UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary
GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Water-Supply Paper 668

SURFACE WATER SUPPLY *of the* UNITED STATES 1928

PART VIII
WESTERN GULF OF MEXICO BASINS

NATHAN C. GROVER, Chief Hydraulic Engineer
C. E. ELLSWORTH, District Engineer

Prepared in cooperation with the
STATE OF TEXAS

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1931

For sale by the Superintendent of Documents, Washington, D. C. - - - - - Price 20 cents

CONTENTS

ILLUSTRATIONS

SURFACE WATER SUPPLY OF WESTERN GULF OF MEXICO BASINS, 1928

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, 1928.

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, 1895–1929

1895	$12,500	1918	$175,000
1896	24,500	1919	148,244
1897–1899	50,000	1920	175,000
1900	70,000	1921–1923	180,000
1901–2	100,000	1924–1925	170,000
1903–1906	200,000	1926	165,000
1907	150,000	1927	151,000
1908–1910	100,000	1928	147,000
1911–1917	150,000	1929	270,500

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 5,480 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1928, 1,830 gaging stations were being maintained by the Geological Survey and the cooperating organiza-

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

DEFINITION OF TERMS

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

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

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

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

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

The following terms not in common use are here defined:

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

"Control," a term used to designate the 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, 1927, and ending September 30, 1928. At the beginning of January in most parts of the United States much of the precipitation in the preceding three 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 precipitation within that year.

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

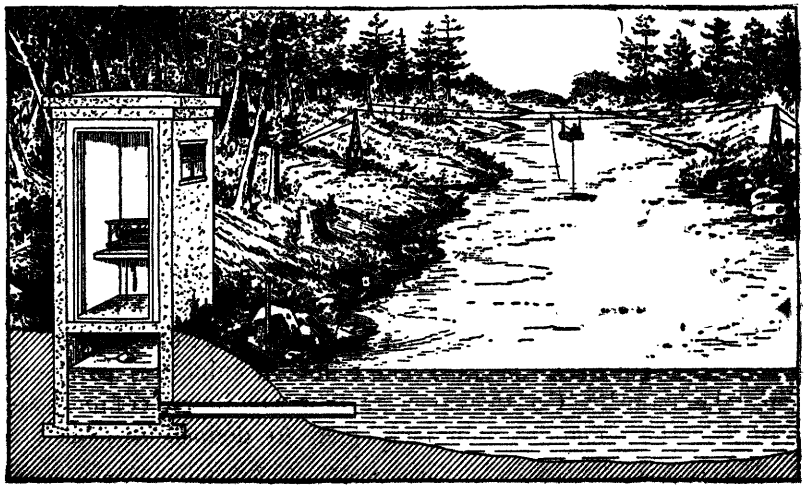

FIGURE 1.—Typical gaging station

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.

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

The data presented for each gaging station in the area covered by this report comprise a description of the station, 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, in addition to statements regarding location and type of gage, information as to diversions that decrease the flow at the gage, artificial regulation, maximum and

minimum recorded stages, and the accuracy of the records. The maximum discharge given under "Extremes" represents the crest discharge determined from records of stage by water-stage recorders or, at stations with nonrecording gages, from flood marks or from graphs based on one or more daily gage readings.

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

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

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

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the 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 records are accurate within 5 per cent; "good," within 10 per cent; "fair," within 15 per cent; and "poor," within 20 per cent or more.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above

the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable. The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches.

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

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

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water powers, 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 I. North Atlantic slope basins (St. John River to York River).
II. South Atlantic slope and eastern Gulf of Mexico basins (James River to the Mississippi).
III. Ohio River Basin.
IV. St. Lawrence River Basin.
V. Hudson Bay and upper Mississippi River basins.
VI. Missouri River Basin.
VII. Lower Mississippi River Basin.
VIII. Western Gulf of Mexico basins.
IX. Colorado River Basin.
X. The Great Basin.
XI. Pacific slope basins in California.
XII. 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, Me., Statehouse.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 60 Washington Street.
Albany, N. Y., 506 Broadway-Arcade Building.
Trenton, N. J., 710 Trenton Trust Building.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 210 Post Office Building.
Ocala, Fla., Federal Building.
Tuscaloosa, Ala., Post Office Building.
Chattanooga, Tenn., 630 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Indianapolis, Ind., 319 Federal Building.
Lansing, Mich., 320 Old State Office Building.
Chicago, Ill., 1503 Consumers Building.
Madison, Wis., 337N State Capitol.
St. Paul, Minn., 202 Old State Capitol.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Capitol.
Tucson, Ariz., 210 Post Office Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 416 Power Block.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 751 South Figueroa Street, room 510.
Honolulu, Hawaii, Territorial Office Building.

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

Stream-flow records have been obtained at about 5,480 points in the United States, and the data obtained have been published in the reports tabulated on page 7.

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 September, 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Description, 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 and 1896.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with the Kansas.	1897.
W 16	Descriptions, measurement, and gage heights, western Mississippi River below junction of Missouri and Platte Rivers, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Description, 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.

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 1928. 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 III 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, 1899–1928

[For basins included see p. 5]

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII-A	XII-B	XII-C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	38
1900 [g]	47, [h] 48	48	48, [i] 49	49	49	49, [j] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65, 66, 75	66, 75	[k] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 85	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98, 99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125, [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166, [p] 167	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [o] 202, [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211, [s] 213	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332–A	332–B	332–C
1913	351	352	353	354	355	356	357	358	359	360	361	362–A	362–B	362–C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926	621	622	623	624	625	626	627	628	629	630	631	632	633	634
1927	641	642	643	644	645	646	647	648	649	650	651	652	653	654
1928	661	662	663	664	665	666	667	668	669	670	671	672	673	674

[a] Rating tables and index to Water-Supply Papers 35-39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in Twenty-first Annual Report, Part IV.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Grand River above junction with Gunnison.
[e] Mohave River only.
[f] Kings and Kern Rivers and south Pacific slope basins.
[g] Rating tables and index to Water-Supply Papers 47-52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Tables of monthly discharge for 1900 in Twenty-second Annual Report, Part IV.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[k] Tributaries of Mississippi from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] Great Basin in California, except Truckee and Carson River basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work of measuring streams in Texas during the year ending September 30, 1928, was carried on in cooperation with the State through the Board of Water Engineers, consisting of John A. Norris, chairman, C. S. Clark, and A. H. Dunlap, to whom special acknowledgments are due for the efficient and cordial manner in which they represented the State in the investigations.

The following have aided in the collection of records in Texas and New Mexico by furnishing funds or otherwise assisting: United States Weather Bureau; American section of the International Boundary Commission; Corpus Christi; Dallas; Fort Worth; San Antonio; Brownwood; Walker-Caldwell Water Co.; Medina Valley Irrigation Co.; Breckenridge Chamber of Commerce; Tarrant County Water Improvement District No. 1; St. Louis Southwestern Railway; International-Great Northern Railroad; Galveston, Harrisburg & San Antonio Railway; Gulf, Colorado & Santa Fe Railway; E. N. Cory; Central Power & Light Co.; Humble Oil & Refining Co.; San Antonio Public Service Co.; and Zavalla Water Improvement District No. 2.

Acknowledgment is made in the description of the gaging stations for records furnished by cooperating parties.

DIVISION OF WORK

Data for stations in Texas and New Mexico were collected and prepared for publication under the direction of C. E. Ellsworth, district engineer, assisted by C. E. McCashin, W. E. Armstrong, Trigg Twichell, H. C. Pritchett, S. D. Breeding, D. A. Dudley, D. M. Corbett, Tate Dalrymple, W. C. Dodd, G. W. King, C. B. Tooley, A. C. Cook, G. E. Ferguson, N. C. Magnuson, R. G. Fisher, E. S. Altgelt, A. B. Goodwin, C. A. Young, B. M. Pember, B. S. Odom, V. W. Rupp, V. L. Austin, S. H. Crowell, F. C. Ames, P. H. Holland, and Kate Casparis.

The records were reviewed and the manuscript assembled by P. R. Speer and Warren Withee.

GAGING-STATION RECORDS

SABINE RIVER BASIN

SABINE RIVER NEAR LONGVIEW, TEX.

LOCATION.—Staff gage just below International-Great Northern Railroad bridge and 3 miles southwest of Longview, Gregg County.

DRAINAGE AREA.—3,010 square miles.

RECORDS AVAILABLE.—January, 1904, to December, 1906; October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 5,370 second-feet April 23 (gage height, 20.74 feet); minimum, 17 second-feet September 17 (gage height, 2.03 feet).

1904–1906, 1923–1928: Maximum discharge, 19,500 second-feet May 19, 1905 (gage height, 35.05 feet); minimum, 14 second-feet August 29–31, 1925 (gage height, 1.10 feet).

REMARKS.—Monthly records fair. Daily records not sufficiently accurate for publication. No diversions of consequence. Slight regulation at extremely low stages caused by pumping just above gage.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4,620	77	1,720	106,000
November	609	154	257	15,300
December	1,470	154	552	33,900
January	905	392	554	34,100
February	3,160	290	988	56,800
March	4,960	455	2,050	126,000
April	5,320	330	2,700	161,000
May	3,660	290	1,510	92,800
June	3,200	271	1,480	88,100
July	3,240	154	796	48,900
August	1,370	55	313	19,200
September	50	17	30.9	1,840
The year	5,320	17	1,080	784,000

SABINE RIVER AT LOGANSPORT, LA.

LOCATION.—Chain gage on highway bridge 200 feet above Houston East & West Texas Railway bridge and a quarter of a mile west of Logansport, De Soto Parish. Zero of gage is 147.5 feet above mean sea level.

DRAINAGE AREA.—4,860 square miles.

RECORDS AVAILABLE.—July, 1903, to December, 1906; October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, about 9,860 second-feet April 29 (gage height, 22.4 feet); minimum, 47 second-feet September 13 (gage height, −0.7 foot).

1903–1906, 1923–1928: Maximum gage height, 35.8 feet May 26, 1905 (discharge not determined); minimum discharge, probably less than 27 second-feet September, 1925.

Maximum stage known, 39.4 feet reached during 1884.

REMARKS.—Monthly records fair. Record of daily discharge not sufficiently accurate for publication. No diversions. Gage-height record furnished by United States Weather Bureau.

Monthly discharge of Sabine River at Logansport, La., 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	----------	170	1,790	110,000
November	576	192	354	21,100
December	1,410	215	738	45,400
January	1,380	600	887	54,500
February	3,960	600	1,520	87,400
March	7,020	1,260	4,480	275,000
April	9,860	882	4,360	259,000
May	9,340	1,170	3,180	196,000
June	5,360	1,050	2,310	137,000
July	4,260	305	1,560	95,900
August	3,090	90	699	43,000
September	106	47	75.1	4,470
The year	9,860	47	1,830	1,330,000

SABINE RIVER NEAR BON WIER, TEX.

LOCATION.—Chain gage on Gulf, Colorado & Santa Fe Railway bridge 1¼ miles east of Bon Wier, Newton County. Zero of gage is 45.4 feet above mean sea level.

DRAINAGE AREA.—8,390 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 18,600 second-feet April 7 (gage height, 17.1 feet); minimum, 390 second-feet September 19–25 (gage height, 0.98 foot).

1923–1928: Maximum discharge, 45,600 second-feet April 21, 1927; minimum, 185 second-feet September 11, 22, and 24, 1925 (gage height, 0.50 foot).

REMARKS.—Monthly records fair. Records of daily discharge not sufficiently accurate for publication. No diversions. Gage-height record furnished by United States Weather Bureau.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4,370	840	2,280	140,000
November	----------	640	1,120	66,600
December	8 330	----------	2 730	168 000
January	7,420	1,280	2,300	141,000
February	5,910	1,400	3,030	174,000
March	15,700	4,700	9,390	577,000
April	18,400	3,020	10,500	625,000
May	12,100	1,660	6,170	379,000
June	----------	1,880	5,520	328,000
July	5,690	1,100	2 870	176,000
August	3,720	600	1,730	106,000
September	720	390	459	27,300
The year	18,400	390	4,010	2 910,000

SABINE RIVER NEAR RULIFF, TEX.

LOCATION.—Staff gage on Kansas City Southern Railway bridge 1½ 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.

DRAINAGE AREA.—9,450 square miles.

RECORDS AVAILABLE.—October, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, 20,500 second-feet April 12 (gage height, 12.50 feet); minimum, 534 second-feet September 30 (gage height, 1.95 feet).

1924–28: Maximum discharge, about 54,400 second-feet January 4, 1927 (gage height, 14.14 feet): minimum, 372 second-feet September 11, 1925 (gage height, 1.10 feet).

The river reached a stage of 15.5 feet April 15, 1923.

REMARKS.—Records fair. Discharge partly estimated September 30. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	777	1,840	1,200	13,500	1,670	5,760	9,300	9,300	3,050	4,560	5,000	652
2	809	1,560	1,160	13,500	1,670	5,910	8,120	9,850	2,870	5,000	4,420	809
3	876	1,400	1,160	11,800	1,610	5,910	6,650	10,400	2,700	5,600	3,900	1,090
4	1,050	1,240	1,160	10,800	1,670	5,910	5,300	11,100	2,550	5,760	3,650	1,120
5	1,160	1,160	1,200	8,580	1,670	5,910	44,20	11,100	2,620	5,600	3,780	1,200
6	1,240	1,120	1,200	6,460	1,720	5,760	4,850	11,100	2,700	5,600	3,650	1,120
7	1,310	1,120	1,240	5,000	1,780	5,760	6,480	10,800	2,960	5,000	3,450	1,020
8	1,400	1,120	1,310	3,900	1,840	5,600	9,300	10,800	3,250	4,700	3,250	876
9	1,450	1,090	1,450	3,450	1,970	5,600	11,800	10,400	3,450	4,420	3,050	777
10	1,670	1,090	1,970	3,050	2,100	5,910	15,400	9,850	3,250	4,150	2,700	714
11	2,100	1,090	2,960	2,870	2,320	6,850	19,200	9,050	3,050	3,900	2,550	714
12	2,250	1,090	3,250	2,700	2,550	8,350	19,200	7,900	3,450	3,650	2,250	714
13	1,970	1,050	3,050	2,620	2,550	9,300	18,200	7,050	4,700	3,350	2,100	714
14	1,720	1,050	3,050	2,550	2,700	10,400	18,200	6,260	6,260	2,870	1,840	683
15	1,610	1,090	3,450	2,480	2,870	11,100	18,200	5,910	7,680	2,550	1,720	714
16	1,840	1,240	3,900	2,480	3,250	11,400	17,100	5,300	7,900	2,400	1,500	714
17	2,100	1,450	4,700	2,550	3,650	11,800	17,100	5,150	7,900	2,100	1,400	683
18	2,250	1,610	5,300	2,550	3,550	11,800	15,700	5,300	8,580	1,970	1,310	683
19	2,400	1,970	5,910	2,620	3,350	12,200	14,500	5,600	9,580	1,840	1,270	652
20	2,700	2,400	5,910	2,620	3,050	12,600	12,600	5,300	10,400	1,780	1,240	622
21	2,870	2,250	5,000	2,550	2,700	13,000	11,100	4,700	11,100	1,780	1,200	592
22	3,050	1,970	3,900	2,400	2,870	13,500	9,580	4,150	12,200	1,720	1,120	592
23	3,250	1,610	3,150	2,320	3,450	13,500	8,580	4,150	11,800	1,610	1,090	592
24	3,450	1,400	2,780	2,250	4,420	14,000	8,800	5,450	10,400	1,500	1,050	592
25	3,650	1,310	2,550	2,100	5,450	14,000	9,300	6,260	7,900	1,450	945	592
26	3,780	1,240	2,480	2,040	5,910	13,500	9,580	6,650	6,260	1,500	876	563
27	3,900	1,240	2,480	1,970	6,260	13,000	9,580	5,760	5,300	1,720	809	563
28	3,780	1,240	3,320	1,900	5,910	12,600	9,300	4,560	4,850	2,550	777	563
29	3,450	1,240	6,620	1,840	5,760	12,200	8,800	3,900	4,420	3,150	714	563
30	2,780	1,240	9,620	1,780	------	11,800	8,800	3,650	4,150	3,900	683	534
31	2,250	------	12,600	1,720	------	10,400	------	3,250	------	4,700	683	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,900	777	2,220	136,000
November	2,400	1,050	1,380	82,100
December	12,600	1,160	3,520	216,000
January	13,500	1,720	4,160	256,000
February	6,260	1,610	3,110	179,000
March	14,000	5,600	9,850	606,000
April	19,200	4,420	11,500	684,000
May	11,100	3,250	7,100	437,000
June	12,200	2,550	5,910	352,000
July	5,760	1,450	3,300	203,000
August	5,000	683	2,060	127,000
September	1,200	534	734	43,700
The year	19,200	534	4,580	3,320,000

NECHES RIVER BASIN

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 95.50 feet above mean sea level.

DRAINAGE AREA.—3,540 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 4,290 second-feet March 18 and 19 (gage height, 9.6 feet); minimum, 30 second-feet September 25–30 (gage height, −0.70 foot).

1923–1928: Maximum discharge, 15,400 second-feet April 26 and 27, 1926 (gage height, 22.7 feet); minimum, 7.0 second-feet August 23 and 24, 1925 (gage height, −1.2 feet).

Maximum known stage, 28.9 feet April 2, 1922 (discharge, about 45,800 second-feet).

REMARKS.—Records fair. No diversions above gage. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	136	298	1,040	504	1,350	2,490	1,190	298	470	323	74
2	74	136	298	918	470	1,350	2,440	1,110	323	470	350	61
3	88	119	298	688	576	1,350	2,490	1,040	378	470	378	50
4	88	136	275	688	576	1,390	2,350	1,110	378	504	323	50
5	88	136	275	650	764	1,420	1,900	1,150	407	576	323	40
6	119	136	275	650	613	1,470	2,210	1,150	378	613	323	40
7	438	232	576	576	576	1,510	1,980	1,150	378	650	350	50
8	1,040	298	438	576	540	1,550	1,810	1,190	350	613	350	50
9	470	298	378	688	576	1,550	1,940	1,190	350	613	323	61
10	323	275	378	650	613	3,660	3,600	1,270	407	613	323	74
11	275	253	576	613	576	3,150	3,780	1,350	957	576	350	61
12	407	232	726	613	540	2,780	3,840	1,350	1,230	540	378	61
13	253	211	879	650	613	2,780	3,600	1,390	1,350	504	407	61
14	470	232	764	650	613	2,940	3,200	1,850	1,390	438	378	61
15	470	253	726	650	576	2,990	2,780	1,680	1,850	470	323	61
16	407	253	726	650	576	4,220	2,400	2,030	2,300	378	298	61
17	378	232	650	726	613	4,220	2,080	1,510	2,400	323	253	50
18	323	211	613	726	613	4,290	1,850	1,420	2,210	298	211	50
19	298	211	613	726	613	4,290	1,640	1,110	1,590	253	172	50
20	298	211	613	688	650	4,220	1,470	879	1,390	232	154	40
21	275	211	613	688	650	4,160	1,390	802	1,190	211	136	40
22	275	211	650	688	1,350	3,900	1,390	613	1,040	191	119	40
23	275	232	650	650	1,590	3,840	1,350	540	726	191	103	40
24	275	275	650	650	1,470	3,600	1,350	470	726	172	88	40
25	275	323	650	650	1,350	3,660	1,350	407	802	154	88	30
26	253	350	613	613	1,040	3,550	1,310	378	879	154	74	30
27	232	350	613	613	918	3,430	1,270	323	1,070	172	74	30
28	191	350	688	576	957	3,310	1,270	323	1,040	211	61	30
29	172	298	1,110	576	1,040	3,200	1,230	298	802	191	61	30
30	154	298	957	540	-------	2,730	1,230	298	650	211	88	30
31	154	-------	1,040	540	-------	2,590	-------	298	-------	253	74	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,040	61	287	17,600
November	350	119	237	14,100
December	1,110	275	600	36,900
January	1,040	540	665	40,900
February	1,590	470	764	43,900
March	4,290	1,350	2,920	180,000
April	3,840	1,230	2,100	125,000
May	2,030	298	996	61,200
June	2,400	298	975	58,000
July	650	154	378	23,200
August	407	61	234	14,400
September	74	30	482	2,870
The year	4,290	30	851	618,000

NECHES RIVER AT EVADALE, TEX.

LOCATION.—Staff gage at Gulf, Colorado & Santa Fe Railway bridge at Evada Jasper County. Zero of gage is 7.20 feet above mean sea level.

DRAINAGE AREA.—7,910 square miles.

RECORDS AVAILABLE.—July, 1904, to December, 1906; October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 11,800 second-feet April 15 (gage height, 14.50 feet); minimum discharge, 267 second-feet September 28–30; minimum gage height, 0.10 foot September 30.

1904–1906, 1923–1928: Maximum discharge, 40,700 second-feet June 1–7, 1924 (gage height, 19.0 feet); minimum, about 148 second-feet September 10, 1925.

Maximum stage known, 33.4 feet in 1884, from records of Gulf, Colorado & Santa Fe Railway.

REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	432	633	884	3,660	1,530	3,530	8,330	3,800	1,340	2,840	1,610	414
2	451	607	884	3,190	1,530	3,460	7,910	3,600	1,260	2,350	1,970	414
3	451	582	914	2,900	1,460	3,530	7,590	3,390	1,260	2,010	1,970	414
4	492	558	914	2,620	1,420	3,600	7,280	3,120	1,300	1,780	1,870	414
5	535	535	914	2,350	1,420	3,660	6,990	2,950	1,460	1,650	1,650	380
6	633	513	884	2,110	1,500	3,660	7,430	2,840	1,740	1,610	1,530	364
7	659	492	977	1,970	1,780	3,730	8,400	2,780	1,920	1,500	1,500	348
8	713	492	977	1,920	1,970	3,730	10,000	2,780	1,870	1,530	1,420	333
9	797	513	1,150	1,870	1,870	3,880	11,300	2,780	1,780	1,570	1,220	319
10	1,190	558	1,460	1,870	1,780	4,460	10,500	2,840	1,780	1,650	1,080	319
11	1,570	607	1,460	1,870	1,780	5,020	9,600	2,900	2,310	1,700	977	333
12	1,420	713	1,420	1,870	1,780	6,100	9,600	2,950	3,430	1,700	945	333
13	1,220	740	1,530	1,830	1,780	6,990	10,500	2,950	4,720	1,610	945	333
14	1,080	768	1,700	1,830	1,830	7,430	11,600	3,010	4,720	1,500	914	333
15	1,080	768	1,970	1,830	1,920	7,590	11,800	3,010	4,820	1,380	884	333
16	1,110	826	2,060	1,830	2,010	7,750	11,600	3,530	5,120	1,340	855	333
17	1,150	855	2,160	1,780	2,010	7,910	10,500	4,050	5,420	1,300	826	333
18	1,150	914	2,160	1,830	1,970	8,230	9,180	3,730	6,100	1,220	797	319
19	1,080	1,010	2,010	1,870	2,010	8,770	7,430	3,530	6,460	1,150	740	305
20	1,010	945	1,920	1,920	1,970	9,180	6,590	3,390	6,460	1,080	659	305
21	945	884	1,830	1,870	1,970	9,390	5,860	3,060	6,100	945	633	305
22	914	826	1,740	1,870	2,300	9,390	5,620	2,900	5,420	855	582	292
23	884	797	1,700	1,830	2,670	9,180	5,420	2,510	4,720	797	535	292
24	855	797	1,650	1,830	3,390	9,180	5,120	2,250	4,210	740	492	279
25	826	797	1,650	1,830	4,050	8,970	4,820	1,920	4,050	713	471	279
26	826	768	1,610	1,780	4,290	8,770	4,540	1,780	3,660	686	451	279
27	797	797	1,650	1,740	4,130	8,580	4,370	1,610	4,620	659	414	279
28	768	797	2,350	1,700	3,960	8,580	4,290	1,530	4,620	740	397	267
29	740	797	2,620	1,650	3,660	8,580	4,210	1,500	3,960	826	397	267
30	713	884	3,390	1,610	------	8,400	3,960	1,460	3,320	945	380	267
31	659	------	3,800	1,570	------	8,400	------	1,420	------	1,300	380	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,570	432	876	53,900
November	1,010	492	726	43,200
December	3,800	884	1,690	104,000
January	3,660	1,570	2,010	124,000
February	4,290	1,420	2,270	131,000
March	9,390	3,460	6,760	416,000
April	11,800	3,960	7,740	461,000
May	4,050	1,420	2,770	170,000
June	6,460	1,260	3,660	218,000
July	2,840	659	1,340	82,400
August	1,970	380	951	58,500
September	414	267	326	19,400
The year	11,800	267	2,590	1,880,000

ANGELINA RIVER NEAR LUFKIN, TEX.

LOCATION.—Chain gage 1 mile above Houston East & West Texas Railway bridge and 8 miles north of Lufkin, Angelina County.
DRAINAGE AREA.—1,580 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 3,140 second-feet March 25 (gage height, 11.10 feet); minimum, 11 second-feet September 28 and 29 (gage height, 1.76 feet).
1923–1928: Maximum discharge, about 30,200 second-feet November 19–21, 1925 (gage height, 15.99 feet at railroad bridge); minimum, that of September 28 and 29, 1928.
REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	83	242	385	300	1,520	1,220	830	830	385	280	20
2	42	118	215	415	300	1,580	980	930	830	415	270	35
3	90	140	197	485	300	1,720	780	1,100	730	415	270	32
4	260	156	180	520	300	1,790	730	1,160	680	415	270	26
5	320	188	172	520	320	1,940	640	1,160	780	385	270	22
6	310	206	172	520	340	1,940	640	1,040	830	340	242	20
7	320	206	206	485	350	1,940	780	980	780	290	215	20
8	350	206	300	485	365	1,860	930	830	640	233	180	20
9	415	197	320	485	385	1,650	930	640	520	188	132	20
10	365	188	310	485	450	1,580	1,160	485	640	156	97	19
11	300	180	330	485	485	1,460	1,340	365	830	148	71	19
12	251	172	365	485	485	1,340	1,520	330	830	140	58	19
13	260	156	415	485	560	1,280	1,520	310	730	132	50	17
14	280	140	450	520	560	1,160	1,580	385	680	156	42	16
15	260	132	450	560	520	1,340	1,580	485	730	156	40	15
16	242	132	450	560	485	1,940	1,650	450	830	148	36	14
17	224	132	485	560	485	2,300	1,720	385	780	132	34	14
18	215	140	520	560	485	2,400	1,720	330	730	104	30	14
19	197	156	560	560	450	2,500	1,720	320	680	86	28	14
20	172	172	600	520	450	2,200	1,720	340	680	71	26	13
21	140	197	640	485	450	2,100	1,650	330	680	61	24	13
22	118	224	680	450	600	2,020	1,520	290	560	52	23	13
23	97	260	680	385	880	2,100	1,340	260	385	46	20	13
24	90	270	640	365	1,160	2,860	1,100	280	320	52	19	12
25	77	280	560	350	1,340	3,140	880	330	330	68	19	12
26	71	290	450	340	1,400	2,860	730	365	485	170	18	12
27	66	290	365	340	1,340	2,500	680	450	640	368	18	12
28	66	290	350	320	1,340	2,200	640	485	560	640	18	11
29	61	280	340	320	1,400	1,860	640	560	415	640	19	11
30	61	260	365	310	-------	1,659	680	680	365	415	18	12
31	66	-------	385	300	-------	1,400	-------	780	-------	320	18	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	415	40	188	11,600
November	290	83	195	11,600
December	680	172	400	24,600
January	560	300	453	27,900
February	1,400	300	631	36,300
March	3,140	1,160	1,940	119,000
April	1,720	640	1,160	69,000
May	1,160	260	570	35,000
June	830	320	650	38,700
July	640	46	236	14,500
August	280	18	92.1	5,660
September	35	11	17.0	1,010
The year	3,140	11	544	395,000

ANGELINA RIVER AT HORGER, TEX.

LOCATION.—Chain gage on Zavalla-Jasper highway bridge one-fourth mile east of Horger, Jasper County, and 20 miles above mouth.

DRAINAGE AREA.—3,440 square miles.

RECORDS AVAILABLE.—March to September, 1928.

EXTREMES.—Maximum discharge during period, 6,940 second-feet April 11 (gage height, about 17.10 feet); minimum, 46 second-feet for part of day September 9, 15, and 21 (gage height, 1.28 feet).

Maximum stage known, about 39.50 feet August, 1914.

REMARKS.—Records fair. No diversions above station. At times there is possibility of backwater from Neches River, 20 miles downstream.

Daily and monthly discharge, in second-feet, 1928

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	4,010	1,430	587	870	1,520	77
2	------	3,820	1,260	726	762	1,340	72
3	------	3,390	1,220	726	554	1,010	72
4	------	3,000	1,130	906	620	762	66
5	------	2,960	1,130	942	522	587	49
6	------	4,340	1,180	1,010	587	554	52
7	1,880	3,720	1,220	1,050	554	458	89
8	1,920	2,700	1,220	1,130	655	458	62
9	2,010	2,800	1,260	1,090	655	396	50
10	3,570	5,220	1,300	2,330	620	396	59
11	3,530	6,550	1,260	2,380	587	380	72
12	3,290	6,010	1,180	2,240	490	133	60
13	3,200	5,100	1,050	2,240	490	133	60
14	3,720	4,600	1,050	2,330	458	219	63
15	3,280	4,060	1,520	3,000	396	187	52
16	4,060	3,390	1,340	3,240	380	141	56
17	4,850	2,960	1,220	3,000	280	117	63
18	4,520	2,720	942	2,670	322	102	67
19	4,250	2,520	1,010	2,520	267	102	65
20	4,350	2,380	1,010	2,480	254	96	52
21	4,400	2,290	978	2,150	230	89	51
22	4,200	2,330	870	1,830	187	89	60
23	4,200	2,290	798	1,700	177	96	61
24	4,250	2,290	906	1,700	177	77	67
25	4,350	2,200	942	2,200	198	72	55
26	4,500	2,150	906	1,650	230	67	54
27	4,600	2,100	834	1,260	294	55	57
28	4,550	1,970	762	834	587	61	55
29	4,450	1,830	655	798	1,220	72	55
30	4,300	1,600	655	870	1,700	72	52
31	4,200	------	655	------	1,700	72	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
March 7-31	4,850	1,880	3,860	191,000
April	6,550	1,600	3,240	193,000
May	1,520	655	1,060	65,200
June	3,240	587	1,720	102,000
July	1,700	177	549	33,800
August	1,520	55	320	19,700
September	89	49	60.8	3,620
The period				608,000

TRINITY RIVER BASIN

WEST FORK OF TRINITY RIVER AT BRIDGEPORT, TEX.

LOCATION.—Staff gage at Chicago, Rock Island & Gulf Railway Co.'s pumping plant half a mile southwest of Bridgeport, Wise County.

DRAINAGE AREA.—1,010 square miles.

RECORDS AVAILABLE.—October, 1914, to September, 1928.

EXTREMES.—Maximum discharge during year, 3,760 second-feet June 27 (gage height, 16.86 feet); no flow during several periods.

1908–1928: Maximum stage, 28.9 feet June 8, 1915 (discharge not determined); no flow during several periods.

REMARKS.—Records fair. Small amount of water diverted above station for water supply of Bridgeport.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	0.7	0	2.1	4.0	3.4	6.4	6.4	4.2	1,090	520	170
2	2,400	.7	0	1.8	3.4	2.9	4.0	6.4	418	163	126	238
3	629	.7	0	1.7	2.9	2.6	3.7	4.2	1,410	45	48	59
4	140	.6	0	1.6	9.0	2.9	3.7	6.4	1,840	25	.124	21
5	54	.5	0	4.7	7.1	2.9	79	93	1,040	16	84	18
6	49	.4	0	7.1	5.8	3.4	61	294	566	9.7	100	10
7	1,120	.4	0	7.8	8.4	3.4	9.7	253	616	7.1	39	8.4
8	1,020	.4	0	6.4	9.7	3.2		98	434	4.2	116	7.1
9	1,020	.2	0	4.5	8.4	4.0		41	108	112	45	11
10	750	.2	0	4.0	8.4	4.0		23	52	602	27	4.5
11	342	.2	0	4.2	25	4.0	6.0	15	328	455	16	3.4
12	139	.2	0	3.4	21	4.0		10	1,360	126	9.7	2.9
13	61	.1	.6	3.4	18	3.7		6.4	2,920	59	7.1	1.6
14	32	.1	4.2	3.2	11	1.7		5.8	1,860	27	5.2	1.1
15	19	.1	2.6	2.9	9.7	15	2.3	152	1,040	17	4.0	.7
16	15	.1	1.6	2.9	7.1	36	2.1	30	387	11	3.4	.5
17	10	.1	1.4	2.3	7.1	16	2.1	200	520	7.1	2.6	.4
18	7.8	0	1.3	4.0	5.8	12	1.7	1,140	240	4.0	2.9	.4
19	5.8	0	1.3	7.1	4.5	85	1.5	520	88	3.4	216	.1
20	5.2	0	.9	226	4.2	50	1.3	230	43	142	54	0
21	4.2	0	.7	374	4.2	30	1.1	349	22	81	18	0
22	3.4	.1	.7	113	7.1	19	1.2	178	16	34	8.4	0
23	3.2	.1	.6	50	9.0	13	1.4	269	12	19	4.2	0
24	2.6	0	.7	30	5.8	10	1.4	285	9.7	13	16	0
25	2.1	0	.7	19	4.5	8.4	27	184	7.1	53	21	0
26	2.1	.1	.8	16	4.0	7.1	12	74	281	798	18	0
27	1.7	.1	1.0	11	4.0	4.5	15	50	2,630	1,670	8.4	0
28	1.5	0	69	9.7	4.5	4.0	9.7	19	1,660	1,850	4.5	0
29	1.1	1	30	7.1	4.0	4.0	5.8	10	1,300	1,620	4.0	0
30	.7	0	8.4	5.8	------	6.4	3.7	7.8	1,410	840	3.7	0
31	.6	------	5.2	5.2	------	9.0	------	6.4	------	750	3.4	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,400	0.6	255	15,700
November	.7	0.0	.20	12
December	69	0.	4.25	261
January	374	1.6	30.4	1,870
February	25	2.9	7.85	452
March	85	1.7	12.1	744
April	79	1.1	9.96	593
May	1,140	4.2	147	9,040
June	2,920	4.2	754	44,900
July	1,850	3.4	344	21,200
August	520	2.6	53.5	3,290
September	238	0	18.6	1,110
The year	2,920	0	136	99,200

WEST FORK OF TRINITY RIVER AT LAKE WORTH DAM, ABOVE FORT WORTH, TEX.

LOCATION.—Water-stage recorder just above Lake Worth Dam, 4½ miles northwest of Tarrant County courthouse in Fort Worth.
DRAINAGE AREA.—1,870 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 3,180 second-feet July 3 (gage height, 1.22 feet); no flow during several periods.
1923–1928: Maximum discharge, 7,600 second-feet November 18, 1923 (gage height, 2.25 feet); no flow during several periods.
REMARKS.—Records fair. Diversions for municipal use only; amount not known.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0	110	17	38	0	20	38	2,190	2,160	70
2	9.2	0	78	14	25	0	12	78	2,860	1,820	54
3	25	0	86	9.2	22	2.1	9.2	256	3,140	1,080	30
4	332	0	62	25	27	17	25	513	2,440	735	46
5	861	0	38	25	22	421	30	972	982	437	70
6	735.0	0	25	30	20	638	22	1,390	399	287	62
7	418	0	27	30	17	380	25	1,720	202	240	46
8	334	0	30	25	20	302	122	1,650	156	214	30
9	513	0	20	22	25	214	168	1,110	110	202	30
10	1,050	0	17	22	25	156	168	999	78	202	27
11	1,520	0	17	20	25	110	144	972	86	168	22
12	1,620	0	17	20	20	62	86	664	256	122	17
13	1,230	0	14	38	20	62	54	972	437	86	12
14	617	63	6.6	14	14	54	46	1,170	318	62	6.6
15	364	225	4.0	6.6	38	27	78	1,520	214	54	6.6
16	225	110	3.2	14	38	20	122	1,950	133	30	3.2
17	156	94	4.0	17	20	14	144	2,330	94	22	.8
18	110	70	9.2	3.2	25	6.6	552	2,960	70	17	0
19	86	27	12	1.6	22	9.2	999	3,100	38	12	0
20	78	27	4.0	2.4	22	4.0	1,250	2,360	22	6.6	0
21	70	22	1.6	32	25	30	1,780	999	14	25	0
22	46	22	2.4	318	30	30	1,580	456	12	62	0
23	27	20	48	349	30	17	1,320	287	22	62	0
24	22	14	133	156	46	4.0	1,300	214	54	70	0
25	17	12	78	110	38	1.6	861	144	202	38	0
26	17	6.6	78	94	46	12	532	612	418	25	0
27	12	11	54	86	17	6.6	334	1,260	664	22	0
28	4.0	380	30	70	9.2	4.0	190	1,360	1,140	20	0
29	.8	456	25	54	22	6.6	122	1,420	1,620	14	0
30	0	418	27	-------	2.4	17	86	1,780	1,880	14	0
31	0	256	25	-------	0	-------	54	-------	2,020	70	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,620	0	339	20,800
December	456	0	72.1	4,430
January	133	1.6	35.0	2,150
February	349	1.6	56.0	3,220
March	46	0	24.2	1,490
April	638	0	87.6	5,210
May	1,780	9.2	395	24,300
June	3,100	38	1,180	70,200
July	3,140	12	718	44,100
August	2,160	6.6	270	16,600
September	70	0	17.8	1,060
The year	3,140	0	266	194,000

NOTE.—No flow during November.

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. Zero of gage is 519.26 feet above mean sea level.

DRAINAGE AREA.—2,430 square miles.

RECORDS AVAILABLE.—October, 1920, to September, 1928.

EXTREMES.—Maximum discharge during year, 12,800 second-feet about April 4 (gage height, 14.15 feet, from floodmarks); minimum not determined.

1910–1928: Maximum discharge, determined by slope-area method, about 85,000 second-feet April 25, 1922 (gage height, 23.95 feet); no flow during several periods.

REMARKS.—Monthly records fair. Daily discharge not sufficiently accurate for publication. About 15 second-feet diverted by city of Fort Worth for municipal use. Flow partly regulated by Lake Worth.

Monthly discharge, 1927–28

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October			388	23,900
November	21	3.3	10.7	637
December			112	6,890
January	194		49.8	3,060
February			*186	10,700
March			*78.3	4,810
April		52	524	31,200
May		40	423	26,000
June	3,270	136	1,270	75,600
July		12	733	45,100
August			*286	17,600
September			*23.7	1,410
The year			340	247,000

* Estimated.

WEST FORK OF TRINITY RIVER AT GRAND PRAIRIE, TEX.

LOCATION.—Chain gage on highway bridge on Grand Prairie-Irving road 1 mile northeast of Grand Prairie, Dallas County. Zero of gage is 412.99 feet above mean sea level.

DRAINAGE AREA.—2,890 square miles.

RECORDS AVAILABLE.—March, 1925, to September, 1928.

EXTREMES.—Maximum discharge during year, 7,090 second-feet June 28 (gage height, 24.30 feet); minimum, 15 second-feet September 21–23 (gage height, 2.14 feet).

1925–1928: Maximum discharge, 8,980 second-feet May 8, 1925, and April 22, 1926 (gage height, 25.0 feet); minimum, 3.2 second-feet June 6, 1925.

During April, 1922, a stage of about 29 feet was attained.

REMARKS.—Records fair. Discharge partly estimated July 7 and interpolated August 15. Numerous small diversions above gage; amount not known. Flow partly regulated by storage at Lake Worth.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	25	29	340	54	121	62	91	103	1,400	1,810	115
2	4,510	29	24	191	55	97	48	89	365	1,880	1,910	127
3	2,530	31	26	121	53	91	42	84	1,990	2,380	1,710	78
4	281	29	29	91	55	97	3,830	79	1,060	2,770	1,140	63
5	356	31	29	74	85	79	5,710	229	1,340	2,310	828	45
6	847	29	26	71	81	89	4,350	250	1,220	1,070	545	41
7	809	29	33	62	62	83	1,550	121	1,400	509	388	69
8	600	28	32	60	97	79	809	91	1,750	324	292	65
9	509	31	33	59	81	84	771	103	1,680	473	218	54
10	657	26	24	67	77	84	752	178	1,960	204	204	41
11	942	22	29	47	53	84	545	191	1,320	139	178	44
12	1,340	26	26	33	55	81	388	165	1,160	109	139	39
3	1,420	26	67	42	55	77	292	139	847	227	115	33
14	1,180	29	292	42	74	74	232	109	1,160	509	90	30
15	657	24	324	44	109	86	218	107	1,220	422	84	29
16	356	39	261	41	59	246	165	914	1,440	276	77	28
17	218	39	178	39	44	218	158	356	1,740	165	69	22
18	152	35	133	41	38	133	146	204	2,060	115	63	18
19	127	33	109	41	81	91	139	522	2,440	80	59	17
20	97	29	87	60	36	91	127	1,020	2,680	57	55	18
21	83	29	66	61	41	97	139	1,470	2,150	41	50	17
22	74	26	51	43	1,790	79	340	1,710	1,040	26	43	16
23	67	31	48	36	1,330	79	276	1,440	527	21	48	17
24	59	30	47	33	619	84	178	1,240	308	22	75	20
25	47	28	42	77	292	72	127	1,180	218	91	97	20
26	41	18	40	115	204	91	115	866	178	824	80	20
27	29	29	35	103	158	86	127	563	2,670	961	71	21
28	31	29	325	91	152	78	152	388	6,190	1,810	42	21
29	31	26	980	79	139	69	115	261	3,170	1,420	40	19
0	31	26	638	57	-------	55	103	178	1,480	1,610	38	18
1	26	-------	473	55	-------	86	-------	133	-------	1,710	38	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,510	26	589	36,200
November	39	18	28.7	1,710
December	980	24	146	8,980
January	340	33	74.7	4,590
February	1,790	36	208	12,000
March	246	55	95.5	5,870
April	5,710	42	734	43,700
May	1,710	79	467	28,700
June	6,190	103	1,560	92,800
July	2,770	21	773	47,500
August	1,910	38	342	21,000
September	127	16	38.8	2,310
The year	6,190	16	421	305,000

TRINITY RIVER AT DALLAS, TEX.

LOCATION.—Chain gage on 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, 1928.

EXTREMES.—Maximum discharge during year, 11,200 second-feet April 6 (gage height, 32.20 feet); minimum, 17 second-feet September 20 (gage height, 4.71 feet).

1898–99, 1903–1906, 1920–1928: Maximum discharge, 75,100 second-feet April 27, 1922 (gage height, 42.35 feet); minimum, 6.8 second-feet September 11, 1924 (gage height, 4.27 feet).

Maximum known flood, 52.6 feet May 26, 1908. During drought of 1917–18, discharge was practically zero.

REMARKS.—Records fair. Only known diversions are for municipal uses. Low-water flow partly regulated by dams upstream. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	261	47	42	2,050	107	233	58	259	194	2,740	2,080	34
2	5,270	47	42	1,160	99	207	47	194	194	2,170	2,080	107
3	9,620	47	42	657	99	194	201	172	1,550	2,290	1,960	96
4	5,660	47	42	577	92	172	5,320	162	3,020	2,630	1,480	68
5	1,630	42	42	597	92	162	8,990	152	3,020	2,520	927	55
6	2,700	42	42	757	233	152	10,900	362	2,490	1,630	657	34
7	1,930	42	37	577	233	194	9,800	233	1,810	697	485	34
8	1,930	40	47	246	413	172	4,420	183	1,870	622	395	61
9	2,020	278	42	142	362	162	1,930	194	1,810	1,270	413	50
10	1,840	839	71	142	332	142	1,160	207	1,900	565	317	50
11	2,080	817	47	132	233	142	971	272	5,000	207	233	40
12	2,460	777	82	194	194	132	677	246	3,410	142	183	40
13	2,490	677	356	183	142	132	539	194	1,810	132	172	29
14	2,350	431	3,100	142	183	142	431	172	2,460	317	123	32
15	1,900	207	3,700	123	172	287	413	142	3,060	377	92	32
16	1,230	85	2,780	123	233	449	332	2,130	3,180	272	71	29
17	403	64	2,420	123	162	557	259	4,480	3,060	194	58	24
18	233	71	2,200	142	107	317	259	4,850	2,420	132	52	32
19	183	52	2,080	132	142	207	233	4,480	2,700	96	52	28
20	152	52	1,960	123	123	152	220	2,780	2,820	74	52	17
21	107	52	1,870	123	475	152	419	2,170	2,600	55	44	20
22	92	64	1,660	142	5,320	142	1,730	3,580	1,690	50	34	20
23	78	58	1,270	123	6,350	132	790	2,460	817	44	31	24
24	71	52	1,020	123	2,200	107	413	2,140	485	68	31	24
25	64	52	521	115	395	132	272	1,960	317	132	44	20
26	52	52	207	183	449	123	409	1,330	302	520	74	24
27	52	47	99	162	347	123	1,630	839	716	2,490	55	24
28	52	47	760	152	272	107	1,270	597	6,790	3,140	44	24
29	47	47	4,800	132	272	115	993	449	8,680	4,710	34	20
30	47	47	4,580	115	------	85	557	332	5,320	3,100	34	24
31	47	------	2,940	115	------	78	------	259	------	2,170	34	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,620	47	1,520	93,500
November	839	40	174	10,400
December	4,800	37	1,250	76,900
January	2,050	115	316	19,400
February	6,350	92	684	39,300
March	557	78	181	11,100
April	10,900	47	1,850	110,000
May	4,850	142	1,230	75,600
June	8,680	194	2,520	150,000
July	4,710	44	1,150	70,700
August	2,080	31	398	24,500
September	107	17	37.2	2,210
The year	10,900	17	941	684,000

TRINITY RIVER NEAR OAKWOOD, TEX.

LOCATION.—Chain gage on International-Great Northern Railroad bridge 4 miles northeast of Oakwood, Anderson County.

DRAINAGE AREA.—12,800 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 17,000 second-feet April 17 (gage height, 35.60 feet); minimum, 80 second-feet September 30 (gage height, 3.9 feet).

1923–1928: Maximum discharge, about 50,800 second-feet December 25 and 26, 1923 (gage height, 43.3 feet); minimum, probably less than 28 second-feet in August, 1925.

On June 4, 1908, river reached stage of about 53.5 feet.

REMARKS.—Monthly records fair. Daily-discharge record not sufficiently accurate for publication. No diversions above station. Gage-height record furnished by United States Weather Bureau.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	12,200	229	4,400	271,000
November	644	198	[a]385	22,900
December	2,450	198	1,120	68,900
January	3,240	582	1,380	84,900
February	----------	542	3,920	225,000
March	----------	866	3,120	192,000
April	16,800	644	6,880	409,000
May	8,040	686	3,440	212,000
June	13,200	1,210	6,780	403,000
July	10,800	411	3,280	202,000
August	6,400	146	1,310	80,600
September	165	80	125	7,440
The year	16,800	80	3,000	2,180,000

[a] Estimated.

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.

DRAINAGE AREA.—15,500 square miles.

RECORDS AVAILABLE.—January, 1903, to December, 1906; October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 18,600 second-feet June 14 (gage height, 21.20 feet); minimum, 115 second-feet September 22, 23, and 25 (gage height, 0.17 foot).

1903–1906, 1923–1928: Maximum discharge, about 63,300 second-feet April 23, 1926 (gage height, 38.1 feet); minimum, 70 second-feet August 20–26 and September 8–13, 1925 (gage height, 0.2 foot).

The United States Weather Bureau records show a stage of 49.7 feet (present datum) June 11, 1908.

REMARKS.—Monthly records fair. Daily-discharge records not sufficiently accurate for publication. No large diversions. Gage-height record furnished by United States Weather Bureau.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	14,000	325	5,610	345,000
November	4,650	410	1,080	64,300
December	5,500	338	1,700	105,000
January	5,840	875	2,310	142,000
February	14,100	830	4,430	255,000
March	15,000	1,600	7,490	461,000
April	15,700	1,080	7,250	431,000
May	7,920	740	3,590	221,000
June	18,100	1,480	8,300	494,000
July	12,600	925	4,630	285,000
August	6,780	190	1,950	120,000
September	300	115	182	10,800
The year	18,100	115	4,040	2,930,000

TRINITY RIVER AT ROMAYOR, TEX.

LOCATION.—Chain gage on Gulf, Colorado & Santa Fe Railway bridge one-fourth mile west of Romayor, Liberty County. Gage readings indicate distance from base of rail to water surface. Zero of gage is 89.00 feet above mean sea level.

DRAINAGE AREA.—17,200 square miles.

RECORDS AVAILABLE.—May, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, 17,400 second-feet June 15 (gage height, −33.87 feet); minimum, 240 second-feet September 29 (gage height, −52.84 feet).

1924–1928: Maximum discharge, 46,900 second-feet April 26 and 27, 1926 (gage height, −20.90 feet); minimum, 132 second-feet August 21 and 22, 1925 (gage height, −53.46 feet).

Stage of −16.3 feet was reached June, 1908.

REMARKS.—Records fair. No large diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	520	2,840	1,160	6,800	1,200	14,200	2,290	4,120	4,030	6,800		375
2	1,130	2,910	1,120	5,550	1,200	14,500	1,870	3,690	3,530	8,670		350
3	2,490	4,210	990	4,570	1,200	14,900	1,750	4,030	2,770	10,100		375
4	3,690	4,210	990	3,850	1,250	15,000	1,700	4,570	2,420	11,100		375
5	3,850	2,490	950	3,210	1,300	13,800	1,600	5,050	2,230	11,300		375
6	4,480	1,870	910	2,770	1,300	11,500	1,550	5,550	2,050	11,200		378
7	4,480	1,650	1,300	4,030	1,350	9,220	1,700	6,170	2,230	10,900	3,830	375
8	8,020	1,200	1,400	4,210	1,400	7,020	2,050	6,480	2,630	9,770		350
9	11,900	950	1,450	4,390	1,500	5,250	3,240	6,170	3,050	8,450		325
10	12,800	870	1,500	4,390	1,450	5,520	6,250	4,850	5,070	6,910		312
11	13,600	830	1,580	6,170	1,450	13,700	11,900	3,530	7,680	5,250		300
12	14,000	790	3,210	5,250	1,500	12,600	13,800	2,560	10,800	4,390		288
13	12,500	790	2,770	4,480	1,650	9,550	13,800	2,050	14,000	3,690		288
14	12,100	830	2,560	4,750	1,870	7,790	13,900	2,230	14,800	3,290	1,500	288
15	12,000	910	2,170	4,300	2,110	6,590	13,900	2,560	17,400	3,290	1,600	275
16	11,900	990	2,110	3,770	2,050	8,890	13,900	2,490	17,100	3,290	1,160	288
17		1,550	2,050	3,050	2,170	14,500	14,200	1,750	16,200	3,370	950	325
18		3,130	1,930	2,290	2,290	14,800	14,600	1,550	15,400	2,490	910	300
19		1,930	1,700	2,350	2,290	12,500	15,000	1,450	14,400	2,110	870	288
20		1,550	1,550	2,420	2,230	10,800	15,500	1,300	13,600	1,810	830	275
21		1,250	1,550	2,350	2,350	10,400	15,500	1,250	12,500	1,600	750	262
22		1,200	1,400	2,050	3,720	10,100	14,000	1,160	11,200	1,350	670	262
23		1,200	1,550	1,700	9,880	10,100	11,000	1,500	9,660	1,250	630	262
24	4,010	1,160	2,770	1,500	12,800	9,220	7,240	3,240	7,240	1,200	490	275
25		1,250	3,050	1,450	14,300	7,680	4,950	5,650	5,550	1,120	435	250
26		1,200	3,210	1,350	14,400	6,380	4,300	7,460	5,050	1,070	460	250
27		1,160	3,370	1,350	13,100	4,570	4,300	7,900	5,650	1,160	435	250
28		1,160	4,390	1,250	13,000	4,030	5,250	7,020	5,350	1,160	400	250
29		1,160	7,020	1,250	13,300	3,290	5,350	6,170	4,950	1,250	400	240
30		1,160	7,790	1,200	-------	2,700	4,950	5,350	5,350	3,830	375	245
31	1,450	-------	7,900	1,200	-------	2,420	-------	4,570	-------		375	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	14,000	520	6,030	371,000
November	4,210	790	1,610	95,800
December	7,900	910	2,500	154,000
January	6,800	1,200	3,200	197,000
February	14,400	1,200	4,470	257,000
March	15,000	2,420	9,470	582,000
April	15,500	1,550	8,040	478,000
May	7,900	1,160	3,980	245,000
June	17,400	2,050	8,130	484,000
July	11,300	1,070	4,740	291,000
August	-------	375	2,030	125,000
September	375	240	302	18,000
The year	17,400	240	4,540	3,300,000

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 3 miles southwest of Tarrant County courthouse in Fort Worth.

DRAINAGE AREA.—522 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1928.

EXTREMES.—Maximum gage height during year, 19.83 feet April 3 (discharge not determined); no flow during several periods.

1924–1928: Maximum gage height, that of April 3, 1928; no flow for several periods.

REMARKS.—Monthly records fair. Record of daily discharge not sufficiently accurate for publication. Practically all low-water flow diverted 800 feet below gage by Texas & Pacific Railway; amount not known. Low-water flow regulated by dam just above gage.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	582	0	38.7	2,380
November	1.1	0	.07	4.2
December	----------	0	4.94	304
January	----------	----------	[a] 5.81	357
February	----------	----------	[a] 130	7,480
March	----------	----------	[a] 50.0	3,070
April	----------	----------	[a] 425	25,300
May	----------	----------	[a] 25.1	1,540
June	----------	----------	[a] 55	3,270
July	----------	----------	[a] 12.0	738
August	82.	0	5.12	315
September	5.4	0	.88	52
The year	----------	0	61.8	44,800

[a] Estimated.

VILLAGE CREEK NEAR HANDLEY, TEX.

LOCATION.—Staff gage at Fort Worth-Webb road crossing, 3½ miles south of Handley, Tarrant County.

DRAINAGE AREA.—130 square miles.

RECORDS AVAILABLE.—June, 1925, to September, 1928.

EXTREMES.—Maximum discharge during year, determined by slope-area method, about 9,400 second-feet October 1 (gage height, 15.73 feet); no flow during several periods.

1925–1928: Maximum discharge, that of October 1, 1927; no flow during several periods.

REMARKS.—Monthly records fair. Daily-discharge record not sufficiently accurate for publication. No diversions above station.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,450	----------	77.0	4,730
November	----------	----------	1.50	89
December	35	----------	3.06	188
January	----------	----------	1.04	64
February	346	0.4	20.7	1,190
March	13	.6	2.59	159
April	751	.6	42.2	2,510
May	6.9	0	1.24	76
June	1,800	0	73.4	4,370
July	19	0	2.27	140
August	11	0	.35	22
The year	1,800	0	18.7	13,500

NOTE.—No flow during September.

MOUNTAIN CREEK NEAR GRAND PRAIRIE, TEX.

LOCATION.—Water-stage recorder at Grand Prairie-Duncanville highway bridge, 3½ miles southeast of Grand Prairie, Dallas County.
DRAINAGE AREA.—267 square miles.
RECORDS AVAILABLE.—March, 1925, to September, 1928.
EXTREMES.—Maximum discharge during year, about 5,000 second-feet October 2 (gage height, 18.20 feet); no flow during several periods.
1925–1928: Maximum discharge, that of October 2, 1927; no flow during several periods.
REMARKS.—Records fair. Discharge estimated January 23 to February 9, February 20, 29, April 16–19, and June 20–25. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	133	0.1	0	0.8		5.9	1.4	0.6	0	5.9	1.6
2	3,550	.1	0	.4		4.6	1.4	.5	5.1	2.2	.6
3	1,410	.3	0	.4		3.6	1.4	.4	80	1.2	.3
4	30	.0	0	.2		3.0	1.4	.4	285	.5	.3
5	9.0	.1	0	.2	4.0	2.9	1,410	.4	992	.3	.4
6	4.6	.1	0	.2		2.8	1,040	.3	85	.1	.3
7	3.0	0	.1	.4		2.7	51	.3	9.5	.1	.1
8	5.5	0	.1	.5		2.6	28	.3	4.2	4.0	.1
9	4.5	0	.1	.6	4.6	2.6	112	.3	3.3	201	.1
10	2.9	0	.1	.6	3.9	2.8	165	.3	2,230	30	0
11	1.8	0	.1	.5	3.1	2.8	67	.2	1,280	4.1	0
12	1.2	0	.3	.5	2.9	2.4	37	.2	84	1.4	0
13	.7	0	11	.5	3.6	2.3	26	.2	117	.5	0
14	.6	0	2.6	.5	4.0	2.0	19	.2	947	.2	0
15	.5	0	1.0	.5	4.0	4.9	14	.1	162	.1	0
16	.4	0	.4	.5	3.7	525	11	.3	602	.1	0
17	.4	0	.3	.6	3.7	120	8.2	.6	30	0	0
18	.4	.1	.2	1.2	3.6	24	6.2	.4	9.9	0	0
19	.4	.1	.2	2.9	3.2	13	4.6	.3	4.6	0	0
20	.3	.1	.1	2.7	2.9	8.5	2.9	.3	2.2	0	0
21	.3	.1	.1	2.2	13	6.7	23	4.6	1.6	0	0
22	.3	.1	.1	2.2	1,330	5.5	59	1.4	1.0	0	0
23	.2	.1	.1		424	4.8	18	.3	.8	3.8	0
24	.2	0	.1		42	4.1	5.2	.2	.7	117	0
25	.2	0	.1		19	3.5	2.9	.1	.6	190	0
26	.2	0	.1	2.0	12	3.1	2.2	0	8.7	230	0
27	.1	.1	.1		8.3	2.4	2.9	0	1,230	595	0
28	.1	.1	12		6.9	2.0	2.4	0	1,440	1,260	0
29	.1	.1	8.8		6.2	1.8	1.6	0	60	246	0
30	.1	.1	5.6			1.6	1.2	0	16	16	0
31	.1		2.2			1.5		0		4.0	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,550	0.1	166	10,200
November	.1	0	.05	3.0
December	12	0	1.48	91
January		.2	1.20	74
February	1,330		66.8	3,840
March	525	1.5	25.0	1,540
April	1,410	1.2	104	6,190
May	4.6	0	.43	26
June	2,230	0	323	19,200
July	1,260	0	94.0	5,780
August	1.6	0	.12	7.4
The year	3,550	0	64.8	47,000

NOTE.—No flow during September.

ELM FORK OF TRINITY RIVER NEAR CARROLLTON, TEX.

LOCATION.—Staff gage just above Carrollton Dam, 40 feet below Dallas-Denton highway bridge and 1½ miles west of Carrollton, Dallas County.
DRAINAGE AREA.—2,540 square miles.
RECORDS AVAILABLE.—November, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 6,190 second-feet April 6 (gage height, 5.70 feet); minimum not determined.
1923–1928: Maximum gage height, 12.75 feet December 14, 1923 (discharge not determined); no flow during several periods.
REMARKS.—Records fair. No diversions. Flow partly regulated at Garza Dam, 20 miles upstream.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	14	15	1,010	76	72	23	82	100	628	330	14
2	3,130	11	12	572	76	65	23	49	323	208	153	12
3	581	9.4	15	506	76	55	32	30	700	137	96	8.0
4	213	9.4	15	476	82	55	1,790	34	1,400	79	65	
5	884	9.4	15	476	145	58	3,550	34	1,090	62	46	
6	884	9.4	15	684	277	72	4,100	30	638	46	43	
7	884	9.4	15	475	383	86	957	46	476	37	101	
8	1,070	12	15	96	418	72	314	55	259	267	241	
9	1,160	695	15	82	362	68	186	65	190	224	182	
10	1,200	810	15	104	227	58	125	49	2,410	40	100	
11	1,250	774	23	165	133	55	118	23	1,860	32	65	
12	995	739	32	161	133	55	100	21	388	30	46	
13	920	606	1,120	145	133	55	86	19	996	27	30	
14	884	252	3,610	96	133	49	68	17	1,310	27	25	
15	847	90	2,900	110	133	49	65	65	1,420	27	21	
16	242	37	2,370	82	118	93	49	2,310	1,800	32	15	17
17	34	21	2,020	82	79	121	43	4,610	668	25	12	
18	27	15	1,910	110	43	104	43	4,610	605	23	14	
19	55	15	1,910	121	43	68	43	2,620	358	17	21	
20	19	17	1,910	125	37	55	52	865	161	14	15	
21	15	23	1,800	145	120	52	1,130	2,100	107	11	12	
22	15	23	1,470	153	2,760	43	661	1,350	90	8.0	9.4	
23	14	23	668	118	885	43	186	810	118	14	9.4	
24	12	21	476	82	222	43	107	920	79	34	8.0	
25	9.4	15	294	90	165	43	62	395	62	167	6.8	
26	9.4	15	93	90	110	43	693	182	114	681	4.6	
27	9.4	15	104	90	107	37	1,270	141	2,170	1,100	5.6	
28	6.8	15	2,990	82	93	37	847	125	3,900	876	6.8	
29	4.6	15	4,350	82	86	37	558	114	1,470	1,580	5.6	
30	17	15	2,600	76	------	27	174	104	1,070	691	5.6	
31	37	------	2,020	76	------	23	------	93	------	388	5.6	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,130	4.6	499	30,700
November	810	9.4	144	8,570
December	4,350	12	1,120	68,900
January	1,010	76	218	13,400
February	2,760	37	264	15,200
March	121	23	57.8	3,550
April	4,100	23	582	34,600
May	4,610	17	709	43,600
June	3,900	62	878	52,200
July	1,580	8.0	243	14,900
August	330	4.6	54.9	3,380
September	------	------	16.4	976
The year	4,610	------	400	290,000

ELM FORK OF TRINITY RIVER NEAR DALLAS, TEX.

LOCATION.—Staff gage at city of Dallas pumping plant and dam, 2,800 feet above Rock Island Railroad bridge and 5 miles northwest of Dallas, Dallas County.

DRAINAGE AREA.—2,660 square miles.

RECORDS AVAILABLE.—October, 1920, to December, 1928 (discontinued).

EXTREMES.—Maximum gage height during period October 1, 1927, to December 31, 1928, 17.40 feet December 18, 1928 (discharge not determined because of backwater from Trinity River); no flow during several periods.

1920–1928: Maximum gage height, 20.20 feet April 27, 1922 (discharge not determined because of backwater from Trinity River); no flow during several periods.

REMARKS.—Records good for low stages and poor for medium and high stages. Discharge estimated October 2–4, 1927, April 4–8, June 11, 12, 28–30, July 28–30, and December 17–20, 1928. Some water diverted for municipal use; amount believed to be but a small percentage of run-off during years of ordinary flow. Flow partly regulated by reservoirs upstream.

Daily discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1927-28												
1	0.5	0	8.3	1,250	50	88	10	113	58	803	384	0
2	2,000	0	8.3	635	50	73	10	88	268	275	295	0
3		0	6.1	510	50	67	67	64	480	132	132	0
4		0	6.1	480	55	61		55	1,090	79	96	0
5	818	0	6.1	480	76	58		50	1,490	55	42	0
6	930	0	6.1	818	182	58	3,000	45	635	34	29	0
7	930	0	6.1	415	384	88		45	510	23	39	0
8	1,090	0	6.1	234	422	76		52	300	151	152	0
9	1,250	301	10	79	351	64	258	73	168	1,020	152	0
10	1,330	818	10	61	282	55	192	52	1,420	154	116	0
11	1,330	780	9.4	96	136	55	152	37	2,920	39	64	0
12	1,170	742	23	128	128	55	124	29	735	23	32	0
13	1,010	705	103	124	128	45	102	25	696	17	18	0
14	970	300	2,780	76	128	39	85	18	1,410	14	10	0
15	930	132	2,630	73	128	50	67	21	1,170	14	5.0	0
16	560	34	2,210	73	128	76	61	1,740	1,890	12	1.7	0
17	77	17	1,970	73	99	92	52	3,310	888	7.2	0	1.4
18	23	14	1,890	79	50	116	42	3,990	510	4.4	0	5.0
19	32	10	1,810	79	47	85	39	2,970	464	1.4	0	2.6
20	25	14	1,730	92	42	64	42	1,650	180	0	0	0
21	4.4	21	1,650	96	61	47	781	1,480	113	0	0	0
22	4.4	25	1,650	106	3,680	39	958	1,820	79	0	0	0
23	4.4	21	970	102	3,010	34	317	742	124	0	0	0
24	4.4	14	780	79	422	29	144	1,010	92	0	0	0
25	2.6	14	440	61	204	29	99	599	58	0	0	0
26	.3	10	132	61	156	37	123	222	96	313.0	0	0
27	0	10	85	61	124	27	1,440	152	998	1,330	0	0
28	0	8.3	838	55	106	21	1,050	128			0	0
29	0	8.3	3,650	50	99	21	764	120	2,950	1,300	0	0
30	0	10	2,980	50	-------	15	317	99			0	0
31	0	-------	2,050	50	-------	10	-------	67	-------	406	0	-------

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1928											
1	0	527	50	11	0	50	76	21	128	47	245
2	0	261	50	12	0	52	138	22	132	42	245
2	0	88	52	13	0	50	2,180	23	110	45	152
4	0	67	55	14	145	67	683	24	106	45	129
5	0	58	55	15	113	1,270	232	25	106	39	116
6	0	50	55	16	110	686	905	26	113	39	113
7	0	50	55	17	106	132		27	113	50	110
8	8	52	55	18	106	70	7,600	28	261	50	99
9	0	58	55	19	106	55		29	243	50	99
10	0	50	64	20	116	50		30	180	50	92
								31	96	-------	92

Monthly discharge, in second-feet, of Elm Fork of Trinity River, near Dallas, Tex., 1927-28

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1927-28				
October		0	597	36,700
November	818	0	134	7,970
December	3,650	6.1	982	60,400
January	1,250	50	214	13,200
February	3,680	42	372	21,400
March	116	10	54	3,320
April		10	743	44,200
May	3,990	18	673	41,400
June		58	923	54,900
July		0	284	17,500
August	384	0	50.6	3,110
September	5.0	0	.30	18
The year		0	419	304,000
1928				
October	261	0	77.1	4,740
November	1,270	39	140	8,330
December		50	1,180	72,600
The period				85,700

EAST FORK OF TRINITY RIVER NEAR ROCKWALL, TEX.

LOCATION.—Chain gage on Dallas-Rockwall highway bridge 3 miles southwest of Rockwall, Rockwall County.
DRAINAGE AREA.—831 square miles.
RECORDS AVAILABLE.—November, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 15,800 second-feet April 6 (gage height, 17.45 feet); no flow September 7–17 and 26–30.
1923–1928: Maximum discharge, 23,000 second-feet July 14, 1926 (gage height, 18.98 feet); no flow during several periods.
Maximum stage known, about 25 feet in spring of 1922.
REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	293	17	220	80	260	76	609	72	123	42	0.4
2	553	155	16	131	76	230	76	380	149	99	29	.4
3	1,190	46	16	76	69	203	69	330	911	80	24	.4
4	1,680	31	16	123	76	195	680	300	948	66	20	.2
5	2,750	24	16	147	87	230	3,390	280	1,170	58	17	.2
6	1,530	23	16	155	179	360	13,200	470	1,110	49	15	.1
7	435	22	16	171	518	240	9,650	260	260	42	25	0
8	713	19	17	203	583	211	3,780	211	155	66	118	0
9	570	19	20	203	240	203	1,440	195	131	699	35	0
10	340	19	26	171	179	195	820	179	1,100	1,320	22	0
11	147	18	24	139	155	179	557	155	1,270	518	17	0
12	95	18	61	131	155	163	424	147	340	99	14	0
13	72	18	300	123	203	155	350	139	187	166	12	0
14	52	18	739	115	240	147	402	131	203	350	9.6	0
15	44	18	1,500	107	203	179	583	123	163	106	8.1	0
16	39	18	1,550	107	179	380	435	470	115	52	7.5	0
17	39	17	412	99	187	446	230	1,250	95	44	5.7	0
18	37	24	155	123	171	230	211	2,300	83	37	4.6	4.4
19	35	26	131	220	139	171	195	1,330	69	31	4.0	3.1
20	33	23	107	300	123	155	187	320	55	28	4.0	2.1
21	31	22	95	187	306	139	211	647	62	24	4.0	1,4
22	29	19	95	131	2,970	131	1,150	1,380	226	23	9.8	.8
23	28	18	107	115	4,440	131	3,360	777	544	21	4.8	.5
24	26	18	99	115	4,660	123	3,160	187	270	21	3.9	.2
25	26	17	91	115	1,790	123	762	147	340	22	3.1	.1
26	24	17	83	107	470	123	559	147	300	33	2.4	0
27	23	17	76	91	360	107	2,020	123	513	174	1.7	0
28	22	17	179	83	320	99	7,830	115	1,130	158	.8	0
29	22	17	889	80	290	91	5,990	99	1,260	174	.8	0
30	20	17	1,130	76	-------	83	2,060	91	329	360	.8	0
31	19	-------	458	76	-------	83	-------	83	-------	97	.5	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,750	5.3	343	21,100
November	293	17	343	2,040
December	1,550	16	273	16,800
January	300	76	137	8,420
February	4,660	69	671	38,600
March	446	83	186	11,400
April	13,200	69	2,130	127,000
May	2,300	83	431	26,500
June	1,270	55	452	26,900
July	1,320	21	166	10,200
August	118	.5	15.0	922
September	4.4	0	.48	29
The year	13,200	0	399	290,000

BRAZOS RIVER BASIN

DOUBLE MOUNTAIN FORK OF BRAZOS RIVER NEAR ASPERMONT, TEX.

LOCATION.—Chain gage on Aspermont-Hamlin highway bridge in southeast corner of section 134, 11 miles south of Aspermont, Stonewall County.
DRAINAGE AREA.—7,980 square miles, part of which is noncontributing.
RECORDS AVAILABLE.—December, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, about 11,600 second-feet July 26 (gage height, 8.84 feet); no flow during several periods.
1923–1928: Maximum discharge, determined by slope-area method, about 45,800 second-feet October 15, 1926 (gage height, 18.14 feet, from floodmarks); no flow during several periods.
REMARKS.—Monthly records poor. Records of daily discharge not sufficiently accurate for publication. No diversions above station.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	282	0.4	38.5	2,370
November	.6	0	.07	4.2
December	.9	0	.18	11
January	35	0	1.38	85
February	.3	0	.02	1.2
March	37	0	2.57	158
April	1.2	0	.15	8.9
May	4,840	0	729	44,800
June	792	1.1	64.5	3,840
July	6,920	0	818	50,300
August	2,420	28	317	19,500
September	30	0	3.98	237
The year	6,920	0	167	121,000

BRAZOS RIVER AT SEYMOUR, TEX.

LOCATION.—Chain gage three-fourths of a mile above Wichita Valley Railway bridge and 1 mile southwest of courthouse in Seymour, Baylor County.
DRAINAGE AREA.—14,500 square miles, part of which is noncontributing.
RECORDS AVAILABLE.—November, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 13,800 second-feet May 18 (gage height, about 7.00 feet); no flow during several periods.
1923–1928: Maximum discharge, 52,100 second-feet October 16, 1926 (gage height, 15.16 feet, from floodmarks); no flow during several periods. Maximum stage known, about 20.0 feet during 1916.
REMARKS.—Monthly records poor. Records of daily discharge not sufficiently accurate for publication. No diversions above station.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	208	0.4	20.4	1,250
November		0	1.35	80
December	17	0	3.20	197
January	16	.9	6.59	405
February	17	.9	5.10	293
March	179	0	19.2	1,180
May	9,600	0	1,670	103,000
June	890	2.4	188	11,200
July	7,850	0	1,190	73,200
August	2,860	74	559	34,400
September	155	0	14.4	857
The year	9,600	0	310	226,000

NOTE.—No flow during April.

BRAZOS RIVER NEAR MINERAL WELLS, TEX.

LOCATION.—Chain gage on Mineral Wells-Palo Pinto highway bridge 4 miles west of Mineral Wells, Palo Pinto County.
DRAINAGE AREA.—23,100 square miles, part of which is noncontributing.
RECORDS AVAILABLE.—January, 1924, to September, 1928.
EXTREMES.—Maximum discharge during year, 28,300 second-feet July 29 (gage height, about 12.50 feet); minimum, 5.2 second-feet March 24.
1924–1928: Maximum gage height, 17.35 feet October 18, 1926 (discharge not determined); no flow for several periods.
REMARKS.—Records poor. No diversion above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,580	57	10	19	20	11	12	7.0	1,010	294	3,360	4,680
2	3,280	45	9.8	19	18	11	11	6.2	1,230	220	2,440	3,760
3	1,840	38	9.5	14	16	11	9.2	7.0	1,140	177	2,040	1,590
4	1,010	35	9.2	11	16	10	9.8	90	7,710	151	1,980	804
5	804	33	9.0	11	16	9.8	19	37	12,400	129	2,180	477
6	712	31	8.5	12	16	9.5	96	18	8,180	115	5,550	332
7	712	30	8.0	13	15	9.2	225	96	3,600	95	9,400	240
8	585	27	7.8	12	14	9.0	116	122	2,720	71	5,540	191
9	585	25	7.8	11	14	8.8	174	92	2,440	57	2,720	169
10	1,360	23	7.2	11	13	8.2	225	76	2,520	47	1,720	155
11	1,280	22	7.0	11	13	7.8	137	57	2,220	41	1,280	151
12	955	22	6.8	10	16	7.5	95	41	6,920	61	1,280	115
13	712	22	11	9.5	14	7.5	76	27	3,360	160	2,260	112
14	530	21	11	11	14	7.2	68	30	1,980	129	1,910	92
15	426	20	10	11	12	8.0	53	3,700	4,000	115	1,230	71
16	338	19	9.8	10	10	9.2	31	16,300	11,700	92	1,060	55
17	256	18	9.0	9.8	9.8	8.8	22	16,300	7,600	68	804	45
18	205	17	8.5	14	9.5	8.2	20	17,700	3,360	41	626	37
19	186	16	8.5	16	9.2	7.8	18	19,100	1,910	16	546	31
20	169	16	9.0	13	9.0	7.2	16	17,700	1,280	10	470	25
21	160	14	9.0	12	9.8	6.8	16	18,600	902	6.2	1,020	22
22	195	14	9.5	12	18	6.5	15	21,000	666	7.0	2,810	19
23	169	14	9.2	147	22	6.0	14	19,100	507	6.2	3,600	22
24	147	14	9.0	100	21	5.5	14	14,500	377	5.8	1,980	20
25	129	13	8.8	84	19	52	12	10,400	338	694	4,820	18
26	109	12	8.5	57	16	35	10	4,320	1,010	13,100	7,640	16
27	92	11	9.2	43	14	25	9.0	2,920	1,860	18,100	2,720	16
28	81	11	22	33	12	18	8.2	1,840	1,700	22,500	2,260	15
29	74	11	16	27	12	14	7.5	1,400	712	23,000	1,460	14
30	64	10	15	23	------	14	7.2	1,180	426	12,100	955	13
31	57	------	19	22	------	12	------	1,010	------	7,260	758	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,580	57	671	41,300
November	57	10	22.0	1,310
December	22	6.8	10.1	621
January	147	9.5	26.1	1,600
February	22	9.0	14.4	828
March	52	5.5	12.0	738
April	225	7.2	51.5	3,060
May	21,000	6.2	6,060	373,000
June	12,400	338	3,190	190,000
July	23,000	5.8	3,190	196,000
August	9,400	470	2,530	156,000
September	4,680	13	444	26,400
The year	23,000	5.5	1,360	991,000

BRAZOS RIVER NEAR GLEN ROSE, TEX.

LOCATION.—Staff gage a quarter of a mile above Glen Rose-Cleburne highway bridge and 4 miles northeast of Glen Rose, Somervell County.

DRAINAGE AREA.—24,800 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum gage height during year, 13.60 feet April 4 (discharge not determined); minimum discharge, 18 second-feet December 5 and 6.

1923–1928: Maximum discharge, about 45,700 second-feet May 8, 1925 (gage height, 15.10 feet); no flow September 7–9, 1924.

REMARKS.—Records fair for low stages and poor for high stages. Discharge estimated during period of backwater April 3 and 4. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	128	22	216	89	103	22	48	1,200	1,260	7,860	2,570
2	15,100	118	21	201	82	92	26	41	1,040	790	4,620	4,090
3	5,780	110	20	137	76	76	4,000	39	985	570	3,110	6,960
4	3,110	99	20	107	92	74	3,300	43	2,840	389	2,680	3,590
5	2,030	89	20	82	96	71	2,340	39	4,090	299	4,620	2,340
6	1,440	82	18	60	85	63	1,260	444	11,300	224	4,090	1,500
7	985	76	20	53	76	60	620	256	8,160	186	3,840	985
8	1,040	71	21	50	68	58	482	128	4,620	172	8,940	760
9	1,560	65	26	45	65	55	610	85	2,690	148	7,560	530
10	1,380	65	26	41	60	55	482	76	1,630	107	4,350	434
11	1,040	60	33	35	65	50	454	65	3,110	82	2,890	371
12	1,150	58	137	33	68	50	482	53	5,170	82	2,180	299
13	1,760	53	482	31	68	45	282	41	8,760	71	1,890	232
14	1,380	45	875	29	60	82	232	41	6,660	65	1,440	166
15	1,100	45	463	26	50	103	232	79	4,090	60	1,320	172
16	1,100	45	248	26	45	89	160	112	8,760	50	2,890	160
17	730	48	137	28	45	74	160	14,000	12,900	39	2,030	137
18	492	50	82	29	41	71	154	16,800	7,260	31	1,760	118
19	407	45	68	35	37	63	137	19,900	4,890	76	1,260	128
20	353	41	60	35	31	53	118	24,700	2,690	63	1,040	137
21	317	37	55	33	55	45	110	17,100	1,700	60	985	132
22	282	35	50	33	273	39	107	18,800	1,320	58	820	114
23	224	33	41	33	1,680	37	308	19,600	930	41	610	99
24	201	33	37	33	1,200	33	290	15,700	720	74	1,270	85
25	216	31	33	29	620	33	154	5,760	560	65	3,840	76
26	232	29	29	26	362	29	110	4,350	580	183	3,980	71
27	216	28	103	26	208	26	103	3,110	1,320	18,800	6,960	65
28	172	26	407	24	142	26	74	2,890	2,170	19,400	4,190	60
29	160	26	720	123	114	29	74	2,510	2,340	23,200	3,110	50
30	148	24	580	110	------	22	50	1,760	2,180	21,800	2,890	45
31	137	------	282	99	------	26	------	1,560	------	10,800	2,340	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	15,100	118	1,430	87,900
November	128	24	56.5	3,360
December	875	18	166	10,200
January	216	24	60.3	3,710
February	1,680	31	205	11,800
March	103	22	55.9	3,440
April	----------	22	564	33,600
May	24,700	39	5,490	338,000
June	12,900	560	3,890	231,000
July	23,200	31	3,200	197,000
August	8,940	610	3,270	201,000
September	6,960	45	88.3	52,500
The year	----------	18	1,620	1,170,000

BRAZOS RIVER AT WACO, TEX.

LOCATION.—Water-stage recorder at Texas Electric Co.'s bridge in Waco, McLennan County. Zero of gage is 360.88 feet above mean sea level.

DRAINAGE AREA.—28,500 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—September, 1898, to December, 1911; October, 1914, to September, 1928.

EXTREMES.—Maximum discharge during year, 36,300 second-feet April 4 (gage height, 18.95 feet); minimum, 42 second-feet July 22.

1898–1928: Maximum gage height, 39.7 feet December 3, 1913 (discharge not determined); no flow August 20 and 21, 1918, and probably for several days in August, 1923.

REMARKS.—Records poor. Daily discharge partly estimated September 3, 4, and 7–11. The numerous small diversions above station do not appreciably affect flow except during low stages.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,930	260	68	768	86	650	149	256	2,100	2,260	7,380	3,020
2	18,800	232	66	502	110	552	141	232	4,100	1,980	6,520	3,070
3	15,500	210	66	323	179	480	139	219	2,590	1,180	5,100	2,020
4	4,710	192	64	253	182	445	14,100	204	16,300	790	4,270	1,890
5	3,400	182	62	222	187	402	6,880	198	16,300	541	4,620	4,540
6	2,650	173	68	225	228	371	7,370	182	6,380	402	3,720	3,220
7	2,200	163	69	219	260	376	3,250	171	9,620	307	5,410	2,320
8	1,910	154	66	195	198	376	2,080	165	6,580	250	3,280	1,740
9	1,580	146	66	192	182	358	2,120	646	4,540	1,430	6,550	1,330
10	1,580	141	68	182	168	358	3,480	307	3,320	1,600	7,210	1,040
11	1,960	136	73	171	154	335	2,260	228	4,200	404	5,080	828
12	1,640	124	86	157	182	303	1,640	187	4,200	216	3,780	650
13	1,240	122	87	149	236	281	1,340	373	4,180	154	2,800	568
14	1,480	115	350	141	210	260	1,180	548	8,200	127	2,200	425
15	1,960	124	492	134	187	678	1,070	246	7,680	106	1,860	366
16	1,520	136	782	129	168	1,500	940	187	11,700	97	1,470	335
17	1,200	139	805	127	165	828	902	781	6,680	84	1,280	303
18	955	127	470	134	149	585	798	12,900	10,200	73	2,720	288
19	760	113	340	129	139	450	708	18,700	6,520	66	2,050	278
20	624	108	267	127	129	407	630	21,400	4,750	56	1,740	270
21	541	106	210	124	347	362	618	24,500	3,320	51	1,360	264
22	492	106	184	122	9,470	340	696	16,700	2,390	46	1,110	253
23	440	99	160	113	4,440	303	558	16,300	1,860	53	925	246
24	402	89	141	108	2,760	281	430	17,600	1,380	52	850	242
25	358	87	139	104	2,800	260	380	12,300	1,040	68	782	239
26	319	86	124	106	2,320	228	440	9,320	1,130	264	1,260	236
27	299	84	124	104	1,470	204	450	7,020	4,600	932	3,620	236
28	274	78	204	102	1,050	184	362	4,860	6,050	17,000	4,880	236
29	270	76	182	99	828	171	315	3,400	2,060	15,900	5,220	236
30	270	74	141	93	-------	154	281	2,650	2,400	20,900	3,550	236
31	281	-------	404	89	-------	149	--------	2,390	--------	14,300	2,950	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	18,800	270	2,310	142,000
November	260	74	133	7,910
December	805	62	207	12,700
January	768	89	182	11,200
February	9,470	86	999	57,500
March	1,500	149	407	25,000
April	14,100	139	1,860	111,000
May	24,500	165	5,650	347,000
June	16,300	1,040	5,550	330,000
July	20,900	46	2,640	162,000
August	7,380	782	3,400	209,000
September	4,540	236	1,030	61,300
The year	24,500	46	2,030	1,480,000

BRAZOS RIVER NEAR BRYAN, TEX.

LOCATION.—Chain gage on Pitts Bridge, on State highway between Bryan and Caldwell, 9 miles southwest of Bryan, Brazos County.

DRAINAGE AREA.—38,400 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—September, 1925, to September, 1928. February, 1918, to September, 1925, comparable record obtained 7½ miles downstream.

EXTREMES.—Maximum discharge during year, 38,700 second-feet October 4 (gage height, about 21.30 feet); minimum, 149 second-feet September 28 (gage height, 3.32 feet).

1925–1928: Maximum discharge not determined; minimum, that of September 28, 1928.

A stage of about 55.0 feet (present gage datum) occurred December, 1913.

REMARKS.—Records fair. Discharge October 25–27, January 31, and April 29 estimated or interpolated. The numerous small diversions above gage do not appreciably affect flow except during low stages.

Daily and monthly discharge, in second-feet, 1927-28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	530	1,040	495	1,200	430	3,140	852	778	3,750	3,500	15,500	2,780
2	5,450	2,220	460	965	436	2,660	815	670	3,260	3,020	8,650	2,780
3	29,000	2,660	460	928	460	2,220	815	635	4,000	3,020	6,880	2,660
4	36,000	1,820	442	1,120	495	2,020	815	600	5,020	2,780	5,350	2,020
5	26,200	1,370	442	1,120	600	1,920	7,480	530	23,400	2,220	4,640	2,120
6	21,800	1,120	442	928	670	1,730	10,300	530	22,500	1,820	4,120	2,660
7	12,100	965	442	852	778	1,640	11,900	495	12,800	1,540	4,000	2,900
8	7,420	928	442	852	815	1,540	7,150	460	15,600	1,370	4,120	2,780
9	8,230	890	442	815	815	1,540	4,250	424	11,900	1,200	3,750	2,540
10	12,300	815	670	778	890	2,120	3,500	394	8,230	1,040	3,620	2,120
11	9,490	740	670	852	815	2,230	3,500	364	5,650	1,280	6,340	1,730
12	5,650	740	635	778	815	1,730	4,000	335	4,510	2,220	5,350	1,460
13	3,880	740	600	778	852	1,640	3,260	1,170	5,500	1,460	4,000	1,200
14	3,500	740	600	705	928	1,540	2,900	789	5,350	1,120	3,500	1,120
15	3,260	705	565	670	965	1,730	2,540	565	9,980	852	2,780	965
16	3,140	705	565	635	965	1,640	2,220	1,200	16,500	705	2,330	890
17	3,020	705	530	600	1,040	1,460	1,820	1,200	20,700	600	2,120	965
18	2,900	705	778	565	1,040	2,850	1,540	2,080	9,700	495	1,820	600
19	2,540	740	1,370	495	928	2,540	1,540	5,350	11,600	400	1,820	2,120
20	2,330	740	1,540	460	852	2,020	1,460	14,800	8,650	330	2,440	530
21	2,020	740	1,460	436	1,310	1,730	1,280	19,800	6,340	325	2,220	460
22	1,820	670	1,200	460	11,700	1,460	1,200	23,000	5,050	325	2,120	364
23	1,640	670	1,040	495	29,000	1,370	1,120	18,700	4,250	320	1,920	290
24	1,540	635	815	460	23,500	1,280	1,370	17,000	3,750	300	1,370	258
25	1,370	635	740	460	10,200	2,220	1,280	18,700	3,380	290	1,370	245
26	1,280	600	705	442	7,060	1,540	1,120	16,200	3,020	305	1,460	219
27	1,200	565	815	430	5,350	1,200	1,040	12,800	2,660	1,300	1,370	197
28	1,200	565	1,200	430	4,120	1,120	965	10,200	3,620	3,200	1,730	204
29	1,200	530	1,040	430	3,620	1,040	908	8,860	6,700	12,900	3,500	388
30	1,280	530	1,200	430	-------	928	852	5,980	4,250	16,500	4,250	412
31	1,200	-------	1,280	430	-------	890	-------	4,920	-------	18,100	2,900	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	36,000	530	6,920	425,000
November	2,660	530	908	54,000
December	1,540	442	777	47,800
January	1,200	430	677	41,600
February	29,000	430	3,840	221,000
March	3,140	890	1,760	108,000
April	10,300	815	2,790	166,000
May	23,000	335	6,110	376,000
June	23,400	2,660	8,390	499,000
July	18,100	290	2,740	168,000
August	15,500	1,370	3,780	232,000
September	2,900	197	1,330	79,100
The year	36,000	197	3,340	2,420,000

BRAZOS RIVER AT ROSENBERG, TEX.

LOCATION.—Chain gage on Rosenberg–Richmond highway bridge at Rosenberg, Fort Bend County.

DRAINAGE AREA.—44,000 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1928.

EXTREMES.—Maximum discharge during year, 36,800 second-feet October 5 (gage height, about 20.6 feet); minimum not determined.

1922–1928: Maximum discharge, about 86,900 second-feet April 26, 1926 (gage height, 37.1 feet); minimum, 306 second-feet August 19-22, 1925 (gage height, 0.30 foot).

The flood of December 9, 1913, reached a stage of 55.5 feet (from floodmarks).

REMARKS.—Records poor. No diversion. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	975	1,820	1,280	2,560	845	9,510				4,310	18,500	1,560
2	1,020	1,620	1,380	2,300	805	8,050				5,490	17,800	2,090
3	1,960	1,380	1,220	2,840	725	7,590				4,180	13,500	2,230
4	10,200	1,750	1,120	2,560	930	6,840				3,920	8,320	2,950
5	32,600	1,680	1,120	2,160	930	6,540			27,100	3,070	1,440	3,190
6	32,000	2,230	1,060	1,880	1,160	6,240				3,190	1,280	4,700
7	25,300	2,380	1,120	1,380	885	5,640				2,950	1,220	2,950
8	23,100	2,020	1,060	1,680	885	5,640			16,500	3,070	1,160	2,230
9	18,800	1,820	1,060	1,500	1,020	5,350			16,700	2,380	1,560	2,230
10	14,300	1,560	975	1,500	885	5,090			15,000	3,190	4,310	2,160
11	13,900	1,560	1,280	1,330	1,020	4,700			10,900	2,740	4,700	2,160
12	16,500	1,500	1,280	1,280	930	4,570			8,850	2,020	5,350	2,160
13	15,800	1,440	1,380	1,380	685	5,350		1,150	6,540	1,440	5,940	2,090
14	12,700	1,380	1,380	1,220	1,060	6,390			6,240	1,120	4,570	2,090
15	10,200	1,280	1,120	1,280	1,060	5,640			6,540	765	4,440	1,950
16	9,170	1,220	1,280	1,280	1,060	4,180	3,600		6,990	765	4,180	1,880
17	8,530	1,220	1,160	1,120	1,120	3,430			15,000	930	3,550	1,680
18	7,740	1,160	1,280	1,020	1,160	7,440			15,000	930	3,190	1,500
19	7,140	1,060	1,160	885	1,160	6,990			13,100	930	2,950	1,440
20	6,690	1,120	1,160	885	1,160	6,090			12,700	1,820	2,950	1,330
21	6,090	1,060	1,220	885	1,280	4,570			11,300	1,500	2,230	1,120
22	5,220	1,060	1,280	845	2,330	3,550			10,200	1,280	2,230	885
23	4,180	845	1,280	885	9,440	2,640			8,530	1,120	2,090	845
24	3,070	765	1,380	1,330	30,400	2,560			7,590	1,120	2,230	845
25	2,740	1,020	1,500	1,160	29,500	2,380			7,140	1,380	2,160	845
26	2,380	1,060	1,330	885	23,600	2,380			6,990	1,020	2,090	845
27	2,160	1,160	1,160	1,060	18,500	2,160			6,690	930	2,090	805
28	2,020	1,020	1,750	1,280	14,300	2,380		20,000	5,490	845	2,020	765
29	1,880	930	1,680	1,060	11,500	2,380			4,700	1,740	1,750	765
30	1,750	885	2,560	885	-------	2,090			4,050	6,870	1,680	725
31	1,820	-------	2,380	885	-------	1,880	-------		-------	14,300	1,560	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	32,600	975	9,740	599,000
November	2,380	765	1,370	81,500
December	2,560	975	1,340	82,400
January	2,840	845	1,390	85,500
February	30,400	685	5,530	318,000
March	9,510	1,880	4,850	298,000
April	-------	-------	3,600	214,000
May	-------	-------	4,800	295,000
June	-------	4,050	13,700	815,000
July	14,300	765	2,620	161,000
August	18,500	1,160	4,290	264,000
September	4,700	725	1,770	105,000
The year	-------	-------	4,580	3,320,000

CLEAR FORK OF BRAZOS RIVER AT NUGENT, TEX.

LOCATION.—Staff gage at highway bridge at Nugent, Jones County.
DRAINAGE AREA.—2,220 square miles.
RECORDS AVAILABLE.—February, 1924, to September, 1928.
EXTREMES.—Maximum discharge during year, 11,500 second-feet May 20 (gage height, about 18.0 feet); no flow April 23, 24, May 4, 9, and 10.
1924–1928: Maximum and minimum discharge, same as for 1928.
REMARKS.—Records fair. Discharge partly estimated December 30, 31, and January 1. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	5.6	6.2	5.9	3.6	4.0	2.6	0.4	59	25	107	46
2	29	5.6	6.2	5.6	3.6	3.8	2.4	.4	169	40	72	44
3	66	5.6	6.2	5.6	3.6	3.8	2.2	.4	394	25	96	33
4	28	5.0	6.2	5.0	3.6	3.8	2.2	0	812	19	2,830	29
5	61	5.0	5.9	5.0	4.0	3.6	56	.2	1,080	18	1,740	23
6	18	5.0	6.2	5.6	4.0	3.8	19	.2	293	17	345	26
7	11	5.0	6.2	5.6	4.0	4.0	6.5	.2	86	17	215	19
8	10	5.0	6.2	5.6	4.0	4.0	4.8	.2	53	17	71	20
9	9.2	5.0	6.2	5.6	3.6	3.8	8.0	0	40	17	53	19
10	40	5.0	6.2	5.0	3.6	4.0	6.5	0	29	15	48	19
11	61	4.8	6.2	5.0	3.6	3.8	4.4	406	421	14	398	19
12	18	4.8	6.5	5.0	3.6	3.8	3.4	7,820	766	14	395	18
13	10	4.2	6.8	5.0	3.6	3.8	2.7	5,740	2,220	14	140	16
14	8.0	4.2	6.8	5.0	3.6	3.6	1.4	3,800	752	48	59	16
15	6.8	4.2	6.8	5.0	3.6	5.3	1.2	4,540	90	18	45	15
16	6.5	4.2	6.8	5.0	3.8	4.0	1.2	7,750	123	23	54	14
17	6.2	4.2	6.2	54	3.6	4.0	1.8	2,140	88	25	44	13
18	5.9	4.2	5.6	169	4.6	3.6	1.4	1,200	51	15	892	12
19	5.9	4.2	5.6	61	5.3	3.6	1.0	5,160	45	14	1,320	14
20	5.9	4.4	5.6	42	4.8	3.6	.6	9,890	39	12	1,070	14
21	5.9	5.3	6.2	19	4.8	3.6	.4	6,900	33	28	618	14
22	5.9	6.2	6.2	9.6	4.6	3.6	.1	4,400	266	30	318	15
23	5.9	6.5	6.2	5.6	4.4	3.6	0	1,360	1,770	166	108	13
24	5.9	6.8	6.2	4.8	4.4	3.6	0	254	394	347	1,680	12
25	5.9	6.5	6.2	4.4	4.0	3.6	.1	121	54	1,860	792	12
26	6.5	6.8	6.2	4.0	4.0	3.6	.2	88	39	4,360	256	12
27	6.2	7.4	7.4	4.0	3.8	3.6	.5	79	33	5,980	119	12
28	6.2	7.4	7.4	4.0	3.8	3.4	.2	69	29	2,950	54	9.2
29	5.6	6.8	6.8	3.6	4.0	2.6	.4	85	26	847	42	9.6
30	5.6	6.8	6.5	3.6	-------	2.6	.6	95	25	658	34	9.2
31	5.6	-------	6.2	3.6	-------	2.6	-------	74	-------	202	32	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	66	5.6	16.8	1,030
November	7.4	4.2	5.39	321
December	7.4	5.6	6.32	389
January	169	3.6	15.4	947
February	5.3	3.6	3.98	229
March	5.3	2.6	3.68	226
April	56	0	4.39	261
May	9,890	0	2,000	123,000
June	2,220	25	343	20,400
July	5,980	12	575	35,400
August	2,830	32	453	27,900
September	46	9.2	18.2	1,080
The year	9,890	0	291	211,000

CLEAR FORK OF BRAZOS RIVER AT FORT GRIFFIN, TEX.

LOCATION.—Chain gage on Fort Griffin-Throckmorton highway bridge half a mile east of Fort Griffin, Shackleford County.

DRAINAGE AREA.—3,970 square miles.

RECORDS AVAILABLE.—December, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 12,100 second-feet May 21 (gage height, 26.42 feet); no flow February 8–15, February 19 to April 10, and April 27 to May 11.

1923–1928: Maximum discharge, about 12,500 second-feet June 21, 1926 (gage height, 27.0 feet); no flow for several periods.

REMARKS.—Records fair. Small diversions for municipal use; amount not known. Possibly slight regulatory effect at low stages by power plant at Stamford.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Apr.	May	June	July	Aug.	Sept.
1	358	10	9.8	5.0	1.3	0	0	115	40	358	69
2	173	6.3	7.8	4.2	1.1	0	0	95	27	187	77
3	97	9.4	9.0	4.2	1.1	0	0	95	24	143	66
4	93	8.7	7.8	3.8	1.3	0	0	458	35	115	44
5	58	9.4	5.6	3.8	1.3	0	0	677	37	2,990	30
6	52	8.7	5.6	3.4	1.3	0	0	1,170	24	2,950	27
7	36	8.7	5.6	3.0	1.1	0	0	567	40	545	31
8	104	10	5.2	3.0	0	0	0	397	140	377	27
9	44	16	5.6	3.0	0	0	0	182	148	170	24
10	26	11	5.6	2.6	0	0	0	107	82	174	14
11	34	12	6.0	1.9	0	3.2	0	323	31	227	13
12	41	12	8.4	1.5	0	7.8	1,020	377	19	512	16
13	39	11	8.4	1.5	0	15	6,900	1,010	13	462	15
14	28	10	8.4	1.9	0	49	8,430	2,200	12	397	15
15	15	10	7.5	1.9	0	57	5,300	1,770	13	227	14
16	16	8.1	8.7	1.4	.3	62	5,160	448	11	227	14
17	19	8.1	8.7	1.4	1.8	37	9,300	159	18	227	13
18	12	8.7	5.8	5.6	1.8	24	8,110	105	34	170	11
19	11	10	5.0	2.8	0	15	2,870	70	28	1,130	11
20	12	12	5.0	3.6	0	8.1	4,560	57	17	1,720	9.8
21	12	12	4.6	3.6	0	8.7	10,300	51	87	1,120	8.1
22	10	10	4.6	3.6	0	3.4	10,000	51	414	677	8.1
23	11	10	5.0	2.8	0	3.6	5,900	48	677	440	6.9
24		10	4.6	2.4	0	1.8	1,780	1,730	736	358	6.0
25		9.4	4.6	2.8	0	.3	677	1,560	994	1,850	5.2
26	10	8.1	5.0	2.4	0	.2	306	188	2,860	1,230	5.2
27		8.1	6.3	2.0	0	0	241	103	4,880	462	4.2
28		6.3	5.8	2.0	0	0	200	71	5,920	213	4.2
29	10	6.3	6.3	1.8	0	0	138	56	3,940	138	3.4
30	11	6.0	5.0	1.8	------	0	138	44	1,340	115	3.0
31	12	------	4.8	1.3	------	------	124	------	952	305	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	358	----------	44.6	2,740
November	16	6.0	9.54	568
December	9.8	4.6	6.33	389
January	5.6	1.3	2.77	170
February	1.8	0	.43	25
April	62	0	9.87	587
May	10,300	0	2,630	162,000
June	2,200	44	476	28,300
July	5,920	11	761	46,800
August	2,990	115	652	40,100
September	77	3.0	19.8	1,180
The year	10,300	0	389	283,000

NOTE.—No flow during March.

CLEAR FORK OF BRAZOS RIVER AT CRYSTAL FALLS, TEX.

LOCATION.—Staff gage at Walker-Caldwell Water Co.'s pumping plant, a quarter of a mile north of Crystal Falls, Stephens County.

DRAINAGE AREA.—4,320 square miles.

RECORDS AVAILABLE.—November, 1921, to September, 1928.

EXTREMES.—Maximum gage height during year, about 13.1 feet July 28 (discharge not determined because of backwater); no flow during several periods.
1921–1928: Maximum gage height, 18.25 feet April 30, 1922 (discharge not determined); no flow during several periods.

REMARKS.—Records for low stages good, for high stages poor. Large part of ordinary flow diverted for municipal use and mining. Low-water flow partly regulated by dam above gage.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	May	June	July	Aug.	Sept.
1	907	6.0	2.0	1.2	0	129	22	658	289
2	214	8.0	2.0	1.2	0	116	22	290	71
3	116	8.0	1.2	1.2	0	123	22	169	52
4	93	8.0	.4	.8	0	562	12	481	22
5	93	6.0	0	.8	0	492	8.0	246	142
6	82	5.2	0	.4	0	1,070	8.0	3,070	36
7	71	5.2	0	0	0	1,310	16	1,210	19
8	281	8.0	1.2	1.2	0	426	93	365	16
9	104	8.0	1.2	0	0	184	169	264	22
10	52	8.0	.8	0	0	142	36	155	12
11	29	8.0	1.2	0	0	336	12	1,110	10
12	29	8.0	1.2	0	0	308	8.0	290	8.0
13	29	6.0	16	0	3,170	574	6.0	550	10
14	19	6.0	5.2	0	7,080	1,800	6.0	504	6.0
15	16	5.2	5.2	0		4,380	6.0	318	5.2
16	44	5.2	2.0	0		1,040	6.0	116	6.0
17	22	5.2	.4	0		327	29	71	5.2
18	16	5.2	.4	46	8,200	155	5.2	44	4.4
19	16	3.6	1.2	16		82	22	104	3.6
20	12	3.6	1.2	5.2		62	8.0	1,420	4.4
21	10	3.6	1.2	3.6		44	5.2	1,600	4.4
22	6.0	3.6	2.0	2.0	9,700	44	169	822	3.6
23	6.0	5.2	1.2	1.2	13,400	76	790	852	5.2
24	6.0	6.0	.8	1.2	5,520	741	915	1,750	4.4
25	6.0	5.2	.4	.4	1,360	1,840	1,310	996	3.6
26	6.0	5.2	.4	0	504	336	2,840	1,890	2.8
27	10	3.6	2.0	0	281	123	5,400	682	2.8
28	6.0	3.6	12	0	199	82		336	2.8
29	8.0	2.0	12	0	169	44	5,690	206	2.0
30	6.0	3.6	2.0	0	155	36	3,040	176	2.0
31	6.0	------	1.2	0	142	------	1,040	3,260	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	907	6.0	74.9	4,610
November	8.0	2.0	5.60	333
December	16	0	2.52	155
January	46	0	2.66	164
May	------	0	3,200	197,000
June	4,380	36	566	33,700
July	------	5.2	875	53,800
August	3,260	44	774	47,600
September	289	2.0	25.9	1,540
The year	------	0	466	339,000

NOTE.—No flow during February, March, and April.

CLEAR FORK OF BRAZOS RIVER NEAR CRYSTAL FALLS, TEX.

LOCATION.—Staff gage at Humble Oil & Refining Co.'s pumping plant, 4 miles northeast of Crystal Falls, Stephens County, and 5 miles below mouth of Hubbard Creek.

DRAINAGE AREA.—5,690 square miles.

RECORDS AVAILABLE.—July to September, 1928.

EXTREMES.—Maximum discharge during period, 21,500 second-feet July 27 (gage height, 29.6 feet); minimum, 3.0 second-feet July 18, September 29 and 30 (gage height, 0.80 foot).

River reached about a 38.0 foot stage during 1900.

REMARKS.—Records good. Discharge partly estimated or interpolated August 19, September 2, 9, 23, and 30. Large part of ordinary flow diverted for municipal use and mining. Low-water flow partly regulated by dams above gage.

Daily and monthly discharge, in second-feet, 1928

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	44	730	1,470	16	7.2	152	20
2	30	298	252	17	4.4	98	22
3	26	252	98	18	3.0	91	18
4	22	2,220	57	19	14	105	16
5	16	4,830	22	20	28	1,950	12
6	14	3,600	64	21	20	1,690	10
7	14	1,760	50	22	16	850	8.6
8	14	422	40	23	913	1,360	9.0
9	141	336	50	24	2,300	5,580	9.3
10	81	179	61	25	2,440	4,030	7.9
11	20	1,120	28	26	6,800	2,170	7.2
12	9.3	396	26	27	16,700	850	4.4
13	7.2	557	22	28	17,400	417	4.4
14	7.2	476	22	29	7,210	235	3.0
15	7.2	252	18	30	3,540	171	3.0
				31	1,050	4,920	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
July	17,400	3.0	1,900	117,000
August	5,580	91	1,360	83,600
September	1,470	3.0	81.2	4,830
The period	-------	-------	-------	205,000

NORTH BOSQUE RIVER NEAR CLIFTON, TEX.

LOCATION.—Staff gage one-fourth mile above Gulf, Colorado & Santa Fe Railway bridge and 1⅛ miles northwest of Clifton, Bosque County.

DRAINAGE AREA.—974 square miles.

RECORDS AVAILABLE.—November, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 10,500 second-feet April 4 (gage height, 8.56 feet); minimum, 0.1 second-foot July 21–24 (gage height, 0.33 foot).

1923–1928: Maximum discharge, determined by slope-area method, 13,100 second-feet May 13, 1927 (gage height, 10.15 feet); no flow June 25 and July 13–30, 1925.

REMARKS.—Records fair for low stages and poor for high stages. Railroad pumps about 100,000 gallons a day above dam one-third mile below gage.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	151	1.8	1.2	16	2.0	3.2	3.2	8.5	873	5.0	10	1.0
2	3,180	1.6	1.1	12	2.0	12	3.1	7.6	169	3.2	8.5	96
3	435	1.6	1.2	12	2.2	10	997	6.7	298	3.2	6.7	36
4	85	1.5	1.2	12	2.8	10	2,450	6.7	4,890	3.0	2,250	16
5	36	1.6	1.4	12	3.2	10	1,360	5.8	1,170	2.7	902	10
6	23	1.4	1.5	10	3.2	10	164	5.0	203	2.5	96	6.7
7	12	1.4	2.0	10	3.0	12	127	5.0	85	2.2	41	4.1
8	12	1.4	3.2	7.6	2.8	12	71	3.2	52	1.8	23	4.1
9	88	1.4	3.2	8.5	3.0	10	286	3.2	34	8.5	12	9.4
10	114	1.5	4.1	7.6	3.0	11	358	3.0	25	3.0	10	5.0
11	47	1.6	3.2	7.6	5.0	11	166	3.0	27	2.6	7.6	3.1
12	22	1.3	3.2	5.8	8.5	10	105	13	218	2.2	6.7	2.5
13	12	1.1	4.1	7.6	6.7	8.5	71	500	223	1.9	4.1	1.9
14	12	.9	500	6.7	6.7	7.6	71	64	1,210	1.5	3.2	1.5
15	11	1.0	92	6.7	5.0	16	54	29	4,060	1.1	2.8	1.2
16	8.5	1.9	57	6.7	5.0	22	49	22	1,640	.7	2.5	.9
17	6.7	1.6	23	6.7	3.2	14	41	1,000	202	.4	2.2	.7
18	6.7	1.6	16	8.5	3.2	12	41	92	110	.3	1.8	.6
19	7.6	1.4	11	5.8	3.2	11	31	3,420	64	.2	3.2	.5
20	8.5	1.4	10	3.2	3.1	10	29	491	47	.2	2.2	.4
21	8.5	1.4	10	3.2	82	9.4	25	127	31	.1	1.7	.3
22	6.7	1.9	7.6	3.2	1,340	8.5	23	60	23	.1	20	.3
23	5.0	2.5	8.5	3.2	291	6.7	23	36	20	.1	12	.4
24	7.6	3.0	8.5	2.8	92	6.7	20	25	16	.1	8.5	.4
25	8.5	2.2	8.5	2.7	54	6.7	18	20	12	427	6.7	.5
26	8.5	1.8	6.7	2.5	34	5.8	12	12	10	134	3.2	.6
27	8.5	1.8	7.6	2.4	23	5.0	12	11	10	215	2.7	.6
28	6.7	1.7	7.6	2.1	20	5.0	11	9.4	8.5	118	2.1	.6
29	2.5	1.6	6.7	2.0	16	3.2	10	8.5	7.6	41	1.8	.8
30	1.8	1.5	52	2.0	------	3.2	8.5	6.7	6.7	23	1.3	.8
31	1.8	------	34	2.0	------	3.2	------	16	------	16	1.2	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,180	1.8	140	8,610
November	3.0	.9	1.61	96
December	500	1.1	28.9	1,780
January	16	2.0	6.49	399
February	1,340	2.0	70.0	4,030
March	22	3.2	9.22	567
April	2,450	3.1	221	13,200
May	3,420	3.0	194	11,900
June	4,890	6.7	525	31,200
July	427	.1	32.9	2,020
August	2,250	1.2	112	6,890
September	96	.3	6.90	411
The year	4,890	.1	112	81,100

SOUTH BOSQUE RIVER NEAR SPEEGLEVILLE, TEX.

LOCATION.—Chain gage on highway bridge 2 miles south of Speegleville, McLennan County.

DRAINAGE AREA.—388 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, about 20,900 second-feet June 14 (gage height, 20.26 feet); no flow September 20.

1924–1928: Maximum discharge, determined by slope-area method, 54,500 second-feet June 14, 1927 (gage height, 29.37 feet, from floodmarks); no flow during several periods.

REMARKS.—Records for low and intermediate stages fair, and for high stages poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,030	34	11	11	10	130	50	47	8.0	12	3.5	0.5
2	1,880	28	10	11	10	116	47	47	738	12	2.5	.4
3	130	23	10	11	10	113	53	44	130	11	1.9	.3
4	58	23	9.0	11	14	113	53	47	6,800	10	1.9	.3
5	47	21	11	10	13	96	643	42	493	9.0	1.8	.2
6	32	19	13	12	23	96	133	32	179	6.5	1.8	.2
7	39	21	15	13	30	103	70	28	133	6.5	1.7	.2
8	319	19	11	13	16	96	70	28	116	7.0	1.6	.3
9	194	17	11	11	14	96	175	25	103	7.0	1.7	.7
10	106	17	11	10	12	113	164	25	93	7.0	1.5	.6
11	90	17	13	10	12	93	140	23	83	6.0	1.5	.4
12	70	17	15	11	36	83	127	21	77	4.5	1.5	.4
13	61	17	17	11	56	77	106	182	99	4.0	1.3	.2
14	58	17	15	10	26	83	106	70	150	3.0	1.4	.5
15	44	23	13	10	24	290	106	47	467	3.0	1.5	.4
16	47	23	11	10	23	157	103	26	123	3.0	1.3	.7
17	47	21	10	10	23	110	93	19	93	2.5	1.4	.5
18	42	17	10	12	19	96	90	19	67	1.8	56	.4
19	42	16	10	14	19	93	90	16	56	1.7	16	.2
20	39	15	9.0	12	19	90	83	58	47	1.7	8.9	0
21	34	15	10	10	1,050	86	86	110	42	1.6	1.8	.3
22	30	15	10	10	1,700	83	83	28	34	1.7	1.0	.7
23	30	15	10	10	410	80	70	16	30	1.7	.9	1.4
24	28	14	9.0	10	265	83	64	11	26	1.9	.8	1.0
25	30	15	10	9.0	210	77	61	11	23	74	.7	.8
26	26	15	10	9.0	187	70	58	11	21	140	.5	.7
27	23	15	12	10	172	58	58	7.0	42	19	.1	.8
28	23	15	64	10	161	53	58	12	28	13	.3	.8
29	21	14	28	10	147	50	50	39	21	6.5	.4	.8
30	25	12	17	10	-------	50	47	12	16	5.5	.4	.7
31	61	-------	13	10	-------	47	-------	6.0	-------	4.0	.5	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,030	21	184	11,300
November	34	12	18.3	1,090
December	64	9.0	13.8	849
January	14	9.0	10.7	658
February	1,700	10	162	9,320
March	290	47	96.2	5,920
April	643	47	104	6,190
May	182	6.0	35.8	2,200
June	6,800	8.0	345	20,500
July	140	1.6	12.5	769
August	56	.1	3.81	234
September	1.4	0	.51	30
The year	6,800	0	81.4	59,100

LEON RIVER NEAR HAMILTON, TEX.

LOCATION.—Chain gage on St. Louis Southwestern Railway bridge 6 miles north of Hamilton, Hamilton County.

DRAINAGE AREA.—1,900 square miles.

RECORDS AVAILABLE.—January, 1925, to September, 1928.

EXTREMES.—Maximum gage height during year, 16.0 feet June 15 (discharge not determined); no flow December 1, 2, and 4–9.

1925–1928: Maximum gage height, 17.0 feet April 12, 1926 (discharge not determined); no flow during several periods.

A stage of 29.8 feet occurred in May, 1908.

REMARKS.—Records fair. No large diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	4.0	0	1.8	4.0	17	6.5	5.5	121	5.5	99	678
2	317	4.5	0	1.8	3.8	16	6.0	5.5	38	5.5	62	544
3	524	5.5	.1	1.8	4.0	13	6.0	6.0	314	4.5	41	369
4	600	5.0	0	1.8	5.0	7.0	6.5	4.5	1,560	4.5	597	296
5	574	4.0	0	1.6	5.5	9.6	64	6.0	1,240	4.5	760	208
6	354	4.0	0	1.6	6.0	12	42	26	652	4.5	684	132
7	226	4.0	0	1.4	6.2	12	111	32	1,050	3.8	665	84
8	152	3.3	0	2.0	6.5	13	88	11	1,250	3.8	269	56
9	730	2.8	0	2.0	7.0	13	84	6.5	804	3.5	164	37
10	226	2.8	.1	2.3	9.6	13	79	3.9	287	3.0	109	31
11	200	2.0	18	2.5	7.0	13	71	3.2	801	3.0	66	15
12	100	1.7	137	2.5	5.5	13	35	3.4	366	2.8	29	7.8
13	75	1.4	61	2.6	3.9	13	24	3.9	1,090	2.6	11	5.8
14	56	1.4	1,360	2.5	3.4	13	17	4.3	878	2.6	7.4	1.9
15	35	1.4	205	2.6	3.2	13	16	3.6	2,360	2.5	5.0	1.9
16	22	1.2	75	2.6	2.9	13	14	3.6	1,490	2.5	3.3	1.5
17	17	.8	15	2.3	2.6	13	11	3.9	1,020	2.5	3.3	.6
18	12	1.0	4.5	2.8	2.6	13	11	396	930	2.2	28	.5
19	9.2	1.1	2.5	2.8	2.5	12	11	803	542	2.0	365	.4
20	5.8	1.4	1.8	2.9	2.6	12	10	1,080	258	1.8	549	.6
21	5.8	1.4	1.4	2.8	7.8	12	10	1,100	208	1.5	345	.3
22	4.3	1.4	1.4	3.4	287	11	9.2	2,250	158	1.4	208	.4
23	4.3	1.4	1.1	3.5	232	11	8.3	3,320	111	1.1	170	.2
24	4.5	1.2	.7	4.0	288	11	8.3	3,030	71	107	147	1.2
25	2.6	1.0	.8	4.0	135	11	6.5	2,370	49	2,360	136	1.1
26	2.4	.8	.7	4.3	54	14	6.0	1,080	37	1,700	121	.5
27	2.7	.7	.7	4.5	35	12	6.0	246	26	480	35	.6
28	3.2	.6	1.4	4.3	25	11	5.0	136	19	369	74	1.2
29	3.2	.5	1.8	4.0	21	11	5.0	102	15	390	112	1.2
30	3.6	.2	1.8	4.0	------	11	5.0	67	12	432	64	1.1
31	4.0	------	1.8	4.3	------	7.4	------	67	------	217	347	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	730	2.4	139	8,550
November	5.5	.2	2.08	124
December	1,360	0	61.1	3,760
January	4.5	1.4	2.82	173
February	288	2.5	40.6	2,340
March	17	7.0	12.1	744
April	111	5.0	26.1	1,550
May	3,320	3.2	522	32,100
June	2,360	12	592	35,200
July	2,360	1.1	198	12,200
August	760	3.3	202	12,400
September	678	.2	82.6	4,920
The year	3,320	0	157	114,000

LEON RIVER NEAR BELTON, TEX.

LOCATION.—Staff gage a quarter of a mile above Temple-Belton highway bridge, 2 miles east of Belton, Bell County.

DRAINAGE AREA.—3,550 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, about 27,100 second-feet October 2 (gage height, 15.05 feet); minimum, 7.2 second-feet July 24 and 25 (gage height, 2.41 feet).

1923–1928: Maximum discharge, that of October 2, 1927; no flow during several periods in 1925.

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

REMARKS.—Monthly records fair. Records of daily discharge not sufficiently accurate for publication. Several small pumping plants above gage; amount of water diverted not known.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15,600	87	933	57,400
November	992	103	139	8,270
December	468	70	140	8,610
January	74	58	65.4	4,020
February	2,580	58	331	19,000
March	323	87	168	10,300
April	448	54	167	9,940
May	2,420	28	412	25,300
June	3,280	82	1,080	64,300
July	598	7.2	75.5	4,640
August	634	42	256	15,700
September	409	14	68.8	4,090
The year	15,600	7.2	319	232,000

LITTLE RIVER NEAR LITTLE RIVER, TEX.

LOCATION.—Chain gage on Missouri-Kansas-Texas Railroad bridge 2 miles south of Little River, Bell County. Zero of gage is 400.32 feet above mean sea level.

DRAINAGE AREA.—5,250 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 28,400 second-feet October 2 (gage height, 43.3 feet); minimum, 23 second-feet July 24, (gage height, 3.08 feet).

1923–1928: Maximum discharge, that of October 2, 1927; minimum, 8.9 second-feet August 12, 1925 (gage height, 3.26 feet).

River reached stage of 50.85 feet in September, 1921.

REMARKS.—Records fair. Several small diversions above station; amount diverted not known. Waterworks on Leon River may regulate the flow at extremely low stages.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	686	1,110	118	360	118	712	241	139	335	118	252	74
2	21,200	435	118	335	132	610	230	139	287	111	154	69
3	15,300	323	118	335	125	585	230	139	2,310	104	146	64
4	4,390	252	118	263	139	560	263	132	2,650	91	139	64
5	1,500	241	118	139	163	535	360	132	5,020	80	132	172
6	842	219	125	146	208	485	485	125	3,520	74	208	435
7	635	208	132	146	275	435	410	125	2,620	74	263	311
8	2,290	197	125	188	241	435	360	118	2,140	86	610	180
9	2,170	188	125	154	197	510	535	111	1,530	74	660	163
10	1,340	180	132	154	172	510	485	111	1,080	69	764	146
11	1,050	180	125	146	154	435	610	111	1,180	69	535	125
12	686	180	125	139	188	460	610	104	1,370	69	435	111
13	946	163	139	139	219	460	635	197	998	60	180	86
14	816	154	154	146	241	435	585	154	660	51	125	69
15	585	188	146	139	252	410	410	139	1,910	50	111	60
16	485	172	132	139	263	560	335	125	1,690	48	91	56
17	435	163	125	139	263	660	311	180	1,560	46	80	51
18	385	154	555	139	252	560	299	154	1,580	43	64	45
19	360	146	360	139	252	410	275	132	1,830	38	484	41
20	311	139	323	139	241	385	275	139	1,150	36	335	38
21	299	139	435	132	263	385	263	132	946	34	435	35
22	275	139	385	132	2,860	360	435	272	842	28	299	31
23	263	139	360	132	2,800	335	241	660	738	24	410	41
24	252	139	311	125	1,530	335	208	946	485	23	435	69
25	241	139	241	125	1,130	323	188	1,260	335	28	323	98
26	241	132	197	118	1,050	311	180	1,640	241	237	230	98
27	230	132	146	111	998	275	172	2,710	180	842	154	98
28	219	132	694	111	946	263	163	2,950	163	207	125	98
29	219	132	585	111	790	263	154	1,800	163	287	104	91
30	219	118	335	111	------	252	146	738	146	485	91	64
31	1,380	------	299	118	------	241	------	410	------	510	80	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	21,200	219	1,940	119,000
November	1,110	118	211	12,600
December	694	118	239	14,700
January	360	111	160	9,840
February	2,860	118	568	32,700
March	712	241	440	27,100
April	635	146	336	20,000
May	2,950	104	523	32,200
June	5,020	146	1,320	78,600
July	842	23	132	8,120
August	764	64	273	16,800
September	435	31	103	6,130
The year	21,200	23	521	378,000

LITTLE RIVER AT CAMERON, TEX.

LOCATION.—Chain gage on highway bridge three-fourths mile above Gulf, Colorado & Santa Fe Railway bridge and 2 miles southeast of Cameron, Milam County.

DRAINAGE AREA.—7,030 square miles.

RECORDS AVAILABLE.—November, 1916, to September, 1928.

EXTREMES.—Maximum discharge during year, 18,000 second-feet October 5 (gage height, 33.67 feet); minimum not determined.

1916–1928: Maximum discharge, determined by slope-area method, 647,000 second-feet September 10, 1921 (gage height, about 53.8 feet, present datum, and 49.5 feet, datum of gage used in 1921, situated half a mile upstream); minimum, 2.6 second-feet September 3, 5, and 7, 1918.

REMARKS.—Records fair. Numerous small diversions for irrigation and municipal uses affect flow at station only during extremely low stages. About 2,500 acres irrigated above station. Slight regulation by pumps above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	1,170	271	b 452	236	1,080	a 377	271	542	a 266	512	119
2	2,410	1,710	259	422	271	982	362	271	452	236	422	a 98
3	11,000	918	259	362	334	886	362	259	b 2,150	214	362	77
4	14,200	632	a 265	321	482	b 854	362	248	3,690	193	422	84
5	16,200	512	271	308	b 482	790	362	248	3,600	183	b 452	77
6	7,470	b 452	248	308	422	790	422	a 248	4,300	163	308	110
7	1,430	422	308	308	407	758	572	248	4,020	153	271	452
8	3,860	407	308	a 314	407	726	b 572	236	3,030	a 148	321	348
9	b 6,880	392	308	321	482	726	542	214	2,060	144	348	b 362
10	8,240	392	296	321	452	822	602	204	b 1,310	144	632	296
11	4,820	377	a 296	334	407	a 758	854	193	1,110	144	662	236
12	1,520	362	296	308	b 422	694	662	183	1,150	135	b 602	183
13	1,110	a 348	283	296	602	694	726	b 183	1,350	135	452	153
14	1,190	334	296	296	790	632	726	494	1,190	122	321	124
15	1,010	321	296	a 290	662	602	602	822	1,390		308	109
16	b 854	334	283	283	602	632	542	602	2,860		204	a 95
17	790	308	283	283	542	790	482	452	b 2,650		163	81
18	694	362	a 283	283	512	b 822		334	1,850		144	a 69
19	632	348	283	283	a 497	694		271	2,020		a 150	57
20	602	a 334	604	283	482	602		283	1,690			57
21	572	321	482	271	1,020	542	a 408	1,260	1,310		b 512	49
22	542	308	392	a 265	7,560	542		713	1,050	a 215	377	46
23	b 542	308	348	259	10,900	542		321	1,110		362	a 46
24	482	308	321	259	5,710	512		407	b 918		512	46
25	482	296	a 316	259	2,650	a 512		822	662		422	b 46
26	482	296	a 312	248	b 1,770	512	334	1,110	542		a 340	a 180
27	482	a 290	308	248	1,480	482	308	b 1,730	a 474			
28	452	283	452	248	1,390	452	296	2,230	407		259	173
29	422	283	694	a 248	1,270	422	a 290	2,740	334		204	153
30	a 437	283	822	248		407	283	2,400	296		153	a 136
31	452		572	236		392		1,230		662	135	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	16,200	183	2,920	180,000
November	1,710	283	447	26,600
December	822	248	355	21,800
January	452	236	296	18,200
February	10,900	236	1,490	85,700
March	1,080	392	666	41,100
April	854	283	463	27,600
May	2,740	183	685	42,100
June	4,300	296	1,650	98,200
July			209	12,900
August	662	135	349	21,500
September	452	46	141	8,390
The year	16,200		804	584,000

a Estimated. b Partly estimated.

LAMPASAS RIVER AT YOUNGSPORT, TEX.

LOCATION.—Staff gage half a mile northeast of Youngsport, Bell County.
DRAINAGE AREA.—1,240 square miles.
RECORDS AVAILABLE.—February, 1924, to September, 1928.
EXTREMES.—Maximum gage height during year, 23.70 feet October 2 (discharge not determined); minimum discharge, 3.9 second-feet July 25 and 26 (gage height, 2.64 feet).

1924–1928: Maximum gage height, that of October 2, 1927; no flow July 17 to August 18, 1925.

REMARKS.—Records fair. Mean daily gage height, in feet, on days when stage was beyond limit of rating curve as follows: October 1, 5.95; October 2, 13.21. Small amount of water diverted for municipal use.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	102	21	30	24	177	58	30	19	8.6	14	21
2	------	64	21	30	26	168	58	30	1,810	8.2	11	19
3	426	47	21	28	33	164	58	30	375	8.2	8.2	41
4	120	33	19	28	36	160	58	26	280	8.2	7.0	23
5	81	28	18	28	36	156	58	26	264	9.0	6.2	14
6	68	28	18	24	47	152	85	26	131	9.0	5.4	14
7	85	28	18	23	71	147	85	24	75	9.7	4.8	12
8	160	24	18	23	55	143	88	23	58	10	5.4	28
9	254	24	26	23	44	135	88	23	50	9.7	6.6	37
10	160	24	36	23	41	135	95	21	44	9.7	5.8	33
11	92	23	26	23	44	135	81	18	36	9.7	5.0	11
12	61	21	24	23	68	127	64	20	28	9.0	5.4	9.7
13	39	21	30	23	109	127	61	213	33	8.6	4.9	7.8
14	24	21	28	23	106	127	61	99	284	8.2	4.9	6.6
15	18	21	24	23	71	176	61	55	164	7.8	4.9	5.8
16	16	39	26	24	58	858	55	36	117	6.6	4.9	8.2
17	21	24	24	28	58	205	50	28	81	6.2	4.6	9.7
18	33	21	23	28	55	177	50	24	68	5.8	5.4	7.8
19	33	21	23	28	53	152	47	21	61	5.4	4.8	6.6
20	33	21	23	28	55	102	44	170	55	4.9	4.4	6.2
21	33	21	23	28	455	81	41	129	39	4.8	5.0	5.8
22	30	21	23	28	1,250	78	39	41	21	4.6	4.8	7.0
23	30	21	26	26	580	75	33	30	15	4.4	4.4	44
24	30	21	26	24	308	109	33	26	15	4.3	4.4	89
25	30	21	26	24	224	92	33	26	13	4.0	4.4	39
26	30	21	26	24	210	85	33	21	12	4.3	4.4	30
27	26	21	41	24	196	75	33	15	12	14	4.4	24
28	26	21	124	24	191	71	33	14	11	8.6	4.4	19
29	26	21	106	24	181	64	31	12	10	39	4.3	18
30	101	21	61	24	------	64	30	20	9.7	41	4.2	15
31	730	------	39	24	------	58	------	23	------	24	4.2	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October 3–31	730	16	97.1	5,590
November	102	21	28.2	1,680
December	124	18	31.9	1,960
January	30	23	25.3	1,560
February	1,250	24	162	9,320
March	858	58	148	9,100
April	95	30	54.8	3,260
May	213	12	41.9	2,580
June	1,810	9.7	140	8,330
July	41	4.0	10.2	627
August	14	4.2	5.56	342
September	89	5.8	20.4	1,210
The period				45,600

SAN GABRIEL RIVER AT CIRCLEVILLE, TEX.

LOCATION.—Chain gage on bridge half a mile southeast 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, 1928.

EXTREMES.—Maximum discharge during year, 46,400 second-feet October 2 (gage height, 32.75 feet); minimum discharge, 2.4 second-feet August 28 and 29.

1924–1928: Maximum discharge, that of October 2, 1927; no flow September 5, 6, 8, and 11, 1924.

The river reached a stage of 40.6±0.5 foot September, 1921.

REMARKS.—Records fair. Several small diversions for municipal uses above station; amount diverted not known.

Revised records of daily discharge for certain high-water periods in 1924 and unpublished records for periods in the years ending September 30, 1926 and 1927, are contained in the following table.

Daily discharge, in second-feet, for high-water periods in years ending September 30, 1924, 1926, and 1927

Date	Discharge	Date	Discharge	Date	Discharge
1924		1925		1927	
Apr. 9	1,420	Oct. 16	3,680	Feb. 9	3,820
Apr. 10	2,350	Nov. 6	4,090	Feb. 10	,540
Apr. 26	1,820			Mar. 29	2,210
Apr. 27	668	1926		Apr. 8	2,030
May 30	5,650	Jan. 16	3,580	Apr. 13	1,110
May 31	1,450	Jan. 17	2,230	Apr. 19	3,440
		Feb. 10	2,560	June 6	1,260
1925		Apr. 21	8,150		
Oct. 13	2,260	May 7	7,400		

NOTE.—The figures for Apr. 9, 10, 26, 27 and May 30 and 31, 1924, supersede those published in Water-Supply Paper 588. Discharge for the other periods given in the above table was withheld from publication in the water-supply papers containing the records for years ending Sept. 30, 1926 and 1927, because rating curve was not developed for high stages.

Daily discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,580	160	40	30	38	162	73	40	31	16	12	[a]22
2	14,600	70	31	30	47	162	73	40	38	16	12	6.8
3	235	66	31	30	57	162	73	40	122	16	12	20
4	147	60	31	30	70	162	88	40	1,440	15	12	16
5	90	66	31	30	102	162	106	40	222	14	9.2	[a]10
6	80	66	31	47	84	140	88	40	65	14	6.5	4.8
7	83	60	40	47	102	140	73	40	47	14	9.3	3.4
8	627	60	40	38	84	140	73	40	38	22	8.2	3.0
9	608	62	40	38	70	140	88	31	30	20	5.4	2.8
10	230	57	40	38	57	140	106	31	30	15	7.6	4.8
11	140	54	40	30	57	144	88	31	30	14	6.8	5.4
12	106	49	31	38	102	144	73	36	30	13	7.6	6.8
13	86	49	31	30	186	144	73	579	30	12	8.2	5.1
14	78	49	24	30	102	144	73	272	122	12	6.8	5.4
15	75	49	24	30	84	144	73	88	144	12	9.0	6.2
16	73	44	24	30	70	144	49	49	70	6.5	9.6	4.8
17	70	44	24	30	70	122	49	40	57		10	6.2
18	63	49	17	30	70	122	49	40	47		8.6	5.4
19	70	49	17	30	70	122	49	40	30		7.9	6.2
20	65	49	4.4	30	70	122	49	40	30		7.2	5.4
21	60	49	40	30	104	122	60	49	30	[a]11	6.5	5.4
22	60	49	40	30	854	122	60	88	22		5.8	4.8
23	60	49	40	30	399	122	60		22		6.5	6.2
24	60	49	40	30	248	122	49		22		7.9	6.8
25	60	49	31	30	235	144	49	[a]56	22		7.2	6.2
26	57	49	31	30	210	122	40		20	16	6.5	6.2
27	56	49	31	30	210	102	40		20	235	4.0	5.4
28	55	49	49	30	181	102	40	24	19	34	2.4	6.2
29	55	49	73	38	181	102	40	24	17	25	2.4	6.2
30	108	31	70	38	-------	102	40	24	16	17	4.8	5.4
31	108	-------	22	30	-------	84	-------	24	-------	13	9.0	------

[a] Estimated.

Monthly discharge, in second-feet, of San Gabriel River at Circleville, Tex., 1924–1928

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1924				
February	1,380	156	344	19,800
March	1,420	261	503	30,900
April	2,350	189	421	25,100
May	5,650	156	651	40,000
June	1,280	146	302	18,000
July	136	49	89.1	5,480
August	123	.4	35.9	2,210
September	300	0	34.3	2,040
The period				144,000
1924–25				
October	23	14	17.4	1,070
November	56	16	22.7	1,350
December	26	19	23.1	1,420
January	29	20	24.5	1,510
February	20	16	17.4	968
March	19	14	15.6	962
April	136	6.5	25.3	1,500
May	1,430	9.4	167	10,300
June	22	1.6	4.23	252
July	25	1.1	3.59	221
August	390	1.4	37.6	2,310
September	1,550	8	71.2	4,240
The year	1,550	1.1	36.0	26,100
1925–26				
October	3,680	4.0	333	20,500
November	4,090	32	275	16,400
December	61	38	46.6	2,870
January	3,580	41	376	23,100
February	265	143	194	10,800
March	2,560	138	440	27,100
April	8,150	252	822	48,900
May	7,400	252	809	49,700
June	754	98	199	11,800
July	890	61	163	10,000
August	170	29	48.8	3,000
September	52	17	26.6	1,580
The year	8,150	4.0	312	226,000
1926–27				
October	1,240	14	102	6,270
November	90	23	34.8	2,070
December	145	23	60.2	3,700
January	100	52	63.4	3,900
February	3,820	58	509	28,300
March	2,210	198	375	23,100
April	3,440	210	523	31,100
May	736	74	156	9,590
June	2,260	63	300	17,900
July	83	25	42.7	2,630
August	22	6.5	11.5	707
September	20	2.4	9.12	543
The year	3,820	2.4	179	130,000
1927–28				
October	14,600	55	705	43,300
November	160	31	56.1	3,340
December	73	4.4	34.1	2,100
January	47	30	32.6	2,000
February	854	38	145	8,340
March	162	84	133	8,180
April	106	40	64.8	3,860
May	579	24	68.1	4,190
June	1440	16	95.4	5,680
July	235		21.6	1,330
August	12	2.4	7.71	474
September	22	2.8	6.98	415
The period	14,600	2.4	115	83,200

NOTE.—Monthly discharge for April and May, 1924, supersedes the figures published in Water-Supply Paper 588. Discharge for many months not previously published because of lack of definition of rating curve for high stages is indicated in footnote to table on page 49, giving the daily discharge for certain periods in these years. Monthly discharge for the remaining months republished in order to complete the record.

YEGUA CREEK NEAR SOMERVILLE, TEX.

LOCATION.—Chain gage on Gulf, Colorado & Santa Fe Railway bridge 2 miles south of Somerville, Burleson County. Gage reading gives distance between water surface and base of rail.

DRAINAGE AREA.—990 square miles.

RECORDS AVAILABLE.—May, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, 2,440 second-feet February 24 (gage height, −26.7 feet); no flow during several periods.

1924–1928: Maximum discharge, about 29,500 second-feet April 22, 1926 (gage height, −18.02 feet); no flow during several periods.

REMARKS.—Monthly records fair. Record of daily discharge not sufficiently accurate for publication. No diversions above station. Flow partly regulated by swamp upstream.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	11	0.2	4.23	260
November	9.6	.2	2.58	154
December	84	.2	4.15	255
January	90	2.8	13	799
February	2,310	2.8	303	17,400
March	258	8.9	41.7	2,560
April	243	5.0	29.4	1,750
May	13	1.1	3.72	229
June	115	1.1	14.3	851
July	2.1	0	.59	36
The year	2,310	0	33.5	24,000

NOTE.—No flow during August and September.

NAVASOTA RIVER NEAR EASTERLY, TEX.

LOCATION.—Inverted staff gage at International-Great Northern Railroad bridge 6 miles northeast of Easterly, Robertson County. Zero of gage is 301.24 feet above mean sea level. Gage readings show distance from base of rail to water surface.

DRAINAGE AREA.—949 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, about 10,100 second-feet October 4 (gage height, −9.2 feet); minimum, 2.0 second-feet August 20–25 and September 8–26 (gage height, −25.0 feet).

1924–1928: Maximum discharge, about 10,200 second-feet April 23, 1926 (gage height, −9.1 feet); no flow during several periods.

REMARKS.—Monthly records fair. Daily discharge not sufficiently accurate for publication. No diversions above station.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	9,740	12	1,190	73,200
November	59	9.6	25.6	1,520
December	136	14	59.1	3,630
January	118	16	34.1	2,100
February	5,390	16	836	48,100
March	359	44	121	7,440
April	1,190	44	184	10,900
May	191	13	41.3	2,540
June	4,200	28	874	52,000
July	1,028	8.0	142	8,730
August	94	2.0	15.7	965
September	5.0	2.0	2.51	149
The year	9,740	2.0	291	211,000

COLORADO RIVER BASIN

COLORADO RIVER AT BALLINGER, TEX.

LOCATION.—Staff gage two-thirds of a mile below Gulf, Colorado & Santa Fe Railway bridge at Ballinger, Runnels County.

DRAINAGE AREA.—16,800 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—December, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 29,300 second-feet July 27 (gage height, 25.3 feet); minimum, 1.0 second-foot April 29, May 1, 2, and July 11–14.

1915–1928: Maximum discharge, that of July 27, 1928; no flow during several periods.

REMARKS.—Records for low and medium stages fair and for high stages poor. During periods of heavy local rains, backwater from small creek below gage may affect records for short periods. About 6,900 acres declared irrigated above station; during low stages the diversions are large part of total flow.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,110	10	2.8	5.5	4.5	4.5	1.6	1.0	73	27	465	2,740
2	1,630	8.0	2.8	5.5	4.5	5.5	1.8	1.0	64	20	338	386
3	438	7.5	2.8	5.5	4.0	5.0	1.6	1.2	91	10	681	312
4	202	7.0	2.8	5.5	4.5	5.0	1.8	2.4	389	5.5	1,580	338
5	113	6.0	2.8	5.5	4.5	4.5	2.4	2.4	465	3.5	4,240	183
6	80	7.0	2.8	6.0	4.0	5.0	2.8	2.0	266	2.4	1,420	146
7	62	6.0	2.8	6.0	3.5	5.5	2.0	2.0	137	1.4	447	96
8	78	6.0	2.6	6.0	3.5	5.0	2.4	2.0	102	1.2	188	80
9	293	6.0	2.6	6.0	3.5	7.0	4.5	1.8	73	1.2	316	64
10	91	6.0	2.8	6.0	4.0	12	2.8	1.8	55	1.2	386	59
11	55	5.5	3.0	5.5	3.0	7.0	2.4	4.1	1,440	1.0	167	59
12	146	5.0	3.0	5.0	4.0	5.5	2.0	6,540	1,100	1.0	1,480	59
13	175	5.0	4.0	5.0	4.0	5.0	2.8	17,400	1,890	1.0	1,040	44
14	113	5.0	6.0	4.5	4.0	4.0	3.0	6,400	782	1.0	713	38
15	75	5.0	6.0	4.0	4.0	4.0	3.5	4,140	492	15	386	37
16	53	5.0	5.0	4.0	4.0	2.8	2.8	1,860	287	18	361	35
17	46	4.0	4.0	8.4	4.0	6.0	2.4	678	150	6.5	221	33
18	38	4.0	4.0	49	4.5	6.5	2.4	410	113	2.2	316	28
19	32	4.0	4.0	82	5.0	5.5	2.4	19,700	75	1.6	644	27
20	30	4.0	3.5	33	7.5	4.5	2.4	14,300	59	1.2	748	32
21	27	3.5	4.5	17	13	4.5	241	6,800	53	1.0	438	30
22	27	3.5	4.5	11	35	4.5	44	1,910	3,820	2.0	386	32
23	24	4.0	4.5	7.0	13	4.0	13	748	391	1,790	438	33
24	21	4.0	4.5	6.0	6.5	3.5	5.5	520	99	5,640	1,410	30
25	18	4.0	4.5	5.5	6.0	3.0	2.8	361	167	9,000	562	32
26	17	3.5	4.5	4.5	6.0	2.6	2.2	249	104	14,800	205	32
27	14	3.5	9.0	3.5	5.0	2.2	1.6	186	70	26,700	143	33
28	12	3.5	10	3.5	4.5	1.8	1.2	124	42	20,100	110	37
29	12	3.5	10	3.5	4.5	1.8	1.0	118	33	12,000	86	37
30	12	3.5	9.0	4.0	------	1.4	1.2	93	32	2,530	68	28
31	10	------	8.0	4.0	------	1.4	------	78	------	782	467	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,110	10	195	12,000
November	10	3.5	5.08	302
December	10	2.6	4.62	284
January	82	3.5	10.6	652
February	35	3.0	6.14	353
March	12	1.4	4.53	279
April	241	1.0	12.1	720
May	19,700	1.0	2,670	164,000
June	3,820	32	430	25,600
July	26,700	1.0	3,020	186,000
August	4,240	68	660	40,600
September	2,740	27	171	10,200
The year	26,700	1.0	606	441,000

COLORADO RIVER NEAR MILBURN, TEX.

LOCATION.—Combination staff and chain gage at steel highway bridge 1½ miles northwest of Milburn, McCullough County.

DRAINAGE AREA.—24,600 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—November, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, about 33,700 second-feet July 29 (gage height, 35.10 feet); minimum, 7.4 second-feet July 19 (gage height, 3.65 feet).

1923–1928: Maximum discharge, 35,100 second-feet April 23, 1926 (gage height, 36.1 feet); minimum, 0.6 second-foot August 10, 1924 (gage height, 3.08 feet).

REMARKS.—Records fair. Discharge interpolated October 22, 23, November 6, 26, December 3, 4, 7, 8, 25, January 5 and 8. About 18,000 acres declared irrigated above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,600	51	28	63	51	51	17	27	219	85	1,380	761
2	24,700	47	28	66	51	47	16	23	204	62	930	3,730
3	14,500	45	28	65	51	44	14	19	350	51	755	1,000
4	2,700	42	27	63	57	41	14	42	370	39	14,700	456
5	1,380	42	27	60	62	39	3,250	27	204	33	1,810	382
6	650	40	26	58	60	38	687	19	397	29	1,830	361
7	342	39	27	57	57	38	192	16	486	28	1,830	252
8	219	39	28	57	51	38	142	12	304	23	1,080	207
9	172	38	30	57	51	38	94	11	213	20	685	178
10	236	38	31	57	48	38	65	9.8	201	17	914	139
11	430	37	31	57	46	40	45	8.8	4,850	15	895	115
12	304	33	31	58	48	40	37	7.8	5,590	14	515	110
13	201	34	41	60	48	38	33	5,040	11,200	13	728	98
14	181	34	41	58	48	51	27	17,200	12,800	12	930	87
15	219	34	41	55	48	72	26	16,200	3,010	11	930	79
16	198	34	41	55	50	76	20	4,530	1,220	10	580	87
17	161	39	47	55	46	60	17	3,230	755	8.8	382	368
18	134	37	50	57	45	41	16	1,080	456	8.0	382	354
19	117	34	48	58	42	38	14	3,070	322	20	1,120	132
20	108	30	48	55	40	36	13	19,800	252	28	930	76
21	98	29	50	112	96	31	12	20,700	213	21	1,420	55
22	93	29	50	161	316	29	36	9,290	175	16	755	460
23	88	29	50	120	139	28	44	2,890	2,630	17	486	2,130
24	83	28	50	92	94	27	33	1,300	1,480	22	544	442
25	78	28	51	81	76	26	108	860	342	5,800	1,550	181
26	65	28	52	78	68	25	85	580	195	10,300	1,250	127
27	63	28	52	65	66	23	60	456	158	15,200	430	3,590
28	57	28	66	63	63	23	51	342	186	27,600	269	1,540
29	52	28	63	60	57	20	45	286	142	29,900	219	895
30	51	28	63	57	-------	18	37	236	122	7,580	169	382
31	51	-------	63	52	-------	18	-------	195	-------	2,960	315	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	24,700	51	1,910	117,000
November	51	28	35.0	2,080
December	66	26	42.2	2,590
January	161	52	68.1	4,190
February	316	40	68.1	3,920
March	76	18	37.8	2,320
April	3,250	12	175	10,400
May	20,700	7.8	3,470	213,000
June	12,800	122	1,630	97,000
July	29,900	8.0	3,220	198,000
August	14,700	169	1,310	80,600
September	3,730	55	626	37,200
The year	29,900	7.8	1,060	768,000

COLORADO RIVER NEAR TOW, TEX.

LOCATION.—Water-stage recorder at highway bridge 1¼ miles northeast of Tow, Llano County.

DRAINAGE AREA.—31,100 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 27,200 second-feet October 4 (gage height, 16.22 feet); minimum, 29 second-feet July 26 (gage height, 4.99 feet).

1923–1928: Maximum discharge, 30,300 second-feet (revised) May 12, 1925 (gage height, 16.74 feet); minimum, 24 second-feet January 10, 1925 (gage height, 5.00 feet).

Highest known stage, 28.4 feet (on present gage) in April, 1900.

REMARKS.—Records good, except those for estimated periods, which are fair. Numerous small diversions above station; amount diverted not known.

Daily and monthly discharge, in second-feet, 1927–1928

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,900	1,210	126	179	171	196	120	201		350	[b] 7,470	460
2	9,420	929	132	171	196	183	120	171	[a] 1,570	293	2,360	2,140
3	23,800		129	175	183	183	123	163		255	1,660	4,660
4	26,600		126	179	196	183	142	159	[b] 1,290	234	1,200	2,280
5	9,660		120	179	191	179	144	144	1,070	187	8,280	1,160
6	2,570	[a] 284	129	175	196	171	414	136	1,440	151	7,980	754
7	1,720		129	179	183	163	3,240	120	1,080	123	4,140	596
8	1,230		126	183	175	159	1,160	118	903	113	3,390	552
9	1,350		120	183	167	159	696	115	788	98		444
10	1,540		118	179	163	155	524	106	596	86		350
11	1,320	[b] 187	118	175	159	151	456	98	1,990	75		310
12	1,350	171	120	175	171	144	380	110	8,140	72		266
13	1,120	167	123	171	171	144	322	136	8,560	63		215
14	779	167	799	167	179	136	277	234	14,700	63		196
15		167	1,120	171	183	498	239		15,000	61		175
16		167	552	175	187	318	210		5,140	54		163
17		159	327	175	196	220	201	[a] 6,200	2,710	47		167
18		215	225	175	201	271	191		1,660	43		139
19		225	183	179	210	339	179		1,220	41		126
20		183	171	175	201	271	163		912	37	[a] 1,340	310
21		175	159	167	205	220	155	15,400	704	35		304
22	[a] 335	175	155	159	310	201	144	23,800	567	34		244
23		175	167	163	852	187	132		490	32		1,540
24		155	175	171	1,110	183	129		580	31		4,580
25		151	179	225	657	179	126		2,460	30		2,320
26		144	179	282	430	175	123	[a] 5,200	1,080	2,700		930
27		144	183	244	327	148	120		779	7,110		641
28		139	220	215	255	144	108		649	11,800		1,490
29		132	191	205	220	139	113		470	[b] 17,700		5,330
30		132	183	196	-------	129	196		368	[b] 21,700		2,450
31		-------	191	183	-------	126	-------		-------	23,800		-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	26,600	----------	3,070	189,000
November	1,210	132	258	15,400
December	1,120	118	225	13,800
January	282	159	185	11,400
February	1,110	159	277	15,900
March	498	126	195	12,000
April	3,240	108	355	21,100
May	23,800	98	4,040	248,000
June	15,000	368	2,670	159,000
July	23,800	30	2,820	173,000
August	8,280	----------	2,170	133,000
September	5,330	126	1,180	70,200
The year	26,600	30	1,460	1,060,000

[a] Estimated. [b] Partly estimated.

COLORADO RIVER AT AUSTIN, TEX.

LOCATION.—Water-stage recorder at Congress Avenue viaduct in Austin, Travis County. Zero of gage is 431.77 feet above mean sea level.

DRAINAGE AREA.—38,200 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—February, 1898, to September, 1928.

EXTREMES.—Maximum discharge during year, 39,500 second-feet October 3 (gage height, 10.9 feet); minimum, 80 second-feet July 24–26.

1898–1928: Maximum discharge, about 236,000 second-feet a few minutes after failure of Austin Dam, April 7, 1900 (gage height, 33.5 feet). At the time of failure the depth of water over dam was 11.07 feet (computed discharge, 151,000 second-feet); the flood appeared to be practically at its crest when the dam failed. Minimum discharge, 13 second-feet August 18, 1918.

REMARKS.—Records good. Discharge partly estimated March 23–28 and July 28–30. About 36,000 acres declared irrigated above station. Flow at low stages affected by storage in Lake Austin; power plant at dam not operated since 1918.

Daily and monthly discharge, in second-feet, 1927–1928

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,080	2,060	307	520	388	825	283	211	1,200	900	28,400	1,080
2	21,300	5,390	307	463	404	690	271	191	1,080	714	17,000	1,060
3	25,800	3,400	301	454	438	624	301	203	1,170	602	6,180	885
4	36,100	2,580	307	429	560	580	265	211	2,050	490	3,340	1,140
5	32,500	1,820	307	420	602	520	360	211	3,120	412	2,400	4,340
6	20,100	1,310	339	412	657	480	367	215	2,580	353	1,970	2,880
7	8,190	960	381	420	668	472	313	245	2,080	332	11,000	1,860
8	7,730	798	319	463	646	454	346	225	2,010	301	6,620	1,390
9	5,920	690	313	420	613	463	1,280	195	2,140	346	4,860	1,170
10	6,960	602	332	438	560	446	2,170	187	1,900	295	3,830	855
11	4,690	560	339	438	510	429	1,710	191	1,920	255	2,620	750
12	3,520	530	332	446	530	404	1,290	187	4,820	225	1,920	679
13	3,010	472	353	446	550	420	1,180	250	9,600	187	1,480	613
14	2,420	446	381	438	530	404	900	283	11,600	164	1,310	613
15	2,300	480	395	429	500	404	738	283	14,400	150	1,460	520
16	1,880	438	319	395	500	438	613	1,220	22,200	138	1,180	429
17	1,540	388	633	412	500	346	530	15,400	18,100	135	960	404
18	1,270	404	1,080	404	454	388	480	16,400	8,890	135	1,240	339
19	1,080	412	840	420	438	550	429	8,890	5,040	132	1,150	301
20	930	388	679	388	454	550	360	7,320	3,490	115	1,110	277
21	885	367	560	374	614	480	395	4,050	2,600	109	1,530	289
22	825	381	463	360	635	463	395	9,580	2,100	106	4,860	283
23	762	420	404	353	635	480	289	24,800	1,650	90	3,550	346
24	702	404	388	388	994	480	271	26,600	1,390	84	2,700	429
25	668	360	381	360	1,170	520	245	14,500	1,100	80	2,100	635
26	624	360	374	360	1,400	702	265	5,910	930	88	1,500	3,810
27	580	360	388	346	1,520	624	260	3,260	1,520	135	1,200	3,290
28	550	353	613	325	1,260	472	195	5,560	2,050	833	930	2,120
29	480	332	560	325	1,040	480	187	1,970	1,560	10,600	1,520	1,540
30	550	374	591	395	-------	374	207	1,610	1,110	19,900	1,730	1,490
31	714	-------	635	395	-------	313	-------	1,390	--------	25,300	1,240	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	36,100	480	6,470	398,000
November	5,390	332	928	55,200
December	1,080	301	449	27,600
January	520	325	408	25,100
February	1,520	388	682	39,200
March	825	313	493	30,300
April	2,170	187	563	33,500
May	26,600	187	4,900	301,000
June	22,200	930	4,510	268,000
July	25,300	80	2,060	127,000
August	28,400	930	3,960	243,000
September	4,340	277	1,190	70,800
The year	36,100	80	2,230	1,620,000

EVAPORATION NEAR AUSTIN, TEX.

LOCATION.—At reservoir on Hill ranch, 5 miles southeast of Austin, Travis County. Altitude, 475 feet.

RECORDS AVAILABLE.—April, 1916, to September, 1928.

EQUIPMENT.—Two evaporation pans—one pan floating on surface of reservoir, and the other on land 30 feet from reservoir. Auxiliary equipment consists of hook gage, rain gage, anemometer, maximum and minimum thermometers, and psychrometer.

REMARKS.—Reservoir is 250 feet long and 30 feet wide. Moss and weed growth in reservoir may at times affect results. Records from land pan more accurate than those from floating pan. Observations made daily at 8 a. m. Computations made by United States Weather Bureau.

Evaporation near Austin, Tex., 1927–28

Month	Temperature (° F.)					Mean relative humidity (per cent)[b]	Wind		Rainfall (inches)	Evaporation (inches)	
	Air			Water			Average velocity (miles an hour)	Prevailing direction		Floating pan	Land pan
	Mean maximum	Mean minimum	Mean	Floating pan (mean)	Land pan (mean)						
October	84.3	55.5	69.9	68.8	63.6	88	1.2	NE.	4.87	[a] 3.568	[a] 4.835
November	80.0	55.0	67.5	64.4	61.1	88	1.7	S.	T.	2.751	3.635
December	56.4	36.8	46.6	48.8c	47.3g	75	2.6	NE.	3.64	[a] 2.480	[a] 2.448
January	62.9	35.8	49.4	49.5e	46.8e	74	2.4	N.	.38	[a] 1.984	[a] 3.132
February	61.4	41.3	51.4	52.3	47.4	81	2.8	N.	6.20	[a] 2.361	[a] 2.788
March	75.7	48.9	62.3	59.6	54.5	78	3.3	N.	.36	4.668	6.153
April	76.1	50.1	63.1	61.4	57.5	84	3.1	S.	1.46	[a] 5.176	[a] 5.669
May	86.2	60.4	73.3	71.9	67.7	80	1.3	S.	2.70	[a] 5.749	[a] 7.342
June	91.4	69.7	80.6	78.4	73.8	86	1.8	S.	3.66	[a] 6.348	7.555
July	96.7	72.0	84.4	81.8	77.0	87	1.2	S.	2.40	[a] 6.783	[a] 9.172
August	98.2	71.4	84.8	80.6	76.2	84	1.3	S.	.46	7.963	9.357
September	87.2	63.7	75.4	73.5	69.4	85	1.8	N.	3.46	[a] 4.781	[a] 6.476
The year	79.7	55.0	67.4	65.9	61.9	--------	2.0	S.	29.59	54.612	68.552

[a] Estimated.

[b] Relative humidity figures given are for the United States Weather Bureau station at Austin, Tex.

NOTE.—Letters following figures indicate number of days missing: a, 1 day; b, 2 days; etc.

COLORADO RIVER AT COLUMBUS, TEX.

LOCATION.—Water-stage recorder at county highway bridge in eastern edge of Columbus, Colorado County, 400 feet below Galveston, Harrisburg & San Antonio Railway bridge.

DRAINAGE AREA.—40,800 square miles, part of which is noncontributing.

RECORDS AVAILABLE.—January, 1903, to December, 1911; May, 1916, to September, 1928.

EXTREMES.—Maximum discharge during year, 27,700 second-feet October 5 (gage height, 21.4 feet); minimum not determined.

1903-1911, 1916–1928: Maximum discharge, about 79,500 second-feet May 5, 1922 (gage height, 38.3 feet); minimum, 10 second-feet September 9 and 10, 1910.

Stage of 44.6 feet was reached in 1869 and December 6, 1913, when river divided into two channels and left Columbus on an island.

REMARKS.—Records fair. About 36,000 acres declared irrigated above Austin. Flow during low stages is partly controlled by storage in Lake Austin.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	[a] 655	1,060	590	[a]1,090	510	1,610		[a] 370	2,320	1,820	13,200	1,460
2	2,160	1,210	590	910	507	1,430		[a] 366	2,030	1,580	17,600	2,030
3	4,490	1,120	590	880	[a] 542	1,330		[a] 362	1,820	1,300	17,800	1,510
4	11,600	[a]2,110	570	880	[a] 590	1,180	[b] 610	[a] 356	1,580	1,150	10,600	1,360
5	19,700	[a]3,660	570	830	630	1,060		[a] 321	1,430	1,030	6,860	1,360
6	26,900	2,960	590	755	680	970		[a] 307	1,390	910	5,030	1,180
7	14,700	2,480	655	730	755	880	435	[a] 301	1,890	830	3,840	1,340
8	15,900	2,030	590	705	830	[a] 855	423	[a] 298	2,560	910	3,040	3,140
9	8,900	1,680	590	705	805	[a] 805	1,320	[a] 295	1,360	910	6,140	2,640
10	8,480	1,430	610	680	[a] 805	[a] 924	1,030	[a] 295	2,030	1,720	6,490	2,030
11	6,340	1,270	630	655	[a] 805	1,200	1,090	[a] 296	1,890	985	4,860	1,610
12	6,100	[a]1,120	630	655	805	1,630	1,080	[a] 296	2,030	[a] 655	4,370	1,390
13	5,260	1,030	590	[a] 630	805	1,020	1,610	312	1,890	[a] 570	3,640	1,180
14	[a]4,260	940	590	[a] 630	780	780	1,390	414	2,230	[a] 526	2,880	1,030
15	[a]3,640	880	610	610	855	904	1,180	384	7,120	[a] 489	2,320	910
16	3,140	830	[a] 590	610	830	[a]1,100	970	360	9,250	[a] 456	1,960	880
17	2,800	780	590	590	755	730	880	[a] 396	13,400	[a] 426	1,750	830
18	2,480	755	590	590	705	680	780	[a] 432	15,600	[a] 396	1,750	805
19	2,170	755	590	[a] 570	705	655	730	[a]5,810	10,200	[a] 382	1,610	755
20	1,960	730	590	[a] 570	680	655	655	9,660	7,120	368	1,430	730
21	1,720	705	780	[a] 550	705	655	610	6,860	5,380	358	1,420	730
22	1,540	705	1,030	550	2,040	655	550	6,100	4,260	352	1,430	630
23	1,420	680	970	570	9,250	730	492	5,040	3,240	342	1,420	630
24	1,330	680	855	550	[a]4,230	1,940	465	9,320	2,720	334	1,760	610
25	1,240	655	805	542	[a]2,330	1,880	441	18,000	3,330	328	3,740	610
26	1,180	655	730	530	1,640	[a] 780	429	14,000	2,560	328	3,140	610
27	1,120	680	680	530	1,430	[a] 655	411	10,000	1,890	358	2,640	610
28	1,060	680	805	546	1,480	[a] 610	390	6,610	1,540	432	2,240	622
29	1,030	630	1,160	542	1,510	[a] 590	384	4,920	1,330	602	1,820	2,350
30	940	610	1,300	534	-------	[a] 570	376	3,640	1,430	579	1,540	2,400
31	970	-------	[a]1,530	522	-------	[a] 570	-------	2,880	-------	3,570	1,330	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	26,900	655	5,330	328,000
November	3,660	610	1,180	70,200
December	1,530	570	729	44,800
January	1,090	522	653	40,200
February	9,250	507	1,390	80,000
March	1,940	570	969	59,600
April	1,610	376	726	43,200
May	18,000	295	3,520	216,000
June	15,600	1,330	3,890	231,000
July	3,570	328	806	49,600
August	17,800	1,330	4,500	277,000
September	3,140	610	1,270	75,600
The year	26,900	295	2,080	1,520,000

[a] Based on Weather Bureau gage readings. [b] Estimated.

CONCHO RIVER NEAR SAN ANGELO, TEX.

LOCATION.—Water-stage recorder half a mile below confluence of North Concho and South Concho Rivers and 1¾ miles southeast of San Angelo, Tom Green County.

DRAINAGE AREA.—4,490 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 25,400 second-feet October 1 (gage height, 23.35 feet); minimum, 1.6 second-feet July 7 and 8 (gage height, 0.29 foot).

1915–1928: Maximum discharge, about 139,000 second-feet April 26, 1922 (gage height, 36.8 feet); no flow November 29, 1921.

REMARKS.—Records for low and medium stages good, for high stages fair, except those for October 21 to November 3, February 29, March 1, 2, July 4–6, and September 22–28, which were estimated. About 11,000 acres declared irrigated above station. Flow at low stages affected by diversions and storage above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,000	30	23	44	31	26	9.7	4.4	7.7	1.9	122	84
2	1,670		18	45	29	26	14	4.5	6.0	1.9	77	103
3	1,140	23	15	47	31	28	15	4.5	28	2.0	142	50
4	459	22	18	47	32	25	13	4.5	58	1.9	120	25
5	211	28	24	48	32	25	9.0	3.8	28	1.8	80	22
6	134	25	26	45	33	25	11	3.2	17	1.7	58	26
7	96	26	26	48	32	25	4.9	3.3	11	1.6	45	22
8	327	25	26	47	28	25	5.6	4.5	6.3	1.6	38	16
9	143	22	30	45	26	22	14	4.9	3.8	1.8	60	27
10	90	22	36	45	23	32	25	3.8	375	1.8	112	34
11	76	20	45	45	25	30	29	3.0	1,360	1.7	43	27
12	64	19	45	43	29	28	29	12	358	1.7	38	19
13	64	20	53	40	26	20	29	1,300	1,430	2.5	60	15
14	62	18	44	38	27	20	25	950	923	3.8	54	7.4
15	59	18	42	37	26	27	28	139	229	2.1	63	8.7
16	54	18	40	38	29	18	29	298	134	1.9	572	6.0
17	53	18	39	60	25	21	28	117	92	1.8	48	4.4
18	52	19	39	53	18	24	20	85	64	1.8	41	4.9
19	51	20	38	46	18	24	18	105	58	1.9	48	8.4
20	47	20	39	43	23	21	14	334	47	2.0	423	6.7
21	43	22	43	40	26	16	58	204	35	1.9	98	4.5
22		25	43	42	28	14	43	103	25	159	56	
23		24	44	44	28	11	18	66	13	163	38	
24		20	43	40	28	12	12	55	14	36	28	
25		19	44	38	30	16	8.4	46	14	584	20	21
26	30	19	45	39	31	17	6.7	35	8.0	1,470	18	
27		18	50	38	29	14	6.5	26	4.4	5,450	18	
28		18	60	38	25	14	5.2	20	2.6	1,090	16	
29		22	55	38	25	8.4	4.7	14	2.0	645	16	50
30		20	54	36	------	7.7	4.2	12	1.9	391	11	46
31		------	48	33	------	10	------	12	------	220	9.7	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,000	----------	458	28,200
November	----------	18	21.7	1,290
December	60	15	38.5	2,370
January	60	33	42.9	2,640
February	33	18	27.3	1,570
March	32	7.7	20.4	1,250
April	58	4.2	17.9	1,070
May	1,300	3.0	128	7,870
June	1,430	1.9	179	10,700
July	5,450	1.6	331	20,400
August	572	9.7	83.0	5,100
September	----------	----------	25.5	1,520
The year	9,000	1.6	115	84,000

CONCHO RIVER NEAR PAINT ROCK, TEX.

LOCATION.—Water-stage recorder at Concho, San Saba & Llano Valley Railroad bridge 2 miles northwest of Paint Rock, Concho County.

DRAINAGE AREA.—5,530 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, about 30,100 second-feet October 1 (gage height, 16.35 feet); no flow July 9–12.

1915–1928: Maximum gage height, 27.5 feet April 27, 1922 (discharge not determined); no flow during several periods.

REMARKS.—Records for low stages fair; for high stages poor. About 11,000 acres declared irrigated from Concho River, practically all above station. Flow during low stages materially affected by diversions and storage above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13,000	30	17	54	41	b33	5.6	3.4	37	1.7	201	657
2	4,800	27	19	49	41	33	4.2	3.0	621	1.4	124	82
3	1,120	34	20	49	38	30	3.6	3.0	59	.9	82	108
4	719	35	22	51	37	30	3.2	3.0	28	.6	96	73
5	322	35	21	51	38	31	3.4	2.6	22	.5	170	44
6	194	31	17	51	38	31	3.0	1.8	47	.3	220	28
7	140	31	21	51	37	31	2.6	1.6	41	.1	37	22
8	108	34	24	51	37	31	3.0	1.4	31	.1	87	24
9	335	34	26	51	35	33	5.6	1.2	24	0	144	23
10	153	35	26	49	33	61	5.6	1.0	101	0	41	22
11	111	34	28	47	28	38	5.1	.8	3,110	0	78	30
12	84	31	37	49	27	35	4.7	.8	651	0	49	
13	69	28	47	47	27	35	13	3,120	6,320	124	34	
14	63	26	52	47	26	33	16	847	2,270	129	25	
15	61	25	52	46	26	30	15	194	482	11	41	
16	55	24	47	43	24	24	16	214	233	3.0	41	
17	54	23	47	41	23	23	20	229	146	1.6	46	
18	51	21	46	54	23	25	21	146	100	1.6	343	a50
19	51	20	44	71	25	25	21	108	77	1.6	71	
20	49	20	44	52	24	24	20	102	61	1.2	153	
21	49	21	44	47	23	26	47	2,040	52	.9	296	
22	47	22	46	44	28	26	61	295	43	.7	119	
23	46	22	49	41		25	34	149	34	4.7	67	
24	46	23	49	46		21	38	93	29	89	43	
25	44	24	49	47		16	27	73	75	712	33	
26	44	23	49	46	a30	14	20	65	25	852	24	b71
27	43	22	51	43		12	14	54	14	7,650	21	142
28	41	21	59	43		12	8.2	46	7.3	1,690	13	113
29	37	20	65	44		12	6.0	38	3.8	b970	7.3	111
30	24	20	65	43	------	9.0	4.7	34	2.8	540	7.3	75
31	33	------	59	43	------	6.9	------	30	------	337	6.0	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	13,000	33	710	43,700
November	35	20	26.5	1,580
December	65	17	40.1	2,470
January	71	41	48.1	2,960
February	------	------	30.7	1,770
March	61	6.9	26.3	1,620
April	61	2.6	15.0	893
May	3,120	.8	255	15,700
June	6,320	2.8	492	29,300
July	7,650	0	423	26,000
August	343	6.0	87.7	5,390
September	657	------	77.5	4,610
The year	13,000	0	187	136,000

a Estimated. b Partly estimated.

NORTH CONCHO RIVER NEAR CARLSBAD, TEX.

LOCATION.—Water-stage recorder just above State Sanitorium Dam, 2 miles above Carlsbad, Tom Green County.

DRAINAGE AREA.—1,530 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, about 23,200 second-feet July 26 (gage height, 12.15 feet); no flow June 29 to July 20.

1924–1928: Maximum discharge, about 35,600 second-feet May 30, 1925 (gage height, 14.45 feet); no flow during several periods.

REMARKS.—Records for low stages fair and for high stages poor. At low stages flow affected by pumping; capacity of pumps 40 second-feet, but actual amount of water diverted not known. Low-water flow partly regulated by small reservoir above gage.

Daily and monthly discharge, in second feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	0.3	2.2	4.5	4.5	6.8		12	5.8	0	11	6.8
2	37	.5	2.5	5.1	4.5	6.8		12	6.8	0	7.9	7.9
3	11	.7	3.8	5.1	4.5	6.8		15	49	0	7.9	23
4	5.8	.5	3.8	5.1	5.1	7.9	6.0	15	7.9	0	6.8	16
5	3.2	.4	3.8	5.1	5.1	7.9		18	5.8	0	6.8	10
6	2.2	.5	3.8	5.1	5.1	7.9		19	3.8	0	5.8	6.8
7	1.2	.5	3.8	5.1	5.1	7.9	5.8	18	3.8	0	5.1	5.8
8	2.0	.6	3.8		5.1	7.9	6.8	17	3.8	0	4.5	5.1
9	2.5	.6	3.8		4.5	7.9	6.8	15	3.2	0	4.5	5.1
10	2.2	.8	4.5	5.0	4.5	6.8	6.8	13	3.8	0	4.5	5.1
11	1.7	1.0	3.8		5.8	6.8	5.8	12	93	0	11	5.1
12	.6	1.2	4.5		6.8	7.9	6.8	42	134	0	33	4.5
13	.6	1.1	4.5	5.1	6.8	7.9	6.8	512	39	0	10	5.1
14	.5	1.1	4.5	5.1	6.8	8.9	5.8	11	13	0	5.8	4.5
15	.5	1.5	4.5	4.5	5.8	7.9	7.9	5.1	8.9	0	5.1	4.5
16	.5	1.5	3.8	4.5	6.8	7.9	7.9	7.9	2.5	0	3.8	3.2
17	.6	1.0	3.8	5.1	5.8	6.8	7.9	8.9	.9	0	3.8	1.1
18	.7	1.7	3.8	5.8	5.8	6.8	8.9	7.9	1.2	0	3.8	.7
19	.5	2.0	3.8	5.1	5.8	7.9	8.9	159	.7	0	3.8	.7
20	.5	2.2	3.8	4.5	5.8	7.9	8.9	369	.6	0	3.8	.5
21	.5	3.2	4.5	4.5	6.8		62	82	.5	468	4.5	.4
22	.5	3.8	4.5	4.5	7.9		6.8	31	.3	245	5.1	.6
23	.5	3.8	4.5	4.5	6.8		6.8	17	.2	49	3.8	2.5
24	.3	3.8	4.5	4.5	6.8		7.9	12	.2	508	12	3.8
25	.3	3.2	4.5	4.5	5.8		6.8	11	.1	940	7.9	3.2
26	.3	3.2	3.8	4.5	6.8	6.5	6.8	10	.1	4,480	5.8	3.2
27	.3	3.8	3.8	4.5	6.8		7.9	8.9	.1	2,970	5.8	3.8
28	.3	3.8	4.5	4.5	6.8		10	7.9	.1	197	5.1	3.8
29	.3	3.8	4.5	4.5	6.8		11	8.9	0	82	3.8	3.8
30	.3	2.2	5.1	4.5	------		12	5.8	0	22	3.8	3.8
31	.3	------	4.5	4.5	------		------	5.8	------	17	31	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	65	0.3	4.60	283
November	3.8	.3	1.81	108
December	5.1	2.2	4.04	248
January	5.8	4.5	4.82	296
February	7.9	4.5	5.91	340
March	------	------	7.19	442
April	62	------	9.19	547
May	512	5.1	48.0	2,950
June	134	0	13.0	774
July	4,480	0	322	19,800
August	33	3.8	7.65	470
September	23	.4	5.01	298
The year	4,480	0	36.6	26,600

NORTH CONCHO RIVER AT SAN ANGELO, TEX.

LOCATION.—Water-stage recorder at concrete viaduct in San Angelo, Tom Green County, 1 mile above confluence with South Concho River.
DRAINAGE AREA.—1,800 square miles.
RECORDS AVAILABLE.—October, 1915, to September, 1928.
EXTREMES.—Maximum and minimum discharge during year not determined. 1915–1928: Maximum discharge not determined; maximum stage when backwater from Concho River probably existed, 19.3 feet April 26, 1922; no flow during several periods.
REMARKS.—Records fair except those for estimated periods, which are poor. About 600 acres declared irrigated above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		1.6	0.7		4.4		3.4	3.1	6.8
2	[a]1,120	1.6	.7		5.0		3.4	3.1	6.0
3		1.8	1.3		5.0		3.4	3.4	20
4		1.8	1.8		5.5		3.1	2.8	31
5		1.8	1.8	[a]4.4	5.5		5.0	2.3	15
6	[a]12	1.8	1.8		5.0		3.9	2.8	10
7	2.8	1.3	2.3		4.4		2.8	3.1	6.0
8	70	1.6	2.6		4.4		3.4	3.9	5.0
9	20	1.8	2.6		4.4		6.0	2.8	3.9
10	5.5	1.8	2.8	[b]3.4	4.4		6.8	2.6	11
11	4.4	1.8	2.8	3.9	4.4		6.0	2.3	------
12	2.8	1.8	3.4	3.4	5.0	[a]5.0	5.5	48	------
13	2.6	1.3	5.0	3.9	5.0		5.0	1,250	------
14	2.6	1.3	3.9	3.4	5.5		5.5	104	------
15	2.6	1.8	3.4	3.9	5.5		6.0	25	------
16	2.3	1.8	3.1	3.9	[b]5.0		5.0	10	------
17	2.3	1.1	2.8	7.7			4.4	9.4	------
18	2.3	.7	2.8	5.0			4.4	12	------
19	2.0	.5	2.8	5.0			4.4	196	------
20	2.0	.5	2.6	5.0			4.4	375	------
21	2.0	1.3	2.8	4.4			49	147	------
22	2.3	.9	2.8	3.9			27	73	------
23	2.8	.7	2.8	3.9	[a]5.8		10	41	------
24	3.1	.9	2.8	3.9		4.4	6.0	29	------
25	2.6	.9	2.8	3.9		4.4	5.5	20	------
26	2.3	1.1	2.8	3.9		4.4	5.5	18	------
27	2.3	1.1	3.9	3.9		3.9	5.0	13	------
28	2.3	1.1	3.9	4.4		3.4	4.4	12	------
29	1.8	1.1	[b]3.9	3.9		3.4	3.4	10	------
30	1.6	.7	[a]4.4	4.4	------	3.4	3.4	10	------
31	1.6	------		4.4	------	3.1	------	9.4	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	----------	1.6	150	9,220
November	1.8	.5	1.31	78
December	5.0	.7	2.85	175
January	7.7	3.4	4.29	264
February	----------	4.4	5.30	305
March	----------	3.1	4.69	288
April	49	28	7.03	418
May	1,250	2.3	78.8	4,850
June 1–10	31	3.9	11.5	228
The period	----------	----------	----------	15,800

[a] Estimated. [b] Partly estimated.

NOTE.—No record June 11 to Sept. 30.

PECAN BAYOU AT BROWNWOOD, TEX.

LOCATION.—Staff gage at pumping plant of city of Brownwood, 800 feet above lower dam and 1 mile north of Brownwood, Brown County. Zero of gage is 1,319.26 feet above mean sea level.

DRAINAGE AREA.—1,610 square miles.

RECORDS AVAILABLE.—May, 1917, to June, 1918; October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 22,600 second-feet May 20 (gage height, 14.30 feet); no flow during several periods.

1917–18, 1923–1928: Maximum discharge, that of May 20, 1928; no flow during several periods.

REMARKS.—Monthly records fair. Daily discharge not sufficiently accurate for publication. 590 acres declared irrigated above station. Flow regulated during normal stages by storage reservoir and pumping plants above station.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7,500	0	424	26,100
February	82	0	4.60	265
March	5.1	0	.38	23
April	1,760	0	74.9	4,460
May	15,800	0	1,290	79,300
June	1,860	0	173	10,300
July	5,210	0	257	15,800
August	6,060	0	532	32,700
September	171	0	10.7	637
The year	15,800	0	234	170,000

NOTE.—No flow during November, December, and January.

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.—1,150 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, about 1,310 second-feet October 2 (gage height, 6.0 feet); no flow July 11–13.

1915–1928: Maximum discharge, about 8,610 second-feet September 16, 1915 (gage height, 13.6 feet); no flow July 12–14, 19–31, August 1–4, 26–31, 1918, and July 11–13, 1928.

On June 5 and 6, 1899, river reached a stage of 25.4 feet, present datum.

REMARKS.—Records fair. Flow at low stages during irrigation season regulated by diversions to Noyes Canal, which diverts 4 miles above Menard. About 4,300 acres above and 7,700 acres below gage declared irrigated.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	291	15	24	22	36	15	22	10	2.8	1.9	21	9.3
2	931	15	24	17	36	14	15	11	5.1	1.9	21	84
3	211	13	24	17	38	15	11	11	4.7	1.9	24	44
4	92	12	24	17	40	16	11	11	4.3	1.9	19	35
5	46	12	25	18	41	15	12	10	3.4	1.4	13	33
6	42	12	27	18	43	16	12	9.8	3.4	.9	5.1	28
7	39	12	27	18	41	16	11	9.8	3.2	.6	3.4	26
8	42	12	27	18	40	16	12	9.0	2.8	.5	3.2	26
9	58	12	33	36	40	16	17	8.1	3.0	.2	8.4	38
10	68	12	40	37	38	19	16	7.5	94	.1	6.7	49
11	47	12	42	37	38	19	16	7.5	46	0	5.1	32
12	41	12	39	37	29	19	16	7.5	30	0	3.8	29
13	35	12	49	37	17	19	15	31	221	0	3.0	26
14	35	12	41	37	16	20	14	35	226	.7	3.0	26
15	34	13	38	37	14	21	13	38	137	1.1	2.8	14
16	33	15	37	38	13	21	13	38	55	1.1	2.8	13
17	33	15	36	40	13	21	13	38	36	1.1	3.0	16
18	34	16	36	41	13	20	13	7.2	30	1.1	3.2	16
19	34	16	36	41	13	20	12	7.2	26	1.1	3.0	19
20	35	16	36	38	13	19	12	6.7	26	1.1	6.7	27
21	33	16	36	38	28	19	12	7.2	22	1.0	6.7	24
22	14	16	38	38	27	19	12	7.0	10	1.0	5.6	36
23	13	16	38	38	24	19	12	7.2	5.8	1.0	5.1	68
24	12	16	23	38	16	19	12	7.2	4.3	1.1	3.4	44
25	12	23	20	38	14	19	11	7.2	4.0	1.1	3.8	38
26	12	27	20	38	14	20	11	7.2	4.0	1.3	3.4	48
27	11	27	20	38	14	20	11	6.7	4.0	362	3.0	78
28	11	24	23	38	15	19	11	5.1	2.6	174	3.0	84
29	11	24	23	37	15	19	10	5.4	2.6	42	3.0	58
30	18	24	21	37	------	17	10	3.6	2.1	26	2.8	50
31	15	------	21	37	------	17	------	3.3	------	22	4.5	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	931	11	75.6	4,650
November	27	12	16.0	952
December	49	20	30.6	1,880
January	41	17	32.8	2,020
February	43	13	25.5	1,470
March	21	14	18.2	1,120
April	22	10	12.9	768
May	38	3.3	12.3	756
June	226	2.1	34.0	2,020
July	362	0	21.0	1,290
August	24	2.8	6.63	408
September	84	9.3	37.3	2,220
The year	931	0	269	19,600

SAN SABA RIVER NEAR SAN SABA, TEX.

LOCATION.—Staff gage 200 feet above Beveridge highway bridge and 2 miles northwest of San Saba, San Saba County.

DRAINAGE AREA.—3,040 square miles.

RECORDS AVAILABLE.—December, 1904, to December, 1906; September, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 8,460 second-feet October 2 (gage height, 23.5 feet); minimum not determined.

1904–1906, 1915–1928: Maximum gage height, from floodmarks, about 37.0 feet April 26 or 27, 1922 (discharge not determined); no flow August 9 and 10, 1918.

REMARKS.—Records fair. Considerable water is diverted above gage. About 9,300 acres above and 2,700 acres below station declared irrigated. Flood waters from Brady Creek at Brady are stored for municipal use; capacity of reservoir not known but probably small.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	469	62	68	72	80	a 56	37	30		158	61
2	5,230	195	62	70	75	72	57	33	421		109	626
3	1,720	128	62	70	80	76	57	33	484		118	348
4	640	111	62	68	83	75	57	33	230		109	170
5	387	92	62	70	83	75	80	33	107		109	109
6	272	87	66	72	73	73	58	33	76		90	90
7	188	83	66	72	78	75	54	33	54		73	70
8	158	80	66	75	73	78	58	33	44		100	67
9	209	80	68	75	67	75	73	33	44		90	67
10	402	76	66	75	66	76	92	32	833		76	64
11	264	76	66	73	66	75	100	31	785		88	64
12	148	72	73	72	68	70	85	31	314	a 25	52	64
13	138	70	85	72	70	66	83	34	1,960		38	70
14	118	73	85	75	68	67	82	40	2,940		36	68
15	107	73	184	75	66	85	90	41	874		33	61
16	90	73	107	75	66	73	80	38	380		34	61
17	85	73	88	75	66	80	73	36	293		31	58
18	82	78	85	78	66	70	70	36	178		34	58
19	87	73	75	76	66	68	68	46	138		34	105
20	83	76	76	75	66	64	66	49	109		a 50	53
21	80	70	76	72	70	67	64	50	85		a 66	48
22	80	64	80	75	262	70	64	91	82		82	48
23	76	70	80	75	200	68	57	258	75		57	673
24	76	72	83	75	111	68	53	134	68		68	1,020
25	75	73	87	72	109	62	48	75	35	446	53	348
26	73	68	83	68	96	61	46	52	230	128	42	240
27	61	68	87	72	92	54	45	44	346	148	36	561
28	60	67	80	72	92	55	45	35	86	1,450	34	1,930
29	60	68	76	72	82	53	45	43	54	705	34	780
30	67	70	76	72	-------	52	43	34	38	276	34	515
31	796	-------	70	72	-------	54	-------	29	-------	188	35	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,230	60	390	24,000
November	469	64	94.3	5,610
December	184	62	78.8	4,850
January	78	68	72 8	4,480
February	262	66	87.3	5,020
March	85	52	68 9	4,240
April	100	43	65.0	3,870
May	258	29	50.3	3,090
June	2,940	30	380	22,600
July	1,450	-------	127	7,810
August	158	31	64.6	3,970
September	1,930	48	283	16,800
The year	5,230	-------	146	106,000

a Estimated.

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, 1928.

EXTREMES.—Maximum discharge during year, 43 second-feet April 29 and 30 (gage height, 1.91 feet); no flow during several periods.

1924–1928: Maximum discharge, 55 second-feet May 12 and June 13,1927 (gage height, 2.40 feet); no flow during several periods.

REMARKS.—Records fair. Canal diverts from San Saba River 4 miles above Menard. Water used for irrigation near Menard; 10 acres irrigated above station. Flow regulated at headgates.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	25	12	24	0	22	16	33	24	20	0	26
2	0	25	12	22	0	22	19	22	28	20	0	26
3	0	25	13	24	0	22	25	22	29	20	0	9.2
4	0	25	12	24	0	22	25	24	29	20	0	0
5	0	25	12	25	0	22	25	24	28	18	9.2	0
6	0	25	12	25	0	22	25	22	26	20	21	0
7	0	25	11	24	0	21	25	24	25	20	22	0
8	0	25	11	24	0	21	25	24	24	18	22	0
9	0	25	0	0	0	21	28	22	24	18	20	0
10	0	25	0	0	0	21	26	22	29	18	18	0
11	0	25	0	0	0	21	25	22	0	20	24	0
12	0	25	0	0	12	21	25	22	0	20	21	0
13	0	25	0	0	26	21	25	0	0	20	21	0
14	0	25	0	0	24	21	25	0	0	18	20	0
15	0	25	0	0	25	21	25	0	0	18	21	8.6
16	0	24	0	0	25	21	25	0	0	18	22	0
17	0	24	0	0	25	20	24	0	0	18	21	0
18	0	22	0	0	24	18	24	13	0	18	21	0
19	0	21	0	0	25	15	24	26	0	18	21	0
20	0	21	0	0	24	15	24	26	0	18	29	0
21	0	24	0	0	30	15	24	28	0	18	26	0
22	22	24	0	0	28	14	22	28	13	18	24	0
23	22	22	7.5	0	25	14	30	26	21	18	24	0
24	22	21	24	0	25	14	40	25	20	20	24	0
25	22	11	24	0	22	14	32	25	20	20	24	0
26	22	12	22	0	24	14	22	25	20	20	22	0
27	22	13	24	0	22	14	22	25	20	28	21	0
28	22	13	26	0	22	14	39	25	20	30	20	0
29	22	13	26	0	22	14	43	25	20	8.0	20	0
30	24	12	28	0	------	15	43	24	20	0	21	0
31	25	------	28	0	------	15	------	24	------	0	25	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (10 days)	25	22	22.5	446
November	25	11	21.7	1,290
December (17 days)	28	7.5	17.9	604
January (8 days)	25	22	24.0	381
February (18 days)	30	12	23.9	853
March	22	14	18.3	1,130
April	43	16	26.7	1,590
May (26 days)	33	13	24.2	1,250
June (19 days)	29	13	23.2	873
July (29 days)	30	8.0	19.2	1,110
August (27 days)	29	9.2	21.6	1,160
September (4 days)	26	8.6	17.4	138
The year				10,800

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.

DRAINAGE AREA.—914 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, about 25,100 second-feet October 1 (gage height, 16.00 feet); minimum, 3.0 second-feet September 21 (gage height, 1.09 feet).

1915–1928: Maximum discharge, about 43,100 second-feet April 24, 1923 (gage height, 23 feet); no flow during several periods.

REMARKS.—Records for low stages good and for high stages poor. About 1,200 acres declared irrigated by diversions above station. During low stages diversions materially reduce flow at station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,390	98	23	22	15	14	14	9.2	9.2	38		4.5
2	531	73	23	22	15	13	14	9.2	50	38		5.6
3	293	63	23	22	15	14	14	9.2	316	36		7.6
4	143	55	23	22	15	13	14	9.2	124	32		7.6
5	103	50	25	22	14	13	14	9.2	70	29		5.6
6	86	46	25	20	14	13	14	9.2	53	27		5.0
7	78	46	25	20	14	13	13	9.2	46	27		5.0
8	147	43	25	20	14	13	14	10	38	27		4.5
9	181	41	27	20	14	13	15	9.2	40	23		4.5
10	112	38	25	20	14	88	16	9.2	7,720	23		5.0
11	78	36	25	17	14	46	16	8.7	655	20	8.7	5.6
12	60	34	25	17	14	27	16	9.8	261	17		6.6
13	50	32	32	16	14	23	14	48	1,590	15		6.6
14	46	31	25	16	15	22	14	15	588	14		6.1
15	38	29	25	16	15	20	14	14	273	14		5.6
16	36	29	25	16	16	18	14	13	214	14		5.0
17	32	29	23	16	16	18	14	12	205	14		5.0
18	31	27	22	16	15	18	14	12	189	13		4.5
19	29	27	22	17	15	18	13	12	174	12		4.0
20	25	25	23	17	15	18	13	12	162	12		3.5
21	23	23	23	18	15	18	12	17	146	11		3.2
22	22	23	23	18	15	18	11	20	134	11	5.6	3.2
23	20	22	25	18	15	17	11	16	118	11	5.6	5.6
24	18	22	25	18	14	17	10	14	109	11	5.6	7.6
25	18	22	23	18	14	16	9.2	13	98	10	5.6	7.6
26	17	22	23	16	14	16	9.2	12	89	10	5.6	7.6
27	17	22	23	17	13	16	8.7	11	78	20	5.6	9.2
28	16	23	23	17	14	15	8.7	10	68	29	5.6	111
29	16	23	23	16	13	15	9.2	9.2	58	22	5.0	65
30	940	23	23	16	------	14	9.2	9.2	48	17	4.5	34
31	204	------	22	16	------	14	------	9.2	------	14	4.5	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,390	16	284	17,500
November	98	22	35.9	2,140
December	32	22	24.1	1,480
January	22	16	18.1	1,110
February	16	13	14.5	834
March	88	13	19.7	1,210
April	16	8.7	12.7	756
May	48	8.7	12.6	775
June	7,720	9.2	457	27,200
July	38	10	19.7	1,210
August	------	------	7.61	468
September	111	3.2	12.0	714
The year	7,720	3.2	76.3	55,400

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 3½ miles east of Junction, Kimble County.

DRAINAGE AREA.—1,760 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 32,000 second-feet October 1 (gage height, 16.1 feet); minimum, 50 second-feet August 18 and 19.

1915–1928: Maximum discharge, about 98,800 second-feet September 16, 1915 (gage height, 26.3 feet); minimum, 13 second-feet August 23–28, 1918 (gage height, 1.32 feet).

REMARKS.—Low-stage records good, high-stage records fair. About 2,500 acres above and 1,300 acres below station declared irrigated. Diversions slightly reduce flow at station during low stages. Slight regulation by water-power plant on South Llano River.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	b 5,770	189	87	84	84	74	69	63	58	98	69	52
2	b 4,890	160	87	84	84	77	66	60	60	94	66	55
3	1,460	142	87	84	84	77	66	60	568	94	66	55
4	575	129	87	84	80	72	66	60	234	91	63	55
5	378	112	87	84	77	72	66	60	160	77	60	55
6	295	105	87	80	77	69	69	66	129	77	60	55
7	250	98	87	80	77	66	63	69	109	74	58	55
8	312	94	87	80	77	66	66	69	102	74	58	55
9	348	91	87	80	77	69	72	66	94	72	55	55
10	255	84	87	77	80	111	74	66		72	58	52
11	229	80	84	80	80	105	74	66		72	58	52
12	198	80	87	80	80	91	77	66	e 3,500	72	58	55
13	179	80	91	80	77	87	74			73	58	55
14	165	84	87	80	77	80	74			72	58	52
15	151	84	87	80	77	77	74		306	69	58	52
16	147	84	87	80	77	77	74	e 84	277	69	52	52
17	138	84	84	80	74	77	74		312	69	52	55
18	134	84	84	80	74	80	72		283	69	50	55
19	129	84	87	77	72	80	66	79	250	66	50	55
20	120	84	87	77	74	80	66	77	229	66	52	55
21	116	87	87	77	74	80	66	74	208	63	52	55
22	112	87	87	80	74	77	66	77	189	63	52	60
23	109	91	87	80	74	74	69	74	179	60	52	66
24	105	87	87	80	74	77	69	74	160	60	91	66
25	105	87	87	80	74	77	69	69	151	60	60	69
26	98	87	87	80	77	72	66	69	138	60	55	69
27	98	87	87	84	77	72	66	66	120	77	55	80
28	98	87	87	84	77	72	66	63	116	84	55	129
29	94	87	87	84	77	72	66	63	109	80	52	112
30	1,180	87	84	84	------	72	66	63	102	77	52	94
31	359	------	84	84	------	72	------	63	------	72	52	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,770	94	600	36,900
November	189	80	96.9	5,770
December	91	84	86.6	5,320
January	84	77	80.9	4,970
February	84	72	77.1	4,430
March	111	66	77.5	4,770
April	77	63	69.0	4,110
May	------	60	70.5	4,330
June	------	58	738	43,900
July	98	60	73.4	4,510
August	91	50	57.6	3,540
September	129	52	62.7	3,730
The year	------	50	174	126,000

e Estimated. b Partly estimated.

LLANO RIVER NEAR CASTELL, TEX.

LOCATION.—Staff gage 4 miles above mouth of Hickory Creek and 6 miles east of Castell, Llano County.
DRAINAGE AREA.—3,510 square miles.
RECORDS AVAILABLE.—November, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 33,900 second-feet October 2 (gage height, 13.95 feet); minimum, 38 second-feet September 17 (gage height, 0.94 foot).
1923–1928: Maximum discharge, about 59,500 second-feet May 30, 1925 (gage height, 16.8 feet); minimum, that of September 17, 1928.
REMARKS.—Records fair. Several small diversions above slightly reduce flow at station during low stages; amount not known.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	707	890	117	104	98	93	75	60	76	124	82	154
2	19,100	412	117	104	143	93	74	59	88	110	76	114
3	4,840	251	117	104	150	93	78	61	296	104	71	179
4	1,420	204	110	104	143	93	79	61	310	98	68	93
5	870	190	110	104	136	93	82	60	276	93	72	71
6	515	176	117	104	124	93	82	62	252	88	68	58
7	440	162	117	110	117	98	81	62	208	82	63	51
8	516	156	117	104	110	93	88	60	143	80	60	48
9	667	156	110	104	104	93	110	59	130	76	59	48
10	515	150	110	104	104	98	143	60	2,390	74	63	51
11	380	150	117	104	104	93	130	61	11,600	74	75	56
12	330	143	117	104	104	93	110	62	2,420	73	66	53
13	264	136	124	104	110	117	104	64	1,840	72	59	57
14	232	136	117	104	104	110	104	75	3,290	71	57	58
15	204	136	117	104	104	110	98	88	1,740	69	54	56
16	197	143	117	104	104	104	98	82	740	67	52	47
17	182	130	110	104	104	98	93	74	570	64	50	39
18	176	130	110	110	104	98	93	72	400	60	50	44
19	176	130	104	110	98	93	88	72	330	57	72	45
20	156	130	104	104	98	93	82	73	276	53	156	44
21	143	130	104	104	110	93	82	364	242	52	88	42
22	143	130	104	104	143	93	78	609	222	51	68	49
23	143	130	110	104	124	93	73	392	197	51	59	75
24	143	124	110	104	110	93	69	233	182	51	70	88
25	130	124	117	104	110	93	68	176	176	52	75	104
26	130	124	117	104	104	88	67	124	162	57	98	117
27	130	124	117	98	98	82	67	93	156	64	93	150
28	124	124	117	98	98	82	66	82	150	300	72	150
29	124	117	117	98	98	82	63	82	136	455	53	143
30	1,450	117	110	98	------	82	62	82	136	117	49	130
31	5,080	------	110	98	------	80	------	79	------	98	90	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	19,100	124	1,280	78,700
November	890	117	178	10,600
December	124	104	113	6,950
January	110	98	104	6,400
February	150	98	112	6,440
March	117	80	93.9	5,770
April	143	62	86.2	5,130
May	609	59	118	7,260
June	11,600	76	971	57,800
July	455	51	94.7	5,820
August	156	49	70.6	4,340
September	179	39	80.5	4,790
The year	19,100	39	275	200,000

PEDERNALES RIVER AT STONEWALL, TEX.

LOCATION.—Staff gage at Stonewall, Gillespie County, 2 miles below mouth of South Grape Creek.
DRAINAGE AREA.—647 square miles.
RECORDS AVAILABLE.—July, 1924, to September, 1928.
EXTREMES.—Maximum discharge during year, 5,600 second-feet October 8 (gage height, 5.90 feet); minimum, 3.8 second-feet August 23–26 (gage height, 0.38 foot).
1924–1928: Maximum discharge, about 10,700 second-feet May 9, 1925 (gage height, 8.20 feet); minimum, 1.8 second-feet July 30 and 31, 1925 (gage height, 0.33 foot).
River reached stage of about 24.0 feet in 1900.
REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	32	10	14	13	13	9.2	7.5	6.8	5 8	5.8	4.7
2	194	18	10	13	41	13	9.2	7.5	7.5	5.4	5.4	63
3	44	14	10	13	34	13	10	7.5	42	5.0	4.7	11
4	20	13	9.2	13	32	13	11	7.5	11	4.7	5.4	6.4
5	16	13	9.2	13	26	13	11	7.5	10	4.7	5.4	5.0
6	13	12	12	13	23	13	11	7.5	7.5	4.7	4.7	4.4
7	11	11	13	13	22	13	10	7.5	6.8	5.0	4.7	4.0
8	2,070	11	13	13	20	13	13	6.8	6.8	5.4	4.7	4.7
9	547	11	13	13	18	14	25	6.8	6.1	5.4	4.7	5.8
10	66	11	13	13	17	34	30	6.8	525	4.7	4.4	5.8
11	41	10	13	12	16	27	24	6.8	112	4.7	4.7	10
12	27	9.2	14	12	18	23	20	6.8	26	4.7	4.4	4.7
13	22	9.2	14	12	17	17	18	246	734	4.7	4.0	4.4
14	18	9.2	13	12	16	16	16	35	156	4.4	4.0	4.4
15	16	11	13	11	16	15	15	15	55	4.0	4.0	4.4
16	15	10	13	12	16	14	14	12	30	4.0	4.0	4.4
17	14	10	13	13	14	14	13	9.2	23	4.0	4.0	4.0
18	14	10	13	13	14	13	13	9.2	16	4.0	4.0	4.0
19	13	9.2	13	13	13	13	12	9.2	13	4.0	4.0	4.0
20	13	9.2	13	12	14	13	12	9.2	11	4.0	4.0	3.9
21	13	9.2	13	11	15	13	13	884	9.2	4.0	4.0	4.0
22	12	9.2	13	11	18	13	11	29	8.4	4.0	4.0	7.2
23	12	9.2	13	12	18	13	11	16	7.5	4.0	3.8	26
24	11	10	13	12	15	13	10	11	7.5	4.0	3.8	16
25	11	10	13	11	14	12	9.2	8.4	7.5	4.0	3.8	9.2
26	11	10	13	12	14	12	9.2	7.5	6.8	4.0	3.8	8.4
27	11	11	16	11	14	11	8.4	7.2	6.8	70	3.9	13
28	11	11	29	11	14	11	7.5	6.8	6.1	79	3.9	10
29	10	10	24	11	13	11	7.5	292	6.1	20	3.9	7.5
30	16	10	20	11	------	9.2	7.5	13	6.1	9.2	4.0	7.5
31	34	------	16	11	------	9.2	------	7.5	------	6.8	9.6	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,070	10	113	6,950
November	32	9.2	11.4	678
December	29	9.2	13.8	848
January	14	11	12.2	750
February	41	13	18.4	1,060
March	34	9.2	14.3	879
April	30	7.5	13.0	774
May	884	6.8	55.3	3,400
June	734	6.1	62.6	3,720
July	79	4.0	9.75	600
August	9.6	3.8	4.50	277
September	63	3.9	9.06	539
The year	2,070	3.8	28.2	20,500

PEDERNALES RIVER NEAR SPICEWOOD, TEX.

LOCATION.—Staff gage 2½ miles below mouth of Fall Creek and 8 miles southeast of Spicewood, Burnet County.
DRAINAGE AREA.—1,290 square miles.
RECORDS AVAILABLE.—November, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, about 6,940 second-feet October 2 (gage height, 9.55 feet); no flow July 19–28 and August 19 to September 3.
1923–1928: Maximum discharge, about 28,000 second-feet April 21, 1926 (gage height, 16.4 feet); no flow during several periods.
REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	848	113	17	56	22	31	23	11	60	3.2	56	0
2	2,470	53	16	47	31	30	22	10	258	2.8	33	0
3	637	44	16	34	28	30	22	9.6	94	2.6	22	0
4	189	44	16	35	70	30	21	10	65	2.3	15	14
5	107	40	16	33	101	28	22	9.1	43	2.0	11	12
6	80	34	18	32	87	28	23	9.1	26	1.8	8.2	7.3
7	77	29	21	31	82	26	22	8.6	20	2.2	6.4	4.8
8	663	25	23	30	68	26	24	7.8	17	3.0	5.5	3.8
9	1,520	22	24	30	62	28	29	7.3	14	2.8	4.2	4.2
10	515	21	24	30	53	29	32	7.3	48	2.6	3.8	3.5
11	201	19	26	30	42	34	34	6.4	32	2.6	3.2	2.9
12	124	19	26	29	50	46	39	6.8	194	2.5	2.8	40
13	89	18	29	28	50	37	44	14	143	2.3	2.5	110
14	71	18	30	28	50	40	47	17	208	2.0	2.1	64
15	56	17	30	27	47	42	43	166	706	1.7	1.7	37
16	46	17	30	26	42	34	38	110	179	1.3	1.4	23
17	39	16	29	26	39	30	34	65	98	.9	1.1	16
18	34	16	27	26	35	28	32	44	70	.6	.8	12
19	31	16	26	25	32	26	29	33	47	0	0	8.6
20	28	16	24	24	30	23	25	28	33	0	0	6.8
21	26	18	25	24	33	22	23	24	26	0	0	5.5
22	24	18	24	24	32	22	22	329	20	0	0	4.0
23	22	18	26	24	37	22	19	224	16	0	0	13
24	22	18	28	24	48	288	18	103	13	0	0	12
25	21	18	28	23	54	198	16	64	11	0	0	37
26	20	18	28	22	38	94	15	40	8.6	0	0	74
27	19	18	28	22	37	64	14	29	6.8	0	0	53
28	18	18	66	22	35	47	13	22	5.5	0	0	46
29	17	18	77	22	33	35	12	16	4.8	24	0	50
30	16	18	74	22	------	31	11	13	4.0	132	0	47
31	263	------	62	22	------	27	------	11	------	94	0	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,470	16	268	16,500
November	113	16	25.9	1,540
December	77	16	30.1	1,850
January	56	22	28.3	1,740
February	101	22	47.2	2,720
March	288	22	47.6	2,930
April	47	11	25.6	1,520
May	329	6.4	46.9	2,880
June	706	4.0	82.4	4,900
July	132	0	9.33	574
August	56	0	5.83	358
September	110	0	23.7	1,410
The year	2,470	0	53.6	38,900

ONION CREEK NEAR DEL VALLE, TEX.

LOCATION.—Staff gage at Del Valle-Creedmoor highway crossing 2 miles below mouth of Williamson Creek and 2½ miles southwest of Del Valle, Travis County.

DRAINAGE AREA.—337 square miles.

RECORDS AVAILABLE.—May, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, 4,850 second-feet February 22 (gage height, 9.8 feet); no flow during several periods.

1924–1928: Maximum discharge, 24,300 second-feet April 21, 1926 (gage height, 16.05 feet, from floodmark); no flow during several periods.

REMARKS.—Monthly records fair. Records of daily discharge not sufficiently accurate for publication. No diversions above station.

Monthly discharge, in second-feet, 1927–28

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	729	1.4	46.0	2,830
November	36	2.0	8.18	487
December	410	1.8	17.2	1,060
January	7.2	2.8	3.73	229
February	1,240	2.7	71.5	4,110
March	20	4.2	10.3	633
April	22	2.8	6.71	399
May	63	1.9	5.96	366
June	51	1.2	6.33	377
July	42	0	2.28	140
September	1.4	0	.05	3.0
The year	1,240	0	14.6	10,600

NOTE.—No flow during August.

GUADALUPE RIVER BASIN

GUADALUPE RIVER NEAR COMFORT, TEX.

LOCATION.—Staff gage at low-water bridge and dam on State highway No. 27, 2.6 miles west of Comfort, Kendall County.

DRAINAGE AREA.—916 square miles.

RECORDS AVAILABLE.—December, 1917, to September, 1928. Records prior to August 10, 1924, at a point 1 mile upstream.

EXTREMES.—Maximum discharge during year, 2,320 second-feet March 10 (gage height 6.93 feet); minimum gage height, 1.68 feet July 20 (discharge not determined).

1917–1928: Maximum gage height, from floodmarks, about 41 feet August 21, 1919 (discharge not determined); minimum discharge, about 0.40 second-foot August 2, 1918 (gage height, 0.80 foot).

REMARKS.—Records fair. About 400 acres declared irrigated above station. Several pumping plants 8 miles upstream. Regulation during low water caused by operation of water-power plants.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	50	44	57	50	54	44	37	62			34
2	376	45	42	54	65	52	44	38	382			32
3	273	44	42	54	92	52	47	42	381			37
4	119	44	43	52	84	52	50	42	157			30
5	101	43	43	54	72	52	52	50	114			24
6	88	42	47	54	72	52	51	52	88			19
7	76	42	50	57	69	52	50	47	78			13
8	306	44	48	57	65	52	52	42	72			17
9	80	42	47	57	58	57	60	37	65			22
10	65	40	47	57	58	935	65	34	67			44
11	65	42	47	54	58	209	57	32	80			62
12	63	43	50	52	60	126	55	32	71			42
13	55	44	50	51	62	88	54	118	285			36
14	52	43	52	54	58	76	52	84	152			32
15	52	42	50	54	58	71	57	76	110			28
16	45	43	50	52	57	69	55	62	88	19.5	18.7	26
17	42	47	45	55	58	63	50	52	72			24
18	44	43	44	55	58	58	50	50	58			23
19	44	47	45	55	52	58	50	47	58			20
20	42	44	45	52	51	57	50	47	57			22
21	43	43	45	51	55	55	48	44	52			22
22	44	43	47	52	71	55	44	50	47			32
23	43	44	45	52	65	54	44	50	44			47
24	42	44	47	52	62	52	45	42	42			72
25	48	44	47	54	62	51	47	39	42			65
26	44	43	47	52	62	50	50	37	39			52
27	42	44	55	50	54	50	50	34	39			62
28	42	44	94	51	55	50	47	31	38			55
29	42	44	84	50	52	44	38	313	37			54
30	40	44	69	50	-------	47	37	112	33			50
31	42	-------	58	50	-------	44	-------	92	-------			-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	376	40	82.7	5,080
November	50	40	43.7	2,600
December	94	42	50.6	3,110
January	57	50	53.3	3,280
February	92	50	61.9	3,560
March	935	44	91.5	5,630
April	65	37	49.8	2,960
May	313	31	60.2	3,700
June	382	33	97.0	5,770
July	----------	----------	19.5	1,200
August	----------	----------	18.7	1,150
September	72	13	36.6	2,180
The year	935	----------	55.4	40,200

GUADALUPE RIVER NEAR SPRING BRANCH, TEX.

LOCATION.—Water-stage recorder at New Braunfels and Blanco City highway bridge 4 miles southeast of Spring Branch, Comal County.

DRAINAGE AREA.—1,430 square miles.

RECORDS AVAILABLE.—June, 1922, to September, 1928.

EXTREMES.—Maximum discharge during year, 7,660 second-feet March 9 (gage height, 11.32 feet); minimum, 10 second-feet July 26.

1922–1928: Maximum discharge, about 19,800 second-feet April 21, 1926 (gage height, 20.70 feet); minimum, about 4.7 second-feet August 18, 1923 (gage height, about 1.74 feet).

REMARKS.—Records fair. About 400 acres declared irrigated above station. Slight regulation during low water caused by operation of water-power plants upstream.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	81	55	88	65	75	55	37	132	35	24	14
2	136	65	55	77	67	77	57	37	117	35	24	29
3	325	65	53	73	71	75	57	37	240	32	24	22
4	287	63	53	69	94	77	57	39	411	31	21	18
5	188	61	51	67	114	77	61	37	165	30	23	20
6	145	61	59	67	105	73	63	36	140	27	21	20
7	122	59	61	71	98	75	63	37	124	25	21	25
8	112	57	63	73	96	77	63	48	112	29	22	26
9	240	55	65	75	90	927	69	48	105	33	24	30
10	137	55	65	75	86	898	75	42	124	25	27	32
11	103	55	67	75	77	433	79	37	162	24	27	29
12	92	55	71	75	79	179	83	36	114	23	23	23
13	83	57	71	77	81	179	81	51	156	22	22	41
14	75	55	71	75	79	135	75	166	316	22	20	37
15	73	57	75	73	77	108	69	92	235	23	19	32
16	71	59	75	73	75	92	63	71	153	20	21	29
17	69	53	73	75	75	83	61	77	112	19	21	27
18	67	55	69	75	73	81	59	67	94	18	20	26
19	65	57	69	79	75	73	55	57	75	18	19	23
20	65	57	67	77	75	55	55	51	69	16	15	22
21	67	57	65	75	184	53	53	42	65	15	14	23
22	63	57	65	73	185	53	55	46	59	14	14	26
23	65	57	69	71	105	50	55	42	55	14	12	30
24	61	55	69	69	96	50	51	44	53	13	14	31
25	55	57	69	71	94	50	50	42	50	12	17	35
26	57	55	71	69	88	50	48	37	46	11	12	46
27	67	55	71	73	81	50	50	36	44	18	12	61
28	65	53	90	69	77	51	44	36	41	97	11	53
29	61	53	90	69	77	53	41	340	39	75	11	48
30	73	55	105	67	------	53	39	238	37	39	28	51
31	77	------	98	67	------	55	------	165	------	26	21	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	325	55	105	6,460
November	81	53	57.9	3,450
December	105	51	69.4	4,270
January	88	67	73.0	4,490
February	185	65	91.0	5,230
March	927	50	142	8,730
April	83	39	59.5	3,540
May	340	36	70.0	4,300
June	411	37	121	7,200
July	97	11	27.1	1,670
August	28	11	19.5	1,200
September	61	14	31.0	1,840
The year	927	11	72.3	52,400

GUADALUPE RIVER ABOVE COMAL RIVER, AT NEW BRAUNFELS, TEX.

LOCATION.—Water-stage recorder, installed January 7, 1928, 1.1 miles above Comal River and 1.3 miles northeast from center of New Braunfels, Comal County. From December 19, 1927 to January 7, 1928, a staff gage at same site and datum was used. Zero of gage is 586.56 feet above mean sea level.

DRAINAGE AREA.—1,670 square miles.

RECORDS AVAILABLE.—December, 1927, to September, 1928.

EXTREMES.—Maximum discharge during period, 6,090 second-feet March 10 (gage height, 7.05 feet); minimum, 14 second-feet July 19 and 20.

A stage of about 38 feet was reached in 1869 and December, 1913.

REMARKS.—Records good. About 400 acres declared irrigated above station. Slight regulation during low stages caused by operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1927–28

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	118	74	160	96	60	179	46	54	16
2	------	110	82	153	96	59	155	45	39	25
3	------	100	88	145	98	58	166	43	30	21
4	------	92	105	138	103	59	204	40	26	18
5	------	90	108	132	105	58	367	38	25	20
6	------	88	134	120	96	58	233	36	26	18
7	------	95	136	124	92	54	179	46	26	20
8	------	92	122	122	95	52	168	130	25	26
9	------	90	113	134	113	51	141	56	23	27
10	------	86	110	1,920	115	55	129	41	22	30
11	------	84	105	849	117	60	127	36	22	29
12	------	82	110	496	113	60	125	36	18	28
13	------	82	107	306	113	197	166	36	19	32
14	------	82	102	275	117	179	182	27	20	31
15	------	81	98	233	112	122	331	30	20	30
16	------	81	95	198	103	150	280	26	20	28
17	------	81	95	179	96	113	192	24	19	37
18	------	81	93	168	92	100	160	22	18	36
19	87	81	92	160	90	102	136	16	18	30
20	86	81	92	150	92	92	115	18	17	28
21	86	78	833	145	92	105	95	20	17	26
22	84	78	1,020	141	86	93	86	20	18	29
23	84	78	438	136	80	72	81	18	18	37
24	84	78	290	134	78	64	72	18	18	47
25	87	77	246	129	75	63	71	17	16	43
26	88	77	216	124	71	59	65	18	16	40
27	88	75	202	118	68	58	64	19	15	35
28	176	72	182	113	67	58	59	20	16	39
29	127	74	168	112	64	54	55	22	16	56
30	118	74	------	107	63	172	50	20	16	54
31	110	74	------	102	------	212	------	76	17	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
December 19–31	176	84	100	2,590
January	118	72	84.3	5,180
February	1,020	74	195	11,200
March	1,920	102	243	14,900
April	117	63	93.3	5,550
May	212	51	88.7	5,450
June	367	50	148	8,810
July	130	16	34.2	2,100
August	54	15	21.6	1,330
September	56	16	31.2	1,860
The period				59,000

GUADALUPE RIVER BELOW CUERO, TEX.

LOCATION.—Water-stage recorder three-fourths of a mile upstream from Heards Bridge, on Arneckville road, and 2½ miles southeast of Cuero, De Witt County.

DRAINAGE AREA.—5,070 square miles.

RECORDS AVAILABLE.—August, 1916, to September, 1928. From December, 1902, to December, 1906, and August, 1915, to August, 1916, comparable records were obtained at Schleicher Bridge, 4 miles upstream.

EXTREMES.—Maximum discharge during year, 8,240 second-feet February 25 (gage height, 11.36 feet); minimum, 139 second-feet August 16 (gage height 0.76 foot).

1916–1928: Maximum gage height, from floodmarks, about 32.2 feet October 20, 1919 (discharge not determined); minimum discharge, about 80 second-feet November 1, 1917 (gage height, 0.58 foot).

A stage of 37.6 feet was reached November 4, 1913.

REMARKS.—Records fair. Flow not materially affected by numerous small diversions above station; partly regulated by operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	432	515	427	563	432	858	593	545	427	410	361	306
2	2,930	1,020	432	527	444	773	587	466	1,280	372	545	245
3	1,700	1,060	444	504	432	740	605	444	3,900	378	356	494
4	3,100	728	438	454	444	695	504	581	4,300	388	361	806
5	1,930	569	432	476	545	728	551	635	3,720	410	394	713
6	955	569	488	545	515	623	641	515	1,040	378	322	394
7	825	563	438	504	427	617	581	545	683	378	405	344
8	1,100	515	438	493	444	647	617	515	780	454	300	361
9	1,240	515	498	498	460	617	792	400	677	488	322	388
10	806	527	498	539	416	647	1,860	515	1,410	527	285	361
11	773	454	471	460	444	733	1,940	460	1,860	581	356	444
12	721	515	471	427	361	3,390	1,680	533	1,600	422	270	433
13	721	454	438	454	476	2,520	922	682	1,300	378	250	361
14	734	416	466	515	623	1,490	858	1,490	955	366	312	344
15	641	460	460	471	515	1,380	665	4,740	1,350	322	260	328
16	635	476	438	493	488	858	605	4,220	2,780	466	187	328
17	488	510	471	569	504	922	617	1,240	4,700	388	322	388
18	482	427	460	454	432	858	587	760	4,050	334	295	366
19	454	444	438	527	476	754	617	647	1,020	366	250	280
20	378	466	471	498	521	728	611	623	740	350	235	361
21	427	444	482	533	476	665	581		587	388	215	410
22	629	449	466	454	482	714	563		629	290	300	400
23	647	427	410	504	1,610	677	593		569	344	235	990
24	647	476	454	527	6,660	1,570	611		410	280	245	799
25	587	422	521	488	7,240	1,730	563	625	460	290	285	728
26	671	400	471	427	2,090	2,120	563		510	285	285	575
27	449	454	515	466	1,130	1,120	521		432	317	270	427
28	521	454	482	444	1,020	818	557		460	400	300	449
29	488	460	1,170	449	858	689	557	551	432	1,360	215	427
30	444	438	1,270	416	-------	740	533	466	383	826	250	438
31	575	-------	922	482	-------	858	-------	476	-------	438	290	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,100	378	875	53,800
November	1,060	400	521	31,000
December	1,270	410	525	32,300
January	569	416	489	30,100
February	7,240	361	1,070	61,600
March	3,390	617	1,040	64,000
April	1,940	504	736	43,800
May	4,740	400	873	53,700
June	4,700	383	1,450	86,300
July	1,360	280	431	26,500
August	545	187	299	18,400
September	990	245	456	27,100
The year	7,240	187	728	529,000

GUADALUPE RIVER SEEPAGE INVESTIGATION

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

Discharge measurements to determine seepage on Guadalupe River from Comfort, Tex., to New Braunfels, Tex., in January, 1928

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Jan. 16	Guadalupe River	At gaging station 2 miles above Comfort.	0.0	52.0			
16	Cypress Creek	One-fourth mile above mouth at Comfort.	3.0		1.5		
16	Holiday Creek	One-eighth mile above mouth	4.8		.3		
16	Guadalupe River	At railroad bridge near Comfort	6.4	58.6		+4.8	+4.8
16	do	At Waring	12.2	58.7		+.1	+4.9
17	Joshua Creek	2 miles above mouth, near Waring	16.0		1.6		
17	Sister Creek	One-half mile above mouth, near Sisterdale.	19.7		.4		
17	Guadalupe River	Just below mouth, at Sister Creek near Sisterdale.	19.7	65.4		+4.7	+9.6
17	Wasp Creek	At mouth, 6 miles below Sisterdale	29.5		.2		
17	Sabino Creek	At mouth, 8 miles northeast of Boerne.	31.2		.5		
17	Guadalupe River	Just below mouth of Sabino Creek, at Ammans Crossing.	31.2	70.9		+4.8	+14.4
17	do	At Schillers Crossing, 4 miles north of Bergheim.	45.6	68.3		−2.6	+11.8
18	Currys Creek	One-half mile above mouth, 4 miles above Spring Branch.	55.8		2.6		
18	Guadalupe River	At Specks Crossing, 25 miles southwest of Spring Branch.	57.5	71.9		+1.0	+12.8
18	Spring Branch	1½ miles above mouth, near Spring Branch.	59.0		1.5		
18	Guadalupe River	At gaging station near Spring Branch.	61.7	73.5		+.1	+12.9
18	Big Spring	At Cranes Mill	78.5		3.9		
18	Guadalupe River	Just below Big Spring, at Cranes Mill.	78.5	72.3		−5.1	+7.8
18	do	2 miles northeast of Sattler	92.7	88.9		+16.6	+24.4
19	Jacobs Creek	At mouth, 2 miles below Sattler	95.9		.0		
19	Guadalupe River	4 miles below Sattler	97.4	83.2		−5.7	+18.7
19	Isaacs Creek	At mouth, 5½ miles above New Braunfels.	103.5		.0		
19	Guadalupe River	0.4 mile above Elm Creek, near New Braunfels.	103.9	81.6		−1.6	+17.1
19	Elm Creek	At mouth, near New Braunfels	104.3		.0		
19	Guadalupe River	At new gage 1 mile above mouth of Comal River.	108.7	77.7		−3.9	+13.2

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

COMAL RIVER AT NEW BRAUNFELS, TEX.

LOCATION.—Water-stage recorder, installed January 7, 1928, 200 feet upstream from San Antonio Street viaduct in New Braunfels, Comal County. From December 19, 1927, to January 7, 1928, a staff gage at same site and datum was used. Zero of gage is 582.61 feet above mean sea level.

RECORDS AVAILABLE.—December, 1927, to September, 1928.

EXTREMES.—Maximum gage height during period, 12.1 feet February 21 (discharge not determined); minimum discharge, 216 second-feet July 29 (gage height, 2.59 feet).

The flood of December, 1913, reached a stage of 35.8 feet (probably some backwater from Guadalupe River).

REMARKS.—Records for low stages fair, for medium and high stages poor. Mean daily gage height, in feet, on days when stage was beyond limit of rating curve as follows: February 21, 3.97; February 22, 4.49; March 10, 4.10; May 13, 3.67; and June 15, 3.56. About 635 acres declared irrigated above station. Flow partly regulated by steam power plant half a mile upstream.

Daily and monthly discharge, in second-feet, 1927–28

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	305	a294	297	300	294	300	297	280	275
2	------	308	294	297	297	297	314	294	283	275
3	------	305	294	297	297	297	302	294	280	275
4	------	294	297	294	294	291	300	291	280	275
5	------	308	294	294	297	291	294	291	283	272
6	------	311	302	294	291	291	291	291	280	270
7	------	297	300	294	291	291	291	297	283	270
8	------	297	294	291	297	289	291	294	278	272
9	------	297	289	313	297	289	294	294	278	272
10	------	297	286	------	300	291	434	291	283	272
11	------	297	291	328	297	291	302	289	278	267
12	------	291	291	305	302	289	302	289	280	270
13	------	289	291	297	294	------	392	286	275	272
14	------	291	297	297	302	322	316	289	280	272
15	------	302	294	300	305	300	------	289	280	275
16	------	300	294	297	305	297	316	289	278	275
17	------	302	294	297	297	294	305	286	278	272
18	------	305	291	297	300	297	305	289	275	270
19	311	294	294	297	300	294	300	291	272	267
20	311	297	294	297	302	300	300	286	267	272
21	311	297	------	300	300	291	300	289	264	275
22	302	300	------	297	300	291	300	289	262	275
23	311	300	322	a297	297	289	297	291	264	278
24	294	300	a319	a300	297	289	297	291	264	280
25	302	297	a305	300	297	289	297	280	264	275
26	311	297	305	300	297	289	297	283	267	280
27	322	297	302	300	297	291	294	280	272	278
28	316	a297	302	300	291	286	294	286	272	280
29	294	a297	300	300	294	294	297	283	275	283
30	311	a296	------	300	294	297	294	286	275	283
31	294	a294	------	300	------	300	------	280	272	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
December 19–31	322	294	307	7,910
January	311	289	299	18,400
February	----------	286	----------	----------
March	----------	294	----------	----------
April	305	291	298	17,700
May	----------	286	----------	----------
June	----------	291	----------	----------
July	297	280	289	17,800
August	283	262	275	16,900
September	283	267	274	16,300

a Estimated.

BLANCO RIVER AT WIMBERLEY, TEX.

LOCATION.—Water-stage recorder 800 feet below mouth of Cypress Creek and one-fourth mile south of Wimberley, Hays County.

DRAINAGE AREA.—378 square miles.

RECORDS AVAILABLE.—August, 1924, to September, 1926; June to September, 1928.

EXTREMES.—Maximum discharge during year, 24 second-feet June 13 (gage height, 0.45 foot); minimum, 4.0 second-feet September 20 (gage height, 0.30 foot).

1924–1926, 1928: Maximum discharge, determined by slope-area method, about 32,500 second-feet April 21, 1926 (gage height, 19.3 feet); minimum, that of September 20, 1928.

REMARKS.—Records fair. Daily discharge estimated or interpolated June 10, 17, 24, and 29. No diversions.

Daily and monthly discharge, in second-feet, 1928

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1		13	18	6.6	16	17	10	17	5.8
2		13	20	8.2	17	18	10	16	5.8
3		13	20	9.0	18	18	11	14	5.0
4		12	20	7.4	19	17	11	13	5.0
5		12	20	6.6	20	17	11	12	5.0
6	14	12	23	5.8	21	14	11	11	5.0
7	14	13	23	5.0	22	14	11	10	6.6
8	14	16	21	7.4	23	14	11	9.0	13
9	14	14	23	8.2	24	14	11	8.2	10
10	16	11	23	7.4	25	13	10	6.6	8.2
11	17	10	23	6.6	26	12	10	7.4	7.4
12	16	10	18	5.8	27	12	12	7.4	8.2
13	23	9.0	17	5.8	28	12	13	6.6	8.2
14	17	9.0	17	5.8	29	11	13	6.6	7.4
15	17	9.0	16	5.8	30	12	18	7.4	5.8
					31		20	7.4	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
June 6–30	23	11	15.1	748
July	20	9.0	11.9	732
August	23	6.6	14.9	916
September	13	5.0	6.93	412
The period				2,810

SAN MARCOS RIVER AT OTTINE, TEX.

LOCATION.—Water-stage recorder at highway bridge one-fourth mile southwest of Ottine, Gonzales County.

DRAINAGE AREA.—1,250 square miles.

RECORDS AVAILABLE.—June, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 16,000 second-feet February 22 (gage height, 32.14 feet); minimum not determined.

1915–1928: Maximum discharge, determined by slope-area method, 125,000 second-feet April 21, 1926 (gage height, 40.6 feet, from floodmarks); no flow July 29, 1923, March 31, 1925, and June 24, 1926.

REMARKS.—Records fair except those for estimated periods, which are poor. Diversions above station for irrigation and municipal use are small. Flow regulated by operation of small cotton gin above gage. Most of normal flow comes from large springs near San Marcos.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	139	735		141	154	252	228	184	145		109	78
2	935	[b]339		148	141	245	228	188	418		119	93
3	864			245		245	209	187	538		139	298
4	307			323		230	216	184	196		142	124
5	216			223		230	216	181	147	[a]150	124	97
6	181			196		223	230	184	152		102	86
7	173			160		223	223	184	145		92	85
8	168			133		230	216	173	143		83	86
9	142			148		223	238	161	142	[b]364	79	86
10	167		[a]180			1,080	299	170	532		99	83
11	195					1,640	299	160	422		88	83
12	194				[a]138	323	[b]245	166	194		81	87
13	175					268		335	168		50	82
14	163					223		1,920	732	[a]140	70	73
15	148							370	2,140		115	86
16	151	[a]180						223	4,300		79	82
17	130			[a]140				209	291		67	78
18	140						[a]205	201		125	59	89
19	139					[a]210		181		178	63	92
20	139		164					175		133	70	87
21	139		143					199		129	82	126
22	141		128					208		130	94	261
23	136		142					187		116	86	216
24	119		128			1,450		196		[a]150	128	88	160
25	137		127	142	[a]2,460	749	187	216		127	77	101
26	129		136	136		347	199	184		129	78	100
27	129		130	129		268	202	171		743	59	91
28	140		137	129	[a]310	245	184	164		454	80	94
29	124		192	128		238	182	150		137	86	106
30	139		147	133		238	185	147		127	85	116
31	419		142	124		230		155		223	86	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	935	119	213	13,100
November	735		204	12,100
December			166	10,200
January			153	9,410
February			557	32,000
March	1,640		364	22,400
April	299		215	12,800
May	1,920	147	252	15,500
June	4,300		425	25,300
July	743		179	11,000
August	142	50	88.1	5,420
September	298	73	111	6,600
The year			242	176,000

[a] Estimated. [b] Partly estimated.

PLUM CREEK NEAR LOCKHART, TEX.

LOCATION.—Staff gage at steel highway bridge 700 feet below mouth of Dry Creek and 7 miles southeast of Lockhart, Caldwell County. Zero of gage is 371.39 feet above mean sea level.

DRAINAGE AREA.—184 square miles.

RECORDS AVAILABLE.—January, 1925, to September, 1928.

EXTREMES.—Maximum discharge during year, 11,200 second-feet February 22 (gage height, 20.10 feet); minimum, 0.3 second-foot September 18 and 19 (gage height, 0.72 foot).

1925–1928: Maximum discharge, 26,000 second-feet April 21, 1926 (gage height, 22.6 feet, from floodmarks); no flow July 2 to September 11, 1925.

The flood of December, 1913, reached a stage of 26.8 feet from floodmarks.

REMARKS.—Records poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	33	0.6	6.7	1.6	9.9	3.2	1.1	0.8	0.7	3.4	0.5
2	204	9.7	.6	3.2	1.8	8.1	2.9	1.0	1.0	.7	2.5	.5
3	20	6.4	.6	2.8	5.2	7.6	2.6	.9	5.9	.6	2.0	24
4	5.0	}	.6	2.4	5.7	7.3	2.3	1.0	1.7	.6	1.2	1.2
5	2.0		.6	2.1	5.2	7.3	3.6	.9	.9	.6	.7	.7
6	1.0	}	.7	2.0	7.9	7.6	6.3	.8	.8	.5	.7	.6
7	.9	1.3	1.0	2.3	7.3	7.6	6.1	.8	.7	22	.7	.6
8	1.0		.9	2.4	6.1	7.0	5.9	.7	.6	353	.7	3.3
9	2.0		.9	2.4	4.0	7.0	4.9	.7	.7	52	.6	4.7
10	1.4	}	1.0	2.6	3.2	1,140	25	.6	119	3.5	.7	1.1
11	1.0	.5	1.2	2.5	3.0	117	23	.7	56	2.0	.7	.8
12	.9	.6	1.6	2.4	3.4	23	15	.8	18	1.3	.8	.6
13	.8	.6	1.6	2.2	3.3	14	15	7.0	14	1.2	.8	.6
14	.7	.6	1.6	2.2	8.1	12	6.7	240	159	1.0	.8	.6
15	.6	.6	1.7	2.0	5.4	8.2	5.7	54	1,010	.7	.7	.5
16	.5	.6	1.7	1.9	4.5	7.7	5.0	15	287	.4	.5	.4
17	.5	.6	1.7	1.9	4.4	7.6	3.9	9.1	31	.5	.5	.4
18	.4	.6	1.7	1.9	4.3	6.6	3.3	4.7	6.0	.8	.6	.3
19	.4	.6	1.6	1.7	4.4	6.3	3.0	3.8	3.4	.7	.6	.3
20	.4	.6	1.2	1.7	4.5	5.7	3.0	3.0	3.0	.8	.6	.4
21	.4	.6	1.2	1.7	222	4.9	3.1	2.3	2.4	.8	.5	.4
22	.4	.6	1.2	1.8	3,140	4.5	3.0	2.0	1.3	.7	.5	.6
23	.8	.6	1.2	1.9	213	4.4	2.7	1.8	1.0	.7	.5	1.4
24	.8	.6	1.2	2.0	51	362	2.1	1.7	.8	.6	.5	1.2
25	.8	.6	1.3	2.0	23	26	2.0	1.6	.8	.6	.6	.9
26	.8	.6	1.2	2.0	18	12	2.0	1.3	.8	.6	.6	.8
27	.8	.6	1.5	2.0	13	8.1	1.9	1.2	.7	163	.5	.7
28	.8	.6	144	1.9	8.4	6.8	1.7	1.2	.7	11	.5	.7
29	.9	.6	65	1.8	9.9	4.9	1.6	1.0	.7	7.6	.5	.6
30	.9	.6	12	1.7	------	4.0	1.3	1.0	.7	7.4	.5	.6
31	442	------	8.6	1.6	------	3.2	------	.8	------	3.9	.5	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	442	0.4	22.4	1,380
November	33	.5	2.35	140
December	144	.6	8.44	519
January	6.7	1.6	2.25	138
February	3,140	1.6	131	7,540
March	1,140	3.2	59.9	3,680
April	25	1.3	5.59	333
May	240	.6	11.7	719
June	1,010	.6	57.6	3,430
July	353	.4	20.7	1,270
August	3.4	.5	.82	50
September	24	.3	1.67	99
The year	3,140	.3	26.6	19,300

SAN ANTONIO RIVER AT SAN ANTONIO, TEX.

LOCATION.—Water-stage recorder at South Alamo Street Bridge in San Antonio, Bexar County. Zero of gage is 619.72 feet above mean sea level.

DRAINAGE AREA.—38 square miles.

RECORDS AVAILABLE.—January, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 755 second-feet June 2 (gage height, 4.93 feet); minimum, 4.4 second-feet January 22.

1915–1928: Maximum discharge, determined by slope-area method, 15,300 second-feet September 10, 1921 (gage height, 20.14 feet, from floodmarks); minimum, that of January 22, 1928.

REMARKS.—Records fair. Amount of water diverted above gage not known but believed to be small. Operation of mill just above gage causes sharp diurnal fluctuations. Normal flow of river comes from springs. Changes in mean daily stage during low flow are probably caused by pumping from deep wells for city water supply and for irrigation, thereby depleting underground reservoir, which feeds river through springs.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	26	20	20	20	a 16		22	21	13	20	17
2	24	26	20	19	43			25	150	15	15	16
3	23	26	21	18	20	a 20		25	18	15	16	16
4	23	25	19	18	34	18		26	16	15	16	16
5	23	26	20	19	17	18	a 18	21	18	15	15	18
6	23	21	19	24	18	18		21	18	16	15	14
7	24	23	18	30	18	18		20	15	16	16	14
8	49	23	18	20	18	18	18	22	18	18	16	58
9	24	23	18	21	17	91	41	23	18	14	16	21
10	26	24	19	21	16	45	27	24	18	16	16	15
11	26	22	20	21	16	20	18	24	18	17	19	15
12	24	22	25	21	24	21	19	41	18	13	16	18
13	25	21	21	21	16	21	20	215	24	13	18	14
14	24	24	23	22	16	21	19	30	18	13	17	15
15	23	24	22	20	16	20	a 24	27	18	13	17	16
16	20	22	21	25	16	19	18	28	18	15	16	16
17	24	23	20	25	16	19	18	29	17	14	16	18
18	24	21		25	a 16	a 18	19	30	18	15	17	18
19	25	21		25	a 16	a 18	20	28	17	14	15	18
20	24	18		23	a 16	18	21	23	19	14	16	17
21	24	21	a 20	22	51	19	21	25	15	16	18	133
22	26	23		20	20	20	21	23	16	15	20	32
23	20	23		22	20	20	19	21	18	16	15	41
24	24	20	a 19	22	19	20	20	21	16	16	16	14
25	24	22	20	20		18	20	20	15	16	16	14
26	24	22	19	23	a 16	18	20	20	15	27	14	14
27	24	20	47	23		18	21	20	17	21	15	16
28	24	21	46	24		18	22	20	14	18	15	18
29	26	21	23	22		18	21	32	15	15	15	17
30	24	21	23	20	------	18	23	20	15	16	62	17
31	28	------	21	18	------	18	------	20	------	15	20	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	53	20	25.8	1,590
November	26	18	22.5	1,340
December	47	18	22.0	1,350
January	30	18	21.7	1,330
February	51	----------	20.0	1,150
March	91	----------	21.9	1,350
April	41	----------	20.5	1,220
May	215	20	30.5	1,880
June	150	14	21.7	1,290
July	27	13	15.6	969
August	62	14	17.9	1,100
September	133	14	22.9	1,360
The year	215	13	21.9	15,900

a Estimated.

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.—2,070 square miles.

RECORDS AVAILABLE.—April, 1925, to September, 1928.

EXTREMES.—Maximum discharge during year, 5,550 second-feet October 1 (gage height, 7.16 feet); minimum, 36 second-feet May 11 and 12 (gage height, 0.97 foot).

1925–1928: Maximum discharge, 9,260 second-feet April 23, 1926 (gage height, 10.53 feet); minimum, that of May 11 and 12, 1928.

In 1913, river reached stage of 28.36 feet (from floodmarks).

REMARKS.—Records fair. Discharge estimated March 11–16 and August 8–12. Slight regulation caused by operation of Medina Dam. For diversions see record of Medina Canal near Riomedina.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,260	67	78	98	92	106	98	78	303	54	54	287
2	1,040	67	74	95	95	106	95	74	1,570	50	54	119
3	380	71	67	92	95	109	95	71	1,880	50	57	129
4	98	71	74	88	134	109	92	500	1,700	50	54	109
5	64	67	78	88	124	109	92	138	530	54	50	78
6	81	67	84	92	134	109	95	54	176	54	50	60
7	350	67	84	95	106	106	98	50	134	296	50	57
8	206	64	92	98	106	106	88	43	114	173	50	319
9	150	71	92	109	102	134	252	43	106	399	50	645
10	314	67	92	106	98	248	421	40	98	334	50	370
11	169	71	98	106	95		516	36	109	81	50	215
12	67	71	102	106	92		421	47	171	57	50	124
13	64	71	106	106	84	420	193	412	160	54	47	81
14	64	67	119	106	102		124	1,580	109	54	43	71
15	60	67	134	106	95		106	2,960	150	54	47	67
16	60	67	124	109	88	114	102	1,120	171	54	43	64
17	60	67	129	109	81	109	98	286	114	54	40	60
18	60	67	114	109	81	106	95	210	95	60	40	60
19	57	67	106	109	81	102	95	182	95	60	38	60
20	57	67	106	114	81	106	95	166	92	60	40	54
21	57	67	109	292	78	102	88	160	84	57	40	122
22	60	67	109	462	88	102	88	155	81	50	40	215
23	57	71	109	171	155	102	88	150	74	43	43	681
24	60	71	109	102	134	106	84	150	67	47	47	359
25	64	74	106	98	106	114	81	171	67	54	54	276
26	67	71	114	98	102	109	81	166	64	54	54	140
27	71	67	119	98	98	106	78	193	64	50	54	95
28	71	67	155	95	98	106	74	193	60	71	54	84
29	71	71	298	98	98	102	74	248	57	84	57	81
30	74	74	308	95	------	98	74	242	57	60	60	74
31	81	------	134	92	------	98	------	450	------	54	146	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,260	57	174	10,700
November	74	64	68.7	4,090
December	308	67	117	7,190
January	462	88	121	7,440
February	155	78	101	5,810
March	------	98	162	9,960
April	516	74	136	8,090
May	2,960	36	334	20,500
June	1,880	57	285	17,000
July	399	43	87.9	5,400
August	146	38	51.8	3,190
September	681	54	172	10,200
The year	2,960	36	151	110,000

SAN ANTONIO RIVER AT GOLIAD, TEX.

LOCATION.—Chain gage on Galveston, Harrisburg & San Antonio Railway bridge in Goliad, Goliad County.

DRAINAGE AREA.—3,910 square miles.

RECORDS AVAILABLE.—June, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, 3,880 second-feet May 16 (gage height, 19.0 feet); minimum not determined.

1924–1928: Maximum discharge, 11,900 second-feet April 25, 1926 (gage height, 31.0 feet); minimum, 44 second-feet for several periods during 1927.

REMARKS.—Monthly records fair. Record of daily discharge not sufficiently accurate for publication. For diversions see record of Medina Canal near Riomedina.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,510	55	292	18,000
November	410		91.6	5,450
December	256		107	6,580
January	430	81	117	7,190
February			[a] 112	6,440
March			[a] 173	10,600
April	506		145	8,630
May	3,720	78	420	25,800
June	3,360	84	503	29,900
July	438	52	91.4	5,620
August			51.0	3,140
September	2,030	48	391	23,300
The year	3,720		208	151,000

[a] Estimated.

SAN PEDRO CREEK AT SAN ANTONIO, TEX.

LOCATION.—Water-stage recorder at south end of Missouri-Kansas-Texas Railroad culvert 200 feet south of Arsenal Street in San Antonio, Bexar County, 1 mile above mouth of Salsamora and Martinez Creeks, and 2½ miles above confluence with San Antonio River.

RECORDS AVAILABLE.—July, 1916, to September, 1928.

EXTREMES.—Maximum discharge during year, 1,170 second-feet March 9 (gage height, 6.79 feet); no flow May 23.

1916–1928: Maximum discharge not determined; maximum stage, 8.6 feet September 9, 1921, when backwater from Alizan Creek existed; no flow August 16, 1926, and May 23, 1928.

REMARKS.—Records fair. No diversions. Flow partly regulated at small swimming pool dam above. Entire flow of San Pedro Creek, except during times of heavy precipitation, is furnished by San Pedro Springs, 2 miles upstream, and flow at this station is believed to be that which reaches San Antonio River. Martinez and Salsamora Creeks carry no water except during heavy local rains and have been known to be dry for several years at a time.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.7	4.8	6.5	5.2	6.0	5.2		7.0	4.0	6.5	3.1	1.9
2	4.4	5.6	4.8	5.2	13	5.2		8.5	58	7.0	3.7	1.9
3	5.2	4.4	6.0	5.6	6.2	5.2		7.0	5.2	6.5	3.1	1.9
4	4.4	3.7	6.0	6.5	9.1	5.2	a 5.3	6.0	6.0	5.6	2.8	1.9
5	4.0	4.4	6.0	4.0	3.4	5.2		2.8	4.0	7.0	9.2	1.9
6	4.0	4.4	6.0	4.0	4.8	5.2		4.8	4.8	6.0	4.4	3.4
7	4.4	4.4	7.0	7.0	4.8	7.5	a 6.5	4.4	6.5	4.8	3.1	1.9
8	9.3	4.4	4.4	4.8	4.4	5.2	4.4	4.4	5.2	3.7	2.5	16
9	5.6	4.8	4.4	4.4	5.2	72	12	5.2	5.2	4.4	2.5	8.7
10	5.2	5.9	5.2	4.4	3.4	5.2	9.0	4.4	6.5	4.4	2.5	3.1
11	5.2	3.7	4.4	4.8	5.2	4.8	4.4	2.2	6.5	3.7	2.5	3.1
12	5.2	4.8	9.4	5.2	10	4.4	4.4	8.0	6.5	5.2	2.8	2.5
13	5.2	4.8	4.8	5.2	5.2	4.4	4.4	48	7.4	4.0	3.1	3.1
14	7.5	4.8	10	5.2	5.2	4.0	3.4	6.5	6.5	3.7	2.5	2.5
15	5.6	4.8	4.8	5.2	5.2	4.0	a 4.0	5.6	5.6	4.0	2.5	a 2.8
16	4.0	6.5	5.2	5.2	5.2	3.7	5.6	4.0	6.0	4.4	2.8	a 3.1
17	6.0	5.2	a 6.0	5.2	4.8	a 3.7	4.4	4.8	6.5	3.7	2.2	3.7
18	5.6	3.7		6.0	4.8	a 4.0	1.9	9.0	8.5	3.4	1.9	2.8
19	5.2	4.8		4.8	a 5.2	a 4.8	4.0	12	6.0	3.7	1.9	1.9
20	6.0	4.8	a 6.0	4.0	a 5.6	4.8	4.4	9.0	5.6	3.4	2.5	2.5
21	4.4	4.8		4.8	18	4.4	4.0	11	6.5	2.8	2.2	44
22	4.0	4.8		5.2	7.5	6.5	4.4	5.2	5.6	3.1	1.6	13
23	5.2	4.8		5.2	5.6	3.4	4.0	1.1	5.6	4.0	2.5	14
24	5.2	7.5	6.0	5.2	4.8	4.4	4.0	2.8	5.6	3.4	1.9	6.0
25	5.2	4.8	6.5	5.2	4.8	4.4	4.0	2.2	7.0	3.1	1.9	4.8
26	6.0	3.7	6.5	5.2	4.8	4.0	4.8	2.2	6.5	7.3	1.9	3.7
27	4.4	5.2	14	5.2	4.8	4.0	4.8	3.1	8.5	4.0	2.8	3.1
28	3.7	5.6	11	4.8	4.8	4.0	4.0	4.4	8.5	3.7	2.5	2.5
29	4.4	5.6	6.0	4.8	5.2	4.0	4.8	9.7	6.5	3.7	2.2	2.5
30	5.6	6.5	3.7	4.8	------	4.0	4.8	4.0	6.0	4.4	16	2.2
31	5.2	------	4.8	4.8	------	4.0	------	5.2	------	3.7	1.6	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9.3	3.7	5.23	322
November	7.5	3.7	4.93	293
December	14	3.7	6.30	387
January	7.0	4.0	5.07	312
February	18	3.4	6.10	351
March	72	3.4	6.80	418
April	12	1.9	4.94	294
May	48	1.1	6.92	425
June	58	4.0	7.89	469
July	7.3	2.8	4.46	274
August	16	1.6	3.18	196
September	44	1.9	5.55	330
The year	72	1.1	5.61	4,070

a Estimated.

MEDINA RIVER NEAR PIPE CREEK, TEX.

LOCATION.—Water-stage recorder 3½ miles above mouth of Pipe Creek and 4 miles southwest of Pipe Creek post office, Bandera County.

DRAINAGE AREA.—412 square miles.

RECORDS AVAILABLE.—December, 1922, to September, 1928.

EXTREMES.—Maximum discharge during year, 1,530 second-feet June 2 (gage height, 4.50 feet); minimum, 2.7 second-feet August 26–30 and September 10–12.

1922–1928: Maximum gage height, 19.8 feet April 21, 1926 (discharge not determined); minimum discharge, 2.2 second-feet September 9, 1927.

The flood of 1919 reached a stage of about 42 feet.

REMARKS.—Records for low stages fair and for high stages poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	16	14	24	24	29	20	12	9.2	31	11	3.2
2	99	14	14	24	27	29	18	12	793	27	6.8	3.2
3	42	a 14	12	27	33	29	18	14	315	22	5.8	3.2
4	31	a 14	14	27	38	27	18	14	148	18	5.8	3.2
5	22	a 14	14	27	38	24	22	16	111	12	11	3.2
6	22	a 14	14	27	40	24	22	16	102	9.2	6.8	3.2
7	22	14	18	27	40	27	20	14	95	5.8	4.8	3.2
8	22	a 14	20	27	40	27	18	12	86	5.8	4.8	3.2
9	a 29	a 14	20	24	40	94	38	11	77	5.8	3.9	3.2
10	27	a 15	20	24	35	359	35	11	64	5.8	3.9	2.7
11	22	a 16	22	24	35	74	38	9.2	64	5.8	3.2	2.7
12	22	a 16	27	22	38	62	33	8.0	64	5.8	3.2	2.7
13	a 21	a 16	29	22	35	50	33	96	360	5.8	3.2	3.2
14	a 20	18	27	22	35	44	29	42	149	4.8	3.2	3.2
15	a 19	16	27	20	35	42	27	38	123	3.2	3.2	3.2
16	a 18	a 16	24	20	31	38	27	38	111	3.9	3.9	3.2
17	14	a 16	24	20	29	33	27	33	44	4.8	3.9	3.2
18	14	a 16	22	24	31	33	27	33	40	4.8	3.9	3.2
19	14	a 16	22	27	33	38	27	29	38	4.8	4.8	3.2
20	14	a 16	22	27	33	33	27	27	35	6.8	3.9	3.2
21	14	16	24	24	96	27	24	27	38	6.8	3.9	3.2
22	14	12	24	24	63	27	22	24	38	5.8	3.9	3.2
23	14	a 13	22	27	38	27	22	22	40	3.9	3.9	3.6
24	11	a 14	22	29	33	27	20	18	40	3.9	3.9	3.9
25	14	a 15	22	29	33	24	18	14	40	3.9	3.2	3.9
26	8.0	a 17	27	27	33	24	18	11	40	3.2	2.7	3.9
27	a 9.0	a 18	24	27	33	22	18	11	38	3.2	2.7	3.9
28	a 11	a 19	35	24	33	22	18	11	35	60	2.7	3.2
29	a 13	a 20	27	27	31	24	12	11	38	38	2.7	3.2
30	a 14	18	24	22	------	22	12	11	35	27	2.7	3.2
31	14	------	27	24	------	18	------	9.2	------	14	3.2	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	99	8.0	22.8	1,400
November	20	12	15.6	928
December	35	12	22.1	1,360
January	29	20	24.8	1,520
February	96	24	37.3	2,150
March	359	18	44.5	2,740
April	38	12	23.6	1,400
May	96	8.0	21.1	1,300
June	793	9.2	107	6,370
July	60	3.2	11.7	719
August	11	2.7	4.40	271
September	3.9	2.7	3.26	194
The year	793	2.7	28.0	20,400

a 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.—606 square miles.

RECORDS AVAILABLE.—January, 1922, to September, 1928.

EXTREMES.—No flow over dam during year.

1922–1928: Maximum discharge, about 11,800 second-feet April 21, 1926 (gage height, 5.17 feet); no flow over dam for several periods.

REMARKS.—Yearly record fair. Record of monthly seepage not sufficiently accurate for publication. Water to irrigate about 5,000 acres is diverted to Medina Canal just above gage; see "Medina Canal near Riomedina." Flow regulated by main storage dam, 4 miles upstream, except when main reservoir is full and water flows over spillway. Medina Valley Irrigation Co. furnishes daily gage readings of lake level which are used to determine seepage. Seepage past diversion dam, measured at Haby Crossing, 1 mile downstream, was 17,600 acre-feet for year ending September 30, 1928.

MEDINA CANAL NEAR RIOMEDINA, TEX.

LOCATION.—Water-stage recorder just above upper end of flume No. 1, one-third mile below head of canal and 6 miles north of Riomedina, Medina County.

RECORDS AVAILABLE.—March, 1922, to September, 1928.

EXTREMES.—Maximum discharge during year not determined; no flow during several periods.

1922–1928: Maximum discharge, 128 second-feet June 26, 1923, and June 5 and 6, 1925; no flow during several periods.

REMARKS.—Records fair. Station is above all diversions from canal. Flow controlled by headgates. Canal diverts from Medina River for irrigation near Lacosta and Natalia.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		28	25	12	26	3.4	23		26	85	23	43
2		27	19	12	13	2.9	23		18	86	25	43
3		24	18	18	4.7	a 3.6	19		14	76	30	30
4		24	18	24	4.1	a 10	16		15	56	28	13
5	a 30	24	23	20	4.0	17	16		19	56	28	13
6		a 24	23	14	3.6		18		18	56	28	13
7			23	4.0	3.3				17	54	28	15
8	a 30		21	3.6	2.9	a 14	a 13		17	38	23	18
9	17		23	7.8	2.6		0		21	39	23	11
10	17	a 24	25	16	10	0	0		21	39	25	8.4
11	18		25	19	19	0	0		25	33	30	8.9
12	19	a 25	16	19	9.2	0	0		24	30	30	8.9
13	19	23	12	19	4.1	0	0		23	30	30	8.7
14	22	23	4.7	18	2.8	0	a 11		32	30	30	15
15	24	26	0	18	4.1	0	11		39	36	42	24
16	23	30	0	18	5.2		11	a 11	38	46	51	23
17	23	28		18	4.3	a 12	11		45	52	46	23
18	23	28		22	13		11			53	43	23
19	23	a 30		28	17	12	11			55	52	26
20	24		a 6.1	25	14	13	11			55	55	39
21	23			9.6	3.3	12	11			55	55	35
22	23	a 28		0	1.3	13	12			54	49	16
23	25			0	0	a 12	12		a 87	56	48	12
24	30		a 12	0	0	a 14	13			56	41	12
25	30		12	3.7	.7	14	16			56	40	12
26	29	a 25	12	12	2.5		19			56	41	12
27	30	25	12	11	2.2		20			44	41	12
28	30	25	3.4	16	5.0	a 18	a 20		98	21	41	12
29	28	25	0	19	5.8		a 19		97	13	41	14
30	28	25	0	18	-------				94	12	41	14
31	28	-------	8.0	23	-------	a 23	-------	25	-------	23	42	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	----------	17	25.7	1,580
November	----------	----------	25.9	1,540
December (27 days)	25	3.4	14.0	749
January (28 days)	28	3.6	16.0	888
February (27 days)	26	.7	6.95	372
March (25 days)	23	2.9	13.3	658
April (25 days)	23	.11	15.2	752
May	25	----------	11.5	707
June	----------	14	52.4	3,120
July	86	12	46.8	2,880
August	55	23	37.1	2,280
September	43	8.4	18.6	1,110
The year	----------	----------	----------	16,600

a Estimated.

CIBOLO CREEK AT SUTHERLAND SPRINGS, TEX.

LOCATION.—Staff gage at highway bridge in Sutherland Springs, Wilson County 5½ miles below mouth of Elm Creek.

DRAINAGE AREA.—665 square miles.

RECORDS AVAILABLE.—June, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, about 5,480 second-feet May 13 (gage height, 14.40 feet); minimum, 5.4 second-feet August 8 (gage height, 1.94 feet).

1924–1928: Maximum discharge, determined by slope-area method, 23,800 second-feet April 21, 1926 (gage height, 28.5 feet); minimum, that of August 8, 1928.

REMARKS.—Records for low and intermediate stages fair and for high stages poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	11	12	13	13	14	12	15	18	8.8	6.8	8.4
2	519	12	12	14	15	14	12	15	1,260	14	6.4	8.4
3	22	13	11	15	15	14	11	17	702	10	6.8	8.4
4	17	12	11	15	15	14	11	17	73	9.2	7.4	8.1
5	15	10	12	15	15	14	12	16	29	9.6	7.4	8.4
6	15	11	13	16	14	14	12	16	22	8.1	6.8	8.4
7	16	11	11	17	15	13	11	16	17	7.7	6.1	8.1
8	137	10	12	17	14	12	11	16	15	9.2	5.8	16
9	50	10	12	15	14	12	111	16	14	11	6.4	8.8
10	20	11	12	16	14	18	30	16	834	13	8.4	9.2
11	15	11	12	16	15	42	25	20	280	15	7.4	9.2
12	14	11	12	17	15	22	14	17	30	14	7.4	8.8
13	13	10	12	16	14	16	12	2,010	32	12	8.1	8.8
14	14	11	13	17	14	14	11	1,760	368	10	10	8.8
15	14	12	12	17	14	13	11	112	1,100	9.6	14	8.8
16	14	11	12	18	14	12	11	42	344	10	7.7	9.2
17	13	10	12	18	14	12	11	28	41	11	7.7	8.8
18	14	11	13	18	14	12	11	20	23	10	8.4	8.8
19	14	11	13	17	13	12	12	17	16	11	8.8	8.4
20	13	9.6	12	16	13	12	12	16	12	11	7.4	8.8
21	12	10	13	12	14	12	12	17	12	11	7.7	9.6
22	11	9.2	12	13	14	12	14	18	12	12	7.7	11
23	11	9.6	13	13	14	12	13	20	10	11	7.4	11
24	11	10	13	13	13	12	13	20	9.2	8.8	7.4	9.2
25	11	12	13	13	13	12	13	20	10	8.4	8.1	8.8
26	11	12	13	13	13	12	13	20	9.6	8.8	8.1	9.2
27	11	12	13	13	13	12	14	20	9.6	12	8.1	8.8
28	10	12	22	12	13	12	13	20	9.2	39	8.4	9.2
29	11	13	20	12	14	12	14	20	8.8	15	8.4	9.2
30	12	12	16	13	------	11	15	20	7.7	10	8.1	8.8
31	14	------	14	13	------	11	------	20	------	8.8	8.4	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	519	10	35.7	2,200
November	13	9.2	11.0	655
December	22	11	13.0	799
January	18	12	14.9	916
February	15	13	14.0	805
March	42	11	14.1	867
April	111	11	16.6	988
May	2,010	15	142	8,730
June	1,260	7.7	178	10,600
July	39	7.7	11.6	713
August	14	5.8	7.84	482
September	16	8.1	9.18	546
The year	2,010	5.8	39.0	28,300

NUECES RIVER BASIN

NUECES RIVER AT LAGUNA, TEX.

LOCATION.—Water-stage recorder 1 mile northwest of Laguna, Uvalde County.
DRAINAGE AREA.—764 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year, 7,440 second-feet October 2 (gage height, 8.65 feet); minimum, 13 second-feet September 6–8 (gage height, 1.87 feet).

1923–1928: Maximum discharge, 27,000 second-feet July 23, 1926 (gage height, 14.88 feet); minimum, 8.9 second-feet September 9–11, 1924.

The floods of 1913 and September 21, 1923, reached stage of 26.5 feet, from floodmarks (discharge, 74,500 second-feet, determined by slope-area method). Floods in 1903 reached a slightly higher stage.

REMARKS.—Records for low stages fair and for high stages poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,090	56	44	37	46	a44	40	28	46	44	22	16
2	2,980	59	44	39	49	42	40	26	46	39	20	15
3	576	56	44	39	49	42	39	37	46	39	19	15
4	302	56	44	39	49	42	39	33	44	35	999	14
5	197	59	44	40	49	40	39	31	42	33	135	14
6	159	56	44	40	49	42	39	28	40	30	59	13
7	132	56	46	42	52		39	28	40	26	44	13
8	132	59	46	40	54		56	26	39	25	37	13
9	124	56	44	44	56		44	25	37	26	37	17
10	106	56	42	44	56	a42	40	25	962	24	31	20
11	95	56	42		56		39	25	1,370	24	28	19
12	95	56	42		52		39	38	383	25	26	16
13	95	56	42		49		39	401	210	25	26	15
14	92	56	42		49	42	39	128	299	23	25	14
15	92	56	44		49	40	39	95	271	24	24	14
16	92	54	44	a46	46	40	40	82	188	25	23	14
17	89	54	44		46	40	40	79	147	25	23	
18	89	56	44		46	42	40	72	120	25	22	
19	89	59			46	40	39	69	106	24	20	
20	86	59			46	42	39	64	95	24	20	
21	86	56			44	42	39	88	89	24	19	a17
22	82	56			42	40	37	69	82	23	18	
23	79	56	a43	a49	42	40	39	64	79	23	18	
24	79	56		46	42	40	37	62	72	25	17	
25	79	54		46	44	40	35	59	69	23	17	a25
26	79	52		46	44	39	33	56	64	23	16	25
27	76	52		42	a44	40	31	54	59	24	15	25
28	69	49	42	40	a44	40	31	54	56	23	15	23
29	66	46	42	40	a44	40	30	54	54	23	15	22
30	64	46	40	42	------	40	30	52	46	24	14	22
31	59	------	39	44	------	42	------	49	------	23	14	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,980	59	243	14,900
November	59	46	55.1	3,280
December	------	------	43.1	2,650
January	------	------	43.6	2,680
February	56	42	47.7	2,740
March	------	------	41.1	2,530
April	56	30	38.3	2,280
May	401	25	64.5	3,970
June	1,370	37	173	10,300
July	44	23	26.5	1,630
August	999	14	58.6	3,600
September	------	------	17.3	1,030
The year	------	------	71.2	51,600

a Estimated.

NUECES RIVER NEAR UVALDE, TEX.

LOCATION.—Water-stage recorder installed November 22, 1927, at Tom Nunn crossing, 6 miles south of Southern Pacific Railroad bridge and 9 miles west of Uvalde, Uvalde County. From October 4 to November 22, 1927, a staff gage at same site and datum was used.

DRAINAGE AREA.—1,930 square miles (revised), a 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, 1928.

EXTREMES.—Maximum discharge during period, 1,320 second-feet June 11 (gage height, 2.91 feet); minimum, 2.1 second-feet September 30 (gage height, 0.54 foot).

The river reached a stage of 26.4 feet during December, 1913.

REMARKS.—Records good. Discharge interpolated October 6, 8, 11, 30, November 6, 13, and 20. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	7.9	5.2	4.0	5.2	3.0	3.5	3.3	4.0	5.7	4.6	6.8
2	------	7.9	4.0	4.0	5.7	3.0	4.0	3.3	4.6	5.7	4.0	6.2
3	------	7.9	4.0	4.0	5.2	3.5	4.0	3.3	4.0	5.7	4.0	6.2
4	165	7.9	4.6	4.0	4.6	3.5	4.0	3.3	3.5	5.7	4.0	6.2
5	30	7.9	4.6	4.0	4.0	4.0	4.0	3.0	3.5	5.7	4.0	6.2
6	22	7.6	4.6	4.0	4.6	4.0	4.0	3.0	3.5	5.7	5.2	6.8
7	15	7.4	4.6	4.0	5.2	4.0	4.0	3.0	3.3	5.7	6.2	6.8
8	14	7.4	4.0	4.0	5.2	4.0	3.5	2.8	3.5	5.7	6.8	6.8
9	14	7.4	4.0	4.6	5.2	4.0	4.0	2.8	3.3	5.7	6.2	6.2
10	13	7.4	4.0	4.6	4.6	4.0	3.3	2.8	42	5.2	6.2	6.2
11	12	7.4	4.0	4.6	4.0	4.6	3.0	3.0	686	5.7	6.2	6.2
12	11	7.4	4.0	4.0	3.5	4.6	3.3	28	242	5.2	6.2	6.2
13	11	7.4	4.0	4.0	3.0	4.0	3.0	28	77	5.2	6.8	6.2
14	11	7.4	4.0	4.0	4.0	4.0	3.5	4.6	18	4.6	6.8	6.2
15	11	6.8	4.0	4.6	4.0	3.5	3.3	5.2	16	4.0	6.8	5.7
16	9.9	6.8	4.0	4.0	3.5	3.5	3.5	5.7	14	3.5	6.2	5.7
17	9.0	6.8	4.0	4.0	3.5	3.5	3.5	5.2	12	3.5	6.8	4.6
18	8.4	6.8	4.0	3.5	3.5	3.5	3.5	4.6	11	3.5	6.2	4.0
19	8.4	6.8	4.0	3.5	4.0	4.0	3.3	4.6	9.9	3.3	5.7	4.0
20	8.4	6.5	4.0	4.0	4.0	3.5	3.3	4.0	9.0	3.5	5.7	3.5
21	9.0	6.2	4.0	4.6	4.0	4.0	3.3	10	8.4	3.5	5.7	4.6
22	9.0	6.2	4.0	4.6	4.0	4.0	3.3	4.6	8.4	3.5	5.7	7.0
23	8.4	6.2	4.0	3.5	4.0	4.0	3.0	4.0	7.9	4.0	5.7	9.2
24	8.4	6.2	4.0	3.0	4.6	4.0	2.8	3.5	7.9	4.6	5.2	3.5
25	8.4	6.2	4.0	3.0	4.0	4.0	3.0	3.5	7.9	4.6	5.7	3.3
26	8.4	5.7	4.0	3.3	4.0	4.6	3.0	3.5	7.4	4.6	5.7	3.3
27	8.4	5.7	4.0	3.5	4.0	4.0	3.0	3.5	7.4	4.6	6.2	3.3
28	7.9	5.2	4.0	4.0	3.5	4.0	3.3	4.0	6.8	4.6	6.2	3.3
29	7.9	5.2	4.0	4.0	3.3	3.5	3.3	4.0	6.2	6.2	6.2	3.0
30	7.9	4.6	4.0	4.6	------	3.5	3.5	4.0	6.2	5.7	5.7	2.8
31	7.9	------	4.0	4.6	------	3.5	------	4.0	------	4.6	5.7	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October 4–31	165	7.9	16.6	922
November	7.9	4.6	6.81	405
December	5.2	4.0	4.12	253
January	4.6	3.0	4.00	246
February	5.7	3.0	4.20	242
March	4.6	3.0	3.83	236
April	4.0	2.8	3.43	204
May	28	2.8	5.55	341
June	686	3.3	41.5	2,470
July	6.2	3.3	4.81	296
August	6.8	4.0	5.75	354
September	9.2	2.8	5.33	317
The period				6,290

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, by road, from post office at Cotulla, La Salle, County.

DRAINAGE AREA.—5,260 square miles, a large part of which is noncontributing ta low stages, owing to water entering a fault near Uvalde.

RECORDS AVAILABLE.—October, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year, 11,400 second-feet October 11 (gage height, 7.15 feet); no flow during several periods.

1923–1928: Maximum discharge, 49,500 second-feet June 3, 1925 (gage height, 14.89 feet); no flow during several periods.

REMARKS.—Records fair. Discharge interpolated October 1 and 5. Most of low-water flow is diverted by pumping from storage reservoir above; amount not known. Low-water flow is regulated by storage reservoir above.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	May	June	Aug.	Sept.
1	8.8	5.0	0	79	0	12
2	7.5	3.5	0	61	0	5.5
3	6.5	2.5	0	79	0	3.5
4	6.0	1.5	0	300	0	.5
5	4.0	1.0	0	759	0	0
6	2.0	0	0	1,140	0	0
7	1.0	0	0	1,440	0	0
8	480	0	0	1,360	168	203
9	1,330	0	0	505	34	505
10	2,580	0	0	123	186	310
11	9,320	0	0	69	288	69
12	9,270	0	0	44	130	53
13	5,720	0	0	26	78	30
14	4,150	0	4.5	17	57	48
15	2,750	0	6.0	18	30	315
16	3,100	0	408	116	19	468
17	774	0	1,020	264	14	213
18	150	0	1,160	240	12	123
19	82	0	408	213	11	69
20	48	0	195	123	12	53
21	20	0	143	61	12	57
22	14	0	89	20	9.5	188
23	12	0	57	14	7.0	705
24	8.0	0	349	9.0	4.5	1,190
25	6.0	0	1,090	0	2.0	3,100
26	6.5	0	1,440	0	0	4,520
27	7.5	0	1,620	0	0	4,520
28	7.5	0	1,120	0	0	4,920
29	6.0	0	252	0	0	4,330
30	6.0	0	204	0	0	2,400
31	5.5	------	159	------	18	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,320	1.0	1,290	79,300
November	5.0	0	.45	27
May	1,620	0	314	19,300
June	1,440	0	236	14,000
August	288	0	35.2	2,160
September	4,920	0	947	56,400
The year	9,320	0	236	171,000

NOTE.—No flow Dec. 1 to Apr. 30 and July 1–31.

NUECES RIVER NEAR THREE RIVERS, TEX.

LOCATION.—Staff gage at San Antonio, Uvalde & Gulf Railroad bridge half a mile below Frio River and 2 miles southeast of Three Rivers, Live Oak County.

DRAINAGE AREA.—15,600 square miles, part of which is noncontributing at low stages, owing to water entering faults near Uvalde.

RECORDS AVAILABLE.—July, 1915, to September, 1928.

EXTREMES.—Maximum discharge during year, 6,760 second-feet May 14 (gage height, 23.9 feet); no flow May 3, 4, and July 17–27.

1915–1928: Maximum discharge not determined; maximum stage, 46.0 feet (probably some backwater due to Gulf storm) September 18, 1919; no flow during several periods.

REMARKS.—Records fair. About 10,000 acres declared irrigated above station. At very low stages flow is regulated for short periods by railroad pumping plant just above control. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	4.0	0.6	14	2.4	4.0	1.3	0.6	880	6.5	28	254
2	5,330	2.4	.6	6.5	6.2	4.0	.6	.6	1,150	4.0	117	95
3	4,730	1.3	.6	4.0	53	4.0	1.3	0	2,080	2.4	75	38
4	1,940	.6	.6	2.4	75	4.0	1.3	0	1,930	1.3	60	8.8
5	263	.6	.6	2.4	48	4.0	1.3	1,890	948	.6	31	2.4
6	14	1.3	.6	4.0	25	4.0	.6	1,300	347	1.3	19	2.4
7	10	1.3	.6	4.0	19	4.0	.6	215	560	1.3	19	1.3
8	324	.6	.6	6.5	14	4.0	.6	60	790	.6	194	.6
9	1,930	.6	.6	6.5	10	4.0	143	31	790	.6	347	1,030
10	1,360	2.4	1.3	6.5	10	131	258	25	635	14	430	2,440
11	880	2.4	2.4	4.0	10	814	364	48	3,180	31	685	970
12	685	1.3	1.3	4.0	10	192	157	31	2,500	6.5	1,000	289
13	698	1.3	1.3	4.0	10	75	75	48	1,420	14	1,180	137
14	1,210	1.3	2.4	4.0	6.5	31	31	5,530	1,330	6.5	1,180	176
15	2,310	1.3	4.0	4.0	6.5	25	25	6,400	1,630	.6	940	214
16	3,940	91	14	4.0	6.5	25	14	4,550	1,450	.6	334	95
17	3,590	30	2.4	4.0	6.5	19	10	2,740	640	0	176	48
18	4,010	10	.6	2.4	6.5	10	10	2,710	282	0	75	38
19	5,270	4.0	.6	2.4	4.0	10	6.5	5,040	248	0	48	48
20	5,100	4.0	.6	2.4	4.0	10	4.0	6,250	231	0	95	214
21	4,430	4.0	2.4	2.4	4.0	6.5	4.0	5,200	195	0	176	299
22	3,730	4.0	4.0	2.4	6.5	6.5	4.0	3,520	265	0	75	347
23	3,200	2.4	4.0	4.0	6.5	6.5	2.4	2,620	214	0	95	214
24	2,680	2.4	4.0	4.0	6.5	4.0	2.4	1,960	195	0	25	117
25	1,320	1.3	4.0	4.0	6.5	4.0	1.3	1,330	137	0	14	214
26	117	1.3	4.0	4.0	6.5	4.0	1.3	548	75	0	6.5	395
27	38	1.3	4.0	4.0	6.5	2.4	.6	265	48	0	4.0	535
28	14	1.3	37	2.4	6.5	2.4	.6	299	38	371	2.4	660
29	14	1.3	137	2.4	6.5	1.3	.6	450	31	450	1.3	790
30	14	1.3	75	2.4	-------	1.3	.6	635	19	223	1.3	940
31	4.0	-------	48	2.4	-------	1.3	-------	735	-------	21	6.0	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,330	4.0	1,920	118,000
November	91	.6	6.08	362
December	137	.6	11.6	713
January	14	2.4	4.08	251
February	75	2.4	13.4	771
March	814	1.3	45.7	2,810
April	364	.6	37.4	2,230
May	6,400	0	1,760	108,000
June	3,180	19	808	48,100
July	450	0	37.3	2,290
August	1,180	1.3	240	14,800
September	2,240	.6	347	20,600
The year	6,400	0	439	319,000

NUECES RIVER AT CALALLEN, TEX.

LOCATION.—Staff gage at old pump house for city of Corpus Christi, half a mile northwest of Calallen, Nueces County, and half a mile above edge of tidewater and breakwater dam.

DRAINAGE AREA.—16,900 square miles, a large part of which is noncontributing at low stages, owing to water entering faults near Uvalde.

RECORDS AVAILABLE.—August, 1915, to September, 1928. (Records of discharge from 1915 to 1918, only.)

EXTREMES.—Maximum stage during year, 7.40 feet May 24 and 25; minimum, 0.05 foot July 30.

1915–1928: During September, 1919, the river reached a stage of about 12 feet, as determined from floodmarks on gage. This was not only the highest stage reached during the period covered by records but probably exceeds any that occurred for many years prior to the establishment of this station. No flow August 23–28, 1918.

REMARKS.—Discharge not computed. Gage-height record furnished by the city of Corpus Christi.

Daily gage height, in feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.58	1.30	1.30	2.42	2.08	2.08	.85	1.08	3.38	1.20	2.65	1.42
2	2.32	1.12	1.32	2.55	2.08	2.15	.98	1.10	3.78	1.08	2.20	1.40
3	3.82	1.12	1.32	2.45	2.10	2.20	1.10	1.10	4.97	.90	1.90	3.06
4	5.22	1.55	1.30	2.35	2.35	2.20	1.15	.90	5.70	.82	1.72	3.30
5	5.72	1.70	1.20	2.22	2.52	2.15	1.30	.92	5.72	.72	1.80	2.52
6	6.12	1.90	.98	2.22	2.55	2.15	1.40	2.28	5.62	.68	2.28	2.08
7	4.76	1.98	.90	2.25	2.62	2.15	1.40	4.28	4.57	.82	2.32	1.92
8	3.08	1.78	.95	2.25	2.65	2.15	1.42	4.52	3.00	.98	2.65	1.90
9	2.38	1.68	1.08	2.22	2.55	2.18	1.48	3.62	2.80	1.20	3.78	2.87
10	2.55	1.50	1.20	2.20	2.50	2.22	1.58	2.85	3.68	1.52	2.60	4.95
11	4.22	1.40	1.28	2.25	2.42	2.25	1.68	2.58	3.55	1.50	2.83	4.79
12	4.10	1.42	1.35	2.32	2.35	2.28	1.60	2.42	4.00	1.45	3.08	5.14
13	3.62	1.45	1.50	2.32	2.35	3.18	3.16	2.52	5.35	1.55	3.48	4.72
14	3.38	1.65	1.50	2.30	2.35	3.30	3.25	3.35	6.05	1.55	3.90	3.00
15	3.45	1.60	1.52	2.38	2.35	2.82	2.88	4.03	5.15	1.62	4.18	2.28
16	3.90	1.68	1.60	2.42	2.25	2.60	2.60	5.10	4.20	1.62	4.00	2.08
17	4.58	1.70	1.58	2.40	2.20	2.40	2.42	5.58	4.22	1.48	3.50	2.28
18	5.12	1.52	1.58	2.38	2.20	2.35	2.28	6.35	4.12	1.30	2.61	2.08
19	5.62	1.28	1.65	2.38	2.20	2.22	2.15	6.72	3.09	1.15	2.17	1.90
20	5.98	1.68	1.75	2.38	2.20	2.12	2.05	6.62	2.40	.98	2.00	1.68
21	6.32	2.25	1.85	2.42	2.20	2.10	2.02	6.42	2.15	.90	1.82	1.65
22	6.65	2.28	1.92	2.45	2.22	2.08	2.12	6.65	2.05	.78	2.28	1.72
23	6.98	2.22	2.02	2.48	2.25	1.98	2.05	6.98	1.95	.75	2.38	2.50
24	7.10	2.10	2.10	2.50	2.18	1.85	1.78	7.35	2.08	.70	1.82	2.75
25	6.92	2.05	2.10	2.48	2.12	1.95	1.40	7.35	2.05	.72	1.50	2.35
26	6.58	1.92	2.10	2.48	2.15	2.10	1.08	6.92	1.90	.62	1.32	2.10
27	5.58	1.82	2.02	2.40	2.15	1.90	.92	5.85	1.82	.48	1.22	1.98
28	2.95	1.78	2.02	2.32	2.10	1.62	.95	3.80	1.65	.38	1.12	2.55
29	2.00	1.60	2.10	2.35	2.05	1.25	.98	2.95	1.50	.28	1.10	2.85
30	1.78	1.40	2.12	2.32	-------	.85	1.02	2.62	1.30	.12	1.32	3.12
31	1.50	-------	2.18	2.20	-------	.75	-------	2.98	-------	2.61	1.45	-------

FRIO RIVER AT CONCAN, TEX.

LOCATION.—Staff and chain gages half a mile below Concan post office, Uvalde County, four-fifths mile below what is known as "Shut In."
DRAINAGE AREA.—485 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1928.
EXTREMES.—Maximum discharge during year not determined; minimum, 8.1 second feet August 2 and 3.
1923–1928: Maximum discharge, about 30,400 second-feet July 13, 1926 (gage height, 14.50 feet); minimum, that of August 2 and 3, 1928.
Highest known stage, 28.8 feet (from floodmark) September 18, 1923.
REMARKS.—Monthly records fair. Daily records not sufficiently accurate for publication. No diversions above station.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	66	22	42.4	2,610
November	32	31	31.5	1,870
December	34	29	31.7	1,950
January			[a] 32.0	1,970
February	34	31	33.6	1,930
March	34	31	33.2	2,040
April	33	29	31.4	1,870
May	95	29	37.5	2,310
June			33.5	1,990
July	34		15.6	959
August	124	8.1	41.5	2,550
September	28	23	25.2	1,500
The year			32.4	23,500

[a] Estimated.

FRIO RIVER NEAR DERBY, TEX.

LOCATION.—Staff gage at International-Great Northern Railroad bridge 900 feet below mouth of Leona River and 4 miles south of Derby, Frio County.
DRAINAGE AREA.—3,490 square miles, a large part of which is noncontributing at low stages, owing to water entering fault near Uvalde.
RECORDS AVAILABLE.—August, 1915, to September, 1928.
EXTREMES.—Maximum discharge during year, 1,480 second-feet June 4 (gage height 5.20 feet); no flow during several periods.
1915–1928: Maximum discharge, about 34,400 second-feet September 18, 1919 (gage height, 18.5 feet); no flow during several periods of each year.
REMARKS.—Records good. Small areas are irrigated above station; amount diverted not known.

Daily and monthly discharge, in second-feet, of Frio River near Derby, Tex., 1927–28

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	0	0	0	24	0	16	96	162	0	.6	0
2	0	0	0	13	0	17	52	86	0	.3	0
3	0	632	0	3.5	0	18	16	38	0	0	0
4	0	978	0	.5	0	19	5.4	10	0	0	0
5	47	305	0	.2	0	20	2.1	4.1	0	0	0
6	164	70	0	485	0	21	.8	.8	0	0	0
7	58	24	0	228	0	22	5.1	0	0	0	0
8	17	6.1	0	152	0	23	189	0	0	0	0
9	2.5	.2	0	422	0	24	34	0	0	0	25
10	0	8.4	0	142	0	25	13	0	0	0	46
11	0	236	0	35	0	26	2.5	0	0	0	23
12	.7	688	0	14	0	27	.1	0	0	0	8.4
13	11	167	0	5.4	0	28	0	0	0	0	2.5
14	674	106	0	2.5	0	29	0	0	143	0	.8
15	536	87	0	1.7	0	30	0	0	261	0	.1
						31	0		47	0	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
May	674	0	62.1	3,820
June	978	0	120	7,140
July	261	0	14.5	892
August	485	0	49.3	3,030
September	46	0	3.53	210
The year	978	0	20.8	15,100

NOTE.—No flow Oct. 1 to Apr. 30.

LEONA RIVER NEAR DIVOT, TEX.

LOCATION.—Staff gage at Divot-Pearsall highway bridge, 2½ miles northeast of Divot, Frio County, and 12 miles above mouth of river.

DRAINAGE AREA.—565 square miles.

RECORDS AVAILABLE.—April, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, 559 second-feet July 29 (gage height, 9.4 feet); no flow during most of year.

1924–1928: Maximum discharge, about 4,810 second-feet April 23, 1926 (gage height, 14.9 feet); no flow during several periods each year.

REMARKS.—Monthly records fair. Record of daily discharge not sufficiently accurate for publication. Several small diversions above station; amount not known. Low-water flow regulated by dams upstream.

Monthly discharge, 1927–28

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May	67	0	5.23	322
June	425	0	56.2	3,340
July	387	0	15.4	947
August	43	0	3.36	207
September	52	0	4.91	292
The year	425	0	7.05	5,110

NOTE.—No flow Oct. 1 to May 14, May 19 to June 1, June 20 to July 28, and Aug. 10 to Sept. 22.

RIO GRANDE BASIN

RIO GRANDE AT SAN MARCIAL, N. MEX.

LOCATION.—Water-stage recorder in sec. 17, T. 7 S., R. 1 W., at highway bridge half a mile northeast of San Marcial.

DRAINAGE AREA.—30,000 square miles.

RECORDS AVAILABLE.—From January, 1922, to September, 1928; January, 1895, to December, 1921, at site 1½ miles downstream.

EXTREMES.—Maximum discharge during year not determined; no flow during several periods.

1895–1928: Maximum mean daily discharge, 33,000 second-feet October 11, 1904; no flow during periods each year.

REMARKS.—Records fair except those for short periods of ice effect in winter, which are poor. Discharge estimated December 17–26, 1926. Water is diverted above station for irrigation of 600,000 acres. Records, October 1, 1926, to July 31, 1928, furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, 1926–1928

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1926-27												
1	13	50	500	422	540	650	1,510	4,200	2,530	2,600	553	410
2	29	51	450	422	550	750	2,500	4,990	2,320	3,920	335	323
3	45	50	430	422	572	910	2,100	5,620	2,010	4,700	143	170
4	88	60	190	667	598	880	1,960	5,900	2,060	5,700	90	123
5	85	70	560	799	580	840	2,500	6,000	1,830	6,800	900	130
6	100	80	425	732	570	700	3,100	6,000	1,520	7,440	4,060	145
7	131	70	625	694	560	650	3,610	6,550	1,630	6,120	5,030	521
8	93	65	655	670	560	634	3,510	7,000	1,290	5,680	3,500	2,010
9	70	62	745	658	547	642	3,340	7,550	1,050	4,810	808	3,930
10	65	65	695	657	537	635	3,150	7,810	1,390	4,400	555	1,330
11	60	70	805	653	530	600	2,970	6,350	1,800	4,290	643	1,280
12	55	76	802	652	523	638	2,770	5,310	1,980	4,080	693	1,220
13	55	73	730	679	525	684	2,600	4,020	4,250	3,300	600	5,500
14	56	70	820	682	556	755	2,510	3,590	3,020	2,070	400	10,100
15	55	70	805	695	570	740	2,190	3,220	3,710	970	304	7,100
16	55	102	650	721	614	660	1,900	3,500	4,610	860	800	5,400
17	56	134	557	708	588	550	1,890	4,570	4,640	726	760	5,500
18	50	166	538	690	620	331	1,710	5,150	4,420	667	741	4,380
19	45	199	519	678	637	395	1,210	5,670	4,710	394	388	4,200
20	41	200	500	660	654	447	1,100	6,410	4,400	430	262	4,790
21	37	201	480	646	746	581	880	6,410	4,260	344	329	5,550
22	35	202	460	628	703	590	835	6,820	3,990	163	360	5,000
23	32	215	440	582	650	600	845	6,610	3,710	102	321	4,630
24	30	235	420	600	570	513	826	6,210	3,500	62	492	4,450
25	27	255	380	598	590	444	820	4,950	3,190	102	4,800	3,800
26	25	255	375	600	610	313	1,190	4,300	2,900	965	1,800	3,200
27	22	250	370	621	638	292	2,900	3,700	2,520	1,400	820	2,620
28	25	275	300	600	650	252	3,600	3,360	1,900	2,400	672	2,500
29	30	300	250	602	-------	323	4,000	3,020	1,790	943	734	2,700
30	35	530	200	560	-------	366	3,730	2,800	1,700	870	715	2,500
31	49	-------	132	528	-------	452	-------	2,520	-------	630	481	-------

Daily discharge, in second-feet, of Rio Grande at San Marcial, N. Mex., 1926–1928—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1927–28												
1	2,440	1,100	775	1,050	688	730	985	1,140	4,250	0		1,170
2	2,440	1,100	803	963	665	680	905	2,350	4,500	0		923
3	2,410	1,320	818	947	820	648	857	4,500	4,830	0		219
4	2,500	1,290	818	975	719	661	810	5,280	5,330	0		110
5	2,310	1,260	829	975	820	630	816	7,500	5,000	0		75
6	2,120	1,280	894	960	820	657	892	5,840	4,830	0		40
7	2,020	1,150	819	962	852	664	980	4,920	4,100	0	10	5
8	2,080	1,120	730	932	912	800	1,000	4,300	3,500	0		0
9	2,030	951	795	860	880	890	1,300	4,580	3,650	0		0
10	2,000	876	824	810	845	976	995	4,800	2,180	0		0
11	2,100	937	852	762	870	938	938	4,780	1,880	0		0
12	2,100	1,160	900	700	949	1,200	837	5,250	1,600	0		0
13	2,000	1,190	950	710	870	1,020	809	6,020	1,650	0	300	0
14	1,920	1,050	978	720	702	946	813	4,980	1,470	0		0
15	1,750	1,060	1,100	721	656	930	820	5,300	1,200	0	10	0
16	1,570	1,020	1,320	725	830	887	749	4,620	940	0		0
17	1,520	1,020	800	742	880	910	584	3,930	735	0	196	0
18	1,550	923	573	770	1,060	930	470	3,300	560	0	254	0
19	1,500	831	325	810	852	1,000	423	3,390	365	0	103	0
20	1,540	808	90	875	801	912	381	3,590	295	0	47	0
21	1,480	853	85	836	770	826	334	2,820	235	0	14	0
22	1,370	869	130	823	689	790	312	2,820	160	0	24	0
23	1,220	869	242	747	752	703	359	3,030	35	0	18	0
24	1,430	785	245	637	752	650	403	3,450	15	0	59	0
25	1,370	939	625	667	863	621	440	3,920	15	0	584	0
26	1,330	1,060	800	745	795	587	390	2,520	3	0	578	0
27	1,090	1,180	1,240	735	802	594	362	2,360	0	0	192	0
28	915	1,120	1,380	729	921	552	302	3,280	0	0	338	0
29	912	878	1,200	718	853	690	441	3,720	0	0	579	0
30	922	762	1,200	706	-------	840	586	3,910	0	100	456	0
31	1,090	-------	997	663	-------	1,200	-------	4,220	-------	200	806	-------

Monthly discharge in second-feet, of Rio Grande at San Marcial, N. Mex., 1926–1928

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1926–27				
October	131	13	51.4	3,160
November	530	50	150	8,930
December	820	132	510	31,400
January	799	422	630	38,700
February	746	523	592	32,900
March	910	252	575	35,400
April	4,000	820	2,260	134,000
May	7,810	2,520	5,160	317,000
June	4,710	1,050	2,820	168,000
July	7,440	62	2,510	154,000
August	5,030	90	1,070	65,800
September	10,100	123	3,180	189,000
The year	10,100	13	1,630	1,180,000
1927–28				
October	2,500	912	1,710	105,000
November	1,320	762	1,030	61,300
December	1,380	85	779	47,900
January	1,050	637	806	49,600
February	1,060	656	817	47,000
March	1,200	552	808	49,700
April	1,300	302	676	40,200
May	7,500	1,140	4,080	251,000
June	5,330	0	1,780	106,000
July	200	0	9.68	595
August	806	-------	152	9,350
September	1,170	0	84.7	5,040
The year	7,500	0	1,060	773,000

RIO GRANDE BELOW ELEPHANT BUTTE DAM, N. MEX.

LOCATION.—Water-stage recorder in sec. 25, T. 113 S., R. 4 W., just below Elephant Butte Dam. Mescal Canyon enters half a mile downstream.
RECORDS AVAILABLE.—October, 1916, to September, 1928.
EXTREMES.—No data.
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. Records furnished by United States Bureau of Reclamation.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	780	512	406	3	352	849	2,040	1,990	1,780	2,140	2,020	1,360
2	780	20	707	3	530	807	2,040	1,860	1,780	2,130	2,020	1,360
3	780	3	707	3	590	655	2,040	1,260	1,780	2,040	2,000	1,360
4	780	3	707	26	650	807	2,040	1,280	1,780	2,040	1,780	1,360
5	803	3	707	104	550	807	2,040	1,590	1,780	2,040	1,780	1,360
6	1,040	3	707	104	566	807	2,040	1,590	1,810	2,040	2,120	1,740
7	1,130	3	707	104	566	807	2,380	1,590	1,850	2,180	1,930	1,360
8	1,130	3	707	104	566	820	1,880	1,590	1,990	2,160	1,930	1,440
9	1,130	3	707	104	566	896	1,960	1,590	2,100	2,200	1,930	1,530
10	612	45	513	163	542	1,060	2,010	1,580	2,020	2,210	1,930	1,530
11	0	376	3	297	473	1,060	2,010	1,360	2,070	2,280	1,930	1,530
12	3	376	3	333	473	1,110	2,010	1,290	2,040	2,280	1,930	1,640
13	3	888	3	333	473	1,230	2,010	1,060	1,980	2,240	1,930	2,140
14	3	1,450	3	333	442	1,430	2,010	1,060	2,040	2,240	1,930	2,200
15	3	1,390	3	303	312	1,360	2,010	1,060	2,160	2,100	1,930	2,210
16	3	1,090	3	303	344	1,340	2,010	1,060	2,400	2,150	1,930	2,140
17	3	922	3	303	402	1,340	2,040	1,040	2,320	2,280	1,560	2,010
18	3	601	3	303	610	1,340	2,420	1,100	2,320	2,280	2,030	2,000
19	3	601	3	303	573	1,340	2,140	1,100	2,320	2,280	2,030	1,980
20	70	460	3	303	573	1,280	2,140	1,260	2,320	2,260	2,030	1,810
21	480	10	3	111	573	1,100	2,180	1,570	2,320	2,260	2,080	1,500
22	480	3	3	3	573	1,100	2,160	1,850	2,320	2,060	2,070	542
23	480	3	3	3	620	1,100	2,130	1,580	2,320	2,060	2,100	1,640
24	480	3	3	3	930	1,140	2,130	1,590	2,320	2,060	2,080	1,660
25	480	3	3	85	850	1,300	2,130	1,520	2,320	2,060	2,080	1,440
26	580	3	3	212	850	1,360	2,100	1,630	2,310	1,940	2,080	1,370
27	822	3	3	199	850	1,600	1,980	1,660	2,140	1,920	1,870	1,070
28	961	3	3	276	850	1,470	2,020	1,660	2,120	1,820	1,760	800
29	961	3	3	276	850	1,460	1,990	1,660	2,040	1,820	1,820	800
30	961	3	3	276	-------	1,540	1,990	1,660	2,100	1,840	1,820	800
31	961	-------	3	276	-------	1,690	-------	1,700	-------	2,020	1,400	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,130	0	539	33,100
November	1,450	3	293	17,400
December	707	3	214	13,200
January	333	3	179	11,000
February	930	312	590	33,900
March	1,690	655	1,160	71,300
April	2,420	1,880	2,070	123,000
May	1,990	1,040	1,460	89,800
June	2,400	1,780	2,100	125,000
July	2,280	1,820	2,110	130,000
August	2,120	1,400	1,920	119,000
September	2,210	542	1,520	90,400
The year	2,420	0	1,180	857,000

RIO GRANDE NEAR EL PASO, TEX.

LOCATION.—Water-stage recorder in SE. ¼ sec. 9, T. 29 S., R. 4 E., at Courchesnes quarries, 4 miles northwest of El Paso.

RECORDS AVAILABLE.—May, 1897, to September, 1928. May, 1889, to June, 1893, for station at Old Fort Bliss, 1,500 feet above Mexican Dam; January, 1895, to May, 1897, for station at pumping house of smelter company, 1 mile below present gage.

EXTREMES.—Maximum discharge during year, 4,060 second-feet August 13 (gage height, 4.40 feet); minimum not determined.

1889–1893, 1895–1928: Maximum mean daily discharge, 23,700 second-feet June 12, 1905; no flow for several periods prior to construction of Elephant Butte Dam.

REMARKS.—Records good. Considerable water is diverted above station; amount not known. Flow regulated by Elephant Butte Reservoir, diversions, and return water from irrigated lands between reservoir and gaging station. Records furnished by United States Bureau of Reclamation October 1 to July 31.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	640	800	237	155	232	605	920	1,200	1,140	1,170	918	1,540
2	605	790	231	142	238	575	1,050	1,320	1,140	1,280	1,310	1,850
3	670	808	225	133	222	550	1,200	2,040	1,270	1,280	2,040	1,280
4	580	788	235	137	233	610	1,310	1,950	1,300	1,790	1,610	902
5	510	530	371	146	284	680	1,500	1,170	1,080	1,900	1,750	774
6	495	397	661	151	440	561	1,360	780	940	1,080	1,550	742
7	528	320	660	148	520	472	1,420	920	970	975	1,160	782
8	515	283	680	131	434	482	1,660	1,310	915	1,040	1,180	814
9	628	276	716	131	390	535	1,970	1,330	951	1,230	1,490	1,130
10	865	252	690	145	403	478	1,840	1,220	1,030	1,170	1,310	854
11	774	240	770	185	460	410	1,480	1,210	1,480	1,170	1,330	668
12	817	257	692	189	570	509	1,050	1,200	1,400	1,300	2,490	750
13	849	243	552	195	632	625	1,280	1,240	1,320	1,300	2,810	661
14	788	208	405	212	560	612	1,200	1,300	1,150	1,280	1,730	758
15	508	273	284	319	568	650	1,580	980	1,000	1,340	1,510	806
16	329	527	240	312	557	860	1,650	935	1,070	1,300	1,930	1,470
17	300	1,050	208	350	585	1,130	1,280	795	1,220	1,180	1,920	1,600
18	280	990	194	364	580	1,060	1,100	762	1,670	1,120	1,650	1,470
19	248	947	174	330	475	1,010	1,170	740	1,390	1,270	1,290	1,310
20	255	830	180	262	450	955	1,340	645	1,060	1,650	1,390	1,280
21	240	678	186	255	520	925	1,040	730	1,300	2,040	1,320	1,440
22	213	620	186	243	540	910	1,500	660	1,280	2,450	1,200	1,480
23	217	593	186	231	487	870	1,520	620	1,250	1,920	1,280	1,570
24	243	480	180	265	470	586	1,260	1,430	1,260	1,550	1,490	1,180
25	379	370	181	243	392	570	1,160	1,130	1,560	1,540	1,650	870
26	355	324	180	235	400	620	1,260	1,260	1,440	1,650	1,660	1,240
27	350	262	186	133	610	635	1,180	1,020	1,450	1,630	1,760	1,200
28	322	256	183	136	575	710	1,280	1,280	1,250	1,440	2,040	1,270
29	354	234	165	132	575	951	1,370	1,250	1,260	1,300	1,550	1,270
30	586	223	168	205	------	937	1,440	1,180	1,200	1,200	1,380	968
31	841	------	168	205	------	850	------	1,000	------	940	1,530	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	865	213	493	30,300
November	1,050	208	495	29,500
December	770	165	335	20,600
January	364	131	207	12,700
February	632	222	462	26,600
March	1,130	410	708	43,500
April	1,970	920	1,350	80,300
May	2,040	620	1,120	68,900
June	1,670	915	1,220	72,600
July	2,450	940	1,400	86,100
August	2,810	918	1,590	97,800
September	1,850	661	1,130	67,200
The year	2,810	131	876	636,000

RIO GRANDE AT TORNILLO BRIDGE, NEAR FABENS, TEX.

LOCATION.—Water-stage recorder in NE. ¼ NW. ¼ sec. 26, T. 34 S., R. 8 E., at highway bridge 4½ miles southeast of Fabens.

RECORDS AVAILABLE.—October, 1927, to September, 1928.

EXTREMES.—Maximum discharge during year, 1,710 second-feet August 15 (gage height, 12.92 feet); minimum, 0.2 second-foot September 14 and 15 (gage height, 8.45 feet).

REMARKS.—Records good. Considerable water is diverted above station; amount not known. Flow regulated by Elephant Butte Reservoir, diversions, and return water from irrigated lands between reservoir and gaging station. Records furnished by United States Bureau of Reclamation October 1 to July 30. Occasional discharge measurements and daily gage heights furnished by Colorado State Engineering Department.

Daily and monthly discharge, in second-feet, 1927–28.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	326	400	211	159	218	190	84	467	145	199	184	1,090
2	240	393	200	152	49	147	92	463	160	243	271	1,130
3	212	426	188	183	5	122	196	698	309	143	1,070	1,140
4	164	562	179	152	12	163	291	927	365	148	1,410	721
5	129	482	175	158	22	154	638	1,110	420	503	1,380	443
6	102	311	306	152	20	162	728	820	184	430	1,310	218
7	103	291	432	153	15	116	580	404	69	118	1,070	101
8	122	284	449	148	122	42	590	450	67	116	699	91
9	157	260	449	142	118	12	790	399	53	117	970	119
10	255	226	459	144	114	12	932	432	104	93	1,080	250
11	371	220	403	143	105	10	900	314	113	106	791	82
12	304	193	462	147	193	5	532	416	230	85	868	7.4
13	384	187	363	162	231	6	395	655	300	103	1,220	2.6
14	483	188	406	174	253	25	677	740	265	55	1,500	1.0
15	304	171	287	198	264	47	860	660	155	167	1,700	1.0
16	266	95	265	218	248	102	758	326	104	205	1,400	39
17	270	122	230	297	268	199	452	248	178	138	1,300	486
18	263	673	201	205	320	495	313	158	231	120	1,290	508
19	254	591	162	50	273	485	230	120	355	84	1,110	554
20	245	468	184	62	292	326	145	172	258	204	666	443
21	225	451	198	49	364	238	278	158	233	637	527	425
22	194	285	198	33	346	194	313	117	187	900	397	650
23	174	290	200	42	267	194	600	85	207	1,000	290	716
24	98	248	193	25	190	117	516	127	405	981	443	809
25	35	186	186	55	186	96	385	553	395	740	539	439
26	33	175	189	20	180	79	272	401	384	670	840	432
27	62	226	203	52	183	43	240	620	352	635	905	751
28	65	208	203	183	198	38	312	450	276	580	1,020	729
29	68	200	200	164	200	62	450	380	206	710	1,200	755
30	70	226	193	176	------	93	570	334	167	560	1,240	760
31	157	------	163	159	------	108	------	288	------	334	1,160	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	483	33	198	12,200
November	673	95	301	17,900
December	462	162	262	16,100
January	297	20	134	8,240
February	364	5	181	10,400
March	495	5	132	8,120
April	932	84	471	28,000
May	1,110	85	435	26,700
June	420	53	229	13,600
July	1,000	55	359	22,100
August	1,700	184	962	59,200
September	1,140	1.0	463	27,600
The year	1,700	1.0	345	250,000

RIO GRANDE BELOW OLD FORT QUITMAN, NEAR FINLAY, TEX.

LOCATION.—Water-stage recorder at lower end of El Paso Valley, 1½ miles below Old Fort Quitman and 11½ miles south of Finlay, Hudspeth County. Zero of gage is 3,450.60 feet above mean sea level.

RECORDS AVAILABLE.—January, 1923, to September, 1928.

EXTREMES.—Maximum mean daily discharge during year, 1,730 second-feet August 15 (gage height, 4.97 feet); minimum, 34 second-feet March 31.

1923–1928: Maximum mean daily discharge, 2,600 second-feet September 11, 1925; minimum, 20 second-feet July 23 and 24, 1925.

REMARKS.—Records good. Discharge estimated January 20–31. Considerable water diverted above station; amount not known. Flow regulated by storage at Elephant Butte Reservoir, diversions, and return water from irrigated lands between reservoir and gaging station. Records furnished by Colorado State Engineering Department October 1 to September 15. Occasional discharge measurements were made by United States Bureau of Reclamation.

Daily and monthly discharge, in second feet, 1927–28.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	481	184	248	213	165	169	49	370	257	134	316	1,540
2	442	237	237	207	163	189	62	407	198	124	266	1,530
3	429	369	233	195	191	185	72	415	187	124	316	1,500
4	419	425	229	191	252	167	49	486	215	125	725	1,350
5	384	465	223	191	185	158	76	633	253	85	935	1,240
6	387	495	217	191	155	164	182	786	289	93	940	725
7	371	500	215	187	167	170	354	870	266	258	975	538
8	346	430	287	185	165	141	394	711	177	226	1,020	447
9	343	358	380	181	155	130	411	415	131	74	985	394
10	343	214	410	179	205	110	510	368	109	60	748	342
11	361	275	433	173	252	90	575	375	103	76	875	275
12	406	235	450	171	268	80	597	398	84	60	925	317
13	492	231	474	169	265	89	600	570	101	46	779	211
14	570	221	502	169	258	62	477	600	122	42	1,570	124
15	638	213	474	177	268	51	480	660	171	43	1,730	83
16	626	202	430	189	272	44	635	657	160	36	1,470	76
17	436	200	392	199	283	65	645	549	124	66	1,520	73
18	325	231	313	217	285	103	615	370	109	105	1,610	81
19	298	225	274	251	265	90	483	294	104	58	1,590	326
20	284	538	256	252	308	196	330	247	154	48	1,490	421
21	258	565	233	249	297	291	263	232	196	43	1,310	428
22	250	558	239	255	245	223	235	251	151	82	910	459
23	230	493	248	256	255	150	312	207	135	325	792	586
24	220	430	252	211	258	118	378	152	108	505	1,140	824
25	205	390	250	254	247	109	433	148	106	588	1,050	910
26	248	369	237	244	203	104	350	150	162	647	829	806
27	218	336	227	219	209	96	290	297	196	480	870	598
28	177	262	231	192	197	76	249	320	190	423	1,160	703
29	173	260	235	173	173	50	213	340	166	395	1,340	798
30	165	258	235	172	-------	39	282	274	151	412	1,640	802
31	165	-------	233	183	-------	34	-------	254	-------	407	1,590	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	638	165	345	21,200
November	565	184	339	20,200
December	502	215	300	18,400
January	256	169	203	12,500
February	308	155	228	13,100
March	291	34	121	7,440
April	645	49	353	21,000
May	870	148	413	25,400
June	289	84	162	9,640
July	647	36	200	12,300
August	1,730	266	1,080	66,400
September	1,540	73	617	36,700
The year	1,730	34	364	264,000

RIO GRANDE AT BOQUILLAS, TEX.

LOCATION.—Water-stage recorder a quarter of a mile south of Boquillas, Brewster County, 4.0 miles below mouth of Tornillo Creek, and 73 miles southeast of Marathon.

RECORDS AVAILABLE.—June to September, 1928.

EXTREMES.—Maximum discharge during period, 16,200 second-feet August 27 (gage height, 8.38 feet); minimum, 1,080 second-feet September 21 (gage height, 1.78 feet).

REMARKS.—Records good. Considerable water is diverted above station; amount not known. Flow partly regulated by Elephant Butte Dam and dams on tributaries.

Daily and monthly discharge, in second-feet, 1928

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	------	1,150	2,580	3490	16	------	1,490	2,840	1250
2	------	1,280	2,090	3490	17	------	1,490	2,840	1200
3	------	1,400	2,000	3590	18	------	1,380	4,080	1190
4	------	1,280	1,880	3690	19	1,250	1,410	7,350	1190
5	------	1,210	2,500	3110	20	1,200	1,500	6,330	1160
6	------	1,210	3,110	3020	21	2,050	1,480	4,200	1150
7	------	1,190	2,090	2840	22	1,640	1,450	4,200	2640
8	------	2,650	1,790	2660	23	1,210	1,810	4,750	4470
9	------	1,750	1,820	2500	24	1,140	3,690	4,420	2330
10	------	1,790	2,330	2170	25	1,150	2,250	3,490	1730
11	------	1,340	2,750	1900	26	1,150	3,700	7,080	2090
12	------	1,250	4,570	1730	27	1,160	2,750	14,900	2090
13	------	1,250	3,790	1540	28	1,190	2,730	8,470	2330
14	------	1,560	2,840	1460	29	1,280	2,570	4,420	2660
15	------	1,600	2,930	1320	30	1,240	3,590	3,590	2500
					31	------	3,020	3,490	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
June 19–30	2,050	1,140	1,300	31,100
July	3,700	1,150	1,880	116,000
August	14,900	1,790	4,050	249,000
September	4,470	1,150	2,280	136,000
The period	------	------	------	532,000

RIO GRANDE AT LANGTRY, TEX.

LOCATION.—Water-stage recorder, installed June 3, 1928, at east end of canyon section, 1 mile southwest of Langtry, Val Verde County, and 13 miles above Pecos River. May 10 to June 2, 1928, staff gage at same location. Prior to May 10, 1928, staff gage 900 feet downstream.

RECORDS AVAILABLE.—May, 1900, to October, 1914; December, 1919, to March, 1920; January, 1924, to September, 1928.

EXTREMES.—Maximum discharge during year, about 46,400 second-feet August 9 (gage height, 19.4 feet); minimum, 1,170 second-feet June 19 and 26.

1900–1914, 1919–20, 1924–1928: Maximum discharge, 132,000 second-feet September 13, 1904 (gage height, 34.25 feet); minimum, 270 second-feet May 8–13, 1904.

A float measurement by W. H. Dodd on September 16, 1919, at stage of 46.9 feet showed discharge of 152,000 second-feet. A stage of 56.9 feet (from floodmark by W. H. Dodd) reached about June 18, 1922.

REMARKS.—Records fair. Discharge estimated August 7–14 and 27–31; partly estimated September 1–6. Considerable water is diverted above station; amount not known. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,410	2,040	2,040	2,040	2,040	1,890	1,430	1,380	2,760	1,300	3,940	4,760
2	3,410	1,890	2,040	2,040	2,040	1,890	1,430	1,380	2,190	1,280	3,310	6,770
3	3,210	1,890	2,040	2,040	2,040	1,890	1,430	1,960	3,470	1,200	4,080	4,050
4	2,670	1,890	2,040	2,040	2,040	1,890	1,430	1,960	1,800	1,270	2,940	3,830
5	2,500	1,890	2,040	2,040	2,040	1,890	1,430	1,700	1,500	1,390	2,340	3,720
6	2,500	1,760	2,040	1,890	2,040	1,890	1,410	1,500	1,500	1,320	2,260	3,720
7	2,340	1,760	2,040	1,890	2,040	1,890	1,410	1,440	1,550	1,270		3,720
8	2,190	1,760	1,890	1,890	2,040	1,890	1,410	1,440	2,120	1,270		3,410
9	2,500	1,760	1,890	1,890	2,040	1,890	1,410	1,440	2,130	1,600		3,310
10	2,190	1,760	1,890	1,890	2,040	1,890	1,410	1,440	1,620	2,360		3,210
											8,000	
11	2,840	1,760	1,760	1,890	2,040	1,760	1,410	1,440	1,460	1,760		3,020
12	2,670	1,630	1,760	1,890	2,040	1,760	1,410	1,460	1,360	1,800		2,760
13	2,340	1,630	1,760	1,890	2,040	1,760	1,410	2,050	1,360	1,350		2,580
14	2,340	1,630	1,890	1,890	2,040	1,760	1,400	5,990	1,360	1,360		2,340
15	2,340	1,760	2,040	1,890	2,040	1,890	1,400	2,760	1,360	1,360	3,310	2,190
16	2,340	1,890	2,040	1,890	2,040	1,890	1,400	2,190	1,310	1,580	3,520	2,120
17	2,190	2,040	2,190	1,890	2,040	1,890	1,400	1,960	1,290	1,700	3,720	1,890
18	2,190	1,890	2,190	1,890	2,040	1,760	1,400	1,890	1,260	1,580	3,210	1,820
19	2,190	1,890	2,340	1,890	2,040	1,760	1,400	1,890	1,190	1,580	3,920	1,760
20	2,190	1,890	2,340	1,890	2,040	1,760	1,400	1,890	1,260	1,550	7,240	1,700
21	2,190	1,760	2,340	1,890	2,040	1,760	1,390	1,820	1,290	1,550	6,980	1,700
22	2,190	1,760	2,340	1,890	2,040	1,760	1,390	1,820	1,280	2,400	4,470	2,420
23	2,040	1,760	2,190	2,040	2,040	1,510	1,390	1,820	2,010	1,870	4,520	2,620
24	2,040	1,760	2,190	2,040	2,040	1,390	1,390	1,820	1,540	2,260	4,640	5,900
25	1,890	1,760	2,190	2,040	2,040	1,340	1,390	1,700	1,300	3,950	5,120	3,680
26	2,040	1,890	2,190	2,040	2,040	1,340	1,390	1,580	1,190	5,450	4,160	2,670
27	2,040	2,040	2,190	2,040	1,890	1,390	1,390	1,510	1,200	5,070		2,420
28	1,890	2,040	2,190	2,040	1,890	1,510	1,390	1,590	1,210	4,540		2,840
29	1,890	2,040	2,190	2,040	1,890	1,510	1,380	1,550	1,220	2,980	6,200	2,670
30	2,040	1,890	2,190	2,040	-------	1,450	1,380	1,700	1,220	3,320		3,470
31	2,040	-------	2,190	2,040	-------	1,450	-------	1,820	-------	3,820		------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,410	1,890	2,350	144,000
November	2,040	1,630	1,840	109,000
December	2,340	1,760	2,090	129,000
January	2,040	1,890	1,960	121,000
February	2,040	1,890	2,020	116,000
March	1,890	1,340	1,720	106,000
April	1,430	1,380	1,400	83,300
May	5,990	1,380	1,870	115,000
June	3,470	1,190	1,580	94,000
July	5,450	1,200	2,160	133,000
August	-------	2,260	5,440	334,000
September	6,770	1,700	3,100	184,000
The year	-------	1,190	2,300	1,670,000

RIO GRANDE NEAR DEL RIO, TEX.

LOCATION.—Water-stage recorder, installed May 15, 1928, 900 feet upstream from international highway bridge between Del Rio, Val Verde County, and Villa Acuna, Coahuila, Mexico. Prior to May 16, 1928, staff gage at bridge was used. Gages set to same datum.

RECORDS AVAILABLE.—December, 1923, to September, 1928. May, 1900, to April, 1915, records obtained 11 miles upstream; and December, 1919, to March, 1920, at McKees Switch, 7½ miles upstream. Relation between gages not known. Several springs but no tributaries of consequence enter the river between the various sites.

EXTREMES.—Maximum discharge during year, 35,600 second-feet August 10 (gage height, 10.12 feet); minimum, 1,930 second-feet June 27 (gage height 2.44 feet).

1900–1915, 1919–20, 1923–1928: Maximum discharge not determined; maximum stages, 36.5 feet on gage 11 miles upstream April 6, 1900, and 41.0 feet on gage 7½ miles upstream September, 1919 (relation to present gage not known). Minimum mean daily discharge, 1,120 second-feet May 12, 1904 (gage height, 3.25 feet).

Highest stage on record, from floodmark, 32.8 feet (present gage datum) June 18 or 19, 1922.

REMARKS.—Records good. Discharge estimated July 30 to August 1 and partly estimated May 16. Considerable water diverted above station; amount not known. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,400	2,910	2,910	3,140	2,910	2,700	2,220	2,140	2,440	2,020	4,070	5,370
2	14,300	2,910	2,910	3,140	2,910	2,700	2,140	2,220	5,610	2,040	4,270	5,720
3	9,960	2,910	2,910	2,910	2,910	2,700	2,220	9,010	4,290	2,040	3,720	6,610
4	5,480	2,910	2,910	2,910	2,910	2,700	2,140	10,200	4,520	1,950	9,130	5,200
5	4,820	2,910	2,910	2,910	2,910	2,700	2,140	5,130	2,990	2,000	3,720	5,370
6	4,210	2,910	2,910	2,910	2,910	2,700	2,140	3,520	2,720	2,120	3,070	5,370
7	3,650	2,700	2,910	2,910	2,700	2,700	2,140	2,990	2,620	2,060	2,970	4,720
8	4,820	2,700	2,700	2,910	2,700	2,600	2,140	2,600	2,560	1,980	7,400	4,870
9	3,650	2,700	2,700	2,910	2,700	2,600	2,140	2,400	3,080	1,980	13,900	4,420
10	3,380	2,700	2,700	2,910	2,700	2,600	2,140	2,400	3,020	2,190	26,400	5,540
11	4,210	2,700	2,700	2,600	2,700	2,500	2,060	2,400	2,620	2,900	7,580	4,870
12	3,920	2,700	2,700	2,910	2,700	2,500	2,140	2,700	2,470	2,420	5,720	3,990
13	3,380	2,910	2,700	2,910	2,910	2,400	2,060	13,200	2,310	2,470	5,040	3,590
14	3,140	2,910	2,910	2,910	2,700	2,310	2,060	16,800	7,080	2,140	6,060	3,380
15	3,380	2,910	2,910	2,910	2,700	2,310	2,060	12,400	8,380	2,000	5,200	3,190
16	3,380	2,910	2,910	2,910	2,910	2,310	1,980	3,260	3,860	1,980	4,420	3,070
17	3,140	2,700	2,910	2,700	2,700	2,310	1,980	3,720	2,920	2,180	4,870	2,990
18	3,140	2,700	2,910	2,910	2,700	2,310	2,060	3,280	2,530	2,270	4,870	2,860
19	3,140	2,700	2,910	2,910	2,700	2,310	2,310	3,110	2,310	2,210	4,870	2,690
20	3,140	2,700	2,910	2,910	2,910	2,220	2,400	3,260	2,210	2,230	5,890	2,650
21	3,140	2,700	3,140	2,910	2,700	2,220	2,500	3,020	2,230	2,160	7,980	2,740
22	3,140	2,700	3,140	2,910	2,910	2,220	2,400	2,880	2,210	2,160	6,240	6,400
23	3,140	2,700	3,140	2,910	2,910	2,220	2,310	2,760	2,140	3,420	5,720	8,510
24	3,140	2,700	3,140	2,700	2,910	2,220	2,310	2,720	2,730	2,740	5,720	5,540
25	3,140	2,700	3,140	2,700	2,910	2,220	2,310	2,600	2,510	3,380	5,720	6,800
26	3,140	2,700	3,140	2,700	2,700	2,500	2,400	2,580	2,210	5,590	5,540	4,870
27	2,910	2,700	3,140	2,910	2,700	2,310	2,310	2,510	2,020	6,120	5,370	4,130
28	2,910	2,910	3,140	2,910	2,700	2,220	2,220	2,420	2,000	10,300	7,760	3,860
29	4,910	2,910	3,140	2,910	2,700	2,220	2,220	2,360	2,000	6,020	10,400	3,990
30	2,910	2,910	3,140	2,910	-------	2,220	2,220	2,310	2,020	4,070	6,990	3,990
31	2,910	-------	3,140	2,910	-------	2,220	-------	2,470	-------		5,540	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	14,300	2,910	4,260	262,000
November	2,910	2,700	2,790	166,000
December	3,140	2,700	2,950	181,000
January	3,140	2,600	2,890	178,000
February	2,910	2,700	2,790	160,000
March	2,700	2,220	2,420	149,000
April	2,500	1,980	2,200	131,000
May	16,800	2,140	4,370	269,000
June	8,380	2,000	3,090	184,000
July	10,300	1,950	3,010	185,000
August	26,400	2,970	6,650	409,000
September	8,510	2,650	4,580	273,000
The year	26,400	1,950	3,510	2,550,000

RIO GRANDE AT EAGLE PASS, TEX.

LOCATION.—Water-stage recorder, installed April 12, 1928, half a mile above international highway bridge between Eagle Pass, Maverick County, and Piedras Negras, Coahuila, Mexico. January 10 to April 11, 1928, water-stage recorder situated 650 feet downstream at ice-plant intake; prior to January 10, 1928, staff gage at same site. Zero of lower gage is 683.99 feet and of upper gage 682.99 feet above mean sea level.

RECORDS AVAILABLE.—May, 1900, to April, 1916; November, 1923, to September, 1928.

EXTREMES.—Maximum discharge during year not determined; minimum, 1,870 second-feet July 5 (gage height, 3.32 feet).

1900–1916, 1923–1928: Maximum mean daily discharge, 238,000 second-feet June 30, 1905; maximum gage height, 34.6 feet June 29, 1905; minimum mean daily discharge, 1,030 second-feet April 15, 1913.

In June, 1922, river reached stage of 43.7 feet (present gage datum).

REMARKS.—Records fair October 1 to January 9, good January 10 to September 30. Discharge partly estimated August 6–8. Considerable water diverted above gage; amount not known. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries. Gage-height record furnished by United States Weather Bureau prior to January 10.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,860	3,030	3,030	3,460	3,020	2,780	2,120	2,240	2,870	1,970	4,380	5,840
2	18,700	3,030	3,030	3,460	3,100	2,800	2,120	2,160	3,890	1,950	4,630	6,420
3	12,800	3,030	3,030	3,460	3,120	2,780	2,120	3,480	5,790	2,000	4,260	7,010
4	8,520	3,030	3,030	3,460	3,170	2,780	2,100	7,050	4,770	1,980	7,210	5,840
5	6,530	3,030	3,030	3,460	3,170	2,780	2,070	8,810	3,680	1,890	6,690	5,420
6	6,210	3,030	3,030	3,460	3,120	2,760	2,040	4,630	2,960	1,950	4,040	4,280
7	4,990	3,030	3,030	3,460	3,020	2,660	2,020	3,920	2,780	2,050	3,480	5,280
8	7,180	3,030	3,030	3,460	2,900	2,660	2,020	3,380	2,680	2,020	4,630	4,880
9	6,530	3,030	3,030	3,460	2,920	2,660	2,090	3,060	2,680	1,970	11,200	5,020
10	4,710	3,030	3,030	3,000	2,940	2,740	2,180	2,870	3,160	1,970	22,900	*28,400
11	4,440	2,820	3,030	2,940	2,960	2,660	2,140	2,680	2,870	2,410	15,400	*16,000
12	4,710	2,820	3,030	2,960	2,980	2,540	2,160	2,590	2,680	2,680	7,330	6,120
13	4,440	2,820	3,030	3,000	3,040	2,470	2,140	8,080	2,500	2,410	6,420	4,880
14	3,930	3,030	3,030	3,040	2,980	2,370	2,160	14,600	2,320	2,320	5,560	4,260
15	3,690	3,030	3,030	3,040	2,900	2,370	2,160	15,100	10,400	2,130	7,170	3,690
16	3,690	3,030	3,030	3,040	2,960	2,330	2,130	7,810	5,850	1,980	5,560	3,480
17	3,460	3,030	3,030	3,020	2,980	2,280	2,060	4,960	3,480	1,950	5,020	3,380
18	3,460	3,030	3,030	2,960	2,940	2,280	2,050	4,150	2,680	2,130	5,980	3,270
19	3,460	3,030	3,030	3,000	2,940	2,280	2,140	3,920	2,500	2,160	6,270	3,060
20	3,460	3,030	3,240	2,980	2,980	2,280	2,320	3,690	2,320	2,140	6,120	2,870
21	3,460	3,030	3,240	3,060	3,020	2,260	2,410	3,920	2,160	2,160	7,970	3,300
22	3,460	3,030	3,240	3,080	2,940	2,200	2,410	3,690	2,160	2,110	9,400	16,700
23	3,460	3,030	3,460	3,080	2,960	2,200	2,410	3,380	2,160	2,240	6,850	15,100
24	3,460	3,030	3,460	3,040	2,940	2,180	2,410	3,270	2,130	3,160	6,120	11,200
25	3,460	3,030	3,460	2,940	2,900	2,180	2,410	3,160	2,780	2,780	5,980	8,660
26	3,460	3,030	3,460	2,980	2,880	2,180	2,320	3,060	2,410	3,380	5,980	8,830
27	3,240	3,030	3,460	3,000	2,880	2,400	2,320	2,960	2,140	5,840	5,690	7,170
28	3,240	3,030	3,460	3,000	2,840	2,180	2,320	2,870	1,970	9,650	5,420	6,120
29	3,240	3,030	3,460	3,080	2,760	2,120	2,320	3,170	1,970	7,810	10,800	5,420
30	3,240	3,030	3,460	3,120	-------	2,100	2,240	2,780	1,970	5,420	9,970	5,420
31	3,030	-------	3,460	3,060	-------	2,120	-------	2,780	-------	4,260	7,490	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	18,700	3,030	5,180	319,000
November	3,030	2,820	3,010	179,000
December	3,460	3,030	3,180	196,000
January	3,460	2,940	3,150	194,000
February	3,170	2,760	2,970	171,000
March	2,800	2,100	2,430	149,000
April	2,410	2,020	2,200	131,000
May	15,100	2,160	4,650	286,000
June	10,400	1,970	3,160	188,000
July	9,650	1,890	2,930	180,000
August	22,900	3,480	7,290	448,000
September	28,400	2,870	7,280	433,000
The year	28,400	1,890	3,960	2,870,000

*Based on extension of rating curve; subject to error.

RIO GRANDE AT HIDALGO, TEX.

LOCATION.—Water-stage recorder, installed July 13, 1928, at international highway bridge between Hidalgo, Hidalgo County, and Reynosa, Tamaulipas, Mexico, 0.7 mile southwest of Hidalgo. Also, water-stage recorder on each of two floodway channels at the point of crossing of the east McAllen-Hidalgo highway. Zero of all gages is 80 feet above mean sea level.

RECORDS AVAILABLE.—July to September, 1928.

EXTREMES.—Maximum discharge during period, about 47,500 second-feet September 25 (gage height, 20.20 feet); minimum, 1,620 second-feet July 24 (gage height, 3.48 feet).

REMARKS.—Records good. Discharge partly estimated July 23. No flow in floodway channels during period. Considerable water diverted above gage; amount not known. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1928

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1		8,380	9,240	11		4,370	16,500	21		4,940	11,600
2		6,620	10,200	12		8,800	17,700	22		5,060	11,100
3		5,100	13,300	13		20,000	28,200	23	1,700	5,180	19,600
4		4,110	12,000	14		12,800	16,100	24	1,700	6,030	41,400
5		3,850	9,070	15		6,840	7,840	25	2,090	8,200	38,700
6		3,950	8,800	16		5,820	6,650	26	3,290	7,480	27,800
7		4,360	8,070	17		5,300	10,300	27	3,060	6,230	17,800
8		6,840	6,180	18		5,430	22,200	28	3,140	5,600	15,060
9		5,740	8,160	19		6,230	22,300	29	3,140	5,560	13,900
10		4,430	18,200	20		5,690	17,400	30	3,660	5,690	11,700
								31	6,560	5,430	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
July 23-31	6,560	1,700	3,150	56,200
August	20,000	3,850	6,450	397,000
September	41,400	6,180	15,900	946,000
The period				1,400,000

RIO GRANDE SEEPAGE INVESTIGATION

Temporary gaging stations were established on the Rio Grande at the following locations, a water-stage recorder being installed at each station. All stations were well rated by current-meter measurements from a boat for range of stage during period. Records excellent.

Near Comal, Tex., half a mile below confluence with Rio San Rodrigo (Mexican tributary) and 16 miles northwest of Eagle Pass. Period of record, January 12 to March 18, 1928.

At Eagle Pass, Tex., a temporary gage was installed at the intake for the municipal water plant on January 10, 1928, and was moved 650 feet upstream to a permanent location on April 12, 1928.

At Rosita pumping plant, 9 miles below Eagle Pass. Period of record, February 1 to March 15, 1928.

At Indio ranch, 1 mile above "The Narrows" and 18 miles below Eagle Pass. Period of record, January 11 to April 13, 1928.

At Palafox, Tex. (upper), 1,000 feet above point where road approaches river's edge, 41 miles above Laredo, and 87 miles below Eagle Pass. Two ratings were developed for this station, 300 and 500 feet respectively below the gage, the lower rating giving 60 second-feet the greater discharge. Period of records, February 18 to April 25, 1928.

At Palafox, Tex. (lower). See Palafox upper. Period of record, February 18 to April 25, 1928.

At Darwin Ferry, Tex., 28 miles above Laredo and 100 miles below Eagle Pass. Period of record, April 2–25, 1928.

At Islitas, Tex., 20 miles above Laredo and 108 miles below Eagle Pass. Period of record, February 17 to April 25, 1928.

At Laredo, Tex., 128 miles below Eagle Pass. Period of record, February 21 to April 22, 1928.

The gain in discharge due to visible inflow and the loss due to diversions by a number of small pumping plants for that stretch of river under investigation were a negligible percentage of the total discharge and were considered to approximately balance each other.

Summary of seepage measurements, Rio Grande, 1928

Period of record	Station location	Distance in miles from initial point	Discharge in second-feet		
			Mean	Gain or loss in section	Total gain or loss
Jan. 13 to Mar. 18	Comal	0	2,855		
Do	Eagle Pass	16	2,885	+30	+90
Do	Indio ranch	34	2,945	+60	
Feb. 2 to Mar. 14	Eagle Pass	0	2,870		
Do	Rosita pump	9	2,910	+40	+55
Do	Indio ranch	18	2,925	+15	
Jan. 12 to Apr. 12	Eagle Pass	0	2,685		
Do	Indio ranch	18	2,740	+55	+55
Feb. 22 to Apr. 12	Eagle Pass	0	2,420		
Do	Indio ranch	18	2,455	+35	
Do	Palafox (upper)	87	2,445	−10	
Do	Palafox (lower)	87	2,505	+60	−10
Do	Islitas	108	2,385	−120	
Do	Laredo	128	2,410	+25	
Apr. 3 to 22	Eagle Pass	0	2,105		
Do	Palafox (upper)	87	2,080	−25	
Do	Palafox (lower)	87	2,140	+60	
Do	Darwin Ferry	100	2,090	−50	−75
Do	Islitas	108	2,010	−80	
Do	Laredo	128	2,030	+20	
Feb. 22 to Apr. 22	Eagle Pass	0	2,370		
Do	Laredo	128	2,345	−25	−25

PECOS RIVER NEAR ANGELES, TEX.

LOCATION.—Water-stage recorder in T. 26 S., R. 29 E., just below Pecos Valley Railroad bridge and mouth of Delaware Creek, 8½ miles northwest of Angeles.

RECORDS AVAILABLE.—May, 1914, to September, 1928.

EXTREMES.—Maximum discharge during year, about 16,600 second-feet August 10 (gage height, 10.44 feet); minimum, 65 second-feet July 20 (gage height, −0.19 foot).

1914–1928: Maximum gage height, from floodmarks, 21.5 feet August 8, 1916 (discharge not determined); minimum discharge, 45 second-feet July 4 and 5, 1925.

REMARKS.—Records fair. Large part of natural flow above Carlsbad, N. Mex., diverted for irrigation; considerable water is returned by seepage. Flow is regulated to large extent by storage in reservoirs of the Carlsbad project.

Daily and monthly discharge, in second feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	194	108	179	191	151	158	129	108	129	70	305	382
2	198	114	183	187	151	148	129	103	123	70	206	393
3	e206	135	218	198	165	151	120	301	111	74	179	354
4	e203	135	194	210	210	137	106	212	106	78	168	282
5	e200	144	187	210	198	14[illegible]	90	117	108	78	172	e158
6	e197	144	183	227	223	165	98	117	108	72	168	e198
7	e194	144	165	223	210	158	103	120	98	76	165	e168
8	e165	183	141	198	206	155	103	111	106	85	655	e168
9		e165	135	187	198	148	120	117	93	101	1,360	e175
10			148	172	202	135	141	101	95	103	5,340	e191
11			151	158	202	132	106	101	106	106	3,890	e183
12		e160	155	161	206	103	93	101	106	98	1,370	e191
13			155	158	206	126	95	168	93	90	1,530	e191
14			151	179	198	126	106	183	120	90	1,440	e183
15	e150	e179	148	155	198	115	141	148	123	95	1,350	e175
16		155	148	151	202	132	108	126	126	95	e467	e175
17		151	144	141	218	117	90	129	126	85	e282	e194
18		148	158	168	206	126	88	111	132	81	e317	183
19		161	165	158	202	126	88	111	129	74	e244	141
20		172	165	179	202	129	88	108	120	78	e244	158
21		202	135	155	194	128	90	123	120	95	253	165
22	138	175	138	168	198	172	88	106	93	81	248	231
23	148	144	120	155	175	155	103	111	81	196	231	277
24	132	144	141	155	168	175	117	111	78	251	e800	244
25	135	138	138	144	155	179	108	108	78	1,150		206
26	126	151	e147	123	126	155	103	111	70	884	620	
27	132	141	156	151	123	120	98	111	72	316	429	
28	144	141	165	132	165	108	95	106	70	187	422	e200
29	120	168	e174	155	151	114	120	88	70	206	405	
30	132	172	183	141	-------	123	126	98	70	168	410	
1	111	-------	183	155	-------	103	-------	93	-------	221	376	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	206	111	156	9,590
November	202	108	154	9,160
December	218	120	160	9,840
January	227	123	169	10,400
February	223	123	187	10,800
March	179	103	138	8,480
April	141	88	106	6,310
May	301	88	124	7,620
June	132	70	102	6,070
July	1,150	70	176	10,800
August	5,340	165	801	49,300
September	393	141	212	12,600
The year	5,340	70	208	151,000

e Estimated or partly estimated.

PECOS RIVER NEAR COMSTOCK, TEX.

LOCATION.—Staff gage at Pecos high bridge of Galveston, Harrisburg & San Antonio Railway, 12 miles northwest of Comstock, Val Verde County, 5½ miles above confluence with Rio Grande, and below all tributaries.

RECORDS AVAILABLE.—May, 1900, to September, 1928.

EXTREMES.—Maximum discharge during year, 19,800 second-feet May 13 (gage height, 12.47 feet); minimum, 139 second-feet April 29, 30 and July 16.

1900–1928: Maximum gage height, 35.75 feet April 6, 1900 (discharge not determined); minimum discharge, 106 second-feet July 29 to August 1, 1918.

REMARKS.—Records good. Considerable water diverted and stored above station for irrigation. In lower part of basin return waters tend to equalize effects of diversions. Flow at station partly controlled by storage and diversions upstream.

Daily and monthly discharge, in second-feet, 1927–28.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	377	184	196	228	193	209	184	151	255	173	399	808
2	336	190	193	225	206	202	179	149	1,000	173	336	598
3	298	187	190	225	228	199	176	3,320	377	164	1,120	570
4	421	184	190	215	228	202	173	2,440	421	162	603	544
5	317	184	196	218	218	202	159	1,870	399	154	518	570
6	298	184	202	228	212	202	159	963	298	154	421	518
7	280	184	196	225	206	196	157	493	262	149	421	544
8	262	184	193	218	206	196	157	377	252	149	1,190	518
9	262	184	193	215	206	206	176	317	238	164	468	468
10	262	184	190	212	206	209	167	298	245	151	399	444
11	262	184	193	215	206	196	170	280	225	151	1,590	444
12	242	179	196	209	235	196	167	252	222	149	832	421
13	228	182	215	199	215	196	164	12,100	222	144	544	399
14	222	184	209	206	212	196	170	6,660	1,710	144	493	356
15	212	187	202	209	212	199	164	2,100	883	144	421	356
16	206	187	202	209	206	190	159	800	356	139	671	336
17	202	187	196	222	206	190	159	544	317	149	1,500	317
18	196	187	206	215	206	196	159	468	298	146	1,660	317
19	199	187	202	212	206	196	157	684	280	144	1,660	317
20	202	190	228	212	206	190	154	493	262	144	2,180	317
21	199	190	238	222	209	184	157	444	259	146	1,630	798
22	196	196	225	218	212	182	157	399	252	149	1,060	3,190
23	187	193	228	212	212	179	151	377	222	151	832	930
24	187	193	238	212	212	182	154	336	209	670	710	592
25	193	196	231	212	212	298	151	336	252	723	652	518
26	193	196	238	212	202	228	151	336	215	444	652	444
27	190	190	235	202	209	212	144	298	202	5,630	598	421
28	193	196	242	193	209	187	149	298	193	2,600	518	399
29	187	196	228	193	202	187	139	280	193	832	468	377
30	184	193	225	193	------	182	141	280	187	493	421	377
31	184	------	228	190	------	187	------	259	------	421	421	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	421	184	238	14,600
November	196	179	188	11,200
December	242	190	211	13,000
January	228	190	212	13,000
February	235	193	210	12,100
March	298	179	199	12,200
April	184	139	160	9,520
May	12,100	149	1,240	76,200
June	1,710	187	357	21,200
July	5,630	139	494	30,400
August	2,180	336	819	50,400
September	3,190	317	574	34,200
The year	12,100	139	410	298,000

LIMPIA CREEK NEAR FORT DAVIS, TEX.

LOCATION.—Water-stage recorder on State highway No. 3, 13½ miles northeast of Fort Davis, Jeff Davis County, and 16 miles southwest of Balmorhea.
DRAINAGE AREA.—272 square miles.
RECORDS AVAILABLE.—February, 1925, to September, 1928.
EXTREMES.—Maximum discharge during year, about 3,420 second-feet August 26 (gage height, 7.00 feet); no flow during several periods.
1925–1928: Maximum discharge, that of August 26, 1928; no flow during several periods.
REMARKS.—Records good except those for April 11 to June 18, which were estimated. No diversions above station.

Daily and monthly discharge, in second-feet, 1928

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	0	0	0.1	121	16	0	0	35	1.0
2	0	0	0	42	17	0	0	164	.8
3	0	0	1.4	25	18	0	1.9	110	.8
4	0	0	.2	18	19	0	0	60	.7
5	0	0	0	14	20	0	1.5	40	.7
6	0	0	0	12	21	0	0	24	1.1
7	0	20	0	9.6	22	0	34	15	8.4
8	0	2.2	0	9.0	23	0	49	29	9.6
9	0	0	1.5	7.4	24	0	73	17	9.0
10	0	0	60	6.2	25	0	210	54	9.6
11	0	0	224	5.0	26	0	16	939	17
12	0	0	66	3.3	27	0	4.6	110	14
13	0	0	131	2.1	28	0	0	39	11
14	0	0	406	1.7	29	.1	15	23	9.0
15	0	0	122	1.3	30	0	38	34	7.4
					31		7.1	50	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
June	0.1	0	0.003	0.2
July	210	0	15.2	935
August	939	0	88.9	5,470
September	121	.7	12.6	750
The year	939	0	9.85	7,160

NOTE.—No flow Oct. 1 to May 31

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.—2,730 square miles.

RECORDS AVAILABLE.—May, 1925, to September, 1928.

EXTREMES.—Maximum discharge during year, about 28,200 second-feet June 14 (gage height, 13.52 feet); minimum, 70 second-feet March 10–15 (gage height, 2.00 feet).

1925–1928: Maximum discharge, determined by slope-area method, 43,700 second-feet May 29, 1925 (gage height, 15.8 feet); minimum, 64 second-feet August 9-11, 1927 (gage height, 2.02 feet).

One of the highest known floods, 22.1 feet (on present gage), occurred about September 1, 1916; data furnished by Walter Baker.

REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	104	94	86	76	72	75	78	84	86	113	97
2	4,430	104	90	86	78	72	75	78	82	84	113	95
3	1,390	104	87	86	78	72	75	81	82	82	111	95
4	570	104	87	86	78	72	75	80	82	81	111	95
5	235	104	87	84	78	72	75	80	82	81	109	95
6	152	102	87	84	78	72	75	78	82	82	109	95
7	138	102	87	82	78	72	75	78	82	82	107	95
8	132	102	87	82	78	72	76	78	82	81	105	95
9	235	102	87	82	76	72	76	78	82	81	105	93
10	676	100	87	82	76	70	76	78	82	80	103	106
11	202	100	87	82	76	70	76	78	84	80	107	109
12	132	100	87	82	76	70	75	82	222	80	111	107
13	122	98	87	82	76	70	76	2,340	2,510	80	105	107
14	118	98	87	82	76	70	76	1,530	10,500	78	105	107
15	116	98	87	82	75	70	78	206	971	78	103	107
16	114	98	87	82	75	72	76	115	257	78	103	105
17	112	98	87	81	75	74	76	105	138	78	101	105
18	112	96	86	81	75	74	76	99	117	78	99	103
19	110	96	86	81	74	74	76	97	109	76	99	103
20	110	96	86	81	74	74	78	95	101	76	99	103
21	110	96	86	81	74	74	78	91	99	76	99	103
22	110	96	86	81	74	74	78	89	97	76	99	197
23	108	98	86	81	74	74	78	89	95	76	99	121
24	108	98	86	80	74	74	78	87	93	78	99	121
25	106	98	86	80	74	74	78	86	91	78	99	119
26	106	94	86	80	74	74	78	86	91	78	97	117
27	106	94	86	80	74	75	78	84	89	282	97	117
28	106	94	86	78	74	75	78	84	89	1,010	95	115
29	106	94	86	76	74	75	78	84	87	152	95	113
30	106	94	86	76	------	75	78	82	86	121	95	111
31	104	------	86	76	------	75	------	82	------	117	95	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,430	104	341	21,000
November	104	94	98.7	5,870
December	94	86	86.9	5,340
January	86	76	81.5	5,010
February	78	74	75.6	4,350
March	75	70	72.7	4,470
April	78	75	76.5	4,550
May	2,340	78	209	12,900
June	10,500	82	558	33,200
July	1,010	76	121	7,440
August	113	95	103	6,330
September	197	93	108	6,430
The year	10,500	70	161	117,000

DEVILS RIVER NEAR DEL RIO, TEX.

LOCATION.—Water-stage recorder 2,200 feet above Southern Pacific Railroad bridge and Sells Creek and 12 miles northwest of Del Rio, Val Verde County.

DRAINAGE AREA.—4,000 sqare miles.

RECORDS AVAILABLE.—December, 1923, to September, 1928. May, 1900, to March, 1914, records were obtained at Devils River, 1 mile downstream.

EXTREMES.—Maximum discharge during year, about 38,700 second-feet October 1 (gage height, 12.05 feet); minimum, 185 second-feet, partly regulated, September 10 (gage height, 1.45 feet).

1900–1914, 1923–1928: Maximum gage height, 24.96 feet May 29, 1925 (discharge not determined); minimum discharge, that of September 10, 1928.

A stage of 25.4 feet (original datum) was reached April 6, 1900. A stage of 30.15 feet (present datum) was reached in October, 1914.

REMARKS.—Records below 3,000 second-feet good, and above poor. Discharge partly estimated November 2–5 and September 19–30. No diversions above station. Flow partly regulated during September by dam construction work above station.

Daily and monthly discharge, in second-feet, 1927–28

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,980	481	438	410	378	353	313	296	347	341	359	470
2	12,700	478	431	410	378	353	318	296	1,270	341	353	378
3	5,630	475	431	417	384	347	318	550	459	341	353	359
4	1,840	472	431	417	390	347	318	1,540	390	341	359	347
5	1,140	469	438	417	384	347	313	496	372	341	353	347
6	808	466	438	417	378	347	308	341	359	341	347	347
7	692	466	445	417	372	347	308	324	353	341	341	347
8	660	466	431	410	366	353	318	313	347	341	463	341
9	620	459	431	403	366	353	324	302	347	341	417	342
10	604	459	438	403	366	341	318	296	347	341	359	609
11	1,040	459	445	396	372	341	313	296	341	341	353	821
12	700	452	438	396	384	335	313	313	335	335	359	459
13	597	452	438	396	378	335	313	1,070	335	335	384	417
14	565	452	431	396	366	335	308	2,410	8,870	335	353	396
15	558	452	424	396	359	335	308	1,580	4,930	335	347	390
16	542	452	417	396	359	330	308	661	1,260	335	347	390
17	534	445	417	410	359	324	302	474	657	330	341	390
18	527	445	417	410	353	330	302	431	474	330	341	384
19	519	445	417	396	353	330	308	410	417	330	372	384
20	519	445	431	390	353	330	308	403	396	330	341	390
21	512	445	438	403	366	330	308	396	384	330	341	424
22	504	438	431	403	372	330	302	384	372	335	341	762
23	496	445	424	396	366	330	296	372	366	341	341	2,410
24	489	445	424	396	353	324	296	366	359	347	341	947
25	489	438	431	390	353	318	296	359	359	341	330	725
26	481	438	431	384	353	318	296	359	359	335	330	620
27	481	438	438	378	353	313	296	353	353	378	330	612
28	481	438	445	384	353	313	296	347	353	394	324	597
29	481	438	431	378	359	318	291	353	347	1,450	324	589
30	481	438	424	384	------	318	296	347	341	521	318	573
31	481	------	417	378	------	318	------	341	------	390	324	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	12,700	481	1,460	89,800
November	481	438	453	27,000
December	445	417	431	26,500
January	417	378	399	24,500
February	390	353	366	21,100
March	353	313	334	20,500
April	324	291	307	18,300
May	2,410	296	541	33,300
June	8,870	335	873	51,900
July	1,450	330	384	23,600
August	463	318	351	21,600
September	2,410	341	552	32,800
The year	12,700	291	539	391,000

DEVILS RIVER SEEPAGE INVESTIGATIONS

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

Discharge measurements to determine seepage on Devils River

From Dolans Creek to Smith ranch (about 3 miles below Big Satan Creek) in February, 1928

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Feb. 14	Devils River	400 feet above mouth of Dolans Creek.	0	118			
15	Dolans Creek	75 feet above mouth	.1		17.5		
15	Devils River	150 feet below mouth of Dolans Creek.	.1	147		+11.5	+11.5
15	Group of six springs.	On left bank 1.1 miles below Dolans Creek.	1.2		[a] 2.0		
15	Devils River	1.3 miles below Dolans Creek	1.4	149		0	+11.5
15	Spring	On left bank 1.4 miles below Dolans Creek.	1.5		[a] .02		
15	Group of four springs.	On left bank 1.8 miles below Dolans Creek.	1.9		[a] .10		
15	Spring	On left bank 2.6 miles below Dolans Creek.	2.7		[a] .30		
15	do	do	2.7		[a] 1.00		
15	do	do	2.7		[a] .10		
15	Devils River	3.1 miles below Dolans Creek	3.2	164		+13.48	+24.98
16	do	1,000 feet above mouth of Indian Creek.	3.8	167		+3.00	+27.9
16	Spring	On left bank 1.5 miles above Dry Devils River.	6.5		[a] .10		
16	do	On right bank 1.5 miles above Dry Devils River.	6.5		[a] .10		
16	Devils River	1.5 miles above mouth of Dry Devils River.	6.55	203		+35.8	+63.78
17	do	At mouth of Dry Devils River	8.1	189		−14.0	+49.78
17	do	1 mile below mouth of Dry Devils River.	9.2	189		.0	+49.78
18	do	1.5 miles below Deadman Creek	10.8	180		−9.0	+40.78
18	do	do	13.4	[b] 200		+20.0	+60.78
19	do	2¾ miles above mouth of Big Satan Creek.	16.8	205		+5.0	+65.78
20	do	About 1 mile below mouth of Big Satan Creek.	20.7	193		−12.0	+53.78
20	Group of four springs.	On left bank 1.5 miles below Big Satan Creek.	21.3		[a] 1.00		
20	Swan Shelton spring.	do	21.3		[c] 25.7		
20	Spring	On left bank 1¾ miles below Big Satan Creek.	21.5		[a] .50		
20	do	do	21.5		[a] 1.50		
20	Little Satan Creek.	At mouth	22.0		[a] .50		
20	Devils River	Three-fourths mile above Smith ranch house.	22.3	[d] 232		+9.8	+63.78

[a] Estimated.
[b] 2 large springs on right bank and 1 on left bank were reported to be one-fourth mile below mouth of Deadman Creek but were not found.
[c] Partly estimated.
[d] Measurement made at same location and at same stage as first measurement in seepage run from Smith ranch to point 3,000 feet below Southern Pacific R. R. bridge.

Discharge measurements to determine seepage on Devils River—Continued

From Smith ranch (about 3 miles below Big Satan Creek) to a point 3,000 feet downstream from Southern Pacific Railroad bridge in February, 1928

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Feb. 7	Devils River	Three-fourths mile above Smith ranch house.	0	[b] 242			
7	Spring	On right bank of river near Smith ranch house.	.5		2.69		
7	Group of 12 springs.	On left bank of river near Smith ranch house.	0.6–1.2		[a] 1.00		
7	Devils River	Three-fourths mile below Smith ranch house.	1.3	275		+29.31	+29.31
7	Group of five springs.	On right bank 0.8 mile below Smith ranch.	1.55		1.54		
7	Spring	On right bank 1 mile below Smith ranch.	1.70		[a].20		
7	do	On right bank 400 feet above Seller ranch house.	1.85		.50		
7	Group of six springs.	On right bank in front of Seller ranch house.	2.00		[a] 1.00		
7	Spring	On right bank one-fourth mile below Seller ranch house.	2.2		[a].40		
8	Lester Spring	On left bank 0.6 mile below Seller ranch house.	2.7		[a].25		
8	Spring	On left bank 1.2 miles below Seller ranch.	3.45		2.71		
8	do	On left bank 1¼ miles below Seller ranch.	3.50		.54		
8	Devils River	1½ miles below Seller ranch house.	3.90	292		+9.86	+39.17
8	Spring	On left bank 2 miles above Dam No. 1.	5.75		[a].10		
8	Devils River	1¼ miles above Dam No. 1	6.5	289		−3.10	+36.07
9	Spring	On left bank 1.2 miles above Dam No. 1.	6.55		[a].10		
9	do	On right bank 0.9 mile above Dam No. 1.	7.0		.53		
9	do	On left bank 0.6 mile above Dam No. 1.	7.20		[a].80		
9	do	do	7.20		[a].10		
9	do	On right bank in Rough Canyon 0.55 mile above Dam No. 1.	7.25		[a] 1.00		
9	Group of five springs.	On left bank 0.5 mile above Dam No. 1.	7.30		[a] 1.50		
9	Spring	On left bank 1,000 feet above Dam No. 1.	7.70		[a].08		
9	Devils River	At mouth of Bluff Creek, 1,000 feet below Dam No. 1.	8.00	301		+7.89	+43.96
9	Spring	On left bank 0.3 mile below Dam No. 1.	8.50		[a] 1.00		
10	Devils River	1 mile below Dam No. 1	9.20	303		+1.00	+44.96
10	do	At Country Club, one-fourth mile below dam site No. 9.	11.80	301		−2.00	+42.96
10	do	At causeway	14.00	315		+14.00	+56.96
11	Spring	On right bank across from automatic gage.	15.50		10.20		
11	Devils River	2,000 feet below gage	15.80	369		+43.80	+100.76
11	do	3,000 feet below Southern Pacific Railroad bridge.	16.50	366		−3.00	+97.76

[a] Estimated.
[b] Measurement made at same location and at same stage as last measurement in seepage run from Dolans Creek to Smith ranch.

NOTE.—Tributaries not listed were not flowing. Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

GOODWIN CANAL ABOVE PENITAS, TEX.

LOCATION.—Two Venturi meters at point of diversion, 2 miles above Penitas, Hidalgo County.
RECORDS AVAILABLE.—August to September, 1928.
EXTREMES.—Maximum mean daily discharge during period, 18 second-feet August 28; no flow during several periods.
Total capacity of pumping plant, 102 second-feet.
REMARKS.—Records fair. Station is above all diversions from canal. Flow controlled by pumping plant. Canal diverts from left bank of Rio Grande for irrigation near Mission. Base data furnished by Hidalgo County Water Control and Improvement District No. 6.

Daily and monthly discharge, in second-feet, 1928

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1		0	11		0	21		0
2		15	12		0	22		7.3
3		0	13		0	23		0
4		0	14		0	24		0
5		6.2	15		0	25	6.2	0
6		0	16		3.1	26	9.2	4.2
7		6.2	17		3.1	27	11	0
8		0	18		3.1	28	18	0
9		6.2	19		0	29	0	8.5
10		4.6	20		0	30	0	0
						31	0	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
August (4 days)	18	6.2	11.1	88
September (11 days)	15	3.1	6.14	134
The period				222

EDINBURG CANAL AT PENITAS, TEX.

LOCATION.—Six Venturi meters at point of diversion in Penitas, Hidalgo County.
RECORDS AVAILABLE.—July to September, 1928.
EXTREMES.—Maximum mean daily discharge during period, 184 second-feet August 25; no flow during several periods.
Total capacity of pumping plant, 300 second-feet.
REMARKS.—Records good. Station is above all diversions from canal. Flow controlled by pumping plant. Canal diverts from left bank of Rio Grande for irrigation near Edinburg. Base data furnished by Hidalgo County Water Control and Improvement District No. 1.

Daily and monthly discharge, in second-feet, of Edinburg Canal at Penitas, Tex., 1928

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1		91	114	11		105	0	21	81	146	0
2		102	0	12		0	0	22	0	128	0
3		102	47	13		110	29	23	111	173	0
4		99	59	14		120	35	24	107	137	0
5		0	75	15		124	0	25	113	184	0
6		131	172	16		130	0	26	113	0	0
7		92	16	17		103	0	27	82	173	17
8		74	0	18		144	0	28	130	127	0
9		85	0	19		0	0	29	0	111	0
10		101	0	20		0	50	30	99	98	0
								31	118	151	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
July (9 days)	130	81	106	1,890
August (26 days)	184	74	121	6,230
September (10 days)	172	16	61.4	1,220
The period				9,340

MISSION CANAL NEAR MISSION, TEX.

LOCATION.—Water-stage recorder 1,200 feet downstream from Mission pumping plant, 3.4 miles south of Mission, Hidalgo County.

RECORDS AVAILABLE.—August to September, 1928.

EXTREMES.—Maximum discharge during period, 188 second-feet August 30 and September 1 (gage height, 4.85 feet); no flow for several periods.

REMARKS.—Records good. Discharge partly estimated August 2 and 3. Canal diverts water from left bank of Rio Grande 3.5 miles south of Mission for irrigation near Mission. Flow is regulated by pumps. Granjeno Canal diverts water from this canal above station.

Daily and monthly discharge, in second-feet, 1928

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1		168	11	125	0	21	0	54
2	125	163	12	110	0	22	33	1.4
3	125	82	13	110	0	23	158	.3
4	109	26	14	107	52	24	128	4.6
5	129	.7	15	104	0	25	112	0
6	114	1.2	16	116	7.5	26	148	0
7	135	0	17	91	0	27	129	0
8	137	2.1	18	0	0	28	130	0
9	134	0	19	0	0	29	135	1.8
10	134	1.3	20	0	65	30	137	0
						31	152	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
August (26 days)	158	33	122	6,280
September (16 days)	168	.3	39.4	1,250
The period				7,530

GRANJENO CANAL NEAR MISSION, TEX.

LOCATION.—Two water-stage recorders near pumping plant of Hidalgo County Water Control and Improvement District No. 1, 3.6 miles south of Mission, Hidalgo County.
RECORDS AVAILABLE.—August to September, 1928.
EXTREMES.—Maximum discharge during period, 46 second-feet August 24; no flow during several periods.
REMARKS.—Records poor. Daily records not sufficiently accurate for publication. Station above all diversions from canal. Canal diverts from Mission Canal 200 feet above station. Flow regulated at head gates. Water used for irrigation near Mission.

Monthly discharge, 1928

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
August (24 days)	46	0.4	19.5	929
September (6 days)	19	.5	6.02	71.6
The period				1,000

McALLEN CANAL NEAR HIDALGO, TEX.

LOCATION.—Water-stage recorder 200 feet upstream from the West McAllen-Hidalgo highway crossing, 1.1 miles north of Hidalgo, Hidalgo County.
RECORDS AVAILABLE.—July to September, 1928.
EXTREMES.—Maximum discharge during period, 64 second-feet August 30 (gage height, 3.91 feet); no flow during several periods.
REMARKS.—Records fair. Canal diverts water from Rio Grande 1.3 miles northwest of Hidalgo for irrigation near McAllen. Entire flow regulated by pumps. Rio Bravo Canal diverts water from this canal above station.

Daily and monthly discharge, in second-feet, 1928

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1		25	26	11		.7	0	21		8.8	0
2		33	0	12		0	0	22		31	0
3		25	0	13		7.1	0	23		36	0
4		0	0	14		22	0	24		32	0
5		0	0	15		23	0	25		0	0
6		4.7	5.8	16		23	0	26	42	0	0
7		23	3.3	17		6.6	0	27	39	0	0
8		28	0	18		0	0	28	0	5.7	0
9		26	0	19		0	2.4	29	0	26	0
10		19	0	20		3.5	0	30	0	37	0
								31	6.4	39	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
July (3 days)	42	6.4	29.1	173
August (23 days)	39	.7	21.1	962
September (4 days)	26	2.4	9.38	74
The period				1,210

RIO BRAVO CANAL NEAR HIDALGO, TEX.

LOCATION.—Great Western meter at headgates of Rio Bravo Canal, 1.3 miles northwest of Hidalgo, Hidalgo County.
RECORDS AVAILABLE.—July to September, 1928.
EXTREMES.—Maximum discharge not determined; no flow during several periods.
REMARKS.—Records fair. Discharge measured in acre-feet. Canal diverts water from left bank of McAllen Canal for irrigation near Hidalgo. Flow regulated by headgates.

Discharge of Rio Bravo Canal near Hidalgo, Tex., 1928

Period	Run-off in acre-feet
July 26 to Aug. 29	0
Aug. 30 to Sept. 3	24.0
Sept. 4-30	0
	24.0

MISCELLANEOUS DISCHARGE MEASUREMENTS

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 September 30, 1928

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Oct. 12	Neches River	Gulf of Mexico	Texas & New Orleans Railroad bridge near Reese, Tex.	−22.43	271
Nov. 19	do	do	do	−22.94	138
Feb. 29	do	do	do	−18.72	1,070
Apr. 27	do	do	do	−18.15	1,260
May 29	do	do	do	−23.20	120
June 14	do	do	do	−22.18	266
July 17	do	do	do	−24.72	40.9
21	do	do	do	−25.20	22.6
Aug. 4	do	do	do	−21.46	424
Sept. 25	do	do	do	−25.98	5.35
Oct. 13	Mud Creek	Neches River	Texas & New Orleans Railroad bridge near Ponta, Tex.	−21.1	176
Feb. 29	do	do	do	−16.8	877
Mar. 5	do	do	do	−19.22	370
6	do	do	do	−19.68	313
Apr. 28	do	do	do	−16.80	1,040
May 29	do	do	do	−18.15	555
July 18	do	do	do	−23.82	16.3
21	do	do	do	−24.00	15.5
Aug. 15	do	do	do	−24.25	5.53
Sept. 5	do	do	do	−24.79	*2.0
24	do	do	do	−24.78	*2.0
Mar. 2	Overflow from Stone Mill Pond.	Angelina River	7 miles west of Nacogdoches, Tex.		.83
2	Peach Creek	do	10 miles northeast of Nacogdoches on Nacogdoches-Logansport highway.		16.6
Oct. 30	Village Creek	Neches River	Gulf, Colorado & Santa Fe Railway bridge 4 miles east of Kountze, Tex.	−28.20	107
Dec. 8	do	do	do	−27.53	174
Feb. 10	do	do	do	−25.90	461
Mar. 10	do	do	do	−23.67	822
May 9	do	do	do	−27.28	241
June 27	do	do	do	−25.93	355
Aug. 11	do	do	do	−28.32	108
Sept. 16	do	do	do	−28.81	76.9

* Estimated.

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending September 30, 1928—Continued

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Sept. 10	Leon River	Little River	7½ miles above Gulf, Colorado & Santa Fe Railway bridge near Belton, Tex.		86.9
10	do	do	do		90.5
10	do	do	1½ miles below Gulf, Colorado & Santa Fe Railway bridge near Belton, Tex.		94.0
Nov. 25	Barton Springs	Colorado River	Austin, Tex		[b] 27.3
Jan. 9	do	do	do		[b] 30.2
Feb. 11	do	do	do		[b] 32.2
Mar. 28	do	do	do		[b] 48.2
Apr. 7	do	do	do		[b] 30.0
June 14	do	do	do		[b] 33.4
July 11	do	do	do		[b] 26.4
23	do	do	do		[b] 20.2
Aug. 18	do	do	do		[b] 18.8
28	do	do	do		[b] 19.5
Sept. 18	do	do	do		[b] 17.8
Oct. 18	Comal Springs	Guadalupe River	In Landa Park above Comal power plant, New Braunfels, Tex.		[b] 322
Nov. 10	do	do	do		[b] 316
Dec. 9	do	do	do		[b] 314
29	do	do	do		[b] 319
Feb. 1	do	do	do		[b] 319
Mar. 9	do	do	do		[b] 318
29	do	do	do		[b] 314
Apr. 12	do	do	do		[b] 307
24	do	do	do		[b] 292
24	do	do	do		[b c] 280
May 1	do	do	do		[b] 278
June 8	do	do	do		[b] 288
Aug. 13	do	do	do		[b] 280
Sept. 17	do	do	do		[b] 269
Oct. 15	San Marcos River	do	Austin-San Antonio highway crossing at San Marcos, Tex.		132
Dec. 1	do	do	do		107
Feb. 1	do	do	do		125
Sept. 4	do	do	do		107
Oct. 27	San Antonio River	do	Below Simpson street bridge San Antonio, Tex.		21.5
Nov. 18	Springs and Artesian Well.	San Antonio River	In Brackenridge Park, San Antonio, Tex.		6.38
Mar. 19	Artesia well of San Antonio Public Service Co.	San Antonio River	On bank of San Antonio River at Conception Road plant.		15.7
Oct. 4	Nueces River	Gulf of Mexico	Just above mouth of West Nueces River, near Uvalde, Tex.		236
5	do	do	do		120
6	do	do	do		73.4
Dec. 12	do	do	Pulliam ranch house, 11 miles southeast of Uvalde, Tex.		7.80
Oct. 4	West Nueces River	Nueces River	At mouth, 10 miles northwest of Uvalde, Tex.		[a] 2.0
5	do	do	do		0
Dec. 11	Nueces Canal	do	Uvalde-Laguna road crossing 19 miles northwest of Uvalde, Tex.		10.70
13	do	do	do		1.51
12	Dr. Graham's artesian well.	do	La Pryor, Tex		.98
10	Leona River	Frio River	Highway crossing 2 miles below Uvalde, Tex.		.87
Apr. 25	Rio Grande	Gulf of Mexico	Roma, Tex		2,160
Oct. 27	Goodenough Springs.	Rio Grande	Near Comstock, Tex		125
Jan. 24	do	do	do		116
Apr. 27	do	do	do		108
July 19	do	do	do		113
Sept. 20	do	do	do		121

[a] Estimated.
[b] Total flow of springs.
[c] Measurement made using rod suspension for meter. All measurements of Comal Springs made prior to this used cable suspension for meter, and discharges are about 4 per cent too high. Measurements following use rod suspension.

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending September 30, 1928—Continued

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Dec. 29	Devils River	Rio Grande	Just above mouth of Indian Creek, 40 miles northwest of Del Rio, Tex.	3.62	201
30	do	do	do	3.62	221
Feb. 1	do	do	do	3.58	177
16	do	do	do	3.56	167
Mar. 29	do	do	do	3.51	154
July 25	do	do	do	3.56	179
Aug. 14	do	do	do	3.62	201
Nov. 30	do	do	1 mile below mouth of Dry Devils River, 34 miles northwest of Del Rio, Tex.	1.40	242
Dec. 31	do	do	do	1.36	228
Feb. 3	do	do	do	1.34	214
Dec. 3	do	do	Just above mouth of Bluff Creek, 15 miles northwest of Del Rio, Tex.	1.28	377
Jan. 4	do	do	do	1.26	372
29	do	do	do	1.21	342
Feb. 9	do	do	do	1.18	301
June 25	do	do	do	1.18	295
30	do	do	do	1.15	278
July 18	do	do	do	1.12	265
Sept. 25	do	do	do	1.63	624
26	do	do	do	1.58	597
29	do	do	do	1.46	511
Mar. 14	do	do	1 mile above Galveston, Harrisburg & San Antonio Railway bridge near Del Rio, Tex.		277
15	do	do	0.6 mile above Galveston, Harrisburg & San Antonio Railway bridge near Del Rio, Tex.		274
19	do	do	do		290
19	do	do	One-fourth mile above Galveston, Harrisburg & San Antonio Railway bridge near Del Rio, Tex.		324
Apr. 2	do	do	do		309
Oct. 4	Las Vacas River	do	Near Villa Acuna, Coahuila, Mexico.		[a] 5.0
20	do	do	do		[a] 5.0
Nov. 2	do	do	do		[a] 5.0
22	do	do	do		[a] 4.0
Mar. 26	do	do	do		[a] 4.0
May 1	do	do	do		[a] 3.5
Oct. 7	San Felipe Springs	do	Near Del Rio, Tex		[b] 66.1
Nov. 14	do	do	do		[b] 76.2
Jan. 27	do	do	do		[b] 61.4
Apr. 28	do	do	do		[b] 53.0
July 20	do	do	do		[b] 52.6
Sept. 14	do	do	do		[b] 59.2
July 30	Las Maras Springs	do	Bracketville, Tex		5.79

[a] Estimated.

[b] Total flow at springs.

INDEX

20348—31——9