

UNITED STATES DEPARTMENT OF THE INTERIOR

HAROLD L. ICKES, Secretary

GEOLOGICAL SURVEY

W. C. MENDENHALL, Director

Water-Supply Paper 763

# SURFACE WATER SUPPLY *of the* UNITED STATES

1934

PART 8

WESTERN GULF OF MEXICO BASINS

NATHAN C. GROVER, Chief Hydraulic Engineer

C. E. ELLSWORTH, ROBERT FOLLANSBEE, and BENJAMIN JOHNSON  
District Engineers

Prepared in cooperation with the

STATES OF COLORADO, NEW MEXICO  
AND TEXAS



UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1936



# 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.....	6
Cooperation.....	10
Division of work.....	10
Gaging-station records.....	11
Sabine River Basin.....	11
Sabine River near Gladewater, Tex.....	11
Sabine River at Logansport, La.....	12
Sabine River near Bon Wier, Tex.....	13
Sabine River near Ruliff, Tex.....	14
Neches River Basin.....	15
Neches River near Rockland, Tex.....	15
Neches River at Evadale, Tex.....	16
Angelina River near Lufkin, Tex.....	17
Angelina River at Horger, Tex.....	18
Trinity River Basin.....	19
West Fork of Trinity River at Lake Worth Dam, above Fort Worth, Tex.....	19
West Fork of Trinity River at Fort Worth, Tex.....	20
West Fork of Trinity River at Grand Prairie, Tex.....	21
Trinity River at Dallas, Tex.....	22
Trinity River near Oakwood, Tex.....	23
Trinity River at Riverside, Tex.....	24
Trinity River at Romayor, Tex.....	25
Clear Fork of Trinity River at Fort Worth, Tex.....	26
Elm Fork of Trinity River near Carrollton, Tex.....	27
East Fork of Trinity River near Rockwall, Tex.....	28
San Jacinto River Basin.....	29
San Jacinto River near Humble, Tex.....	29
Brazos River Basin.....	30
Double Mountain Fork of Brazos River near Aspermont, Tex..	30
Brazos River at Seymour, Tex.....	30
Brazos River near Glen Rose, Tex.....	31
Brazos River at Waco, Tex.....	32
Brazos River near Bryan, Tex.....	33
Brazos River at Richmond, Tex.....	34
Clear Fork of Brazos River at Nugent, Tex.....	35
Clear Fork of Brazos River at Fort Griffin, Tex.....	36
Clear Fork of Brazos River near Crystal Falls, Tex.....	37
North Bosque River near Clifton, Tex.....	38
Deer Creek at Chilton, Tex.....	39

## Gaging-station records—Continued.

## Brazos River Basin—Continued.

	Page
Leon River near Belton, Tex.....	40
Little River at Cameron, Tex.....	41
Lampasas River at Youngsfort, Tex.....	42
San Gabriel River at Circleville, Tex.....	43
Big Elm Creek near Temple, Tex.....	44
Big Elm Creek near Buckholts, Tex.....	45
Yegua Creek near Somerville, Tex.....	46
Navasota River near Easterly, Tex.....	47
Brazos Valley Irrigation Co.'s canal near Fulshear, Tex.....	48
Richmond Irrigation Co.'s canal near Richmond, Tex.....	49
Colorado River Basin.....	50
Colorado River at Ballinger, Tex.....	50
Colorado River near Milburn, Tex.....	51
Colorado River near San Saba, Tex.....	52
Colorado River near Tow, Tex.....	53
Colorado River at Austin, Tex.....	55
Evaporation at Austin, Tex.....	56
Colorado River at Smithville, Tex.....	57
Colorado River near Eagle Lake, Tex.....	58
Elm Creek at Ballinger, Tex.....	59
South Concho River at Christoval, Tex.....	60
South Concho River at San Angelo, Tex.....	61
Concho River near San Angelo, Tex.....	62
Concho River near Paint Rock, Tex.....	63
Middle Concho River near Tankersly, Tex.....	64
Spring Creek near Tankersly, Tex.....	65
North Concho River near Carlsbad, Tex.....	66
Pecan Bayou at Brownwood, Tex.....	67
San Saba River at Menard, Tex.....	68
San Saba River at San Saba, Tex.....	69
Noyes Canal at Menard, Tex.....	70
North Llano River near Junction, Tex.....	71
Llano River near Junction, Tex.....	72
Llano River near Castell, Tex.....	73
Pedernales River at Stonewall, Tex.....	74
Pedernales River near Spicewood, Tex.....	75
Guadalupe River Basin.....	76
Guadalupe River near Spring Branch, Tex.....	76
Guadalupe River above Comal River, at New Braunfels, Tex.....	77
Guadalupe River below Cuero, Tex.....	78
Comal River at New Braunfels, Tex.....	79
San Marcos River at Ottine, Tex.....	80
Blanco River at Wimberley, Tex.....	81
Plum Creek near Luling, Tex.....	82
Sandies Creek near Westhoff, Tex.....	83
San Antonio River near Falls City, Tex.....	85
Medina River near Pipe Creek, Tex.....	86
Medina River near Riomedina, Tex.....	87
Medina Canal near Riomedina, Tex.....	87
Cibolo Creek near Falls City, Tex.....	88

## Gaging-station records—Continued.

	Page
Nueces River Basin.....	89
Nueces River at Laguna, Tex.....	89
Nueces River near Uvalde, Tex.....	90
Nueces River at Cotulla, Tex.....	91
Nueces River near Three Rivers, Tex.....	92
Nueces River at Calallen, Tex.....	93
Frio River at Concan, Tex.....	94
Frio River near Derby, Tex.....	95
Frio River at Calliham, Tex.....	96
Sabinal River seepage investigation.....	97
Leona River seepage investigation.....	97
Atascosa River at Whitsett, Tex.....	98
Rio Grande Basin.....	99
Rio Grande at Thirtymile Bridge, near Creede, Colo.....	99
Rio Grande at Wason, below Creede, Colo.....	100
Rio Grande near Del Norte, Colo.....	101
Rio Grande near Monte Vista, Colo.....	102
Rio Grande at Alamosa, Colo.....	103
Rio Grande near Lobatos, Colo.....	104
Rio Grande at Taos Junction Bridge, near Taos, N. Mex.....	105
Rio Grande at Embudo, N. Mex.....	106
Rio Grande at Otowi Bridge, near San Ildefonso, N. Mex.....	107
Rio Grande at Cochiti, N. Mex.....	108
Rio Grande at San Felipe, N. Mex.....	109
Rio Grande at San Marcial, N. Mex.....	110
Rio Grande below Elephant Butte Dam, N. Mex.....	111
Clear Creek below Continental Reservoir, Colo.....	112
Saguache Creek near Saguache, Colo.....	113
Carnero Creek near La Garita, Colo.....	114
La Garita Creek near La Garita, Colo.....	115
Alamosa Creek below Terrace Reservoir, Colo.....	116
La Jara Creek near Capulin, Colo.....	117
Trinchera Creek above Turners ranch, near Fort Garland, Colo.....	118
Trinchera Creek above Mountain Home Reservoir, near Fort Garland, Colo.....	119
Trinchera Creek below Smith Reservoir, near Blanca, Colo.....	120
Sangre de Cristo Creek near Fort Garland, Colo.....	121
Sangre de Cristo Creek above Smith Reservoir, near Blanca, Colo.....	122
Ute Creek near Fort Garland, Colo.....	123
Conejos River near Mogote, Colo.....	124
Conejos River near La Sauces, Colo.....	125
San Antonio River at Ortiz, Colo.....	126
San Antonio River at mouth, near Manassa, Colo.....	127
Los Pinos River near Ortiz, Colo.....	128
Culebra Creek at San Luis, Colo.....	129
Rio Colorado near Questa, N. Mex.....	130
Rio Hondo at Valdez, N. Mex.....	131
Rio Hondo at Arroyo Hondo, N. Mex.....	132
Rio Taos at Los Cordovas, N. Mex.....	133
Rio Lucero near Arroyo Seco, N. Mex.....	134

## Gaging-station records—Continued.

## Rio Grande Basin—Continued.

## Page

Seco Ditch at head, near Arroyo Seco, N. Mex.....	135
Embudo Creek at Dixon, N. Mex.....	136
Rio Chama at Park View, N. Mex.....	137
Rio Chama near Chamita, N. Mex.....	138
El Rito Creek near El Rito, N. Mex.....	139
Rio Santa Cruz at Cundiyo, N. Mex.....	140
Nambe Creek near Nambe, N. Mex.....	141
Nambe Canal near Nambe, N. Mex.....	142
Santa Fe Creek near Santa Fe, N. Mex.....	143
Rio Puerco at Rio Puerco, N. Mex.....	144
Bluewater Creek near Bluewater, N. Mex.....	145
Alamosa River near Monticello, N. Mex.....	146
Tornillo Drain at mouth, at Alamo Alto, Tex.....	147
Tornillo Canal at waste near Alamo Alto, Tex.....	148
Hudspeth Canal at head, near Alamo Alto, Tex.....	151
Pecos River at Irvin ranch, near Pecos, N. Mex.....	154
Pecos River near Anton Chico, N. Mex.....	155
Pecos River at Santa Rosa, N. Mex.....	156
Pecos River near Guadalupe, N. Mex.....	157
Pecos River near Dayton, N. Mex.....	158
Pecos River at Carlsbad, N. Mex.....	161
Pecos River near Malaga, N. Mex.....	164
Pecos River near Angeles, Tex.....	167
Gallinas River near Montezuma, N. Mex.....	168
Gallinas River at Montezuma, N. Mex.....	169
Rio Ruidoso at Hondo, N. Mex.....	170
Rio Bonito at Hondo, N. Mex.....	171
Rio Felix near Hagerman, N. Mex.....	172
Cottonwood Creek near Lake Arthur, N. Mex.....	173
Madera Canyon near Toyahvale, Tex.....	174
Devils River near Juno, Tex.....	175
Mimbres River Basin.....	176
Mimbres River near Mimbres, N. Mex.....	176
Mimbres River near Faywood, N. Mex.....	177
Tularosa Valley Basin.....	178
Rio Tularosa near Tularosa, N. Mex.....	178
Alamo Creek at Wood ranch, near Alamogordo, N. Mex.....	179
Alamogordo water supply at intake, near Alamogordo, N. Mex.....	180
Miscellaneous discharge measurements.....	181
Index.....	185

## ILLUSTRATION

## Page

FIGURE 1. Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.....	4
---	---

# SURFACE WATER SUPPLY OF WESTERN GULF OF MEXICO BASINS, 1934

## 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, 1934.

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-----	<sup>1</sup> 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 6,900 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July 1934, 2,940 gaging stations were being

<sup>1</sup> 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-foot”, “second-foot per square mile”, “run-off in inches”, and “acre-feet.” They may be defined as follows:

“Second-foot” 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-foot 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, 1933, and ending September 30, 1934. 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 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 nonrecording 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 usually comprise a description of the station, a table showing the daily discharge of the stream, and a table of 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 or storage, and the accuracy of the records. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more complete years of record. Information under "Extremes" gives the maximum discharge and gage height; the minimum discharge, if there is little or no regulation; the minimum daily discharge, if there is extensive regulation, and also the minimum discharge, if useful; and the minimum gage height except when it is of no importance. Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum represents the lowest discharge unless otherwise qualified.

The table of daily discharge gives, for stations equipped with nonrecording gages, the discharge in second-feet corresponding to once-daily or the mean of twice-daily readings of the gage. For stations equipped with water-stage recorders the table gives the discharge corresponding to the mean daily gage height except for stations on streams

subject to sudden or rapid fluctuation. For stations subject to such fluctuation the mean daily gage height may not indicate the true mean daily discharge, which must be obtained by averaging the discharge for intervals of the day or by using the discharge integrator, an instrument for obtaining the mean daily discharge from a continuous gage-height graph and containing as an essential element the rating curve of the station.

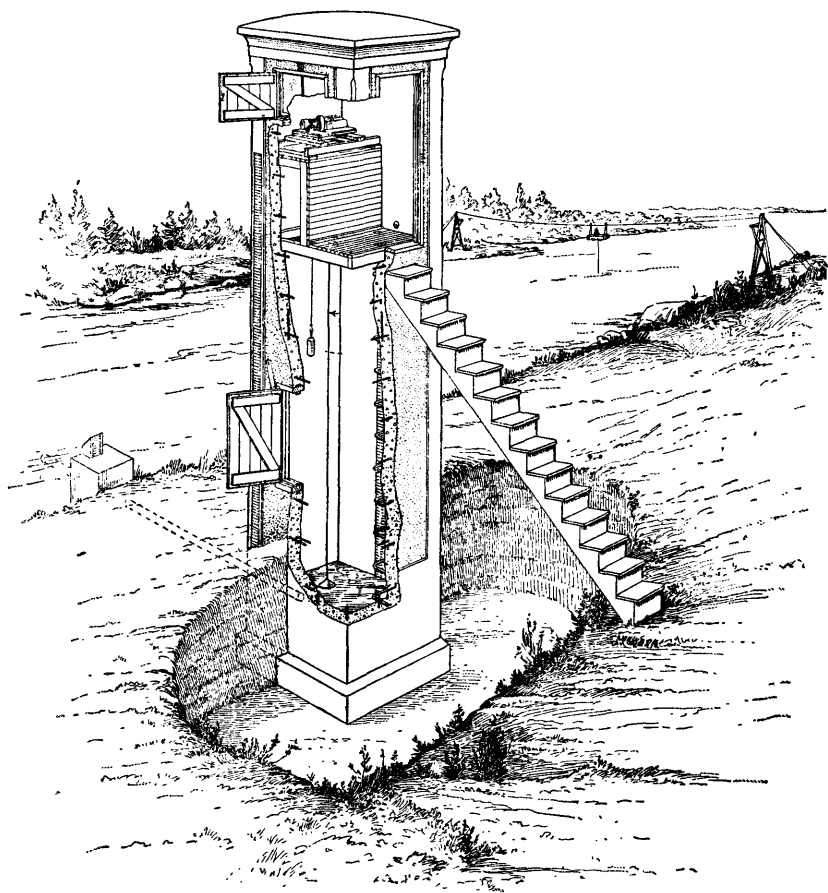


FIGURE 1.—Typical river measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.

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.

## ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanence 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.

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 station must first be satisfied.

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, and that greater degrees of refinement in computations and records may be warranted with increased data and use of improved equipment.

In order to permit greater refinement in analysis and comparison of records for adjacent stations, the following changes have been made in the computation procedure: (a) Mean monthly discharge above 1,000 second-feet and monthly run-off above 10,000 acre-feet are expressed to four significant figures instead of three significant figures as formerly; (b) monthly run-off in acre-feet is computed from the total second-foot-days for the month and not from the mean discharge for the month; (c) drainage areas above 1,000 square miles, if measured on topographic maps or if otherwise warranted, are expressed to four significant figures instead of three as formerly. Some of the records in the series of reports for 1934 have been computed in accordance with the modified procedure.

## 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 in 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., 526 Federal Building.  
 Trenton, N. J., 228 Federal Building.  
 Harrisburg, Pa., 490 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., Customhouse, Eighth and Olive Streets.  
 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., 512 Eighth and Figueroa Building.  
 Honolulu, Hawaii, 225 Federal Building.

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

Stream-flow records have been obtained at about 6,900 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.....	do.....	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.
16th A, 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. 4.....	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.

*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
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.
W 521 to 534.....	do.....	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.
W 756 to 769.....	do.....	1934.

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 discharge measurements" 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 1934. 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, 1899-1934*

[For basins included, see p. —]

Year	1	2	3	4	5	6	7	8	9	10	11	12-A	12-B	12-C	
1899-1	35	2 35, 36	36	36	36	3 36, 37	37	37	37	38	38	38	38	38	
1900-1	47, 8 48	48	48, 0 49	49	49	49, 10 50	50	50	50	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	2 82, 83	83	83	83	84	84	84	84	85	85	85	85	85	
1903	97	2 97, 98	98	98	98	99	99	99	99	100	100	100	100	100	
1904	104, 124, 151, 25, 161, 26	104, 128	128	129	128, 130	130, 17 131	131	132	133	133, 18 134	134	135	135	135	
1905	165, 166, 167	16 167, 168	169	170	170	172	173	174	175, 19 177	176, 18 177	177	178	178	178	
1906	162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000	38	38	38	38	38	38	38	38	38	38	38	38	38	38

1 Rating tables and index to Water-Supply Papers 35-38 contained in Water-Supply Paper 38. Tables for monthly discharge for 1899 in 21st Annual Report, pt. 4.

2 James River only.

3 Gallatin River.

4 Green and Gunnison Rivers and Colorado River above Gunnison River.

5 Mojave River only.

6 Kings and Kern Rivers and south Pacific slope basins.

7 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 32.

8 Monthly discharge for 1900 in 22nd Annual Report, pt. 4.

9 W. Issaquah and Schuykill Rivers to James River.

10 Scioto River.

10 Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.

11 Tributaries of Mississippi River from east.

12 Lake Ontario and tributaries to St. Lawrence River proper.

13 Hudson Bay only.

14 New England rivers only.

15 Hudson River to Delaware River, inclusive.

16 Susquehanna River to York River, inclusive.

17 Platte and Kansas Rivers.

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

19 Below junction with Gila River.

20 Rogue, Umpqua, and Siletz Rivers only.

### COOPERATION

The work was done under cooperative agreements with the several States as follows: In Colorado with the State engineer, M. C. Hinderlider; in New Mexico with the State engineer, Thomas M. McClure; in Texas with the Board of Water Engineers, consisting of John A. Norris, chairman, C. S. Clark, and A. H. Dunlap.

Acknowledgments are due to the American section of the International Boundary Commission, United States Bureau of Reclamation, United States Weather Bureau, for assisting in collecting the records published herein.

Assistance in collecting records was also rendered by the following organizations: In New Mexico by the United States Indian Irrigation Service, the town of Alamogordo, Alamogordo Community Ditch, Aqua Pura Co., New Mexico Power Co., Middle Rio Grande Conservancy District, and Tularosa Community Ditch; in Texas by the cities of Corpus Christi and Fort Worth, Dallas County, Bexar-Medina-Atascosa Counties Water Improvement District No. 1, Gulf, Colorado & Santa Fe Railway Co., San Antonio Public Service Co., and West Texas Utilities Co.

### DIVISION OF WORK

Data for stations in the several States were collected and prepared for publication under supervision of district engineers as follows: In Colorado, Robert Follansbee, the work being done in collaboration with M. C. Hinderlider, State engineer and L. T. Burgess, State chief hydrographer; in New Mexico, Berkeley Johnson; in Texas, C. E. Ellsworth.



Sabine River near Gladewater, Tex.

Location.- Water-stage recorder at Gladewater-Tyler highway bridge 1 mile southwest of Gladewater, Gregg County. Prior to Oct. 13, 1933, chain gage at same location and datum. Zero of gage is 243.85 feet above mean sea level (Texas Reclamation Department datum).

Drainage area.- 2,846 square miles.

Records available.- October 1932 to September 1934.

Extremes.- Maximum discharge during year, 9,340 second-feet Apr. 15 (gage height, 30.93 feet); minimum, 9.8 second-feet Aug. 26, 27 (gage height, 3.61 feet).  
1932-34: Maximum discharge, that of Apr. 15, 1934; minimum, that of Aug. 26, 27, 1934.  
Maximum stage known, 39.4 feet January 1932.

Remarks.- Records fair. Discharge estimated July 9 to Aug. 22. Small diversions for municipal and oil-field operations.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	146	91	1,470	454	1,340	7,690	687	992	40		17
2	97	118	162	1,640	445	3,520	6,210	621	968	53		15
3	112	106	368	2,010	434	4,510	6,270	533	688	56		21
4	86	130	401	2,820	401	4,840	8,090	467	342	46		21
5	73	137	643	2,990	368	4,980	7,800	467	174	44		19
6	64	131	731	3,050	346	4,980	7,860	434	130	43		19
7	66	127	621	3,080	335	5,060	7,690	412	117	39		19
8	45	119	522	3,020	324	5,090	7,480	401	100	37		19
9	43	112	489	2,960	462	5,320	7,180	423	91			19
10	47	104	434	2,960	732	5,640	7,020	768	83			18
11	62	99	379	3,080	872	6,000	6,970	1,140	76			18
12	59	98	346	3,160	1,090	6,370	7,500	1,220	51			18
13	105	100	293	3,030	1,470	6,560	8,090	873	95			18
14	161	103	245	2,350	1,850	6,510	8,940	506	128			19
15	232	101	212	1,300	2,200	6,040	9,540	346	176			20
16	229	97	1,140	660	2,500	4,860	9,270	293	167			20
17	172	92	2,550	478	2,730	3,230	8,750	287	249			21
18	151	91	1,550	456	2,930	1,740	7,860	236	511			94
19	110	89	913	577	2,870	981	6,610	218	666			23
20	103	87	562	643	2,390	709	8,140	234	665			22
21	99	86	401	643	1,920	643	3,780	212	445			22
22	104	85	324	577	1,780	577	2,730	188	221			21
23	101	83	287	522	1,860	544	2,140	176	132			21
24	95	82	289	478	2,060	622	1,970	160	101			19
25	89	86	249	456	2,250	1,970	1,860	165	82			19
26	83	86	232	434	2,310	3,990	1,360	199	69		9.8	19
27	246	87	216	423	2,030	4,580	1,140	201	59		9.8	19
28	555	87	247	401	1,410	4,810	1,020	192	51		10	19
29	599	88	313	379		5,240	800	423	45		11	19
30	434	88	514	346		6,040	731	721	42		12	20
31	229		1,300	346		6,920		896			16	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							599	43	151	9,280		
November							146	82	101	6,010		
December							2,550	91	546	32,600		
January							3,160	546	1,610	92,900		
February							2,930	324	1,460	81,100		
March							6,920	544	4,010	247,000		
April							9,340	731	5,770	343,000		
May							1,220	160	454	27,900		
June							992	42	258	18,400		
July							55		29.3	1,800		
August									13.2	812		
September							24	15	19.5	1,170		
The year							9,340	9.8	1,190	860,000		

## Sabine River at Logansport, La.

Location.- Chain gage on Houston East & West Texas Railway bridge and a quarter of a mile west of railway station in Logansport, De Soto Parish. Prior to Aug. 24, 1934, chain gage at highway bridge 200 feet upstream with same datum. Zero of gage is 147.5 feet above mean sea level.

Drainage area.- 4,858 square miles.

Records available.- July 1903 to December 1906, October 1923 to September 1934.

Average discharge.- 11 years (1923-34), 3,010 second-feet.

Extremes.- Maximum discharge recorded during year, 17,400 second-feet Mar. 8 (gage height, 28.4 feet); minimum, 23 second-feet Aug. 25-27.  
1903-6, 1923-34: Maximum discharge, 41,100 second-feet Feb. 23, 1932 (gage height, 35.6 feet); minimum, that of Aug. 25-27, 1934.  
Maximum stage known, 39.4 feet, present datum, reached during 1884.

Remarks.- Records fair. Discharge partly estimated Dec. 17-31 and estimated Aug. 2-23, Aug. 25 to Sept. 2 and Sept. 4-30. Small diversions above station. Gage-height record furnished by U. S. Weather Bureau.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	254	311	180	1,460	2,790	3,640	7,590	2,970	556	149	44	34
2	380	476	180	1,980	3,430	7,140	7,170	2,240	600	139	39	31
3	362	516	202	2,800	3,340	11,400	6,710	1,800	824	129	38	29
4	282	436	214	4,260	2,830	11,700	6,380	1,620	968	120	37	
5	240	380	268	4,860	2,290	13,300	6,320	1,690	1,020	111	35	
6	214	296	398	6,420	1,900	15,800	6,970	1,770	992	111	34	
7	214	282	578	8,500	1,770	17,000	8,080	1,720	872	129	35	
8	226	296	666	9,980	1,590	17,400	9,300	1,590	732	159	33	
9	202	312	776	8,980	1,720	16,600	11,100	1,420	600	149	31	
10	191	312	824	8,500	2,240	15,800	13,000	1,260	416	129	30	
11	169	296	800	7,800	2,460	14,200	13,300	1,110	344	120	30	
12	159	282	754	7,240	2,910	12,600	13,500	1,140	312	111	29	
13	149	268	710	6,520	3,480	11,300	13,200	1,260	268	111	28	
14	139	264	644	5,080	3,700	10,200	12,500	1,420	254	111	26	
15	139	240	600	4,410	3,430	9,220	12,000	1,450	226	103	27	
16	149	226	566	3,790	3,120	8,430	11,300	1,420	214	95	26	
17	191	226	516	3,250	2,990	7,800	10,900	1,230	191	88	26	
18	268	214	516	2,980	3,070	7,380	10,500	1,040	202	81	26	
19	362	214	877	5,810	3,920	6,840	10,000	992	214	74	25	
20	456	214	1,160	7,240	4,410	5,680	9,570	896	214	67	25	
21	436	202	1,020	6,580	4,710	6,380	9,140	800	240	61	25	
22	398	202	872	5,500	4,610	5,930	8,620	696	363	61	24	
23	328	191	732	4,460	4,610	4,490	8,500	622	516	61	24	
24	268	191	688	3,610	3,790	2,860	8,500	644	556	55	24	
25	240	180	644	2,910	3,480	2,930	8,500	872	476	55	23	
26	214	169	600	2,350	3,120	6,720	8,360	1,040	416	55	23	
27	202	180	600	2,100	3,030	9,750	8,150	1,090	312	49	23	
28	191	169	578	1,800	3,070	9,300	7,660	1,160	254	49	24	
29	191	169	600	1,690		6,660	6,380	968	202	49	27	
30	180	180	776	1,590		8,360	4,410	710	169	49	30	
31	169		928	1,620		8,010		578		49	34	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October	456	139	244	15,000								
November	516	169	263	15,600								
December	1,180	180	628	35,600								
January	6,960	1,460	4,680	288,000								
February	4,610	1,590	3,140	174,000								
March	17,400	2,860	9,570	588,000								
April	13,500	4,410	9,260	551,000								
May	2,870	578	1,260	77,600								
June	1,020	169	450	26,800								
July	169	49	92.9	5,710								
August	44	23	29.2	1,800								
September			34.6	2,060								
The year	17,400	23	2,470	1,780,000								

## Sabine River near Bon Wier, Tex.

Location.- Chain gage on highway bridge  $1\frac{1}{2}$  miles east of Bon Wier, Newton County.  
Zero of gage is 45.4 feet above mean sea level (railway datum).

Drainage area.- 8,323 square miles.

Records available.- October 1923 to September 1934 (discontinued).

Average discharge.- 11 years, 7,110 second-feet.

Extremes.- Maximum discharge recorded during year, 35,200 second-feet Mar. 30, 31  
(gage height, 21.4 feet); minimum, 270 second-feet Sept. 13-15.

1923-34: Maximum discharge recorded, 63,000 second-feet Aug. 1, 2, 1933;  
maximum gage height, 23.04 feet Aug. 2, 1933; minimum discharge, 185 second-feet  
Sept. 11, 22, 24, 1925.

Maximum stage known, 25 feet (present datum) in 1884.

Remarks.- Records fair. No diversions below station near Longview. Gage-height record  
furnished by U. S. Weather Bureau.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,070	830	790	12,800	21,100	12,600	27,600	11,500	1,950	830	710	365
2	1,020	830	790	13,800	20,900	18,000	28,800	9,250	1,810	750	635	340
3	970	830	830	14,500	20,600	23,100	26,400	7,660	1,690	750	565	340
4	970	870	870	16,100	20,600	24,000	25,800	6,460	1,630	750	530	315
5	970	920	830	16,700	20,600	26,100	24,700	5,800	1,670	750	500	315
6	970	1,070	970	16,200	20,100	26,800	24,700	5,320	1,570	710	440	290
7	970	1,120	1,070	19,700	17,600	26,100	23,700	4,960	1,510	710	440	290
8	920	1,120	1,270	17,000	15,400	24,400	22,200	4,720	1,450	710	415	290
9	920	1,070	1,570	21,100	13,800	23,100	20,600	4,600	1,390	790	390	290
10	870	1,070	1,760	21,400	12,700	22,200	18,800	4,460	1,390	830	390	290
11	830	1,070	1,750	21,600	12,200	21,900	17,300	4,480	1,390	830	390	290
12	830	1,020	1,630	21,900	13,200	21,600	16,300	4,000	1,270	790	390	290
13	830	1,020	1,510	21,100	14,900	21,600	15,400	3,400	1,220	710	390	270
14	870	970	1,450	17,800	14,400	21,400	15,200	3,640	1,120	670	390	270
15	920	970	1,390	16,500	13,200	21,100	15,200	4,000	1,020	635	390	270
16	970	970	1,570	15,400	12,100	20,600	15,600	3,760	970	565	365	290
17	970	920	1,880	14,900	11,400	20,400	15,800	3,520	920	530	340	315
18	1,020	870	1,960	14,500	11,000	19,900	16,500	3,300	870	500	340	340
19	1,070	870	2,400	14,400	11,200	19,000	17,300	2,400	830	500	315	340
20	1,070	870	2,600	14,700	11,600	18,200	17,600	2,320	790	470	315	365
21	1,170	920	2,400	15,400	12,100	17,300	18,000	2,240	750	440	315	415
22	1,170	870	2,020	16,100	11,600	16,300	18,400	2,090	750	440	315	440
23	1,170	870	1,950	16,300	10,900	14,500	16,600	2,090	710	440	315	440
24	1,120	830	1,270	16,000	10,300	13,000	17,400	2,240	670	415	315	440
25	1,070	830	1,510	16,100	9,700	13,500	16,500	2,240	670	440	315	440
26	1,020	830	1,880	16,500	9,550	20,900	15,800	2,320	670	470	290	440
27	1,020	830	2,320	19,200	9,850	28,000	14,700	2,320	750	530	290	440
28	970	830	2,800	21,400	10,200	28,400	14,000	2,240	790	635	290	470
29	970	830	3,760	21,900		34,200	13,300	2,160	830	750	290	500
30	870	830	6,460	21,900		35,200	12,700	2,160	870	830	315	530
31	870		9,860	21,900		33,200		2,090		870	340	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October								1,170	830	982	60,400	
November								1,120	830	925	55,000	
December								9,860	790	2,100	129,000	
January								21,900	12,800	17,600	1,090,000	
February								21,100	9,550	14,000	778,000	
March								35,200	12,600	22,100	1,360,000	
April								28,800	12,700	18,800	1,120,000	
May								11,500	2,090	3,990	245,000	
June								1,950	670	1,130	67,200	
July								870	415	646	36,700	
August								710	290	388	25,800	
September								530	270	357	21,200	
The year								35,200	270	6,900	4,990,000	

## Sabine River near Ruliff, Tex.

Location.— Staff gage on Kansas City Southern Railway bridge  $1\frac{1}{2}$  miles east of Ruliff, Newton County, and 5 miles below mouth of Cypress Creek. Zero of gage is 4.7 feet above mean sea level (railway datum).

Drainage area.— 9,448 square miles.

Records available.— October 1924 to September 1934.

Average discharge.— 10 years, 7,780 second-feet.

Extremes.— Maximum discharge recorded during year, 47,100 second-feet Mar. 29 (gage height, 14.15 feet); minimum, 405 second-feet Aug. 28, Sept. 11-14, 22, 23.  
1924-34: Maximum discharge recorded, 68,800 second-feet Aug. 5, 1933 (gage height, 15.55 feet); minimum, 362 second-feet Nov. 15-17, 1932.  
River has been known to have reached higher stages in the past.

Remarks.— Records for medium and high stages good, for low stages fair. No diversions of consequence above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,290	1,140	878	5,380	29,300	11,500	35,400	14,800	3,060	1,140	960	474
2	1,240	1,050	878	6,540	19,700	19,700	35,400	15,400	2,880	1,290	960	474
3	1,190	1,050	878	6,020	29,300	24,900	34,100	12,800	2,700	1,390	918	474
4	1,140	1,000	878	9,450	28,200	30,400	31,600	11,500	2,530	1,290	804	450
5	1,190	960	878	11,000	28,200	35,400	30,400	11,000	2,370	1,290	769	427
6	1,190	960	878	13,400	27,100	35,400	30,400	10,200	2,220	1,290	700	450
7	1,140	960	878	15,800	24,900	32,800	30,400	8,530	2,220	1,240	656	474
8	1,050	960	960	17,700	24,900	30,400	30,400	5,020	2,150	1,240	606	450
9	1,140	1,050	1,240	19,700	26,000	29,300	30,400	7,050	2,150	1,240	577	450
10	1,140	1,140	2,150	21,800	24,900	29,300	28,200	6,580	2,220	1,240	577	427
11	1,140	1,190	2,880	22,800	23,800	28,200	26,000	5,910	2,220	1,290	549	405
12	1,090	1,190	2,970	24,900	23,800	26,000	23,800	5,620	2,150	1,340	549	405
13	1,090	1,140	2,700	24,900	22,800	24,900	21,800	5,290	2,010	1,290	549	405
14	1,050	1,090	2,500	26,000	21,800	23,800	19,700	5,480	1,880	1,190	577	405
15	1,060	1,050	2,080	26,000	21,800	23,800	16,700	5,220	1,750	1,050	577	427
16	1,050	1,050	1,880	24,900	20,700	22,800	17,700	4,980	1,560	960	523	450
17	1,050	1,050	1,610	24,900	19,700	22,800	16,800	4,740	1,450	878	523	450
18	1,140	1,050	1,810	24,900	18,700	22,800	15,800	4,400	1,390	840	523	427
19	1,190	1,050	2,010	23,800	17,700	21,800	16,800	4,290	1,340	804	498	427
20	1,240	1,000	2,370	23,800	15,800	21,800	15,800	4,070	1,290	769	498	427
21	1,340	960	2,880	21,800	15,000	21,800	16,800	3,850	1,240	734	474	427
22	1,390	960	3,060	20,700	15,000	21,800	17,700	3,530	1,140	700	450	405
23	1,390	960	3,060	18,700	14,200	21,800	17,700	3,430	1,090	700	450	405
24	1,340	918	3,060	17,700	14,200	20,700	18,700	3,150	1,050	667	427	450
25	1,290	918	3,150	17,700	13,400	19,700	18,700	3,060	1,050	667	427	549
26	1,240	878	3,430	17,700	12,100	23,800	18,700	2,880	1,000	667	405	636
27	1,240	878	3,530	19,700	11,500	27,100	17,700	3,150	960	636	450	606
28	1,240	878	3,430	20,700	11,500	34,100	17,700	3,430	960	636	474	606
29	1,190	878	3,240	22,800		45,600	16,800	3,850	1,000	636	450	606
30	1,140	878	3,060	24,900		41,100	15,800	3,850	1,050	636	474	734
31	1,140		3,960	28,200		36,800		3,430		734	474	
Month							Maximum	Minimum	Mean		Run-off in acre-feet	
October	1,390	1,050	1,190	75,200								
November	1,190	878	1,010	60,100								
December	3,960	878	2,230	137,000								
January	28,200	5,350	19,600	1,210,000								
February	30,400	11,500	21,000	1,170,000								
March	45,600	11,500	26,800	1,650,000								
April	35,400	15,800	22,900	1,360,000								
May	14,200	2,880	6,170	379,000								
June	3,060	960	1,740	104,000								
July	1,390	636	983	60,400								
August	960	405	576	35,400								
September	734	405	473	28,100								
The year	45,600	406	8,640	6,270,000								

## Neches River near Rockland, Tex.

Location.- Staff gage half a mile above Texas & New Orleans Railroad bridge 1 mile north of Rockland, Tyler County. Zero of gage is 91.3 feet above mean sea level.

Drainage area.- 3,539 square miles.

Records available.- October 1923 to September 1934.

Average discharge.- 11 years, 2,410 second-feet.

Extremes.- Maximum discharge during year, 12,400 second-feet Mar. 7 (gage height, 20.80 feet, from graph based on gage readings); minimum, 15 second-feet Sept. 10-11, 1923-24: Maximum discharge recorded, 34,200 second-feet June 1, 1929 (gage height, 26.8 feet); minimum, 3.0 second-feet Oct. 15, 1931. Maximum stage known, 28.9 feet Apr. 2, 1922 (discharge, about 45,800 second-feet).

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	111	111	97	1,040	9,690	1,780	6,470	4,160	650	96	39	18
2	128	111	111	1,230	9,970	5,390	8,400	3,660	576	96	36	16
3	111	128	111	1,470	10,300	8,290	6,050	3,370	504	82	34	18
4	111	128	128	2,210	10,300	9,550	5,370	3,100	458	91	32	20
5	97	128	128	2,300	9,760	11,200	4,890	2,990	378	87	29	27
6	97	128	242	2,680	9,060	12,100	5,640	2,890	378	78	26	22
7	97	128	298	3,200	8,220	12,000	6,190	2,730	350	75	26	20
8	82	111	650	3,550	7,380	11,600	6,820	2,590	323	69	23	19
9	82	111	504	3,550	7,240	11,500	7,310	2,350	298	65	21	17
10	82	111	350	3,550	6,750	11,200	7,590	2,300	298	65	23	15
11	82	97	275	3,600	6,890	10,700	7,870	2,350	288	66	27	15
12	82	128	264	3,840	6,960	10,200	8,080	2,160	275	62	24	22
13	82	128	232	3,660	6,470	9,550	8,220	2,030	253	69	25	27
14	82	128	222	3,370	5,980	8,640	8,430	1,940	232	80	27	26
15	82	128	212	2,780	5,430	7,730	8,570	1,850	232	77	24	33
16	82	145	201	2,300	4,820	6,750	8,570	1,760	211	82	21	33
17	82	111	182	2,080	4,290	5,910	8,290	1,680	201	68	20	27
18	82	111	201	1,980	3,900	4,960	7,940	1,590	182	53	20	26
19	82	128	201	2,030	3,600	4,420	7,800	1,510	182	49	18	27
20	82	128	286	2,400	3,260	3,900	7,730	1,470	163	46	20	33
21	69	128	378	2,640	2,780	3,550	7,730	1,390	163	44	20	26
22	69	128	378	2,680	2,300	3,260	7,660	1,310	154	42	20	24
23	69	128	407	2,490	1,840	3,100	7,590	1,190	146	37	22	23
24	69	128	407	2,590	1,640	2,990	7,380	1,150	136	33	24	42
25	69	111	378	2,830	1,550	3,980	7,170	1,040	128	33	22	56
26	69	111	298	3,200	1,510	6,610	6,960	957	128	35	20	56
27	69	97	298	5,640	1,510	7,310	6,540	918	111	33	21	53
28	82	111	323	6,750	1,470	7,030	5,910	879	111	43	22	28
29	82	111	378	7,520		6,680	5,800	940	111	81	24	51
30	97	97	576	8,080		6,400	4,690	764	103	61	20	71
31	97		840	8,500		6,400		688		43	19	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							128	69	85.8	5,280		
November							145	97	119	7,060		
December							840	97	508	13,900		
January							8,500	1,040	3,410	210,000		
February							10,300	1,470	5,530	307,000		
March							12,100	1,780	7,230	445,000		
April							8,570	4,690	7,040	419,000		
May							4,160	688	1,920	118,000		
June							650	103	267	15,300		
July							96	33	82.0	5,610		
August							39	18	24.2	1,490		
September							71	15	29.7	1,770		
The year							12,100	15	2,140	1,550,000		

## Neches River at Evadale, Tex.

Location.- Staff gage at highway bridge 200 feet upstream (revised) from Gulf, Colorado & Santa Fe Railway bridge at Evadale, Jasper County. Zero of gage is 7.20 feet above mean sea level (railway datum).

Drainage area.- 7,908 square miles.

Records available.- July 1904 to December 1906, October 1923 to September 1934.

Average discharge.- 11 years (1923-34), 6,400 second-feet.

Extremes.- Maximum discharge recorded during year, 24,800 second-feet Feb. 9, 11; maximum gage height recorded, 18.70 feet Feb. 11; minimum discharge, 217 second-feet Aug. 28, 30, Sept. 11-13, 19-28.  
 1904-6, 1923-34: Maximum discharge, 83,800 second-feet June 1, 1929 (gage height, 22.20 feet); minimum, about 143 second-feet Sept. 10, 1925.  
 Maximum stage known, 33.4 feet in 1884 from records of Gulf, Colorado & Santa Fe Railway Co.

Remarks.- Records good. No diversions above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	633	471	451	2,060	16,500	6,900	19,900	11,800	2,350	555	397	230
2	607	471	451	2,870	17,600	7,820	20,500	10,800	2,160	535	432	230
3	607	471	451	3,460	18,700	10,000	21,200	10,000	2,010	513	432	230
4	607	471	451	4,210	19,900	11,800	21,200	9,270	1,830	492	397	230
5	582	471	471	4,990	20,500	13,100	20,500	8,600	1,700	471	380	230
6	558	471	471	6,360	21,200	14,200	21,200	7,820	1,610	471	363	243
7	535	471	492	7,200	22,600	15,500	19,900	7,800	1,530	471	331	243
8	513	471	513	8,000	24,000	16,500	18,100	6,900	1,460	471	315	243
9	492	471	636	8,600	24,800	18,100	16,500	6,620	1,380	471	285	243
10	471	471	1,040	9,270	24,000	19,300	16,000	6,360	1,340	513	285	230
11	471	471	1,650	9,750	24,800	21,200	15,500	5,990	1,300	555	270	217
12	471	471	1,740	10,600	24,000	21,900	15,100	5,330	1,220	513	266	217
13	451	471	1,870	11,200	22,600	22,600	15,500	5,330	1,150	471	270	217
14	451	471	1,340	11,400	21,200	24,000	15,500	5,870	1,080	432	285	230
15	451	471	1,110	11,800	19,900	24,000	16,000	5,410	1,010	432	270	243
16	471	471	977	11,800	19,300	24,000	16,000	4,800	1,010	432	270	256
17	471	471	914	11,800	18,700	23,300	16,500	4,480	945	414	270	243
18	535	492	977	11,400	17,600	22,600	16,500	4,290	914	397	256	230
19	568	513	1,010	10,800	16,500	21,900	17,000	4,050	884	380	270	217
20	513	513	1,010	10,000	15,100	20,500	17,000	3,800	826	363	270	217
21	471	513	1,040	9,040	13,800	19,900	16,500	3,660	768	347	270	217
22	492	513	1,220	8,820	12,400	18,700	15,500	3,530	740	347	256	217
23	513	492	1,420	9,270	10,800	17,600	16,100	3,390	713	331	243	217
24	513	471	1,500	9,750	9,750	16,000	14,600	3,190	659	331	230	217
25	492	471	1,460	10,000	8,600	14,200	14,600	3,120	633	315	230	217
26	471	451	1,380	10,000	7,820	15,500	14,200	3,260	607	315	230	217
27	451	451	1,300	11,200	7,200	15,500	14,200	3,120	558	300	243	230
28	451	451	1,220	12,100	6,900	15,500	13,800	3,010	535	300	217	230
29	451	451	1,220	13,100		16,000	13,100	2,780	513	300	230	256
30	471	451	1,340	13,800		16,500	12,400	2,620	513	315	217	315
31	471		1,670	16,100		18,100		2,510		347	230	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						633	451	506	31,100			
November						513	451	475	28,300			
December						1,740	451	1,040	64,000			
January						15,100	2,060	9,340	574,000			
February						24,800	6,900	17,400	968,000			
March						24,000	6,900	17,500	1,080,000			
April						21,200	12,400	16,700	994,000			
May						11,800	2,510	5,470	336,000			
June						2,350	513	1,130	87,800			
July						555	300	415	25,500			
August						432	217	288	17,700			
September						315	217	232	13,800			
The year						24,800	217	5,790	4,200,000			

## Angelina River near Lufkin, Tex.

Location.- Chain gage on highway bridge 1 mile above Southern Pacific (Houston East & West Texas) Railway bridge and 8 miles north of Lufkin, Angelina County.

Drainage area.- 1,575 square miles.

Records available.- October 1923 to September 1934 (discontinued).

Average discharge.- 11 years, 1,230 second-feet.

Extremes.- Maximum discharge recorded during year, 11,500 second-feet Mar. 8 (gage height, 13.98 feet); minimum, 4.2 second-feet Sept. 3.  
1923-34: Maximum discharge recorded, 38,200 second-feet Feb. 24, 1932 (gage height, 18.26 feet); minimum, that of Sept. 3, 1934.

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	68	77	850	3,140	1,790	1,520	1,100	245	32	11	4.6
2	71	66	80	880	2,850	3,750	1,720	930	225	30	11	4.5
3	77	66	97	1,560	2,500	6,280	2,020	880	197	32	11	4.8
4	77	66	125	1,400	2,100	6,000	2,200	830	188	30	11	5.1
5	74	66	140	1,580	1,720	4,950	2,600	880	180	29	14	5.6
6	83	68	156	1,660	1,520	4,710	3,640	830	172	29	17	6.2
7	111	71	164	2,600	1,400	8,900	3,640	780	164	30	15	5.4
8	104	77	197	2,500	1,450	11,500	3,640	650	148	28	13	6.0
9	86	85	215	2,300	1,650	10,300	3,460	580	140	28	12	6.4
10	74	104	215	2,200	1,650	8,850	3,000	550	132	28	11	8.6
11	68	125	206	2,020	1,720	7,500	2,360	550	132	29	13	15
12	66	125	197	2,100	1,940	6,280	3,000	525	140	28	15	16
13	61	125	188	2,100	1,940	5,450	4,260	525	132	28	13	17
14	68	118	180	2,100	1,850	4,710	5,720	525	118	24	12	14
15	61	111	172	2,100	1,720	4,040	5,450	525	104	23	11	12
16	71	104	164	2,020	1,580	3,460	4,950	580	97	22	9.8	11
17	68	97	180	1,860	1,520	3,000	4,480	610	83	20	8.8	14
18	61	86	225	1,790	1,520	2,500	3,840	580	77	19	10	19
19	74	83	255	3,290	1,650	2,100	3,290	560	74	17	11	19
20	111	83	289	3,000	1,790	1,790	2,860	525	68	16	10	17
21	132	80	331	2,500	1,860	1,520	2,300	475	64	15	9.0	13
22	140	77	387	2,500	1,790	1,340	1,860	407	58	14	8.4	12
23	125	74	427	2,020	1,650	1,160	1,580	349	54	13	7.5	13
24	104	71	475	1,860	1,580	1,100	1,400	450	50	13	6.9	13
25	86	68	500	1,860	1,650	1,720	1,520	650	44	12	6.6	11
26	77	68	475	2,200	1,650	3,000	2,020	427	41	11	6.0	11
27	74	71	427	2,860	1,650	3,000	2,100	316	40	11	5.7	10
28	71	74	367	2,730	1,650	2,500	1,860	289	36	12	5.4	9.8
29	71	74	427	2,730	1,860	1,520	1,520	277	35	11	5.4	9.2
30	71	74	610	2,500	1,520	1,520	1,280	277	34	11	5.1	12
31	68		730	2,400	1,460			265		11	4.8	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							140	58	82.0	5,040		
November							125	66	84.1	5,000		
December							730	77	280	17,200		
January							3,280	830	2,120	130,000		
February							3,140	1,400	1,610	101,000		
March							11,500	1,100	4,130	284,000		
April							5,720	2,280	2,850	170,000		
May							1,100	265	571	55,100		
June							245	54	109	6,490		
July							32	11	21.0	1,290		
August							17	4.8	10.0	615		
September							19	4.5	10.8	645		
The year							11,500	4.5	1,000	726,000		

## Angelina River at Horger, Tex.

Location.- Chain gage on Zavalla-Jasper highway bridge a quarter of a mile east of Horger, Jasper County, and 20 miles above mouth.

Drainage area.- 3,435 square miles.

Records available.- March 1928 to September 1934.

Extremes.- Maximum discharge during year, 16,500 second-feet Mar. 28 (gage height, 28.00 feet, from graph based on gage readings); minimum, 47 second-feet Sept. 8, 9.

1928-34: Maximum discharge, 48,800 second-feet Feb. 24, 1932 (gage height, 36.35 feet, from graph based on gage readings); minimum, 35 second-feet Oct. 12, 19, 1931.

Maximum stage known, about 39.50 feet August 1914.

Remarks.- Records fair except those estimated which are poor. There is a possibility of backwater at times from Neches River. No diversions above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	222	182	161	2,020	*12,100	5,700	11,000	4,080	916	182	140	57
2	213	182	168	2,300		7,990	9,180	3,930	632	175	147	*64
3	213	175	175	5,010	*12,400	9,760	7,990	3,590	748	175	133	70
4	205	175	190	4,330	12,300	10,500	7,050	5,110	*727	175	128	82
5	197	175	205	5,130	12,000	11,800	6,180	2,960	706	168	106	70
6	197	175	261	5,520	11,600	12,200	6,840	2,920	706	161	92	60
7	197	182	632	5,700	10,900	12,300	7,700	2,730	664	263	88	49
8	190	175	790	6,310	10,400	13,000	7,990	2,580	706	309	82	47
9	182	175	874	6,560	10,100	13,500	*6,340	2,300	664	222	61	47
10	182	175	769	6,980	9,960	13,100	8,680	2,120	538	197	77	75
11	190	182	449	7,120	9,690	12,800	8,760	1,930	496	190	82	72
12	197	182	239	7,050	9,100	12,100	8,760	1,540	456	205	70	72
13	197	182	182	6,910	8,840	11,500	8,610	*1,770	438	182	70	71
14	197	182	161	6,630	7,920	11,400	8,530	1,700	*427	175	70	70
15	190	182	154	6,370	5,760	11,300	8,300	1,700	*416	*161	75	60
16	190	182	147	5,990	5,470	11,000	7,920	1,740	404	147	84	60
17	182	190	161	5,350	5,410	10,600	7,330	1,740	360	133	82	70
18	190	190	230	5,020	5,130	9,960	7,050	1,520	322	126	82	62
19	222	197	309	5,180	4,910	8,930	6,840	1,430	277	126	77	64
20	258	197	589	5,700	4,590	8,070	6,840	1,540	277	109	77	64
21	248	190	874	6,060	4,380	7,050	6,840	1,260	267	109	75	77
22	230	182	974	6,180	4,330	6,060	*6,640	1,220	248	98	71	73
23	213	182	832	6,370	4,080	5,130	6,430	1,340	248	93	67	67
24	197	175	622	6,770	3,680	4,540	6,180	1,390	*239	88	65	60
25	197	168	538	7,190	3,540	4,130	5,350	1,300	230	75	53	59
26	205	168	496		3,490	7,450	5,080	1,430	213	70	53	58
27	205	168	580		3,400	13,000	4,700	1,260	213	67	53	71
28	197	168	874	*6,600	3,930	16,000	4,330	1,260	205	93	52	76
29	197	161	1,260			16,000	*4,260	1,260	205	147	51	78
30	197	161	1,430			14,700	4,180	1,000	182	154	51	92
31	190		1,520			13,000		958		182	51	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						258	182	203	12,500			
November						197	161	179	10,700			
December						1,520	147	540	33,200			
January							2,020	6,430	395,000			
February							3,400	7,560	419,000			
March						16,000	4,130	10,500	646,000			
April						11,000	4,180	7,130	424,000			
May						4,080	958	1,960	121,000			
June						916	182	444	26,400			
July						309	67	153	9,410			
August						147	51	80.1	4,930			
September						92	47	66.6	3,960			
The year						16,000	47	2,910	2,110,000			

\*Estimated.



West Fork of Trinity River at Lake Worth Dam, above Fort Worth, Tex.

Location.- Water-stage recorder just above Lake Worth Dam and  $4\frac{1}{2}$  miles northwest of Tarrant County Courthouse, in Fort Worth.

Drainage area.- 1,872 square miles.

Records available.- October 1923 to September 1934 (discontinued).

Average discharge.- 11 years, 316 second-feet.

Extremes.- Maximum discharge during year, 520 second-feet May 2 (gage height, 0.35 foot); no flow at times.  
1923-34: Maximum discharge, 7,600 second-feet Nov. 18, 1923 (gage height, 2.25 feet); no flow at times.

Remarks.- Records fair except those below 100 second-feet, which are poor. Diversions for municipal use only, amount not known. Flow materially regulated by Eagle Mountain Reservoir.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	0	150	53	1.5	143	0	137	0	0	5.9	
2	1.0	0	163	53	1.0	125	0	207	0	0	4.2	
3	.4	0	137	145	.6	87	0	286	0	0	4.2	
4	.2	0	125	150	.6	53	0	137	0	0	4.2	
5	.1	0	163	150	.4	34	0	95	0	0	4.2	
6	0	0	113	163	.3	26	1.5	53	0	10	4.2	
7	0	0	87	168	.2	34	.6	34	0	79	4.2	
8	0	0	103	65	4.2	20	.3	23	0	163	4.2	
9	0	0	95	53	15	12	0	15	0	223	4.2	
10	0	0	103	43	18	5.9	0	10	18	238	4.2	
11	0	0	113	30	30	7.8	0	2.9	137	270	5.9	
12	0	0	87	30	34	1.5	0	.6	320	286	5.9	
13	0	0	79	18	30	1.0	0	.2	354	270	15	
14	0	0	65	12	26	4.2	0	.6	137	270	65	
15	0	0	71	10	30	2.1	0	0	65	163	223	
16	0	0	59	15	23	1.0	0	0	30	65	354	
17	0	0	59	10	10	2.9	0	0	15	26	406	
18	0	0	43	12	53	4.2	0	0	5.9	10	328	
19	0	0	30	12	43	.2	0	0	.6	2.1	193	
20	0	0	7.8	15	53	0	0	0	0	2.9	79	
21	0	4.9	5.9	10	150	0	0	0	0	2.9	34	
22	0	122	2.9	10	163	0	0	0	0	5.9	18	
23	0	303	1.5	5.9	125	0	0	0	0	20	5.9	
24	0	371	2.1	7.8	95	0	0	0	0	10	2.1	
25	0	337	1.0	12	124	.3	0	0	0	2.9	1.0	
26	0	371	.6	7.8	43	5.9	43	0	0	5.9	.2	
27	0	286	.2	5.9	23	.6	270	0	0	10	0	
28	0	206	.1	5.9	23	0	286	0	0	15	0	
29	0	193	.4	2.9	0	0	270	0	0	12	0	
30	0	163	20	.6	0	0	238	0	0	12	0	
31	0		30	.6	0	0	0	0	0	10	0	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						2.9	0	0.15	9.2			
November						371	0	76.6	4,690			
December						163	.1	61.9	3,810			
January						168	.6	41.2	2,530			
February						163	.2	40.0	2,220			
March						143	0	18.4	1,130			
April						286	0	37.0	2,200			
May						286	0	32.5	1,990			
June						354	0	36.1	2,150			
July						286	0	70.5	4,330			
August						406	0	59.3	3,650			
September						0	0	0	0			
The year						406	0	39.6	28,700			

Note.- No flow during September.

## West Fork of Trinity River at Fort Worth, Tex.

Location.- Water-stage recorder in old pump house of Fort Worth Power & Light Co.'s plant in Fort Worth, Tarrant County, 150 feet above Paddock viaduct and a quarter of a mile below mouth of Clear Fork of Trinity River. Zero of gage is 519.2 feet above mean sea level.

Drainage area.- 2,431 square miles.

Records available.- October 1920 to September 1934.

Average discharge.- 14 years, 416 second-feet.

Extremes.- Maximum discharge during year, 3,600 second-feet May 3 (gage height, 5.12 feet); no flow at times.

1920-34: Maximum discharge, determined by slope-area method, 85,000 second-feet Apr. 25, 1922 (gage height, 23.95 feet); no flow at times.

Remarks.- Records good. Discharge estimated June 9-18. Considerable water diverted above for municipal use. Flow partly regulated by Lake Worth Reservoir and others above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5	6.6	168	96	14	379	42	202	3.4	0	1.2	0
2	3.8	6.1	185	70	14	764	39	341	3.1	0	.8	0
3	3.6	12	160	264	12	220	42	1,040	3.4	0	1.2	4.6
4	5.2	9.5	132	309	11	132	42	284	3.4	0	.6	2.7
5	3.8	5.2	174	230	6.6	70	121	190	3.1	0	.5	1.6
6	3.6	3.4	169	216	8.1	54	347	92	1.6	0	.1	1.2
7	3.8	3.1	86	339	9.5	44	144	59	.1	17	.8	.8
8	3.4	2.3	96	126	24	67	96	42	.1	136	1.2	.5
9	3.1	2.7	106	92	129	28	83	33	0	207	.5	.8
10	3.1	3.1	103	67	70	24	61	28	17	249	.8	.5
11	3.4	3.8	121	54	59	20	61	22	132	263	1.6	.1
12	3.1	3.4	110	64	59	22	56	20	307	273	1.2	.1
13	11	1.6	67	39	47	22	39	20	340	284	2.3	.1
14	6.6	2.3	59	28	37	35	42	15	132	273	16	75
15	37	1.6	61	22	37	33	42	18	62	202	164	3.8
16	12	1.6	59	24	33	29	49	17	29	86	314	3.1
17	3.8	2.7	64	28	26	24	83	17	14	33	388	3.1
18	3.8	2.0	59	24	107	61	193	17	10	15	407	3.1
19	3.8	2.3	76	25	78	29	232	15	5.9	5.2	239	5.1
20	3.4	2.7	22	28	86	28	96	12	3.1	3.1	92	3.1
21	6.6	.8	17	24	112	28	59	12	2.3	3.1	33	14
22	14	57	15	24	216	29	51	12	1.2	3.1	14	3.1
23	3.4	267	12	28	164	31	37	11	.1	9.5	8.1	3.1
24	3.1	388	11	20	114	33	33	12	.1	8.1	6.6	3.1
25	3.1	342	15	18	186	218	29	14	.1	3.4	3.4	3.1
26	3.1	382	14	22	80	434	35	24	.1	2.7	3.4	3.1
27	3.4	320	12	18	35	173	232	15	.1	2.3	2.7	3.1
28	2.7	234	14	17	31	86	314	12	.1	5.2	.8	3.1
29	3.1	198	26	14	61	299	8.1	0	0	2.3	.1	3.1
30	3.1	181	70	11	54	278	6.6	0	0	2.0	.1	3.1
31	3.4		130	15	47		3.8		1.6		.1	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							37	2.7	5.81	357		
November							388	.8	81.6	4,860		
December							185	11	77.8	4,780		
January							339	11	76.1	4,880		
February							216	6.6	64.4	3,580		
March							764	20	106	6,520		
April							347	29	109	6,490		
May							1,040	3.8	84.3	5,180		
June							340	0	35.8	2,130		
July							284	0	67.4	4,140		
August							407	.1	55.0	3,580		
September							75	0	4.97	296		
The year							1,040	0	64.1	46,400		

## West Fork of Trinity River at Grand Prairie, Tex.

Location.- Water-stage recorder 440 feet below Grand Prairie-Sowers-Irving highway bridge 1 mile northeast of Grand Prairie, Dallas County. Zero of gage is 412.99 feet above mean sea level. Prior to Dec. 6, 1933, chain gage at highway bridge 440 feet upstream, with same datum.

Drainage area.- 2,886 square miles.

Records available.- March 1925 to September 1934.

Extremes.- Maximum discharge during year, 2,670 second-feet May 3 (gage height, 14.21 feet); minimum, 15 second-feet July 4, 8, 7.

1925-34: Maximum discharge, 15,400 second-feet Jan. 23, 1932 (gage height, 25.96 feet); minimum, 3.2 second-feet June 6, 1925.

Maximum stage known, about 29 feet in April 1922.

Remarks.- Records good except those estimated for Sept. 1-24, which are fair.

Numerous small diversions above gage. Largest diversion is by City of Fort Worth. Flow partly regulated by storage at Lake Worth Reservoir and others above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	23	212	148	37	397	98	275	27	18	25	27
2	36	23	200	136	41	1,760	90	217	26	19	24	
3	33	42	188	527	39	937	82	1,490	24	17	23	
4	32	47	174	844	37	370	89	960	23	16	21	
5	31	37	180	365	37	249	242	354	21	17	23	
6	31	30	178	257	34	156	1,020	230	21	16	23	27
7	31	26	202	229	33	122	664	152	23	17	19	
8	31	25	120	338	37	100	248	114	21	22	21	
9	29	24	111	164	49	112	181	90	21	80	21	
10	28	24	130	124	122	86	154	76	21	165	20	
11	25	24	122	108	132	65	133	66	21	220	20	62
12	26	24	135	86	100	61	112	60	19	236	21	
13	28	23	140	75	96	56	95	55	186	239	21	
14	33	21	106	87	84	55	66	53	302	239	21	
15	56	21	93	56	70	74	84	48	214	236	21	
16	182	23	86	49	63	82	145	46	111	195	117	40
17	75	21	103	46	65	66	197	48	64	112	284	
18	37	21	101	52	94	68	146	44	42	63	356	
19	31	21	96	52	123	89	216	42	38	43	374	
20	26	19	96	49	128	88	277	42	30	33	236	
21	24	19	78	49	114	65	165	41	25	28	128	28
22	27	21	48	48	121	56	117	36	21	24	71	
23	26	24	42	44	228	54	83	36	20	24	44	
24	28	201	41	45	198	56	82	41	19	21	34	
25	30	430	38	47	143	178	78	37	18	23	29	
26	27	374	34	42	182	1,630	71	34	17	31	28	28
27	25	410	31	42	132	574	68	34	16	28	27	27
28	26	347	37	43	74	258	207	40	18	26	22	27
29	26	266	40	39		161	320	32	18	26	22	28
30	24	230	268	37		130	293	31	18	28	23	28
31	25		387	37		111		29		27	23	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							152	24	35.6	2,190		
November							430	19	94.7	5,640		
December							397	31	123	7,560		
January							844	37	138	9,480		
February							225	33	93.2	5,180		
March							1,750	54	266	16,400		
April							1,020	68	195	11,600		
May							1,490	29	156	9,590		
June							302	16	48.2	2,870		
July							239	16	74.5	4,560		
August							374	19	69.1	4,260		
September									40.5	2,410		
The year							1,750	16	111	80,800		

## Trinity River at Dallas, Tex.

Location.- Water-stage recorder at Commerce Street viaduct in Dallas, Dallas County.  
Zero of gage is 368.05 feet above mean sea level.

Drainage area.- 6,000 square miles.

Records available.- October 1898 to December 1899, July 1903 to December 1906, October 1920 to September 1934.

Average discharge.- 14 years (1920-34), 1,340 second-feet.

Extremes.- Maximum discharge during year, 10,000 second-feet Mar. 2 (gage height, 29.61 feet); minimum, 20 second-feet Sept. 1 and 2.  
1898-99, 1903-6, 1920-34: Maximum discharge, 75,100 second-feet Apr. 27, 1922 (gage height, 42.35 feet); minimum, 6.8 second-feet Sept. 11, 1924 (gage height, 4.27 feet).  
Maximum stage known, 52.6 feet May 26, 1908. Practically no flow at times in 1917 and 1918.

Remarks.- Records good except those above 1,000 second-feet, which are fair. Only known diversions are for municipal uses. Flow partly regulated by dams upstream.

Discharge, in second-feet, 1935-54

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	370	187	282	750	128	2,220	297	433	105	32	36	26
2	282	182	328	297	120	8,800	261	411	93	49	33	22
3	297	307	332	1,290	124	7,440	234	1,710	90	32	34	66
4	314	446	297	3,820	124	2,970	230	3,150	118	32	34	66
5	275	261	240	1,570	117	1,470	3,920	2,330	107	40	36	66
6	261	215	221	716	117	908	6,620	4,860	72	31	45	60
7	268	198	325	508	114	622	5,730	1,140	68	30	36	57
8	268	187	275	535	183	508	2,330	411	58	34	34	53
9	261	187	221	351	227	360	1,130	297	81	53	34	54
10	261	192	234	261	314	253	700	247	105	442	36	58
11	261	187	254	234	676	215	508	209	71	254	34	49
12	268	168	215	198	578	192	380	173	54	227	36	46
13	357	168	198	182	370	168	290	152	127	240	42	46
14	360	221	182	192	254	156	275	132	323	247	34	476
15	314	247	156	164	215	160	240	124	282	240	30	620
16	610	182	148	144	178	234	2,080	117	156	227	47	182
17	417	160	164	228	154	187	2,370	111	162	140	239	108
18	306	160	164	178	617	156	2,420	111	81	87	332	84
19	275	160	148	160	1,660	148	4,260	111	64	64	380	70
20	268	197	144	152	1,000	203	1,600	117	54	50	297	66
21	261	215	152	152	509	173	996	120	201	39	156	76
22	261	156	120	148	282	162	622	105	71	39	96	332
23	268	182	111	144	370	168	522	84	27	47	62	130
24	275	202	111	144	342	173	422	167	38	33	52	93
25	314	508	105	140	275	388	370	888	50	30	38	68
26	282	495	105	132	286	4,220	657	1,200	30	40	41	70
27	268	495	96	124	282	3,650	457	710	29	44	49	64
28	268	457	102	128	187	1,210	390	638	30	45	42	70
29	268	380	136	120		684	522	305	23	52	36	78
30	268	314	547	114		508	495	160	28	54	30	73
31	247		1,420	120		380		124		44	28	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October ..							610	247	299	18,400		
November ..							508	162	253	15,100		
December ..							1,420	95	245	14,800		
January ..							3,820	114	432	26,600		
February ..							1,660	114	349	19,400		
March ..							8,800	148	1,260	77,500		
April ..							5,620	230	1,380	82,100		
May ..							4,860	84	672	41,300		
June ..							323	23	91.3	5,430		
July ..							442	30	97.4	5,990		
August ..							380	28	79.3	4,880		
September ..							620	22	111	6,600		
The year ..							8,800	22	440	318,000		

## Trinity River near Oakwood, Tex.

Location.- Chain gage on Palestine-Oakwood highway bridge  $1\frac{1}{2}$  miles above International-Great Northern Railroad bridge and 6 miles northeast of Oakwood, Leon County. Zero of gage is 175.4 feet above mean sea level (datum used by Corps of Engineers, U. S. Army).

Drainage area.- 12,840 square miles.

Records available.- October 1923 to September 1934.

Average discharge.- 11 years, 4,420 second-feet.

Extremes.- Maximum discharge recorded during year, 24,200 second-feet Apr. 13 (gage height, 40.9 feet); minimum, 22 second-feet Aug. 18, 1923-34: Maximum discharge, 84,400 second-feet May 23, 1930 (gage height, about 46.8 feet on present gage); minimum, that of Aug. 18, 1934. Maximum stage known, about 52.2 feet June 4, 1908, on present gage, and 51.8 feet on gage used prior to July 15, 1932, at railroad bridge  $1\frac{1}{2}$  miles downstream (superseded erroneous figure published in previous water-supply papers).

Remarks.- Records fair. No diversions above station except for municipal uses. Flow partly regulated by reservoirs upstream. Gage-height record furnished by U. S. Weather Bureau.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	366	298	470	4,940	640	1,230	21,300	1,660	3,340	92	74	68
2	382	285	470	5,620	805	5,230	20,000	1,800	2,650	86	68	68
3	530	260	430	5,420	1,280	7,900	15,600	1,490	1,800	106	68	74
4	470	260	398	5,420	1,260	9,480	9,330	1,600	1,130	99	68	86
5	398	248	482	6,320	1,150	11,500	6,890	2,800	794	99	68	80
6	382	236	1,180	7,780	860	12,700	11,300	5,260	596	92	68	80
7	350	236	1,030	8,750	772	13,500	13,600	3,360	450	92	68	68
8	350	311	750	8,750	574	13,700	15,200	8,260	398	92	68	68
9	350	366	640	6,460	596	13,100	17,100	7,260	366	92	62	80
10	324	490	510	4,000	684	11,300	18,800	5,520	366	92	56	92
11	298	450	398	2,200	1,230	8,250	21,000	3,380	324	86	62	92
12	248	366	382	1,630	2,030	4,820	23,600	2,060	248	86	56	86
13	236	311	398	1,150	2,820	2,860	24,200	1,260	213	86	56	80
14	224	248	357	1,030	3,600	1,970	23,500	1,150	182	86	56	74
15	248	236	311	884	3,340	1,460	21,000	1,200	182	264	56	80
16	272	248	337	772	2,590	1,280	17,200	1,390	202	324	50	86
17	298	236	350	772	1,970	1,280	11,600	1,330	165	285	26	106
18	366	224	398	794	1,710	1,230	6,680	1,130	228	260	22	395
19	350	260	530	1,330	1,740	1,130	5,230	980	574	285	40	956
20	350	248	470	1,280	2,150	1,080	6,320	838	684	298	50	618
21	450	213	366	1,800	2,520	1,030	6,870	662	530	311	50	324
22	398	213	272	1,830	3,130	1,000	6,870	574	366	248	62	202
23	350	191	272	1,180	3,170	980	6,540	510	272	173	165	173
24	324	165	272	932	2,420	1,050	5,270	510	213	134	311	173
25	298	167	248	838	1,920	3,470	4,670	932	165	106	350	358
26	311	165	236	772	1,690	7,930	3,170	1,180	173	99	224	684
27	565	182	224	728	1,390	11,900	3,420	2,200	236	92	148	414
28	794	191	191	684	1,150	14,500	3,340	3,760	173	86	127	236
29	574	191	248	640		16,500	2,590	4,360	127	80	99	149
30	366	237	470	596		18,500	1,920	4,340	120	80	86	120
31	324		2,460	596		20,000		3,800		80	74	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							794	224	372	22,900		
November							490	167	257	15,300		
December							2,460	191	501	30,800		
January							8,750	596	2,770	170,000		
February							3,500	574	1,750	97,200		
March							20,000	980	7,140	429,000		
April							24,200	1,920	11,800	702,000		
May							8,380	510	2,630	162,000		
June							3,340	120	572	34,000		
July							324	80	145	8,920		
August							350	22	91.6	5,630		
September							966	68	206	12,300		
The year							24,200	22	2,350	1,700,000		

## Trinity River at Riverside, Tex.

Location.- Chain gage on International-Great Northern Railroad bridge at Riverside, Walker County. Zero of gage is 93.7 feet above mean sea level (railway datum).

Drainage area.- 15,510 square miles.

Records available.- January 1903 to December 1906, October 1923 to September 1934.

Average discharge.- 11 years (1923-34), 6,330 second-feet.

Extremes.- Maximum discharge recorded during year, 47,700 second-feet Mar. 4 (gage height, 33.8 feet); minimum, 90 second-feet Aug. 8, 9, 21, 22.

1903-6, 1923-34: Maximum discharge recorded, 76,100 second-feet June 1, 1929 (gage height, 46.10 feet); minimum, 70 second-feet Aug. 20-26, Sept. 8-13, 1925, and Sept. 29 to Oct. 4, 1931.

Maximum stage known, 49.7 feet June 11, 1908 (present datum).

Remarks.- Records fair. No diversions except for municipal uses. Flow partly regulated by reservoirs upstream. Gage-height record furnished by U. S. Weather Bureau.

Discharge, in second-feet, 1935-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	700	800	295	1,560	9,460	5,670	18,900	4,380	5,060	265	235	135
2	750	660	413	2,610	6,800	33,800	19,900	4,040	4,640	265	160	135
3	660	580	900	6,550	4,980	45,200	20,700	2,800	4,120	235	116	135
4	660	540	900	6,730	3,760	46,400	22,500	2,560	5,440	235	116	160
5	660	500	1,120	8,530	2,720	38,000	31,300	2,400	2,640	210	116	135
6	660	500	1,000	8,630	3,040	27,600	42,700	2,560	1,830	185	116	116
7	660	540	950	10,300	2,860	20,700	43,000	4,120	1,240	160	102	116
8	620	540	1,300	10,900	2,830	17,400	41,300	7,080	900	135	90	102
9	580	540	1,490	11,200	8,730	16,400	36,900	9,140	620	135	90	116
10	540	580	1,360	10,900	5,910	16,200	31,700	9,240	465	135	102	116
11	540	620	1,120	9,240	5,320	15,600	28,600	9,140	580	135	135	116
12	540	1,180	850	7,560	7,640	14,500	26,100	7,460	540	135	116	116
13	500	1,180	750	4,890	6,530	11,700	24,600	5,230	500	116	102	135
14	500	750	700	3,660	6,060	7,840	24,200	3,780	465	116	102	185
15	465	620	660	2,320	5,660	5,230	24,200	3,630	430	116	102	265
16	430	580	660	1,830	5,140	3,530	23,900	2,040	360	116	102	265
17	430	540	907	1,420	4,800	2,800	21,700	1,760	325	116	102	210
18	430	500	1,160	1,420	4,210	2,400	24,600	1,830	295	102	102	265
19	465	465	750	4,490	3,440	2,180	25,900	1,900	295	135	102	265
20	500	465	700	10,200	2,960	2,180	22,900	1,690	295	325	102	210
21	540	465	700	6,630	2,720	2,180	17,700	1,360	295	325	90	265
22	540	465	660	6,000	3,200	2,040	12,400	1,120	430	295	90	800
23	660	500	660	4,640	3,700	1,900	9,980	1,060	620	265	102	800
24	750	465	620	3,620	3,960	1,900	9,240	1,000	580	325	102	660
25	660	465	540	2,640	4,040	4,010	8,630	1,000	500	295	102	500
26	580	430	540	3,700	3,530	11,900	7,550	1,000	395	265	102	265
27	540	360	500	9,660	3,200	18,400	6,710	1,360	325	235	116	235
28	500	325	540	7,260	3,620	15,800	5,660	1,620	265	210	360	295
29	660	295	580	6,000		15,200	5,740	2,640	235	185	325	772
30	850	295	660	4,210		16,900	4,980	4,380	265	185	265	1,120
31	950		950	3,690		18,000		5,060		235	210	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						950	430	597	36,700			
November						1,180	295	558	33,200			
December						1,480	295	804	49,400			
January						11,200	1,560	6,010	370,000			
February						9,460	2,720	4,670	269,000			
March						46,400	1,900	14,200	873,000			
April						43,000	4,980	21,500	1,280,000			
May						9,240	1,000	3,490	215,000			
June						5,060	235	1,100	65,500			
July						325	102	200	12,300			
August						360	90	135	8,300			
September						1,120	102	301	17,900			
The year						46,400	90	4,450	3,220,000			

## Trinity River at Romayor, Tex.

Location.- Chain gage on Gulf, Colorado & Santa Fe Railway bridge a quarter of a mile west of Romayor, Liberty County. Gage readings indicate distance from base of rail to water surface. Zero of gage (base of rail) is 89.36 feet above mean sea level (Texas Reclamation Department datum).

Drainage area.- 17,190 square miles.

Records available.- May 1924 to September 1934.

Average discharge.- 10 years, 6,700 second-feet.

Extremes.- Maximum discharge recorded during year, 44,400 second-feet Mar. 5 (gage height, -23.3 feet); minimum, 180 second-feet Aug. 27.  
1924-34: Maximum discharge, 61,100 second-feet May 31, 1929 (gage height, -16.3 feet); minimum, 132 second-feet Aug. 21 and 22, 1925 (gage height, -53.46 feet).

Remarks.- Records fair. Discharge partly estimated Nov. 27 to Dec. 9, Jan. 12, 13, Apr. 26-28. Small diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	960	720	405	755	13,800	4,210	16,100	4,660	3,690	495	375	307
2	870	720	405	870	15,800	16,900	17,100	4,480	4,670	405	375	307
3	870	765	405	960	11,400	36,100	17,800	3,790	4,300	345	345	295
4	830	720	405	960	7,960	42,700	18,100	3,070	3,950	345	307	345
5	790	720	405	3,040	5,620	44,100	20,000	2,860	3,550	320	282	332
6	790	720	405	7,170	3,790	42,700	27,000	2,650	2,790	320	270	320
7	790	685	615	9,600	2,930	39,700	33,400	2,510	2,330	320	257	320
8	790	585	790	9,960	4,120	32,100	38,100	2,270	1,910	345	245	307
9	790	585	870	9,720	8,550	24,200	40,400	4,600	1,340	320	245	270
10	790	585	1,000	9,600	12,900	21,200	40,000	7,250	1,190	232	232	257
11	790	585	1,050	9,360	11,800	16,400	36,900	8,570	960	232	207	245
12	720	555	1,050	9,120	11,300	15,500	33,400	8,690	790	232	188	245
13	720	525	1,060	8,020	11,700	14,900	29,600	8,680	720	232	220	332
14	685	525	960	6,300	9,480	12,300	28,100	7,350	685	232	345	332
15	650	525	830	3,970	8,020	9,150	25,600	4,550	650	232	307	307
16	615	525	755	2,930	6,200	6,700	23,200	3,510	650	232	257	282
17	585	525	720	2,270	5,020	4,800	23,000	2,730	555	192	245	320
18	585	585	720	1,810	5,110	3,870	23,200	2,090	525	185	232	332
19	585	555	720	1,970	4,930	3,000	24,200	1,850	525	188	220	345
20	585	555	720	2,580	4,030	2,650	24,200	1,610	465	190	220	345
21	555	555	720	7,000	3,550	2,390	23,400	1,490	435	207	220	345
22	555	525	720	7,910	3,390	2,330	18,300	1,550	435	257	220	345
23	555	525	685	6,500	3,070	2,270	12,300	1,610	435	295	220	375
24	555	525	650	4,840	2,930	2,210	10,200	1,340	435	295	195	405
25	555	495	650	3,710	3,230	2,330	9,240	1,240	465	320	192	405
26	555	495	650	3,230	3,790	3,170	8,570	1,240	525	345	192	405
27	555	495	650	3,850	3,710	12,700	7,800	1,240	525	360	180	435
28	585	465	650	11,600	3,870	16,000	6,920	1,190	525	405	182	435
29	650	465	650	10,600		16,000	5,800	1,190	525	405	207	465
30	650	435	650	8,020		14,400	5,300	1,140	525	435	220	495
31	650		685	6,600		13,400		1,770		405	257	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							960	555	684	42,100		
November							755	435	574	34,200		
December							1,050	405	698	42,900		
January							11,600	755	5,650	347,000		
February							15,800	2,930	6,860	381,000		
March							44,100	2,210	15,500	953,000		
April							40,400	5,300	21,600	1,290,000		
May							8,680	1,140	3,310	204,000		
June							4,570	435	1,370	81,500		
July							495	185	301	18,500		
August							375	190	247	15,200		
September							495	245	342	20,400		
The year							44,100	180	4,730	3,450,000		

## Clear Fork of Trinity River at Fort Worth, Tex.

Location.- Water-stage recorder on old masonry pier 300 feet downstream from Texas & Pacific Railway bridge and 3 miles above confluence with West Fork of Trinity River. Zero of gage is 532.83 feet above mean sea level.

Drainage area.- 522 square miles.

Records available.- March 1924 to September 1934.

Average discharge.- 10 years, 69.2 second-feet.

Extremes.- Maximum discharge during year, 3,990 second-feet May 2 (gage height, 7.75 feet); no flow at times.

1924-34: Maximum stage, 20.08 feet Sept. 5, 1932 (discharge not determined); no flow at times.

Maximum discharge known, 74,300 second-feet, by slope-area method Apr. 25, 1922 (gage height, 27.5 feet, present datum).

Remarks.- Records good. Practically all low flow diverted 800 feet below gage by Texas & Pacific Railway Co. Low flow regulated by dam just above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0		0	30	8.0	254	28	15	2.1	0.2		
2	0		0	16	7.0	492	28	361	2.1			
3	0		0	64	8.0	79	26	532	1.6	.2		
4	0		0	99	9.0	35	28	80	1.6	0		
5	0		0	22	9.0	22	90	42	2.1	0		
6	0		0	9.0	9.0	18	282	28	.8	0		
7	0		0	9.0	9.0	14	109	24	0	0		
8	0		0	7.0	10	10	72	22	0	0		
9	0		0	7.0	127	10	57	18	0	0		
10	0		0	7.0	40	8.0	51	16	0	0		
11	0		0	6.0	15	8.0	42	14	0	0		
12	0		0	6.0	9.0	9.0	35	15	0	0		
13	0		0	5.0	8.0	10	30	12	0	0		
14	0		0	5.0	7.0	24	30	12	0	0		
15	0		0	2.6	7.0	12	30	12	0	0		
16	0		0	1.6	6.0	10	38	12	0	0		
17	0		0	2.1	6.0	10	76	10	0	0		
18	0		0	2.6	6.0	12	205	9.0	0	0		
19	0		0	2.6	18	12	179	8.0	0	0		
20	0		0	2.6	22	12	81	7.0	0	0		
21	10		0	2.6	7.0	10	48	8.0	0	0		
22	6.7		0	2.6	5.0	12	35	9.0	0	0		
23	0		0	3.2	4.0	14	30	8.0	0	0		
24	0		0	3.2	4.0	16	26	9.0	0	0		
25	0		0	5.0	2.6	257	22	12	0	0		
26	0		0	5.0	2.1	279	26	18	0	0		
27	0		0	6.0	4.0	105	22	7.0	0	0		
28	0		0	7.0	4.0	57	22	6.0	0	0		
29	0		0	7.0		40	20	5.0	0	0		
30	0		7.6	6.0		32	18	3.2	0	0		
31	0		98	7.0		30				0		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							10	0	0.54	33		
November							0	0	0	0		
December							98	0	3.41	209		
January							99	1.6	11.6	715		
February							127	2.1	13.3	739		
March							492	8.0	61.7	3,790		
April							282	18	59.5	3,540		
May							532	3.2	43.1	2,650		
June							2.1	0	.34	20		
July							.2	0	.02	1.2		
August							0	0	0	0		
September							0	0	0	0		
The year							532	0	16.2	11,700		

Note.- No flow during months left blank.



## Elm Fork of Trinity River near Carrollton, Tex.

Location.- Staff gage just above Carrollton Dam, 40 feet below Dallas-Denton highway bridge, and 2.3 miles northwest (revised) of Carrollton, Dallas County.

Drainage area.- 2,540 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 10 years (1924-34), 622 second-feet.

Extremes.- Maximum discharge during year, 7,460 second-feet Mar. 1 (gage height, 6.10 feet, from graph based on gage readings); minimum, 50 second-feet July 11 (gage height, 0.42 foot), caused by regulation.  
1923-34: Maximum discharge not determined; maximum gage height recorded, 12.75 feet Dec. 14, 1923; no flow at times.

Remarks.- Records good. No diversion above station. Garza Dam, 20 miles upstream, regulates flow at low stages and partly regulates flow at high stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	357	219	85	112	91	1,710	141	126	130	79	79	73
2	335	219	85	105	91	5,800	119	126	119	79	79	73
3	335	335	85	1,560	91	3,830	112	1,280	122	79	79	79
4	335	254	85	1,060	173	2,000	112	640	196	79	79	73
5	274	191	85	357	91	800	2,250	4,710	112	79	79	73
6	269	191	82	269	91	418	2,540	2,480	105	79	79	73
7	269	209	85	165	91	219	1,150	259	91	79	79	73
8	269	173	85	141	91	157	538	166	91	79	79	73
9	269	173	85	133	122	149	308	173	85	378	79	73
10	269	173	85	130	291	122	229	161	82	237	79	73
11	269	173	82	119	335	105	182	145	76	64	79	73
12	269	173	82	119	182	98	141	112	73	79	73	73
13	362	173	82	119	133	98	141	112	76	79	73	79
14	260	186	85	112	122	98	119	112	79	79	73	98
15	445	191	85	105	112	98	112	98	85	79	76	85
16	335	191	85	105	112	112	1,890	85	82	79	85	82
17	280	191	85	105	112	98	1,240	85	73	79	85	79
18	280	191	85	105	1,350	94	5,120	105	73	79	85	79
19	280	191	85	105	925	91	2,140	102	73	76	73	79
20	280	200	82	108	538	91	925	105	141	79	73	79
21	280	94	82	105	219	126	505	105	161	79	73	82
22	302	91	82	105	153	130	335	94	70	79	73	73
23	302	88	82	94	137	130	296	79	73	79	73	73
24	291	88	82	91	133	141	254	463	73	79	73	79
25	291	102	82	94	141	335	357	970	73	79	73	79
26	291	98	79	94	126	1,270	308	840	73	79	79	82
27	291	85	79	94	119	800	254	800	73	79	76	79
28	291	85	79	112	116	418	173	445	79	79	73	79
29	291	85	79	91	308	141	229	79	79	79	73	79
30	291	85	274	91	229	126	165	79	79	79	73	79
31	224	230	91	169			145			79	73	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							445	224	297	18,300		
November							335	85	163	9,700		
December							274	79	94.0	5,780		
January							1,560	91	200	12,300		
February							1,350	91	225	12,500		
March							5,800	91	653	40,200		
April							5,120	112	742	44,200		
May							4,710	79	501	30,800		
June							196	70	93.2	5,550		
July							378	64	93.2	5,730		
August							85	73	76.7	4,720		
September							98	73	77.5	4,610		
The year							5,800	64	268	194,000		

## East Fork of Trinity River near Rockwall, Tex.

Location.- Chain gage on Dallas-Rockwall highway bridge 3 miles southwest of Rockwall, Rockwall County. Zero of gage is 404.2 feet above mean sea level.

Drainage area.- 831 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 11 years, 394 second-feet.

Extremes.- Maximum discharge recorded during year, 8,000 second-feet Mar. 4 (gage height, 15.7 feet); no flow at times.  
1923-34: Maximum discharge, about 42,300 second-feet Jan. 23, 1932 (gage height, 20.9 feet, from graph based on gage readings); no flow at times.  
Maximum stage known, about 25 feet in spring of 1922.

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	0	7.7	347	40	298	213	150	78	1.0		0
2	7.1	3.2	17	160	40	1,370	199	137	65	.9		0
3	3.4	2.3	20	180	44	3,300	192	150	55	.8		0
4	2.2	104	12	774	48	6,850	185	191	48	.7		0
5	1.0	527	9.4	1,040	42	3,140	1,020	409	44	.5		0
6	.6	188	26	970	37	1,550	2,860	1,040	40	.4		0
7	.3	70	28	420	35	810	3,160	975	37	.2		0
8	.2	40	26	192	59	492	2,880	246	33	.1		0
9	.1	28	23	160	320	380	1,930	164	30	0		0
10	0	24	15	118	719	335	678	137	26	0		0
11	0	21	10	106	1,110	290	400	124	23	0		0
12	0	18	9.4	108	881	254	308	112	21	0		0
13	6.6	16	8.7	101	428	236	245	106	18	0		0
14	1.6	14	8.1	95	281	220	213	101	261	0		2.9
15	.3	12	7.5	84	206	213	213	89	335	0		1.6
16	5.5	12	6.9	72	178	213	1,050	84	72	0		.2
17	28	10	9.5	72	157	199	1,270	78	51	0		0
18	20	9.0	10	72	560	185	1,160	78	23	0		0
19	16	8.1	15	67	942	185	816	67	18	0		0
20	11	7.3	23	72	786	206	452	72	14	0		0
21	5.4	6.5	21	78	378	206	272	57	11	0		0
22	2.8	5.6	15	67	220	185	213	57	9.6	0		0
23	1.7	14	12	67	178	184	206	55	8.1	0		0
24	.9	40	10	65	150	150	185	1,810	5.9	0		0
25	.6	28	9.4	60	144	332	210	3,160	4.9	0		0
26	.4	16	8.7	55	164	918	458	2,480	3.6	0		0
27	.2	11	8.3	52	206	942	556	1,730	2.8	0		0
28	.1	8.7	7.7	48	137	603	263	292	2.2	0		0
29	0	8.3	10	44		348	185	130	1.8	0		0
30	0	7.9	62	44		272	184	101	1.4	0		0
31	0		320	42		236		89		0		0
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						28	0	4.29	264			
November						357	0	42.0	2,500			
December						320	6.9	25.0	1,540			
January						1,040	42	188	11,800			
February						1,110	35	303	16,800			
March						6,850	150	809	49,700			
April						3,160	164	738	43,900			
May						3,160	55	467	28,700			
June						355	1.4	44.1	2,620			
July						1.0	0	.15	9.2			
August						0	0	0	0			
September						2.9	0	.16	9.5			
The year						6,850	0	218	158,000			

Note.- No flow during August.

## San Jacinto River near Humble, Tex.

Location.- Chain gage at highway bridge 2,000 feet above Southern Pacific (Houston East & West Texas) Railway bridge and 2½ miles north of Humble, Harris County.

Drainage area.- 1,811 square miles.

Records available.- October 1928 to September 1934.

Extremes.- Maximum discharge during year, 24,600 second-feet Mar. 4 (gage height, 17.50 feet, from graph based on gage readings); minimum, 21 second-feet Aug. 26, 1928-34: Maximum discharge, about 111,000 second-feet May 31, 1929 (gage height recorded on former gage, 32.25 feet, equivalent to about 33.0 feet on present gage); minimum, 14 second-feet Sept. 8-10, 1931.

Remarks.- Daily records poor; monthly records fair. No diversions above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	35	34	66	5,330	995	224	204	74	35	37	24
2	35	37	34	61	5,620	6,130	210	192	68	34	34	24
3	35	35	37	71	6,700	15,000	198	192	66	34	34	26
4	32	34	38	136	7,190	23,000	186	210	63	30	32	32
5	32	36	42	245	5,330	19,600	282	180	68	31	30	37
6	32	36	40	282	2,950	10,900	3,920	163	86	31	30	29
7	32	38	38	412	1,200	5,620	13,400	162	83	31	28	28
8	31	38	38	639	1,200	3,060	18,300	156	51	31	28	26
9	32	38	37	856	3,980	2,000	14,100	131	63	32	26	26
10	32	38	35	639	7,190	1,250	9,600	142	68	34	30	25
11	34	37	38	898	8,550	898	6,860	126	54	37	32	26
12	34	38	45	1,020	11,500	858	4,250	131	45	31	62	31
13	34	38	47	1,300	13,200	706	2,300	122	47	32	55	43
14	32	37	45	1,250	10,900	608	1,400	117	47	32	34	45
15	34	40	43	939	7,190	520	1,020	147	43	29	37	61
16	32	38	51	818	4,120	464	779	126	42	29	35	37
17	32	38	47	578	2,200	412	608	117	40	27	34	43
18	34	35	47	343	1,500	365	492	104	40	27	31	38
19	34	37	45	264	1,800	343	464	83	40	28	29	35
20	34	34	45	264	2,100	321	672	93	37	28	29	42
21	32	32	100	245	1,500	302	1,150	86	37	29	27	38
22	32	32	90	520	1,020	282	1,600	80	37	29	24	134
23	63	34	77	639	779	264	1,800	77	37	29	23	129
24	54	34	74	520	578	264	1,400	74	34	30	23	68
25	40	34	66	365	492	245	706	71	35	45	23	83
26	38	32	54	547	412	245	412	71	34	37	21	56
27	38	35	56	2,920	282	343	343	71	34	38	22	45
28	37	34	61	4,750	343	321	282	100	34	71	24	49
29	37	32	54	5,910		302	245	126	32	97	23	91
30	37	34	61	5,910		264	231	100	32	57	25	557
31	35		58	5,330		245		74		42	23	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						63	31	35.7	2,200			
November						40	32	35.6	2,120			
December						100	34	50.9	3,130			
January						5,910	61	1,250	76,900			
February						13,200	282	4,110	228,000			
March						23,000	245	3,100	181,000			
April						18,300	186	2,910	173,000			
May						210	71	123	7,560			
June						86	32	48.7	2,900			
July						97	27	36.4	2,240			
August						82	21	31.1	1,910			
September						557	24	64.2	3,820			
The year						23,000	21	960	695,000			

Double Mountain Fork of Brazos River near Aspermont, Tex.

Location.- Chain gage on Aspermont-Hamlin highway bridge 11 miles south of Aspermont, Stonewall County.

Drainage area.- 7,980 square miles, of which about 6,470 square miles is probably non-contributing.

Records available.- December 1923 to September 1934 (discontinued).

Average discharge.- 10 years (1924-34), 179 second-feet.

Extremes.- Maximum discharge recorded during year, 9,120 second-feet Sept. 24 (gage height, 8.00 feet); no flow at times.  
1924-34: Maximum discharge, determined by slope-area method, 52,000 second-feet Oct. 15, 1926 (gage height, 18.14 feet); no flow at times.

Remarks.- Daily records too poor for publication; monthly records fair. No diversions above station.

Discharge, in second-feet, 1933-34

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	594	0	28.7	1,760
November	56	0	5.15	306
December	255	0	9.46	582
January	12	0	1.35	83
February	.7	0	.22	12.2
March	201	.2	15.5	953
April	4,430	0	325	19,300
May	565	0	54.3	3,340
June	1,280	0	96.2	5,720
July	0	0	0	0
August	0	0	0	0
September	3,110	0	251	14,900
The year	4,430	0	64.9	47,000

Brazos River at Seymour, Tex.

Location.- Water-stage recorder at highway bridge three-quarters of a mile above Wichita Valley Railway bridge and 1 mile southwest of courthouse in Seymour, Baylor County.

Drainage area.- 14,490 square miles, of which about 9,240 square miles is probably non-contributing.

Records available.- November 1923 to September 1934.

Average discharge.- 10 years (1924-34), 435 second-feet.

Extremes.- Maximum discharge during year, 5,450 second-feet Apr. 19 (gage height, 4.28 feet); no flow at times.

1924-34: Maximum discharge, 79,600 second-feet, by slope-area method, June 14, 1930 (gage height, 13.0 feet, from flood marks); no flow at times during each year.

Maximum stage known, about 21.0 feet, occurred prior to 1916, but exact date is not known.

Remarks.- Daily records not sufficiently accurate for publication, monthly records fair. Discharge estimated Dec. 11-21 and Sept. 22-29. No diversions above station.

Discharge, in second-feet, 1933-34

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,080	3.8	101	6,210
November	74	2.9	24.2	1,440
December	86	7.2	29.2	1,300
January	269	7.2	45.3	2,790
February	12	1.3	5.32	296
March	454	1.0	91.3	5,610
April	4,140	1.0	382	22,700
May	498	1.9	81.8	5,030
June	301	0	30.4	1,610
July	2.9	0	.26	1.6
August	1.4	0	.04	2.6
September		0	230	13,700
The year	4,140	0	84.8	61,400

## Brazos River near Glen Rose, Tex.

Location.- Water-stage recorder a quarter of a mile above Glen Rose-Cleburne highway bridge and 4 miles northeast of Glen Rose, Somervell County.

Drainage area.- 24,840 square miles, of which about 9,240 square miles is probably non-contributing.

Records available.- October 1923 to September 1934.

Average discharge.- 11 years, 1,610 second-feet.

Extremes.- Maximum discharge during year, 5,240 second-feet Mar. 4 (gage height, 4.11 feet); no flow June 28 to Sept. 13.  
1923-34: Maximum discharge recorded, 68,800 second-feet June 17, 1930 (gage height, 19.60 feet); no flow Sept. 7-9, 1924, Sept. 13 to Oct. 11, 1931, and June 28 to Sept. 13, 1934.

Remarks.- Records good. No large diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	333	205	411	972	92	394	1,210	591	193			0
2	280	175	333	1,010	85	675	1,060	704	141			0
3	259	199	250	860	72	1,790	934	699	131			0
4	199	161	205	1,170	66	3,920	861	519	242			0
5	175	280	170	1,060	65	3,160	761	484	223			0
6	155	272	141	772	65	2,380	1,250	459	197			0
7	141	170	126	620	62	1,970	3,520	333	146			0
8	122	126	116	840	72	1,550	2,540	265	118			0
9	111	107	111	730	99	1,160	1,680	242	96			0
10	99	96	103	582	103	840	1,080	217	78			0
11	92	92	96	484	244	679	730	199	58			0
12	85	92	92	403	354	553	910	165	47			0
13	81	115	88	341	223	451	699	150	39			0
14	78	115	85	288	160	387	510	136	33			120
15	102	107	61	258	295	341	403	122	28			146
16	118	99	75	217	427	280	403	111	23			339
17	92	96	78	193	356	229	901	103	18			141
18	75	88	81	199	280	205	1,010	92	14			118
19	58	81	78	181	223	193	806	81	12			103
20	50	75	75	165	187	165	501	75	10			922
21	358	72	72	150	155	141	544	68	6.0			730
22	1,730	68	68	148	131	126	411	62	4.0			638
23	1,160	65	65	136	116	115	2,710	62	3.0			419
24	806	62	62	122	111	111	3,320	68	2.0			451
25	610	58	55	115	232	263	2,380	78	1.0			265
26	493	100	55	107	395	411	1,800	106	.8			223
27	451	122	52	103	310	1,100	1,440	150	.5			316
28	536	103	55	95	250	3,420	1,030	61	0			610
29	936	88	66	85		4,170	840	58	0			411
30	484	285	142	81		2,720	719	131	0			298
31	280		382	88		1,060		181				
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						1,730	50	339	20,800			
November						285	58	126	7,500			
December						411	52	125	7,690			
January						1,170	81	406	25,000			
February						427	62	187	10,400			
March						4,170	111	1,150	70,700			
April						3,520	403	1,230	73,200			
May						704	58	219	13,500			
June						242	0	61.6	3,680			
July						0	0	0	0			
August						0	0	0	0			
September						922	0	208	12,400			
The year						4,170	0	339	245,000			

Note.- No flow during months left blank.

## Brazos River at Waco, Tex.

Location.- Water-stage recorder at Texas Electric Co.'s bridge in Waco, McLennan County. Zero of gage is 358.99 feet above mean sea level.

Drainage area.- 28,500 square miles, of which about 9,240 square miles is probably noncontributing.

Records available.- September 1898 to December 1911, October 1914 to September 1934.

Average discharge.- 33 years, 2,550 second-feet.

Extremes.- Maximum discharge during year, 45,400 second-feet Apr. 6 (gage height, 24.00 feet); minimum, 7.9 second-feet Aug. 1.

1898-1911, 1914-34. Maximum discharge recorded, about 134,000 second-feet May 25, 1908 (gage height, 36.7 feet); no flow Aug. 20, 21, 1918, and probably for several days in August 1923. Maximum stage known, 39.7 feet Dec. 3, 1913.

Remarks.- Records fair below and poor above 5,000 second-feet. Discharge partly estimated Oct. 1-3, May 8, 11-18, July 1-8, Sept. 29, 30. Numerous small diversions above station do not appreciably affect flow except during low stages. Flow slightly regulated by Lake Waco on the North Bosque River near Waco.

Discharge, in second-feet, 1935-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	530	704	168	2,630	482	2,340	2,630	1,140	187	52	8.0	28
2	440	542	179	962	297	6,670	3,230	1,010	140	73	8.0	28
3	340	422	209	6,730	209	3,240	2,800	2,870	188	58	8.7	26
4	316	388	372	6,580	182	2,450	1,640	1,590	210	26	8.7	25
5	284	619	340	2,080	1,420	4,540	11,700	1,260	185	15	12	24
6	245	2,070	275	1,700	262	4,240	32,200	1,820	162	15	8.0	24
7	220	345	241	1,500	233	3,700	10,300	2,150	199	15	8.0	24
8	205	335	212	1,950	237	2,360	9,080	663	213	15	8.7	26
9	205	340	190	965	1,820	2,040	6,750	574	188	15	14	29
10	197	280	172	990	740	1,700	4,140	552	162	14	17	31
11	197	275	162	1,020	1,240	1,360	5,830	513	145	14	12	32
12	197	271	151	824	808	1,130	2,260	476	131	14	12	34
13	308	265	145	683	1,420	1,080	1,860	433	115	13	10	37
14	330	258	135	578	642	2,340	1,700	392	102	13	12	50
15	241	193	132	512	669	995	1,660	353	98	12	13	52
16	220	145	132	440	506	748	4,000	316	92	11	12	595
17	216	168	126	368	416	732	3,280	280	83	9.4	12	941
18	212	172	119	1,350	1,850	704	1,470	247	83	9.4	12	425
19	212	158	110	458	732	697	3,150	238	77	8.7	13	357
20	212	151	105	377	572	1,120	2,020	222	75	8.0	13	228
21	212	145	110	360	470	683	3,330	210	72	8.0	13	160
22	212	138	110	326	976	676	1,140	191	66	8.0	14	239
23	218	132	110	293	350	1,110	3,540	1,250	63	9.4	14	844
24	832	122	110	271	306	1,210	970	194	60	9.4	15	723
25	1,140	116	108	254	280	9,950	9,260	254	56	10	17	517
26	888	116	102	237	249	11,300	5,730	280	53	12	31	392
27	748	113	99	209	237	4,020	2,520	353	50	11	29	380
28	725	113	102	190	266	2,040	2,000	244	47	10	28	264
29	1,110	116	142	168		4,700	1,730	188	45	9.4	34	210
30	690	129	1,130	155		5,230	2,750	213	42	8.7	36	334
31	778		6,260	175		3,220		188		8.0	29	
Month	Maximum						Minimum		Mean		Run-off in acre-feet	
October	1,140						197		415		25,500	
November	2,070						115		311		16,500	
December	6,260						99		389		23,000	
January	6,730						155		1,140		70,100	
February	1,820						182		631		35,000	
March	11,300						676		2,850		175,000	
April	32,200						870		4,800		286,000	
May	2,570						188		649		39,900	
June	213						42		112		6,680	
July	75						8.0		18.6		1,020	
August	36						8.0		15.6		959	
September	941						24		256		14,000	
The year	32,200						8.0		962		697,000	

## Brazos River near Bryan, Tex.

Location.- Water-stage recorder 3,000 feet downstream from Pitts Bridge, 2.4 miles (revised) below mouth of Little Brazos River, and 9 miles southwest of Bryan, Brazos County. Zero of gage is 192.2 feet above mean sea level.

Drainage area.- 38,430 square miles, of which about 9,240 square miles is probably noncontributing.

Records available.- September 1925 to September 1934. Comparable records at former station  $7\frac{1}{2}$  miles downstream February 1918 to September 1925.

Average discharge.- 13 years (1918-20, 1921-24, 1926-34), 6,000 second-feet.

Extremes.- Maximum discharge during year, 79,600 second-feet Apr. 7 (gage height, 31.05 feet); minimum, 87 second-feet Aug. 24.

1925-34: Maximum stage recorded, 47.1 feet May 20, 1930 (discharge not determined); minimum discharge, that of Aug. 24, 1934.

Maximum known stage of about 54.0 feet (present gage datum) occurred in December 1915.

Remarks.- Records fair. Discharge partly estimated Oct. 8-11, Nov. 13-15, Apr. 14-19, July 21-26. Numerous small diversions above gage do not appreciably affect the flow except during low stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	1,060	273	2,940	3,040	2,430	6,040	3,850	1,000	236	141	101
2	1,030	1,070	302	3,460	3,990	8,890	4,870	3,480	826	233	162	105
3	956	1,120	289	2,080	2,580	17,600	4,270	2,740	742	242	162	109
4	777	956	279	5,910	1,680	12,700	4,720	2,880	676	233	146	120
5	700	777	316	10,800	1,040	6,380	13,400	3,460	622	215	136	112
6	668	678	312	6,780	682	4,880	43,600	2,970	592	218	129	109
7	721	616	400	3,720	968	5,800	74,400	3,030	784	212	125	103
8	622	1,530	456	2,740	1,120	5,020	65,400	3,690	770	206	120	97
9	535	1,360	428	2,360	3,430	3,850	40,900	3,330	640	203	116	93
10	510	1,120	416	2,460	7,500	3,460	26,500	2,460	570	190	141	107
11	468	566	392	1,790	8,500	2,970	17,200	2,240	580	185	134	112
12	452	580	370	1,410	4,570	2,630	12,900	2,060	560	190	125	125
13	448	525	351	1,320	3,990	2,300	8,670	1,980	520	200	116	1,250
14	448	468	344	1,280	2,850	2,190	6,440	1,880	480	182	109	732
15	448	424	326	1,040	2,240	2,460	7,140	1,730	452	175	109	606
16	452	392	326	912	2,140	2,910	6,440	1,500	428	188	107	366
17	535	370	330	826	1,680	2,030	5,960	1,410	408	150	107	263
18	476	351	312	1,160	1,600	1,540	6,120	1,280	389	170	103	218
19	452	340	296	4,590	1,410	1,360	5,020	1,160	366	162	101	200
20	448	330	286	5,320	2,680	1,280	5,480	1,080	440	155	99	486
21	448	330	282	3,540	1,830	1,160	6,960	1,000	464	157	99	485
22	448	323	279	1,880	1,360	1,360	5,800	936	370	158	95	428
23	448	312	282	1,240	1,120	1,200	4,670	944	340	160	93	368
24	448	302	279	960	1,080	1,000	4,160	888	312	162	89	302
25	448	292	273	770	1,200	6,010	4,270	1,610	292	164	91	260
26	448	266	273	1,240	856	28,200	5,450	2,300	292	165	95	441
27	754	282	270	2,900	742	33,300	8,040	1,640	266	162	101	610
28	1,080	282	270	3,940	728	17,400	5,320	1,640	257	185	99	560
29	1,080	276	282	4,830		10,700	4,570	1,360	251	178	95	476
30	880	273	404	2,300		8,630	4,270	1,240	239	168	95	448
31	956		682	1,420		8,110		1,240		165	99	
Month	Maximum			Minimum			Mean			Run-off in acre-feet		
October	1,120	448	634	39,000								
November	1,530	273	586	34,900								
December	682	270	356	20,600								
January	10,800	770	2,840	175,000								
February	8,500	682	2,380	132,000								
March	33,300	1,000	6,770	415,000								
April	74,400	4,160	14,000	833,000								
May	3,850	888	2,010	124,000								
June	1,000	239	498	29,600								
July	242	152	186	11,400								
August	152	89	115	6,960								
September	1,250	93	326	19,400								
The year	74,400	89	2,540	1,840,000								

## Brazos River at Richmond, Tex.

Location.— Water-stage recorder on highway bridge in Richmond, Fort Bend County, about 1,500 feet downstream from Galveston, Harrisburg & San Antonio Railway bridge. Zero of gage is 40.8 feet above mean sea level.

Drainage area.— 44,000 square miles, of which about 9,240 square miles is probably non-contributing.

Records available.— June 1931 to September 1934; January 1903 to June 1906 at railroad bridge 1,500 feet upstream.

Extremes.— Maximum discharge during year, 71,400 second-feet Apr. 10 (gage height, 29.40 feet); minimum, 33 second-feet Aug. 23, 24.

1903-6, 1931-34: Maximum discharge, 80,500 second-feet Feb. 24, 1932 (gage height, 31.85 feet); minimum, that of Aug. 23, 24, 1934.

Flood of June 6, 1929, reached a stage of 40.8 feet, present gage datum (discharge, 120,000 second-feet). Flood of December 1913 reached a stage of 45.4 feet, present gage datum (discharge not determined).

Remarks.— Records fair except those estimated Nov. 23 to Dec. 3, June 9 to July 18, which are poor. Considerable water diverted above station for irrigation and municipal use (see records of Brazos Valley Irrigation Co.'s canal near Fulshear and Richmond Irrigation Co.'s canal near Richmond).

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,350	795	532	730	18,800	2,750	13,800	6,860	1,260	278	320	64
2	2,060	1,000	540	642	17,300	12,600	13,000	5,210	1,150		311	124
3	1,650	1,000	532	730	13,000	27,500	11,000	5,600	1,120		244	86
4	1,410	942	524	1,210	11,900	32,900	9,850	5,180	1,120		294	146
5	1,260	1,000	520	3,040	9,650	35,000	9,960	4,620	1,080		256	196
6	1,190	1,030	516	5,390	7,960	29,200	20,300	4,070	1,020	264	157	186
7	1,120	1,090	524	9,860	6,380	22,000	39,200	3,690	924		92	166
8	1,060	1,090	524	9,350	5,620	17,500	54,400	4,070	636		62	236
9	1,000	1,000	516	6,070	10,700	15,200	87,000	4,070			75	536
10	942	914	508	4,720	14,200	13,400	71,000	3,440			115	1,470
11	914	859	516	4,870	11,500	11,700	63,500	4,200		456	140	1,290
12	914	1,030	536	5,770	17,100	10,300	48,400	4,620			122	754
13	859	1,260	594	5,170	19,200	9,470	34,500	4,080			122	502
14	806	1,090	613	4,290	13,800	8,520	28,500	3,180			129	502
15	790	914	603	3,610	11,200	7,780	20,600	2,760			127	650
16	755	832	598	3,260	9,470	7,060	16,900	2,540		298	163	798
17	730	780	598	2,930	6,140	6,540	14,900	2,270			127	359
18	705	755	598	2,560	7,240	6,070	13,600	2,070			135	676
19	680	705	608	2,160	6,540	5,470	12,700	1,920			119	798
20	666	675	584	1,880	6,070	4,570	13,200	1,780			115	754
21	666	642	558	2,230	5,470	3,870	12,400	1,640		203	110	526
22	705	618	544	5,170	4,870	3,370	11,100	1,480			103	45
23	730	589	536	5,920	5,020	3,150	11,700	1,320			103	35
24	675	566	524	4,870	4,570	2,930	11,600	1,380			119	50
25	632	558	516	3,870	3,870	2,820	10,100	1,120			203	58
26	598	549	516	3,870	3,370	2,930	9,330	1,160		173	186	581
27	613	540	508	7,160	3,040	8,500	7,420	1,290			173	39
28	598	532	508	13,600	2,820	24,400	6,710	1,150			269	50
29	589	532	524	13,400		25,800	8,200	1,440			266	53
30	580	528	642	13,600		19,000	8,140	1,600			294	53
31	575		755	15,600		15,000		1,360			298	50
Month							Maximum	Minimum	Mean		Run-off in acre-feet	
October							2,350	575	930		57,200	
November							1,260	528	814		48,400	
December							755	508	555		34,100	
January							15,600	642	5,360		350,000	
February							12,200	2,820	9,260		514,000	
March							35,000	2,750	12,800		787,000	
April							71,000	6,710	22,300		1,330,000	
May							6,860	1,120	2,980		163,000	
June							1,260		603		35,900	
July									103		222	
August							359		36		141	
September							1,470		84		517	
The year							71,000		35		4,660	
											3,370,000	



## Clear Fork of Brazos River at Nugent, Tex.

Location.- Water-stage recorder at highway bridge at Nugent, Jones County. Prior to Dec. 12, 1933, a staff gage to same datum and 575 feet downstream was used.

Drainage area.- 2,220 square miles.

Records available.- February 1924 to September 1934.

Average discharge.- 10 years, 183 second-feet.

Extremes.- Maximum discharge during year, 1,330 second-feet Nov. 21 (gage height, 5.20 feet, from graph based on gage readings); minimum, 0.2 second-foot Aug. 24 (gage height, 1.26 feet).

1924-34: Maximum discharge recorded, about 47,000 second-feet Sept. 8, 1932 (gage height, 27.05 feet); no flow at times.

Remarks.- Records good except those estimated Apr. 30 to June 6, which are fair. Small diversions above station for municipal use and mining.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.7	18	17	354	13	94	16			3.2	1.0	3.2
2	8.9	50	16	46	13	110	16			3.2	.6	1.9
3	8.9	47	15	29	13	64	14			3.2	.6	1.3
4	8.1	50	15	22	13	32	13		14	2.9	.5	1.2
5	8.1	37	15	19	13	21	13			2.6	.5	1.1
6	7.3	36	14	17	13	18	14			2.6	.6	1.0
7	7.3	34	14	16	13	16	18		12	3.5	.8	1.0
8	7.3	29	14	16	14	14	108		9.7	9.2	.8	1.1
9	7.3	24	14	15	15	13	55		8.0	16	.6	4.6
10	6.4	22	14	15	14	13	32		7.5	8.6	.6	8.6
11	6.4	22	14	15	15	13	24		7.5	5.3	.4	2.9
12	114	22	14	14	15	13	18		7.0	3.8	.3	2.2
13	825	21	13	14	15	13	16		5.9	2.9	.5	1.6
14	750	21	13	15	14	13	16		5.9	2.6	.6	1.6
15	220	20	13	15	15	12	16		5.3	1.9	.5	1.4
16	62	20	13	15	14	13	20		5.3	1.2	.6	1.3
17	47	20	13	15	14	12	24		5.9	1.3	.6	1.3
18	38	18	13	15	13	12	170		5.3	1.3	.6	1.4
19	28	18	13	15	13	12	446		131	1.0	.5	28
20	24	180	12	15	13	13	217		14	.9	.5	10
21	24	945	12	15	13	12	91		13	.7	.4	5.9
22	23	206	12	15	13	12	46		8.0	.6	.3	4.2
23	22	51	13	15	13	13	34		4.8	.6	.3	4.2
24	22	36	13	15	13	19	32		3.8	.7	.2	3.8
25	22	27	13	14	13	206	64		10	.7	29	3.8
26	21	22	13	14	13	596	33		6.4	.6	21	3.2
27	20	21	13	13	12	297	20		4.2	.5	9.1	2.8
28	20	20	13	13	12	59	16		3.5	.5	62	2.6
29	20	18	26	13		32	16		1.9	.4	25	2.2
30	20	17	2.0	13		25	15		2.2	.4	8.0	1.9
31	18		877	13		20				1.0	4.8	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October								825	6.4	78.2	4,810	
November								945	17	69.1	4,110	
December								877	12	49.2	3,030	
January								354	13	27.4	1,680	
February								15	12	13.5	750	
March								596	12	59.5	3,600	
April								446	13	54.4	3,240	
May										12.0	738	
June								131	1.9	12.4	738	
July								16	.4	2.71	167	
August								62	.2	5.54	341	
September								28	1.0	3.71	221	
The year								945	.2	32.3	23,400	

## Clear Fork of Brazos River at Fort Griffin, Tex.

Location.- Water-stage recorder at old Fort Griffin-Throckmorton highway bridge half a mile east of Fort Griffin, Shackelford County.

Drainage area.- 3,974 square miles.

Records available.- December 1923 to September 1934.

Average discharge.- 10 years (1924-34), 294 second-feet.

Extremes.- Maximum discharge during year, 3,410 second-feet Oct. 15 (gage height, 10.58 feet, from flood marks); no flow at times.  
1924-34: Maximum discharge, 33,600 second-feet Sept. 10, 1932 (gage height, 35.09 feet); no flow at times.

Remarks.- Records good except those estimated Oct. 1-18, which are poor. Small diversions above station for municipal and irrigation uses.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		12	23	670	14	261	56	27	15	2.2		0
2		17	21	696	14	390	40	28	11	1.6		0
3		25	18	184	14	466	35	21	8.1	1.1		0
4		18	17	106	14	204	31	19	5.8	.7		0
5		17	16	68	14	123	26	13	3.8	.3		0
6		21	15	52	14	83	24	11	2.7	0		0
7	2.0	32	15	40	15	59	21	9.8	2.0	0		0
8		32	14	32	18	36	19	8.6	1.7	0		0
9		25	12	30	22	28	17	8.1	1.3	0		29
10		21	12	29	18	24	16	7.6	1.0	0		11
11		18	12	22	21	20	69	6.6	.9	0		2.4
12		16	12	20	29	16	59	5.8	.6	0		1.0
13		15	12	20	32	15	38	5.0	.4	0		.4
14		14	12	19	27	14	30	3.4	.2	0		.2
15		14	13	18	25	12	35	4.2	0	0		0
16		13	14	18	23	12	77	5.8	0	0		0
17		12	13	17	23	12	362	4.2	0	0		0
18		12	14	17	22	11	505	3.4	0	0		0
19	92	11	16	17	21	9.8	1,090	2.4	0	0		0
20	62	58	15	16	18	9.2	790	1.9	0	0		15
21	44	56	15	16	18	11	501	1.4	0	0		70
22	34	535	16	17	18	12	226	1.3	0	0		5.0
23	27	580	16	17	18	11	138	41	0	0		1.6
24	24	190	16	16	16	11	94	9.8	0	0		1.0
25	21	92	16	17	15	44	60	2.8	0	0		.6
26	18	53	16	16	16	73	46	39	11	0		.3
27	16	37	14	15	16	790	37	50	11	0		0
28	16	33	15	15	16	550	33	30	6.6	0		0
29	15	25	21	15		252	50	18	4.2	0		0
30	14	23	51	13		128	33	16	2.7	0		0
31	14		209	13		79		18		0		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							580	11	110	6,760		
November							209	12	67.6	4,020		
December							696	13	22.6	1,390		
January							32	14	72.9	4,480		
February							790	9.2	19.0	1,060		
March							1,090	16	121	7,440		
April							50	1.3	15.6	9,040		
May							15	0	3.00	836		
June							2.2	0	.19	12		
July							0	0	0	0		
August							70	0	4.58	273		
September												
The year								0	49.1	35,500		

Note.- No flow during August.

Clear Fork of Brazos River near Crystal Falls, Tex.

Location.- Water-stage recorder at Texas Co.'s pumping plant  $2\frac{1}{2}$  miles below Hubbard Creek and  $3\frac{1}{2}$  miles northeast of Crystal Falls, Stephens County.

Drainage area.- 5,686 square miles.

Records available.- July 1928 to September 1934.

Extremes.- Maximum discharge during year, 4,520 second-feet Mar. 28 (gage height, 8.63 feet); no flow at times.

1928-34: Maximum discharge, 22,700 second-feet Sept. 8, 1932 (gage height, 28.10 feet); no flow at times.

Maximum stage known, about 34.0 feet (present datum) in 1900.

Remarks.- Records good. Large part of ordinary flow diverted above station for municipal use and mining. Low-water flow partly regulated by dams above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	11	18	238	27	709	102	46	11			0
2	3.9	22	24	786	24	1,550	71	36	9.7			0
3	2.3	22	22	508	24	633	57	34	9.7			0
4	1.0	18	18	199	29	397	46	34	9.7			0
5	.5	22	16	125	24	227	78	24	5.5			0
6	0	16	11	92	24	152	950	22	3.9			0
7	0	12	11	68	27	102	370	18	2.3			0
8	0	16	11	60	46	71	125	16	1.0			0
9	0	32	11	54	104	54	71	12	0			0
10	0	32	11	44	178	41	52	9.7	0			0
11	0	24	11	41	84	39	41	8.3	0			0
12	0	22	11	39	54	32	39	8.3	0			0
13	0	16	11	32	54	29	71	8.3	0			0
14	0	12	11	29	49	29	57	9.7	0			0
15	379	11	11	29	44	24	46	11	0			0
16	2,040	12	11	29	36	24	46	8.3	0			0
17	1,260	12	12	32	29	27	68	4.7	0			0
18	397	12	16	34	41	20	672	3.9	0			0
19	160	11	20	34	27	18	651	3.9	0			0
20	84	57	18	34	20	18	1,070	3.9	0			0
21	54	220	18	34	20	18	658	2.3	0			781
22	39	199	14	34	18	18	376	3.1	0			156
23	27	648	14	32	16	16	219	4.7	0			32
24	22	410	16	34	14	142	148	20	0			16
25	16	179	16	36	16	1,560	98	20	0			6.9
26	14	95	16	34	14	3,770	68	22	0			3.9
27	12	57	16	36	12	640	57	9.7	0			1.0
28	11	36	16	36	11	825	49	25	0			.5
29	9.7	29	240	32	29	476	36	44	0			0
30	11	24	437	29	252	252	44	27	0			0
31	11		214	29		166		16				
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						2,040	0	147	9,040			
November						648	11	76.3	4,540			
December						437	11	42.0	2,580			
January						786	29	92.7	5,700			
February						178	11	38.1	2,120			
March						3,770	16	389	23,900			
April						1,070	36	215	12,600			
May						46	2.3	16.6	1,020			
June						11	0	1.76	105			
July						0	0	0	0			
August						0	0	0	0			
September						781	0	33.2	1,980			
The year						3,770	0	88.1	63,800			

Note.- No flow during months left blank.

## North Bosque River near Clifton, Tex.

Location.- Staff gage a quarter of a mile above Gulf, Colorado & Santa Fe Railway bridge and 1.4 miles northwest of Clifton, Bosque County.

Drainage area.- 974 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 11 years, 140 second-feet.

Extremes.- Maximum discharge during year, 13,000 second-feet Apr. 6 (gage height, 8.20 feet, from flood marks); no flow Aug. 7-28.  
1923-34: Maximum discharge, about 34,900 second-feet Sept. 8, 1929 (gage height, 18.8 feet, from graph based on gage readings); no flow at times.

Remarks.- Low-water records good, others fair. Railway company pumps about 100,000 gallons a day above control dam a third of a mile below gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	14	2.9	159	16	1,570	142	119	29	2.1	1.1	2.4
2	75	185	3.7	72	29	1,510	134	697	28	2.1	.9	2.2
3	53	855	3.7	1,600	23	307	126	447	26	2.1	.6	1.8
4	21	216	3.4	428	21	196	122	307	23	2.0	.4	1.7
5	16	64	3.0	108	16	151	2,050	293	21	1.9	.2	1.7
6	9.0	29	2.8	72	14	130	5,290	256	20	1.8	.1	1.4
7	5.8	16	2.4	57	11	105	501	196	20	1.8	0	1.1
8	4.4	11	2.3	37	26	86	672	122	17	1.8	0	1.2
9	4.1	7.9	2.8	24	2,110	75	501	105	14	1.8	0	1.0
10	3.7	4.8	2.7	18	244	72	334	102	11	1.5	0	.8
11	3.0	3.4	2.8	17	138	64	280	98	11	1.3	0	.8
12	2.9	2.9	3.7	16	328	60	222	91	9.0	1.1	0	.8
13	3.0	3.4	4.1	13	155	60	182	88	7.9	1.9	0	.8
14	2.9	4.1	3.7	13	108	60	177	80	6.9	1.8	0	.9
15	2.9	4.8	3.0	11	83	51	172	75	6.9	1.7	0	152
16	2.8	4.4	4.8	10	67	46	796	64	5.8	1.6	0	117
17	2.7	4.1	4.8	13	57	46	388	60	5.8	1.4	0	38
18	2.8	3.4	4.1	16	53	42	314	60	4.4	1.4	0	17
19	2.8	3.0	2.9	16	53	42	967	53	4.1	1.3	0	10
20	2.6	2.9	2.6	35	51	42	900	51	4.1	1.1	0	6.9
21	2.5	4.1	3.4	33	49	46	300	44	3.7	1.0	0	4.8
22	2.4	3.4	5.8	29	42	40	206	40	3.4	1.0	0	4.8
23	2.4	3.0	5.8	20	38	40	177	38	3.4	.8	0	4.1
24	2.4	3.0	5.8	16	33	49	778	85	2.9	.8	0	4.1
25	2.8	2.6	5.8	14	31	574	2,610	396	2.9	.8	0	3.4
26	2.6	2.6	4.1	14	33	2,180	267	102	2.6	.8	0	2.7
27	725	2.6	3.7	11	31	447	201	62	2.6	.8	90	2.5
28	91	2.6	3.7	9.0	31	267	155	49	2.5	.8	31	2.4
29	38	2.7	9.0	9.0		227	142	40	2.3	1.1	5.8	2.3
30	26	2.7	2,820	9.0		196	130	37	2.3	1.1	3.0	2.3
31	21		818	11		167		33		1.1	2.8	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							725	2.4	36.8	2,260		
November							855	2.6	48.9	2,910		
December							2,820	2.3	121	7,440		
January							1,800	9.0	100	6,150		
February							2,110	11	139	7,720		
March							2,180	40	289	17,800		
April							5,880	122	658	39,200		
May							697	33	138	8,480		
June							29	2.3	10.1	601		
July							2.1	.8	1.41	97		
August							90	0	4.58	289		
September							152	.8	18.1	780		
The year							5,880	0	129	93,700		

## Deer Creek at Chilton, Tex.

Location.- Water-stage recorder 75 feet below San Antonio & Aransas Pass Railway bridge and 0.8 mile south of Chilton, Falls County. Prior to May 18, 1934, a staff gage at same location and to 1.80 feet lower datum was used.

Drainage area.- 81.8 square miles.

Records available.- March to September 1934.

Extremes.- Maximum discharge during period, 4,000 second-feet Apr. 6 (gage height, 13.2 feet, present datum, from flood marks); no flow June to Sept. 30.

Remarks.- Records fair prior to May 18, others good. No diversions.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							16	6.2	0.1			
2							14	6.4	0			
3							14	8.3	0			
4							13	7.5	0			
5							506	6.1	0			
6							1,410	5.1	0			
7							67	4.0	0			
8							112	3.5	0			
9							52	2.8	0			
10							35	2.7	0			
11							28	2.8	0			
12							15	2.9	0			
13							15	3.0	0			
14							18	2.8	0			
15							21	2.6	0			
16						7.8	21	2.3	0			
17						6.8	19	2.2	0			
18						6.4	16	2.2	0			
19						6.5	16	1.8	0			
20						5.9	12	1.6	0			
21						5.4	9.1	1.6	0			
22						5.2	8.9	1.5	0			
23						5.2	8.4	1.0	0			
24						5.1	7.3	1.7	0			
25						1,130	7.1	6.9	0			
26						223	7.2	1.9	0			
27						37	7.0	1.0	0			
28						24	6.9	.6	0			
29						21	6.8	.4	0			
30						18	6.8	.4	0			
31						17		.3				
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October												
November												
December												
January												
February												
March 16-31							1,130	5.1	95.3	3,020		
April							1,410	6.8	83.1	4,940		
May							8.3	.3	3.04	187		
June							.1	0	0	0		
July							0	0	0	0		
August							0	0	0	0		
September							0	0	0	0		
The period										8,150		

Note.- No flow July to September.

## BRAZOS RIVER BASIN

Leon River near Belton, Tex.

Location.- Water-stage recorder a quarter of a mile above Temple-Belton highway bridge and 2 miles east of Belton, Bell County.

Drainage area.- 3,547 square miles.

Records available.- October 1923 to September 1934.

Average discharge.- 11 years, 425 second-feet.

Extremes.- Maximum discharge during year, 15,200 second-feet Apr. 6 (gage height, 10.73 feet); no flow July 29 to Sept. 30.

1923-34: Maximum stage recorded, 15.35 feet Oct. 6, 1930 (discharge not determined); no flow at times.

Highest known stages, 21.0 feet September 1921 and about 25 feet December 1913.

Remarks.- Records of daily discharge not sufficiently accurate for publication. Monthly records fair. Several small pumping plants divert water above station.

Discharge, in second-feet, 1933-34

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	288	5.2	29.9	1,840
November	101	8.0	25.3	1,510
December	76	5.7	12.2	750
January	2,520	29	249	15,300
February	396	35	124	6,890
March	3,340	89	577	36,800
April	11,200	408	1,760	106,000
May	1,120	134	399	24,600
June	120	5.2	34.5	2,050
July	56	0	7.48	460
August	0	0	0	0
September	0	0	0	0
The year	11,200	0	267	194,000

## Little River at Cameron, Tex.

Location.- Water-stage recorder at old McCowan bridge site 2,100 feet above Cameron-Rockdale highway bridge and 2 miles southeast of Cameron, Milam County. Prior to Oct. 10, 1933, a chain gage with datum 1.58 feet lower was used at the Cameron-Rockdale highway bridge. Present gage is at same location and to same datum as chain gage used Oct. 1 1922, to Apr. 9, 1928.

Drainage area.- 7,034 square miles.

Records available.- November 1918 to September 1934.

Average discharge.- 17 years (1917-34), 1,680 second-feet.

Extremes.- Maximum discharge during year, 41,200 second-feet Apr. 6 (gage height, 34.37 feet); minimum, 14 second-feet Aug. 26.  
1918-34: Maximum discharge, determined by slope-area method, 647,000 second-feet Sept. 10, 1921 (gage height, about 53.2 feet, present datum, from flood marks); minimum, 2.6 second-feet Sept. 3, 5, 7, 1918.

Remarks.- Low and medium stage records good, others fair. Numerous small diversions for irrigation and municipal uses affect flow only during extremely low stages. Slight regulation caused by pumping above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	354	42	116	3,450	745	1,370	782	357	62	59	17
2	58	222	46	113	1,850	6,060	1,160	677	300	60	45	19
3	54	148	46	728	449	6,300	992	677	268	61	39	21
4	54	128	46	3,560	320	1,940	820	971	249	57	36	20
5	130	118	50	4,730	259	1,060	7,450	992	280	54	32	17
6	204	202	49	1,990	225	1,120	30,700	1,240	442	55	28	16
7	153	208	61	772	202	959	25,900	1,370	333	51	26	17
8	114	197	60	593	653	866	20,000	1,120	262	48	26	16
9	74	146	59	491	5,840	782	15,900	908	216	49	26	16
10	65	130	67	399	9,830	656	9,660	761	191	70	26	16
11	54	124	59	320	2,890	593	6,770	655	168	66	25	625
12	53	107	64	271	2,740	581	4,220	593	151	54	28	1,340
13	72	96	56	231	1,430	614	2,680	651	137	70	24	364
14	67	85	51	199	782	487	2,340	510	126	80	24	178
15	59	78	50	170	866	464	1,920	495	116	64	24	161
16	52	75	52	141	719	446	1,660	495	109	53	22	102
17	46	78	53	116	614	431	1,500	442	102	47	22	86
18	46	68	53	1,690	649	417	1,410	403	114	43	21	66
19	49	60	53	3,520	1,780	395	1,840	374	359	38	20	52
20	43	57	53	1,950	684	395	4,240	361	170	36	19	42
21	40	55	52	431	614	388	3,130	354	133	35	18	39
22	39	54	53	313	457	371	2,000	388	109	33	18	36
23	36	50	56	246	421	361	1,620	323	88	32	17	30
24	37	48	55	197	388	364	1,370	319	82	30	16	27
25	38	46	54	165	374	4,270	1,060	656	78	30	16	25
26	37	46	55	171	361	10,200	1,080	656	73	32	15	24
27	128	44	54	3,170	347	7,610	1,930	719	70	32	16	22
28	110	44	54	5,810	330	5,430	1,410	530	70	40	16	20
29	50	44	104	2,370		3,560	1,720	518	68	39	16	21
30	52	43	176	313		1,860	1,070	551	65	51	17	21
31	182		163	1,010		2,640		442		68	18	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							204	36	72.9	4,480		
November							354	45	105	6,250		
December							15	42	62.1	3,820		
January							5,810	113	1,160	71,300		
February							9,830	202	1,410	78,300		
March							10,200	361	1,970	121,000		
April							30,700	820	5,300	315,000		
May							1,370	319	646	39,700		
June							442	65	176	10,500		
July							80	30	49.7	1,340		
August							69	15	24.3	1,490		
September							1,340	15	115	6,840		
The year							30,700	15	915	662,000		

## Lampasas River at Youngsfort, Tex.

Location.- Water-stage recorder 300 feet above highway bridge and half a mile southeast of Youngsfort, Bell County.

Drainage area.- 1,242 square miles.

Records available.- February 1924 to September 1934.

Extremes.- Maximum discharge during year, 12,400 second-feet Apr. 6 (gage height, 12.05 feet); no flow July 22, 23, and Aug. 9 to Sept. 8.

1924-34: Maximum stage from flood marks, 23.70 feet Oct. 2, 1927 (discharge not determined); no flow July 17 to Aug. 18, 1925, July 22, 23 and Aug. 9 to Sept. 8, 1934.

Flood of Dec. 2, 1913, reached a stage of 35.1 feet; flood of September 1873 reached a stage of about 44.2 feet (present gage datum).

Remarks.- Records below 7,000 second-feet good, above poor. Small diversion above station for municipal uses.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	15	9.8	16	18	40	48	59	17	2.5	2.3	0
2	263	24	11	11	20	104	43	86	16	2.0	1.5	0
3	92	143	11	1,690	16	69	41	64	352	1.5	1.3	0
4	31	41	10	115	15	50	43	64	187	1.2	1.0	0
5	19	23	11	46	13	39	1,060	57	71	1.0	.7	0
6	15	16	9.8	33	13	31	6,690	57	41	1.0	.4	0
7	12	13	8.6	25	13	28	707	55	28	2.3	.2	0
8	9.8	11	9.8	22	35	27	576	46	23	2.3	.1	0
9	9.2	9.8	9.8	18	265	25	438	41	18	2.3	0	870
10	8.6	9.2	9.8	16	71	25	279	37	16	5.0	0	1,640
11	8.6	9.8	9.2	16	57	24	210	41	13	3.5	0	55
12	8.6	9.8	9.8	16	50	23	168	39	13	2.3	0	27
13	8.0	9.2	9.8	16	37	23	142	35	12	1.8	0	16
14	7.4	9.2	9.8	15	30	22	130	33	10	1.3	0	12
15	7.4	9.8	9.8	14	27	22	123	28	9.8	1.2	0	9.8
16	6.8	9.8	9.2	14	24	22	115	28	8.6	1.0	0	6.8
17	6.8	9.8	9.2	15	23	22	108	27	7.4	.9	0	5.6
18	7.4	9.8	9.2	23	22	20	108	27	9.8	.7	0	4.0
19	14	9.8	9.2	41	22	20	609	24	8.0	.6	0	4.0
20	10	9.8	10	28	24	20	476	23	7.4	.5	0	3.5
21	9.2	9.8	9.8	23	22	19	201	22	14	.1	0	3.0
22	8.0	9.8	9.2	19	22	19	138	20	12	0	0	2.3
23	7.4	9.8	9.2	18	20	19	115	22	9.8	0	0	2.3
24	7.4	9.8	8.6	16	19	20	96	228	8.0	75	0	2.0
25	7.4	9.8	8.6	16	18	457	329	108	6.8	31	0	1.3
26	12	9.8	8.0	14	18	1,600	253	79	5.6	19	0	1.5
27	150	9.8	7.4	14	16	266	119	52	4.5	13	0	1.3
28	24	9.8	7.4	14	16	127	89	35	4.0	10	0	1.2
29	23	9.8	8.6	14		86	71	27	3.5	9.2	0	1.2
30	19	9.8	17	13		64	64	23	2.5	6.2	0	1.2
31	16		18	14		55		19		3.5	0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							263	6.8	27.1	1,670		
November							143	9.2	16.7	994		
December							18	7.4	9.92	610		
January							1,690	11	76.5	4,690		
February							265	13	33.8	1,880		
March							1,600	19	110	6,760		
April							6,690	41	453	27,000		
May							228	19	48.6	2,990		
June							352	2.5	31.3	1,860		
July							75	0	6.51	400		
August							2.3	0	.24	15		
September							1,640	0	89.0	5,300		
The year							6,690	0	74.7	54,200		



## San Gabriel River at Circleville, Tex.

Location.- Chain gage on highway bridge half a mile northwest of Circleville, Williamson County, and half a mile above Missouri-Kansas-Texas Railroad bridge.

Drainage area.- 602 square miles.

Records available.- February 1924 to September 1934 (discontinued).

Average discharge.- 10 years, 136 second-feet.

Extremes.- Maximum discharge during year, 10,800 second-feet Feb. 8 (gage height, 23.32 feet, from flood marks); minimum, 0.7 second-foot Sept. 2, 3.  
1924-34: Maximum discharge, about 53,400 second-feet May 29, 1929 (gage height, 34.20 feet, from flood marks); no flow Sept. 5, 6, 8, 11, 1924.  
Maximum stage known, about 40.6 feet in September 1921.

Remarks.- Records below 100 second-feet fair, above poor. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.7	5.6	8.6	13	120	255	88	99	29	8.6	3.7	1.0
2	15	9.6	8.6	9.6	71	465	84	106	33	9.6	3.7	.7
3	56	7.9	9.6	118	53	204	82	99	35	7.9	3.7	1.7
4	54	6.3	8.2	202	40	141	79	92	28	7.9	4.2	1.7
5	17	21	8.2	76	36	120	392	91	29	7.1	3.7	1.3
6	11	12	13	45	32	113	1,270	53	28	6.3	3.2	1.5
7	7.9	8.6	10	30	30	106	429	78	26	7.9	3.2	1.5
8	6.3	7.9	10	20	3,230	99	385	72	25	39	3.2	1.7
9	6.6	7.1	8.2	17	1,700	91	284	71	23	25	3.2	1.7
10	4.0	6.3	8.2	13	265	83	212	72	21	22	3.2	394
11	3.4	7.9	7.9	17	528	83	187	75	20	14	3.0	95
12	5.0	7.1	7.1	17	383	79	141	72	14	5.6	2.5	31
13	5.6	6.3	7.1	14	163	78	134	70	17	3.4	2.5	11
14	5.0	11	7.1	12	120	79	141	70	15	2.6	2.5	5.2
15	5.0	6.3	7.1	11	106	78	141	62	11	2.7	2.6	6.0
16	4.4	7.9	7.1	17	92	78	134	60	17	5.2	2.6	6.7
17	4.4	6.3	6.3	25	82	71	127	57	13	6.0	2.6	5.2
18	4.4	6.3	7.1	72	91	74	127	54	83	4.2	2.6	4.2
19	5.6	6.3	6.3	141	87	71	546	53	36	5.6	2.5	4.2
20	5.0	4.4	6.0	63	74	67	344	50	30	4.2	2.5	3.7
21	5.0	6.3	6.3	36	69	66	171	50	7.9	5.0	1.9	2.7
22	5.0	6.3	7.1	28	66	66	141	49	11	5.6	1.9	2.1
23	5.0	6.3	6.7	21	66	66	134	38	11	6.3	1.7	2.0
24	5.6	5.6	7.1	19	66	70	127	195	9.6	6.3	1.7	1.7
25	5.6	5.6	6.3	16	63	252	120	92	8.6	9.6	1.7	1.5
26	5.0	8.6	6.3	109	56	308	113	92	7.9	14	1.2	2.3
27	12	9.1	7.1	207	54	134	113	50	7.1	7.1	2.3	2.5
28	6.3	9.6	7.1	40	60	113	106	45	7.1	8.6	2.1	3.0
29	5.6	9.6	11	26	99	106	40	7.1	7.9	2.1	3.0	3.0
30	4.4	8.6	31	19	88	106	35	8.6	7.9	1.7	3.0	3.0
31	6.3		19	103	86		35		5.0	1.3		
Month					Maximum		Minimum		Mean	Run-off in acre-feet		
October					56		3.4		9.56	589		
November					31		4.4		7.92	471		
December					207		9.6		50.2	3,090		
January					3,230		30		279	15,500		
February					465		66		122	7,500		
March					1,270		79		219	13,000		
April					195		56		71.2	4,380		
May					83		7.1		20.7	1,230		
June					39		2.6		8.97	562		
July					4.2		1.3		2.60	160		
August					394		.7		20.1	1,200		
September												
The year.					3,230		.7		66.6	48,200		

## Big Elm Creek near Temple, Tex.

Location.- Water-stage recorder 350 feet below mouth of Cottonwood Creek and 6 miles east by south of Temple, Bell County. Staff gage used prior to May 12, 1934, was set to a datum 0.35 foot below that of the water-stage recorder.

Drainage area.- 68.5 square miles.

Records available.- March to September 1934.

Extremes.- Maximum discharge during period, 6,130 second-feet Apr. 6 (gage height, 16.15 feet, present datum, from flood marks); no flow June 9 to Sept. 30.

Remarks.- Records fair prior to May 12, others good. No diversions.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							19	7.3	0.4			
2							18	8.1	.3			
3							15	9.6	.3			
4							33	8.1	.3			
5							998	6.4	.2			
6							1,720	4.8	.2			
7							72	4.1	.1			
8							92	3.7	.1			
9							50	3.6	0			
10							42	4.6	0			
11							32	4.6	0			
12							24	3.9	0			
13							22	3.5	0			
14						11	23	3.5	0			
15						11	24	2.9	0			
16						11	22	2.6	0			
17						9.5	22	2.5	0			
18						9.6	18	2.1	0			
19						11	22	1.8	0			
20						9.7	19	1.6	0			
21						8.5	14	1.5	0			
22						8.5	13	1.3	0			
23						8.0	12	1.1	0			
24						7.7	12	2.0	0			
25						282	12	63	0			
26						137	10	5.4	0			
27						39	9.1	2.3	0			
28						30	8.1	1.5	0			
29						27	7.5	1.2	0			
30						23	7.6	.8	0			
31						21		.6				
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October												
November												
December												
January												
February												
March 14-31							282	7.7	36.9	1,320		
April							1,720	7.5	113	6,720		
May							63	.6	5.47	336		
June							.4	0	.06	3.6		
July							0	0	0	0		
August							0	0	0	0		
September							0	0	0	0		
The period										8,380		

Note.- No flow July to September.

## Big Elm Creek near Buckholts, Tex.

Location.- Water-stage recorder at Buckholts-Yarrellton highway bridge, 3.8 miles above mouth of South Elm Creek and 5.5 miles north by east of Buckholts, Milam County. Prior to May 20 staff gage 210 feet downstream with datum 1.39 feet lower.

Drainage area.- 166 square miles.

Records available.- March to September 1934.

Extremes.- Maximum discharge recorded during period, 7,500 second-feet Apr. 6 (gage height, 13.2 feet, present datum); no flow June 9 to Sept. 30.

Remarks.- Records good except those for Mar. 15 to May 19, May 25, 26, which are fair. No diversions.

## Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							27	11	0.6			
2							25	9.3	.4			
3							24	8.2	.3			
4							25	8.0	.2			
5							1,250	7.8	.2			
6							4,050	7.4	.2			
7							325	6.0	.2			
8							164	5.7	.1			
9							117	5.3	0			
10							63	5.3	0			
11							51	5.4	0			
12							42	5.4	0			
13							34	4.9	0			
14							33	4.7	0			
15						15	33	4.2	0			
16						15	33	4.2	0			
17						12	32	3.9	0			
18						11	32	3.7	0			
19						11	34	2.6	0			
20						13	41	2.6	0			
21						12	23	2.2	0			
22						11	20	2.0	0			
23						10	19	1.8	0			
24						10	18	6.1	0			
25						824	16	50	0			
26						1,160	15	27	0			
27						86	14	5.0	0			
28						46	12	2.6	0			
29						41	13	1.8	0			
30						34	12	1.3	0			
31						32		.9	0			
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October												
November												
December												
January												
February												
March 15-31							1,160	10	138	4,650		
April							4,050	12	221	13,200		
May							50	.9	6.98	429		
June							.6	0	.07	4.2		
July							0	0	0	0		
August							0	0	0	0		
September							0	0	0	0		
The period										18,300		

Note.- No flow July to September.

## BRAZOS RIVER BASIN

Yegua Creek near Somerville, Tex.

Location.- Water-stage recorder at highway bridge 760 feet below Gulf, Colorado & Santa Fe Railway bridge and 2 miles south of Somerville, Burleson County. Prior to Jan. 30, 1934, a chain gage was at railway bridge 760 feet upstream. Zero of present gage is 199.29 feet above mean sea level; zero of former (inverted) gage 233.59 feet above mean sea level (revised on basis of U. S. Coast and Geodetic Survey levels in 1934).

Drainage area.- 990 square miles.

Records available.- May 1924 to September 1934.

Average discharge.- 10 years, 324 second-feet.

Extremes.- Maximum discharge during year, 11,800 second-feet Mar. 3 (gage height, 12.17 feet); no flow at times.  
1924-34: Maximum recorded discharge, about 33,600 second-feet May 30, 1929 (gage height, 16.7 feet, present datum); no flow at times.

Remarks.- Records prior to Jan. 30 poor; others fair. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0			0	3,380	611	542	39	3.6	0.2		4.3
2	0			1.0	2,580	6,500	185	36	3.3	.2		1.8
3	0			50	1,840	10,600	114	34	3.3			.9
4	0			195	1,130	5,640	82	32	2.7			.5
5	0			250	738	3,330	694	30	2.2			.3
6	0			160	604	1,940	3,380	28	1.8	.1		.2
7	0			116	410	1,320	4,720	24	1.6			.2
8	0			107	275	856	4,890	22	1.6	0		.1
9	1.4			116	914	425	5,230	20	1.4	0		.1
10	3.0			160	962	185	3,840	17	1.3	0	0	
11	3.0			220	2,140	128	2,510	18	1.1	0	0	
12	2.0			280	2,640	99	1,420	22	1.0	0	0	
13	1.4			147	2,060	81	601	31	.7	0	0	
14	.9			72	1,520	98	450	28	.6	0	0	
15	.9			38	1,520	299	194	19	.5	0	0	
16	.9			26	1,260	185	129	15	.4	0	0	
17	.9			23	890	99	99	13	.3	0	0	
18	.4			46	874	72	98	11	3.0	0	0	
19	.1			160	1,100	59	364	9.6	40	0	0	
20	.9			265	1,010	54	930	8.6	90	0	0	
21	3.0			322	1,010	50	2,240	7.7	33	0	0	
22	3.0			280	759	47	1,840	6.9	11	0	0	
23	3.0			147	682	45	1,100	5.9	4.0	0	0	
24	2.0			99	610	44	610	5.2	2.0	0	0	
25	1.4			56	303	281	231	4.9	1.1	0	0	
26	.9			387	133	822	128	4.6	.7	0	0	
27	.4			4,120	82	443	82	4.2	.5	0	0	
28	0			4,680	63	307	61	5.5	.4	0	0	
29	0			4,260		680	50	7.5	.3	0	0	
30	0			3,240		1,160	44	4.4	.2	2.3	0	
31	0			2,900		1,050		3.2		13	0	
Month				Maximum		Minimum		Mean		Run-off in acre-feet		
October				3.0	0	0	0	0.95		58		
November				0	0	0	0	0		0		
December				0	0	0	0	7.38		45,400		
January				4,680	3,380	63	1,120			62,200		
February				10,600	44	1,210				74,400		
March				5,230	44	1,240				73,800		
April				39	3.2	16.7				1,030		
May				90	.2	7.12				424		
June				13	0	.53				35		
July				4.3	0	.27				17		
August				0	0	0				0		
September												
The year				10,600	0	355				257,000		

Note.- No flow during months left blank.

## Navasota River near Easterly, Tex.

Location.- Water-stage recorder at highway bridge 3,000 feet above Missouri Pacific Railroad bridge and 6 miles northeast of Easterly, Robertson County. Zero of gage is 276.42 feet above mean sea level.

Drainage area.- 949 square miles.

Records available.- March 1924 to September 1934.

Average discharge.- 10 years, 395 second-feet.

Extremes.- Maximum discharge during year, 16,600 second-feet Apr. 7 (gage height, 17.40 feet); minimum, 0.2 second-foot Aug. 21 to Sept. 2.  
1924-34: Maximum discharge, about 48,500 second-feet Sept. 5, 1932 (gage height, 21.9 feet); no flow at times.

Remarks.- Daily records for January and February not sufficiently accurate for publication; monthly records fair. For balance of year low-stage records fair, others good. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.6	4.0	3.6			324	213	56	5.8	0.9	0.4	0.2
2	3.9	3.6	5.1			1,540	131	42	5.6	.9	.3	.2
3	3.6	3.4	5.6			2,610	101	38	5.1	.9	.3	.3
4	3.1	3.6	4.6			2,610	84	45	4.9	.8	.3	.5
5	2.7	3.4	4.8			2,340	1,540	39	4.7	.8	.3	.5
6	2.5	3.4	4.0			1,320	3,300	32	4.4	.8	.3	.5
7	2.9	4.2	3.6			430	13,600	28	4.0	.7	.3	.4
8	3.4	4.0	3.4			164	10,700	29	3.8	.7	.3	.4
9	3.0	3.8	3.4			106	6,870	55	3.7	.6	.3	.6
10	2.9	3.6	3.4			75	3,640	38	3.6	.6	.3	4.4
11	2.8	3.4	3.6			56	1,660	26	3.4	.6	.3	2.5
12	2.7	3.4	3.8			45	568	22	3.2	.6	.3	2.8
13	2.5	3.6	4.6			38	241	19	2.8	.5	.3	1.7
14	2.4	3.6	4.8			62	161	17	2.6	.5	.3	2.3
15	2.4	3.4	4.8			43	122	16	2.7	.5	.3	3.1
16	2.4	3.8	5.1			122	104	15	2.5	.5	.3	2.9
17	2.2	3.6	5.6			198	93	21	2.2	.4	.3	2.3
18	2.1	3.4	5.4			132	90	109	1.9	.4	.3	1.4
19	2.0	3.2	4.8			72	68	61	1.6	.4	.3	1.9
20	1.8	3.0	5.4			49	77	39	1.4	.4	.3	1.7
21	1.7	2.8	5.4			38	66	24	1.4	.4	.2	1.3
22	4.9	2.6	14			34	61	18	1.4	.4	.2	1.3
23	5.7	2.6	15			31	55	13	1.3	.4	.2	1.2
24	4.3	2.6	11			32	52	12	1.2	.4	.2	.9
25	3.5	2.8	8.4			162	46	11	1.2	.4	.2	.8
26	3.1	2.8	7.1			860	41	9.7	1.1	.4	.2	.8
27	3.5	2.6	6.1			8,220	39	8.4	1.1	.4	.2	.6
28	3.9	3.2	6.1			5,530	137	7.7	1.0	.4	.2	.6
29	3.9	3.6	7.4			4,820	173	6.8	1.0	.4	.2	.9
30	3.8	3.4	13			2,580	85	6.2	1.0	.4	.2	1.1
31	4.3		60			839		5.8		.4	.2	
Month						Maximum		Minimum		Mean		Run-off in acre-feet
October						5.7		1.7		3.15		194
November						4.2		2.6		3.35		199
December						60		3.4		6.00		492
January						865		7.8		225		13,800
February						512		8.5		127		7,050
March						8,530		31		1,240		76,200
April						13,600		39		1,470		87,600
May						109		5.8		287		17,600
June						5.6		1.0		2.72		162
July						.9		.4		.55		34
August						.4		.2		.27		17
September						4.4		.2		1.34		60
The year						13,600		.2		281		203,000

Brazos Valley Irrigation Co.'s canal near Fulshear, Tex.

Location.- Water-stage recorder 1 mile below point of diversion and 3 miles south of Fulshear, Fort Bend County.

Records available.- October 1931 to September 1934.

Extremes.- Maximum discharge during year, 261 second-feet May 24 (gage height, 9.63 feet); no flow at times.

1931-34: Maximum discharge, 280 second-feet July 11, 1932; maximum stage, 9.63 feet May 24, 1934; no flow at times.

Remarks.- Daily records fair, monthly records good. Station above all diversions from canal. Flow controlled by pumping plant. Canal diverts from left bank of Brazos River 18 miles (corrected) above Richmond. Water used for irrigation near Sugarland.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0	245	229	0	64
2								0	207	154	39	124
3								41	90	64	70	105
4								44	69	83	74	20
5								46	91	170	200	60
6								43	90	142	200	60
7								42	90	31	200	22
8								56	139	7.4	200	0
9								84	214	78	119	11
10								.6	104	80	170	48
11								0	79	93	79	30
12								0	221	122	111	6.4
13								0	245	76	67	0
14								0	237	95	67	0
15								0	237	174	25	0
16								0	237	214	0	0
17								0	245	186	2.8	0
18								0	245	214	65	0
19								0	237	214	66	0
20								0	237	214	108	25
21								81	237	214	200	103
22								111	237	214	200	39
23								128	237	214	127	0
24								175	237	214	111	0
25								168	237	200	114	0
26								104	221	207	193	0
27								89	172	207	118	23
28								22	229	75	107	.2
29								50	229	44	112	0
30								102	229	13	111	0
31								165		0	111	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October								0	0	0	0	
November								0	0	0	0	
December								0	0	0	0	
January								0	0	0	0	
February								0	0	0	0	
March								0	0	0	0	
April								0	0	0	0	
May								175	0	49.4	3,040	
June								245	79	195	11,600	
July								229	0	137	8,420	
August								200	0	109	6,700	
September								124	0	24.7	1,470	
The year								245	0	43.1	31,200	

Note.- No flow during months left blank.

Richmond Irrigation Co.'s canal near Richmond, Tex.

Location.— Water-stage recorder 600 feet below crossing of Richmond-Rosenberg highway about  $1\frac{1}{2}$  miles below point of diversion, and  $1\frac{1}{2}$  miles west of Richmond, Fort Bend County.

Records available.— October 1931 to September 1934.

Extremes.— Maximum discharge during year, 134 second-feet June 16, 25 (gage height, 7.72 feet); no flow at times.

1931-34: Maximum discharge not determined; no flow at times.

Remarks.— Records fair. Station above all diversions from canal. Flow controlled by pumping plant. Canal diverts from right bank of Brazos River 6 miles (corrected) above Richmond. Water used for irrigation south of Richmond.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0	108	53	68	49
2								0	98	0	88	28
3								0	105	12	35	32
4								0	91	0	11	30
5								0	53	12	0	19
6								0	51	91	64	0
7								0	70	91	91	0
8								0	94	91	91	0
9								0	91	85	91	0
10								19	91	88	91	0
11								.7	91	88	88	42
12								0	94	88	88	43
13								20	94	82	88	40
14								37	94	88	88	30
15								41	94	88	88	9.4
16								40	102	88	52	0
17								40	94	88	0	0
18								56	94	85	0	0
19								108	94	65	22	0
20								119	94	88	84	0
21								119	91	88	83	2.4
22								119	91	85	82	49
23								112	98	85	80	39
24								102	98	52	81	40
25								102	94	7.5	81	23
26								105	98	11	90	0
27								112	91	37	81	0
28								112	91	45	85	0
29								112	88	81	88	0
30								108	84	84	85	0
31								108		85	83	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October								0	0	0	0	
November								0	0	0	0	
December								0	0	0	0	
January								0	0	0	0	
February								0	0	0	0	
March								0	0	0	0	
April								0	0	0	0	
May								119	0	54.6	3,360	
June								108	51	90.7	5,400	
July								91	0	66.9	4,110	
August								91	0	69.6	4,280	
September								49	0	15.9	946	
The year								119	0	25.0	18,100	

Note.— No flow during months left blank.

## Colorado River at Ballinger, Tex.

Location.- Water-stage recorder at Ballinger-Paint Rock highway bridge in Ballinger, Runnels County, 2,000 feet above Elm Creek. Zero of gage is 1,593.74 feet (revised) above mean sea level.

Drainage area.- 16,840 square miles, of which about 11,500 square miles is probably noncontributing.

Records available.- December 1915 to September 1934.

Average discharge.- 19 years, 390 second-feet.

Extremes.- Maximum discharge during year, 5,180 second-feet Oct. 12 (gage height, 6.90 feet); no flow July 19 to Aug. 24.  
1915-34: Maximum discharge recorded, about 33,500 second-feet June 14, 1930 (gage height, 27.45 feet); no flow at times.

Remarks.- Records good. Records not affected by backwater from Elm Creek during the year. Diversions for irrigation above station affect low flow.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	15	29	66	7.9	15	60	556	0.8	2.0	0	15
2	18	29	26	40	7.9	24	42	1,420	.8	1.8	0	9.9
3	9.9	18	22	29	7.9	15	34	229	.8	7.9	0	6.1
4	7.9	54	19	22	7.5	15	164	137	28	29	0	4.7
5	6.7	67	17	18	7.5	12	569	65	191	15	0	4.7
6	6.1	136	16	18	6.7	12	292	34	70	7.3	0	34
7	5.5	120	14	16	6.7	15	1,410	23	120	3.5	0	29
8	4.7	75	13	15	7.3	11	682	17	65	16	0	19
9	4.3	56	11	14	7.9	11	243	14	42	65	0	1,200
10	4.5	42	11	14	7.5	11	320	12	52	54	0	102
11	4.7	35	11	13	6.5	11	136	11	22	14	0	32
12	1,940	30	11	12	9.9	11	70	8.5	15	6.1	0	15
13	2,620	26	9.9	11	13	11	48	7.9	9.9	3.2	0	8.5
14	887	22	9.2	11	17	11	34	6.1	6.7	2.0	0	5.5
15	456	19	9.2	12	14	9.2	29	5.5	4.3	1.3	0	3.9
16	228	17	9.2	11	11	9.2	24	5.1	2.9	.4	0	3.2
17	276	15	9.2	13	9.9	8.5	28	4.3	2.9	.1	0	2.6
18	330	14	7.9	16	8.5	7.3	835	3.9	65	.1	0	2.0
19	193	14	7.9	15	7.9	6.7	1,070	3.5	125	0	0	1.5
20	120	263	7.9	16	7.3	6.7	559	3.2	252	0	0	1.3
21	85	988	7.3	15	7.3	6.7	502	2.6	90	0	0	.7
22	65	165	7.3	12	6.1	6.1	508	2.6	48	0	0	.7
23	52	75	7.3	11	6.7	5.1	287	6.0	35	0	0	.6
24	42	56	7.3	11	6.7	13	143	3.5	19	0	0	.4
25	36	128	6.7	9.9	6.1	446	90	2.9	26	0	1,040	.2
26	30	96	6.7	9.2	5.1	710	63	2.9	15	0	115	.2
27	28	68	6.7	9.2	4.7	121	50	2.0	7.9	0	173	16
28	25	52	6.1	8.5	5.1	50	44	1.5	5.1	0	193	184
29	21	40	15	7.9	56	52	252	1.3	2.9	0	85	96
30	18	35	46	7.9	101	38	1.3	2.0	0	0	38	68
31	16	135	7.9	85			1.0		0	28		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							2,520	4.3	240	14,800		
November							958	14	91.3	5,450		
December							135	6.1	16.8	1,030		
January							66	7.9	15.9	978		
February							17	4.7	8.18	454		
March							710	5.1	59.1	3,630		
April							1,410	24	280	16,700		
May							1,420	1.0	85.0	5,100		
June							252	.8	43.6	2,590		
July							79	0	9.03	555		
August							1,040	0	53.9	3,310		
September							1,200	.2	61.9	3,680		
The year							2,520	0	80.4	58,300		



## Colorado River near Milburn, Tex.

Location.- Combination staff and chain gage at steel highway bridge  $1\frac{1}{2}$  miles northwest of Milburn, McCullough County. Zero of gage is 1,254.81 feet above mean sea level.

Drainage area.- 24,800 square miles, of which about 11,800 square miles is probably noncontributing.

Records available.- November 1923 to September 1934 (discontinued).

Average discharge.- 10 years (1924-34), 830 second-feet.

Extremes.- Maximum discharge recorded during year, 25,600 second-feet Apr. 6 (gage height, 29.90 feet); no flow Aug. 15-25.  
1923-34: Maximum discharge, 78,100 second-feet Oct. 15, 1930 (gage height, 48.71 feet, from flood marks); no flow Aug. 6-10, Sept. 1-5, 1929, Aug. 15-25, 1934.

Remarks.- Records good. Diversions for irrigation and municipal use above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	34	81	52	27	63	112	112	10	14	2.0	131
2	40	36	68	42	26	206	141	1,620	9.2	13	1.3	94
3	65	33	59	85	24	104	128	3,750	7.8	8.2	.5	71
4	43	31	51	126	24	60	121	3,580	8.2	9.2	.6	54
5	33	29	46	98	32	46	6,170	835	10	7.8	.4	37
6	26	28	42	80	54	40	24,300	360	8.9	6.4	.4	33
7	30	27	36	65	48	36	6,890	260	7.2	5.6	.3	26
8	32	33	35	62	47	48	3,220	168	5.9	4.4	.2	20
9	26	92	34	45	296	44	2,410	116	4.4	4.3	.2	17
10	21	153	32	42	108	36	1,060	98	111	3.9	.2	13
11	20	114	29	39	66	32	812	598	104	2.6	.2	693
12	16	94	26	35	148	28	662	258	74	2.0	.1	293
13	84	80	27	34	71	25	370	110	56	1.4	.1	144
14	2,390	68	26	34	45	34	272	78	42	1.2	.1	87
15	1,060	59	26	34	36	46	216	62	34	3.2	0	63
16	634	52	24	32	32	45	190	48	27	3.7	0	43
17	424	47	24	36	30	44	179	37	22	5.3	0	36
18	272	43	22	124	29	42	186	36	36	11	0	27
19	197	41	21	132	30	44	1,580	33	36	7.8	0	22
20	298	37	22	68	33	42	1,910	28	40	6.2	0	18
21	236	32	21	50	34	42	934	25	40	4.6	0	14
22	162	331	22	43	113	42	690	26	24	201	0	16
23	128	565	22	39	150	42	678	23	128	809	0	8.9
24	106	276	22	38	100	46	606	98	104	92	0	7.0
25	65	156	20	36	74	766	474	78	70	34	0	5.6
26	73	114	20	36	59	458	298	38	51	15	1,080	4.4
27	62	90	19	37	52	1,480	224	28	36	10	2,380	3.7
28	54	102	20	33	45	690	240	21	28	6.2	751	2.9
29	45	114	102	30		352	165	18	22	4.4	474	2.6
30	42	98	226	28		200	131	17	20	3.4	334	2.4
31	39	80	30			133		14		2.5	232	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							2,390	16	219	13,500		
November							565	27	100	5,950		
December							226	19	42.2	2,690		
January							152	28	55.4	3,250		
February							296	24	65.6	3,640		
March							1,480	25	171	10,500		
April							24,300	112	1,830	109,000		
May							3,750	14	406	25,000		
June							128	4.4	39.2	2,330		
July							809	1.2	42.0	2,680		
August							2,380	0	170	10,600		
September							693	2.4	66.3	3,950		
The year							24,300	0	266	193,000		

## Colorado River near San Saba, Tex.

Location.- Water-stage recorder at Red Bluff crossing, 5.7 miles below confluence with San Saba River and 9.2 miles east of San Saba, San Saba County. Zero of gage is 1,096.22 feet above mean sea level.

Drainage area.- 30,600 square miles, of which about 11,600 square miles is probably noncontributing.

Records available.- August 1930 to September 1934.

Extremes.- Maximum discharge during year, 45,300 second-feet Apr. 6 (gage height, 29.48 feet); minimum, 26 second-feet Aug. 23.

1930-34: Maximum discharge, 78,900 second-feet Oct. 17, 1930 (gage height, 39.90 feet); minimum, 26 second-feet Aug. 23, 1934.

Flood of Sept. 25, 1900, reached a stage of about 57.5 feet. Flood of Apr. 6, 1922, reached a stage of about 54 feet.

Remarks.- Records good. Diversions above station for irrigation and municipal use.

Low flow partly regulated by reservoirs upstream. Most of flow June 29 to July 21 was water released from Brownwood Reservoir.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	106	171	446	127	236	385	310	118	1,260	305	374
2	106	121	167	254	136	281	300	337	112	547	210	265
3	164	133	153	339	140	646	254	2,040	494	195	190	190
4	171	115	153	327	130	454	481	3,390	164	121	164	147
5	133	106	121	320	121	277	9,270	4,120	143	2,000	124	115
6	124	103	112	326	118	219	36,500	1,280	130	1,790	93	100
7	106	98	106	254	115	183	35,000	644	115	1,620	72	87
8	93	95	100	202	127	150	17,700	468	106	2,490	55	82
9	85	93	100	179	716	136	4,890	413	103	2,390	49	80
10	77	127	95	160	948	127	2,960	357	100	2,390	46	67
11	75	150	98	147	669	121	1,490	305	103	2,970	40	68
12	75	267	95	140	442	127	1,010	373	98	3,100	38	410
13	82	245	95	133	368	124	867	601	90	2,060	35	524
14	85	198	93	127	380	115	626	353	127	1,620	33	295
15	2,150	171	93	124	310	109	482	277	124	1,470	31	206
16	1,400	150	95	121	240	106	402	240	100	1,140	35	150
17	852	136	90	124	183	106	352	198	98	789	33	121
18	535	130	87	228	150	103	717	183	611	449	31	100
19	425	121	85	240	136	109	4,270	167	210	249	31	98
20	315	121	85	249	127	115	3,370	157	124	236	31	95
21	298	109	85	326	121	112	2,440	136	95	232	31	90
22	357	103	85	240	118	109	1,340	133	82	991	30	85
23	281	100	85	198	118	112	917	289	80	1,170	27	80
24	228	368	82	167	124	112	731	194	82	2,190	27	72
25	186	494	80	150	245	2,170	644	147	80	1,070	30	65
26	248	315	82	140	210	5,700	638	246	112	619	31	53
27	240	232	82	136	179	2,070	488	541	121	436	632	38
28	160	186	80	133	157	1,630	413	228	98	471	2,720	35
29	133	160	95	130		1,260	368	179	1,600	425	1,210	42
30	118	140	109	124		762	357	150	1,610	425	712	44
31	112		543	127		529		133		436	488	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							2,150	75	307	18,900		
November							494	93	166	9,880		
December							543	80	116	7,130		
January							446	121	205	12,600		
February							948	115	248	15,800		
March							5,700	103	594	36,500		
April							36,500	254	4,320	257,000		
May							4,120	133	594	36,500		
June							1,610	80	241	14,300		
July							3,100	121	1,210	74,400		
August							2,720	27	245	15,100		
September							524	35	139	8,270		
The year							36,500	27	697	504,000		

## Colorado River near Tow, Tex.

Location.- Water-stage recorder at highway bridge 1½ miles northeast of Tow, Llano County.

Drainage area.- 31,120 square miles, of which about 11,800 square miles is probably noncontributing.

Records available.- October 1923 to December 1934 (discontinued).

Average discharge.- 11 years, 1,370 second-feet.

Extremes.- Maximum discharge during period Oct. 1, 1933, to Dec. 6, 1934, 42,000 second-feet Apr. 7 (gage height, 18.80 feet); minimum, 27 second-feet Aug. 21, 22 (gage height, 5.09 feet).  
1923-34: Maximum discharge, 69,900 second-feet Oct. 17, 1930 (gage height, 22.53 feet); minimum, 20 second-feet Aug. 5, 1930 (gage height, 4.93 feet).  
Maximum stage known, 22.4 feet April 1900.

Remarks.- Records good except those estimated Feb. 6 to Mar. 12 and Aug. 1-7, which are fair. Numerous small diversions above station. Flow partly regulated by dams on tributaries upstream. Practically all flow June 30 to July 22 is released water from Brownwood Reservoir on Pecan Bayou.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	127	172	431	140	180	508	441	142	1,540	390	478
2	142	122	169	446	137	260	383	390	132	1,100	300	383
3	115	127	186	320	137	340	314	851	130	524	220	281
4	109	140	175	370	144	720	341	2,470	425	240	185	208
5	159	132	162	364	144	480	3,210	5,400	193	241	155	169
6	147	120	144	303	132	300	28,900	2,520	140	2,070	120	140
7	122	118	124	359	128	230	37,700	1,120	124	1,660	100	122
8	113	111	127	275	130	190	22,700	595	111	1,960	*90	111
9	104	109	122	226	190	160	7,250	530	98	2,470	76	98
10	94	104	120	189	780	145	4,600	441	92	2,400	64	96
11	90	104	120	178	1,100	135	2,260	370	86	2,700	56	88
12	88	130	118	159	740	140	1,490	326	84	3,330	49	88
13	84	201	118	150	490	*132	1,230	386	82	2,840	45	271
14	80	250	118	142	400	134	1,030	642	75	1,830	42	500
15	454	212	118	140	420	134	789	390	69	1,660	40	314
16	1,940	186	115	134	330	127	652	*270	111	1,410	39	224
17	1,160	169	115	134	255	120	562	*216	113	1,020	38	169
18	764	153	115	162	195	115	568	*186	107	746	35	142
19	538	142	111	216	165	115	1,560	*172	559	441	32	122
20	412	154	109	226	150	115	5,630	*162	250	259	30	107
21	320	132	109	235	137	120	3,200	*159	147	230	28	96
22	275	127	107	303	130	124	2,010	*150	107	221	28	92
23	333	118	107	254	125	122	1,380	*147	88	1,220	28	92
24	298	113	107	212	130	133	1,120	*430	76	1,430	29	84
25	240	238	107	186	160	520	950	283	71	1,790	30	78
26	285	485	107	166	265	5,400	900	182	73	876	31	73
27	*377	345	104	159	205	4,380	843	176	76	538	30	66
28	292	264	104	153	180	1,460	627	377	107	390	1,500	60
29	182	221	109	142		1,760	508	275	113	419	1,950	54
30	156	193	122	137		1,090	455	205	1,760	383	1,020	48
31	137		132	140		712		166		*358	670	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							1,940	80	313	19,200		
November							485	104	171	10,200		
December							186	104	125	7,690		
January							448	134	226	13,900		
February							1,100	125	273	15,200		
March							5,400	115	648	39,800		
April							37,700	314	4,460	265,000		
May							5,400	147	662	40,700		
June							1,760	69	191	11,400		
July							3,330	221	1,240	76,200		
August							1,950	28	240	14,800		
September							500	48	162	9,640		
The year							37,700	28	723	524,000		

\*Partly estimated.

Colorado River near Tow, Tex.

(Continued)

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	46	221									
2	44	49	197									
3	46	56	175									
4	46	52	153									
5	44	104	140									
6	43	82	*127									
7	42	90										
8	42	76										
9	43	64										
10	43	57										
11	43	52										
12	43	52										
13	43	51										
14	66	232										
15	64	971										
16	54	1,200										
17	56	1,830										
18	60	1,660										
19	60	1,290										
20	*59	843										
21	*57	712										
22	*54	941										
23	*51	1,030										
24	*48	1,770										
25	*46	1,120										
26	45	754										
27	44	578										
28	43	433										
29	44	345										
30	48	275										
31	49											
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							66	42	48.8	3,000		
November							1,830	46	587	34,900		
December 1-6							221	127	169	2,010		
January												
February												
March												
April												
May												
June												
July												
August												
September												
The period.										39,900		

\*Partly estimated or interpolated.

## Colorado River at Austin, Tex.

Location.— Water-stage recorder at Congress Avenue viaduct in Austin, Travis County, 1 mile below mouth of Barton Creek. Zero of gage is 421.77 feet above mean sea level.

Drainage area.— 38,150 square miles, of which about 11,800 square miles is probably noncontributing.

Records available. February 1898 to September 1934.

Average discharge.— 36 years, 2,520 second-feet.

Extremes.— Maximum discharge during year, 45,300 second-feet Apr. 8 (gage height, 11.82 feet); minimum, 36 second-feet Aug. 31.

1898-1934: Maximum discharge, about 236,000 second-feet a few minutes after failure of Austin Dam Apr. 7, 1900 (gage height, 33.5 feet). At time of failure, depth of water over dam was 11.07 feet (computed discharge, 151,000 second-feet); flood appeared to be practically at its crest when dam failed. Minimum discharge, 13 second-feet Aug. 18, 1918.

Remarks.— Records good. About 36,000 acres irrigated above station. Low-water flow affected by diversions of Austin pumping plant. Flow partly regulated by dams on tributaries upstream. Practically all flow July 3-25 is released water from Brownwood Reservoir on Pecan Bayou.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	446	395	354	805	550	2,060	1,060	630	148	586	982
2	250	371	387	325	1,010	704	1,690	912	545	144	514	710
3	219	332	354	399	880	1,790	1,220	824	459	780	448	585
4	213	289	325	772	682	1,610	1,050	810	391	1,190	439	451
5	197	275	325	2,180	575	1,210	1,120	782	352	912	413	354
6	197	256	296	1,370	502	995	7,890	2,170	323	630	364	305
7	208	250	256	880	465	961	32,400	4,900	303	431	290	247
8	202	232	256	708	474	978	42,500	2,790	399	691	242	189
9	219	232	263	597	520	865	28,100	1,740	352	1,620	212	154
10	233	232	256	511	2,450	775	15,900	1,250	282	1,620	194	148
11	232	232	250	520	2,300	708	7,540	976	240	2,270	172	143
12	219	232	250	502	1,710	656	5,600	810	222	2,270	172	159
13	213	225	238	446	1,610	619	3,730	703	196	2,440	146	154
14	191	213	232	412	1,510	597	2,800	830	180	3,110	126	132
15	186	208	238	387	1,240	564	2,250	535	175	2,720	126	111
16	181	202	232	387	995	842	2,040	477	161	1,890	122	88
17	175	219	250	354	820	520	2,220	642	156	1,700	118	84
18	200	275	244	466	734	564	2,180	597	165	1,420	110	172
19	865	303	219	465	630	542	1,860	514	180	1,140	107	255
20	1,050	310	219	695	597	586	1,780	480	161	912	76	208
21	865	303	219	734	630	553	4,690	406	144	679	64	214
22	709	282	219	619	619	542	5,520	383	144	566	56	202
23	575	250	213	542	553	520	4,120	375	203	422	50	195
24	492	256	219	511	511	643	3,050	414	296	344	43	183
25	420	238	225	502	474	1,050	2,350	414	251	269	46	170
26	422	232	219	597	428	1,060	1,840	399	211	966	50	148
27	586	225	213	2,620	395	1,060	1,620	1,010	185	2,410	61	158
28	734	219	208	1,610	403	5,400	1,490	1,700	161	1,750	87	116
29	721	232	232	1,150		5,050	1,320	1,160	152	1,120	61	116
30	643	339	256	747		2,980	1,210	610	144	826	50	127
31	511		303	708		2,300		703		690	228	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							1,050	175	400	24,600		
November							446	202	264	15,700		
December							395	208	258	16,900		
January							2,620	325	742	45,600		
February							2,430	395	875	46,600		
March							5,400	520	1,210	74,400		
April							42,300	1,050	6,360	376,000		
May							4,900		1,010	62,100		
June							630	144	259	15,400		
July							3,110	144	1,230	75,600		
August							586	43	186	11,400		
September							982	84	241	14,300		
The year							42,300	43	1,080	782,000		

## Evaporation at Austin, Tex.

Location.- In State Capitol grounds at Austin, Travis County.

Records available.- April 1916 to September 1934.

Equipment.- One land evaporation pan with auxiliary equipment consisting of hook gage, rain gage, anemometer, and maximum and minimum thermometers.

Remarks.- Records fair. Observations made daily at 8:00 a.m. Computations made by U. S. Weather Bureau.

Evaporation at Austin, Tex., 1933-34

Month	Temperature (°F.)			Mean relative humidity (percent)	Average wind velocity (miles per hour)	Rainfall (inches)	Evaporation (inches)
	Mean maxi- mun	Mean mini- mun	Mean				
October	86.0	61.9	74.0	62	0.8	2.99	5.253
November	74.5	49.4	62.0	62	1.0	.74	3.167
December	72.2	45.5	58.8	59	1.3	1.28	3.269
January	61.9	41.8	51.8	73	1.2	9.40	2.369
February	66.4a	40.3a	52.8a	64	1.9	1.92	3.106
March	70.6	45.0	57.8	60	2.1	3.32	4.984
April	80.9	58.7	69.8	64	.9	4.75	5.970
May	87.9	62.6	75.2	59	1.1	1.83	7.632
June	97.6a	72.5a	85.0a	55	1.4	.11	10.086
July	98.5b	74.2b	86.4b	56	1.8	.69	10.732
August	97.7a	74.4a	86.0a	59	1.6	.36	10.094
September	92.6a	68.7a	80.6a	62	1.5	.84	7.105
The year	82.2	57.9	70.0	61	1.4	28.73	73.767

Note.- Relative humidity values are for regular U. S. Weather Bureau station located 2,000 feet away, 129 feet above ground, and 82 feet above evaporation pan. Letters following figures indicate number of days of missing record: a, 1 day; b, 2 days, etc.

## Colorado River at Smithville, Tex.

Location.- Water-stage recorder 800 feet above highway bridge at Smithville, Bastrop County. Zero of gage is 270.14 feet (revised) above mean sea level.

Drainage area.- 39,650 square miles, of which about 11,800 square miles is probably noncontributing.

Records available.- July 1930 to September 1934.

Extremes.- Maximum discharge during year, 39,200 second-feet Apr. 9 (gage height, 17.13 feet); minimum, 146 second-feet Aug. 25 to Sept. 2 (gage height, 0.90 foot). 1930-34: Maximum discharge, 87,500 second-feet Oct. 9, 19, 1930 (gage height, 21.40 feet); minimum, 111 second-feet Aug. 17, 18, 1930 (gage height, 0.74 foot). Maximum stage known, about 47.4 feet in December 1913.

Remarks.- Records good. Diversions above station for irrigation and municipal uses. Low flow partly regulated by reservoirs upstream. Large part of flow July 5-27 was water released from Brownwood Reservoir.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	392	691	253	350	4,450	961	2,430	1,800	924	213	990	146
2	400	693	284	330	2,030	6,970	2,920	1,650	810	209	835	146
3	363	530	379	512	1,450	3,500	1,900	1,550	739	213	718	676
4	358	489	404	715	1,300	1,980	1,550	1,400	655	193	648	763
5	322	440	396	562	1,040	2,160	2,420	1,300	574	532	563	689
6	303	383	366	1,320	818	1,650	7,340	1,240	528	1,120	528	574
7	291	358	350	1,700	692	1,350	11,700	1,420	475	870	505	496
8	280	338	350	1,200	654	1,110	31,500	4,520	438	668	466	450
9	269	326	322	952	2,000	1,040	37,100	3,560	409	528	417	405
10	269	318	307	806	1,860	972	26,000	2,480	442	970	374	355
11	265	314	307	774	1,890	835	15,200	1,950	454	1,550	355	325
12	284	310	307	945	4,720	747	8,960	1,650	409	1,960	333	303
13	291	303	295	836	2,380	668	6,860	1,450	374	2,270	300	322
14	280	288	288	644	1,900	610	5,000	1,240	344	2,320	275	300
15	272	284	288	562	1,750	546	3,970	1,080	318	2,770	258	483
16	265	276	280	525	1,550	514	3,290	972	296	2,900	258	329
17	253	269	269	567	1,300	471	2,900	844	278	2,270	222	258
18	242	269	265	751	1,400	446	3,160	794	300	1,950	206	225
19	235	261	261	2,620	1,720	417	4,030	905	268	1,750	197	203
20	225	269	265	1,270	1,000	425	5,010	818	248	1,650	187	181
21	633	318	269	754	794	425	2,880	725	238	1,300	181	222
22	944	330	261	660	718	413	4,090	648	238	1,060	171	296
23	846	326	257	826	704	398	6,360	592	229	870	159	275
24	734	318	265	754	662	398	5,000	557	209	725	149	272
25	658	299	257	748	597	2,040	3,830	765	200	597	146	261
26	562	284	253	913	537	6,730	3,100	668	252	518	146	248
27	572	276	250	12,600	500	2,040	2,540	580	307	450	146	229
28	702	265	253	11,600	479	1,350	2,270	541	282	1,420	146	225
29	728	265	280	2,940		2,860	2,060	1,400	252	2,320	146	222
30	786	265	330	2,040		4,480	1,900	1,600	229	1,650	146	222
31	767		350	1,740		3,030		1,220		1,280	146	
Month							Maximum	Minimum	Mean		Run-off in acre-feet	
October							944	225	445		27,400	
November							691	281	342		20,400	
December							404	250	299		18,400	
January							12,600	330	1,730		106,000	
February							4,720	479	1,460		81,100	
March							6,970	398	1,650		102,000	
April							37,100	1,550	7,220		430,000	
May							4,520	541	1,350		83,000	
June							924	200	391		23,300	
July							2,900	193	1,260		77,600	
August							990	146	332		20,400	
September							763	146	337		20,100	
The year							37,100	146	1,390		1,010,000	

## Colorado River near Eagle Lake, Tex.

Location.-- Water-stage recorder at highway bridge 100 feet below San Antonio & Aransas Pass Railway bridge, 1.2 miles above Lakeside Irrigation Co.'s pumping plant, and 5 miles west of Eagle Lake, Colorado County. Prior to Nov. 23, 1933, gage was 6,390 feet downstream at Lakeside Irrigation Co.'s pumping plant with same datum as present gage.

Drainage area.-- 40,940 square miles, of which about 11,800 square miles is probably noncontributing.

Records available.-- September 1930 to September 1934.

Extremes.-- Maximum discharge during year, 37,100 second-feet Apr. 10 (gage height, 17.10 feet); minimum not determined.  
1930-34: Maximum discharge, 57,500 second-feet Oct. 21, 1930 (gage height, 20.48 feet, on former gage); minimum not determined.  
Maximum stage known, about 32.0 feet, on former gage, in December 1913.

Remarks.-- Records good. Discharge tables include flow of Lakeside Irrigation Co.'s canal. Low flow partly regulated by reservoirs upstream. Large part of flow July 8-30 was water released from Brownwood Reservoir. Diversions above station for irrigation and municipal uses. The Lakeside Irrigation Co. furnished pump records of canal which were used in estimating missing canal records.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	497	677	337	359	3,930	3,630	4,350	2,140	1,390	383	1,520	199
2	469	701	332	376	4,490	23,200	3,300	1,940	1,210	359	1,220	186
3	436	665	332	535	4,070	16,500	2,790	1,750	1,010	342	1,040	187
4	430	631	343	511	2,330	7,150	2,520	1,680	915	326	911	192
5	436	562	365	535	1,750	3,970	5,480	1,440	967	313	850	189
6	436	540	376	870	1,550	3,040	9,690	1,300	769	312	754	412
7	418	540	412	800	1,350	2,850	9,500	1,220	702	309	697	585
8	393	497	418	975	1,330	2,260	15,600	1,130	637	535	628	562
9	371	465	405	1,560	3,850	1,880	33,000	1,650	615	590	615	555
10	359	424	399	1,320	3,180	1,640	34,800	3,850	577	787	587	504
11	354	405	399	1,430	2,850	1,530	23,600	3,130	529	664	565	532
12	348	399	387	1,380	3,300	1,460	13,900	2,430	526	600	575	469
13	343	387	371	1,260	4,350	1,350	9,600	1,910	532	1,100	489	405
14	337	382	371	1,170	4,070	1,280	7,860	1,630	549	1,490	449	371
15	348	371	371	1,070	2,660	1,470	6,280	1,480	515	1,900	415	365
16	354	365	365	698	2,140	1,390	5,200	1,140	483	2,010	393	343
17	348	359	405	766	2,000	1,140	4,350	1,150	460	2,600	387	337
18	343	354	348	701	1,810	944	3,930	1,090	436	2,630	347	399
19	332	348	327	693	1,610	907	3,670	997	421	2,170	345	354
20	327	343	322	600	1,770	851	4,630	934	393	1,820	280	307
21	317	332	322	2,030	1,940	816	4,630	934	408	1,650	282	278
22	312	322	322	1,740	1,420	800	4,530	934	390	1,480	272	261
23	307	307	327	1,040	1,170	782	3,110	880	364	1,300	259	274
24	591	322	327	916	1,100	749	5,560	828	371	1,120	251	283
25	741	343	322	944	1,020	733	5,580	771	343	904	248	283
26	701	359	312	1,360	954	1,950	4,630	724	336	851	247	263
27	677	354	302	2,100	898	4,730	3,650	712	337	733	166	278
28	631	359	307	10,100	870	4,640	3,040	813	324	623	192	292
29	585	348	327	10,400		2,460	2,590	724	533	570	199	292
30	578	337	399	4,640		1,760	2,330	675	376	781	189	474
31	677		354	3,510		3,620		896		1,790	194	
Month	Maximum						Minimum		Mean		Run-off in acre-feet	
October	741						307		445		27,400	
November	701						307		427		25,400	
December	418						302		355		21,800	
January	10,400						359		1,830		113,000	
February	4,490						670		2,280		127,000	
March	23,200						735		3,260		200,000	
April	34,800						2,330		8,120		483,000	
May	3,850						675		1,380		84,800	
June	1,390						324		574		34,200	
July	2,630						309		1,070		65,000	
August	1,520						168		502		30,900	
September	686						186		347		20,600	
The year	34,800						168		1,700		1,230,000	



## Elm Creek at Ballinger, Tex.

Location.- Water-stage recorder 1,000 feet above city water-supply storage dam in Ballinger, Runnels County, and  $1\frac{1}{4}$  miles above confluence with Colorado River. Zero of gage is 1,617.72 feet (revised) above mean sea level.

Drainage area.- 458 square miles.

Records available.- April 1932 to September 1934.

Extremes.- Maximum discharge during year, 1,940 second-feet Apr. 4 (gage height, 2.09 feet); no flow at times.  
1932-34: Maximum stage, 9.40 feet July 3, 1932 (discharge not determined); no flow at times.

Remarks.- Low stage records poor; medium stage records good. Discharge estimated Apr. 16-18.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0				0	0.5	1.9			0	0
2		0				5.9	.3	1.9			0	0
3		0				2.6	.1	.9			0	0
4		0				.9	392	.5			0	0
5		0				.7	288	.1			0	0
6		0				.3	493	0			0	0
7		0				0	766	0			0	0
8		0				0	786	0			0	0
9		0				0	56	0			0	218
10		0				0	17	0			0	96
11		0				0	6.6	0			0	6.6
12		0				0	2.7	0			0	1.9
13		0				0	1.9	0			0	.5
14		0				0	1.2	0			0	0
15		0				0	.9	0			0	0
16		0				0		0			0	0
17		0				0	177	0			0	0
18		0				0	0	0			0	0
19		0				0	42	0			0	0
20		0				0	21	0			0	0
21		23				0	8.7	0			0	0
22		6.6				0	5.0	0			0	0
23		1.9				0	2.7	0			0	0
24		.3				0	1.2	0			0	0
25		0				207	109	0			362	0
26		0				632	42	0			47	0
27		0				32	5.0	0			2.7	0
28		0				6.6	3.7	0			.5	0
29		0				2.7	2.7	0			0	0
30		0				1.2	.9	0			0	0
31						.7		0			0	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						0	0	0	0			
November						23	0	1.06	63			
December						0	0	0	0			
January						0	0	0	0			
February						0	0	0	0			
March						632	0	28.8	1,770			
April						786	.1	120	7,140			
May						1.9	0	.17	10			
June						0	0	0	0			
July						0	0	0	0			
August						362	0	13.3	813			
September						218	0	10.8	643			
The year						786	0	14.4	10,400			

Note.- No flow during months left blank.

## South Concho River at Christoval, Tex.

Location.- Water-stage recorder at Panhandle & Santa Fe Railway bridge in Christoval, Tom Green County. Zero of gage is 2,010.2 feet above mean sea level (railway datum).

Drainage area.- 434 square miles.

Records available.- February 1930 to September 1934.

Extremes.- Maximum discharge during year, 3,000 second-feet Aug. 24 (gage height, 6.26 feet); minimum, 2.1 second-feet July 17-19, 28-29, Aug. 28 to Sept. 5, 1930-34. Maximum stage, 20.20 feet Oct. 13, 1930 (discharge not determined); minimum, that of July 17-19, 28-29, and Aug. 28 to Sept. 5, 1934. Flood of Aug. 8, 1906, reached a stage of about 20.0 feet, but discharge was probably greater than flood of Oct. 13, 1930, because railroad dump did not confine flow in 1906.

Remarks.- Records good. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.3	9.7	7.9	7.1	9.7	14	13	12	4.4	2.6	2.6	2.1
2	6.3	13	7.9	7.1	9.7	12	14	12	4.4	2.6	2.6	2.1
3	7.1	11	7.9	7.1	9.7	12	14	12	4.4	2.6	2.6	2.1
4	7.1	9.7	7.9	7.1	9.7	12	14	12	4.4	2.6	2.6	2.1
5	7.1	9.7	7.9	7.1	9.7	12	395	12	3.9	2.6	2.3	2.1
6	7.1	9.7	7.1	7.9	9.7	12	81	12	3.4	2.6	2.3	2.3
7	7.1	9.7	7.9	7.9	9.7	12	23	12	3.4	2.6	2.3	2.3
8	7.9	9.7	7.1	7.1	9.7	12	21	13	3.4	2.3	2.3	2.3
9	7.9	11	7.1	7.1	9.7	12	20	14	3.4	2.3	2.6	2.3
10	7.9	11	7.1	7.9	9.7	12	21	14	3.9	2.3	2.6	2.3
11	7.9	11	7.1	7.9	9.7	12	18	14	3.9	2.3	2.6	2.3
12	7.9	11	7.1	7.9	8.8	12	15	12	3.4	2.3	2.6	2.3
13	11	11	7.9	8.8	9.7	12	15	12	3.0	2.3	2.6	2.3
14	7.9	11	7.9	8.8	12	12	16	12	3.0	2.3	2.3	2.6
15	7.1	11	7.9	8.8	12	11	16	12	2.6	2.3	2.3	7.1
16	7.1	11	7.9	8.8	12	12	16	12	2.6	2.3	2.3	4.4
17	7.1	11	7.9	11	12	12	17	6.3	2.6	2.1	2.3	3.4
18	7.1	12	7.1	11	12	12	20	6.3	2.6	2.1	2.3	3.4
19	7.1	12	7.1	8.8	12	12	20	6.3	2.6	2.1	2.6	3.9
20	7.1	12	7.9	8.8	12	12	20	6.3	2.3	2.3	2.6	3.9
21	7.1	12	7.9	8.8	12	13	18	7.1	2.3	2.3	2.6	7.1
22	7.1	12	8.8	8.8	12	12	18	7.1	2.3	2.3	2.6	7.9
23	8.8	12	8.8	8.8	12	12	18	7.1	2.6	2.3	17	4.4
24	8.8	12	8.8	8.8	12	15	18	7.1	2.6	2.3	656	3.9
25	8.8	12	8.8	8.8	12	16	16	7.1	2.6	2.3	173	3.9
26	8.8	12	7.9	8.8	12	13	13	7.1	2.6	2.1	12	3.9
27	7.9	7.9	7.9	8.8	12	12	12	6.3	2.6	2.1	2.6	3.9
28	7.9	7.9	7.9	9.7	12	12	12	5.6	2.6	2.1	2.1	3.9
29	7.9	7.9	8.8	8.8	12	12	12	5.6	2.6	2.1	2.1	4.4
30	7.9	7.9	8.8	9.7	12	12	12	5.6	2.6	2.3	2.1	4.4
31	8.8	7.9	7.9	9.7	12	13	13	4.4	2.6	2.6	2.1	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							11	6.3	7.71	474		
November							13	7.9	10.7	637		
December							6.8	7.1	7.87	484		
January							11	7.1	8.50	523		
February							12	8.8	10.9	605		
March							16	11	12.4	762		
April							395	12	31.3	1,860		
May							14	4.4	9.49	584		
June							4.4	2.3	3.10	184		
July							2.6	2.1	2.33	143		
August							656	2.1	2.98	1,630		
September							71	2.1	5.64	336		
The year							686	2.1	11.6	9,420		

## South Concho River at San Angelo, Tex.

Location.- Water-stage recorder at highway bridge half a mile south of San Angelo, Tom Green County, and 1 mile above confluence with North Concho River.

Drainage area.- 2,687 square miles, of which about 152 square miles is noncontributing.

Records available.- October 1931 to September 1934.

Extremes.- Maximum discharge during year, 12,000 second-feet Apr. 5 (gage height, 6.00 feet); no flow at times.

1931-34: Maximum stage, 10.98 feet May 10, 1932 (discharge not determined); no flow at times.

Remarks.- Low-stage records fair, others good. Discharge partly estimated Nov. 10-14, Dec. 20-27, and Feb. 13-19. Diversions above station for irrigation, municipal, and power uses. Flow partly regulated by reservoirs above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	5.7	9.2	10	18	6.4	22	40	0	14	0	1.0
2	0	11	8.1	10	14	5.7	22	40	0	12	0	.3
3	0	11	8.1	12	9.2	4.4	20	40	.2	10	0	.1
4	0	9.2	8.1	16	8.1	11	17	40	12	10	0	0
5	0	9.2	8.1	14	6.4	40	1,380	40	7.0	8.1	.2	0
6	0	9.2	9.2	10	6.4	40	218	45	5.7	10	.2	0
7	2.7	9.2	9.2	9.2	8.1	42	237	45	5.1	7.0	0	0
8	5.1	9.2	8.1	8.1	11	37	228	32	3.1	11	0	0
9	4.4	9.2	8.1	8.1	17	37	212	12	1.7	9.2	0	0
10	4.4	9.2	9.2	8.1	17	40	100	9.2	2.7	5.1	0	1.7
11	4.4	9.2	9.2	9.2	18	40	95	4.4	2.7	.7	0	2.0
12	3.8	9.2	9.2	9.2	18	42	90	5.1	.9	0	.2	.4
13	5.7	9.2	10	8.1	18	42	85	3.8	.2	0	.2	0
14	8.1	9.2	9.2	8.1	18	42	52	1.7	0	0	0	0
15	8.1	9.2	9.2	9.2	18	42	49	.5	0	0	0	.1
16	5.7	9.2	10	8.1	18	42	49	.1	0	0	0	2.7
17	4.4	9.2	10	10	69	45	60	0	0	0	0	2.4
18	3.8	9.2	8.1	11	264	40	49	0	0	0	0	.2
19	5.1	9.2	9.2	10	162	37	49	0	0	3.2	0	0
20	5.7	9.2	8.1	9.2	42	37	45	0	0	67	0	0
21	5.7	8.1	9.2	9.2	30	32	42	0	0	146	0	0
22	5.7	8.1	9.2	8.1	12	17	45	0	0	153	0	0
23	5.7	8.1	9.2	9.2	10	12	42	0	0	114	3.5	0
24	6.4	8.1	9.2	10	6.4	22	45	0	0	4.4	90	0
25	5.7	8.1	9.2	10	5.7	32	42	0	0	.1	12	0
26	5.7	9.2	9.2	10	5.1	22	42	0	0	0	26	.2
27	5.7	9.2	9.2	10	4.4	18	40	1.0	.2	0	18	0
28	5.7	8.1	10	37	4.4	20	42	3.1	87	0	5.7	0
29	6.4	9.2	11	52	20	20	42	2.0	12	96	5.1	0
30	5.7	9.2	12	56	20	20	42	1.2	9.2	106	4.4	0
31	6.4		12	56		22		.4		3.8	3.1	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							8.1	0	4.39	270		
November							11	5.7	8.98	534		
December							12	8.1	9.26	569		
January							56	8.1	15.0	922		
February							264	4.4	29.9	1,660		
March							45	4.4	29.3	1,800		
April							1,380	17	117	6,980		
May							45	0	11.8	726		
June							87	0	4.99	297		
July							153	0	25.5	1,570		
August							90	0	5.44	534		
September							2.7	0	.37	22		
The year							1,380	0	21.6	15,700		

## Concho River near San Angelo, Tex.

Location.- Water-stage recorder half a mile below confluence of North Concho and South Concho Rivers and 1½ miles southeast of San Angelo, Tom Green County. Zero of gage is 1,776.8 feet above mean sea level.

Drainage area.- 4,492 square miles, of which about 275 square miles is probably noncontributing.

Records available.- September 1915 to September 1934.

Average discharge.- 19 years, 145 second-feet.

Extremes.- Maximum discharge during year, 9,510 second-feet Apr. 5 (gage height, 12.85 feet); minimum, 0.6 second-foot Oct. 1.

1915-34: Maximum discharge, about 139,000 second-feet Apr. 26, 1922 (gage height, 36.8 feet); no flow Nov. 29, 1921.

Remarks.- Records good except those estimated June 24 to July 23, which are fair. Diversions above for municipal and irrigation uses. Flow partly regulated by diversions and storage in reservoirs above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	7.4	8.4	10	19	7.4	22	47	2.6	15	1.7	3.0
2	.8	16	7.8	9.7	11	4.0	22	46	2.2	13	1.2	2.6
3	.7	11	7.8	10	9.2	3.3	19	47	2.8	11	1.2	2.5
4	.8	9.2	7.8	13	8.4	6.3	15	45	136	11	1.2	40
5	.8	8.6	7.4	11	7.4	38	1,150	44	24	9.0	1.2	40
6	.8	8.8	7.0	10	6.0	41	480	46	9.7	11	1.1	48
7	1.5	8.8	7.4	8.8	8.4	43	332	44	6.7	8.0	1.1	22
8	4.6	8.8	7.4	8.4	14	38	290	35	4.6	10	1.0	14
9	5.6	8.8	7.0	8.1	16	39	251	15	2.8	6.0	1.1	43
10	4.8	8.8	7.4	7.8	16	40	108	11	2.5	1.7	1.2	21
11	5.0	9.7	7.8	8.4	18	41	99	5.3	4.0	1.0	1.4	14
12	4.0	9.2	7.0	7.4	17	41	112	6.0	2.2	1.0	1.5	11
13	6.9	8.8	7.8	8.1	16	40	103	5.0	1.4	1.0	1.4	7.0
14	12	8.4	8.1	7.4	19	41	61	3.8	1.0	1.0	1.4	3.6
15	9.7	8.4	7.4	7.8	19	41	54	3.0	1.0	1.0	1.5	2.2
16	7.4	8.8	7.4	6.7	16	40	52	2.6	1.0	1.0	1.5	2.8
17	5.0	8.8	7.8	12	65	45	70	2.5	.9	1.0	1.7	4.3
18	4.3	7.8	7.4	11	276	41	60	2.3	.8	1.0	1.7	1.8
19	4.6	8.1	6.7	9.7	174	39	51	2.6	.8	4.2	1.7	1.5
20	6.4	8.4	7.0	8.8	40	40	51	4.0	.9	68	.8	1.5
21	6.4	7.4	8.1	8.8	32	37	54	3.8	1.0	147	.9	1.5
22	6.4	7.4	8.1	9.2	11	18	52	3.0	1.0	154	1.1	1.8
23	6.4	7.8	8.1	8.4	8.1	11	52	2.6	.9	115	1.4	1.5
24	6.4	7.8	7.8	9.7	6.4	28	51	3.0	.9	6.7	874	1.5
25	6.7	7.8	8.1	8.6	4.0	80	51	2.8	.9	1.5	3,370	1.7
26	6.7	7.8	8.1	8.1	4.0	38	53	2.6	.9	1.2	1,100	1.7
27	7.0	8.4	7.8	8.1	3.3	51	50	3.0	1.1	1.0	162	1.7
28	6.4	8.4	8.1	31	2.8	18	47	4.6	90	1.0	50	1.7
29	7.0	8.1	8.4	45		16	46	3.8	15	78	51	1.7
30	7.0	8.1	13	47		16	46	7.0	10	112	16	1.7
31	7.4		10	46		23		3.8		7.4	4.8	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							12	0.6	5.16	317		
November							16	7.4	8.73	519		
December							13	6.7	7.92	487		
January							47	6.7	13.4	824		
February							276	2.8	30.2	1,680		
March							80	3.3	32.4	1,990		
April							1,150	15	130	7,740		
May							47	2.3	14.7	804		
June							136	.8	11.0	655		
July							154	1.0	25.8	1,590		
August							3,370	.8	183	11,500		
September							48	1.5	10.1	601		
The year							3,370	.6	39.4	28,600		

## Concho River near Paint Rock, Tex.

Location.- Water-stage recorder at Gulf, Colorado & Santa Fe Railway bridge 2 miles northwest of Paint Rock, Concho County.

Drainage area.- 5,532 square miles, of which about 275 square miles is probably noncontributing.

Records available.- September 1915 to September 1934.

Average discharge.- 19 years, 197 second-feet.

Extremes.- Maximum discharge during year, 19,500 second-feet Apr. 5 (gage height, 14.05 feet); no flow at times.

1915-34: Maximum stage, 27.5 feet Apr. 27, 1922 (discharge not determined); no flow at times.

Remarks.- Records good except those estimated Aug. 29 to Sept. 30, which are poor.

Diversions above station for irrigation and municipal uses. Low-water flow materially affected by diversions and storage above station.

Discharge, in second-feet, 1935-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	3.5	9.4	19	53	14	24	48	0.5		0	
2	.9	6.0	9.4	18	53	17	24	143	.5		1.9	
3	.4	8.8	8.2	14	40	16	28	162	.5		4.6	
4	.2	11	8.8	14	28	14	102	70	.9		2.2	
5	.2	12	7.6	14	21	14	6,560	53	60		.9	
6	.1	8.8	8.8	14	18	14	3,570	46	62		.5	
7	.1	8.8	7.6	16	16	16	876	45	29		.3	
8	.1	8.2	7.6	18	14	42	491	45	17		.3	
9	0	8.2	7.0	17	14	46	302	45	8.8		.2	
10	0	8.8	7.6	14	11	43	239	40	4.5		.1	
11	0	8.8	7.6	14	14	42	137	25	2.5		.1	
12	0	8.8	8.2	14	20	43	106	21	1.2		0	
13	0	8.8	8.8	13	23	46	103	16	.8		0	
14	0	9.4	9.4	12	24	46	108	14	.6		0	
15	11	9.4	9.4	12	24	42	86	8.6	.5		0	
16	16	9.4	9.4	12	23	43	60	7.0	.4		0	
17	7.6	9.4	8.2	12	25	45	56	5.5	.4		0	
18	4.2	8.8	8.8	14	25	42	68	5.0	.5		0	
19	2.8	9.4	8.2	14	21.5	43	131	3.5	.4		0	
20	2.2	10	8.2	14	206	42	67	2.8	.3		0	
21	1.8	10	8.2	16	76	39	66	1.8	.2		0	
22	1.2	11	7.6	14	61	36	84	2.8	.2		0	
23	1.1	11	7.6	14	42	32	223	2.5	.2		0	
24	.9	10	8.2	14	30	25	72	4.2	.1		0	
25	.8	8.8	7.6	13	24	56	58	25	.1		2,270	
26	.6	8.2	8.8	13	18	144	54	17	0		1,980	
27	.6	8.2	9.4	12	14	84	51	7.6	0		380	
28	.4	8.8	8.8	14	12	61	51	3.8	0		180	
29	1.5	8.8	8.2	14	53	50	50	2.5	0			
30	3.1	8.8	25	16	36	48		1.2	0			
31	3.5		20	45	26	26		.9			42	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							16	0	1.98	122		
November							12	3.5	9.00	536		
December							25	7.0	9.28	571		
January							45	12	15.3	941		
February							215	11	40.5	2,250		
March							144	14	40.3	2,480		
April							6,360	24	466	27,100		
May							182		28.9	1,790		
June							62	.9	8.40	381		
July							0	0	0	0		
August							2,270	0	160	9,840		
September									9.10	541		
The year							6,360	0	64.3	46,600		

Note.- No flow during July.

## Middle Concho River near Tankersly, Tex.

Location.- Water-stage recorder at Twelvemile Bridge, 3 miles northeast of Tankersly, Tom Green County, and  $7\frac{1}{2}$  miles above confluence with Spring Creek. Zero of gage is 1,919.5 feet above mean sea level.

Drainage area.- 1,280 square miles, of which about 152 square miles is probably non-contributing.

Records available.- February 1930 to September 1934.

Extremes.- Maximum discharge during year, 2,320 second-feet Aug. 25 (gage height, 9.40 feet); no flow at times.  
1930-34: Maximum discharge, 12,500 second-feet May 11, 1932 (gage height, 22.45 feet); no flow at times.

Remarks.- Records good. Small diversions for irrigation above station affect low flow.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							0		0		0	
2							0		0		0	
3							0		0		0	
4							0		0		0	
5							0		40		0	
6							38		26		0	
7							29		8.9		0	
8							5.4		2.4		0	
9							1.1		.1		0	
10							0		0		0	
11							0		0		0	
12							0		0		0	
13							0		0		0	
14							0		0		0	
15							0		0		0	
16							0		0		0	
17							0		0		0	
18							0		0		0	
19							0		0		0	
20							0		0		0	
21							0		0		0	
22							0		0		0	
23							0		0		0	
24							0		0		12	
25							0		0		835	
26							0		0		47	
27							0		0		43	
28							0		0		3.3	
29							0		0		.1	
30							0		0		0	
31							0		0		0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							0	0	0	0		
November							0	0	0	0		
December							0	0	0	0		
January							0	0	0	0		
February							0	0	0	0		
March							0	0	0	0		
April							38	0	2.45	146		
May							0	0	0	0		
June							40	0	2.58	154		
July							0	0	0	0		
August							835	0	30.3	1,860		
September							0	0	0	0		
The year							835	0	2.99	2,160		

Note.- No flow during months left blank.

## Spring Creek near Tankersly, Tex.

Location.- Water-stage recorder  $2\frac{1}{2}$  miles above confluence with Middle Concho River and  $8\frac{1}{2}$  miles east of Tankersly, Tom Green County. Zero of gage is 1,874.6 feet above mean sea level.

Drainage area.- 734 square miles.

Records available.- February 1930 to September 1934.

Extremes.- Maximum discharge during year, 381 second-feet June 4 (gage height, 3.49 feet); no flow July 13 to Sept. 30.  
1930-34: Maximum discharge, 17,000 second-feet May 10, 1932 (gage height, 17.70 feet); no flow at times.

Remarks.- Records excellent below 30 second-feet and fair above. Several small diversions above station for irrigation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	12	26	18	27	20	20	15	0.7	0.4		
2	.9	17	24	15	22	22	22	11	.7	.4		
3	1.0	18	21	13	24	19	27	8.2	2.1	.3		
4	1.0	17	18	13	23	17	25	6.8	.79	.2		
5	1.0	22	17	13	24	15	56	5.4	5.2	.2		
6	1.0	25	16	14	31	14	50	3.6	2.7	.2		
7	1.1	25	17	15	35	12	59	3.0	2.1	.2		
8	1.3	24	16	18	37	11	47	2.7	1.7	.2		
9	1.4	24	18	19	37	9.8	42	2.5	1.4	.2		
10	1.5	24	22	20	38	11	41	2.2	1.3	.2		
11	1.4	25	23	20	39	9.8	41	2.1	1.1	.1		
12	1.7	24	22	20	38	9.2	37	2.1	1.0	.1		
13	2.5	23	14	20	38	9.5	37	2.0	1.0	0		
14	6.3	24	14	20	39	6.1	32	1.7	.9	0		
15	8.8	26	14	21	38	5.0	32	1.6	.8	0		
16	7.9	26	17	19	37	6.4	28	1.5	.7	0		
17	6.6	27	18	20	26	5.4	42	1.5	.6	0		
18	7.6	31	18	24	24	3.7	42	1.3	.6	0		
19	7.9	31	16	24	23	3.4	42	1.3	.6	0		
20	7.1	30	16	24	22	3.1	42	1.3	.7	0		
21	5.4	27	14	22	20	2.8	41	1.0	.6	0		
22	6.4	25	15	31	16	2.8	39	.6	.6	0		
23	8.8	24	13	31	15	2.7	39	.6	.5	0		
24	7.6	22	12	34	15	5.3	38	1.1	.4	0		
25	5.9	22	12	32	13	49	27	1.1	.4	0		
26	5.2	25	12	31	11	28	22	1.1	.4	0		
27	4.8	28	11	31	11	20	17	1.0	.4	0		
28	4.2	25	13	31	13	19	15	.8	.4	0		
29	3.7	25	14	30		18	16	.7	.4	0		
30	7.5	26	18	28		18	15	.7	.4	0		
31	12		19	28		21		.7		0		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							12	0.9	4.55	279		
November							31	12	24.1	1,430		
December							28	11	16.9	1,040		
January							34	13	22.4	1,380		
February							39	11	28.3	1,460		
March							49	2.7	12.9	793		
April							59	15	34.4	2,050		
May							15	.6	2.79	172		
June							79	.4	3.65	217		
July							.4	0	.09	5.5		
August							0	0	0	0		
September							0	0	0	0		
The year							79	0	12.2	8,830		

Note.- No flow during months left blank.

## North Concho River near Carlsbad, Tex.

Location.- Water-stage recorder just above State Sanatorium Dam and 2 miles above Carlsbad, Tom Green County.

Drainage area.- 1,529 square miles, of which about 123 square miles is probably non-contributing.

Records available.- March 1924 to September 1934.

Average discharge.- 10 years, 42.3 second-feet.

Extremes.- Maximum discharge during year, 7,400 second-feet Aug. 25 (gage height, 9.80 feet); no flow at times.

1924-34: Maximum discharge, about 35,600 second-feet May 30, 1925 (gage height, 14.45 feet); no flow at times.

Remarks.- Records good except those estimated Dec. 1-20, which are fair. Diversions by pumping above station affect low-water flow; pump capacity, 40 second-feet. Low-water flow partly regulated by small reservoir above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				3.8	3.3	4.8	3.8	5.4			0	3.8
2				3.3	3.8	5.4	4.3	9.2			0	2.0
3				2.8	3.8	5.4	3.8	11			0	109
4				2.4	4.3	4.8	3.8	7.5			0	49
5				1.5	4.3	4.3	5.4	5.4			0	73
6				1.4	3.8	4.3	4.3	5.4			0	28
7				1.4	3.8	4.3	23	4.3			0	11
8				1.5	3.8	3.3	8.3	3.8			0	30
9				1.8	3.3	3.8	7.5	3.3			0	8.3
10				2.0	3.3	3.8	7.5	2.8			0	4.3
11			0.4	2.0	3.8	3.8	7.5	2.8			0	3.3
12				2.0	3.8	3.8	7.5	2.8			0	1.2
13				2.0	3.8	4.3	7.5	2.4			0	.6
14				1.8	4.3	4.3	7.5	1.8			0	.3
15				1.8	3.8	4.3	7.5	2.0			0	.1
16				1.8	3.8	3.8	7.5	2.0			0	0
17				2.8	3.8	3.3	7.5	2.0			0	0
18				3.3	3.8	2.8	8.3	1.8			0	0
19				2.8	3.3	3.3	8.3	1.2			0	0
20				2.8	2.8	3.3	8.3	.9			0	0
21			.8	2.8	4.3	3.3	7.5	.7			0	0
22			.8	2.8	4.3	3.3	6.7	.5			0	0
23			.9	2.8	3.8	3.3	6.0	.4			0	0
24			.9	2.8	4.3	2.8	6.0	3.8			1,150	0
25			1.0	2.8	3.8	5.4	6.0	4.3			3,300	0
26			1.4	2.4	3.8	4.8	6.0	2.4			256	0
27			1.4	2.8	3.8	4.8	5.4	.8			49	0
28			1.8	3.3	3.8	4.3	5.4	.5			23	0
29			3.8	3.3		4.3	5.4	.4			12	0
30			5.4	3.3		3.8	5.4	.2			10	0
31			4.3	3.3		3.8		.1			6.7	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							0	0	0	0		
November							0	0	0	0		
December									.98	60		
January							3.8	1.4	2.50	154		
February							4.3	2.8	3.80	211		
March							5.4	2.8	4.04	248		
April							23	3.8	6.96	414		
May							11	.1	2.96	182		
June							0	0	0	0		
July							0	0	0	0		
August							3,300	0	155	9,530		
September							109	0	10.8	643		
The year							3,300	0	15.8	11,400		

Note.- No flow during months left blank.



Pecan Bayou at Brownwood, Tex.

Location.- Water-stage recorder at Fort Worth & Rio Grande Railway bridge three-eighths of a mile above city dam, 1 mile north of Brownwood, Brown County, and 10 miles below Brownwood Reservoir. Zero of gage is 1,319.2 feet above mean sea level.

Drainage area.- 1,614 square miles.

Records available.- May 1917 to June 1918, October 1923 to September 1934.

Extremes.- Maximum discharge during year, 3,620 second-feet June 28 (gage height, 4.58 feet); no flow over control dam at times; minimum seepage past control estimated as 0.2 second-foot.

1917-18, 1923-34: Maximum discharge, 52,700 second-feet Oct. 14, 1930 (gage height, 16.92 feet); no flow at times.

Flood of July 3, 1932, probably the greatest known, reached a discharge of about 235,000 second-feet as it entered Brownwood Reservoir (computed from rate of storage in reservoir, data furnished by engineers of Brown County Water Improvement District No. 1).

Remarks.- Records good. Seepage past control dam, ranging from 0.2 to 2.0 second-feet, was included in daily discharge. Flow regulated by storage in Brownwood Reservoir (capacity, 140,000 acre-feet).

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	2.0	0.4	0.7	0.2	78	0.3	0.3	0.3	101	133	0.2
2	39	2.0	.4	.3	.2	15	.3	.8	.3	32	77	.2
3	3.0	2.0	.4	1.3	.2	1.0	.3	7.1	.3	915	1.4	.2
4	4.0	2.0	.4	.8	.2	.4	.3	5.5	.3	2,270	9.3	.2
5	2.0	2.0	.4	.2	.2	.3	184	1.3	.3	1,560	.6	.2
6	2.0	47	.4	.2	.2	.3	81	.4	.3	1,810	.2	.2
7	2.0	57	.4	.2	.7	.3	7.1	.3	.3	2,580	.2	.2
8	2.0	57	.4	.2	207	.3	7.1	.3	.3	2,370	.2	.2
9	2.0	57	.4	.2	82	.3	2.6	.3	.3	2,550	.2	.2
10	2.0	45	.4	.2	82	.3	1.0	.3	.3	3,340	.2	.2
11	2.0	3.9	.4	.2	86	.3	.3	.3	.3	3,110	.2	.2
12	2.0	.4	.4	.2	82	.3	.3	.3	.3	1,870	.2	.2
13	2.0	.4	.4	.2	79	.3	.3	.3	.3	1,680	.2	14
14	2.0	.4	.4	.2	7.7	.3	.3	.3	.3	1,430	.2	29
15	2.0	.4	.4	.2	.5	.3	.3	.3	.3	937	.2	7.0
16	2.0	.4	.4	.2	.3	.3	.3	.3	.3	600	.2	21
17	2.0	.4	.4	.2	.3	.3	.3	.3	.3	232	.2	18
18	2.0	.4	.4	.2	.3	.3	7.4	.3	.3	226	.2	2.8
19	2.0	.4	.4	.2	.3	.3	14	.3	.3	221	.2	.2
20	2.0	.4	.4	.2	.3	.3	5.5	.3	.3	221	.2	.2
21	2.0	.4	.4	.2	.3	.3	.6	.3	.3	216	.2	.2
22	2.0	.4	.4	.2	.3	.3	.3	.3	.3	216	.2	.2
23	2.0	.4	.4	.2	.3	.3	.3	.3	.3	216	.2	.2
24	2.0	.4	.4	.2	.3	.3	.3	.3	.3	216	.2	.2
25	2.0	.4	.4	.2	.3	162	4.4	.3	.3	211	2.2	.2
26	2.0	.4	.4	.2	.3	26	1.0	.3	.3	263	.2	.2
27	2.0	.4	.4	.2	.3	1.3	.3	.3	697	320	.2	.2
28	2.0	.4	.4	.2	.3	.6	.3	.3	2,100	284	.2	.2
29	2.0	.4	40	.2	.3	.3	.3	.3	1,530	350	.2	.2
30	2.0	.4	47	.2	.3	.3	.3	.3	883	254	.2	.2
31	2.0		4.1	.2		.3		.3		150	.2	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							39	2.0	4.26	262		
November							57	.4	9.48	564		
December							47	.4	3.30	203		
January							1.3	.2	.27	17		
February							207	.2	22.6	1,260		
March							162	.3	9.39	577		
April							184	.3	10.7	637		
May							7.1	.3	.74	46		
June							2,100	.3	174	10,400		
July							3,340	32	993	61,100		
August							133	.2	7.37	453		
September							29	.2	3.22	192		
The year							3,340		.2	104	75,700	

## San Saba River at Menard, Tex.

Location.- Staff gage 1,000 feet above highway bridge in Menard, Menard County, and half a mile below mouth of Las Moras Creek.

Drainage area.- 1,151 square miles.

Records available.- September 1915 to September 1934.

Average discharge.- 19 years, 46.7 second-feet.

Extremes.- Maximum discharge recorded during year, 16,500 second-feet Apr. 18 (gage height, 13.60 feet); no flow at times.

1915-34: Maximum stage, 18.3 feet, from flood marks, Oct. 6, 1930 (discharge not determined); no flow at times.

Maximum stage known, 25.4 feet June 5, 6, 1899.

Remarks.- Records fair. Low-water flow during irrigation season regulated by diversions to Noyes Canal, 4 miles above Menard. About 4,300 acres above and about 7,700 acres below gage have been declared irrigated.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	3.9	9.9	17	39	39	5.6	18	13	0	21	20
2	6.9	7.3	9.9	15	37	36	6.0	23	12	3.7	12	20
3	6.5	7.8	9.4	17	37	34	6.0	25	12	1.5	0	14
4	6.0	6.5	8.9	18	36	34	144	20	16	1.5	1.0	5.4
5	6.0	6.5	8.9	18	35	34	1,380	41	17	1.3	2.3	3.5
6	6.0	7.8	8.9	44	35	32	237	30	12	.8	2.3	3.7
7	6.9	7.8	8.9	39	35	31	76	21	11	.1	2.3	3.0
8	6.5	8.3	9.9	37	37	30	55	18	6.9	0	2.5	3.5
9	5.6	6.5	12	37	37	30	48	23	7.2	0	2.3	3.2
10	6.5	7.3	13	36	35	29	43	18	7.8	.2	2.3	3.2
11	6.5	8.9	14	37	38	21	41	20	7.2	.5	2.3	3.2
12	6.5	8.9	17	38	35	39	39	19	7.2	.5	1.3	3.2
13	7.3	8.9	15	38	35	31	38	16	7.2	.2	1.6	3.5
14	7.3	8.9	14	38	35	31	37	14	6.0	0	1.8	3.5
15	7.8	7.8	14	38	34	31	36	12	5.1	0	1.8	8.3
16	6.5	7.8	14	39	34	31	36	12	5.1	0	2.3	6.6
17	6.0	7.3	12	45	34	30	48	11	5.1	0	2.3	4.2
18	23	7.8	14	52	32	30	5,130	10	10	0	2.8	3.0
19	23	8.3	14	47	33	30	205	9.4	15	0	2.3	3.5
20	24	8.9	14	41	33	22	84	9.4	5.1	0	2.3	2.3
21	6.9	9.4	14	39	33	7.3	65	8.9	.5	0	2.0	1.5
22	5.2	7.8	16	39	32	6.5	56	7.8	.1	925	2.3	1.8
23	5.2	6.5	14	36	33	7.3	48	7.8	0	215	3.0	1.6
24	5.2	7.3	13	38	33	9.9	45	340	0	46	24	1.6
25	5.2	7.8	14	37	33	28	45	53	.2	25	5.1	2.6
26	5.2	9.4	14	38	33	38	42	30	.2	23	5.4	3.5
27	5.6	7.8	14	38	33	20	39	29	0	23	4.5	2.5
28	6.0	7.3	15	38	33	8.9	33	27	0	27	3.7	3.5
29	6.0	7.3	17	36	7.3	29	26	0	0	24	3.2	3.5
30	4.8	8.9	18	36	6.5	19	20	0	0	23	4.2	3.5
31	3.9		18	41	6.0			14		20	3.7	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							24	3.9	7.74	476		
November							9.4	3.9	7.76	462		
December							18	8.9	15.2	812		
January							52	15	35.7	2,800		
February							39	32	34.6	1,820		
March							39	6.0	24.9	1,530		
April							5,130	5.6	271	16,100		
May							340	7.8	30.1	1,850		
June							17	0	6.30	375		
July							925	0	43.9	2,700		
August							24	0	4.19	258		
September							20	1.5	4.87	290		
The year							5,130	0	40.0	29,000		

## San Saba River at San Saba, Tex.

Location.- Water-stage recorder at the San Saba-Chadwick Mill highway bridge three-quarters of a mile northeast of San Saba, San Saba County, and 15 miles above confluence with Colorado River. Zero of gage is 1,152.4 feet above mean sea level.

Drainage area.- 3,046 square miles.

Records available.- August 1930 to September 1934. Comparable records obtained at site 4½ miles upstream December 1904 to December 1906 and September 1915 to August 1930.

Average discharge.- 19 years (1915-34), 228 second-feet.

Extremes.- Maximum discharge during year, 27,200 second-feet Apr. 6 (gage height, 32.92 feet); minimum, 8.0 second-feet July 21 (gage height, 3.03 feet).  
1904-6, 1915-34: Maximum stage, 42.1 feet (present datum) Apr. 26, 1922, possibly affected by backwater from Colorado River (discharge not determined); no flow Aug. 9, 10, 1918.

Remarks.- Records good. Diversions above station for irrigation and municipal use.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	38	58	77	85	102	118	148	85	26	36	35
2	32	41	58	78	89	113	106	152	84	30	34	31
3	32	47	53	93	86	124	98	160	88	30	32	29
4	32	45	50	86	82	100	168	138	86	29	29	25
5	32	41	47	107	81	95	10,500	132	81	27	35	25
6	31	39	45	99	78	95	17,400	131	72	25	35	25
7	31	38	47	82	78	89	3,780	131	61	27	24	24
8	31	35	52	77	85	81	977	119	58	35	23	25
9	31	38	52	74	999	77	662	130	60	34	23	26
10	31	45	54	70	356	77	451	122	58	30	20	29
11	32	53	57	72	190	77	354	109	56	25	19	29
12	35	57	72	138	77	303	102	45	23	20	30	
13	35	56	57	71	116	75	278	99	41	23	23	29
14	38	54	58	70	102	68	244	102	40	21	18	26
15	36	52	61	71	93	67	228	102	36	23	16	25
16	32	47	60	70	68	71	215	95	35	26	17	25
17	31	49	58	71	85	75	204	92	38	24	18	25
18	31	49	58	110	61	70	318	91	60	20	18	25
19	32	48	58	125	77	68	4,870	84	40	15	21	25
20	32	48	58	125	75	64	1,060	79	39	12	23	25
21	32	47	58	105	77	63	479	77	41	8.5	19	25
22	31	48	61	100	75	64	337	71	39	12	18	24
23	32	47	60	93	74	61	278	75	35	241	18	24
24	32	43	60	88	75	64	236	62	34	1,060	20	24
25	35	48	60	84	77	1,210	214	92	32	333	21	24
26	49	54	64	81	74	3,200	190	339	27	162	24	23
27	64	57	57	79	71	558	176	230	21	107	66	23
28	40	56	56	79	72	294	166	149	20	86	272	24
29	36	53	67	79		209	168	114	23	70	107	26
30	35	49	77	77		166	154	100	25	61	61	27
31	38		72	79		136		92		48		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							64	31	34.6	2,130		
November							57	35	47.4	2,620		
December							77	45	57.7	3,550		
January							125	70	85.5	5,240		
February							999	71	131	7,280		
March							3,200	61	248	15,200		
April							17,400	98	1,480	88,100		
May							339	71	121	7,440		
June							88	20	48.7	2,900		
July							1,060	8.5	86.9	5,540		
August							272	16	37.2	5,290		
September							35	23	26.1	1,550		
The year							17,400	8.5	199	144,000		

## COLORADO RIVER BASIN

## Noyes Canal at Menard, Tex.

Location.- Staff gage 1,000 feet above highway bridge in Menard, Menard County, and 4 miles below head gates.

Records available.- March 1924 to September 1934.

Average discharge.- 10 years, 15.2 second-feet.

Extremes.- Maximum discharge during year, 33 second-feet Apr. 18 (gage height, 1.74 feet, from graph based on gage readings); no flow at times.  
1924-34: Maximum discharge, about 58 second-feet Feb. 2, 1931 (gage height, 2.70 feet, from graph based on gage readings); no flow at times.

Remarks.- Records fair. Canal diverts from right bank of San Saba River 4 miles above Menard. Water used for irrigation near Menard; 10 acres irrigated above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	19	23	19		0	24	24	20	20	0	0.6
2	18	23	23	19		0	24	24	20	28	4.1	0
3	17	23	23	19		0	18	24	19	26	20	5.6
4	18	23	22	19		0	11	24	20	24	18	19
5	17	23	23	19		0	11	28	22	20	24	17
6	17	23	23	3.4		0	.5	26	22	19	22	15
7	17	22	23	.3		0	.1	24	22	19	19	15
8	17	19	23	.1		0	.1	23	20	22	18	16
9	16	19	22	0		0	0	22	20	19	18	16
10	17	19	23	0		0	0	20	20	19	17	16
11	17	20	23	0		0	0	22	19	22	13	16
12	17	20	23	0		0	0	23	19	20	15	16
13	17	20	22	0		0	0	23	19	20	17	18
14	18	20	20	0		0	0	23	17	19	17	17
15	17	19	19	0		0	0	22	19	19	15	24
16	17	19	19	0		0	0	22	18	20	15	18
17	17	19	22	0		0	0	22	18	15	14	17
18	2.1	20	20	0		0	19	23	6.6	19	19	19
19	.1	20	19	0		0	10	23	17	19	14	18
20	0	22	19	0		6.4	2.3	22	22	20	17	17
21	14	23	19	0		22	1.7	22	19	20	17	17
22	17	22	19	0		22	1.3	22	17	23	16	17
23	19	22	19	0		22	1.1	20	15	24	20	17
24	19	22	19	0		24	.9	26	16	10	30	15
25	20	22	19	0		28	1.2	16	20	0	24	19
26	20	20	19	0		28	1.4	9.3	20	0	30	18
27	22	24	19	0		27	3.5	8.2	17	0	23	17
28	20	24	19	0		24	12	8.0	15	0	19	17
29	20	24	20	0		24	18	8.0	17	0	24	18
30	19	24	20	0		24	23	13	16	0	23	18
31	19		20	0		24		22		0	17	
Month						Maximum		Minimum	Mean		Run-off in acre-feet	
October						22	0	16.2	996			
November						24	19	21.3	1,270			
December						23	19	20.8	1,260			
January						19	0	3.19	196			
February						0	0	0	0			
March						28	0	8.88	546			
April						24	0	6.14	365			
May						28	8.0	20.6	1,270			
June						22	6.6	18.4	1,090			
July						28	0	15.7	965			
August						30	0	18.0	1,110			
September						24	0	15.8	940			
The year						30	0	13.8	10,000			

Note.- No flow during February.

## North Llano River near Junction, Tex.

Location.- Water-stage recorder 500 feet above remains of Old Wilson Dam and 3 miles northwest of Junction, Kimble County. Zero of gage is 1,699.9 feet above mean sea level.

Drainage area.- 914 square miles.

Records available.- September 1915 to September 1934.

Average discharge.- 19 years, 60.1 second-feet.

Extremes.- Maximum discharge during year, 4,660 second-feet Apr. 4 (gage height, 6.00 feet); no flow at times.

1915-34: Maximum stage, 20.9 feet Oct. 6, 1930 (discharge not determined); revised maximum for Apr. 24, 1923, about 19.0 feet, supersedes values previously published.

Remarks.- Records good. Diversions above station for irrigation materially reduce low-water flow.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.6	4.1	9.3	14	16	14	20	28	8.6	0.5		
2	4.6	4.6	9.3	14	16	14	19	32	8.0	.2		
3	4.6	4.6	9.3	37	16	14	19	32	7.3	0		
4	4.1	5.0	10	21	16	13	470	29	15	0		
5	4.1	5.5	10	20	16	13	202	28	9.3	.1		
6	4.1	6.0	10	20	15	12	125	28	6.0	0		
7	4.1	6.7	10	20	15	12	45	24	5.0	0		
8	4.1	6.0	10	20	15	13	39	21	5.0	.1		
9	4.6	6.0	10	21	15	13	34	19	4.1	.1		
10	4.6	6.0	11	21	15	13	34	19	5.0	.3		
11	5.5	7.3	11	21	15	13	32	21	2.4	0		
12	5.5	7.3	11	23	15	13	29	21	1.5	0		
13	5.5	7.3	11	23	14	12	29	20	.6	0		
14	8.6	7.3	12	23	14	12	28	19	.5	0		
15	6.7	7.3	12	23	14	12	26	17	.2	0		
16	6.0	7.3	12	23	14	12	26	14	.2	0		
17	6.0	8.0	12	23	14	12	56	13	.2	0		
18	5.5	8.0	12	25	14	12	49	12	.4	0		
19	5.5	8.0	12	24	14	12	150	12	.4	0		
20	5.0	8.0	12	23	14	12	80	11	.4	0		
21	3.6	8.0	12	21	13	11	78	8.6	.3	0		
22	3.6	7.3	12	20	13	12	57	6.6	.5	0		
23	3.6	7.3	12	18	13	12	47	9.3	.2	0		
24	3.6	8.0	12	17	13	13	43	165	0	0		
25	4.1	9.3	12	16	12	106	39	28	0	0		
26	4.6	9.3	13	16	12	86	38	17	0	0		
27	4.6	9.3	13	16	12	39	34	14	.3	.2		
28	4.1	9.3	13	16	12	30	34	13	.1	.2		
29	3.6	9.3	14	16	12	26	33	12	0	.2		
30	4.1	9.3	14	16	12	24	30	10	.1	.2		
31	4.1		14	16		21		8.6		.2		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							8.6	3.6	4.71	290		
November							9.3	4.1	7.22	430		
December							14	9.3	11.5	707		
January							37	14	20.2	1,240		
February							16	12	14.2	769		
March							106	11	20.4	1,250		
April							470	19	64.2	3,820		
May							165	8.6	23.0	1,410		
June							15	0	2.65	158		
July							.5	0	.07	4.3		
August							0	0	0	0		
September							0	0	0	0		
The year							470	0	14.0	10,100		

Note.- No flow during months left blank.

## Llano River near Junction, Tex.

Location.- Water-stage recorder 100 feet north of Kerrville-Junction road, 3 miles below confluence of North Llano and South Llano Rivers, and  $3\frac{1}{4}$  miles east of Junction, Kimble County.

Drainage area.- 1,762 square miles.

Records available.- September 1915 to September 1934.

Average discharge.- 19 years, 203 second-feet.

Extremes.- Maximum discharge during year, 4,720 second-feet Apr. 4 (gage height, 5.85 feet); minimum, 27 second-feet Aug. 23-26 (gage height, 1.34 feet).  
1915-34: Maximum discharge, about 106,000 second-feet Sept. 1, 1932 (gage height, 27.15 feet); minimum, 13 second-feet Aug. 23-28, 1916 (gage height, 1.32 feet).

Remarks.- Records good. About 2,500 acres above and 1,300 acres below station have been declared irrigated. Diversions slightly reduce low-water flow. Slight regulation by water-power plant on South Llano River.

Published daily discharge for Apr. 24, 25, 1923 (Water-Supply Paper 568, page 62) is greatly in error, owing to erroneous gage readings recorded by observer. Mean discharge for two-day period believed to be about 5,000 second-feet. Daily and monthly figures for April 1923 will be revised and published in subsequent water-supply paper when sufficient discharge measurements are obtained to better define rating curve for North Llano River near Junction, the record of which will be basis for revision.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	54	60	62	74	68	74	68	44	37	34	29
2	46	54	60	62	74	71	71	74	44	46	34	28
3	48	54	60	62	74	71	68	76	42	42	34	28
4	48	57	60	62	74	71	404	74	57	38	32	28
5	48	57	60	62	74	71	291	68	54	37	32	28
6	48	57	60	62	74	71	254	65	52	37	32	28
7	48	57	60	62	74	68	111	62	48	37	32	28
8	48	57	60	62	74	68	98	57	46	39	31	31
9	50	54	60	62	74	65	92	54	46	39	29	29
10	50	57	60	62	74	65	85	54	44	37	29	29
11	50	60	60	62	74	65	82	54	44	35	29	29
12	50	60	60	62	74	65	79	54	44	35	28	31
13	54	60	60	62	74	65	76	54	42	35	28	32
14	57	60	60	62	74	65	74	54	40	34	28	34
15	54	60	62	62	74	65	74	52	40	34	28	34
16	54	60	62	62	74	65	74	50	39	34	28	34
17	54	60	62	62	71	68	79	50	37	32	28	34
18	52	60	62	71	71	65	101	50	37	32	28	32
19	52	57	62	71	71	65	173	48	37	31	28	32
20	52	57	62	71	71	65	111	48	37	31	28	31
21	52	57	62	71	71	65	114	48	37	29	28	31
22	52	57	62	68	68	65	98	48	37	28	28	31
23	52	57	62	68	68	65	86	50	35	29	27	31
24	52	60	62	68	68	65	82	331	35	31	27	31
25	52	60	62	68	68	94	79	88	34	31	27	29
26	52	60	62	71	68	154	76	60	34	35	28	29
27	52	60	62	71	68	104	74	54	34	39	31	29
28	54	60	62	74	68	88	71	50	34	40	29	29
29	54	60	62	74	74	82	68	48	34	39	29	29
30	54	60	62	74	74	76	68	46	34	37	29	29
31	54	60	62	74	74	74	74	46	46	35	29	29
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							57	46	51.3	3,150		
November							60	54	59.1	3,430		
December							62	60	61.1	3,760		
January							74	62	66.1	4,060		
February							74	68	72.0	4,000		
March							154	65	73.4	4,510		
April							404	68	110	6,550		
May							331	46	65.6	4,030		
June							57	34	40.7	2,420		
July							46	28	36.4	2,180		
August							34	27	29.4	1,610		
September							34	28	30.2	1,800		
The year							404	27	57.6	41,700		

## Llano River near Castell, Tex.

Location.- Water-stage recorder 4 miles above mouth of Hickory Creek and 6 miles east of Castell, Llano County.

Drainage area.- 3,514 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 10 years (1924-34), 284 second-feet.

Extremes.- Maximum discharge during year, 19,300 second-feet Apr. 5 (gage height, 10.95 feet); minimum, 6.4 second-feet Aug. 26 (gage height, 0.05 foot).  
1923-34: Maximum discharge, about 89,800 second-feet Oct. 6, 1930 (gage height, 22.3 feet); minimum discharge, that of Aug. 26, 1934.

Remarks.- Records good except those estimated Oct. 1-19, June 27 to July 6, which are fair. Small diversions above station slightly reduce low-water flow.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		58	72	89	93	104	103	94	75		24	30
2		60	72	89	95	123	98	91	69		24	26
3		62	73	92	94	130	93	95	65	17	22	20
4		64	73	95	91	114	133	104	63		20	16
5		64	73	95	90	103	6,160	106	62		18	14
6		65	71	91	89	96	2,380	102	65	20	16	13
7	50	66	71	89	89	93	652	93	70	29	15	12
8		67	70	89	211	86	378	85	72	25	14	11
9		67	70	88	597	86	253	79	65	24	13	11
10		68	71	86	179	80	196	73	56	22	11	12
11		71	72	86	121	79	159	71	50	20	11	18
12		73	73	85	110	79	136	71	45	18	12	18
13		74	73	84	102	78	121	66	42	18	11	25
14		73	75	84	98	78	113	63	39	17	10	60
15		72	76	84	94	77	109	60	36	16	9.7	53
16	77	70	77	84	91	77	104	58	32	14	9.2	186
17		69	77	90	89	76	104	58	30	13	8.8	100
18		68	77	121	86	75	239	55	27	11	8.5	64
19		73	76	146	83	75	1,310	53	25	10	8.3	45
20	55	75	75	134	82	73	618	53	24	9.5	7.8	36
21	55	70	74	120	90	72	367	52	24	8.8	7.5	30
22	55	69	74	110	91	72	255	50	22	9.0	7.2	27
23	54	68	74	103	88	72	187	61	21	12	7.0	25
24	54	67	76	98	86	77	162	245	21	71	6.9	24
25	54	67	77	95	86	99	137	1,880	20	62	6.6	22
26	53	67	78	94	85	190	124	484	20	44	6.4	20
27	55	68	78	93	82	206	114	259		35	6.6	19
28	77	69	79	91	80	159	107	166		28	6.3	19
29	69	70	80	90		153	100	121	18	26	12	20
30	59	71	84	89		127	96	100		25	11	18
31	58		88	88		113		86		24	25	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									59.2	3,640		
November							75	58	68.2	4,060		
December							88	70	75.1	4,620		
January							146	84	96.0	5,900		
February							597	80	117	6,500		
March							206	72	101	6,210		
April							6,160	93	503	29,900		
May							1,860	50	162	9,960		
June								75	40.4	2,400		
July								71	8.8	1,380		
August								25	6.4	750		
September								186	11	1,970		
The year							6,160	6.4	107	77,300		

## Pedernales River at Stonewall, Tex.

Location.- Staff gage at Stonewall, Gillespie County, 2 miles below mouth of South Grape Creek. Zero of gage is 1,418.85 feet above mean sea level.

Drainage area.- 647 square miles.

Records available.- July 1924 to September 1934 (discontinued).

Average discharge.- 10 years, 60.2 second-feet.

Extremes.- Maximum discharge during year, 4,240 second-feet Jan. 3 (gage height, 5.00 feet, from graph based on gage readings); minimum, 1.2 second-feet at times during period July to September.

1924-34: Maximum discharge, about 28,300 second-feet May 28, 1929 (gage height, 14.25 feet, from flood marks); minimum, that of period July to September 1934.

Maximum stage known, about 24.0 feet in 1900.

Remarks.- Records fair. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	3.2	6.1	6.1	24	158	15	13	9.1	1.7	1.8	1.3
2	3.9	3.5	6.5	6.1	16	79	15	13	7.6	2.4	1.8	1.3
3	3.9	4.6	7.8	1,390	15	34	15	12	7.8	2.0	2.0	1.3
4	3.9	5.4	7.8	90	15	24	15	13	6.5	1.7	2.0	1.3
5	3.9	5.4	6.5	32	13	21	263	12	6.5	1.4	2.0	1.3
6	3.5	4.6	5.4	22	12	20	115	11	5.8	1.3	2.0	1.3
7	3.5	4.6	5.4	17	12	17	94	9.1	5.8	1.4	1.5	1.3
8	3.5	4.6	5.4	15	18	17	147	9.1	5.8	1.4	1.5	1.2
9	3.5	4.6	5.4	12	23	15	49	7.8	5.0	1.4	1.5	1.2
10	3.2	4.6	5.4	11	18	15	34	7.8	4.6	1.3	1.5	1.2
11	3.9	4.6	5.4	12	20	15	23	7.2	4.3	1.4	1.5	1.2
12	5.4	4.6	5.4	12	22	15	20	6.5	4.3	1.5	1.5	1.3
13	4.6	4.6	5.4	10	17	15	20	6.1	3.2	1.5	1.5	1.3
14	3.9	4.6	5.4	10	15	15	20	5.8	3.2	1.3	1.5	1.3
15	3.2	4.6	5.4	10	15	15	22	5.0	3.2	1.3	1.5	1.3
16	3.2	4.6	5.4	9.8	15	15	24	5.0	2.5	1.3	1.5	1.3
17	3.2	4.6	5.4	13	13	15	22	4.6	2.5	1.3	1.4	1.3
18	3.2	5.0	5.0	47	231	15	233	4.3	2.5	1.3	1.4	1.3
19	2.7	5.2	5.0	22	61	13	418	4.3	2.5	1.2	1.3	1.3
20	2.8	5.4	5.0	16	31	13	78	4.3	2.5	1.3	1.3	1.3
21	2.8	5.4	5.0	15	23	13	41	3.9	2.4	1.3	1.3	1.3
22	2.8	5.4	5.0	12	17	13	31	3.5	2.1	1.5	1.3	1.3
23	3.2	5.4	5.0	12	15	13	24	3.9	2.1	1.5	1.3	1.2
24	3.2	5.4	5.0	12	13	13	20	754	2.1	1.5	1.3	1.2
25	3.2	5.8	5.4	11	12	379	17	196	2.1	1.5	1.2	1.2
26	3.2	6.1	5.4	29	12	146	16	68	1.7	5.0	4.2	1.3
27	3.5	6.1	5.4	75	12	38	15	29	1.7	7.8	7.2	1.3
28	3.2	6.1	6.1	22	13	27	13	20	1.7	5.0	2.4	1.3
29	3.2	6.1	6.1	17		22	13	15	1.7	3.9	1.5	1.3
30	3.2	6.1	7.2	13		18	13	12	1.7	2.1	1.5	1.3
31	3.2		6.1	71		16		10		2.0	1.4	
Month					Maximum	Minimum	Mean	Run-off in acre-feet				
October					5.4	2.7	3.47	213				
November					6.1	3.2	5.03	299				
December					7.8	5.0	5.68	349				
January					1,390	6.1	66.2	4,070				
February					231	12	25.8	1,430				
March					379	13	40.1	2,470				
April					418	13	61.7	3,670				
May					754	3.5	41.2	2,530				
June					9.1	1.7	3.62	227				
July					7.8	1.2	2.02	124				
August					7.2	1.2	1.83	113				
September					1.3	1.2	1.28	76				
The year					1,390	1.2	21.5	15,600				



## Pedernales River near Spicewood, Tex.

Location.- Staff gage in Travis County, 2½ miles below mouth of Fall Creek and 8 miles southeast of Spicewood, Burnet County. Zero of gage is 824.8 feet above mean sea level.

Drainage area.- 1,294 square miles.

Records available.- November 1923 to September 1934.

Average discharge.- 10 years (1924-34), 155 second-feet.

Extremes.- Maximum discharge during year, 11,400 second-feet Apr. 6 (gage height, 11.72 feet, from graph based on gage readings); no flow at times.  
1923-34: Maximum discharge, about 155,000 second-feet, by slope-area method, May 28, 1929 (gage height, 40.4 feet, from flood marks); no flow at times.

Remarks.- Records good. No diversions above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	1.1	1.6	18	452	207	62	55	25	0.2	31	
2	1.7	1.1	1.6	17	189	875	55	52	21	.3	18	
3	1.5	.9	1.6	444	113	322	48	50	18	.2	12	
4	1.4	1.0	2.0	1,160	77	190	47	50	16	0	10	
5	1.2	1.0	2.6	273	60	133	254	48	14	0	6.5	
6	1.2	.9	3.2	154	47	108	5,770	42	12	0	4.1	
7	1.4	.9	3.5	88	40	92	531	37	10	0	2.6	
8	1.2	.9	3.8	62	186	77	536	32	9.5	0	1.8	
9	1.1	.9	3.5	47	916	69	448	30	8.5	0	1.4	
10	1.0	.9	3.5	38	212	64	228	28	7.5	0	1.1	
11	1.2	.9	5.5	41	117	57	173	35	6.5	0	.9	
12	4.1	1.0	7.0	42	150	54	139	37	5.5	0	.7	
13	2.9	.9	6.0	30	141	50	115	33	4.7	0	.5	
14	1.9	.9	5.0	29	102	47	108	30	3.8	0	.4	
15	1.7	.9	4.7	26	77	44	102	25	3.2	0	.3	
16	1.6	.9	4.1	26	60	44	698	22	2.6	0	.2	
17	1.4	1.0	3.8	29	48	42	351	21	3.5	0	0	
18	1.4	1.0	3.8	244	52	40	167	19	2.3	0	0	
19	1.4	1.0	3.5	332	154	38	436	18	1.7	0	0	
20	1.6	.9	3.2	150	186	37	576	16	1.4	0	0	
21	1.6	1.0	3.2	97	111	36	267	15	1.2	0	0	
22	1.5	1.0	2.6	67	84	36	163	14	1.0	0	0	
23	1.2	1.2	2.9	50	65	33	129	14	.8	0	0	
24	1.1	1.2	3.2	38	82	38	108	18	.6	0	0	
25	1.0	1.1	3.2	32	45	165	92	263	.5	0	0	
26	1.0	1.0	3.2	281	40	422	79	302	.4	377	0	
27	1.7	1.1	3.2	1,250	35	298	76	143	.2	121	0	
28	2.3	1.2	3.2	257	36	168	77	97	.1	93	0	
29	1.8	1.5	47	121		106	65	57	0	98	0	
30	1.5	1.6	37	88		81	59	44	0	221	0	
31	1.1		23	372		70		31		69	0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							4.1	1.0	1.57	97		
November							1.6	.9	1.03	61		
December							47	1.6	6.82	407		
January							1,250	17	190	11,700		
February							916	35	137	7,610		
March							875	33	130	7,990		
April							5,770	47	332	19,800		
May							302	14	54.1	3,330		
June							25	0	6.05	360		
July							377	0	31.6	1,940		
August							31	0	2.95	181		
September							0	0	0	0		
The year							5,770	0	73.8	53,500		

Note.- No flow during September.

## Guadalupe River near Spring Branch, Tex.

Location.- Water-stage recorder at New Braunfels-Blanco highway bridge 4 miles south-east of Spring Branch, Comal County. Zero of gage is 947.37 feet above mean sea level.

Drainage area.- 1,432 square miles.

Records available.- June 1922 to September 1934.

Average discharge.- 12 years, 217 second-feet.

Extremes.- Maximum discharge during year, 3,400 second-feet Apr. 18 (gage height, 7.96 feet); minimum, 7.0 second-feet July 20, 21.  
1922-34: Maximum discharge, 121,000 second-feet July 3, 1932 (gage height, 42.10 feet); minimum, about 4.7 second-feet Aug. 18, 1923.

Remarks.- Records good. Discharge partly estimated or interpolated Nov. 12-19 and Dec. 3-6. About 400 acres have been declared irrigated above station. Slight regulation during low-water periods caused by operation of water-power plants upstream.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	50	53	73	136	782	84	105	66	17	55	12
2	48	51	55	75	122	344	77	105	62	16	44	12
3	50	51	55	89	93	184	75	105	53	16	53	13
4	48	51	56	456	84	145	71	101	55	16	46	12
5	46	56	57	214	79	130	166	105	50	16	37	10
6	44	58	58	145	77	113	714	103	50	16	34	10
7	44	60	60	120	73	101	226	96	48	18	31	12
8	46	58	58	108	75	96	163	89	44	16	28	12
9	44	56	56	98	66	69	148	79	43	16	28	12
10	44	58	58	89	105	84	135	73	40	16	26	11
11	49	56	58	93	91	81	117	68	38	15	26	12
12	48	56	58	86	91	79	110	68	36	16	23	14
13	50	55	60	77	86	77	96	68	34	15	21	52
14	50	54	62	79	81	75	91	66	33	15	20	79
15	51	54	62	79	79	73	89	64	32	14	16	55
16	51	53	62	77	77	73	66	60	31	12	18	73
17	51	52	64	77	73	73	111	58	31	10	18	51
18	50	52	64	101	109	75	905	56	28	10	18	43
19	48	51	64	108	178	71	816	53	27	8.5	16	37
20	48	51	62	110	103	68	748	50	34	7.0	15	29
21	48	51	62	113	84	66	407	48	32	7.0	14	28
22	46	53	62	103	77	66	255	48	26	7.5	12	27
23	46	53	58	91	71	66	203	48	33	10	12	24
24	46	51	60	84	71	75	179	68	29	13	11	22
25	53	51	62	81	71	84	166	452	25	16	11	20
26	64	50	62	81	71	77	148	279	23	980	10	18
27	55	48	66	174	68	145	130	171	21	345	10	18
28	51	48	64	193	68	122	120	127	19	148	9.5	18
29	51	51	71	108	108	108	110	96	18	406	10	18
30	50	53	71	86	93	105	79	105	18	110	10	18
31	50		73	93		89		71		79	12	
Month	Maximum						Minimum		Mean		Run-off in acre-feet	
October	64						44		48.9		3,010	
November	60						48		53.1		3,160	
December	73						53		61.1		3,760	
January	456						73		115		7,070	
February	178						68		88.5		4,920	
March	782						66		123		7,560	
April	905						71		228		13,600	
May	452						48		98.7		6,070	
June	66						18		36.0		2,140	
July	980						7.0		77.6		4,770	
August	55						9.5		22.5		1,380	
September	79						10		25.7		1,530	
The year	980						7.0		61.4		59,000	

## Guadalupe River above Comal River at New Braunfels, Tex.

Location.- Water-stage recorder at New Braunfels, Comal County, 1.1 miles above Comal River. Zero of gage is 588.56 feet above mean sea level.

Drainage area.- 1,666 square miles (published in error in Water-Supply Paper 748).

Records available.- December 1927 to September 1934.

Extremes.- Maximum discharge during year, about 2,960 second-feet Apr. 18 (gage height, 4.4 feet); minimum, 12 second-feet Sept. 1 (gage height, 0.90 foot).

1927-34: Maximum discharge, 95,200 second-feet July 3, 1932 (gage height, 32.48 feet); minimum, that of Sept. 1, 1934.

Maximum stage known, about 38 feet in 1889 and December 1913.

Remarks.- Records good. Discharge partly estimated Apr. 18, 20-30, Sept. 22-25. Small diversions above station for irrigation. Slight regulation during low water caused by operation of small power plants upstream.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	54	63	75	221	387	163	179	95	29	160	13
2	62	56	65	74	209	1,370	153	179	91	27	142	14
3	62	56	65	82	217	618	146	176	85	24	123	15
4	57	54	64	92	176	424	143	173	81	22	88	15
5	56	56	65	339	150	359	150	160	74	22	82	16
6	54	54	65	258	138	318	851	153	71	20	80	14
7	54	58	64	163	130	291	828	153	67	20	69	17
8	52	63	64	128	136	261	467	146	66	20	62	15
9	50	64	65	108	179	243	359	133	64	19	54	14
10	50	63	64	100	190	230	323	124	61	20	51	15
11	53	63	64	117	213	217	296	124	58	18	48	16
12	52	63	64	115	206	209	256	115	56	18	45	17
13	51	64	64	102	194	202	234	108	54	18	42	22
14	52	64	65	91	179	194	221	108	51	18	40	20
15	54	63	66	86	176	183	213	102	46	17	39	24
16	54	63	66	96	163	176	213	100	44	16	35	54
17	51	63	69	100	150	163	198	92	41	16	33	60
18	52	62	68	126	179	153	912	91	67	16	29	62
19	53	62	66	176	190	143	929	90	48	14	27	62
20	53	64	65	146	234	140	1,090	87	42	14	24	48
21	53	66	65	136	194	138	778	83	39	14	23	46
22	54	62	65	128	163	138	475	80	34	14	22	41
23	52	62	65	124	143	136	365	78	34	15	21	38
24	51	60	66	124	136	401	307	86	40	15	20	34
25	50	59	65	108	130	236	270	86	35	15	18	32
26	50	60	64	126	121	198	243	368	33	80	17	29
27	69	60	64	315	112	186	221	291	35	961	17	27
28	90	60	64	341	114	194	198	206	34	390	15	24
29	66	62	72	286		206	183	166	30	334	14	23
30	58	62	80	190		190	176	133	29	380	15	28
31	56		80	190		173		112		198	14	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						90	50	55.9	3,440			
November						66	54	60.7	3,610			
December						65	63	66.2	4,070			
January						341	74	149	9,160			
February						234	112	169	9,390			
March						1,370	136	273	16,800			
April						1,090	143	379	22,600			
May						368	78	138	8,480			
June						95	29	53.5	3,180			
July						961	14	90.5	5,560			
August						160	14	47.4	2,810			
September						62	13	28.5	1,700			
The year						1,370	13	126	90,900			

## Guadalupe River below Cuero, Tex.

Location.- Water-stage recorder three-quarters of a mile upstream from Heard's Bridge, on Arneckville road, and 2½ miles southeast of Cuero, DeWitt County. Zero of gage is 125.45 feet above mean sea level.

Drainage area.- 5,073 square miles.

Records available.- August 1916 to September 1934. Comparable records at Schleicher Bridge, 4 miles upstream, December 1902 to December 1906, August 1915 to August 1916.

Average discharge.- 16 years (1916-18, 1920-34), 1,280 second-feet.

Extremes.- Maximum discharge during year, 10,800 second-feet Mar. 4 (gage height, 14.37 feet); minimum discharge not determined; minimum daily discharge, 242 second-feet July 7.

1902-6, 1915-34: Maximum discharge, about 101,000 second-feet May 30, 1929 (gage height, 35.2 feet); minimum discharge not determined; minimum daily discharge, 165 second-feet Nov. 4, 1917.

Maximum stage known, 37.6 feet Nov. 4, 1913.

Remarks.- Records good. Flow not materially affected by numerous small diversions above station. Low-water flow regulated by operation of water-power plants upstream.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	631	482	465	544	2,610	4,600	859	956	660	416	923	389
2	488	427	389	443	2,630	8,410	859	923	642	405	891	389
3	465	460	498	752	2,000	9,090	802	891	625	421	654	344
4	567	449	572	642	1,230	10,400	853	923	572	400	859	405
5	625	460	521	678	956	7,260	956	891	516	394	727	379
6	394	471	460	1,290	809	2,070	1,020	923	544	374	521	394
7	405	454	443	988	828	1,730	1,650	815	242	460	359	
8	438	567	499	783	1,120	1,260	3,700	821	510	379	454	349
9	394	449	471	498	2,760	1,060	3,320	783	516	369	555	369
10	465	482	460	607	1,650	1,120	2,160	752	516	364	405	379
11	471	521	427	1,930	1,840	1,120	1,820	828	535	389	499	400
12	438	493	454	2,231	956	891	1,500	739	538	330	482	465
13	449	394	505	2,070	1,190	859	1,330	727	450	369	505	527
14	432	521	454	1,160	1,760	956	1,260	764	400	369	477	411
15	443	533	499	777	1,190	859	1,190	709	394	369	359	374
16	488	516	544	1,410	853	891	1,060	654	421	374	384	421
17	443	538	521	1,330	809	859	1,020	642	411	354	405	427
18	521	493	482	988	739	859	1,020	642	486	374	394	379
19	454	443	384	1,020	1,120	846	1,520	625	421	349	427	359
20	482	488	449	821	2,070	828	3,760	709	449	354	389	400
21	438	493	555	1,060	1,540	802	4,060	578	499	359	416	449
22	477	443	471	846	1,160	815	3,330	527	421	325	400	379
23	488	384	493	684	714	796	1,820	482	411	364	421	400
24	438	416	527	783	764	796	1,730	666	405	364	330	389
25	493	405	488	994	771	672	1,540	596	443	389	293	384
26	471	449	449	2,980	714	790	1,430	555	411	1,160	344	400
27	449	465	516	2,900	619	1,540	1,230	596	400	1,360	389	477
28	482	465	482	2,780	714	1,580	1,190	625	454	2,630	364	465
29	427	572	510	2,390		1,020	956	815	427	3,100	369	389
30	596	482	510	1,760		891	1,090	733	416	2,070	344	339
31	482		521	3,170		891		702		2,000	349	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							631	394	475	29,200		
November							572	384	474	28,200		
December							572	384	484	29,800		
January							3,170	445	1,330	81,800		
February							2,760	619	1,290	71,600		
March							10,400	672	2,150	132,000		
April							4,060	802	1,670	99,400		
May							956	482	729	44,800		
June							660	394	482	28,700		
July							3,100	242	694	42,700		
August							923	293	477	29,300		
September							527	359	401	23,000		
The year							10,400	242	886	641,000		

## Comal River at New Braunfels, Tex.

Location.- Water-stage recorder 200 feet upstream from San Antonio Street viaduct in New Braunfels, Comal County, and 1.1 miles above confluence with Guadalupe River. Zero of gage is 582.61 feet above mean sea level.

Records available.- December 1927 to September 1934.

Extremes.- Maximum discharge during year, 1,170 second-feet Mar. 1 (gage height, 5.07 feet); minimum, 227 second-feet Nov. 14 (gage height 2.78 feet, caused by regulation); minimum daily discharge, 286 second-feet Oct. 14-18, 29.  
1927-34: Maximum stage, 29.51 feet July 3, 1932, affected by backwater from Guadalupe River (discharge not determined); minimum discharge about 142 second-feet Dec. 11, 1928 (gage height, 2.12 feet, caused by regulation); minimum daily discharge, 246 second-feet Apr. 3 and Oct. 30, 1930.  
Maximum stage known, 35.4 feet December 1913 (probably some backwater from Guadalupe River).

Remarks.- Records good except those estimated July 20-25, 27, 28, 30, 31, Aug. 3-9, which are fair. Flow partly regulated by steam-power plant half a mile above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	294	308	308	304	527	329	336	322	333	329	311
2	300	300	304	318	308	362	329	336	318	336	329	311
3	300	297	304	344	304	333	340	336	322	333		311
4	297	297	304	358	300	333	336	333	322	347		308
5	297	294	304	347	300	333	333	329	322	340		304
6	297	294	304	344	300	329	354	329	315	336	329	304
7	297	297	304	336	300	347	336	340	318	336		304
8	297	297	308	336	337	347	329	329	322	340		297
9	290	297	304	333	322	340	329	329	318	340		297
10	290	300	308	333	311	333	329	329	318	336	329	297
11	294	297	308	344	308	333	329	329	322	333	326	297
12	294	297	308	329	311	329	329	326	322	329	326	297
13	290	297	308	329	308	333	329	326	326	333	329	294
14	286	300	308	326	308	329	336	329	326	333	329	304
15	286	300	308	322	308	329	333	329	318	333	329	294
16	286	300	308	411	311	329	329	329	315	333	329	297
17	286	300	308	328	308	333	329	329	318	333	329	297
18	286	300	308	340	304	326	333	329	322	333	329	297
19	290	300	308	322	304	326	329	326	329	333	329	294
20	300	300	308	315	304	329	340	329	329		329	294
21	294	300	311	306	304	326	333	329	326		322	297
22	290	297	311	304	304	326	329	326	333	333	322	290
23	290	297	308	317	304	326	329	329	333		326	294
24	290	300	311	328	304	326	336	329	333		322	297
25	290	300	308	304	304	322	329	322	333		318	294
26	290	304	308	311	304	322	329	318	336	402	318	297
27	294	304	308	315	304	333	336	318	333	353	322	297
28	290	304	308	304	304	333	329	322	329		315	297
29	286	304	322	300		333	329	322	336	351	318	294
30	290	304	326	300		336	336	322	340		315	297
31	290		311	333		336		322		329	315	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							300	286	292	18,000		
November							304	294	299	17,200		
December							326	304	309	19,000		
January							411	300	327	20,100		
February							337	300	307	17,000		
March							527	322	339	20,800		
April							354	329	332	19,800		
May							340	318	328	20,200		
June							340	315	325	19,500		
July								402	337	20,700		
August							329	315	325	20,000		
September							311	290	299	17,800		
The year							527	286	318	230,000		

## San Marcos River at Ottine, Tex.

Location.- Water-stage recorder at highway bridge a quarter of a mile southwest of Ottine, Gonzales County. Zero of gage is 285.1 feet above mean sea level.

Drainage area.- 1,249 square miles.

Records available.- June 1915 to September 1934.

Average discharge.- 19 years, 428 second-feet.

Extremes.- Maximum discharge during year, 3,840 second-feet Mar. 3 (gage height, 18.80 feet); minimum, 38 second-feet Dec. 9 (caused by regulation); minimum daily discharge, 88 second-feet Dec. 9.

1915-34: Maximum discharge (determined by extension of rating curve), about 202,000 second-feet May 29, 1929 (gage height, 43.32 feet); no flow July 29, 1923, Mar. 31, 1925, June 24, 1926 (caused by regulation); minimum daily discharge, 40 second-feet Sept. 16, 1917.

Maximum stage known, about 44.0 feet in December 1913.

Remarks.- Records good. Small diversions above station for irrigation and municipal uses. Low-water flow regulated by operation of several small power plants above station. Most of normal flow from large springs near San Marcos.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	118	126	138	708	593	270	294	177	123	137	107
2	149	90	116	129	428	2,910	262	318	174	123	144	107
3	135	126	114	145	302	2,260	255	318	168	123	144	108
4	112	111	112	142	255	638	247	310	164	115	133	136
5	124	124	133	132	225	511	463	302	166	118	133	113
6	123	110	180	132	217	443	1,280	286	165	118	125	107
7	123	122	124	150	202	409	2,450	270	160	112	126	109
8	121	118	95	126	195	392	780	262	154	125	118	105
9	121	112	86	120	443	375	615	255	142	118	118	102
10	111	120	94	132	392	350	614	255	145	116	121	108
11	131	114	120	202	264	342	477	255	165	123	141	116
12	130	122	113	247	1,290	342	547	255	145	122	154	123
13	109	107	115	177	439	334	477	240	149	122	113	116
14	127	120	124	139	255	334	356	240	139	115	111	111
15	111	114	112	122	225	334	342	201	141	109	118	114
16	121	113	116	123	210	326	356	217	143	114	115	107
17	125	115	115	133	195	326	403	217	139	115	114	109
18	106	112	108	210	512	310	472	210	136	114	114	115
19	120	129	113	520	973	318	1,280	210	178	113	114	108
20	118	113	120	357	350	302	1,740	202	155	109	106	106
21	110	116	115	202	270	302	798	199	142	108	118	103
22	118	126	118	168	232	302	528	194	131	120	114	103
23	108	111	117	149	217	302	443	192	133	109	109	108
24	117	117	126	149	210	310	400	196	130	111	108	103
25	118	116	117	149	191	681	384	201	124	120	108	110
26	111	127	117	211	191	882	366	202	131	231	106	108
27	133	143	124	488	184	484	350	198	125	440	115	105
28	138	142	121	1,120	175	334	334	210	121	268	110	110
29	108	111	132	560		310	318	198	129	800	112	114
30	121	90	147	342		286	310	189	118	374	104	378
31	125		147	390		278		184		171	107	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	149	106	122	7,500
November	143	90	117	6,980
December	180	86	120	7,360
January	1,120	120	242	14,300
February	1,290	175	348	19,300
March	2,910	278	536	35,000
April	2,450	247	603	35,900
May	318	184	235	14,400
June	178	118	146	8,690
July	800	108	168	10,300
August	154	104	120	7,360
September	378	102	119	7,080
The year	2,910	86	239	173,000

## Blanco River at Wimberley, Tex.

Location.- Water-stage recorder 800 feet below mouth of Cypress Creek and a quarter of a mile south of Wimberley, Hays County.

Drainage area.- 378 square miles.

Records available.- August 1924 to September 1928, June 1928 to September 1934.

Extremes.- Maximum discharge during year, 8,720 second-feet Apr. 19 (gage height, 8.50 feet); minimum, 3.5 second-feet Sept. 24-27 (gage height, 0.20 foot).  
1924-28, 1928-34: Maximum discharge, by slope-area method, 113,000 second-feet May 28, 1929 (gage height, 31.10 feet); minimum, that of Sept. 24-27, 1934.

Remarks.- Records excellent. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	14	11	14	126	1,080	74	115	44	20	30	12
2	14	14	11	14	84	393	70	123	42	17	29	12
3	13	14	11	24	70	192	68	118	42	17	27	11
4	12	14	11	20	59	147	65	104	42	17	24	11
5	12	12	10	15	52	120	139	96	40	21	23	11
6	12	13	11	14	46	101	1,150	91	36	16	20	11
7	13	12	11	14	42	94	294	82	36	16	18	11
8	13	13	11	14	40	84	290	77	34	16	17	11
9	13	13	12	14	146	79	231	72	34	15	17	11
10	13	13	11	14	97	72	199	72	34	14	16	11
11	15	12	11	26	63	68	182	68	30	14	16	12
12	15	10	11	23	50	65	166	68	29	14	16	14
13	14	11	10	20	50	63	153	68	29	14	16	11
14	14	11	10	18	46	61	147	63	27	14	15	16
15	14	11	10	17	42	59	144	61	26	13	15	13
16	14	11	10	18	38	57	153	57	26	13	14	9.2
17	13	10	10	18	38	54	141	57	26	13	14	8.3
18	13	10	11	59	172	52	265	52	27	13	14	7.4
19	14	10	10	40	98	50	2,080	50	24	13	14	6.5
20	14	10	10	32	54	50	399	48	24	13	14	6.5
21	14	10	12	29	48	51	254	46	23	13	13	5.3
22	14	10	12	24	44	50	216	46	23	14	13	4.7
23	14	11	12	24	42	50	196	46	21	15	13	4.1
24	14	11	12	24	42	326	179	48	21	15	13	3.5
25	14	12	13	23	40	126	163	68	21	21	13	3.5
26	14	12	15	90	38	112	150	77	21	141	13	3.5
27	34	12	15	519	38	110	144	57	21	29	13	3.5
28	18	12	16	210	38	94	135	48	20	27	13	4.1
29	15	11	21	94	89	123	44	20	27	13	13	4.1
30	15	11	17	65	82	118	44	20	46	12	12	4.1
31	15		15	84	77		42		36	12		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							34	12	14.5	892		
November							14	10	11.7	696		
December							21	10	12.0	738		
January							519	14	52.1	3,200		
February							172	38	62.2	3,450		
March							1,080	50	133	8,180		
April							2,080	65	270	16,100		
May							123	42	59.0	4,320		
June							44	20	28.8	1,710		
July							141	13	22.2	1,360		
August							30	12	16.5	1,010		
September							16	3.5	8.54	508		
The year							2,080	3.5	57.9	42,000		

## Plum Creek near Luling, Tex.

Location.- Water-stage recorder at highway bridge 2 miles above Southern Pacific Railroad bridge and 3 miles northeast of Luling, Caldwell County. Zero of gage is 328.5 feet above mean sea level.

Drainage area.- 356 square miles.

Records available.- March 1930 to September 1934.

Extremes.- Maximum discharge during year, 2,880 second-feet Mar. 2 (gage height, 14.88 feet); minimum, 0.8 second-foot July 19.  
1930-34: Maximum discharge, 4,270 second-feet June 18, 1930; maximum gage height, 18.83 feet Jan. 5, 1932; minimum discharge, that of July 19, 1934.  
A stage of 22.0 feet has been reached.

Remarks.- Records fair except those estimated Oct. 31 to Dec. 15, Apr. 21 to May 10, which are poor. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4			5.8	489	351	16		3.6	2.0	3.8	1.6
2	3.8			3.8	66	2,080	15		3.1	2.0	3.6	1.5
3	2.9			4.0	34	448	15		3.1	2.0	3.4	1.6
4	2.9			4.7	28	69	15		3.1	2.0	2.9	2.4
5	2.6			3.8	23	64	182		2.9	2.0	2.6	1.8
6	2.6			5.1	22	62	1,190	7.0	2.6	2.0	2.4	1.6
7	2.6			5.8	21	57	1,080		2.3	2.0	2.3	1.5
8	2.6		5.0	4.4	20	40	158		2.1	1.8	2.3	1.8
9	2.4			3.8	349	32	279		1.8	1.6	2.3	1.5
10	2.4			3.6	92	29	69		1.7	1.5	2.1	1.5
11	2.4			18	168	28	31	5.3	1.7	1.5	11	1.5
12	2.4			50	883	27	55	7.4	1.5	1.5	3.1	5.1
13	2.4			30	70	26	28	6.3	1.4	1.5	2.3	2.8
14	2.6			9.3	31	25	16	5.5	1.5	1.4	2.3	2.8
15	2.6			7.1	23	24	14	4.9	1.4	1.4	2.1	2.6
16	2.6		4.9	6.3	20	23	14	4.4	1.6	1.5	2.1	2.8
17	2.6		4.9	9.5	17	23	16	4.4	1.2	1.4	2.3	2.8
18	2.6		4.4	33	297	23	349	4.2	1.4	1.4	2.1	2.3
19	2.4		4.7	474	405	23	755	4.2	1.6	1.2	2.1	2.1
20	2.3		4.7	66	31	22	236	4.2	1.5	1.4	2.1	2.1
21	2.3		4.9	17	21	23		4.2	1.6	1.2	2.1	2.1
22	2.3		5.3	12	18	23		4.0	1.6	1.4	2.1	2.1
23	2.4		5.3	10	17	23		4.0	1.6	1.5	2.3	2.4
24	2.4		6.8	8.6	15	23		6.3	1.6	1.5	2.3	2.1
25	2.4		6.0	8.9	15	185		6.3	1.6	1.4	2.1	2.1
26	2.3		6.0	25	14	436	12	10	1.8	161	2.1	2.1
27	2.8		5.8	455	14	58		7.4	1.8	113	2.3	2.1
28	4.0		5.8	472	13	26		5.5	2.1	8.2	2.1	2.4
29	4.4		7.2	34	21	21		5.1	2.1	615	2.1	2.6
30	5.1		11	16	19	47		2.1	2.1	44	2.1	201
31	3.0		7.4	50		18		4.2		6.8	1.8	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							4.4	2.3	2.75	168		
November									3.9	179		
December							11		3.52	216		
January							474	3.6	59.9	3,680		
February							883	13	115	6,390		
March							2,080	18	140	6,610		
April							1,190		155	9,220		
May									5.89	352		
June							3.6	4.0	1.97	117		
July							615	1.2	31.9	1,960		
August							11	1.8	2.66	164		
September							201	1.5	8.82	525		
The year							2,080	1.2	43.6	31,600		



## Sandies Creek near Westhoff, Tex.

Location.— Water-stage recorder at Westhoff-Cheapside highway bridge 2 miles northeast of Westhoff, DeWitt County.

Drainage area.— 493 square miles.

Records available.— March 1930 to November 1934 (discontinued).

Extremes.— Maximum discharge during period Oct. 1, 1933, to Nov. 9, 1934, 3,640 second-foot Mar. 3 (gage height, 20.10 feet); minimum, 0.2 second-foot July 16-24, 1930-34: Maximum discharge, 5,780 second-foot Apr. 30, 1932 (gage height, 21.79 feet); no flow Aug. 11, 1932. Maximum stage known, about 25.1 feet in 1913 (discharge, about 18,000 second-foot).

Remarks.— Records good except those for low stages, which are poor. Discharge interpolated Oct. 10-27, 1933. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	4.6	2.3	3.5	818	926	4.1	7.4	0.4	0.3	47	0.8
2	7.2	3.0	2.8	3.7	718	2,650	3.6	3.5	.3	.3	20	.8
3	4.8	2.3	2.7	5.0	138	3,450	3.3	2.3	.3	.3	112	.8
4	4.4	2.0	2.6	4.2	41	1,770	3.1	1.8	.3	.3	54	.8
5	4.4	1.8	2.7	4.0	25	230	6.2	2.7	.3	.3	33	.7
6	4.2	1.8	2.7	4.2	18	56	9.9	2.3	.3	.3	13	.7
7	4.0	12	2.5	11	15	26	27	1.8	.3	.3	6.2	.7
8	3.9	14	2.4	8.7	52	17	78	1.5	.3	.3	3.9	.7
9	3.7	46	2.3	8.3	438	13	87	1.4	.3	.3	3.3	.6
10	3.6	15	2.3	5.5	680	10	44	1.3	.4	.3	3.3	.9
11	3.5	6.2	2.3	333	208	8.7	19	1.3	.4	.3	2.6	12
12	3.4	4.1	2.3	652	52	7.7	11	1.2	.4	.3	2.0	65
13	3.4	3.1	2.5	411	30	7.0	7.6	1.0	.4	.3	1.6	34
14	3.3	2.5	2.6	77	24	6.4	5.7	1.0	.3	.3	1.6	5.0
15	3.2	2.3	2.9	26	19	6.1	4.6	.9	.3	.3	1.6	2.4
16	3.1	2.0	2.9	41	15	5.9	4.1	.8	.3	.2	1.6	1.5
17	3.0	2.0	2.8	147	13	5.5	3.7	.8	.3	.2	1.4	1.3
18	2.9	1.9	2.7	192	15	4.8	3.6	.7	.3	.2	1.4	1.2
19	2.9	1.8	2.7	85	28	4.4	173	.6	.3	.2	1.5	1.5
20	2.8	1.6	2.7	24	68	4.2	467	.6	.3	.2	1.4	1.3
21	2.7	1.8	2.5	15	35	4.1	384	.6	.4	.2	1.4	1.2
22	2.6	1.8	2.5	12	20	4.1	59	.6	.3	.2	1.3	1.2
23	2.5	2.1	2.6	9.5	14	3.9	15	.6	.3	.2	1.2	1.8
24	2.4	1.9	2.8	10	12	3.6	7.9	.6	.3	.2	1.0	1.3
25	2.3	1.8	2.9	130	9.9	3.7	4.8	.6	.3	.3	.9	1.1
26	2.2	1.8	2.8	1,040	8.1	3.7	3.4	.6	.4	150	.9	.9
27	2.1	1.8	2.7	1,500	7.6	6.8	2.6	.6	.3	970	.9	.8
28	2.0	1.8	2.7	1,230	7.4	12	2.2	.6	.3	1,870	1.1	.9
29	3.8	1.8	2.8	372		7.2	2.0	.5	.3	797	.9	.6
30	14	2.0	3.2	53		5.5	8.7	.4	.3	264	.7	.9
31	6.3		3.3	340		4.6		.4		186	.7	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							14	2.0	4.12	253		
November							46	1.8	4.96	295		
December							3.3		2.66	164		
January							1,500	3.5	219	13,500		
February							818	7.4	126	7,000		
March							3,450	3.6	299	18,400		
April							467	2.0	48.5	2,890		
May							7.4	.4	1.32	81		
June							.4	.3	.32	19		
July							1,870	.2	137	8,420		
August							112	.7	10.4	540		
September							63	.6	4.72	281		
The year							3,450	.2	71.7	51,900		

## Sandies Creek near Westhoff, Tex.

(Continued)

## Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	0.3										
2	2.4	28										
3	2.3	252										
4	1.8	84										
5	1.5	6.2										
6	1.2	6.8										
7	1.0	5.5										
8	.9	2.8										
9	.9	1.6										
10	.9											
11	.8											
12	.7											
13	.7											
14	.7											
15	.7											
16	.7											
17	.7											
18	2.5											
19	3.2											
20	5.6											
21	6.1											
22	2.3											
23	1.4											
24	.9											
25	.7											
26	.5											
27	.4											
28	.4											
29	.4											
30	.4											
31	.4											
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							6.1	0.4	1.44	88		
November 1-9							252	.3	43.0	768		
December												
January												
February												
March												
April												
May												
June												
July												
August												
September												
The period										856		

## San Antonio River near Falls City, Tex.

Location.- Water-stage recorder at highway bridge half a mile above Scared Dog Creek and 3.4 miles southwest of Falls City, Karnes County.

Drainage area.- 2,067 square miles.

Records available.- April 1925 to September 1934.

Extremes.- Maximum discharge during year, 3,400 second-feet Apr. 7 (gage height, 5.35 feet); minimum, 68 second-feet July 16, 17, 22, 23, Aug. 28-31, Sept. 2-4.  
1925-34: Maximum discharge, 10,100 second-feet May 29, 1929 (gage height, 11.15 feet); minimum, 36 second-feet May 11, 12, 1928 (gage height, 0.97 foot).  
Maximum stage known, 28.36 feet in 1913.

Remarks.- Records good. Slight regulation caused by operation of Medina Dam. Medina Canal diverts above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	112	108	136	376	213	136	169	98	81	183	71
2	119	112	108	130	436	896	140	169	98	81	133	68
3	116	119	108	133	275	872	144	194	98	81	155	68
4	116	116	108	136	236	476	144	315	98	85	262	68
5	116	116	112	140	170	338	161	275	95	81	155	71
6	112	112	108	144	155	293	456	182	95	74	122	81
7	112	161	102	144	151	211	2,000	155	95	71	116	74
8	108	122	102	155	148	170	2,020	151	98	74	112	74
9	102	119	102	140	246	163	518	148	98	74	105	71
10	105	119	102	133	151	163	275	144	98	71	102	71
11	105	116	102	249	144	159	223	136	91	78	95	88
12	108	119	102	235	144	155	198	136	88	78	95	182
13	108	119	102	369	148	151	203	144	81	74	102	133
14	108	116	102	310	148	148	178	144	91	75	88	98
15	112	112	102	178	144	148	170	144	88	71	98	241
16	112	116	102	222	140	144	167	182	91	68	95	155
17	112	116	102	172	140	144	178	144	85	68	91	133
18	112	116	102	194	172	140	324	133	88	71	88	95
19	112	116	105	335	245	140	356	133	85	71	85	85
20	112	112	102	346	203	140	1,740	126	88	71	81	85
21	112	108	105	203	148	136	1,930	119	88	71	78	85
22	112	105	108	174	136	133	591	119	85	68	78	85
23	112	105	112	151	136	133	361	119	88	68	78	85
24	112	105	112	167	133	136	240	116	81	71	78	85
25	112	105	108	1,080	130	136	211	116	85	81	74	78
26	112	102	108	742	126	133	211	122	85	238	68	74
27	130	102	105	356	126	140	198	122	85	808	68	74
28	126	105	108	519	122	144	182	116	85	698	68	78
29	126	112	116	328		136	190	112	85	278	68	78
30	112	112	126	249		136	178	112	85	734	68	267
31	112		133	582		136		108		496	68	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							130	102	113	6,950		
November							161	102	114	6,780		
December							133	102	107	6,880		
January							1,080	130	276	17,000		
February							436	122	180	10,000		
March							896	133	218	13,400		
April							2,020	136	467	27,800		
May							315	108	148	9,100		
June							98	81	90.0	5,360		
July							808	68	165	10,100		
August							262	68	102	6,270		
September							297	68	100	5,950		
The year							2,020	68	173	125,000		

## Medina River near Pipe Creek, Tex.

Location.- Water-stage recorder  $3\frac{1}{2}$  miles above mouth of Pipe Creek and 4 miles south-west of Pipe Creek post office, Bandera County.

Drainage area.- 412 square miles.

Records available.- December 1922 to September 1934.

Average discharge.- 11 years (1923-34), 103 second-feet.

Extremes.- Maximum discharge during year, 1,520 second-foot Apr. 19 (gage height, 4.75 feet); minimum, 0.3 second-foot Sept. 14, 15 (gage height, 0.57 foot).

1922-34: Maximum discharge, determined by slope-area method, 64,000 second-feet July 1, 1932 (gage height, 33.8 feet, from flood marks); minimum, that of Sept. 14, 15, 1934.

Maximum stage known, about 42 feet in 1919.

Remarks.- Low-stage records fair, others poor. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	17	16	27	45	64	29	*55	8.5	4.9	*9.9	2.5
2	16	16	14	24	33	31	29	*52	7.3	4.9	*8.5	2.5
3	16	*16	14	29	33	23	29	*48	7.3	4.9	8.5	2.5
4	16	17	14	43	31	21	29	*45	7.3	4.9	8.5	2.5
5	14	16	16	36	31	19	56	*42	7.3	4.9	8.5	2.5
6	14	16	17	33	31	17	35	*39	7.3	4.9	7.3	2.5
7	11	16	17	29	31	17	48	*35	6.1	3.7	7.3	.8
8	9.9	*16	17	27	31	14	57	*32	6.1	2.5	7.3	1.6
9	9.9	*16	21	*29	31	14	54	*29	6.1	2.5	6.1	2.5
10	8.5	*16	21	*29	31	14	46	*26	6.1	2.5	3.7	2.5
11	9.9	*16	21	*31	40	14	48	*23	4.9	2.5	3.7	2.5
12	11	*16	19	*31	56	14	48	*19	3.7	2.5	3.7	2.5
13	11	*16	19	31	40	14	45	*16	3.7	2.5	4.9	1.6
14	13	*16	16	31	38	14	40	16	3.7	2.5	4.9	1.6
15	13	*16	23	31	35	14	40	16	3.7	2.5	4.9	.8
16	13	*16	24	31	33	14	40	16	3.7	2.5	4.9	1.6
17	13	*16	24	29	31	14	40	14	2.5	1.6	3.7	1.6
18	13	14	24	38	50	14	74	13	.8	1.6	3.7	1.6
19	13	14	24	38	47	16	} *292	11	2.5	1.6	2.5	1.6
20	11	13	*23	35	*43	17		11	3.7	2.5	2.5	1.6
21	13	14	*23	33	*40	19	87	11	6.1	2.5	2.5	1.6
22	13	14	*21	35	*38	19	*84	9.9	6.1	2.5	2.5	2.5
23	11	14	19	35	*35	21	*81	9.9	*5.9	.8	2.5	1.6
24	13	*14	19	40	*33	19	*77	20	*5.8	2.5	*2.5	1.6
25	13	*16	21	35	33	23	*74	30	*5.6	2.5	*2.5	2.5
26	13	17	21	35	23	29	*71	23	*5.4	*295	*2.5	2.5
27	11	17	23	51	21	27	*68	17	*5.2	} *38	*2.5	2.5
28	14	17	23	40	21	29	*64	16	*5.1		*2.5	2.5
29	17	17	23	40	27	27	*61	14	4.9	} *11	*2.5	2.5
30	17	17	*23	40	29	29	*58	13	4.9		2.5	1.6
31	17		24	58		31		13			2.5	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							17	8.5	13.1	806		
November							17	13	15.7	934		
December							24	14	20.1	1,240		
January							58	24	34.6	2,130		
February							56	21	35.2	1,950		
March							64	14	21.0	1,290		
April								29	70.9	4,220		
May								9.9	24.0	1,480		
June							8.5	.8	5.24	312		
July							295	.8	15.4	947		
August								2.5	4.60	283		
September							2.5	.8	2.03	121		
The year								.8	21.7	15,700		

\*Estimated.

## Medina River near Riomedina, Tex.

Location.- Water-stage recorder just above Medina Valley Irrigation Co.'s diversion dam 6 miles northwest of Riomedina, Medina County.

Drainage area.- 608 square miles.

Records available.- January 1922 to September 1934.

Average discharge.- 13 years (1921-34), 1.28 second-feet (not including seepage); average seepage discharge, 12 years (1922-34), 24.9 second-feet.

Extremes.- No flow over dam during year.

1922-34: Maximum discharge, about 11,800 second-feet Apr. 21, 1926 (gage height, 5.17 feet); no flow over dam at times.

Remarks.- Yearly seepage record fair; monthly records not sufficiently accurate for publication. Water to irrigate about 5,000 acres is diverted to Medina Canal above gage (see "Medina Canal near Riomedina"). Flow regulated by storage dam 4 miles upstream except when reservoir is full and water flows over spillway. Seepage past diversion dam measured at Haby's crossing 1 mile downstream was 22,400 acre-feet (mean of 7 discharge measurements well distributed throughout year) for year ending Sept. 30, 1934.

## Medina Canal near Riomedina, Tex.

Location.- Water-stage recorder just above upper end of flume 1, a third of a mile below head of canal, and 6 miles north of Riomedina, Medina County.

Records available.- March 1922 to September 1934.

Average discharge.- 11 years, 23.3 second-feet.

Extremes.- Maximum discharge during period Oct. 1, 1933, to May 12, 1934, 73 second-feet Oct. 28 (gage height, 1.69 feet); no flow at times.

1922-34: Maximum stage, 2.40 feet Oct. 17, 1932 (discharge not determined); no flow at times.

Remarks.- Records good. No records May 13 to Sept. 30. Station is above all diversions from canal. Canal diverts from right bank of Medina River for irrigation near Lacoste and Natalia.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	62	48	39	7.8	0	43	32				
2	36	62	42	35	7.3	0	46	28				
3	38	62	43	22	5.9	0	46	19				
4	39	63	43	20	5.9	0	46	19				
5	38	63	42	22	5.7	0	46	18				
6	41	62	39	22	5.5	0	31	18				
7	44	55	38	20	5.5	0	13	19				
8	48	52	38	16	5.7	18	12	23				
9	52	52	36	17	5.5	40	8.2	36				
10	64	52	44	17	6.1	40	0	47				
11	61	52	49	12	10	35	0	48				
12	61	49	50	10	12	0	0	43				
13	61	44	49	10	15	0	17					
14	58	44	49	11	20	0	18					
15	52	44	50	13	24	0	20					
16	48	44	51	13	24	0	29					
17	50	45	52	14	20	10	29					
18	61	46	52	14	14	37	28					
19	61	45	53	13	16	41	27					
20	62	44	54	12	21	51	15					
21	54	44	55	11	16	56	9.5					
22	51	45	56	11	12	63	20					
23	49	49	57	11	23	64	17					
24	52	52	56	13	25	56	13					
25	52	52	56	14	0	40	46					
26	56	52	54	14	0	12	44					
27	66	52	52	14	0	0	32					
28	66	52	51	14	0	0	32					
29	64	52	51	13	0	0	31					
30	63	52	45	11	2.0	31						
31	63		37	8.4		28						
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							68	36	53.7	3,300		
November							63	44	51.5	3,060		
December							57	37	48.2	2,960		
January							39	8.4	15.7	965		
February							25	0	11.2	622		
March							64	0	19.1	1,170		
April							46	0	25.0	1,490		
May 1-12							48	18	29.2	694		
June												
July												
August												
September												
The period										14,300		

## Cibolo Creek near Falls City, Tex.

Location.- Water-stage recorder 200 feet downstream from Cestohowa Bridge, 6 miles above confluence with San Antonio River, and 6 miles northeast of Falls City, Karnes County.

Drainage area.- 831 square miles.

Records available.- November 1930 to September 1934.

Extremes.- Maximum discharge during year, 4,870 second-feet July 27 (gage height, 17.27 feet, from flood marks); minimum, 7.0 second-feet July 21, 22, 1930-34. Maximum discharge, 6,390 second-feet July 30, 1933 (gage height, 21.5 feet, from flood marks); minimum, 6.8 second-feet Oct. 31, Nov. 1, 1931, May 24, 1933.

Remarks.- Records good. No large diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	13	9.5	14	134	283	12	56	9.8	8.6	58	10
2	9.8	12	10	14	154	1,610	12	42	9.8	8.2	45	10
3	9.2	11	10	15	58	293	12	30	9.8	8.2	34	16
4	8.6	13	10	14	31	96	12	37	9.8	8.2	27	17
5	8.6	12	9.8	13	21	46	20	41	9.5	8.2	22	11
6	8.2	11	9.5	19	16	31	91	26	9.5	8.2	20	11
7	8.2	29	9.5	15	13	23	552	20	9.2	8.2	17	10
8	8.2	12	9.5	13	13	17	183	17	9.2	8.2	15	10
9	8.2	11	9.5	12	166	15	85	16	9.2	8.2	14	10
10	8.2	10	10	12	121	13	39	15	8.9	7.9	13	14
11	8.6	10	11	74	38	13	25	15	9.2	8.2	13	13
12	8.9	9.8	11	36	25	13	16	41	9.2	8.6	13	41
13	8.9	9.5	11	16	25	13	14	16	9.5	8.2	12	14
14	9.2	9.2	12	17	23	13	14	15	8.9	7.9	12	17
15	9.2	8.9	12	15	19	13	12	15	8.9	7.6	12	94
16	9.5	8.6	12	283	15	15	12	14	9.2	7.3	12	26
17	9.2	8.6	12	56	13	12	12	28	9.2	7.3	11	17
18	9.2	8.6	12	13	117	12	12	23	8.6	7.3	11	13
19	9.2	8.6	12	14	55	12	478	17	9.2	7.3	11	12
20	9.2	8.2	12	14	56	12	2,230	14	9.5	7.3	11	12
21	9.2	8.6	12	23	27	12	135	12	8.9	7.0	11	12
22	9.2	8.6	12	27	20	12	58	12	8.9	7.0	10	12
23	9.2	8.2	12	19	16	12	56	12	8.6	7.3	10	12
24	9.2	8.2	13	206	15	12	25	11	8.9	7.6	10	11
25	9.2	8.2	13	905	14	12	20	12	8.9	82	10	11
26	9.2	8.2	13	565	14	22	17	11	8.6	3,170	10	11
27	13	8.2	13	59	13	29	15	10	8.6	3,020	11	11
28	62	8.6	12	40	13	17	1,550	10	8.6	434	10	12
29	94	9.2	13	64	14	13	510	9.8	8.2	661	11	12
30	34	9.2	14	56	13	13	75	9.8	9.2	777	9.5	15
31	18		14	325		12		10		115	9.8	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							84	8.2	14.4	885		
November							29	9.2	10.3	813		
December							14	9.5	11.5	707		
January							905	12	95.2	5,650		
February							168	13	44.5	2,470		
March							1,610	12	87.8	5,400		
April							2,230	12	209	12,400		
May							56	9.8	20.0	1,220		
June							9.8	8.2	9.12	543		
July							3,170	7.0	273	16,800		
August							56	9.5	16.0	984		
September							94	10	16.5	982		
The year							3,170	7.0	67.6	48,900		

## Nueces River at Laguna, Tex.

Location.- Water-stage recorder 1 mile northeast of Laguna, Uvalde County.

Drainage area.- 764 square miles.

Records available.- October 1923 to September 1934.

Average discharge.- 11 years, 123 second-feet.

Extremes.- Maximum discharge during year, 1,470 second-feet Apr. 4 (gage height, 6.1 feet, from flood marks); minimum, 8.9 second-feet Sept. 10-14, 22-29.

1923-34: Maximum discharge, about 47,500 second-feet June 15, 1930 (gage height, 20.1 feet); minimum, 8.9 second-feet Sept. 9-11, 1924, and Sept. 10-14, 22-29, 1934.

Floods of 1913 and Sept. 21, 1923, reached a stage of 26.5 feet (discharge, by slope-area method, 74,500 second-feet). Flood of 1903 reached a slightly higher stage.

Remarks.- Records good except those estimated, Dec. 12 to Jan. 29, Apr. 1 to May 16, which are poor. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	24	26		36	38			36	20	14	9.6
2	22	24	26		35	35	41	108	35	20	14	9.3
3	23	24	26		35	34			35	19	15	10
4	22	24	26		35	34	89		34	19	14	9.6
5	22	23	27		35	34			33	18	13	9.3
6	22	23	27		36	34			32	18	13	9.3
7	22	24	27		35	34			31	18	12	9.3
8	22	24	27		36	34			31	18	12	9.3
9	22	23	27		36	34			31	17	12	9.3
10	24	23	27		35	34		55	30	17	12	8.9
11	24	23	27		36	34			29	16	11	8.9
12	24	23			35	34			29	16	10	8.9
13	24	23			35	34			28	16	10	8.9
14	24	23			35	34			27	16	10	8.9
15	24	23		32	35	34			27	15	10	9.6
16	23	23			35	34			26	14	10	9.6
17	23	23			35	34		56	26	14	10	9.6
18	24	23			35	34	42	54	25	14	10	9.6
19	24	24			34	34		53	24	14	10	9.3
20	24	24			34	34		50	24	14	10	9.3
21	24	24	32		34	34		49	23	14	10	9.3
22	24	24			34	34		48	23	14	9.6	8.9
23	24	24			34	34		48	22	14	10	8.9
24	24	24			34	60		45	22	14	9.6	8.9
25	24	24			34	58		44	22	14	9.6	8.9
26	24	24			34	49		43	22	21	9.6	8.9
27	24	24			34	45		42	21	18	12	8.9
28	24	24			34	43		41	22	17	12	8.9
29	24	24				42		40	21	15	10	8.9
30	24	25		36		42		39	20	14	10	9.3
31	24			36		41		38		14	9.6	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							24	22	23.4	1,440		
November							25	23	23.6	1,400		
December									30.1	1,850		
January									32.3	1,990		
February							36	34	34.6	1,930		
March							60	34	37.6	2,310		
April									46.6	2,770		
May									55.8	3,430		
June							36	20	27.0	1,610		
July							21	14	16.2	996		
August							15	9.6	11.1	682		
September							10	8.9	9.21	548		
The year									8.9	29.0		
										21,000		

## Nueces River near Uvalde, Tex.

Location.- Water-stage recorder at Tom Nunn crossing,  $4\frac{1}{2}$  miles (corrected) below Southern Pacific Railroad bridge and 7 miles (corrected) west by south of Uvalde, Uvalde County.

Drainage area.- 1,930 square miles, large part of which is noncontributing at low stages, owing to water entering fault a few miles above gage.

Records available.- October 1927 to September 1934.

Extremes.- Maximum discharge during year, 45 second-feet July 26 (gage height, 0.87 foot); minimum, 4.9 second-feet at times during April, July to September (gage height, 0.62 foot).

1927-34: Maximum discharge, determined by slope-area method, 188,000 second-feet Sept. 1, 1932 (gage height, 23.25 feet); minimum not determined but probably less than 0.3 second-foot.

Maximum stage known, 28.4 feet in December 1913.

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	12	12	11	12	11	6.0	9.8	6.0	6.0	4.9	4.9
2	14	12	12	9.8	12	11	6.0	8.5	6.0	6.0	4.9	4.9
3	14	12	12	9.8	12	11	6.0	7.2	6.0	6.0	4.9	4.9
4	14	12	12	11	12	11	6.0	7.2	6.0	6.0	4.9	4.9
5	14	12	12	11	12	11	4.9	8.5	6.0	6.0	4.9	4.9
6	14	12	12	11	12	11	4.9	8.5	6.0	6.0	4.9	4.9
7	14	12	12	8.5	12	11	4.9	8.5	6.0	6.0	4.9	4.9
8	14	12	12	8.5	12	11	4.9	8.5	6.0	6.0	4.9	4.9
9	14	12	12	8.5	12	11	4.9	8.5	6.0	6.0	4.9	4.9
10	15	12	12	7.2	12	11	4.9	8.5	6.0	6.0	4.9	4.9
11	15	12	11	7.2	12	9.8	6.0	8.5	6.0	6.0	4.9	6.0
12	15	12	11	8.5	11	9.8	6.0	8.5	6.0	6.0	4.9	4.9
13	15	12	11	8.5	11	9.8	6.0	8.5	6.0	6.0	4.9	4.9
14	15	12	11	7.2	11	9.8	6.0	8.5	6.0	7.2	4.9	4.9
15	15	12	11	7.2	11	9.8	4.9	7.2	6.0	7.2	4.9	6.0
16	15	12	11	7.2	11	9.8	6.0	7.2	6.0	7.2	6.0	6.0
17	15	12	9.8	7.2	11	9.8	4.9	7.2	6.0	7.2	6.0	6.0
18	14	12	7.2	7.2	11	11	4.9	7.2	6.0	7.2	6.0	6.0
19	14	12	7.2	7.2	11	10	4.9	7.2	6.0	7.2	6.0	4.9
20	14	12	7.2	7.2	11	10	4.9	6.0	6.0	7.2	6.0	4.9
21	14	12	6.5	7.2	11	9.8	6.0	6.0	6.0	6.0	6.0	4.9
22	14	12	8.5	7.2	11	9.0	6.0	6.0	6.0	7.2	6.0	6.0
23	14	12	9.8	7.2	11	8.5	6.0	6.0	6.0	8.5	6.0	6.0
24	12	12	9.8	8.5	11	8.5	6.0	7.2	6.0	6.0	6.0	6.0
25	12	12	9.8	8.5	11	7.2	6.0	6.0	6.0	7.2	6.0	6.0
26	12	12	9.8	9.8	11	7.2	6.0	6.0	6.0	14	6.0	6.0
27	12	12	9.8	9.8	11	7.2	6.0	6.0	6.0	6.0	6.0	6.0
28	12	12	11	9.8	11	6.0	6.0	6.0	6.0	4.9	6.0	4.9
29	12	12	12	9.8		4.9	6.0	6.0	6.0	4.9	6.0	4.9
30	12	12	12	11		4.9	6.0	6.0	6.0	4.9	6.0	4.9
31	12	12	12	12		4.9		6.0		4.9	6.0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							15	12	13.8	848		
November							12	12	12.0	714		
December							12	7.2	10.7	658		
January							12	7.2	8.76	559		
February							12	11.4	11.4	635		
March							11	4.9	9.28	571		
April							6.0	4.9	5.60	333		
May							9.8	6.0	7.32	450		
June							6.0	6.0	6.00	357		
July							14	4.9	6.55	403		
August							6.0	4.9	5.47	336		
September							6.0	4.9	5.30	316		
The year							15	4.9	8.50	6,160		



## Nueces River at Cotulla, Tex.

Location.- Staff gage 100 feet upstream from Farmer Dam, half a mile below International-Great Northern Railroad bridge, and 1.9 miles from post office at Cotulla, LaSalle County. Zero of gage is 376.36 feet above mean sea level.

Drainage area.- 5,260 square miles, large part of which is noncontributing at low stages, owing to water entering a fault near Uvalde.

Records available.- October 1923 to September 1934.

Average discharge.- 11 years, 277 second-feet.

Extremes.- Maximum discharge recorded during year, 2,140 second-feet Sept. 18 (gage height, 2.66 feet); no flow at times.  
1923-34: Maximum discharge, about 49,500 second-feet June 3, 1925; maximum gage height, 16.05 feet, from flood mark, Sept. 7, 1932; no flow at times.

Remarks.- Records of daily discharge not sufficiently accurate for publication. Monthly records fair. Most of low-water flow is diverted by pumping above station. Low-water flow partly regulated by storage reservoirs above station.

Discharge, in second-feet, 1933-34

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	308	0	24.8	1,520
November	2.6	0	.57	34
December	0	0	0	0
January	116	0	13.0	799
February	96	1.5	14.3	794
March	1.4	0	.32	20
April	1,090	0	140	8,330
May	650	2.2	105	8,460
June	1,840	0	152	9,040
July	87	0	3.84	236
August	81	0	8.01	493
September	1,960	0	209	12,400
The year	1,960	0	55.4	40,100

## Nueces River near Three Rivers, Tex.

Location.- Water-stage recorder 100 feet below San Antonio, Uvalde & Gulf Railroad bridge, half a mile below Frio River, and 2 miles southeast of Three Rivers, Live Oak County. Zero of gage is 101.08 feet above mean sea level.

Drainage area.- 15,800 square miles, part of which is noncontributing at low stages, owing to water entering faults near Uvalde.

Records available.- July 1915 to September 1934.

Average discharge.- 17 years (1915-18, 1920-34), 627 second-feet.

Extremes.- Maximum discharge during year, 5,730 second-feet Jan. 17 (gage height, 22.35 feet); no flow July 1-28.

1915-34: Maximum discharge, about 85,000 second-feet Sept. 18, 1919 (gage height, 46.0 feet); no flow at times.

Remarks.- Records good. Discharge partly estimated July 27. About 10,000 acres irrigates above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	4.6	4.3	9.9	5,130	117	12	114	32	0	2,260	80
2	42	4.1	4.8	10	2,640	1,120	12	350	18	0	1,940	17
3	33	5.5	5.0	12	640	1,580	12	528	12	0	1,720	109
4	28	115	4.0	12	516	325	11	307	395	0	1,560	399
5	19	80	5.0	12	329	94	10	128	202	0	1,640	283
6	17	32	3.9	424	192	53	911	124	117	0	1,560	60
7	76	24	3.9	339	142	41	3,520	184	38	0	1,260	26
8	84	70	4.3	229	156	33	3,290	98	82	0	1,260	10
9	87	73	4.5	100	162	28	2,060	139	150	0	1,370	6.2
10	50	34	4.6	40	124	26	1,140	252	328	0	964	6.0
11	30	21	5.2	932	106	24	917	345	505	0	148	135
12	18	13	6.2	2,700	102	24	561	449	620	0	64	346
13	13	11	6.2	1,720	84	24	699	455	645	0	39	47
14	10	11	6.0	548	63	23	781	229	219	0	23	36
15	26	9.0	5.7	505	50	21	627	120	73	0	18	23
16	17	7.4	6.0	975	46	19	860	82	40	0	12	20
17	42	6.7	6.0	5,220	42	18	1,540	57	26	0	9.3	26
18	212	6.0	5.2	5,340	39	17	1,180	41	15	0	6.7	50
19	318	5.5	5.5	3,520	49	15	316	32	9.0	0	4.8	471
20	318	5.7	6.2	2,140	43	14	154	23	5.2	0	3.6	712
21	176	5.5	5.2	1,750	37	14	94	46	3.2	0	2.6	850
22	90	4.8	5.2	1,640	33	14	80	32	2.2	0	1.9	922
23	120	4.6	6.7	1,800	32	15	60	17	1.5	0	1.5	804
24	78	4.3	7.2	3,500	30	14	46	9.3	1.1	0	1.2	781
25	39	4.1	7.4	2,300	29	14	49	6.7	.8	0	1.2	950
26	27	3.7	7.4	1,780	27	14	100	28	.6	0	1.1	394
27	17	4.1	6.9	1,380	25	13	61	54	.5	2,650	.8	126
28	12	4.3	6.7	620	25	13	47	16	.3	3,560	.7	130
29	8.6	4.6	6.9	362		13	55	8.0	.2	3,720	.6	41
30	6.7	4.5	7.4	206		13	82	72	.1	3,780	.6	176
31	5.5		8.6	2,260		13		59		5,130	.5	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						318	5.5	67.6	4,160			
November						115	3.7	19.4	1,150			
December						5,340	8.6	3.9	355			
January						5,340	9.9	1,370	84,200			
February						5,130	25	399	21,600			
March						1,580	13	121	7,440			
April						3,520	10	647	38,500			
May						528	6.7	141	8,670			
June						643	.1	118	7,020			
July						3,780		543	33,400			
August						2,260	.5	612	31,500			
September						922	6.0	265	15,800			
The year						5,340	0	350	254,000			

## Nueces River at Calallen, Tex.

Location.- Staff gage at old pump house for City of Corpus Christi, half a mile north-west of Calallen, Nueces County, and half a mile above tidewater and breakwater dam.

Drainage area.- 16,920 square miles.

Records available.- August 1915 to September 1934; records of discharge only from 1915 to 1918.

Extremes.- Maximum recorded stage during year, 7.60 feet Jan. 21; minimum stage, 2.20 feet July 24, 25.

1915-34: During September 1919 the river reached a stage of about 12 feet as determined from flood marks on gage. This stage probably exceeds any that occurred for many years prior to establishment of this station. No flow Aug. 23-29, 1918.

Remarks.- Discharge not computed. Gage-height record furnished by the City of Corpus Christi.

Gage height, in feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.92	3.52	3.00	3.35	4.68	3.68	3.65	3.80	3.25	3.35	6.98	3.35
2	4.02	3.55	3.10	3.25	5.90	3.70	3.65	3.72	3.25	3.32	6.86	3.38
3	4.00	3.62	3.30	3.40	7.02	3.80	3.62	3.68	3.55	3.32	6.52	3.48
4	3.92	3.72	3.32	3.50	7.20	4.98	3.55	3.82	3.42	3.25	5.88	3.40
5	3.80	3.62	3.30	3.50	5.48	5.35	3.62	4.10	3.32	3.22	5.70	3.22
6	3.75	3.58	3.22	3.45	4.52	4.72	3.65	4.08	3.58	3.12	4.90	3.38
7	3.72	3.68	2.98	3.42	4.20	4.18	3.65	3.80	3.80	3.02	4.68	3.18
8	3.72	3.80	2.75	3.55	3.92	3.95	5.28	3.65	3.78	2.98	5.50	3.06
9	3.70	3.62	2.62	4.30	3.98	3.85	6.65	3.70	3.65	2.95	4.58	3.05
10	3.78	3.60	2.65	4.22	3.95	3.80	7.32	3.72	3.58	3.02	5.55	3.35
11	3.88	3.60	2.72	4.05	3.98	3.75	6.68	3.65	3.48	3.20	4.85	3.68
12	3.90	3.80	2.65	3.88	3.95	3.75	5.72	3.78	3.82	3.32	4.50	3.60
13	3.82	3.72	2.68	4.80	3.90	3.70	5.08	3.98	4.20	3.30	3.70	4.10
14	3.78	3.60	2.70	5.65	3.85	3.65	4.70	4.12	4.30	3.12	3.58	4.10
15	3.70	3.55	2.68	5.95	3.85	3.70	4.68	4.12	4.35	3.00	3.22	3.68
16	3.70	3.52	2.68	5.42	3.85	3.65	4.82	4.02	4.08	3.00	3.20	4.18
17	3.65	3.48	2.90	4.88	3.78	3.68	4.88	3.62	3.80	2.90	3.20	4.18
18	3.58	3.55	3.18	5.72	3.78	3.70	5.35	3.68	3.58	2.88	3.20	3.65
19	3.62	3.60	3.12	6.50	3.72	3.62	6.18	3.62	3.45	2.80	3.22	3.30
20	3.60	3.50	3.05	7.28	3.70	3.62	6.25	3.60	3.28	2.72	3.08	3.15
21	4.15	3.48	3.00	7.60	3.70	3.60	4.88	3.52	3.20	2.62	3.02	3.08
22	4.25	3.38	2.98	7.18	3.70	3.60	4.25	3.42	2.98	2.52	3.00	3.52
23	4.18	3.18	2.98	6.28	3.70	3.62	4.08	3.40	2.70	2.48	3.00	4.12
24	3.98	2.88	2.95	5.70	3.65	3.62	3.92	3.40	2.92	2.32	3.12	4.32
25	3.80	2.58	3.28	5.80	3.70	3.68	3.85	3.48	3.32	2.28	3.30	4.18
26	3.85	2.58	3.30	6.42	3.60	3.68	3.78	3.48	3.38	2.85	3.28	4.40
27	3.80	2.80	3.20	6.70	3.62	3.70	3.75	3.40	3.40	2.98	3.22	4.72
28	3.72	2.92	3.10	6.20	3.65	3.72	3.35	3.40	3.08	3.08	3.08	4.40
29	3.70	2.98	3.08	5.65	3.65	3.65	3.65	3.20	3.38	3.22	2.95	4.22
30	3.62	3.05	3.15	4.85	3.62	3.92	3.28	3.35	3.35	5.22	2.65	3.72
31	3.52		3.22	4.50		3.65		3.35		6.48	2.88	

## Frio River at Concan, Tex.

Location.- Water-stage recorder half a mile below Concan post office, Uvalde County.

Drainage area.- 485 square miles.

Records available.- October 1923 to September 1934.

Extremes.- Maximum discharge during year, 2,020 second-feet Apr. 4 (gage height, 4.75 feet); minimum, 9.7 second-feet Sept. 15-30.  
1923-34: Maximum discharge, by slope-area method, 162,000 second-feet July 1, 1932 (gage height, 34.44 feet); minimum, 8.1 second-feet Aug. 2, 3, 1928.

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, 1935-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	34	34	36	41	43	41	48	34	18	19	14
2	34	36	36	36	41	41	41	378	32	18	18	13
3	34	37	36	41	41	41	39	113	32	19	23	12
4	34	36	37	41	41	37	173	84	30	18	24	12
5	30	36	37	41	41	37	143	75	27	18	23	12
6	30	36	36	43	41	37	55	69	27	18	22	12
7	30	36	36	41	41	37	52	66	26	17	20	12
8	30	36	34	41	41	36	52	64	26	17	19	12
9	30	36	34	41	41	36	50	61	26	16	18	12
10	34	36	34	41	39	36	50	61	26	16	17	12
11	39	36	36	45	39	36	46	58	26	16	16	12
12	34	34	34	45	39	36	43	58	26	16	16	12
13	34	34	34	43	39	36	43	58	24	16	14	12
14	30	32	34	41	39	36	43	58	23	16	14	11
15	32	34	36	41	39	36	43	55	23	16	14	9.7
16	32	34	36	41	37	36	45	52	23	16	13	9.7
17	32	34	36	45	37	36	55	52	23	16	13	9.7
18	32	34	36	55	39	34	50	52	22	14	13	9.7
19	32	36	36	48	37	34	221	52	22	14	13	9.7
20	32	36	36	45	37	34	91	50	22	14	13	9.7
21	32	36	36	45	37	34	66	50	22	13	13	9.7
22	32	36	36	45	37	34	61	48	20	13	13	9.7
23	32	34	36	43	37	34	58	48	19	14	12	9.7
24	32	34	36	43	37	39	52	48	18	14	12	9.7
25	32	34	34	43	37	61	52	46	18	14	12	9.7
26	32	34	34	43	37	43	52	45	18	27	12	9.7
27	32	32	36	43	37	41	50	43	18	22	12	9.7
28	32	34	36	43	37	41	48	43	18	22	13	9.7
29	32	32	37	41	41	49	41	18	34	16	16	9.7
30	32	32	37	39	41	41	48	41	18	23	19	9.7
31	34		37	41		41		37		22	16	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							39	30	32.4	1,990		
November							37	32	34.7	2,060		
December							37	34	35.6	2,190		
January							55	36	42.6	2,620		
February							41	37	38.8	2,150		
March							61	34	38.2	2,350		
April							221	39	63.8	3,800		
May							378	37	66.2	4,070		
June							34	18	23.6	1,400		
July							34	13	17.6	1,080		
August							24	12	15.9	978		
September							14	9.7	10.8	643		
The year							378	9.7	35.0	25,300		

## Frio River near Derby, Tex.

Location.- Water-stage recorder at International-Great Northern Railroad bridge 900 feet below mouth of Leona River and 4 miles south of Derby, Frio County. Zero of gage is 449.3 feet above mean sea level.

Drainage area.- 3,493 square miles, large part of which is noncontributing at low stages, owing to water entering fault a few miles below Concan.

Records available.- August 1915 to September 1934.

Average discharge.- 19 years, 150 second-feet.

Extremes.- Maximum discharge during year, 755 second-feet Apr. 6 (gage height, 2.77 feet); no flow at times.

1915-34: Maximum discharge, determined by slope-area method, 230,000 second-feet, July 4, 1932 (gage height, 29.45 feet, from flood marks); no flow at times.

Remarks.- Records good. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.1	7.1	9.5	17	18	14	12	8.7	1.7	0	3.2	0.2
2	7.1	7.9	9.5	18	15	13	13	11	1.7	0	3.2	.2
3	7.1	8.7	8.7	18	16	15	12	12	1.7	0	7.9	.2
4	7.1	8.7	8.7	18	16	14	12	14	1.7	0	.6	.2
5	10	11	8.7	18	15	14	18	24	.6	0	.3	.2
6	8.7	9.5	7.9	19	15	14	399	30	.3	0	.2	0
7	6.4	8.7	7.9	19	15	13	572	17	.3	0	.2	0
8	6.4	7.9	7.9	18	15	12	222	11	.4	0	.2	0
9	6.4	8.7	9.5	20	15	11	203	9.5	.4	0	.2	0
10	6.4	9.5	10	18	15	11	102	7.9	.4	0	.2	0
11	6.4	10	11	21	15	10	49	7.1	.2	0	.2	0
12	7.1	9.5	12	20	15	9.5	26	7.1	.2	0	.2	0
13	6.4	9.5	13	20	15	10	18	6.4	.2	0	.2	0
14	6.4	6.7	13	21	15	10	15	6.4	.1	0	.2	0
15	7.9	8.7	13	22	15	10	14	5.7	0	0	.2	0
16	6.4	8.7	14	22	15	10	12	5.7	0	0	.2	0
17	5.7	8.7	14	23	15	10	12	5.0	0	0	.2	0
18	5.7	8.7	13	24	15	9.5	13	5.0	0	0	.2	0
19	6.4	7.9	13	24	14	9.5	12	3.8	0	0	.2	0
20	6.4	8.7	13	27	14	9.5	12	3.2	0	0	.2	0
21	6.4	8.7	13	24	14	9.5	139	2.7	0	0	.2	0
22	5.7	7.9	14	23	14	9.5	53	2.7	0	0	.2	0
23	6.4	8.7	15	21	14	9.5	25	2.7	0	0	.2	0
24	6.4	7.9	15	22	14	9.5	16	2.7	0	0	.1	0
25	6.4	8.7	16	63	15	10	12	3.2	0	0	.1	0
26	6.4	7.9	16	34	14	10	10	3.2	0	1.6	.1	0
27	6.4	7.9	16	20	13	9.5	10	50	0	1.0	0	0
28	6.4	8.7	16	20	14	9.5	10	12	0	3.5	0	0
29	6.4	8.7	16	17	9.5	9.5	9.5	5.7	0	5.7	0	0
30	6.4	8.7	16	14	10	10	8.7	4.4	0	6.7	0	3.2
31	7.1	16	19	11	11	11	3.2	3.2	0	9.5	0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							10	5.7	6.71	413		
November							11	7.1	8.69	517		
December							16	7.9	12.5	769		
January							63	14	22.1	1,360		
February							18	13	14.8	822		
March							14	9.5	10.8	664		
April							572	8.7	68.0	4,050		
May							50	2.7	9.45	581		
June							1.7	0	.33	20		
July							9.5	0	.90	55		
August							7.9	0	.62	38		
September							3.2	0	.14	8.3		
The year							572	0	12.8	9,300		

## Frio River at Calliham, Tex.

Location.- Water-stage recorder at Calliham-Whitsett highway bridge half a mile below mouth of San Miguel Creek and 1 mile north of Calliham, McMullen County. Zero of gage is 153.47 feet above mean sea level.

Drainage area.- 5,448 square miles, a large part of which is noncontributing at low stages, owing to water entering a fault below Concan.

Records available.- October 1924 to April 1926, April 1932 to September 1934.

Extremes.- Maximum discharge during year, 3,860 second-feet Apr. 7 (gage height, 16.85 feet); no flow at times.

1924-26, 1932-34: Maximum discharge, determined by slope-area method, 109,000 second-feet July 6, 1932 (gage height, 39.20 feet); no flow at times.

Remarks.- Low-stage records good, others poor. Discharge estimated June 15-29. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	3.8	5.5	10	1,200	37	9.6	21	3.4	0	138	0
2	4.0	4.3	5.5	10	502	287	9.6	28	3.6	0	69	0
3	3.6	6.6	6.2	10	198	177	9.1	242	305	0	39	19
4	3.4	10	5.8	10	109	48	9.1	63	130	0	86	190
5	3.1	5.5	5.5	10	70	29	6.7	61	205	0	226	61
6	2.7	3.6	5.5	46	47	25	578	52	52	0	151	19
7	2.2	4.3	5.5	82	35	21	3,250	29	21	0	94	7.8
8	2.2	7.5	5.5	30	29	18	977	23	12	0	46	7.1
9	2.4	6.5	5.8	17	26	16	84	18	6.8	0	26	8.2
10	3.8	4.8	5.8	16	24	16	770	18	8.2	0	16	4.5
11	4.8	4.5	6.8	513	27	16	518	26	6.2	0	11	25
12	3.1	7.8	7.1	994	30	16	260	21	4.0	0	7.5	14
13	2.4	9.1	7.1	336	24	16	175	15	2.7	0	5.2	2.4
14	2.9	7.5	6.5	107	19	14	118	12	1.7	0	3.8	1.4
15	4.5	6.8	6.5	53	19	13	80	9.1		0	2.7	1.0
16	4.8	5.8	6.5	430	18	13	52	7.1		0	2.1	.8
17	3.8	5.8	7.1	1,290	18	12	749	5.8		0	1.7	.3
18	3.6	6.2	7.8	135	18	12	128	5.2		0	1.4	.2
19	4.5	6.5	6.5	98	17	11	56	4.0		0	1.0	0
20	7.8	6.5	6.5	90	16	11	37	3.4		0	.8	0
21	7.5	6.8	7.8	50	16	11	36	3.1	1.0	0	.7	0
22	6.5	7.1	7.8	33	16	11	34	2.9		0	.4	0
23	8.2	7.1	8.2	25	16	11	24	2.2		0	.3	0
24	8.2	6.5	9.1	250	16	11	19	1.9		0	.1	0
25	4.5	6.5	8.2	112	16	11	189	2.1		0	0	0
26	4.0	6.5	7.8	249	15	10	63	3.4		762	0	0
27	3.8	6.5	7.8	134	14	9.6	40	7.8		2,100	0	3.3
28	3.6	6.5	7.8	70	14	9.1	28	3.4		1,940	0	3.4
29	3.6	6.5	7.8	56		9.1	68	1.9		1,540	0	.8
30	3.6	6.5	8.7	56		9.1	33	1.6	0	1,270	0	402
31	3.6		9.6	1,190		9.6		3.8		1,060	0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							6.2	2.2	4.23	260		
November							10	3.6	6.54	377		
December							9.6	5.5	6.95	427		
January							1,290	10	210	12,900		
February							1,200	14	91.8	5,100		
March							287	9.1	29.7	1,830		
April							3,250	8.7	281	16,700		
May							242	1.6	22.5	1,380		
June							305	0	25.9	1,540		
July							2,100	0	280	17,200		
August							226	0	30.0	1,840		
September							402	0	25.7	1,530		
The year							3,250	0	84.4	61,100		

## Sabinal River seepage investigation

During the investigation the river was at a constant stage, and measurements represent natural conditions.

Discharge measurements of Sabinal River  
to determine seepage from 0.8 mile below Utopia, Tex., to 18.8 miles below Utopia, Tex., 1934

Date	Location	Distance in miles from initial point	Discharge in second-feet		
			Measured	Gain or loss in section	Total gain or loss above point of measurement
Jan. 10	0.8 mile below Utopia, Tex.	0.0	4.98		
10	7.8 miles below Utopia, Tex.	7.0	7.82	+2.84	+2.84
10	18.3 miles below Utopia, Tex.	17.5	6.46	-1.36	+1.48
10	18.8 miles below Utopia, Tex.	18.0	5.90	-.56	+.92

## Leona River seepage investigation

During the investigation the river was at a constant stage, and measurements represent natural conditions.

Discharge measurements of Leona River near Uvalde, Tex., to determine seepage June 21, 22, 1934

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Diver-sion	Gain or loss in section	Total gain or loss
June 21	Leona River	Highway bridge 1.7 miles southeast of Uvalde	0	6.8	0		
June 21	Leona Valley Livestock & Irrigation Co. Canal	At head of canal	2.0		0		
June 21	Leona River	Below Leona Valley Livestock & Irrigation Co. Dam	2.1	14.4		+7.6	+7.6
June 21	.....do.....	Crossing at White's place above Kincaid Dam	6.6	18.8		+4.4	+12.0
June 21	Kincaid Canal	$\frac{1}{2}$ mile below head	8.2		3.7		
June 21	Leona River	$\frac{1}{2}$ mile below Kincaid Dam	8.4	7.7		-7.4	+4.6
June 22	.....do.....	5 miles below Kincaid Dam	13.0	12.9		+5.2	+9.8
June 21	.....do.....	Hackberry crossing	17.0	8.9		-4.0	+5.8
June 22	Batesville Canal	Head of canal, above Batesville	20.1		0		
June 22	Leona River	Below Batesville Dam	20.1	5.3		-3.6	+2.2
June 22	.....do.....	3 miles below Batesville	23.3	2.4		-2.9	-0.7
June 22	.....do.....	Ottenhouse ranch	26.4	1.6		-.8	-1.5
June 22	.....do.....	Rogers ranch	34.6	0		-1.6	-3.1

Note.- There was no inflow from tributaries during seepage investigation.

## Atascosa River at Whitsett, Tex.

Location.- Water-stage recorder 0.9 mile west of Whitsett, Live Oak County, and 4 miles below mouth of La Parita Creek.

Drainage area.- 1,171 square miles.

Records available.- September 1924 to May 1926, May 1932 to September 1934.

Extremes.- Maximum discharge during year, 2,760 second-feet Feb. 1 (gage height, 19.63 feet); no flow at times.  
1924-26, 1932-34: Maximum discharge, about 2,760 second-feet July 12, 1925 (gage height, 17.3 feet, old gage datum); no flow at times.  
Flood of Apr. 29, 30, 1932, reached a stage of 20 feet, present gage datum (discharge, 2,850 second-feet). Maximum stage known, 32.1 feet (present datum) in April 1922.

Remarks.- Records good except those estimated or partly estimated Oct. 1-8, Apr. 18 to June 8, which are fair. No diversions above station.

## Discharge, in second-feet, 1935-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0.8	2.5	3.8	2,300	166	6.6			0	16	28
2		.7	2.1	4.0	224	1,070	6.2			0	7.7	2.5
3		64	1.8	3.8	61	537	5.9			0	9.9	87
4	0.4	103	2.0	3.6	35	69	6.2			0	8.5	165
5		19	2.0	3.6	27	33	7.0		5.7	0	2.3	28
6		7.7	2.0	39	22	23	480			0	1.2	3.8
7		5.1	2.0	26	19	19	1,200			0	.3	1.4
8	.5	107	2.0	27	17	16	897			0	0	.7
9	.4	28	1.8	11	16	13	570		.3	0	0	.2
10	.4	12	2.0	7.0	18	12	86		.1	0	0	0
11	.5	6.2	2.0	262	26	12	43		0	0	0	0
12	.6	4.6	2.0	596	19	10	52		0	0	0	3.7
13	.5	3.3	2.0	120	14	10	37		0	0	0	6.2
14	.6	2.5	2.1	29	12	10	25		0	0	0	1.6
15	.6	2.1	2.3	16	12	8.9	19		0	0	0	5.5
16	.7	2.0	2.3	590	12	8.5	180		0	0	0	23
17	.7	1.7	2.3	692	12	8.5	597		0	0	0	14
18	.7	1.6	1.8	205	23	7.7	290		0	0	0	3.3
19	.7	1.6	1.7	96	24	7.3	53		0	0	0	1.5
20	.7	1.5	1.6	42	15	7.7	26		0	0	0	.6
21	.8	1.4	2.0	24	12	8.1	19		0	0	0	.4
22	1.2	1.5	2.5	17	10	7.7	15		0	0	0	.2
23	1.2	1.7	2.3	60	9.2	7.3	12		0	0	0	0
24	1.0	2.1	2.3	1,410	9.6	7.0	12		0	0	0	0
25	.9	2.1	2.3	707	9.2	7.3	11		0	.3	0	0
26	.8	2.0	2.3	1,070	8.1	7.3	10		0	132	0	0
27	.8	1.8	2.1	301	7.7	7.7	8.5		0	501	0	0
28	.8	1.5	2.1	73	8.1	9.1	7.8		0	124	0	0
29	.8	1.6	2.6	35		8.1	29		0	70	0	0
30	.8	2.5	3.0	29		8.1	12		0	164	0	92
31	.8		3.2	1,670		7.3				34	25	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									0.65	40		
November							107	0.7	13.1	760		
December							3.2	1.6	2.16	133		
January							1,670	3.8	264	16,200		
February							2,300	7.7	106	5,890		
March							1,070	7.0	68.9	4,240		
April							1,200		157	9,340		
May									6.3	387		
June								0	1.53	91		
July							501	0	33.1	2,040		
August							25	0	2.29	141		
September							165	0	15.6	928		
The year							2,300	0	55.6	40,200		



## Rio Grande at Thirtymile Bridge, near Creede, Colo.

Location.- Water-stage recorder in sec. 13, T. 40 N., R. 4 W., 30 miles southwest of Creede and above mouth of Squaw Creek.

Drainage area.- 163 square miles.

Records available.- June 1909 to September 1913, October 1933 to September 1934 in reports of U. S. Geological Survey; June 1909 to September 1934 in reports of State engineer.

Average discharge.- 21 years (1910-23, 1926-34), 236 second-feet.

Extremes.- Maximum discharge during year, 859 second-feet Apr. 25 (gage height, 2.68 feet); minimum daily discharge, 3 second-feet when reservoir gates are closed. 1909-34: Maximum discharge, 7,500 second-feet June 23, 1927 (gage height, 6.63 feet); minimum daily discharge, 3 second-feet when reservoir gates are closed.

Remarks.- Records excellent. Discharge Nov. 8 to Mar. 19, Sept. 5-10 estimated on the basis of released flow and seepage from reservoir above station. Flow regulated by Rio Grande Reservoir just above station, capacity, 45,800 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	60					74	626	326	73	36	68
2	73	49					76	420	238	60	36	76
3	70	47					71	305	238	60	36	76
4	89	35					53	270	234	62	37	60
5	105	47					41	267	203	60	37	60
6	148	66					35	294	217	60	36	60
7	145	52				4	31	507	182	44	36	80
8	118						25	609	161	37	53	80
9	110						28	722	161	55	66	80
10	99						73	684	159	79	66	100
11	96						143	714	139	89	56	110
12	103						182	714	143	92	60	110
13	99						238	714	143	73	59	128
14	94						284	707	126	53	60	108
15	87						254	469	108	38	70	97
16	79					5	228	389	110	36	71	97
17	76						214	393	112	42	73	97
18	76						214	444	96	43	86	99
19	71						214	485	89	38	92	99
20	65						267	579	105	36	137	99
21	54					10	410	560	108	36	99	106
22	52					28	496	434	79	36	99	114
23	56					42	633	429	89	48	74	156
24	56					41	745	548	90	71	338	
25	60					41	817	566	106	63	68	424
26												
27	52					43	826	548	103	59	68	228
28	55					47	714	566	94	68	68	179
29	53					49	606	566	68	53	60	179
30	50					52	662	530	63	42	60	145
31	48					70	730	424	73	36	60	134
								402				
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							148	48	78.9	4,850		
November									25	1,490		
December									4	246		
January									3	184		
February									3	167		
March							70		18	1,110		
April							326	25	313	18,600		
May							809	267	519	31,900		
June							326	63	139	8,270		
July							42	92	36	54.2		
August							137	36	64.2	3,950		
September							424	60	126	7,600		
The year							826		113	81,600		

## Rio Grande at Wason, below Creede, Colo.

Location.- Water-stage recorder in sec. 8, T. 41 N., R. 1 E., at Wason, 3 miles south-east of Creede.

Drainage area.- 705 square miles.

Records available.- April 1907 to September 1913, October 1933 to September 1934 in reports of U. S. Geological Survey; April 1907 to September 1934 in reports of State engineer.

Average discharge.- 27 years (1907-34), 672 second-feet.

Extremes.- Maximum discharge during year, 2,170 second-feet May 9, 10 (gage height, 2.73 feet); minimum occurred during winter.  
1907-34: Maximum discharge, 9,750 second-feet June 26, 1927 (gage height, 7.40 feet); minimum probably occurred during winter.

Remarks.- Records good except those for Oct. 12-18, 18-28, which were estimated, and those for Dec. 1 to Apr. 1, which were estimated on the basis of four discharge measurements and temperature records. Diversions for irrigation above station. Flow regulated by three reservoirs, total capacity, 117,600 acre-feet.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	171					215	1,500	808	218	166	218
2	233	171			*74		218	1,050	647	211	166	198
3	256	160					215	853	604	204	163	186
4	308	171					177	706	577	169	177	174
5	336	152		*104			171	690	544	233	174	168
6	376	149					177	604	507	233	166	171
7	366	167					168	1,200	500	208	171	174
8	326	163					186	1,700	447	198	183	174
9	289	143					186	1,800	442	204	186	211
10	289	130					256	1,800	425	294	183	192
11	289	130					419	1,810	398	215	189	183
12	270	130					500	1,750	381	233	198	163
13	260	133					584	1,610	381	226	201	160
14	250	130					604	1,490	366	201	211	166
15	245	130					598	1,350	331	186	222	154
16	240	130					598	1,100	308	183	229	146
17	233	130					604	1,060	268	195	244	146
18	230	125	*103				584	1,060	260	195	252	146
19	230	123			*76		668	1,080	256	189	260	146
20	230	120					751	1,100	252	180	272	146
21	220	118					1,020	1,140	268	177	346	152
22	210	116					1,250	942	252	192	264	160
23	200	115					1,380	850	226	226	276	280
24	190	116					1,660	933	244	244	248	690
25	190	115					1,780	981	289	233	252	519
26	180	116					1,780	1,010	280	226	229	476
27	180	116					1,640	1,040	256	218	240	326
28	180	115					1,440	1,050	236	204	240	280
29	174	115					1,400	981	211	177	244	260
30	166	115					1,450	1,010	206	168	222	260
31	166							896		166	211	
Month							Maximum		Minimum	Mean	Run-off in acre-feet	
October							376		166	243	14,900	
November							171		115	135	7,910	
December										110	6,780	
January										90	5,530	
February										75	4,170	
March										130	7,990	
April							1,780		168	756	45,000	
May							1,810		604	1,170	71,900	
June							608		208	372	22,100	
July							294		166	207	12,700	
August							346		163	219	13,500	
September							690		146	228	13,600	
The year							1,810			312	226,100	

\*Discharge measurement.

## Rio Grande near Del Norte, Colo.

Location.- Water-stage recorder in sec. 30, T. 40 N., R. 5 E., 6 miles west of Del Norte. From July 1889 to September 1907 station 4 miles below present station; records comparable.

Drainage area.- 1,320 square miles.

Records available.- July 1889 to November 1906, April 1908 to September 1913, October 1933 to September 1934 in reports of U. S. Geological Survey; January 1890 to September 1934 in reports of State engineer.

Average discharge.- 45 years, 978 second-feet.

Extremes.- Maximum discharge during year, 2,980 second-feet May 10 (gage height, 3.35 feet); minimum daily discharge recorded, 167 second-feet Mar. 1, 1889-1934. Maximum discharge, 15,000 second-feet June 29, 1927 (gage height, 6.40 feet); minimum, 121 second-feet (discharge measurement) Jan. 23, 1931.

Remarks.- Records good except those estimated for periods of ice effect, Nov. 1, 6-12, Nov. 29 to Feb. 22, on the basis of four discharge measurements and temperature records, which are fair. Small diversions for irrigation above station. Flow regulated by three reservoirs above station, total capacity, 117,600 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	348	324				167	355	2,210	1,140	239	200	260
2	370	324				171	355	1,800	938	236	200	250
3	397	296				190	355	1,450	856	236	198	228
4	462	296				182	292	1,380	792	236	202	215
5	521	292		*258		190	292	1,360	724	250	208	205
6	606	288				195	292	1,500	643	272	192	220
7	578	298				195	288	1,580	651	264	195	225
8	535	276				185	316	2,100	586	256	210	232
9	482	249			*213	182	335	2,520	546	239	205	242
10	450	249				200	482	2,690	526	260	228	242
11	432	249				202	659	2,610	539	260	225	225
12	444	249				215	872	2,500	500	272	215	215
13	438	256				220	985	2,350	476	276	213	205
14	444	243				236	966	2,130	452	253	225	205
15	438	235	*200			239	1,020	1,940	405	236	236	208
16	402	225				250	1,070	1,640	385	220	256	195
17	330	225				268	1,020	1,670	415	212	264	195
18	364	225				236	890	1,530	375	198	280	195
19	365	222			*206	232	956	1,640	320	192	292	195
20	348	216				250	1,120	1,480	276	192	336	193
21	338	225				256	1,460	1,530	276	192	435	208
22	334	225				260	1,760	1,400	284	205	405	208
23	329	222			180	284	1,880	1,250	264	239	345	253
24	319	219			178	300	2,300	1,220	264	264	328	1,100
25	314	216			178	312	2,500	1,510	324	272	312	715
26	310	216			180	296	2,490	1,320	304	268	296	628
27	296	213			175	304	2,370	1,330	284	260	272	470
28	296	216			173	312	2,160	1,350	272	264	260	390
29	288	215				370	2,040	1,250	228	239	264	375
30	280	215				340	2,070	1,350	239	215	253	332
31	280					360		1,300		212	242	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October ..						608	280	393	24,200			
November ..						324	213	247	14,700			
December ..								210	12,900			
January ..								215	13,200			
February ..								200	11,100			
March ..						370	167	245	15,100			
April ..						2,500	288	1,130	67,200			
May ..						2,610	1,220	1,680	103,000			
June ..						1,140	228	475	28,300			
July ..						276	192	259	14,700			
August ..						435	192	258	15,200			
September ..						1,100	195	301	17,900			
The year ..						2,610	167	468	338,200			

\*Discharge measurement.

## Rio Grande near Monte Vista, Colo.

Location.- Water-stage recorder in sec. 24, T. 39 N., R. 7 E., 2 miles north of Monte Vista. Zero of gage lowered 0.50 foot Mar. 10, 1934.

Drainage area.- 1,740 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; May 1928 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 1,040 second-feet May 9 (gage height, 2.72 feet); minimum daily discharge recorded, 16 second-feet Oct. 28, 29.  
1928-34: Maximum discharge, 18,500 second-feet June 30, 1927 (gage height, 8.35 feet, present datum); minimum daily discharge, 4 second-feet Apr. 18, 1927.

Remarks.- Records good except those estimated, Nov. 25-30, Feb. 1 to Mar. 9, which are fair. No records Dec. 1 to Jan. 31. Diversions for irrigation above station. Flow regulated by three reservoirs, total capacity, 117,600 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	110				140	28	748	330	93	83	44
2	20	165				137	28	642	215	83	80	53
3	24	184				135	27	649	130	76	72	47
4	20	165				130	27	535	110	76	62	42
5	32	165				120	37	479	95	85	64	38
6	146	165				100	32	485	88	72	72	38
7	165	204				80	28	629	64	42	62	35
8	165	204				60	29	791	66	42	55	40
9	146	224				60	32	834	80	40	62	58
10	78	224				58	72	719	95	58	64	70
11	65	224				53	100	670	130	72	85	68
12	52	204				55	150	784	130	85	78	64
13	52	204				56	236	791	135	95	66	58
14	52	184				47	263	733	147	85	70	48
15	52	165				45	278	726	154	74	55	44
16	52	146				36	303	622	150	62	55	36
17	65	165				28	319	542	150	60	53	30
18	52	184				26	249	503	147	55	58	27
19	52	165				24	210	542	113	42	66	25
20	52	165				23	308	516	98	37	95	24
21	32	165				25	535	491	78	42	92	35
22	32	146				36	698	419	90	52	90	35
23	28	146			140	31	615	335	90	58	47	35
24	27	146				32	677	249	100	66	36	254
25	20	146				32	726	278	119	100	28	210
26	20	146				29	581	319	130	97	25	78
27	20	146			144	27	581	368	113	97	25	31
28	16	146				25	684	419	102	100	27	23
29	16	146				26	677	368	100	108	35	22
30	16	146				26	748	396	85	97	41	22
31	20					27		460		92	38	
Month						Maximum		Minimum		Mean		Run-off in acre-feet
October						165		16		51.9		3,190
November						224		110		170		10,100
December												
January										140		7,780
February										55.8		3,430
March						140		23		309		18,400
April						748		27		550		33,800
May						834		249		121		7,200
June						330		64		72.0		4,450
July						108		37		59.1		3,650
August						92		25		54.5		3,240
September						254		22				

## Rio Grande at Alamosa, Colo.

Location.- Water-stage recorder in sec. 3, T. 37 N., R. 10 E., in Alamosa.

Drainage area.- 1,840 square miles.

Records available.- May 1912 to September 1913, October 1933 to September 1934 in reports of U. S. Geological Survey; May 1912 to September 1934 in reports of State engineer.

Average discharge.- 22 years (1912-34), 376 second-feet.

Extremes.- Maximum discharge during year, 270 second-feet (estimated) Feb. 24-26; minimum daily discharge, 2 second-feet Oct. 24-26.  
1912-34: Maximum discharge, 14,000 second-feet July 1, 1927 (gage height, 8.37 feet); minimum daily discharge, that of Oct. 24-26, 1933.

Remarks.- Records good except those estimated Dec. 4 to May 4, which are fair. Divergences for irrigation above station. During irrigation season flow is return water from irrigated lands above station except during extreme stages.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	9	58	190	200	200		20	75	34	25	17
2	18	9	157	190	204	170		20	70	39	25	17
3	18	29	157	190	205	150		22	64	39	25	17
4	18	58	160	180	205	150		22	59	39	25	17
5	18	58	200	180	205	130		25	64	39	25	17
6	18	58	200	180	210	130		26	64	34	25	17
7	18	67	250	170	210	130		26	64	34	21	17
8	23	109	250	171	220	100		27	59	34	21	17
9	23	120	250	170	220	100		28	59	34	25	17
10	23	132	250	170	220	100		28	54	30	25	17
11	23	132	250	170	230	90		29	54	30	34	17
12	23	132	250	170	230	90		30	54	30	39	17
13	23	120	247	170	230	90		30	54	30	34	17
14	23	120	245	165	240	90		30	54	25	39	17
15	23	109	245	165	240	90		36	49	25	39	17
16	23	87	240	165	240	60		36	49	25	39	17
17	23	77	240	165	250	50		32	49	25	39	17
18	23	58	240	165	250	40		24	49	25	34	17
19	23	67	240	165	250	30		24	39	25	34	17
20	18	58	240	165	256	25		25	44	25	39	17
21	18	58	230	170	260	25		25	39	25	30	17
22	23	58	230	170	260	25		25	39	25	25	14
23	18	50	230	170	260	25		25	39	25	25	14
24	2	50	230	170	270	25		49	39	25	25	14
25	2	50	230	170	270	25		54	39	25	25	14
26	2	50	210	170	270	20		64	39	25	25	14
27	2	50	210	170	250	20		64	39	25	25	14
28	2	42	210	180	240	20		59	39	25	21	14
29	2	42	200	180		20		64	39	25	21	14
30	5	42	200	190		20		70	34	25	17	14
31	9		200	190		20		70		25	17	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							23	2	16.3	1,000		
November							132	9	70.0	4,170		
December							250	58	218	13,400		
January							190	165	174	10,700		
February							270	200	236	13,100		
March							200	20	72.9	4,480		
April									20	1,190		
May							70	20	35.8	2,200		
June							75	34	50.4	3,000		
July							39	25	28.9	1,780		
August							39	17	28.0	1,720		
September							17	14	16.1	958		
The year							270	2	79.6	57,700		

## Rio Grande near Lobatos, Colo.

Location.- Water-stage recorder in sec. 22, T. 33 N., R. 11 E., 6 miles north of Colorado-New Mexico line and 10 miles east of Lobatos.

Drainage area.- 7,700 square miles.

Records available.- June 1899 to September 1913, October 1933 to September 1934 in reports of U. S. Geological Survey; June 1899 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 663 second-feet, Feb. 19 (gage height, 2.05 feet); minimum daily discharge, 6 second-feet July 19, 20, 22, Aug. 3, 4.  
1899-1934: Maximum daily discharge, 13,100 second-feet June 8, 1905; minimum daily discharge, that of July 19, 20, 22, Aug. 3, 4, 1934.

Remarks.- Records good except those for Dec. 5, 6, Dec. 8 to Feb. 18 estimated on the basis of three discharge measurements and temperature records, which are fair. Diversions for irrigation above station. Flow regulated by numerous reservoirs on headwaters.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	126	204		*323	413	155	130	96	8	10	20
2	73	113	214			406	160	130	83	8	8	18
3	76	126	304			406	164	168	73	9	6	14
4	80	126	214	*373		394	160	146	80	11	6	13
5	106	134	287			377	155	110	73	11	8	10
6	110	186	359			365	151	99	62	9	7	10
7	96	186	359			359	146	89	45	9	7	12
8	102	191	398			351	146	92	56	9	7	16
9	119	209	400			325	142	99	30	13	8	34
10	126	223	390			309	138	114	32	14	8	36
11	118	242	390			304	130	155	27	13	9	44
12	122	242	370			304	126	195	26	12	10	58
13	130	232	360			282	118	214	22	11	11	36
14	134	232	370			277	138	173	20	11	13	33
15	134	237	370			277	173	134	18	10	20	27
16	134	237	375		*498	262	164	122	16	9	22	18
17	130	232	315			252	168	106	16	7	26	20
18	130	218	300			237	164	96	14	7	22	21
19	138	214	300		582	232	155	86	13	6	26	24
20	142	209	300		490	227	142	73	11	6	52	26
21	146	209	300		483	204	130	80	9	7	33	32
22	142	218	300		497	200	118	86	9	6	38	38
23	146	209	300		456	191	122	76	9	9	33	50
24	151	209	315		456	182	122	76	11	27	30	40
25	146	204	315		444	182	164	80	13	26	45	55
26	138	200	350		431	182	173	60	9	18	32	55
27	134	191	380		419	186	164	60	7	13	27	50
28	126	182	375		419	182	164	60	9	11	28	52
29	126	182	375			164	134	67	9	9	27	55
30	122	182	375			160	134	92	9	9	24	55
31	122		375			160		110		12	20	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							151	73	122	7,500		
November							242	118	197	11,700		
December							400	204	333	20,500		
January									325	20,000		
February							592		400	22,200		
March							413	160	289	16,500		
April							173	118	147	8,750		
May							214	60	109	6,700		
June							96	7	29.6	1,760		
July							27	6	10.9	670		
August							52	6	20.1	1,240		
September							58	10	32.4	1,930		
The year							582	6	165	119,400		

\*Discharge measurement.

Rio Grande below Taos Junction Bridge, near Taos, N. Mex.

Location.- Water-stage recorder in sec. 15, T. 24 N., R. 11 E., 2 miles below bridge on Taos-Taos Junction highway and about 12 miles southwest of Taos. Prior to Apr. 15, 1934, water-stage recorder to independent datum, at bridge 2 miles upstream.

Drainage area.- 9,150 square miles.

Records available.- October 1930 to September 1934 in reports of U. S. Geological Survey; July 1925 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, about 2,060 second-feet Aug. 12 (gage height, 4.85 feet); minimum daily discharge, 178 second-feet June 26, 27, July 1-4, 12, 14, 15, 20, 24, Aug. 10.  
1930-34: Maximum discharge, 6,950 second-feet May 25, 1932 (gage height, 8.56 feet at former location; minimum daily discharge (estimated), 140 second-feet Aug. 21, 1931.

Remarks.- Records good. Discharge estimated Mar. 18, 19. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	320	404	556	529	628	344	362	390	178	194	219
2	278	320	404	574	542	628	340	368	382	178	186	210
3	278	320	360	556	547	624	348	349	368	178	190	206
4	278	313	392	552	552	619	356	368	368	178	190	202
5	271	328	400	574	552	610	356	406	342	182	186	198
6	285	340	368	538	568	583	352	349	336	182	198	298
7	310	360	404	508	592	574	348	330	299	182	190	210
8	292	396	420	476	601	556	336	316	277	190	194	224
9	292	392	456	448	628	534	332	316	266	206	190	260
10	299	400	488	456	632	529	328	330	246	195	178	250
11	306	420	500	464	610	518	328	442	237	182	186	232
12	310	436	512	456	574	508	328	494	226	178	296	228
13	308	448	547	482	614	500	324	492	224	182	214	237
14	324	444	578	464	624	496	320	476	219	178	214	246
15	324	440	570	460	642	484	330	458	202	178	210	246
16	320	444	529	452	660	480	362	412	198	186	214	242
17	316	440	578	452	710	476	356	375	202	202	214	237
18	316	436	500	456	696	470	362	356	202	198	214	232
19	316	432	496	472	686	460	375	356	194	182	210	224
20	320	412	500	476	705	448	362	349	194	178	210	219
21	328	400	504	480	705	444	356	336	190	284	250	214
22	324	396	516	480	673	428	349	342	186	210	266	214
23	328	396	524	484	668	420	349	368	182	219	219	219
24	328	400	542	492	705	428	316	349	182	178	210	277
25	336	400	538	504	678	420	330	362	186	182	210	299
26	340	396	552	508	646	404	362	356	178	232	206	294
27	336	396	556	508	646	404	368	349	178	277	232	282
28	332	396	556	524	628	392	362	356	182	250	214	282
29	324	388	560	524	424	390	330	186	214	206	277	
30	320	380	556	524	368	382	349	182	210	206	272	
31	320		556	529	356		405		202	206		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							340	271	311	19,120		
November							448	313	393	23,380		
December							578	360	496	30,480		
January							574	448	497	30,540		
February							710	529	630	34,990		
March							628	356	491	30,170		
April							390	316	350	20,810		
May							492	316	374	23,000		
June							390	178	240	14,290		
July							284	178	199	12,210		
August							295	178	210	12,200		
September							299	198	242	14,380		
The year							710	178	368	266,300		

## Rio Grande at Embudo, N. Mex.

Location.- Water-stage recorder in SW $\frac{1}{4}$  sec. 23, T. 23 N., R. 9 E., a quarter of a mile below depot at Embudo and about 2 $\frac{1}{4}$  miles below Embudo Creek.

Drainage area.- 10,000 square miles.

Records available.- January 1889 to December 1903, September 1912 to September 1916, October 1930 to September 1934 in reports of U. S. Geological Survey; January 1889 to December 1903, September 1912 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 832 second-feet Feb. 20 (gage height, 3.28 feet); minimum daily discharge, 182 second-feet July 20, Aug. 3, 11.  
1930-34: Maximum discharge, 8,360 second-feet May 25, 1932 (gage height, 9.35 feet); minimum, 166 second-feet Aug. 22, 1931.

Remarks.- Records good. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	302	310	458	601	565	672	380	368	392	193	193	264
2	299	302	440	623	601	662	372	384	372	193	185	241
3	324	292	368	612	612	662	360	376	368	193	182	225
4	368	320	392	590	623	650	352	360	372	190	185	214
5	352	356	450	618	628	646	356	428	340	193	186	202
6	360	366	368	590	650	634	372	384	324	190	193	236
7	368	352	414	555	662	623	360	348	302	190	193	278
8	362	392	414	515	667	590	344	336	288	202	193	246
9	326	392	465	481	694	575	340	324	271	205	190	264
10	324	396	500	495	712	565	328	332	260	214	185	238
11	340	422	525	505	678	550	328	400	254	193	182	229
12	336	427	525	505	645	535	336	510	244	190	241	241
13	285	454	555	476	689	535	352	510	238	190	244	257
14	352	450	596	481	700	535	368	481	229	185	229	254
15	360	440	596	486	730	515	372	481	220	199	217	238
16	324	440	530	490	742	520	414	436	206	196	211	226
17	316	436	596	486	784	515	432	396	208	202	199	217
18	310	427	545	486	778	481	440	360	211	226	202	208
19	306	422	520	500	742	476	432	348	205	185	240	205
20	310	400	520	505	784	476	422	344	202	182	235	199
21	356	392	530	510	784	472	409	336	199	209	302	193
22	348	392	545	520	772	454	404	324	196	278	278	196
23	344	404	555	525	736	440	409	352	193	226	254	274
24	348	404	575	530	784	436	396	336	202	214	229	450
25	356	396	570	545	760	427	388	348	205	202	235	336
26	360	396	580	545	718	414	384	348	196	220	229	296
27	352	396	585	550	712	418	409	344	193	313	241	299
28	340	396	590	570	672	396	422	360	196	260	244	285
29	332	409	596	580		392	418	326	196	229	255	274
30	320	404	590	570		384	414	352	196	211	244	271
31	313		601	575		384		418		199	235	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							368	285	335	20,600		
November							454	292	392	23,560		
December							601	368	520	31,960		
January							623	476	556	32,970		
February							784	585	702	39,960		
March							672	384	517	31,800		
April							440	328	384	22,840		
May							510	324	380	23,390		
June							392	193	249	14,840		
July							313	182	209	12,640		
August							302	182	220	13,550		
September							450	193	252	14,980		
The year							784	182	390	282,100		



## Rio Grande at Otowi Bridge, near San Ildefonso, N. Mex.

Location.— Water-stage recorder in San Ildefonso Pueblo grant, at Denver & Rio Grande Western Railroad bridge 2 miles southwest of San Ildefonso and 3 miles below Tesuque Creek.

Drainage area.— 13,800 square miles.

Records available.— February 1895 to December 1905, June 1909 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; February 1895 to December 1905, June 1909 to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, 3,180 second-feet Sept. 23 (gage height, 5.28 feet); minimum, 124 second-feet June 23, Aug. 12.  
1930-34: Maximum discharge, 14,500 second-feet May 20, 1932 (gage height, 9.84 feet); minimum, that of June 23, Aug. 12, 1934.

Remarks.— Records good. Discharge estimated Jan. 3-11, Mar. 21, July 9-10, Aug. 21. Diversions for irrigation above station.

Discharge, in second-feet, 1935-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	389	397	650	743	750	838	1,100	892	1,060	159	190	272
2	389	405	680	782	743	790	945	855	789	156	169	350
3	421	457	608		750	790	886	878	668	140	163	300
4	510	441	545		750	750	822	840	610	138	152	248
5	550	474	578		729	758	722	870	522	140	181	221
6	743	483	515		722	722	668	930	420	146	191	205
7	743	483	540	670	729	701	686	848	350	387	148	278
8	614	488	555		729	694	620	747	300	212	142	289
9	545	501	560		758	680	608	701	257	270	138	324
10	515	506	596		830	674	757	688	215	270	140	300
11	501	515	644		790	668	1,210	878	198	167	132	263
12	488	520	644	614	750	650	1,590	945	172	152	134	269
13	465	545	668	595	766	628	1,820	952	150	146	218	294
14	488	550	701	584	822	644	1,880	885	144	138	163	314
15	550	550	722	608	830	662	1,720	840	138	136	314	303
16	535	550	674	626	854	674	1,670	747	148	154	242	292
17	483	560	694	632	919	701	1,630	642	144	150	212	266
18	483	578	650	555	937	722	1,580	598	142	154	198	251
19	461	560	644	520	919	729	1,260	534	130	163	185	248
20	461	555	662	596	937	680	1,270	534	130	136	251	239
21	449	540	668	620	946	690	1,300	512	128	146	230	242
22	453	535	674	668	928	694	1,310	475	132	265	377	239
23	457	520	694	662	978	694	1,380	534	132	441	372	655
24	449	520	722	687	928	694	1,300	556	159	322	306	1,400
25	461	535	729	722	964	729	1,230	495	172	395	266	984
26	465	525	743	722	964	701	1,180	490	148	303	326	623
27	461	525	766	750	928	668	1,100	555	140	334	359	539
28	437	525	782	766	870	674	1,090	544	194	326	372	485
29	437	545	758	798	743	743	1,050	465	167	296	443	440
30	429	578	743	774	798	798	976	495	165	272	334	420
31	413		736	750	910		952			215	260	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							743	389	492	30,240		
November							578	397	515	30,660		
December							722	515	663	40,750		
January							793	520	670	41,210		
February							964	722	836	46,450		
March							910	626	714	43,930		
April							1,880	608	1,178	70,080		
May							952	465	705	43,390		
June							1,060	128	274	16,310		
July							441	136	220	13,580		
August							443	132	286	14,500		
September							1,400	205	365	22,920		
The year							1,880	128	572	414,000		

## Rio Grande at Cochiti, N. Mex.

Location.- Water-stage recorder at highway bridge 1 mile northeast of Cochiti, Sandoval County, 4 miles north of Pena Blanca, and 8 miles above mouth of Galisteo Creek.

Drainage area.- 14,300 square miles.

Records available.- October 1930 to September 1934 in reports of U. S. Geological Survey; January 1925 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 2,110 second-feet Sept. 24 (gage height, 5.30 Feet); minimum daily discharge, 1 second-foot Aug. 10-12.  
1930-34: Maximum discharge, 13,000 second-feet Sept. 24, 1931, and May 22, 1932; minimum daily discharge, that of Aug. 10-12, 1934.

Remarks.- Records good except those estimated, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	307	291	482	600	704	756	862	690	773	22	52	235
2	310	300	518	635	717	742	850	630	650	22	*30	282
3	307	318	486	640	717	726	773	660	590	22	24	174
4	469	342	477	635	717	762	710	680	410	21	13	84
5	468	342	468	630	678	689	620	700	434	*20	12	55
6	545	382	464	600	691	675	560	806	240	17	*45	55
7	536	410	446	585	734	690	610	680	*180	14	*15	104
8	486	386	446	575	735	645	560	550	*160	232	3	264
9	410	450	434	570	745	570	495	540	*130	71	2	282
10	356	477	464	570	785	531	580	468	257	58	1	205
11	346	454	486	585	780	531	946	630	73	11	1	117
12	338	442	500	668	775	468	1,290	762	64	4	1	110
13	338	450	545	701	738	442	1,520	839	*50	2	*4	282
14	346	454	570	} *700	773	522	1,650	630	*35	15	*50	166
15	398	454	595		765	540	1,650	590	30	13	*10	170
16	390	464	600		814	495	1,490	540	} *25	10	88	166
17	360	459	570		836	640	1,490	450		11	107	186
18	352	459	570	805	630	1,520	410	13		94	186	
19	335	472	570	801	590	1,230	402	13		*40	117	
20	328	504	570	787	550	1,180	410	13	*15	99		
21	328	459	575	792	495	1,290	300	21	42	*25	90	
22	324	414	585	778	620	1,280	270	21	44	*80	126	
23	324	426	595	712	680	1,260	282	21	186	99	356	
24	316	426	600	751	670	1,120	370	21	294	132	1,250	
25	378	394	575	812	660	1,030	300	21	141	120	922	
26	398	402	605	695	857	590	1,040	328	21	246	107	560
27	332	446	620	694	814	570	910	660	21	138	200	356
28	318	462	630	676	770	522	910	378	21	144	230	300
29	314	472	640	705	620	886	282	*40	147	258	246	
30	321	495	625	686	680	773	225	*25	135	386	205	
31	300		625	717	795	795	513		84	276		
Month							Maximum	Minimum	Mean		Run-off in acre-feet	
October							545	300	367		22,550	
November							504	291	424		25,240	
December							640	434	546		33,590	
January								570	663		40,790	
February							857	678	764		42,450	
March							795	442	616		37,880	
April							1,650	495	1,036		61,660	
May							839	225	515		31,690	
June							773		148		8,790	
July							294	2	71.1		4,370	
August							386	1	61.3		5,000	
September							1,250	55	258		15,350	
The year							1,650	1	455		329,400	

\*Estimated.

## Rio Grande at San Felipe, N. Mex.

Location.- Water-stage recorder in San Felipe grant at steel highway bridge 2,000 feet below mouth of Tonque Arroyo, half a mile above San Felipe Pueblo, Sandoval County, and about 12 miles northeast of Bernalillo.

Drainage area.- 15,600 square miles.

Records available.- October 1930 to September 1934 in reports of U. S. Geological Survey; March 1925 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 2,260 second-feet Apr. 15; maximum gage height, 5.09 feet Sept. 24; minimum daily discharge, 34 second-feet July 7.  
1930-34: Maximum discharge, 18,200 second-feet May 21, 1932; maximum gage height, 8.35 feet Jan. 26, 1932, during an ice jam; minimum daily discharge, that of July 7, 1934.

Remarks.- Records fair except those estimated Apr. 15-30, Aug. 7-9, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	315	449	770	1,140	702	1,020	919	780	831	55	122	295
2	310	470	790	1,140	760	996	1,030	810	760	52	115	275
3	330	456	820	1,120	853	930	780	908	842	46	113	260
4	400	510	740	1,120	875	952	820	1,020	648	44	81	165
5	478	558	720	1,120	864	820	720	1,020	606	41	68	135
6	518	590	790	1,110	886	820	740	1,010	407	39	58	127
7	449	614	919	1,050	941	760	740	1,020	280	34	182	
8	566	639	790	930	930	702	720	1,020	216	104	60	228
9	470	790	740	810	963	711	630	1,030	193	89		300
10	470	702	853	711	974	675	790	941	236	89	55	285
11	449	720	853	780	1,020	693	1,030	1,010	180	79	54	200
12	449	711	953	770	919	648	1,200	864	122	62	58	182
13	478	711	897	720	886	630	1,680	919	109	62	42	285
14	494	750	908	740	897	614	1,660	919	98	72	62	250
15	582	684	897	800	952	630		952	79	68	65	290
16	442	702	930	842	941	582	1,600	996	68	63	100	300
17	542	720	908	842	974	639		842	66	48	102	245
18	470	853	1,030	810	1,030	630		740	70	50	112	236
19	449	864	1,110	780	1,030	630		657	58	55	114	186
20	428	675	1,210	800	1,040	582		820	52	51	109	176
21	414	875	1,160	790	1,050	582	1,400	614	51	58	105	172
22	382	684	1,160	780	1,050	606		510	45	138	105	182
23	400	574	1,140	780	1,050	614		558	42	119	107	340
24	407	639	1,150	740	1,080	622	1,200	598	44	193	150	1,090
25	400	675	1,150	675	1,090	639	1,100	606	44	196	179	930
26	428	614	1,150	693	1,100	630	1,100	510	48	193	350	574
27	428	639	1,160	598	1,050	622		534	47	186	364	414
28	414	648	1,170	657	1,010	566	1,000	542	47	182	232	364
29	414	614	1,190	648		606		566	45	190	235	352
30	435	720	1,170	702		648	900	566	55	179	352	376
31	442		1,150	711		711		666		156	228	
Month	Maximum		Minimum		Mean		Run-off in acre-feet					
October	582		310		440		27,080					
November	875		449		663		39,430					
December	1,210		720		980		60,270					
January	1,140		598		836		51,390					
February	1,100		702		961		53,390					
March	1,020		566		694		42,660					
April	1,680		630		1,139		67,750					
May	1,030		510		792		48,890					
June	842		34		212		12,610					
July	196		34		96.5		5,940					
August	364		42		130		7,970					
September	1,090		127		313		18,640					
The year	1,680		34		602		435,800					

## Rio Grande at San Marcial, N. Mex.

Location.- Water-stage recorder in Pedro Armendaris grant 34, at Atchison, Topeka & Santa Fe Railway bridge 1.1 miles below San Marcial, Socorro County.

Drainage area.- 28,400 square miles.

Records available.- January 1895 to September 1934 in reports of U. S. Geological Survey; January 1895 to December 1931 in reports of State engineer. Records prior to January 1922 about 0.3 mile above present site; January 1922 to February 1932 at highway bridge half a mile northeast of San Marcial and 1.8 miles above present site.

Average discharge.- 38 years (1897-1934), 1,557 second-feet.

Extremes.- Maximum discharge during year, 9,910 second-feet Aug. 28 (gage height, 8.35 feet); no flow June 2, June 11 to Aug. 27.

1895-1934: Maximum daily discharge, 33,000 second-feet Oct. 11, 1904; maximum discharge on Sept. 24, 1929, probably reached about same discharge as flood of 1904; no flow at times.

Remarks.- Records good except those estimated Oct. 13-31, Mar. 8-15, May 6-31, June 3, 7-10, Sept. 1-30, which are fair. Diversions for irrigation above station. Beginning July 1, 1931, complete records, except for occasional discharge measurements by the U. S. Geological Survey, were furnished by the International Boundary Commission, U. S. Section (formerly shown as U. S. Boundary Commission).

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	211	509	928	728	960	175	514	10	0	0	706
2	146	214	525	922	752	1,010	190	261	0	0	0	1,120
3	110	217	649	931	756	886	176	279	11	0	0	514
4	100	234	832	897	717	803	214	255	29	0	0	107
5	92	250	894	908	783	682	334	170	29	0	0	101
6	182	271	640	921	797	617	469	166	13	0	0	98
7	206	307	650	902	823	587	458	163	12	0	0	73
8	275	429	590	843	826	394	402	159	6.8	0	0	121
9	585	526	628	900	796	414	567	117	3.2	0	0	688
10	472	432	547	829	828	434	295	76	.2	0	0	1,170
11	424	437	612	845	908	454	244	34	0	0	0	403
12	351	440	734	758	925	474	146	27	0	0	0	213
13	307	426	776	632	942	494	136	19	0	0	0	198
14	284	435	708	657	967	514	108	12	0	0	0	218
15	280	459	684	666	851	475	100	12	0	0	0	200
16	280	453	691	701	720	481	334	12	0	0	0	156
17	280	466	821	714	731	426	1,230	12	0	0	0	87
18	283	447	862	720	766	349	1,420	13	0	0	0	45
19	287	427	879	671	810	291	1,280	14	0	0	0	37
20	290	430	775	701	854	257	1,150	15	0	0	0	33
21	278	478	810	738	890	311	970	13	0	0	0	28
22	265	401	919	751	853	348	742	11	0	0	0	24
23	268	338	748	781	801	236	656	9.1	0	0	0	22
24	270	358	731	827	869	194	583	11	0	0	0	20
25	265	398	746	763	897	197	625	14	0	0	0	2,900
26	260	441	685	904	924	196	579	16	0	0	0	2,880
27	225	394	826	821	936	174	495	12	0	0	0	288
28	190	368	931	823	924	199	379	7.9	0	0	5,910	126
29	190	440	896	817	203	284	3.9	0	0	0	7,210	127
30	189	520	915	810	222	335	7.3	0	0	0	2,200	156
31	204		1,090	796		175		11			659	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						583	92	259	15,900			
November						526	211	397	23,020			
December						1,090	509	751	46,200			
January						931	632	795	48,880			
February						967	717	833	46,260			
March						1,010	174	434	26,490			
April						1,420	100	495	29,480			
May						314	3.9	72.5	4,460			
June						29	0	3.81	227			
July						0	0	0	0			
August						7,210	0	515	31,690			
September						2,900	20	429	25,510			
The year						7,210	0	412	298,300			

Note.- No flow during July.

## Rio Grande below Elephant Butte Dam, N. Mex.

Location.- Water-stage recorder in Pedro Armendaris grant, 300 feet below Elephant Butte Dam, in sec. 25, T. 13 S., R. 4 W. (surveys by U. S. Bureau of Reclamation).

Records available.- October 1916 to September 1934.

Average discharge.- 18 years, 1,201 second-feet.

Extremes.- Maximum daily discharge during year, 2,550 second-feet July 14: maximum daily gage height, 6.64 feet Aug. 8, 9; minimum daily discharge, 2.4 second-feet Jan. 10, 11.  
1916-34: Maximum daily discharge, 3,200 second-feet July 29 to Aug. 3, 1917: no flow at times.

Remarks.- Records good. Considerable water is diverted above station; amount not known. Flow controlled by Elephant Butte Dam, which forms reservoir having capacity of 2,638,000 acre-feet when constructed. Records furnished by U. S. Bureau of Reclamation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,080	891	856	2.8	3.3	800	1,640	1,670	1,710	2,190	2,340	1,440
2	1,050	891	815	3.1	160	758	1,630	1,450	1,730	2,050	2,280	1,440
3	991	759	856	3.1	1,320	882	1,690	1,400	1,730	1,980	2,320	1,450
4	982	640	852	2.9	1,320	882	1,800	1,370	1,730	1,680	2,360	1,450
5	652	368	852	3.1	1,320	887	1,810	1,390	1,710	1,880	2,370	1,440
6	9.2	4.3	344	4.7	1,320	939	1,940	1,410	1,890	1,860	2,460	1,440
7	9.1	4.4	2.8	3.0	1,320	939	1,940	1,520	1,940	1,820	2,490	1,350
8	9.7	6.3	3.4	2.6	1,320	943	1,940	1,430	1,860	1,820	2,490	1,340
9	7.6	4.0	3.2	2.7	1,310	963	2,030	1,500	1,800	1,620	2,480	1,340
10	8.0	3.7	2.9	2.4	1,020	1,090	2,090	1,670	1,800	2,040	2,470	1,340
11	7.3	4.3	3.3	2.4	1,000	1,090	2,020	1,670	1,890	2,230	2,460	1,340
12	8.7	4.3	4.6	2.5	1,000	1,100	1,890	1,690	1,810	2,230	2,460	1,320
13	6.3	3.9	39	2.6	1,000	1,100	1,920	1,680	1,960	2,260	2,450	1,180
14	100	133	320	2.8	1,010	1,160	2,030	1,680	1,940	2,550	2,430	1,180
15	1,040	805	839	2.6	1,080	1,160	2,030	1,670	2,050	2,500	2,360	1,180
16	987	805	852	3.0	1,040	1,190	2,000	1,670	2,170	2,440	2,190	1,180
17	972	805	878	379	948	1,320	1,940	1,660	2,190	2,480	2,210	1,170
18	838	716	869	278	934	1,230	1,940	1,620	2,270	2,510	2,390	1,140
19	68	5.4	869	3.5	934	1,230	1,800	1,680	2,270	2,500	2,380	1,110
20	4.9	4.0	789	3.5	878	1,280	1,800	1,770	2,260	2,480	2,440	1,080
21	4.8	3.9	132	4.0	754	1,360	1,800	1,770	2,230	2,380	2,360	1,070
22	6.0	12	4.2	3.7	754	1,360	1,800	1,850	2,120	2,260	2,360	1,160
23	4.8	4.1	3.0	3.6	754	1,430	1,790	1,900	2,080	2,180	2,250	1,150
24	4.9	3.8	2.6	3.5	800	1,430	1,710	1,900	2,080	2,230	2,030	1,130
25	5.5	4.0	2.5	6.3	996	1,320	1,620	1,840	2,090	2,070	1,920	1,050
26	5.3	4.2	2.7	3.8	996	1,320	1,510	1,770	2,180	2,050	1,530	1,050
27	5.3	7.3	2.7	3.2	1,000	1,300	1,610	1,770	2,270	1,900	1,150	1,040
28	5.3	3.7	3.0	3.7	982	1,230	1,570	1,770	2,310	1,920	1,730	1,040
29	5.7	3.7	2.9	3.4		1,230	1,570	1,770	2,360	1,920	1,650	1,020
30	5.0	89	3.3	3.8		1,380	1,770	1,770	2,300	1,920	1,370	920
31	84		3.2	2.7		1,660	1,630	1,690		2,050	1,320	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						1,080	4.8	289	17,790			
November						891	3.7	233	13,270			
December						878	2.5	329	20,260			
January						379	2.4	24.3	1,490			
February						1,320	3.3	974	54,100			
March						1,660	758	1,160	71,330			
April						2,090	1,510	1,813	107,900			
May						1,900	1,370	1,658	102,000			
June						2,360	1,710	2,024	120,590			
July						2,550	1,820	2,142	131,700			
August						2,490	1,150	2,176	133,800			
September						1,450	920	1,218	72,460			
The year						2,550	2.4	1,170	647,200			

## Clear Creek below Continental Reservoir, Colo.

Location.- Water-stage recorder in sec. 22, T. 42 N., R. 3 W., 15 miles west of Creede.

Drainage area.- 49 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; May 1929 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 160 second-feet Apr. 20 (gage height, 2.40 feet); minimum daily discharge, 5 second-feet Aug. 6-14.  
1929-34: Maximum discharge, 246 second-feet June 2, 1933 (gage height, 3.14 feet); minimum daily discharge, that of 1934.

Remarks.- Records excellent except those estimated, Apr. 1-15, July 3-12, July 30 to Aug. 4, Sept. 5-30, which are fair. Flow regulated by Continental Reservoir, 1,000 feet above station, capacity 26,700 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							8	79	25	21	8	8
2							8	64	24	21	8	8
3							8	42	20	21	8	8
4							8	29	20	50	15	8
5							8	20	18	50	13	8
6							8	53	18	50	15	8
7							8	69	19	35	8	8
8							8	71	20	11	5	8
9							8	78	20	11	5	8
10							8	99	11	11	5	8
11							8	134	8	11	5	8
12							8	117	9	11	5	8
13							8	93	13	11	5	8
14							8	84	14	8	5	8
15							8	68	13	16	6	8
16							51	49	14	19	6	8
17							63	42	15	16	7	8
18							121	42	15	14	8	8
19							149	38	15	8	9	8
20							154	37	28	7	9	8
21							152	34	23	9	11	8
22							149	24	19	10	14	8
23							146	20	17	11	13	8
24							145	22	18	13	13	8
25							145	24	21	14	14	8
26							144	25	22	14	17	8
27							117	28	21	15	19	8
28							84	29	22	10	18	8
29							79	28	22	8	18	8
30							78	27	22	8	11	8
31								26		8	7	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									8	492		
November									8	476		
December									8	492		
January									8	492		
February									8	444		
March									8	492		
April							154	8	63.2	3,760		
May							134	20	51.7	3,180		
June							28	8	18.2	1,080		
July							50	7	16.8	1,030		
August							19	5	10.0	615		
September							8	8	8.0	476		
The year							154	5	18.0	13,030		

## Saguache Creek near Saguache, Colo.

Location.- Water-stage recorder in sec. 14, T. 45 N., R. 6 E., 10 miles west of Saguache. Gage moved few feet upstream and set to independent datum Apr. 9, 1934.

Drainage area.- 595 square miles.

Records available.- August 1910 to September 1912, October 1933 to September 1934 in reports of U. S. Geological Survey; August 1910 to September 1912, June 1914 to September 1934 in reports of State engineer.

Average discharge.- 22 years (1910-12, 1914-34), 82.6 second-feet.

Extremes.- Maximum discharge during year, 92 second-feet July 25 (gage height, 1.25 feet); minimum daily discharge, 14 second-feet Oct. 1, 2.  
1910-12, 1914-34: Maximum discharge, 746 second-feet June 15, 1921 (gage height, 3.45 feet, former datum); minimum daily discharge, that of Oct. 1, 2, 1933.

Remarks.- Records good except those estimated, Oct. 16-23, Apr. 1-8, which are fair. No records Nov. 5 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	36					40	56	56	19	21	34
2	14	36					40	59	44	19	19	39
3	18	35					40	55	46	19	20	30
4	36	39					40	54	46	20	21	26
5	59						40	57	41	22	26	25
6	52						40	65	37	20	38	26
7	46						40	68	34	19	34	27
8	40						40	73	33	19	29	31
9	40						43	74	29	20	41	47
10	34						44	74	28	21	49	41
11	34						49	72	27	21	41	35
12	30						57	70	26	21	37	31
13	30						61	66	24	20	35	31
14	30						56	66	24	18	41	29
15	30						54	61	23	16	44	27
16	30						54	57	24	18	37	27
17	30						54	56	26	19	43	26
18	30						49	56	26	24	46	25
19	30						49	56	23	19	53	24
20	30						54	57	20	18	63	26
21	30						59	56	19	17	48	29
22	35						64	57	19	25	43	29
23	35						64	58	19	24	40	30
24	35						68	53	25	34	37	56
25	34						73	53	26	55	33	46
26	34						69	54	27	38	31	29
27	34						62	59	20	30	30	32
28	34						61	61	19	24	29	30
29	34						56	60	18	20	26	29
30	35						56	64	18	19	25	29
31	35						56	71		19	33	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							59	14	33.3	2,050		
November												
December												
January												
February												
March												
April							73	40	52.5	3,120		
May							74	53	61.2	3,760		
June							56	18	28.2	1,680		
July							55	16	22.5	1,330		
August							63	19	35.9	2,210		
September							56	24	31.5	1,970		

## Carnero Creek near La Garita, Colo.

Location.— Water-stage recorder in sec. 26, T. 42 N., R. 6 E., 3 miles northwest of La Garita.

Drainage area.— 117 square miles.

Records available.— October 1933 to September 1934 in reports of U. S. Geological Survey; April 1919 to September 1934 in reports of State engineer.

Extremes.— Maximum discharge during year, about 278 second-feet July 23 (gage height, 2.05 feet); minimum daily discharge, 1 second-foot July 8-10, 13-22, Aug. 1-8, 1919-34: Maximum daily discharge, 500 second-feet Apr. 14, 1924; minimum daily discharge, 1 second-foot July 8-10, 13-22, Aug. 1-8, 1934.

Remarks.— Records fair. Discharge estimated Oct. 1-3, Apr. 1-8. No records Nov. 1 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12						6	12	7	5	1	3
2	12						6	12	5	5	1	3
3	12						6	12	5	5	1	3
4	12						6	12	5	5	1	2
5	12						6	12	5	2	1	2
6	9						6	12	5	2	1	2
7	9						6	15	5	2	1	2
8	9						6	15	5	1	1	2
9	9						9	15	5	1	2	2
10	9						9	15	4	1	5	2
11	7						9	15	4	2	4	2
12	7						9	15	4	2	4	2
13	7						9	15	4	1	3	2
14	7						9	12	2	1	3	2
15	7						9	9	2	1	4	2
16	5						9	9	2	1	4	2
17	5						9	9	2	1	8	3
18	5						9	9	2	1	8	3
19	4						15	9	2	1	8	3
20	4						15	9	2	1	6	3
21	4						15	9	2	1	4	3
22	2						15	9	2	1	4	3
23	2						15	7	2	4	4	3
24	2						15	7	2	6	4	3
25	2						15	7	2	6	4	3
26	4						12	7	2	4	4	3
27	4						12	7	2	3	4	3
28	4						12	7	2	3	3	3
29	4						12	7	2	2	3	3
30	4						12	7	4	2	3	3
31	4							7		2		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							12	2	6.4	394		
November												
December												
January												
February												
March												
April							15	6	10.1	601		
May							15	7	10.5	646		
June							7	2	3.3	196		
July							6	1	2.4	148		
August							8	1	3.4	209		
September							3	2	2.6	165		



## La Garita Creek near La Garita, Colo.

Location.- Water-stage recorder in sec. 10, T. 41 N., R. 6 E.,  $3\frac{1}{4}$  miles southwest of La Garita.

Drainage area.- 61 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; April 1919 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 149 second-feet Aug. 15 (gage height, 2.25 feet); minimum daily discharge, 3 second-feet several days June to September. 1919-34: Maximum daily discharge, 316 second-feet May 10, 1924; minimum daily discharge, 2 second-feet Oct. 19-21, 1926, Apr. 18, 1927.

Remarks.- Records fair. Discharge estimated Apr. 1. No records Nov. 3 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	5					6	11	7	3	4	3
2	5	5					6	11	6	3	4	3
3	5						6	10	6	3	4	3
4	7						6	9	6	3	4	3
5	6						6	11	6	3	4	3
6	6						6	10	6	3	4	3
7	6						7	10	6	3	4	3
8	6						7	9	6	4	5	3
9	5						8	9	6	4	5	3
10	5						10	9	5	5	7	3
11	5						15	9	5	5	6	3
12	5						20	9	4	4	6	3
13	4						22	9	3	4	6	3
14	5						16	9	3	4	5	3
15	5						17	8	3	3	14	3
16	4						14	8	4	3	5	3
17	4						15	7	4	4	6	3
18	5						10	8	4	4	6	3
19	5						14	9	3	3	6	3
20	4						13	8	3	3	6	3
21	4						16	8	3	6	5	4
22	4						15	9	3	4	4	4
23	4						13	9	3	5	4	4
24	5						13	9	4	4	3	4
25	5						16	9	4	6	4	4
26	6						12	9	4	8	3	4
27	5						11	9	3	7	3	4
28	5						11	9	3	4	3	4
29	5						11	9	3	3	3	4
30	5						10	9	3	3	3	4
31	5							9		6	3	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							7	4	5.0	307		
November												
December												
January												
February												
March												
April							22	6	11.7	696		
May							11	7	9.1	560		
June							7	3	4.3	256		
July							8	3	4.1	252		
August							14	3	4.8	295		
September							4	3	3.3	196		

## Alamosa Creek below Terrace Reservoir, Colo.

Location.- Water-stage recorder in sec. 23, T. 36 N., R. 6 E., half a mile below Terrace Reservoir and 11 miles northwest of Capulin. Prior to 1915 station located 6 miles upstream; records comparable.

Drainage area.- 120 square miles.

Records available.- April 1909 to October 1912, October 1933 to September 1934 in reports of U. S. Geological Survey; April 1909 to November 1912, April to October 1915, February 1917 to October 1920, April 1922 to September 1934 in reports of state engineer.

Extremes.- Maximum discharge during year, 546 second-feet Apr. 22 (gage height, 3.16 feet); minimum daily discharge, 4 second-feet July 10.  
1909-12, 1915, 1917-20, 1922-34: Maximum daily discharge, 1,450 second-feet June 16, 17, 18, 1917; minimum daily discharge, that of July 10, 1934.

Remarks.- Records good except those estimated, Oct. 1 to Mar. 5, Sept. 8-30, which are fair. Flow regulated by Terrace Reservoir, capacity, 17,700 acre-feet.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						12	35	293	137	35	20	24
2						12	35	293	105	35	20	24
3						12	35	148	95	30	20	24
4						12	35	148	77	16	20	24
5						12	35	148	69	16	20	20
6						24	35	148	69	35	20	16
7						24	35	209	61	35	20	20
8						24	35	293	54	35	35	20
9						24	35	323	54	35	30	24
10						24	35	323	61	4	24	24
11						24	35	338	69	6	24	20
12						24	105	354	61	12	30	17
13						24	183	308	35	16	35	17
14						24	264	235	30	16	35	17
15						24	308	209	24	12	24	17
16						24	308	196	24	35	30	17
17						24	308	148	24	35	35	16
18						24	308	137	24	16	35	16
19						24	308	137	24	16	41	16
20						24	183	137	24	16	41	16
21						24	183	115	16	8	41	16
22						24	183	105	16	16	41	16
23						35	264	105	16	30	41	25
24						35	354	105	16	16	35	45
25						35	456	95	16	16	30	32
26						35	488	105	16	16	24	27
27						35	456	115	16	41	24	27
28		*34				35	456	137	35	41	24	25
29						35	456	137	35	41	24	25
30						35	456	115	35	41	24	25
31						35		115		41	24	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									25	1,540		
November									15	893		
December									10	615		
January									10	615		
February									12	656		
March							35	12	25.3	1,560		
April							488	35	210	12,500		
May							354	95	186	11,400		
June							137	16	44.6	2,650		
July							41	4	24.6	1,510		
August							41	20	25.7	1,760		
September							45	16	21.7	1,290		
The year							488	4	51.2	37,000		

\*Discharge measurement.

## La Jara Creek near Capulin, Colo.

Location.- Water-stage recorder in sec. 21, T. 34 N., R. 7 E., 9 miles southwest of Capulin. Prior to 1924 station located 2 miles upstream.

Drainage area.- 73 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; April 1916 to November 1917, April 1919 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 70 second-feet July 27 (gage height, 1.70 feet); minimum daily discharge, 1 second-foot July 1, 3-10, Aug. 1-4, 28. 1916-17, 1919-34: Maximum discharge 653 second-feet Apr. 22, 1919 (gage height, 3.22 feet); minimum daily discharge, that of 1934.

Remarks.- Records fair. Discharge estimated Oct. 1-4, 6-20, 22-31, Nov. 1-12, 14-30. No records Dec. 1 to Mar. 27. Small diversions for irrigation above station. Flow regulated by La Jara Reservoir, capacity, 14,040 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							15	26	18	1	1	7
2							12	26	18	2	1	5
3							12	18	18	2	1	5
4	7						8	12	15	1	1	4
5							8	10	12	1	3	4
6							12	10	10	1	6	4
7							12	8	7	1	6	4
8							10	8	5	1	6	4
9							12	8	7	1	4	5
10							18	8	5	1	4	5
11							20	8	5	3	4	3
12							32	10	5	3	4	3
13		7					29	8	3	3	6	3
14							29	8	8	3	4	3
15							29	8	9	3	4	2
16							29	7	8	3	7	2
17							29	7	5	5	6	2
18							26	7	5	22	6	2
19							26	6	16	25	6	2
20							20	4	21	40	6	2
21	4						18	4	21	33	4	2
22							20	4	16	16	7	3
23							20	4	13	11	4	3
24							15	7	9	9	6	5
25							20	8	7	9	4	3
26							18	18	7	8	2	3
27							18	18	6	24	2	3
28	*5					12	20	18	4	14	1	5
29						16	23	18	4	6	5	3
30						18	26	18	2	5	5	3
31						15		18		3	5	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									5.0	307		
November									6.0	357		
December												
January												
February												
March												
April							32	8	19.5	1,160		
May							26	4	11.0	676		
June							21	2	9.6	571		
July							40	1	8.5	525		
August							7	1	4.2	258		
September							7	2	3.5	208		

\*Discharge measurement.

Trinchera Creek above Turners ranch, near Fort Garland, Colo.

Location.- Water-stage recorder in sec. 2, T. 31 S., R. 71 W., above Turners ranch and 7 miles southeast of Fort Garland.

Drainage area.- 45 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; April 1923 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 59 second-feet May 21, 22 (gage height, 1.40 feet); minimum occurred during winter.  
1923-34: Maximum discharge, 318 second-feet May 23, 1926 (gage height, 2.54 feet); minimum occurred during winter.

Remarks.- Records good except those estimated, Nov. 16-30, Apr. 1, 2, which are fair. No record Dec. 1 to Mar. 31. No diversions or regulation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	9					10	32	42	13	13	9
2	9	9					10	32	42	13	13	9
3	9	9					11	32	42	13	13	7
4	11	9					13	32	36	13	13	7
5	11	9					16	32	32	13	13	7
6	11	8					13	32	32	13	13	7
7	11	11					16	27	27	13	13	7
8	11	11					13	32	27	13	13	8
9	11	9					13	32	27	11	13	8
10	11	9					16	36	27	11	13	8
11	11	9					19	42	23	11	11	7
12	11	9					23	42	23	11	11	7
13	11	9					27	42	23	11	11	8
14	11	9					27	42	23	11	11	8
15	11	9					27	42	23	11	11	8
16	11	9					23	42	23	11	11	8
17	11	9					23	42	23	11	11	7
18	11	9					23	42	19	11	11	7
19	11	9					23	42	19	13	11	7
20	11	9					27	36	19	13	11	7
21	11	8					27	36	16	11	9	7
22	11	8					27	47	16	11	9	7
23	11	8					32	42	16	13	9	10
24	11	8					32	42	16	13	9	14
25	9	8					32	42	16	13	9	10
26	9	8					32	42	13	16	9	10
27	9	8					32	42	13	19	9	10
28	9	8					32	42	13	16	9	10
29	9	8					32	42	13	13	9	10
30	9	8					32	42	13	13	9	10
31	9						42	42		13	9	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							11	9	10.4	640		
November							11	8	8.8	524		
December												
January												
February												
March												
April							32	10	22.6	1,360		
May							47	27	38.5	2,370		
June							42	13	23.2	1,380		
July							19	11	12.6	775		
August							13	9	10.9	670		
September							14	7	6.3	494		

Trinchera Creek above Mountain Home Reservoir, near Fort Garland, Colo.

Location.- Water-stage recorder in sec. 31, T. 30 S., R. 71 W., 5 miles southeast of Fort Garland.

Drainage area.- 61 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; May 1923 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 51 second-feet May 31 (gage height, 0.70 foot); minimum probably occurred during winter.  
1923-34: Maximum discharge, 385 second-feet May 24, 1928 (gage height, 1.84 feet); minimum probably occurred during winter.

Remarks.- Records good except those estimated, Nov. 16-30, Apr. 1, 2, which are fair.  
No records Dec. 1 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8	9					12	20	37	14	6	6
2	8	9					12	21	36	12	6	6
3	9	8					12	17	34	9	9	4
4	12	10					12	15	35	10	8	4
5	11	9					12	10	29	11	8	6
6	12	9					10	11	27	9	10	6
7	11	8					11	10	26	10	9	6
8	10	9					13	11	26	12	9	8
9	10	8					12	14	25	9	7	10
10	9	8					12	24	23	9	6	9
11	10	8					14	32	23	9	7	8
12	10	8					18	29	21	9	8	8
13	9	7					19	30	23	9	9	8
14	9	7					20	28	22	9	10	7
15	9	7					19	27	21	9	9	8
16	8	7					17	27	21	9	9	8
17	8	7					16	31	21	9	9	7
18	9	7					15	33	20	8	10	7
19	7	7					15	33	17	8	9	8
20	7	7					12	32	16	8	9	7
21	6	6					12	31	16	8	9	8
22	6	6					12	40	15	8	10	8
23	6	6					12	36	15	7	9	10
24	8	6					12	36	15	12	9	20
25	9	6					13	36	13	13	8	13
26	8	6					16	36	12	16	7	12
27	8	6					16	36	12	18	7	10
28	9	6					17	36	11	15	7	10
29	10	6					17	35	11	7	6	11
30	9	6					19	42	15	6	6	11
31	9							43		6	6	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							12	7	9.0	553		
November							10	6	7.3	454		
December												
January												
February												
March												
April							20	10	14.2	845		
May							43	10	27.7	1,700		
June							37	11	21.2	1,260		
July							18	6	9.9	609		
August							10	6	8.1	498		
September							20	4	8.5	506		

Trinchera Creek below Smith Reservoir, near Blanca, Colo.

Location.- Water-stage recorder below Smith Reservoir, in sec. 5, T. 31 S., R. 73 W., 5 miles southwest of Blanca.

Drainage area.- 396 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; October 1929 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 87 second-feet Apr. 17 (gage height, 2.08 feet); minimum daily discharge, 1 second-foot on days when reservoir gates are closed.  
1929-34: Maximum discharge, 164 second-feet May 15, 1932 (gage height, 2.90 feet); minimum daily discharge, 1 second-foot on days when reservoir gates are closed.

Remarks.- Records good except those for estimated periods, Oct. 1-3, Nov. 9 to Feb. 20, Sept. 27-30, which are fair. Diversions for irrigation above station. Flow regulated by Smith Reservoir, capacity, 5,335 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	1			1	21	42	10	1	2	1	2
2	1	1			1	20	39	7	3	2	1	1
3	1	1			1	20	46	4	8	2	1	1
4	1	1			1	19	38	3	7	2	1	1
5	1	1			1	18	41	2	6	2	1	1
6	1	1			1	18	43	2	6	2	1	1
7	1	1			1	20	43	2	6	2	1	1
8	1	1			1	22	42	2	6	5	2	1
9	1				1	22	39	2	6	5	3	1
10	1				1	21	36	2	6	4	3	1
11	1				1	21	40	2	6	4	3	1
12	1				1	20	37	2	6	3	3	1
13	1				1	20	48	2	6	3	2	1
14	2				1	23	57	1	6	3	2	1
15	1				1	26	66	1	6	2	2	1
16	1				1	24	71	1	7	2	2	1
17	1				1	35	77	1	7	2	1	1
18	1				1	23	73	1	7	2	1	1
19	1				1	22	64	1	6	3	1	1
20	1	1			2	24	56	1	6	3	1	1
21	1				3	26	49	1	6	3	1	1
22	1				5	28	44	1	6	3	1	1
23	1				9	37	41	1	6	3	1	1
24	1				11	30	36	1	2	3	1	1
25	1				14	32	30	1	2	3	3	1
26	1				16	35	35	1	2	3	5	1
27	1				16	33	20	1	2	3	5	1
28	1				19	35	20	1	2	3	5	1
29	1					39	19	1	2	2	5	1
30	1					41	17	1	2	1	5	1
31	1					39		1		2	5	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						2	1	1.0	61			
November								1	60			
December								1	61			
January								1	61			
February						19	1	4.0	222			
March						41	18	26.3	1,620			
April						77	17	43.6	2,590			
May						10	1	1.9	117			
June						8	1	5.0	298			
July						5	1	2.7	165			
August						5	1	2.3	141			
September						2	1	1.0	60			
The year						77	1	7.5	5,460			

## Sangre de Cristo Creek near Fort Garland, Colo.

Location.- Water-stage recorder in sec. 23, T. 30 S., R. 72 W.,  $1\frac{1}{2}$  miles east of Fort Garland.

Drainage area.- 187 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; March to October 1916, May 1923 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 73 second-feet Apr. 14 (gage height, 1.58 feet); no flow July 4-28, Aug. 7 to Sept. 30.

1916, 1923-34: Maximum discharge, 377 second-feet May 14, 1924 (gage height, 4.20 feet); minimum, that of 1934.

Remarks.- Records good except those estimated, Oct. 1-3, Nov. 8-30, Apr. 1, 2, which are fair. No records Dec. 1 to Mar. 31. Some diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6	9					20	38	14	2	1	
2	6	10					30	39	12	2	1	
3	6	10					30	39	12	1	1	
4	6	10					19	40	12	0	1	
5	7	12					40	38	10	0	1	
6	6	8					26	34	9	0	1	
7	7	6					28	30	8	0	0	
8	7						32	27	8	0	0	
9	7						37	27	8	0	0	
10	7						45	27	6	0	0	
11	9						50	28	6	0	0	
12	9						64	28	5	0	0	
13	9						65	26	5	0	0	
14	9						68	26	4	0	0	
15	10						64	25	3	0	0	
16	9						61	23	4	0	0	
17	9						60	21	4	0	0	
18	9						59	17	4	0	0	
19	9	5					52	16	2	0	0	
20	9						50	16	2	0	0	
21	9						49	16	2	0	0	
22	9						49	18	1	0	0	
23	9						50	22	1	0	0	
24	9						53	19	1	0	0	
25	9						50	19	3	0	0	
26	9						45	19	2	0	0	
27	9						48	16	1	2	0	
28	9						49	14	1	12	0	
29	9						44	13	1	6	0	
30	9						39	14	2	2	0	
31	9							17		1		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							10	6	8.2	506		
November									6	357		
December												
January												
February												
March												
April							68	19	45.9	2,730		
May							40	13	24.3	1,490		
June							14	1	5.1	303		
July							12	0	.9	55		
August							1	0	.2	12		
September							0	0	0	0		

Note.- No flow during September.

Sangre de Cristo Creek above Smith Reservoir, near Blanca, Colo.

Location.- Water-stage recorder in sec. 35, T. 30 S., R. 73 W., just above Smith Reservoir and 2 miles south of Blanca.

Drainage area.- 231 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; April 1929 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 78 second-feet Apr. 16 (gage height, 2.20 feet); minimum daily discharge, 3 second-feet for days during October and June to September.

1929-34: Maximum discharge, 191 second-feet May 20, 1932 (gage height, 3.60 feet); minimum daily discharge, 1 second-foot June 18-20, 25, 26, 30, 1931.

Remarks.- Records fair. Discharge estimated Nov. 8-30, Apr. 1-4, 14, 15, Aug. 8 to Sept. 30. No records Dec. 1 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	3	6					50	17	6	3	4	3	
2	3	6					50	17	6	3	3	3	
3	3	6					50	11	6	3	3	3	
4	3	9					50	8	6	3	4	3	
5	3	8					51	8	6	4	4	3	
6	3	9					48	12	6	3	4	3	
7	3	9					47	11	6	4	4	3	
8	3	9					36	8	6	4	4	3	
9	3						37	8	5	4	4	3	
10	3						38	8	5	4	5	3	
11	3						43	9	5	4	5	3	
12	3	8					52	7	4	4	3	3	
13	3						62	7	4	3	3	3	
14	3						65	8	4	4	3	3	
15	3						65	8	4	4	3	3	
16	3						74	8	4	3	3	3	
17	3						74	8	4	3	3	3	
18	3	8					60	8	4	3	3	3	
19	3						47	8	4	3	3	3	
20	3						41	8	4	3	3	3	
21	3						37	7	3	3	3	3	
22	3						39	7	3	3	3	3	
23	3						36	7	3	4	3	3	
24	3						33	7	3	4	3	3	
25	3						28	7	3	4	3	3	
26	4		8					22	8	3	4	3	3
27	4							25	8	3	4	3	3
28	4							26	7	3	4	3	3
29	4							30	7	3	4	3	3
30	5						22	7	3	4	3	3	
31	5							7		4	3		
Month							Maximum	Minimum	Mean	Run-off in acre-feet			
October							5	3	3.3	203			
November									8	476			
December													
January													
February													
March													
April							74	22	44.6	2,650			
May							17	7	8.6	529			
June							6	3	4.3	256			
July							4	3	3.6	221			
August							5	3	3.4	209			
September							3	3	3.0	179			



## Ute Creek near Fort Garland, Colo.

Location.- Water-stage recorder in sec. 2, T. 30 S., R. 72 W.,  $2\frac{1}{2}$  miles north of Fort Garland.

Drainage area.- 32 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; March to October 1918, May 1923 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 118 second-feet Sept. 24 (gage height, 1.52 feet); minimum daily discharge, 4 second-feet for several days during the period June to September.  
1918, 1923-34: Maximum discharge, 313 second-feet July 22, 1930 (gage height, 2.38 feet); minimum daily discharge, that of 1934.

Remarks.- Records excellent except those estimated, Nov. 18-30, Apr. 1, 2, which are fair. Some diversion for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	8					15	42	29	7	6	6
2	9	7					15	39	26	8	6	6
3	6	6					15	35	26	6	10	5
4	10	8					18	32	22	6	9	4
5	11	6					16	27	18	6	7	4
6	10	6					16	29	16	6	7	4
7	10	8					18	40	15	6	6	4
8	8	10					19	49	14	6	6	10
9	10	9					20	53	12	6	4	10
10	10	9					24	66	12	13	6	8
11	11	10					32	67	11	10	6	8
12	10	10					45	58	10	6	10	8
13	11	10					49	55	11	6	6	9
14	12	10					49	49	10	6	7	7
15	12	10					47	40	11	5	10	6
16	10	9					42	40	11	4	10	7
17	10	9					37	37	11	6	10	4
18	10	9					33	35	10	26	12	4
19	10	9					33	38	7	15	10	4
20	10	9					38	33	5	12	9	4
21	10	8					37	33	4	8	10	4
22	10	8					38	33	4	5	10	5
23	9	8					45	33	4	7	9	19
24	8	8					55	32	4	8	6	71
25	8	8					46	31	4	6	8	34
26	8	8					43	33	4	14	7	25
27	7	8					39	32	4	15	6	18
28	8	8					35	31	4	17	5	15
29	8	6					37	31	6	12	5	15
30	7	8					40	37	11	7	4	14
31	8							35		7	4	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							12	7	9.5	584		
November							10	6	8.4	500		
December												
January												
February												
March												
April							55	15	33.3	1,980		
May							67	27	39.5	2,430		
June							29	4	11.2	666		
July							26	4	8.8	541		
August							12	4	7.5	463		
September							71	4	11.4	678		

## RIO GRANDE BASIN

## Conejos River near Mogote, Colo.

Location.- Water-stage recorder in sec. 34, T. 33 N., R. 7 E., 5 miles west of Mogote. 1893-1900, 1903-05 station maintained 1 mile downstream, 1906, 1907-11 station maintained 3 miles upstream; record practically comparable.

Drainage area.- 282 square miles.

Records available.- September 1899 to March 1900, April 1903 to September 1913, October 1933 to September 1934 in reports of U. S. Geological Survey; September 1889 to March 1900, April 1903 to September 1934 in reports of State engineer.

Average discharge.- 32 years (1902-34), 381 second-feet.

Extremes.- Maximum discharge during year, 1,310 second-feet May 10 (gage height, 3.45 feet); minimum probably occurred during winter.

1889-1900, 1903-34: Maximum discharge, 6,000 second-feet (estimated) Oct. 5, 1911; minimum probably occurred during winter.

Remarks.- Records good except those estimated Dec. 7 to Mar. 27 on the basis of five discharge measurements and temperature records, which are fair. No diversion or regulation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	74	82			48	159	940	322	62	73	70
2	111	82	52		*40	48	159	725	265	65	61	76
3	125	71	55	*33		48	147	591	250	60	62	62
4	204	72	82			48	115	509	227	55	65	55
5	192	71	58			55	118	501	193	51	63	51
6	242	69	56			55	115	688	182	48	52	51
7	188	70				55	112	940	165	47	52	51
8	164	72				55	122	951	147	51	54	55
9	147	68	*42			55	175	1,020	135	60	50	57
10	136	68				55	285	1,080	125	69	47	63
11	128	66				60	429	964	112	62	57	69
12	128	65				60	616	940	106	63	61	51
13	125	65				60	660	840	101	66	54	51
14	130	65				70	607	716	65	60	55	49
15	133	64				70	633	582	87	56	52	48
16	120	64				80	633	565	84	57	84	47
17	111	62				80	633	541	96	58	68	44
18	104	63				90	457	517	82	72	84	44
19	98	61				90	443	478	76	56	82	46
20	90	60		*37		80	464	415	70	52	70	45
21	84	61				90	582	392	66	52	75	46
22	60	59				100	725	363	62	63	84	46
23	78	59				110	811	356	56	79	92	55
24	77	60				120	870	328	65	87	79	317
25	76	59				130	910	328	87	92	66	182
26	76	58				140	850	317	72	96	62	144
27	74	59				140	860	317	65	125	60	122
28	72	58				135	890	301	53	115	58	108
29	70	61				147	900	290	54	115	57	97
30	70	64				162	920	334	60	96	66	33
31	68					182		356		82	57	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							242	68	116	7,130		
November							82	56	65	3,970		
December									41	2,520		
January									35	2,150		
February									45	2,500		
March							182	48	87.0	5,350		
April							920	112	513	30,500		
May							1,080	280	597	36,100		
June							322	54	118	7,020		
July							125	47	70.1	4,310		
August							92	47	64.5	3,970		
September							317	33	74.5	4,430		
The year							1,080		152	109,800		

\*Discharge measurement.

## Conejos River near La Sauces, Colo.

Location.- Two water-stage recorders in sec. 2, T. 35 N., R. 11 E., 2 miles north of La Sauces and half a mile above mouth.

Drainage area.- 887 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; March 1921 to September 1934 in reports of State engineer.

Average discharge.- 13 years, 244 second-feet.

Extremes.- Maximum discharge during year, 93 second-feet Dec. 15; no flow July 21 to Sept. 8.

1921-34: Maximum daily discharge, 3,650 second-feet May 24, 1932; no flow July 21 to Sept. 8, 1934.

Remarks.- Records good except those partly estimated, which are fair. No flow July 21 to Sept. 8. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	49	47	71	77	72	*31	18	2	0		0
2	25	51	47	*71	80	72	*31	23	2	2		0
3	25	51	47	71	80	72	*25.5	16	2	0		0
4	27	52	50	74	82	70	*20.5	16	2	2		0
5	30	54	46	72	86	68	*15.5	13	2	4		0
6	28	54	46	71	87	68	*12.5	13	2	2		0
7	29	52	52	75	87	87	*12.5	13	*2	4		0
8	30	51	59	*83	90	67	*12.5	13	*2	6		0
9	33	52	68	*83	*85	66	*12.5	14	*2	6		*5
10	32	54	77	*85	81	61	13	23	*2	9		11
11	33	54	80	*74	74	54	14	24	*2	5		*11
12	41	55	71	*86	74	52	34	41	*2	4		*12
13	44	55	74	*78	72	52	14	35	*2	2		*11
14	44	55	79	*78	76	51	14	20	2	2		*10
15	45	56	91	*78	76	51	14	13	2	*2		*12
16	45	58	77	*76	79	61	14	13	2	*2		*11
17	46	58	*67	*76	79	*62	19	*12	3	*1		*11
18	48	59	*67	*71	75	*62	20	*12	3	*1		*11
19	48	56	*70	*71	71	61	19	*12	2	*1		*12
20	45	48	*75	*66	71	56	25	*8	2	*1		*13
21	44	34	*80	66	71	53	22	*8	1	0		*13
22	44	35	71	71	73	54	22	*6	1	0		*13
23	46	37	68	69	73	53	27	*5	1	0		*13
24	48	47	66	69	73	50	23	*4	1	0		13
25	48	47	65	76	73	54	27	*2	1	0		*12
26	48	47	65	77	73	50	27	2	2	0		*10
27	48	47	68	74	73	39	34	2	0	0		*9
28	48	47	65	74	73	38	24	2	0	0		*9
29	48	47	66	79		35	20.0	2	0	0		*9
30	49	47	68	79		32	20.0	2	0	0		8
31	51		66	79		*31		2		0		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							51	24	40.2	2,470		
November							59	34	50.3	2,990		
December							91	46	65.7	4,040		
January							86	66	74.9	4,610		
February							90	71	77.3	4,290		
March							72	31	56.0	3,440		
April							34	12.5	20.6	1,230		
May							41	2	12.6	775		
June							3	0	1.6	95		
July							0	0	1.8	111		
August							0	0	0	0		
September							13	0	8.0	476		
The year							91	0	33.9	24,530		

\*Partly estimated.

## San Antonio River at Ortiz, Colo.

Location.- Water-stage recorder in sec. 24, T. 32 N., R. 8 E., half a mile south of Ortiz and half a mile above mouth of Los Pinos River.

Drainage area.- 110 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; January to October 1915, May 1919 to October 1920, October 1924 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 79 second-feet Apr. 12 (gage height, 1.50 feet); no flow at times during June to September.  
1915, 1919-20, 1924-34: Maximum discharge, 900 second-feet May 6, 1926 (gage height, 3.00 feet); no flow for periods nearly every year.

Remarks.- Records good except those estimated Oct. 1-5, Nov. 7-30, Apr. 1-9, which are fair. No records Dec. 1 to Mar. 31. Small diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2					25	13	6	0	0	1
2	2	2					25	10	2	0	0	6
3	3	2					25	10	2	0	0	3
4	8	2					28	10	1	0	0	1
5	8	2					28	10	1	0	0	1
6	8	2					30	8	1	0	10	1
7	6						30	6	0	0	6	1
8	3						30	8	0	0	2	1
9	3						34	6	0	0	0	1
10	2						34	6	0	0	0	2
11	2						44	3	0	0	0	2
12	2						57	3	0	0	0	2
13	2						64	2	0	0	0	1
14	2						57	2	0	0	0	0
15	3						57	1	0	0	0	0
16	3						50	1	0	0	0	0
17	3						50	1	0	0	6	0
18	3						44	1	0	0	6	0
19	2	2					39	1	0	0	6	1
20	2						39	1	0	0	6	0
21	1						39	1	0	0	6	0
22	1						34	1	0	0	2	0
23	1						29	1	0	0	2	0
24	2						24	1	0	0	1	0
25	2						24	1	0	0	1	6
26	2						20	1	0	0	1	8
27	2						16	1	0	0	0	3
28	2						16	8	0	0	0	1
29	2						13	3	0	1	0	1
30	2						13	2	0	1	0	1
31	2							3		0		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							8	1	2.8	172		
November									2	119		
December												
January												
February												
March												
April							64	13	33.9	2,020		
May							13	1	4.1	252		
June							6	0	.4	24		
July							1	0	.1	6		
August							10	0	1.6	111		
September							8	0	1.5	89		

## San Antonio River at mouth, near Manassa, Colo.

Location.- Water-stage recorder in sec. 21, T. 34 N., R. 10 E., 1 mile above mouth and 2½ miles east of Manassa. Gage reinstalled Mar. 28, 1934, at independent datum after highway bridge was rebuilt.

Drainage area.- 348 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; April 1923 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 108 second-feet Apr. 13 (gage height, 1.82 feet); no flow June 28 to Aug. 17, Aug. 25-28, Aug. 31 to Sept. 30.  
1923-34: Maximum discharge, 1,890 second-feet May 5, 1924 (gage height, 5.42 feet, former datum); no flow for periods nearly every year.

Remarks.- Records good except those estimated Oct. 1 to Mar. 27 on the basis of six discharge measurements and temperature records and those estimated May 28-31, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					*5		8	64	14		0	
2							9	69	14		0	
3							7	60	12		0	
4							6	62	11		0	
5							6	53	8		0	
6	*5					6	4	46	6		0	
7							4	41	3		0	
8							4	44	2		0	
9							4	44	2		0	
10							4	42	.6		0	
11							8	54	.5		0	
12							40	82	.4		0	
13							79	62	.4		0	
14							74	42	.4		0	
15							68	36	.4		0	
16												
17			*3		*7		60	31	.4		0	
18							52	27	.4		0	
19							41	24	.4		.5	
20						5	23	19	.4		10	
21							19	15	.4		6	
22							18	14	.2		2	
23							50	14	.2		.8	
24							68	14	.3		.4	
25	*10						69	13	.4		.2	
26							66	13	.4		0	
27		*3					75	12	.2		0	
28							72	10	.2		0	
29							68	10	0		0	
30							65	10	0		.8	
31							1	11	0		.2	
							2	12			0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									0.75	46		
November									3.0	179		
December									3.0	164		
January									4.0	246		
February									6.0	333		
March								1	5.0	307		
April							79	4	37.9	2,260		
May							52	10	33.9	2,080		
June							14	0	2.62	166		
July							0	0	0	0		
August							0	0	.67	41		
September							0	0	0	0		
The year							82	0	8.06	5,830		

\*Discharge measurement.

Note.- No flow during July and September.

## Los Pinos River near Ortiz, Colo.

Location.- Water-stage recorder in sec. 27, T. 32 N., R. 8 E., 2½ miles west of Ortiz.

Drainage area.- 167 square miles.

Records available.- October 1933 to September 1934 in reports of U. S. Geological Survey; January 1914 to November 1920, October 1924 to September 1934 in reports of State engineer.

Extremes.- Maximum discharge during year, 569 second-feet Apr. 12 (gauge height, 2.88 feet); minimum daily discharge, 5 second-feet Aug. 11, Sept. 19.  
1914-20, 1924-34: Maximum discharge, 2,300 second-feet May 21, 1920 (gauge height, 6.10 feet); minimum daily discharge, that of 1934.

Remarks.- Records good except those estimated Apr. 1-9, Sept. 8-11, which are fair. No records Dec. 1 to Mar. 31. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	21					200	176	70	13	12	14
2	21	24					200	164	56	13	12	14
3	21	21					200	152	56	13	12	11
4	44	21					175	152	56	13	12	8
5	44	21					175	130	49	12	12	6
6	49	33					200	141	44	12	82	8
7	32	33					200	164	39	9	13	8
8	32	38					250	104	33	7	6	8
9	28	33					300	164	33	12	6	9
10	24	32					334	164	33	12	6	8
11	24	27					328	152	29	12	5	8
12	24	27					360	152	24	11	11	8
13	24	20					344	130	24	11	8	9
14	24	20					324	130	24	11	6	9
15	28	20					318	110	21	11	8	8
16	24	20					288	110	18	10	11	6
17	24	20					273	101	18	10	33	6
18	21	20					216	92	16	17	24	6
19	21	16					230	92	16	10	19	5
20	21	16					230	94	14	10	19	9
21	21	15					244	77	14	10	19	14
22	21	19					258	77	14	10	14	14
23	21	15					244	64	11	12	14	18
24	21	15					244	70	14	15	8	86
25	21	15					259	70	24	15	9	96
26	21	15					259	65	19	15	8	47
27	21	15					216	71	13	15	8	41
28	21	15					202	62	13	22	8	31
29	21	15					202	56	13	30	8	31
30	21	15					189	70	13	22	18	20
31	21							84		15	11	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							49	21	25.2	1,550		
November							38	15	21.2	1,260		
December												
January												
February												
March												
April							360	175	249	14,800		
May							176	56	113	6,950		
June							70	11	27.4	1,630		
July							30	7	13.2	812		
August							92	5	14.1	867		
September							96	5	18.8	1,120		

## Culebra Creek at San Luis, Colo.

Location.- Water-stage recorder 1 mile southeast of San Luis, Costilla County.

Drainage area.- 220 square miles.

Records available.- January 1910 to December 1911, October 1933 to September 1934 in reports of U. S. Geological Survey; May 1909 to December 1910, April 1927 to September 1934 in reports of State engineer.

Average discharge.- 17 years (1909-19, 1927-34), 67.0 second-feet.

Extremes.- Maximum discharge during year, 166 second-feet (estimated) May 24, minimum daily discharge, 5 second-feet Sept. 14-18.  
1909-19, 1927-34: Maximum daily discharge, 470 second-feet June 28, 1915; minimum daily discharge, that of 1934.

Remarks.- Records excellent except those for May 7-28, which were estimated on the basis of amount of water released from reservoir just above station and are good. Diversions for irrigation above station. Flow regulated by Sanchez Reservoir, capacity, 103,100 acre-feet.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	28	27	28	28	13	10	21	123	63	78	35
2	17	32	25	28	27	14	13	26	53	88	76	28
3	24	26	28	28	25	16	17	34	88	57	78	53
4	35	28	28	28	12	13	15	37	103	13	71	26
5	46	28	27	28	27	15	17	29	112	69	68	25
6	34	27	26	23	26	20	17	34	118	108	62	26
7	35	26	27	9	27	15	15	66	117	128	57	22
8	32	30	25	30	28	19	11	75	119	121	65	23
9	31	30	25	21	28	18	21	93	117	129	55	16
10	30	31	26	22	26	18	19	121	108	128	45	9
11	30	28	26	29	11	11	21	133	134	121	58	8
12	30	28	26	26	23	15	23	127	160	119	54	7
13	28	28	28	28	26	14	23	88	156	110	48	6
14	28	25	28	26	26	21	21	130	151	117	40	5
15	28	25	27	28	28	22	11	135	145	103	33	5
16	26	30	25	27	28	23	11	138	143	112	41	5
17	25	30	25	26	25	21	12	97	110	129	33	12
18	25	28	25	27	12	10	18	151	125	121	25	12
19	26	28	26	27	12	11	11	168	124	122	17	15
20	25	28	25	23	26	19	20	150	112	108	25	22
21	23	26	27	10	23	19	19	158	97	77	28	16
22	26	27	27	26	12	16	11	159	87	66	36	16
23	26	28	21	25	26	25	11	151	76	75	30	25
24	26	28	10	26	24	25	11	166	70	62	52	31
25	23	27	11	26	10	25	21	155	71	54	42	26
26	25	27	16	27	15	25	32	156	73	55	27	27
27	25	28	26	25	19	25	39	127	47	121	28	26
28	23	26	28	11	15	25	30	123	46	117	34	26
29	25	27	28	26		21	12	132	67	126	39	27
30	25	28	27	26		22	25	140	70	61	47	17
31	23		27	26		20		120		80	36	
Month	Maximum		Minimum		Mean		Run-off in		acre-feet			
October	46	16	27.1	1,670								
November	32	25	27.9	1,660								
December	28	10	24.9	1,530								
January	30	9	24.8	1,520								
February	28	10	22.0	1,220								
March	25	10	18.6	1,140								
April	39	10	17.9	1,070								
May	166	21	111	6,820								
June	160	46	104	6,190								
July	129	13	94.8	5,830								
August	78	17	46.1	2,830								
September	35	5	19.3	1,160								
The year	166	5	45.1	32,630								

## Rio Colorado near Questa, N. Mex.

(Also known as Red River)

Location.- Water-stage recorder in sec. 33, T. 29 N., R. 13 E.,  $1\frac{1}{2}$  miles above mouth of Cabresto Creek and 2 miles east of Questa. Zero of gage raised 1.14 feet May 1, 1934.

Drainage area.- 112 square miles.

Records available.- October 1912 to August 1915, October 1930 to September 1934 in reports of U. S. Geological Survey; October 1912 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 161 second-feet July 26 (gage height, 2.16 feet); minimum daily discharge, 12 second-feet Jan. 12, 1930-34: Maximum discharge, 827 second-feet May 24, 1932 (gage height, 4.37 feet, old datum); minimum daily discharge, 6.3 second-feet Nov. 24, 25, 1931.

Remarks.- Records good except those for August and September, which are poor. Discharge estimated Jan. 14-17, Aug. 8-27, Aug. 28 to Sept. 30. Diversions for irrigation above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	20	18	18	18	16	23	44	71	25	25	
2	23	20	18	18	18	17	22	44	67	23	25	
3	24	19	15	17	18	18	23	43	69	22	26	
4	24	19	13	18	18	16	21	44	66	23	26	
5	24	18	17	18	18	17	22	41	59	23	27	
6	24	20	13	15	18	18	22	40	55	22	32	
7	23	19	15	13	18	18	22	43	48	27	31	
8	23	20	16	12	17	18	22	46	46	40		
9	22	19	16	14	18	17	23	52	44	46		
10	22	20	18	15	18	18	23	64	41	40		
11	22	20	18	16	15	18	24	75	40	35	30	25
12	22	19	18	15	15	18	29	73	38	29		
13	22	19	18	14	18	18	32	75	37	24		
14	23	19	19	15	18	18	35	78	36	23		
15	24	19	18	15	19	19	36	75	34	22		
16	22	19	16	16	18	20	38	71	33	22		
17	22	19	15	16	19	20	36	67	33	22		
18	22	19	14	17	17	17	34	64	31	24		
19	21	18	15	16	19	18	34	66	29	26		
20	21	18	16	16	18	20	35	63	29	23		
21	21	18	15	16	18	21	40	61	28	24	25	
22	21	18	15	16	18	21	42	66	25	25		
23	21	18	16	16	18	21	43	64	24	25		30
24	21	18	16	16	18	21	46	63	27	25		40
25	21	18	17	16	17	22	52	63	26	27		60
26	21	18	18	16	17	22	55	63	22	46		45
27	21	18	18	16	17	22	50	64	22	50		
28	21	19	18	16	16	22	50	63	23	36	27	
29	20	19	18	18		22	53	66	24	31		35
30	20	19	18	17		22	53	73	25	28	25	30
31	19		19	18		23		77		26		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							24	19	21.9	1,350		
November							20	18	18.9	1,120		
December							19	13	16.5	1,020		
January							18	12	16.0	982		
February							19	15	17.6	980		
March							23	16	19.2	1,180		
April							55	21	34.7	2,060		
May							78	40	61.0	3,750		
June							71	22	38.4	2,290		
July							50	22	28.5	1,750		
August									26.9	1,650		
September							60		29.0	1,730		
The year							78	12	27.4	19,650		



## Rio Hondo at Valdez, N. Mex.

Location.- Chain gage in Antoine Leroux grant, half a mile below old toll gate and 1 mile east of Valdez, Taos County.

Drainage area.- 38 square miles.

Records available.- October 1930 to September 1934 (discontinued) in reports of U. S. Geological Survey; December 1915 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 47 second-feet May 11-13; maximum gage height, 2.20 feet May 11-19; no flow Oct. 8-31.  
1930-34: Maximum discharge, 296 second-feet May 20, 1932; maximum gage height, 3.5 feet (backwater from ice) Dec. 23, 1930; no flow July 29-31, Oct. 8-31, 1933.

Remarks.- Records fair. Discharge estimated because of ice Dec. 17, Jan. 3, 5-12, 15-17. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	1	2	12	6	10	4	10	25	3	3	1
2	1	1	9	12	6	10	1	8	24	2	3	1
3	1	1	14	12	6	10	1	8	22	1	3	1
4	1	1	14	12	7	10	1	8	20	1	3	1
5	1	1	17	12	7	10	1	8	19	1	3	1
6	1	1	17	12	7	10	1	9	16	1	3	1
7	1	1	16	12	7	10	1	11	13	1	3	1
8	0	1	14	12	7	10	1	14	10	2	3	1
9	0	1	14	12	7	8	1	18	9	2	2	1
10	0	1	14	12	7	8	5	29	9	1	2	1
11	0	1	14	12	6	8	13	42	7	1	2	1
12	0	1	14	12	9	8	13	47	7	1	6	1
13	0	1	14	12	9	8	14	47	6	1	8	1
14	0	1	14	8	10	8	15	46	5	1	3	1
15	0	1	13	8	10	8	15	46	5	1	2	1
16	0	1	13	9	10	10	17	46	4	1	2	1
17	0	1	13	10	10	10	18	46	3	2	2	1
18	0	1	13	10	10	10	18	45	3	2	2	1
19	0	1	13	8	10	10	19	40	2	2	2	1
20	0	1	13	8	10	10	21	36	2	2	2	1
21	0	1	13	8	10	10	21	36	1	3	2	1
22	0	1	13	8	10	9	21	36	1	3	2	1
23	0	1	13	8	10	8	17	35	1	2	1	17
24	0	1	13	8	10	6	14	27	2	1	1	24
25	0	1	13	8	10	6	14	27	2	3	2	17
26	0	1	13	8	10	8	14	27	1	11	2	14
27	0	1	13	8	10	8	13	27	2	11	2	12
28	0	1	10	8	10	8	14	26	2	6	2	10
29	0	1	12	7	8	8	14	26	2	3	1	8
30	0	1	12	6	8	8	13	26	5	3	1	8
31	0		12	6	8	8		26		3	1	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							2	0	0.3	16		
November							1	1	1.0	60		
December							17	2	13.0	797		
January							12	6	9.7	595		
February							10	6	8.7	482		
March							10	6	8.9	549		
April							21	1	11.2	964		
May							47	8	28.5	1,750		
June							25	1	7.6	450		
July							11	1	2.5	155		
August							8	1	2.5	151		
September							24	1	4.4	282		
The year							47	0	6.2	5,930		

## Rio Hondo at Arroyo Hondo, N. Mex.

Location. Water-stage recorder in T. 27 N., R. 12 E., on Arroyo Hondo grant, 1.5 miles west of Arroyo Hondo, Taos County, and half a mile above confluence with Rio Grande. Prior to Aug. 13, 1934, chain gage half a mile upstream.

Records available.— January 1932 to September 1934 in reports of U. S. Geological Survey. Comparable records 200 yards above confluence with Rio Grande April 1910 to August 1915 (previously published "near Arroyo Hondo") in reports of U. S. Geological Survey; April 1910 to December 1928 in reports of State engineer.

Extremes.— Maximum discharge recorded during year, about 1,800 second-feet July 22 (gage height, 5.0 feet); minimum daily discharge, 4 second-feet July 13-16. 1932-34: Maximum discharge recorded, about 1,800 second-feet Sept. 1, 1932, July 22, 1934 (gage height, 5.0 feet); minimum daily discharge, that of July 13-16, 1934.

Remarks.— Records good. Discharge estimated because of ice Jan. 8. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	10	10	18	16	14	13	9	26	7	6	7
2	10	10	10	19	16	15	12	9	13	7	5	7
3	10	10	11	17	17	16	12	9	14	5	5	7
4	10	10	11	19	17	16	11	9	13	5	5	7
5	10	11	12	19	16	16	10	9	13	5	5	7
6	11	10	13	19	17	16	10	9	13	5	5	8
7	10	10	13	19	17	15	9	9	12	5	5	8
8	10	10	12	18	17	14	9	9	10	5	5	8
9	10	10	11	18	16	14	9	10	8	5	5	8
10	10	10	14	17	15	14	10	10	7	5	5	8
11	9	10	15	15	16	14	10	37	7	5	5	8
12	9	10	15	15	16	14	10	45	7	5	5	9
13	9	10	17	14	15	14	10	37	8	4	6	9
14	14	9	15	14	15	14	10	24	7	4	6	9
15	10	9	14	14	15	15	9	24	7	4	7	9
16	10	9	14	14	15	15	9	24	7	4	5	9
17	10	9	15	14	15	15	9	23	7	30	6	8
18	10	9	16	14	15	15	9	23	7	12	6	8
19	10	9	17	14	15	16	9	23	7	6	6	7
20	9	10	17	14	15	15	10	23	7	6	6	7
21	9	10	17	15	15	15	10	23	7	6	6	8
22	9	10	17	15	15	15	14	26	7	390	6	8
23	9	10	17	14	15	8	14	25	7	22	6	25
24	9	10	17	14	13	8	14	25	9	10	6	33
25	9	10	18	14	14	8	12	26	8	9	6	31
26	10	10	18	14	13	11	10	23	8	13	6	28
27	10	10	18	14	13	11	8	22	7	28	7	22
28	10	10	18	14	13	11	8	22	7	18	7	17
29	9	10	18	14		11	9	25	7	9	7	16
30	9	10	19	14		11	9	28	7	5	7	17
31	10		19	15		11		34		6	7	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							14	9	9.8	601		
November							11	9	9.8	585		
December							19	10	16.1	923		
January							19	14	15.6	956		
February							17	13	15.2	945		
March							16	8	13.4	825		
April							14	8	10.3	611		
May							45	9	21.1	1,300		
June							26	7	9.1	543		
July							390	4	21.0	1,290		
August							7	5	5.8	357		
September							33	7	12.1	720		
The year							390	4	13.2	9,560		

## Rio Taos at Los Cordovas, N. Mex.

Location.- Water-stage recorder in Martinez grant about 50 feet below mouths of Rio Ranchos de Taos and Arroyo Seco, half a mile northeast of Los Cordovas, and 4 miles west of Taos, Taos County.

Drainage area.- 395 square miles.

Records available.- April 1910 to August 1915, October 1930 to September 1934 in reports of U. S. Geological Survey; April 1910 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 77 second-feet July 16 (gage height, 1.95 feet); minimum daily discharge, 1.4 second-feet Aug. 7, 10.  
1930-34: Maximum discharge, 725 second-feet Sept. 24, 1931 (gage height, 4.65 feet); minimum daily discharge, that of Aug. 7, 10, 1934.

Remarks.- Records good except those estimated because of ice Jan. 8-12, 14, Feb. 10-12, and those estimated June 14-19, Aug. 20-31, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	17	35	26	31	24	23	10	28	3.9	2.1	9.5
2	13	17	35	29	31	24	21	9.5	22	3.9	1.3	9.0
3	12	17	30	27	30	22	19	10	24	3.2	2.1	8.2
4	14	18	27	29	30	22	20	10	25	3.2	1.8	7.7
5	14	20	29	29	29	22	21	8.6	18	3.2	2.1	7.7
6	14	23	26	22	29	23	22	6.8	18	2.8	2.5	9.0
7	13	23	27	21	30	24	22	7.2	13	3.2	1.4	9.0
8	13	24	26		29	24	20	6.4	10	5.4	2.1	13
9	12	25	26		30	25	19	6.3	10	3.6	2.1	13
10	13	25	25	23		25	18	6.4	8.6	4.3	1.4	10
11	14	24	26		30	26	14	18	7.2	3.9	2.1	8.6
12	14	24	24			25	16	21	6.4	2.8	5.9	9.5
13	12	24	24	24	39	24	18	18	5.9	2.6	8.6	11
14	14	25	24	25	35	24	17	18	5.5	2.6	10	9.0
15	16	22	21	26	34	23	18	16	5.0	3.9	5.9	8.6
16	14	22	27	26	34	23	19	12	4.5	8.5	2.1	8.6
17	14	21	26	26	32	24	16	10	4.0	3.2	3.8	8.2
18	15	21	17	33	32	22	17	8.6	3.5	5.9	1.8	8.2
19	15	21	21	26	32	23	14	7.2	3.0	5.9	7.2	7.2
20	16	22	22	26	30	24	13	7.7	2.5	3.9		6.8
21	15	22	22	26	29	24	12	5.4	3.6	5.4		7.7
22	14	22	22	26	33	22	12	5.9	2.5	5.9		8.2
23	14	22	22	24	35	22	10	6.4	2.5	5.9		19
24	12	23	23	24	34	22	11	6.8	5.4	6.8		18
25	13	24	23	26	32	21	12	15	4.6	5.4	8.0	12
26	12	24	22	24	29	19	14	15	3.2	5.4		12
27	11	23	22	24	26	18	10	27	3.9	4.6		10
28	16	24	23	25	25	20	9.0	30	3.6	3.6		9.5
29	16	29	25	26		21	6.6	29	3.2	4.6		9.5
30	16	28	25	26		19	9.5	38	3.9	3.9		10
31	16		26	29		22		44		2.8		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							16	11	13.9	853		
November							29	17	22.5	1,340		
December							35	17	24.9	1,530		
January							33		25.5	1,570		
February							39	25	31.1	1,730		
March							28	18	22.7	1,390		
April							25	8.6	15.8	935		
May							44	5.4	14.2	874		
June							28	2.5	6.68	517		
July							6.5	2.6	4.50	277		
August								1.4	5.25	323		
September							19	6.8	9.92	590		
The year							44	1.4	16.5	11,930		

## Rio Lucero near Arroyo Seco, N. Mex.

Location.- Water-stage recorder in Antoine Leroux grant, in T. 26 N., R. 13 E., about 200 feet above Rio Lucero diversion dam, 2 miles southeast of Arroyo Seco, 4½ miles north of Taos Pueblo, and 7½ miles northeast of Taos.

Records available.- April 1910 to December 1915 (published as Rio Lucero near Taos, N. Mex.), November 1933 to September 1934 in reports of U. S. Geological Survey; January 1911 to December 1915 in reports of State engineer.

Extremes.- Maximum discharge during period November 1933 to September 1934, 63 second-feet May 11 (gage height, 1.85 second-feet); minimum daily discharge, 3.4 second-feet Feb. 25.

Remarks.- Records good except those estimated Dec. 9 to Jan. 18, and those estimated because of ice Feb. 11-14, 18, 19, which are poor. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			4.9		4.0	4.6	14	38	44	13	12	10
2			7.6		4.2	4.7	15	35	43	13	12	9.5
3			8.0		4.4	4.9	14	32	42	12	12	9.2
4			7.8		4.2	5.1	12	30	39	12	11	9.2
5			6.5		4.4	5.5	12	28	35	11	11	9.2
6			5.5		4.4	6.2	12	32	32	11	11	10
7			6.2		4.4	6.5	11	40	30	12	13	9.8
8			6.2		4.2	6.0	13	46	26	13	12	9.8
9					4.2	6.0	15	52	24	12	11	11
10				6	4.6	6.2	18	56	22	12	11	9.5
11						6.8	19	59	21	12	11	9.2
12					4	7.8	20	58	20	12	11	10
13						8.9	21	58	19	11	11	10
14		6.5				10	22	56	18	11	10	9.8
15		6.2			4.6	13	22	51	18	11	10	9.5
16		6.2			4.6	14	21	48	17	11	10	9.5
17		6.0			4.6	13	20	46	16	11	10	9.2
18		6.0			4.5	11	19	44	16	11	9.8	9.5
19		6.2		5.3	4.5	11	19	43	16	11	9.5	9.2
20		6.0	6	4.6	4.7	12	21	38	17	10	10	9.2
21		6.0		4.2	4.7	12	24	37	14	10	10	9.5
22		6.2		3.8	4.7	12	26	39	14	11	10	9.8
23		5.8		3.6	4.9	12	30	35	13	11	9.8	17
24		5.8		3.8	4.2	12	32	35	16	11	9.8	20
25		5.8		3.8	3.4	11	37	38	14	13	13	17
26		5.5		3.8	5.5	10	41	36	14	18	11	16
27		6.0		5.6	4.6	10	39	39	13	16	10	15
28		5.5		3.8	4.4	10	37	37	13	13	10	14
29		5.5		3.8		12	37	38	13	13	10	13
30		5.5		3.8		14	37	43	15	13	9.8	13
31				3.8		15		45		12	10	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							6.5	5.5	5.92	200		
November 14-30												
December							5.5	3.4	4.39	244		
January												
February							15	4.6	9.46	582		
March												
April							41	11	22.7	1,350		
May												
June							59	28	42.3	2,600		
July												
August							44	13	21.8	1,300		
September												
The period							18	10	12.0	740		
							13	9.5	10.7	658		
							20	9.2	11.2	668		
										9,040		

## Seco Ditch at head, near Arroyo Seco, N. Mex.

Location.- Water-stage recorder in sec. 10, T. 28 N., R. 13 E., 2 miles southeast of Arroyo Seco,  $4\frac{1}{2}$  miles north of Taos Pueblo, and  $7\frac{1}{2}$  miles northeast of Taos.

Records available.- July to September 1934.

Extremes.- Maximum discharge during period not determined; minimum daily discharge not determined.

Remarks.- Records poor. Flow regulated at head gate of ditch. No diversions above station.

Discharge, in second-feet, 1934

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											2.4	
2											2.5	
3											2.5	
4											2.5	
5											*2.5	
6												
7											*2.6	
8											2.8	
9											2.5	
10												
11												
12												
13												
14												
15										1.8		
16										1.7		
17										1.6		
18										1.6		
19										1.4		
20										1.4		
21										1.6		
22										1.6		
23										1.3		
24										1.0		
25										1.8		
26										2.1		
27										*2.2		
28												
29											1.7	
30											1.7	
31										2.2	1.6	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October												
November												
December												
January												
February												
March												
April												
May												
June												
July 14-31									1.76		65	
August									2.25		138	
September									1.79		106	
The period											307	

\*Estimated.

## Embudo Creek at Dixon, N. Mex.

Location.- Water-stage recorder in sec. 29, T. 23 N., R. 10 E., 1 mile northwest of Dixon and 1½ miles above confluence with Rio Grande.

Drainage area.- 305 square miles.

Records available.- October 1930 to September 1934 in reports of U. S. Geological Survey; October 1923 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 181 second-feet Sept. 23; maximum gage height, 3.88 feet Aug. 29; minimum daily discharge, 3 second-feet July 18-20, 23.

1930-34: Maximum discharge, about 5,190 second-feet June 13, 1933 (gage height, 6.66 feet); minimum daily discharge, 1 second-foot July 23, 24, 1932.

Remarks.- Records fair for October to May, others poor. Discharge estimated Jan. 28 to Feb. 2. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	26	38	32	20	17	22	43	29	5	4	17
2	20	27	33	32	19	17	21	39	23	5	4	16
3	24	28	29	35	19	16	20	39	25	5	5	14
4	41	28	31	34	20	17	19	38	28	5	5	14
5	28	36	35	38	19	17	20	35	20	4	4	12
6	28	35	29	32	18	17	21	35	16	4	4	12
7	25	28	32	32	18	17	22	32	16	4	5	14
8	24	28	32	29	17	17	22	31	15	4	5	14
9	23	30	32	30	18	16	22	30	14	4	5	15
10	23	32	33	35	20	18	22	28	13	4	5	14
11	23	30	34	34	22	20	25	29	12	4	5	12
12	22	30	30	33	24	22	31	40	12	4	6	12
13	22	29	30	28	25	22	39	32	12	4	9	12
14	31	30	34	27	24	24	44	36	11	4	9	11
15	41	30	28	28	24	26	47	38	10	7	9	10
16	34	30	26	28	24	28	49	36	10	7	8	10
17	29	30	28	25	25	29	50	30	10	4	8	11
18	28	30	26	24	21	28	49	27	9	3	8	11
19	28	29	29	26	22	26	46	27	9	3	8	11
20	28	28	30	23	22	29	44	25	9	3	10	10
21	28	28	30	22	23	28	47	28	8	7	8	10
22	27	28	32	22	20	28	53	28	8	4	8	10
23	27	28	32	24	21	26	54	28	7	3	8	27
24	28	28	33	25	22	25	56	27	7	19	7	56
25	27	28	32	25	20	25	53	28	6	6	9	46
26	28	28	34	22	17	28	49	26	6	6	8	42
27	27	28	35	23	20	22	49	26	6	6	8	41
28	27	29	35	16	16	22	47	30	6	6	8	40
29	27	29	34	20	21	47	24	6	5	12	36	
30	28	29	33	21	46	24	5	5	5	20	33	
31	28	35	22	22	39				5	5	18	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						41	20	27.2	1,670			
November						36	26	29.2	1,740			
December						38	26	31.8	1,960			
January						38		27.3	1,680			
February						25	17	20.8	1,160			
March						29	16	22.4	1,370			
April						56	19	37.9	2,250			
May						43	24	31.5	1,940			
June						29	5	12.3	730			
July						19	3	5.1	315			
August						20	4	7.7	476			
September						56	10	19.8	1,180			
The year						56	3	22.7	16,470			

## Rio Chama at Park View, N. Mex.

Location.- Water-stage recorder in Tierra Amarilla grant, 100 feet above highway bridge 700 feet below mouth of Rio Brazos and half a mile northwest of Park View, Rio Arriba County. On June 19 datum was lowered about 2.3 feet.

Drainage area.- 405 square miles.

Records available.- November 1912 to September 1916, October 1930 to September 1934 in reports of U. S. Geological Survey; November 1912 to September 1916, August 1924 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 2,100 second-feet Apr. 12 (gage height, 3.23 feet, old datum); minimum daily discharge, 3 second-feet July 6, 7, 1930-34: Maximum discharge, 5,770 second-feet May 22, 1932; minimum gage height, 4.35 feet (old datum) May 20, 1933; minimum daily discharge, that of July 6 and 7, 1934.

Remarks.- Records fair except those estimated Oct. 1-23, Dec. 26 to Jan. 23, June 12-18, 20-25, 27, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		70	70		32	65	331	476	226	7	16	17
2	40	70	55		43	55	361	450	151	6	14	18
3		57	43		43	60	292	437	137	4	6	12
4		62	48		41	57	217	506	140	4	7	10
5		62	60	70	34	65	221	506	127	4	8	9
6	200	62	48		48	75	204	430	107	3	6	9
7		55	55		48	81	204	430	95	3	4	12
8		50	52		43	70	276	430	65	4	5	12
9		50	41		48	75	471	424	45	8	6	13
10		52	52		50	78	762	430	37	10	6	13
11		50	52		52	84	1,100	437	27	8	6	12
12		50	50		48	92	1,350	404		7	11	11
13		48	55		52	104	1,380	355		8	9	11
14		48	52		52	117	1,190	314		7	8	11
15	100	48	50		57	137	1,190	241		6	8	10
16		48	50	40	55	155	1,100	221		5	5	10
17		45	50		52	155	935	200		6	8	10
18		45	50		48	120	726	187		5	8	10
19		43	50		50	120	902	178	12	4	17	11
20		45	50		62	137	913	167		4	15	10
21		43	50		52	148	935	151		4	19	11
22		43	50		50	155	935	130	13	38	20	10
23		43	48		60	167	840	117		43	14	235
24	60	48	48	41	75	163	800	107		26	11	348
25	57	48	45	39	60	167	753	90		23	9	71
26	57	45		39	60	167	699	78	14	27	11	57
27	52	45		45	65	191	618	92	10	57	12	46
28	50	48		43	75	212	560	92	7	39	11	43
29	50	57	70	41		255	528	87	7	27	11	38
30	48	75		39		367	492	303	7	22	11	35
31	48			34		424		392		21		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October									87.1	5,350		
November							75	43	51.8	3,080		
December								41	54.6	3,360		
January									46.8	2,680		
February							75	32	52.0	2,890		
March							424	55	139	8,560		
April							1,380	204	710	42,220		
May							506	78	286	17,680		
June							226	7	47.7	2,840		
July							57	3	14.3	877		
August							20	4	10.2	625		
September							348	9	37.5	2,230		
The year							1,380	3	128	92,490		

## Rio Chama near Chamita, N. Mex.

Location.- Water-stage recorder in S $\frac{1}{2}$  sec. 31, T. 22 N., R. 8 E., 50 feet below Espanola-Ojo Caliente highway bridge,  $\frac{3}{4}$  miles northwest of Chamita, and 4 miles above confluence with Rio Grande. Prior to Oct. 4, 1933, station was located 1,000 feet above mouth and about  $\frac{3}{4}$  miles below present site.

Records available.- October 1912 to June 1915, October 1930 to September 1934 in reports of U. S. Geological Survey; October 1912 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, about 2,070 second-feet Apr. 13 (gage height, 3.33 feet); no flow at times.  
1930-34: Maximum discharge, 7,700 second-feet May 20, 1932 (gage height, 6.40 feet, old datum); no flow at times.

Remarks.- Records fair except those estimated June 5-20, 27-30, July 1-12, 17-23, Aug. 10-20, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	65	94	109	90	98	796	588	588		7	24
2	47	71	113	122	94	108	550	359	323		3	39
3	94	87	98	127	109	108	562	341	222		2	10
4	76	98	83	156	102	132	525	395	156		3	5
5	161	106	79	151	94	127	359	386		5	5	4
6	396	79	71	132	109	122	298	500	130		2	2
7	341	76	76	127	127	122	251	395			0	35
8	228	83	79	83	185	137	236	396			0	102
9	142	71	62	73	151	151	266	395		10	0	73
10	117	49	71	79	132	113	512	426	60		0	35
11	156	54	73	90	127	106	930	588				30
12	146	68	73	79	98	102	1,320	448		5	50	57
13	109	59	73	76	90	98	1,540	457		0		57
14	142	47	76	65	83	113	1,520	541		0		98
15	132	57	94	83	90	117	1,400	297		1	25	57
16	113	59	76	83	102	156	1,380	251	20			27
17	106	79	71	79	73	146	1,240	222		1		21
18	122	39	59	79	83	161	1,190	178			5	17
19	109	31	68	87	102	137	834	166				23
20	102	37	79	106	117	109	984	137		1		30
21	137	35	90	94	166	109	966	137	0		2	35
22	54	68	90	117	122	137	1,070	146	0		25	39
23	54	59	98	113	151	222	1,020	197	1	50	12	301
24	51	76	109	102	137	259	818	203	1	102	7	1,070
25	57	51	122	94	178	297	796	146	2	251	9	834
26	59	27	132	83	178	282	726	109	4	98	16	305
27	62	37	122	94	132	266	625	151		57	15	172
28	65	35	122	94	94	305	562	151		49	18	122
29	62	59	102	87		323	468	132	5	31	10	71
30	59	79	117	83		377	437	191		33	7	31
31	62		117	87		625		612		12	6	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							586	45	116	7,130		
November							106	27	61.4	3,650		
December							132	59	90.0	5,530		
January							156	65	97.9	6,020		
February							185	73	112	6,890		
March							625	98	183	11,230		
April							1,540	236	805	47,920		
May							612	109	297	18,260		
June							588	0	70.9	4,220		
July							251	0	24.7	1,520		
August								0	10.5	643		
September							1,070	2	124	7,590		
The year							1,540	0	166	120,100		



## El Rito Creek near El Rito, N. Mex.

Location.— Water-stage recorder in sec. 19, T. 25 N., R. 7 E., 3 miles northwest of El Rito. Prior to May 4, 1934, water-stage recorder 200 feet downstream set to independent datum.

Records available.— May 1931 to September 1934.

Extremes.— Maximum discharge during year, 28 second-feet Apr. 11 (gage height, 2.68 feet, old datum); minimum daily discharge, 0.3 second-foot June 21-23. 1931-34: Maximum discharge, 398 second-feet May 19, 1932 (gage height, 4.16 feet, old datum); minimum daily discharge, that of June 21-23, 1934.

Remarks.— Records fair except those estimated Nov. 30 to Jan. 29, Jan. 31 to Feb. 28, Mar. 1, 2, 17, which are poor. One small diversion for irrigation above station. Stage-discharge relation affected by ice Nov. 30 to Mar. 2.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	0.8				3	12	10	5.2	1.2	0.7	0.8
2	.9	.7				13	11	11	3.6	.9	.5	1.0
3	1.2	.7				3.7	12	11	3.1	.6	.5	1.7
4	1.6	1.2				3.8	10	11	2.9	.5	.6	.6
5	1.6	.6				3.9	10	10	2.4	.5	.5	.5
6	1.5	.8				5.1	10	7.8	2.0	.4	.7	.5
7	1.5	.6				5.7	9.8	6.6	1.9	.4	1.8	.6
8	1.5	.6				5.0	11	6.0	1.8	.5	1.4	.7
9	1.5	1.0				5.2	14	5.5	1.7	.6	1.0	.7
10	1.5	1.6				6.0	17	5.2	1.4	.7	.6	.7
11	1.5	1.4				4.6	21	6.6	1.2	.6	.7	.6
12	1.4	1.4				5.4	22	5.5	1.0	.6	1.9	.6
13	1.4	1.2				5.6	22	4.2	1.0	.5	1.1	.9
14	1.7	1.2				6.2	20	3.6	.9	.5	1.2	.9
15	1.7	1.2		2		6.6	19	3.3	.8	.4	1.4	.7
16	1.7	1.0				6.3	18	3.1	.7	.4	1.5	.6
17	1.7	1.4				6.4	18	3.1	1.0	.5	1.9	.5
18	1.5	1.2				6.4	17	3.3	1.0	.4	1.3	.5
19	1.5	1.2				5.9	16	3.3	.7	1.0	1.1	.9
20	1.6	1.4				6.9	16	3.3	.5	.6	.7	.7
21	1.6	.7				7.5	16	3.4	.3	.4	.6	.5
22	1.7	1.4				8.4	16	3.3	.3	2.8	.7	.5
23	1.5	1.9				8.6	15	3.4	.3	1.4	.8	8.0
24	1.6	1.4				8.9	15	3.3	.6	2.0	.7	6.3
25	1.6	1.7				8.6	14	3.3	1.1	2.4	.7	2.4
26	1.5	1.4				9.1	13	3.3	.9	3.1	.8	1.7
27	1.4	1.6				9.5	12	6.8	.6	1.7	.8	1.2
28	1.3	1.6				10	12	4.9	.4	1.9	.8	1.0
29	1.2	1.9				11	11	3.3	.5	1.3	.8	.9
30	1.1	2		1.9		13	11	3.8	.8	1.1	.8	.8
31	1.0			2		14		8.2		1.0	.7	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						1.7	0.9	1.45	89			
November						2	.6	1.23	73			
December								2.0	123			
January								2.00	123			
February								2.50	139			
March						14		6.88	423			
April						22	9.8	14.8	878			
May						11	3.1	5.50	338			
June						5.2	.3	1.35	81			
July						3.1	.4	1.00	61			
August						1.9	.5	1.95	59			
September						8.0	.5	1.23	73			
The year						22	.3	3.40	2,460			

## Rio Santa Cruz at Curdiyo, N. Mex.

Location.— Water-stage recorder in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 17, T. 20 N., R. 10 E., 100 feet below highway bridge at junction of Rio Medio and Rio Frijoles to form Rio Santa Cruz and a quarter of a mile northwest of Cundiyo.

Records available.— September 1931 to September 1934 in reports of U. S. Geological Survey; June 1928 to June 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, 234 second-feet Sept. 23 (gage height, 2.27 feet); minimum daily discharge, 3.2 second-feet July 17.  
1931-34: Maximum discharge, about 2,610 second-feet Sept. 24, 1931 (gage height, 8.20 feet); minimum daily discharge, 3 second-feet Feb. 3, 1932.

Remarks.— Records good except those estimated because of ice Dec. 3-25, 28-30, Jan. 8-23, 26-28, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	10	9.8	9.8	10	7.5	14	25	24	10	5.4	34
2	10	11	8.0	8.0	8.3	7.8	16	24	20	7.5	5.1	22
3	11	9.0		8.0	8.3	8.0	14	24	18	6.6	7.5	17
4	16	9.8		6.9	7.5	8.0	11	22	20	5.6	7.2	14
5	14	12		6.6	6.9	8.3	12	22	16	6.9	8.0	12
6	14	11			7.2	8.6	14	20	14	7.2	6.1	12
7	12	7.2			7.2	9.8	9.8	21	11	11	6.1	12
8	11	11			6.9	8.6	13	22	12	12	5.6	12
9	10	11			6.6	9.4	15	22	11	7.5	5.6	15
10	11	11			6.9	10	18	23	10	6.6	7.2	12
11	12	10			6.9	10	19	27	10	6.1	9.4	11
12	11	9.8			8.3	11	22	27	9.4	6.9	8.3	11
13	11	10			8.0	11	24	27	8.6	6.6	17	12
14	12	10	8		7.5	12	24	24	7.8	6.1	14	11
15	17	9.8		8	6.9	12	23	22	7.2	5.8	7.8	10
16	14	9.8			6.9	12	24	18	7.5	3.9	9.0	9.4
17	14	9.4			7.2	12	25	16	8.3	3.2	10	8.6
18	11	9.4			6.9	9.0	21	16	7.8	4.1	10	9.0
19	11	7.8			8.0	9.8	18	18	6.9	5.6	7.5	8.6
20	10	8.0			7.8	12	19	18	6.4	6.6	6.9	8.6
21	9.8	8.6			7.5	12	21	17	5.8	6.4	6.6	11
22	9.0	7.5			7.5	12	24	17	5.2	7.5	12	9.4
23	9.0	9.0			7.8	10	22	24	5.4	8.0	11	58
24	9.8	9.4		8.6	8.3	12	24	19	9.0	7.8	9.0	56
25	10	9.8		8.0	8.0	7.5	12	25	8.0	9.0	14	27
26	10	9.4	8.0		8.0	12	24	17	6.4	24	15	19
27	9.8	9.0	8.3	10	8.0	12	23	53	6.1	17	31	16
28	10	9.8			7.5	13	22	36	5.4	14	27	14
29	9.8	10	8	12	15	15	22	29	7.8	9.4	22	13
30	9.4	10		12	17	17	23		11	6.4	18	12
31	9.4		7.8	11	18	18		31		5.6	19	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October								17	9.0	11.2	690	
November								12	7.2	9.65	574	
December										8.06	496	
January										8.55	525	
February								10	6.6	7.58	421	
March								18	7.5	11.0	678	
April								25	9.8	19.5	1,160	
May								53	16	23.5	1,450	
June								24	5.2	10.2	607	
July								24	3.2	8.09	498	
August								31	5.4	11.3	895	
September								58	8.5	16.6	985	
The year								58	3.2	12.1	8,780	

## Nambé Creek near Nambé, N. Mex.

Location.— Water-stage recorder in Nambé Pueblo grant, about 1,000 feet below diversion dam for Nambé Canal and 2½ miles southeast of Nambé, Santa Fe County.

Records available.— October 1932 to September 1934.

Extremes.— Maximum discharge during year, 67 second-feet Aug. 24 (gage height, 2.83 feet); minimum daily discharge, 0.5 second-foot Sept. 30.  
1932-34: Maximum discharge, that of Aug. 24, 1934; minimum daily discharge, that of Sept. 30, 1934.

Remarks.— Records fair. One diversion for irrigation above station. Stage-discharge relation affected by ice Jan. 6-9, 13-15, 17-20.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	7.2	3.7	2.6	2.2	2.3	3.8	8.6	7.5	4.2		17
2	4.5	8.3	3.5	2.8	2.2	2.4	4.7	6.5	5.8	2.8		14
3	4.0	9.4	*3.8	2.8	2.2	2.6	4.7	5.0	5.6	2.9		13
4	8.6	1.5	3.3	2.8	2.4	2.4	*3.8	6.5	7.5	2.9	*2	14
5	10	9.6	3.5	2.8	2.4	2.6	4.0	6.5	6.5	2.4		14
6	10	5.2	*2.2	*2.0	2.4	2.8	4.7	6.3	5.0	*1.4		14
7	9.4	*4.5	3.3	*.9	2.4	2.6	*3.5	*6.0	4.7	*1.6	4.7	8.8
8	7.5	*3.8	3.3	*1.3	2.2	*2.2	5.0	*8.6	4.7	3.3	1.9	7.9
9	5.5	*3.0	3.1	*1.8	2.4	*2.0	4.5	9.4	3.7	2.9	1.4	8.3
10	6.0	2.3	3.3	2.2	2.4	*2.2	3.7	7.5	4.0	*1.8	3.8	6.3
11	6.8	1.9	3.1	2.8	*1.8	*2.4	5.8	8.3	3.5	*1.5	5.0	6.0
12	6.5	1.8	3.1	2.9	*2.0	2.8	7.5	9.8	3.7	*1.5	4.0	5.8
13	6.5	1.8	3.3	*2.8	2.3	2.9	6.8	9.0	3.3	1.2	3.5	5.0
14	6.5	1.7	2.9	*2.6	2.3	3.1	6.8	10	2.8	*1.1	6.0	4.7
15	8.3	1.8	*2.2	*2.8	2.4	3.3	7.2	9.8	2.2	1.2	5.5	5.5
16	8.3	1.7	*1.9	2.8	2.4	3.5	7.2	10	2.9	*1.1	5.2	5.8
17	6.8	1.7	*1.6	*2.6	2.6	3.3	7.2	9.4	2.9	*1.2	5.5	5.2
18	6.8	1.8	*1.5	*2.4	2.2	*2.4	7.2	7.5	*1.9	*1.4	3.7	5.2
19	6.8	2.0	*2.1	*2.6	*1.8	2.6	7.2	6.5	*1.4	1.7	4.2	4.7
20	6.8	2.9	2.9	*2.6	2.3	3.5	7.2	9.4	*.8	*1.1	4.0	3.8
21	7.5	3.3	2.9	2.8	2.4	3.3	8.3	5.5	*.7	*1.1	2.8	3.1
22	6.8	2.8	3.3	2.8	2.2	2.8	8.6	6.3	*.9	*1.1	5.2	3.3
23	5.8	3.1	3.3	2.8	2.6	2.3	6.5	7.2	*1.5	*1.7	4.7	19
24	6.5	2.9	3.3	2.8	2.6	2.4	6.5	6.0	*2.2	*1.8	8.5	48
25	6.5	3.1	3.1	2.6	2.6	3.5	7.5	9.4	1.8	*2.0	12	50
26	6.0	2.9	3.3	2.4	2.4	3.1	6.5	13	1.0		9.8	28
27	8.6	2.6	3.1	2.3	2.6	3.5	6.3	12	.7		15	18
28	11	3.3	2.9	2.4	2.6	3.5	7.5	3.8	2.4	*2	17	8.3
29	6.3	3.5	2.8	2.4		3.7	7.5	3.5	4.0		14	2.9
30	6.3	3.7	2.6	2.3		4.0	7.2	6.3	5.5		13	.5
31	6.5		2.8	2.3		4.5		10				
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							11	4.0	7.09	456		
November							15	1.7	3.97	236		
December							3.8	1.3	2.93	180		
January							2.9	.9	2.48	152		
February							2.6	1.8	2.33	150		
March							4.5	2.0	2.93	180		
April							8.6	3.5	6.16	367		
May							13	3.5	7.86	483		
June							7.5	.7	3.37	200		
July							4.2	1.1	1.90	117		
August							17	1.4	5.95	366		
September							48	.5	10.9	651		
The year							48	.5	4.83	3,500		

\*Estimated.

## Nambe Canal near Nambe, N. Mex.

Location.- Water-stage recorder in Nambe Pueblo grant, about 300 feet below head of Nambe Canal, which diverts from Nambe Creek, and about  $2\frac{1}{2}$  miles southeast of Nambe, Santa Fe County.

Records available.- May 1932 to September 1934.

Extremes.- Maximum discharge during year, 6.5 second-feet Sept. 23 (gage height, 1.38 feet); no flow at times.

1932-34: Maximum discharge, that of Sept. 23, 1934; no flow at times.

Remarks.- Records good. Discharge estimated Oct. 22-24, Nov. 5, 12-19, Dec. 5-14.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.2	0.2			0	0	0.5	0.5	0	0	0
2	.6	.3	.1			0	0	1.3	.4	.3	0	.3
3	.6	.3	.3			0	0	2.1	.6	0	0	.6
4	.5	.1	.4			0	0	1.8	.6	0	0	.2
5	.2	.2				0	0	1.8	.6	.2	0	.2
6	.3	.4				0	0	1.7	1.1	.6	0	.2
7	.4	.2				.3	0	2.5	.7	.5	.7	.3
8	.2	.2				.3	0	1.8	.8	0	1.8	0
9	.2	.2				0	.5	1.7	.8	.4	1.5	.2
10	.2	.3	.2			0	2.0	1.1	.3	.7	.4	.4
11	.3	.2				0	1.3	.9	.5	.4	0	.3
12	.5					0	.6	.1	.5	.4	.3	1.3
13	.5					0	.4	.1	.6	.3	1.2	1.2
14	.5					0	.3	.4	.9	.4	.8	1.0
15	.4		0			0	.2	.7	1.0	.4	.2	.9
16	.6	.1	.3			0	.7	.7	.4	.5	.2	.5
17	.9		.7			0	.6	1.2	.4	.6	.3	.3
18	.8		.7			0	.1	1.6	.5	.2	.5	.4
19	1.0		.6			0	.2	1.4	.9	.1	.1	.2
20	.7	0	.5			0	.1	.2	.8	.3	.7	.3
21	.2	.1	0			0	.1	1.1	.1	.6	1.0	.9
22	.1	.1	0			.4	0	1.3	.2	.1	.5	.3
23	.1	.1	0			.9	1.2	1.0	.3	.8	.2	1.5
24	.1	0	0			1.1	2.3	1.3	.4	.5	.1	0
25	.2	.2	0			.1	1.3	.4	.7	0	.2	.3
26	.4	.3	0			.2	1.1	.2	.8	0	.2	.1
27	.4	.4	0			0	1.3	0	.8	0	.1	.1
28	.4	.4	0			0	1.1	1.5	0	0	.4	.5
29	.6	.3	0			0	0	2.7	0	0	.5	.6
30	.7	.2	0			0	1.1	.9	.1	0	.5	.6
31	.5		0			0		.1		0	.3	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October								1.0		0.43	27	
November								.4	0	.19	11	
December								.7	0	.19	12	
January								0	0	0	0	
February								0	0	0	0	
March								1.1	0	.11	7	
April								2.3	0	.55	33	
May								2.7	0	1.11	68	
June								1.1	0	.54	32	
July								.8	0	.27	16	
August								1.8	0	.42	26	
September								1.5	0	.47	28	
The year								2.7	0	.36	260	

Note.- No flow during months left blank.

## Santa Fe Creek near Santa Fe, N. Mex.

Location.— Water-stage recorder in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 24, T. 17 N., R. 10 E., about 300 feet below upper storage reservoir of New Mexico Power Co. and 6 miles east of Santa Fe.

Records available.— May to July 1910 at a site 3 miles downstream, April 1913 to December 1914 at a site 2 miles downstream from present site, October 1930 to September 1934 in reports of U. S. Geological Survey; January 1913 to November 1930 at a site 2 miles downstream from present site, November 1930 to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, 9.4 second-foot June 28-29 (gage height, 0.85 foot); minimum daily discharge, 0.6 second-foot Nov. 13, 1930-34: Maximum discharge, 139 second-foot Sept. 19, 1931 (gage height, 2.35 feet); minimum daily discharge, that of Nov. 13, 1933.

Remarks.— Records good. Discharge estimated Mar. 5, 6, July 28, 29, Sept. 5, 6. Flow regulated at dam immediately above station. No diversions above gage.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	0.9	0.9	1.3	1.2	1.0	1.2	4.6	3.5	1.2	3.3	4.4
2	2.2	.8	.9	1.3	1.3	1.0	1.0	4.6	6.0	1.2	3.1	4.2
3	2.2	.8	.9	1.4	1.2	1.0	1.2	4.6	6.0	1.0	3.0	4.6
4	2.0	.8	.9	1.4	1.3	1.0	1.7	4.6	4.6	1.0	3.0	4.4
5	2.0	.7	.9	1.4	1.2	1.1	2.5	4.6	3.7	.9	2.8	4.4
6	2.0	.7	.9	1.3	1.3	1.2	2.3	4.6	3.5	1.0	2.7	4.4
7	2.0	.7	.9	1.3	1.3	1.3	2.3	4.6	3.5	1.7	2.7	4.4
8	2.0	.7	.9	1.3	1.2	1.3	2.3	4.6	3.5	2.3	2.5	4.4
9	2.0	.7	.9	1.3	1.2	1.3	2.3	4.6	3.5	2.0	2.5	4.6
10	2.0	.7	.9	1.3	1.2	1.3	2.5	4.6	3.5	3.0	2.5	4.6
11	2.0	.7	.9	1.3	1.0	1.3	2.5	4.8	3.3	3.0	2.3	4.8
12	2.0	.7	1.0	1.4	1.0	1.2	2.5	4.4	3.3	4.2	2.5	4.8
13	2.0	.6	1.0	1.3	1.0	1.0	2.7	4.4	2.5	5.1	2.3	4.4
14	2.0	1.2	1.0	1.4	1.0	1.0	2.5	4.4	2.0	5.1	2.3	4.6
15	2.0	1.9	1.0	1.3	1.0	1.0	2.7	4.4	2.0	5.1	2.7	4.4
16	2.0	1.7	1.0	1.3	1.2	1.2	2.7	4.4	1.9	5.1	2.5	4.6
17	2.0	1.7	1.0	1.2	1.0	1.2	2.8	4.6	1.9	4.5	2.5	4.4
18	1.9	1.6	1.0	1.2	1.0	1.2	3.5	4.6	2.0	4.6	2.5	4.6
19	1.9	3.5	1.0	1.2	.9	1.2	4.2	4.6	2.0	4.4	2.5	4.6
20	1.9	5.5	1.0	1.0	1.0	1.2	4.4	4.6	2.0	4.4	2.5	4.4
21	2.0	5.3	1.0	1.0	1.0	1.0	4.4	4.6	2.0	4.2	2.5	4.6
22	1.9	4.4	1.0	1.0	1.0	.9	4.4	4.6	2.2	4.0	2.5	2.3
23	1.9	3.1	1.3	1.0	1.2	.9	4.4	4.6	2.2	4.0	2.3	1.0
24	1.9	3.3	1.4	3.1	1.0	.9	4.4	4.6	2.2	3.7	2.3	1.0
25	1.9	3.5	1.4	6.0	.9	1.0	4.4	4.6	4.4	3.7	2.7	.9
26	1.9	3.5	1.4	6.3	.9	.9	4.4	5.1	7.9	3.5	2.7	1.0
27	1.9	2.2	1.4	6.3	.9	1.0	4.4	6.8	9.4	3.3	2.7	1.0
28	1.4	1.2	1.4	6.3	.9	1.2	4.4	6.6	9.4	3.4	3.0	1.0
29	1.0	1.0	1.3	2.6		1.0	4.4	6.3	9.1	3.4	3.1	1.0
30	1.0	1.2	1.2	.9		1.0	4.6	4.0	4.0	3.5	3.5	.9
31	1.0		1.2	1.0		1.2		1.4		3.5	4.2	
Month							Maximum	Minimum	Mean		Run-off in acre-feet	
October							2.2	1.0	1.87		115	
November							5.5	.6	1.84		110	
December							1.4	.9	1.06		35	
January							6.3	.9	1.99		122	
February							1.3	.9	1.08		30	
March							1.3	.9	1.10		37	
April							4.6	1.0	3.13		136	
May							6.8	1.4	4.66		236	
June							9.4	1.9	3.91		232	
July							5.1	.9	3.27		231	
August							4.2	2.3	2.72		197	
September							4.8	.9	3.49		228	
The year							9.4	.6	2.52		1,820	

## Rio Puerco at Rio Puerco, N. Mex.

Location.- Water-stage recorder in San Clemente grant, in sec. 31, T. 7 N., R. 1 W., at Atchison, Topeka & Santa Fe Railway bridge at Rio Puerco. Zero of gage lowered 0.47 foot Mar. 19, 1934.

Records available.- Fragmentary records September 1910 to October 1911, August 1912 to December 1914, March to September 1934 in reports of U. S. Geological Survey; January 1913 to December 1925, September 1926 to December 1927 in reports of State engineer.

Extremes.- Maximum discharge during period March to September 1934, about 19,000 second-feet Sept. 24 (gage height, 4.38 feet); no flow at times.  
Maximum discharge during flood of Sept. 23, 1929, about 40,000 second-feet.

Remarks.- Records fair except those estimated July 28-31, Aug. 1, 6-23, Sept. 13-23, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0	209	0	10	974
2								0	41	0	7	205
3								0	23	0	7	38
4								0	35	0	5	82
5								0	18	0	9	55
6								0	7	0	13	16
7								0	3	0		363
8								0	1	0		1,240
9								0	1	0		170
10								0	1	0	20	130
11								12	1	0		82
12			*4		*0			0	1	0		38
13								0	1	0		250
14								0	0	0	20	
15								0	0	0		
16	*10		*7					0	0	0		
17								0	0	0		
18								0	0	0	20	
19								0	0	0		
20				*14				0	0	0		
21								0	0	0	35	
22								0	0	2		
23								0	0	3		
24								0	4	105		9,460
25								0	1	79	751	829
26								0	0	0	620	119
27								0	0	1	2,080	29
28								0	0	130	1,700	20
29								8	0		534	18
30								20	0	40	52	11
31								593			45	
Month								Maximum	Minimum	Mean	Run-off in acre-feet	
October												
November												
December												
January												
February								0	0	0	0	
March								0	0	0	0	
April								0	0	0	0	
May								593	0	20.4	1,260	
June								209	0	11.6	682	
July								130	0	14.2	873	
August								2,080	5	200	12,310	
September								9,460	11	478	28,420	
The period											43,560	

\*Discharge measurement.

Note.- No flow during March and April.

## Bluewater Creek near Bluewater, N. Mex.

Location.— Water-stage recorder in SW $\frac{1}{4}$  sec. 5, T. 12 N., R. 11 W., 2 $\frac{1}{2}$  miles northwest of Bluewater and 8 miles below storage reservoir of Bluewater-Toltec Irrigation District.

Drainage area.— 235 square miles.

Records available.— May 1912 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; May 1912 to June 1919, April 1921 to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, 68 second-feet May 10 (gage height, 2.79 feet); minimum daily discharge, 0.3 second-foot July 27–30, Aug. 1–8, 25, Sept. 5.

Remarks.— Records good except those estimated because of ice Dec. 2–4, 6–10, 15–31, Feb. 1–19, and those estimated July 9–13, Aug. 6–10, which are poor. Flow regulated by storage in Bluewater-Toltec Reservoir for irrigation.

Discharge, in second-feet, 1933–34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	6.4	3.6		1.9	2.4	2.0	30	1.3	4.8	0.3	0.4
2	2.6	7.1			1.7	2.0	2.1	42	1.2	3.6	.3	.4
3	7.7	7.1	3.0		1.6	2.0	2.3	45	1.1	2.3	.3	.4
4	8.0	7.4			1.6	2.0	2.4	45	.9	2.0	.3	.4
5	6.0	6.9	2.9		1.9	1.9	6.9	44	5.5	1.5	.3	.3
6	8.0	6.6			1.9	2.0	7.4	52	6.9	1.1	.3	.4
7	8.0	6.6			2.0	1.9	7.4	56	9.3	.3	.4	.4
8	3.7	6.6	2.5		1.9	1.9	7.4	56	9.0	.7	.4	.4
9	3.2	6.9			1.9	2.0	7.4	65	8.8	.6	.4	.4
10	5.3	6.9		2.5	2.0	2.0	7.4	66	8.8	.6	.5	.4
11	5.7	7.1	2.0		2.0	1.9	11	56	9.0	.6	.5	.4
12	6.6	7.1	2.0		1.9	1.9	12	49	14	.5	.4	.4
13	6.6	7.1	2.0		2.1	1.7	12	48	15	.5	.4	.4
14	6.6	6.9	2.0		2.0	1.9	12	48	15	.4	.5	.4
15	5.1	3.6			2.1	2.1	11	45	14	.4	2.2	.4
16	3.2	3.2			2.3	2.1	12	44	22	.4	.6	.4
17	3.0	3.0			2.1	2.0	12	42	21	.4	.4	.4
18	3.0	2.9			2.3	1.9	8.8	41	20	.4	.4	.4
19	2.9	2.9			2.3	1.9	8.5	41	19	.4	.4	.4
20	2.9	2.9		3.0	2.3	2.0	9.3	47	16	.4	.4	.4
21	3.2	2.9		2.9	2.3	2.0	15	45	26	.4	.4	.4
22	3.2	2.9	2.0	2.7	2.1	2.0	16	43	24	1.2	.4	.4
23	3.0	2.9		2.6	2.3	2.0	19	30	24	.6	.4	.5
24	3.2	3.0		2.4	2.7	2.1	19	19	24	.4	.4	.5
25	3.2	3.0		2.3	2.6	2.3	20	17	21	.4	.3	.4
26	3.2	3.0		2.0	2.4	2.3	20	16	16	.4	.4	.4
27	3.2	3.0		1.6	2.4	2.3	19	9.6	15	.3	.6	.4
28	3.2	3.0		1.7	2.4	2.3	20	4.6	12	.3	.5	.4
29	3.0	3.7		2.0		2.3	20	1.9	8.8	.3	.4	.4
30	2.9	3.6		1.9		2.4	30	2.5	6.9	.3	.4	.4
31	3.0			1.7		2.1		1.7		.4	.4	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							8.0	2.6	4.42	272		
November							7.4	2.9	4.87	290		
December								1.6	2.26	139		
January								1.6	2.40	147		
February							2.7	1.6	2.11	117		
March							2.4	1.7	2.05	126		
April							30	2.0	12.0	713		
May							66	1.7	37.1	2,280		
June							26	.9	13.2	788		
July							4.8	.3	.88	54		
August							2.2	.3	.47	29		
September							.6	.3	.40	24		
The year							66	.3	6.88	4,980		

## Alamosa River near Monticello, N. Mex.

Location.— Water-stage recorder in SW $\frac{1}{4}$  sec. 31, T. 8 S., R. 7 W., just below mouth of Wildhorse Creek, Alamosa dam site, and Old Fort Quitman, and 15 miles northwest of Monticello.

Drainage area.— 470 square miles.

Records available.— May 1931 to September 1934 in reports of U. S. Geological Survey; October to December 1929, May to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, about 3,060 second-feet Aug. 26 (gage height, 5.53 feet); minimum daily discharge, 6.0 second-feet July 17.  
1931-34: Maximum discharge, about 4,500 second-feet Aug. 5, 1931 (gage height, 6.30 feet); minimum daily discharge, 5.6 second-feet Jan. 9, 1932.

Remarks.— Records good for October to April, June, July; fair for September; poor for May and August. No diversions above station; entire normal flow diverted below for irrigation.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.1	7.1	*7.8	8.3	7.6	6.7	8.0	8.5	*7	6.6	6.7	
2	7.1	7.1		8.1	7.4	*6.7	8.0	8.5	6.9	7.2	6.7	
3	7.1	6.9	7.8	8.1	7.4	*6.7	8.0	8.5	7.1	6.7	6.9	
4	6.9	6.9	7.6	8.1	7.4	*6.7	7.8	8.5	7.2	6.7	6.9	
5	6.9	7.2	7.6	8.0	7.4	*6.7	8.1	8.5	7.2	6.6	6.9	
6	6.9	7.1	7.6	8.0	7.4	*6.6	8.1	8.5	7.1	6.6	38	*7
7	7.6	7.1	7.6	8.0	7.4	*6.6	8.1	8.5	7.2	6.4	14	
8	7.2	7.1	7.6	8.0	7.2	*6.6	8.1	8.5	7.1	6.4		
9	7.4	7.1	7.4	8.0	7.2	*6.6	8.5	8.5	7.1	6.2		
10	7.2	7.1	7.4	8.0	7.2	*6.6	8.1	8.5	6.9	6.2		
11	7.2	7.1	7.4	7.8	7.2	6.6	8.5	8.5	6.9	6.2		
12	7.2	7.1	7.6	7.8	7.2	6.6	8.5	8.5	6.9	6.1	7.1	7.1
13	7.4	7.1	7.6	7.8	7.2	6.6	8.5	8.5	7.1	6.2	12	7.1
14	7.4	7.4	7.6	7.8	7.2	6.7	8.5	8.5	7.1	6.2		7.1
15	7.4		7.6	7.8	7.2	6.7	8.5	8.5	7.2	6.1		7.1
16	7.2		7.8	7.8	7.2	6.9	8.3	8.3	7.2	6.2		7.4
17	7.2		7.8	7.8	7.1	6.7	8.1	8.3	7.2	6.0		7.4
18	7.2		7.8	7.8	7.1	6.9	8.3	8.3	7.4	12		7.4
19	7.2		7.8	7.8	7.1	6.9	8.3	8.1	7.2	6.9		7.4
20	7.2		8.0	7.6	7.1	7.1	8.1	8.1	7.2	6.4		7.4
21	7.2		8.0	7.6	7.1	7.1	8.3	8.1	7.1	7.1		7.4
22	7.1	*7.6	8.0	7.6	7.2	7.1	8.5		7.1	6.4		7.4
23	7.1		8.0	7.6	7.2	7.2	8.5		6.9	6.4		7.4
24	7.2		8.0	7.6	7.2	7.2	8.3		6.9	11		7.6
25	7.1		8.1	7.6	7.1	7.4	8.5		7.1	6.2		7.4
26	7.1		8.1	7.6	*7.0	7.4	8.3	*30	6.7	6.1	*100	7.4
27	7.1		8.1	7.6	*6.9	7.8	8.3		6.7	6.2	34	7.4
28	6.9		8.1	7.6	*6.8	7.8	8.3		6.6	6.6	87	7.4
29	6.9		8.3	7.4		7.8	8.3		6.7	6.2	*70	7.4
30	6.9		8.3	7.4		7.8	8.5		6.6	6.4	*10	7.4
31	6.9		8.3	7.4		8.0				6.6	*7	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							7.6	6.9	7.15	439		
November									7.37	438		
December							8.3	7.4	7.82	481		
January							8.3	7.4	7.79	479		
February							7.6	6.8	7.20	400		
March							8.0	6.6	6.99	430		
April							8.5	7.8	8.27	492		
May									15.4	945		
June							7.4	6.6	7.02	418		
July							12	6.0	6.75	415		
August							100	6.7	17.3	1,070		
September									7.22	430		
The year								6.0	8.88	6,440		

\*Estimated.



Tornillo Drain at mouth, at Alamo Alto, Tex.

Location.- Staff gage in sec. 11, T. 35 S., R. 9 E., 1,230 feet above mouth and half a mile below Alamo Alto.

Records available.- October 1931 to September 1934 in reports of U. S. Geological Survey; January 1930 to December 1931 in report of New Mexico State engineer.

Remarks.- Records furnished by U. S. Bureau of Reclamation. Tornillo Drain represents return flow from about 11,000 acres of the Tornillo district and from about 14,000 acres on San Elizario Island.

Discharge measurements, in second-feet, 1931-34

Date	Discharge	Date	Discharge	Date	Discharge
1931		Sept. 7	97	Aug. 10	95
Oct. 2	82	Sept. 16	84	Aug. 17	89
Oct. 6	73	Sept. 22	83	Aug. 31	85
Oct. 9	74	Oct. 6	95	Sept. 7	82
Oct. 24	65	Oct. 14	80	Sept. 13	78
Oct. 29	69	Oct. 20	67	Sept. 21	80
Nov. 13	63	Oct. 27	69	Sept. 27	75
Nov. 27	61	Nov. 3	63	Oct. 4	72
Dec. 4	61	Nov. 4	69	Oct. 19	63
Dec. 11	58	Nov. 17	68	Oct. 27	59
Dec. 30	61	Nov. 24	70	Nov. 9	68
1932		Dec. 1	74	Nov. 16	61
Jan. 10	48	Dec. 8	65	Nov. 23	59
Jan. 10	57	Dec. 15	65	Dec. 7	53
Jan. 15	50	Dec. 22	66	Dec. 20	54
Jan. 23	47	Dec. 28	56	1934	
Jan. 29	48	1933		Feb. 2	48
Feb. 8	48	Jan. 5	57	Feb. 8	60
Feb. 12	50	Jan. 12	59	Feb. 28	56
Feb. 22	59	Jan. 19	61	Mar. 8	58
Feb. 27	54	Jan. 26	51	Mar. 15	66
Mar. 19	58	Feb. 2	50	Mar. 29	72
Apr. 1	66	Feb. 8	58	Apr. 5	65
Apr. 2	62	Feb. 9	53	Apr. 19	76
Apr. 15	75	Feb. 17	50	Apr. 26	78
Apr. 26	73	Feb. 27	58	May 3	75
May 10	75	Mar. 4	57	May 10	81
May 20	78	Mar. 11	64	May 17	84
May 24	83	Mar. 18	51	May 29	88
May 27	74	Apr. 8	84	June 6	84
June 2	96	Apr. 13	94	June 14	82
June 10	79	Apr. 15	87	June 23	88
June 17	86	Apr. 22	89	June 25	79
June 23	82	Apr. 27	78	June 28	80
July 1	92	May 4	90	July 5	84
July 8	82	May 10	89	July 12	78
July 15	103	May 18	83	July 19	82
July 26	89	May 27	88	July 25	85
July 29	92	May 29	80	Aug. 3	88
July 30	99	June 1	82	Aug. 9	81
Aug. 5	92	June 8	82	Aug. 15	87
Aug. 12	91	June 15	88	Aug. 23	84
Aug. 19	92	June 29	81	Aug. 30	102
Aug. 19	94	July 6	82	Sept. 6	80
Aug. 19	96	July 13	78	Sept. 13	82
Aug. 24	99	July 27	79	Sept. 14	79
Sept. 2	93	Aug. 10	89	Sept. 20	74
				Sept. 27	71

## Tornillo Canal at waste near Alamo Alto, Tex.

Location.- Water-stage recorder in sec. 11, T. 35 S., R. 9 E., at mouth, 2 miles southeast of Alamo Alto. Zero of gage is 3,557.15 feet above mean sea level.

Records available.- October 1931 to September 1934 in reports of U. S. Geological Survey; January 1930 to December 1931 in report of New Mexico State engineer.

Extremes.- Maximum daily discharge during year ending Sept. 30, 1934, 99 second-feet Oct. 7 (gage height, 1.57 feet); no flow at times.  
1930-34: Maximum daily discharge, 157 second-feet May 12, 1930 (gage height, 2.13 feet); no flow at times.

Remarks.- Records furnished by U. S. Bureau of Reclamation. Diversions for irrigation above station.

## Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*36	*20	0		0	46	39	25	15	27	26	24
2	*84	*20	0		0	79	32	30	20	26	25	30
3	*63	0	0		0	129	34	20	27	30	24	39
4	*66	0	0		0	144	15	20	28	28	17	45
5	*75	0	0		0	120	14	13	43	26	13	40
6	*50	0	0		0	104	22	6.3	44	21	12	28
7	*40	0	0		0	97	26	5.2	20	2.2	9.8	27
8	*20	*15	0		0	79	37	5.2	16	12	98	25
9	*25	*110	0		18	71	36	7.1	17	27	78	24
10	*20	*120	0		82	54	36	15	34	15	22	15
11	*25	*60	0		84	33	31	13	38	45	14	14
12	*25	*100	0		83	40	24	2.5	41	50	12	25
13	0	*75	0		66	61	21	9.1	45	51	12	28
14	0	*75	0		53	34	28	17	5.9	43	13	28
15	0	*75	0		32	12	22	14	16	37	11	24
16	0	*80	0		20	12	25	26	38	40	11	34
17	0	*50	0		17	10	18	26	19	34	43	30
18	0	0	0		24	10	8.3	18	7.1	42	76	33
19	0	0	0		1.6	28	5.9	40	13	17	14	24
20	0	0	0		0	39	4.5	19	22	16	24	22
21	0	0	*50		0	64	3.9	25	35	33	31	13
22	0	0	*75		0	34	4.5	33	37	14	25	*18
23	*58	*25	*80		0	19	5.2	19	40	14	18	*62
24	*30	*140	*90		32	13	4.5	5.9	29	15	23	*50
25	*30	*60	*90		52	12	16	3.3	13	14	15	*43
26	*30	*65	*100		24	7.9	20	2.8	11	13	13	*71
27	*30	*70	*85		22	6.7	10	2.2	11	20	22	*75
28	*30	*80	*85		25	8.3	4.9	2.8	10	19	42	51
29	*25	0	*94		28	7.9	4.9	9.1	7.9	24	74	110
30	*20	0	*80		13	5.2	13	12	25	25	92	78
31	*20	0	*82		50		10		23	37		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							84	0	26.6	1,630		
November							140	0	40.7	2,420		
December							100	0	29.4	1,810		
January							0	0	0	0		
February							84	0	22.9	1,320		
March							144	6.7	46.4	2,850		
April							36	3.9	18.6	1,110		
May							40	2.2	14.8	907		
June							45	5.9	23.8	1,420		
July							51	2.2	25.9	1,590		
August							98	9.8	30.5	1,880		
September							110	13	38.7	2,300		
The year							144	0	26.5	19,240		

\*Estimated.

Note.- No flow during January.

## Tornillo Canal at waste near Alamo Alto, Tex.

(Continued)

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	0	0		0	58	6.3	48	17	8.7	16	34
2	62	0	0		0	19	12	40	13	9.6	22	55
3	52	0	0		0	37	19	38	8.3	7.1	26	45
4	41	0	0		0	34	12	25	28	6.7	18	44
5	0	0	0		0	40	7.4	17	28	6.7	5.9	38
6	0	0	0		0	50	4.2	3.6	18	8.7	8.7	36
7	0	59	46		0	38	4.5	23	15	11	18	34
8	0	48	74		96	23	5.0	15	28	21	43	46
9	0	38	89		92	20	12	13	26	22	23	125
10	41	39	91		126	29	11	8.7	28	21	12	61
11	41	51	67		118	53	5.9	.6	7.5	15	4.2	17
12	27	55	2.2		104	57	8.2	.4	6.7	7.9	16	19
13	46	30	.3		45	41	4.9	.3	11	4.9	38	18
14	42	10	0		112	32	11	3.5	19	3.6	37	23
15	33	6.7	0		65	13	28	14	18	3.3	34	21
16	31	2.8	0		52	9.5	32	18	42	3.6	34	39
17	11	0	0		54	15	22	13	50	6.0	20	72
18	.4	0	0		52	8.7	61	15	50	7.9	11	56
19	0	0	0		53	17	95	21	53	9.1	12	50
20	46	0	0		53	25	70	24	95	7.1	19	50
21	51	0	0		37	24	43	21	84	*6	18	49
22	71	45	38		27	21	33	21	67	*7	19	52
23	50	97	73		24	19	36	12	56	14	30	63
24	45	76	72		24	23	54	22	47	20	32	64
25	63	71	73		111	15	32	24	49	18	27	61
26	80	47	57		119	7.5	43	22	51	15	26	57
27	74	21	40		82	7.5	42	25	36	12	37	54
28	55	0	1.3		69	7.1	53	34	15	11	32	54
29	3.1	0	0			4.2	61	26	7.1	7.9	28	52
30	.6	0	0			7.9	48	25	9.1	15	24	53
31	.1	0	0			8.3		21		13	26	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							90	0	33.1	2,040		
November							97	0	23.1	1,380		
December							91	0	23.3	1,440		
January							0	0	0	0		
February							126	0	54.1	3,000		
March							58	4.2	24.6	1,510		
April							95	4.2	29.3	1,740		
May							48	.3	19.2	1,180		
June							95	6.7	32.8	1,850		
July							22	3.3	10.6	654		
August							43	4.2	23.0	1,410		
September							123	17	48.0	2,860		
The year							126	0	26.5	19,160		

\*Estimated.

Note.- No flow during January.

## Tornillo Canal at waste near Alamo Alto, Tex.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	0	0.2		0	66	14	9.1	33	30	4.3	22
2	53	0	0		0	57	8.7	5.2	40	19	0	26
3	53	0	0		0	50	5.9	22	56	36	0	22
4	52	0	0		0	58	4.9	25	50	36	0	24
5	52	0	0		0	43	3.9	28	33	34	2.0	18
6	84	0	0		0	34	3.9	57	26	23	.6	2.2
7	99	53	22		0	43	3.9	38	12	24	.3	4.2
8	98	50	33		3.8	32	3.9	23	2.8	32	0	1.7
9	97	21	33		14	25	8.6	7.2	2.5	24	0	8.2
10	96	19	32		6.7	34	18	2.4	5.3	1.4	0	34
11	91	2.8	32		3.3	45	11	3.1	17	1.1	0	21
12	87	2.0	33		43	42	5.2	3.1	9.5	.8	0	34
13	9.9	.1	29		55	24	12	16	.9	.4	2.5	14
14	3.3	0	.6		10	19	15	31	.3	.4	3.5	4.5
15	1.3	0	0		35	9.7	47	32	.3	.4	3.7	13
16	0	0	0		20	9.6	26	22	.4	.4	13	1.3
17	0	0	0		38	17	12	9.2	.4	.3	6.2	2.2
18	0	0	0		48	37	6.7	2.8	.4	.4	1.1	4.0
19	0	0	0		59	12	7.3	1.1	.4	.3	1.6	.8
20	0	0	0		72	6.3	18	14	.4	.3	.3	6.7
21	7.4	0	0		79	5.4	8.7	9.8	.4	2.8	.2	7.1
22	92	22	27		59	21	5.5	2.2	.4	7.1	2.4	14
23	30	25	50		42	16	7.8	11	8.4	6.0	.2	1.4
24	31	24	13		76	43	4.2	7.7	16	2.7	9.7	14
25	35	21	14		96	88	5.8	7.7	15	1.9	13	35
26	43	17	11		58	50	10	16	6.8	1.4	5.3	11
27	38	17	13		59	48	4.6	54	3.3	15	26	13
28	11	18	9.9		51	38	14	17	7.3	26	29	1.8
29	.3	21	0			9.8	33	35	4.4	49	18	1.9
30	0	3.4	0			17	28	35	12	42	9.6	1.4
31	0	0	0			11		40		25	17	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							99	0	39.3	2,420		
November							53	0	10.5	627		
December							50	0	11.4	700		
January							0	0	0	0		
February							96	0	33.1	1,840		
March							88	5.4	32.6	2,000		
April							47	3.9	11.9	709		
May							57	1.1	19.0	1,170		
June							55	.3	12.2	723		
July							49		14.2	875		
August							29	0	5.47	336		
September							35	.8	12.1	723		
The year							99	0	16.7	12,120		

Note.- No flow during January.

## Hudspeth Canal at head, near Alamo Alto, Tex.

Location.- Water-stage recorder in sec. 11, T. 35 S., R. 9 E., surveys of U. S. Bureau of Reclamation, at head of canal, 2 miles southeast of Alamo Alto.

Records available.- October 1931 to September 1934 in reports of U. S. Geological Survey; March 1930 to December 1931 in report of New Mexico State engineer.

Extremes.- Maximum daily discharge during year ending Sept. 30, 1934, 236 second-feet Aug. 14 (gage height, 4.53 feet); no flow at times.  
1930-34: Maximum daily discharge, that of Aug. 14, 1934; no flow at times.

Remarks.- Records good. Flow is used for irrigation in Hudspeth County Conservation and Reclamation District No. 1. Records furnished by U. S. Bureau of Reclamation.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	74	0		0	11	102	107	116	114	116	123
2	39	25	0		0	30	100	99	129	110	114	123
3	32	0	0		0	0	98	101	128	110	114	113
4	32	0	0		0	0	102	110	120	108	114	114
5	32	0	0		0	0	103	106	115	107	122	108
6	49	0	0		0	0	105	90	119	106	120	105
7	60	4	0		0	0	104	101	106	95	117	106
8	78	0	0		0	0	99	96	98	70	50	106
9	80	0	0		0	0	100	99	98	62	46	110
10	77	21	0		2.0	0	99	102	106	97	86	114
11	66	37	0		9.8	0	110	105	102	86	86	115
12	59	44	0		4.5	0	106	105	71	84	86	110
13	23	42	0		20	0	118	110	74	96	89	117
14	0	42	0		38	22	113	114	101	94	98	120
15	0	51	0		34	66	114	112	115	98	96	122
16	0	65	0		18	67	106	110	116	100	106	126
17	0	*7	0		1.4	78	98	110	93	106	88	121
18	0	0	0		0	65	111	110	90	98	48	119
19	0	0	0		0	56	87	110	107	102	121	117
20	0	0	0		0	39	75	106	113	105	129	114
21	0	0	5		0	26	72	102	117	106	136	110
22	0	0	7		0	57	69	99	92	90	134	110
23	37	0	0		0	88	115	98	109	121	139	94
24	66	*18	0		0	107	114	93	106	124	155	80
25	58	*28	0		0	93	113	87	104	124	145	82
26	65	*33	0		0	89	123	73	104	122	150	82
27	72	*32	0		0	68	114	89	107	114	152	74
28	77	*4	0		3.7	57	78	84	109	106	145	72
29	72	0	0		11	38	86	104	109	109	110	20
30	69	0	0		0	60	106	108	114	114	78	0
31	68		0		79			106		115	122	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							80	0	40.5	2,480		
November							74	0	17.6	1,050		
December							7	0	.4	24		
January							0	0	0	0		
February							38	0	4.91	282		
March							107	0	38.5	2,370		
April							123	72	102	6,070		
May							114	73	102	6,240		
June							120	71	106	6,320		
July							124	62	103	6,310		
August							155	46	110	6,770		
September							126	0	101	6,000		
The year							155	0	60.5	43,920		

\*Estimated.

Note.- No flow during January.

## Hudspeth Canal at head, near Alamo Alto, Tex.

(Continued)

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0		0	81	160	122	148	118	162	161
2	0	0	0		0	84	184	115	149	119	167	121
3	0	0	0		0	88	181	107	145	113	155	154
4	0	0	0		0	103	185	105	147	115	174	149
5	0	0	0		0	96	182	108	143	115	179	133
6	0	0	0		0	89	180	119	150	125	170	133
7	0	0	14		0	96	176	119	162	125	164	137
8	0	50	41		0	100	174	119	161	121	163	136
9	0	99	36		0	102	172	112	157	119	161	168
10	0	78	25		0	120	166	99	159	120	183	109
11	0	76	25		0	106	163	83	160	136	155	138
12	0	61	0		0	100	161	87	150	144	174	148
13	0	39	0		0	117	159	88	159	118	167	158
14	0	45	0		0	110	121	112	168	107	167	178
15	0	0	0		26	96	141	143	143	99	162	172
16	0	0	0		41	102	139	152	142	113	158	166
17	0	0	0		68	101	66	151	129	128	167	122
18	0	0	0		62	103	30	157	136	113	175	142
19	0	0	0		66	114	46	147	130	149	166	142
20	0	0	0		62	131	69	143	91	145	176	161
21	31	0	0		70	122	120	147	86	131	177	146
22	29	0	11		96	124	124	149	100	147	183	123
23	33	22	32		92	130	129	149	89	157	187	116
24	40	57	35		103	130	139	171	68	158	181	119
25	20	50	36		24	111	137	151	68	161	181	118
26	0	66	24		14	107	128	152	78	164	183	118
27	0	52	23		56	116	131	158	74	158	177	111
28	0	0	0		82	141	131	151	82	155	164	115
29	0	0	0			146	111	143	96	145	167	113
30	0	0	0			164	119	144	115	159	173	114
31	0	0	0			157		143		159	167	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							40	0	4.9	303		
November							99	0	23.2	1,380		
December							41	0	9.7	599		
January							0	0	0	0		
February							103	0	30.8	1,710		
March							164	83	112	6,920		
April							185	30	137	8,180		
May							171	83	131	8,030		
June							168	68	126	7,510		
July							164	99	133	8,200		
August							187	153	170	10,420		
September							178	68	133	7,940		
The year							187	0	84.5	61,190		

Note.- No flow during January.

## Hudspeth Canal at head, near Alamo Alto, Tex.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	0	0		0	95	139	139	168	205	132	183
2	112	0	0		0	96	141	131	168	205	78	181
3	113	0	0		0	103	111	153	165	191	56	181
4	112	0	0		0	104	137	157	170	205	36	181
5	115	0	0		0	112	102	157	169	203	80	172
6	106	0	0		0	113	125	154	169	193	91	165
7	83	3.6	40		0	113	107	165	171	198	93	145
8	96	96	102		0	118	109	165	121	199	83	165
9	87	118	104		0	122	142	141	131	201	53	173
10	98	113	107		0	119	169	138	159	165	98	161
11	99	102	114		0	117	135	121	165	103	172	158
12	92	2.9	114		0	116	136	113	169	60	201	158
13	0	0	73		51	123	158	139	121	53	229	158
14	0	0	0		12	137	164	158	174	54	236	145
15	0	0	0		69	136	163	158	175	64	229	122
16	0	0	0		86	135	169	158	103	84	231	129
17	0	0	0		109	136	167	163	102	148	205	141
18	0	0	0		115	113	166	160	109	149	190	129
19	0	0	0		114	137	168	149	94	66	188	122
20	0	0	0		90	135	166	155	103	112	186	133
21	0	0	0		105	150	146	161	112	118	86	130
22	67	35	0		105	167	147	144	110	194	104	137
23	124	103	49		116	161	159	156	167	211	157	133
24	117	97	93		88	136	154	157	193	228	183	129
25	107	94	96		74	97	156	161	197	229	173	128
26	117	81	90		107	125	157	166	177	222	181	128
27	115	85	98		112	127	153	137	161	214	181	128
28	8.3	87	80		112	129	133	149	120	197	181	125
29	0	79	0			86	127	162	149	196	178	119
30	0	0	0			133	127	162	182	199	180	117
31	0	0	0			139		161		200	183	
Month						Maximum	Minimum	Mean	Run-off in acre-feet			
October						124	0	60.4	3,710			
November						118	0	36.2	2,160			
December						114	0	37.4	2,300			
January						0	0	0	0			
February						115	0	52.3	2,910			
March						131	86	123	7,580			
April						169	102	144	8,590			
May						166	113	151	9,300			
June						197	94	149	8,870			
July						229	53	163	10,050			
August						236	36	149	9,190			
September						183	117	146	8,680			
The year						236	0	101	73,340			

Note.- No flow during January.

## Pecos River at Irvin ranch, near Pecos, N. Mex.

Location.- Water-stage recorder in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 17, T. 17 N., R. 12 E., at private road bridge on Irvin ranch 600 feet above mouth of Indian Creek, 2 miles below Canon Espiritu Santo, and 11 miles north of Pecos.

Drainage area.- 175 square miles.

Records available.- March 1910 to December 1914 published as "Pecos River near Cowles" and October 1930 to September 1934 in report of U. S. Geological Survey; August 1919 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 274 second-feet Sept. 25 (gage height, 2.40 feet); minimum daily discharge, 6.1 second-feet Jan. 18.  
1930-34: Maximum discharge, 1,390 second-feet Sept. 24, 1931 (gage height, 3.70 feet); minimum daily discharge, that of Jan. 18, 1934.

Remarks.- Records good except those estimated Nov. 4, Dec. 17, June 4-9, Sept. 9, 22-27, 29, which are poor. Stage-discharge relation affected by ice Dec. 17. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	24	27	14	20	21	51	94	58	34	31	96
2	29	26	27	15	20	21	56	87	53	30	32	81
3	33	24	27	14	22	23	51	81	52	27	36	67
4	36	24	27	15	23	24	41	81	45	28	34	61
5	32	23	25	17	20	24	42	90		30	32	54
6	30	27	24	21	20	25	41	76	40	26	32	56
7	30	25	24	20	19	28	33	76		25	42	64
8	29	27	24	21	18	24	34	80		34	37	56
9	28	28	24	27	20	24	46	85		32	32	54
10	28	28	24	32	19	24	54	90	36	31	36	53
11	29	24	24	20	20	24	73	98	34	27	32	48
12	29	24	22	19	24	23	63	96	32	28	36	48
13	28	24	24	19	21	24	89	92	31	24	47	51
14	28	25	21	17	21	24	90	92	29	21	42	44
15	32	24	26	8.2	21	26	83	85	28	23	45	44
16	29	24	22	6.1	21	27	85	81	29	27	44	40
17	27	26	15	7.1	21	28	72	76	29	26	53	38
18	25	24	12	7.4	25	24	62	74	29	31	61	38
19	25	23	10	7.4	21	24	62	72	27	30	57	38
20	26	21	11	7.4	21	27	64	68	25	24	58	37
21	27	22	12	13	22	29	72	67	24	22	47	42
22	27	19	13	24	20	32	83	68	23	28	48	40
23	27	19	13	24	23	34	73	68	23	41	45	40
24	27	18	10	23	23	35	78	62	27	41	40	40
25	27	20	10	20	22	36	81	64	26	54	68	130
26	28	20	10	24	21	36	92	62	22	87	58	110
27	27	20	10	32	22	35	90	98	21	80	99	80
28	24	22	11	29	20	39	85	85	24	53	85	68
29	24	24	11	25	39	30	70	32	46	72	66	66
30	23	27	11	24	48	92	67	39	41	66	60	60
31	24		13	24	54		67		35	76		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							35	23	27.9	1,710		
November							28	18	23.5	1,400		
December							27	10	18.2	1,120		
January							32	6.1	18.7	1,150		
February							25	18	21.1	1,170		
March							54	21	29.2	1,800		
April							92	33	68.3	4,060		
May							95	62	78.3	4,840		
June							98	21	33.6	2,000		
July							97	21	35.0	2,150		
August							89	31	48.8	3,000		
September							130	37	58.1	3,460		
The year							130	6.1	38.5	27,860		



## Pecos River near Anton Chico, N. Mex.

Location.- Water-stage recorder in Anton Chico grant,  $1\frac{1}{4}$  miles southeast of Anton Chico and 4 miles below mouth of Tecolote Creek.

Drainage area.- 1,080 square miles.

Records available.- April 1910 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; April 1910 to December 1931 in reports of State engineer. Prior to Jan. 11, 1929, station was located at four sites from  $3\frac{1}{2}$  miles above to 1- $\frac{1}{3}$  miles below present location. Records believed to be comparable.

Extremes.- Maximum discharge during year, 6,340 second-feet May 25 (gage height, 6.11 feet); no flow at times.

1930-34: Maximum discharge, about 12,900 second-feet July 16, 1933 (gage height, 8.0 feet); no flow at times.

Remarks.- Records good except those estimated, which are poor. Stage-discharge relation affected by ice Dec. 16, 17, 19, 27, Jan. 6-14. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
1	7	12	9	8	*9	19	17	43	*10	0	0	*150		
2	6	11	12	7		19	21	38		0	4	*80		
3	7	12	17	7		15	16	49		0	0	*30		
4	24	13	22	7		14	22	54		0	0	*10		
5	25	15	15	8		18	25	54		0	0			
6	68	14	14	*8	9	22	24	52	*15	0	0	*5		
7	32	16	14		10	22	24	46		0	0			
8	21	15	14		9	11	24	24		0	0			
9	18	13	13		8	6	15	19		0	0			
10	14	13	11		9	6	10	24		0	0			
11	14	14	10	*11	11	9	13	36	*5	0	0	*2		
12	15	14	11		22	17	12	46		0	0			
13	12	14	10		21	21	22	54		0	0			
14	11	13	11		15	14	46	50		0	0			
15	11	12	11		16	9	98	38		0	0			
16	11	12	*11	*10	17	10	108	32	0	0	0	1		
17	11	12	*12		19	11	72	21	0	0	0			
18	10	12	12		21	12	93	15	0	0	1			
19	9	12	*12		*20	14	54	11	0	0	1			
20	8	12	11			11	43	14	0	0	1			
21	7	12	10	*8		7	38	15	0	0	1	2		
22	11	12	8	*8	20	8	37	10	0	0	12	3		
23	9	12	7		21	12	42	12	0	4	3	7		
24	9	12	9		20	15	46	282	0	3	2	8		
25	10	12	10		22	16	58	768	0	56	2	183		
26	10	11	9		*9	24	20	62	*1,100	0	6	450	152	
27	10	11	*8	21		12	90	*300	0	7	*300	75		
28	10	11	8	19		14	95	*150	0	17	*200	56		
29	10	8	8			15	88	58	0	16	*150	40		
30	11	8	8			15	58	*40	0	6	*200	32		
31	12	9	9			16			1	*250				
Month							Maximum	Minimum	Mean	Run-off in acre-feet				
October							68	6	14.3	879				
November							16	3	12.3	734				
December							22	7	11.2	686				
January									6.9	547				
February							24		15.7	871				
March							22	6	13.9	887				
April							108	10	45.9	2,730				
May							1,100	10	112	6,900				
June									0	248				
July							56	0	3.6	234				
August							450	0	50.9	3,130				
September							183		29.4	1,750				
The year...							1,100	0	27.0	19,570				

\*Estimated.

## Pecos River at Santa Rosa, N. Mex.

Location.— Water-stage recorder in sec. 3, T. 8 N., R. 21 E., at Santa Rosa, a quarter of a mile above highway bridge (former location of station), 1½ miles above mouth of Rio Agua Negra Chiquita, and near site of station maintained by U. S. Bureau of Reclamation, 1903-8.

Drainage area.— 2,880 square miles.

Records available.— May 1903 to December 1906, February 1910 to July 1911, September 1912 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; February 1910 to July 1911, September 1912 to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, about 6,700 second-feet Aug. 26 (gage height, 6.31 feet); minimum daily discharge, 8 second-feet at times during June to September.

1930-34: Maximum discharge, 7,760 second-feet Aug. 29, 1933; maximum gage height, 7.00 feet July 6, 1932; minimum daily discharge, that of 1934.

Remarks.— Records fair except those estimated, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	18	16	13	16	*15	12	11	*12	9	9	683
2	21	16	16	14	16	*15	12	11	12	9	9	122
3	20	16	16	14	16	16	12	10	12	8	10	16
4	23	16	16	14	15	*14	12	10	12	8	15	9
5	22	18	16	14	15	*15	13	10	26	8	13	8
6	20	16	15	15	15	*16	13	10	22	8	12	8
7	20	16	15	15	15	*18	14	10	13	8	*11	9
8	25	16	15	14	14	13	13	10	13	9	*10	11
9	23	16	15	14	15	*14	12	10	13	9	*9	10
10	20	16	16	20	16	14	12	10	12	8	*8	10
11	18	15	16	25	*17	14	13	10	12	8	8	9
12	18	15	16	23	*20	14	12	10	12	8	9	9
13	18	16	16	18	*18	14	12	10	12	8	9	9
14	18	16	16	18	*15	13	13	10	12	8	9	9
15	19	16	15	18	*13	13	13	10	11	9	9	9
16	19	16	15	18	*12	13	14	10	9	8	*9	9
17	19	16	14	17	12	13	14	10	9	8	*9	8
18	19	15	17	17	*12	12	14	10	10	9	8	8
19	19	15	20	18	*13	13	16	10	10	9	8	8
20	19	15	20	15	*13	12	18	10	9	9	8	8
21	18	15	20	12	*14	12	15	*15	9	8	8	8
22	20	15	20	12	14	12	13		9	9	8	8
23	20	15	20	13	*13	12	12		9	9	12	8
24	20	15	19	13	13	13	12		9	11	11	9
25	20	15	18	14	*14	13	11	*900	8	44	9	8
26	20	15	18	14		14	12		8	90	1,350	8
27	20	15	14	16		14	12		8	23	1,000	9
28	19	15	16	16		14	12	*200	9	12	447	9
29	19	16	20	16	13	11	11	*100	8	10	402	9
30	20	16	17	16	13	11	11	*50	8	9	116	9
31	20	14	16	16	12	12	12	*15	8	9	121	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							25	18	19.9	1,220		
November							18	15	15.7	934		
December							20	14	16.7	1,030		
January							25	12	15.9	976		
February							20	12	14.5	807		
March							18	12	13.6	839		
April							18	11	12.8	764		
May							900	8	62.6	3,850		
June							26	8	11.3	670		
July							90	8	13.0	797		
August							1,550	8	119	7,290		
September							683	8	55.2	2,100		
The year							1,550	8	29.4	21,280		

\*Estimated.

## Pecos River near Guadalupe, N. Mex.

Location.- Water-stage recorder in sec. 34, T. 5 N., R. 24 E., 500 feet below mouth of Alamogordo Creek, half a mile above Alamogordo dam site, and 4 miles north of Guadalupe.

Drainage area.- 4,470 square miles.

Records available.- October 1912 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; October 1912 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 8,690 second-feet May 11 (gage height, 7.36 feet); minimum daily discharge, 48 second-feet July 22.  
1930-34: Maximum discharge, about 27,000 second-feet Oct. 11, 1930 (gage height, 12.8 feet); minimum daily discharge, 48 second-feet June 29, 1931.

Remarks.- Records good except those estimated Oct. 1-5, Nov. 1 to Dec. 10, Apr. 17-30, May 12-18, June 27 to July 18, Aug. 15-17, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100		90	80	80	95	85	92	214	60	64	813
2				80	80	85	80	90	128		66	890
3				82	80	90	90	78	116		66	509
4				85	82	78	90	72	136		60	325
5				90	85	70	90	80	107		80	232
6	95			101	85	72	92	80	107	60	75	184
7	95				95	86	72	92	72		62	146
8	90				90	80	90	78	78		64	125
9	90				85	90	78	90	75		60	107
10	101				85	95	78	88	66		64	90
11	101		90	80	95	82	85	686	70	60	60	85
12	88			78	92	82	90	70	70		56	80
13	116			75	92	80	85	150	68		58	66
14	116			78	92	72	88	88	66		62	66
15	90			75	90	80	95	80	62		70	70
16	82		90	78	90	85	98	70	66	60	64	64
17	82			85	78	88			68		68	68
18	78			90	78	80			64		56	75
19	82			80	85	78			64		54	75
20	78			92	80	82			62		54	64
21	78		92	85	88	82	110	64	58	50	62	68
22	65			85	88	85		72	54		66	66
23	95			88	90	82		78	58		58	66
24	95			78	82	92		232	60		62	68
25	101			80	82	90		1,240	62		80	66
26	10		80	88	88	90	100	686	70	70	78	62
27	92			90	88	92		679	134		2,020	60
28	90			80	88	90		335	142		754	62
29	90			82	88	88		300	122		601	56
30	90			85	80	85		260	116		433	56
31	92		82	82		88		340		90	547	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							116	78	93.3	5,740		
November									90.0	5,360		
December									87.8	5,400		
January							101	75	85.6	5,140		
February							98	80	87.9	4,880		
March							95	70	82.0	5,040		
April								80	93.6	5,870		
May							1,240		211	12,980		
June							214	54	82.1	4,890		
July							184		73.9	4,550		
August							2,020	54	194	11,910		
September							890	56	159	9,450		
The year							2,020		112	81,210		

## Pecos River near Dayton, N. Mex.

Location.- Water-stage recorder in sec. 18, T. 18 S., R. 27 E., half a mile above mouth of Penaeco River, 3 miles east of Dayton, and about 10 miles above McMillan Dam.

Records available.- October 1931 to September 1934 in reports of U. S. Geological Survey; March 1905 to December 1931 in reports of State engineer.

Average discharge.- 29 years (1905-34), 363 second-feet.

Extremes.- Maximum daily discharge during year ending Sept. 30, 1934, 1,090 second-feet Aug. 26 (gage height, 15.25 feet); no flow Aug. 17-24.  
1905-34: Maximum daily discharge, 50,300 second-feet during July 1905; no flow Aug. 17-24, 1934.

Remarks.- Records furnished by U. S. Bureau of Reclamation. Considerable water is diverted for irrigation above station, amount not known. Discharge represents inflow into McMillan Reservoir for irrigation of about 25,000 acres of the Carlsbad project.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	512	236	298	267	257	165	172	473	749	473	138	734
2	486	238	320	267	267	172	172	388	592	525	125	592
3	512	238	320	267	267	187	158	287	496	1,110	113	486
4	826	229	320	267	277	187	158	238	448	1,040	95	424
5	551	220	309	277	298	187	152	195	424	872	72	342
6	376	220	298	298	267	187	145	187	388	888	61	267
7	320	229	298	309	267	157	138	172	388	690	50	220
8	267	220	309	309	238	180	125	132	365	825	50	210
9	211	220	320	331	238	172	125	145	320	953	61	195
10	203	212	342	353	229	172	119	870	296	579	45	187
11	187	203	353	342	211	172	187	1,430	257	388	35	172
12	172	203	342	331	195	229	298	2,200	238	309	25	165
13	158	203	331	342	187	257	309	2,500	203	248	45	145
14	145	212	331	353	187	247	309	1,160	180	212	45	132
15	145	238	320	342	187	247	297	931	172	187	35	119
16	145	247	309	298	187	238	229	809	165	172	35	119
17	145	247	309	287	187	238	180	662	165	145	30	119
18	145	247	309	287	195	220	190	606	158	145	35	107
19	145	236	320	277	203	203	158	592	145	119	72	107
20	145	247	342	277	212	187	190	538	145	101	167	113
21	145	257	353	277	236	180	248	620	132	95	172	113
22	145	257	342	267	277	180	229	648	220	83	138	132
23	203	257	331	248	267	180	238	634	119	72	95	172
24	606	257	320	248	277	180	297	705	95	95	61	1,230
25	565	247	309	238	267	187	267	690	95	113	50	5,500
26	436	247	309	238	267	172	287	634	113	132	45	4,000
27	365	257	298	238	238	172	412	648	277	101	40	7,100
28	298	257	267	248	211	165	474	565	165	119	40	6,100
29	277	267	267	248	172	158	436	1,160	552	95	320	10,100
30	267	298	277	257	151	151	436	986	936	187	1,390	16,000
31	248	267	267	257	151	151	825	825	156	1,050	1,050	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							825	145	301	18,530		
November							298	203	238	14,180		
December							353	267	315	19,400		
January							353	238	295	17,540		
February							298	172	236	13,550		
March							257	151	191	11,720		
April							474	119	256	14,070		
May							2,500	132	730	44,890		
June							936	95	300	17,850		
July							1,110	72	362	22,280		
August							1,390	25	153	9,430		
September							16,000	107	1,847	109,900		
The year							16,000	25	432	313,300		

## Pecos River near Dayton, N. Mex.

(Continued)

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12,100	365	257	287	220	220	89	83	486	257	45	794
2	6,600	365	248	298	220	211	89	83	538	212	45	648
3	872	365	248	298	229	211	89	65	298	203	40	565
4	700	365	248	308	220	203	89	50	220	187	35	463
5	662	365	248	287	220	203	78	72	158	180	1,800	535
6	606	342	247	297	220	203	95	72	119	172	2,800	365
7	565	342	247	308	220	195	95	55	83	172	1,570	309
8	565	342	229	320	212	187	72	60	83	298	800	277
9	565	331	229	330	212	187	78	55	83	212	800	257
10	512	331	220	342	203	180	83	50	83	158	238	203
11	473	331	220	330	229	172	83	45	77	132	165	220
12	456	351	229	309	248	172	72	35	77	119	113	277
13	436	320	229	297	248	172	61	35	77	107	89	287
14	424	309	229	257	220	165	61	30	77	95	113	648
15	400	298	238	257	212	158	72	35	119	78	101	676
16	377	298	238	257	298	152	66	55	500	72	77	486
17	354	298	238	257	515	152	78	40	257	72	50	309
18	342	298	235	257	376	152	83	35	187	1,600	55	238
19	320	310	257	257	298	152	61	35	152	3,100	107	211
20	320	310	267	277	257	145	55	30	132	1,550	72	565
21	320	298	238	267	238	145	61	30	107	860	61	512
22	320	288	277	257	212	145	61	30	113	400	45	370
23	331	298	320	267	195	145	66	30	354	330	40	277
24	388	288	342	267	195	138	78	30	648	300	40	258
25	388	277	342	247	195	132	83	30	794	380	119	203
26	377	277	424	238	195	125	83	30	634	270	320	187
27	376	277	525	229	203	125	72	30	550	220	450	172
28	376	277	448	238	220	125	61	30	510	101	580	165
29	365	277	400	220		119	55	30	500	101	1,300	165
30	365	277	342	220		100	61	35	354	67	4,600	158
31	365		298	220		89		35		45	3,000	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							12,100	320	1,019	62,680		
November							365	277	315	18,740		
December							525	220	285	17,530		
January							342	220	274	16,920		
February							515	195	240	13,350		
March							220	89	161	9,680		
April							95	55	74.3	4,420		
May							83	30	43.9	2,700		
June							794	77	279	16,600		
July							3,100	45	398	24,500		
August							4,600	35	635	39,010		
September							794	158	359	21,340		
The year							12,100	30	342	247,400		

## Pecos River near Dayton, N. Mex.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	130	145	181	193	151	163	73	163	12	9	890
2	132	140	151	181	211	157	157	68	133	12	9	661
3	132	151	158	175	211	181	151	58	127	12	9	760
4	125	162	158	175	211	224	133	53	115	10	9	847
5	113	172	151	175	211	224	115	58	115	10	7	633
6	113	172	151	175	217	205	121	63	139	15	9	398
7	107	172	152	169	205	181	121	68	163	13	12	287
8	119	172	158	169	199	157	127	68	133	9	7	187
9	132	172	158	175	187	151	133	58	97	12	4	139
10	125	172	158	175	181	139	127	53	79	15	6	133
11	119	190	158	175	175	145	109	53	68	13	4	127
12	107	187	152	169	175	139	109	53	58	10	3	127
13	107	180	152	169	169	133	109	58	53	7	1	121
14	138	180	138	175	163	115	109	257	53	6	1	97
15	145	180	138	187	175	115	109	211	43	7	3	85
16	152	180	138	187	163	109	115	175	35	9	1	68
17	152	180	138	181	157	109	115	139	21	9	0	58
18	152	190	138	181	157	121	115	115	21	9	0	55
19	145	180	145	181	157	139	115	91	19	3	0	48
20	152	180	145	175	157	133	103	79	19	2	0	43
21	152	187	145	175	157	127	91	79	19	1	0	39
22	145	187	158	175	157	127	115	79	15	2	0	35
23	145	158	152	175	151	127	151	79	12	3	0	35
24	145	145	152	175	145	133	139	73	9	5	0	31
25	152	138	152	175	139	145	133	68	10	19	633	31
26	152	145	158	175	151	163	115	68	19	17	1,090	35
27	152	151	165	175	169	181	103	239	15	10	448	35
28	138	151	165	175	163	181	91	551	7	10	348	43
29	120	128	165	181	175	187	323	323	12	10	633	39
30	120	138	158	181	169	199	323	9	9	10	1,080	43
31	120		158	181	169		211			10	804	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							152	107	134	8,210		
November							187	128	165	9,820		
December							165	138	152	9,340		
January							187	169	177	10,860		
February							217	139	175	9,730		
March							224	109	152	9,370		
April							199	91	126	7,500		
May							551	53	127	7,820		
June							163	7	58.4	3,830		
July							19	1	9.4	1,379		
August							1,090	0	165	10,180		
September							890	31	204	12,160		
The year							1,090	0	137	99,100		

## Pecos River at Carlsbad, N. Mex.

Location.— Water-stage recorder in SE $\frac{1}{4}$  sec. 6, T. 22 S., R. 27 E., at Green Street Bridge, in Carlsbad.

Records available.— May 1903 to March 1906, May 1914 to September 1925, October 1931 to September 1934 in reports of U. S. Geological Survey; June 1903 to December 1906, May 1914 to December 1928, January 1930 to December 1931 in reports of State engineer.

Average discharge.— 20 years (1903-4, 1905-6, 1914-28, 1930-34), 326 second-feet.

Extremes.— Maximum daily discharge during year ending Sept. 30, 1934, 420 second-feet, Oct. 28-31 (gage height, 1.30 feet); minimum daily discharge, 24 second-feet Jan. 31, Feb. 1, 1903-8, 1914-28, 1930-34: Maximum discharge, 85,700 second-feet Aug. 7, 1916 (gage height, about 21.0 feet); no flow May 9, 1904.  
Maximum discharge during flood of Oct. 3-10, 1904, not determined.

Remarks.— Records furnished by U. S. Bureau of Reclamation. Considerable water is diverted for irrigation, amount not known.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	127	211	217	212	*289	222	103	106	932	*110	124	116
2	135	206	201	212	*289	211	103	98	1,030	*107	131	116
3	135	131	222	212	*289	206	103	139	957	*105	109	116
4	139	124	243	222	*289	191	109	146	932	103	109	109
5	131	164	179	222	*289	165	155	139	480	103	102	109
6	109	191	201	243	*289	165	155	139	278	139	109	103
7	109	160	255	243	*289	165	155	124	103	495	113	109
8	127	160	222	249	*289	168	129	139	507	109	120	109
9	107	160	222	255	*289	150	160	139	116	495	109	124
10	107	109	243	222	*289	155	160	139	116	196	102	120
11	109	173	233	233	*289	177	139	146	109	109	131	116
12	109	164	233	255	*289	191	155	146	103	92	116	116
13	109	182	243	255	*289	173	146	146	87	95	124	92
14	98	182	243	255	*289	211	135	146	78	92	109	87
15	98	191	272	255	289	211	139	139	74	92	124	103
16	98	217	280	272	307	201	135	103	78	95	109	109
17	135	243	272	255	301	182	135	82	89	87	109	109
18	160	255	272	255	301	135	142	233	92	98	109	109
19	146	255	280	236	320	124	135	393	98	109	109	109
20	120	255	280	244	326	116	155	435	116	116	109	*109
21	120	255	255	233	301	150	132	421	120	124	109	*109
22	81	150	196	244	301	160	132	386	120	139	109	*109
23	95	191	196	233	278	160	132	386	120	109	113	*109
24	103	255	191	244	272	160	109	457	120	113	116	*109
25	206	278	191	244	232	160	113	465	120	103	109	*1,750
26	243	278	201	244	232	160	120	465	120	116	102	*193
27	243	267	196	244	232	124	120	365	124	131	102	2,100
28	227	191	206	266	249	103	116	421	*120	164	102	6,700
29	222	109	222	260	243	98	103	442	*116	116	124	6,900
30	211	243	211	243	103	106	106	915	*113	116	112	14,300
31	211		243	266	103	103		1,000		124	116	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							243	81	141	8,670		
November							278	109	198	11,800		
December							280	179	229	14,080		
January							272	212	243	14,940		
February							326	232	284	16,320		
March							222	98	161	9,920		
April							160	103	130	7,760		
May							1,000	82	290	17,850		
June							1,030	74	240	14,280		
July							507	87	152	9,320		
August							131	102	112	6,900		
September							14,300	87	1,153	68,590		
The year							14,300	74	276	200,400		

\*Estimated.

## Pecos River at Carlsbad, N. Mex.

(Continued)

## Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14,500	301	260	286	349	215	92	98	98	98	100	95
2	11,100	289	272	300	349	205	98	92	98	98	100	98
3	7,100	289	295	290	355	194	98	98	98	98	98	103
4	4,800	278	301	301	355	177	95	86	98	92	100	98
5	2,000	255	320	290	349	168	95	105	98	98	103	98
6	1,100	267	320	290	350	168	95	98	98	80	95	98
7	457	289	320	290	350	215	95	98	103	92	95	98
8	510	339	301	290	350	215	95	98	103	95	76	98
9	540	326	301	325	350	195	95	89	100	98	76	98
10	510	301	301	337	350	150	95	98	103	98	86	89
11	140	301	301	325	350	150	95	92	100	100	86	80
12	326	289	301	337	350	159	92	98	100	103	86	92
13	555	278	314	337	381	250	95	92	98	109	86	92
14	540	278	320	337	337	273	80	92	95	103	89	95
15	510	283	326	337	313	278	80	92	95	103	89	89
16	485	278	314	355	325	290	92	100	95	100	86	86
17	414	278	307	325	337	296	92	98	95	98	89	103
18	360	283	301	325	325	284	95	98	95	98	80	103
19	350	267	301	325	337	287	95	103	95	90	86	140
20	333	278	320	337	337	266	89	98	95	89	86	140
21	333	301	320	337	287	205	89	92	98	86	86	140
22	320	301	326	337	278	205	89	95	98	86	86	140
23	301	256	352	325	284	205	78	103	98	98	80	140
24	301	267	339	325	307	146	80	98	98	100	86	140
25	326	255	326	325	195	150	98	98	98	100	80	140
26	320	233	326	325	190	150	98	98	98	95	92	140
27	289	191	267	355	195	120	98	98	98	89	92	137
28	295	202	267	361	215	100	98	95	98	86	100	155
29	285	243	267	361	98	98	98	98	98	89	103	168
30	301	255	267	355	98	98	98	98	98	89	100	164
31	289	267	267	355	92	92	98	98	98	89	103	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							14,500	140	1,613	99,170		
November							339	191	275	18,360		
December							352	260	304	18,680		
January							361	286	326	20,030		
February							361	190	315	17,510		
March							296	92	193	11,850		
April							98	76	92.7	5,510		
May							105	96	96.6	5,950		
June							103	95	98.0	5,830		
July							109	80	95.4	5,860		
August							103	76	90.3	5,560		
September							168	80	115	6,860		
The year							14,500	76	303	219,200		



## Pecos River at Carlsbad, N. Mex.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	155	415	150	109	24	106	48	27	66	63	71	63
2	140	300	150	103	37	100	63	27	66	63	71	63
3	140	300	142	106	37	118	48	27	66	63	71	63
4	140	300	159	100	46	106	48	27	66	50	71	63
5	140	319	205	106	43	91	48	27	66	50	71	63
6	140	273	205	118	43	91	48	27	66	50	66	63
7	140	230	173	82	40	97	48	27	66	50	60	63
8	140	205	177	82	43	88	48	27	66	50	55	63
9	140	210	186	82	46	94	48	27	66	50	50	63
10	140	216	205	82	50	94	48	50	66	50	50	63
11	146	220	205	82	129	94	76	50	63	50	50	63
12	146	215	205	82	129	100	76	50	63	50	50	63
13	146	215	205	82	133	91	76	50	63	50	50	63
14	146	220	159	82	133	91	76	50	63	50	50	63
15	146	120	155	82	141	91	76	50	63	50	50	63
16	146	86	155	63	149	91	76	50	63	50	50	63
17	146	80	159	63	118	91	76	50	63	50	50	63
18	146	86	215	63	118	91	76	50	63	50	50	63
19	146	89	215	63	118	91	50	50	63	50	50	63
20	146	159	177	63	118	137	50	88	63	50	50	63
21	146	262	177	63	118	137	50	88	63	50	50	53
22	146	295	177	63	109	137	50	88	63	50	50	63
23	146	190	168	45	115	137	50	88	63	50	50	53
24	146	123	165	45	112	137	50	88	63	50	50	53
25	146	173	150	45	115	137	50	88	63	50	50	53
26	407	160	140	45	112	137	50	88	63	50	50	53
27	407	150	154	45	112	48	50	88	63	50	50	53
28	420	140	120	45	106	48	50	88	63	50	50	53
29	420	130	120	37		48	50	76	63	50	50	53
30	420	120	127	43		48	50	76	63	71	50	53
31	420		120	24		48		76		71	50	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							480	140	197	12,100		
November							415	80	200	11,900		
December							215	120	168	10,310		
January							118	24	70.9	4,360		
February							149	24	92.4	5,130		
March							137	48	97.3	5,980		
April							76	48	56.8	3,860		
May							88	27	56.9	3,500		
June							66	63	64.0	3,810		
July							71	50	52.6	3,240		
August							71	50	54.4	3,340		
September							63	53	59.3	3,530		
The year							420	24	97.5	70,590		

## Pecos River near Malaga, N. Mex.

Location.- Water-stage recorder in sec. 19, T. 24 S., R. 29 E., 3 miles southeast of Malaga and 4½ miles below mouth of Black River.

Records available.- May 1920 to September 1925, October 1931 to September 1934 in reports of U. S. Geological Survey; January 1921 to December 1931 in reports of State engineer.

Average discharge.- 14 years (1920-34), 293 second-feet.

Extremes.- Maximum daily discharge during year ending Sept. 30, 1934, 295 second-feet Nov. 4-8; maximum daily stage, 2.83 feet Nov. 4-11; no flow Aug. 20-22.  
1920-34: Maximum daily discharge, about 22,000 second-feet June 8, 1921 (gage height, 12.85 feet); no flow Aug. 20-22, 1934.  
Maximum stage known, 26.4 feet in September 1919 (discharge not determined).

Remarks.- Records furnished by U. S. Bureau of Reclamation. Diversions for irrigation above station.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	260	320	280	280	240	42	11	1,660	143	143	180
2	200	240	300	280	260	240	30	14	585	95	126	180
3	180	260	280	280	260	143	11	14	1,250	125	126	180
4	200	300	280	300	260	95	14	14	1,960	161	126	200
5	200	220	260	300	260	80	11	22	1,180	143	143	200
6	180	200	260	300	240	110	11	22	515	95	110	200
7	162	180	260	300	240	143	7	11	280	560	127	200
8	180	180	300	300	260	161	3	3	180	560	161	200
9	200	143	280	280	260	200	3	22	110	660	161	200
10	160	114	260	280	240	200	11	220	80	515	280	200
11	162	143	260	280	260	200	22	110	110	470	340	200
12	163	200	280	280	260	220	53	127	110	448	280	200
13	163	180	280	280	260	200	42	80	125	448	320	200
14	180	240	280	280	260	200	30	80	125	402	320	200
15	200	260	280	280	320	180	14	42	143	340	260	200
16	240	260	280	300	280	180	14	30	143	180	180	200
17	240	260	280	280	260	200	11	22	143	180	143	200
18	220	280	280	300	240	200	14	53	126	161	143	200
19	240	280	280	280	260	200	11	320	95	110	143	200
20	240	280	280	300	280	180	3	448	80	161	143	200
21	260	260	280	300	280	220	11	470	42	95	161	200
22	260	220	300	300	300	143	30	425	190	126	143	200
23	220	200	280	380	220	95	53	425	95	161	127	200
24	200	240	280	260	200	95	53	425	53	161	127	320
25	260	300	280	260	200	110	80	405	66	161	127	2,460
26	260	300	280	280	220	67	30	380	53	161	127	2,460
27	280	300	280	280	260	53	240	960	161	180	965	
28	260	280	280	300	260	53	80	1,320	200	161	143	7,200
29	260	220	280	280	*250	66	42	4,840	143	200	200	8,000
30	260	200	280	280		53	7	1,960	143	143	180	13,000
31	260		280	280		53		1,660		143	180	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							280	162	219	13,470		
November							300	114	233	13,880		
December							320	260	279	17,180		
January							360	260	288	17,730		
February							320	200	256	14,740		
March							240	53	148	9,080		
April							80	3	25.5	1,520		
May							4,840	3	462	28,390		
June							1,960	42	364	21,690		
July							660	95	246	16,130		
August							340	110	176	10,860		
September							13,000	180	1,293	77,250		
The year							13,000	3	332	240,900		

\*Estimated.

## Pecos River near Malaga, N. Mex.

(Continued)

Discharge, in second-feet, 1932-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18,000	425	280	405	390	330	128	85	79	61	61	259
2	12,000	425	320	420	390	315	128	95	79	121	61	182
3	8,600	425	320	435	390	330	128	85	70	89	70	131
4	8,610	425	320	435	390	315	128	117	61	110	70	131
5	3,440	405	320	435	375	345	128	106	61	110	53	131
6	1,500	380	320	435	375	330	128	75	53	157	61	131
7	1,020	380	320	435	390	315	117	85	53	146	61	131
8	655	360	320	420	390	287	117	85	45	70	61	131
9	650	405	340	435	360	287	85	85	53	89	53	131
10	685	380	340	420	360	287	85	85	53	53	53	152
11	448	360	320	435	360	287	117	95	53	45	61	152
12	240	340	300	420	375	301	117	106	53	45	61	152
13	585	340	320	435	375	289	106	106	70	24	61	152
14	685	340	320	435	375	301	117	106	70	12	61	645
15	685	360	340	420	345	315	128	117	61	12	61	280
16	635	360	320	420	330	330	95	106	53	12	61	182
17	560	340	300	405	301	345	66	95	53	31	53	170
18	515	340	300	405	301	330	75	106	53	53	53	170
19	493	320	300	405	301	315	58	117	89	53	53	170
20	493	300	300	405	315	315	66	117	70	45	53	170
21	515	300	300	405	315	330	85	117	70	61	53	170
22	470	300	320	390	315	301	75	95	79	45	53	170
23	448	300	360	390	315	273	85	95	79	45	70	170
24	448	300	320	390	315	241	85	117	99	99	70	177
25	448	280	300	390	345	225	66	117	70	79	79	177
26	470	280	300	390	301	215	95	95	70	79	61	177
27	425	280	300	390	345	190	106	58	70	79	89	177
28	405	280	300	405	330	175	95	95	70	61	89	177
29	405	300	300	405		165	66	85	61	45	79	177
30	425	280	300	405		150	75	66	61	53	79	177
31	425		300	390		140		66		53	121	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							16,000	240	1,976	121,500		
November							425	280	344	20,490		
December							360	280	314	19,280		
January							435	390	413	25,410		
February							390	301	349	19,380		
March							345	140	279	17,150		
April							128	58	98.3	5,850		
May							117	58	96.1	5,910		
June							99	45	65.4	3,890		
July							157	12	65.7	4,040		
August							121	53	65.3	4,020		
September							645	131	183	10,910		
The year							16,000	12	356	257,800		

## Pecos River near Malaga, N. Mex.

(Continued)

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	207	215	147	111	89	63	171	65	43	22	63
2	190	207	215	131	111	89	63	171	65	43	25	39
3	190	207	203	131	111	89	63	171	60	43	25	39
4	190	295	203	131	105	86	63	171	60	43	46	39
5	190	295	203	131	105	86	63	171	60	43	70	39
6	190	295	203	147	105	86	63	127	60	43	70	39
7	182	295	203	147	105	86	63	127	60	43	70	39
8	182	295	203	140	105	86	50	127	60	33	87	39
9	182	270	203	140	105	86	50	127	60	33	46	50
10	170	270	200	140	105	86	50	127	63	26	25	50
11	170	270	198	140	89	89	50	127	63	18	12	50
12	157	185	198	140	89	89	50	127	63	12	12	50
13	157	185	198	140	89	89	50	82	63	6	12	50
14	192	185	210	178	89	89	50	82	63	6	12	50
15	192	185	210	178	89	89	79	82	63	12	12	50
16	192	185	210	178	89	89	79	82	63	16	12	63
17	192	185	210	178	89	89	79	82	71	18	12	63
18	192	135	210	178	60	115	79	82	71	18	12	63
19	192	218	185	178	60	115	79	82	71	27	12	63
20	192	218	185	178	60	115	79	125	71	25	0	63
21	192	218	185	113	60	115	79	125	71	33	0	63
22	192	218	185	113	60	115	63	125	71	25	0	63
23	192	218	185	113	60	115	53	125	71	25	6	63
24	192	218	185	113	60	115	53	125	82	33	19	63
25	192	215	185	113	89	208	53	125	82	33	70	63
26	192	215	185	113	89	208	53	125	82	33	54	63
27	192	215	185	113	89	208	53	69	82	33	54	63
28	192	215	160	111	89	208	53	69	82	25	54	63
29	207	215	160	111		208	173	69	82	33	54	61
30	207	215	148	111		208	173	69	82	33	54	61
31	207		148	111		208		69		25	54	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							207	157	198	11,590		
November							295	135	225	13,390		
December							215	148	193	11,850		
January							173	111	138	8,500		
February							111	60	83.1	4,620		
March							208	86	121	7,440		
April							173	50	66.7	4,090		
May							171	69	114	7,020		
June							82	60	68.7	4,090		
July							43	6	28.4	1,740		
August							70	0	32.0	1,970		
September							63	39	54.3	3,230		
The year							295	0	110	79,530		

## Pecos River near Angeles, Tex.

Location.- Water-stage recorder in T. 26 S., R. 29 E., half a mile below mouth of Delaware Creek, 2 miles north of Texas-New Mexico State line, and 8½ miles northwest of Angeles, Reeves County. Datum lowered 1.0 foot June 8, 1934.

Records available.- May 1914 to September 1934.

Average discharge.- 19 years (1914-15, 1916-34), 371 second-feet.

Extremes.- Maximum discharge during year, 3,880 second-feet May 22 (gage height, 4.80 feet, former datum); minimum, 23 second-feet Aug. 20.  
1914-34: Maximum stage, 22.5 feet (present datum) Aug. 8, 1916 (discharge not determined); minimum discharge, 23 second-feet Aug. 20, 1934.

Remarks.- Records good except those estimated or partly estimated, which are fair. Large part of natural flow above Carlsbad, N. Mex. diverted for irrigation; considerable water is returned by seepage. Flow regulated to large extent by storage in reservoirs of the Carlsbad project.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	413	216	244	186	148	135	111	449	*83	104	50	104
2	216	230	237	179	142	170		179	*94	70	46	104
3	202	219	223	170	*140	170		148	*81	84	44	91
4	228	216	244	186	145	138		142	*87	63	37	84
5	189	222	230	*176	145	148		132	*111	72	65	74
6	202	354	234	189	138	135		120	*89	61	106	63
7	182	336	223	182	*138	135	*105	114	*94	68	101	54
8	169	295	219	*170	140	123		123	249	65	101	61
9	192	262	252	*179	*138	132		128	110	61	98	74
10	182	277	246	170	*138	123		116	91	54	94	91
11	182	273	244	170	*132	*102		114	77	50	70	91
12	173	273	241	*164	*118	*107		114	88	40	62	104
13	164	246	234	199	*118	123	100	116	86	34	43	106
14	273	273	230	205	*116	130	109	107	88	34	34	91
15	182	277	226	212	*111	132	104	128	77	37	27	81
16	179	226	223	237	*107	130	92	116	77	34	26	77
17	212	*173	241	244	102	123	109	111	70	38	26	98
18	202	*148	252	219	102	140	96	102	70	41	27	101
19	170	*156	226	199	102	142	111	*81	72	44	28	104
20	230	*159	223	192	102	123	114	*87	72	55	24	98
21	216	*176	219	182	111	130	104	*96	74	57	28	88
22	202	270	230	173	111	132	100	*325	104	55	27	91
23	209	354	230	*162	109	155	107	*395	128	48	28	96
24	186	265	241	*156	96	173	111	*215	122	44	40	98
25	192	237	290	*153	107	202	87	*170	126	59	68	91
26	202	244	252	*153	125	205	102	*135	148	57	128	91
27	202	273	199	*153	114	234	94	*153	117	54	94	101
28	199	219	176	*156	111	192	92	*111	128	55	84	94
29	202	261	196	*150	145	94	*120	101	50	79	96	
30	231	265	186	*148	132	98	*104	137	52	161	101	
31	230		182	*140	116	116		*85	55	108		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							413	164	208	12,800		
November							354	145	247	14,700		
December							290	178	229	14,100		
January							244	140	179	11,000		
February							148	96	122	6,780		
March							234	102	144	8,850		
April								87	103	6,130		
May							449	81	149	9,180		
June							249	70	102	6,070		
July							164	34	54.7	3,560		
August							161	24	69.8	8,860		
September							106	54	89.9	5,350		
The year							449	24	141	102,000		

\*Estimated.

## Gallinas River near Montezuma, N. Mex.

Location.- Water-stage recorder in Las Vegas grant, 2 miles west of Montezuma, San Miguel County. Gage rehabilitated and set to independent datum Sept. 27, 1934.

Drainage area.- 86 square miles.

Records available.- October 1930 to September 1934 in reports of U. S. Geological Survey; March 1915 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 101 second-feet July 21 (gage height, 1.90 feet, old datum); minimum daily discharge, 0.8 second-foot Aug. 15-18, 21, 25, 26, 30.  
1930-34: Maximum discharge, about 520 second-feet Oct. 1, 1930 (gage height, 4.25 feet); minimum daily discharge, that of Aug. 15-18, 21, 25, 26, 30, 1934.

Remarks.- Records good except those estimated Jan. 5-31, Feb. 9-12, June 3-8, Sept. 21-26, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	3.7	5.6	3.2	3.6	5.3	10	6.7	2.6	1.1	1.8	5.9
2	3.2	3.9	4.3	2.8	2.5	5.3	9.2	6.7	2.6	1.0	1.7	2.2
3	3.9	4.5	4.5	2.6	2.2	5.3	9.4	6.2	3	1.1	1.5	1.4
4	6.2	4.1	5.1	3.0	2.3	5.3	7.3	6.2	2.5	1.1	1.1	1.1
5	5.1	5.1	4.9		2.2	5.6	7.3	7.0		1.1	1.1	1.1
6	4.1	4.8	5.1		2.2	5.9	7.0	5.9	2	1.1	1.1	1.1
7	4.3	4.8	4.8		2.1	7.0	6.5	5.3		1.1	1.1	1.3
8	4.3	5.6	4.8		2.0	7.7	6.5	5.3		1.1	1.1	1.4
9	4.1	5.1	5.1			6.2	5.1	5.1	1.8	1.1	1.0	1.3
10	4.1	4.9	5.3	3		7.3	7.0	5.6	1.7	1.1	.9	1.6
11	4.5	4.6	5.3		3	7.0	7.7	5.9	1.6	1.0	1.0	1.3
12	4.8	3.7	5.3			7.7	7.3	5.9	1.6	1.0	1.1	1.3
13	4.8	3.7	4.8		3.9	7.7	8.4	5.3	1.4	1.0	.9	1.3
14	4.5	3.6	4.8		3.9	8.0	9.9	5.3	1.4	.9	.9	1.2
15	4.5	3.4	5.3		4.5	8.4	9.5	5.6	1.6	.9	.8	1.1
16	4.1	3.2	5.1		5.1	8.0	8.8	4.5	1.6	.9	.8	1.2
17	4.1	3.4	5.6		5.3	8.0	9.5	4.1	1.6	1.1	.8	1.2
18	3.7	3.6	6.5	2.5	4.8	6.7	10	3.6	1.4	1.1	.8	1.3
19	3.4	3.7	4.5		4.1	8.0	11	3.2	1.6	1.2	.9	1.2
20	3.6	3.6	5.6		5.3	8.0	10	3.0	1.4	1.4	1.1	1.1
21	3.7	3.4	5.9		5.3	8.4	8.4	3.7	1.4	6.8	.8	1.1
22	3.4	3.4	5.9		4.5	8.6	8.0	4.8	1.3	2.6	.9	1.1
23	3.4	3.4	5.6		5.6	8.8	8.4	4.8	1.3	1.7	.9	1.1
24	3.2	3.4	4.3		6.5	8.4	7.7	4.3	1.3	1.4	.9	1.3
25	3.4	3.9	3.7		6.2	8.0	8.4	4.3	1.2	1.2	.8	1.5
26	3.6	3.9	3.4	3.5	5.3	7.7	8.4	7.0	1.1	1.4	.8	1.5
27	3.9	3.9	3.4		5.9	7.0	8.0	6.7	1.2	1.6	1.5	1.5
28	3.9	4.1	3.2		5.6	7.7	8.0	5.1	1.1	1.7	2.3	1.8
29	3.9	4.1	3.0			8.4	8.0	3.9	1.2	2.0	1.2	2.3
30	3.9	4.3	3.2			8.8	8.0	3.7	1.1	2.1	.8	2.0
31	3.9		2.8			9.5		3.2		2.1	1.0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							6.2	3.0	4.02	247		
November							5.6	3.2	4.02	239		
December							6.5	2.8	4.73	291		
January									3.08	190		
February							6.5	2.0	4.03	224		
March							9.5	5.3	7.46	459		
April							11	6.2	8.29	493		
May							7.0	3.0	5.09	313		
June								1.1	1.65	96		
July							6.8	.9	1.48	91		
August							2.3	.8	1.08	66		
September							5.9	1.1	1.53	91		
The year							11	.8	3.87	2,600		

## Gallinas River at Montezuma, N. Mex.

Location.- Water-stage recorder in Las Vegas grant, at highway bridge half a mile below Montezuma, San Miguel County.

Drainage area.- 89 square miles.

Records available.- August 1903 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; October 1904 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 51 second-feet May 26 (gage height, 2.86 feet); minimum daily discharge, 0.1 second-foot at times during July to September. 1930-34: Maximum discharge, about 720 second-feet Oct. 1, 1930 (gage height, 4.81 feet); minimum daily discharge, that of 1934.

Remarks.- Records good. Flow regulated by reservoirs owned by Agua Pura Co. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	1.3	*1.9	1.7	0.9	1.3	7.2	5.5	*2.1	0.8	0.2	3.4
2	1.5	1.5		2.0	1.1	1.3	10	5.2	1.1	.8	.2	3.7
3	1.3	1.1	1.7	1.5	1.1	1.1	12	4.4	1.3	.8	.2	1.3
4	4.0	.9		1.7	1.1	1.1	11	4.4	1.1	.3	.2	.3
5	1.5	1.3	.9	1.7	1.1	1.1	8.0	4.0	.9	.2	.2	.3
6	1.3	1.1	*1.2	1.7	1.1	1.3	*6.6	3.7	.8	.2	.2	.2
7	1.5	.6	1.5	1.8	1.5	1.5	5.2	3.3	.8	.2	.2	.1
8	1.7	1.1	1.5	1.5	1.5	2.0	4.4	3.3	.8	.2	.1	.1
9	1.7	1.1	1.5	1.5	1.5	3.7	4.0	3.3	.8	.2	.1	.1
10	1.3	1.1	1.3	1.8	2.0	4.0	4.8	3.3	.8	.2	.1	.2
11	1.5	1.3	1.5	1.8	1.5	3.7	5.9	3.3	.8	.3	.1	.1
12	1.3	.6	1.5	1.8	1.5	2.9	6.3	2.9	.8	.2	.2	*1.1
13	1.3	.4	1.3	1.5	1.5	4.0	7.2	2.6	.8	.2	.2	*1.1
14	1.3	.4	1.3	1.1	2.0	4.0	7.6	2.6	.8	.2	.1	*1.1
15	1.5	.6	1.1	1.1	2.2	4.4	8.0	2.6	.8	.2	.1	.1
16	1.7	.4	.9	1.3	2.2	4.8	7.6	2.2	.9	.1	.1	.1
17	1.7	.4	.6	1.1	1.3	4.8	8.0	2.0	1.3	.1	.1	.1
18	1.5	.8	.8	1.3	.9	4.4	8.5	1.3	1.1	.1	.2	.1
19	1.3	.6	1.5	1.7	.9	4.0	8.5	1.3	.9	.1	.2	*1.1
20	1.1	.8	1.8	1.7	1.3	4.8	*7.0	1.3	.9	.1	.2	.1
21	.9	1.8	1.8	1.8	1.1	5.2	5.5	1.5	.9	2.8	.2	.2
22	.8	.9	1.8	2.0	1.1	5.5	5.5	1.8	.9	2.9	.2	.1
23	.8	1.5	1.8	2.0	1.3	*5.4	5.9	1.7	1.1	3.0	.2	.1
24	.6	.8	1.7	2.0	1.5	5.2	5.9	1.8	1.1	.8	.2	.1
25	.6	2.6	1.5	1.5	1.5	4.8	5.9	2.2	.8	.4	.2	.1
26	.6	2.6	2.0	1.3	1.5	5.2	6.3	5.2	.6	.3	.2	.1
27	.8	*2.3	1.7	.9	1.7	5.2	6.8	7.2	.8	.4	.3	.1
28	.8		1.8	1.3	1.3	5.2	7.2	6.3	.6	.3	.2	.1
29	*1.2	1.7	.9	.9		5.2	6.8	5.2	.8	.1	.1	.1
30	1.5	1.5				5.9	6.8	4.0	.8	.1	.2	.1
31	1.5	1.8		.9		6.8		*3.0		.1	.2	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							4.0	0.6	1.35	83		
November								.4	1.23	73		
December								.6	1.51	93		
January							2.0	.9	1.51	93		
February							2.2	.9	1.41	78		
March							6.8	1.1	3.85	238		
April							12	4.0	7.01	417		
May							7.2	1.3	3.30	203		
June							2.1	.6	.93	55		
July							3.0	.1	.54	33		
August							.3	.1	.17	11		
September							3.7	.1	.39	23		
The year							12	.1	1.93	1,400		

\*Estimated.

## Rio Ruidoso at Hondo, N. Mex.

Location.— Water-stage recorder in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 4, T. 11 S., R. 17 E., a quarter of a mile above confluence with Rio Bonito to form Rio Hondo and half a mile south-west of Hondo.

Records available.— October 1930 to September 1934 in reports of U. S. Geological Survey; August 1930 to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, 195 second-feet May 27 (gage height, 2.97 feet); minimum daily discharge, 0.1 second-foot July 12, 13.  
1930-34: Maximum discharge, about 1,140 second-feet July 23, 1933;  
minimum daily discharge, that of July 12, 13, 1934.

Remarks.— Records good. Discharge estimated Oct. 30, 31, Apr. 6. Diversions for irrigation above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	4.3	6.7	2.8	2.5	8.9	1.0	0.7	3.7	0.6	0.6	7.5
2	4.9	7.1	8.0	3.1	2.2	8.4	.9	.7	3.4	.5	.5	8.0
3	4.9	7.5	11	3.1	2.2	8.0	.9	.7	3.4	.5	.5	5.8
4	5.3	7.1	11	3.4	2.5	8.0	.9	.9	3.4	1.0	.6	5.3
5	5.8	8.4	11	3.7	2.5	8.0	.7	.9	3.1	.7	.6	5.3
6	5.3	9.3	11	3.7	2.8	8.4	.8	.7	2.8	.5	.7	4.9
7	6.7	9.9	11	3.1	2.5	8.4	.9	.9	2.5	.4	.6	4.6
8	6.7	10	8.9	3.1	2.8	8.0	.9	.7	2.5	.3	.6	4.3
9	7.5	11	6.2	3.7	2.8	8.4	.9	.7	2.2	.3	.6	4.3
10	6.7	11	9.3	4.0	5.4	8.4	.9	.7	2.2	.2	.6	3.7
11	5.8	12	9.3	4.3	3.1	8.4	.9	.9	1.9	.2	.6	3.7
12	5.8	11	7.1	5.3	3.4	8.4	.9	.9	1.6	.1	.6	3.4
13	5.8	12	4.9	5.8	3.1	8.9	.9	.7	1.4	.1	.6	3.7
14	7.1	12	7.1	4.9	4.3	8.9	1.0	.9	.7	.2	.7	3.7
15	7.5	12	7.1	6.7	3.4	8.0	1.0	.9	.6	.2	.9	3.1
16	8.0	11	8.0	8.9	7.1	8.0	1.1	1.0	.6	.2	.7	2.5
17	6.7	10	8.4	9.3	9.9	8.4	1.1	1.0	.6	.3	.7	2.2
18	5.8	10	4.3	8.9	9.3	7.5	1.0	1.0	.5	.3	.6	1.8
19	5.8	10	1.6	9.3	8.4	8.0	1.0	1.0	.6	.3	.5	1.6
20	5.8	9.9	7.1	9.3	8.9	8.4	.9	1.0	.5	.4	.5	1.5
21	5.8	12	7.1	9.3	10	6.7	.9	1.0	.5	.4	.5	1.4
22	8.2	11	7.5	8.9	12	4.9	.9	1.0	.5	.5	.7	1.4
23	7.1	13	7.1	8.4	11	4.3	.7	1.0	.5	.5	35	1.4
24	6.7	12	7.1	8.4	11	4.6	.9	1.0	.6	.5	16	1.4
25	6.2	10	7.5	8.0	10	4.6	.7	2.1	.7	.5	1.9	1.4
26	7.1	9.3	7.1	7.1	10	4.6	.6	37	.9	.5	14	1.4
27	6.2	8.0	6.2	6.7	10	2.9	.8	42	.9	.5	16	1.2
28	4.6	7.5	6.2	6.2	9.9	.9	.6	14	.7	.5	19	1.2
29	3.7	7.1	5.8	5.8		1.0	.6	9.9	.7	.5	20	1.2
30	3.9	7.1	4.3	4.9		1.0	.7	6.7	.6	.6	16	1.2
31	4.1		1.8	2.5		1.0		4.6		.6	8.4	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							8.0	3.7	5.93	365		
November							13	4.3	9.75	580		
December							11	1.6	7.31	450		
January							9.3	2.5	5.89	362		
February							12	2.2	6.11	339		
March							8.9	.9	6.53	401		
April							1.1	.7	4.36	61		
May							42	.5	4.43	272		
June							3.7	.5	1.49	89		
July							1.0	.1	.42	26		
August							35	.5	5.15	317		
September							8.0	1.2	3.14	187		
The year							42	.1	4.75	3,440		



## Rio Bonito at Hondo, N. Mex.

Location.— Water-stage recorder in NE  $\frac{1}{4}$  sec. 4, T. 11 S., R. 17 E., at Hondo, half a mile above confluence with Rio Ruidoso.

Records available.— October 1930 to September 1934 in reports of U. S. Geological Survey; August 1930 to December 1931 in reports of State engineer.

Extremes.— Maximum discharge during year, about 5,640 second-feet Aug. 28 (gage height, 14.12 feet, from flood marks); no flow during several periods.  
1930-34: Maximum discharge, that of Aug. 28, 1934; no flow at times.

Remarks.— Records fair except those for July and August, which are poor. Diversions for irrigation above station.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	1.1	0.4	2.4	1.0	0	0	0	0.3	0	0	17
2		1.1	.6	2.1	1.1	0	0	0	.2	0	0	6.6
3		.8	4.0		1.2	0	0	0	.2	0	0	4.4
4		.6	3.0		.9	0	0	0	.1	0	0	3.0
5	*.1	.4	2.1	*1.4	.4	0	0	.1	.1	0	0	1.9
6		.3	.4	.7	0	0	0	0	.3	0	0	1.0
7		.3	.8	.6	0	0	0	0	.1	0	0	24
8	0	.3	.5	2.1	0	0	0	0	0	0	0	38
9	0	.3	.7	1.5	0	0	0	*.1	0	0	0	16
10	0	.3	.8	.5	0	0	0	0	0	0	0	11
11	0	.4	.8	.5	0	0	0	*.3	0	0	0	8.4
12	0	.4	.8	.5	0	0	0	0	0	0	0	5.8
13	.8	.6	.8	.5	0	0	0	0	0	0	0	4.4
14	1.8	.6	.9	.5	0	0	0	0	0	0	0	3.0
15	1.3	.8	1.2	.5	0	0	0	0	0	0	0	2.1
16	1.7	.8	1.0	.4	0	0	0	0	0	0	0	1.5
17	1.5	.8	1.1	.4	0	0	0	0	0	.7	0	1.3
18	1.5	.8	1.7	.5	0	0	0	0	0	0	0	1.0
19	2.4	.9	1.5	.6	0	0	0	0	.2	0	0	1.0
20	1.6	1.1	1.5	.6	0	0	0	0	.2	0	0	1.0
21		1.5	1.3	.6	0	0	0	0	.4	.2	0	1.3
22	.8	1.7	1.3	.6	0	0	0	0	.2	*4.4	*30	1.1
23	.7	1.9	1.5	.6	0	.1	0	0	0	0	*10	1.5
24	.7	2.1	1.7	.7	0	.2	0	0	0	*15	0	1.5
25	1.1	2.1	1.7	.7	0	.2	0	1.4	0	*15	0	1.1
26	1.1	2.1	1.5	.7	0	.3	.6	29	0	*5	73	1.3
27	1.7	.7	1.5	.8	0	.3	.4	104	0	0	*125	1.3
28	1.5	.5	1.7	.8	0	.3	.2	*40	0	2.0	*550	.2
29	1.2	.5	2.4	.8			.2	*20	0	0	*50	0
30	*1.2	.4	2.4	.8		0	0	*10	0	0	*20	0
31	*1.1		2.6	1.0		0		*1		0	9.4	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							2.4	0	0.81	50		
November							2.1	.3	.88	52		
December							4.4	.4	1.44	88		
January							2.4	.4	.88	54		
February							1.2	0	.16	9		
March							.3	0	.05	3		
April							.6	0	.05	3		
May							104	0	6.64	408		
June							.4	0	.08	5		
July							15	0	1.36	84		
August							550	0	28.0	1,720		
September							38	0	5.39	321		
The year							550	0	3.86	2,800		

\*Estimated.

## Rio Felix near Hagerman, N. Mex.

Location.- Water-stage recorder in sec. 3, T. 14 S., R. 26 E., a quarter of a mile below State Highway 2, 1.5 miles north of Hagerman, and 1.6 miles above mouth.

Records available.- March 1932 to September 1934.

Extremes.- Maximum discharge during year, about 7,360 second-feet Aug. 24 (gage height, 11.0 feet, from trash marks); minimum daily discharge, 6.1 second-feet July 15, 21, 22, Aug. 3, 4.

1932-34: Maximum discharge, about 20,000 second-feet Sept. 24, 1932 (gage height, 19.5 feet); minimum daily discharge, that of July 15, 21, 22, Aug. 3, 4, 1934.

Remarks.- Records good except those for August and September, which are fair. Discharge estimated Dec. 26-28, Jan. 8-11, 21-26, Aug. 27-30. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	11	32	10	10	13	10	8.8	9.8	7.1	6.4	968
2	10	10	33	10.0	10	39	9.5	8.8	8.8	7.1	6.4	37
3	10	9.8	32	9.8	21	43	9.5	9.1	8.8	7.1	6.1	10
4	9.5	9.8	30	9.5	31	48	9.1	9.5	12	7.1	6.1	9.5
5	8.8	9.3	23	9.5	25	47	9.1	9.5	21	7.1	6.4	9.1
6	8.9	9.3	21		13	25	9.1	10	10	7.8	6.4	8.8
7	10	9.1	24	8.4	10	16	9.1	9.8	9.5	8.1	6.4	8.1
8	22	9.1	24		11	15	9.1	9.1	8.8	8.1	6.7	8.4
9	18	8.8	24		13	24	9.5	9.1	9.1	7.4	7.1	8.8
10	14	8.4	23	6.5	9.8	21	9.1	9.1	9.8	7.1	7.1	8.1
11	12	8.4	20		9.1	21	9.5	8.8	9.1	6.7	7.1	8.1
12	12	8.4	15	9.5	10	20	8.8	8.8	9.1	6.7	7.4	8.4
13	26	8.4	15	9.5	12	14	9.1	9.8	8.8	6.4	7.4	8.4
14	38	6.1	9.8	10	9.5	14	9.5	9.8	9.8	6.4	7.1	8.1
15	42	7.8	11	10	10	13	9.5	9.8	8.8	6.1	6.7	7.4
16	35	7.8	9.1	10	9.5	15	9.1	12	9.8	6.4	6.7	7.4
17	23	7.4	9.5	9.8	8.8	14	9.1	11	9.1	6.4	6.7	7.8
18	17	7.1	24	9.5	8.4	13	9.5	9.5	8.4	6.4	6.7	7.8
19	16	7.8	15	9.5	9.8	13	8.8	8.1	8.1	6.4	6.4	7.8
20	23	13	12	9.1	8.8	14	8.8	9.4	8.1	6.4	6.7	7.8
21	27	8.4	12		8.4	15	8.8	9.5	8.1	6.1	6.7	7.8
22	34	17	12		7.8	14	8.8	9.1	7.8	6.1	6.7	8.4
23	38	13	10		7.4	13	8.8	8.4	7.8	7.4	6.4	8.8
24	41	17	11	9.3	11	9.1	9.1	8.8	7.4	7.4	820	8.4
25	39	24	9.5		37	15	9.1	8.8	7.4	6.7	3,040	8.8
26	36	26			27	27	9.1	9.1	7.4	6.7	841	9.5
27	27	21	10	9.5	13	15	9.1	8.4	7.1	7.1	35	9.1
28	23	13		9.8	11		8.8	8.8	7.1	7.4		9.1
29	24	25	10	10		9.5	9.1	8.8	7.1	7.8	25	9.1
30	20	21	10	23		9.5	8.8	9.5	6.7	6.4		8.8
31	15		10	13		9.8		9.1		6.4	13	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							42	8.8	22.2	1,370		
November							26	7.1	12.1	722		
December							33	9.1	16.7	1,030		
January							23		9.95	612		
February							37	7.4	13.3	738		
March							48	9.1	19.0	1,170		
April							10	8.8	9.17	545		
May							12	8.1	9.28	569		
June							21	6.7	8.92	531		
July							8.1	6.1	6.90	424		
August							3,040	6.1	161	9,870		
September							968	7.4	41.4	2,460		
The year							3,040	6.1	27.7	20,040		

## Cottonwood Creek near Lake Arthur, N. Mex.

Location.— Water-stage recorder in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 22, T. 16 S., R. 26 E., 1-5/8 miles above mouth and  $\frac{3}{4}$  miles south of Lake Arthur.

Records available.— March 1932 to September 1934.

Extremes.— Maximum discharge during year, 14 second-feet Mar. 26 (gage height, 3.32 feet); minimum daily discharge, 0.3 second-foot July 24-27, 30, 31, Aug. 1-3, 1932-34: Maximum discharge, about 1,070 second-feet Sept. 28, 1932 (gage height, 10.32 feet); minimum daily discharge, that of July 24-27, 30, 31, Aug. 1-3, 1934.

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

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	7.5	13	9.5	7.5	9.8	11	3.5	3.9	1.0	0.3	3.3
2	5.4	8.3	13	9.5	7.5	10	11	3.3	4.0	1.0	.3	2.2
3	5.8	8.6	13	8.7	7.4	9.7	11	4.5	3.9	1.0	.3	2.2
4	5.9	9.5	13	9.7	6.7	9.0	10	3.9	2.3	1.0	.4	2.0
5	5.7	9.2	12	7.7	6.7	9.2	7.6	3.3	2.6	.9	.4	2.0
6	5.9	10	11	8.4	6.9	10	7.5	3.8	2.8	.9	.4	2.0
7	6.2	11	11	9.0	7.6	9.4	8.1	3.4	2.9	.9	.4	2.0
8	6.5	11	11	9.0	8.0	7.1	9.4	3.5	2.5	.8	.5	2.1
9	6.4	11	11	9.3	8.4	7.6	8.4	3.7	2.4	.8	.5	2.0
10	6.6	10	12	9.5	8.7	8.7	7.6	3.6	2.1	.8	.5	2.2
11	6.7	9.7	12	9.7	8.9	8.6	6.9	4.0	2.2	.7	.5	2.2
12	6.8	9.9	12	9.5	8.7	8.5	6.3	4.1	2.2	.7	.5	2.2
13	7.7	9.7	12	9.7	8.8	8.4	6.8	4.0	1.9	.6	.5	2.2
14	8.4	9.5	11	9.9	9.0	8.2	6.1	3.7	1.9	.6	.5	2.3
15	8.1	10	10	11	8.2	8.6	4.8	3.8	1.8	.8	.6	2.2
16	11	9.6	11	11	8.3	8.3	3.4	4.0	1.8	.9	.7	2.3
17	13	9.1	10	11	8.9	7.4	3.9	4.0	1.9	.5	.7	2.4
18	13	9.1	10	10	9.6	7.4	4.0	3.7	2.4	.5	.7	2.4
19	14	9.0	11	10	9.4	7.7	3.6	3.5	2.3	.5	.8	2.5
20	14	9.2	10	10	9.8	7.9	4.0	4.8	2.0	.5	.8	2.5
21	14	9.0	10	9.6	11	7.8	4.1	5.6	1.6	.4	.8	2.4
22	11	9.0	11	9.7	9.4	8.2	4.9	3.8	1.5	.4	.9	2.5
23	9.2	9.1	11	9.8	9.4	8.0	3.8	3.8	1.8	.4	1.0	2.6
24	8.6	9.1	11	9.6	9.6	8.0	4.0	3.9	1.9	.3	1.0	2.7
25	7.6	8.7	11	8.8	8.7	11	3.8	3.5	2.0	.3	1.2	2.8
26	7.1	8.7	11	8.5	8.8	14	4.2	4.6	2.0	.3	1.1	2.8
27	7.2	8.8	11	8.0	8.8	13	3.6	4.9	1.6	.3	1.2	3.0
28	7.1	9.9	11	7.7	8.8	11	4.1	4.8	1.5	.7	1.2	3.2
29	6.7	13	8.4	7.7	7.7	11	4.9	4.7	1.0	.7	1.7	3.4
30	7.6	13	9.2	7.7	7.7	10	3.8	4.6	1.1	.3	2.0	3.6
31	7.6		7.2	7.2	7.2	9.9		4.4		.3	2.0	
Month	Maximum						Minimum		Mean		Run-off in acre-feet	
October	14						4.8		8.24		307	
November	13						7.5		9.64		574	
December	13						7.9		11.0		677	
January	11						7.2		9.24		588	
February	11						6.7		8.55		475	
March	14						7.1		9.14		562	
April	11						3.4		6.05		350	
May	6.6						3.3		4.01		247	
June	4.0						1.0		2.19		131	
July	1.0						.3		.64		39	
August	2.0						.3		.80		49	
September	3.6						2.0		2.48		148	
The year	14						.3		5.99		4,340	

## Madera Canyon near Toyahvale, Tex.

Location.- Water-stage recorder in Jeff Davis County, 11 miles above confluence with Toyah Creek and 12 miles southwest of Toyahvale, Reeves County.

Drainage area.- 54 square miles.

Records available.- July 1932 to September 1934.

Extremes.- Maximum discharge during year, 660 second-feet June 4 (gage height, 3.50 feet); no flow at times.  
1932-34: Maximum stage, 8.00 feet Sept. 29, 1932, from flood marks (discharge not determined); no flow at times.

Remarks.- Records fair. Discharge estimated Aug. 25-27. No diversions.

## Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	0.1						0	0	0	0.7	
2	1.7	.1						0	0	0	.5	
3	1.6	.1						0	.1	0	1.3	
4	1.4	.1						0	16	2.3	.8	
5	1.3	.1						0	3.7	.3	1.0	
6	1.2	.2						0	1.4	0	1.7	
7	1.1	.2						0	.8	0	.7	
8	.9	.2						0	.5	0	.4	
9	.8	.1						0	.4	0	.2	
10	1.7	.1						0	.5	0	.1	
11	1.7	.1						0	.4	0	.1	
12	1.3	.1						0	.3	0	0	
13	1.4	.1						0	.2	0	0	
14	2.6	.1						0	.1	0	0	
15	3.5	0						0	0	0	0	
16	1.8	0						0	0	0	0	
17	1.2	0						0	0	0	0	
18	.7	0						0	0	0	0	
19	.6	0						0	0	0	0	
20	.4	0						0	0	0	0	
21	.4	0						0	0	0	0	
22	.3	0						0	0	5.4	0	
23	.2	0						0	0	4.9	0	
24	.2	0						4.5	0	.7	0	
25	1.9	0						.2	0	.7	0	
26	1.3	0						0	0	1.1	9.3	
27	.7	0						0	0	1.7		
28	.4	0						0	0	1.2		
29	.3	0						0	0	1.3		
30	.2	0						0	0	1.3	0	
31	.1							0	0	1.1	0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							3.5	.1	1.12	69		
November							.2	0	.06	3.6		
December							0	0	0	0		
January							0	0	0	0		
February							0	0	0	0		
March							0	0	0	0		
April							0	0	0	0		
May							4.5	0	.15	9.2		
June							16	0	.81	48		
July							5.4	0	.71	44		
August								0	1.14	70		
September							0	0	0	0		
The year								0	.34	244		

Note.- No flow during months left blank.

## Devils River near Juno, Tex.

Location.- Water-stage recorder 500 feet below Walter Baker ranch house, 2 miles above mouth of Phillips Creek, and 13½ miles southwest of Juno, Val Verde County.

Drainage area.- 2,733 square miles.

Records available.- May 1925 to September 1934.

Extremes.- Maximum discharge during year, 8,570 second-feet June 4 (gage height, 9.05 feet); minimum, 50 second-feet Sept. 28-30.  
1925-34.- Maximum discharge, determined by slope-area method, about 370,000 second-feet Sept. 1, 1932 (gage height, 31.3 feet, from flood marks); minimum, 48 second-feet June 4-6, 1930.

Remarks.- Low-stage records good, others fair. No diversions above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	110	107	105	100	99	96	94	88	91	89	85
2	116	112	107	105	100	99	97	96	88	89	89	85
3	116	109	107	105	99	99	97	94	89	89	91	102
4	116	109	105	104	99	97	97	92	2,620	89	91	106
5	116	110	105	105	99	99	97	91	1,110	91	91	97
6	116	110	104	104	99	97	97	91	197	91	89	94
7	116	110	105	102	99	97	97	91	150	92	89	92
8	116	109	105	102	99	97	97	91	136	91	89	91
9	114	109	105	104	99	97	97	91	129	91	89	89
10	114	109	105	104	99	99	96	91	122	91	89	89
11	114	109	105	104	100	99	96	91	119	91	89	88
12	114	109	105	104	88	97	94	91	117	92	89	88
13	116	109	105	104	99	97	94	91	114	92	89	89
14	108	108	105	102	99	97	94	91	110	92	89	86
15	117	107	105	102	99	97	96	91	109	92	89	85
16	116	107	105	105	99	97	94	91	107	92	89	85
17	114	107	105	105	99	97	94	91	104	92	89	85
18	114	107	105	105	99	96	98	91	102	92	89	83
19	114	107	105	105	99	97	119	91	100	92	88	83
20	114	107	105	104	99	97	94	91	97	91	88	83
21	114	107	105	104	99	96	94	91	96	89	86	82
22	114	107	105	104	97	97	94	89	96	91	86	82
23	114	105	105	104	97	97	94	89	94	91	86	82
24	112	105	105	102	97	100	92	91	94	91	86	82
25	112	105	104	104	97	102	92	89	94	91	88	82
26	110	105	104	104	97	99	92	89	92	92	86	80
27	110	105	104	104	97	94	89	92	92	92	86	80
28	110	105	104	104	97	97	92	88	91	92	86	80
29	110	107	104	102	97	97	92	88	91	92	86	80
30	110	105	104	102	97	97	92	86	91	91	86	80
31	110		104	102		96		86		89	86	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							128	110	114	7,010		
November							112	105	108	6,430		
December							107	104	105	6,460		
January							105	102	104	6,400		
February							100	97	98.6	5,480		
March							102	96	97.6	6,000		
April							119	92	95.6	5,890		
May							96	86	90.5	5,560		
June							2,620	88	225	13,400		
July							92	88	91.1	5,600		
August							91	86	88.2	5,420		
September							192	80	89.5	5,530		
The year							2,620	80	109	76,800		

## MIMBRES RIVER BASIN

Mimbres River near Mimbres, N. Mex.

Location.- Water-stage recorder in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 33, T. 16 S., R. 11 W.,  $1\frac{1}{2}$  miles north-west of Mimbres.

Drainage area.- 183 square miles.

Records available.- October 1930 to September 1934 in reports of U. S. Geological Survey; May 1921 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 546 second-feet Oct. 8 (gage height, 2.95 feet); minimum daily discharge, 2.1 second-feet Aug. 18-20.  
1930-34: Maximum discharge, about 2,060 second-feet July 17, 1933 (gage height, 4.51 feet); minimum daily discharge, 1.4 second-feet July 11, 12, 1933.

Remarks.- Records good except those estimated Oct. 9-12, Aug. 25-31, Sept. 1-12, 26-30, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.1	8.2	12	9.8	7.0	5.3	6.2	3.5	2.8	3.3	3.3	
2	6.7	8.2	10	9.8	6.5	5.0	5.6	3.3	2.8	3.3	3.5	
3	6.5	8.8	9.8	9.3	7.0	4.1	5.3	3.3	2.8	3.3	2.8	
4	5.9	8.8	9.3	9.3	6.5	4.1	4.7	3.5	2.8	3.3	2.6	
5	6.7	8.8	8.8	8.8	6.5	4.1	4.4	3.5	3.3	4.1	3.0	
6	8.2	8.8	8.8	7.1	6.5	4.1	4.4	3.3	4.1	3.5	3.0	3
7	7.6	8.8	9.3	7.1	6.5	4.7	4.7	3.5	3.3	4.4	3.0	
8	18	8.8	9.3	7.6	6.5	3.8	4.1	3.5	2.8	4.7	2.4	
9	30	8.8	9.3	7.6	6.5	3.5	4.1	3.5	2.8	4.4	2.2	
10	20	8.8	9.3	7.6	6.5	3.3	4.1	3.1	3.0	3.8	2.2	
11	12	8.8	8.8	7.6	6.5	3.3	3.8	3.1	2.8	2.8	2.4	
12	11	8.8	8.8	7.6	6.5	3.3	4.7	3.1	2.6	2.6	2.4	
13	10	8.8	8.8	7.1	6.5	3.8	3.8	3.1	2.8	2.8	2.4	2.6
14	10	8.8	8.8	7.1	6.2	4.1	3.8	3.3	2.6	2.8	2.4	2.6
15	9.8	8.8	8.8	7.1	5.9	4.7	5.9	3.3	2.8	3.0	2.2	2.6
16	9.3	9.3	8.8	7.1	5.9	6.2	5.9	3.1	2.8	2.6	2.4	2.6
17	9.3	9.3	8.8	7.0	6.2	6.6	5.9	3.3	2.8	2.4	2.2	2.6
18	9.3	9.3	8.8	7.0	5.6	6.6	5.6	3.0	3.0	2.4	2.1	2.4
19	8.8	9.8	9.3	7.0	5.6	6.6	5.0	3.0	3.0	2.4	2.1	2.4
20	8.8	9.8	9.3	6.5	5.6	6.5	3.8	2.8	3.1	2.4	2.1	2.4
21	8.2	9.8	9.3	6.5	5.3	5.6	3.5	3.0	3.1	3.1	2.6	2.6
22	8.2	9.8	9.3	6.5	5.0	5.0	3.5	3.1	3.1	5.6	5.9	2.8
23	8.2	9.8	8.8	7.0	5.0	4.7	3.5	3.1	3.1	12	3.0	4.7
24	8.2	9.8	8.8	7.0	5.6	7.5	3.3	3.0	3.1	5.9	3.0	4.7
25	7.6	9.8	8.8	6.5	5.6	6.6	3.3	4.1	3.1	5.3	50	4.7
26	7.6	9.8	9.3	6.5	5.6	6.5	3.5	3.5	3.1	4.4	20	4.5
27	7.6	9.8	9.3	6.5	5.3	8.1	3.8	2.8	3.1	3.8	10	4.0
28	7.6	9.8	9.3	6.5	5.6	6.5	3.8	2.4	3.1	4.8	5	3.5
29	7.6	12	9.3	6.5	6.5	3.8	2.6	5.8	5.8	4.7		3.0
30	7.6	15	9.8	6.5	5.9	3.5	2.8	3.5	3.5	3.8	3	3.0
31	7.6		9.8	7.0	6.9					3.5		
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							30	5.9	9.70	597		
November							15	8.2	9.46	563		
December							12	6.8	9.25	569		
January							9.8	6.6	7.36	452		
February							7.0	5.0	6.05	358		
March							6.6	3.3	5.57	342		
April							6.2	3.3	4.38	260		
May							4.1	2.4	3.18	195		
June							4.1	2.6	3.03	180		
July							12	2.4	3.91	240		
August							50	2.1	5.15	315		
September							4.7	2.4	3.12	186		
The year							50	2.1	5.85	4,240		

## Mimbres River near Faywood, N. Mex.

Location.- Water-stage recorder in sec. 7, T. 20 S., R. 10 W., about 6 miles north-east of Faywood Hot Springs and 10 miles northeast of Faywood.

Drainage area.- 485 square miles.

Records available.- April 1908 to December 1914, October 1930 to September 1934 in reports of U. S. Geological Survey; April 1908 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, about 2,500 second-feet Aug. 25 (gage height, 4.45 feet); no flow at times.  
1930-34: Maximum discharge, about 6,900 second-feet Aug. 10, 1931 (gage height, 6.82 feet); no flow at times.

Remarks.- Records fair except those for August and September, which are poor.  
Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	5	7	11	5	3	4	2	2	1	0	} *1
2	1	6	8	11	4	3	4	2	2	8	*0	
3	1	6	8	10	4	3	4	2	2	3	*0	
4	1	5	8	10	5	4	3	2	1	1	*0	
5	1	4	9	11	4	4	4	2	1	1	*0	7
6	2	4	10	12	4	4	4	1	1	0	0	8
7	7	4	11	12	4	4	4	1	1	147	0	*94
8	26	4	10	11	4	4	3	1	2	4	0	*15
9	*55	3	9	11	4	4	3	1	2	2	0	6
10	72	3	9	11	4	3	3	1	2	2	0	*4
11	37	3	10	11	4	3	3	1	1	1	0	*3
12	31	3	10	11	4	3	3	1	2	1	0	*2
13	22	3	11	10	4	3	4	1	1	*1	0	0
14	19	3	11	9	4	3	4	1	1	*1	0	2
15	12	3	10	9	4	3	3	1	2	*1	0	3
16	9	3	10	10	4	3	3	1	2	*1	0	3
17	6	3	10	7	4	3	3	1	1	1	0	3
18	5	4	10	6	4	3	3	1	1	1	0	*3
19	5	4	11	6	5	3	3	1	1	1	0	*3
20	5	4	11	7	4	3	3	1	1	1	0	*4
21	4	4	11	6	4	2	4	1	1	*12	37	*4
22	5	5	10	5	3	2	4	2	1	11	8	*4
23	5	5	*10	6	3	3	3	2	1	1	70	*5
24	5	5	*10	8	3	4	3	1	1	*1	1	*5
25	4	5	10	9	3	4	2	1	1	*1	24	5
26	5	5	11	9	3	4	2	1	1	1	20	*5
27	5	6	11	8	3	3	2	2	1	1	0	*4
28	5	7	12	6	3	3	2	2	1	0	0	*4
29	5	8	12	6	2	2	2	2	1	0	0	*3
30	6	7	11	6	2	2	2	2	0	0	0	*3
31	6	11	11	5	3	3	2	2	0	0	0	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							72	1	12.0	740		
November							8	3	4.5	266		
December							12	7	10.1	619		
January							12	5	8.7	536		
February							5	3	3.9	214		
March							4	2	3.2	184		
April							4	2	3.1	186		
May							2	1	1.4	85		
June							2	0	1.3	75		
July							147	0	6.6	409		
August							70	0	6.0	387		
September							94	0	6.9	409		
The year							147	0	5.7	4,100		

\*Estimated.

## TULAROSA VALLEY BASIN

Rio Tularosa near Tularosa, N. Mex.

Location.- Water-stage recorder in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 15, T. 14 S., R. 10 E., 200 feet above diversion dam for Tularosa Community Ditch. Prior to Dec. 15, 1934, water-stage recorder to independent datum about a mile upstream.

Records available.- December 1912 to December 1914, October 1931 to September 1934.

Extremes.- Maximum discharge during year, 41 second-feet Apr. 18 (gage height, 1.97 feet); minimum daily discharge, 1 second-foot July 31 and Aug. 1.  
1931-34: Maximum discharge and stage not determined; minimum daily discharge, that of July 31 and Aug. 1, 1934.

Remarks.- Records poor. Diversions for irrigation above station.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	16	14	17	18	24	12	14	12	11	*12	1	}	
2	15	15	15	18	23	11	13	13	11	13	*6		
3	15	15	16	18	22	11	13	12	9	13	11		
4	15	14	16	18	21	12	13	12	8	12	6		
5	16	15	16	18	20	11	13	12	11	11	3		
6	16	15	17	18	19	11	14	9	11	10	}	*8	
7	17	14	16	20	17	10	13	10	11	10			*7
8	15	15	16	17	15	10	12	14	10	e			
9	16	15	16	18	14	10	11	14	11	7			12
10	15	14	16	18	16	10	13	14	11	5			12
11	15	15	15	20	14	11	13	14	10	4	14	}	
12	15	15	15	20	14	11	13	14	9	3	17		
13	14	15	15	18	14	11	13	14	9	4	18		
14	14	15	15	20	14	12	12	12	9	3	18		
15	*14	15	17	18	12	12	12	11	8	2	16		
16	*14	16	16	18	12	11	10	10	9	3	20	}	
17	*15	16	14	20	13	13	10	11	7	8	13		
18	*15	16	14	18	13	16	12	11	8	6	12		
19	15	17	14	19	14	14	11	11	11	10	}		10
20	15	16	15	20	14	14	12	9	11	11			10
21	14	17	15	20	14	13	12	10	12	13	}	10	
22	15	17	14	20	13	12	12	12	12	13		6	
23	14	17	14	22	13	12	12	13	12	10		8	
24	14	17	15	21	14	13	16	13	12	12		8	
25	10	18	15	20	15	13	16	12	10	*10		*10	e
26	11	18	16	22	15	13	15	14	9	8	}	5	
27	11	18	16	22	14	12	16	13	8	9			
28	13	19	17	23	14	12	15	11	8	4		*6	
29	14	19	17	23		12	15	13		5		}	11
30	14	19	18	22		11	12	12	*10	4			
31	14		18	23		11		12		1			
Month							Maximum	Minimum	Mean	Run-off in acre-feet			
October							17	10	14.4	885			
November							19	14	16.0	954			
December							19	14	15.7	964			
January							23	17	19.7	1,210			
February							24	12	15.6	867			
March							16	10	11.8	726			
April							16	10	12.9	770			
May							14	9	12.1	742			
June							12	7	9.9	591			
July							13	1	7.9	484			
August							20	1	10.7	689			
September							11	5	8.1	484			
The year							24	1	12.9	9,340			

\*Estimated.



Location.- Water-stage recorder in sec. 4, T. 17 S., R. 11 E., 100 feet above road crossing at Wood ranch and 8 miles southeast of Alamogordo. Prior to July 29, 1934, water-stage recorder at same site to independent datum.

Extremes.— Maximum discharge during year, 5.0 second-feet Aug. 30 (gage height, 0.51 foot); minimum daily discharge, 1.7 second-feet Sept. 28-29.  
1931-34: Maximum discharge, 7.7 second-feet July 17, 1933 (gage height, 1.55 feet, old datum); minimum daily discharge, 1.7 second-feet July 13, 1932, and Sept. 28-29, 1934.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	2.7	2.7	2.6	2.3	2.4	2.2	2.1	1.9	1.9	2.1	1.9
2	2.6	2.7	2.7	2.6	2.3	2.4	2.2	2.1	1.9	1.9	2.1	1.9
3	2.6	2.7	2.7	2.6	2.3	2.4	2.2	2.1	1.9	1.8	2.0	1.9
4	2.6	2.7	2.7	2.6	2.3	2.4	2.2	2.1	1.9	1.8	2.0	1.9
5	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.9	1.8	2.0	1.9
6	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
7	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
8	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
9	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
10	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
11	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
12	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
13	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
14	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.8	2.0	1.9
15	2.6	2.7	2.7	2.6	2.3	2.3	2.2	2.1	1.8	1.9	2.0	1.9
16	2.6	2.7	2.7	2.6	2.4	2.3	2.2	2.0	1.8	1.9	2.0	1.9
17	2.6	2.7	2.7	2.6	2.4	2.3	2.2	2.0	1.8	1.9	2.0	1.9
18	2.6	2.7	2.7	2.6	2.4	2.3	2.1	2.0	1.8	1.9	2.0	1.9
19	2.6	2.7	2.7	2.6	2.4	2.3	2.1	2.0	1.8	1.9	2.0	1.9
20	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.0	1.8	1.9	2.0	1.9
21	2.6	2.7	2.6	2.5	2.5	2.3	2.1	2.0	1.8	1.9	2.0	1.8
22	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.0	1.8	1.9	2.0	1.8
23	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.1	1.8	1.9	2.0	1.8
24	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.1	1.8	1.9	2.0	1.8
25	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.1	1.8	2.0	2.0	1.8
26	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.0	1.8	2.0	2.0	1.7
27	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.0	1.8	2.1	2.0	1.7
28	2.6	2.7	2.6	2.5	2.4	2.3	2.1	2.0	1.8	2.1	2.0	1.7
29	2.7	2.7	2.6	2.3	2.2	2.2	2.1	1.9	1.8	2.1	2.0	1.7
30	2.7	2.7	2.6	2.3	2.2	2.2	2.1	1.9	1.9	2.1	2.0	1.8
31	2.7		2.6	2.3	2.2	2.2		1.9		2.1	1.9	
Month							Maximum	Minimum	Mean		Run-off in acre-feet	
October							2.7	2.6	2.61		160	
November							2.7	2.7	2.70		161	
December							2.7	2.6	2.66		164	
January							2.6	2.3	2.54		156	
February							2.6	2.3	2.35		131	
March							2.4	2.2	2.30		142	
April							2.2	2.1	2.15		125	
May							2.1	1.9	2.05		126	
June							1.9	1.8	1.82		108	
July							2.1	1.8	1.90		117	
August							2.1	1.9	2.00		123	
September							1.9	1.7	1.85		110	
The year							2.7	1.7	2.25		1,630	

## Alamogordo water supply at intake, near Alamogordo, N. Mex.

Location.- Water-stage recorder in NW $\frac{1}{4}$  sec. 8, T. 17 S., R. 11 E., at head of intake to Alamogordo water system, 7 $\frac{1}{2}$  miles southeast of Alamogordo.

Records available.- October 1932 to September 1934. \*

Extremes.- Maximum discharge during year, 4.0 second-feet July 27 (gage height, 0.63 foot); minimum daily discharge, 1.1 second-feet Jan. 17.  
1933-34: Maximum discharge, 4.3 second-feet Aug. 7, 1933 (gage height, 0.67 foot); no flow July 7, 1933.

Remarks.- Records good. Discharge estimated Nov. 3-10. Water is diverted from Alamo Creek for use of Alamogordo.

Discharge, in second-feet, 1933-34

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	2.4	2.6	2.6	2.5	2.6	2.4	2.2	2.0	1.9	1.9	1.8
2	2.3	2.5	2.7	2.6	2.5	2.6	2.4	2.2	2.0	1.9	1.9	1.8
3	2.4		2.7	2.6	2.5	2.5	2.4	2.2	2.0	1.9	1.8	1.8
4	2.4		2.7	2.6	2.5	2.4	2.4	2.2	2.0	1.9	1.9	1.8
5	2.4		2.6	2.6	2.5	2.4	2.4	2.2	2.0	1.8	1.9	1.8
6	2.4	2.4	2.6	2.5	2.5	2.5	2.4	2.2	2.0	1.8	1.8	1.8
7	2.4		2.7	2.5	2.5	2.5	2.4	2.2	2.0	1.9	1.8	1.8
8	2.5		2.7	2.5	2.6	2.4	2.4	2.1	2.0	2.0	1.9	1.9
9	2.3		2.7	2.5	2.7	2.1	2.4	2.1	2.0	1.9	1.9	1.8
10	2.3		2.7	2.5	2.7	2.5	2.4	2.2	2.0	1.9	1.9	1.8
11	2.4	2.5	2.7	2.6	2.6	2.5	2.4	2.2	2.0	1.9	1.8	1.8
12	2.4	2.5	2.7	2.6	2.7	2.5	2.4	2.2	2.0	1.9	1.8	1.8
13	2.4	2.5	2.7	2.6	2.7	2.5	2.4	2.2	2.0	1.9	1.8	1.8
14	2.5	2.4	2.7	2.6	2.7	2.4	2.4	2.2	2.0	1.9	1.8	1.8
15	2.5	2.5	2.7	2.6	2.6	2.5	2.4	2.2	2.0	1.8	1.8	1.7
16	2.4	2.4	2.6	2.5	2.5	2.5	2.4	2.1	1.9	1.8	1.8	1.8
17	2.4	2.6	2.6	1.1	2.7	2.5	2.4	2.1	1.9	1.8	1.8	1.7
18	2.4	2.6	2.5	1.3	2.6	2.5	2.4	2.1	1.9	1.8	1.8	1.7
19	2.4	2.6	2.5	2.6	2.6	2.5	2.5	2.1	1.9	1.8	1.8	1.7
20	2.4	2.6	2.5	2.6	2.7	2.5	2.5	2.1	1.8	1.8	1.8	1.7
21	2.5	2.6	2.6	2.5	2.7	2.5	2.5	2.0	1.8	1.8	1.8	1.7
22	2.4	2.6	2.6	2.5	2.7	2.5	2.5	2.0	1.8	1.8	1.8	1.7
23	2.5	2.6	2.6	2.5	2.7	2.5	2.5	2.1	1.9	1.9	1.8	1.6
24	2.5	2.6	2.6	2.5	2.5	2.6	2.5	2.1	1.8	1.8	1.8	1.6
25	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.1	1.8	1.8	1.8	1.6
26	2.5	2.0	2.6	2.5	2.5	2.5	2.5	2.0	1.9	1.6	1.8	1.6
27	2.5	2.6	2.6	2.5	2.6	2.5	2.5	2.0	1.9	1.8	1.8	1.6
28	2.5	2.6	2.6	2.5	2.6	2.4	2.5	2.0	1.9	1.7	1.8	1.5
29	2.3	2.6	2.6	2.5		2.4	2.2	2.0	1.8	1.8	1.8	1.6
30	2.4	2.6	2.6	2.5		2.4	2.2	2.0	1.8	1.8	1.8	1.7
31	2.4		2.6	2.5		2.4		2.0		1.9	1.8	
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October							2.5	2.3	2.40	147		
November							2.6	2.0	2.48	147		
December							2.7	2.5	2.63	162		
January							2.6	1.1	2.45	151		
February							2.7	2.5	2.60	144		
March							2.6	2.1	2.47	152		
April							2.4	2.2	2.35	140		
May							2.2	2.0	2.12	130		
June							2.0	1.8	1.93	115		
July							2.0	1.7	1.85	113		
August							1.9	1.8	1.83	112		
September							1.8	1.5	1.72	103		
The year							2.7	1.1	2.23	1,620		

In addition to the records of flow obtained at the gaging stations and reported in the preceding pages, measurements were made at other points as shown by the following table:

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending Sept. 30, 1934

Date	Stream	Tributary to or diverting from-	Locality	Gage height	Discharge
				Feet	Sec.-ft.
Apr. 11	Trinity River...	Gulf of Mexico .....	Liberty, Tex.....	*27.26	37,900
Apr. 21	.....do.....	.....do.....	.....do.....	*25.90	24,500
Apr. 27	.....do.....	.....do.....	.....do.....	*17.72	10,700
Dec. 13	Brazos River...	.....do.....	Former gaging station near Garwal Wells	3.53	53.6
Oct. 19	Salado Creek...	Lampasas River.....	4,400 feet below highway crossing at Salado, Tex.		7.98
Nov. 19	.....do.....	.....do.....	1 mile below highway crossing at Salado, Tex.		7.19
July 2	Colorado River..	Gulf of Mexico.....	Columbus, Tex.....		283
July 4	.....do.....	.....do.....	.....do.....		260
July 7	.....do.....	.....do.....	.....do.....		256
July 7	.....do.....	.....do.....	.....do.....		†515
July 8	.....do.....	.....do.....	.....do.....		†941
July 8	.....do.....	.....do.....	.....do.....		†589
July 9	.....do.....	.....do.....	.....do.....		†832
July 10	.....do.....	.....do.....	.....do.....		†650
July 11	.....do.....	.....do.....	.....do.....		†564
July 13	.....do.....	.....do.....	.....do.....		†1,350
July 14	.....do.....	.....do.....	.....do.....		†1,920
July 4	.....do.....	.....do.....	1,500 feet below Garwood Irrigation Co.'s pumping plant at Garwood, Tex. Considerable water diverted between Columbus and Garwood by two pumping plants. See measurements of Garwood Irrigation Co.'s canal.		3.40
July 9	.....do.....	.....do.....	.....do.....		†512
July 10	.....do.....	.....do.....	.....do.....		†463
July 11	.....do.....	.....do.....	.....do.....		†357
July 12	.....do.....	.....do.....	.....do.....		†297
July 16	.....do.....	.....do.....	.....do.....		†1,390
July 5	.....do.....	.....do.....	3 miles below Pierce estate pumping plant at Wharton, Tex. Considerable water diverted between Garwood and Wharton by two pumping plants.		48.2
July 10	.....do.....	.....do.....	.....do.....		†358
July 11	.....do.....	.....do.....	.....do.....		†344
July 13	.....do.....	.....do.....	.....do.....		†220
July 18	.....do.....	.....do.....	.....do.....		†1,200
Oct. 18	Irrigation Canal	South Concho River..	Head of canal, Christoval, Tex.		11.7
Nov. 13	.....do.....	.....do.....	.....do.....		9.64
Dec. 26	.....do.....	.....do.....	.....do.....		11.8
Jan. 23	.....do.....	.....do.....	.....do.....		12.2
Feb. 20	.....do.....	.....do.....	.....do.....		8.60
Apr. 18	.....do.....	.....do.....	.....do.....		10.7
May 17	.....do.....	.....do.....	.....do.....		14.1
June 22	.....do.....	.....do.....	.....do.....		13.9
July 24	.....do.....	.....do.....	.....do.....		14.2
Aug. 23	.....do.....	.....do.....	.....do.....		12.3
Sept. 18	.....do.....	.....do.....	.....do.....		14.5
May 8	Spring Creek...	Middle Concho River..	100 feet above springs and 3 miles above Mertzon, Tex.		.89
May 8	.....do.....	.....do.....	200 feet below springs and 2.9 miles above Mertzon, Tex.		13.7
July 19	Pecan Bayou....	Colorado River.....	8 miles above gaging station at Brownwood, Tex.		235
Oct. 21	Barton Creek...	.....do.....	Above Barton Springs, Austin, Tex.		0
Nov. 25	.....do.....	.....do.....	.....do.....		0
Jan. 21	.....do.....	.....do.....	.....do.....		0
Feb. 22	.....do.....	.....do.....	.....do.....		0
Apr. 2	.....do.....	.....do.....	.....do.....		26.7
June 16	.....do.....	.....do.....	.....do.....		0
July 17	.....do.....	.....do.....	.....do.....		0
Aug. 13	.....do.....	.....do.....	.....do.....		0
Aug. 30	.....do.....	.....do.....	.....do.....		0
Sept. 22	.....do.....	.....do.....	.....do.....		0
Oct. 21	Barton Springs..	Barton Creek.....	Austin, Tex.....		†24.3
Nov. 25	.....do.....	.....do.....	.....do.....		†21.1
Jan. 21	.....do.....	.....do.....	.....do.....		†25.1
Feb. 22	.....do.....	.....do.....	.....do.....		†52.5

\*U. S. Weather Bureau gage.

†Large part of flow is released from Brownwood Reservoir on Pecan Bayou.

‡Includes flow of Old Mill Spring.

## MISCELLANEOUS DISCHARGE MEASUREMENTS

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending Sept. 30, 1934- Continued

Date	Stream	Tributary to or diverting from-	Locality	Gage height	Discharge
				Feet	Sec.-ft.
Apr. 2	Barton Springs...	Barton Creek.....	Austin, Tex.....		167.2
June 16	.....do.....	.....do.....	.....do.....		159.2
July 17	.....do.....	.....do.....	.....do.....		136.5
Aug. 13	.....do.....	.....do.....	.....do.....		126.6
Aug. 30	.....do.....	.....do.....	.....do.....		124.2
Sept. 22	.....do.....	.....do.....	.....do.....		122.1
July 6	Garwood Irriga- tion Co.'s canal	Colorado River.....	200 feet below head gates, Garwood, Tex.		53.9
July 9	.....do.....	.....do.....	.....do.....		51.7
July 10	.....do.....	.....do.....	.....do.....		54.0
July 16	.....do.....	.....do.....	.....do.....		111
Oct. 31	San Marcos River.	Guadalupe River.....	0.5 mile below San Marcos-Luling high- way crossing, Tex.		105
Dec. 6	.....do.....	.....do.....	.....do.....		107
Jan. 23	.....do.....	.....do.....	.....do.....		105
Mar. 29	.....do.....	.....do.....	.....do.....		118
May 11	.....do.....	.....do.....	.....do.....		139
July 17	.....do.....	.....do.....	.....do.....		119
Dec. 8	San Antonio River	.....do.....	South Alamo Street Bridge, San Antonio, Tex.	1.16	40.3
June 28	Costilla Creek...	Rio Grande.....	About sec. 14, T. 2 S., R. 72 W., 3 miles below mouth of Latir Creek and 10½ miles south- east of Costilla, N. Mex.		1.09
June 28	.....do.....	.....do.....	About sec. 20, T. 1 S., R. 72 W., 2.6 miles above concrete diversion dam and 5.5 miles southeast of Costilla, N. Mex.		118
June 28	.....do.....	.....do.....	About sec. 13, T. 1 S., R. 73 W., 500 feet above concrete diversion dam and 2.5 miles southeast of Costilla, N. Mex.		121
June 28	Latir Creek.....	Costilla Creek.....	About sec. 20, T. 2 S., R. 71 W., at mouth, 14 miles southeast of Costil- la, N. Mex.		5.09
Aug. 16	Rio Pueblo de Taos	Rio Taos .....	Sec. 6, T. 25 N., R. 14 E., 4 miles above Taos Pueblo, N. Mex.	.82	5.26
June 8	Pueblo Ditch....	Tesuque Creek.....	Sec. 24, T. 18 N., R. 9 E., 2.7 miles southeast of Tesuque Pueblo, N. Mex.		.97
June 8	.....do.....	.....do.....	Sec. 24, T. 18 N., R. 9 E., 2.4 miles south- east of Tesuque Pueblo, N. Mex.		.74
June 8	.....do.....	.....do.....	Sec. 14, T. 18 N., R. 9 E., 2.1 miles south- east of Tesuque Pueblo, N. Mex.		.97
Oct. 10	Santa Fe Creek...	Rio Grande.....	Sec. 24, T. 17 N., R. 10 E., above upper reservoir and 6½ miles east of Santa Fe, N. Mex.	.16	1.74
Nov. 24	.....do.....	.....do.....	.....do.....	.11	.97
Jan. 31	.....do.....	.....do.....	.....do.....	.15	1.41
Mar. 7	.....do.....	.....do.....	.....do.....	.17	2.05
Mar. 7	.....do.....	.....do.....	.....do.....	.17	1.78
Apr. 7	.....do.....	.....do.....	.....do.....	.11	.58
May 3	.....do.....	.....do.....	.....do.....	.32	5.38
June 6	.....do.....	.....do.....	.....do.....	.20	2.45
July 12	.....do.....	.....do.....	.....do.....	.13	1.02
Aug. 10	.....do.....	.....do.....	.....do.....	.22	2.64
Sept. 7	.....do.....	.....do.....	.....do.....	.34	5.44
Sept. 29	.....do.....	.....do.....	.....do.....	.45	7.25
Oct. 27	Las Palomas Creek	.....do.....	Sec. 8, T. 14 S., R. 5 W., 0.8 mile above dam site and 6 miles northwest of Las Pal- omas, N. Mex.	.99	4.26
Dec. 4	.....do.....	.....do.....	.....do.....	1.02	4.86
Jan. 7	.....do.....	.....do.....	.....do.....	1.04	5.20
Feb. 7	.....do.....	.....do.....	.....do.....	1.07	4.81
Mar. 11	.....do.....	.....do.....	.....do.....	1.01	4.35
Apr. 12	.....do.....	.....do.....	.....do.....	1.03	5.23

† Includes flow of Old Mill Spring.

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending Sept. 30, 1934- Continued.

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
				Feet	Sec.-ft.
May 5	Las Palomas Creek.	Rio Grande.....	Sec. 8, T. 14 S., R. 5 W., 0.8 mile above dam site and 6 miles northwest of Las Palomas, N. Mex.	1.01	3.91
June 3	.....do.....	.....do.....	.....do.....	1.01	3.58
June 17	.....do.....	.....do.....	.....do.....	1.02	3.82
July 17	.....do.....	.....do.....	.....do.....	.90	2.92
Aug. 12	.....do.....	.....do.....	.....do.....	.83	3.60
Sept. 13	.....do.....	.....do.....	.....do.....	.90	3.75
Feb. 12	Rio Tularosa.....	Tularosa Valley Basin.	Sec. 15, T. 14 S., R. 10 E., $3\frac{1}{2}$ miles northeast of Tularosa, N. Mex.	.74	15.4
Oct. 31	Rio La Luz.....	.....do.....	Sec. 28, T. 15 S., R. 10 E., at head of Alamogordo Community Ditch, 1 mile east of La Luz, N. Mex.	.42	9.85
Dec. 10	.....do.....	.....do.....	.....do.....	.54	12.9
Jan. 13	.....do.....	.....do.....	.....do.....	.40	13.1
Feb. 13	.....do.....	.....do.....	.....do.....	.34	10.3
Mar. 18	.....do.....	.....do.....	.....do.....	.26	10.4
Apr. 16	.....do.....	.....do.....	.....do.....	.14	4.95
May 10	.....do.....	.....do.....	.....do.....	-.15	6.82
June 8	.....do.....	.....do.....	.....do.....	-.11	3.62
June 22	.....do.....	.....do.....	.....do.....	-.22	1.64
July 22	.....do.....	.....do.....	.....do.....	-.12	7.16
Aug. 17	.....do.....	.....do.....	.....do.....	.09	1.70
Sept. 18	.....do.....	.....do.....	.....do.....	.45	7.88
Jan. 31	Phantom Lake Spring.	Toyah Creek.....	At source, near Toyahvale, Tex.	.70	17.0
Feb. 15	.....do.....	.....do.....	.....do.....	.69	15.2
Feb. 16	San Solomon Spring	.....do.....	.....do.....	1.23	40.6
Jan. 31	Comanche Springs..	Comanche Creek.....	Main Canal $\frac{1}{4}$ mile below diversion dam, at Fort Stockton, Tex.		45.0
Feb. 15	.....do.....	.....do.....	.....do.....		46.6



# INDEX

	Page		Page
Accuracy of data and computed results.....	5	Brownwood, Tex., Pecan Bayou at.....	67
Acre-foot, definition of.....	2	Bryan, Tex., Brazos River near.....	33
Alamo Alto, Tex., Hudspeth Canal near.....	151-153	Buckholts, Tex., Big Elm Creek near.....	45
Tornillo Canal near.....	148-150	Calallen, Tex., Nueces River at.....	93
Tornillo Drain at.....	147	Calliham, Tex., Frio River at.....	96
Alamo Creek at Wood ranch, near Alamo-		Cameron, Tex., Little River at.....	41
gordo, N. Mex.....	179	Capaulin, Colo., La Jara Creek near.....	117
Alamogordo, N. Mex., Alamo Creek near.....	179	Carlsbad, N. Mex., Pecos River at.....	161-163
Alamogordo water supply near.....	180	Carlsbad, Tex., North Concho River near.....	66
Alamosa, Colo., Rio Grande at.....	103	Carnero Creek near La Garita, Colo.....	114
Alamosa Creek below Terrace Reservoir,		Carrollton, Tex., Elm Fork of Trinity River	
Colo.....	116	near.....	27
Alamosa River near Monticello, N. Mex.....	146	Castell, Tex., Llano River near.....	73
Angeles, Tex., Pecos River near.....	167	Chamita, N. Mex., Rio Chama near.....	138
Angelina River at Horger, Tex.....	18	Chilton, Tex., Deer Creek at.....	39
near Lufkin, Tex.....	17	Christoval, Tex., South Concho River at.....	60
Anton Chico, N. Mex., Pecos River near.....	155	Cibolo Creek near Falls City, Tex.....	88
Appropriations, record of.....	1	Circleville, Tex., San Gabriel River at.....	43
Arroyo Hondo, N. Mex., Rio Hondo at.....	132	Clear Creek below Continental Reservoir,	
Arroyo Seco, N. Mex., Rio Lucero near.....	134	Colo.....	112
Seco Ditch near.....	135	Clifton, Tex., North Bosque River near.....	38
Aspermont, Tex., Double Mountain Fork of		Cochiti, N. Mex., Rio Grande at.....	108
Brazos River near.....	30	Colorado River at Austin, Tex.....	55
Atascosa River at Whitsett, Tex.....	98	at Ballinger, Tex.....	50
Austin, Tex., Colorado River at.....	55	at Smithville, Tex.....	57
evaporation at.....	56	discharge measurements of.....	181
Ballinger, Tex., Colorado River at.....	50	near Eagle Lake, Tex.....	58
Elm Creek at.....	59	near Milburn, Tex.....	51
Barton Creek, Tex., discharge measurements		near San Saba, Tex.....	52
of.....	181	near Tow, Tex.....	53-54
Barton Springs, Tex., discharge measure-		Colorado River Basin, Tex., gaging-station	
ments of.....	181-182	records in.....	50-75
Belton, Tex., Leon River near.....	40	Comal River at New Braunfels, Tex.....	79
Big Elm Creek near Buckholts, Tex.....	45	Comanche Springs, Tex., discharge measure-	
near Temple, Tex.....	44	ments of.....	183
Blanca, Colo., Sangre de Cristo Creek near...	122	Computations, results of, accuracy of.....	5
Trinchera Creek near.....	120	Concan, Tex., Frio River at.....	94
Blanco River at Wimberley, Tex.....	81	Concho River near Paint Rock, Tex.....	63
Bluewater Creek near Bluewater, N. Mex.....	145	near San Angelo, Tex.....	62
Bon Wier, Tex., Sabine River near.....	13	Conejos River near La Sauses, Colo.....	125
Brazos River at Richmond, Tex.....	34	near Mogote, Colo.....	124
at Seymour, Tex.....	30	Continental Reservoir, Colo., Clear Creek	
at Waco, Tex.....	32	below.....	112
Clear Fork of, at Fort Griffin, Tex.....	36	Control, definition of.....	2
at Nugent, Tex.....	35	Cooperation, record of.....	10
near Crystal Falls, Tex.....	37	Costilla Creek, N. Mex., discharge measure-	
discharge measurement of.....	181	ments of.....	182
Double Mountain Fork of, near Asper-		Cottonwood Creek near Lake Arthur,	
mont, Tex.....	30	N. Mex.....	173
near Bryan, Tex.....	33	Cotulla, Tex., Nueces River at.....	91
near Glen Rose, Tex.....	31	Creede, Colo., Rio Grande below.....	100
Brazos River Basin, Tex., gaging-station rec-		Rio Grande near.....	99
ords in.....	30-49	Crystal Falls, Tex., Clear Fork of Brazos	
Brazos Valley Irrigation Co.'s canal near Ful-		River near.....	37
shear, Tex.....	48	Cuero, Tex., Guadalupe River below.....	78

	Page		Page
Three Rivers, Tex., Nueces River near .....	92	Trinity River, West Fork of, at Fort Worth, Tex.....	20
Tornillo Canal at waste near Alamo Alto, Tex.....	148-150	West Fork of, at Grand Prairie, Tex.....	21
Tornillo Drain at mouth, at Alamo Alto, Tex.....	147	at Lake Worth Dam, above Fort Worth, Tex.....	19
Tow, Tex., Colorado River near.....	53-54	Tularosa, N. Mex., Rio Tularosa near.....	178
Toyahvale, Tex., Madera Canyon near.....	174	Tularosa River Basin, N. Mex., gaging-station records in.....	178-180
Trinchera Creek above Mountain Home Reservoir, near Fort Garland, Colo.....	119	Ute Creek near Fort Garland, Colo.....	123
above Turners ranch, near Fort Garland, Colo.....	118	Uvalde, Tex., Nueces River near.....	90
below Smith Reservoir, near Blanca, Colo.....	120	Valdez, N. Mex., Rio Hondo at.....	131
Trinity River at Dallas, Tex.....	22	Waco, Tex., Brazos River at.....	32
at Riverside, Tex.....	24	Westhoff, Tex., Sandies Creek near.....	83-84
at Romayor, Tex.....	25	Whitsett, Tex., Atascosa River at.....	98
Clear Fork of, at Fort Worth, Tex.....	26	Wimberley, Tex., Blanco River at.....	81
discharge measurements of.....	181	Work, authorization of.....	1
East Fork of, near Rockwall, Tex.....	28	division of.....	10
Elm Fork of, near Carrollton, Tex.....	27	scope of.....	1-2
near Oakwood, Tex.....	23	Yegua Creek near Somerville, Tex.....	46
		Youngsfort, Tex., Lampasas River at.....	42

