 30, 31, 1931.

REMARKS.—Records fair except those estimated, which are poor. Stage-discharge relation affected by ice Dec. 8 to Mar. 4. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	326	261	172		} a 200	} a 300	290	442	4,430	1,150	290	a 50	
2	312	257	172				330	365	5,720	1,020	257	a 50	
3	308	257	175	} a 200	} a 170	} 285	400	390	5,180	968	242	a 50	
4	277	253	172				496	430	3,760	984	203	a 40	
5	285	249	175	} a 170	} 142	} 425	648	400	3,860	1,070	186	a 40	
6	277	253	169				285	532	484	3,550	1,170	265	a 40
7	273	242	175	} 143	} 142	} 430	281	442	564	2,660	1,660	a 600	a 40
8	273	245					298	430	496	2,080	1,960	a 650	a 100
9	316	245	} a 170	} a 170	} 425	} 385	365	400	484	2,150	2,020	a 600	385
10	294	242					425	385	454	3,080	1,550	a 500	896
11	281	245	a 150	} a 150	} 430	} 340	405	3,970	1,310	a 400	928		
12	269	231	143				190	390	316	395	4,430	1,220	a 250
13	269	224	} a 150	} a 200	} 360	} 316	350	3,550	1,110	139	960		
14	249	234					335	330	321	3,080	928	108	880
15	245	242	} a 200	} a 220	} 326	} 298	316	3,080	870	86	753		
16	242	234					321	308	303	3,000	897	98	620
17	242	228	} 235	} a 200	} 316	} 326	308	3,170	874	95	526		
18	238	220					321	350	571	3,080	669	72	912
19	234	196	} a 200	} a 250	} 321	} 405	1,190	2,910	585	70	585		
20	242	182					290	420	1,660	3,260	490	70	508
21	249	178	} a 200	} a 300	} 265	} 365	2,150	2,910	436	88	478		
22	312	182					242	312	2,290	2,500	425	64	550
23	326	178	} a 200	} a 200	} 231	} 308	1,890	2,660	400	68	676		
24	308	172					220	303	1,320	2,430	880	a 65	585
25	294	166	} a 200	} a 200	} 206	} 285	1,180	2,020	840	a 60	550		
26	308	166					200	285	1,360	1,890	400	a 55	a 500
27	273	172	} a 200	} a 300	} 224	} 290	1,960	1,720	835	a 50	a 450		
28	281	178					234	290	2,430	1,500	437	a 60	a 400
29	281	175	} a 200	} a 200	} 253	} 385	2,820	1,430	281	a 60	a 350		
30	277	172					277	442	3,360	1,220	228	a 50	a 300
31	269					303		3,970		277	a 50		

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	326	234	278	17,100
November.....	261	166	216	12,900
December.....			185	11,400
January.....			201	12,400
February.....			200	11,100
March.....	430	200	297	18,300
April.....	648	285	368	21,900
May.....	3,970	303	1,130	68,500
June.....	5,720	1,220	3,010	179,000
July.....	2,020	228	835	51,300
August.....	650	50	189	11,600
September.....	1,000	40	473	28,200
The year.....	5,720	40	614	445,000

* Estimated.

LA PLATA RIVER AT LA PLATA, N.MEX.

LOCATION.—Water-stage recorder in sec. 3, T. 31 N., R. 13 W., 1,000 feet south-east of La Plata and 15 miles above mouth.

DRAINAGE AREA.—335 square miles.

RECORDS AVAILABLE.—May 1905 to July 1911; September 1912 to December 1914; October 1930 to September 1933. Records for 1915-30 published by State engineer.

DISCHARGE.—Maximum during year, 598 second-feet June 22 (gage height, 4.31 feet); minimum, 0.1 second-foot during several periods.

1930-33: Maximum, about 825 second-feet July 30, 1931 (gage height, 4.82 feet); no flow at times.

REMARKS.—Records fair except those estimated, which are poor. Stage-discharge relation affected by ice Jan. 3-18, 29-31, Feb. 1-15. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
1	° 1	° 5	7.0	° 20	° 20	29	3.6	9.5	11	3.9	1.6	0.4		
2	1.1	1.4	7.0			34	2.8	5.4	3.3	2.2	1.4	.4		
3	2.2	1.6	° 7			32	1.7	4.7	2.5	1.1	1.2	.4		
4	° 1.5	1.4	7.0			28	.8	1.7	2.0	.4	1.1	.4		
5		1.2	7.0			26	2.2	1.4	1.9	.6	.9	.2		
6	° 1.5	.5	6.6	° 15	21	26	1.4	3.0	1.7	.8	.8	.2		
7		.6	.2		7.4	30	1.6	4.7	1.4	2.8		.2		
8		2.2	.2		8.6	33	.8	1.7	.8	41		.1		
9		7.4	5.4		6.6	12	31	.8	2.0	1.2	° 20		.1	
10		4.4	6.6		5.0	29	1.7	2.0	.8	° 10		° 7	9.0	
11	3.9	6.6	3.6	19	° 12	28	1.7	1.4	.6	5.4	° 4	° 4		
12	3.0	7.0	7.0	32		1.7	1.4	2.2						
13	° 1.5	7.4	14	31		1.6	.8	1.2		.6				
14		7.4	13	30		1.4	.9	.9		.6			3.3	
15		8.6	12	29		1.2	.9	3.9		.8			4.2	
16	° 1.5	8.6	12	° 15	26	1.2	.8	° 15	° 5	1.6	3.9			
17		8.2	11		25	1.1	.6			° 15	.6	4.4		
18		.2	6.2		7.4	24	.9			.9		.6	° 10	
19		.1	6.2		9.0	12	19			.9	1.4	20	.5	° 2
20		.6	6.6		11	14	20			.9	.8	19	.5	1.2
21	1.9	6.6	11	° 13	14	15	.9	.8	19	° 3	.4	1.6		
22	16	7	15		17	18	.9	3.9	46	1.4	.4	1.1		
23	16	8	10		15	18	.9	7.6	22			.4		
24	13	8.2	12		18	17	.9	1.6	16			.4		
25	12	7.4	10		20	15	.8	2.8	7.8		° 4	.4		
26	10	7.0	° 10	° 15	20	15	1.1	5.4	° 7	° 1.5		.4		
27	9.0	7.0	11		22	15	1.6	7.0	° 6			.4	.6	
28	8.6	7.4	14		13	25	13	1.9	9.0		5.0	.3	.6	
29	12	7.0	15			21	4.2	19	4.7			.4	.4	
30	13	7.0	18		° 15	20	3.3	14	4.4			.4	.4	
31	° 9		15			10		26		1.7	.3			

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	16	0.1	5.14	316
November	8.6	.2	5.64	335
December	18	3.6	10.0	615
January			14.7	902
February			16.0	889
March			23.8	1,470
April	34	10	1.55	92
May	4.2	.8	4.62	284
June	26	.6	8.58	510
July	41	.4	4.85	298
August	1.6	.3	.68	42
September	10	.1	1.96	116
The year	46	.1	8.10	5,870

° Estimated.

PARIA RIVER BASIN

PARIA RIVER AT LEES FERRY, ARIZ.

LOCATION.—Water-stage recorder in NW¼NE¼ sec. 13, T. 40 N., R. 7 E., half a mile above mouth and 1 mile northwest of Lees Ferry. Zero of gage is 3,123.6 feet above mean sea level.

DRAINAGE AREA.—1,520 square miles.

RECORDS AVAILABLE.—November 1923 to September 1933.

DISCHARGE.—Maximum during year, 3,660 second-feet Aug. 22 (gage height, 8.81 feet); minimum discharge (estimated), 1 second-foot several times in December and January; minimum gage height, 3.76 feet Sept. 4.

1923-33: Maximum 16,100 second-feet Oct. 5, 1925 (gage height, 17.5 feet); no flow several times in December and January of many years.

REMARKS.—Records good except those estimated for periods of ice effect, Dec. 14 to Jan. 19, Jan. 25-30, and Feb. 3-19, which are fair. D'versions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	16	22	7	18	88	17	24	3	3	29	6
2	40	16	42	7	18	104	16	26	3	3	18	5
3	54	17	31	6	12	119	16	20	3	4	13	5
4	25	17	21	5	12	108	15	16	3	4	8	5
5	18	15	22	4	17	66	15	10	3	4	6	5
6	16	14	23	4	20	39	14	8	3	4	6	5
7	16	14	20	4	7	40	14	7	3	10	86	4
8	13	15	14	4	5	56	13	7	3	8	50	9
9	11	16	16	4	11	55	12	5	3	21	48	685
10	10	17	24	4	10	52	10	5	2	9	18	73
11	10	18	21	4	12	49	9	7	2	7	10	23
12	9	15	12	6	18	41	11	5	2	34	8	13
13	9	14	9	7	16	36	10	5	3	43	5	10
14	9	18	10	7	18	35	9	9	3	22	4	7
15	8	20	7	7	16	26	8	8	3	17	4	8
16	8	20	6	8	20	24	8	7	3	99	4	16
17	8	18	7	10	18	25	8	5	3	169	4	11
18	7	18	12	12	20	30	9	4	3	450	8	8
19	7	17	14	16	23	25	7	4	3	27	20	5
20	8	17	10	16	24	18	8	4	3	23	13	5
21	17	17	10	14	26	18	8	4	2	48	118	118
22	36	17	11	18	24	20	8	4	3	99	558	90
23	27	17	11	19	25	18	8	4	2	37	92	31
24	24	16	12	18	28	16	7	4	2	14	34	18
25	20	14	12	19	36	15	7	10	2	11	18	12
26	17	17	7	17	59	15	5	7	2	14	12	8
27	18	19	8	14	72	16	5	5	2	11	9	7
28	18	19	4	20	81	16	5	4	3	177	7	7
29	20	17	6	16	-----	15	7	4	2	41	8	8
30	17	17	5	19	-----	16	20	4	2	95	6	7
31	16	-----	5	19	-----	18	-----	3	-----	51	6	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	104	7	20.0	1,230
November	20	14	19.7	996
December	42	4	14.0	861
January	20	4	17.8	664
February	81	5	23.8	1,320
March	119	15	39.3	2,420
April	20	5	17.3	613
May	26	3	7.7	474
June	3	2	2.6	157
July	450	3	57.3	3,090
August	558	4	39.7	2,440
September	685	4	47.5	2,410
The year	685	2	23.0	16,700

LITTLE COLORADO RIVER BASIN

LITTLE COLORADO RIVER AT ST. JOHNS, ARIZ.

LOCATION.—Water-stage recorder in sec. 27, T. 13 N., R. 28 E., at highway bridge at eastern edge of St. Johns.

DRAINAGE AREA.—938 square miles.

RECORDS AVAILABLE.—April 1906 to December 1909; May 1920 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 780 second-feet Sept. 9 (gauge height, 2.72 feet); no flow part or all of many days.

1929-33: Maximum, 1,410 second-feet Aug. 26, 1929 (gauge height, 3.65 feet); no flow part or all of many days each year.

REMARKS.—Records good except those estimated for periods of ice effect, Dec. 11-21, 25-31, Jan. 1-15, Feb. 8-11, and for July 9-13, 17-21, and Sept. 10-15, which are fair. Diversions for irrigation above station. Regulation by numerous storage reservoirs upstream and by operation of St. Johns hydro-electric plant, a short distance upstream.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	4	5	9	8	11	8	8	2	0.4	0.4	2	0.2
2.....	0	5	10	10	10	6	6	.4	.3	.5	1	.1
3.....	0	5	10	10	11	7	9	2	.3	.5	1	0
4.....	2	5	6	10	12	7	10	1	.6	.7	1	0
5.....	2	7	9	10	9	6	10	.3	.6	.9	2	0
6.....	2	5	7	10	10	10	10	.3	.3	1	71	0
7.....	2	4	10	9	11	7	10	.2	.4	.5	30	.1
8.....	3	7	9	7	10	9	10	.2	.3	27	.5	100
9.....	2	7	9	9	10	7	7	.1	.3	3	25	210
10.....	3	6	9	9	10	7	8	.2	.4	1	.2	10
11.....	2	9	6	9	10	6	6	.1	.7	1	.2	2
12.....	2	9	9	9	6	4	4	.2	.7	1	.2	2
13.....	2	4	10	9	9	6	6	.1	1	10	.1	2
14.....	2	8	10	9	9	10	6	.1	1	5	.3	2
15.....	3	8	10	7	9	9	6	.1	1	1	.3	2
16.....	1	8	10	9	8	6	3	.3	37	3	.4	2
17.....	4	9	8	9	12	7	4	.2	48	1	.4	2
18.....	3	9	11	10	11	8	4	0	7	1	.5	2
19.....	3	9	11	11	7	5	5	0	1	1	.6	.3
20.....	3	5	12	10	8	7	6	0	2	40	0	.6
21.....	5	7	12	9	8	8	3	0	28	20	0	1
22.....	6	7	11	6	8	8	2	0	90	15	.3	2
23.....	5	8	12	9	8	7	2	.5	8	5	.2	3
24.....	6	6	11	9	8	7	3	3	2	15	0	2
25.....	6	9	10	9	9	7	2	3	1	1	.1	2
26.....	7	8	10	9	7	6	3	2	.9	45	0	2
27.....	7	5	10	10	9	9	7	.5	.5	35	.8	2
28.....	6	8	10	10	9	8	6	.5	.8	1	0	2
29.....	5	7	10	7	-----	8	3	.5	.9	1	1	1
30.....	4	9	10	10	-----	8	.9	.5	.5	1	3	.9
31.....	5	-----	10	10	-----	8	-----	.7	-----	1	.9	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	7	0	3.5	212
November.....	9	4	6.9	413
December.....	12	6	9.7	597
January.....	11	7	9.1	559
February.....	12	6	9.2	514
March.....	10	4	7.3	448
April.....	10	.9	5.66	337
May.....	3	0	.61	38
June.....	90	.3	7.86	468
July.....	45	.4	7.73	475
August.....	71	0	4.61	284
September.....	210	0	11.8	704
The year.....	210	0	6.97	5,050

LITTLE COLORADO RIVER NEAR HUNT, ARIZ.

LOCATION.—Water-stage recorder in sec. 4, T. 14 N., R. 25 E., 3 miles below Zuni River and 5 miles northwest of Hunt.

DRAINAGE AREA.—7,240 square miles.

RECORDS AVAILABLE.—May 1929 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 3,600 second-feet July 24 (gage height, 12.4 feet); minimum, 0.1 second-foot several days in April and June.

1929-33: Maximum, 8,000 second-feet July 28, 1929 (gage height, 19.0 feet); no flow on various days May to July 1929 and April to July 1931.

REMARKS.—Records good except those estimated, which are fair. Stage-discharge relation affected by ice Nov. 26 to Feb. 16. Diversions for irrigation above station. Some regulation by reservoirs upstream.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	12	12	2	5	13	0.4	0.2	0.2	0.5	50	0.9
2	12	11	11	3	5	12	3	2	2	5	40	.9
3	12	11	11	3	5	10	3	2	2	4	30	.8
4	12	11	10	3	6	9	2	2	2	3	20	.8
5	13	10	11	4	7	9	3	2	2	3	100	.8
6	12	10	11	4	7	9	2	2	2	36	50	.7
7	12	10	10	4	7	9	5	2	1	2	100	.7
8	11	10	10	4	5	9	2	2	1	2	300	4
9	12	10	10	4	5	8	2	2	1	15	150	357
10	12	10	10	4	5	8	2	2	1	35	300	502
11	12	10	7	4	6	8	2	2	1	15	100	646
12	12	10	7	4	8	8	2	2	1	10	60	305
13	11	10	6	4	10	7	2	2	1	100	30	200
14	11	10	4	4	12	6	2	2	2	60	20	130
15	11	10	4	5	12	7	2	2	2	10	10	100
16	12	10	3	5	13	6	2	2	1	30	30	80
17	12	10	2	5	15	6	2	2	1	90	20	60
18	11	10	2	5	16	6	2	2	37	50	20	50
19	12	10	2	5	14	6	2	2	15	10	20	40
20	12	10	2	5	12	7	1	2	10	2	10	35
21	12	10	2	5	11	6	1	2	2	2	9	30
22	14	10	3	5	11	6	1	2	39	2	8	26
23	13	10	3	5	11	6	1	2	18	49	7	24
24	12	10	3	5	11	1	2	2	29	1,200	6	22
25	12	10	2	5	11	9	2	2	17	150	4	20
26	12	11	2	5	58	8	2	2	3	30	1	18
27	12	11	2	5	31	8	2	2	2	20	1	16
28	11	11	2	6	22	7	2	2	2	20	1	15
29	11	11	2	6	-----	6	2	2	1	30	1	15
30	11	11	2	6	-----	5	2	2	7	100	1	14
31	12	-----	2	5	-----	5	2	2	-----	40	.9	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	18	11	12.1	742
November	12	10	10.3	615
December	12	2	5.5	337
January	6	2	4.5	276
February	58	5	12.2	676
March	13	.5	6.03	371
April	2	.1	.27	16
May	.2	.2	.20	12
June	39	.1	5.94	353
July	1,200	.3	68.1	4,190
August	300	.9	48.4	2,980
September	646	.7	90.5	5,380
The year	1,200	.1	22.0	15,900

• Estimated.

LITTLE COLORADO RIVER NEAR WOODRUFF, ARIZ.

LOCATION.—Water-stage recorder in sec. 7, T. 16 N., R. 22 E., 4 miles below Silver Creek and $1\frac{1}{2}$ miles northwest of Woodruff.

DRAINAGE AREA.—9,060 square miles (revised).

RECORDS AVAILABLE.—March 1905 to December 1908 and December 1915 to December 1919 (fragmentary); April 1929 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 8,300 second-feet Sept. 11 (gage height, 11.0 feet); no flow on several days.

1929-33: Maximum, 10,700 second-feet July 21, 1929 (gage height, 12.45 feet); no flow on some days during spring or summer of each year.

A maximum discharge of 25,000 second-feet was recorded Dec. 5, 1919.

REMARKS.—Records good except those estimated for period of ice effect, Dec. 13 to Feb. 23, which are fair. Diversions for irrigation above station.

Some regulation by reservoirs upstream.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	32	21	21	4	21	45	14	0.6	0.1	0	137	20
2.....	25	23	19	4	21	35	10	2	.2	0	231	6
3.....	23	23	17	5	21	59	4	2	.1	.1	75	4
4.....	23	22	18	5	20	144	2	.8	0	4	42	4
5.....	23	21	19	6	23	137	.6	.1	0	14	43	3
6.....	22	21	21	6	26	89	.5	30	0	85	821	3
7.....	20	20	20	7	26	61	2	40	0	779	294	2
8.....	16	19	20	7	24	82	0	12	0	95	290	108
9.....	30	19	21	7	22	282	2	4	.1	130	543	1,310
10.....	35	19	21	8	22	270	2	2	.2	175	332	1,450
11.....	29	17	23	9	22	252	1	.6	1	173	454	2,980
12.....	26	16	18	9	24	252	2	.5	0	288	103	544
13.....	26	17	20	9	26	258	1	.2	0	287	69	332
14.....	32	20	19	9	28	209	1	.4	174	289	40	202
15.....	21	19	18	9	28	153	.4	1	41	125	29	144
16.....	21	19	18	12	28	89	.3	.1	16	588	27	111
17.....	21	21	17	16	32	64	.5	.1	8	289	60	95
18.....	20	19	16	18	39	59	.5	.1	33	372	33	75
19.....	18	19	16	20	37	59	.5	.2	20	173	85	75
20.....	21	19	16	20	32	56	.4	0	7	60	457	68
21.....	33	20	16	20	34	40	3	.1	8	47	111	244
22.....	87	23	16	20	28	34	3	.1	60	15	35	71
23.....	43	23	17	20	30	27	4	.2	25	95	18	34
24.....	37	20	18	20	37	22	2	.1	8	1,690	11	26
25.....	29	19	16	20	35	20	3	.3	12	372	8	23
26.....	25	20	11	20	267	17	3	.2	10	60	23	21
27.....	25	22	6	20	308	14	2	.1	6	120	34	21
28.....	26	21	6	21	85	14	.6	0	.4	37	14	21
29.....	25	19	6	22	-----	12	.4	0	.1	29	6	20
30.....	24	20	6	22	-----	12	.2	0	.1	57	5	16
31.....	22	-----	4	22	-----	14	-----	.2	-----	379	22	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	87	16	27.7	1,710
November.....	23	16	20.0	1,190
December.....	23	4	16.1	992
January.....	22	4	13.5	827
February.....	308	20	48.1	2,670
March.....	282	12	92.9	5,710
April.....	14	0	2.17	131
May.....	40	0	3.16	194
June.....	174	0	14.3	853
July.....	1,690	0	204	12,600
August.....	821	5	144	8,830
September.....	2,980	2	268	15,900
The year.....	2,980	0	71.3	51,600

LITTLE COLORADO RIVER AT GRAND FALLS, ARIZ.

LOCATION.—Water-stage recorder in T. 24 N., R. 11 E., unsurveyed, on Navajo Indian Reservation, at Grand Falls, 33 miles northeast of Flagstaff. Zero of gage is about 4,440 feet above mean sea level.

DRAINAGE AREA.—22,100 square miles.

RECORDS AVAILABLE.—November 1925 to September 1933.

DISCHARGE.—Maximum during year, 7,500 second-feet Sept. 12 (gage height, 13.69 feet); no flow on many days.

1925-33: Maximum, 50,500 second-feet Apr. 5, 1929 (gage height, 30.0 feet); no flow during periods of each year.

A discharge of about 120,000 second-feet occurred on Sept. 19, 1923 (gage height, 47.0 feet).

REMARKS.—Records good except those estimated for period of ice effect, Dec. 12 to Feb. 22, and those for Mar. 22-24, Apr. 2-4, 8-12, July 28 to Aug. 3, and Aug. 13-17, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	44	11	5	0	34	430	774	136	0	0	300	1
2.....	32	9	5	0	34	195	640	169	0	0	300	0
3.....	23	9	4	0	29	100	630	340	0	0	250	0
4.....	17	8	6	0	24	75	720	947	0	0	192	0
5.....	13	6	5	0	20	60	774	997	0	0	110	0
6.....	14	5	4	0	20	119	961	627	0	0	66	0
7.....	9	4	3	0	20	249	800	450	0	0	1,330	0
8.....	6	3	3	0	20	199	500	418	0	67	1,930	29
9.....	5	4	3	0	20	224	370	271	0	331	1,170	4
10.....	4	3	4	0	15	215	320	209	0	5 9	1,060	1,060
11.....	3	2	1	0	15	465	310	167	0	703	952	3,490
12.....	2	2	0	0	20	558	270	139	0	3 45	525	4,630
13.....	4	2	0	0	25	586	205	119	0	583	300	1,650
14.....	1	2	0	0	35	940	185	100	0	414	150	744
15.....	6	2	0	0	45	926	183	78	0	2 1	90	350
16.....	5	2	0	0	55	788	135	61	0	2 7	60	200
17.....	2	2	0	0	64	621	111	42	0	272	40	150
18.....	1	3	0	0	83	547	79	28	0	495	30	120
19.....	1	2	0	0	121	474	76	20	0	235	26	87
20.....	0	2	0	0	134	455	62	14	0	345	57	70
21.....	3	3	0	0	138	441	71	8	0	172	215	204
22.....	45	3	0	0	142	330	89	3	0	132	346	425
23.....	434	4	0	0	119	310	106	1	0	98	158	388
24.....	90	4	0	0	96	380	85	0	0	170	80	139
25.....	62	4	0	0	108	395	51	0	0	496	43	81
26.....	42	3	0	0	209	361	38	0	0	2,000	26	45
27.....	26	3	0	0	623	312	29	0	0	530	15	30
28.....	22	3	2	7	1,450	297	157	0	0	200	15	20
29.....	18	4	0	18	-----	324	198	0	0	150	37	15
30.....	14	5	0	34	-----	550	170	0	0	100	10	10
31.....	12	-----	0	34	-----	808	-----	0	-----	400	3	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	434	0	31.0	1,900
November.....	11	2	4.0	236
December.....	6	0	1.5	89
January.....	34	0	3.0	184
February.....	1,450	15	13 1/2	7,370
March.....	940	60	411	25,300
April.....	961	29	303	18,000
May.....	997	0	172	10,600
June.....	0	0	0	0
July.....	2,000	0	267	18,300
August.....	1,930	3	31 1/2	19,600
September.....	4,630	0	465	27,700
The year.....	4,630	0	179	129,000

SILVER CREEK NEAR WOODRUFF, ARIZ.

LOCATION.—Water-stage recorder in sec. 32, T. 16 N., R. 22 E., hal' a mile above mouth and 3 miles south of Woodruff.

DRAINAGE AREA.—942 square miles.

RECORDS AVAILABLE.—April 1929 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 4,600 second-feet Sept. 10 (gage height, 7.83 feet); no flow on several days.

1929-33: Maximum, 12,100 second-feet July 21, 1929 (gage height, 11.67 feet); no flow on several days in spring and summer of each year.

REMARKS.—Records good except those estimated for period of ice effect, Dec. 11 to Feb. 13, and those estimated Nov. 14-19 and June 26 to July 21, which are fair. Diversions for irrigation above station. Woodruff Canal diverts above control for this station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	16	13	4	18	24	7	2	0.2	0	80	11
2	13	16	13	4	18	25	3	.8	.1	0	136	4
3	10	17	13	5	18	60	.6	.7	0	0	17	3
4	13	17	13	5	17	140	.6	.4	0	1	9	3
5	9	14	12	6	18	126	.2	.3	0	5	10	2
6	8	13	14	6	20	82	0	43	0	40	145	2
7	9	14	14	7	22	56	0	30	0	400	178	1
8	6	13	12	7	21	98	0	8	0	60	44	9
9	33	13	10	7	20	269	0	.8	0	150	154	109
10	22	13	10	8	19	258	0	.7	0	50	48	474
11	18	14	13	9	19	240	0	.6	0	120	37	1,050
12	17	13	12	9	20	249	0	.4	0	100	15	114
13	21	14	13	9	22	253	0	.3	0	200	10	65
14	21	14	13	9	24	192	0	.5	165	150	6	28
15	16	14	14	9	25	148	0	.4	22	200	4	23
16	12	13	14	10	24	85	0	.3	10	350	11	18
17	8	13	14	14	27	65	0	.2	8	150	8	17
18	12	12	14	16	35	57	0	.1	20	200	7	17
19	11	12	14	17	32	57	0	.1	11	50	58	16
20	10	12	14	17	27	50	.4	.3	4	40	417	38
21	30	13	14	17	30	35	1	.2	1	30	101	162
22	73	16	14	17	24	22	2	.4	12	7	22	31
23	30	16	14	17	21	18	.9	.2	2	57	9	11
24	22	13	15	17	21	17	.8	.1	.4	93	6	8
25	18	13	14	17	25	17	2	.2	0	10	4	5
26	17	13	10	17	37	16	2	0	0	32	14	5
27	18	14	6	17	30	13	.4	0	0	55	18	7
28	18	14	6	18	29	12	0	0	0	6	7	8
29	17	13	6	18	-----	10	0	0	0	4	4	7
30	17	14	6	18	-----	10	.4	.1	0	17	4	8
31	17	-----	4	18	-----	8	-----	.1	-----	137	19	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	73	6	18.1	1,110
November	17	12	13.9	825
December	15	4	11.9	730
January	18	4	11.9	732
February	37	17	23.7	1,320
March	269	8	87.5	5,380
April	7	0	.71	42
May	43	0	2.94	181
June	165	0	8.52	507
July	400	0	87.5	5,380
August	417	4	51.7	3,180
September	1,050	1	75.2	4,470
The year	1,050	0	33.0	23,900

CHEVELON FORK NEAR WINSLOW, ARIZ.

LOCATION.—Water-stage recorder in sec. 27, T. 18 N., R. 17 E., $\frac{1}{2}$ miles above mouth and 12 miles southeast of Winslow.

DRAINAGE AREA.—1,010 square miles.

RECORDS AVAILABLE.—December 1905 to December 1908; December 1915 to December 1919; March 1929 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 1,060 second-feet Sept. 20 (gage height, 5.41 feet); minimum, 2 second-feet July 16, 17.

1929-33: Maximum, 16,100 second-feet Apr. 4, 1929 (gage height, 17.8 feet); minimum, 1 second-foot Jan. 10, 1930, Sept. 20, 1931, June 3, 1932.

REMARKS.—Records good. Discharge estimated Jan. 5-18, 21-31, Feb. 1-2, 4-17, Sept. 28-30. No diversions above station. One diversion below station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	4	4	4	4	4	20	227	150	5	4	5	6
2.....	5	4	4	4	4	18	217	328	4	5	4	4
3.....	5	4	4	4	4	29	249	432	4	5	4	4
4.....	4	4	4	4	4	68	257	378	4	5	4	4
5.....	4	4	4	4	4	108	243	246	4	5	4	4
6.....	4	4	4	4	4	122	201	180	3	6	5	4
7.....	4	4	4	4	4	117	136	133	4	6	7	3
8.....	4	4	4	4	4	124	98	86	5	6	6	4
9.....	4	4	4	4	4	155	84	63	6	7	6	6
10.....	4	4	4	4	4	222	77	46	6	6	5	9
11.....	4	4	4	4	5	254	68	41	6	4	5	3
12.....	4	4	4	4	5	257	56	29	6	4	5	3
13.....	4	4	4	4	5	298	47	23	6	4	4	3
14.....	4	4	4	4	5	278	38	20	5	4	4	3
15.....	4	4	4	4	5	276	35	17	5	3	4	3
16.....	4	4	4	4	5	257	28	17	5	2	4	3
17.....	4	4	4	4	5	230	23	16	5	2	4	3
18.....	4	4	4	4	5	222	16	15	5	3	4	3
19.....	4	4	4	4	5	224	17	13	5	4	7	3
20.....	4	4	4	4	5	191	18	12	5	4	7	126
21.....	33	4	4	4	5	148	27	11	5	4	5	48
22.....	12	4	4	4	5	162	23	11	4	4	4	22
23.....	6	4	4	4	5	201	28	10	4	4	4	5
24.....	5	4	4	4	5	204	25	9	4	66	4	4
25.....	5	4	4	4	5	172	66	9	4	21	4	4
26.....	5	4	4	4	26	170	111	9	4	6	4	4
27.....	5	4	4	4	18	180	84	8	4	6	4	4
28.....	4	4	4	4	21	235	58	7	4	6	4	4
29.....	4	4	4	4	-----	298	44	7	4	5	4	4
30.....	4	4	4	4	-----	321	37	7	4	9	4	4
31.....	4	-----	4	4	-----	284	-----	6	-----	7	5	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	33	4	5.5	335
November.....	4	4	4.0	238
December.....	4	4	4.0	246
January.....	4	4	4.0	246
February.....	26	4	6.4	357
March.....	321	18	189	11,600
April.....	257	16	87.9	5,230
May.....	432	6	75.5	4,640
June.....	6	3	4.6	276
July.....	66	2	7.3	450
August.....	7	4	4.6	286
September.....	126	3	10.1	603
The year.....	432	2	33.8	24,500

CLEAR CREEK NEAR WINSLOW, ARIZ.

LOCATION.—Water-stage recorder in SE¼ sec. 9, T. 18 N., R. 16 E., 1½ miles above mouth and 5 miles southeast of Winslow. Control for station is crest of dam 1,000 feet downstream.

DRAINAGE AREA.—637 square miles.

RECORDS AVAILABLE.—March 1929 to September 1933 (discontinued). June 1906 to January 1909 at station 3 miles upstream.

DISCHARGE.—Maximum during year, 780 second-feet Apr. 5 (height over dam crest, 1.36 feet); no flow on many days.

1929-33: Maximum, 39,000 second-feet Apr. 4, 1929 (height over dam crest, 13.4 feet); no flow on many days of each year.

REMARKS.—Records good. Water diverted above station for municipal and industrial use.

Discharge, in second-feet, 1932-33

Day	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	0	3	0	4	439	290	4	0	20
2	0	4	0	4	439	362	2	0	7
3	0	5	0	3	558	493	0	0	1
4	0	5	0	3	625	596	0	0	0
5	0	4	0	2	675	430	0	10	0
6	0	3	0	3	615	379	0	9	0
7	0	3	0	36	430	345	0	2	0
8	0	4	0	111	337	267	0	18	0
9	0	3	0	101	290	196	0	3	0
10	0	3	0	152	298	159	0	2	0
11	2	2	0	246	275	147	0	0	0
12	3	1	0	275	232	130	0	0	0
13	3	2	0	306	190	116	0	0	0
14	4	2	0	322	184	101	0	0	0
15	4	2	0	288	166	84	0	0	0
16	3	0	0	283	135	70	0	0	0
17	5	0	0	253	121	59	0	0	0
18	5	0	0	232	116	52	0	0	0
19	4	0	0	217	130	45	0	0	0
20	3	0	0	203	141	45	0	0	0
21	3	0	0	178	130	45	0	0	0
22	3	0	0	166	97	38	0	0	0
23	3	0	0	196	84	35	0	0	0
24	3	0	1	210	84	33	0	0	0
25	3	0	3	203	111	28	0	0	0
26	3	0	6	184	184	26	0	0	0
27	3	0	4	203	196	20	0	0	0
28	3	0	3	275	172	15	0	0	0
29	3	0	—	388	153	12	0	0	0
30	4	0	—	511	243	10	0	30	0
31	—	0	—	511	—	8	—	139	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
November	5	0	2.2	133
December	5	0	1.5	91
January	6	0	.6	34
February	511	2	196	12, 100
March	675	84	262	15, 600
April	596	8	150	9, 200
May	4	0	.2	12
June	139	0	6.9	422
July	20	0	.9	56
August	—	—	—	—
The year	675	0	51.9	37, 600

NOTE.—No flow during months omitted.

MOENKOPI WASH NEAR TUBA, ARIZ.

LOCATION.—Water-stage recorder in T. 31 N., R. 10 E., unsurveyed, on Navajo Indian Reservation, at highway bridge 5 miles southwest of Tuba and 17 miles above mouth.

DRAINAGE AREA.—2,270 square miles.

RECORDS AVAILABLE.—July 1926 to September 1933.

DISCHARGE.—Maximum during year, 4,400 second-feet July 7 (gauge height, 8.48 feet); no flow on several days.

1926-33: Maximum, 15,100 second-feet Aug. 4, 1929 (gauge height, 15.4 feet); no flow on several days each year.

REMARKS.—Records good except those estimated for periods of ice effect, Dec. 11 to Jan. 24, Feb. 7-13, which are fair. Diversions for irrigation above station; none below.

Discharge, in second feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	July	Aug.	Sept.
1	9.7	4.8	5.7	1	8.3	5.7	1.1	1.5	0	0.1	4.2
2	6.6	4.8	6.1	1	7.7	6.1	3.9	1.3	0	.1	.2
3	5.7	4.8	5.7	1	7.1	10	2.7	.9	0	.1	0
4	5.2	5.2	5.2	1	6.6	9.7	1.8	.9	3.9	0	0
5	4.3	5.2	5.7	1	7.1	6.1	2.1	2.7	2.4	0	0
6	4.3	5.2	5.7	1	7.1	5.2	.7	.2	379	0	.1
7	3.9	5.2	4.8	1	6	5.7	.4	.1	821	0	.7
8	3.9	4.8	3.5	1	5	5.2	1.4	.8	50	87	.4
9	4.8	4.8	6.6	1	5	5.2	3.5	.4	484	184	85
10	5.2	4.8	5.2	1	4	4.8	3.9	.9	244	15	67
11	5.7	4.3	4	1	4	4.8	3.5	1.3	50	4.6	56
12	4.8	3.9	3	1	5	4.3	.4	2.4	219	4.1	21
13	4.8	4.8	2	1	6	3.5	1.9	.2	69	4.0	6.6
14	4.8	4.8	3	1	7.1	3.1	1.5	1.7	34	2.7	177
15	4.3	4.8	3	2	7.1	2.4	.2	1.5	26	3.5	49
16	4.3	4.8	3	3	8.3	1.1	.4	.4	24	3.9	9.0
17	3.9	5.2	4	3	9.7	1.5	.1	.4	12	11	1.8
18	3.9	4.8	4	3	8	3.5	.3	.1	60	6.1	.4
19	4.3	4.8	4	4	8	3.9	.6	.1	14	14	.2
20	4.8	4.3	3	4	8	3.1	2.7	.1	4.6	334	.2
21	20	4.3	3	4	7.7	2.7	3.1	.2	2.2	179	14
22	86	2.7	4	6	8.2	3.1	2.4	.2	.6	54	9.8
23	21	2.7	5	6	11	.9	2.7	.2	5.1	64	3.9
24	9.0	2.4	5	9	9.0	.9	2.4	.1	46	19	.3
25	5.2	2.7	4	9.0	9.0	1.5	2.1	.3	15	8.3	.1
26	4.3	2.7	4	7.7	9.7	4.8	1.8	.2	4.6	5.2	.1
27	4.8	4.3	3	8.3	9.0	4.3	.2	0	.6	3.5	.1
28	4.8	5.2	2	9.0	9.0	3.5	.9	0	.7	3.9	.1
29	5.2	4.8	1	7.7	-----	1.1	2.8	0	.2	1.8	.1
30	5.2	4.8	1	7.7	-----	1.1	1.5	0	.1	1.5	.1
31	4.8	-----	1	8.3	-----	.9	-----	0	.1	.3	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	86	3.9	8.69	535
November	5.2	2.7	4.42	263
December	6.6	1	3.9	238
January	9	1	3.7	229
February	11	4	7.42	412
March	10	.9	3.86	237
April	3.9	.1	1.77	105
May	2.7	0	.62	38
June	0	0	0	0
July	821	0	83.0	5,100
August	334	0	32.7	2,010
September	177	0	16.9	1,010
Total year	821	0	14.1	10,200

BRIGHT ANGEL CREEK BASIN

BRIGHT ANGEL CREEK NEAR GRAND CANYON, ARIZ.

LOCATION.—Water-stage recorder installed Jan. 30, 1933, a quarter of a mile above mouth and 11 miles by trail from Grand Canyon, Coconino County. Zero of gage is 2,458.2 feet above mean sea level. Prior to Jan. 30 a staff gage 22 feet upstream at a datum 1.86 feet higher was used.

DRAINAGE AREA.—100 square miles.

RECORDS AVAILABLE.—October 1923 to September 1933.

DISCHARGE.—Maximum during year, 186 second-feet Aug. 7 (gage height, 4.26 feet); minimum, 10 second-feet Sept. 10 (gage height, 2.46 feet).

1923-33: Maximum, about 1,000 second-feet July 27, 1926, Sept. 16, 1927; minimum, that of Sept. 10, 1933.

REMARKS.—Records good. Minor diversions for irrigation above station. Some fluctuation in discharge caused by operation of power plant 9 miles upstream; no regulation by storage.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	23	23	25	23	24	22	24	26	37	20	19	18
2.....	24	24	24	23	23	22	24	25	36	22	20	19
3.....	22	24	23	24	22	23	25	26	34	20	19	18
4.....	22	24	22	24	22	23	28	26	32	20	19	18
5.....	22	24	22	24	22	23	28	27	31	21	19	17
6.....	22	24	22	24	22	23	28	29	30	21	19	17
7.....	22	25	22	24	22	23	27	29	30	21	35	17
8.....	22	25	22	23	22	23	28	30	29	20	23	19
9.....	22	26	22	23	22	24	29	31	28	24	21	17
10.....	22	26	23	23	22	24	29	32	27	20	20	16
11.....	22	25	23	22	22	24	29	31	26	20	19	17
12.....	22	25	23	22	22	23	28	29	25	20	19	17
13.....	22	24	24	22	22	23	29	29	24	20	19	17
14.....	22	24	24	22	22	24	28	28	24	19	19	17
15.....	23	24	24	22	21	24	28	27	24	19	19	16
16.....	22	24	23	23	21	24	30	29	23	20	19	16
17.....	24	23	23	25	22	24	31	34	23	20	27	16
18.....	24	23	22	23	22	24	31	38	23	19	21	17
19.....	24	24	22	24	22	24	31	41	23	19	21	16
20.....	24	24	22	24	22	24	29	43	23	19	20	17
21.....	26	24	22	24	22	24	28	47	22	20	19	18
22.....	26	24	22	24	22	24	26	47	22	19	19	18
23.....	24	24	22	24	22	24	25	43	21	19	19	17
24.....	25	24	23	24	22	24	25	41	21	19	19	17
25.....	24	24	23	24	22	23	25	40	21	19	19	18
26.....	24	24	22	22	22	23	26	40	20	19	19	18
27.....	24	24	22	22	22	23	26	42	20	19	19	18
28.....	24	24	23	22	22	23	28	44	20	19	19	17
29.....	24	24	22	23	22	24	28	43	20	19	19	17
30.....	24	24	22	24	22	24	28	42	20	19	18	18
31.....	24	22	23	24	22	24	28	40	20	19	18	18

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	26	22	23.3	1,430
November.....	26	23	24.2	1,440
December.....	25	22	22.7	1,390
January.....	25	22	23.3	1,430
February.....	24	21	22.0	1,220
March.....	24	22	23.5	1,440
April.....	31	24	27.6	1,640
May.....	47	25	34.8	2,140
June.....	37	20	25.3	1,510
July.....	24	19	19.8	1,220
August.....	35	18	20.1	1,240
September.....	19	16	17.3	1,030
The year.....	47	16	23.7	17,100

VIRGIN RIVER BASIN

VIRGIN RIVER AT VIRGIN, UTAH

LOCATION.—Chain gage in SE¼ sec. 22, T. 41 S., R. 12 W., at east edge of Virgin, half a mile below North Creek.

DRAINAGE AREA.—990 square miles.

RECORDS AVAILABLE.—April 1909 to September 1933 (fragmentary).

DISCHARGE.—Maximum recorded during year, 2,350 second-feet Sept. 8 (gage height, 6.9 feet); minimum, 47 second-feet Sept. 24, 25.

1909-33: Maximum (estimated), 12,000 second-feet Oct. 27, 1912 (gage height, 11.6 feet); minimum, 23 second-feet Sept. 30, 1931.

REMARKS.—Records fair. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	118	180	132	132	150	180	298	537	86	78	71
2	170	113	150	141	150	180	180	242	407	93	86	71
3	104	113	150	150	170	190	221	205	354	100	78	78
4	104	122	150	150	190	180	221	185	286	93	78	86
5	88	113	141	141	150	150	141	309	284	93	108	161
6	104	104	150	150	150	150	170	253	264	93	117	117
7	104	104	141	160	160	180	180	232	232	117	100	86
8	104	104	132	170	122	170	180	264	221	108	86	1,200
9	96	118	136	155	104	170	200	242	211	100	100	462
10	96	109	145	145	104	180	180	200	190	108	78	134
11	104	118	145	145	170	170	150	205	211	13	78	100
12	113	127	165	155	170	180	141	190	161	100	78	78
13	104	118	145	145	160	180	160	190	152	117	71	64
14	96	118	175	155	150	170	160	242	147	108	64	86
15	88	118	226	165	132	170	141	242	142	100	78	64
16	104	118	185	155	141	170	211	275	152	286	86	58
17	113	132	150	160	132	180	190	321	142	152	108	58
18	113	132	180	170	141	180	200	333	108	134	125	64
19	113	132	190	160	150	150	180	345	108	125	134	58
20	132	122	190	160	132	170	150	374	113	152	384	64
21	122	122	170	160	141	170	141	429	121	142	134	343
22	113	122	141	170	141	160	141	479	117	108	93	64
23	113	132	150	160	132	160	150	333	108	86	86	52
24	113	132	160	160	141	141	180	374	100	93	100	47
25	113	127	155	155	122	132	180	366	104	100	93	47
26	122	127	145	145	122	150	185	456	108	86	78	52
27	113	127	145	165	141	160	180	537	93	93	64	52
28	113	136	145	155	150	170	190	487	100	86	78	64
29	104	136	136	155	-----	180	292	474	82	71	64	58
30	122	136	127	160	-----	170	333	474	108	78	64	52
31	113	-----	136	165	-----	170	-----	524	-----	64	58	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	170	88	110	6,760
November	136	104	122	7,260
December	226	127	156	9,590
January	170	132	155	9,530
February	190	104	143	7,940
March	190	132	167	10,300
April	333	141	184	10,900
May	537	185	325	20,000
June	537	82	181	10,800
July	286	64	110	6,760
August	384	58	97.6	6,000
September	1,200	47	133	7,910
The year	1,200	47	157	114,000

VIRGIN RIVER AT LITTLEFIELD, ARIZ.

LOCATION.—Staff gage in SE¼ sec. 5, T. 40 N., R. 15 W., about half a mile below Beaverdam Wash and about the same distance above Littlefield.

DRAINAGE AREA.—4,400 square miles.

RECORDS AVAILABLE.—October 1929 to September 1933.

DISCHARGE.—Maximum during year (estimated), 15,000 second-feet May 1; minimum recorded, 26 second-feet July 27, 29, 30.

1929-33: Maximum (estimated), 25,000 second-feet Aug. 27, 1932; minimum that of July 27, 29, 30, 1933.

REMARKS.—Records poor except those for May and June, which are fair. No diversions in Arizona above this point, except a few second-feet from the Beaverdam Springs. Mesquite Canal diverts water a few miles downstream for irrigation in Nevada.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	400	145	268	191	270	277	205	1,200	416	54	27	117
2	334	150	458	183	277	215	210	300	331	54	34	121
3	291	150	479	191	227	215	196	241	302	54	33	121
4	265	153	320	194	229	213	191	235	246	54	29	121
5	180	153	320	183	227	204	183	207	213	51	30	121
6	162	150	312	188	235	191	178	227	187	425	30	126
7	148	150	298	191	256	191	178	227	162	325	26	121
8	143	153	275	191	247	194	172	148	135	200	30	192
9	138	150	275	194	256	194	157	210	121	203	96	406
10	131	150	268	191	272	191	153	188	126	184	77	316
11	124	155	281	194	285	191	153	188	96	121	52	184
12	124	163	288	199	305	213	145	188	79	81	44	121
13	122	168	275	204	288	224	133	172	74	59	46	117
14	113	168	262	202	262	244	136	131	68	47	52	77
15	108	173	256	204	226	253	129	188	63	41	46	74
16	126	175	253	207	224	259	120	183	60	493	45	74
17	124	175	241	221	215	259	124	180	65	302	45	70
18	131	173	235	259	224	265	131	244	57	167	44	68
19	155	180	213	259	229	224	126	320	54	121	46	70
20	165	180	224	281	224	202	126	262	56	81	77	121
21	155	175	215	285	221	165	117	295	54	52	218	360
22	180	175	221	295	224	160	117	295	52	41	296	288
23	207	180	215	275	221	158	67	388	54	39	423	218
24	188	183	218	268	218	160	83	278	57	34	172	104
25	180	180	215	256	221	155	73	262	54	32	153	100
26	173	183	224	224	226	153	67	268	54	31	126	90
27	168	180	215	262	221	160	79	319	54	26	121	90
28	158	185	207	285	224	168	108	384	57	27	117	86
29	158	180	202	285	-----	188	168	378	56	26	121	81
30	155	191	188	320	-----	185	600	419	55	26	121	77
31	153	-----	188	256	-----	199	-----	390	-----	27	117	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	400	108	173	10,600
November	191	145	168	10,000
December	458	188	260	16,000
January	320	183	230	14,100
February	305	215	239	13,300
March	265	153	201	12,400
April	600	67	155	9,220
May	1,200	131	288	17,700
June	416	52	115	6,840
July	493	26	112	6,890
August	423	26	93.4	5,740
September	360	68	141	8,390
The year	1,200	26	181	131,000

NORTH FORK OF VIRGIN RIVER NEAR SPRINGDALE, UTAH¹

LOCATION.—Staff gage in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 41 S., R. 10 W., half a mile south of entrance to Zion National Park, half a mile below Pine Creek, and 2 miles northeast of Springdale.

RECORDS AVAILABLE.—October 1932 to September 1933 at present site. June to November 1923, April 1925 to September 1931, February to September 1932 at site a quarter of a mile above Pine Creek.

DISCHARGE.—Maximum during year, about 3,000 second-feet (estimated) Sept. 7 (gage height, 7,000 feet); minimum, 38 second-feet Aug. 30 to Sept. 2, 1925-33: Maximum, about 3,000 second-feet (estimated) Aug. 3, 1923, and Sept. 7, 1933 (gage height, 7.0 feet at present gage; 11.0 feet at former gage); minimum, 24 second-feet Dec. 17, 31, 1928.

REMARKS.—Records fair. Springdale Canal diverts from North Fork of Virgin River in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 41 S., R. 10 W., for irrigation in vicinity of Springdale. Total flow of North Fork of Virgin River at park boundary is given in table of combined discharge of North Fork of Virgin River and Springdale Canal (p. 76).

Discharge, in second-feet, 1932-33

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	* 54	48	48	60	61	71	100	260	65	45	33
2.....	54	50	50	59	61	* 75	123	325	* 64	48	33
3.....	* 54	50	50	59	61	73	85	261	64	48	39
4.....	* 54	50	50	59	61	118	91	232	61	43	39
5.....	* 53	50	50	59	61	71	123	229	65	43	39
6.....	* 53	48	48	59	61	71	127	265	65	43	117
7.....	* 53	48	50	48	63	72	112	185	65	43	* 70
8.....	53	49	50	48	68	91	140	178	65	43	* 250
9.....	54	48	50	48	63		125	171	65	43	157
10.....	53	50	50	48	63		127	180	65	43	92
11.....	55		48	50	64		138	136	64	45	66
12.....	55		50	54		* 80	110	146	60	45	55
13.....	52		50	59			105	126	57	* 45	
14.....	50		50	60			148	117	57	* 45	
15.....	50	* 55	48	60	* 60		166	110	57	45	* 52
16.....	59		48	60		91	230	114	66	45	
17.....	56		48	61		98	286	100	72	46	
18.....	54	39	52	61		105	263	88	70	45	50
19.....	54	42	56	59	60	90	306	* 85	70	45	50
20.....	53	44	59	56	44	73	274	82	72	43	50
21.....	53	44	56	54	48	63	306	81	57	43	48
22.....	52	48	60	50	52	68	385	73	52	41	48
23.....	52	48	59	50	54	94	* 275	71	52	41	48
24.....	50	52	44	48	54	96	258	72	50	39	* 48
25.....	50	* 45	42	46	52	98	* 225	68	50	39	48
26.....	48	42	42	50	* 53	106	319	64	48	39	
27.....	48	42	44	56	54	106	* 500	62	49	39	
28.....	48	50	50	59	56	118	* 400	66	48	39	* 45
29.....	48	50	48		71	133	378	62	48	39	
30.....	48	48	46		71	85	378	58	48	38	
31.....		50	46		71		638		45	38	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....			* 50	3, 070
November.....	59	48	52.3	3, 110
December.....		39	49.0	3, 010
January.....	60	42	49.7	3, 060
February.....	61	46	55.0	3, 050
March.....	71	44	59.6	3, 660
April.....	133	63	89.2	5, 310
May.....	638	85	233	14, 300
June.....	360	58	137	8, 150
July.....	72	45	59.2	3, 640
August.....	48	38	42.8	2, 630
September.....	750	38	85.2	5, 070
The year.....	750	38	80.3	58, 100

* Estimated.

¹ Formerly published as Mukuntuweap River near Springdale, Utah.

Combined discharge, in second-feet, of North Fork of Virgin River and Springdale Canal near Springdale, Utah, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		66	60	59	70	72	83	115	367	73	53	46
2		66	63	61	69	73	87	137	333	72	57	46
3		66	63	61	69	73	123	99	269	72	57	47
4		66	63	61	69	73	118	106	240	69	51	47
5		64	62	61	69	73	87	141	237	73	51	47
6			64	60	59	69	73	87	144	213	73	51
7			64	60	61	58	76	88	127	193	74	51
8			64	61	61	58	81	108	158	185	74	51
9			65	60	61	58	76	96	142	179	74	51
10			64	62	61	58	76	95	141	188	74	51
11			66	67	59	61	77	96	151	144	73	53
12			66	67	61	64	73	96	123	155	68	53
13			64	67	61	69	73	96	117	134	65	53
14			62	67	61	70	73	96	162	125	65	53
15			62	66	59	70	73	96	180	118	65	53
16		60	71	66	59	70	73	108	245	133	74	53
17			68	66	59	71	73	116	302	111	81	54
18			66	50	63	71	72	123	279	99	79	53
19			65	53	68	69	72	107	322	96	79	53
20			64	55	71	66	55	89	291	93	81	51
21			64	55	68	64	60	78	321	92	67	51
22			64	59	72	60	64	84	398	83	61	49
23			64	59	71	60	66	110	288	81	61	49
24			61	63	55	58	66	112	268	82	59	47
25			61	56	53	56	64	114	237	77	58	47
26			59	53	53	61	65	123	331	73	56	47
27			60	53	55	67	66	123	510	71	57	47
28			60	61	61	70	68	136	410	75	56	47
29			60	61	59		83	150	386	71	56	47
30			60	59	57		83	102	386	66	56	46
31				61	57		83		646		53	46

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October			60	3,690
November	71	59	63.9	3,800
December	67	50	60.6	3,730
January	72	53	60.9	3,740
February	71	56	65.1	3,620
March	83	55	71.9	4,420
April	150	78	104	6,190
May	646	99	247	15,200
June	367	66	146	8,690
July	81	53	67.7	4,160
August	57	46	50.8	3,120
September	759	46	89.7	5,340
The year	759	46	90.7	65,700

* Estimated.

WILLIAMS RIVER BASIN

WILLIAMS RIVER AT PLANET, ARIZ.

LOCATION.—Water-stage recorder in NE¼ sec. 36, T. 11 N., R. 17 W., 12 miles above mouth and 1 mile west of Planet. Zero of gage is 556.56 feet above mean sea level.

DRAINAGE AREA.—5,140 square miles.

RECORDS AVAILABLE.—September 1910 to December 1915, fragmentary; October 1928 to September 1933.

DISCHARGE.—Maximum during year, 107 second-feet Mar. 4; maximum gage height, 5.07 feet Oct. 14; minimum discharge, 9 second-feet July 14 (gage height, 4.02 feet).

1928-33: Maximum, 55,500 second-feet Aug. 5, 1931 (gage height, 12.3 feet); minimum, 9 second-feet in July or September of each year 1930-33.

REMARKS.—Records good. Minor diversions above station for irrigation.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	19	23	22	22	18	18	16	17	15	12	14
2	20	18	21	21	22	21	16	16	18	16	14	14
3	21	20	21	21	21	53	16	16	17	15	15	14
4	21	20	22	19	20	68	16	17	16	14	16	14
5	21	21	22	18	20	49	16	17	15	16	15	14
6	20	22	21	20	21	52	17	18	15	15	14	13
7	21	23	23	21	18	24	17	18	16	14	15	12
8	20	24	25	21	21	22	17	16	14	14	14	12
9	19	23	25	20	21	18	17	15	14	13	13	12
10	20	20	24	17	21	23	16	16	14	12	13	12
11	20	17	24	15	21	28	16	15	14	12	12	12
12	20	19	22	16	21	24	16	16	14	12	12	12
13	22	18	19	15	21	26	15	15	15	12	12	12
14	23	23	20	14	20	24	15	16	16	11	12	13
15	21	22	22	14	20	24	16	14	16	11	13	12
16	21	23	22	14	20	25	16	14	15	11	12	13
17	21	22	21	25	20	24	16	14	16	13	13	13
18	19	22	21	22	19	23	17	18	15	14	13	13
19	18	22	19	22	19	23	17	28	15	13	14	12
20	20	22	18	22	19	23	14	34	15	14	13	13
21	25	22	21	22	19	23	15	38	16	13	14	13
22	22	21	22	21	19	18	16	34	14	12	14	12
23	20	22	22	21	19	20	16	31	14	11	14	26
24	18	24	23	25	20	21	15	28	14	13	14	13
25	15	24	23	22	20	17	15	26	14	13	14	12
26	16	24	24	28	19	17	16	22	14	12	14	13
27	16	23	24	23	18	19	14	21	14	12	13	13
28	15	24	23	19	19	17	15	21	14	13	13	12
29	16	24	22	20	-----	17	15	20	15	12	14	11
30	17	26	23	22	-----	16	15	20	14	12	14	12
31	19	-----	22	23	-----	16	-----	18	-----	11	-----	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	25	15	19.6	1,200
November	26	17	21.8	1,300
December	25	18	22.1	1,360
January	28	14	20.2	1,240
February	22	18	20.0	1,110
March	68	16	25.6	1,570
April	18	14	15.9	944
May	38	14	20.3	1,250
June	18	14	15.0	893
July	16	11	12.9	795
August	16	12	13.5	831
September	26	11	13.1	780
The year	68	11	18.3	13,300

GILA RIVER BASIN

GILA RIVER NEAR GILA, N. MEX.

LOCATION.—Water-stage recorder in sec. 30, T. 14 S., R. 16 W., at Hooker dam site, 1 mile above mouth of Mogollon Creek and 7 miles northeast of Gila. Prior to Dec. 31, 1928, station was 3 miles upstream, about a quarter of a mile below mouth of Turkey Creek.

DRAINAGE AREA.—1,780 square miles.

RECORDS AVAILABLE.—April to December 1914; October 1930 to September 1933.

Records 1927–30 published by State engineer.

DISCHARGE.—Maximum during year, 732 second-feet Sept. 15 (gage height, 5.52 feet); minimum, 45 second-feet July 2.

1930–33: Maximum 2,310 second-feet Feb. 11, 1932 (gage height, 7.40 feet);

minimum, 43 second-feet Dec. 24, 1930, and July 21, 1932.

REMARKS.—Records good. One small diversion for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	66	62	61	82	326	214	100	128	53	81	90
2	70	63	60	62	80	387	202	100	128	53	81	126
3	68	61	62	61	80	404	202	99	126	53	86	97
4	64	64	62	62	79	435	210	103	120	57	107	74
5	62	64	62	58	80	415	214	108	111	56	133	62
6	60	65	61	62	87	352	212	104	101	60	276	57
7	59	64	60	64	122	300	198	102	97	63	282	56
8	60	62	60	63	105	324	178	102	94	101	190	64
9	58	64	66	63	90	399	163	106	92	109	154	92
10	57	64	70	63	88	429	147	108	83	76	144	105
11	56	62	74	66	88	453	136	114	74	60	163	140
12	64	62	68	63	86	488	131	118	72	56	149	94
13	70	64	78	64	92	542	122	118	72	54	116	83
14	64	66	94	62	97	496	118	121	84	54	99	76
15	60	64	116	62	100	420	115	118	88	72	88	215
16	56	66	108	61	97	368	112	109	88	128	79	101
17	56	66	90	77	105	340	109	103	83	118	76	88
18	56	65	77	96	112	337	106	102	88	218	78	118
19	56	66	70	88	117	322	104	106	101	178	76	120
20	62	64	70	87	116	293	108	112	96	126	76	107
21	70	62	72	96	116	260	110	126	105	107	69	94
22	78	64	74	91	118	238	107	131	122	151	63	90
23	77	62	74	82	126	226	104	135	140	147	62	81
24	76	62	72	84	149	220	98	133	140	111	60	76
25	75	62	70	82	180	218	96	122	113	97	60	72
26	76	60	66	80	286	222	101	118	88	96	66	66
27	74	61	64	78	311	222	102	113	76	105	64	63
28	75	60	62	79	300	234	97	113	69	97	57	62
29	69	60	65	80	-----	249	100	120	63	88	54	60
30	70	62	66	82	-----	252	102	124	57	94	84	81
31	68	-----	63	84	-----	238	-----	126	-----	86	69	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	78	56	65.7	4,040
November	66	60	63.2	3,760
December	116	60	71.5	4,400
January	96	58	73.0	4,490
February	311	79	125	6,920
March	542	218	336	20,600
April	214	96	137	8,170
May	135	99	113	6,970
June	140	57	96.6	5,750
July	218	53	94.3	5,800
August	282	54	105	6,430
September	215	56	90.3	5,380
The year	542	53	114	82,700

GILA RIVER NEAR RED ROCK, N.MEX.

LOCATION.—Water-stage recorder in sec. 23, T. 18 S., R. 18 W., 11 miles below mouth of Mangas Creek.

DRAINAGE AREA.—2,840 square miles.

RECORDS AVAILABLE.—May 1908 to December 1914; October 1930 to September 1933. Records for 1915-30 published by State engineer.

DISCHARGE.—Maximum during year, about 2,890 second-feet Aug. 30 (gage height, 9.10 feet); minimum, 26 second-feet Aug. 24.

1930-33: Maximum, about 12,600 second-feet July 3, 1931 (gage height, 11.46 feet); minimum, 14 second-feet June 30, 1931.

REMARKS.—Records good except those estimated, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	88	89	93	86	106	* 600	265	109	92	* 50	* 70	* 120
2.....	89	88	94	87	106	590	273	102	90	47	* 70	* 170
3.....	88	87	93	88	108	590	281	98	99	43	* 75	* 120
4.....	84	90	93	87	108	632	270	112	102	36	77	* 100
5.....	83	90	93	87	109	632	286	115	118	50	131	* 70
6.....	81	89	93	87	108	510	289	110	110	57	337	* 60
7.....	78	89	94	84	118	462	270	118	110	47	388	* 50
8.....	79	88	94	84	121	458	245	125	113	69	258	* 80
9.....	80	89	95	84	118	550	227	110	112	66	243	* 120
10.....	79	90	95	83	121	590	207	113	107	64	162	* 200
11.....	78	89	99	83	118	632	187	115	100	57	160	* 250
12.....	79	88	101	84	118	655	173	122	96	* 55	177	* 160
13.....	87	89	106	81	118	725	153	128	95	* 55	149	148
14.....	85	90	113	81	125	678	149	153	122	67	112	131
15.....	84	90	124	82	131	610	146	148	104	74	99	170
16.....	83	90	124	82	138	530	134	120	107	139	* 90	157
17.....	82	91	117	90	148	514	131	110	99	151	* 70	133
18.....	83	92	108	98	155	502	* 115	101	100	131	* 65	142
19.....	83	93	104	101	166	506	106	108	108	213	* 60	168
20.....	85	92	102	103	168	* 450	109	118	125	117	* 50	160
21.....	86	92	100	107	164	* 400	107	121	227	136	* 40	* 130
22.....	92	93	98	108	160	* 350	101	127	256	* 140	32	* 110
23.....	93	93	98	104	158	* 300	102	120	343	* 200	28	* 90
24.....	93	93	96	103	166	* 280	100	124	* 200	* 219	27	* 80
25.....	88	93	96	103	175	* 280	89	121	* 150	* 130	28	* 75
26.....	88	92	93	103	1,030	284	94	106	* 120	* 170	27	* 70
27.....	89	93	90	103	775	284	96	100	* 90	* 90	35	* 70
28.....	90	93	92	103	610	292	94	96	* 70	* 120	37	* 70
29.....	91	93	91	106	-----	308	91	104	* 60	96	190	* 70
30.....	90	93	89	106	-----	308	112	95	* 50	83	* 100	* 90
31.....	91	-----	88	106	-----	292	-----	95	-----	78	* 90	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	93	78	85.5	5,250
November.....	93	87	90.7	5,400
December.....	124	88	98.9	6,080
January.....	108	81	93.4	5,740
February.....	1,030	106	205	11,400
March.....	725	280	477	29,300
April.....	289	89	167	9,920
May.....	153	95	114	7,030
June.....	343	50	122	7,290
July.....	250	36	102	6,290
August.....	388	27	112	6,900
September.....	250	50	119	7,070
The year.....	1,030	27	149	108,000

* Estimated.

GILA RIVER AT FULLER'S RANCH, NEAR DUNCAN, ARIZ.

LOCATION.—Water-stage recorder in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 19 S., R. 19 W., N.Mex., at the head of a canyon immediately downstream from Fuller's ranch, 16 miles east of Duncan, Ariz. Zero of gage is about 3 875 feet above mean sea level.

DRAINAGE AREA.—3,140 square miles.

RECORDS AVAILABLE.—June 1931 to September 1933. May 1914 to September 1915 at station 6 miles downstream, above intake of Sunset Canal. January 1923 to September 1926 at station 8 miles downstream, and October 1926 to September 1931 at station at Virden Bridge, 8 $\frac{1}{2}$ miles downstream, both below intake of Sunset Canal.

DISCHARGE.—Maximum during year, 5,650 second-feet Sept. 8 (gage height, 11.1 feet); minimum, 11 second-feet Aug. 26 (gage height, 4.11 feet).

1931-33: Maximum, 9,100 second-feet Aug. 3, 1931 (gage height, 13.6 feet); minimum, that of Aug. 26, 1933.

REMARKS.—Records good. Diversions for irrigation above station. Station is above all diversions for Duncan Valley.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	89	92	92	92	116	546	279	133	97	53	83	180
2.....	92	89	92	92	116	534	274	127	89	47	74	82
3.....	94	82	92	94	116	572	279	118	92	41	61	80
4.....	89	84	89	94	116	598	274	121	102	38	55	77
5.....	87	87	92	94	118	611	274	130	116	37	337	72
6.....	87	87	92	97	116	540	274	121	113	35	342	60
7.....	84	87	89	94	121	447	256	124	99	41	388	47
8.....	84	87	89	94	140	417	243	133	99	47	265	1, 110
9.....	84	87	94	94	130	484	229	116	99	50	194	422
10.....	84	89	97	97	127	546	213	110	99	59	152	496
11.....	82	92	102	97	121	572	198	116	92	48	143	546
12.....	913	92	108	97	121	618	190	116	89	48	161	245
13.....	149	89	113	92	121	691	176	118	84	53	159	181
14.....	108	92	124	92	118	719	172	130	102	55	113	146
15.....	97	92	136	92	124	604	169	143	105	65	68	173
16.....	92	92	146	92	130	509	162	130	102	136	47	208
17.....	89	94	130	94	140	453	155	110	99	164	39	146
18.....	84	94	118	105	146	429	136	108	94	152	35	155
19.....	82	94	113	116	155	423	130	108	105	185	28	173
20.....	80	94	110	121	159	400	136	110	113	155	24	165
21.....	82	92	105	127	155	359	136	113	369	117	19	146
22.....	92	92	105	127	152	331	133	121	207	158	16	125
23.....	99	92	108	124	152	310	133	116	313	124	14	110
24.....	102	92	105	121	162	294	127	116	196	197	13	104
25.....	102	92	105	118	178	279	121	118	181	141	13	99
26.....	102	94	102	118	2, 030	274	113	105	155	127	12	93
27.....	99	94	97	118	1, 240	274	121	97	133	155	12	87
28.....	99	92	99	118	705	279	118	97	104	113	12	79
29.....	99	92	99	118	-----	300	116	102	81	134	298	74
30.....	94	92	94	118	-----	300	127	99	65	106	357	85
31.....	92	-----	94	118	-----	294	-----	97	-----	97	92	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	913	80	120	7, 380
November.....	94	82	90. 7	5, 400
December.....	146	89	104	6, 410
January.....	127	92	105	6, 480
February.....	2, 030	116	262	14, 500
March.....	719	274	452	27, 800
April.....	279	113	182	10, 800
May.....	143	97	116	7, 150
June.....	369	65	126	7, 530
July.....	185	35	96. 1	5, 910
August.....	388	12	117	7, 190
September.....	1, 110	47	191	11, 400
The year.....	2, 030	12	163	118, 000

GILA RIVER NEAR CLIFTON, ARIZ.

LOCATION.—Water-stage recorder in SE¼ sec. 25, T. 5 S., R. 29 E., at highway bridge 7 miles south of Clifton and 5 miles above San Francisco River.

DRAINAGE AREA.—4,040 square miles.

RECORDS AVAILABLE.—March 1928 to September 1933 (discontinued). November 1910 to July 1918 at a station 4 miles upstream, published as "Gila River at Guthrie, Ariz."

DISCHARGE.—Maximum during year, 4,000 second-feet Sept. 9 (gage height, 10.67 feet); minimum, 20 second-feet Aug. 29.

1928-33: Maximum, 9,500 second-feet July 30, 1929 (gage height, 14.5 feet); minimum, 12 second-feet June 26, 1929.

REMARKS.—Records good. Diversions for irrigation above station. Station is below all diversions from Gila River above San Francisco River.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	50	88	98	107	120	649	209	84	26	4	80	60
2.....	50	88	98	111	120	555	188	86	30	3	65	70
3.....	54	81	92	111	120	531	194	71	31	33	44	40
4.....	53	77	94	113	117	507	197	65	29	33	38	30
5.....	51	72	96	113	117	545	215	68	28	37	109	30
6.....	50	77	94	115	117	526	203	70	26	30	277	28
7.....	46	75	86	115	120	450	206	56	26	2	268	24
8.....	47	67	80	115	117	380	197	59	26	29	285	335
9.....	49	75	89	115	131	367	200	59	26	30	170	1,800
10.....	50	71	89	113	128	432	188	56	26	23	137	449
11.....	49	74	86	117	122	460	158	47	25	25	90	883
12.....	47	75	86	113	128	488	142	44	25	27	209	340
13.....	705	80	109	111	128	540	113	43	26	23	90	268
14.....	168	78	140	107	122	619	107	42	29	27	75	466
15.....	131	83	150	104	113	594	92	46	30	2	65	163
16.....	107	77	142	102	117	502	100	46	41	20	50	153
17.....	104	83	142	113	115	419	104	43	39	43	38	182
18.....	91	96	138	122	120	397	88	48	30	24	31	216
19.....	80	104	133	111	120	397	74	48	90	42	28	206
20.....	75	100	131	126	133	397	75	38	261	137	25	272
21.....	78	104	124	142	142	367	63	38	117	103	25	203
22.....	102	105	120	138	148	310	59	37	393	74	25	166
23.....	100	98	117	145	138	273	59	36	326	193	24	138
24.....	111	89	117	145	128	248	61	38	290	103	24	102
25.....	111	92	117	140	145	241	59	37	175	163	23	89
26.....	111	94	117	135	1,410	231	60	36	165	103	23	77
27.....	109	92	117	133	1,700	228	61	34	112	93	23	65
28.....	92	94	117	128	850	200	56	32	79	13	22	50
29.....	98	98	117	131	-----	182	65	32	61	183	21	39
30.....	94	100	115	126	-----	215	74	33	48	123	494	42
31.....	91	-----	111	126	-----	206	-----	29	-----	157	128	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	705	46	102	6,260
November.....	105	67	86.2	5,130
December.....	150	80	112	6,870
January.....	145	102	121	7,420
February.....	1,700	113	253	14,100
March.....	649	182	402	24,700
April.....	215	56	122	7,270
May.....	86	29	48.4	2,980
June.....	393	25	87.9	5,230
July.....	425	25	95.0	5,840
August.....	494	21	97.0	5,960
September.....	1,800	24	233	13,900
The year.....	1,800	21	146	106,000

GILA RIVER BELOW BONITA CREEK, NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—Water-stage recorder in SE¼ sec. 21, T. 6 S., R. 28 E., unsurveyed three-eighths of a mile below Bonita Creek and 10 miles northeast of Solomonsville.

DRAINAGE AREA.—7,900 square miles.

RECORDS AVAILABLE.—February 1932 to September 1933 (discontinued). April 1914 to September 1932 at a station published as "Gila River near Solomonsville, Ariz.," 3 miles downstream and below intake of Brown Canal.

DISCHARGE.—Maximum during year, 9,600 second-feet Sept. 9 (gage height, 15.4 feet); minimum, 87 second-feet July 12 (gage height, 5.21 feet).

1914-33: Maximum, about 100,000 second-feet Jan. 19, 1916; minimum, 29 second-feet July 4, 1923. Average, 12 years (1921-33), 400 second-feet.

REMARKS.—Records good. Discharge estimated June 26-30, July 1-7, 26-28, Aug. 2-4, 14-23, Sept. 2-8. Diversions for irrigation above station. Station is above all diversions for Safford Valley, including Brown Canal.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	143	169	184	214	244	1,860	565	255	140	110	230	400
2-----	136	167	184	211	244	1,570	529	258	146	100	180	170
3-----	138	165	184	214	239	1,440	520	250	145	90	150	130
4-----	136	159	186	214	236	1,370	520	250	133	90	160	120
5-----	130	156	186	214	234	1,310	534	250	124	90	278	100
6-----	128	158	190	218	234	1,140	543	244	118	100	415	100
7-----	124	158	184	221	260	952	520	228	113	110	440	100
8-----	120	154	182	221	290	846	483	234	110	100	440	430
9-----	124	156	184	218	275	912	457	231	108	90	400	4,290
10-----	128	161	186	218	263	1,120	439	226	105	99	250	1,000
11-----	131	156	193	216	250	1,210	414	218	98	90	263	1,420
12-----	128	161	195	214	247	1,260	387	218	96	110	451	725
13-----	676	165	226	209	244	1,370	339	224	93	102	310	447
14-----	290	171	306	209	244	1,440	319	221	94	103	170	1,840
15-----	231	173	431	206	231	1,330	303	211	118	100	140	533
16-----	193	171	418	204	236	1,160	293	206	109	394	130	395
17-----	180	167	315	226	236	1,020	287	182	163	220	130	367
18-----	163	180	278	296	241	964	275	178	156	400	120	338
19-----	159	190	255	275	244	1,020	260	184	202	848	110	367
20-----	156	188	241	250	252	973	247	178	428	302	100	437
21-----	163	184	236	284	258	865	244	173	309	234	100	351
22-----	244	190	236	309	258	770	234	169	505	295	100	291
23-----	228	188	234	269	252	709	226	173	483	457	100	254
24-----	209	184	236	258	241	662	224	173	526	462	100	211
25-----	197	178	236	247	255	640	214	165	309	360	96	193
26-----	193	184	231	244	3,060	623	271	154	280	280	93	188
27-----	190	180	224	239	3,780	591	255	148	220	220	92	179
28-----	178	178	218	239	2,740	580	221	143	170	190	112	176
29-----	173	182	218	244	-----	570	224	140	140	341	200	166
30-----	173	186	218	244	-----	607	241	143	120	234	505	160
31-----	169	-----	216	247	-----	591	-----	143	-----	284	960	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October-----	676	120	185	11,400
November-----	190	154	172	10,200
December-----	431	182	233	14,300
January-----	309	204	235	14,500
February-----	3,780	231	564	31,300
March-----	1,860	570	1,020	62,500
April-----	565	214	353	21,000
May-----	258	140	199	12,200
June-----	526	93	195	11,600
July-----	848	90	226	13,900
August-----	960	92	236	14,500
September-----	4,290	100	529	31,500
The year-----	4,290	90	344	249,000

GILA RIVER NEAR ASHURST, ARIZ.

LOCATION.—In sec. 30, T. 5 S., R. 24 E., at Eden crossing, 1½ miles southeast of Ashurst.

DRAINAGE AREA.—10,900 square miles.

RECORDS AVAILABLE.—December 1920 to September 1933 (discontinued); discharge measurements only.

REMARKS.—Below all diversions in Safford Valley.

Discharge measurements, in second-feet, 1932-33

Oct. 13.....	2.8	Apr. 14.....	23.4	July 8.....	2.4
Oct. 27.....	39.6	Apr. 28.....	9.1	July 21.....	5.0
Nov. 14.....	90.7	May 13.....	6.2	July 30.....	2.4
Dec. 1.....	27.1	May 26.....	10.3	Aug. 12.....	2.6
Jan. 2.....	123	June 10.....	4.5	Aug. 25.....	1.7
Apr. 1.....	108	June 24.....	72.2	Sept. 23.....	36.8

GILA RIVER AT CALVA, ARIZ.

LOCATION.—Water-stage recorder in sec. 5, T. 3 S., R. 21 E., unsurveyed, on San Carlos Indian Reservation, at railroad bridge at head of San Carlos Reservoir, 1½ miles northwest of Calva.

DRAINAGE AREA.—11,500 square miles.

RECORDS AVAILABLE.—March 1929 to September 1933.

DISCHARGE.—Maximum during year, 6,560 second-feet Sept. 8 (gage height, 6.23 feet); minimum, 0.1 second-foot Aug. 30.

1929-33: Maximum, 21,500 second-feet Feb. 12, 1932 (gage height, 9.7 feet); no flow July 4-7, 1930.

REMARKS.—Records good. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	12	120	101	230	149	2,260	195	111	23	14	9	65
2.....	12	108	101	235	160	1,740	199	120	22	13	8	54
3.....	13	103	106	230	167	1,650	191	108	21	12	7	13
4.....	12	93	117	225	178	1,450	171	98	22	11	6	7
5.....	12	88	130	235	182	1,250	142	120	21	9	6	5
6.....	12	98	126	230	191	1,150	139	111	19	9	10	4
7.....	12	103	133	212	191	940	146	98	19	8	169	3
8.....	14	93	136	199	171	744	136	101	19	7	89	2
9.....	18	93	139	212	195	602	136	95	18	7	54	2,050
10.....	19	95	136	207	203	636	130	72	17	6	59	2,360
11.....	18	103	142	182	186	820	136	62	16	4	30	938
12.....	18	106	149	164	203	955	126	59	16	6	20	823
13.....	17	106	164	156	212	1,080	114	57	15	10	16	481
14.....	104	111	195	160	207	1,190	117	56	13	13	11	1,100
15.....	123	123	325	153	191	1,200	108	59	13	8	11	1,340
16.....	108	126	397	171	191	1,050	114	56	18	31	8	500
17.....	103	126	354	191	156	900	108	52	24	21	5	290
18.....	95	133	325	207	139	750	93	49	18	15	10	220
19.....	74	108	288	195	136	705	83	46	18	10	6	170
20.....	68	106	270	207	136	731	85	43	20	100	3	165
21.....	66	103	245	199	153	613	83	41	18	73	2	126
22.....	72	103	230	220	171	530	85	39	22	59	2	108
23.....	79	111	225	276	164	438	88	37	36	215	1	95
24.....	101	103	235	255	156	375	88	37	95	68	0	81
25.....	111	120	245	230	156	331	83	36	72	96	0	70
26.....	111	126	270	230	413	360	83	34	81	68	0	54
27.....	108	114	270	207	4,610	307	83	34	56	46	0	47
28.....	101	111	245	156	3,070	270	83	31	40	32	0	40
29.....	106	114	225	160	-----	240	88	30	23	24	0	36
30.....	103	114	216	164	-----	195	95	29	16	16	0	30
31.....	111	-----	216	171	-----	191	-----	24	-----	11	1	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	123	12	62.4	3,830
November.....	133	88	109	6,470
December.....	397	101	208	12,800
January.....	276	153	202	12,400
February.....	4,610	136	444	24,700
March.....	2,260	191	828	50,900
April.....	199	83	118	7,000
May.....	120	24	62.7	3,860
June.....	95	13	27.7	1,650
July.....	215	4	33.0	2,030
August.....	199	0	18.5	1,140
September.....	2,360	2	376	22,300
The year.....	4,610	0	206	149,000

SAN CARLOS RESERVOIR AT COOLIDGE DAM, ARIZ.

LOCATION.—In NW¼ sec. 17, T. 3 S., R. 18 E., unsurveyed, at Coolidge Dam.

DRAINAGE AREA.—12,900 square miles.

RECORDS AVAILABLE.—November 1928 to September 1933.

EXTREMES.—Maximum contents during year, 332,000 acre-feet Mar. 23 (altitude, 2,459.05 feet); minimum, 99,800 acre-feet Sept. 8 (altitude, 2,420.19 feet).

1928-33: Maximum contents, 444,200 acre-feet Apr. 5, 6, 1928 (elevation, 2,471.56 feet); water below outlet gates in 1928 and several months in 1929.

REMARKS.—Lowest outlet in dam at elevation 2,383.00 feet. Reservoir capacity, 1,195,000 acre-feet at spillway elevation of 2,523.00 feet. Records of daily gage heights and contents furnished by United States Indian Service. Records published for each second day only.

Gage height, in feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	53.53	52.04	50.95	52.32	53.59	56.42	58.47	54.19	48.98	42.05	33.82	23.00
3.....	53.41	51.99	50.94	52.41	53.71	57.10	58.23	53.97	48.52	41.56	33.16	22.26
5.....	53.31	51.93	50.93	52.50	53.80	57.50	58.01	53.70	48.06	41.06	32.52	21.56
7.....	53.17	51.87	50.89	52.59	53.97	57.84	57.71	53.44	47.54	40.55	31.94	20.67
9.....	53.02	51.81	50.85	52.63	54.18	58.00	57.43	53.15	47.11	40.03	31.44	20.44
11.....	52.89	51.73	50.82	52.68	54.28	58.04	57.15	52.80	46.68	39.48	30.91	21.67
13.....	52.74	51.59	50.84	52.70	54.38	58.25	56.87	52.49	46.23	38.84	30.18	22.00
15.....	52.63	51.46	51.08	52.70	54.50	58.51	56.55	52.19	45.71	38.33	29.54	22.07
17.....	52.56	51.37	51.29	52.72	54.61	58.77	56.24	51.87	45.24	37.81	28.90	22.13
19.....	52.46	51.25	51.48	52.82	54.64	58.91	55.92	51.54	44.81	37.27	28.13	21.89
21.....	52.40	51.18	51.64	52.90	54.62	59.00	55.58	51.12	44.34	36.74	27.34	21.71
23.....	52.36	51.11	51.77	53.02	54.63	59.05	55.26	50.74	43.90	36.33	26.49	21.56
25.....	52.24	51.07	51.89	53.17	54.63	59.00	54.96	50.39	43.47	35.89	25.74	21.34
27.....	52.19	51.03	52.04	53.33	54.96	58.93	54.66	50.04	43.03	35.37	24.94	21.02
29.....	52.13	50.99	52.16	53.44	-----	58.80	54.38	49.63	42.54	34.77	24.14	20.63
31.....	52.07	-----	52.28	53.54	-----	58.58	-----	49.21	-----	34.17	23.38	-----

NOTE.—Add 2,400 feet to gage heights in table to obtain altitude above mean sea level.

Contents, in acre-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1...	287,800	275,600	266,600	277,900	238,200	310,900	327,400	293,000	252,400	209,600	162,700	111,500
3...	286,800	276,200	266,600	278,600	239,200	316,400	325,400	291,300	249,400	206,800	158,900	108,200
5...	286,000	274,700	266,500	279,300	239,900	319,600	323,700	289,100	246,400	203,900	155,800	105,200
7...	284,900	274,300	266,200	280,100	291,300	322,300	321,300	287,000	243,000	201,000	153,100	101,700
9...	283,700	273,800	265,900	280,400	293,000	323,600	319,000	284,700	240,200	198,100	150,700	100,800
11...	282,600	273,200	265,600	280,800	293,800	323,900	316,800	281,800	237,400	194,900	148,300	105,700
13...	281,300	271,900	265,800	281,000	294,600	325,600	314,500	279,200	234,500	191,300	144,900	107,000
15...	280,400	270,800	267,700	281,000	295,500	327,700	312,000	276,800	231,100	188,400	141,900	107,300
17...	279,800	270,100	269,400	281,200	296,400	329,800	309,500	274,300	228,100	185,400	138,900	107,600
19...	279,000	269,100	271,000	282,000	296,700	330,900	306,900	271,500	225,500	182,300	135,400	106,600
21...	278,500	268,500	272,400	282,700	296,500	331,600	304,200	268,000	222,900	179,300	131,700	105,800
23...	278,200	267,900	273,500	283,700	296,600	332,000	301,600	265,000	220,400	177,000	127,700	105,200
25...	277,200	267,600	274,400	284,900	296,600	331,600	299,200	262,400	217,800	174,500	124,200	104,400
27...	276,800	267,200	275,600	286,100	299,200	331,100	296,800	259,800	215,200	171,500	120,500	103,100
29...	276,300	266,900	276,500	287,000	-----	330,000	294,600	256,900	212,400	168,100	116,800	101,600
31...	275,800	-----	277,500	287,800	-----	328,300	-----	254,000	-----	164,700	113,300	-----

GILA RIVER AT COOLIDGE DAM, ARIZ.

LOCATION.—Water-stage recorder in SW¼ sec. 17, T. 3 S., R. 18 E., unsurveyed, 1,200 feet below Coolidge Dam. Zero of gage is 2,309.5 feet above mean sea level.

DRAINAGE AREA.—12,900 square miles.

RECORDS AVAILABLE.—April 1914 to September 1933. July 1899 to November 1905 at station 8 miles upstream, below San Carlos River. August 1910 to February 1911 at station 9 miles upstream, above San Carlos River.

DISCHARGE.—Maximum during year, 1,040 second-foot July 11 (gage height, 5.98 feet); minimum, 0.3 second-foot Jan. 23, 25, 26.

1914-28: Maximum, 130,000 second-feet Jan. 20, 1916; no flow for various periods.

1929-33: Maximum discharge, that of July 11, 1933; no flow various days of most years.

REMARKS.—Records good. Discharge estimated June 20-23. Discharge regulated by Coolidge Dam after Nov. 15, 1928.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	213	193	129	0.5	0.4	238	652	527	832	762	904	850
2.....	213	188	129	.5	.4	242	646	539	844	762	904	856
3.....	178	188	131	.5	.4	325	646	539	844	774	904	904
4.....	152	185	133	.7	2.6	374	652	544	838	820	904	886
5.....	150	185	172	64	.5	374	652	544	838	826	898	898
6.....	182	183	204	108	.8	379	652	567	838	826	876	952
7.....	261	180	219	108	.6	430	652	629	832	826	809	940
8.....	310	180	222	108	8.5	505	658	635	774	826	809	862
9.....	306	178	225	108	2.4	489	669	635	739	868	809	692
10.....	290	178	210	108	.4	478	721	641	750	898	803	618
11.....	286	227	183	108	.4	483	721	641	745	952	803	567
12.....	286	294	164	129	.4	483	721	635	803	1,010	803	567
13.....	278	294	103	142	.5	494	733	629	838	964	803	567
14.....	252	294	28	142	.4	478	733	624	838	721	803	567
15.....	210	294	.7	139	1.9	435	733	629	838	791	797	567
16.....	216	290	.5	139	.4	435	727	652	832	958	844	567
17.....	219	290	.5	126	61	446	733	652	832	958	874	567
18.....	219	294	.4	84	122	451	733	669	832	880	970	550
19.....	222	278	.4	83	144	456	733	687	809	797	1,030	489
20.....	216	215	.5	70	144	462	733	681	775	809	1,030	473
21.....	222	168	.5	25	144	462	721	687	775	809	1,030	259
22.....	219	166	.5	.4	144	462	669	698	775	774	1,000	259
23.....	219	168	.5	.3	144	456	675	692	775	745	922	259
24.....	219	168	.5	.4	181	451	669	698	768	745	916	256
25.....	198	166	.5	.3	228	451	669	681	768	745	916	278
26.....	201	164	.5	.3	231	462	669	687	768	856	916	389
27.....	196	161	.5	.4	234	522	629	727	768	910	910	389
28.....	196	161	.5	.4	231	561	612	768	762	910	910	389
29.....	198	164	.5	.4	-----	578	578	774	762	904	868	389
30.....	201	154	.5	.4	-----	646	533	774	762	904	850	389
31.....	207	-----	.5	.4	-----	646	-----	779	-----	904	850	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	310	150	224	13,800
November.....	294	154	208	12,400
December.....	225	.4	72.9	4,480
January.....	142	.3	58.0	3,560
February.....	234	.4	72.5	4,020
March.....	646	238	457	28,100
April.....	733	533	677	40,300
May.....	779	527	654	40,200
June.....	844	739	798	47,500
July.....	1,010	721	846	52,000
August.....	1,030	797	886	54,500
September.....	952	256	573	34,100
The year.....	1,030	.3	463	335,000

GILA RIVER BASIN

87

GILA RIVER AT WINKELMAN, ARIZ.

LOCATION.—In NW¼ sec. 24, T. 5 S., R. 15 E., at highway bridge at Winkelman, 1 mile above San Pedro River.

DRAINAGE AREA.—13,300 square miles.

RECORDS AVAILABLE.—September 1917 to June 1918. Discharge measurements only, December 1928 to September 1933 (discontinued).

REMARKS.—Principal discharge regulated at Coolidge Dam, 30 miles upstream. Discharge measurements, in second-feet, 1932-33: Dec. 20, 15.0; Jan. 28, 18.4; Feb. 11, 26.6.

GILA RIVER AT KELVIN, ARIZ.

LOCATION.—Water-stage recorder in NW¼ sec. 12, T. 4 S., R. 13 E. at Kelvin, 15 miles below San Pedro River and 15 miles above Ashurst-Hayden Dam.

DRAINAGE AREA.—18,300 square miles.

RECORDS AVAILABLE.—January 1911 to September 1933.

DISCHARGE.—Maximum during year, 8,800 second-feet July 24 (gauge height, 6.45 feet); minimum, 51 second-feet Jan. 6 (gauge height, 2.30 feet).

1911-33: Maximum, about 132,000 second-feet Jan. 20, 1916 (gauge height, 19.5 feet); minimum, less than one second-foot in summer of various years, prior to 1929.

REMARKS.—Records good. Diversions for irrigation above station. Discharge largely regulated by storage in San Carlos Reservoir, after Nov. 15, 1928.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	210	232	205	57	251	293	628	553	779	755	935	856
2.....	194	216	171	61	203	286	650	553	843	755	909	829
3.....	194	194	166	62	139	286	639	543	843	743	909	922
4.....	166	185	171	61	97	400	628	533	816	743	950	935
5.....	121	185	171	59	91	439	639	543	816	779	909	964
6.....	113	180	210	54	218	413	628	533	816	843	978	993
7.....	136	180	248	138	695	396	661	543	816	791	1,020	1,040
8.....	221	180	280	166	392	439	707	584	816	816	869	1,430
9.....	299	185	286	178	253	514	707	595	755	843	935	1,400
10.....	299	185	293	174	168	474	707	606	755	882	909	816
11.....	280	185	280	174	104	494	743	639	755	909	779	765
12.....	351	240	232	163	86	504	791	628	767	950	767	563
13.....	380	334	274	195	75	484	816	606	779	1,040	767	606
14.....	312	350	564	199	70	484	755	617	803	964	767	639
15.....	261	350	838	191	64	439	767	650	803	882	767	628
16.....	205	357	444	191	61	430	755	650	869	993	767	628
17.....	199	350	230	207	59	474	719	661	882	1,070	829	639
18.....	189	357	130	236	61	474	731	661	856	935	869	628
19.....	205	350	105	182	116	494	767	661	816	856	1,010	779
20.....	221	342	91	174	178	494	707	683	767	755	1,460	731
21.....	254	254	84	290	203	484	639	650	731	779	978	1,160
22.....	334	199	89	306	170	494	606	650	731	816	978	439
23.....	267	189	86	286	156	494	606	639	731	1,840	950	320
24.....	243	180	77	280	166	514	650	661	743	2,570	935	280
25.....	232	176	77	227	224	514	661	695	743	816	935	261
26.....	210	185	68	184	306	504	628	695	755	755	922	293
27.....	205	194	67	129	299	533	661	707	743	882	922	396
28.....	210	199	67	104	293	584	617	743	755	922	922	396
29.....	205	205	65	104	-----	595	595	791	743	993	909	404
30.....	216	205	61	118	-----	628	553	779	755	909	843	404
31.....	216	-----	58	246	-----	639	-----	743	-----	950	843	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	380	113	231	14,200
November.....	357	176	237	14,100
December.....	838	58	200	12,300
January.....	306	54	168	10,300
February.....	695	59	186	10,300
March.....	639	286	474	29,100
April.....	816	553	679	40,400
May.....	791	533	639	39,300
June.....	882	731	796	46,800
July.....	2,570	743	933	58,600
August.....	1,460	767	911	56,000
September.....	1,430	261	705	41,900
The year.....	2,570	54	516	373,000

GILA RIVER AT ASHURST-HAYDEN DAM, NEAR FLORENCE, ARIZ.

LOCATION.—Water-stage recorder in sec. 8, T. 4 S., R. 11 E., at Ashurst-Hayden Dam, 10 miles northeast of Florence.

DRAINAGE AREA.—18,600 square miles.

RECORDS AVAILABLE.—July 1923 to September 1933, gage heights only.

EXTREMES.—Maximum stage during year, 1.5 feet Aug. 20; no flow over dam on many days.

1923-33: Maximum stage, 8.0 feet Sept. 28, 1926; no flow over dam on many days each year.

REMARKS.—Florence-Casa Grande Canal diverts water at this dam. Other diversions for irrigation upstream. Flow largely regulated by storage in San Carlos Reservoir. A considerable quantity of water is passed through the sluice gates in the dam. Gage-height record furnished by United States Indian Service.

Daily mean head, in feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	June	July	Aug.	Sept.
1.....									
2.....									
3.....									
4.....									
5.....								0.01	
6.....							0.02	.03	
7.....			0.01					.01	0.01
8.....								.02	.23
9.....									.32
10.....									.16
11.....			.03						.10
12.....	0.08								
13.....	.08	0.03	.03						
14.....			.38						
15.....			.59				.08		
16.....			.30				.08		
17.....			(^a)			0.01	.11		
18.....			(^a)				.03		
19.....			(^a)				.04		.01
20.....			(^a)					.24	.01
21.....				0.09				.03	.27
22.....				.16					.01
23.....				.16					
24.....				(^b)			.42		
25.....				(^b)			.01		
26.....				(^b)	0.01				
27.....									
28.....									
29.....							.01		
30.....									
31.....									

^a Continuous sluicing kept water below crest of dam.

^b Canal taking all water from river above dam and returning part to river below dam.

NOTE.—No record Feb. 1-14 and July 20-23. No flow over dam crest for other days for which no height shown.

GILA RIVER AT GILLESPIE DAM, ARIZ.

LOCATION.—Water-stage recorder in SE¼NE¼ sec. 28, T. 2 S., R. 5 W., at Gillespie Dam, 8 miles below Hassayampa River. Zero of gage is 5 feet below average altitude of crest of dam, which is 753.8 feet above mean sea level.

DRAINAGE AREA.—49,700 square miles.

RECORDS AVAILABLE.—August 1921 to September 1933.

DISCHARGE.—Maximum during year, 2,180 second-feet Oct. 9 (height over crest of dam, 0.70 foot); no flow on many days.

1921-33: Maximum, 70,000 second-feet Dec. 28, 1923 (height over crest of dam, 6.0 feet); no flow for various periods each year.

REMARKS.—Records good. Gillespie Canal diverts water at this dam and is not included in this record. Other diversions for irrigation above station. Water passed through sluice gates is included in this record. During periods when water level is below crest of dam, a small quantity not included in this record is released through a gate. Discharge partly regulated by storage reservoirs.

Discharge, in second-feet, 1932-33

Day	Oct.	Dec.	Jan.	Feb.	Mar.	Sept.	Day	Oct.	Dec.	Jan.	Feb.	Mar.	Sept.
1.....	0	0	170	379	15	0	16.....	0	90	0	35	0	0
2.....	0	0	90	345	15	0	17.....	0	270	13	15	0	0
3.....	0	0	90	220	5	0	18.....	0	245	60	15	0	0
4.....	0	0	75	150	0	0	19.....	0	150	90	15	0	0
5.....	0	0	60	150	0	0	20.....	0	90	90	10	0	0
6.....	0	0	45	150	8	0	21.....	0	75	212	5	0	0
7.....	0	0	60	150	0	0	22.....	0	90	820	10	0	0
8.....	0	0	45	90	0	0	23.....	0	90	464	10	0	0
9.....	726	0	15	90	0	0	24.....	0	90	295	10	0	0
10.....	168	0	10	75	0	121	25.....	0	90	220	15	0	0
11.....	48	0	0	75	0	93	26.....	0	75	170	45	0	0
12.....	0	0	0	75	0	18	27.....	0	174	150	35	0	0
13.....	0	0	0	75	0	0	28.....	0	220	150	25	0	0
14.....	0	16	0	60	0	0	29.....	0	195	130	-----	0	0
15.....	0	75	0	35	0	0	30.....	0	195	130	-----	0	0
							31.....	0	195	170	-----	0	-----

Month	Maximum	Minimum	Mean	Run-off in acre feet
October.....	726	0	30.4	1,870
December.....	270	0	78.2	4,810
January.....	820	0	123	7,580
February.....	379	5	84.4	4,690
March.....	15	0	1.4	85
September.....	121	0	7.7	460
The year.....	820	0	26.9	19,500

NOTE.—No flow during months omitted.

GILA RIVER NEAR DOME, ARIZ.

LOCATION.—Water-stage recorder in SW¼ sec. 4, T. 8 S., R. 21 W., 3 miles west of Dome and 18 miles above mouth of Gila River.

DRAINAGE AREA.—58,100 square miles.

RECORDS AVAILABLE.—May 1929 to September 1933. October 1903 to December 1906 at a station 4 miles upstream.

DISCHARGE.—Maximum during year, 770 second-feet Oct. 10 (gage height, 3.90 feet); no flow during most of year.

1929-33: Maximum, 20,700 second-feet Feb. 15, 1932 (gage height, 16.75 feet); no flow during part of each year.

Maximum daily mean (estimated), 200,000 second-feet Jan. 22, 1916.

REMARKS.—Records good. Diversions for irrigation above station. Regulation by storage reservoirs.

Discharge, in second-feet, 1932-33

Oct. 10..... 338 | Oct. 12..... 8
Oct. 11..... 235 | Oct. 13..... 1

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	338	0	18.8	1,150
The year.....	338	0	1.6	1,150

NOTE.—No flow except as shown above.

SAN FRANCISCO RIVER NEAR GLENWOOD, N. MEX.

LOCATION.—Water-stage recorder in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 11 S., R. 20 W., 1 $\frac{1}{2}$ miles south of Glenwood and 1 $\frac{1}{4}$ miles below mouth of Whitewater Creek.

RECORDS AVAILABLE.—October 1930 to September 1933. Records for 1927–30 published by State engineer.

DISCHARGE.—Maximum during year, 1,340 second-feet Sept. 8 (gage height, 4.63 feet); minimum, 24 second-feet Jan. 13 and June 13.

1930–33: Maximum, about 4,400 second-feet Sept. 16, 1931 (gage height, 8.16 feet); minimum, 16 second-feet Dec. 31, 1930.

REMARKS.—Records good. Discharge estimated Oct. 1–7, July 9–15. Diversions for irrigation above station.

Discharge, in second-feet, 1932–33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	35	32	34	26	32	251	128	57	51	2'	73	45
2.....	35	33	34	26	30	188	126	56	46	2'	71	46
3.....	34	33	34	26	30	183	124	56	43	2'	70	50
4.....	33	33	33	28	30	199	122	57	40	2'	80	43
5.....	32	34	33	28	31	170	118	59	39	2'	83	39
6.....	31	34	33	30	33	120	113	57	36	2'	130	36
7.....	30	34	32	32	36	106	101	60	34	2)	101	34
8.....	30	33	32	31	31	137	93	59	30	5'	66	216
9.....	30	34	34	30	26	210	87	60	28		65	98
10.....	32	34	35	30	28	236	80	60	27		53	87
11.....	31	34	36	30	28	248	72	62	26	5)	109	68
12.....	36	34	35	28	30	266	67	61	26		66	73
13.....	33	34	37	26	33	306	64	57	25		46	64
14.....	33	35	44	27	37	270	60	56	25		43	70
15.....	32	35	46	26	38	218	59	51	26	7)	40	61
16.....	32	35	43	27	37	204	57	46	27	9)	75	46
17.....	32	34	38	32	38	204	54	46	34	8)	46	39
18.....	31	34	34	34	40	218	51	49	53	18)	35	47
19.....	32	34	29	32	40	215	50	52	74	8)	45	45
20.....	34	35	30	30	38	183	49	53	63	9)	45	46
21.....	36	34	32	32	37	157	49	57	60	72	45	42
22.....	42	34	33	31	37	150	49	58	60	7)	43	39
23.....	40	33	35	28	40	150	48	54	102	117	41	36
24.....	38	33	34	30	41	145	46	50	51	10)	40	34
25.....	36	33	31	29	86	145	46	46	43	6)	38	32
26.....	36	32	26	28	413	141	49	46	38	4)	66	32
27.....	35	33	26	28	365	141	50	47	34	4)	63	31
28.....	34	33	26	29	276	143	50	48	31	4)	49	31
29.....	34	33	27	32	---	150	54	48	29	4)	52	31
30.....	33	34	26	32	---	150	57	47	28	12)	94	32
31.....	32	---	26	33	---	145	---	54	---	6)	52	---

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	42	30	33.7	2,070
November.....	35	32	33.7	2,000
December.....	46	26	33.2	2,040
January.....	34	26	29.4	1,810
February.....	413	26	70.0	3,890
March.....	306	106	185	11,400
April.....	128	46	72.4	4,310
May.....	62	46	53.8	3,310
June.....	102	25	41.0	2,440
July.....	183	28	63.3	3,890
August.....	130	35	63.1	3,820
September.....	216	31	53.1	3,160
The year.....	413	25	67.0	44,100

SAN FRANCISCO RIVER AT CLIFTON, ARIZ.

LOCATION.—Water-stage recorder in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 4 S., R. 30 E., at Rail road Boulevard bridge at Clifton. Zero of gage is 3,432.3 feet above mean sea level.

DRAINAGE AREA.—2,790 square miles.

RECORDS AVAILABLE.—July 1927 to September 1933 (discontinued). Fragmentary record October 1910 to July 1918 at several different points within 2 miles upstream.

DISCHARGE.—Maximum during year, 3,800 second-feet July 23 (gage height, 9.1 feet); minimum, 41 second-feet July 4 (gage height, 2.19 feet).

1927-33: Maximum, 8,100 second-feet Feb. 10, 1932 (gage height, 12.0 feet); minimum, 15 second-feet June 24, 1929.

Minimum known, 2 second-feet June 29, 1917.

REMARKS.—Records good. Discharge estimated Aug. 16, 17. Diversions for irrigation and municipal supply above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	78	66	66	64	94	770	292	143	106	49	95	73
2.....	74	65	66	64	92	677	276	137	108	48	94	71
3.....	69	66	66	64	89	562	276	138	99	46	81	60
4.....	65	65	65	64	88	547	273	148	93	45	91	65
5.....	65	65	65	65	88	480	276	145	88	46	101	55
6.....	63	67	65	67	92	375	276	143	81	56	141	52
7.....	62	67	65	69	130	297	249	140	78	70	153	50
8.....	61	68	65	70	127	281	230	145	75	55	135	90
9.....	62	67	66	72	109	372	215	143	72	63	112	1,030
10.....	63	67	67	71	98	490	205	143	64	63	102	230
11.....	62	67	70	70	93	532	195	145	61	58	105	204
12.....	61	68	72	70	95	593	182	146	56	55	182	145
13.....	67	68	81	69	97	683	171	152	53	51	75	132
14.....	70	68	147	68	97	666	165	146	71	59	65	728
15.....	62	68	224	67	99	567	160	137	69	139	60	207
16.....	60	68	186	69	102	499	155	124	77	146	65	148
17.....	59	70	121	83	104	480	150	112	92	135	80	112
18.....	58	71	99	102	108	490	143	111	101	341	70	137
19.....	58	70	85	116	111	490	137	116	133	182	58	154
20.....	62	70	77	99	108	428	141	115	165	118	63	166
21.....	79	69	77	145	105	372	141	120	158	121	64	115
22.....	149	69	78	146	102	342	138	122	170	178	58	97
23.....	106	68	79	109	102	332	133	124	186	368	56	88
24.....	88	68	80	99	108	320	126	120	153	160	53	79
25.....	80	68	78	94	135	320	124	112	105	145	52	75
26.....	77	67	72	93	2,170	311	191	105	88	104	50	72
27.....	74	66	67	89	1,310	300	138	104	74	84	64	70
28.....	71	66	66	89	1,170	311	130	101	64	78	73	67
29.....	69	67	66	90	-----	329	135	102	57	77	65	65
30.....	68	66	67	93	-----	342	146	102	51	79	157	73
31.....	67	-----	64	94	-----	317	-----	104	-----	127	95	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	149	58	71.3	4,380
November.....	71	65	67.5	4,020
December.....	224	64	84.3	5,180
January.....	162	64	86.6	5,320
February.....	2,170	88	258	14,300
March.....	770	281	448	27,500
April.....	292	124	186	11,000
May.....	152	101	127	7,820
June.....	186	51	94.9	5,650
July.....	368	45	108	6,640
August.....	182	50	87.6	5,390
September.....	1,030	50	157	9,340
The year.....	2,170	45	147	107,000

SAN SIMON CREEK NEAR SAN SIMON, ARIZ.

LOCATION.—Water-stage recorder in SW¼ sec. 10, T. 14 S., R. 31 E., 4½ miles southeast of San Simon.

DRAINAGE AREA.—803 square miles.

RECORDS AVAILABLE.—June 1931 to September 1933 (discontinued). August 1919 to September 1925 at a station 3½ miles downstream.

DISCHARGE.—Maximum during year, 1,250 second-feet Aug. 4 (gage height, 7.7 feet); no flow during much of year.

1919-25, 1931-33: Maximum, 5,350 second-feet July 21, 1923; no flow greater part of each year.

REMARKS.—Records fair. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	June	July	Aug.	Sept.
1.....	0.03	0.02	0	0.08	0.05	0.1	0	0	0	0.1
2.....	.04	.03	0	.06	.05	.1	0	0	0	0
3.....	.04	.01	0	.07	.04	.06	0	4	47	0
4.....	.04	.01	0	.07	.04	.05	0	0	130	0
5.....	.02	.03	0.01	.06	.04	.05	0	.1	72	0
6.....	0	0	.02	.06	.04	.04	0	0	2	0
7.....	0	0	.02	.07	.04	.02	0	0	0	0
8.....	0	.01	.03	.07	.04	.02	0	0	0	10
9.....	.03	.03	.02	.07	.03	.01	0	0	0	.1
10.....	.05	.02	.01	.07	.03	.02	0	0	0	14
11.....	.05	.02	.01	.07	.04	0	0	0	0	0
12.....	.05	.02	.01	.08	.03	0	0	0	0	0
13.....	.05	.02	.04	.08	.03	.02	0	0	0	0
14.....	.03	.02	1	.07	.04	0	0	0	0	0
15.....	.03	.02	5	.07	.04	0	0	0	0	0
16.....	.03	.02	.1	.07	.04	0	19	0	0	0
17.....	.02	.02	.1	.06	.04	0	28	4	0	0
18.....	.02	.03	.09	.06	.04	0	6	6	0	4
19.....	.02	.03	.09	.06	.04	0	38	1	2	.1
20.....	.03	.02	.08	.06	.04	0	64	0	2	0
21.....	.03	.02	.07	.06	.04	0	1	5	0	0
22.....	.03	0	.3	.06	.04	0	0	1	0	0
23.....	.02	0	.2	.06	.04	0	0	1	0	0
24.....	.02	0	.09	.06	.05	0	0	1	0	0
25.....	.02	0	.08	.06	.4	0	0	0	0	0
26.....	.02	0	.07	.06	9	0	0	0	0	0
27.....	.02	0	.08	.06	.3	0	0	0	0	0
28.....	.02	0	.09	.05	.2	0	0	16	0	0
29.....	.01	0	.09	.05	-----	0	0	.1	0	0
30.....	0	0	.09	.05	-----	0	0	0	0	0
31.....	0	-----	.09	.05	-----	0	-----	.1	0	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	0.05	0	0.02	1.5
November.....	.03	0	.01	.8
December.....	5	0	.25	15.6
January.....	.08	.05	.08	3.9
February.....	9	.03	.29	21.5
March.....	.1	0	.02	1.0
June.....	64	0	5.2	309
July.....	16	0	1.27	77.9
August.....	130	0	8.22	506
September.....	14	0	.64	58.1
The year.....	130	0	1.37	993

NOTE.—No flow during months omitted.

SAN CARLOS RIVER NEAR PERIDOT, ARIZ.

LOCATION.—Water-stage recorder in sec. 7, T. 2 S., R. 19 E., unsurveyed, on San Carlos Indian Reservation, at railroad bridge at head of San Carlos Reservoir, 2 miles south of Peridot.

DRAINAGE AREA.—1,070 square miles.

RECORDS AVAILABLE.—March 1929 to September 1933. Fragmentary record August 1910 to January 1911 and April 1914 to September 1915 at a station $5\frac{1}{2}$ miles downstream.

DISCHARGE.—Maximum during year, 11,000 second-feet Sept. 8 (gage height, 8.04 feet); minimum, 0.4 second-foot July 11.

1929-33: Maximum, 12,000 second-feet Feb. 10, 1932 (gage height, 8.3 feet); no flow on several days of some years.

REMARKS.—Records good. Discharge estimated June 5-9, July 18, 19, Aug. 10, 11, 18-21. Minor diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	4	4	11	13	38	103	6	7	2	1	2	1
2.....	4	14	10	16	41	88	7	6	2	1	2	1
3.....	4	13	12	14	32	72	7	7	2	1	2	526
4.....	4	6	9	14	25	61	7	7	2	1	2	78
5.....	4	6	10	14	22	57	8	7	2	1	2	2
6.....	4	8	9	15	18	46	9	6	2	1	96	1
7.....	4	2	12	17	305	40	10	6	1	1	3	1
8.....	4	2	9	17	144	35	9	6	1	1	24	1,440
9.....	4	5	9	14	63	32	8	7	1	1	15	114
10.....	9	3	13	13	46	35	10	7	1	1	1	178
11.....	7	4	18	13	38	36	8	4	1	1	1	57
12.....	3	6	12	12	35	36	7	5	1	1	1	35
13.....	4	9	16	12	32	34	7	5	1	11	1	19
14.....	5	8	16	11	29	30	7	5	1	6	1	10
15.....	1	5	32	13	31	27	8	5	1	14	1	8
16.....	1	6	26	13	28	22	8	4	1	162	31	7
17.....	2	6	19	12	34	19	8	6	4	10	30	6
18.....	1	9	18	17	34	18	6	5	11	3	2	6
19.....	2	9	16	16	34	19	8	5	2	2	2	5
20.....	4	9	18	14	36	19	8	4	2	2	2	14
21.....	47	12	16	16	29	18	7	4	2	1	2	12
22.....	68	10	18	19	27	18	6	4	1	66	10	9
23.....	30	10	17	23	26	18	5	4	1	54	3	8
24.....	22	16	16	37	27	16	5	4	1	35	1	8
25.....	13	20	12	44	31	13	5	4	1	10	1	9
26.....	14	18	12	40	280	12	5	4	1	30	1	8
27.....	8	20	12	32	336	11	5	4	1	27	1	9
28.....	7	21	12	25	211	10	4	3	1	8	1	10
29.....	7	13	14	22	-----	10	5	3	1	8	1	64
30.....	10	14	14	20	-----	8	6	4	1	35	1	28
31.....	9	-----	13	27	-----	7	-----	2	-----	8	1	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	68	1	10.0	615
November.....	21	2	9.6	571
December.....	32	9	14.5	895
January.....	44	11	18.9	1,160
February.....	336	18	72.6	4,030
March.....	103	7	31.3	1,920
April.....	10	4	7.0	415
May.....	7	2	5.0	305
June.....	11	1	1.7	103
July.....	162	1	16.3	1,000
August.....	96	1	7.9	484
September.....	1,440	1	39.1	5,300
The year.....	1,440	1	23.2	16,800

SAN PEDRO RIVER AT PALOMINAS, ARIZ.

LOCATION.—Water-stage recorder in SE¼ sec. 33, T. 23 S., R. 22 E., at bridge half a mile east of Palominas, 4 miles downstream from international boundary, and 12 miles southwest of Bisbee.

DRAINAGE AREA.—991 square miles.

RECORDS AVAILABLE.—May 1930 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 4,700 second-feet Sept. 19 (gage height, 8.1 feet); minimum, 1 second-foot July 3.

1930-33: Maximum, 9,400 second-feet Aug. 7, 1930 (gage height, 9.75 feet); no flow June 29, July 1, 1930.

REMARKS.—Records good except those estimated, Oct. 25-30, Jan. 23 to Feb. 2, Aug. 6, 7, Sept. 12-14, 21-25, 30, which are fair. No diversions above station in Arizona and probably none in Mexico.

Discharge in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	7	7	9	11	12	16	5	4	2	2	44	10
2.....	6	7	10	10	12	12	5	4	2	2	22	16
3.....	6	7	10	9	12	10	5	4	2	2	69	13
4.....	7	7	9	9	11	9	6	4	2	2	40	7
5.....	7	7	8	9	12	8	5	4	2	2	343	5
6.....	6	7	10	9	15	9	5	4	2	4	50	4
7.....	5	7	10	16	16	8	5	4	2	4	20	4
8.....	5	7	10	13	15	8	5	4	2	3	140	9
9.....	6	7	10	12	15	9	4	4	2	3	33	15
10.....	6	7	10	11	14	9	5	4	2	2	17	62
11.....	4	7	10	12	14	8	5	4	2	24	10	53
12.....	8	7	9	12	14	8	5	4	2	10	9	30
13.....	6	8	13	12	13	8	4	4	2	825	8	15
14.....	6	8	27	10	12	7	4	4	2	190	9	15
15.....	6	7	33	10	11	6	6	4	2	270	10	15
16.....	6	8	20	9	10	5	5	3	2	85	9	10
17.....	6	9	16	30	10	5	5	3	5	35	11	9
18.....	5	9	14	93	10	5	4	3	5	25	9	257
19.....	5	9	11	46	10	5	4	3	4	15	8	670
20.....	5	9	11	34	11	5	4	3	5	12	46	515
21.....	6	9	10	34	11	5	4	3	5	10	17	30
22.....	6	8	10	28	11	6	4	2	5	12	9	20
23.....	7	7	10	29	12	8	4	3	4	38	14	15
24.....	6	7	10	25	15	8	4	3	4	43	10	15
25.....	6	8	10	20	15	7	4	3	4	15	9	10
26.....	6	8	9	18	26	6	4	3	3	7	14	9
27.....	6	9	9	16	26	5	4	3	3	7	9	8
28.....	7	10	9	14	21	5	4	3	2	9	8	8
29.....	7	9	9	12	-----	6	4	3	2	23	6	20
30.....	7	9	10	12	-----	6	4	3	2	14	28	15
31.....	7	-----	9	12	-----	5	-----	3	-----	8	10	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	8	4	6.1	375
November.....	10	7	7.8	466
December.....	33	8	11.8	724
January.....	93	9	19.3	1,180
February.....	26	10	13.8	766
March.....	16	5	7.3	450
April.....	6	4	4.5	268
May.....	4	2	3.5	212
June.....	5	2	2.8	169
July.....	825	2	54.9	3,380
August.....	343	6	33.6	2,060
September.....	670	4	62.8	3,740
The year.....	825	2	19.1	13,800

SAN PEDRO RIVER AT CHARLESTON, ARIZ.

LOCATION.—Water-stage recorder in SW $\frac{1}{4}$ sec. 35, T. 20 S., R. 21 E., unsurveyed' in Spanish land grant of San Juan de las Boquillas y Nogales, at Charleston dam site, 6 miles above Babocomari River and three-fourths mile north of Charleston. Zero of gage is 3,923.0 feet above mean sea level.

DRAINAGE AREA.—1,480 square miles.

RECORDS AVAILABLE.—May 1928 to September 1933 (discontinued). Several stations have been maintained at various locations both upstream and downstream, 1904-6 and 1910-28.

DISCHARGE.—Maximum during year, 9,600 second-feet July 22 (gage height, 8.45 feet); minimum, 3 second-feet July 9.

1928-33: Maximum, 24,500 second-feet Aug. 9, 1931 (gage height, 12.0 feet); minimum, 2 second-feet July 12, 1928, June 12, 1931. Average, 18 years (1915-33), 73.9 second-feet.

Maximum stage known, 21.9 feet Sept. 28, 1926 (discharge, about 98,000 second-feet).

REMARKS.—Records good. Discharge estimated Dec. 20, Apr. 14-30, May 1-4 and 16. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	20	28	12	22	28	13	13	13	5	29	21
2	15	30	20	15	22	21	13	14	11	5	52	18
3	12	22	25	12	22	21	13	14	9	5	55	19
4	12	20	28	15	20	19	14	14	8	9	47	19
5	9	15	30	12	22	20	13	14	8	7	327	13
6	9	18	20	15	32	21	15	16	8	6	76	8
7	12	20	20	25	35	18	14	15	10	6	36	8
8	8	25	22	25	25	19	12	16	12	6	433	12
9	10	25	18	20	25	21	14	13	11	4	55	20
10	12	28	22	20	28	19	12	14	12	4	30	42
11	9	30	10	12	32	21	13	14	9	4	18	129
12	9	20	18	22	28	21	13	15	7	15	14	61
13	12	20	22	22	28	19	12	19	7	827	15	30
14	18	22	22	12	28	14	12	19	8	337	19	27
15	18	22	28	18	32	18	12	16	8	287	21	27
16	18	28	18	18	32	24	12	16	10	122	16	29
17	20	20	15	30	25	23	12	16	12	125	18	450
18	15	18	12	102	32	19	12	16	13	43	19	321
19	12	22	15	42	22	21	12	16	13	38	16	250
20	20	15	14	28	25	21	12	16	11	29	31	1,430
21	12	15	12	42	35	20	12	12	11	236	51	128
22	18	25	18	30	35	18	12	14	12	930	38	60
23	15	22	20	48	22	20	12	14	13	520	30	40
24	20	18	18	48	20	19	12	14	16	57	32	38
25	12	22	12	48	28	19	12	12	16	40	26	36
26	18	30	25	30	32	14	12	12	15	35	22	27
27	22	32	25	32	54	14	12	12	12	43	21	27
28	20	35	10	42	30	11	12	12	8	136	18	30
29	25	30	15	30	-----	12	13	15	6	67	13	41
30	15	35	18	15	-----	11	13	13	5	29	13	76
31	15	-----	18	15	-----	12	-----	13	-----	26	26	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	25	8	14.8	912
November	35	15	23.5	1,400
December	30	10	19.3	1,190
January	102	12	27.6	1,700
February	54	20	28.3	1,570
March	28	11	18.6	1,150
April	15	12	12.6	748
May	19	12	14.5	891
June	16	5	10.5	623
July	930	4	129	7,940
August	433	13	52.2	3,210
September	1,430	8	115	6,820
The year	1,430	4	38.9	28,200

SAN PEDRO RIVER NEAR MAMMOTH, ARIZ.

LOCATION.—Water-stage recorder in NE¼ sec. 18, T. 8 S., R. 17 E., at highway bridge 1½ miles north of Mammoth.

DRAINAGE AREA.—3,850 square miles.

RECORDS AVAILABLE.—May 1931 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 13,500 second-feet July 23 (gage height, 9.8 feet); no flow during part of year.

1931-33: Maximum, 19,400 second-feet Oct. 2, 1931 (gage height, 11.1 feet); no flow part of each year.

REMARKS.—Records fair. Discharge estimated July 20-21, Aug. 11-14, 19, 25-27, Sept. 22-30. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Dec.	Jan.	Feb.	Mar.	July	Aug.	Sept.
1.....	0	9	20	4	0	6	0
2.....	0	9	16	4	0	3	0
3.....	0	7	15	4	0	1	0
4.....	0	6	16	3	0	2	34
5.....	0	4	18	1	5	16	14
6.....	0	4	16	2	3	368	8
7.....	0	3	26	1	0	142	5
8.....	0	4	57	2	0	122	8
9.....	0	5	34	4	0	225	60
10.....	0	6	26	0	4	92	200
11.....	0	9	31	0	0	20	1
12.....	0	11	18	0	105	5	1
13.....	0	9	22	0	45	2	48
14.....	0	7	9	0	242	0	62
15.....	13	8	9	0	187	0	57
16.....	40	8	7	0	109	0	103
17.....	28	10	9	0	125	18	63
18.....	20	11	9	0	186	13	214
19.....	15	9	11	0	70	1	262
20.....	12	42	9	0	5	0	728
21.....	11	66	5	0	1	0	330
22.....	7	88	2	0	228	0	50
23.....	6	50	2	0	1,210	9	20
24.....	6	30	1	0	250	6	5
25.....	6	14	2	0	69	4	1
26.....	6	15	2	0	16	2	0
27.....	7	11	3	0	39	0	0
28.....	7	14	4	0	89	0	0
29.....	7	16	-----	0	47	0	0
30.....	8	18	-----	0	20	0	20
31.....	8	21	-----	0	14	2	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
December.....	40	0	6.6	407
January.....	88	3	16.9	1,040
February.....	57	1	14.2	791
March.....	4	0	8	50
July.....	1,210	0	99.0	6,090
August.....	364	0	34.2	2,100
September.....	728	0	76.5	4,550
The year.....	1,210	0	20.8	15,000

NOTE.—No flow during months omitted.

SAN PEDRO RIVER AT WINKELMAN, ARIZ.

LOCATION.—In SW¼ sec. 23, T. 5 S., R. 15 E., at mouth, 1 mile west of Winkelman.

DRAINAGE AREA.—4,720 square miles.

RECORDS AVAILABLE.—December 1928 to September 1933 (discontinued), discharge measurements only. April to August 1890, monthly discharge, published as "San Pedro River at Dudleyville, Ariz."

REMARKS.—Diversions for irrigation above station.

Discharge measurements, in second-feet, 1932-33

Oct. 10.....	2.1	Mar. 29.....	0.5	June 26.....	0.2
Oct. 24.....	8.9	Apr. 4.....	.3	July 5.....	.2
Nov. 10.....	9.9	Apr. 10.....	.1	July 10.....	.3
Nov. 28.....	.7	Apr. 16.....	.2	July 17.....	123
Dec. 20.....	29.2	May 1.....	.3	July 23.....	34.8
Jan. 6.....	.5	May 8.....	.2	July 26.....	49.3
Jan. 28.....	.4	May 15.....	.4	Aug. 1.....	23.3
Feb. 11.....	1.2	May 22.....	.2	Aug. 14.....	7.2
Feb. 25.....	1.0	May 28.....	.2	Aug. 21.....	17.0
Mar. 10.....	1.0	June 5.....	.3	Aug. 27.....	1.0
Mar. 17.....	.5	June 12.....	.2	Sept. 5.....	18.8
Mar. 21.....	.5	June 19.....	.2	Sept. 12.....	9.4

ARAVAIPA CREEK NEAR FELDMAN, ARIZ.

LOCATION.—Water-stage recorder in NW¼ sec. 9, T. 7 S., R. 17 E., 6 miles above mouth and 6 miles southeast of Feldman.

DRAINAGE AREA.—535 square miles.

RECORDS AVAILABLE.—May 1931 to September 1933 (discontinued). April 1919 to September 1921 at station 5¼ miles downstream.

DISCHARGE.—Maximum during year, 9,300 second-feet July 23 (gage height, 10.5 feet); minimum, 2 second-feet Aug. 29.

1931-33: Maximum, that of July 23, 1933; minimum, that of Aug. 29, 1933.

A maximum discharge of 20,000 second-feet occurred Aug. 2, 1919.

REMARKS.—Records good. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.
1.....	16	12	15	17	44	19	12	14	5	5	19	7
2.....	16	12	14	17	30	18	12	13	7	5	16	5
3.....	15	12	14	18	27	18	12	13	9	5	15	4
4.....	14	12	14	17	26	17	8	13	9	5	15	4
5.....	13	12	14	17	24	18	9	12	9	8	89	4
6.....	12	12	14	17	22	17	12	10	8	12	16	3
7.....	12	12	14	16	53	17	12	12	9	10	14	3
8.....	12	12	14	16	33	17	14	12	10	83	12	81
9.....	15	12	16	15	27	17	12	12	8	30	12	81
10.....	16	14	16	15	24	17	14	12	7	15	10	15
11.....	16	14	17	15	23	16	13	10	7	9	8	13
12.....	16	12	17	16	22	15	10	12	8	8	6	16
13.....	22	12	21	16	22	14	10	13	8	8	5	13
14.....	17	12	44	17	22	14	10	12	8	8	4	10
15.....	17	13	264	17	22	14	12	12	10	8	3	10
16.....	16	12	54	17	22	14	14	12	14	190	3	9
17.....	15	12	27	19	22	11	14	10	16	20	4	10
18.....	14	12	24	20	22	13	14	10	14	16	5	11
19.....	15	12	22	16	22	14	14	10	16	15	5	14
20.....	15	13	20	16	21	15	16	10	14	12	5	23
21.....	21	14	21	73	21	15	16	9	10	10	4	12
22.....	24	15	22	91	21	16	14	8	9	13	3	10
23.....	17	15	19	72	20	17	14	8	8	688	3	8
24.....	17	16	20	51	20	16	14	7	6	71	3	8
25.....	17	16	19	35	25	16	12	8	5	43	3	8
26.....	16	14	19	30	34	16	14	8	4	27	4	6
27.....	15	15	19	27	26	16	13	8	4	16	3	6
28.....	14	16	20	26	21	12	16	7	4	12	3	6
29.....	13	16	19	27	-----	10	17	8	5	14	3	5
30.....	12	16	18	27	-----	14	14	6	6	83	4	5
31.....	12	-----	17	45	-----	10	-----	5	-----	30	3	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	24	12	15.5	956
November.....	16	12	13.3	791
December.....	264	14	27.0	1,720
January.....	91	15	27.0	1,660
February.....	53	20	25.6	1,420
March.....	19	10	15.3	938
April.....	17	8	12.9	770
May.....	14	5	17.2	627
June.....	16	4	8.6	510
July.....	668	5	47.1	2,890
August.....	89	3	9.7	599
September.....	81	3	17.7	813
The year.....	668	3	17.9	13,700

SANTA CRUZ RIVER NEAR NOGALES, ARIZ.

LOCATION.—Water-stage recorder in NW¼ sec. 18, T. 24 S., R. 15 E., unsurveyed, on Spanish land grant of Buena Vista, 5½ miles east of Nogales and three-quarters of a mile downstream from international boundary.

DRAINAGE AREA.—473 square miles.

RECORDS AVAILABLE.—May 1930 to September 1933 (discontinued). Fragmentary records March to November 1907, April 1909 to June 1920, at station 5¼ miles downstream. April 1921 to June 1922 at station 6 miles downstream.

DISCHARGE.—Maximum during year, 1,900 second-feet Sept. 19 (gage height, 5.5 feet); no flow on parts of several days.

1930-33. Maximum, 8,300 second-feet July 8, 1932 (gage height, 9.5 feet); no flow on several days or parts of days of each year.

REMARKS.—Records good. Minor diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	7	6	8	15	23	17	7	3	1	0	2	0
2.....	7	6	8	15	22	17	7	2	1	0	0	7
3.....	8	5	7	16	20	17	6	3	1	0	0	67
4.....	6	5	8	15	18	14	6	2	1	0	52	4
5.....	3	5	8	14	18	13	5	2	1	0	19	1
6.....	2	7	9	14	20	13	5	2	1	0	6	0
7.....	2	9	8	14	21	13	6	2	1	0	2	7
8.....	2	9	8	14	32	14	6	2	1	0	2	46
9.....	3	10	8	13	31	14	6	2	1	0	1	6
10.....	5	10	8	13	26	11	6	3	0	0	1	11
11.....	5	9	8	12	22	10	7	2	0	23	0	12
12.....	5	9	10	11	22	10	6	2	0	20	0	6
13.....	6	9	18	10	21	10	7	2	0	9	0	4
14.....	5	9	40	9	19	9	7	2	0	1	1	2
15.....	4	8	58	9	17	11	6	2	1	9	1	1
16.....	3	9	35	9	19	10	5	2	0	12	0	1
17.....	3	10	28	18	18	10	5	2	1	5	0	1
18.....	3	12	26	50	18	10	5	2	1	1	0	1
19.....	3	12	25	35	18	10	6	2	1	0	0	87
20.....	3	10	22	36	18	8	8	1	1	0	0	12
21.....	6	10	19	100	18	8	8	1	1	0	0	5
22.....	6	9	21	96	17	8	6	1	0	0	2	3
23.....	8	9	20	62	15	9	5	1	0	14	1	2
24.....	7	9	18	48	16	10	3	1	0	23	0	1
25.....	5	8	17	42	17	9	3	1	0	2	2	1
26.....	5	8	16	34	18	10	5	1	0	1	0	1
27.....	5	8	16	32	17	9	2	1	0	1	0	1
28.....	4	8	16	31	18	7	4	1	0	0	0	1
29.....	5	7	16	28	-----	7	6	1	0	0	0	1
30.....	6	7	15	27	-----	7	3	1	0	2	0	23
31.....	6	-----	14	27	-----	7	-----	1	-----	4	0	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	8	2	4.8	294
November.....	12	5	8.4	500
December.....	58	7	17.4	1,070
January.....	100	9	28.0	1,720
February.....	32	15	20.0	1,110
March.....	17	7	10.7	659
April.....	8	2	5.6	331
May.....	3	1	1.7	105
June.....	1	0	.5	30
July.....	23	0	4.1	252
August.....	52	0	3.0	182
September.....	87	0	10.5	625
The year.....	100	0	9.5	6,880

SANTA CRUZ RIVER AT TUCSON, ARIZ.

LOCATION.—Water-stage recorder in NE¼ sec. 14, T. 14 S., R. 13 E., at Congress Street Bridge, in Tucson.

DRAINAGE AREA.—2,100 square miles.

RECORDS AVAILABLE.—October 1905 to September 1933.

DISCHARGE.—Maximum during year, 6,100 second-feet Aug. 21 (gage height, 10.1 feet); no flow during greater part of year.

1905-33: Maximum, 11,400 second-feet Sept. 28, 1926 (gage height, 12.2 feet); no flow during greater part of each year. Average, 21 years (1912-33), 24.9 second-feet.

REMARKS.—Records good. Discharge estimated Oct. 13, Feb. 8, 9, and Sept. 11. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Feb.	July	Aug.	Sept.	Day	Oct.	Feb.	July	Aug.	Sept.
1.....	0	0	0	50	0	16.....	0	0	0	0	0
2.....	0	0	0	0	0	17.....	0	0	0	65	880
3.....	0	0	0	0	0	18.....	0	0	0	1	812
4.....	0	0	0	0	0	19.....	0	0	0	1	1
5.....	0	0	0	0	0	20.....	0	0	0	0	0
6.....	0	0	0	171	0	21.....	0	0	0	450	0
7.....	0	0	0	30	0	22.....	0	0	44	4	0
8.....	0	2	0	9	3	23.....	0	0	77	0	0
9.....	0	1	0	6	23	24.....	0	0	357	0	0
10.....	0	0	0	0	298	25.....	0	0	0	0	0
11.....	40	0	0	0	260	26.....	0	0	0	2	0
12.....	105	0	0	0	0	27.....	0	0	0	0	0
13.....	3	0	0	0	0	28.....	0	0	0	0	0
14.....	0	0	0	0	0	29.....	0	-----	0	0	0
15.....	0	0	0	0	0	30.....	0	-----	0	0	0
						31.....	0	-----	0	0	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	105	0	4.8	294
February.....	2	0	.1	6
July.....	350	0	15.0	920
August.....	450	0	25.5	1,560
September.....	880	0	75.9	4,520
The year.....	880	0	10.1	7,300

NOTE.—No flow during months omitted.

NOGALES WASH AT NOGALES, ARIZ.

LOCATION.—Water-stage recorder in NE¼ sec. 8, T. 24 S., R. 14 E., 0.4 mile north of Nogales city limits, 2 miles north of the international boundary, and 7 miles upstream from mouth. Zero of gage is 3,753.4 feet above mean sea level.

DRAINAGE AREA.—30 square miles.

RECORDS AVAILABLE.—April 1932 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 1,800 second-feet July 23 (gage height, 10.0 feet); no flow most of the year.

1932-33: Maximum, 3,250 second-feet Aug. 26, 1932 (gage height, 12.64 feet); no flow most of the time.

A maximum discharge of 4,400 second-feet (gage height, 13.8 feet) occurred July 29 or Aug. 15, 1931.

REMARKS.—Records good. No diversions above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	July	Aug.	Day	Oct.	Nov.	Dec.	July	Aug.
1.....	4	1	1	0	0	16.....	2	1	0	0	0
2.....	4	1	1	0	0	17.....	2	1	1	0	0
3.....	4	1	1	0	0	18.....	2	1	1	0	0
4.....	4	1	1	0	0	19.....	2	1	1	0	9
5.....	4	1	0	0	0	20.....	1	1	1	0	0
6.....	4	1	0	0	5	21.....	2	1	1	0	0
7.....	3	1	0	0	0	22.....	1	1	0	0	7
8.....	3	1	0	0	1	23.....	1	1	0	52	0
9.....	3	1	0	0	0	24.....	1	1	0	0	0
10.....	3	1	0	0	0	25.....	1	1	0	0	0
11.....	3	1	0	0	0	26.....	1	1	1	0	3
12.....	10	1	0	0	0	27.....	1	1	0	0	0
13.....	2	1	0	0	0	28.....	1	1	1	0	0
14.....	1	1	2	0	0	29.....	1	1	0	0	0
15.....	2	1	1	0	0	30.....	1	1	0	0	0
						31.....	1	0	0	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	10	1	2.4	149
November.....	1	1	1.0	60
December.....	1	0	.5	28
July.....	52	0	1.7	103
August.....	9	0	.7	44
The year.....	52	0	.5	384

NOTE.—No flow during months omitted.

SONOITA CREEK NEAR PATAGONIA, ARIZ.

LOCATION.—Water-stage recorder in sec. 20, T. 22 S., R. 15 E., unurveyed, in Spanish land grant of San José de Sonoita, 5½ miles downstream from Patagonia.

DRAINAGE AREA.—210 square miles.

RECORDS AVAILABLE.—June 1930 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 1,050 second-foot July 15 (gage height, 6.0 feet); minimum, 0.2 second-foot Aug. 9.

1930-33: Maximum, 2,600 second-foot Aug. 7, 1930 (gage height, 7.3 feet); minimum, that of Aug. 9, 1933.

REMARKS.—Records good. Minor diversions for irrigation and mining above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	4	4	6	6	6	6	5	2	2	4	2
2	4	6	5	7	6	7	6	4	3	2	4	93
3	6	6	5	11	7	7	6	4	3	2	4	15
4	5	5	5	9	8	7	5	4	2	2	4	5
5	5	5	5	11	8	7	5	4	2	2	3	4
6	5	6	5	8	8	7	5	4	2	2	3	4
7	5	4	6	7	8	7	5	4	3	2	4	4
8	6	5	6	6	8	7	5	6	3	2	2	11
9	6	6	6	6	7	7	5	5	3	2	3	6
10	4	6	6	6	6	8	5	5	3	2	2	16
11	5	8	6	6	8	8	5	5	2	2	3	6
12	6	9	6	6	8	8	5	6	2	2	2	6
13	4	9	6	6	6	8	5	5	2	2	2	4
14	5	9	11	6	6	8	5	5	2	3	4	4
15	5	8	7	6	6	7	6	4	2	85	3	3
16	4	6	6	6	6	7	6	4	2	7	120	3
17	5	6	6	6	6	7	6	4	4	4	6	3
18	4	6	6	8	6	7	6	4	4	3	30	3
19	4	5	6	7	6	6	6	4	4	2	5	68
20	6	4	6	8	6	6	6	4	4	2	66	13
21	8	4	7	18	6	6	6	4	3	62	4	7
22	6	4	6	12	6	6	6	4	2	19	40	6
23	6	4	6	7	6	6	6	4	2	6	4	6
24	6	4	7	6	6	6	6	4	2	6	4	6
25	5	5	9	6	6	6	6	4	2	4	5	6
26	5	4	8	6	6	6	6	4	2	3	6	6
27	6	5	6	6	6	6	6	4	2	4	6	6
28	6	5	7	6	6	6	6	4	2	4	5	6
29	6	5	7	6	6	6	6	4	2	4	5	6
30	4	5	7	6	6	6	6	3	2	4	4	6
31	4	6	6	7	6	6	6	3	4	4	3	---

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	8	4	5.2	319
November	9	4	5.6	333
December	11	4	6.3	387
January	18	6	7.4	452
February	8	6	6.6	365
March	8	6	6.7	413
April	6	5	5.6	335
May	6	3	4.3	262
June	4	2	2.5	149
July	85	2	8.1	500
August	120	2	11.6	714
September	93	2	11.1	662
The year	120	2	6.8	4,890

RILLITO CREEK NEAR TUCSON, ARIZ.

LOCATION.—Water-stage recorder in sec. 23, T. 13 S., R. 13 E., at Oracle Road Bridge, 4 miles above confluence with Santa Cruz River and 4 miles north of Tucson.

DRAINAGE AREA.—903 square miles.

RECORDS AVAILABLE.—January 1911 to September 1933.

DISCHARGE.—Maximum during year, 4,400 second-feet Sept. 10 (gage height, 7.65 feet); no flow during greater part of year.

1911-33: Maximum, 24,000 second-feet Sept. 23, 1929; no flow during greater part of each year. Average, 20 years (1913-33), 31.1 second-feet.

REMARKS.—Records good. Discharge estimated Feb. 2-6, Mar. 5, 6, July 12, 17, and Aug. 5. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Jan.	Feb.	Mar.	July	Aug.	Sept.
1	0	0	13	5	0	0	0
2	0	0	12	13	0	0	0
3	0	0	12	15	0	0	0
4	0	0	11	11	0	0	0
5	0	0	10	6	0	20	0
6	0	0	10	2	0	0	0
7	0	0	9	0	0	0	0
8	0	0	6	1	0	0	0
9	0	0	5	3	0	0	0
10	0	0	1	4	0	0	333
11	0	0	1	2	0	0	3
12	225	0	1	3	10	0	0
13	1	0	0	3	0	0	0
14	0	0	1	1	0	0	0
15	0	0	1	0	0	0	0
16	0	0	2	0	0	0	0
17	0	0	4	0	10	0	0
18	0	0	4	0	0	0	0
19	0	0	2	0	0	0	0
20	0	0	1	0	0	0	0
21	0	0	0	0	0	38	0
22	0	0	0	0	0	6	0
23	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0
26	0	0	3	0	0	0	0
27	0	0	2	0	0	0	0
28	0	0	4	0	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
31	0	1	0	0	0	0	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	225	0	7.3	448
January	1	0	.03	2
February	13	0	4.1	228
March	15	0	2.2	137
July	10	0	.6	40
August	38	0	2.1	127
September	333	0	11.2	666
The year	333	0	2.3	1,650

NOTE.—No flow during months omitted.

SABINO CREEK NEAR TUCSON, ARIZ.

LOCATION.—Water-stage recorder in E½ sec. 9, T. 13 S., R. 15 E., half a mile north of the Coronado National Forest boundary and 12 miles northeast of Tucson.

DRAINAGE AREA.—35 square miles.

RECORDS AVAILABLE.—June 1932 to September 1933.

DISCHARGE.—Maximum during year, 510 second-feet Sept. 10 (gage height, 4.73 feet); minimum, 0.01 second-foot several times in July and August (gage height, 1.03 feet).

1932-33: Maximum, 700 second-feet July 15, 1932 (gage height, 5.4 feet); minimum, 0.01 second-foot in summer of each year (gage height, 1.03 feet).

REMARKS.—Records excellent. No diversions above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	0.05	0.2	0.07	4.5	35	42	11	2.8	0.2	0.03	0.4	0.1
2.....	.05	.2	.07	4.8	32	50	11	3.0	.1	.02	.3	.06
3.....	.04	.2	.09	5.4	28	53	12	3.0	.1	.02	.2	3.6
4.....	.05	.2	.07	5.4	23	49	12	2.8	.09	.02	.2	2.5
5.....	.04	.1	.07	5.7	20	38	12	2.5	.09	.04	3.7	1.1
6.....	.03	.1	.07	6.0	25	30	10	2.3	.07	.03	1.8	.4
7.....	.03	.1	.07	8.7	35	30	8.5	2.1	.06	.02	.9	.3
8.....	.04	.09	.07	8.9	28	36	7.4	1.9	.05	.02	.5	46
9.....	.05	.07	.07	8.9	27	36	6.7	1.8	.05	.02	.3	28
10.....	.05	.07	.05	9.3	25	36	6.0	1.6	.04	.02	.2	99
11.....	.08	.07	.06	9.7	23	35	5.4	1.6	.04	.02	.1	45
12.....	.06	.07	.06	8.1	22	38	4.8	1.6	.03	.02	.06	12
13.....	.04	.06	.07	6.7	25	33	4.5	1.6	.04	.01	.03	6.3
14.....	.04	.06	11	6.0	27	27	4.2	1.6	.04	.01	.03	3.9
15.....	.3	.06	24	5.7	27	23	4.0	1.3	.05	.01	.02	2.5
16.....	.3	.06	12	5.4	30	21	3.7	1.0	.05	.02	.01	1.6
17.....	.3	.05	10	6.0	32	20	3.7	.9	1.6	.01	.01	1.3
18.....	.2	.05	12	8.9	32	20	3.7	.8	25	.01	.01	1.3
19.....	.2	.05	12	7.7	30	17	3.7	.7	6.6	.01	.01	1.1
20.....	.2	.05	11	9.3	25	14	3.5	.6	2.4	.01	.01	.9
21.....	.4	.05	10	17	25	13	3.2	.5	1.3	.01	9.8	.7
22.....	8.3	.05	9.7	20	26	12	3.0	.5	.7	.01	33	.6
23.....	3.4	.05	8.9	19	29	12	2.8	.5	.4	7.0	5.2	.5
24.....	1.6	.05	10	21	29	12	2.5	.4	.2	3.7	1.8	.3
25.....	1.0	.04	8.9	18	32	12	2.5	.4	.1	.3	.8	.2
26.....	.8	.05	6.7	16	29	11	2.3	.3	.06	.08	.5	.2
27.....	.6	.05	6.0	15	28	12	2.3	.3	.04	.03	.3	.2
28.....	.4	.05	6.0	18	38	12	2.5	.3	.02	.02	1.1	.1
29.....	.4	.05	6.7	18	-----	13	3.0	.2	.03	1.4	.5	.08
30.....	.3	.06	6.0	17	-----	13	2.8	.2	.03	1.3	.4	.06
31.....	.3	-----	5.1	33	-----	12	-----	.2	-----	.5	.2	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	8.3	0.03	0.63	39.0
November.....	.2	.04	.08	4.8
December.....	24	.05	5.71	351
January.....	33	4.5	11.4	700
February.....	38	20	27.1	1,560
March.....	53	11	25.2	1,550
April.....	12	2.3	5.49	327
May.....	3.0	.2	1.27	78.0
June.....	25	.02	1.32	78.6
July.....	7.0	.01	1.47	29.2
August.....	33	.01	2.01	124
September.....	99	.06	8.66	516
The year.....	99	.01	7.40	5,360

SALT RIVER NEAR CHRYSOTILE, ARIZ.

LOCATION.—Water-stage recorder in sec. 5, T. 5 N., R. 18 E., unsurveyed, 1,200 feet above bridge on U.S. highway 60, 8 miles above Cibecue Creek, on San Carlos Indian Reservation, and 5½ miles northeast of Chrysotile. Zero of gage is 3,381.2 feet above mean sea level (adjusted altitude, which supersedes that previously published).

DRAINAGE AREA.—2,830 square miles.

RECORDS AVAILABLE.—September 1924 to September 1933.

DISCHARGE.—Maximum during year, 2,880 second-feet Feb. 28 (gage height, 4.40 feet); minimum, 118 second-feet Dec. 28 (gage height, 1.51 feet).

1924-33: Maximum, 36,000 second-feet Feb. 10, 1932 (gage height, 13.3 feet); minimum, 103 second-feet June 29, 1929, and Dec. 23, 1931 (gage height, 1.45 feet).

REMARKS.—Records excellent. Minor diversions above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	204	222	187	172	241	1,280	1,400	856	642	222	370	209
2.....	209	217	187	187	231	1,230	1,480	934	678	213	411	217
3.....	222	217	187	200	213	1,170	1,620	1,040	649	213	399	204
4.....	217	213	179	192	209	1,260	1,780	1,080	600	217	364	196
5.....	204	209	183	200	200	1,060	1,900	1,310	566	265	346	183
6.....	200	209	183	200	246	832	1,910	1,560	532	307	897	176
7.....	196	209	179	213	324	730	1,590	1,470	519	318	927	164
8.....	196	204	176	204	275	784	1,530	1,320	493	307	943	172
9.....	250	200	179	209	213	969	1,420	1,230	467	280	552	449
10.....	270	200	200	217	185	1,140	1,320	1,170	436	265	499	525
11.....	246	200	226	226	213	1,230	1,240	1,100	418	255	467	1,000
12.....	250	200	217	217	221	1,370	1,130	1,040	405	231	454	614
13.....	268	196	222	204	260	1,560	1,080	998	399	352	430	436
14.....	226	196	231	204	260	1,590	1,030	916	405	318	381	375
15.....	213	200	236	204	241	1,500	925	840	424	364	335	352
16.....	209	196	241	222	263	1,390	865	776	430	393	307	341
17.....	209	196	217	241	291	1,290	881	737	486	418	286	302
18.....	192	196	187	265	335	1,300	881	722	506	575	324	291
19.....	183	196	168	255	364	1,400	873	722	745	461	286	280
20.....	187	196	164	226	346	1,220	848	737	593	393	260	286
21.....	200	192	204	260	313	1,080	815	737	486	335	260	291
22.....	318	187	222	270	307	1,080	768	745	448	313	260	302
23.....	265	187	226	236	341	1,140	753	737	430	454	231	270
24.....	275	187	213	231	370	1,140	730	700	399	538	217	241
25.....	313	183	200	236	512	1,120	693	671	370	499	200	222
26.....	275	179	168	226	1,380	1,140	693	642	341	506	196	209
27.....	260	179	143	213	1,380	1,100	707	614	307	629	192	200
28.....	246	183	157	222	2,010	1,210	715	621	280	491	192	192
29.....	241	187	183	231	-----	1,430	776	628	255	506	187	187
30.....	236	187	200	241	-----	1,560	791	614	241	399	176	192
31.....	226	-----	179	241	-----	1,520	-----	607	-----	341	187	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	318	183	232	14,300
November.....	222	179	197	11,700
December.....	241	143	195	12,000
January.....	270	172	221	13,600
February.....	2,010	185	419	23,300
March.....	1,590	730	1,220	75,000
April.....	1,910	693	1,100	65,700
May.....	1,560	607	899	55,300
June.....	678	241	465	27,700
July.....	629	213	367	22,600
August.....	943	176	372	22,900
September.....	1,000	164	303	18,000
The year.....	2,010	143	500	362,000

SALT RIVER NEAR ROOSEVELT, ARIZ.

LOCATION.—Staff gage in sec. 9 (corrected), T. 3 N., R. 14 E., (unsurveyed), 1 mile above diversion dam for power canal, 3 miles above upper end of Roosevelt Reservoir and 13 miles east of Roosevelt.

DRAINAGE AREA.—4,310 square miles.

RECORDS AVAILABLE.—October 1913 to September 1933.

DISCHARGE.—Maximum mean daily during year, 2,950 second-feet Mar. 1; minimum, 180 second-feet Sept. 8.

1913-33: Maximum mean daily, 79,200 second-feet Jan. 19, 1916; minimum, 97 second-feet July 1, 1929.

REMARKS.—Minor diversions above station. Daily-discharge record furnished by Salt River Valley Water Users' Association.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	237	250	204	232	360	2,950	1,680	957	657	238	395	185
2.....	223	250	203	217	345	1,820	1,510	1,040	694	270	406	205
3.....	240	237	202	225	329	1,630	1,520	1,220	722	233	540	230
4.....	273	237	202	232	305	1,760	1,640	1,330	704	220	454	212
5.....	245	235	202	233	268	1,740	1,760	1,170	670	219	461	208
6.....	237	231	202	233	267	1,630	1,920	1,420	636	297	421	202
7.....	223	230	204	232	301	1,060	1,960	1,560	593	322	1,230	193
8.....	223	229	202	233	598	1,140	1,660	1,500	573	370	1,160	180
9.....	251	230	202	245	416	1,280	1,460	1,310	529	370	973	462
10.....	295	227	206	245	349	1,210	1,500	1,220	510	328	685	700
11.....	300	217	235	235	280	1,480	1,260	1,180	488	300	621	680
12.....	285	214	292	245	271	1,110	1,180	1,120	459	597	544	1,330
13.....	270	214	298	244	258	1,880	1,070	1,060	424	348	515	815
14.....	273	214	347	223	319	1,910	1,110	1,130	408	382	470	527
15.....	262	214	420	229	345	1,880	1,070	1,050	407	390	473	458
16.....	244	214	365	228	310	1,740	965	1,000	459	600	414	385
17.....	237	214	325	229	311	1,650	935	868	457	753	365	375
18.....	235	214	328	240	355	1,530	880	823	541	605	340	375
19.....	218	214	282	331	445	1,530	890	815	621	775	350	350
20.....	211	214	265	299	437	1,600	915	804	813	610	340	352
21.....	227	214	238	286	410	1,500	845	810	653	422	355	348
22.....	365	214	267	368	360	1,360	840	818	544	425	313	392
23.....	465	214	310	348	363	1,160	760	845	500	772	300	358
24.....	358	200	303	328	402	1,280	735	824	452	620	285	335
25.....	320	209	295	296	430	1,240	703	806	422	730	255	312
26.....	430	207	311	277	526	1,400	660	757	398	575	244	278
27.....	320	206	272	275	2,570	1,440	673	712	378	550	269	267
28.....	295	206	233	265	2,170	1,400	735	680	343	795	225	254
29.....	283	204	225	238	-----	1,490	752	690	318	773	220	244
30.....	277	204	245	272	-----	1,680	845	687	286	515	220	241
31.....	273	-----	265	312	-----	1,840	-----	673	-----	432	210	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	465	211	277	17,000
November.....	250	200	219	13,000
December.....	420	202	263	16,200
January.....	368	217	261	16,100
February.....	2,570	258	504	28,000
March.....	2,950	1,060	1,560	95,800
April.....	1,960	660	1,150	68,300
May.....	1,560	673	996	61,200
June.....	813	286	522	31,100
July.....	795	220	474	29,100
August.....	1,230	210	453	27,900
September.....	1,330	180	382	22,700
The year.....	2,950	180	589	426,000

TONTON CREEK NEAR ROOSEVELT, ARIZ.

LOCATION.—Staff gage in sec. 14, T. 6 N., R. 10 E., 6 miles above upper end of Roosevelt Reservoir and 15 miles northwest of Roosevelt.

DRAINAGE AREA.—813 square miles.

RECORDS AVAILABLE.—October 1913 to September 1933.

DISCHARGE.—Maximum mean daily during year, 435 second-feet Jan. 22; minimum, 4 second-feet July 5.

1913-33: Maximum mean daily, 20,000 second-feet Dec. 28, 1923; no flow Sept. 4-10, 1924.

REMARKS.—Minor diversions above station. Daily-discharge record furnished by Salt River Valley Water Users' Association.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	32	22	18	32	230	290	90	315	12	5	16	7
2.....	30	22	16	32	230	365	72	295	10	5	48	6
3.....	60	22	18	32	210	315	72	275	9	5	25	6
4.....	32	22	18	28	210	290	80	225	9	5	16	5
5.....	32	18	18	28	132	290	80	180	8	4	14	5
6.....	28	18	18	32	132	255	65	160	7	5	10	5
7.....	25	18	18	30	255	215	60	130	7	5	10	5
8.....	20	18	18	30	255	180	45	110	7	5	12	8
9.....	50	16	16	30	160	180	40	105	7	5	14	135
10.....	42	16	18	30	132	255	40	80	7	5	16	80
11.....	35	15	25	30	110	255	35	80	7	5	12	175
12.....	30	15	35	30	100	215	35	60	6	5	12	175
13.....	28	15	42	30	90	255	35	55	6	5	10	65
14.....	28	15	105	30	80	215	35	50	6	5	10	54
15.....	25	12	250	30	80	200	28	40	6	5	8	40
16.....	22	16	210	30	72	180	28	35	6	5	7	35
17.....	22	16	180	30	80	160	28	35	6	100	7	22
18.....	20	18	105	120	100	145	25	28	7	145	6	20
19.....	20	18	75	145	120	130	28	28	6	70	6	18
20.....	20	18	60	135	120	105	40	25	6	40	6	18
21.....	22	18	55	360	110	100	40	25	6	23	110	20
22.....	390	18	50	435	110	108	35	25	6	30	145	72
23.....	105	18	55	295	110	90	28	23	6	23	28	40
24.....	50	18	62	255	110	80	28	23	6	30	22	28
25.....	42	18	50	275	132	80	28	20	6	58	20	22
26.....	35	18	46	215	195	80	28	20	5	48	16	18
27.....	32	18	42	160	290	80	28	17	5	28	14	18
28.....	32	18	42	145	315	72	28	17	5	20	14	15
29.....	30	18	42	135	-----	72	95	14	5	28	12	12
30.....	25	18	35	120	-----	90	295	13	5	28	10	12
31.....	25	-----	35	160	-----	100	-----	12	-----	28	8	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	390	20	44.8	2,760
November.....	22	12	17.7	1,050
December.....	250	16	57.3	3,520
January.....	435	28	112	6,880
February.....	315	72	152	8,470
March.....	365	72	176	10,800
April.....	295	25	53.1	3,160
May.....	315	12	81.3	5,000
June.....	12	5	6.7	397
July.....	145	4	25.1	1,540
August.....	145	6	21.4	1,320
September.....	175	5	38.0	2,260
The year.....	435	4	65.1	47,200

VERDE RIVER ABOVE CAMP CREEK, NEAR McDOWELL, ARIZ.

LOCATION.—Water-stage recorder in sec. 17, T. 5 N., R. 7 E., 500 feet above mouth of Camp Creek and 10 miles north of McDowell.

DRAINAGE AREA.—6,240 square miles.

RECORDS AVAILABLE.—February 1925 to September 1933. August to September 1889; April 1897 to November 1899; January 1901 to February 1925 at a point three-quarters of a mile above mouth of Verde River.

DISCHARGE.—Maximum mean daily during year, 1,490 second-feet Mar. 14; minimum, 74 second-feet July 6.

1897-1933: Maximum mean daily, 61,500 second-feet Nov. 27, 1905; minimum, 32 second-feet July 19, 20, 1904.

REMARKS.—Minor diversions above station. Daily-discharge record furnished by Salt River Valley Water Users' Association.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	687	221	234	282	425	490	600	507	160	97	176	143
2.....	398	225	234	283	415	531	555	527	157	91	152	136
3.....	387	220	237	280	410	571	475	1,090	148	91	150	155
4.....	311	212	227	287	402	680	420	665	147	90	155	149
5.....	295	213	235	284	392	844	430	613	126	84	148	135
6.....	269	207	239	283	367	865	410	1,080	159	74	146	131
7.....	245	206	246	282	378	685	363	722	159	86	150	126
8.....	226	195	244	282	452	600	320	557	165	93	144	124
9.....	246	201	240	282	435	464	291	425	164	102	162	310
10.....	230	200	245	276	383	591	264	335	163	107	196	177
11.....	225	199	266	282	355	806	238	275	160	109	162	675
12.....	212	199	263	282	340	1,080	243	255	154	112	162	310
13.....	295	196	277	280	326	1,290	234	243	150	228	150	278
14.....	234	210	342	278	311	1,490	235	247	151	173	154	290
15.....	209	206	439	278	303	1,460	239	215	152	153	156	272
16.....	204	211	501	276	300	1,360	224	201	154	216	142	243
17.....	200	209	430	280	285	925	215	202	173	217	118	222
18.....	187	210	361	413	296	793	209	181	153	155	120	175
19.....	184	210	331	510	308	700	222	182	189	235	122	183
20.....	191	208	315	476	325	665	234	170	182	221	124	181
21.....	204	204	299	599	313	598	240	200	160	169	131	192
22.....	307	201	296	886	290	555	257	199	155	173	215	185
23.....	585	209	301	624	306	526	263	184	148	321	164	398
24.....	580	210	302	550	339	513	249	177	141	442	173	380
25.....	360	210	313	541	375	502	239	176	125	337	164	332
26.....	303	205	300	520	433	483	240	174	115	421	180	270
27.....	280	205	282	452	451	472	228	174	110	280	285	225
28.....	261	211	283	390	480	453	219	174	110	211	302	197
29.....	255	213	280	374	-----	430	265	179	113	190	180	177
30.....	248	214	278	363	-----	493	362	174	105	172	155	173
31.....	246	-----	280	372	-----	595	-----	176	-----	201	145	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	687	184	292	18,000
November.....	225	195	208	12,400
December.....	501	227	294	18,100
January.....	886	276	382	23,500
February.....	480	285	364	20,200
March.....	1,490	430	726	44,600
April.....	600	209	299	17,800
May.....	1,090	174	344	21,200
June.....	189	105	148	8,820
July.....	442	74	182	11,200
August.....	302	118	164	10,100
September.....	675	124	231	13,800
The year.....	1,490	74	303	220,000

GRANITE CREEK NEAR PRESCOTT, ARIZ.

LOCATION.—Water-stage recorder in SW¼ sec. 26, T. 14 N., R. 2 W., unsurveyed, on Fort Whipple Military Reservation, at highway bridge 4½ miles above Willow Creek and 2 miles north of Prescott. Zero of gage is 5,207.3 feet above mean sea level.

DRAINAGE AREA.—39 square miles.

RECORDS AVAILABLE.—July 1932 to September 1933 (discontinued).

DISCHARGE.—Maximum during period ending Sept. 30, 1932, 270 second-feet Aug. 25 (gage height, 6.0 feet); no flow most of period.

Maximum during year ending Sept. 30, 1933, 230 second-feet Sept. 7 (gage height, 5.89 feet); no flow much of year.

1932-33: Maximum, that of Aug. 25, 1932; no flow much of period.

REMARKS.—Records fair. Discharge estimated July 1-6, 1932, Feb. 10, 11, 1933. Municipal water supply pumped from stream bed above station. Entire flow is stored 3 miles below station and used for irrigation.

Discharge, in second-feet, 1932-33

Day	July	Aug.	Jan.	Feb.	Mar.	Apr.	May	July	Aug.	Sept.
1	0	0	0	1.2	14	0.6	0.6	0	0.4	0.4
2	1	0	0	.8	14	.7	0	0	.4	.4
3	1	0	0	1.6	14	.2	0	0	.4	.4
4	0	0	0	1.7	14	.5	0	0	.4	.4
5	0	0	0	1.8	11	0	.4	.2	.4	.4
6	0	0	0	1.8	8.6	.6	0	.9	.4	.4
7	0	0	0	2.0	10	.1	0	2.7	4.3	3.0
8	0	9	0	1.5	11	.3	0	.3	11	28
9	0	0	0	1.5	11	0	0	.3	.7	.6
10	0	0	0	1.5	11	.2	0	.3	.4	.7
11	0	0	0	1.5	9.5	0	.3	.2	.4	.6
12	0	0	0	1.7	10	.4	0	3.5	.3	.4
13	0	0	0	2.2	8.6	0	.5	.5	.4	.3
14	0	0	0	2.3	7.2	.1	.3	.2	.4	.3
15	0	0	0	3.1	6.7	0	0	.2	.4	.3
16	0	0	0	4.9	4.3	0	0	.2	.4	.3
17	0	0	0	4.6	4.0	0	0	.3	.4	.3
18	0	0	0	5.5	2.6	0	0	4.5	.4	.3
19	0	0	0	4.3	2.9	0	0	.4	.8	.3
20	0	0	0	4.5	2.1	0	0	.3	1.0	.4
21	0	3.3	0	3.9	1.7	0	0	.3	0	.3
22	0	0	0	6.6	1.8	0	0	.3	9.8	.3
23	0	0	0	5.5	1.1	0	0	.3	.2	.3
24	0	0	0	6.2	1.7	.2	0	.3	0	.3
25	0	13	0	8.6	1.5	0	0	.4	.1	.3
26	0	7.1	0	8.6	.7	0	0	.4	.4	.3
27	0	.6	0	11	.6	0	0	.4	.4	.3
28	0	0	0	11	.8	.3	0	.4	.4	.3
29	0	0	0	-----	.8	.6	0	.4	.4	.3
30	0	0	0	-----	.8	.6	0	.4	.4	.3
31	0	0	1.0	-----	.8	-----	0	.4	5.6	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1932				
July	1	0	0.06	4
August	13	0	1.06	65
The period				69
1932-33				
January	1.0	0	0.03	2
February	11	.8	3.98	221
March	14	.6	6.09	374
April	.7	0	.18	11
May	.6	0	.07	4
July	4.5	0	.61	38
August	11	0	1.34	82
September	28	.3	1.37	82
The year	28	0	1.12	814

NOTE.—No flow September to December 1932, June 1933.

WILLOW CREEK NEAR PRESCOTT, ARIZ.

LOCATION.—Water-stage recorder in SE¼NW¼ sec. 12, T. 14 N., R. 2 W., three-eighths mile above mouth and 5 miles north of Prescott.

DRAINAGE AREA.—22 square miles.

RECORDS AVAILABLE.—June 1932 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, about 450 second-feet Sept. 7 (gage height, 6.4 feet); minimum, 0.1 second-foot July 22.

1932-33: Maximum, 450 second-feet Aug. 21, 1932, and Sept. 7, 1933 (gage height, 6.4 feet); minimum, that of July 22, 1933.

REMARKS.—Records good. Stage-discharge relation affected by ice Feb. 10. No diversions above station; small diversion for irrigation below station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	0.6	0.6	0.4	0.4	0.9	0.5	0.5	0.4	0.2	0.4	0.4
2	1.2	.6	.7	.5	.5	.8	.5	.4	.4	.2	.3	.6
3	1.0	.6	.7	.5	.5	.9	.6	.4	.4	.2	.2	.9
4	.9	.6	.7	.6	.7	.7	.6	.4	.4	.2	.2	.4
5	.7	.6	.7	.5	.6	.6	.5	.4	.4	.2	.2	.4
6	.6	.6	.7	.6	.6	.5	.5	.4	.4	2.1	.2	.6
7	.6	.6	.7	.6	.6	.5	.5	.4	.4	.4	12	4.5
8	.5	.6	.7	.6	.4	.5	.4	.4	.4	.2	5.2	12
9	.6	.6	.7	.6	.4	.6	.5	.4	.4	.2	.5	.4
10	.5	.6	.8	.6	.4	.5	.5	.5	.4	.2	.2	.4
11	.5	.6	.8	.6	.4	.4	.5	.5	.4	.2	.2	.4
12	.5	.6	.8	.6	.4	.4	.5	.5	.4	2.0	.2	.4
13	.5	.6	.8	.6	.4	.4	.5	.5	.3	.4	.2	.4
14	.5	.6	.9	.6	.4	.4	.5	.4	.4	.3	.2	.4
15	.4	.6	.8	.6	.4	.4	.6	.4	.4	.2	.2	.4
16	.4	.6	.7	.6	.4	.4	.6	.4	.4	.3	.2	.4
17	.4	.6	.6	.7	.5	.4	.6	.4	.4	.3	.4	.4
18	.4	.6	.7	.7	.6	.4	.6	.3	.4	.4	.4	.4
19	.4	.6	.7	.7	.6	.3	.6	.3	.4	.4	3.2	.4
20	.5	.6	.6	.9	.6	.3	.7	.3	.4	.2	.6	.8
21	.6	.6	.6	.7	.7	.4	.7	.4	.4	.2	.4	.4
22	.6	.6	.6	.7	.7	.4	.7	.4	.3	.2	.6	.3
23	.6	.6	.6	.6	.8	.4	.6	.4	.2	.2	.4	.2
24	.6	.6	.6	.6	.7	.4	.6	.4	.3	.2	.4	.2
25	.6	.6	.6	.6	.8	.4	.6	.4	.2	.2	.4	.3
26	.6	.6	.5	.6	1.1	.4	.6	.4	.3	.3	.4	.4
27	.5	.6	.4	.5	.9	.4	.6	.4	.3	.4	.4	.2
28	.6	.6	.4	.5	.9	.4	.6	.4	.2	4.2	.4	.2
29	.6	.6	.4	.6	-----	.4	.6	.4	.2	.7	.4	.2
30	.6	.6	-----	.5	-----	.5	.6	.4	.2	.5	.4	.2
31	.6	-----	.4	.4	-----	.5	-----	.4	-----	.3	.4	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1.2	0.4	0.59	36
November	.6	.6	.60	36
December	.9	.4	.64	39
January	.9	.4	.59	36
February	1.1	.4	.59	33
March	.9	.3	.48	30
April	.7	.5	.57	34
May	.5	.3	.40	25
June	.4	.2	.35	21
July	4.2	.2	.52	32
August	12	.2	.96	59
September	12	.2	.92	55
The year	12	.2	.60	436

WHITEWATER BASIN

WHITEWATER DRAW NEAR DOUGLAS, ARIZ.

LOCATION.—Water-stage recorder in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 10, T. 24 S., R. 27 E., at highway bridge 2 miles west of Douglas and 1 $\frac{1}{2}$ miles upstream from international boundary.

DRAINAGE AREA.—1,020 square miles.

RECORDS AVAILABLE.—August 1911 to April 1922, June 1930 to September 1933 (discontinued).

DISCHARGE.—Maximum during year, 1,730 second-feet Sept. 20 (gage height, 9.36 feet); minimum, 0.2 second-foot June 14.

1930-33: Maximum, 3,450 second-feet Aug. 10, 1931 (gage height, 12.15 feet); minimum, less than 0.5 second-foot several days in most years.

Maximum known discharge, 4,050 second-feet (estimated) July 28, 1919.

REMARKS.—Records good. Diversions for irrigation above station.

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	1.2	1.3	1.5	1.5	1.2	1.1	0.7	0.9	0.8	1.6	1.0
2	1.7	1.1	1.3	1.5	1.5	1.1	1.0	.7	1.1	.6	1.9	1.0
3	1.4	1.2	1.4	1.4	1.5	1.1	1.2	.7	1.2	.7	1.6	1.1
4	1.4	1.2	1.3	1.3	1.5	1.1	1.0	.7	1.1	.9	2.4	1.1
5	1.4	1.3	1.4	1.4	1.5	1.1	.8	.7	1.0	.7	9.8	1.1
6	4.4	1.4	1.4	1.9	1.9	1.1	.9	.8	1.2	.8	2.7	1.3
7	1.3	1.4	1.4	1.7	1.7	1.1	1.1	.6	.9	.7	9.4	1.5
8	1.4	1.3	1.4	1.5	1.4	1.0	1.0	.6	1.1	.7	17	1.5
9	1.6	1.4	1.5	1.4	1.4	.8	1.0	.7	.8	.7	17	10
10	1.7	1.3	1.4	1.3	1.2	.9	.9	.8	.9	.6	3.1	1.7
11	7.3	1.4	1.5	1.4	1.2	.8	.9	.9	.7	1.0	1.6	6.1
12	16	1.5	1.6	1.4	1.2	.7	1.1	.9	.6	1.6	1.3	2.0
13	1.8	1.6	7.9	1.4	1.2	.8	1.0	.8	.9	.9	1.3	1.2
14	1.1	1.6	10	1.4	1.2	.9	.9	.9	.6	1.0	1.5	1.3
15	1.1	1.9	50	1.4	1.2	1.0	.9	.9	.6	1.0	1.2	1.3
16	1.1	1.9	5.0	1.5	1.2	.9	1.1	.9	.9	228	1.0	1.1
17	1.0	1.9	2.6	2.7	1.2	1.0	1.2	1.0	.9	5.4	1.0	4.4
18	.9	1.9	2.2	2.3	1.2	1.2	1.2	1.0	.9	18	1.0	5.7
19	.9	1.6	1.7	1.7	1.3	1.1	1.2	1.2	17	2.4	1.0	73
20	1.1	1.5	1.6	2.0	1.3	1.1	1.2	1.2	2.9	10	9.0	436
21	1.2	1.5	1.5	1.9	1.4	1.1	1.2	1.3	6.9	2.4	6.8	8.9
22	1.2	1.6	1.5	1.7	1.4	1.0	1.2	1.0	1.5	.9	1.7	2.8
23	1.3	1.5	1.7	1.7	1.2	1.2	1.2	.9	2.0	234	1.0	1.7
24	1.2	1.5	1.6	1.6	1.9	1.2	1.2	1.2	.9	24	1.0	1.2
25	1.2	1.4	1.6	1.6	4.1	1.2	1.0	1.2	.8	4.7	1.0	1.1
26	1.2	1.5	1.6	1.5	1.6	1.2	1.0	1.3	.6	2.2	1.0	1.2
27	1.2	1.4	1.5	1.5	1.3	1.2	1.0	1.2	.7	1.7	.8	1.1
28	1.2	1.4	1.5	1.5	1.2	1.2	.8	1.1	.7	1.7	.8	1.0
29	1.2	1.4	1.4	1.5	-----	1.1	.8	1.1	.7	1.7	1.0	1.1
30	1.2	1.4	1.5	1.5	-----	1.2	.6	1.3	.7	1.6	1.2	2.2
31	1.1	-----	1.5	1.5	-----	1.2	-----	1.2	-----	1.3	1.2	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	16	0.9	1.95	120
November	1.9	1.1	1.47	88
December	50	1.3	3.70	228
January	2.7	1.3	1.60	98
February	4.1	1.2	1.48	82
March	1.2	.7	1.06	65
April	1.2	.6	1.02	61
May	1.3	.6	.95	59
June	17	.6	1.70	102
July	234	.6	18.1	1,110
August	17	.8	3.35	206
September	436	1.0	19.2	1,140
The year	436	.6	4.66	3,360

MISCELLANEOUS DISCHARGE MEASUREMENTS

Discharge measurements of streams in the Colorado River Basin at points other than regular gaging stations are listed in the following table:

Miscellaneous discharge measurements in Colorado River Basin during the year ending Sept. 30, 1933

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				<i>Feet</i>	<i>Sec.-ft.</i>
Aug. 8	Duchesne River.....	Green River.....	Near quarter corner between secs. 20 and 29, T. 3 S., R. 18 E., 100 feet below Ouray School Canal diversion and 6½ miles southwest of Fort Duchesne, Utah.	0.56	52.6
18	do.....	do.....	do.....	.13	12.7
24	do.....	do.....	do.....	.01	4.5
Mar. 26	West Fork of Lake Fork.	Lake Fork.	Sec. 19, T. 1 N., R. 4 W., at highway bridge 2 miles above junction with East Fork and 6 miles northwest of Altonah, Utah.		30.2
Apr. 14	Price River.....	Green River.....	SW¼ sec. 12, T. 13 S., R. 9 E., at water commissioner's gaging station at Heiner, Utah.	.74	22.4
May 2	do.....	do.....	do.....	1.30	88.5
16	do.....	do.....	do.....	1.57	146
31	do.....	do.....	do.....	2.03	361
June 25	do.....	do.....	do.....	1.72	220
July 7	do.....	do.....	do.....	1.58	171
22	do.....	do.....	do.....	1.66	179
Aug. 8	do.....	do.....	do.....	1.46	139
22	do.....	do.....	do.....	1.56	170
Sept. 11	do.....	do.....	do.....	1.09	71.8
30	do.....	do.....	do.....	1.20	85.2
Oct. 7	La Plata River.....	San Juan River.....	Sec. 14, T. 35 N., R. 11 W., a quarter of a mile northwest of Hesperus railroad station and about 200 yards above highway bridge at Hesperus, Colo.	.28	13.5
Nov. 9	do.....	do.....	do.....	.25	9.36
Dec. 15	do.....	do.....	do.....	.22	7.06
Jan. 11	do.....	do.....	do.....		4.63
Feb. 5	do.....	do.....	do.....		5.25
Mar. 22	do.....	do.....	do.....	.22	7.50
Apr. 23	do.....	do.....	do.....	.43	31.6
June 8	do.....	do.....	do.....	1.65	88.5
28	do.....	do.....	do.....	.43	42.4
July 20	do.....	do.....	do.....	.37	20.2
Aug. 19	do.....	do.....	do.....	.26	9.86
Sept. 14	do.....	do.....	do.....	.40	24.9
Oct. 7	do.....	do.....	Sec. 10, T. 32 N., R. 13 W., 300 feet south of Colorado-New Mexico State line and 4 miles north of La Plata, N. Mex.	.52	9.81
Nov. 9	do.....	do.....	do.....	.60	12.0
Dec. 15	do.....	do.....	do.....	1.50	12.0
Jan. 11	do.....	do.....	do.....	1.70	8.54
Mar. 22	do.....	do.....	do.....	.79	18.4
Apr. 23	do.....	do.....	do.....	.56	9.28
June 8	do.....	do.....	do.....	.29	.18
28	do.....	do.....	do.....	.20	*.20
July 20	do.....	do.....	do.....	.26	*.30
Aug. 19	do.....	do.....	do.....	.21	*.15
Sept. 14	do.....	do.....	do.....	.64	7.57
Apr. 18	Little Colorado River.	Colorado River.....	Above mouth of Clear Creek, near Winslow, Ariz.		9.8
24	do.....	do.....	do.....		12.3
30	do.....	do.....	do.....		24.8
14	Silver Creek.....	Little Colorado River.	Mouth, near Woodruff, Ariz.		.1
Mar. 25	Woodruff Canal.....	Silver Creek.....	Diversion dam which is control for station Silver Creek near Woodruff, Ariz.		1.7
Apr. 2	do.....	do.....	do.....		5.8

* Estimated.

Miscellaneous discharge measurements in Colorado River Basin during the year ending Sept. 30, 1933—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	Sec.-ft.
Mar. 19	Chevelon Irrigation Co's. canal.	Chevelon Fork	Diversion dam 2 miles below station Chevelon Fork near Winslow, Ariz.		5.1
Apr. 3	do	do	do		4.5
13	do	do	do		1.6
15	do	do	do		1.7
18	do	do	do		.5
19	do	do	do		1.1
June 24	do	do	do		2.0
July 21	do	do	do		1.7
Aug. 19	do	do	do		1.4
Sept. 19	do	do	do		1.1
Nov. 4	Clear Creek	Little Colorado River.	1 mile below station Clear Creek near Winslow, Ariz.		2.7
June 22	National Park Service Canal.	Mukuntuweap River.	SW $\frac{1}{4}$ sec. 15, T. 41 S., R. 10 W., 500 feet above park headquarters at entrance to Zion National Park, Utah.		.8
22	Springdale Canal	do	SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T. 41 S., R. 10 W., below spillway, 100 feet below gaging station, which is above spillway and 2 miles northeast of Springdale, Utah.		7.7
May 4	North Creek	Virgin River	NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 41 S., R. 12 W., 100 feet above highway bridge and $\frac{1}{4}$ miles northeast of Virgin, Utah.		6.8
June 9	Santa Clara Creek	do	NE $\frac{1}{4}$ sec. 34, T. 41 S., R. 17 W., $\frac{1}{4}$ mile below highway bridge and $\frac{5}{8}$ miles northwest of Santa Clara, Utah.		11.6
Dec. 7	Williams River	Colorado River	580 feet above station Williams River at Planet, Ariz.	4.56	22.2
7	do	do	300 feet above station Williams River at Planet, Ariz.	4.56	22.7
7	do	do	20 feet below station Williams River at Planet, Ariz.	4.56	22.9
7	do	do	320 feet below station Williams River at Planet, Ariz.	4.56	18.8
7	do	do	930 feet below station Williams River at Planet, Ariz.	4.56	19.0
7	do	do	1,610 feet below station Williams River at Planet, Ariz.	4.56	17.3
Dec. 7	do	do	2,200 feet below station Williams River at Planet, Ariz.	4.56	19.0
7	do	do	2,900 feet below station Williams River at Planet, Ariz.	4.56	18.0
21	do	do	20 feet below station Williams River at Planet, Ariz.	4.54	19.3
21	do	do	320 feet below station Williams River at Planet, Ariz.	4.54	17.4
Jan. 6	do	do	580 feet above station Williams River at Planet, Ariz.	4.56	19.8
6	do	do	20 feet below station Williams River at Planet, Ariz.	4.56	21.4
6	do	do	320 feet below station Williams River at Planet, Ariz.	4.55	17.9
6	do	do	2,200 feet below station Williams River at Planet, Ariz.	4.55	16.4
May 12	Gila River	do	$\frac{1}{4}$ mile above Brown Canal heading, near Solomonsville, Ariz.		232
12	do	do	do		225
Oct. 1	do	do	Below Brown Canal heading and at former station Gila River near Solomonsville, Ariz.	1.10	151
3	do	do	do	1.07	131
Jan. 21	do	do	do	1.59	306
Apr. 13	do	do	do	1.59	334
May 25	do	do	do	1.08	158
25	do	do	do	1.08	158
June 9	do	do	do	0.89	106
9	do	do	do	0.89	109
23	do	do	do	1.73	455
July 20	do	do	do	1.37	280
Aug. 24	do	do	do	0.85	102

Miscellaneous discharge measurements in Colorado River Basin during the year ending Sept. 30, 1933—Continued

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Dis-charge
				<i>Feet</i>	<i>Sec.-ft.</i>
Jan. 21	Brown Canal.....	Gila River.....	Former gaging station Brown Canal near Solomonsville, Ariz.	1.28	0.2
Apr. 13	do.....	do.....	do.....	2.72	17.6
May 25	do.....	do.....	do.....	2.26	12.6
June 9	do.....	do.....	do.....	1.80	4.0
23	do.....	do.....	do.....	2.38	13.1
Aug. 24	do.....	do.....	do.....	2.03	4.2
Dec. 14	Aravaipa Creek.....	San Pedro River.....	Highway crossing near mouth, near Feldman, Ariz.		41.6
20	do.....	do.....	do.....		2.8
Jan. 28	do.....	do.....	do.....		7.1
Feb. 11	do.....	do.....	do.....		2.8
July 10	do.....	do.....	do.....		.4
24	do.....	do.....	do.....		12.5
27	do.....	do.....	do.....		1.7
Aug. 1	do.....	do.....	do.....		4.7
Feb. 20	Mineral Creek.....	Gila River.....	Mouth at Kelvin, Ariz.		7.6
25	do.....	do.....	do.....		4
Mar. 3	do.....	do.....	do.....		8.9
9	do.....	do.....	do.....		6.8
17	do.....	do.....	do.....		5.9
21	do.....	do.....	do.....		3.6
29	do.....	do.....	do.....		2.1
Apr. 4	do.....	do.....	do.....		1.9
10	do.....	do.....	do.....		1.7
16	do.....	do.....	do.....		1.2
24	do.....	do.....	do.....		1.2
May 1	do.....	do.....	do.....		1.1
8	do.....	do.....	do.....		1.0
15	do.....	do.....	do.....		.6
22	do.....	do.....	do.....		.5
28	do.....	do.....	do.....		.3
June 5	do.....	do.....	do.....		.2
12	do.....	do.....	do.....		.3
19	do.....	do.....	do.....		.3
26	do.....	do.....	do.....		.3
July 5	do.....	do.....	do.....		.1
10	do.....	do.....	do.....		.2
17	do.....	do.....	do.....		.2
22	do.....	do.....	do.....		.3
23	do.....	do.....	do.....		122
24	do.....	do.....	do.....		.3
26	do.....	do.....	do.....		.03
Aug. 1	do.....	do.....	do.....		.2
7	do.....	do.....	do.....		.1
13	do.....	do.....	do.....		.1
21	do.....	do.....	do.....		.1
27	do.....	do.....	do.....		.05
Sept. 5	do.....	do.....	do.....		.01
11	do.....	do.....	do.....		4.0
Oct. 9	Animas Creek.....	Closed basin.....	NE $\frac{1}{4}$ sec. 33, T. 31 S., R. 20 W., at The Box, 11 $\frac{1}{2}$ miles north-east of Cloverdale, N.Mex.		(a)
Nov. 1	do.....	do.....	do.....		(a)
Dec. 12	do.....	do.....	do.....		(a)
Jan. 11	do.....	do.....	do.....		(a)
Feb. 14	do.....	do.....	do.....		(a)
18	do.....	do.....	do.....		(a)
Mar. 4	do.....	do.....	do.....		(a)
Apr. 8	do.....	do.....	do.....	.68	4.18
May 23	do.....	do.....	do.....	.54	1.01
June 9	do.....	do.....	do.....	.47	.47
July 13	do.....	do.....	do.....		(a)
Aug. 8	do.....	do.....	do.....		(a)
30	do.....	do.....	do.....		(a)
Sept. 19	do.....	do.....	do.....		(a)

* Dry.

INDEX

	Page		Page
Accuracy of data and computed results.....	5	Cottonwood Creek near Orangeville, Utah..	54
Acre-foot, definition of.....	2	Daniel, Wyo., Green River near.....	26
Animas Creek, N. Mex., discharge measurements of.....	115	Horse Creek near.....	30
Animas River at Farmington, N. Mex.....	61	Data, accuracy of.....	5
Appropriations, record of.....	1	explanation of.....	2-4
Aravaipa Creek, Ariz., discharge measurements of.....	115	Diamondville, Wyo., Hams Fork at.....	37
near Feldman, Ariz.....	99	Dillon, Colo., Blue River at.....	20
Ashley Creek near Vernal, Utah.....	40	Snake River at.....	21
Ashurst, Ariz., Gila River near.....	83	Tenmile Creek at.....	22
Big Sandy Creek near Farson, Wyo.....	36	Dome, Ariz., Gila River near.....	90
Blanco, N. Mex., San Juan River near.....	56	Douglas, Ariz., Whitewater Draw near.....	112
Blue River at Dillon, Colo.....	20	Duchesne, Utah, Strawberry River at.....	45
Bluff, Utah, San Juan River near.....	59	Duchesne River at Duchesne, Utah.....	43
Boulder, Wyo., New Fork near.....	31	at Myton, Utah.....	44
Bright Angel Creek near Grand Canyon, Ariz.....	72	discharge measurements of.....	113
Brown Canal, Ariz., discharge measurements of.....	115	near Tablona, Utah.....	42
Brown Duck Creek near Mountain Home, Utah.....	49	North Fork of, at Provo River Trail, near Hanna, Utah.....	41
Burnt Fork at Burntfork, Wyo.....	39	Duncan, Ariz., Gila River near.....	80
Calva, Ariz., Gila River at.....	84	Farmington, N. Mex., Animas River at.....	61
Charleston, Ariz., San Pedro River at.....	96	San Juan River at.....	57
Chevelon Fork near Winslow, Ariz.....	69	Farson, Wyo., Big Sandy Creek near.....	36
Chevelon Irrigation Co.'s canal, Ariz., discharge measurements of.....	114	Feldman, Ariz., Aravaipa Creek near.....	99
Chrysotile, Ariz., Salt River near.....	106	Florence, Ariz., Gila River near.....	88
Cisco, Utah, Colorado River near.....	13	Fontenelle Creek near Fontenelle, Wyo.....	35
Clear Creek, Ariz., discharge measurement of.....	114	Gila River at Ashurst-Hayden Dam, near Florence, Ariz.....	88
near Winslow, Ariz.....	70	at Calva, Ariz.....	84
Clifton, Ariz., Gila River near.....	81	at Coolidge Dam, Ariz.....	86
San Francisco River at.....	92	at Fuller's ranch, near Duncan, Ariz.....	80
Colona, Colo., Uncompahgre River near.....	25	at Gillespie Dam, Ariz.....	89
Colorado River and tributaries above Green River, Colo.-Utah-Ariz., gaging-station records in.....	11-25	at Kelvin, Ariz.....	87
Colorado River at Bright Angel Creek, near Grand Canyon, Ariz.....	15	at Winkelman, Ariz.....	87
at Glenwood Springs, Colo.....	11	below Bonita Creek, near Solomonsville, Ariz.....	82
at Lees Ferry, Ariz.....	14	discharge measurements of.....	114
at Yuma, Ariz.....	17-19	near Ashurst, Ariz.....	83
near Cisco, Utah.....	13	near Clifton, Ariz.....	81
near Palisade, Colo.....	12	near Dome, Ariz.....	90
near Topock, Ariz.....	16	near Gila, N. Mex.....	78
Computations, results of, accuracy of.....	5	near Red Rock, N. Mex.....	79
Control, definition of.....	2	Gila River Basin, N. Mex.-Ariz., gaging-station records in.....	78-111
Coolidge Dam, Ariz., Gila River at.....	86	Gillespie Dam, Ariz., Gila River at.....	89
San Carlos Reservoir at.....	85	Glenwood, N. Mex., San Francisco River near.....	91
Cooperation, record of.....	10	Glenwood Springs, Colo., Colorado River at.....	11
		Grand Canyon, Ariz., Bright Angel Creek near.....	72
		Colorado River near.....	15

	Page		Page
Grand Falls, Ariz., Little Colorado River at.....	67	Nogales Wash at Nogales, Ariz.....	102
Granite Creek near Prescott, Ariz.....	110	Santa Cruz River near.....	100
Green River at Green River, Utah.....	29	North Creek, Utah, discharge measurement of.....	114
at Green River, Wyo.....	27	North Piney Creek near Mason, Wyo.....	33
at Warren Bridge, near Daniel, Wyo.....	26		
near Linwood, Utah.....	28	Orangeville, Utah, Cottonwood Creek near.....	54
Green River Basin, Wyo.-Utah, gaging station records in.....	26-54		
		Palisade, Colo., Colorado River near.....	12
Hams Fork at Diamondville, Wyo.....	37	Palominas, Ariz., San Pedro River at.....	95
Hanna, Utah, North Fork of Duchesne River near.....	41	Paria River at Lees Ferry, Ariz.....	63
Helper, Utah, Price River near.....	52	Patagonia, Ariz., Sonoita Creek near.....	103
Henrys Fork at Linwood, Utah.....	38	Peridot, Ariz., San Carlos River near.....	94
Henson Creek at Lake City, Colo.....	24	Pine Creek at Pinedale, Wyo.....	32
Horse Creek near Daniel, Wyo.....	30	Pinedale, Wyo., Pine Creek at.....	32
Hunt, Ariz., Little Colorado River near.....	65	Planet, Ariz., Williams River at.....	77
Huntington Creek near Huntington, Utah.....	53	Prescott, Ariz., Granite Creek near.....	110
		Willow Creek near.....	111
Ignacio, Colo., Los Pinos River at.....	60	Price River, Utah, discharge measurements of.....	113
		near Helper, Utah.....	52
Kelvin, Ariz., Gila River at.....	87	Publications, information concerning obtaining or consulting of.....	7-9
		on stream flow, lists of.....	7-9
La Plata River at La Plata, N. Mex.....	62		
discharge measurements of.....	113	Red Rock, N. Mex., Gila River near.....	79
Labarge Creek near Tulsa, Wyo.....	34	Rillito Creek near Tucson, Ariz.....	104
Lake City, Colo., Henson Creek at.....	24	Roosevelt, Ariz., Salt River near.....	107
Lake Fork at.....	23	Tonto Creek near.....	108
Lake Fork (Colorado River Basin) at Lake City, Colo.....	23	Rosa, N. Mex., San Juan River at.....	55
Lake Fork (Green River Basin) near Myton, Utah.....	48	Run-off in inches, definition of.....	2
West Fork of, Utah, discharge measurement of.....	113		
above Moon Lake, near Mountain Home, Utah.....	46	Sabino Creek near Tucson, Ariz.....	105
near Mountain Home, Utah.....	47	St. Johns, Ariz., Little Colorado River at.....	64
Lees Ferry, Ariz., Colorado River at.....	14	Salt River near Chrysotile, Ariz.....	106
Paria River at.....	63	near Roosevelt, Ariz.....	107
Linwood, Utah, Green River near.....	28	San Carlos Reservoir at Coolidge Dam, Ariz.....	85
Henrys Fork at.....	38	San Carlos River near Peridot, Ariz.....	94
Little Colorado River at Grand Falls, Ariz.....	67	San Francisco River at Clifton, Ariz.....	92
at St. Johns, Ariz.....	64	near Glenwood, N. Mex.....	91
discharge measurements of.....	113	San Juan River at Farmington, N. Mex.....	57
near Hunt, Ariz.....	65	at Rosa, N. Mex.....	55
near Woodruff, Ariz.....	66	at Shiprock, N. Mex.....	58
Little Colorado River Basin, Ariz., gaging station records in.....	64-71	near Blanco, N. Mex.....	56
Littlefield, Ariz., Virgin River at.....	74	near Bluff, Utah.....	59
Los Pinos River at Ignacio, Colo.....	60	San Juan River Basin, N. Mex.-Utah, gaging station records in.....	55-62
		San Pedro River at Charleston, Ariz.....	96
McDowell, Ariz., Verde River near.....	109	at Palominas, Ariz.....	95
Mammoth, Ariz., San Pedro River near.....	97	at Winkelman, Ariz.....	98
Mason, Wyo., North Piney Creek near.....	33	near Mammoth, Ariz.....	97
Mineral Creek, Ariz., discharge measurements of.....	115	San Simon Creek near San Simon, Ariz.....	93
Moenkopi Wash near Tuba, Ariz.....	71	Santa Clara Creek, Utah, discharge measurement of.....	114
Mountain Home, Utah, Brown Duck Creek near.....	49	Santa Cruz River at Tucson, Ariz.....	101
West Fork of Lake Fork near.....	46-47	near Nogales, Ariz.....	100
Myton, Utah, Duchesne River at.....	44	Second-feet per square mile, definition of.....	2
Lake Fork near.....	48	Second-foot, definition of.....	2
		Shiprock, N. Mex., San Juan River at.....	58
National Park Service Canal, Utah, discharge measurement of.....	114	Silver Creek, Ariz., discharge measurement of.....	113
Neola, Utah, Uinta River near.....	50	near Woodruff, Ariz.....	68
New Fork near Boulder, Wyo.....	31	Snake River at Dillon, Colo.....	21
		Solomonsville, Ariz., Gila River near.....	82
		Sonoita Creek near Patagonia, Ariz.....	103
		Springdale, Utah, North Fork of Virgin River near.....	75-76

	Page		Page
Springdale Canal, Utah, discharge measure- ment of.....	114	Virgin River at Littlefield, Ariz.....	74
Stage-discharge relation, definition of.....	2	at Virgin, Utah.....	73
Strawberry River at Duchesne, Utah.....	45	North Fork of, near Springdale, Utah....	75-76
Tabiona, Utah, Duchesne River near.....	42	Whiterocks River near Whiterocks, Utah....	51
Tenmile Creek at Dillon, Colo.....	22	Whitewater Draw near Douglas, Ariz.....	112
Terms, definition of.....	2	Williams River at Planet, Ariz.....	77
Tonto Creek near Roosevelt, Ariz.....	108	discharge measurements of.....	114
Topock, Ariz., Colorado River near.....	16	Willow Creek near Prescott, Ariz.....	111
Tuba, Ariz., Moenkopi Wash near.....	71	Winkelman, Ariz., Gila River at.....	87
Tucson, Ariz., Rillito Creek near.....	104	San Pedro River at.....	98
Sabino Creek near.....	105	Winslow, Ariz., Chevelon Fork near.....	69
Santa Cruz River at.....	101	Clear Creek near.....	70
Tulsa, Wyo., Labarge Creek near.....	34	Woodruff, Ariz., Little Colorado River near.....	66
Uinta River near Neola, Utah.....	50	Silver Creek near.....	68
Uncompahgre River near Colona, Colo.....	25	Woodruff Canal, Ariz., discharge measure- ments of.....	113
Verde River above Camp Creek, near Mc- Dowell, Ariz.....	109	Work, authorization of.....	i
Vernal, Utah, Ashley Creek near.....	40	division of.....	10
		scope of.....	1-2
		Yuma, Ariz., Colorado River at.....	17-19



