UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary
GEOLOGICAL SURVEY
W. C. MENDENHALL, Director

Water-Supply Paper 718

SURFACE WATER SUPPLY *of the* UNITED STATES 1931

PART 8

WESTERN GULF OF MEXICO BASINS

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Prepared in cooperation with the
STATE OF TEXAS

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SURFACE WATER SUPPLY OF WESTERN GULF OF MEXICO BASINS, 1931

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, 1931.

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, 1895–1932

1895	$12, 500. 00	1920	$175, 000. 00
1896	24, 500. 00	1921–1923	180, 000. 00
1897–1899	50, 000. 00	1924–25	170, 000. 00
1900	70, 000. 00	1926	165, 000. 00
1901–2	100, 000. 00	1927	151, 000. 00
1903–1906	200, 000. 00	1928	147, 000. 00
1907	150, 000. 00	1929	270, 500. 00
1908–1910	100, 000. 00	1930	275, 000. 00
1911–1917	150, 000. 00	1931	565, 000. 00
1918	175, 000. 00	1932	711, 000. 00
1919	148, 244. 10		

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

Measurements of stream flow have been made at about 6,270 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1931, 2,660 gaging stations were being maintained by the Geological Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

DEFINITION OF TERMS

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

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

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

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

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

The following terms not in common use are here defined:

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

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

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1930, and ending September 30, 1931. 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 outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

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

The data presented for each gaging station in the area covered by this report comprise a description of the station, 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 discharges, 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 in case of nonrecording gages it is determined from flood marks or from graphs based on gage readings made once daily or oftener.

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.

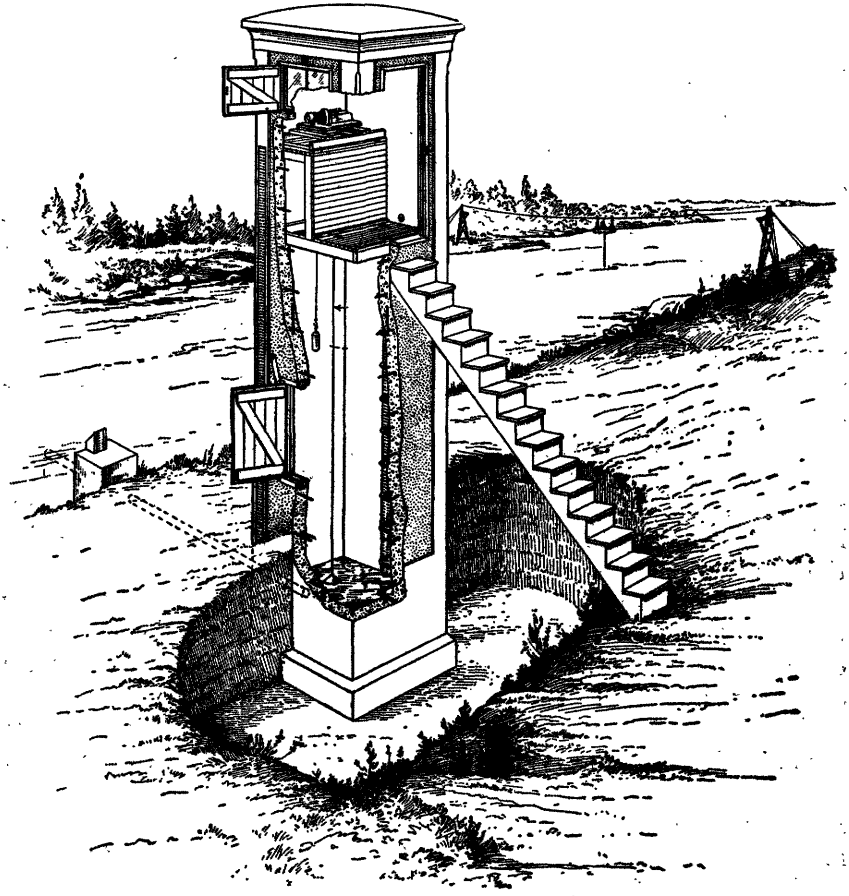

FIGURE 1.—Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car

In the table of monthly discharge the column headed "Maximum" gives the maximum daily discharge and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" is the average flow in cubic feet per second during the month. 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," 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 sections of the United States are situated above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the station must first be satisfied.

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 on the next page.

PART 1. North Atlantic slope basins (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River Basins.
6. Missouri River Basin.
7. Lower Mississippi River Basin.
8. Western Gulf of Mexico basins.
9. Colorado River Basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. North Pacific slope drainage 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., 318 State Office Building.
Albany, N. Y., 603 State Public Works Building.
Trenton, N. J., 710 Trenton Trust Building.
Harrisburg, Pa., 604 Claster Building.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 220 Post Office Building.
Columbia, S. C., 801 National Loan & Exchange Bank Building.
Ocala, Fla., Post Office Building.
Tuscaloosa, Ala., Post Office Building.
Chattanooga, Tenn., 630 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Indianapolis, Ind., 319 Federal Building.
Urbana, Ill., 302 University New Agricultural Building.
Madison, Wis., 337N State Capitol.
St. Paul, Minn., 632 State Office Building.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Capitol.

Santa Fe, N. Mex., State Capitol.
Tucson, Ariz., 210 Post Office Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 303 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, 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 6,270 points in the United States, and the data obtained have been published in the reports tabulated as follows:

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

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

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept., 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas River.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22nd 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.

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

Report	Character of data	Year
W 451 to 464	Complete data	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919–20.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.
W 601 to 614	do	1925.
W 621 to 634	do	1926.
W 641 to 654	do	1927.
W 661 to 674	do	1928.
W 681 to 694	do	1929.
W 696 to 709	do	1930.
W 711 to 724	do	1931.

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 1931. The data for any particular station will as a rule be found in the reports covering the years during which the station was maintained. For example, data from 1910 to 1920 for any station in the area covered by Part 3 are published in Water-Supply Papers 283, 303, 323, 353, 383, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

Numbers of water-supply papers containing results of stream measurements, 1899–1931

[For basins included see p. 6]

Year	1	2	3	4	5	6	7	8	9	10	11	12–A	12–B	12–C
1899 [a]	35	[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
1929	681	682	683	684	685	686	687	688	689	690	691	692	693	694
1930	696	697	698	699	700	701	702	703	704	705	706	707	708	709
1931	711	712	713	714	715	716	717	718	719	720	721	722	723	724

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Monthly discharge for 1899 in Twenty-first Annual Report, Part 4.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Colorado River above junction with Gunnison River.
[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 53. Tables of monthly discharge for 1900 in Twenty-second Annual Report, Part 4.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte River.
[k] Tributaries of Mississippi River from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] The Great Basin in California, except Truckee and Carson River Basins.
[s] Below junction with Gila River.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work in Texas was carried on under cooperative agreement with the State through the Board of Water Engineers, consisting of John A. Norris, chairman, C. S. Clark, and A. H. Dunlap.

Acknowledgment is due to the Corps of Engineers, United States Army, for financial assistance, and to the American section of the International Boundary Commission for assistance in collecting the records published herein.

Assistance was also rendered by the following municipalities, organizations, corporations, and individuals: The cities of Corpus Christi, Dallas, and Fort Worth; Dallas County; City and County of Dallas Levee Improvement District, Bexar-Medina-Atascosa Counties Water Improvement District No. 1, Tarrant County Water Improvement District No. 1, Brown County Water Improvement District No. 1, Breckenridge Chamber of Commerce, St. Louis Southwestern Railway Co., Gulf, Colorado & Santa Fe Railway Co., Humble Oil & Refining Co., San Antonio Public Service Co., Texas Power & Light Co., Central & Southwest Utilities Co., West Texas Utilities Co., Emery, Peck & Rockwood Development Co., and Richmond Irrigation Co.

DIVISION OF WORK

The data for stations in Texas, Louisiana, and New Mexico were collected and prepared for publication under the direction of C. E. Ellsworth, district engineer, assisted by Trigg Twichell, S. D. Breeding, H. C. Pritchett, Tate Dalrymple, W. C. Dodd, G. W. King, C. B. Tooley, G. E. Ferguson, N. C. Magnuson, Kate Casparis, A. B. Goodwin, C. A. Young, V. W. Rupp, V. L. Austin, S. H. Crowell, F. C. Ames, P. H. Holland, J. M. Terry, and R. W. Yarborough, jr.

The records were reviewed and manuscript assembled by K. N. Phillips.

GAGING-STATION RECORDS

SABINE RIVER BASIN

SABINE RIVER NEAR LONGVIEW, TEX.

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

DRAINAGE AREA.—3,010 square miles.

RECORDS AVAILABLE.—January, 1904, to December, 1906; October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,590 second-feet Mar. 14, 15 (gage height, 22.26 feet); minimum, 26 second-feet Aug. 17.

1904–1906, 1923–1931: Maximum discharge, 22,300 second-feet Dec. 26, 1928 (gage height, 29.95 feet); minimum, 14 second-feet Aug. 29–31, 1925 (gage height, 1.10 feet).

REMARKS.—Records fair except those for Dec. 20 to May 5, which are poor because of probable backwater from Rabbit Creek. Small diversions above station. Slight regulation at extremely low stages caused by pumping just above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	379	2,050	740	463	2,000	2,650	1,160	160	73	36	202
2	32	360	1,780	607	463	2,560	2,980	1,190	151	66	34	185
3	32	341	1,700	535	463	3,200	3,200	1,210	143	62	34	176
4	32	322	1,950	535	463	3,300	3,340	1,300	135	59	33	310
5	33	341	2,590	720	481	3,200	3,410	1,480	128	55	32	644
6	103	360	2,920	1,050	499	3,230	3,340	1,720	128	51	32	761
7	398	341	2,980	1,050	553	3,340	3,040	1,850	120	47	31	607
8	634	265	2,950	942	800	3,530	2,380	1,880	120	43	30	391
9	738	198	2,950	840	1,190	3,790	1,550	1,920	114	44	30	263
10	780	151	2,950	720	1,190	4,720	840	2,080	107	52	30	176
11	1,050	113	2,980	682	1,100	5,150	701	2,500	101	108	30	135
12	1,190	94	3,130	780	1,100	5,620	607	2,650	95	160	29	101
13	1,340	83	3,340	840	1,100	6,250	535	2,560	95	194	28	82
14	1,500	77	3,660	740	1,740	6,450	499	1,950	138	194	28	72
15	1,320	80	3,970	701	2,380	6,520	463	1,160	558	168	28	66
16	1,040	109	4,240	682	2,470	5,800	427	800	740	168	27	60
17	506	151	4,280	682	2,830	4,220	391	607	701	185	36	54
18	265	189	3,740	663	2,800	2,530	373	409	780	334	276	47
19	151	236	2,340	663	2,470	1,320	373	355	589	409	304	41
20	117	303	1,320	644	1,880	1,030	427	355	427	168	528	36
21	113	341	644	607	1,390	1,010	481	391	355	69	775	34
22	112	455	571	571	1,190	942	800	391	287	57	409	38
23	104	574	535	535	1,190	840	860	355	253	51	338	43
24	104	634	571	499	1,260	800	780	355	219	48	338	48
25	109	634	720	481	1,370	760	820	553	185	47	304	52
26	129	614	820	481	1,420	800	840	535	160	43	287	53
27	151	614	840	481	1,510	920	840	427	135	43	270	49
28	170	696	840	481	1,680	1,140	840	499	114	41	253	45
29	189	950	840	481	------	1,230	840	338	95	39	236	40
30	246	1,890	860	463	------	1,480	860	194	83	38	236	36
31	360	------	840	463	------	2,020	------	168	------	37	219	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,500	32	422	25,900
November	1,390	77	396	23,600
December	4,280	535	2,130	131,000
January	1,050	463	657	40,400
February	2,830	463	1,340	74,400
March	6,520	760	2,890	178,000
April	3,410	373	1,320	78,600
May	2,650	168	1,080	66,400
June	780	83	247	14,700
July	409	37	102	6,270
August	775	27	171	10,500
September	701	34	159	9,460
The year	6,520	27	909	659,000

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 railway station in 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, 1931.

EXTREMES.—Maximum discharge during year, 10,800 second-feet May 4 (gage height, 24.6 feet); minimum, 68 second-feet Sept. 23–30 (gage height, −0.1 foot).

1903–1906, 1923–1931: Maximum discharge, 34,800 second-feet May 29, 1930 (gage height, 34.1 feet). Maximum stage of 35.8 feet previously published, recorded on gage used in 1905, which read 2.0 feet higher than present gage. Minimum discharge, probably less than 27 second-feet in September, 1925.

Maximum stage known, 39.4 feet, present datum, in 1884.

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

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October			* 500	30,700
November	1,570	226	470	28,000
December	6,520	710	3,060	188,000
January	6,900	1,110	3,000	184,000
February	4,910	1,040	2,410	134,000
March	6,640	2,790	5,040	310,000
April	3,760	896	2,130	127,000
May	10,700	848	3,890	239,000
June	1,040	416	756	45,000
July	732		363	22,300
August	436	88	183	11,300
September		68	164	9,760
The year	10,700	68	1,840	1,330,000

* Estimated.

SABINE RIVER NEAR BON WIER, TEX.

LOCATION.—Chain gage on highway bridge 1¼ miles east of Bon Wier, Newton County. Zero of gage is 45.4 feet above mean sea level. Prior to July 8, 1931, gage was at Gulf, Colorado & Santa Fe Railway bridge 1 mile downstream, with same datum.

DRAINAGE AREA.—8,390 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 24,600 second-feet Jan. 16–18 (gage height, 18.2 feet); minimum, 335 second-feet Aug. 18–23, Sept. 28–30. 1923–1931: Maximum discharge, 45,600 second-feet Apr. 21, 1927 (gage height, 20.6 feet); minimum, 185 second-feet Sept. 11, 22, 24, 1925 (gage height 0.50 foot).

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

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	7,960	505	2,020	124,000
November	4,260	1,100	1,720	102,000
December	19,000	7,360	11,300	695,000
January	24,600	3,900	12,900	793,000
February	15,300	4,000	9,740	541,000
March	14,000	4,600	9,670	595,000
April	7,360	2,470	4,630	276,000
May	13,800	1,650	7,220	444,000
June	1,460	685	1,060	63,100
July	835	375	584	35,900
August	1,050	335	535	32,900
September	----------	335	534	31,800
The year	24,600	335	5,160	3,730,000

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, 1931.

EXTREMES.—Maximum discharge during year, 29,000 second-feet Jan. 16, 17 (gage height, 12.8 feet); minimum, 547 second-feet Sept. 30 (gage height, 1.71 feet).

1924–1931: Maximum discharge, about 61,200 second-feet June 1, 1929 (gage height, 14.4 feet); minimum, 372 second-feet Sept. 11, 1925 (gage height, 1.10 feet).

Maximum stage known, 15.5 feet Apr. 15, 1923.

REMARKS.—Records good. No diversions below station near Longview.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,010	2,490	5,340	11,500	6,010	19,000	7,830	4,190	2,490	1,300	1,010	1,100
2	1,010	2,670	7,190	11,500	7,830	19,000	8,850	4,560	2,310	1,300	1,010	1,060
3	1,010	2,400	9,120	10,700	8,850	18,000	10,000	5,850	2,220	1,250	971	971
4	932	1,980	10,700	10,000	10,700	17,000	10,700	7,190	2,140	1,200	932	932
5	859	1,680	13,200	9,700	11,900	16,200	11,100	8,580	1,980	1,150	859	895
6	895	1,420	14,900	9,700	11,900	15,500	10,400	9,700	1,900	1,150	824	859
7	1,300	1,300	16,200	10,400	11,500	15,500	9,400	10,700	1,750	1,100	824	859
8	2,220	1,200	17,000	11,500	11,500	15,500	8,320	11,500	1,680	1,060	824	859
9	3,040	1,200	18,000	12,300	10,700	14,900	7,830	12,300	1,540	971	859	824
10	4,820	1,150	19,000	13,200	10,000	15,500	7,390	12,800	1,480	895	859	824
11	6,010	1,150	19,000	15,500	9,700	17,000	7,190	13,200	1,420	859	824	790
12	6,650	1,150	20,100	18,000	9,700	17,000	7,000	13,200	1,360	859	790	790
13	6,170	1,200	20,100	21,300	9,700	17,000	7,000	13,200	1,300	790	757	790
14	4,690	1,200	19,000	23,700	9,700	16,200	7,000	13,200	1,250	790	725	824
15	3,540	1,300	18,000	26,300	9,400	15,500	7,000	12,300	1,200	790	693	859
16	2,760	1,360	15,500	29,000	9,700	14,900	6,820	10,700	1,150	790	693	932
17	2,310	1,360	14,300	29,000	10,400	14,300	6,330	8,850	1,150	790	725	1,010
18	1,980	1,870	13,200	27,600	11,100	13,200	5,700	6,170	1,100	790	725	1,010
19	1,900	3,640	12,300	27,600	11,500	12,800	4,960	5,850	1,060	932	725	971
20	1,820	4,820	11,100	26,300	12,300	12,300	4,310	6,650	1,060	1,100	725	932
21	1,680	4,960	10,000	25,000	12,800	11,500	3,850	8,320	1,060	1,100	725	859
22	1,750	4,430	9,400	22,500	13,800	11,100	3,640	9,400	1,100	1,060	725	824
23	1,820	3,640	9,120	21,300	14,300	10,700	3,540	10,700	1,150	1,010	790	790
24	1,900	3,040	8,850	19,000	14,900	10,400	3,540	11,500	1,200	1,010	790	725
25	1,820	2,580	8,580	16,200	15,500	10,000	3,640	10,700	1,300	1,010	757	725
26	1,980	2,310	8,580	14,300	15,500	10,000	3,740	8,320	1,540	1,010	725	693
27	2,060	2,140	8,580	10,000	16,200	9,400	3,850	6,010	1,680	1,060	757	662
28	2,140	2,060	8,850	9,700	18,000	8,850	3,850	4,560	1,820	1,100	824	632
29	2,140	2,060	9,700	8,320	-------	7,830	3,960	3,640	1,610	1,100	932	603
30	1,980	3,380	10,700	7,000	-------	7,190	4,070	3,140	1,540	1,100	1,060	575
31	2,140	-------	11,500	6,490	-------	7,190	-------	2,760	-------	1,060	1,150	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	6,650	859	2,460	151,000
November	4,960	1,150	2,240	133,000
December	20,100	5,340	12,800	787,000
January	29,000	6,490	16,600	1,020,000
February	18,000	6,010	11,600	644,000
March	19,000	7,190	13,600	836,000
April	11,100	3,540	6,430	383,000
May	13,200	2,760	8,700	535,000
June	2,490	1,060	1,520	90,400
July	1,300	790	1,020	62,700
August	1,150	693	825	50,700
September	1,100	575	839	49,900
The year	29,000	575	6,550	4,740,000

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 91.3 feet (revised) above mean sea level.

DRAINAGE AREA.—3,540 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,800 second-feet Jan. 12 (gage height, 14.7 feet); minimum, 8.0 second-feet Sept. 30 (gage height, −0.8 foot).

1923–1931: Maximum discharge, 34,200 second-feet June 1, 1929 (gage height, 26.8 feet); minimum, 7.0 second-feet Aug. 23, 24, 1925 (gage height, −1.2 feet).

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

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	407	3,780	3,040	2,490	5,160	3,660	5,840	918	191	88	61
2	74	378	3,840	2,730	2,640	5,980	4,030	6,680	802	211	107	61
3	61	378	3,550	2,350	3,200	6,190	4,220	6,960	726	211	232	50
4	61	350	3,200	2,680	3,780	6,330	4,160	6,820	650	211	211	88
5	74	323	5,090	2,590	4,100	6,400	4,030	6,470	613	211	191	154
6	583	298	5,500	2,490	3,900	6,260	3,780	5,770	576	191	154	172
7	3,220	298	6,050	2,210	3,900	6,260	3,490	5,230	540	172	154	154
8	3,200	275	6,540	2,030	4,540	6,260	3,260	4,960	504	136	136	136
9	2,590	275	6,470	1,980	6,260	6,330	3,150	4,620	470	136	119	119
10	1,590	275	6,120	2,720	6,750	6,260	3,260	4,160	407	119	88	88
11	1,270	253	5,570	5,950	6,890	5,910	3,370	3,900	378	88	74	74
12	1,110	253	4,890	7,450	6,610	5,300	3,200	3,780	350	88	74	74
13	1,040	253	4,290	7,100	6,190	4,750	2,890	3,260	323	88	61	61
14	957	253	3,720	7,170	5,980	4,100	2,490	2,540	298	136	61	61
15	918	350	3,260	6,820	5,840	3,550	2,080	2,300	298	119	74	61
16	879	726	2,730	6,470	5,640	3,260	1,810	2,120	275	88	74	61
17	802	802	2,400	6,260	5,430	2,990	1,640	2,030	253	88	88	61
18	764	764	2,260	6,540	4,790	2,730	1,550	1,940	232	88	88	61
19	688	840	2,210	6,190	3,900	2,590	1,510	2,030	232	88	74	61
20	613	1,040	2,120	5,770	3,660	2,940	1,470	2,350	232	74	88	61
21	540	1,190	2,080	5,230	3,310	2,940	1,420	2,350	232	154	88	40
22	504	1,150	2,030	4,960	2,940	2,890	1,390	2,440	253	211	119	40
23	470	1,110	1,980	4,480	3,780	2,830	1,350	2,350	253	232	136	40
24	438	1,070	1,900	4,100	4,030	2,830	1,310	2,160	232	232	232	30
25	407	957	1,850	3,660	4,160	2,830	1,310	1,940	232	211	232	30
26	378	840	3,770	3,430	4,220	2,780	1,270	1,680	211	191	211	14
27	1,280	726	3,960	3,200	4,360	2,590	1,270	1,420	211	172	191	14
28	1,760	613	4,100	2,990	4,690	2,350	1,230	1,270	211	154	154	14
29	1,150	827	3,900	2,830	-------	2,210	1,230	1,190	191	154	136	14
30	650	3,370	3,600	2,730	-------	2,320	2,060	1,040	191	136	119	8.0
31	540	-------	3,260	2,590	-------	3,310	-------	996	-------	119	74	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,220	61	926	56,900
November	3,370	253	688	40,900
December	6,540	1,850	3,740	230,000
January	7,450	1,980	4,220	259,000
February	6,890	2,490	4,570	254,000
March	6,400	2,210	4,180	257,000
April	4,220	1,230	2,430	145,000
May	6,960	996	3,310	204,000
June	918	191	376	22,400
July	232	74	152	9,350
August	232	61	127	7,810
September	172	8.0	65.4	3,890
The year	7,450	8.0	2,060	1,490,000

NECHES RIVER AT EVADALE, TEX.

LOCATION.—Staff gage at Gulf, Colorado & Santa Fe Railway bridge at Evadale, 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, 1931.

EXTREMES.—Maximum discharge during year, 17,900 second-feet Jan. 18, 19 (gage height, 15.76 feet); minimum, 243 second-feet Sept. 30 (gage height, 0.12 foot).

1904–1906, 1923–1931: Maximum discharge, 83,800 second-feet June 1, 1929 (gage height, 22.2 feet); minimum, about 148 second-feet Sept. 10, 1925. Maximum stage known, 33.4 feet in 1884, from records of Gulf, Colorado & Santa Fe Railway.

REMARKS.—Records good. No diversions above station.

Daily discharge, in second-feet, for high-water period during year ending September 30, 1929

May 21	28,100	May 30	55,300	June 8	59,600
May 22	31,000	May 31	77,300	June 9	55,300
May 23	33,000	June 1	83,800	June 10	48,800
May 24	34,000	June 2	81,200	June 11	42,400
May 25	33,000	June 3	78,600	June 12	38,100
May 26	33,000	June 4	74,700	June 13	33,000
May 27	32,000	June 5	71,000	June 14	29,000
May 28	33,000	June 6	73,400		
May 29	39,200	June 7	65,200		

Monthly discharge, in second-feet, 1928–29

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	380	255	299	18,400
November	1,420	319	857	51,000
December	3,460	797	2,140	132,000
January	7,230	3,390	5,960	366,000
February	9,810	5,860	7,650	425,000
March	17,200	4,720	9,540	587,000
April	14,400	3,660	6,370	379,000
May	77,300	3,010	19,200	1,180,000
June	83,800	4,540	34,600	2,060,000
July	5,320	1,150	2,650	163,000
August	1,570	492	774	47,600
September	1,080	414	614	36,500
The year	83,800	255	7,500	5,450,000

NOTE.—Daily and monthly discharges for May and June, 1929, supersede figures published in Water-Supply Paper 688. Monthly discharge for remaining months republished in order to complete record.

Daily and monthly discharge, in second-feet, of Neches River at Evadale, Tex., 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	513	3,260	4,800	10,300	9,180	12,500	7,130	4,050	3,190	797	582	582
2	492	2,300	6,220	10,000	8,770	12,800	7,910	5,120	2,900	768	582	535
3	471	1,740	7,910	9,390	8,400	12,500	8,970	7,130	2,670	740	582	471
4	451	1,460	9,180	8,770	8,400	12,800	9,600	8,970	2,350	713	582	432
5	432	1,300	10,500	8,070	8,770	12,800	9,600	10,500	2,160	713	582	397
6	432	1,220	11,000	8,070	9,390	13,600	9,390	11,600	2,010	686	659	397
7	558	1,150	11,300	8,070	10,300	14,000	9,180	13,200	1,920	659	686	380
8	826	1,080	11,800	8,070	10,800	14,900	8,770	12,800	1,780	633	713	363
9	3,300	1,040	12,200	7,910	11,000	15,400	8,400	12,600	1,700	607	713	363
10	5,390	977	12,800	7,750	11,000	14,900	8,070	11,800	1,610	607	633	397
11	6,720	945	13,200	8,230	11,000	14,400	7,750	11,600	1,530	582	558	432
12	7,130	945	13,600	9,180	11,300	14,000	7,590	11,300	1,460	558	513	432
13	5,620	945	13,600	10,300	11,600	13,600	7,590	10,500	1,380	535	471	414
14	4,540	914	13,600	11,800	11,600	13,600	7,910	10,000	1,300	513	432	414
15	3,530	914	12,800	13,600	11,600	13,600	7,750	9,390	1,220	582	414	397
16	2,900	977	11,800	15,400	11,600	13,200	7,280	8,400	1,150	768	414	363
17	2,510	1,300	10,800	17,200	11,600	11,800	6,720	8,070	1,110	855	432	347
18	2,250	2,400	9,600	17,900	11,300	11,000	5,860	7,750	1,080	945	451	347
19	2,060	3,120	8,400	17,900	11,300	10,000	5,220	7,590	1,040	1,010	471	347
20	1,970	3,260	7,430	17,200	11,000	9,390	4,820	7,910	977	945	471	363
21	1,830	3,260	7,130	16,000	11,000	8,770	4,460	8,400	945	914	492	347
22	1,700	3,260	6,850	15,400	10,800	8,400	4,130	9,180	914	884	471	331
23	1,570	3,390	6,720	14,900	10,500	8,070	3,880	9,180	884	884	451	315
24	1,530	3,190	6,590	14,000	10,300	7,910	3,960	8,580	855	826	432	300
25	1,460	2,950	6,720	13,600	10,000	7,910	4,290	7,430	826	768	432	285
26	1,420	2,730	6,850	12,800	10,000	7,750	4,460	6,590	826	713	432	285
27	1,340	2,560	7,430	12,200	10,800	7,430	4,290	5,740	826	686	451	270
28	1,530	2,400	8,230	11,600	12,200	7,280	4,210	5,220	855	659	535	270
29	2,160	2,250	8,970	10,800	------	6,850	4,130	4,290	855	633	659	256
30	2,670	3,000	9,810	10,300	------	6,590	3,960	3,800	826	607	659	243
31	3,860	------	10,300	9,600	------	6,850	------	3,460	------	582	607	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	7,130	432	2,360	145,000
November	3,390	914	2,010	120,000
December	13,600	4,800	9,620	592,000
January	17,900	7,750	11,800	726,000
February	12,200	8,400	10,600	589,000
March	15,400	6,590	11,100	682,000
April	9,600	3,880	6,580	392,000
May	13,200	3,460	8,450	520,000
June	3,190	826	1,440	85,700
July	1,010	513	722	44,400
August	713	414	534	32,800
September	582	243	369	22,000
The year	17,900	243	5,450	3,950,000

ANGELINA RIVER NEAR LUFKIN, TEX.

LOCATION.—Chain gage on highway bridge 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, 1931.

EXTREMES.—Maximum discharge during year, 4,260 second-feet May 9 (gage height, 11.72 feet); minimum, 12 second-feet Sept. 30.

1923–1931: Maximum discharge, about 21,900 second-feet Nov. 19–21, 1925 (gage height, 15.99 feet at gage on railroad bridge 1 mile downstream); minimum, 10 second-feet Oct. 2, 3, 1928 (gage height, 1.72 feet).

REMARKS.—Records fair. No diversions above station.

Daily discharge, in second-feet, for high-water periods in the year ending September 30, 1924

Dec. 21	4,280	Feb. 3	4,280	Mar. 19	5,400
Dec. 22	8,440	Feb. 4	3,930	Mar. 20	6,160
Dec. 23	6,920	Feb. 5	3,620	Mar. 21	6,540
Dec. 24	5,400	Feb. 26	3,620	Mar. 22	6,540
Dec. 25	3,930	Feb. 27	5,780	Mar. 23	5,780
Dec. 28	3,930	Feb. 28	6,160	Mar. 24	5,020
Dec. 29	6,920	Feb. 29	5,400	Mar. 25	4,280
Dec. 30	7,680	Mar. 1	4,650	Mar. 26	3,930
Dec. 31	7,300	Mar. 2	3,930	Mar. 27	3,620
Jan. 1–14	*3,150	Mar. 3	4,280	Apr. 28	7,300
Jan. 17	3,930	Mar. 4	4,650	Apr. 29	3,930
Jan. 18	5,020	Mar. 5	5,400	May 31	6,160
Jan. 19	4,280	Mar. 6	5,020	June 1	8,060
Jan. 20	3,620	Mar. 7	4,650	June 2	8,820
Jan. 23	3,340	Mar. 8	3,930	June 3	9,970
Jan. 24	6,160	Mar. 9	4,650	June 4	13,500
Jan. 25	6,920	Mar. 10	4,650	June 5	13,900
Jan. 26	6,540	Mar. 11	3,930	June 6	12,700
Jan. 27	5,780	Mar. 12	3,620	June 7	10,800
Jan. 28	4,650	Mar. 13	3,620	June 8	9,200
Jan. 29	3,930	Mar. 14	4,650	June 9	8,060
Jan. 30	3,930	Mar. 15	4,650	June 10	6,920
Jan. 31	3,930	Mar. 16	4,650	June 11	5,780
Feb. 1	3,930	Mar. 17	4,280	June 12	4,650
Feb. 2	4,280	Mar. 18	4,650	June 13	3,930

* Estimated.

Monthly discharge, in second-feet, 1923–24

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October 29–31	166	121	144	855
November	817	111	360	21,400
December	8,440	709	3,010	185,000
January			3,770	232,000
February	6,160	1,400	2,990	172,000
March	6,540	3,110	4,520	278,000
April	7,300	817	1,910	114,000
May	6,160	1,100	1,770	109,000
June	13,900	473	4,510	268,000
July	450	53	156	9,590
August	53	42	45.5	2,800
September	94	39	50.5	3,000
The period				1,400,000

NOTE.—Daily and monthly discharges for December, 1923, to June, 1924, supersede those published in Water-Supply Paper 588. Monthly discharges for the remaining months republished to complete the record.

Daily and monthly discharge, in second-feet, of Angelina River near Lufkin, Tex., 1925–26

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	247	850	455	2,890	510	7,480	4,560	560	640	287	48
2	23	234	688	738	3,210	480	6,020	3,930	479	530	265	41
3	40	222	642	1,220	3,210	480	4,780	3,550	395	458	256	38
4	57	266	642	1,300	2,890	480	4,120	3,040	380	365	215	38
5	34	2,240	600	1,300	2,530	510	3,930	2,460	560	350	175	39
6	23	6,170	562	1,150	2,130	720	3,740	2,210	560	380	144	44
7	21	5,500	562	1,090	1,790	1,010	3,930	1,870	458	309	130	43
8	20	5,100	528	1,030	1,410	960	3,930	1,570	458	256	118	41
9	19	3,710	499	970	1,180	912	3,740	1,310	479	247	97	36
10	17	8,700	499	910	1,010	1,340	3,740	1,160	500	365	88	34
11	19	10,300	475	850	864	1,950	3,210	1,230	560	395	80	34
12	20	10,300	475	850	768	2,230	3,040	1,230	560	365	72	30
13	23	17,500	475	910	720	2,330	2,650	1,310	479	350	68	29
14	46	19,100	475	970	684	2,130	2,330	1,310	350	350	64	29
15	184	20,300	499	970	648	1,950	2,040	1,230	276	395	64	27
16	378	20,300	600	1,030	612	1,870	1,790	1,310	239	395	72	27
17	738	19,500	738	1,090	612	1,950	1,550	1,480	215	365	80	30
18	1,290	17,900	738	1,290	576	2,230	1,410	1,670	199	335	76	30
19	1,090	21,900	738	1,480	576	2,530	1,290	1,980	191	309	72	29
20	642	21,900	792		576	2,770	1,180	2,210	247	298	64	27
21	455	17,900	792	1,420	540	3,210	1,180	2,330	247	276	60	27
22	419	19,100	738		540	6,230	6,370	2,330	265	380	56	30
23	419	5,550	738		540	8,290	9,900	2,210	287	730	56	32
24	738	212	738	1,350	540	6,590	7,480	1,870	350	458	56	30
25	688	168	688	1,350	540	5,760	5,760	1,570	365	380	50	30
26	738	145	688	1,480	576	7,000	5,000	1,230	380	500	80	29
27	275	105	642	1,550	540	10,300	5,020	950	560	479	44	25
28	275	93	562	1,710	540	9,900	6,590	780	950	380	41	23
29	212	1,090	528	1,950		8,440	6,020	680	1,160	350	37	23
30	222	970	528	2,230		8,120	5,260	1,230	830	320	43	23
31	261		528	2,650		8,120		730		320	52	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,290	17	303	18,600
November	21,900	93	8,560	509,000
December	850	475	621	38,200
January	2,650	455	1,280	78,700
February	3,210	540	1,190	66,100
March	10,300	480	3,590	221,000
April	9,900	1,180	4,180	249,000
May	4,560	680	1,820	112,000
June	1,160	191	451	26,800
July	730	247	388	23,900
August	287	37	98.8	6,070
September	48	23	32.2	1,920
The year	21,900	17	1,870	1,350,000

NOTE.—Daily discharge for 1925–26 not previously published. Discharge estimated Nov. 1, 2, Jan. 20–23. Monthly discharges for October, November, and January to April supersede those previously published. Monthly discharges for remaining months republished to complete record.

Daily and monthly discharge, in second-feet, of Angelina River near Lufkin, Tex., 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	190	1,520	1,160	1,220	3,000	1,790	2,500	316	61	74	58
2	29	188	1,580	1,220	1,340	3,000	1,860	3,140	301	56	50	46
3	46	188	1,520	1,280	1,860	2,860	1,940	3,290	301	54	44	41
4	50	180	1,340	1,280	1,720	2,730	1,860	3,000	289	50	50	48
5	48	172	1,860	1,460	1,580	2,600	1,790	3,000	289	52	44	54
6	72	164	1,860	1,580	1,400	2,500	1,790	3,290	265	50	40	52
7	212	148	1,940	1,720	1,280	2,500	1,720	3,640	245	46	36	46
8	476	140	2,100	1,860	1,560	2,500	1,720	4,040	225	44	36	40
9	580	125	2,200	1,790	1,940	2,500	1,650	4,260	206	41	56	35
10	580	118	2,300	1,790	2,300	2,500	1,650	4,040	197	40	56	30
11	580	118	2,500	2,200	2,300	2,600	1,460	3,640	188	36	52	29
12	550	118	2,730	2,730	2,200	2,600	1,280	3,140	180	34	46	28
13	580	111	3,140	3,140	2,020	2,500	1,160	2,730	172	32	38	24
14	580	118	3,640	3,460	2,100	2,400	930	2,200	164	34	32	22
15	550	148	3,840	3,640	2,200	2,300	830	1,650	156	36	29	20
16	525	225	3,640	3,640	2,500	2,200	730	1,220	140	38	25	18
17	475	225	3,460	3,840	2,600	2,020	690	830	132	40	49	19
18	427	245	3,000	3,840	2,730	1,860	650	650	132	42	36	29
19	331	265	2,600	3,840	2,860	1,650	580	610	132	46	35	30
20	225	387	2,100	3,840	3,000	1,520	550	650	140	52	93	26
21	164	500	1,720	3,640	3,140	1,460	580	650	132	74	148	22
22	132	580	1,400	3,460	3,460	1,400	730	610	125	90	206	19
23	118	580	1,160	3,290	4,040	1,280	880	580	125	111	225	17
24	111	580	930	3,000	4,040	1,220	930	550	111	148	215	16
25	104	580	880	2,600	4,040	1,160	880	550	97	180	164	15
26	111	610	1,160	2,400	3,640	1,100	880	525	86	206	125	15
27	125	650	1,220	2,100	3,290	1,220	930	500	77	225	86	14
28	156	650	1,160	1,860	3,290	1,520	980	475	71	215	64	14
29	188	690	1,160	1,650	-------	1,580	1,040	427	68	180	61	13
30	206	1,240	1,100	1,520	-------	1,520	1,400	387	64	125	90	12
31	206	-------	1,100	1,400	-------	1,720	-------	349	-------	97	74	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	580	26	276	17,000
November	1,240	111	341	20,300
December	3,840	880	2,000	123,000
January	3,840	1,160	2,460	151,000
February	4,040	1,220	2,490	138,000
March	3,000	1,100	2,050	126,000
April	1,940	550	1,200	71,400
May	4,260	349	1,840	113,000
June	316	64	171	10,200
July	225	32	81.8	5,030
August	225	26	76.8	4,720
September	58	12	28.4	1,690
The year	4,260	12	1,080	781,000

ANGELINA RIVER AT HORGER, TEX.

LOCATION.—Chain gage on Zavalla-Jasper highway bridge a quarter of a mile east of Horger, Jasper County, and 20 miles above mouth.
DRAINAGE AREA.—3,440 square miles.
RECORDS AVAILABLE.—March, 1928, to September, 1931.
EXTREMES.—Maximum discharge during year, 9,690 second-feet Jan. 14 (gage height, 20.2 feet); minimum, 46 second-feet Sept. 30.
1928–1931: Maximum discharge, 33,300 second-feet May 30, 1929 (gage height, 34.50 feet); minimum, 36 second-feet Oct. 18, 19, 1929.
Maximum stage known, about 39.50 feet in August, 1914.
REMARKS.—Records good. No diversions above station. There is a possibility of back water at times from Neches River.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	167	720	5,650	4,070	4,020	7,120	4,760	4,900	835	230	208	187
2	167	546	5,940	3,600	4,070	7,630	4,600	6,710	765	230	230	177
3	167	467	5,650	3,140	4,920	8,230	4,180	6,570	731	208	319	167
4	158	442	5,480	2,880	6,440	8,000	3,920	6,130	663	177	274	158
5	149	417	6,440	2,780	6,570	7,780	3,710	5,820	630	177	252	149
6	266	392	7,630	2,730	6,070	7,330	3,600	5,530	600	167	208	133
7	1,710	392	8,230	2,930	5,300	6,850	3,500	5,880	573	167	149	117
8	3,800	392	8,460	3,240	4,860	7,260	3,340	5,820	546	158	133	102
9	3,810	367	7,560	3,860	5,300	7,050	3,030	5,590	442	158	141	96
10	2,930	367	6,850	4,390	5,300	6,980	3,340	5,030	417	149	133	89
11	2,240	342	6,510	6,760	4,920	6,440	3,920	4,920	493	149	117	89
12	1,690	342	5,770	8,610	4,700	6,000	3,500	4,920	467	149	110	88
13	1,340	342	4,650	9,370	4,650	5,650	3,140	4,810	442	133	249	77
14	1,140	417	4,120	8,680	4,760	5,140	2,830	4,700	417	177	252	77
15	905	697	3,660	8,000	4,980	4,760	2,580	4,600	392	367	208	88
16	870	1,360	3,240	7,050	5,080	4,600	2,340	4,330	367	312	141	83
17	765	2,000	3,030	6,570	5,080	4,700	2,100	3,920	367	274	133	102
18	731	2,100	2,980	6,850	4,980	4,230	1,870	3,660	342	208	96	110
19	663	2,050	2,830	6,980	4,860	3,710	1,640	3,550	319	219	96	77
20	630	2,000	3,190	6,780	4,810	3,660	1,510	3,760	319	274	110	70
21	600	1,560	3,340	6,780	4,650	3,710	1,430	3,550	296	296	83	67
22	573	1,260	3,450	6,190	4,920	3,550	1,910	2,880	285	274	83	65
23	519	1,180	3,500	6,070	6,640	3,860	2,290	2,240	274	252	110	63
24	546	1,020	3,400	5,770	7,410	3,550	2,100	1,870	263	241	133	61
25	467	980	3,760	5,590	7,330	3,290	1,960	1,690	252	230	208	61
26	367	940	5,030	5,480	6,850	2,930	1,870	1,430	263	219	274	59
27	1,680	905	5,940	5,360	6,440	2,630	1,820	1,180	274	208	296	58
28	2,000	905	5,710	5,140	6,640	2,530	1,780	1,100	274	198	274	54
29	1,340	870	5,250	4,700	------	2,340	1,640	940	241	198	241	51
30	870	3,420	4,920	4,280	------	1,960	2,400	905	230	208	230	47
31	663	------	4,700	4,180	------	4,040	------	870	------	219	198	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,810	149	1,090	67,000
November	3,420	342	973	57,900
December	8,460	2,830	5,060	311,000
January	9,370	2,730	5,450	335,000
February	7,410	4,020	5,450	303,000
March	8,230	1,960	5,080	312,000
April	4,760	1,430	2,750	164,000
May	6,710	870	3,860	237,000
June	835	230	426	25,300
July	367	133	215	13,200
August	319	83	184	11,300
September	187	47	93.7	5,590
The year	9,370	47	2,550	1,840,000

TRINITY RIVER BASIN

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, 1931.

EXTREMES.—Maximum discharge during year, 4,730 second-feet Oct. 19, Feb. 27 (gage height, 1.62 feet); no flow at times.

1923–1931: Maximum discharge, 7,600 second-feet Nov. 18, 1923 (gage height, 2.25 feet); no flow at times.

REMARKS.—Records good except those below 100 second-feet, which are fair. Diversions for municipal use only; amount not known.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	0	202	327	25	54	1,190	1,140	122	25	0	185
2	0	190	739	22	78	806	1,360	110	17	0	94
3	0	179	1,110	27	110	712	1,750	102	12	0	46
4	0	144	1,500	54	102	918	1,920	78	9.2	0	20
5	0	110	1,320	27	78	1,460	1,880	94	4.0	0	12
6	0	94	1,480	14	78	1,880	1,490	110	1.6	0	2.4
7	0	78	1,680	20	86	1,750	904	156	0	0	0
8	.8	62	1,920	14	133	1,320	456	202	0	0	0
9	556	54	2,090	14	102	735	364	190	0	0	0
10	1,990	38	2,230	20	94	456	225	202	.8	0	0
11	3,290	38	2,230	54	102	334	214	272	0	0	0
12	3,700	38	1,950	46	144	225	202	225	2.8	0	0
13	3,290	30	1,370	30	272	202	156	179	70	0	0
14	2,010	25	771	25	334	202	144	144	156	0	0
15	1,110	20	381	20	334	190	122	86	256	0	0
16	1,420	17	202	25	318	168	133	70	399	0	0
17	1,850	12	122	46	240	144	133	22	475	0	0
18	2,990	4.0	122	46	179	156	133	22	418	0	0
19	4,560	6.6	94	38	156	133	122	30	204	0	0
20	3,510	4.0	86	38	110	302	156	22	94	0	0
21	1,480	1.6	86	30	86	256	110	38	62	0	0
22	554	.8	78	30	122	179	62	133	30	0	0
23	725	0	62	30	213	179	54	156	22	0	0
24	1,450	.8	54	30	700	168	78	168	12	0	0
25	1,390	0	46	38	1,460	122	86	144	4.0	0	0
26	1,720	0	38	38	2,960	190	78	102	.8	15	0
27	2,190	0	38	38	4,180	318	54	62	0	232	0
28	1,990	0	54	62	2,360	202	54	30	0	475	9
29	1,030	2.5	30	54	------	240	78	30	0	513	0
30	489	89	27	46	------	589	133	62	0	456	0
31	287	------	27	46	------	1,170	------	46	------	341	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,560	0	1,410	86,700
November	202	0	48.0	2,880
December	2,230	27	718	44,100
January	62	14	33.8	2,080
February	4,180	54	542	30,100
March	1,880	122	545	33,500
April	1,920	54	460	27,400
May	272	22	110	6,760
June	475	0	75.8	4,510
July	513	0	65.5	4,030
August	185	0	11.6	713
The year	4,560	0	335	243,000

NOTE.—No flow during September.

WEST FORK OF TRINITY RIVER AT FORT WORTH, TEX.

LOCATION.—Water-stage recorder in old pump house of Fort Worth Power & Light Co.'s plant in Fort Worth, Tarrant County, 150 feet above Paddock Viaduct. Zero of gage is 488.76 feet (revised) above mean sea level.

DRAINAGE AREA.—2,430 square miles.

RECORDS AVAILABLE.—October, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 4,390 second-feet Oct. 20 (gage height, 5.60 feet); no flow at times.

1920–1931: Maximum discharge (determined by slope-area method), 85,000 second-feet Apr. 25, 1922 (gage height, 23.95 feet); no flow at times.

REMARKS.—Records good. Considerable water diverted above station for municipal use. Flow partly regulated by Lake Worth Reservoir.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	249	494	54		1,680	1,470	342	67	2.3	266	3.1
2	0	190	800	49		1,410	1,390	198	64	2.7	124	2.3
3	0	172	1,140	47		985	1,620	164	54	3.4	56	1.6
4	0	128	1,670	42	250	940	1,800	128	39	3.4	35	1.6
5	0	110	2,700	89		1,130	1,920	380	31	3.8	18	.8
6	564	80	1,740	64		1,550	1,680	206	28	2.0	11	1.2
7	1,070	73	1,680	54	168	1,860	1,200	230	24	1.5	5.2	.8
8	172	59	1,800	56	235	1,440	770	304	22	1.6	3.1	.1
9	308	51	1,980	37	309	962	613	326	20	2.0	2.0	.1
10	1,680	42	2,100	35	280	684	469	331	318	1.6	.5	0
11	2,640	37	2,100	59	220	488	342	456	179	1.2	.1	23
12	3,240	31	1,920	80	216	364	299	388	44	1.6	.1	9.8
13	3,310	31	1,450	70	298	294	263	304	138	1.6	0	2.0
14	2,580	29	873	64	475	289	225	244	156	2.0	0	2.0
15	1,280	26	670	51	494	284	202	185	284	2.0	0	.5
16	1,220	83	298	47	508	258	185	172	425	33	0	.5
17	1,450	33	190	86	444	225	185	132	514	17	.9	.5
18	2,520	24	172	106	336	216	181	92	586	11	23	.8
19	4,000	24	156	103	309	202	164	80	421	9.5	4.6	.5
20	3,750	42	124	92	258	508	152	73	181	132	.1	.5
21	1,810	22	121	83	194	572	230	73	99	22	.1	1.6
22	741	15	124	67	241	279	136	185	61	24	0	1.6
23	763	14	121	64	553	230	110	207	42	14	0	.8
24	1,830	15	89	64	808	220	148	216	26	3.4	0	.8
25	1,500	26	76	61	1,460	177	160	202	17	1.6	0	.8
26	1,560	15	89	64	2,340	168	164	164	12	.8	0	1.2
27	2,040	8.1	64		4,000	526	110	114	11	160	0	1.6
28	2,220	5.2	80		2,590	521	99	99	11	510	0	2.0
29	1,330	31	80	110	-------	309	148	80	5.2	627	185	1.6
30	691	386	59		-------	614	299	70	3.1	560	60	.1
31	394	-------	56		-------	2,740	-------	70	-------	463	6.6	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,000	0	1,440	88,500
November	386	5.2	68.4	4,070
December	2,700	56	807	49,600
January	-------	-------	72.2	4,440
February	4,000	-------	653	36,300
March	2,740	168	712	43,800
April	1,920	99	558	33,200
May	456	70	200	12,300
June	586	3.1	129	7,680
July	627	.8	84.6	5,200
August	266	0	25.8	1,590
September	23	0	2.13	127
The year	4,000	0	396	287,000

WEST FORK OF TRINITY RIVER AT GRAND PRAIRIE, TEX.

LOCATION.—Chain gage at highway bridge on Grand Prairie-Sowers-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, 1931.

EXTREMES.—Maximum discharge during year, 5,700 second-feet Dec. 5 (gage height, 22.4 feet); minimum, 8 second-feet Sept. 29, 30.

1925–1931: Maximum discharge, 15,200 second-feet May 14, 1930 (gage height, 25.95 feet); minimum discharge, 3.2 second-feet June 6, 1925.

Maximum stage known, about 29 feet in April, 1922.

REMARKS.—Records good. Numerous small diversions above gage; largest diversion is about 15 second-feet by city of Fort Worth. Flow partly regulated by storage at Lake Worth Reservoir.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	346	480	81	135	2,880	3,330	362	116	25	394	42
2	21	250	530	79	168	3,140	1,660	330	96	23	234	29
3	21	204	844	76	433	1,860	1,600	234	79	21	142	20
4	21	175	1,520	82	422	1,080	1,780	182	71	17	82	17
5	22	154	4,620	83	282	1,130	1,900	269	63	17	58	16
6	438	135	3,160	128	234	1,490	1,960	461	46	15	40	16
7	2,710	116	1,840	88	204	1,840	1,770	378	41	16	30	14
8	1,090	91	1,780	67	219	1,810	990	250	37	17	24	13
9	224	82	1,930	86	338	1,330	680	282	36	22	20	11
10	477	71	2,050	66	314	844	548	282	38	25	16	11
11	1,850	70	2,140	71	250	602	427	314	352	20	13	12
12	2,950	66	2,110	116	234	461	362	394	180	17	10	19
13	3,480	66	1,810	122	250	378	314	378	412	16	10	50
14	3,340	69	1,280	116	401	330	282	282	462	16	10	25
15	2,170	63	740	99	512	314	250	234	204	24	10	16
16	1,180	54	530	95	512	314	234	182	298	26	10	12
17	1,350	108	322	84	512	282	219	148	444	35	12	11
18	1,750	55	204	148	410	250	219	122	548	44	14	12
19	2,800	48	204	161	330	250	204	122	478	31	31	10
20	4,070	83	175	142	282	362	189	128	314	40	61	12
21	3,720	97	154	122	234	740	204	128	161	83	26	12
22	1,670	48	135	106	219	512	219	346	116	58	18	11
23	780	39	154	99	497	298	161	266	84	39	16	10
24	1,110	28	142	99	1,000	250	161	234	72	35	14	10
25	1,900	25	108	99	1,380	219	204	219	55	29	12	10
26	1,490	41	106	86	1,780	282	204	204	42	19	10	11
27	1,720	36	116	93	2,720	634	182	175	38	13	10	11
28	2,080	31	99	109	3,960	906	148	135	32	38	12	10
29	1,900	59	101	189	------	461	148	97	32	424	42	8.0
30	1,010	298	105	175	------	394	282	93	26	530	185	8.0
31	568	------	100	142	------	3,000	------	106	------	478	90	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,070	21	1,550	95,300
November	346	25	100	5,960
December	4,620	99	954	58,700
January	189	66	107	6,580
February	3,960	135	651	36,200
March	3,140	219	924	56,800
April	3,330	148	694	41,300
May	461	93	237	14,600
June	548	26	166	9,880
July	530	13	71.4	4,390
August	394	10	53.4	3,280
September	50	8.0	15.6	928
The year	4,620	8.0	461	334,000

TRINITY RIVER AT DALLAS, TEX.

LOCATION.—Chain gage at Millers Ferry Bridge, 6 miles below Commerce Street Viaduct in Dallas, Dallas County. Zero of gage is 365.06 feet above mean sea level. Prior to July 21, 1930, a chain gage at Commerce Street Viaduct was used, with zero 368.05 feet above mean sea level.

DRAINAGE AREA.—6,040 square miles.

RECORDS AVAILABLE.—October, 1898, to December, 1899; July, 1903, to December, 1906; October, 1920, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,210 second-feet Dec. 6 (gage height, 25.84 feet); minimum, 33 second-feet Aug. 28 (gage height, 2.57 feet).

1898–99, 1903–1906, 1920–1931: Maximum discharge, 75,100 second-feet Apr. 27, 1922 (gage height, 42.35 feet); minimum, 6.8 second-feet Sept. 11, 1924 (gage height, 4.27 feet).

Maximum stage known, 52.6 feet May 26, 1908. Practically no flow at times in 1917 and 1918.

REMARKS.—Records good. Discharge at this station slightly greater than at Commerce Street Viaduct. Only known diversions are for municipal uses. Low-water flow partly regulated by dams upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	733	3,700	900	460	4,780	7,460	779	286	108	602	218
2	61	540	3,200	875	500	5,780	7,210	710	272	102	444	150
3	57	424	2,070		644	8,380	4,920	520	244	92	300	144
4	57	373	2,360		1,000	8,160	4,040	424	218	77	205	114
5	81	358	4,600	875	851	6,700	3,620	480	192	102	150	92
6	571	373	8,900		644	5,270	3,540	1,300	168	108	114	82
7	1,630	358	8,980		560	5,170	3,430	1,000	150	102	102	85
8	4,880	460	7,680	875	733	5,570	2,610	602	150	84	84	85
9	3,540	480	5,220	851	900	5,120	1,800	520	192	85	75	84
10	1,430	602	3,580	688	1,180	4,330	1,540	500	180	86	86	80
11	1,570	460	3,470	500	875	3,890	1,420	460	220	86	79	177
12	2,220	460	3,770	314	756	3,620	1,180	500	460	77	76	151
13	3,090	480	3,700	300	851	2,540	1,120	520	300	77	63	102
14	3,540	480	3,200	328	1,260	1,200	1,300	442	1,490	74	73	156
15	3,320	480	2,250	314	1,770	1,030	1,240	373	1,670	132	66	144
16	1,930	442	1,640	272	1,360	1,150	1,030	328	1,380	180	62	108
17	875	442	1,260	272	1,150	1,060	560	272	1,060	180	74	108
18	1,030	460	1,200	258	1,200	900	442	258	1,030	144	102	75
19	1,200	540	1,240	358	1,000	1,180	406	358	950	144	86	77
20	1,320	540	925	389	851	1,320	389	358	710	114	120	73
21	5,320	644	925	343	779	2,000	424	373	442	114	168	86
22	3,920	581	900	373	803	1,900	442	442	314	218	102	76
23	2,320	500	875	406	1,260	1,380	424	803	244	484	82	80
24	2,540	480	875	373	3,320	1,240	520	581	192	520	84	79
25	3,930	460	851	343	5,070	1,180	373	389	168	328	78	76
26	2,540	328	827	328	5,680	1,180	406	358	132	244	100	75
27	1,730	272	851	314	3,850	1,570	406	328	120	286	120	71
28	1,860	192	803	343	3,970	2,580	343	272	114	300	98	78
29	1,970	337	779	373	-------	2,110	343	218	108	370	309	83
30	1,900	1,120	803	460	-------	1,380	500	272	108	602	644	72
31	1,180	-------	803	500	-------	2,270	-------	258	-------	644	461	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,320	57	1,990	122,000
November	1,120	192	480	28,600
December	8,980	779	2,650	163,000
January	-------	258	517	31,800
February	5,680	460	1,550	86,100
March	8,380	900	3,090	190,000
April	7,460	343	1,780	106,000
May	1,300	218	484	29,800
June	1,670	108	442	26,300
July	644	74	202	12,400
August	644	62	168	10,300
September	218	71	103	6,130
The year	8,980	57	1,120	812,000

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, 1931.

EXTREMES.—Maximum discharge during year, 18,800 second-feet Dec. 13 (gage height, 37.30 feet); minimum, 50 second-feet Sept. 26.

1923–1931: Maximum discharge, 84,400 second-feet May 23, 1930 (gage height, 46.35 feet); minimum, probably less than 28 second-feet in August, 1925.

Maximum stage known, about 53.5 feet June 4, 1908.

REMARKS.—Records fair. No diversions above station except for municipal uses. Flow partly regulated by reservoirs upstream. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	1,860	5,680	1,340	1,140	8,270	11,400	5,580	708	265	359	155
2	80	1,740	8,990	1,260	1,630	7,920	10,800	7,010	730	237	447	432
3	112	1,470	11,000	1,240	3,450	8,270	10,400	7,860	962	211	562	899
4	186	1,260	12,300	1,240	4,520	9,230	10,300	8,620	986	198	730	890
5	237	973	13,400	1,440	5,800	10,200	10,500	8,560	914	186	665	752
6	520	752	13,600	1,440	6,460	11,200	10,800	7,270	752	186	582	465
7	2,580	708	13,800	1,580	4,770	12,100	9,630	6,400	708	175	465	
8	6,340	628	14,800	1,720	4,000	12,600	7,360	7,070	628	165	376	
9	8,560	582	15,800	1,630	4,520	13,400	6,080	7,690	542	165	265	
10	9,680	542	16,900	1,920	5,770	13,600	5,580	6,900	503	155	186	
11	10,100	522	17,700	2,040	7,900	13,600	4,460	6,160	465	146	146	
12	9,820	484	18,400	2,450	8,740	13,000	3,560	4,060	447	280	86	141
13	7,590	465	18,700	2,170	8,860	12,200	2,690	2,290	532	237	80	
14	3,760	503	17,800	2,810	9,160	9,850	2,490	1,500	1,660	420	80	
15	2,380	532	14,800	2,540	8,560	7,700	2,110	1,390	2,450	336	80	
16	2,870	623	10,000	1,800	8,330	5,660	1,890	1,310	2,650	326	75	
17	3,340	686	6,410	1,980	8,740	3,880	1,920	1,360	3,010	359	70	
18	3,540	708	4,600	2,500	7,750	2,600	1,920	1,140	3,540	429	70	
19	3,100	752	3,510	3,840	5,960	2,240	1,800	1,140	3,390	582	66	62
20	1,900	866	2,340	5,240	4,860	2,880	1,600	1,060	3,150	917	66	70
21	1,360	938	2,040	7,130	3,440	3,530	1,580	1,170	2,340	1,610	62	92
22	1,160	1,010	1,800	5,700	3,390	2,570	1,210	2,780	2,080	1,360	66	92
23	1,390	1,160	1,690	3,900	4,440	2,870	1,140	4,460	1,620	1,160	66	86
24	3,750	1,290	1,440	2,140	5,690	3,150	1,180	4,940	1,080	755	66	75
25	5,470	1,290	1,260	1,890	6,520	3,010	1,500	5,370	866	429	66	58
26	5,100	1,180	1,600	1,690	6,350	2,650	1,800	4,380	686	429	75	50
27	4,260	986	1,500	1,390	6,350	2,530	2,080	2,870	602	429	98	58
28	4,000	890	1,440	1,060	6,810	2,930	2,240	1,460	503	447	86	66
29	3,370	1,000	1,420	962	-------	5,750	3,160	1,040	326	522	105	66
30	2,410	2,910	1,390	962	-------	8,790	4,940	914	280	429	128	70
31	2,110	-------	1,390	962	-------	10,400	-------	820	-------	342	137	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	10,100	70	3,590	221,000
November	2,910	465	976	58,100
December	18,700	1,260	8,310	511,000
January	7,130	962	2,260	139,000
February	9,160	1,140	5,850	325,000
March	13,600	2,240	7,370	453,000
April	11,400	1,140	4,600	274,000
May	8,620	820	4,020	247,000
June	3,540	280	1,300	77,400
July	1,610	146	448	27,500
August	730	62	207	12,700
September	899	50	204	12,100
The year	18,700	50	3,260	2,360,000

TRINITY RIVER AT RIVERSIDE, TEX.

LOCATION.—Chain gage on International-Great Northern Railroad bridge at Riverside, Walker County. Zero of gage is 93.7 feet above mean sea level.

DRAINAGE AREA.—15,500 square miles.

RECORDS AVAILABLE.—January, 1903, to December, 1906; October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 33,200 second-feet May 1 (gage height, 29.3 feet); minimum, 70 second-feet Sept. 29, 30.

1903–1906; 1923–1931: Maximum discharge, 76,100 second-feet June 1, 1929 (gage height, 46.10 feet); minimum, 70 second-feet Aug. 20–26, Sept. 8–13, 1925, Sept. 29–30, 1931.

Maximum stage known, 49.7 feet June 11, 1908.

REMARKS.—Records fair. No diversions except for municipal uses. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	3,970	10,400	2,160	1,540	17,400	12,300	28,000	1,420	540	540	210
2	170	3,240	11,200	2,240	4,070	17,800	13,600	13,100	1,180	470	830	275
3	170	2,540	11,300	2,160	15,400	15,400	14,100	11,200	1,080	410	975	325
4	190	1,950	14,900	1,950	18,100	13,500	13,600	11,300	1,080	380	785	275
5	230	2,240	22,700	1,670	13,400	11,700	12,900	10,800	1,020	300	470	250
6	440	1,740	21,400	2,680	9,850	11,100	12,500	10,900	1,130	300	615	380
7	1,430	1,360	22,700	2,760	8,480	14,000	12,200	10,300	1,080	250	880	470
8	3,650	1,020	20,200	2,460	14,900	12,600	12,000	9,250	830	275	1,300	615
9	4,650	925	18,900	2,540	19,300	12,800	11,100	8,760	925	325	829	470
10	5,760	695	15,000	2,240	15,300	13,100	9,450	8,670	1,020	470	540	410
11	8,670	695	15,800	4,990	12,800	13,300	8,760	8,290	875	325	440	350
12	9,650	655	16,000	5,420	10,600	13,500	6,690	8,380	695	275	410	300
13	10,700	540	16,200	4,140	9,550	13,300	6,100	8,380	615	250	300	250
14	10,900	655	15,600	3,560	10,400	13,800	4,990	5,840	575	250	275	210
15	9,650	1,080	17,000	3,080	10,800	13,500	4,060	3,970	540	275	275	170
16	6,780	2,160	17,300	5,290	11,100	12,500	3,480	2,680	1,130	708	210	170
17	3,880	2,610	17,000	7,680	11,300	10,500	3,160	2,020	2,610	1,130	210	150
18	3,240	1,670	15,000	10,000	11,000	7,940	2,840	1,950	3,080	1,160	210	130
19	1,420	1,180	10,700	9,850	9,750	6,180	2,460	1,880	3,320	1,010	190	150
20	975	1,130	7,290	9,650	9,150	7,030	2,610	2,460	3,970	673	210	170
21	1,540	1,540	5,670	8,200	8,860	5,160	2,610	2,680	3,880	975	170	190
22	2,240	1,240	4,740	8,290	6,940	5,080	2,460	2,760	3,640	1,020	150	210
23	1,950	1,480	3,240	8,860	11,700	4,900	2,310	2,680	3,160	1,360	150	190
24	1,670	1,240	2,610	8,290	10,200	4,060	2,020	3,320	3,240	1,600	150	190
25	2,380	1,130	3,000	6,690	10,000	4,140	1,810	4,900	1,810	1,300	150	170
26	3,480	1,180	3,800	4,140	10,300	4,650	1,810	6,100	1,420	875	130	150
27	5,160	1,300	3,480	2,920	10,400	4,480	2,090	6,010	1,180	615	130	100
28	5,840	1,360	3,400	2,090	15,300	3,970	2,310	5,330	975	540	115	85
29	5,670	1,130	2,840	2,020	-------	3,880	4,380	3,970	740	470	130	70
30	5,500	4,500	2,540	1,810	-------	4,420	25,900	2,540	615	470	150	70
31	4,990	-------	2,460	1,810	-------	9,250	-------	1,740	-------	540	190	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	10,900	170	3,970	244,000
November	4,500	540	1,610	95,800
December	22,700	2,460	11,400	701,000
January	10,000	1,670	4,570	281,000
February	19,300	1,540	11,100	616,000
March	17,800	3,880	9,840	605,000
April	25,900	1,810	7,220	430,000
May	28,000	1,740	6,780	417,000
June	3,970	540	1,630	97,000
July	1,600	250	630	38,700
August	1,300	115	391	24,000
September	615	70	238	14,200
The year	28,000	70	4,920	3,560,000

TRINITY RIVER AT ROMAYOR, TEX.

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

DRAINAGE AREA.—17,200 square miles.

RECORDS AVAILABLE.—May, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 25,000 second-feet Dec. 6, Feb. 10 (gage height, −28.40 feet); minimum, 195 second-feet Sept. 30 (gage height, −52.20 feet).

1924–1931: Maximum discharge, 81,100 second-feet May 31, 1929 (gage height, −16.3 feet); minimum, 132 second-feet Aug. 21, 22, 1925 (gage height, −53.46 feet).

REMARKS.—Records fair. Small diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	330	4,980	18,500	3,470	2,300	15,200	12,600	20,100	2,110	1,040	635	270
2	330	4,010	14,200	2,990	2,300	18,100	14,600	21,700	1,760	910	600	270
3	300	3,150	12,800	2,630	5,400	20,300	15,000	19,200	1,450	790	635	315
4	300	2,700	14,200	2,630	15,200	18,600	15,300	15,700	1,320	710	635	330
5	300	2,110	19,200	2,420	18,600	16,400	14,200	13,100	1,270	635	635	330
6	330	1,990	23,800	2,420	17,100	13,500	12,100	11,900	1,220	600	635	330
7	3,990	1,870	24,000	3,230	12,800	11,800	11,900	11,800	1,220	530	710	330
8	5,740	1,760	23,300	3,070	11,300	11,800	12,100	11,400	1,220	495	790	600
9	4,880	1,760	21,400	2,910	18,400	14,000	11,800	10,200	1,220	495	750	670
10	4,780	1,760	19,800	2,700	24,600	13,400	11,700	8,550	1,180	565	830	750
11	5,850	1,760	17,800	4,730	21,600	13,400	11,700	7,460	1,180	600	790	750
12	8,060	1,450	17,000	19,700	17,800	13,500	8,920	6,740	1,090	530	750	600
13	9,800	1,090	16,600	23,800	14,600	13,500	6,980	7,340	910	495	635	892
14	10,700	1,040	16,600	20,600	11,900	13,600	5,960	7,100	830	460	565	530
15	11,300	1,040	16,600	16,700	11,800	15,400	4,980	6,180	830	425	530	530
16	10,700	1,140	16,800	11,700	11,800	13,900	4,280	5,410	790	408	495	390
17	8,300	1,760	17,400	9,050	12,700	13,200	3,560	3,260	798	390	425	360
18	5,410	1,930	17,000	9,050	12,400	11,800	3,310	2,630	1,240	495	390	360
19	3,560	2,050	15,200	13,600	11,400	11,700	3,230	2,170	1,700	662	390	360
20	3,470	2,050	12,400	13,800	11,000	7,460	2,910	2,050	2,300	1,030	390	330
21	3,470	2,050	10,400	11,700	10,900	8,680	2,770	3,010	2,840	1,140	390	330
22	3,650	2,050	6,810	10,000	11,400	7,700	2,630	3,070	2,990	1,140	390	285
23	3,230	1,870	6,070	9,420	12,300	6,290	2,490	2,770	2,990	1,140	390	270
24	2,560	1,700	6,070	9,180	14,700	5,520	2,490	2,700	2,770	1,180	390	270
25	2,050	1,600	7,220	8,680	14,200	4,570	2,490	2,700	2,420	1,180	360	270
26	1,820	1,500	7,220	7,700	12,800	4,280	2,490	3,700	2,050	1,270	360	270
27	2,560	1,500	6,620	5,300	12,800	4,570	2,110	4,570	1,700	1,140	330	285
28	4,280	1,500	5,960	3,470	13,500	4,880	1,990	4,980	1,600	1,000	300	300
29	5,520	1,500	4,670	2,910	-------	4,470	1,990	4,780	1,450	870	300	270
30	5,630	8,500	4,280	2,560	-------	4,670	8,300	4,010	1,220	790	300	195
31	5,300	-------	4,100	2,560	-------	4,880	-------	2,840	-------	670	300	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	11,300	300	4,470	275,000
November	8,500	1,040	2,170	129,000
December	24,000	4,100	13,700	842,000
January	23,800	2,420	7,890	485,000
February	24,600	2,300	13,100	728,000
March	20,300	4,280	11,000	676,000
April	15,300	1,990	7,230	430,000
May	21,700	2,050	7,520	462,000
June	2,990	790	1,590	94,600
July	1,270	390	767	47,200
August	830	300	517	31,800
September	892	195	401	23,900
The year	24,600	195	5,840	4,220,000

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. Zero of gage is 532.8 feet above mean sea level.

DRAINAGE AREA.—522 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,650 second-feet Mar. 31 (gage height, 6.06 feet); no flow at times.

1924–1931: Maximum stage, 19.83 feet Apr. 3, 1928 (discharge not determined); no flow at times.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	7.8	88	14	47	187	471	178	14	0	0.1	0.4
2	0	10	14	16	173	469	300	76	14	0	0	0
3	0	10	6.6	16	385	223	218	60	12	0	0	.9
4	0	4.7	388	16	143	153	161	53	7.8	0	0	.7
5	0	0	1,080	16	100	137	145	290	6.6	0	0	0
6	477	0	267	16	89	117	141	91	7.8	0	0	0
7	963	0	86	19	79	141	137	60	7.8	0	0	0
8	142	0	47	19	129	106	121	63	5.4	0	0	0
9	25	0	33	14	145	96	121	50	5.4	0	0	0
10	10	0	30	14	117	92	117	39	369	0	0	0
11	7.8	0	25	30	92	89	103	41	110	0	0	0
12	.7	0	22	39	82	86	92	41	36	0	0	0
13	.5	.1	19	33	122	79	86	36	40	0	0	0
14	.1	0	22	25	125	79	82	30	16	0	0	0
15	0	0	27	22	106	76	79	30	14	13	0	0
16	0	0	19	19	141	76	72	30	9.0	30	0	0
17	0	0	19	36	125	72	69	27	7.8	7.8	0	0
18	0	0	19	53	100	69	66	25	7.8	3.2	0	0
19	0	0	19	44	86	69	63	27	7.8	24	0	0
20	0	0	19	33	86	212	60	27	5.4	133	0	0
21	0	0	22	27	79	143	53	27	3.2	12	0	0
22	0	0	19	25	168	82	47	44	2.2	28	0	0
23	16	0	19	22	376	72	44	39	2.2	5.4	0	0
24	509	0	27	22	368	60	63	36	2.2	1.0	0	0
25	89	0	27	19	327	53	72	27	3.2	.2	0	0
26	27	0	25	19	145	72	53	19	.7	0	0	0
27	16	0	16	22	117	264	47	12	.5	.2	0	0
28	9.0	0	16	70	121	164	41	10	.7	.1	0	0
29	7.8	0	16	69	------	89	82	10	.2	.1	10	0
30	9.0	304	16	53	------	303	180	12	0	.1	37	0
31	7.8	------	16	44	------	1,580	------	14	------	.1	2.2	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	963	0	74.7	4,590
November	304	0	11.2	666
December	1,080	6.6	79.6	4,890
January	70	14	28.6	1,760
February	385	47	149	8,280
March	1,580	53	178	10,900
April	471	41	113	6,720
May	290	10	49.2	3,030
June	369	0	24.0	1,430
July	133	0	8.33	512
August	37	0	1.59	97.8
September	0.9	0	.07	4.2
The year	1,580	0	59.3	42,900

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, 1931.

EXTREMES.—Maximum discharge during year, 5,700 second-feet Mar. 31 (gage height, 18.38 feet); no flow at times.

1925–1931: Maximum discharge (determined by slope-area method), 35,900 second-feet, of which 2,680 second-feet was flowing through break in levee half a mile above gage, Dec. 17, 1928 (gage height, 21.41 feet); no flow at times.

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

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	817	0	38.0	2,340
November	20	0	.67	40
December	1,740	1.2	78.8	4,850
January	39	1.4	6.68	411
February			96.2	5,340
March			199	12,200
April	575	7.4	39.6	2,360
May	424	3.0	35.5	2,180
June		0	18.7	1,110
July	53	0	3.99	245
August	26	0	1.82	112
September	1.8	0	.17	10
The year		0	43.1	31,200

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, 1931.

EXTREMES.—Maximum discharge during year, 8,100 second-feet Dec. 5 (gage height, 6.46 feet); minimum, 15 second-feet Aug. 27 (gage height, 0.28 foot). 1923–1931: Maximum stage, 12.75 feet Dec. 14, 1923 (discharge not determined); no flow at times.

REMARKS.—Records good. No diversions above station. Garza Dam, 20 miles upstream, regulates flow at low stages and partly regulates flow at high stages.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	157	2,180	640	298	830	3,520	268	129	104	129	104
2	23	153	1,340	678	303	5,760	2,870	182	125	104	82	86
3	23	149	1,120	715	351	5,380	2,480	190	141	104	86	90
4	23	227	1,400	715	418	3,820	1,960	199	133	104	86	79
5	32	227	6,730	715	324	3,680	1,700	1,000	125	104	86	79
6	864	236	5,100	715	303	3,400	1,700	708	125	104	86	72
7	3,820	418	3,980	715	293	3,680	1,080	204	141	104	86	76
8	1,310	418	2,220	715	330	3,400	640	153	182	125	86	76
9	790	418	1,340	715	418	3,130	640	137	118	121	86	76
10	640	418	1,400	239	476	3,130	606	129	125	107	86	76
11	268	418	1,960	149	388	3,130	640	125	137	96	86	82
12	218	418	1,830	149	383	2,350	678	104	110	90	86	90
13	190	418	1,830	157	346	476	950	110	418	90	86	90
14	174	418	950	153	1,120	506	910	100	830	90	86	90
15	141	418	790	145	752	678	708	118	1,080	114	86	90
16	76	418	640	141	506	539	222	107	752	90	86	90
17	65	418	640	145	572	506	170	104	418	86	86	76
18	55	506	640	174	539	830	161	118	227	68	86	72
19	43	476	640	208	476	830	157	145	170	68	141	62
20	32	640	678	174	476	1,400	165	213	137	68	121	62
21	25	506	678	165	447	1,080	174	213	114	68	82	68
22	25	476	678	241	616	910	174	149	104	489	76	65
23	1,260	476	678	254	2,740	870	165	129	100	572	72	68
24	3,450	476	678	236	4,440	870	165	125	100	273	72	68
25	455	246	678	213	4,200	910	190	118	104	213	65	68
26	186	110	640	213	2,220	752	186	110	107	273	17	68
27	100	93	640	213	910	1,080	165	90	104	303	120	68
28	76	110	640	218	870	1,220	129	93	129	199	314	68
29	161	564	640	231	------	790	220	104	114	153	666	68
30	170	4,780	640	330	------	606	388	129	107	145	181	302
31	165	------	640	314	------	3,230	------	121	------	145	82	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,820	23	480	29,500
November	4,780	93	507	30,200
December	6,730	640	1,440	88,500
January	715	141	348	21,400
February	4,440	293	911	50,600
March	5,760	476	1,930	119,000
April	3,520	129	797	47,400
May	1,000	90	187	11,500
June	1,080	100	224	13,300
July	572	68	144	8,850
August	666	17	116	7,130
September	302	62	84.3	5,020
The year	6,730	17	597	432,000

EAST FORK OF TRINITY RIVER NEAR ROCKWALL, TEX.

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

DRAINAGE AREA.—831 square miles.

RECORDS AVAILABLE.—November, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,590 second-feet Mar. 2 (gage height, 14.20 feet); no flow at times.

1923–1931: Maximum discharge, 23,000 second-feet July 14, 1926, May 14, 1929; maximum gage height, 19.4 feet May 14, 1929; no flow at times. Maximum stage known, about 25 feet in spring of 1922.

REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.8	489	27	20	217	701	877	68	0.9	0.4	21
2	0	.6	286	27	29	2,480	730	1,250	81	.7	17	6.3
3	0	.5	97	25	56	3,050	331	488	54	.5	5.5	2.7
4	0	.5	149	25	51	2,270	252	277	37	.3	2.0	.9
5	0	.4	939	25	51	1,150	191	1,030	31	.2	.8	.5
6	0	.3	1,620	24	39	331	156	896	23	5.1	.4	.3
7	0	.3	2,140	23	31	447	150	420	21	6.6	.3	.1
8	31	.3	971	22	72	1,040	144	277	18	1.4	.1	.1
9	54	.2	163	21	301	1,170	144	163	16	.8	0	0
10	18	.2	102	21	608	430	144	144	21	3.4	0	0
11	5.9	.1	86	21	320	252	138	120	20	5.3	0	.1
12	2.5	.1	77	22	144	228	126	108	13	1.9	0	2.2
13	1.4	.1	67	23	120	198	114	97	45	2.1	0	18
14	.9	.1	62	24	170	184	108	91	185	2.1	0	19
15	.7	.1	56	24	322	170	108	86	45	.8	0	5.4
16	.4	.2	51	24	228	170	102	81	22	.5	0	2.1
17	.2	.1	47	23	170	150	97	72	14	.5	0	.8
18	.1	.1	45	22	205	144	102	67	17	.4	0	.3
19	.1	.1	45	24	177	144	132	62	16	.3	0	.2
20	.1	.2	43	24	144	138	97	77	14	.2	6.9	.1
21	0	.1	41	23	132	156	97	86	12	.1	38	0
22	0	.1	37	23	120	228	625	77	9.5	.1	27	0
23	.2	.1	35	21	313	156	1,130	58	6.2	0	8.4	0
24	15	.1	35	19	536	138	1,480	54	4.0	0	3.2	0
25	67	0	33	18	380	126	550	49	4.2	0	.9	0
26	33	.1	33	18	331	120	322	45	3.6	0	.4	0
27	11	.4	31	16	212	181	212	41	3.0	0	.3	0
28	5.4	.9	31	17	177	469	150	37	2.0	18	.1	0
29	3.2	1.4	29	18	-------	584	126	35	1.4	3.6	2.1	0
30	1.4	280	29	18	-------	295	184	35	1.1	1.4	60	0
31	.9	-------	27	20	-------	352	-------	33	-------	.6	78	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	67	0	8.14	501
November	280	0	9.62	572
December	2,140	27	255	15,700
January	27	16	22.0	1,350
February	608	20	195	10,800
March	3,050	120	554	34,100
April	1,480	97	298	17,700
May	1,250	33	233	14,300
June	185	1.1	269	16,000
July	18	0	1.86	114
August	78	0	8.12	499
September	21	0	2.67	159
The year	3,050	0	154	112,000

SAN JACINTO RIVER BASIN

SAN JACINTO RIVER NEAR HUMBLE, TEX.

LOCATION.—Chain gage at bridge crossing on State highway 35 about 900 feet below Houston East & West Texas Railway bridge and 2½ miles north of Humble, Harris County.

DRAINAGE AREA.—1,810 square miles.

RECORDS AVAILABLE.—October, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 9,040 second-feet Dec. 8 (gage height, 10.58 feet); minimum, 14 second-feet Sept. 8–10.

1928–1931: Maximum discharge, about 111,000 second-feet May 31, 1929 (gage height, 32.25 feet); minimum, that of Sept. 8–10, 1931.

A stage of about 35 feet was reached in 1920.

REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	497	2,320	443	443	7,330	1,670	914	127	80	47	30
2	60	480	3,200	350	580	8,720	1,570	1,780	118	77	44	28
3	57	246	6,210	288	920	8,240	1,370	4,500	114	64	41	30
4	52	142	5,560	270	1,170	8,240	1,120	6,880	106	52	38	28
5	50	118	3,830	270	1,570	6,600	805	4,870	102	58	33	28
6	60	91	3,170	230	1,220	4,810	522	2,420	98	52	38	25
7	254	85	5,080	217	1,000	3,180	394	960	106	56	38	25
8	1,080	79	8,560	193	880	2,000	371	371	114	52	33	14
9	1,040	76	6,330	199	805	1,670	308	350	95	50	29	14
10	673	66	3,390	172	2,360	1,570	328	350	79	58	37	14
11	536	58	1,380	683	5,300	1,370	678	270	82	47	36	30
12	618	79	735	1,780	7,030	1,080	640	236	76	50	28	33
13	388	76	640	2,230	4,650	840	443	217	79	44	30	38
14	210	76	522	3,960	2,120	640	308	188	72	50	30	50
15	152	86	418	6,600	1,270	700	288	178	66	71	28	50
16	116	152	418	4,420	1,780	1,620	246	163	69	74	28	47
17	89	132	350	3,300	2,820	2,700	226	154	60	93	32	50
18	85	100	350	3,900	3,540	3,540	214	149	63	133	29	47
19	79	91	371	4,420	3,420	3,420	202	149	57	180	34	44
20	63	97	328	5,200	2,460	2,940	208	178	51	133	72	41
21	57	94	288	4,680	1,370	3,900	190	437	57	98	71	30
22	62	79	223	3,420	920	4,550	180	522	60	84	72	28
23	60	94	211	1,970	2,360	4,160	175	418	66	77	52	28
24	61	85	230	1,170	4,680	2,940	180	394	63	56	50	25
25	56	82	270	840	6,180	2,110	190	328	57	58	41	25
26	54	85	1,180	670	6,320	1,170	185	242	63	62	44	25
27	57	91	1,370	580	5,760	1,170	180	182	86	56	43	21
28	89	79	1,080	551	5,760	1,170	190	170	116	52	48	18
29	102	100	1,080	522	------	805	185	149	104	47	43	21
30	105	912	805	495	------	770	196	140	96	52	37	21
31	133	------	640	468	------	1,220	------	135	------	44	38	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,080	50	212	13,000
November	912	58	151	8,980
December	8,560	211	1,950	120,000
January	6,600	172	1,760	108,000
February	7,030	443	2,810	156,000
March	8,720	640	3,070	189,000
April	1,670	175	459	27,300
May	6,880	135	916	56,300
June	127	51	83.4	4,960
July	180	44	69.7	4,290
August	72	28	40.8	2,510
September	50	14	30.3	1,800
The year	8,720	14	956	692,000

BRAZOS RIVER BASIN

DOUBLE MOUNTAIN FORK OF BRAZOS RIVER NEAR ASPERMONT, TEX.

LOCATION.—Chain gage on Aspermont-Hamlin highway bridge in southeast corner of sec. 134, 11 miles south of Aspermont, Stonewall County.

DRAINAGE AREA.—7,980 square miles, a large part of which is probably noncontributing.

RECORDS AVAILABLE.—December, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,820 second-feet Dec. 5 (gage height, 6.80 feet); no flow at times.

1924–1931: Maximum discharge (determined by slope area method), about 45,800 second-feet Oct. 15, 1926 (gage height, 18.14 feet); no flow at times.

REMARKS.—Records poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1	8.2	27	53	11	16	34	0.4	16	27	220	5.2
2	1.3	24	25	9.0	136	31	.3	10	21	129	4.3
3	80	20	14	9.0	58	14	.3	9.0	14	68	.3
4	447	17	494	5.0	7.0	21	.3	12	11	23	0
5	193	14	3,440	19	5.4	5.8	.3	53	7.4	3.0	0
6	142	12	941	.4	9.4	5.0	.3	40	4.2	.8	0
7	108	10	281	.4	9.4	3.4	.3	21	1.8	.2	0
8	37	9.4	132	7.8	125	2.8	.3	13	.4	0	0
9	9.0	8.6	123	3.8	20	1.6	.3	13	0	411	0
10	5.0	7.8	97	34	19	1.2	.2	13	0	247	0
11	3.0	7.4	70	23	17	34	.2	7.8	0	190	0
12	1,290	8.2	24	14	16	3.0	.2	4.2	12	108	0
13	1,100	7.0	19	11	19	8.6	.1	2.2	9.0	34	0
14	79	6.2	26	12	28	2.6	.1	.7	2.6	17	0
15	665	5.4	24	7.4	4.6	1.8	.1	.2	1.0	10	0
16	220	5.0	22	4.2	3.4	1.2	61	0	323	7.0	0
17	83	3.8	21	1.0	.9	2.6	53	0	235	2.6	0
18	36	4.2	14	1.0	.5	2.2	1.6	0	132	.9	0
19	17	5.4	11	2.2	.5	2.2	3.4	0	62	.1	0
20	11	4.2	9.4	1.0	2.4	1.0	26	0	26	73	0
21	2.8	2.4	7.4	2.2	8.0	.5	27	0	10	31	0
22	.2	1.4	5.0	1.8	18	1.8	28	0	7.0	5.4	0
23	175	1.2	9.8	2.2	40	1.0	33	0	4.2	28	0
24	268	.9	27	1.0	198	.2	31	0	2.8	37	0
25	324	.9	56	1.4	72	.7	28	0	1.6	12	0
26	175	.8	58	2.2	31	.1	26	1,240	.4	5.0	0
27	105	.5	48	13	19	.6	25	373	0	1.2	0
28	68	.5	34	8.6	14	.8	6.2	16	0	.3	0
29	38	281	27	2.6	-------	.6	9.0	148	0	0	0
30	34	195	25	4.6	-------	.6	21	55	230	0	0
31	29	-------	25	11	-------	.7	-------	37	-------	0	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,290	0.2	186	11,400
November	281	.5	23.0	1,370
December	3,440	5.0	199	12,200
January	34	.4	7.32	450
February	198	.5	32.1	1,780
March	34	.1	6.02	370
April	61	.1	12.8	762
May	1,240	0	67.2	4,130
June	323	0	38.2	2,270
July	411	0	53.7	3,300
September	5.2	0	.33	20
The year	3,440	0	52.6	38,100

NOTE.—No flow during August.

BRAZOS RIVER AT SEYMOUR, TEX.

LOCATION.—Chain gage on highway bridge three-quarters of a mile above Wichita Valley Railway bridge and 1 mile southwest of courthouse in Seymour, Baylor County.

DRAINAGE AREA.—14,500 square miles, a large part of which is probably noncontributing.

RECORDS AVAILABLE.—November, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, about 18,500 second-feet Oct. 13 (gage height, 6.70 feet); no flow at times.

1923–1931: Maximum discharge (determined by slope-area method), 79,600 second-feet June 14, 1930 (gage height, 13.0 feet); no flow at times each year.

Maximum stage known, about 20.0 feet in 1916.

REMARKS.—Records good except those above 4,000 second-feet, which are poor. Discharge interpolated Mar. 20. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	0	211	277	87	82	183	29	155	130	0	30
2	0	147	354	78	84	226	20	92	92	0	20
3	0	101	236	71	82	264	15	68	53	0	14
4	1,470	69	552	60	228	202	14	51	31	0	6.2
5	9,300	89	10,800	69	275	159	8.8	40	19		2.9
6	5,100	80	6,600	73	127	106	5.8	39	12	0	2.2
7	3,380	66	2,240	61	99	82	1.7	22	4.6		0
8	1,050	57	1,120	58	195	75	1.9	4.6	1.8		0
9	640	51	732	56	670	58	5.4	14	.8	32	0
10	396	46	570	71	324	51	2.9	48	1.6	44	0
11	226	49	466	89	253	46	4.6	21	.5	9.7	0
12	5,960	33	282	87	211	45	5.0	16	3.7	309	0
13	14,300	42	236	92	206	39	5.0	2.7	168	220	0
14	5,100	33	226	112	174	38	3.4	7.0	144	151	0
15	2,810	44	166	101	144	32	1.6	2.1	32	118	0
16	2,810	36	151	104	140	33	7.0	2.7	11	101	0
17	1,120	29	136	87	112	30	109	2.3	6.6	46	0
18	1,210	17	174	71	115	24	28	1.7	2.7	29	0
19	720	25	106	68	118	23	42	2.3	.8	16	0
20	670	29	73	64	80	20	388	1.6	148	132	0
21	379	26	75	49	66	16	502	2.1	112	606	0
22	253	26	94	51	87	14	422	2.1	78	1,250	0
23	754	23	84	50	89	14	270	.6	36	694	0
24	2,660	16	77	29	118	14	202	0	21	324	0
25	2,960	10	112	32	202	5.4	151	44	8.8	192	0
26	1,660	11	94	46	197	15	104	22	6.6	73	0
27	952	14	124	56	159	4.2	80	124	1.0	50	0
28	680	16	109	57	124	49	53	511	1.6	159	0
29	550	28	136	68	-------	16	68	296	1.3	144	0
30	388	51	104	77	-------	10	513	289	1.3	89	0
31	331	-------	121	82	-------	36	-------	202	-------	51	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	14,300	0	2,190	135,000
November	211	10	49.2	2,930
December	10,800	73	859	52,800
January	112	29	69.5	4,270
February	670	66	170	9,440
March	264	4.2	62.2	3,820
April	513	1.6	102	6,070
May	511	0	67.3	4,140
June	168	.5	37.7	2,240
July	1,250	0	156	9,590
August	30	0	2.43	149
The year	14,300	0	318	230,000

NOTE.—No flow during September.

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, a large part of which is probably noncontributing.

RECORDS AVAILABLE.—January, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 31,400 second-feet Oct. 13 (gage height, 13.90 feet); no flow Sept. 6–11, 18–30.

1924–1931: Maximum discharge, 95,600 second-feet June 16, 1930 (gage height, 28.43 feet); no flow at times.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	1,000	536	200	262	815	1,000	308	111	24	142	0.6
2	49	815	1,000	195	527	1,150	654	284	88	20	114	.1
3	44	638	1,150	195	595	1,150	536	251	90	18	98	.1
4	70	544	1,150	187	1,390	1,050	409	568	183	16	106	.1
5	1,040	478	4,370	179	1,200	908	314	518	152	15	106	.1
6	16,800	395	13,500	167	770	725	256	347	135	13	85	0
7	21,800	314	12,200	159	586	586	213	246	114	12	70	0
8	13,600	251	7,450	155	612	510	195	183	88	11	56	0
9	6,750	204	5,530	152	939	438	195	148	72	9.8	47	0
10	4,540	187	3,930	148	2,090	388	226	132	85	8.7	37	0
11	3,340	187	1,870	145	1,980	340	273	119	647	7.5	27	0
12	2,560	179	1,550	155	2,300	302	222	111	1,750	6.0	22	2.8
13	13,300	179	1,350	148	2,090	273	152	100	1,760	3.9	19	3.4
14	18,700	171	1,000	145	1,350	251	117	85	1,350	1.9	17	1.9
15	20,800	163	815	142	955	240	98	70	815	1.5	17	1.2
16	19,900	148	725	155	725	231	95	56	381	2.4	16	.8
17	6,820	135	620	175	620	191	85	45	226	7.0	13	.3
18	5,270	129	518	171	552	167	80	42	159	5.0	11	0
19	5,270	122	454	163	470	148	75	58	122	487	9.8	0
20	3,160	117	395	179	409	135	70	82	95	1,910	8.7	0
21	2,200	111	340	179	367	129	63	70	75	1,190	7.5	0
22	1,760	106	328	171	2,820	119	54	72	117	2,470	7.5	0
23	9,540	100	302	171	2,160	108	49	1,290	117	1,600	6.5	0
24	14,600	95	284	163	815	103	56	1,320	88	1,000	5.5	0
25	13,100	90	251	163	815	98	75	1,250	68	955	4.4	0
26	8,240	85	240	142	955	191	108	815	56	1,000	3.4	0
27	5,010	80	231	142	860	256	191	536	45	815	2.4	0
28	3,340	70	222	171	725	246	246	340	37	486	1.9	0
29	2,320	1,390	213	251	-------	278	226	240	32	340	1.5	0
30	1,650	988	208	262	-------	685	262	183	28	240	1.0	0
31	1,200	-------	204	231	-------	1,760	-------	138	-------	187	.6	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	21,800	44	7,320	450,000
November	1,390	70	316	18,800
December	13,500	204	2,030	125,000
January	262	142	173	10,600
February	2,820	262	1,070	59,400
March	1,760	98	451	27,700
April	1,000	49	220	13,100
May	1,320	42	323	19,900
June	1,760	28	303	18,000
July	2,470	1.5	415	25,500
August	142	.6	34.3	2,110
September	3.4	0	.38	23
The year	21,800	0	1,060	770,000

BRAZOS RIVER NEAR GLEN ROSE, TEX.

LOCATION.—Water-stage recorder a quarter of a mile above Glen Rose-Cleburne highway bridge and 4 miles northeast of Glen Rose, Somervell County. Prior to May 7, 1931, staff gage maintained 300 feet downstream.

DRAINAGE AREA.—24,800 square miles, a large part of which is probably non-contributing.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 31,700 second-feet Oct. 7 (gage height, 12.18 feet); no flow Sept. 13–30.

1923–1931: Maximum discharge, 68,300 second-feet June 17, 1930 (gage height, 19.60 feet); no flow Sept. 7-9, 1924; Sept. 13–30, 1931.

REMARKS.—Records for period Oct. 1 to May 6, fair; May 7 to Sept. 30, good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	242	1,960	235	304	579	1,500	1,060	222	478	104	372	26
2	190	1,500	398	297	568	1,430	1,000	276	364	93	282	21
3	145	1,360	756	283	1,240	1,500	940	924	290	76	208	18
4	93	1,060	3,980	283	1,360	1,960	928	1,120	244	72	172	11
5	139	848	11,100	269	1,500	1,430	894	4,810	190	60	141	8.0
6	4,160	802	11,700	262	1,620	1,360	802	2,300	168	51	118	6.4
7	26,300	688	16,100	255	1,560	1,360	655	1,110	145	72	100	4.9
8	17,500	655	18,100	242	1,560	1,300	516	743	141	54	126	3.6
9	10,200	600	17,100	210	1,500	744	437	543	186	51	115	2.8
10	6,230	558	13,900	203	1,500	568	398	424	1,710	38	96	2.0
11	4,540	476	6,230	242	1,500	537	350	347	10,100	34	79	1.4
12	3,250	437	3,850	248	1,560	548	334	282	3,290	36	69	.4
13	2,400	398	2,240	222	1,620	526	276	238	1,530	57	57	0
14	18,700	382	1,960	210	3,250	506	262	208	3,520	90	48	0
15	22,300	366	1,430	184	5,630	506	235	190	2,930	97	40	0
16	18,100	350	1,240	184	3,640	516	229	176	2,010	82	36	0
17	12,200	334	1,180	197	2,880	506	216	168	1,420	38	32	0
18	6,230	304	1,060	203	1,690	495	197	150	930	26	28	0
19	5,330	276	1,000	216	940	476	190	190	611	40	34	0
20	4,790	276	917	203	894	390	173	158	433	57	21	0
21	4,070	262	790	190	848	374	162	154	314	40	20	0
22	2,880	248	622	203	825	358	150	190	250	20	18	0
23	2,550	248	568	216	3,160	342	128	818	214	480	15	0
24	15,400	242	537	203	3,250	326	162	2,130	220	772	12	0
25	13,600	235	516	216	2,550	311	162	954	282	1,860	10	0
26	12,300	222	495	216	1,960	311	139	1,420	214	1,440	8.5	0
27	7,430	222	476	255	1,560	311	150	1,230	181	886	7.0	0
28	6,530	210	398	297	1,560	358	184	1,410	158	699	6.1	0
29	5,050	197	366	466	-------	476	184	954	137	820	72	0
30	4,300	184	350	485	-------	611	184	732	118	765	208	0
31	3,060	-------	334	526	-------	860	-------	677	-------	534	72	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	26,300	93	7,750	477,000
November	1,960	184	530	31,500
December	18,100	235	3,870	238,000
January	526	184	258	15,900
February	5,630	568	1,870	104,000
March	1,960	311	735	45,200
April	1,060	128	390	23,200
May	4,810	150	814	50,100
June	10,100	118	1,090	64,900
July	1,860	20	308	18,900
August	372	6.1	84.6	5,200
September	26	0	3.52	209
The year	26,300	0	1,480	1,070,000

BRAZOS RIVER AT WACO, TEX.

LOCATION.—Water-stage recorder at Texas Electric Co.'s bridge in Waco, McLennan County. Zero of gage is 356.99 feet above mean sea level.

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

RECORDS AVAILABLE.—September, 1898, to December, 1911; October, 1914, to September, 1931.

EXTREMES.—Maximum discharge during year, about 93,500 second-feet Oct. 7 (gage height, 31.4 feet); minimum, 14 second-feet Sept. 29–30.

1898–1931: Maximum stage, 39.7 feet Dec. 3, 1913 (discharge not determined); no flow Aug. 20, 21, 1918, and probably for several days in August, 1923.

REMARKS.—Records fair. Numerous small diversions above station do not appreciably affect flow except during low stages.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	370	3,080	2,330	a 750	2,500	3,780	5,100	1,110	1,090	a 268	884	233
2	312	2,640	2,910	a 655	7,800	4,920	3,560	3,790	884	221	709	530
3	290	2,200	3,050	a 641	5,510	4,660	4,920	950	703	190	578	919
4	331		11,700	979	3,450	2,530	3,540	1,410	568	168	463	1,070
5	954		21,300	1,590	3,540	2,620	2,640	2,940	472	141	376	590
6	36,200		11,400	634	4,720	4,120	3,980	7,090	840	149	a 306	184
7	41,800		8,480	590	3,320	4,060	1,720	3,880	360	134	a 265	168
8	31,200		11,900	608	6,810	2,310	1,610	2,280	323	136	218	134
9	18,000	b 1,280	9,420	718	5,720	2,140	2,350	2,110	316	187	184	99
10	11,100		6,200	1,620	3,760	a 1,770	1,200		320	131	160	69
11	7,600		6,040	662	2,670	a 1,820	1,060		2,600	134	149	56
12	6,200		4,600	912	3,630	2,300	2,070		7,120	124	146	49
13	5,200		3,540	1,000	4,960	2,830	950		3,640	124	136	40
14	9,880	a 1,070	3,780	1,930	5,920	1,770	1,680		3,230	113	127	33
15	15,000	1,210	3,080	1,050	5,570	1,720	1,340	b 810	1,870	386	115	29
16	20,200	b 861	3,160	2,020	6,800	1,620	743		3,420	337	113	28
17	18,600	a 512	a 2,200	7,490	5,240	1,570	1,500		3,820	538	99	25
18	12,700	609	a 2,420	6,100	4,180	1,470	664		3,020	387	91	24
19	6,200	927	a 3,220	3,460	3,190	1,610	632			684	91	22
20	4,920	452	a 2,090	2,540	2,140	2,950	1,250	1,380		384	139	22
21	4,760	429	a 1,570	2,100	3,260	1,950	1,290	1,030		659	93	21
22	3,780	402	a 1,570	2,470	3,460	2,120	562	2,420		367	62	19
23	4,180	375	a 1,420	1,540	6,040	1,060	646	5,390	b 690	195	61	19
24	5,300	396	a 1,800	2,700	7,400	1,900	1,290	2,230		173	56	19
25	14,300	345	a 2,290	2,140	5,400	1,020	531	1,240		139	49	18
26	11,400	326	a 1,320	1,800	4,450	1,820	648	1,820		392	45	17
27	8,920	308	a 928	2,030	2,860	3,460	1,210	1,770		1,400	42	16
28	5,450	495	a 1,800	2,860	3,780	4,510	463	1,360	400	1,400	42	16
29	5,080	2,300	a 864	2,240	-------	1,500	2,040	1,860	384	1,870	44	14
30	4,320	3,670	a 1,410	1,870	-------	2,040	2,090	1,960	a 306	1,520	41	14
31	3,780	-------	a 2,410	1,950	-------	6,230	-------	1,400	-------	1,670	392	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	41,800	290	10,300	633,000
November	3,670	308	1,180	70,200
December	21,300	864	4,520	278,000
January	7,490	590	1,920	118,000
February	7,800	2,140	4,570	254,000
March	6,230	1,020	2,590	159,000
April	5,100	463	1,780	106,000
May	7,090	----------	1,860	114,000
June	7,120	----------	1,400	83,300
July	1,870	113	475	29,200
August	884	41	202	12,400
September	1,070	14	150	8,930
The year	41,800	14	2,580	1,870,000

a Partly estimated. b Estimated.

BRAZOS RIVER NEAR BRYAN, TEX.

LOCATION.—Chain gage at Pitts Bridge on State highway between Bryan and Caldwell, 9 miles southwest of Bryan, Brazos County. Zero of gage is 192.2 feet above mean sea level.

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

RECORDS AVAILABLE.—September, 1925, to September, 1931.

EXTREMES.—Maximum stage and discharge not determined during year; minimum discharge, 145 second-feet Sept. 30.

1925–1931: Maximum stage, 47.1 feet May 20, 1930 (discharge not determined); minimum discharge, 100 second-feet Apr. 27, 28, 1930.

Maximum stage known, about 55.00 feet, present datum, in December, 1913.

REMARKS.—Monthly records poor. Daily discharge not sufficiently accurate for publication. Numerous small diversions above gage do not appreciably affect flow except during low stages.

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October		352	* 14,400	885,000
November	10,700	852	* 2,470	147,000
December	48,600	2,220	10,400	640,000
January	31,100	1,730	5,570	342,000
February	23,400	4,780	11,400	633,000
March	13,500	4,510	6,940	427,000
April	13,800	2,330	5,350	318,000
May	13,100		* 4,390	270,000
June			* 3,560	212,000
July	4,000	530	1,310	80,600
August	1,540	295	* 614	37,800
September	1,330	145	* 420	25,000
The year		145	5,550	* 4,020,000

* Partly estimated.

BRAZOS RIVER AT ROSENBERG, TEX.

LOCATION.—Chain gage on Rosenberg-Richmond highway bridge at Rosenberg, Fort Bend County. Zero of gage is 44.9 feet above mean sea level.

DRAINAGE AREA.—44,000 square miles.

RECORDS AVAILABLE.—October, 1922, to September, 1931 (discontinued).

EXTREMES.—Maximum discharge during year, 52,100 second-feet Oct. 10 (gage height, 27.6 feet); minimum not determined.

1922–1931: Maximum discharge, 123,000 second-feet June 6, 1929 (gage height, 46.2 feet); minimum, 250 second-feet Sept. 2, 1929 (gage height, 0.2 foot).

Maximum stage known, 55.5 feet Dec. 9, 1913.

REMARKS.—Records fair. Discharge interpolated Aug. 12, 13; estimated June 16–26, Aug. 2–10, Sept. 1–7, 23–30. Brazos River Irrigation Co. installed a pumping plant during current year 8 miles upstream; maximum pumping capacity, 670 second-feet; total annual diversion allowed, 100,000 acre-feet. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,460	8,680	18,600	4,300	8,380	33,000	8,100	8,760	6,110	1,970	965	
2	1,340	7,140	16,700	4,300	8,100	33,000	11,200	21,600	5,420	1,970		
3	1,520	6,870	15,800	4,080	9,610	32,100	14,800	19,000	4,640	1,840		
4	1,520	6,600	15,200	3,750	15,000	26,200	12,800	16,700	3,960	1,710		640
5	1,520	5,640	20,900	3,750	14,400	22,600	11,900	12,200	3,640	1,580		
6	1,840	5,080	28,100	3,450	12,600	20,400	10,300	10,000	3,280	1,460	1,350	
7	2,410	4,520	39,300	2,900	9,860	17,600	9,110	9,110	2,680	1,230		
8	12,800	4,300	43,200	2,900	9,860	14,600	7,410	7,540	2,680	1,120		670
9	40,000	3,750	37,000	3,120	10,300	12,600	7,140	6,870	2,400	1,060		918
10	50,500	3,280	33,800	6,220	10,700	11,000	6,870	6,600	2,180	1,060		1,120
11	47,800	2,970	28,400	9,260	11,400	10,300	6,600	6,480	1,910	1,060	965	1,460
12	37,500	2,900	22,300	11,000	11,900	9,560	6,480	6,230	1,770	1,060	891	1,340
13	25,200	2,760	18,500	12,400	13,100	8,680	6,230	5,870	1,770	1,020	818	1,120
14	19,900	2,760	15,000	12,900	11,400	7,820	6,110	5,640	1,710	965	745	965
15	14,200	2,760	13,100	12,900	10,500	8,610	5,640	5,080	1,580	965	745	965
16	11,900	2,680	12,600	13,100	10,500	12,600	5,310	4,520		965	745	827
17	16,000	2,610	11,500	13,300	21,000	11,000	5,200	3,850		1,170	745	786
18	20,400	2,540	9,710	24,400	19,900	10,300	4,750	3,640		1,170	745	786
19	22,800	2,540	8,100	30,000	15,000	11,900	4,520	3,450		1,230	745	786
20	22,300	2,540	7,280	31,900	13,100	12,900	4,300	3,280		1,290	745	745
21	15,000	2,470	6,740	30,200	12,400	15,400	4,190	3,120	4,880	2,220	707	670
22	10,300	2,400	6,350	23,500	12,000	13,900	3,960	2,970		3,060	707	670
23	8,820	2,250	5,870	18,500	14,000	12,900	3,750	3,050		3,750	827	
24	7,410	2,250	4,970	13,900	14,200	12,400	3,540	3,120		2,830	965	
25	7,000	2,250	4,970	11,000	15,600	11,400	3,360	2,970		2,400	871	
26	7,000	1,970	4,970	9,110	23,800	10,200	3,360	3,450		1,970	786	550
27	7,000	1,970	4,860	9,110	26,000	9,110	3,360	4,750	3,200	1,710	745	
28	7,140	1,840	4,750	9,110	31,300	8,380	3,360	4,750	2,830	1,520	827	
29	16,000	1,640	4,750	8,960	-------	5,990	3,450	4,860	2,470	1,290	965	
30	14,200	4,800	4,750	8,820	-------	5,640	3,450	4,970	2,110	1,120	786	
31	9,710	-------	4,300	8,680	-------	5,420	-------	5,530	-------	965	786	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	50,500	1,340	14,900	916,000
November	8,680	1,640	3,560	212,000
December	43,200	4,300	15,200	935,000
January	31,900	2,900	11,600	713,000
February	31,300	8,100	14,100	783,000
March	33,000	5,420	14,100	867,000
April	14,800	3,360	6,350	378,000
May	21,600	2,970	6,770	416,000
June	----------	1,580	3,670	218,000
July	3,750	965	1,570	96,500
August	----------	707	967	59,500
September	1,460	----------	757	45,000
The year	50,500	----------	7,800	5,640,000

BRAZOS RIVER AT RICHMOND, TEX.

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

DRAINAGE AREA.—44,000 square miles.

RECORDS AVAILABLE.—June to September, 1931. January, 1903, to June, 1906, at railroad bridge 1,500 feet upstream; gage read 1 foot lower than present gage.

EXTREMES.—Maximum discharge during period, 7,090 second-feet June 23 (gage height, 7.82 feet); minimum, 363 second-feet Sept. 28 (gage height, 1.10 feet).

1903–1906, 1931: Maximum discharge, 66,600 second-feet Mar. 7, 1903 (gage height, 33.4 feet, old datum); minimum, that of Sept. 28, 1931.

Flood of June 6, 1929, reached a stage of 40.6 feet, present gage datum (discharge, 120,000 second-feet). Maximum stage known, 45.4 feet, present datum, in December, 1913 (discharge not determined).

REMARKS.—Records good except those estimated, July 1–17, 31, Aug. 1, 2, 12–22, which are poor. Considerable water diverted above station for irrigation and municipal use.

Daily and monthly discharge, in second-feet, 1931

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	------		854	595	11	1,700		968	1,170	21	4,640	2,350	545	660
2	------		908	580	12	1,740			1,230	22	6,270	3,320	570	635
3	------		1,260	550	13	1,580	1,160		1,110	23	7,090	3,440	708	585
4	------		1,360	540	14	1,430			968	24	6,110	2,990	805	570
5	------		1,360	515	15	1,580		603	830	25	4,640	2,330	780	550
6	------	1,160	1,320	480	16	4,790	885		805	26	3,440	1,910	730	535
7	2,880		1,230	466	17	4,920	995		780	27	3,100	1,620	780	505
8	2,430		1,200	532	18	4,220	1,080	555	705	28	2,780	1,500	730	375
9	2,230		1,200	755	19	3,690	1,320	545	730	29	2,430	1,290	830	427
10	1,960		1,170	968	20	3,100	1,400	535	705	30	2,180	1,050	755	427
										31	------		854	650

Month	Maximum	Minimum	Mean	Run-off in acre-feet
June 7–30	7,090	1,430	3,370	161,000
July	3,440	------	1,480	91,000
August	1,360	------	839	51,600
September	1,230	375	676	40,200
The period	------	------	------	344,000

NOTE.—Following diversions were made about 5 miles upstream, by Richmond Irrigation Co.: June, 1,730 acre-feet; July, 10,400 acre-feet; August, 8,770 acre-feet; September, 4,840 acre-feet. Diversion record furnished by Richmond Irrigation Co.

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, 1931.
EXTREMES.—Maximum discharge during year, 6,220 second-feet Dec. 6 (gage height, 12.42 feet); no flow Aug. 1–31, Sept. 1, 15–30.
1924–1931: Maximum discharge, 11,500 second-feet May 20, 1928 (gage height, 18.0 feet); no flow at times.
REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1	60	23	199	15	12	20	11	52	4.2	1.5	0
2	34	19	212	13	12	14	10	19	4.5	1.5	.1
3	10	16	255	13	122	12	10	11	5.1	.9	4.1
4	68	14	1,040	13	167	11	9.5	9.5	5.1	.9	4.7
5	73	12	4,780	13	32	14	9.0	9.0	5.1	.5	1.3
6	1,560	11	4,530	13	25	14	9.0	8.5	5.1	.4	.4
7	2,040	10	792	13	22	11	9.0	7.5	2.7	.3	.2
8	813	10	364	13	1,630	11	8.0	6.0	2.3	.3	.2
9	76	10	240	13	1,580	10	8.0	6.0	1.7	1.4	.1
10	35	10	226	13	204	9.0	8.0	6.0	99	33	.1
11	22	11	199	13	117	9.0	8.0	5.7	26	191	.1
12	264	14	56	14	82	9.0	8.0	5.4	7.0	17	.1
13	1,800	14	47	18	60	9.0	8.0	4.8	4.8	6.5	.1
14	1,440	12	37	14	42	9.0	8.0	4.8	552	6.5	.1
15	1,520	12	31	13	35	15	8.0	4.5	80	4.2	0
16	674	11	26	12	35	11	8.0	4.2	32	4.5	0
17	316	10	26	12	38	11	9.0	4.2	410	6.0	0
18	68	11	26	13	26	11	8.0	4.2	38	3.6	0
19	34	9.0	27	12	18	10	8.0	34	30	7.0	0
20	35	9.0	23	12	18	11	8.0	13	30	9.0	0
21	23	9.5	22	12	18	13	60	4.8	4.2	5.7	0
22	21	8.5	22	12	424	11	52	3.9	3.9	4.5	0
23	775	8.5	26	12	150	11	19	3.9	3.0	2.7	0
24	1,680	8.5	26	12	[illegible]	[illegible]	12	3.3	2.3	1.6	0
25	826	8.0	[illegible]	12	44	10	10	3.3	1.7	1.7	0
26	127	9.0	23	13	32	11	9.5	3.3	1.4	2.0	0
27	70	9.5	21	18	30	25	9.0	3.0	1.2	1.4	0
28	56	9.5	19	26	28	32	9.0	2.6	1.2	.5	0
29	143	22	18	15	------	20	20	3.9	1.2	.3	0
30	116	422	16	14	------	12	50	3.9	1.0	.1	0
31	38	------	14	14	------	11	------	3.9	------	.1	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,040	10	478	29,400
November	422	8.0	25.4	1,510
December	4,780	14	431	26,500
January	26	12	13.7	842
February	1,630	12	181	10,100
March	32	9.0	12.8	787
April	60	8.0	14.1	839
May	52	2.6	8.36	514
June	552	1.0	45.5	2,710
July	191	.1	10.2	627
September	4.7	0	.39	23
The year	4,780	0	102	73,900

NOTE.—No flow during August.

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, 1931.

EXTREMES.—Maximum discharge during year occurred about Dec. 7 (stage and discharge not determined); no flow at times.

1924–1931: Maximum gage height, 33.90 feet June 15, 1930 (discharge not determined); no flow at times.

REMARKS.—Records good except those estimated, Dec. 6–10, which are poor. Small diversions above station for municipal use. Probably slight regulatory effect at low stages by power plant at Stamford.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	889	186	67	17	16	44	12	14	9.7	0.2	0
2	248	84	424	15	20	31	12	7.9	7.9	0	0
3	115	48	388	17	45	27	17	199	5.6	0	0
4	127	48	503	17	78	25	16	66	4.9	0	0
5	940	35	371	17	66	25	15	32	2.1	0	0
6	1,340	27		16	229	23	14	21	.9	0	0
7	2,630	23		16	82	20	14	13	.6	0	0
8	2,420	20	2,500	15	469	22	15	7.9	.6	0	0
9	1,340	17		17	2,330	20	16	8.4	1.0	0	0
10	285	16		18	2,250	20	13	9.7	224	0	0
11	28	15	251	16	477	17	14	7.9	35	214	0
12	327	15	144	15	224	16	15	5.6	29	128	0
13	1,760	13	103	15	173	14	13	3.0	10	83	0
14	3,010	13	90	18	155	14	11	2.6	4.9	56	0
15	2,310	14	73	18	94	13	9.7	2.6	287	30	0
16	1,780	13	61	16	76	13	6.6	1.7	421	864	0
17	982	14	43	16	62	15	6.0	.9	83	230	0
18	279	14	37	15	53	14	6.3	.9	70	88	0
19	873	13	37	15	51	15	6.3	.8	53	36	0
20	94	15	35	15	33	13	7.4	.9	47	23	0
21	70	13	31	16	29	13	6.6	.9	46	19	2.4
22	873	12	31	16	54	15	6.6	471	42	244	1.4
23	2,930	9.7	35	17	144	14	7.9	510	19	313	1.1
24	1,910	9.7	33	16	324	13	7.0	218	13	72	.5
25	2,710	12	32	17	164	13	4.2	94	7.4	23	.2
26	1,340	13	26	17	76	12	22	43	4.9	14	0
27	410	13	26	19	64	12	26	26	3.8	6.6	0
28	177	13	24	24	51	11	17	21	2.1	3.3	0
29	113	13	24	19	------	11	15	16	1.2	1.0	0
30	78	15	26	18	------	11	36	14	.8	.6	0
31	105	------	26	18	------	11	------	13	------	.4	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,010	28	1,050	64,600
November	186	9.7	25.5	1,520
December	------	24	498	30,600
January	24	15	16.8	1,030
February	2,330	16	282	15,700
March	44	11	17.3	1,060
April	36	4.2	12.9	768
May	510	.8	59.1	3,630
June	421	.6	47.9	2,850
July	864	0	79.0	4,860
August	2.4	0	.18	11
The year	------	0	175	127,000

NOTE.—No flow during September.

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, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 20,500 second-feet Oct. 15 (gage height, 29.73 feet); no flow July 4–12, Aug. 3 to Sept. 30.

1928–1931: Maximum discharge, 21,500 second-feet July 27, 1928 (gage height, 29.6 feet); maximum gage height, 29.73 feet Oct. 15, 1930; no flow at times.

Maximum stage known, about 38 feet in 1900.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	458	73	226	26	e 36	e176	106	233	19	0.6	0.7
2	552	e 82	324	26	1,720	243	49	91	12	.6	e.4
3	172	91	341	26	720	106	31	e 58	8.3	.1	0
4	895	64	3,160	e 24	181	73	21	24	9.4	0	0
5	e 3,540	49	7,710	21	136	58	21	115	8.3	0	0
6	6,260	41	2,690	19	132	46	21	58	7.2	0	0
7	4,330	36	4,260	19	168	36	16	41	e 5.8	0	0
8	2,630	31	5,200	19	e 212	e 32	16	29	4.3	0	0
9	2,170	e 28	1,050	19	1,340	29	16	21	4.3	0	0
10	586	26	503	24	2,660	26	10	e 16	1,950	0	0
11	168	26	341	e 22	1,890	24	7.2	10	614	0	0
12	e 1,620	31	284	21	476	19	e 7.2	8.3	820	0	0
13	8,820	31	160	21	298	19	7.2	7.2	148	98	0
14	17,800	31	e 126	21	230	33	7.2	6.1	e 84	98	0
15	15,000	26	91	21	e 177	31	7.2	5.0	21	58	0
16	2,580	e 24	70	19	124	26	6.1	4.3	230	547	0
17	1,550	21	58	21	110	21	6.1	e 3.6	256	181	0
18	620	14	52	e 20	98	17	6.1	2.8	110	214	0
19	e 370	24	43	19	80	21	e 7.2	547	64	e 545	0
20	121	26	41	19	64	26	8.3	2,060	49	2,180	0
21	70	21	e 38	14	49	24	5.0	203	e 39	484	0
22	55	21	36	12	e 61	e 17	3.5	2,100	29	166	0
23	5,980	e 20	33	10	424	10	2.8	980	26	375	0
24	8,940	19	31	14	345	8.3	2.8	e 586	31	224	0
25	2,300	14	31	e 16	308	8.3	4.3	221	21	70	0
26	e 1,580	9.4	31	17	216	17	e 5.2	113	12	e 38	0
27	850	8.3	26	52	144	52	6.1	67	8.3	19	0
28	261	8.3	e 26	303	110	31	8.3	43	e 5.9	8.3	0
29	172	479	26	128	------	21	41	31	3.5	2.8	0
30	124	e588	31	73	------	142	988	24	1.0	2.8	0
31	87	------	26	41	------	270	------	e 22	------	1.2	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	17,800	55	2,920	180,000
November	588	8.3	65.4	3,890
December	7,710	26	873	53,700
January	303	10	35.7	2,200
February	2,660	36	447	24,800
March	270	8.3	53.6	3,300
April	988	2.8	48.1	2,860
May	2,100	2.8	249	15,300
June	1,950	1	153	9,100
July	2,180	0	171	10,500
August	0.7	0	.04	2.5
The year	17,800	0	423	306,000

e Estimated or interpolated.

NOTE.—No flow during September.

NORTH BOSQUE RIVER NEAR CLIFTON, TEX.

LOCATION.—Staff gage a quarter of a mile above Gulf, Colorado & Santa Fe Railway bridge and 1⅞ miles northwest of Clifton, Bosque County.

DRAINAGE AREA.—974 square miles.

RECORDS AVAILABLE.—November, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, about 25,400 second-feet Oct. 6 (gage height, 16.30 feet); minimum, 2.7 second-feet Sept. 29, 30 (gage height, 0.47 foot).

1924–1931: Maximum discharge, about 26,500 second-feet Sept. 8, 1929 (gage height, 16.8 feet); no flow at times.

REMARKS.—Records fair. Railway company pumps about 100,000 gallons a day above control dam, a third of a mile below gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.3	31	137	78	905	1,040	497	361	63	16	7.9	31
2	5.3	28	69	72	1,490	1,050	331	200	58	16	5.8	525
3	4.4	25	60	72	790	553	257	129	52	16	5.8	2,060
4	4.0	25	2,600	100	544	434	210	104	46	16	5.8	129
5	125	24	1,990	143	461	393	185	414	42	16	5.8	42
6	13,000	22	472	90	393	353	185	475	38	16	5.8	30
7	2,960	22	269	87	377	345	180	175	36	44	5.8	25
8	320	22	215	72	790	317	165	108	32	25	5.8	19
9	157	22	180	66	790	289	165	90	31	16	5.8	12
10	72	20	165	66	425	263	157	78	38	19	5.8	7.9
11	50	22	153	162	369	263	149	72	401	25	4.4	6.9
12	37	20	141	133	345	239	141	63	711	24	4.4	5.8
13	420	24	125	149	544	227	133	60	312	19	4.4	5.8
14	258	28	118	111	479	215	137	56	108	30	4.1	4.4
15	72	28	108	97	461	260	133	56	60	62	3.7	4.4
16	52	25	94	100	860	448	125	52	50	455	4.1	4.4
17	34	20	97	2,410	515	257	118	50	141	119	3.7	4.1
18	26	16	90	945	393	215	111	48	90	816	4.1	4.1
19	22	16	87	506	345	195	111	204	52	141	4.4	3.7
20	50	14	84	385	324	691	104	472	42	54	4.4	3.4
21	100	13	118	345	317	407	111	137	34	69	4.4	3.4
22	66	13	145	303	1,110	227	104	4,500	31	38	4.1	3.4
23	82	13	141	269	1,060	190	100	849	28	25	4.1	3.4
24	1,040	13	125	251	572	175	118	180	25	22	3.7	3.0
25	206	13	111	239	425	161	118	114	25	19	3.7	3.0
26	97	13	104	215	377	165	118	87	24	16	3.7	3.0
27	66	12	90	263	361	331	97	69	22	13	3.4	2.9
28	52	12	90	790	443	303	87	58	19	10	3.4	2.8
29	44	178	84	506	------	215	176	56	19	10	1,010	2.8
30	44	331	78	369	------	248	251	100	18	9.0	334	2.7
31	37	------	78	324	------	810	------	81	------	7.9	70	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	13,000	4.0	629	38,700
November	331	12	35.5	2,110
December	2,600	60	272	16,700
January	2,410	66	313	19,200
February	1,490	317	581	32,300
March	1,050	161	364	22,400
April	497	87	162	9,640
May	4,500	48	306	18,800
June	711	18	88.3	5,250
July	816	7.9	70.4	4,330
August	1,010	3.4	49.9	3,070
September	2,060	2.7	98.6	5,870
The year	13,000	2.7	246	178,000

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, 1931 (discontinued).
EXTREMES.—Maximum discharge during year, 5,680 second-feet May 22 (gage height, 20.00 feet); no flow at times in August and September.
1925–1931: Maximum discharge, that of May 22, 1931; no flow at times. Maximum stage known, 29.8 feet in May, 1908.
REMARKS.—Records good, October to June; poor, July to September. Discharge estimated July 1–31, Sept. 6, 7. No large diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Aug.	Sept.
1	105	121	16	23	203	241	126	56	73	0	10
2	30	64	359	23	420	374	106	96	64	0	7.8
3	11	50	221	22	280	306	155	196	54	1.5	3.6
4	47	37	111	20	363	215	106	96	46	1.3	1.7
5	306	31	250	20	612	167	73	68	39	1.0	0
6	2,700	22	612	24	480	143	64	82	36	1.0	1.5
7	3,620	19	795	20	280	126	61	132	31	.9	1.5
8	1,660	16	795	18	320	106	57	91	26	.8	3.5
9	2,130	14	468	16	306	96	55	51	20	.9	3.5
10	1,590	12	228	16	203	96	49	36	27	.8	.4
11	464	11	149	23	228	86	47	26	392	.5	.2
12	203	12	111	31	191	82	46	22	1,900	.4	0
13	576	12	82	30	179	82	44	18	1,350	.3	0
14	540	12	62	28	167	78	42	16	1,220	.2	0
15	795	10	51	24	143	82	39	14	1,000	.2	0
16	714	8.0	43	28	228	138	38	12	615	.1	0
17	849	7.5	36	449	167	106	36	10	295	0	0
18	705	8.0	33	267	143	86	34	9.8	498	0	0
19	230	6.6	28	203	126	78	32	98	199	0	0
20	143	6.6	27	167	138	191	32	1,130	82	0	0
21	111	6.3	25	138	121	179	29	744	73	0	0
22	82	5.7	28	121	143	293	29	3,330	56	0	0
23	73	5.4	31	101	743	215	29	2,600	51	0	0
24	170	4.8	31	91	447	132	32	1,620	39	0	0
25	516	5.1	29	82	540	96	29	2,390	32	0	0
26	741	4.6	34	78	396	82	28	849	27	0	0
27	1,220	5.4	32	82	241	73	28	267	23	0	0
28	876	6.8	27	167	215	78	27	179	20	0	0
29	279	10	26	149	------	68	32	143	16	0	0
30	167	36	25	138	------	68	48	106	14	3.3	0
31	111	------	26	179	------	106	------	86	------	38	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,620	11	702	43,200
November	121	4.6	19.0	1,130
December	795	16	155	9,530
January	449	16	89.6	5,510
February	743	121	287	15,900
March	374	68	138	8,480
April	155	27	51.8	3,080
May	3,330	9.8	470	28,900
June	1,900	14	277	16,500
July	------	------	[a] 50	3,070
August	38	0	1.65	101
September	10	0	1.12	67
The year	3,620	0	187	135,000

[a] Estimated.

LEON RIVER NEAR BELTON, TEX.

LOCATION.—Water-stage recorder a quarter of a mile above Temple-Belton highway bridge and 2 miles east of Belton, Bell County. Prior to May 21, 1931, staff gage at same location.

DRAINAGE AREA.—3,550 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum stage during year, 15.35 feet Oct. 6 (discharge not determined); minimum discharge, 4.3 second-feet Sept. 30 (gage height, 2.34 feet).

1923–1931: Maximum stage, that of Oct. 6, 1930; no flow at times.

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

REMARKS.—Records fair. Discharge interpolated July 3–7. Several small pumping plants divert water above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	438	521	240	805	1,790	1,030	1,320	447	124	50	702
2	16	267	512	234	940	1,430	895	657	367	110	47	243
3	298	207	375	227	1,120	1,270	805	554	313	105	44	88
4	305	189	367	220	1,380	1,120	717	479	282	100	41	105
5	172	166	3,740	213	1,270	1,120	648	422	254	95	38	238
6	10,900	138	3,800	213	940	1,030	605	614	227	90	35	305
7	15,200	124	3,920	213	985	940	588	546	200	85	32	115
8	7,920	105	1,120	254	2,100	805	563	471	177	80	26	64
9	4,130	105	1,170	240	2,150	760	521	398	160	76	24	47
10	3,320	105	1,220	213	1,380	717	496	390	595	80	22	35
11	3,160	105	1,270	227	1,080	657	471	422	305	80	65	32
12	2,300	105	985	254	985	614	438	351	220	76	80	26
13	2,040	105	674	282	2,000	588	438	297	189	68	38	22
14	940	189	554	297	1,910	571	422	282	242	236	47	22
15	895	183	512	297	1,910	580	406	240	1,390	658	35	18
16	1,030	143	447	290	2,300	940	406	227	1,550	711	26	18
17	805	134	390	2,940	2,170	850	390	213	4,730	1,170	24	14
18	895	115	359	3,120	1,550	674	375	189	2,310	1,330	22	14
19	895	105	343	2,860	1,320	674	359	189	1,350	438	20	12
20	940	96	328	2,040	1,080	1,590	359	194	1,080	305	265	11
21	850	96	313	1,320	985	805	343	189	940	247	240	11
22	455	96	414	1,120	985	674	328	408	546	166	68	10
23	313	88	438	985	1,670	631	313	1,270	367	124	47	8.0
24	313	88	455	895	1,670	597	343	1,970	275	101	56	6.0
25	305	80	406	805	1,670	571	359	2,720	220	96	29	6.0
26	220	80	351	760	1,490	674	328	3,320	189	92	22	5.4
27	189	80	320	717	1,270	940	313	3,480	172	84	20	5.2
28	297	80	297	717	1,670	985	297	2,860	154	72	16	4.9
29	850	237	282	940	-------	760	635	1,560	166	68	16	4.6
30	1,120	746	267	985	-------	665	1,320	717	154	64	203	4.3
31	940	-------	254	940	-------	1,170	-------	529	-------	56	88	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	15,200	16	2,000	123,000
November	746	80	160	9,520
December	3,920	254	852	52,400
January	3,120	213	808	49,700
February	2,300	805	1,460	81,100
March	1,790	571	877	53,900
April	1,320	297	517	30,800
May	3,480	189	886	54,500
June	4,730	154	652	38,800
July	1,330	56	232	14,300
August	265	16	57.6	3,540
September	702	4.3	73.2	4,360
The year	15,200	4.3	712	516,000

LITTLE RIVER AT CAMERON, TEX.

LOCATION.—Chain gage on highway bridge three-quarters of a 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, 1931.

EXTREMES.—Maximum discharge during year, 20,800 second-feet Oct. 9 (gage height, 34.00 feet); minimum, 51 second-feet Sept. 30.

1916–1931: Maximum discharge (determined by slope-area method), 647,000 second-feet Sept. 10, 1921 (gage height, about 53.8 feet); minimum, 2.6 second-feet Sept. 3, 5, 7, 1918.

REMARKS.—Records excellent except those estimated or revised, which are fair. Numerous small diversions for irrigation and municipal uses affect flow only during extremely low stages. Slight regulation by pumping above station.

Revised daily discharge, in second-feet, of Little River at Cameron, Tex., for high-water periods, 1918–1922

1918		1920		1922	
Apr. 16	13,200	Jan. 26	11,900	Apr. 5	88,000
Apr. 17	15,900	May 16	11,700	Apr. 6	39,200
Apr. 18	11,500	May 17	19,700	Apr. 7	17,200
Dec. 25	13,200	May 18	15,100	Apr. 8	14,200
Dec. 26	15,200	Aug. 9	15,900	Apr. 27	22,200
		Aug. 10	13,700	Apr. 28	56,000
1919				Apr. 29	22,700
Jan. 23	13,900	1921		Apr. 30	15,900
Jan. 24	14,200	Sept. 10	229,000	May 1	29,900
June 28	14,900	Sept. 11		May 2	76,000
June 29	15,200	Sept. 12	54,000	May 3	42,000
Oct. 12	13,100	Sept. 13	23,400	May 4	54,000
Oct. 13	23,100	Sept. 14		May 5	52,000
Oct. 14	17,200	Sept. 15		May 6	23,200
Nov. 13	13,700	Sept. 16		May 7	15,500
Nov. 14	12,700	Sept. 17	4,260	May 8	13,400
		Sept. 18		May 16	15,200
1920		Sept. 19		May 17	15,700
Jan. 13	14,700	Sept. 20		May 18	15,300
Jan. 14	16,500			May 19	14,900
Jan. 15	13,900	1922		May 20	12,900
Jan. 23	11,000	Mar. 30	17,600		
Jan. 24	22,300	Mar. 31	14,200		
Jan. 25	23,600	Apr. 4	49,300		

NOTE.—The above figures include flow of overflow channel and supersede those previously published in Water-Supply Papers 478, 508, 528, and 548.

Daily discharge, in second-feet, of Little River at Cameron, Tex., 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	1,390	1,850	758	e2,480	e4,770	4,420	6,920	1,110	452	214	118
2	103	e 982	1,480	726	2,530	5,150	3,290	8,510	854	422		225
3	103	694	1,010	726	2,780	5,100	2,780	e4,520	758	392		569
4	103	602	2,230	e 758	2,780	4,070	2,400	2,020	694	362		348
5	e 110	542	6,680	790	2,650	3,430	2,150	1,600	602	e 342		236
6	2,290	482	8,510	790	2,820	3,210	1,940	1,390	572	321	e 170	e 374
7	8,680	452	e8,300	758	2,440	3,030	1,810	1,310	e 542	321		512
8	13,000	422	6,880	758	e2,270	e2,780	1,770	1,310	512	308		422
9	16,600	e 407	4,780	758	4,940	2,530	1,690	1,270	482	283		259
10	16,600	392	2,360	694	4,300	2,360	1,600	e1,140	452	296	135	204
11	11,100	392	2,020	e 918	3,560	2,270	1,560	1,010	583	283	133	163
12	e7,080	392	2,060	1,270	2,650	2,190	e1,480	1,010	1,770	e 290	127	144
13	4,490	392	1,940	1,050	2,320	2,110	1,390	982	e1,090	296	124	e 144
14	3,830	392	e1,600	886	2,360	2,020	1,350	918	e 694	283	163	144
15	3,030	407	1,270	822	3,480	2,020	1,310	854	632	321	163	124
16	1,690	e 504	1,110	790	4,630	2,780	1,270	822	913	512	e 149	109
17	1,600	602	1,010	3,720	5,620	3,690	1,220	e 774	1,600	1,610	135	100
18	1,430	512	950	e9,030	5,620	3,160	1,190	726	2,750	e2,440	135	94
19	e1,310	452	918	11,500	4,490	2,530	e1,150	726	5,290	e2,440	124	94
20	1,270	422	886	8,280	3,510	4,650	1,110	886	5,800	e1,620	119	e 87
21	1,270	392	e 886	5,520	3,030	7,340	1,080	918	e2,840	822	116	80
22	1,350	362	886	3,970	e2,990	5,020	1,050	822	1,600	632	116	80
23	1,080	e 348	918	3,120	5,400	3,070	1,050	726	1,080	542	e 186	75
24	854	334	1,050	2,690	8,720	2,400	1,050	1,010	822	422	296	72
25	758	321	e1,020	e2,480	9,040	2,190	1,050	1,770	662	377	214	63
26	e 742	321	982	2,270	5,840	2,020	e1,030	2,480	572	e 330	183	62
27	726	321	950	2,150	4,250	2,150	1,010	3,030	542	283	163	e 61
28	632	321	e 886	2,110	4,580	2,440	950	3,470	e 512	271	144	60
29	602	482	822	2,190	-------	e2,610	1,010	3,430	482	259	133	54
30	854	1,270	790	2,270	-------	2,820	3,090	e2,800	452	236	e 116	52
31	1,190	-------	758	2,440	-------	4,170	-------	e1,790	-------	214	100	-------

e Estimated or interpolated.

Monthly discharge, in second-feet, of Little River at Cameron, Tex., 1917–1922, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1917–18				
October	30	13	19.7	1,210
November	736	13	58.4	3,480
December	34	26	30.6	1,880
January	54	30	38.1	2,340
February	612	32	83.7	4,650
March	112	26	37.2	2,290
April	15,900	27	2,750	164,000
May	2,320	58	472	29,000
June	2,790	69	807	48,000
July	180	12	41.5	2,550
August	13	5.8	8.32	512
September	534	4.2	86.3	5,140
The year	15,900	4.2	366	265,000
1918–19				
October	3,720	24	751	46,200
November	10,300	167	2,990	178,000
December	15,200	226	3,020	186,000
January	14,200	534	3,570	220,000
February	7,980	1,560	3,410	189,000
March	9,240	891	2,300	141,000
April	5,110	721	2,080	124,000
May	7,820	1,560	4,180	257,000
June	15,200	909	5,320	317,000
July	11,100	1,460	4,020	247,000
August	5,440	643	1,660	102,000
September	12,200	444	2,270	135,000
The year	15,200	24	2,960	2,140,000

Monthly discharge, in second-feet, of Little River at Cameron, Tex., 1917–1922, 1930–31—Continued

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1919–20				
October	23,100	1,080	7,060	434,000
November	13,700	2,880	5,650	336,000
December	6,800	2,260	3,800	234,000
January	23,600	2,060	8,130	500,000
February	4,790	2,400	3,550	204,000
March	2,880	1,520	1,990	122,000
April	2,140	965	1,260	75,000
May	19,700	821	3,710	228,000
June	4,560	927	2,010	120,000
July	3,380	472	1,120	68,900
August	15,900	565	3,170	195,000
September	10,000	753	2,820	168,000
The year	23,600	472	3,700	2,680,000
1920–21				
October	4,680	472	979	60,200
November	9,960	565	1,710	102,000
December	2,660	1,020	1,370	84,200
January	2,200	855	1,130	69,500
February	1,410	787	964	53,500
March	4,350	923	1,420	87,300
April	9,240	889	3,090	184,000
May	11,600	503	1,720	106,000
June	10,400	472	2,450	146,000
July	11,600	270	1,300	79,900
August	270	120	174	10,700
September		112	19,200	1,140,000
The year		112	2,940	2,120,000
1921–22				
October	1,680		587	36,100
November			340	20,200
December	923	242	379	23,300
January	1,600	204	328	20,200
February	3,460	209	537	29,800
March	17,600	187	1,750	108,000
April	88,000	1,640	13,900	827,000
May	76,000	3,150	16,300	1,000,000
June	5,210	753	2,120	126,000
July	787	216	507	31,200
August	216	131	173	10,600
September	236	122	160	9,520
The year	88,000	122	3,100	2,240,000
1930–31				
October	16,600	103	3,370	207,000
November	1,390	321	510	30,300
December	8,510	758	2,190	135,000
January	11,500	694	2,480	152,000
February	9,040	2,270	4,000	222,000
March	7,340	2,020	3,230	199,000
April	4,420	950	1,640	97,600
May	8,510	726	1,970	121,000
June	5,800	452	1,240	73,800
July	2,440	214	580	35,700
August	296	100	156	9,590
September	569	52	171	10,200
The year	16,600	52	1,790	1,290,000

NOTE.—Monthly discharge for April, December, 1918; January, June, October, November, 1919; January, May, August, 1920; March, April, May, 1922, supersedes the figures published in Water-Supply Papers 478, 508, and 548. Discharge for September, 1921, not previously published. Monthly discharge for the remaining months republished in order to complete the record.

LAMPASAS RIVER AT YOUNGSPORT, TEX.

LOCATION.—Water-stage recorder half a mile northeast of Youngsport, Bell County. Prior to Mar. 14, 1931, staff gage with same datum at same location.

DRAINAGE AREA.—1,240 square miles.

RECORDS AVAILABLE.—February, 1924, to September, 1931.

EXTREMES.—Maximum stage during year, 20.3 feet Oct. 6 (discharge not determined); minimum discharge, 4.6 second-feet Oct. 3, 4 (gage height, 2.72 feet).

1924–1931: Maximum stage, 23.70 feet Oct. 2, 1927 (discharge not determined); no flow July 17 to Aug. 18, 1925.

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

REMARKS.—Records good. Small amount of water diverted above station for municipal uses.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	45	160	93	420	1,240	748	620	82	68	25	38
2	5.7	40	103	90	532	926	660	398	79	57	25	25
3	4.6	40	79	90	500	788	620	324	70	52	24	882
4	5.2	40	1,190	93	460	748	580	317	68	45	24	514
5	24	38	2,800	112	405	708	564	317	62	38	21	103
6	-------	36	628	103	375	668	564	302	57	35	21	55
7	-------	36	368	93	368	636	564	281	55	50	22	35
8	282	36	244	84	782	588	572	250	55	36	21	30
9	122	36	194	79	708	556	580	250	50	84	21	27
10	106	33	174	79	452	532	580	232	1,160	57	19	22
11	96	36	160	87	390	524	580	232	357	60	19	25
12	544	48	151	100	368	500	564	232	130	43	24	22
13	469	45	143	96	1,430	484	548	220	395	39	33	19
14	204	76	130	90	988	452	540	199	146	168	33	17
15	116	90	116	90	867	774	540	184	84	608	27	14
16	84	79	106	96	1,640	1,070	532	174	65	704	24	13
17	70	60	100	1,940	985	724	500	160	2,140	274	24	14
18	60	43	96	1,490	788	604	484	147	2,490	384	22	13
19	57	40	93	780	724	635	468	232	398	116	21	12
20	79	40	93	676	668	2,180	452	151	189	125	150	10
21	79	40	96	612	644	844	607	119	122	73	100	9.0
22	62	38	199	548	873	644	500	106	96	57	50	8.4
23	73	36	189	500	1,160	596	398	103	82	45	30	9.0
24	93	36	147	460	985	564	390	93	73	38	30	8.4
25	79	36	130	436	796	540	382	87	65	36	25	8.4
26	68	36	116	405	716	548	360	84	57	33	21	9.0
27	62	36	109	436	732	1,130	338	79	52	33	19	9.0
28	57	36	100	468	917	870	302	73	57	30	18	9.0
29	55	115	93	572	-------	676	1,130	73	60	28	18	8.4
30	50	262	93	508	-------	718	1,790	76	55	27	18	8.4
31	48	-------	93	452	-------	960	-------	82	-------	27	76	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	----------	4.6	----------	----------
November	262	33	53.6	3,190
December	2,800	79	274	16,800
January	1,940	79	379	23,300
February	1,640	368	738	41,000
March	2,180	452	756	46,500
April	1,790	302	581	34,600
May	620	73	200	12,300
June	2,490	50	295	17,600
July	704	27	112	6,890
August	150	18	32.4	1,990
September	882	8.4	65.9	3,920

NOTE.—Discharge Oct. 6 and 7, not determined because stage was above limit for which rating curve is developed.

SAN GABRIEL RIVER AT CIRCLEVILLE, TEX.

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

DRAINAGE AREA.—602 square miles.

RECORDS AVAILABLE.—February, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, about 13,500 second-feet Oct. 6 (gage height, 24.75 feet); minimum, 6.0 second-feet Sept. 27 (gage height, 1.82 feet).

1924–1931: Maximum discharge, about 53,400 second-feet May 29, 1929 (gage height, 34.20 feet); no flow Sept. 5, 6, 8, 11, 1924.

Maximum stage known, about 40.6 feet in September, 1921.

REMARKS.—Records fair. Discharge interpolated June 14. Several small diversions for municipal use above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	52	134	85	308	693	328	401	88	28	19	11
2	9.5	50	75	88	436	551	308	248	78	28	17	11
3	9.5	42	69	86	348	482	268	182	75	30	14	11
4	24	50	148	97	308	436	268	156	69	23	15	11
5	281	48	248	92	308	436	238	164	64	23	15	10
6	5,690	46	190	89	288	392	228	156	62	30	15	9.0
7	1,530	44	112	86	268	392	228	148	60	22	15	10
8	228	46	105	79	487	392	228	148	56	23	14	10
9	126	46	105	77	405	348	228	140	54	22	14	10
10	105	48	105	88	288	348	218	133	69	23	14	9.5
11	85	50	105	140	288	348	199	133	64	23	14	11
12	259	56	98	140	288	348	190	126	60	23	12	13
13	801	56	98	119	268	308	190	126	52	20	12	18
14	242	445	93	98	370	328	190	119	48	20	12	17
15	90	291	93	95	308	370	182	112	44	176	12	16
16	83	85	88	367	524	482	173	95	42	107	12	11
17	66	66	83	4,640	543	392	173	105	66	120	12	10
18	64	58	88	1,160	392	348	164	105	105	123	12	10
19	61	60	90	551	348	328	173	133	78	119	12	11
20	58	58	81	459	348	513	199	126	66	95	11	10
21	69	52	97	414	328	479	164	98	46	52	13	9.0
22	62	52	182	370	3,180	308	173	105	42	35	11	9.0
23	66	54	126	348	3,430	308	156	105	37	31	11	9.0
24	73	52	105	348	996	268	164	98	35	26	11	8.0
25	88	52	105	308	551	258	164	90	35	24	19	8.0
26	69	50	98	308	482	268	148	85	35	22	27	7.0
27	66	48	98	328	644	370	140	83	33	19	15	6.0
28	64	46	93	328	644	328	140	78	33	19	7.0	7.0
29	62	67	93	348	-------	288	418	78	33	18	11	7.0
30	58	194	90	328	-------	288	621	90	31	12	12	8.0
31	54	-------	93	308	-------	574	-------	95	-------	16	13	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,690	9.5	340	20,900
November	445	42	78.8	4,690
December	248	69	109	6,700
January	4,640	77	399	24,500
February	3,430	268	621	34,500
March	693	258	386	23,700
April	621	140	222	13,200
May	401	78	131	8,060
June	105	31	55.3	3,290
July	176	12	43.6	2,680
August	27	7.0	13.6	836
September	18	6.0	10.2	607
The year	5,690	6.0	199	144,000

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. Zero of gage (base of rail) is 233.52 feet above mean sea level.

DRAINAGE AREA.—990 square miles.

RECORDS AVAILABLE.—May, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,700 second-feet Jan. 13 (gage height, −24.42 feet); no flow at times.

1924–1931: Maximum discharge, about 33,600 second-feet May 30, 1929 (gage height, −17.02 feet); no flow at times.

REMARKS.—Monthly records fair. Gage read about 3 times a week; discharge estimated for days when gage was not read. Record of daily discharge not sufficiently accurate for publication. No diversions above station. Flow partly regulated by swamp upstream.

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,140	1.2	238	14,600
November	3,140	.5	154	9,160
December	4,130	10	592	36,400
January	6,450	8.8	1,400	86,100
February	2,310	99	860	47,800
March	3,000	35	852	52,400
April	1,660	17	109	6,490
May	1,800	10	316	19,400
June	9.6	0	3.38	201
July	140	0	9.13	561
August	50	0	4.09	251
The year	6,450	0	378	273,000

NOTE.—No flow during September.

NAVASOTA RIVER NEAR EASTERLY, TEX.

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

DRAINAGE AREA.—949 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, 6,200 second-feet Jan. 21 (gage height, −10.4 feet); minimum discharge, 0.3 second-foot Aug. 20 to Sept. 30 (gage height, −24.8 feet).

1924–1931: Maximum stage, −5.5 feet May 30, 1929 (discharge not determined); no flow at times.

REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	14	1,960	9.6	e 158	e 708	370	1,280	36	8.0	1.2	0.3
2	5.0	e 12	2,450	14	205	795	1,000	1,790	32	8.0	e 1.2	.3
3	5.0	9.6	3,800	19	362	1,130	1,830	e2,260	28	8.0	1.2	.3
4	5.0	9.6	4,000	e 30	682	820	1,800	2,320	22	8.0	1.2	.3
5	55	9.6	4,000	40	1,580	582	e1,100	2,010	16	e 7.2	1.2	.3
6	259	8.0	4,000	44	2,530	239	405	1,160	12	6.4	.7	.3
7	770	8.0	e3,800	91	1,690	170	106	675	e 12	6.4	.7	.3
8	1,530	8.0	3,600	239	e1,040	e 156	84	407	12	6.4	.7	.3
9	1,830	e 8.0	2,340	121	1,340	142	49	223	12	6.4	e 2.4	.3
10	1,310	8.0	1,050	100	1,430	136	36	e 130	12	6.4	4.0	.3
11	895	8.0	318	e 94	2,630	130	28	79	12	6.4	15	.3
12	e 463	9.6	140	308	2,040	106	e 18	69	12	e 5.1	69	.3
13	193	12	100	980	876	74	8.0	54	12	3.8	42	e .3
14	94	14	79	950	282	84	8.0	44	e 11	3.8	22	.3
15	89	14	74	662	437	e 134	8.0	36	9.6	3.8	5.0	.3
16	79	e 13	64	351	2,850	184	6.4	32	9.6	8.0	e 1.9	.3
17	64	12	59	257	3,600	301	6.4	e 42	9.6	12	.7	.3
18	32	12	54	e 279	2,450	130	6.4	1,280	9.6	16	.7	.3
19	e 23	12	49	826	2,260	118	e 11	966	9.6	e 20	.7	.3
20	14	12	44	1,700	2,160	100	16	366	9.6	25	.3	e .3
21	12	12	e 34	3,910	2,100	89	31	325	e 8.8	66	.3	.3
22	9.6	12	25	3,440	e3,050	138	69	312	8.0	100	.3	.3
23	9.6	e 12	22	896	4,000	661	54	1,130	8.0	58	e .3	.3
24	14	12	19	249	2,380	940	54	e 654	8.0	22	.3	.3
25	22	12	16	e 206	2,260	662	69	231	8.0	9.1	.3	.3
26	e 20	12	14	163	1,860	358	e 84	149	8.0	e 7.8	.3	.3
27	19	12	12	136	950	178	106	130	8.0	6.4	.3	e .3
28	19	67	e 9.2	112	428	71	118	89	e 8.0	5.0	.3	.3
29	16	458	6.4	112	-------	74	200	44	8.0	3.8	.3	.3
30	16	e1,250	3.8	112	-------	149	672	40	8.0	2.8	e .3	.3
31	14	-------	2.0	112	-------	130	-------	e 38	-------	2.0	.3	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,830	5.0	255	15,700
November	1,250	8.0	69.1	4,110
December	4,000	2.0	1,040	64,000
January	3,910	9.6	534	32,800
February	4,000	158	1,700	94,400
March	1,130	71	313	19,200
April	1,830	6.4	278	16,500
May	2,320	32	592	36,400
June	36	8.0	12.6	750
July	100	2.0	14.8	910
August	69	.3	5.65	347
September	.3	.3	.30	18
The year	4,000	.3	394	285,000

e Interpolated or partly estimated.

COLORADO RIVER BASIN

COLORADO RIVER AT BALLINGER, TEX.

LOCATION.—Water-stage recorder at Ballinger-Paint Rock highway bridge in Ballinger, Runnels County. Zero of gage is 1,594.4 feet above mean sea level. Prior to Nov. 29, 1930, staff gage at same datum 2,000 feet upstream.

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

RECORDS AVAILABLE.—December, 1915, to September, 1931.

EXTREMES.—Maximum stage during year, 19.50 feet Oct. 13 (discharge not determined because of backwater); minimum discharge, 0.6 second-foot Sept. 18, 19, 24, 25.

1915–1931: Maximum discharge, about 33,500 second-feet June 14, 1930 (gage height, 27.45 feet); no flow at times.

REMARKS.—Records fair. Discharge estimated during periods of backwater, Oct. 5, 6, 12–14. During periods of heavy local rains backwater from Elm Creek below gage affects stage. Diversions for irrigation above station affect low-water flow.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	30	104	14	18	48	9.5	218	9.5	7.0	12	767
2	1.4	27	41	17	25	57	11	285	48	10	9.5	91
3	1.6	27	28	18	34	46	9.5	151	32	9.5	8.0	37
4	2.2	27	487	12	44	35	8.0	88	23	7.0	5.5	37
5	3,970	21	10,100	18	50	35	7.0	60	18	3.7	4.7	17
6		17	2,270	19	67	30	8.5	37	14	3.7	4.0	8.0
7	352	16	868	19	67	28	10	163	13	3.0	3.4	5.5
8	116	16	459	18	2,120	26	8.0	147	12	2.7	3.4	4.0
9	57	16	285	13	1,000	21	59	101	8.5	1.2	2.7	3.4
10	37	17	245	10	401	19	23	62	6.5	100	2.4	2.7
11	26	21	154	12	225	19	12	44	6.5	280	2.4	1.4
12		24	104	17	151	21	11	32	5.0	132	2.4	1.4
13	6,620	22	75	17	121	19	9.0	28	5.5	60	2.4	1.2
14		21	67	14	108	18	8.0	23	5.0	34	1.6	1.2
15	886	18	50	12	80	265	8.0	21	4.7	20	38	1.2
16	386	37	37	10	78	75	8.0	16	4.0	13	151	1.2
17	249	37	35	13	70	35	7.5	14	28	36	80	1.1
18	150	30	34	17	57	23	6.0	11	9.5	11	67	1.0
19	238	24	32	12	53	17	6.0	8.5	6.0	22	39	1.0
20	306	21	32	13	53	28	7.0	9.0	4.7	57	26	1.0
21	91	18	28	13	53	20	7.5	8.5	114	57	20	1.0
22	59	16	28	12	240	16	34	7.0	80	28	13	1.0
23	113	16	25	12	269	17	85	6.5	53	25	13	1.0
24	146	15	19	12	70	12	57	6.0	35	209	9.0	1.0
25	96	12	21	12	44	12	50	6.0	25	240	13	1.0
26	53	14	19	9.5	37	10	34	5.0	18	166	8.5	1.1
27	83	12	19	40	28	7.5	23	4.0	13	80	6.5	46
28	232	11	23	65	57	7.5	26	4.0	10	50	4.0	19
29	190	479	16	28	------	9.5	128	3.4	7.0	35	3.0	8.5
30	59	448	14	25	------	9.5	331	3.7	7.0	26	2.7	4.0
31	40	------	14	23	------	9.0	------	5.5	------	17	2.7	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	----------	1.4	1,020	62,700
November	479	11	50.3	2,990
December	10,100	14	508	31,200
January	65	9.5	17.6	1,080
February	2,120	18	201	11,200
March	265	7.5	32.1	1,970
April	331	6.0	33.7	2,010
May	285	3.4	50.9	3,130
June	114	4.0	20.8	1,240
July	280	1.2	56.3	3,460
August	151	1.6	18.1	1,110
September	767	1.0	35.6	2,120
The year	----------	1.0	172	124,000

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, a large part of which is probably noncontributing.

RECORDS AVAILABLE.—November, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 76,100 second-feet Oct. 15 (gage height, 48.71 feet); minimum, 2.6 second-feet Oct. 4.

1923–1931: Maximum discharge, that of Oct. 15, 1930; no flow Aug. 8–10, Sept. 1–5, 1929.

REMARKS.—Records fair except those for estimated period, Jan. 5–12, which are poor. Discharge interpolated Jan. 28, 29, May 15. Diversions for irrigation above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	393	464	226	593	946	111	458	31	27	82	25
2	4.5	370	860	226	566	710	107	416	28	25	64	24
3	3.0	349	593	226	514	489	99	489	206	25	46	70
4	2.6	328	514	213	566	370	88	440	393	22	35	308
5	496	266	464		822	288	75	349	328	20	29	248
6	35,900	213	8,580		770	262	67	328	281	18	25	170
7	52,300	190	4,420		680	234	62	240	230	17	23	120
8	11,700	158	2,190		514	213	59	255	132	17	22	82
9	1,200	147	1,480	140	489	178	57	284	129	22	19	58
10	620	134	800		1,440	152	54	226	2,480	21	18	44
11	540	161	593		1,040	142	53	190	1,390	19	217	35
12	2,490	187	566		770	132	51	155	392	18	176	30
13	33,200	210	416	111	593	129	140	139	220	24	63	27
14	67,000	200	270	194	514	125	103	129	190	196	32	21
15	65,100	197	262	349	440	489	78	112	328	172	21	18
16	17,200	194	262	203	370	566	68	96	350	71	15	16
17	2,880	184	258	489	370	566	67	90	1,930	58	11	12
18	1,830	181	240	328	328	370	64	80	1,210	27	8.7	19
19	1,620	181	237	328	349	248	64	75	990	30	7.8	22
20	1,970	181	226	328	328	197	63	96	920	27	6.6	18
21	1,480	181	223	328	308	190	279	103	620	37	5.4	16
22	1,130	181	216	277	288	175	372	90	240	150	28	14
23	990	181	223	288	1,040	161	266	80	69	230	44	12
24	1,130	178	230	237	1,180	161	244	71	64	184	40	11
25	1,060	178	226	230	740	150	203	62	57	152	32	7.5
26	1,060	178	226	230	440	142	164	54	51	145	36	4.2
27	920	178	226	393	393	139	150	46	46	139	35	7.2
28	800	178	226	433	328	134	120	37	40	132	37	6.3
29	593	440	226	473	-------	125	124	35	34	122	32	5.1
30	540	489	226	514	-------	120	2,660	34	29	114	30	5.1
31	464	-------	226	566	-------	116	-------	32	-------	98	27	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	67,000	2.6	9,880	608,000
November	489	134	226	13,400
December	8,580	216	844	51,900
January	566	----------	268	16,500
February	1,440	288	599	33,300
March	946	116	272	16,700
April	2,660	51	204	12,100
May	489	32	171	10,500
June	2,480	28	447	26,600
July	230	17	76.1	4,680
August	217	5.4	40.9	2,510
September	308	4.2	48.5	2,890
The year	67,000	2.6	1,100	799,000

COLORADO RIVER NEAR SAN SABA, TEX.

LOCATION.—Water-stage recorder at Red Bluff crossing, 5.7 miles below confluence with San Saba River and 9.2 miles east of San Saba, San Saba County.
DRAINAGE AREA.—30,600 square miles, part of which is probably noncontributing.
RECORDS AVAILABLE.—August, 1930, to September, 1931.
EXTREMES.—Maximum discharge during year, 78,900 second-feet Oct. 17 (gage height, 39.90 feet); minimum, 57 second-feet Sept. 29.

1930–31: Maximum discharge, that of Oct. 17, 1930; minimum, 52 second-feet Sept. 29, 1930.

Maximum stage known, about 57.5 feet Sept. 25, 1900. Flood of Apr. 6, 1922, reached a stage of about 54 feet.
REMARKS.—Records good except those estimated, which are fair. Diversions above station for irrigation.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68		1,170	390		972	279	3,640	187	138	205	109
2	71		2,030	394		989	279	2,050	181	148	172	98
3	78	853	1,240	399		1,280	279	1,200	172	133	158	1,720
4	73		985	394		788	269	813	170	116	145	422
5		608	918	390	1,590	677	246	679	167	104	133	642
6	23,700	565	2,480	377		591	240	580	178	102	116	463
7		530	8,750	364		540	230	829	227	88	107	262
8	46,600	505	6,080	342		500	221	525	211	78	98	184
9	46,200	500	2,080	322		462	214	404	211	78	92	145
10	20,300	485	1,360	310	1,800	435	208	350	459	82	138	124
11	1,540	471	950	303	2,950	408	205	334	5,120	119	636	112
12	1,970	471	725	330	1,540	394	199	359	5,780	124	183	104
13	11,200	476	653	338	1,060	386	199	342	2,240	98	273	102
14	30,000	476	591	326	1,020	368	199	334	608	86	232	92
15	44,000	480	565	306	950	520	208	303	1,340	118	158	88
16	62,400	495	510	303	1,090	1,310	237	279	1,180	241	126	84
17	71,900	480	471	1,360	1,020	1,200	227	266	4,230	211	107	80
18	40,500	458	453	2,250	737	918	214	253	11,700	825	94	78
19	4,530	458	453	1,230	618	618	202	246	8,000	402	88	77
20		453	440	788	580	505	221	243	1,090	318	82	75
21		458	426	653	575	570	230	708	422	901	80	71
22		471	466	586	772	466	211	429	314	1,350	78	68
23		444	471	550	1,490	399	358	318	269	576	90	66
24		430	453	525	2,120	372	426	269	234	381	77	68
25	1,810	412	440	495	1,860	350	368	240	193	330	73	68
26		399	448	471	1,460	334	306	230	170	296	77	66
27		390	440	462	885	310	266	218	140	243	100	62
28		364	440	495	786	303	266	205	138	199	96	60
29		451	430	989		299	602	196	148	207	94	59
30		505	404	1,240		296	1,780	184	148	266	104	60
31			394	918		289		184		237	96	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	71,900	68	15,300	941,000
November		364	522	31,100
December	8,750	394	1,220	75,000
January	2,250	303	600	36,900
February			1,340	74,400
March	1,310	289	576	35,400
April	1,780	199	313	18,600
May	3,640	184	555	34,100
June	11,700	138	1,520	90,400
July	1,350	78	277	17,000
August	636	73	139	8,550
September	1,720	59	190	11,300
The year	71,900	59	1,900	1,370,000

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, a part of which is probably noncontributing.

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 69,900 second-feet Oct. 17 (gage height, 22.53 feet); minimum, 62 second-feet Oct. 1 (gage height, 5.40 feet).

1923–1931: Maximum discharge, that of Oct. 17, 1930; minimum, 20 second-feet Aug. 5, 1930 (gage height, 4.93 feet).

Maximum stage known, 28.4 feet in April, 1900.

REMARKS.—Records good except those estimated, which are fair. Numerous small diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	1,150	652	364	1,160	1,310	397	2,660	197		281	118
2	200	1,160	1,650	364	1,070	1,100	397	3,440	197		250	109
3	197	980	1,950	358	1,250	1,390	397	1,510	197		205	214
4	153	807	6,060	352	2,330	1,350	377	1,280	201		175	1,710
5	150	729	3,170	364	2,330	970	345	980	201		153	519
6	15,200	695	1,490	358	1,770	890	326	852	197	120	140	797
7	33,600	644	5,340	364	1,660	789	320	834	197		130	601
8	47,200	618	9,320	358	1,490	686	303	980	212		113	370
9	44,000	610	3,390	326	2,010	618	298	686	212		109	254
10	33,300	594	1,890	314	1,490	578	286	522	2,070		100	193
11	3,430	578	1,450	333	2,960	522	275	448	2,570		288	162
12	2,440	578	1,130	339	2,080	522	270	390	6,160		602	144
13	10,000	570	940	339	1,930	508	259	433	3,580	193	292	130
14	22,700	554	843	339	1,440	492	259	426	1,210	189	312	122
15	39,000	538	763	339	1,440	522	264	390	755	142	314	115
16	50,400	522	678	345	1,600	902	264	345	1,490	132	221	111
17	66,300	478	610	1,760	1,490	1,600	309	309	1,920	380	178	111
18	55,900	448	554	2,400	1,260	1,320	298	281	11,000	309	147	107
19	11,200	448	500	1,960	1,050	1,030	292	352	10,600	925	130	98
20	2,760	419	470	1,230	920	960	275	309	3,460	508	115	92
21	2,360	390	485	980	861	772	281	254	910	405	104	84
22	1,890	433	500	816	930	825	286	727		1,290	90	84
23	1,890	448	538	746	1,290	695	264	546		1,130		82
24	2,070	412	522	712	2,220	570	488	397		695		80
25	3,060	383	500	678	1,890	522	618	320		492		76
26	3,690	377	455	627	2,010	478	515	259	250	419	95	75
27	2,070	370	448	610	1,470	578	441	226		370		73
28	1,710	352	448	618	1,170	455	377	216		309		73
29	1,380	419	397	720	-------	412	543	201		259		69
30	1,180	712	390	1,300	-------	412	1,110	193		216	104	67
31	1,040	-------	370	1,340	-------	426	-------	197	-------	298	118	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	66,300	71	14,900	916,000
November	1,160	352	581	34,600
December	9,320	370	1,550	95,300
January	2,400	314	711	43,700
February	2,960	861	1,590	88,300
March	1,600	412	781	48,000
April	1,110	259	371	22,100
May	3,440	193	676	41,600
June	11,000	----------	1,660	98,800
July	1,290	----------	326	20,000
August	602	----------	172	10,600
September	1,710	67	228	13,600
The year	66,300	67	1,970	1,430,000

COLORADO RIVER AT AUSTIN, TEX.

LOCATION.—Water-stage recorder at Congress Avenue Viaduct in Austin, Travis County. Zero of gage is 421.77 feet (corrected) above mean sea level.

DRAINAGE AREA.—38,200 square miles.

RECORDS AVAILABLE.—February, 1898, to September, 1931.

EXTREMES.—Maximum discharge during year, 97,600 second-feet Oct. 7 (gage height, 22.50 feet); minimum, 98 second-feet Sept. 28 (gage height, −0.35 foot).

1898–1931: Maximum discharge, about 236,000 second-feet a few minutes after failure of Austin Dam Apr. 7, 1900 (gage height, 33.5 feet). At time of failure depth of water over dam was 11.07 feet (computed discharge, 151,000 second-feet); flood appeared to be practically at its crest when dam failed. Minimum discharge, 13 second-feet Aug. 18, 1918.

REMARKS.—Records good. Discharge estimated Apr. 17 to May 5; interpolated Aug. 2, 3. About 36,000 acres irrigated above station. Low-water flow affected by diversions of the city of Austin pumping plant.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	250	1,940	652	926	3,400	4,690	1,570		724	895	506	204
2	250	1,770	1,340	895	3,350	4,300	1,550		700	1,350	484	188
3	245	1,710	1,400	895	3,160	4,300	1,520	7,000	676	974	462	176
4	450	1,810	2,400	910	3,910	3,910	1,400		652	748	440	176
5	585	1,770	3,660	865	3,650	3,780	1,330		640	652	450	182
6	1,620	1,650	8,860	850	4,170	3,650	1,290	3,020	630	526	423	188
7	79,500	1,480	3,940	880	3,780	3,140	1,280	2,500	598	488	398	681
8	66,300	1,370	3,020	835	3,380	2,920	1,240	2,250	598	459	364	644
9	55,600	1,290	8,870	790	3,380	2,730	1,240	2,300	566	556	355	640
10	48,400	1,260	6,560	760	3,910	2,540	1,210	2,150	652	700	364	652
11	38,600	1,240	3,620	835	3,910	2,380	1,220	1,890	712	712	325	516
12	11,200	1,240	2,610	805	3,230	2,250	1,240	1,630	1,630	712	254	423
13	6,820	1,260	2,190	850	4,300	2,120	1,170	1,460	3,140	608	254	364
14	16,600	1,280	1,830	835	3,910	2,040	1,140	1,310	5,990	535	267	318
15	21,200	1,440	1,650	835	4,960	2,060	1,100	1,260	3,980	612	286	274
16	39,000	1,380	1,460	1,040	3,910	2,150	1,090	1,240	2,270	972	556	248
17	51,300	1,260	1,330	2,940	6,700	2,540		1,240	1,560	958	488	234
18	66,200	1,100	1,280	9,610	5,470	2,850		1,120	1,500	748	414	219
19	56,700	1,090	1,210	7,960	4,040	3,180		1,120	3,890	1,950	423	193
20	18,900	1,010	1,120	5,790	3,300	3,350		1,090	10,300	2,170	389	176
21	6,520	990	1,120	4,430	2,920	3,520		1,010	7,440	1,830	397	171
22	4,430	958	1,090	3,400	3,930	3,140		1,010	3,640	1,530	389	166
23	4,040	865	1,070	2,870	10,400	2,590		990	1,960	1,160	332	166
24	3,520	835	1,090	2,520	10,500	2,300	1,530	895	1,400	1,020	364	150
25	3,380	736	1,140	2,300	7,470	2,120		1,100	1,120	1,520	364	140
26	3,380	748	1,140	2,150	6,350	1,920		1,070	926	1,240	432	140
27	4,430	700	1,090	2,040	5,370	1,830		895	820	990	364	135
28	4,430	640	1,070	2,000	5,100	1,790		805	748	748	302	125
29	3,300	664	974	2,020	-------	2,000		760	748	652	267	115
30	2,730	652	958	3,110	-------	1,850		748	736	608	254	110
31	2,500	-------	926	3,400	-------	1,670	-------	748	-------	566	222	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	79,500	245	20,100	1,240,000
November	1,940	640	1,200	71,400
December	8,870	652	2,280	140,000
January	9,610	760	2,270	140,000
February	10,500	2,920	4,710	262,000
March	4,690	1,670	2,760	170,000
April	-------	-------	1,400	83,300
May	-------	748	2,280	140,000
June	10,300	566	2,030	121,000
July	2,170	459	942	57,900
August	556	222	374	23,000
September	681	110	270	16,100
The year	79,500	110	3,400	2,460,000

EVAPORATION AT AUSTIN, TEX.

LOCATION.—In State capitol grounds at Austin, Travis County.
RECORDS AVAILABLE.—April, 1916, to September, 1931.
EQUIPMENT.—One land evaporation pan with auxiliary equipment consisting of hook gage, rain gage, anemometer, and maximum and minimum thermometers. Relative humidity determined at United States Weather Bureau station at Austin.
REMARKS.—Records fair. Observations made daily at 8 a. m. Computations made by United States Weather Bureau; evaporation record corrected for rainfall.

Evaporation at Austin, Tex., 1930–31

Month	Air temperature (° F.)			Mean relative humidity (per cent)	Average wind velocity (miles per hour)	Rainfall (inches)	Evaporation (inches)
	Mean maximum	Mean minimum	Mean				
October	78.0	58.4	68.2	84	0.8	8.47	3.621
November	69.0	47.5	58.2	78	.8	1.76	2.368
December	59.5	36.9	48.2	83	1.0	3.95	1.816
January	59.7	39.7	49.7	88	1.0	4.44	1.805
February	66.4	45.8	56.1	88	1.3	5.61	2.752
March	67.9	42.6	55.2	85	1.9	3.87	5.038
April	75.1	50.5	62.8	85	1.2	5.14	4.717
May	83.6a	60.5a	72.0a	83	1.2	1.01	6.108
June	93.4	70.8	82.1	85	1.1	2.42	7.647
July	94.7	73.6	84.2	86	.9	3.20	8.201
August	95.0	71.0	83.0	85	1.1	1.90	8.481
September	95.8	70.3	83.0	84	1.0	T.	7.746
The year	78.2	55.6	66.9	84	1.1	41.77	60.300

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

COLORADO RIVER AT SMITHVILLE, TEX.

LOCATION.—Water-stage recorder 800 feet above highway bridge at Smithville, Bastrop County. Zero of gage is 270.01 feet above mean sea level. Prior to Apr. 9, 1931, staff gage with same datum at same location.

DRAINAGE AREA.—39,600 square miles.

RECORDS AVAILABLE.—July, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 67,500 second-feet Oct. 9, 19 (gage height, 21.40 feet); minimum, 217 second-feet Sept. 30.

1930–31: Maximum discharge, that of Oct. 9, 19, 1930; minimum, 111 second-feet Aug. 17, 18, 1930 (gage height, 0.74 foot).

Maximum stage known, about 47.4 feet in December, 1913.

REMARKS.—Records good. Discharge interpolated May 7, 8, 19–22. Diversions above station for irrigation.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	303	2,840	1,150	1,080	3,790	8,360	2,420	14,000	1,050	936	826	353
2	272	2,600	992	1,060	4,210	5,430	2,180	10,500	1,000	864	749	339
3	253	2,360	1,090	1,020	3,930	4,650	2,060	9,150	1,000	1,080	680	320
4	257	2,180	2,610	1,020	3,790	4,350	2,060	7,980	968	1,260	629	298
5	280	2,180	8,970	1,000	4,070	4,070	1,820	6,480	936	1,020	587	290
6	848	2,120	5,810	1,000	3,930	3,790	1,720	4,650	896	888	575	278
7	5,980	1,940	8,900	960	4,350	3,790	1,660	4,050	848	805	563	278
8	53,800	1,770	4,980	952	4,650	3,440	1,550	3,440	826	721	545	278
9	64,900	1,600	3,510	968	4,210	3,230	1,550	2,840	791	680	498	548
10	55,700	1,550	8,060	952	3,790	2,970	1,550	2,720	742	648	476	721
11	51,300	1,500	7,140	4,390	4,210	2,780	1,500	2,600	700	721	482	749
12	37,300	1,400	4,500	3,910	4,210	2,540	1,450	2,420	749	856	482	756
13	12,300	2,060	3,370	1,500	3,790	2,480	1,450	2,180	959	880	471	799
14	9,340	1,770	2,840	1,230	4,350	2,660	1,450	1,940	2,220	920	439	581
15	17,700	1,550	2,480	1,150	4,980	3,920	1,400	1,820	5,270	805	408	504
16	29,000	1,500	2,180	1,190	8,560	7,940	1,400	1,660	4,210	714	378	450
17	44,700	1,550	1,820	12,000	5,530	3,370	1,350	1,550	2,970	1,430	368	403
18	58,300	1,500	1,660	10,700	6,490	2,970	1,350	1,550	2,180	1,820	528	373
19	63,600	1,400	1,550	10,900	5,770	3,230	1,350	1,480	1,660	1,160	533	344
20	57,000	1,300	1,450	8,520	4,500	8,440	1,400	1,420	2,960	1,230	521	315
21	18,900	1,260	1,350	6,470	3,790	7,750	1,450	1,350	10,000	3,370	563	298
22	8,950	1,220	1,300	4,950	3,770	3,930	1,500	1,290	7,700	2,480	605	282
23	6,290	1,180	1,300	4,070	16,100	3,650	1,350	1,220	4,300	2,060	763	270
24	5,270	1,120	1,230	3,440	17,400	3,160	1,600	1,220	2,780	1,660	617	266
25	4,650	976	1,260	3,040	12,200	2,840	1,660	1,170	2,060	1,300	510	263
26	4,070	798	1,260	2,840	8,120	2,600	1,600	1,140	1,550	1,450	476	263
27	3,930	805	1,260	2,660	7,220	2,540	1,550	1,300	1,300	1,660	482	256
28	4,650	1,000	1,230	2,780	8,170	2,360	1,580	1,190	1,110	1,350	498	238
29	4,950	1,170	1,200	3,100	-------	2,360	2,560	1,080	1,020	1,150	493	235
30	3,790	1,200	1,120	2,660	-------	2,480	14,500	1,040	992	944	439	224
31	3,300	-------	1,080	3,100	-------	2,540	-------	1,030	-------	864	388	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	64,900	253	20,400	1,250,000
November	2,840	798	1,580	94,000
December	8,970	992	2,860	176,000
January	12,000	952	3,370	207,000
February	17,400	3,770	6,070	337,000
March	8,440	2,360	3,890	239,000
April	14,500	1,350	2,070	123,000
May	14,000	1,030	3,140	193,000
June	10,000	700	2,190	130,000
July	3,370	648	1,220	75,000
August	826	368	535	32,900
September	799	224	386	23,000
The year	64,900	224	3,980	2,880,000

COLORADO RIVER NEAR EAGLE LAKE, TEX.

LOCATION.—Water-stage recorder at Lakeside Irrigation Co.'s pumping plant 1 mile below San Antonio & Aransas Pass Railway bridge, and 5 miles southwest of Eagle Lake, Colorado County.

DRAINAGE AREA.—40,900 square miles.

RECORDS AVAILABLE.—September, 1930, to September, 1931.

EXTREMES.—Maximum discharge during period, 57,500 second-feet Oct. 21 (gage height, 20.48 feet); minimum not determined.

Maximum stage known, about 32.0 feet in December, 1913.

REMARKS.—Records fair. Discharge tables include flow of Lakeside Irrigation Co.'s canal. Diversons above station for irrigation and municipal uses.

Daily and monthly discharge, in second-feet, 1930–31

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	800	4,860	4,870	1,390	2,790	16,100	2,720	16,700	1,290	1,210	1,050	520
2	-------	611	4,220	2,370	1,340	3,350	13,100	2,720	12,900	1,270	1,160	955	477
3	-------	520	3,820	1,720	1,330	5,340	7,800	2,720	10,300	1,220	1,090	896	451
4	-------	502	3,420	4,720	1,320	4,860	6,300	2,370	9,080	1,220	986	869	425
5	-------	575	3,140	26,800	1,290	4,060	5,500	2,090	8,200		1,060	845	434
6	-------	1,030	2,930	12,800	1,250	3,580	4,860	2,020	7,200		1,280	815	439
7	-------	5,930	2,860	7,960	1,230	3,900	4,540	1,960	5,820	1,120	1,120	784	425
8	-------	11,000	2,720	8,200	1,200	3,900	4,540	1,900	4,540		1,020	699	186
9	-------	43,600	2,510	6,380	1,190	5,850	4,060	1,900	3,980		947	667	335
10	-------	54,000	2,370	4,590	1,180	5,180	3,660	1,900			818	635	335
11	-------	55,000	2,300	6,290	1,700	4,060	3,420	1,780		982	793	675	380
12	-------	51,200	2,160	7,860	10,900	3,740	3,210	1,720		953	827	564	639
13	-------	38,500	2,020	5,500	6,600	3,900	3,070	1,720		917	758	602	676
14	-------	17,000	1,960	4,060	3,250	3,820	2,930	1,720	2,550	907	856	593	762
15	-------	10,900	1,960	3,280	2,090	3,580	2,790	1,660		970	959	575	800
16	------	17,000	2,160	2,860	1,840	8,460	7,360	1,660		2,250	1,210	556	695
17	2,530	25,600	2,090	2,580	21,500	11,500	9,380	1,600		4,190	1,250	520	602
18	2,460	38,200	1,960	2,300	26,100	7,000	5,580	1,540		3,450	2,230	494	556
19	1,840	47,800	1,960	2,090	12,800	5,500	3,720	1,520	1,820	2,530	1,900	485	511
20	1,510	54,000	1,900	1,900	9,740	6,140	6,770	1,500	1,740	2,000	1,780	494	477
21	1,290	55,900	1,720	1,780	9,210	5,020	13,200	1,500	1,760	1,670	1,410	593	442
22	1,110	28,800	1,600	1,660	6,660	4,700	8,610	1,510	1,680	9,590	1,390	621	425
23	990	13,400	1,600	1,660	5,660	8,660	5,020	1,480	1,580	7,460	2,560	667	395
24	890	9,540	1,600	1,540	4,700	18,200	4,380	1,490	1,550	5,180	2,120	780	372
25	800	8,000	1,530	1,540	3,900	16,900	3,820	1,510	1,480	3,450	1,820	860	365
26	771	7,020	1,420	2,090	3,420	11,800	3,500	1,600	1,460	2,400	1,600	762	358
27	724	6,660	1,360	2,230	3,070	9,450	3,210	1,660	1,440	1,960	1,350	648	358
28	667	7,400	1,330	1,720	2,860	17,800	2,930	1,660	1,380	1,600	1,320	566	350
29	648	6,660	5,020	1,600	3,580	-------	2,650	1,660	1,350	1,420	1,480	556	350
30	960	6,660	14,400	1,500	3,740	-------	2,580	2,110	1,400	1,330	1,320	556	343
31	-------	5,820	-------	1,440	3,070	-------	2,580	-------	1,320	-------	1,190	556	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930				
September 17–30	2,530	648	1,230	34,100
1930–31				
October	55,900	502	20,300	1,250,000
November	14,400	1,330	2,830	168,000
December	26,800	1,440	4,450	274,000
January	26,100	1,180	5,130	315,000
February	18,200	2,790	6,890	383,000
March	16,100	2,580	5,520	339,000
April	2,720	1,480	1,830	109,000
May	16,700	1,320	3,920	241,000
June	9,590	907	2,230	133,000
July	2,560	758	1,320	81,200
August	1,050	485	675	41,500
September	800	186	463	27,600
The year	55,900	186	4,640	3,360,000

SOUTH CONCHO RIVER AT CHRISTOVAL, TEX.

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

DRAINAGE AREA.—434 square miles.

RECORDS AVAILABLE.—February, 1930, to September, 1931.

EXTREMES.—Maximum stage during period February to September, 1930, 13.7 feet June 15 (discharge not determined); minimum discharge, 2.8 second-feet Sept. 27–28 (gage height, 0.73 foot).

Maximum stage during year ending Sept. 30, 1931, 20.20 feet Oct. 13 (discharge not determined); minimum discharge, 3.0 second-feet Oct. 4 (gage height, 0.74 foot).

Flood of Aug. 6, 1906, reached a stage of about 20.0 feet; but discharge was probably greater than flood of Oct. 13, 1930, because railroad dump did not confine flow in 1906.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930								
1		7.7	7.7	8.6	6.8	12	3.6	4.6
2		7.7	7.7	8.6	6.8	11	4.2	4.6
3		7.7	9.5	8.6	6.8	11	4.6	4.6
4		7.7	9.5	6.8	6.8	11	4.6	4.2
5		7.7	9.5	6.8	6.8	11	4.6	4.2
6		5.9	9.5	6.8	6.8	10	4.6	4.2
7		5.0	10	6.8	6.8	9.5	4.6	4.0
8		5.0	9.5	6.8	8.6	10	5.0	3.8
9		5.0	9.5	6.8	7.7	9.5	5.0	3.8
10		5.0	9.5	6.8	6.8	9.5	5.0	3.8
11		5.0	9.5	6.8	6.8	9.5	4.8	3.8
12		5.0	11	11	6.8	9.5	5.0	4.0
13		4.8	11	7.7	4.6	9.5	5.0	4.2
14		4.8	11	6.8	4.6	9.5	5.0	4.4
15		4.8	11	6.8	-------	9.5	5.0	4.2
16		4.8	11	6.8	97	6.8	5.0	4.2
17		4.8	11	9.5	19	5.9	5.0	4.2
18		4.8	11	38	15	5.0	5.0	4.2
19		4.8	13	16	15	5.0	5.0	4.2
20		4.6	11	8.6	15	4.8	5.9	4.4
21		4.6	13	8.6	15	4.8	5.0	4.0
22		4.6	13	8.6	14	4.6	5.0	4.2
23		4.6	13	8.6	14	4.4	5.0	4.2
24		4.6	52	8.6	14	4.4	4.2	4.2
25		4.6	280	8.6	14	4.2	4.4	4.2
26		4.6	24	9.5	13	4.4	4.4	4.2
27	7.7	4.8	47	10	13	4.2	4.4	3.4
28	7.7	4.8	9.5	10	13	4.2	4.6	3.0
29		4.8	57	9.5	13	4.2	4.6	3.4
30		4.8	11	10	13	4.2	4.6	3.6
31		4.8	-------	8.6	-------	3.6	4.6	-------

Daily and monthly discharge, in second-feet, of South Concho River at Christoval, Tex., 1930–31—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930–31												
1	3.6	56	50	37	46	50	36	24	19	16	18	12
2	4.0	56	50	39	710	52	33	23	20	17	19	11
3	3.6	56	48	41	79	52	32	23	19	13	17	10
4	3.4	56	50	39	48	51	31	23	18	14	19	9.5
5	------	57	47	40	47	51	30	28	17	15	17	9.5
6	------	57	45	40	45	43	31	25	17	15	17	9.5
7	50	56	45	43	43	43	32	26	19	16	16	10
8	14	56	45	41	43	42	31	27	20	16	17	10
9	16	55	43	41	46	42	31	26	17	19	17	9.5
10	25	55	45	37	45	45	28	28	15	15	16	10
11	25	55	43	37	47	42	30	26	16	15	280	12
12	32	56	41	39	47	43	31	24	16	14	14	12
13	------	56	42	39	46	45	28	24	16	16	11	11
14	------	59	43	37	48	43	30	25	16	15	12	11
15	87	59	42	40	48	43	30	23	16	15	12	10
16	57	63	40	40	51	41	30	24	16	95	11	11
17	51	61	41	40	54	42	28	24	26	27	11	10
18	54	57	42	40	50	41	30	24	18	18	10	10
19	61	60	41	40	50	41	28	23	19	18	12	11
20	51	59	40	41	50	43	27	22	19	22	12	11
21	52	57	39	41	52	39	26	23	18	31	12	10
22	54	59	39	41	103	39	25	22	17	30	11	10
23	55	56	40	41	94	41	24	21	15	16	15	9.5
24	54	56	40	41	57	42	25	21	15	16	15	10
25	54	54	41	41	51	39	25	22	15	16	13	9.5
26	55	54	39	40	51	37	26	21	15	16	12	10
27	54	52	39	40	48	35	26	20	16	16	12	10
28	55	51	40	37	51	34	26	20	15	16	12	10
29	55	59	40	39	------	35	35	20	14	16	12	10
30	55	51	37	39	------	35	28	19	15	16	12	10
31	55	------	37	40	------	37	------	19	------	16	13	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930				
March	7.7	4.6	5.30	326
April	280	7.7	24.1	1,430
May	38	6.8	9.42	579
June	------	4.6	------	------
July	12	3.6	7.31	449
August	5.9	3.6	4.75	292
September	4.6	3.0	4.07	242
1930–31				
October	------	3.4	------	------
November	63	51	56.5	3,360
December	50	37	42.4	2,610
January	43	37	39.7	2,440
February	710	43	76.8	4,270
March	52	34	42.2	2,590
April	36	24	29.1	1,730
May	28	19	23.2	1,430
June	26	14	17.1	1,020
July	95	13	19.9	1,220
August	280	10	22.5	1,380
September	12	9.5	10.3	613
The period	------	------	------	22,700

NOTE.—Stage was above limit for which rating curve is defined on June 15, Oct. 5, 6, 13, 14, 1930.

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. Zero of gage is 1,776.8 feet above mean sea level.

DRAINAGE AREA.—4,490 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, about 92,000 second-feet Oct. 13 (gage height, 32.65 feet); minimum, 0.4 second-foot Aug. 4 (gage height, 0.24 foot).

1915–1931: Maximum discharge, about 139,000 second-feet Apr. 26, 1922 (gage height, 36.8 feet); no flow Nov. 29, 1921.

REMARKS.—Records good except those for Oct. 13, Feb. 20 to Apr. 1. Discharge interpolated Nov. 4, 5. Some water diverted above station for municipal and irrigation uses. Low-water flow affected by diversions and storage above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	103	128	32	78		10	103	87	1.2	0.8	2.6
2	1.6	101	122	38	406		10	71	64	1.1	.5	2.4
3	1.5	96	122	41	478		16	67	51	1.2	.5	3.6
4	2.0	102	268	38	234		11	69	32	1.0	.5	9.0
5	214	108	435	38	179		8.4	64	26	1.0	.5	26
6	432	114	268	43	136		10	55	33	1.0	.5	28
7	265	101	163	74	54		20	53	28	1.0	1.0	28
8	76	85	128	37	87		30	74	25	.9	1.1	29
9	20	81	111	38	137		26	48	33	1.3	1.2	44
10	7.4	85	125	44	114		13	47	50	1.3	1.3	55
11	4.0	92	92	66	111		14	52	40	1.0	3.4	9.7
12	187	85	90	67	83		20	44	10	1.1	21	5.6
13	30,400	87	87	72	85		27	41	4.9	1.2	43	4.5
14	13,400	99	99	57	87		27	35	3.2	1.2	45	4.0
15	1,010	144	87	58	99		22	40	3.0	3.8	45	3.2
16	396	150	74	76	160	50	19	38	2.0	725	48	2.7
17	214	106	92	122	83		16	45	2.5	98	41	2.4
18	140	92	81	108	71		104	38	20	117	8.0	2.2
19	160	114	76	94	106		748	28	28	137	3.8	2.0
20	169	92	76	94			206	11	12	120	2.1	1.9
21	122	83	76	103			50	8.0	6.7	75	1.6	1.9
22	122	83	74	96			40	6.5	2.4	32	1.4	1.8
23	188	85	74	85			35	7.7	1.6	16	1.3	1.8
24	237	87	76	87	135		39	6.7	1.4	11	1.3	1.7
25	170	92	74	67			63	6.7	1.4	4.2	147	1.7
26	80	87	72	34			29	10	1.2	2.2	15	1.6
27	69	87	78	40			30	9.7	1.2	2.0	7.0	2.8
28	172	87	76	37			43	12	1.2	1.6	4.7	9.3
29	180	241	74	40			240	18	1.2	1.4	3.4	4.4
30	99	137	69	54			179	225	1.2	1.2	3.0	4.2
31	106		48	63				193		1.0	2.8	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	30,400	1.5	1,570	96,500
November	241	81	104	6,190
December	435	48	113	6,950
January	122	32	62.7	3,860
February			143	7,940
March			[a] 50	3,070
April	748	8.4	70.2	4,180
May	225	6.5	49.2	3,030
June	87	1.2	19.1	1,140
July	725	.9	44.0	2,710
August	147	.5	14.7	904
September	55	1.6	9.90	589
The year	30,400	.5	189	137,000

[a] Estimated.

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, 1931.

EXTREMES.—Maximum stage during year, 26.6 feet Oct. 13 (discharge not determined); no flow Sept. 28–30.

1915–1931: Maximum stage, 27.5 feet Apr. 27, 1922 (discharge not determined); no flow at times.

REMARKS.—Records good except those estimated. Diversions above station for irrigation and municipal use. Low-water flow materially affected by diversions and storage above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4				60	129	21	196	179	1.8	1.8	2.6
2	.5	140			93	126	20	137	106	1.5	1.2	4.9
3	.4		180		472	126	20	101	74	1.3	.9	24
4	.3	129			1,120	126	17	88	60	1.1	.7	2.4
5	968	126			234	88	16	84	47	.9	.4	1.3
6		123	479		180	86	18	79	29	.8	.2	1.2
7		120	267		160	74	18	66	23	.8	.2	1.0
8		115	170		91	60	14	60	25	.8	.1	.7
9		106	132		79	56	18	79	28	190	.1	13
10		104	123		112	60	30	62	20	30	.1	17
11		109	126	75	120	62	33	49	21	8.1		34
12		118			109	68	24	49	33	3.8		37
13		106			101	60	20	51	24	2.1		16
14		109			98	74	21	47	17	1.6		8.6
15		120			98	74	30	42	11	1.3		6.8
16		137			112	64	33	34	14	80		4.6
17		164			154	62	27	37	98	700		3.2
18		134			106	62	27	37	52	142		2.1
19	4,500	118			68	72	439	46	16	129	40	1.2
20		120			93	66	495	40	8.1	143		.7
21		129	85		98	81	212	32	8.1	129		.5
22		112		109	215	66	93	20	13	106		.2
23		109		101	362	64	60	14	10	54		.2
24		112		96	250	88	54	11	5.9	33		.1
25		109		93	221	72	52	10	4.3	23		.1
26		109		93	180	64	56	8.6	3.2	15		.1
27		109		66	160	62	62	8.6	2.4	13	49	.1
28		98		62	140	66	42	8.6	1.6	9.0	22	0
29		218		56	------	62	74	10	3.5	5.5	10	0
30		334		46	------	52	261	12	2.6	3.8	6.8	0
31		------		46	------	32	------	98	------	2.6	3.8	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	------	0.3	3,810	234,000
November	384	------	132	7,860
December	------	------	126	7,750
January	------	------	75.6	4,650
February	1,120	60	189	10,500
March	129	32	74.3	4,570
April	495	14	76.9	4,580
May	196	8.6	52.2	3,210
June	179	1.6	31.3	1,860
July	700	.8	59.2	3,640
August	------	------	23.8	1,460
September	37	0	6.12	364
The year	------	0	393	284,000

MIDDLE CONCHO RIVER NEAR TANKERSLY, TEX.

LOCATION.—Water-stage recorder at Twelvemile Bridge, 3 miles northeast of Tankersly, Tom Green County, and 7½ miles above confluence with Spring Creek. Zero of gage is 1,919.5 feet above mean sea level.

DRAINAGE AREA.—1,280 square miles.

RECORDS AVAILABLE.—February, 1930, to September, 1931.

EXTREMES.—Maximum stage during period February to September, 1930, 7.80 feet May 13 (discharge not determined); no flow at times.

Maximum stage during year ending Sept. 30, 1931, 18.30 feet Oct. 14 (discharge not determined); no flow at times.

REMARKS.—Records poor. Small diversions for irrigation above station affect low flow.

Daily discharge, in second-feet, 1930–31

Day	Apr.	May	June	Day	Apr.	May	June	Day	Apr.	May	June
1930				1930				1930			
1	0	3.1	4.4	11	0	0	0	21	9.4	9.5	0
2	0	1.5	2.0	12	0	0	0	22	.4	3.9	0
3	0	.7	.7	13	0	------	0	23	0	2.6	0
4	0	1.6	.1	14	0	------	.9	24	0	1.7	0
5	0	2.6	0	15	0	2.1	3.1	25	5.8	.7	0
6	0	1.4	0	16	0	3.3	.5	26	5.2	.1	0
7	0	.7	0	17	0	5.2	0	27	2.1	0	0
8	0	0	0	18	0	------	0	28	7.0	0	0
9	0	0	0	19	0	43	0	29	43	0	0
10	0	0	0	20	25	32	0	30	8.9	8.3	0
								31	------	17	0

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Apr.	May	July
1930–31								
1		2.0	13	0.4	0.1	0	1.7	0
2	0	.2	4.6	.3	.4	0	1.8	0
3	0	0	.3	.2	.3	0	3.1	0
4	0	0	2.6	.6	0	0	.8	0
5	0	0	6.4	.4	0	0	.3	0
6	0	0	20	.3	0	0	.2	0
7	0	0	14	.2	0	0	.2	0
8	0	0	16	.3	.4	0	.2	0
9	0	0	25	.2	.2	0	.2	0
10	0	0	5.8	.3	0	0	.3	0
11	0	3.8	16	.3	0	0	.3	0
12	------	4.3	5.8	.3	0	0	.1	0
13	------	3.1	2.2	.3	0	0	.1	0
14	------	3.7	1.5	.1	0	0	.1	0
15	------	4.0	.6	0	0	0	.2	0
16	70	2.2	.3	0	0	0	.1	------
17	37	.2	.1	.6	0	0	0	4.3
18	26	0	0	.3	0	------	0	0
19	69	0	0	.3	0	52	0	0
20	27	0	0	.2	0	2.2	0	0
21	15	0	0	.2	0	.4	0	0
22	9.3	0	0	.1	3.1	.2	0	0
23	31	0	0	0	.2	.1	0	0
24	12	0	.6	.1	0	.1	0	0
25	11	0	1.5	.2	0	.3	0	0
26	4.0	0	.4	.2	0	.1	0	0
27	.3	0	.3	.3	0	0	0	0
28	2.0	0	.2	.3	0	.3	0	0
29	5.8	0	0	.3	------	39	.2	0
30	3.4	0	0	.2	------	5.8	.2	0
31	16	------	.1	.2	------	------	0	0

Monthly discharge, in second-feet, of Middle Concho River near Tankersly, Tex., 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930				
April	43	0	3.56	212
May		0		
June	4.4	0	.39	23
1930–31				
November	4.3	0	.78	46
December	25	0	4.43	272
January	.6	0	.25	15
February	3.1	0	.17	9.4
May	3.1	0	.33	20

NOTE.—Stage was above the limit for which rating curve is defined on following days: May 13, 14, 18, Oct. 12–15, 1930, and Apr. 18, July 16, 1931. No flow during months omitted after the beginning of the record on Feb. 10, 1930.

SPRING CREEK NEAR TANKERSLY, TEX.

LOCATION.—Water-stage recorder 2¾ miles above confluence with Middle Concho River and 6½ miles east of Tankersly, Tom Green County. Zero of gage is 1,874.6 feet above mean sea level.

DRAINAGE AREA.—734 square miles.

RECORDS AVAILABLE.—February, 1930, to September, 1931.

EXTREMES.—Maximum stage during year, 17.34 feet Oct. 14 (discharge not determined); no flow Oct. 1–4, 9–11.

1930–31: Maximum stage, that of Oct. 14, 1930; no flow at times.

REMARKS.—Records good for low discharge and fair for high discharges, except those from July to September, which are poor. Several small diversions above station for irrigation.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	0	30	32	23	25	30	6.6	30	12	0.9	0.6	0.4
2	0	29	23	23	180	30	5.6	31	16	1.1	.6	.5
3	0	29	27	22	60	30	4.8	30	19	.9	.6	.6
4	0	28	145	22	49	26	5.6	32	14	1.1	.6	.6
5	.8	28	55	21	37	22	5.6	33	14	1.2	.6	.6
6	166	29	39	23	26	26	5.9	27	12	.9	.7	.7
7	16	29	36	27	26	26	5.2	27	8.0	.5	.6	.8
8	1.0	40	35	22	33	24	3.9	28	7.0	.5	.4	.8
9	0	41	34	21	33	24	3.1	24	5.2	1.2	.6	.9
10	0	32	37	22	20	20	2.9	20	6.2	1.0	.6	1.2
11	0	43	34	24	17	18	2.7	20	7.3	.9	.9	1.1
12	99	39	30	22	18	12	3.5	18	7.3	.8	.7	1.2
13	------	33	30	19	32	9.8	3.3	12	4.5	.8	.6	1.2
14	------	32	29	19	35	8.6	2.4	11	3.9	.9	.6	1.2
15	136	35	28	19	31	7.3	2.2	11	3.9	.9	.7	1.3
16	63	34	29	22	32	15	2.4	5.6	2.9	36	.6	1.4
17	39	35	29	34	28	18	2.5	4.1	2.5	2.5	.6	1.4
18	34	33	29	26	32	14	240	3.9	3.3	1.1	.6	1.3
19	37	38	28	24	21	9.8	81	5.2	3.5	1.1	.6	1.2
20	38	33	26	24	24	10	8.0	5.2	3.1	1.2	.6	1.2
21	29	37	26	25	23	10	4.1	3.9	2.9	.9	.6	1.2
22	28	45	27	25	39	8.6	3.3	3.9	2.9	.8	.6	1.2
23	37	31	26	24	41	7.6	2.5	3.1	3.1	.7	.6	1.2
24	34	33	26	24	31	7.3	2.5	3.3	2.9	.7	.6	1.1
25	30	23	26	23	30	6.2	3.7	3.9	2.3	.6	.6	1.1
26	27	30	26	25	27	5.2	3.7	3.9	1.8	.6	.5	1.2
27	28	31	27	31	27	5.2	4.1	3.1	1.7	.6	.5	1.0
28	35	31	25	30	28	4.5	6.2	2.7	1.4	.6	.5	.9
29	35	58	22	27	------	4.1	47	8.0	1.3	.6	.5	.8
30	30	42	22	24	------	8.6	35	16	1.3	.6	.5	.8
31	30	------	24	23	------	6.2	------	12	------	.6	.4	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	----------	0	----------	----------
November	58	23	34.4	2,050
December	145	22	33.3	2,050
January	34	19	23.9	1,470
February	180	17	35.9	1,990
March	30	4.1	14.6	898
April	240	2.2	17.0	1,010
May	33	2.7	14.3	879
June	19	1.3	5.91	352
July	36	.5	2.03	125
August	.9	.4	.59	36
September	1.4	.4	1.00	60
The period	----------	----------	----------	10,900

NOTE.—Stage was above limit for which rating curve is defined on Oct. 13, 14.

NORTH CONCHO RIVER NEAR CARLSBAD, TEX.

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

DRAINAGE AREA.—1,530 square miles.

RECORDS AVAILABLE.—March, 1924, to September, 1931.

EXTREMES.—Maximum stage during year, 7.40 feet Oct. 13 (discharge not determined); no flow at times.

1924–1931: Maximum discharge, about 63,600 second-feet June 13, 1930 (gage height, 18.2 feet); no flow at times.

REMARKS.—Records fair except those for Oct. 13, Dec. 5, May 30, and those estimated July 16, 17, which are poor. Diversions by pumping above station affect low-water flow; pump capacity, 40 second-feet. Low-water flow partly regulated by small reservoir above gage.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	0	1.4	1.7	5.6	5.6	6.8	5.0	5.6	32	0
2	0	1.4	1.5	5.6	6.1	6.8	5.0	4.5	12	0
3	0	1.2	1.5	6.1	5.6	6.1	5.6	4.5	7.6	0
4	0	1.4	14	6.1	5.0	.9	5.0	4.0	6.8	0
5	0	1.5	305	6.1	5.0	10	6.1	3.6	5.6	0
6	.4	1.5	97	6.1	5.6	4.5	6.1	4.5	5.0	0
7	.6	1.9	35	6.8	5.6	.6	6.1	30	4.5	0
8	.3	2.4	15	5.6	75	.7	6.8	14	3.6	0
9	0	2.2	9.4	5.0	28	4.0	6.8	6.8	2.8	0
10	0	1.7	9.4	5.6	11	5.0	6.1	5.0	2.8	0
11	0	2.4	8.5	5.0	8.5	5.6	5.6	4.5	2.4	0
12	63	2.4	7.6	5.6	7.6	6.1	5.6	4.5	2.4	0
13	282	2.8	6.8	5.0	7.6	6.1	5.6	5.6	2.2	0
14	92	2.4	6.8	5.0	6.8	6.1	5.6	5.0	1.9	0
15	6.1	1.9	6.1	5.0	6.1	6.1	5.6	4.5	1.9	0
16	3.1	1.7	6.8	5.0	6.1	7.6	5.6	4.0	1.5	1.3
17	1.9	1.5	6.8	5.6	5.6	7.6	5.6	4.0	1.0	
18	1.7	2.4	7.6	5.6	5.6	7.6	6.8	4.0	.8	0
19	1.7	2.4	5.6	5.6	6.8	6.8	8.5	3.1	.6	0
20	1.9	2.4	6.1	5.6	7.6	6.1	6.1	2.4	.6	0
21	1.5	2.4	6.1	4.5	8.5	6.1	5.0	2.2	.5	0
22	1.4	2.2	5.6	3.6	11	6.1	4.5	2.2	.4	0
23	.9	2.2	6.1	3.6	8.5	6.1	4.5	2.2	.4	0
24	.8	1.9	6.1	3.1	7.6	6.1	4.5	2.2	.2	0
25	.8	1.5	6.8	3.1	7.6	5.6	4.5	1.9	0	0
26	.8	1.9	6.1	3.1	7.6	5.6	3.6	1.4	0	0
27	1.1	2.4	5.6	5.6	7.6	5.0	4.0	1.0	0	0
28	1.4	1.4	5.6	5.0	7.6	5.0	4.5	1.2	0	0
29	1.1	2.4	5.6	5.0	-------	5.0	6.8	5.0	0	0
30	1.4	1.9	5.6	5.0	-------	4.5	5.6	344	0	0
31	1.7	-------	5.6	4.5	-------	4.5	-------	72	-------	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	282	0	15.1	928
November	2.8	1.2	1.97	117
December	305	1.5	20.1	1,240
January	6.8	3.1	5.09	313
February	75	5.0	10.2	566
March	10	.6	5.51	339
April	8.5	3.6	5.56	331
May	344	1.0	18.0	1,110
June	32	0	3.32	198
July	----------	0	.08	4.9
The year	344	0	7.10	5,150

NOTE.—No flow during August and September.

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. Zero of gage is 1,800.44 feet above mean sea level.

DRAINAGE AREA.—1,800 square miles.

RECORDS AVAILABLE.—October, 1915, to September, 1931 (discontinued).

EXTREMES.—Maximum stage and discharge during year not determined; no flow at times.

1915–1931: Maximum discharge, about 47,000 second-feet June 13, 1930 (gage height, 22.52 feet); no flow at times.

REMARKS.—Records good. Discharge estimated Oct. 13–14, May 10–29. Several small diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	0	0.7	6.2	3.0	3.3	7.0	2.5	8.5	46	0
2	0	.7	5.5	3.2	7.0	9.7	2.5	5.9	27	0
3	0	.8	5.5	3.0	4.4	9.0	2.7	5.2	16	0
4	0	.9	28	3.0	2.7	5.5	3.2	4.9	9.0	0
5	58	1.1	267	2.1	1.5	5.9	3.7	6.2	5.5	0
6	25	1.1	123	2.0	.8	4.9	2.5	5.2	4.2	0
7	1.6	.9	57	2.1	1.0	4.2	2.5	4.4	3.2	0
8	1.1	1.0	33	2.0	5.5	8.0	2.3	16	2.3	0
9	.7	1.2	20	1.6	46	7.0	2.5	19	1.6	.3
10	.8	1.4	13	1.8	25	5.5	3.0		1.4	.2
11	.5	4.9	9.7	3.0	14	3.9	3.2		.8	.2
12	301	1.5	7.5	3.0	8.5	2.3	3.2		.4	.2
13	569	1.4	6.2	3.0	6.5	3.2	3.0		.3	.1
14	569	1.4	4.9	2.3	4.4	4.2	3.2		.3	2.2
15	60	1.0	3.7	2.0	2.0	4.2	3.0		.1	.7
16	26	.7	3.5	2.5	1.6	4.4	2.7		.2	215
17	11	.6	3.0	3.7	1.2	4.4	3.0		7.3	6.2
18	5.9	.7	2.5	3.5	1.2	3.9	115		7.0	2.7
19	26	.6	2.5	3.0	2.5	7.2	96		1.8	18
20	14	.5	2.7	3.2	4.2	6.5	10	5.0	.8	7.5
21	4.2	.7	3.2	2.5	3.2	5.2	5.5		.5	2.7
22	2.7	.5	3.5	2.0	157	6.2	3.7		.3	.9
23	2.7	.5	3.2	2.0	11	5.9	4.2		.2	.5
24	1.5	.5	3.2	2.8	8.5	5.9	4.9		.1	.1
25	1.2	.6	3.2	2.0	10	5.2	5.9		.1	0
26	1.1	.6	4.4	1.2	8.5	5.2	5.2		0	0
27	1.2	.7	6.2	2.1	4.7	6.5	5.2		0	0
28	4.2	.4	3.2	3.9	4.9	6.2	8.5		0	0
29	2.0	37	2.5	2.5	-------	4.4	74		0	0
30	1.0	9.0	2.7	1.6	-------	4.4	16	210	0	0
31	.6	-------	2.7	.9	-------	4.2	-------	133	-------	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	-------	0	54.6	3,360
November	37	.4	2.45	146
December	267	2.5	20.7	1,270
January	3.9	.9	2.47	152
February	157	.8	12.5	694
March	9.7	2.3	5.49	338
April	115	2.3	13.4	797
May	210	-------	16.7	1,030
June	46	0	4.55	271
July	215	0	8.31	511
The year	-------	0	11.8	8,570

NOTE.—No flow during August and September.

PECAN BAYOU AT BROWNWOOD, TEX.

LOCATION.—Water-stage recorder at Fort Worth & Rio Grande Railway bridge 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, 1931.

EXTREMES.—Maximum discharge during year, 52,700 second-feet Oct. 14 (gage height, 16.92 feet); no flow at times.

1917–18, 1923–1931: Maximum discharge, that of Oct. 14, 1930; no flow at times.

REMARKS.—Records good. About 590 acres irrigated above station. Flow regulated during low stages by storage reservoirs and pumping plants above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	18	60	239	11	424	247	15	256	0	0
2	7.5	51	100	11	274	109	15	109	0	0
3	1.2	45	63	11	317	60	13	60	0	0
4	3.1	33	296	9.0	256	51	7.5	36	0	0
5	258	31	2,140	9.0	165	26	13	266	0	0
6	18,700	39	514	9.0	122	.7	11	161	0	0
7	12,400	33	160	9.0	104	.3	9.0	42	0	0
8	324	29	82	6.0	118	.5	15	22	0	0
9	132	29	51	6.0	335	2.0	13	22	0	0
10	63	29	33	6.0	298	20	7.5	20	3,980	0
11	45	26	26	13	150	24	3.1	11	571	0
12	6,430	26	22	9.0	104	24	7.5	7.5	159	0
13	24,300	26	22	11	93	20	1.2	4.5	60	0
14	40,000	26	18	11	78	18	1.2	4.5	248	0
15	4,860	36	13	11	74	7.5	1.2	.3	109	0
16	478	42	13	11	82	11	3.1	0	60	0
17	250	33	15	33	74	15	3.1	0	4,970	15
18	160	29	15	93	70	15	4.5	0	1,650	0
19	118	29	15	82	63	26	4.5	454	109	0
20	100	29	13	54	57	81	3.1	491	45	1,170
21	89	22	15	48	45	26	1.2	104	24	462
22	96	15	15	42	288	22	.5	39	13	145
23	1,040	15	26	31	204	15	.5	24	11	74
24	2,750	15	26	31	212	13	1.2	15	7.5	45
25	534	15	22	31	127	15	2.0	13	4.5	29
26	212	13	20	31	74	15	3.1	7.5	2.0	24
27	132	11	18	33	54	18	.7	1.2	.5	18
28	93	11	20	295	42	22	.3	.5	0	56
29	78	29	20	345	-------	29	4.5	.1	0	3.8
30	85	1,120	15	212	-------	22	335	.3	0	0
31	78	-------	13	140	-------	11	-------	.1	-------	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	40,000	1.2	3,670	226,000
November	1,120	11	64.9	3,860
December	2,140	13	131	8,060
January	345	6.0	53.4	3,280
February	424	42	154	8,550
March	247	.3	31.2	1,920
April	335	.3	16.7	994
May	491	0	70.0	4,300
June	4,970	0	401	23,900
July	1,170	0	65.9	4,050
The year	40,000	0	393	285,000

NOTE.—No flow during August and September.

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, 1931.

EXTREMES.—Maximum stage during year, 18.3 feet Oct. 6 (discharge not determined); minimum discharge, 0.9 second-foot Oct. 3.

1915–1931: Maximum stage, that of Oct. 6, 1930; no flow at times.

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

REMARKS.—Records good except those during high-water periods, which are poor. Low-water flow during irrigation season regulated by diversions to Noyes Canal, 4 miles above Menard. About 4,300 acres irrigated above and 7,700 acres below station.

Daily discharge, in second-feet, for high-water periods in 1918, 1919, and 1922

1918		1919		1922	
Apr. 15	1,900	May 16	1,350	Mar. 29	4,340
Apr. 16	1,420	June 9	487	Mar. 30	861
Apr. 17	350	June 22	645	Apr. 24	1,400
June 3	2,540	June 25	1,770	Apr. 25	1,580
June 4	896	June 26	493	Apr. 26	6,980
June 5	282	Sept. 22	3,480	Apr. 27	1,820
Nov. 8	7,900	Sept. 23	2,820	Apr. 28	467
Nov. 9	399	Sept. 24	355	Apr. 30	482
				May 3	1,500
				May 13	122
				May 14	188
				May 17	1,730

NOTE.—Records for above periods not previously published because of lack of definition of rating curve for high stages.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	35	35	28	84	38	27	42	17	12	11	7.0
2	2.0	35	35	27	816	37	27	26	16	8.1	11	6.7
3	1.3	35	36	27	468	37	27	23	15	8.4	11	1,300
4	1.6	35	37	27	112	37	26	22	14	12	11	64
5	1.8	35	37	27	66	37	26	21	13	7.4	11	25
6	6,540	34	35	27	52	36	25	20	13	33	10	17
7	622	34	35	27	48	36	24	20	13	12	9.9	14
8	155	35	35	26	45	35	23	19	13	8.8	10	14
9	81	38	35	26	43	35	25	19	13	12	10	14
10	60	36	35	27	42	35	25	19	15	29	21	12
11	42	35	35	32	40	35	25	20	14	27	11	9.2
12	37	35	35	30	40	35	23	20	14	26	9.2	8.8
13	129	34	35	27	43	35	24	19	34	22	7.7	9.5
14	3,770	34	35	26	40	35	24	18	13	19	7.0	10
15	288	33	35	25	39	49	23	18	14	15	7.4	10
16	111	33	35	26	40	49	25	17	12	178	6.4	9.9
17	73	32	35	45	38	46	26	16	12	222	7.0	8.8
18	48	32	35	43	38	45	25	17	99	140	8.1	8.8
19	48	31	35	32	38	44	84	17	136	50	7.7	9.2
20	50	31	35	31	38	45	58	17	14	35	8.1	8.4
21	40	31	35	30	38	43	31	16	13	24	8.1	8.1
22	38	32	36	29	42	37	20	15	8.1	23	8.4	7.7
23	45	32	36	29	40	29	19	16	8.8	19	8.8	8.1
24	42	33	35	29	42	29	20	16	9.9	18	9.9	7.7
25	39	34	35	29	40	28	20	16	7.4	16	9.2	7.4
26	38	34	34	29	38	29	19	16	8.8	15	8.4	7.4
27	38	34	34	34	39	29	19	16	7.7	15	8.8	7.4
28	41	34	33	33	40	28	20	16	7.4	13	8.1	7.4
29	39	37	33	30	------	28	32	17	11	14	7.7	7.4
30	37	37	32	29	------	27	82	18	12	14	8.1	7.4
31	37	------	28	30	------	28	------	19	------	12	8.1	------

Monthly discharge, in second-feet, of San Saba River at Menard, Tex., 1917–1919, 1921–22, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1917–18				
October	2.9	1.1	1.88	116
November	22	3.5	9.81	584
December	36	15	23.7	1,460
January	41	13	27.1	1,670
February	40	19	30.2	1,680
March	44	10	26.5	1,630
April	1,900	1.2	139	8,270
May	121	7.8	23.2	1,430
June	2,540	1.4	140	8,330
July	15	0	1.83	113
August	19	0	5.18	319
September	121	.8	47.2	2,810
The year	2,540	0	39.3	28,400
1918–19				
October	393	4.8	36.6	2,250
November	7,900	22	317	18,900
December	49	31	37.9	2,330
January	48	29	36.9	2,270
February	41	39	39.6	2,200
March	40	23	29.1	1,790
April	28	26	27.3	1,620
May	1,350	24	75.8	4,660
June	1,770	25	160	9,520
July	422	40	72.8	4,480
August	49	40	42.7	2,630
September	3,480	33	263	15,600
The year	7,900	4.8	94.3	68,200
1921–22				
October	241	5.4	35.3	2,170
November	5.7	2.2	3.65	217
December	21	3.9	10.8	663
January			5.72	351
February	5.1	2.4	4.31	239
March	4,340	1.6	172	10,600
April	6,980	7.0	447	26,600
May	1,730	47	191	11,700
June	306	22	53.6	3,190
July	91	4.8	18.5	1,140
August	9.5	4.2	6.87	422
September	19	7.5	11.1	663
The year	6,980	1.6	80.0	58,000
1930–31				
October	6,540	1.3	403	24,800
November	38	31	34.0	2,020
December	37	28	34.7	2,130
January	45	25	29.6	1,820
February	816	38	88.9	4,940
March	49	27	36.0	2,210
April	84	19	29.1	1,730
May	42	15	19.1	1,170
June	136	7.4	19.9	1,180
July	222	7.4	34.2	2,100
August	21	6.4	9.33	574
September	1,300	6.7	54.7	3,250
The year	6,540	1.3	66.2	48,000

NOTE.—Monthly discharge for some months, 1918–1922, not previously published because of lack of definition of rating curve for high stages.

SAN SABA RIVER AT SAN SABA, TEX.

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

DRAINAGE AREA.—3,050 square miles.

RECORDS AVAILABLE.—August, 1930, to September, 1931. Comparable records at site 4½ miles upstream December, 1904, to December, 1906; September, 1915, to August, 1930.

EXTREMES.—Maximum discharge during year, 38,300 second-feet Oct. 7 (gage height, 35.15 feet); minimum, 23 second-feet Oct. 3 (gage height, 3.11 feet). 1904–1906, 1915–1931: Maximum stage, 42.1 feet (present gage datum) Apr. 26, 1922 (discharge not determined); no flow Aug. 9, 10, 1918.

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

Revised daily discharge, in second-feet, of San Saba River at San Saba, Tex., for high-water periods in 1922

Apr. 4	9,610	Apr. 27	41,200	May 2	21,800
Apr. 25	12,900	Apr. 28	9,840	May 3	16,300
Apr. 26	50,300	May 1	5,770	May 4	7,060

NOTE.—The above figures supersede those published in Water-Supply Paper 548 because of revision of rating curve for high stages.

Daily discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26		271	84	222	296	141	310	82	57	56	34
2	25	174	170	84	247	236	141		75	53	62	35
3	24		136	85	996	222	135		73	47	59	70
4	25	154	134	86	1,340	208	131		69	44	56	42
5	92	152	172	88	609	198	126		69	44	50	442
6	8,770	149	176	89	402	188	120		65	47	46	192
7	24,800	143	133	89	312	183	117		64	42	42	110
8	3,680	141	140	88	675	176	114		65	36	39	80
9	830	141	124	85	515	172	117	110	61	42	40	66
10	450	140	115	88	304	165	117		272	68	42	57
11	312	143	110	95	274	162	117		301	108	110	53
12	463	149	103	100	252	160	117		315	89	55	56
13	3,910	146	99	99	252	156	115		135	64	102	52
14	12,400	146	97	98	442	154	115		187	60	70	51
15	5,020	146	94	97	304	255	114	99	230	69	65	50
16	1,590	142	90	102	461	452	111	98	170	75	52	46
17	639	134	89	616	389	428	112	91	151	224	46	44
18	412	129	88	988	289	259		88	226	744	43	45
19	320	130	86	476	252	215		88	217	246	40	45
20	289	126	85	337	244	208		88	130	266	41	44
21	289	123	89	282	229	194		87	100	183	40	42
22	259	119	119	244	359	195		85	91	137	37	42
23	358	119	106	215	611	169	106	82	93	112	39	40
24	346	119	94	201	524	160		81	83	95	41	39
25	266	117	88	188	450	155		81	77	90	40	38
26		116	88	179	291	154		79	72	82	42	36
27		116	85	179	252	154		77	64	69	41	36
28		114	82	248	255	154		75	58	67	39	36
29	174	132	81	320	-------	154		76	58	67	37	40
30		236	80	274	-------	146	310	79	62	63	35	40
31		-------	82	244	-------	145	-------	87	-------	63	34	------

Monthly discharge, in second-feet, of San Saba River at San Saba, Tex., 1921–22, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1921–22				
October	233	36	59.4	3,650
November	49	31	36.8	2,190
December	61	35	47.4	2,910
January	63	40	50.1	3,080
February	62	46	52.3	2,900
March	6,590	30	403	24,800
April	50,300	38	4,480	267,000
May	21,809	330	2,660	164,000
June	761	127	296	17,600
July	467	67	137	8,420
August	268	58	73.4	4,510
September	74	58	64.7	3,850
The year	50,300	30	697	505,000
1930–31				
October	24,800	24	2,150	132,000
November	236	114	141	8,390
December	271	80	113	6,950
January	988	84	208	12,800
February	1,340	222	420	23,300
March	452	145	202	12,400
April	----------	----------	128	7,620
May	----------	75	109	6,700
June	315	58	124	7,380
July	744	36	111	6,820
August	110	34	49.7	3,060
September	442	34	66.8	3,970
The year	24,800	24	320	231,000

NOTE.—Monthly discharge for April and May, 1922, not previously published because of lack of definition of rating curve for high stages.

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, 1931.

EXTREMES.—Maximum discharge during year, about 58 second-feet Feb. 2 (gage height, 2.70 feet); no flow at times.

1924–1931: Maximum discharge, that of Feb. 2, 1931.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	9.8	5.6	15	12	9.2	16	25	18	22	21	21
2	21	9.8	5.4	15	34	9.2	16	21	20	22	22	21
3	21	9.8	5.2	15	30	9.2	16	22	18	21	21	25
4	22	10	5.4	15	18	9.2	16	21	18	21	21	24
5	24	10	5.6	14	13	9.2	16	21	18	20	16	21
6	25	10	5.6	14	13	9.6	17	20	18	18	21	21
7	28	10	5.6	14	12	9.6	18	20	18	18	20	20
8	24	10	5.6	13	11	10	17	20	20	20	18	17
9	16	10	5.6	13	11	11	18	20	20	17	20	17
10	9.4	10	5.6	13	11	11	17	20	21	0	25	18
11	9.4	10	5.2	14	10	11	17	20	20	0	28	18
12	9.4	10	5.2	14	9.6	11	16	18	20	0	28	18
13	18	11	5.2	13	9.2	11	16	18	20	6.8	25	21
14	33	11	5.2	12	9.2	11	16	18	21	22		20
15	29	11	5.2	12	9.2	13	16	18	20	20		20
16	17	11	5.2	12	11	13	15	20	21	25		18
17	13	10	5.2	17	10	0	15	20	21	29		17
18	8.8	9.8	5.2	14	11	0	15	20	21	30		20
19	7.4	9.8	5.2	13	11	0	8.9	21	20	30	21	20
20	9.4	9.8	5.2	12	9.2	0	0	21	21	26		20
21	9.2	9.8	5.1	12	9.2	0	11	22	20	24		20
22	9.8	9.8		12	9.4	9.7	22	21	20	24		20
23	10	8.6		11	9.2	21	22	17	20	24		20
24	10	7.4		12	9.2	17	22	18	20	21		20
25	10	7.4	5.0	12	9.2	17	22	18	17	21	17	21
26	10	7.0		12	9.6	17	22	17	18	22	20	21
27	10	6.1	14	13	9.2	17	22	20	18	21	18	21
28	11	5.6	14	13	9.2	17	22	20	20	21	20	20
29	11	5.6	15	13	------	17	24	20	22	21	21	21
30	10	5.6	15	13	------	17	25	21	22	21	21	21
31	10	------	15	12	------	17	------	20	------	22	18	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (30 days)	33	7.4	15.2	904
November	11	5.6	9.19	547
December	------	------	6.78	417
January	17	11	13.2	812
February	34	9.2	12.1	672
March (26 days)	21	9.2	12.8	662
April (29 days)	25	8.9	17.8	1,020
May	25	17	19.9	1,220
June	22	17	19.7	1,170
July (28 days)	30	6.8	21.8	1,210
August	------	------	21.0	1,290
September	25	17	20.1	1,200
The year	------	------	------	11,100

NORTH LLANO RIVER NEAR JUNCTION, TEX.

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

DRAINAGE AREA.—914 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, about 37,700 second-feet Oct. 6 (gage height, 20.9 feet); no flow Oct. 3.

1915–1931: Maximum discharge, about 43,100 second-feet Apr. 24, 1923 (gage height, 23 feet); no flow at times.

REMARKS.—Records good except those during high-water periods. Discharge estimated Nov. 30 to Dec. 14. Diversions above station for irrigation materially reduce low-water flow.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	46		23	24	44	32	138	32	17	14	3.9
2	.4	41		22	26	44	30	106	27	16	13	3.9
3	0	39		21	27	39	30	93	27	15	13	3.9
4	.4	39		20	29	39	32	84	27	14	13	3.5
5	.8	36		20	27	39	33	78	26	13	11	2.6
6	12,700	38		20	27	39	32	75	23	13	11	3.0
7	1,480	35		19	27	38	32	69	23	13	10	2.6
8	317	36	31	18	27	38	32	63	22	11	10	2.4
9	170	35		18	29	36	38	58	22	22	9.2	2.3
10	96	35		18	29	38	33	53	38	14	9.2	2.3
11	51	33		19	29	36	30	53	29	13	11	1.8
12	17	32		20	30	36	27	49	26	15	7.7	1.6
13	55	30		20	32	35	27	49	23	15	6.6	1.6
14	408	29		21	32	35	27	46	21	13	6.6	1.6
15	228	29	30	21	35	46	27	41	20	12	6.1	1.6
16	161	29	30	24	38	46	29	41	19	66	5.2	1.3
17	135	27	29	32	39	39	29	39	22	26	5.2	1.0
18	•145	26	29	32	38	36	27	39	26	16	5.2	1.0
19	128	26	29	29	36	36	214	39	22	32	4.8	1.0
20	119	27	29	27	36	73	72	39	21	27	4.8	1.0
21	96	27	29	27	36	49	49	38	19	22	4.8	.9
22	81	29	29	26	64	39	41	36	17	29	4.8	.8
23	63	29	29	26	92	36	39	35	15	24	4.8	.8
24	66	29	29	24	61	38	39	35	15	21	4.8	.8
25	66	30	27	24	51	36	38	33	15	20	4.4	.8
26	63	29	26	24	51	36	36	32	14	18	4.4	.7
27	61	30	27	24	49	36	35	32	14	17	3.9	.7
28	58	32	26	26	46	35	50	32	15	17	4.4	.7
29	56	32	26	26	------	35	725	32	22	15	3.9	.7
30	53	31	24	26	------	33	302	33	20	15	3.9	.6
31	49	------	24	26	------	33	------	35	------	14	3.9	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	12,700	0	546	33,600
November	46	26	32.2	1,920
December	------	------	29.2	1,800
January	32	18	23.3	1,430
February	92	24	38.1	2,120
March	73	33	39.3	2,420
April	725	27	72.9	4,340
May	138	32	52.4	3,220
June	38	14	22.1	1,320
July	66	11	19.2	1,180
August	14	3.9	7.25	446
September	3.9	.6	1.71	102
The year	12,700	0	74.4	53,900

LLANO RIVER NEAR JUNCTION, TEX.

LOCATION.—Water-stage recorder 100 feet north of Kerrville-Junction road, 3 miles below confluence of North Llano and South Llano Rivers, and 3.5 miles east of Junction, Kimble County.

DRAINAGE AREA.—1,760 square miles.

RECORDS AVAILABLE.—September, 1915, to September, 1931.

EXTREMES.—Maximum stage during year, 25.2 feet Oct. 6 (discharge not determined); minimum discharge, 35 second-feet Sept. 28 (gage height, 1.42 feet).

1915–1931: Maximum discharge, about 98,800 second-feet Sept. 16, 1915 (gage height, 26.3 feet); minimum, 13 second-feet Aug. 23–28, 1918 (gage height, 1.32 feet).

REMARKS.—Records good except those during high-water periods. About 2,500 acres irrigated above and 1,300 acres below station. Diversions slightly reduce low-water flow. Slight regulation by water-power plant on South Llano River.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	129	105	84	91	109	80	1,360	118	87	69	46
2	42	116	102	84	105	109	80	538	111	80	63	46
3	42	105	98	84	102	105	80	378	107	77	60	48
4	44	105	102	80	102	105	80	342	104	74	60	52
5	77	105	105	80	102	102	80	272	100	74	58	52
6	23,900	109	105	77	102	102	80	244	97	69	58	50
7	2,270	112	94	77	102	102	80	244	94	72	60	48
8	905	120	94	74	102	102	87	229	94	69	60	48
9	472	125	94	74	102	94	98	203	90	72	60	50
10	366	129	94	74	102	94	91	189	141	69	58	50
11	318	125	94	74	102	94	87	184	107	66	58	46
12	283	120	91	74	98	94	87	174	100	63	55	46
13	487	116	91	74	98	91	87	165	90	63	58	48
14	482	112	91	74	98	87	84	156	87	66	58	46
15	378	112	87	74	105	105	84	151	83	66	58	46
16	266	109	87	84	112	116	84	138	83	87	55	46
17	260	102	87	98	112	109	84	125	83	122	58	46
18	393	102	87	94	105	102	95	125	90	87	58	44
19	272	102	87	91	105	116	398	122	87	94	58	44
20	224	102	87	87	105	138	189	122	80	111	58	44
21	198	102	84	84	105	116	142	118	77	100	58	42
22	179	102	84	84	105	102	120	114	69	97	58	39
23	174	98	84	84	160	98	109	111	69	94	66	39
24	170	98	84	84	125	94	102	111	72	90	63	39
25	165	94	87	77	116	91	102	114	72	90	60	39
26	156	94	84	77	112	87	98	111	72	80	58	39
27	147	94	87	80	105	87	98	107	72	77	52	37
28	147	94	87	87	105	91	112	107	77	72	50	37
29	147	120	84	87	-------	87	2,510	107	94	69	50	39
30	142	112	80	87	-------	84	3,650	111	90	69	50	37
31	138	-------	84	87	-------	84	-------	118	-------	69	48	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	23,900	42	1,070	65,800
November	129	94	109	6,490
December	105	80	90.7	5,580
January	98	74	81.6	5,020
February	160	91	107	5,940
March	138	84	99.9	6,140
April	3,650	80	305	18,100
May	1,360	107	216	13,300
June	141	69	90.3	5,370
July	122	63	79.8	4,910
August	69	48	57.8	3,550
September	52	37	44.4	2,640
The year	23,900	37	198	143,000

LLANO RIVER NEAR CASTELL, TEX.

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

DRAINAGE AREA.—3,510 square miles.

RECORDS AVAILABLE.—November, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, about 89,800 second-feet Oct. 6 (gage height, 22.3 feet); minimum, 33 second-feet Sept. 26–30 (gage height, 0.74 foot).

1924–1931: Maximum discharge, that of Oct. 6, 1930; minimum, 16 second-feet Aug. 17, Sept. 4, 5, 1929 (gage height, 0.59 foot).

REMARKS.—Records good. Several small diversions above station slightly reduce low-water flow.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59		325	149	359	383	174	2,540	198	130		47
2	52		212	148	750	330	172	1,380	180	143		47
3	46		175	144	497	292	189	804	158	126		47
4	48		1,300	142	387	278	184	590	141	110		64
5	142		594	134	353	268	177	486	133	102		68
6	51,700		388	130	327	254	166	430	124	560		54
7	9,940		288	125	311	239	150	390	119	280		51
8	2,860		242	123	472	227	148	370	115	134		51
9	1,330		218	120	383	216	169	347	116	141		49
10			208	123	303	212	179	319	167	116		48
11		200	182	148	280	210	189	300	334	115		47
12			189	155	270	203	160	282	255	104		45
13			182	143	829	196	149	266	168	108		44
14	608		175	132	507	196	148	248	136	112		44
15			166	121	776	347	150	235	120	97		41
16			155	371	1,010	422	154	220	111	115	69	39
17			150	2,420	523	376	142	205	106	536		39
18	406		150	726	426	273	138	205	175	305		38
19	465		149	467	387	250	316	160	134	226		38
20	453		148	387	356	305	390	192	133	204		37
21	402		158	339	339	319	396	189	124	205		36
22	324	134	177	300	1,170	250	267	181	116	189		35
23		136	163	270	708	235	207	173	109	146		35
24		134	154	254	523	207	199	170	103	129		35
25		134	149	233	422	189	196	165	98	120		35
26	275	132	146	225	373	187	179	160	95	110		34
27		134	143	384	370	180	186	155	93	102		34
28		134	138	682	373	194	204	150	102	94		34
29		381	134	559	-------	186	1,850	155	128	89		33
30		524	132	444	-------	187	3,480	173	136	69	49	33
31		-------	143	398	-------	187	-------	194	-------		49	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	51,700	46	2,440	150,000
November	----------	----------	201	12,000
December	1,300	132	233	14,300
January	2,420	120	339	20,800
February	1,170	270	492	27,300
March	422	180	252	15,500
April	3,480	138	360	21,400
May	2,540	150	382	23,500
June	334	93	141	8,390
July	560	----------	164	10,100
August	----------	----------	67.7	4,160
September	68	33	42.7	2,540
The year	51,700	33	428	310,000

PEDERNALES RIVER AT STONEWALL, TEX.

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

DRAINAGE AREA.—647 square miles.

RECORDS AVAILABLE.—July, 1924, to September, 1931.

EXTREMES.—Maximum discharge during year, about 19,100 second-feet Oct. 12 (gage height, 9.50 feet); minimum, 3.3 second-feet Oct. 2, 3 (gage height, 0.44 foot).

1924–1931: Maximum discharge, about 38,100 second-feet May 28, 1929 (gage height, 14.25 feet); minimum, 1.8 second-feet July 30, 31, 1925 (gage height, 0.33 foot).

Maximum stage known, about 24.0 feet in 1900.

REMARKS.—Records good except those during high-water periods, which are fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.7	21	21	16	57	80	62	291	60	70	11	6.8
2	3.5	18	18	16	392	74	62	183	42	40	9.8	6.8
3	3.5	18	18	16	116	67	62	238	39	30	9.0	6.8
4	8.2	16	21	16	82	64	57	140	35	22	7.5	6.0
5	24	16	18	15	72	64	57	120	32	20	7.5	5.2
6	2,840	13	18	15	64	64	60	187	28	99	7.5	5.2
7	422	13	17	15	64	60	62	769	28	36	6.0	5.2
8	82	16	16	13	596	57	62	140	25	21	6.0	5.2
9	44	18	16	13	144	55	64	110	25	17	6.0	5.2
10	28	18	16	16	82	51	62	97	39	15	5.2	5.2
11	20	21	16	17	67	53	62	87	42	12	4.5	5.2
12	4,710	21	16	18	64	51	60	80	35	11	4.5	5.2
13	758	21	16	17	72	51	62	74	28	11	4.1	5.2
14	144	25	16	16	62	51	69	69	24	10	4.1	4.3
15	87	28	16	15	124	242	67	69	20	11	4.1	4.3
16	64	22	13	24	312	151	60	67	18	658	4.1	4.5
17	51	18	13	482	127	87	55	64	16	173	4.1	4.3
18	40	16	13	180	93	67	55	69	15	518	4.1	4.3
19	37	15	13	85	77	67	69	69	16	166	4.1	4.3
20	35	13	13	67	74	253	64	67	15	67	4.1	4.3
21	30	13	16	55	72	110	62	60	12	40	4.1	4.3
22	27	13	17	51	509	74	57	60	12	37	10	4.3
23	32	13	16	46	265	67	57	55	12	27	123	4.3
24	40	13	16	42	161	62	57	51	10	22	20	4.3
25	37	13	17	39	100	62	55	49	10	20	15	4.3
26	32	13	16	39	85	64	57	46	9.0	17	15	4.3
27	28	13	16	40	85	395	82	42	10	13	10	4.3
28	27	13	13	55	85	110	72	39	321	12	9.0	4.3
29	24	17	13	82	-------	74	2,650	39	802	12	7.5	4.3
30	24	18	15	72	-------	72	826	67	646	12	7.5	4.3
31	24	-------	16	64	-------	67	-------	90	-------	12	6.8	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,710	3.5	314	19,300
November	28	13	16.9	1,010
December	21	13	16.0	984
January	482	13	53.5	3,290
February	596	57	147	8,160
March	395	51	92.5	5,690
April	2,650	55	174	10,400
May	769	39	116	7,130
June	802	9.0	80.9	4,810
July	658	10	72.0	4,430
August	123	4.1	11.1	682
September	6.8	4.3	4.88	290
The year	4,710	3.5	91.2	66,200

PEDERNALES RIVER NEAR SPICEWOOD, TEX.

LOCATION.—Staff gage 2½ miles below mouth of Fall Creek and 8 miles southeast of Spicewood, Burnet County. Zero of gage is 624.8 feet above mean sea level.

DRAINAGE AREA.—1,290 square miles.

RECORDS AVAILABLE.—November, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, about 13,900 second-feet Oct. 13 (gage height, 12.60 feet); minimum, 1.4 second-feet Sept. 29, 30.

1924–1931: Maximum discharge, about 155,000 second-feet May 28, 1929 (gage height, 40.4 feet); no flow at times.

REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	56	58	47	226	564	254	2,340	141	569	32	14
2	2.8	50	55	48	336	520	241	674	148	196	30	14
3	2.7	49	50	47	494	466	228	484	121	121	28	12
4	12	47	52	46	352	430	215	466	104	86	26	12
5	90	46	61	44	284	394	202	358	93	62	24	10
6	1,110	43	72	43	226	376	202	310	84	52	22	9.0
7	2,900	41	63	42	212	340	190	267	77	167	21	8.0
8	497	39	58	41	378	325	190	586	70	142	19	6.5
9	177	40	55	41	736	310	178	325	67	95	18	5.5
10	117	42	54	44	345	295	176	254	101	106	16	4.4
11	90	46	51	50	240	280	171	228	90	135	19	4.4
12	73	48	50	69	212	267	167	215	95	79	16	4.4
13	4,390	49	49	69	212	267	165	202	108	50	14	4.4
14	557	88	48	63	212	254	165	190	84	54	13	4.1
15	242	84	46	56	212	282	178	178	69	249	13	3.5
16	150	77	44	62	672	557	178	169	60	184	12	3.2
17	110	70	43	1,320	578	484	163	158	50	110	12	2.9
18	83	55	43	925	352	358	156	156	47	2,070	21	2.3
19	72	52	41	432	268	295	169	156	42	1,620	19	2.0
20	68	50	41	284	240	730	167	154	40	396	15	2.0
21	68	47	44	226	226	641	190	146	37	222	14	2.0
22	65	43	56	200	3,410	412	228	139	37	146	44	1.9
23	61	42	55	176	2,830	325	171	135	32	106	37	1.8
24	63	41	55	160	1,750	280	158	129	31	83	167	1.6
25	77	41	52	150	836	254	156	123	29	70	109	1.7
26	77	39	51	142	652	254	148	117	27	59	76	1.8
27	70	39	49	144	608	325	150	110	25	52	50	1.7
28	68	40	48	150	608	484	174	102	28	44	37	1.6
29	66	42	46	197	-------	394	2,510	104	31	40	27	1.4
30	65	48	46	318	-------	295	3,690	115	594	38	19	1.4
31	61	-------	46	268	-------	280	-------	141	-------	35	16	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,390	2.7	371	22,800
November	88	39	49.8	2,960
December	72	41	51.0	3,140
January	1,320	41	190	11,700
February	3,410	212	632	35,100
March	730	254	379	23,300
April	3,690	148	378	22,500
May	2,340	102	298	18,300
June	594	25	85.4	5,080
July	2,070	35	240	14,800
August	167	12	31.8	1,960
September	14	1.4	4.85	289
The year	4,390	1.4	224	162,000

GUADALUPE RIVER BASIN

GUADALUPE RIVER NEAR COMFORT, TEX.

LOCATION.—Staff gage at low-water bridge and dam on State highway 27, 2.6 miles west of Comfort, Kendall County.

DRAINAGE AREA.—916 square miles.

RECORDS AVAILABLE.—December, 1917, to September, 1931.

EXTREMES.—Maximum stage during year, 20.3 feet Oct. 6 (discharge not determined); minimum discharge, 18 second-feet Oct. 1 (gage height, 2.04 feet).

1917–1931: Maximum stage from flood marks, about 41 feet Aug. 21, 1919 (discharge not determined); minimum discharge, about 0.4 second-foot Aug. 2, 1918 (gage height, 0.80 foot).

REMARKS.—Records good except those estimated Oct. 6, 7. Some water diverted above station for irrigation; several pumping plants 8 miles upstream. Small power plants upstream partly regulate low-water flow.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	97	106	79	206	173	156	735	182	123	106	52
2	19	92	97	79	255	165	148	568	165	104	94	50
3	19	92	97	75	216	159	148	505	153	92	85	50
4	50	90	125	75	206	156	143	448	148	88	81	52
5	66	92	111	70	196	153	138	395	146	88	79	48
6	9,000	88	106	62	185	156	138	935	146	85	77	48
7		83	101	62	185	148	133	716	133	85	72	45
8	505	97	101	68	241	143	133	395	133	81	68	45
9	360	111	101	62	202	143	138	325	133	75	70	45
10	272	111	97	75	192	143	133	272	165	70	72	45
11	308	111	94	83	182	143	133	308	143	75	77	42
12	1,100	101	92	75	192	138	125	308	133	77	66	42
13	556	97	92	72	199	135	130	290	123	75	62	42
14	290	116	92	66	173	138	140	272	116	72	54	42
15	213	111	88	66	199	252	133	255	111	110	60	41
16	185	101	83	79	318	407	128	252	108	170	60	42
17	159	94	83	373	234	230	123	244	104	182	60	42
18	168	94	75	308	213	182	125	248	99	158	59	42
19	143	97	75	227	202	159	138	238	99	414	59	41
20	140	97	77	192	192	244	146	224	99	395	59	41
21	130	92	88	173	199	206	369	202	90	284	59	41
22	120	94	85	168	286	170	189	202	94	188	60	41
23	125	101	81	165	213	159	138	199	88	168	92	42
24	146	97	79	148	202	153	138	192	83	148	97	44
25	130	97	79	146	188	148	138	182	81	133	77	42
26	116	92	79	140	182	153	128	179	81	120	66	41
27	116	94	77	202	182	397	153	176	94	108	62	28
28	130	94	75	220	182	220	148	170	127	104	57	37
29	116	130	75	255	------	170	1,960	170	182	101	54	35
30	104	116	75	241	------	176	4,660	325	159	99	55	42
31	97	------	79	224	------	165	------	224	------	104	52	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	------	18	771	47,400
November	130	83	99.3	5,910
December	125	75	89.2	5,480
January	373	62	140	8,610
February	318	173	208	11,600
March	407	135	183	11,300
April	4,660	123	358	21,300
May	935	170	328	20,200
June	182	81	124	7,380
July	414	70	135	8,300
August	106	52	69.4	4,270
September	52	28	43.0	2,560
The year	------	18	213	154,000

GUADALUPE RIVER NEAR SPRING BRANCH, TEX.

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

DRAINAGE AREA.—1,430 square miles.

RECORDS AVAILABLE.—June, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, about 24,000 second-feet Oct. 7 (gage height, 24.57 feet); minimum, 20 second-feet Oct. 1.

1922–1931: Maximum discharge, that of Oct. 7, 1930; minimum, about 4.7 second-feet Aug. 18, 1923 (gage height, about 1.74 feet).

REMARKS.—Records good. Discharge partly estimated May 23–27, June 27, 28, Sept. 1, 4, 5; interpolated Sept. 2, 3. About 400 acres irrigated above station. Slight regulation during low-water periods caused by operation of water-power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	206	173	125	559	470	450	6,060	454	386	173	84
2	22	196	130	128	784	454	438	1,840	390	269	166	80
3	23	193	153	128	708	434	426	1,400	358	222	160	77
4	29	190	173	128	631	422	406	1,200	343	199	150	73
5	72	186	190	125	590	410	343	1,070	332	183	137	71
6	221	180	190	125	564	402	335	945	317	170	134	71
7	15,000	176	176	122	542	398	335	2,300	306	156	128	69
8	1,460	170	173	122	554	386	332	1,040	306	150	122	67
9	685	170	163	116	618	370	332	895	294	147	119	67
10	490	190	156	113	534	339	328	798	294	140	113	65
11	406	196	153	125	514	339	328	752	324	137	131	67
12	877	193	153	131	498	320	317	708	302	131	122	67
13	2,080	193	150	128	498	309	309	685	280	150	113	65
14	1,120	196	147	125	498	302	335	640	258	147	108	65
15	466	196	150	116	482	461	350	618	239	188	105	65
16	374	196	143	136	600	626	332	582	226	374	98	65
17	313	186	137	652	626	554	320	554	219	254	96	65
18	280	173	137	708	554	498	313	546	203	451	103	62
19	250	170	140	550	522	450	317	542	196	410	100	61
20	243	163	137	494	506	652	332	518	193	547	100	62
21	226	156	140	438	482	613	359	490	186	662	122	61
22	219	153	147	398	502	518	484	474	180	418	119	61
23	209	150	147	374	582	478	366	462	176	324	123	61
24	186	147	147	362	577	462	343	450	166	280	339	61
25	209	147	143	346	522	438	339	438	156	254	170	61
26	209	147	140	335	494	454	324	422	150	229	134	64
27	209	143	134	332	482	763	317	410	150	213	113	62
28	404	137	137	408	478	839	339	386	153	206	103	59
29	246	147	134	626	------	526	2,760	378	442	183	98	57
30	226	156	131	662	------	478	8,400	382	629	173	93	53
31	209	------	128	595	------	462	------	498	------	173	84	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	15,000	21	870	53,500
November	206	137	173	10,300
December	190	128	151	9,280
January	708	113	299	18,400
February	784	478	554	30,800
March	839	302	472	29,000
April	8,400	309	700	41,700
May	6,060	378	919	56,500
June	629	150	274	16,300
July	662	131	256	15,700
August	339	84	128	7,870
September	84	53	65.6	3,900
The year	15,000	21	405	293,000

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

LOCATION.—Water-stage recorder at New Braunfels, Comal County, 1.1 miles above Comal River. Zero of gage is 586.56 feet above mean sea level.

DRAINAGE AREA.—1,670 square miles.

RECORDS AVAILABLE.—December, 1927, to September, 1931.

EXTREMES.—Maximum discharge during year, 22,200 second-feet Oct. 8 (gage height, 16.40 feet); minimum, 22 second-feet Oct. 2–4.

1928–1931: Maximum discharge, that of Oct. 8, 1930; minimum, 14 second-feet July 19, 20, 1928 (gage height, 0.88 foot).

Maximum stage known, about 38 feet in 1869 and in December, 1913.

REMARKS.—Records good except that estimated because of backwater July 18. Small diversions above station for irrigation. Slight regulation during low-water periods caused by operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	222	190	170	876	678	645	9,780	701	749	268	150
2	22	210	194	170	980	624	624	3,310	604	470	262	142
3	22	206	202	167	1,090	593	614	2,220	545	374	268	140
4	24	194	236	167	876	583	572	2,000	503	319	247	135
5	29	190	284	167	797	593	545	1,710	478	290	236	130
6	46	183	268	164	737	583	537	1,480	462	273	222	124
7	5,280	186	252	161	690	562	528	1,860	455	257	210	120
8	9,440	186	236	158	678	537	537	2,470	431	252	206	118
9	1,230	186	231	158	678	520	554	1,470	431	236	202	114
10	701	190	222	161	725	512	528	1,290	423	226	190	110
11	537	202	218	190	624	503	512	1,200	439	222	186	108
12	431	206	214	177	604	503	495	1,150	462	218	186	105
13	2,260	206	210	174	604	495	478	1,060	431	214	190	103
14	1,230	222	210	170	583	503	478	1,020	408	210	180	102
15	678	218	202	167	593	583	503	958	387	299	177	100
16	495	214	190	189	772	944	495	889	368	265	174	98
17	400	214	186	465	930	958	470	863	387	447	167	96
18	336	210	186	1,020	850	850	447	850	362	3,130	161	96
19	307	202	183	850	772	772	447	836	342	1,130	164	95
20	295	194	183	666	713	1,150	447	823	330	810	167	92
21	273	186	183	562	701	1,130	520	772	319	915	231	92
22	252	186	186	520	690	930	520	725	313	823	198	90
23	242	186	186	486	772	797	583	678	295	583	198	88
24	236	180	186	462	973	737	495	645	278	486	186	88
25	222	180	186	447	876	678	478	635	278	416	328	87
26	222	177	183	431	772	656	462	614	268	381	242	86
27	226	180	180	416	737	678	447	593	268	349	210	82
28	257	177	177	494	713	1,340	439	562	262	324	186	86
29	387	194	174	826	------	973	1,280	545	278	307	174	86
30	262	190	170	1,020	------	737	6,860	554	572	290	164	82
31	247	------	170	944	------	666	------	562	------	278	155	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,440	22	858	52,800
November	222	177	196	11,700
December	284	170	203	12,500
January	1,020	158	397	24,400
February	1,090	583	764	42,400
March	1,340	495	722	44,400
April	6,860	439	751	44,700
May	9,780	545	1,420	87,300
June	701	262	403	24,000
July	3,130	210	501	30,800
August	328	155	204	12,500
September	150	82	105	6,250
The year	9,780	22	544	394,000

GUADALUPE RIVER BELOW CUERO, TEX.

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

DRAINAGE AREA.—5,070 square miles.

RECORDS AVAILABLE.—August, 1916, to September, 1931. December, 1902, to December, 1906; August, 1915, to August, 1916, at Schleicher Bridge, 4 miles upstream.

EXTREMES.—Maximum discharge during year, 8,240 second-feet May 4; maximum gage height, 11.67 feet Jan. 20; minimum discharge not determined.

1902–1906, 1915–1931: Maximum discharge, about 101,000 second-feet May 30, 1929 (gage height, 35.2 feet); minimum, about 80 second-feet Nov. 1, 1917 (gage height, 0.58 foot).

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

REMARKS.—Records good except estimated discharge for period Oct. 1–30, Sept. 10–16. Discharge interpolated Mar. 29, 30. Flow not materially affected by numerous small diversions above station. Flow regulated by operation of water-power plants upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		955	955	708	1,980	4,620	2,120	1,620	1,380	1,200	410	818
2		858	922	702	2,280	4,780	1,980	4,820	1,340	990	825	587
3		714	689	677	3,100	3,020	1,860	7,380	1,340	1,100	635	605
4		818	641	659	4,140	2,350	1,820	8,160	1,380	1,200	599	587
5		677	1,730	708	3,100	2,120	1,790	6,460	1,380	1,160	617	408
6		695	3,100	641	2,280	1,980	1,680	3,900	1,340	955	766	589
7		659	3,500	677	1,980	1,900	1,680	3,260	1,300	515	754	545
8		629	1,740	659	1,900	1,980	1,640	2,950	1,270	714	665	557
9		581	990	683	1,900	1,820	1,600	2,650	1,200	812	521	545
10		659	858	629	2,420	1,790	1,520	3,180	1,130	858	593	
11		695	812	740	2,050	1,750	1,490	2,880	1,100	858	581	
12		689	812	754	1,790	1,750	1,600	2,580	1,060	773	623	
13		708	780	3,780	1,750	1,680	1,520	2,350	1,060	858	617	538
14		677	806	4,460	1,820	1,640	1,450	2,200	1,130	858	545	
15		766	806	1,400	1,820	1,600	1,410	2,120	1,100	818	635	
16	1,400	1,060	714	890	2,200	1,640	1,410	2,050	955	1,970	545	
17		825	714	2,180	3,900	3,600	1,410	1,900	922	4,150	635	551
18		629	714	4,300	5,980	5,820	1,410	1,900	1,020	2,050	641	581
19		635	659	6,940	3,700	3,430	1,380	1,820	955	2,280	629	563
20		641	754	7,180	2,420	2,350	1,380	1,820	890	2,240	557	482
21		677	740	2,390	2,200	2,580	1,380	1,790	955	5,180	569	521
22		708	714	1,680	2,050	4,860	1,300	1,710	890	3,660	780	510
23		635	714	1,490	2,050	4,140	1,380	1,710	858	2,200	825	493
24		773	659	1,380	3,340	2,500	1,340	1,640	922	1,860	990	482
25		677	629	1,270	5,020	2,200	1,380	1,600	890	1,860	635	493
26		677	740	1,160	3,900	2,050	1,380	1,560	825	1,560	533	488
27		647	714	1,100	2,800	1,980	1,340	1,560	812	1,410	515	454
28		635	766	1,130	3,100	1,900	1,340	1,490	922	1,240	498	545
29		734	721	1,130	-------	2,000	1,300	1,490	1,020	1,160	533	471
30		955	695	2,580	-------	2,100	1,410	1,410	1,130	1,060	669	394
31	677	-------	702	2,950	-------	2,200	-------	1,410	-------	593	426	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	-------	-------	1,380	84,800
November	1,060	581	723	43,000
December	3,500	629	984	60,500
January	7,180	629	1,860	114,000
February	5,980	1,750	2,750	153,000
March	5,820	1,600	2,580	159,000
April	2,120	1,300	1,520	90,400
May	8,160	1,410	2,690	165,000
June	1,380	812	1,080	64,300
July	5,180	515	1,550	95,300
August	990	410	625	38,400
September	818	-------	534	31,800
The year	8,160	-------	1,520	1,100,000

COMAL RIVER AT NEW BRAUNFELS, TEX.

LOCATION.—Water-stage recorder 200 feet upstream from San Antonio Street viaduct in New Braunfels, Comal County. Zero of gage is 582.61 feet above mean sea level.

RECORDS AVAILABLE.—December, 1927, to September, 1931.

EXTREMES.—Maximum stage during year, 16.23 feet, not due to backwater, July 18 (discharge not determined); minimum discharge, 206 second-feet Oct. 10 (gage height, 2.63 feet).

1928–1931: Maximum stage, that of July 18, 1931; minimum discharge, about 142 second-feet Dec. 11, 1928 (gage height, 2.12 feet).

Maximum stage known, 35.8 feet in December, 1913 (probably some backwater from Guadalupe River).

REMARKS.—Records good. Stage-discharge relation affected by backwater Oct. 7, 8, 13, Apr. 29, 30, May 1–3, 7, 8, July 18. About 635 acres irrigated above station. Flow partly regulated by steam-power plant half a mile upstream.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262	254	264	270	289	336	336	------	342	348	322	339
2	264	257	262	272	375	336	334	------	342	348	325	336
3	262	257	267	270	311	334	336	------	339	345	322	336
4	262	257	270	270	305	334	334	351	339	342	325	339
5	270	259	267	270	305	334	334	342	336	342	322	339
6	272	259	270	270	302	331	334	345	339	342	328	339
7	------	259	272	270	302	331	331	------	342	342	319	336
8	------	259	267	272	305	331	331	------	339	339	322	336
9	262	259	264	275	302	334	331	345	342	339	314	336
10	259	262	270	275	302	342	331	342	342	339	314	334
11	270	264	264	347	305	342	334	339	345	339	311	334
12	267	264	270	283	305	342	334	339	348	339	308	336
13	------	264	267	280	308	342	331	345	348	339	311	339
14	270	267	267	280	305	363	328	342	345	339	311	336
15	264	259	267	286	365	640	328	345	345	348	311	336
16	259	259	270	318	383	369	325	348	348	345	311	334
17	259	262	272	424	331	336	328	345	348	351	314	336
18	262	259	270	289	328	339	325	345	345	------	314	331
19	262	259	267	286	328	353	322	348	348	707	314	328
20	259	262	270	286	328	548	322	345	351	336	322	319
21	257	259	270	286	328	345	325	342	348	331	322	319
22	254	259	270	286	331	339	325	342	351	325	322	314
23	257	262	267	286	336	336	328	342	348	331	325	316
24	251	259	270	280	334	336	331	339	351	328	328	319
25	251	259	272	283	336	336	331	339	348	328	325	316
26	251	259	272	280	331	336	328	345	345	328	328	316
27	249	259	272	286	336	336	331	336	348	325	336	314
28	249	259	275	286	336	339	334	334	348	328	336	316
29	251	257	275	300	------	336	------	339	345	328	334	314
30	246	259	267	294	------	339	------	345	345	319	339	316
31	251	------	270	291	------	336	------	339	------	325	339	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	------	246	------	------
November	267	254	260	15,500
December	275	262	269	16,500
January	424	270	289	17,800
February	383	289	323	17,900
March	640	331	356	21,900
April 1–28	336	322	330	18,300
May	------	334	------	------
June	351	336	345	20,500
July	------	319	------	------
August	339	308	322	19,800
September	339	314	329	19,600
The year	------	246	------	------

SAN MARCOS RIVER AT OTTINE, TEX.

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

DRAINAGE AREA.—1,250 square miles.

RECORDS AVAILABLE.—June, 1915, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,150 second-feet Jan. 12 (gage height, 24.62 feet); minimum, 77 second-feet Sept. 20.

1915–1931: Maximum discharge, about 202,000 second-feet May 29, 1929 (gage height, 43.32 feet); no flow July 29, 1923, Mar. 31, 1925, June 24, 1926. Maximum stage known, about 44.0 feet in December, 1913.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	151	177	209	655	1,040	695	4,530	355	323	238	168
2	116	152	168	209	1,240	815	655	3,080	371	363	230	167
3	115	147	164	216	1,450	735	635	1,140	355	299	223	157
4	119	150	343	216	815	695	615	975	339	268	223	157
5	147	145	637	202	655	675	595	875	331	245	223	156
6	166	150	499	223	615	655	575	815	331	238	216	154
7	146	147	291	216	595	635	540	735	323	238	202	155
8	242	145	252	209	864	615	540	695	315	238	216	150
9	189	155	230	209	909	595	540	655	331	230	202	147
10	191	152	223	223	615	575	575	635	299	223	202	150
11	168	160	223	1,580	540	575	540	595	268	216	216	146
12	159	152	223	5,290	523	557	523	575	291	216	182	139
13	177	160	223	578	523	557	506	557	291	216	182	151
14	729	368	216	268	557	540	506	540	252		194	154
15	459	170	216	238	573	778	489	523	275		189	142
16	291	140	209	248	3,110	4,530	506	506	268	770	199	146
17	238	150	209	3,440	2,180	2,550	489	489	268		201	142
18	202	148	209	4,960	835	825	472	472	268		201	145
19	188	150	209	1,170	735	735	455	472	268		187	140
20	175	154	209	575	695	1,510	472	472	275	1,550	195	124
21	171	148	209	489	675	1,930	489	472	268	523	218	166
22	173	151	209	455	675	876	455	446	260	421	331	136
23	167	156	216	430	1,790	735	455	438	252	446	283	129
24	182	157	216	412	2,190	695	455	430	252	331	209	136
25	171	157	223	396	1,210	675	446	412	245	299	199	133
26	163	163	223	387	895	655	446	404	245	275	191	135
27	341	166	223	379	1,000	635	438	387	252	268	202	135
28	377	147	216	875	1,870	995	430	379	290	260	202	131
29	192	178	216	2,210	------	891	472	363	351	248	182	129
30	155	182	209	1,220	------	715	1,750	371	315	245	177	122
31	155	------	216	775	------	695	------	363	------	272	174	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	729	115	212	13,000
November	368	140	162	9,640
December	637	164	242	14,900
January	5,290	202	920	56,600
February	3,110	523	1,040	57,800
March	4,530	540	958	58,900
April	1,750	430	559	33,300
May	4,530	363	768	47,200
June	371	245	293	17,400
July	------	------	422	25,900
August	331	174	209	12,900
September	168	122	145	8,630
The year	5,290	115	491	356,000

BLANCO RIVER AT WIMBERLEY, TEX.

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

DRAINAGE AREA.—378 square miles.

RECORDS AVAILABLE.—August, 1924, to September, 1926; June, 1928, to September, 1931.

EXTREMES.—Maximum discharge during year, 12,000 second-feet July 18 (gage height, 10.66 feet); minimum, 11 second-feet Oct. 2–4 (gage height, 0.26 foot).

1924–1926, 1928–1931: Maximum discharge (by slope-area method), 113,000 second-feet May 28, 1929 (gage height, 31.10 feet); minimum, 4.0 second-feet Sept. 20, 1928 (gage height, 0.30 foot).

REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	36	44	57	329	403	298	1,000	153	126	70	38
2	12	34	46	57	486	379	294	701	138	89	70	40
3	11	34	48	54	438	351	282	612	132	77	68	40
4	18	34	86	54	374	338	262	546	123	70	63	40
5	20	34	126	54	356	320	250	493	120	68	63	40
6	40	34	99	54	338	307	243	448	115	63	61	40
7	99	34	86	54	320	290	235	418	110	61	59	40
8	68	34	82	54	379	270	231	393	104	57	57	38
9	38	36	77	52	338	258	224	365	101	54	52	38
10	29	36	74	57	298	254	213	329	101	52	50	38
11	27	38	74	61	290	250	202	311	104	54	52	38
12	84	38	72	63	286	339	196	294	99	59	48	38
13	1,150	38	70	65	298	235	196	278	94	52	48	38
14	156	46	68	63	286	224	199	266	91	59	44	36
15	82	42	68	61	286	376	206	247	89	99	44	34
16	57	44	65	73	498	480	188	231	86	179	38	34
17	46	42	65	536	408	342	182	220	96	96	46	32
18	38	42	65	333	360	307	179	216	89	3,270	42	30
19	38	40	65	254	342	298	179	216	84	477	38	29
20	40	38	65	224	333	730	175	202	79	185	36	29
21	36	38	68	206	320	388	179	192	79	135	52	27
22	36	38	68	192	850	333	199	185	77	112	50	26
23	36	38	70	185	713	324	169	182	77	99	44	27
24	36	38	68	179	578	307	166	175	77	91	48	26
25	38	38	65	172	478	290	163	172	74	89	76	24
26	34	38	63	163	443	286	156	169	74	84	50	23
27	36	38	63	159	453	1,120	153	163	70	82	42	21
28	36	38	59	228	448	433	153	153	72	79	40	23
29	38	44	59	370	------	347	1,730	150	177	77	38	23
30	40	42	57	398	------	338	2,810	153	249	74	38	23
31	38	------	57	351	------	333	------	169	------	70	38	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,150	11	79.6	4,890
November	46	34	38.1	2,270
December	126	44	69.1	4,250
January	536	52	158	9,720
February	850	286	404	22,400
March	1,120	224	360	22,100
April	2,810	153	344	20,500
May	1,000	150	311	19,100
June	249	70	104	6,190
July	3,270	52	201	12,400
August	76	36	50.5	3,110
September	40	21	32.4	1,930
The year	3,270	11	178	129,000

PLUM CREEK NEAR LULING, TEX.

LOCATION.—Water-stage recorder at highway bridge 2 miles above Southern Pacific Railroad bridge and about 3 miles northeast of Luling, Caldwell County. Zero of gage is 326.5 feet above mean sea level.

DRAINAGE AREA.—356 square miles.

RECORDS AVAILABLE.—March, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,580 second-feet Jan. 11 (gage height, 15.85 feet); minimum, 1.5 second-feet Sept. 29 (gage height, −0.23 foot).

1930–31: Maximum discharge, 4,270 second-feet June 16, 1930 (gage height, 16.68 feet); minimum, that of Sept. 29, 1931.

Maximum stage known, 22.0 feet.

REMARKS.—Records fair except those estimated Oct. 12–25, Apr. 4–28. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	6.2	8.5	7.0	65	147	35	2,590	13	6.4	4.6	2.6
2	5.8	6.2	7.6	7.3	101	64	28	254	12	5.8	3.4	2.4
3	5.2	6.2	7.0	7.0	425	40	26	53	10	5.4	3.4	2.4
4	4.8	6.0	261	7.3	65	35		38	8.8	5.4	3.2	2.6
5	8.0	6.0	562	7.3	47	32		29	8.2	5.4	3.2	2.4
6	8.5	6.2	119	7.0	41	30		22	7.6	5.2	3.2	2.4
7	9.3	6.0	18	7.3	39	29		18	7.0	5.2	3.2	2.6
8	9.6	5.6	10	7.0	383	27		16	6.6	5.0	3.2	2.6
9	7.5	6.2	10	7.0	211	26		14	6.4	5.0	3.2	2.6
10	7.0	6.2	8.5	7.6	45	26		12	5.8	5.0	3.0	2.6
11	5.8	6.2	8.2	1,900	33	26		11	5.8	5.0	3.0	2.7
12		6.6	7.9	1,920	26	25		9.7	5.6	4.6	3.0	2.7
13		6.8	7.9	78	27	25		9.7	5.2	4.2	3.0	4.8
14		91	7.6	26	48	25	24	9.7	4.6	308	3.0	3.4
15		18	7.0	15	38	414		9.7	4.2	31	3.0	3.0
16		7.9	6.4	68	1,990	3,080		9.4	4.2	38	3.8	2.8
17		7.0	6.6	2,810	919	364		8.8	4.0	48	4.8	2.8
18	7.0	6.8	7.0	2,240	88	79		8.5	3.8	13	3.6	2.7
19		6.6	7.0	136	52	53		9.1	3.8	6.6	3.4	2.6
20		6.0	7.0	59	40	917		10	3.6	64	3.9	2.4
21		5.8	6.8	44	33	432		11	3.6	7.9	61	2.4
22		5.8	7.0	38	151	56		12	3.4	24	107	2.4
23		6.4	7.9	37	1,470	43		10	3.4	86	30	2.6
24		6.6	7.0	33	642	37		16	3.4	7.0	5.2	2.4
25		6.2	8.5	25	150	31		12	3.2	4.8	3.6	2.4
26	6.0	6.4	8.5	24	55	30	18	10	3.0	4.2	3.8	2.4
27	164	6.2	7.3	25	379	29		10	3.0	4.0	3.0	2.2
28	112	6.6	7.6	917	823	28		10	11	3.8	2.7	2.2
29	13	7.6	7.6	1,500	-------	27	46	12	25	3.8	2.6	2.1
30	7.6	9.1	7.3	278	-------	24	1,210	12	16	7.6	2.7	2.1
31	6.6	-------	7.0	94	-------	28	-------	14	-------	26	2.6	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	164	----------	15.7	965
November	91	5.6	9.68	576
December	562	6.4	37.6	2,310
January	2,810	7.0	398	24,500
February	1,990	26	310	17,200
March	3,080	24	201	12,400
April	1,210	----------	63.8	3,800
May	2,590	8.5	106	6,520
June	25	3.0	6.84	407
July	308	3.8	24.4	1,500
August	107	2.6	9.43	580
September	4.8	2.1	2.61	155
The year	3,080	2.1	97.9	70,900

PEACH CREEK NEAR DILWORTH, TEX.

LOCATION.—Water-stage recorder at San Antonio & Aransas Pass Railway bridge 1½ miles west of Dilworth, Gonzales County.

DRAINAGE AREA.—445 square miles.

RECORDS AVAILABLE.—March, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 3,120 second-feet Dec. 6 (gage height, 18.67 feet); flood of Jan. 17 or 18 reached about same stage; no flow at times.

1930–31: Maximum discharge, about 4,670 second-feet May 13, 1930 (gage height, 21.09 feet); no flow at times.

REMARKS.—Records good. Discharge estimated Jan. 17–19. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	2.7	142	2.4	21	1,280	13	16	1.6	0	0.1	0.4
2	0	1.4	27	2.1	166	444	13	33	.6	0	0	.1
3	0	.8	11	1.8	453	142	12	19	.5	0	0	0
4	0	.6	864	1.8	177	52	11	9.8	.4	0	0	0
5	0	.5	2,200	1.7	43	31	8.9	6.5	.3	0	0	0
6	81	.4	2,510	1.7	22	25	8.0	4.7	.2	0	0	0
7	556	.3	406	1.7	17	94	8.0	4.5	.2	0	0	0
8	851	.3	42	1.4	17	76	7.7	5.9	.1	0	0	0
9	118	.3	18	1.4	33	24	7.4	5.3	0	0	0	0
10	19	.3	13	1.4	37	16	10	4.5	0	0	0	0
11	131	.3	9.8	6.8	19	15	55	4.7	0	0	0	0
12	558	.4	7.4	163	13	16	16	4.5	0	0	.8	0
13	245	.6	5.9	142	11	18	10	3.7	0	0	.9	0
14	32	8.8	5.3	23	9.5	17	8.3	3.7	0	0	.4	0
15	11	48	3.7	9.8	34	82	8.9	3.7	0	0	.1	0
16	5.3	24	2.9	70	841	581	7.1	3.2	0	11	0	0
17	2.3	9.8	2.7		1,000	422	6.5	2.7	0	42	0	0
18	1.0	4.0	2.3	1,950	275	85	6.2	3.2	0	220	0	0
19	.8	1.8	2.0		64	35	5.3	4.2	0	90	0	0
20	.7	.8	1.8	126	33	267	16	4.2	0	14	0	0
21	.7	.6	1.8	39	21	766	16	4.2	0	20	213	0
22	.6	.8	1.8	21	72	418	8.9	4.2	0	22	159	0
23	.6	16	2.0	15	1,030	72	5.9	4.0	0	49	19	0
24	.6	33	1.7	13	1,300	33	5.9	4.0	0	114	7.5	0
25	.5	14	6.3	11	490	23	5.6	3.2	0	16	4.8	0
26	.5	6.5	27	10	107	19	5.6	2.3	0	5.9	1.8	0
27	.5	2.7	27	10	362	17	5.6	2.0	0	2.3	3.3	0
28	69	1.3	11	9.8	1,240	16	4.7	1.7	0	.7	.5	0
29	62	44	6.8	227	-------	15	4.7	1.4	0	.5	13	0
30	16	280	4.2	148	-------	14	9.1	1.3	0	.3	3.6	0
31	6.5	-------	3.2	40	-------	13	-------	2.0	-------	.2	1.4	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	851	0	89.3	5,490
November	280	.3	16.8	1,000
December	2,510	1.7	205	12,600
January		1.4	224	13,800
February	1,300	9.5	282	15,700
March	1,280	13	165	10,100
April	55	4.7	10.3	613
May	33	1.3	5.72	352
June	1.6	0	.13	7.7
July	220	0	19.6	1,210
August	213	0	13.8	848
September	.4	0	.02	1.2
The year	----------	0	85.4	61,700

SANDIES CREEK NEAR WESTHOFF, TEX.

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

DRAINAGE AREA.—493 square miles.

RECORDS AVAILABLE.—March, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, 454 second-feet Feb. 3 (gage height, 9.77 feet); minimum, 0.2 second-foot Sept. 8, 9.

1930–31: Maximum discharge, 746 second-feet June 18, 1930 (gage height, 11.82 feet); minimum, that of Sept. 8, 9, 1931.

Maximum stage known, 25.1 feet in 1913.

REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	2.6	4.6	3.4	13	91	4.7	127	2.2	101	2.0	0.9
2	1.2	2.3	4.3	3.4	138	190	4.7	100	2.9	39	1.9	.8
3	1.7	1.9	3.2	3.4	384	82	4.4	32	2.3	9.6	1.8	.7
4	1.4	1.9	3.0	3.4	200	28	4.8	11	2.0	3.7	1.4	.6
5	2.3	2.1	24	3.5	53	25	4.6	6.3	1.6	1.7	1.2	.6
6	7.1	2.1	45	3.3	20	20	4.3	4.4	1.4	1.0	1.1	.5
7	13	2.1	23	2.7	13	17	4.0	3.7	1.3	1.0	1.0	.4
8	11	1.9	13	2.4	11	7.3	3.8	3.2	1.2	.9	.8	.3
9	4.5	1.7	6.6	2.5	9.5	6.7	3.8	3.2	1.2	.9	.7	.4
10	2.8	2.4	4.4	2.8	8.2	6.0	3.8	2.7	1.0	.9	.7	.5
11	2.1	5.3	3.8	18	7.1	5.6	4.0	2.5	.8	.9	3.2	.4
12	2.0	8.9	3.4	9.2	6.4	5.4	4.0	2.4	.6	.8	2.8	.4
13	4.2	7.4	3.2	5.3	6.3	5.2	3.8	2.2	.6	.8	2.0	.4
14	4.6	5.6	2.8	4.4	6.4	5.2	3.8	2.2	.5	.8	1.6	.4
15	3.9	3.5	2.9	6.1	7.0	6.7	3.8	2.0	.4	.6	4.2	.4
16	2.9	3.0	2.8	19	100	14	3.8	2.1	.4	24	2.2	.4
17	2.2	2.7	2.7	265	156	12	3.7	2.3	.4	19	1.2	.4
18	2.0	2.2	2.6	270	81	10	3.5	2.2	.4	56	1.0	.4
19	1.6	2.4	2.8	87	30	10	3.5	2.5	.4	180	.9	.4
20	1.5	2.5	2.8	32	16	30	18	2.3	.4	84	1.0	.4
21	1.5	2.6	2.7	15	11	212	22	2.2	.4	25	6.6	.5
22	1.5	2.3	3.1	9.5	8.8	224	6.2	1.8	.4	16	8.7	.5
23	1.5	2.3	3.3	7.3	7.7	52	4.8	4.2	.4	7.2	103	.5
24	2.1	2.7	3.3	6.6	7.9	18	3.7	5.0	.4	21	27	.5
25	2.1	3.8	2.9	6.0	8.8	12	3.5	3.3	.4	18	25	.4
26	2.1	4.1	3.7	5.8	8.8	7.6	3.2	2.6	.4	5.7	10	.4
27	2.0	3.5	3.5	6.8	12	6.3	3.3	2.4	.4	3.2	3.3	.5
28	2.3	2.9	3.8	7.6	12	5.6	3.2	2.1	22	2.3	2.0	.5
29	3.6	4.0	3.7	12	------	5.2	4.3	1.9	124	1.9	1.4	.5
30	3.5	5.0	3.4	13	------	5.0	34	2.0	143	1.6	1.2	.5
31	3.3	------	3.2	16	------	4.9	------	2.0	------	1.6	1.0	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	13	0.7	3.17	195
November	8.9	1.7	3.26	194
December	45	2.6	6.37	392
January	270	2.4	27.5	1,690
February	384	6.3	48.0	2,670
March	224	4.9	36.4	2,240
April	34	3.2	6.10	363
May	127	1.8	11.2	689
June	143	.4	10.5	625
July	180	.6	20.3	1,250
August	103	.7	7.16	440
September	.9	.3	.48	29
The year	384	.3	14.9	10,800

COLETO CREEK NEAR SCHROEDER, TEX.

LOCATION.—Staff gage 1 mile below Schroeder-Nursery highway bridge, 1 mile east of Schroeder, Goliad County, and about 15 miles above Galveston, Harrisburg & San Antonio Railway bridge.

DRAINAGE AREA.—365 square miles.

RECORDS AVAILABLE.—January, 1930, to September, 1931.

EXTREMES.—Maximum discharge during year, about 7,800 second-feet July 17 (gage height, 7.68 feet); minimum, 1.7 second-feet Oct. 1, 2.

1930–31: Maximum discharge, that of July 17, 1931; minimum, 1.4 second-feet Sept. 7, 8, 19, 1930.

REMARKS.—Records fair. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	4.6	9.0	7.1	16	136	14	13	7.4	105	30	7.7
2	1.7	4.6	7.7	6.8	200	141	14	12	6.8	54	30	8.5
3	2.1	4.8	12	7.4	104	36	14	13	6.0	40	518	7.4
4	1.9	4.8	11	7.7	29	21	12	12	6.0	26	59	8.0
5	1.9	4.6	10	7.4	22	18	12	12	5.7	21	39	7.7
6	131	4.4	9.0	6.8	19	15	10	12	5.7	19	30	7.7
7	11	4.6	9.0	7.1	17	15	10	10	5.7	20	24	7.4
8	6.0	5.1	8.0	6.3	16	14	10	10	5.7	21	20	6.8
9	4.8	5.7	6.8	6.6	15	13	141	10	5.4	18	16	7.4
10	4.6	7.1	6.6	8.0	14	12	345	9.0	5.1	16	15	7.1
11	3.9	8.5	7.1	10	13	13	32	9.0	5.7	14	14	7.4
12	38	10	6.3	13	14	12	24	8.5	5.1	12	14	7.7
13	52	9.5	6.6	10	14	12	22	8.5	5.1	10	12	7.4
14	7.7	7.1	6.0	8.5	13	12	22	8.0	5.1	10	12	17
15	5.7	6.0	5.4	7.7	13	910	19	7.7	5.1	16	12	18
16	5.1	5.4	5.7	226	99	468	16	8.0	5.1	10	41	11
17	4.6	4.2	5.4	1,580	56	68	14	8.0	4.8	3,970	29	7.7
18	4.1	4.8	6.0	171	36	34	13	10	4.8	2,360	16	8.0
19	3.9	6.0	5.4	58	18	24	12	12	4.8	553	12	12
20	4.1	4.9	6.0	36	15	888	12	12	4.4	122	16	7.4
21	3.9	4.6	38	29	14	196	12	13	4.6	60	11	6.8
22	4.6	4.9	34	25	129	38	11	11	4.4	68	12	6.3
23	4.8	6.3	9.5	19	250	25	11	10	4.4	132	21	6.6
24	5.7	5.7	5.7	19	26	21	12	10	4.4	53	32	6.0
25	4.8	5.4	14	19	17	16	12	8.0	4.4	44	22	5.1
26	4.6	4.9	8.5	19	16	18	11	8.0	4.6	39	14	5.4
27	6.3	4.9	9.0	18	411	17	18	8.5	1,350	36	13	4.8
28	8.0	5.1	8.0	18	194	15	13	7.1	3,170	33	12	4.9
29	6.6	56	7.7	19	------	15	12	6.8	489	32	10	4.6
30	5.1	14	7.4	19	------	17	14	7.7	186	30	10	4.2
31	4.8	------	7.4	16	------	18	------	8.0	------	32	9.0	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	131	1.7	11.5	707
November	56	4.2	7.62	453
December	38	5.4	9.62	592
January	1,580	6.3	77.8	4,780
February	411	13	64.3	3,570
March	910	12	105	6,460
April	345	10	29.8	1,770
May	13	6.8	9.77	601
June	3,170	4.4	178	10,600
July	3,970	10	257	15,800
August	518	9.0	36.3	2,230
September	18	4.2	7.80	464
The year	3,970	1.7	66.3	48,000

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, 1931.

EXTREMES.—Maximum discharge during year, 2,540 second-feet July 20 (gage height, 4.44 feet); minimum, 47 second-feet Jan. 26, 27.

1925–1931: Maximum discharge, 10,100 second-feet May 29, 1929 (gage height, 11.15 feet); minimum, 36 second-feet May 11, 12, 1928 (gage height, 0.97 foot).

Maximum stage known, 28.36 feet in 1913.

REMARKS.—Record poor to Apr. 26; good thereafter. Discharge estimated Dec. 7–19; interpolated Apr. 26. Slight regulation caused by operation of Medina Dam. Medina Canal diverts above station (see p. 97).

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	74	78	251	398	162	177	313	197	369	153	116
2	64	71	82	192	229	162	177	285	177	363	153	121
3	64	71	78	74	281	157	153	207	167	229	148	116
4	60	71	74	115	477	157	153	162	167	157	148	112
5	64	71	82	182	248	157	157	197	162	148	148	112
6	67	71	169	91	108	157	157	207	153	130	144	108
7	82	71		182	95	157	148	192	148	112	144	103
8	112	74		153	87	187	148	177	144	103	139	103
9	134	87		71	87	182	144	234	139	95	134	103
10	95	87		67	95	157	139	324	144	78	134	99
11	87	95		64	78	157	144	212	139	64	130	99
12	82	121		245	74	157	144	177	134	57	162	95
13	108	125	85	824	71	218	139	167	139	50	125	99
14	223	99		320	144	212	134	162	139	60	121	95
15	246	142		99	125	172	144	153	134	74	116	91
16	134	234		54	82	444	157	144	130	95	112	116
17	91	121		108	328	1,920	157	144	134	99	112	167
18	74	99		514	406	1,050	153	144	130	274	112	177
19	71	95	182	422	296	380	157	139	130	1,370	116	130
20	67	91	130	103	207	257	153	153	121	2,060	116	99
21	67	95	67	78	223	783	172	410	125	770	116	95
22	67	95	64	67	182	1,530	197	534	177	341	125	95
23	71	95	60	60	162	530	229	229	212	262	139	95
24	71	194	74	57	167	274	223	172	153	229	121	99
25	157	230	60	54	157	229	207	162	139	207	125	95
26	187	87	57	47	153	197	190	157	134	192	125	91
27	95	74	57	47	153	187	172	157	130	177	125	91
28	87	74	57	50	168	197	167	173	186	167	125	87
29	82	71	60	103	------	177	281	153	274	162	125	87
30	87	71	71	850	------	167	374	153	335	157	121	91
31	82	------	133	788	------	162	------	162	------	153	116	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	246	60	98.4	6,050
November	234	71	102	6,070
December	------	57	85.6	5,260
January	850	47	204	12,500
February	477	71	188	10,400
March	1,920	157	356	21,900
April	374	134	175	10,400
May	534	139	205	12,600
June	335	121	158	9,400
July	2,060	50	284	17,500
August	162	112	130	7,990
September	177	87	106	6,310
The year	2,060	47	175	126,000

MEDINA RIVER NEAR PIPE CREEK, TEX.

LOCATION.—Water-stage recorder 3.5 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, 1931.

EXTREMES.—Maximum stage during year, 17.2 feet Oct. 6 (discharge not determined); minimum discharge, 5.8 second-feet Oct. 4 (gage height, 0.64 foot).

1923–1931: Maximum stage, 19.8 feet Apr. 21, 1926 (discharge not determined); minimum discharge, 2.2 second-feet Sept. 9, 1927.

Maximum stage known, about 42 feet in 1919.

REMARKS.—Records good except those for high-water periods, which are poor. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.0	104	109	72	423	244	218	2,540	244		111	35
2	8.0	102	106	72	470	231	210	1,380	218		106	35
3	8.0	95	106	67	416	231	206	1,270	203		102	35
4	89	93	109	64	367	218	194	1,020	187		95	38
5	112	91	111	64	353	206	185	900	176		89	38
6	4,410	86	109	62	340	192	185	994	164		84	31
7	1,120	89	106	62	326	189	178	973	166	91	77	29
8	466	98	111	64	336	187	174	760	161		69	29
9	370	100	106	62	313	187	172	672	157		64	29
10	294	100	104	62	294	183	172	628	197		60	27
11	297	102	102	67	281	183	168	586	172		60	29
12	1,240	102	100	79	281	178	161	524	153		57	31
13	300	102	95	79	281	174	161	493			57	31
14	247	100	93	77	259	172	174	459			54	31
15	218	98	91	74	269	399	161	426		1,130	50	31
16	192	95	91	300	360	986	153	398			54	27
17	181	91	84	721	320	524	151	394			54	27
18	166	86	81	450	291	333	149	391		253	52	27
19	155	86	79	336	278	297	178	367		260	50	24
20		81	84	288	275	349	181	336		275	47	24
21		79	84	253	269	281	303	310	113	187	60	24
22	135	79	69	234	269	269	210	291		143	52	20
23		79	69	218	275	262	187	281		123	77	20
24		79	69	206	269	253	181	272		104	60	20
25		81	69	198	253	242	174	259			54	20
26	123	86	69	187	244	242	168	250			52	20
27	115	93	69	215	236	327	170	239		97	50	18
28	113	100	69	357	244	236	172	223			44	18
29	113	104	74	426	------	225	3,350	234	153		42	18
30	111	109	72	444	------	223	6,140	320	230		38	18
31	106	------	69	444	------	218	------	297	------		35	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,410	8.0	367	22,600
November	109	79	93.0	5,530
December	111	69	89.0	5,470
January	721	62	203	12,500
February	470	236	307	17,000
March	986	172	272	16,700
April	6,140	149	486	28,900
May	2,540	223	596	36,600
June	------	------	146	8,690
July	------	------	249	15,300
August	111	35	63.1	3,880
September	38	18	26.8	1,590
The year	6,140	8.0	242	175,000

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, 1931.

EXTREMES.—No flow over dam during year.

1922–1931: Maximum discharge, about 11,800 second-feet Apr. 21, 1926 (gage height, 5.17 feet); no flow over dam at times.

REMARKS.—Monthly seepage records fair. Oct. 1 to Mar. 31, seepage record obtained from auxiliary staff gage about 2,000 feet below diversion dam; Apr. 1 to Sept. 30, seepage estimated as mean of five discharge measurements. Water to irrigate about 5,000 acres is diverted to Medina Canal above gage (see p. 97). Flow regulated by storage dam 4 miles upstream except when main reservoir is full and water flows over spillway.

Monthly seepage, in second-feet, past station on Medina River near Riomedina, Tex., 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	28	20	23.9	1,470
November	21	18	19.0	1,130
December	19	17	17.8	1,090
January	18	16	16.8	1,030
February	26	18	22.1	1,230
March	26	24	24.9	1,530
April				
May				
June			25.3	9,180
July				
August				
September				
The year			23.0	16,700

MEDINA CANAL NEAR RIOMEDINA, TEX.

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

RECORDS AVAILABLE.—March, 1922, to September, 1931.

EXTREMES.—Maximum discharge during year, 106 second-feet June 26 (gage height, 2.05 feet); no flow at times.

1922–1931: Maximum discharge, 128 second-feet June 26, 1923, June 5, 6, 1925; no flow at times.

REMARKS.—Records good. Discharge interpolated Sept. 10. Station is above all diversions from canal. Canal diverts from Medina River for irrigation near Lacoste and Natalia.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	22	0	0	0	0	14	0	3.5	0	37	47
2	55	7.0	0	6.8	0	0	14	0	22	0	37	47
3	43	.3	2.1	23	0	0	14	0	23	2.9	39	51
4	30	1.6	24	19	0	0	14	0	24	13	49	58
5	10	23	23	22	0	0	14	0	31	13	48	59
6	5.1	23	26	30	1.2	25	19	0	33	24	66	67
7	1.2	21	24	34	0	45	32	0	33	63	72	69
8	.4	.8	16	34	0	17	42	0	33	52	68	69
9	0	0	7.1	21	0	17	39	5.8	36	45	64	71
10	0	0	.8	6.1	0	29	19	15	48	43	66	78
11	0	0	0	0	0	30	14	14	47	43	64	84
12	.1	0	0	0	0	19	16	26	52	46	69	85
13	0	0	0	0	0	15	12	48	64	47	71	85
14	0	0	0	0	0	5.5	0	48	70	60	70	84
15	0	0	4.7	0	0	3.1	0	47	71	60	58	84
16	0	0	16	.2	0	0	0	17	77	60	38	84
17	0	0	20	0	1.9	0	0	0	83	52	54	84
18	0	0	21	0	18	0	0	0	85	27	54	84
19	0	0	21	0	43	0	0	0	85	9.7	55	84
20	0	0	20	0	20	0	4.2	0	84	9.2	57	83
21	12	.6	20	0	0	0	16	0	81	8.7	50	84
22	61	21	19	0	0	6.0	9.0	1.1	80	9.2	48	84
23	22	25	11	0	0	24	9.0	14	81	9.7	28	84
24	0	24	2.0	13	0	23	3.1	31	87	9.7	22	75
25	0	23	0	26	0	5.7	3.1	43	92	9.7	39	70
26	0	12	0	28	0	5.9	15	43	88	14	46	67
27	0	2.6	0	26	0	6.2	15	37	63	18	37	65
28	0	0	0	7.9	0	5.9	7.0	14	28	25	35	69
29	0	0	0	0	------	5.7	0	15	0	28	36	68
30	0	0	0	0	------	5.5	0	4.8	0	37	36	72
31	6.3	------	0	0	------	11	------	0	------	38	42	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (13 days)	62	0.1	23.7	611
November (15 days)	25	.3	13.8	410
December (18 days)	26	.8	15.4	551
January (15 days)	34	.2	19.8	589
February (5 days)	43	1.2	16.8	167
March (20 days)	45	3.1	15.2	604
April (22 days)	42	3.1	15.6	683
May (17 days)	48	1.1	24.9	840
June (28 days)	92	3.5	57.3	3,180
July (29 days)	63	2.9	30.2	1,740
August	72	22	50.2	3,090
September	85	47	73.2	4,360
The year				16,800

CIBOLO CREEK NEAR FALLS CITY, TEX.

LOCATION.—Water-stage recorder 200 feet downstream from Cestohowa Bridge, 6 miles above confluence with San Antonio River, and 6 miles northeast of Falls City, Karnes County.
DRAINAGE AREA.—831 square miles.
RECORDS AVAILABLE.—November, 1930, to September, 1931.
EXTREMES.—Maximum stage during year, 19.15 feet July 19 (discharge not determined); minimum discharge not determined.
REMARKS.—Records poor. No large diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	10		59	25	20	550	16	18		
2	------	10		96	17	20	1,220	16			
3	------	9.8		792	16	20	455	16			
4	9.8	11		144	16	19	210	15			
5	9.8	11		59	17	18	135	14			
6	9.8	11		35	16	18	96	14		14	13
7	10	11	14	26	16	18	71	14			
8	10	11		22	14	18	55	13			
9	16	11		18	14	18	42	13			
10	15	11		16	14	18	34	13	30		
11	13	11		15	14	18	30	13			
12	12	9.8		14	14	17	27	13		14	10
13	12	9.8	118	14	13	16	25	12			11
14	11	9.8	100	14	13	16	24				10
15	9.8	10	39	16	32	16	22				10
16	11	11	30	20	108	16	20				10
17	13	11	108	361	206	16	20				11
18	11	11	986	97	82	16	27				11
19	9.8	11	116	47	45	16	22				12
20	9.5	11	53	31	------	16	52	10	------		11
21	9.5	11	33	23	------	16	21			13	11
22	9.8	11	24	20	209	49	20				11
23	11	11	18	18	92	68	19				10
24	10		16	16	59	35	18				10
25	10		16	16	43	25	18				10
26	9.8		15	16	36	18	18		14		9.8
27	9.5	14	14	25	30	18	18				9.5
28	9.8		14	22	26	16	16	300			9.5
29	10		17	------	24	91	16				8.9
30	10		354	------	22	138	18				8.9
31	------		144	------	20	------	18	------	------		------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
November 4–30	16	9.5	10.8	579
December	------	9.8	11.5	707
January	986	------	76.9	4,730
February	792	14	73.3	4,070
March	------	13	------	------
April	138	16	27.5	1,640
May	1,220	16	108	6,640
June	------	------	50.4	3,000
August	------	------	13.4	824
September	------	------	11.3	672

NOTE.—No record Oct. 1 to Nov. 3. Stage was above limit for which rating curve is defined Mar. 20, 21, July 18–21.

NUECES RIVER BASIN

NUECES RIVER AT LAGUNA, TEX.

LOCATION.—Water-stage recorder 1 mile northeast of Laguna, Uvalde County.
DRAINAGE AREA.—764 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1931.
EXTREMES.—Maximum discharge during year, about 30,800 second-feet Oct. 6 (gage height, 15.91 feet); minimum, 17 second-feet Oct. 1–3.

1923–1931: Maximum discharge, about 47,500 second-feet June 15, 1930 (gage height, 20.1 feet); minimum, 8.9 second-feet Sept. 9–11, 1924.

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

REMARKS.—Records good. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	144	114	86	266	174	144	824	238	122	187	110
2	17	140	110	86	297	174	140	828	214	118	178	110
3	17	136	107	86	292	169	140	1,310	200	118	169	107
4	30	133	103	83	276	169	140	822	191	114	165	107
5	39	129	107	83	262	165	136	703	182	107	153	107
6	9,960	125	114	80	247	161	133	594	178	107	148	107
7	1,700	125	114	80	238	161	129	815	174	103	140	103
8	836	129	110	80	228	157	129	575	169	100	136	100
9	568	133	107	80	228	157	129	490	173	96	133	100
10	432	136	103	80	219	153	129	444	210	93	129	96
11	358	133	103	77	205	148	129	421	187	93	688	96
12	403	125	103	77	196	144	125	403	174	96	348	93
13	329	118	103	77	191	140	125	386	169	93	223	90
14	287	129	103	77	196	136	122	359	161	93	187	90
15	257	125	103	77	210	148	122	340	157	96	165	86
16	233	129	107	77	228	187	122	313	153	93	157	83
17	219	129	107	80	233	182	122	297	148	93	153	83
18	219	122	103	83	219	169	122	287	144	96	148	80
19	238	122	103	90	205	161	161	281	144	887	140	80
20	238	125	103	93	200	169	144	271	140	1,670	140	77
21	210	125	100	93	191	165	157	262	136	749	133	77
22	200	125	100	93	187	165	144	252	133	520	129	73
23	196	122	100	93	187	161	136	238	129	403	148	73
24	196	118	96	90	187	161	125	233	125	340	136	70
25	187	114	96	90	182	161	122	228	122	292	133	70
26	174	107	96	90	178	157	122	214	122	262	129	70
27	165	110	96	100	178	165	122	205	125	247	125	67
28	165	107	93	161	178	161	118	205	125	228	122	67
29	161	103	90	223	------	157	136	219	125	214	118	67
30	157	110	90	262	------	148	1,560	281	125	200	114	65
31	148	------	90	266	------	148	------	266	------	191	114	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,960	17	592	36,400
November	144	103	124	7,380
December	114	90	102	6,270
January	266	77	103	6,330
February	297	178	218	12,100
March	187	136	160	9,840
April	1,560	118	180	10,700
May	1,310	205	431	26,500
June	238	122	159	9,460
July	1,670	93	259	15,900
August	688	114	171	10,500
September	110	65	86.8	5,160
The year	9,960	17	216	157,000

NUECES RIVER NEAR UVALDE, TEX.

LOCATION.—Water-stage recorder at Tom Nunn crossing, 6 miles south of Southern Pacific Railroad bridge and 9 miles west of Uvalde, Uvalde County.

DRAINAGE AREA.—1,930 square miles, 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, 1931.

EXTREMES.—Maximum discharge during year, about 27,000 second-feet Oct. 6 (gage height, 11.11 feet); minimum, 1.0 second-foot Oct. 1–5 (gage height, 0.50 foot).

1927–1931: Maximum discharge, about 57,500 second-feet June 15, 1930 (gage height, 15.73 feet); minimum not determined.

Maximum stage known, 26.4 feet in December, 1913.

REMARKS.—Records good except those estimated. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	11	7.0		5.4	58	20	1,360	178	32	104	25
2	1.0	10	7.0		5.4	55	20	1,200	146	30	96	25
3	1.0	9.1	7.0		16	53	20	2,340	135	26	87	24
4	1.0	9.1	6.4		51	53	20	1,230	118	25	79	20
5	1.7	9.1	5.4		55	53	19	842	114	24	74	20
6	8,110	9.1	5.9		58	49	19	576	107	24	71	19
7	9,800	9.1	7.0		58	40	18	731	104	22	64	19
8	2,360	9.1	6.4		60	36	18	597	98	24	58	19
9	669	9.1	6.4		58	34	18	490	90	22	53	19
10		8.0	5.9		55	34	18	434	96	24	51	19
11		8.0	5.4		55	32	18	384	111	24	199	19
12		8.0	5.4	4.5	55	32	17	356	98	20	456	19
13		9.1	5.4		58	31	17	323	84	19	215	18
14		8.0	5.9		55	30	17	302	76	19	138	18
15		8.0	4.9		62	26	17	265	69	19	104	18
16	120	8.0	5.9		82	25	17	239	62	20	84	16
17		7.5	5.9		98	31	16	210	58	19	71	16
18		7.5	5.4		96	47	16	206	55	19	58	15
19		7.5	4.9		87	45	15	196	51	24	51	16
20		7.5	5.4		79	36	14	187	47	2,180	47	16
21		7.5	4.9		74	40	17	174	44	972	42	16
22		7.5	4.9		71	36	14	162	42	514	45	16
23		7.5	4.9		71	34	14	154	38	384	49	15
24	30	7.0	4.9	3.8	67	32	12	146	34	302	51	15
25	25	7.0	4.9	4.4	64	31	11	138	31	244	47	15
26	19	7.5	4.9	4.9	62	31	11	135	28	201	38	14
27	17	7.5	4.9	5.9	60	28	12	128	30	170	32	14
28	16	7.5	4.4	5.4	60	30	12	124	32	150	31	12
29	14	7.5		5.4	------	30	38	131	38	135	30	12
30	12	7.0	4.5	5.4	------	30	899	192	38	128	28	12
31	12	------		4.9	------	24	------	201	------	114	26	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,800	1.0	735	45,200
November	11	7.0	8.18	487
December	7.0	------	5.52	339
January	------	------	4.63	285
February	98	5.4	59.9	3,330
March	58	24	37.0	2,280
April	899	11	46.5	2,770
May	2,340	124	457	28,100
June	178	28	75.1	4,470
July	2,180	19	191	11,700
August	456	26	83.2	5,120
September	25	12	17.4	1,040
The year	9,800	1.0	145	105,000

NUECES RIVER AT COTULLA, TEX.

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

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

RECORDS AVAILABLE.—October, 1923, to September, 1931.

EXTREMES.—Maximum discharge during year, 2,920 second-feet Oct. 12 (gage height, 3.08 feet); no flow at times.

1923–1931: Maximum discharge, about 49,500 second-feet June 3, 1925 (gage height, 14.89 feet); no flow at times.

REMARKS.—Records good. Most of low-water flow is diverted by pumping above station. Low-water flow partly regulated by storage reservoir above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	228	6.2	0	860	14	0.8	0.8	788	23	188	26
2	0	208	4.4	0	759	15	.6	3.6	1,170	89	168	20
3	0	178	3.6	0	680	15	.6	353	1,620	396	140	18
4	0	140	3.0	0	555	13	.6	408	2,140	505	123	15
5	0	94	1.8	0	384	11	0	788	2,140	282	107	12
6	0	69	.8	0	218	9.5	0	1,240	1,620	178	100	10
7	0	42	.5	0	140	8.0	0	1,790	1,010	123	81	7.5
8	0	31	.1	0	115	8.0	0	2,050	492	81	69	3.9
9	0	31	0	0	69	7.5	0	2,220	282	59	64	2.4
10	266	42	0	0	54	6.2	0	2,400	218	45	45	.7
11	1,510	74	0	0	24	5.2	0	2,050	168	35	117	.3
12	2,750	304	0	0	15	3.6	0	1,790	140	29	94	0
13	2,750	408	0	0	11	3.6	0	991	123	19	64	0
14	1,790	420	0	0	6.6	3.6	0	860	107	12	54	0
15	788	248	0	0	5.7	3.0	0	655	107	6.6	45	0
16	408	228	0	0	3.6	2.1	0	456	100	4.4	218	0
17	238	178	0	0	3.6	.7	0	372	94	1,080	248	0
18	248	148	0	0	3.6	.5	0	349	94	1,090	208	0
19	248	123	0	0	3.6	.2	.6	326	74	846	158	0
20	408	94	0	0	3.6	0	.4	349	69	718	132	0
21	456	74	0	0	3.6	0	.3	384	59	860	123	0
22	384	59	0	0	6.6	.3	.3	468	49	1,120	100	0
23	326	42	0	3.1	9.5	1.5	.2	468	45	1,310	81	0
24	248	31	0	8.0	15	3.3	0	396	31	1,290	64	0
25	208	24	0	8.9	25	8.0	0	315	45	1,290	54	0
26	148	21	0	8.0	29	8.0	.8	259	42	1,170	49	0
27	148	15	0	8.0	23	8.0	197	228	38	655	45	0
28	148	11	0	8.4	17	8.0	20	208	31	432	38	0
29	198	9.0	0	11	-------	6.2	4.8	188	35	315	31	0
30	248	8.0	0	88	-------	3.0	1.8	238	26	238	26	0
31	248	-------	0	580	-------	2.4	-------	408	-------	218	26	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,750	0	457	28,100
November	420	8.0	119	7,080
December	6.2	0	.66	41
January	580	0	23.3	1,430
February	860	3.6	144	8,000
March	15	0	5.75	354
April	197	0	7.63	454
May	2,400	.8	742	45,600
June	2,140	26	432	25,700
July	1,310	4.4	468	28,800
August	248	26	98.7	6,070
September	26	0	3.86	230
The year	2,750	0	210	152,000

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. Zero of gage is 101.08 feet above mean sea level.

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, 1931.

EXTREMES.—Maximum discharge during year, 6,040 second-feet May 11 (gage height, 22.0 feet); no flow at times.

1915–1931: Maximum stage, 46.0 feet (probably affected by strong upstream wind) Sept. 18, 1919 (discharge not determined); no flow at times.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	622	25	4.0	1,990	43	8.2	1,300	585	2,270	1,480	43
2	0	685	25	4.0	1,930	43	8.2	860	510	788	1,000	34
3	0	739	19	4.0	2,590	68	8.2	640	560	315	347	28
4	0	347	19	4.0	3,520	54	8.2	1,510	450	299	248	28
5	0	248	14	4.0	3,660	68	5.2	1,930	560	379	195	22
6	0	222	14	2.4	3,380	54	5.2	2,050	685	470	176	22
7	4.5	231	14	4.0	2,560	43	3.2	3,670	820	430	151	19
8	1.0	282	14	4.0	1,360	34	3.2	5,440	910	430	131	14
9	.5	127	10	4.0	850	34	3.2	5,970	970	363	110	14
10	0	214	10	4.0	450	34	3.2	5,970	1,150	231	89	10
11	38	379	10	4.0	315	34	3.2	5,900	1,330	157	842	6.5
12	1,320	660	6.5	6.5	222	34	3.2	4,880	1,450	75	1,780	6.5
13	2,840	850	6.5	8.6	186	34	3.2	3,480	1,570	75	970	4.0
14	2,520	1,000	4.0	30	147	28	3.2	2,830	1,630	117	1,390	4.0
15	735	1,120	4.0	21	106	28	5.2	2,410	1,080	75	760	2.4
16	265	910	4.0	14	106	43	12	2,290	222	48	735	2.4
17	363	535	4.0	820	147	43	16	2,290	127	334	585	2.4
18	510	430	4.0	1,330	166	68	12	2,470	127	3,020	490	2.4
19	710	347	4.0	390	106	68	10	2,590	60	5,270	490	1.2
20	880	248	4.0	139	106	186	174	2,500	60	4,920	635	1.3
21	940	127	4.0	85	85	186	315	2,470	48	3,900	585	.6
22	372	95	6.5	60	85	147	157	2,260	48	3,660	940	.6
23	248	75	6.5	38	68	54	106	1,480	48	3,480	347	.6
24	299	48	6.5	31	68	43	83	1,270	48	3,310	231	0
25	363	38	6.5	31	68	34	64	850	38	3,300	214	0
26	331	31	6.5	25	54	22	55	735	38	5,240	214	0
27	363	31	4.0	19	54	22	216	910	60	5,550	195	.6
28	395	25	4.0	25	43	16	410	710	303	4,360	137	.6
29	315	25	4.0	161	------	16	127	410	1,460	3,000	54	.6
30	282	25	4.0	1,470	------	16	528	363	3,520	2,290	43	.6
31	248	------	4.0	1,960	------	16	------	379	------	1,870	43	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,840	0	463	28,500
November	1,120	25	357	21,200
December	25	4.0	8.76	539
January	1,960	2.4	216	13,300
February	3,660	43	872	48,400
March	186	16	52.0	3,200
April	528	3.2	79.0	4,700
May	5,970	363	2,350	144,000
June	3,520	38	682	40,600
July	5,550	48	1,950	120,000
August	1,780	43	503	30,900
September	43	0	9.05	539
The year	5,970	0	630	456,000

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 tidewater and breakwater dam.

DRAINAGE AREA.—16,900 square miles.

RECORDS AVAILABLE.—August, 1915, to September, 1931. (Records of discharge from 1915 to 1918 only.)

EXTREMES.—Maximum stage during year, 9.00 feet Nov. 26, after failure of City of Corpus Christi dam near La Fruta; minimum stage, 1.65 feet Oct. 3, Dec. 23.

1915–1931: During September, 1919, river reached a stage of about 12 feet, as determined from floodmarks on gage. This stage probably exceeds any that occurred for many years prior to the establishment of this station. No flow Aug. 23–29, 1918.

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

Daily gage height, in feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.00	3.42	2.68	2.15	3.98	2.25	1.88	2.80	3.05	4.35	7.02	3.90
2	1.88	3.45	2.58	2.10	4.58	2.20	1.90	2.70	3.08	4.80	6.28	3.90
3	1.75	3.60	2.50	2.08	4.72	2.20	1.90	3.78	3.25	5.08	5.75	3.82
4	1.82	3.85	2.48	2.15	4.80	2.15	1.88	3.70	3.00	3.98	5.12	3.80
5	2.00	3.92	2.45	2.05	4.95	2.10	1.88	3.30	2.90	2.92	4.45	3.75
6	2.00	3.68	2.45	2.00	5.42	2.18	1.80	3.98	3.08	2.68	4.15	3.75
7	2.00	3.50	2.40	2.12	6.08	2.22	1.85	4.40	3.22	2.70	4.02	3.72
8	1.95	3.38	2.35	2.28	6.32	2.25	1.78	4.55	3.35	3.20	3.92	3.70
9	1.90	3.35	2.35	2.20	5.98	2.22	1.78	4.85	3.48	3.35	3.82	3.70
10	1.80	3.28	2.30	2.18	4.78	2.18	1.88	5.55	3.58	3.58	3.75	3.62
11	1.75	3.32	2.30	2.32	3.72	2.15	1.90	6.32	3.72	3.58	3.68	3.70
12	1.82	3.38	2.30	2.35	3.32	2.12	1.85	6.88	3.82	3.28	3.60	3.72
13	2.20	3.60	2.28	2.35	3.02	2.08	1.80	7.28	3.95	2.95	3.95	3.75
14	2.30	3.85	2.25	2.35	2.85	2.10	1.82	7.55	4.15	2.72	5.22	3.75
15	2.22	4.08	2.25	2.35	2.70	2.20	1.85	7.62	4.28	2.58	5.05	3.70
16	2.90	4.22	2.22	2.38	2.80	2.32	1.80	7.30	4.35	3.62	5.22	3.68
17	3.72	4.30	2.18	2.42	2.72	2.28	1.80	6.65	3.72	3.90	4.85	3.68
18	3.52	4.22	2.12	2.78	2.62	2.25	1.80	6.05	2.72	4.50	4.65	3.70
19	3.45	4.00	2.12	3.25	2.60	2.15	1.78	6.05	2.38	5.62	4.32	3.70
20	3.62	3.95	1.95	4.12	2.58	2.18	1.82	6.32	2.28	6.12	4.18	3.70
21	3.82	3.70	1.78	3.52	2.48	2.20	1.88	6.22	2.25	6.62	4.15	3.68
22	4.00	3.50	1.70	2.85	2.40	2.25	1.90	6.12	2.15	6.98	4.25	3.62
23	4.10	3.48	1.68	2.55	2.35	2.42	2.68	5.85	2.08	7.22	4.28	3.68
24	4.10	5.25	1.82	2.45	2.35	2.42	2.60	5.52	2.08	7.22	4.55	3.68
25	3.75	7.70	2.00	2.35	2.30	2.32	2.40	4.75	2.00	7.08	4.12	3.70
26	3.48	8.83	2.10	2.25	2.30	2.18	2.30	3.82	2.00	6.85	3.80	3.65
27	3.45	6.98	2.20	2.22	2.30	2.10	2.28	3.58	2.18	6.75	3.58	3.65
28	3.45	3.50	2.22	2.20	2.28	2.00	2.35	3.50	3.08	6.88	3.50	3.62
29	3.98	2.92	2.22	2.28	------	1.95	2.35	3.52	3.90	7.15	3.55	3.58
30	4.02	2.82	2.20	3.20	------	1.90	2.95	3.48	3.62	7.38	3.80	3.50
31	3.60	------	2.18	2.80	------	1.90	------	3.25	------	7.42	3.95	------

NUECES RIVER SEEPAGE INVESTIGATION

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

Discharge measurements of Nueces River to determine seepage from gaging station at Laguna, Tex., to former gaging station near Cinonia, Tex., 1931

Date	Location	Distance in miles from initial point	Discharge in second-feet		
			Measured	Gain or loss in section	Total gain or loss above point of measurement
May 16	Laguna	0	316		
16	Mouth of West Fork	13.0	259	−57	−57
16	Southern Pacific Railroad bridge	18.0	222	−37	−94
16	Uvalde-Del Rio road crossing	20.6	199	−23	−117
16	Gaging station near Uvalde	22.7	219	+20	−97
17	Uvalde-Eagle Pass road crossing	28.2	229	+10	−87
17	San Antonio, Uvalde & Gulf Railroad bridge	31.6	227	−2	−89
17	Old Uvalde-La Pryor road crossing	36.3	221	−6	−95
17	Gas well 5 miles northeast of La Pryor	39.6	219	−2	−97
17	La Pryor-Batesville road crossing	44.8	208	−11	−108
17	Former gaging station near Cinonia	56.5	240	+32	−76
19	Laguna	0	275		
19	6.8 miles above mouth of West Fork	6.2	279	+4	+4
19	2.6 miles above mouth of West Fork	10.4	274	−5	−1
19	Gaging station near Uvalde	22.7	196	−78	−79
June 4	Laguna, Tex	0	192		
4	2.6 miles above West Fork	10.4	187	−5	−5
4	Mouth of West Fork	13.0	157	−30	−35
4	Southern Pacific Railroad bridge	18.0	116	−41	−76
5	Uvalde-Del Rio road crossing	20.6	84.6	−31.4	−107.4
5	Gaging station near Uvalde	22.7	114	+29.4	−78
5	San Antonio, Uvalde & Gulf Railroad bridge	31.6	118	+4	−74
5	Gas well 5 miles northeast of La Pryor	39.6	111	−7	−81
6	La Pryor-Batesville road crossing	44.8	107	−4	−85
6	3½ miles above Cinonia bridge	53.0	108	+1	−84
15	Laguna	0	156		
15	2.6 miles above West Fork	10.4	140	−16	−16
15	Mouth of West Fork	13.0	106	−34	−50
15	Southern Pacific Railroad bridge	18.0	69.7	−36.3	−86.3
15	Uvalde-Del Rio road crossing	20.6	46.6	−23.1	−109.4
16	Gaging station near Uvalde	22.7	63.7	+17.1	−92.3
16	Uvalde-Eagle Pass road crossing	28.2	81.2	+17.5	−74.8
16	San Antonio, Uvalde & Gulf Railroad bridge	31.6	75.7	−5.5	−80.3
16	Gas well 5 miles northeast of La Pryor	39.6	65.1	−10.6	−90.9
16	La Pryor-Batesville road crossing	44.8	60.4	−4.7	−95.6
17	3½ miles above Cinonia bridge	53.0	69.0	+8.6	−87.0
17	Former gaging station near Cinonia	56.5	82.4	+13.4	−73.6
June 22	Laguna	0	138		
22	2.6 miles above West Fork	10.4	124	−14	−14
22	Mouth of West Fork	13.0	84.1	−39.9	−53.9
22	Southern Pacific Railroad bridge	18.0	43.4	−40.7	−94.6
22	Uvalde-Del Rio road crossing	20.6	21.5	−21.9	−116.5
23	Gaging station near Uvalde	22.7	40.2	+18.7	−97.8
23	Uvalde-Eagle Pass road crossing	28.2	57.2	+17.0	−80.8
23	San Antonio, Uvalde & Gulf Railroad bridge	31.6	50.1	−7.1	−87.9
23	Gas well 5 miles northeast of La Pryor	39.6	40.9	−9.2	−97.1
23	La Pryor-Batesville road crossing	44.8	33.2	−7.7	−104.8
24	3.5 miles above Cinonia bridge	53.0	45.3	+12.1	−92.7
24	Former gaging station near Cinonia	56.5	46.1	+.8	−91.9

Discharge measurements of Nueces River to determine seepage from gaging station at Laguna, Tex., to former gaging station near Cinonia, Tex., 1931—Continued

Date		Location	Distance in miles from initial point	Discharge in second-feet		
				Measured	Gain or loss in section	Total gain or loss above point of measurement
July	2	Laguna	0	118		
	2	2.6 miles above West Fork	10.4	101	−17	−17
	2	Mouth of West Fork	13.0	63.8	−37.2	−54.2
	2	Southern Pacific Railroad bridge	18.0	27.5	−36.3	−90.5
	2	Uvalde-Del Rio road crossing	20.6	6.31	−21.2	−111.7
	3	Gaging station near Uvalde	22.7	26.9	+20.6	−91.1
	3	Uvalde-Eagle Pass road crossing	28.2	43.9	+17.0	−74.1
	3	San Antonio, Uvalde & Gulf Railroad bridge	31.6	39.6	−4.3	−78.4
	3	Gas well 5 miles northeast of La Pryor	39.6	29.6	−10.0	−88.4
	3	La Pryor-Batesville road crossing	44.8	24.2	−5.4	−93.8
	4	3½ miles above Cinonia bridge	53.0	35.8	+11.6	−82.2
	4	¼ mile below Cinonia bridge	56.7	35.5	−.3	−82.5
	9	Laguna	0	98.9		
	9	2.6 miles above West Fork	10.4	69.4	−29.5	−29.5
	9	Mouth of West Fork	13.0	36.5	−32.9	−62.4
	9	Southern Pacific Railroad bridge	18.0	4.6	−31.9	−94.3
	9	Uvalde-Del Rio road crossing	20.6	[a] 1.5	−3.1	−97.4
	9	Gaging station near Uvalde	22.7	21.6	+20.1	−77.3
	13	Gaging station near Uvalde	0	17.5		
	13	Uvalde-Eagle Pass road crossing	5.5	33.6	+16.1	+16.1
	13	San Antonio, Uvalde & Gulf Railroad bridge	8.9	29.0	−4.6	+11.5
	13	Gas well 5 miles northeast of La Pryor	16.9	17.9	−11.1	+.4
	13	La Pryor-Batesville road crossing	22.1	11.5	−6.4	−6.0
	13	3½ miles above Cinonia bridge	30.3	23.4	+11.9	+5.9
	13	¼ mile below Cinonia bridge	33.8	21.5	−1.9	+4.0
	16	Laguna	0	91.8		
	16	6.8 miles above West Fork	6.2	79.9	−11.9	−11.9
	16	2.6 miles above West Fork	10.4	63.8	−16.1	−28.0
	16	Mouth of West Fork	13.0	25.1	−38.7	−66.7
	16	Uvalde-Del Rio road crossing	20.6	0.0	−25.1	−91.8
	17	Gaging station near Uvalde	22.7	18.8	+18.8	−73.0
Aug.	29	Laguna	0	119		
	29	2.6 miles above West Fork	10.4	56.8	−62.2	−62.2
	29	Mouth of West Fork	13.0	40.2	−16.6	−78.8
	29	Southern Pacific Railroad crossing	18.0	15.2	−25.0	−103.8
	30	Uvalde-Del Rio road crossing	20.6	7.8	−7.4	−111.2
	30	Gaging station near Uvalde	22.7	26.9	+19.1	−92.1
	30	Uvalde-Eagle Pass road crossing	28.2	36.3	+9.4	−82.7
	30	San Antonio, Uvalde & Gulf Railroad crossing	31.6	38.8	+2.5	−80.2

[a] Estimated.

FRIO RIVER AT CONCAN, TEX.

LOCATION.—Water-stage recorder half a mile south of Concan post office, Uvalde County. Prior to Oct. 3, 1930, staff gage with same datum at same location.
DRAINAGE AREA.—485 square miles.
RECORDS AVAILABLE.—October, 1923, to September, 1931.
EXTREMES.—Maximum gage height during year, 22.3 feet Oct. 6 (discharge not determined); minimum discharge, 19 second-feet Oct. 1–3.
1923–1931: Maximum gage height, that of Oct. 6, 1930; minimum discharge, 8.1 second-feet Aug. 2, 3, 1928.
Maximum stage known, 28.8 feet Sept. 18, 1923.
REMARKS.—Records good except those during high-water periods, which are poor. Discharge estimated Oct. 1, 2. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	100	98	74	235	163	132	1,010	214	115	210	100
2	19	100	95	72	230	159	132	876	206	109	201	100
3	19	98	95	72	222	155	128	1,170	201	106	193	98
4	82	95	100	69	214	152	125	756	193	103	189	95
5	69	92	92	69	206	148	125	681	193	148	181	95
6	7,330	100	92	69	201	145	122	591	189	155	170	92
7	1,370	92	92	69	201	141	118	575	185	100	166	92
8	465	100	92	69	214	141	118	512	181	98	163	89
9	289	103	89	67	210	138	115	470	178	98	159	89
10	218	103	89	72	197	135	115	445	206	95	159	86
11	178	100	89	72	193	132	112	410	185	103	166	84
12	166	100	89	69	193	128	109	395	174	95	159	84
13	181	98	89	69	189	128	106	380	163	95	148	81
14	170	103	89	67	181	125	106	351	155	92	145	79
15	159	103	84	64	197	421	106	336	152	92	152	76
16	145	98	84	92	222	218	103	317	148	100	141	76
17	138	98	81	138	206	193	103	303	145	112	138	74
18	132	98	81	122	201	181	106	299	141	118	132	74
19	122	95	81	118	197	174	148	285	138	5,570	128	72
20	115	98	84	112	193	174	118	276	128	886	125	72
21	112	98	84	109	193	163	112	271	125	501	128	69
22	115	98	79	106	197	159	109	262	122	390	157	69
23	128	100	79	106	189	155	106	253	118	336	135	69
24	125	98	79	109	185	152	109	248	115	312	125	69
25	112	95	79	109	181	148	106	240	112	285	118	67
26	106	95	76	115	174	148	103	235	109	271	112	67
27	106	95	76	159	170	145	103	230	106	253	109	62
28	106	98	74	230	166	141	106	226	112	240	103	62
29	100	112	72	240	------	141	141	235	135	230	103	60
30	103	106	72	244	------	138	3,150	253	125	226	100	60
31	103	------	74	244	------	135	------	230	------	222	100	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	7,330	19	407	25,000
November	112	92	99.0	5,890
December	100	72	84.8	5,210
January	244	64	110	6,760
February	235	166	198	11,000
March	421	125	161	9,900
April	3,150	103	216	12,900
May	1,170	226	423	26,000
June	214	106	155	9,220
July	5,570	92	376	23,100
August	210	100	146	8,980
September	100	60	78.7	4,680
The year	7,330	19	205	149,000

FRIO RIVER NEAR DERBY, TEX.

LOCATION.—Water-stage recorder at International-Great Northern Railroad bridge 900 feet below mouth of Leona River and 4 miles south of Derby, Frio County. Prior to Apr. 22, 1931, staff gage with same datum at same location.

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, 1931.

EXTREMES.—Maximum discharge during year, 6,200 second-feet May 4 (gage height, 9.28 feet); no flow Oct. 1–6, Sept. 29, 30.

1915–1931: Maximum discharge, about 34,400 second-feet Sept. 18, 1919 (gage height, 18.5 feet); no flow at times each year.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.5	0.8	0.8	104	22	1.4	2,310	79	0.8	16	0.4
2	0	.5	.8	.8	122	24	3.0	5,200	60	.6	13	.4
3	0	.5	.8	.8	242	24	1.4	4,540	52	.6	9.2	.3
4	0	.5	.8	.8	168	23	1.1	6,000	35	.5	6.1	.3
5	0	.5	.8	.8	108	21	1.1	4,080	26	.5	3.5	.3
6	0	.8	.8	.8	90	19	1.1	3,020	20	.6	2.5	.3
7	1,210	1.4	.8	.8	69	17	1.1	1,370	17	.6	1.4	.3
8	4,190	1.4	.8	.8	64	14	1.1	1,280	14	.6	1.1	.3
9	3,170	1.4	.8	.8	62	13	.8	875	11	.6	.8	.3
10	759	1.4	.8	.8	54	11	.8	674	8.4	.6	1.1	.3
11	228	1.4	.8	.8	52	9.2	.8	542	7.6	1.1	1.7	.3
12	111	1.4	.8	.8	44	8.4	.8	451	6.8	.8	.8	.3
13	56	1.4	.8	.8	37	6.1	.8	381	4.7	.6	4.1	.3
14	33	1.4	.8	.8	37	6.1	.8	328	3.0	.6	3.5	.3
15	22	1.4	.8	.8	37	6.1	.8		4.1	1.1	4.1	.3
16	22	1.4	.8	.8	38	5.4	.8	215	5.4	1.4	2.5	.3
17	15	1.4	.8	1.4	42	3.0	.8		3.5	1.4	1.4	.2
18	12	1.4	.8	4.7	52	3.0	.8		2.1	139	.8	.2
19	6.8	1.4	.8	23	66	8.4	.8		1.4	186	.8	.2
20	1.1	1.1	.8	18	48	12	.8	162	1.1	586	1.1	.2
21	.8	.8	1.4	8.4	44	12	.8	201	.8	3,620	1.4	.1
22	.8	.8	1.4	6.8	37	7.6	.8	170	.6	3,010	1.1	.1
23	.8	.8	1.4	2.1	35	5.4	1.4	158	.6	584	1.1	.1
24	.8	.8	1.4	2.1	37	4.1	.8	140	.6	271	.8	.2
25	.8	.8	1.4	1.4	35	3.5	1.1	84	.6	162	.6	.2
26	.8	.8	1.4	1.4	27	2.1	.8	66	.6	106	.6	.1
27	.8	.8	1.4	1.7	25	1.4	.8	56	1.4	74	.6	.1
28	.8	.8	.8	8.4	22	1.4	1.1	48	1.1	67	.6	.1
29	.8	.8	.8	20	------	1.4	.8	42	1.1	38	.8	0
30	.6	.8	.8	26	------	1.4	94	46	.8	26	.8	0
31	.5	------	.8	46	------	1.4	------	116	------	20	.5	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,190	0	318	19,600
November	1.4	.5	1.02	61
December	1.4	.8	.94	58
January	46	.8	5.94	365
February	242	22	64.2	3,570
March	24	1.4	9.59	590
April	94	.8	4.11	245
May	6,000	42	1,080	66,400
June	79	.6	12.3	732
July	3,620	.5	287	17,600
August	16	.5	2.72	167
September	.4	0	.23	14
The year	6,000	0	151	109,000

FRIO 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 Frio River from Concan to Uvalde-Concan road crossing, Tex., 1931

Date	Stream	Location	Approximate distance in miles from initial point	Discharge in second-feet		
				Main stream	Gain or loss in section	Total gain or loss
July 1	Frio River	Concan Leakey road crossing at Concan	0	112		
1	do	Gaging station at Concan	1.0	114	+2.0	+2.0
1	do	1½ miles below Concan station	2.5	116	+2.0	+4.0
1	do	3½ miles below Concan station	4.5	107	−9.0	−5.0
1	do	One-fourth mile above Uvalde-Concan road crossing.	6.0	86.3	−20.7	−25.7

NOTE.—No diversions from portion of river covered by measurements; no inflow from tributaries.

LEONA 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 Leona River near Uvalde, Tex., 1931

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Diversion	Gain or loss in section	Total gain or loss
June 11	Leona River	Highway bridge 1.7 miles southeast of Uvalde.	0	3.1			
11	Leona Valley Live Stock and Irrigation Co. Canal.	At head of Canal, diversion No. 1.	2.0		0		
11	Leona River	Below Leona Valley Live Stock and Irrigation Co. Dam.	2.1	8.0		+4.9	+4.9
11	do	Crossing at White's place above Kincaid Dam.	6.6	16.4		+8.4	+13.3
11	Kincaid Canal	At head of canal	8.1		0		
11	Leona River	Below Kincaid Dam	8.1	7.2		−9.2	+4.1
11	do	3 miles below Kincaid Dam	11.0	19.1		+11.9	+16.0
12	do	Hackberry crossing	17.0	9.5		−9.6	+6.4
12	Batesville Canal	Head of canal, above Batesville.	20.1		0		
12	Leona River	Below Batesville Dam	20.1	6.9		−2.6	+3.8
12	do	1½ miles below Batesville	22.1	4.7		−2.2	+1.6
12	do	3 miles below Batesville	23.3	3.6		−1.1	+0.5
12	do	Ottenhouse ranch	26.4	2.2		−1.4	−0.9
12	do	Old Woodward ranch	33.5	.5		−1.7	−2.6
12	do	Rogers ranch	37.5	0		−.5	−3.1

NOTE.—No diversions from river or inflow from tributaries during seepage investigation.

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, Socorro County.

DRAINAGE AREA.—30,000 square miles.

RECORDS AVAILABLE.—January, 1895, to June, 1931. Station maintained by International Water Commission after June, 1931. Records prior to January, 1922, at station 1½ miles downstream.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 2,650 second-feet May 19 (gage height, 3.29 feet); no flow Oct. 1–5 and June 15–30.

1895–1931: Maximum mean daily discharge, 33,000 second-feet Oct. 11, 1904; maximum discharge on Sept. 24, 1929, probably reached about same discharge as the flood of 1904; no flow at times.

REMARKS.—Records fair. Water diverted from Rio Grande and tributaries above station for irrigation of 600,000 acres.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	185	604		685	768	768	1,360	445
2	0	161	619	540	715	745	705	1,460	406
3	0	136	700		685	922	665	1,730	331
4	0	152	803	809	863	906	555	1,900	257
5	0	168	750	715	809	782	531	2,080	220
6	116	152	709	725	755	641	585	1,950	176
7	73	130	663	796	735	620	583	1,780	166
8	32	124	682	695	655	809	498	2,110	153
9	16	124	682	675	655	876	406	1,750	126
10	9.7	136	672	579	695	922	406	1,820	88
11	6.7	149	627	655	735	745	425	2,110	81
12	5.7	165	636	627	836	561	503	1,900	64
13		199	619	585	906	675	508	1,640	56
14		272	654	655	938	705	486	1,750	5.5
15		322	645	599	954	705	492	1,290	0
16	45	294	691	585	1,140	685	498	1,120	0
17		287	718	599	986	695	715	1,580	0
18		330	729	627	863	715	1,360	2,000	0
19		372	691	648	822	768	2,140	2,080	0
20	196	448	654	655	850	745	1,440	2,220	0
21	136	486	550	579	768	755	1,020	2,160	0
22	101	537	475	641	745	822	890	1,710	0
23	94	524	399	613	822	938	1,150	1,420	0
24	94	486	314	573	906	986	1,290	1,140	0
25	117	475		555	922	876	1,710	890	0
26	146	390		520	906	705	1,500	768	0
27	165	381		585	863	768	1,260	695	0
28	161	486	417	627	863	1,080	1,000	627	0
29	158	524		768	-------	1,150	1,420	599	0
30	124	475		705	-------	986	1,290	561	0
31	111	-------		725	-------	922	-------	503	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	196	0	70.2	4,320
November	537	124	302	18,000
December	803	-------	587	36,100
January	-------	-------	637	39,200
February	1,140	655	824	45,800
March	1,150	561	806	49,600
April	2,140	406	893	53,100
May	2,220	503	1,510	92,800
June	445	0	85.5	5,090
The period	-------	-------	-------	344,000

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, El Paso County. Zero of gage is 3,718.04 feet above mean sea level.

RECORDS AVAILABLE.—May, 1897, to June, 1931. Station maintained by International Water Commission after June, 1931. May, 1889, to June, 1893, at station at old Fort Bliss, 1,500 feet above Mexican Dam; January, 1895, to May, 1897, at station at pumping house of smelter company 1 mile below present gage.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 1,890 second-feet Apr. 17 (gage height, 3.06 feet); minimum, 118 second-feet Feb. 8.

1889–1893, 1895–1931: 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. Numerous diversions for irrigation above station. Flow regulated by Elephant Butte Reservoir, diversions, and return water from irrigated lands between reservoir and gaging station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	652	230	214	158	155	391	992	938	1,360
2	613	252	182	153	149	397	956	712	1,190
3	547	257	174	149	136	317	880	648	1,300
4	426	239	174	153	124	312	832	672	1,150
5	414	180	222	160	132	304	992	592	1,070
6	408	300	162	155	137	290	1,150	592	1,030
7	391	391	590	160	126	281	938	505	1,130
8	487	352	426	168	122	308	920	452	1,290
9	701	222	330	153	160	360	872	415	1,120
10	540	230	305	143	250	409	904	427	1,000
11	437	248	252	149	263	512	872	648	1,010
12	380	239	248	141	254	584	947	760	912
13	518	257	226	147	276	584	1,080	1,010	888
14	358	270	214	158	335	672	1,010	1,120	947
15	315	275	202	153	330	760	920	1,170	992
16	290	239	198	151	380	974	929	1,230	1,090
17	285	206	186	143	355	947	1,400	1,370	965
18	295	186	170	141	312	864	1,290	1,400	956
19	336	174	182	139	322	752	1,290	1,200	896
20	391	232	310	141	272	696	929	1,110	896
21	437	414	449	145	281	616	712	938	1,140
22	513	540	629	145	263	600	696	888	1,280
23	582	513	330	139	272	608	938	808	1,050
24	629	414	234	137	286	712	1,000	784	1,000
25	441	295	206	135	304	680	840	896	1,060
26	295	257	194	134	304	776	752	816	1,060
27	290	248	194	160	335	1,290	696	824	947
28	270	244	158	150	370	1,010	720	929	956
29	266	262	154	149	------	929	947	956	965
30	248	248	154	141	------	1,340	1,240	1,030	1,220
31	222	------	154	132	------	1,110	------	1,210	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	701	222	419	25,800
November	540	174	280	16,700
December	629	154	262	16,100
January	168	132	148	9,100
February	380	122	250	13,900
March	1,340	281	658	40,500
April	1,400	696	955	56,800
May	1,400	415	873	53,700
June	1,360	888	1,060	63,100
The period	------	------	------	296,000

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, El Paso County.

RECORDS AVAILABLE.—October, 1927, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 1,060 second-feet May 1 (gage height, 11.99 feet); minimum, 5.5 second-feet June 20.

1927–1931: Maximum discharge, 3,440 second-feet Aug. 14, 1929 (gage height, 14.72 feet); no flow June 14, 1929, Mar. 14, 1930.

REMARKS.—Records good. Numerous diversions for irrigation above station. Flow regulated by Elephant Butte Reservoir, diversions, and return water from irrigated lands between reservoir and gaging station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	202	174	217	115	147	118	195	990	352
2	105	163	204	98	142	105	213	692	427
3	70	170	188	118	149	102	208	522	324
4	70	154	184	124	149	70	178	388	384
5	58	145	170	119	143	38	166	280	216
6	156	132	176	118	140	47	205	200	138
7	154	49	232	127	140	50	223	121	180
8	88	27	252	124	136	51	112	54	176
9	75	36	248	121	73	92	96	19	267
10	177	16	208	132	18	47	52	21	216
11	232	21	143	145	55	28	50	23	167
12	223	42	174	138	125	21	98	21	192
13	295	86	221	143	118	50	133	31	115
14	323	159	213	140	124	50	248	59	142
15	259	161	194	143	142	139	216	136	120
16	215	133	180	151	189	344	108	300	57
17	196	157	170	143	253	472	141	463	95
18	184	154	159	140	208	388	706	584	50
19	196	143	147	133	174	296	740	414	15
20	192	143	135	135	138	209	701	248	16
21	204	156	172	135	91	151	320	67	16
22	127	187	192	135	87	142	133	95	173
23	92	284	252	132	83	125	481	69	232
24	115	292	225	130	83	49	715	84	74
25	161	213	127	130	63	31	648	53	25
26	208	107	95	128	96	54	535	22	21
27	154	65	122	151	80	70	490	12	47
28	109	80	154	165	108	360	454	34	29
29	171	77	154	171	------	284	740	29	61
30	208	141	135	158	------	200	840	42	54
31	184	------	124	147	------	320	------	92	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	323	58	168	10,300
November	292	16	129	7,680
December	252	95	180	11,100
January	171	98	135	8,300
February	253	18	123	6,830
March	472	21	145	8,920
April	840	50	338	20,100
May	990	12	199	12,200
June	427	15	146	8,690
The period				94,100

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 3,452.64 feet above mean sea level.

RECORDS AVAILABLE.—January, 1923, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 2,350 second-feet Oct. 13 (gage height, 6.28 feet); minimum, 57 second-feet Mar. 14.

1923–1931: Maximum mean daily discharge, 2,600 second-feet Sept. 11, 1925; minimum, 20 second-feet July 23, 24, 1925.

REMARKS.—Records good except those for Apr. 17 to May 5, which are fair. Numerous diversions for irrigation above station. Flow regulated by storage at Elephant Butte Reservoir, diversions, and return water from irrigated lands between reservoir and gaging station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	213	238	236	176	184	160	203	1,200	102
2	254	228	217	179	176	169	237	1,360	97
3	410	222	219	166	172	182	168	1,390	150
4	296	209	232	149	163	169	128	1,060	215
5	532	204	226	144	156	156	134	805	242
6	452	200	217	154	158	131	156	605	260
7	401	197	219	155	158	105	140	458	228
8	330	192	215	154	160	96	169	360	203
9	346	230	251	155	152	94	210	284	191
10	303	204	374	160	150	94	188	224	205
11	310	193	392	149	160	86	149	176	233
12	317	185	362	161	177	77	144	144	212
13	792	186	307	164	161	80	146	124	196
14	532	157	272	164	177	61	163	109	189
15	496	151	272	160	212	86	158	113	174
16	424	156	274	163	212	122	193	118	172
17	389	181	260	158	205	132	1,600	115	191
18	606	175	240	156	200	190	830	169	150
19	462	168	224	158	212	260	880	297	120
20	365	178	206	156	268	315	1,110	360	110
21	322	178	192	144	250	315	1,140	308	93
22	299	178	181	124	230	284	930	224	74
23	284	173	181	117	219	252	1,000	166	67
24	296	185	217	120	196	221	930	142	67
25	288	244	272	121	188	196	1,140	108	96
26	290	335	327	125	161	172	1,140	99	84
27	292	327	282	138	146	149	1,060	101	67
28	327	278	219	150	138	149	1,000	87	61
29	343	232	193	166	-------	138	980	81	68
30	296	226	176	174	-------	218	1,060	82	106
31	278	-------	185	184	-------	246	-------	86	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	792	213	372	22,900
November	335	151	207	12,300
December	392	176	246	15,100
January	184	117	153	9,410
February	268	138	184	10,200
March	315	61	165	10,100
April	1,600	128	583	34,700
May	1,390	81	353	21,700
June	260	61	147	8,750
The period	-------	-------	-------	145,000

RIO GRANDE AT BOQUILLAS, TEX.

LOCATION.—Water-stage recorder at Boquillas, Brewster County, 4.0 miles below mouth of Tornillo Creek, about 25 miles northeast of Hot Springs, and 73 miles southeast of Marathon.

RECORDS AVAILABLE.—June, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 19,000 second-feet about Oct. 5 (gage height, 9.60 feet); minimum, 123 second-feet Oct. 1 (gage height, 0.35 foot).

1928–1931: Maximum discharge, 27,600 second-feet Sept. 11, 1929 (gage height, 11.90 feet); minimum, 123 second-feet Sept. 29 to Oct. 1, 1930 (gage height, 0.35 foot).

REMARKS.—Records good. Numerous diversions for irrigation above station. Flow partly regulated by Elephant Butte Dam and dams on tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1		674	498	854	530	970	394	2,420	1,210
2		665	514	764	522	818	620	2,150	1,090
3		701	593	674	474	1,040	522		1,080
4		719	593	602	450	1,000	442		1,110
5		701	566	557	466	960	434		1,110
6		647	539	530	566	1,050	566	1,480	1,580
7		584	498	683	602	1,110	490		1,240
8		557	490	602	665	890	629		1,010
9		539	490	539	701	1,030	530		1,070
10	2,250	530	482	482	683	1,190	530	1,200	1,530
11		539	566	466	647	1,210	566	1,160	1,160
12		530	584	458	620	1,040	450	1,190	1,080
13		577	539	426	629	809	458	1,170	1,040
14		674	506	418	593	683	482	1,060	1,010
15		710	498	474	566	611	584	881	940
16		836	482	466	602	530	539	845	930
17		800	498	434	575	530	5,240	854	940
18		764	557	434	530	482	4,960	910	1,140
19	1,500	719	701	434	782	426	2,340	1,170	1,220
20	1,210	674	746	434	737	418	1,950	900	1,020
21	1,030	638	647	442	647	364	1,540	845	1,210
22	1,030	629	683	442	593	434	1,270	1,210	1,110
23	1,100	584	674	450	548	498	1,310	920	881
24	1,000	575	602	418	589	434	1,740	791	854
25	950	557	548	410	530	426	1,570	827	791
26	860	539	674	394	522	370	1,320	1,450	863
27	1,060	522	692	410	514	593	1,320	1,280	791
28	827	530	602	426	566	692	1,270	1,990	629
29	827	514	620	410	-------	557	1,330	2,170	755
30	863	514	584	418	-------	458	1,600	1,180	973
31	710	-------	566	198	-------	394	-------	1,080	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	-------	-------	1,720	106,000
November	836	514	625	37,200
December	746	482	575	35,400
January	854	394	498	30,600
February	782	450	586	32,600
March	1,210	364	710	43,700
April	5,240	394	1,230	73,200
May	2,420	791	1,290	79,300
June	1,580	629	1,050	62,500
The period	-------	-------	-------	500,000

RIO GRANDE AT LANGTRY, TEX.

LOCATION.—Water-stage recorder at east end of canyon section 1 mile southwest of Langtry, Val Verde County, and 13 miles above Pecos River.

RECORDS AVAILABLE.—May, 1900, to October, 1914; December, 1919, to March, 1920; January, 1924, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 14,400 second-feet Oct. 7 (gage height, 7.98 feet); minimum, 397 second-feet Oct. 2 (gage height, 0.49 foot).

1900–1914, 1919–20, 1924–1931: Maximum discharge, 132,000 second-feet Sept. 13, 1904 (gage height, 34.25 feet); minimum, 270 second-feet May 8–13, 1904.

A float measurement Sept. 16, 1919, at stage of 46.9 feet showed discharge of 152,000 second-feet. Maximum stage known, 56.9 feet about June 18, 1922.

REMARKS.—Records good. Numerous diversions for irrigation above station. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	427	1,200	768	952	776	944	800	1,760	1,480
2	407	1,050	744	888	800	928	720	4,370	1,370
3	427	1,000	728	1,110	848	944	665	4,680	1,430
4	437	960	712	1,080	840	944	728	2,990	1,380
5	959	976	720	1,000		960	824	3,470	1,350
6	1,760	992	768	936	880	984	728	2,160	1,330
7	5,510	992	752	880		1,140	665	1,950	1,330
8	7,280	984	736	832		1,210	776	1,820	1,670
9	4,330	936	712	888		1,360	808	1,950	1,590
10	3,400	896	696	968	928	1,180	792	1,820	1,820
11	2,370	888	696	920	960	1,140	840	1,540	1,760
12	1,760	888	704	872	984	1,430	744	1,480	1,820
13	1,710	864	736	824	952	1,480	776	1,380	1,540
14	2,210	880	808	800	912	1,360	800	1,350	1,370
15	1,640	856	768	768	920	1,170	704	1,310	1,330
16	1,190	928	736	776	904	1,050	688	1,430	1,290
17	1,080	984	720	800	888	952	832	1,340	1,210
18	3,210	1,060	712	864	888	904	992	2,510	1,200
19	2,750	1,120	728	848	880	888	4,840	1,260	1,210
20	2,090	1,080	792	792	832	856	5,360	1,210	1,380
21	1,760	1,040	872	784	840	800	3,150	1,430	1,480
22	1,540	984	1,010	784	888	760	2,160	1,260	1,280
23	1,380	960	944	784	880	720	2,370	1,180	1,430
24	1,340	928	936	784	848	672	1,820	1,480	1,380
25	1,540	912	968	776	976	744	1,700	1,320	1,130
26	1,340	872	920	800	968	760	1,700	1,140	1,100
27	1,310	856	880	800	952	696	2,090	1,140	1,070
28	1,280	840	912	768	968	688	2,020	1,690	1,120
29	1,430	808	1,020	760	-------	650	2,960	1,930	2,440
30	1,280	784	960	768	-------	912	3,720	4,810	1,070
31	1,320	-------	960	784	-------	872	-------	2,130	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	7,280	407	1,950	120,000
November	1,200	784	951	56,600
December	1,020	696	810	49,800
January	1,110	760	851	52,300
February	-------	-------	894	49,600
March	1,480	650	971	59,700
April	5,360	665	1,590	94,600
May	4,810	1,140	1,980	122,000
June	2,440	1,070	1,410	83,900
The period	-------	-------	-------	688,000

RIO GRANDE NEAR DEL RIO, TEX.

LOCATION.—Water-stage recorder 900 feet upstream from International highway bridge between Del Rio, Val Verde County, and Villa Acuña, Coahuila, Mexico.

RECORDS AVAILABLE.—December, 1923, to June, 1931. Station maintained by International Water Commission after June, 1931. May, 1900, to April, 1915, at station 11 miles upstream; December, 1919, to March, 1920, at McKees Switch, 7½ miles upstream. Several springs but no important tributaries enter river between the various sites.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 77,900 second-feet Oct. 6 (gage height, 18.35 feet); minimum, 1,000 second-feet Oct. 1, 2 (gage height, 1.40 feet).

1900–1915, 1919–20, 1923–1931: Maximum stage, 36.5 feet at site 11 miles upstream Apr. 6, 1900, and 41.0 feet at site 7½ miles upstream in September, 1919 (discharge not determined). Minimum discharge, 938 second-feet May 23–26, 1930 (gage height, 1.42 feet).

Maximum stage known, 32.8 feet (present gage datum) June 18 or 19, 1922.

REMARKS.—Records good. Numerous diversions for irrigation above station. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1,040	2,820	2,210	2,350	2,460	1,970	2,070	8,270	4,390
2	1,080	2,820	2,240	2,240	2,500	1,910	1,840	5,560	3,570
3	1,090	2,650	2,180	2,300	2,480	2,240	1,910	8,390	3,350
4	4,970	2,600	2,190	2,370	2,370	2,460	1,760	5,840	3,240
5	20,800	2,540	2,180	2,180	2,330	2,020	1,600	5,700	3,130
6	57,500	2,500		2,260	2,280	2,280	1,900	5,270	3,020
7	34,600	2,540		2,260	2,240	2,600	1,810	4,180	2,920
8	13,300	2,600		2,230	2,240	2,436	1,660	4,340	2,920
9	8,240	2,690	2,180	2,180	2,240	2,320	1,800	4,340	3,240
10	6,860	2,650		2,260	2,320	2,650	1,860	4,340	3,400
11	5,990	2,620		2,090	2,330	2,350	1,780	4,180	3,460
12	5,270	2,620	2,190	2,210	2,330	2,410	1,810	4,050	3,240
13	4,850	2,520	2,140	2,260	2,350	2,520	1,700	3,680	3,240
14	20,100	2,650	2,160	2,160	2,350	2,710	1,780	3,460	3,020
15	33,800	2,460	2,180	1,920	2,350	2,620	1,750	3,570	2,820
16	8,400	2,390	1,970	2,120	2,330	2,600	1,730	3,570	2,730
17	5,130	2,410	2,050	2,190	2,280	2,350	1,720	3,680	2,670
18	4,300	2,460	2,040	1,970	2,300	2,280	1,940	5,500	2,560
19	5,560	2,520	2,000	2,000	2,280	2,050	2,190	4,860	2,500
20	4,710	2,560	2,000	2,090	2,240	1,960	6,590	3,460	2,500
21	4,050	2,520	1,900	2,050	2,160	1,970	5,610	3,240	2,690
22	4,050	2,480	1,980	1,810	2,120	2,140	4,050	3,130	2,730
23	4,050	2,410	2,280	1,980	2,190	1,910	3,240	3,020	2,540
24	3,920	2,350	2,240	2,000	2,300	1,940	3,240	3,020	2,600
25	3,920	2,330	2,160	1,880	2,210	1,800	3,020	3,020	2,640
26	4,050	2,300	2,020	1,850	2,120	1,840	2,920	2,920	2,370
27	4,050	2,210	2,210	2,260	2,070	1,980	2,650	2,710	2,370
28	3,920	2,210	2,140	2,280	2,120	1,900	3,130	2,650	2,640
29	3,570	2,190	2,210	2,430	------	1,770	15,200	4,740	2,600
30	3,350	2,210	2,430	2,560	------	1,600	12,500	8,600	4,140
31	3,130	------	2,370	2,500	------	2,070	------	6,960	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	57,500	1,040	9,340	574,000
November	2,820	2,190	2,490	148,000
December	2,430	1,900	2,150	132,000
January	2,560	1,810	2,170	133,000
February	2,500	2,070	2,280	127,000
March	2,710	1,600	2,180	134,000
April	15,200	1,600	3,230	192,000
May	8,600	2,650	4,520	278,000
June	4,300	2,370	2,970	177,000
The period				1,900,000

RIO GRANDE AT EAGLE PASS, TEX.

LOCATION.—Water-stage recorder half a mile above International highway bridge between Eagle Pass, Maverick County, and Piedras Negras, Coahuila, Mexico. Zero of gage is 682.99 feet above mean sea level.

RECORDS AVAILABLE.—May, 1900, to April, 1916; November, 1923, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 66,800 second-feet Oct. 7 (gage height, 18.35 feet); minimum, 1,060 second-feet Oct. 1, 2 (gage height, 2.58 feet).

1900–1916, 1923–1931: Maximum mean daily discharge, 238,000 second-feet June 30, 1905; maximum stage, 34.6 feet at bridge gage June 29, 1905; minimum discharge, 940 second-feet May 26, 1930 (gage height, 2.51 feet).

Maximum stage known, 43.7 feet in June, 1922.

REMARKS.—Records good. Discharge ascertained from readings of United States Weather Bureau gage, Feb. 1 to Mar. 2. Numerous diversions for irrigation above station. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1,120	4,740	3,260	3,350	3,750	3,260	2,790	14,300	6,600
2	1,100	4,520	3,260	3,350	3,850	2,520	2,610	10,200	5,100
3	1,170	4,400	3,260	3,350	4,070	2,790	2,520	11,000	4,520
4	4,840	4,070	3,260	3,160	3,960	2,970	2,520	12,100	4,180
5	7,630	3,960	3,160	3,160	3,750	3,160	2,360	7,510	4,180
6	29,600	3,850	3,160	2,970	3,550	3,060	2,200	6,520	3,960
7	56,800	3,750	3,160	2,970	3,550	3,260	2,440	5,600	3,850
8	29,300	3,960	3,160	2,970	3,550	3,350	2,360	5,100	3,850
9	16,200	4,290	2,970	2,970	3,350	3,160	2,270	5,100	3,750
10	9,660	5,100	3,060	3,160	3,350	3,160	2,360	4,980	4,400
11	7,800	5,350	3,060	3,160	3,350	3,350	2,440	4,980	4,180
12	6,520	5,220	2,970	2,790	3,350	3,060	2,360	4,860	4,180
13	5,730	4,980	3,060	2,970	3,350	3,160	2,360	4,740	3,850
14	5,540	4,860	3,060	2,970	3,350	3,260	2,270	4,290	3,960
15	35,400	4,740	3,060	2,790	3,350	3,850	2,360	4,070	3,550
16	24,600	4,400	3,060	2,790	3,350	3,850	2,270	4,180	3,450
17	9,020	4,180	2,880	3,060	3,350	3,550	2,200	4,180	3,350
18	6,940	4,180	2,970	2,970	3,350	3,260	2,270	4,400	3,260
19	6,390	4,070	2,880	2,700	3,350	3,160	2,610	6,850	3,160
20	6,800	4,070	2,880	2,970	3,350	2,880	3,730	4,740	3,060
21	5,730	3,960	2,880	2,970	3,350	2,700	7,510	3,960	3,160
22	5,350	3,960	2,700	2,700	3,350	2,700	5,220	3,750	3,350
23	5,480	3,850	2,790	2,520	3,160	2,880	4,290	3,650	3,260
24	5,220	3,750	3,060	2,700	3,160	2,880	3,750	3,550	3,060
25	5,100	3,650	3,060	2,700	3,160	2,880	3,650	3,450	3,160
26	5,100	3,650	2,970	2,610	3,260	2,880	3,550	3,650	3,060
27	5,220	3,550	2,790	2,790	3,260	2,880	3,350	3,450	2,970
28	5,220	3,450	2,970	3,160	3,260	2,880	3,260	3,260	3,650
29	5,220	3,450	2,970	3,450	-------	2,700	4,060	3,450	6,160
30	4,860	3,350	2,970	3,750	-------	2,880	22,600	7,190	4,080
31	4,980	-------	3,350	3,750	-------	2,700	-------	9,030	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	56,800	1,100	10,600	652,000
November	5,350	3,350	4,180	249,000
December	3,350	2,700	3,040	187,000
January	3,750	2,520	3,020	186,000
February	4,070	3,160	3,440	191,000
March	3,850	2,520	3,070	189,000
April	22,600	2,200	3,680	219,000
May	14,300	3,260	5,740	353,000
June	6,600	2,970	3,880	231,000
The period				2,460,000

RIO GRANDE AT ROMA, TEX.

LOCATION.—Water-stage recorder at International highway bridge between Roma, Starr County, and San Pedro, Tamaulipas, Mexico. Zero of gage is 145.94 feet above mean sea level.

RECORDS AVAILABLE.—March, 1929, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931; 53,400 second-feet Oct. 9 (gage height, 16.2 feet); minimum, 1,080 second-feet Oct. 5, 6 (gage height, 3.05 feet).

1929–1931: Maximum discharge, 59,000 second-feet June 12, 1930 (gage height, 16.72 feet); minimum, that of Oct. 5, 6, 1930.

Maximum stage known, 35.0 feet June 22, 1922 (discharge by slope-area method, 240,000 second-feet).

REMARKS.—Records good. Numerous diversions for irrigation above station. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1,430	7,560	3,980	3,180	5,950	3,240	2,570	4,340	10,500
2	1,160	6,260	3,980	3,180	5,270	3,180	2,570	20,900	9,500
3	1,120	5,360	3,830	3,460	4,610	3,110	2,340	21,000	7,400
4	1,120	5,180	3,760	3,380	4,290	3,110	2,450	16,300	5,070
5	1,080	4,840	3,680	3,310	4,290	2,980	2,690	14,100	4,630
6	1,080	6,680	3,680	3,240	4,450	2,800	2,510	13,100	4,600
7	3,970	4,360	3,680	3,180	4,290	2,980	2,450	8,140	4,350
8	28,200	5,320	3,680	3,240	4,130	3,040	2,450	7,240	4,250
9	49,000	7,180	3,680	3,180	3,980	3,110	2,340	6,160	4,150
10	30,400	5,760	3,600	3,180	3,980	3,040	4,350	4,940	4,060
11	14,000	5,980	3,600	3,240	3,830	3,310	2,840	6,630	4,380
12	10,000	6,940	3,460	3,310	3,830	3,180	2,420	7,500	4,050
13	10,200	6,940	3,380	3,310	3,760	3,040	2,240	5,310	4,500
14	9,540	8,560	3,460	3,380	3,760	3,310	2,740	5,330	4,460
15	6,440	7,280	3,380	3,180	3,760	3,180	3,170	4,890	4,290
16	8,010	6,630	3,310	3,180	3,980	4,140	2,450	4,550	3,970
17	33,800	6,290	3,380	3,240	3,980	5,360	2,330	4,260	3,810
18	28,200	5,950	3,310	3,180	3,830	5,440	2,340	4,130	3,530
19	13,400	5,440	3,380	3,180	3,830	4,450	2,390	4,910	3,440
20	8,680	5,100	3,310	3,310	3,760	3,830	2,380	6,800	3,630
21	7,480	4,930	3,240	3,240	3,680	3,530	2,380	7,620	4,520
22	7,760	4,770	3,310	3,040	3,600	3,310	2,450	6,980	3,650
23	11,200	4,770	3,240	2,920	3,530	3,040	3,920	12,000	3,440
24	15,800	4,770	3,240	3,040	3,460	2,920	6,160	9,530	3,290
25	8,100	4,770	3,180	2,980	3,380	2,800	4,820	4,880	3,380
26	7,210	4,610	3,040	2,860	3,310	2,860	4,240	4,010	3,470
27	6,200	4,450	3,380	2,800	3,310	2,800	3,830	3,660	3,310
28	7,610	4,290	3,380	2,980	3,380	2,580	3,710	3,540	3,950
29	15,400	4,290	3,310	3,310	------	2,630	3,590	3,660	12,600
30	11,800	4,130	3,180	5,910	------	2,520	3,470	4,910	6,370
31	10,800	------	3,180	6,800	------	2,580	------	7,390	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	49,000	1,080	11,900	732,000
November	8,560	4,130	5,650	336,000
December	3,980	3,040	3,460	213,000
January	6,800	2,800	3,380	208,000
February	5,950	3,310	3,970	220,000
March	5,440	2,520	3,270	201,000
April	6,160	2,240	3,020	180,000
May	21,000	3,540	7,700	473,000
June	12,600	3,290	4,880	290,000
The period				2,850,000

RIO GRANDE AT HIDALGO, TEX.

LOCATION.—Water-stage recorder at international highway bridge between Hidalgo, Hidalgo County, and Reynosa, Tamaulipas, Mexico, seven-tenths mile southwest of Hidalgo. Also water-stage recorder on each of two floodway channels at crossing of East McAllen-Hidalgo highway. Zero of gages is 80 feet above mean sea level.

RECORDS AVAILABLE.—July, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 36,700 second-feet Oct. 20 (gage height, 19.70 feet); minimum, 1,300 second-feet Oct. 4.

1928–1931: Maximum discharge, about 47,500 second-feet Sept. 25, 1928 (gage height, 20.20 feet); minimum, 784 second-feet Apr. 16, 1930.

Maximum stage known, 26.6 feet June 23, 1922 (discharge not determined).

REMARKS.—Records good. No flow in floodway channels during period. Numerous diversions for irrigation above station. Flow partly regulated by storage at Elephant Butte Dam and at dams on tributaries.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2,000	15,800	5,930	3,790	17,200	4,470	3,110	3,820	8,900
2	2,020	11,200	5,520	3,790	11,000	4,470	3,110	7,250	11,800
3	1,500	9,800	5,240	3,790	7,940	4,490	3,080	20,200	11,900
4	1,520	9,090	4,970	3,940	6,810	4,320	2,950	20,900	8,000
5	2,210	8,600	4,920	3,940	6,330	4,220	2,900	16,500	7,490
6	2,000	8,520	4,920	3,850	6,230	4,060	2,920	16,500	6,590
7	1,640	8,190	4,920	3,870	6,130	3,880	3,200	13,200	6,230
8	3,820	8,240	4,770	3,880	6,030	3,790	2,920	9,170	5,730
9	20,200	10,200	4,860	3,980	5,670	3,910	3,060	8,130	5,220
10	31,700	11,200	4,850	4,060	5,490	3,680	2,820	6,970	5,220
11	29,400	10,000	4,840	4,060	5,310	3,670	3,640	5,900	5,010
12	15,500	10,200	4,730	4,050	5,050	3,770	4,290	6,660	5,080
13	10,200	10,700	4,630	3,910	5,030	3,850	3,600	8,000	4,820
14	11,200	11,300	4,630	3,810	4,950	3,820	3,100	6,350	4,610
15	20,900	11,900	4,520	3,710	4,980	3,850	2,920	6,090	4,740
16	17,200	11,200	4,350	3,850	5,010	4,030	3,280	5,570	4,570
17	15,200	10,200	4,130	3,810	5,040	4,220	3,340	5,270	4,470
18	30,800	9,460	4,120	3,860	5,120	4,990	3,050	4,710	4,130
19	34,200	8,660	4,120	3,910	5,120	5,730	2,840	4,440	3,840
20	36,400	8,110	4,120	3,970	5,120	5,470	2,710	4,510	3,740
21	31,800	7,580	4,220	3,960	4,990	4,860	2,830	5,190	3,790
22	20,900	7,250	4,130	4,100	4,850	4,420	2,680	6,230	4,290
23	19,400	7,140	4,140	4,240	4,630	4,160	2,700	6,860	4,180
24	22,900	7,120	3,850	4,350	4,520	3,960	2,890	18,300	3,770
25	24,700	6,620	4,030	4,240	4,420	3,780	4,860	19,700	3,550
26	24,700	6,770	3,930	4,050	4,400	3,610	5,370	8,450	3,540
27	18,000	6,620	3,850	3,860	4,320	3,460	4,980	6,020	3,740
28	13,200	6,270	3,940	3,700	4,320	3,410	4,500	5,490	4,140
29	18,800	6,200	3,950	3,760	-------	3,410	4,160	5,170	5,030
30	25,400	6,170	3,800	3,850	-------	3,330	4,040	5,100	10,800
31	21,300	-------	3,710	10,700	-------	3,170	-------	6,850	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	36,400	1,500	17,300	1,060,000
November	15,800	6,170	9,010	536,000
December	5,930	3,710	4,470	275,000
January	10,700	3,700	4,150	255,000
February	17,200	4,320	5,930	329,000
March	5,730	3,170	4,070	250,000
April	5,370	2,680	3,400	202,000
May	20,900	3,820	8,820	542,000
June	11,900	3,540	5,630	335,000
The period				3,780,000

PECOS RIVER NEAR ANGELES, TEX.

LOCATION.—Water-stage recorder in T. 26 S., R. 29 E., just below Delaware Creek and 8½ miles northwest of Angeles, Reeves County.

RECORDS AVAILABLE.—May, 1914, to September, 1931.

EXTREMES.—Maximum discharge during year, 7,570 second-feet Apr. 29 (gage height, 6.14 feet); minimum not determined.

1914–1931: Maximum stage, 21.5 feet Aug. 8, 1916 (discharge not determined); minimum discharge, 45 second-feet July 4, 5, 1925.

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

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,230	514	379	277	338	317	151	2,870	172	191	105	187
2	662	500	183	282	332	338	93	1,610	194	218	135	175
3	871	467	179	282	327	370	108	3,160	175	194	161	158
4	691	467	223	296	332	348	103	2,110	175	175	175	144
5	474	442	187	301	338	332	108	2,110	155	165	132	132
6	637	448	214	306	322	301	135	2,000	151	198	108	172
7	343	442	194	296	327	267	114	1,940	161	158	140	123
8	227	429	240	286	317	257	106	1,890	148	120	161	126
9	175	435	267	291	317	257	120	2,860	168	95	356	129
10	198	422	306	291	311	248	132	2,410	760	95	357	144
11	322	422	311	306	306	244	106	976	1,730	93	329	
12	1,360	410	311	301	272	257	95	416	282	93	306	
13	3,320	429	306	306	267	218	108	262	227	93	214	
14	3,540	442	306	301	262	214	98	283	206	90	165	
15	3,680	393	306	296	277	227	88	784	187	72	141	151
16	4,210	376	332	301	311	240	103	776	161	74	187	
17	4,210	343	338	301	317	227	120	498	151	67	187	
18	2,700	343	322	301	291	191	342	342	106	70	218	
19	2,630	343	317	296	218	191	499	231	117	81	179	
20	2,110	348	311	306	214		187	187	117	129	165	158
21	692	343	311	301	227		120	194	98	154	165	144
22	493	348	306	306	218		123	210	103	107	161	151
23	435	354	306	301	218		132	210	74	123	175	274
24	416	343	301	296	257		191	202	108	98	161	194
25	650	343	301	301	306	160	161	236	106	106	155	187
26	652	327	286	306	311		141	198	87	102	117	168
27	527	322	291	338	311		138	227	141	97	126	158
28	493	343	296	354	317		144	144	144	96	397	158
29	487	338	282	343	------		3,260	158	138	100	520	187
30	500	688	291	338	------	138	2,070	175	332	106	210	198
31	507	------	286	338	------	123	------	175	------	98	194	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,210	175	1,270	78,100
November	688	322	405	24,100
December	379	179	284	17,500
January	354	277	305	18,800
February	338	214	291	16,200
March	370	123	223	13,700
April	3,260	88	313	18,600
May	3,160	144	963	59,200
June	1,730	74	229	13,600
July	218	67	118	7,260
August	520	105	203	12,500
September	274	------	161	9,580
The year	4,210	67	399	289,000

PECOS RIVER NEAR COMSTOCK, TEX.

LOCATION.—Staff gage at 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 June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 20,100 second-feet Oct. 14 (gage height, 12.6 feet); minimum, 113 second-feet Oct. 1 (gage height, −0.05 foot).

1900–1931: Maximum stage, 35.75 feet Apr. 6, 1900 (discharge not determined); minimum discharge, 97 second-feet Aug. 31, 1930 (gage height, −0.15 foot).

REMARKS.—Records good. Diversions and storage above station for irrigation. In lower part of basin return waters tend to equalize effects of diversions.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	113	493	317	377	356	336	280	1,370	800
2	119	444	317	356	493	356	280	570	680
3	146	468	356	377	356	336	262	680	625
4	228	468	356	377	317	336	245	832	625
5	4,940	444	336	356	317	317	245	544	570
6	6,150	421	336	356	317	317	245	588	544
7	604	421	317	336	336	336	228	1,200	518
8	444	444	317	356	356	356	222	1,350	518
9	399	421	377	377	356	336	222	1,350	493
10	336	421	377	377	356	317	225	1,280	493
11	298	421	377	377	356	317	219	1,350	493
12	336	399	356	377	356	317	219	1,420	468
13	317	377	356	336	377	317	219	1,420	444
14	12,400	377	336	356	377	317	212	1,350	421
15	4,190	356	317	336	399	336	212	1,350	421
16	1,000	336	317	356	377	493	216	1,420	399
17	1,140	336	298	356	399	399	225	1,500	377
18	710	336	280	336	377	336	319	2,620	377
19	544	336	280	336	377	336	702	1,160	356
20	493	336	280	317	356	336	280	865	377
21	799	317	280	317	356	336	280	680	399
22	1,140	317	280	317	356	356	280	625	377
23	1,200	317	298	317	356	336	298	652	377
24	1,280	317	280	317	336	317	245	652	356
25	1,350	317	280	317	356	317	245	598	336
26	1,420	317	280	336	336	298	225	570	336
27	1,420	317	336	444	356	298	245	493	317
28	1,060	298	336	444	336	298	298	544	356
29	770	317	356	444	-------	298	2,740	1,900	336
30	625	317	356	399	-------	280	2,680	1,340	356
31	544	-------	377	377	-------	280	-------	1,140	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	12,400	113	1,500	92,200
November	493	298	374	22,300
December	377	280	325	20,000
January	444	317	360	22,100
February	493	317	361	20,000
March	493	280	331	20,400
April	2,740	212	427	25,400
May	2,620	493	1,080	66,400
June	800	317	451	26,800
The period				316,000

LIMPIA CREEK NEAR FORT DAVIS, TEX.

LOCATION.—Water-stage recorder on State highway 3, 13½ miles northeast of Fort Davis, Jeff Davis County, and 16 miles southeast of Balmorhea.

DRAINAGE AREA.—272 square miles.

RECORDS AVAILABLE.—February, 1925, to September, 1931.

EXTREMES.—Maximum discharge during year, 925 second-feet in August (gage height, 4.10 feet); no flow at times.

1925–1931: Maximum discharge, about 3,420 second-feet Aug. 26, 1928 (gage height, 7.00 feet); no flow at times.

REMARKS.—Records fair except those estimated Jan. 30 to Feb. 6, Apr. 30 to May 12, June 12, Aug. 3–19, which are poor. No diversions above station

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	0	0		0.1	0.1		0.2	0.2	0
2	0	0		.1	.1		.2	.3	0
3	72	0		.1	.1		.2	.4	
4	62	0	0.1	.1	.1		.2	.4	
5	8.4	0		.1	.1		.2	.4	
6	6.6	0		.1	.1		.2	.4	
7	0	0	.1	.1	.1	0.2	.2	.4	
8	0	0	.1	.1	.1		.2	.3	
9	0	0	.1	.1	.1		.1	.2	
10	0	0	.1	.1	.1		.2	.2	
11	0	0	.1	.1	.1		.2	.1	35
12	0	0	.1	0	.2		.2	.1	
13	0	0	.1	.1	.2	.2	.2	.1	
14	0	0	.1	0	.2	.2	.2	.1	
15	0	0	.1	0	.2	.2	.2	.2	
16	0	0	.1	0	.2	.2	.2	.2	
17	0	0	.1	.1	1.2	.2	.2	.2	
18	0	0	.1	.1	.4	1.3	.1	.2	
19	0	0	.1	.1	0	.4	2.9	.1	
20	0	0	.1	.1	0	.3	1.7	.2	.1
21	0	0	.1	.1	0	.2	.6	.2	.1
22	0	0	.1	.1	0	.2	.5	.2	.1
23	0	0	.1	.1	0	.2	.4	9.9	.1
24	0	0	.1	.1	0	15	.3	.1	.1
25	0	0	.1	.1	0	4.4	.2	0	.1
26	0	0	.1	.1	0	.2	.2	0	.1
27	0	0	.1	.1	0	.2	.2	0	0
28	0	0	.1	.1	0	.2	.2	0	0
29	0	0		.1	3.0	.2	.2	0	0
30	0	.1		.1	.5	.2	.2	0	0
31	0	.1		.1		.2		0	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	72	0	4.81	296
January		0	.01	.6
February			.10	5.6
March	.1	0	.09	5.6
April	3.0	0	.24	14.3
May	15		.86	52.9
June	2.9	.1	.37	22.0
July	9.9	0	.49	30.1
August		0	19.2	1,180
The year		0	2.22	1,610

NOTE.—No flow during months omitted.

GOODENOUGH SPRINGS NEAR COMSTOCK, TEX.

LOCATION.—Water-stage recorder half a mile above mouth of arroyo which drains into Rio Grande 12 miles southwest of Comstock, Val Verde County.

RECORDS AVAILABLE.—February, 1929, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, about 204 second-feet Apr. 29 (gage height, 1.53 feet); minimum, 104 second-feet Oct. 1–4 (gage height, 0.40 foot).

1929–1931: Maximum stage, 2.98 feet Apr. 28, 1930 (discharge not determined); minimum discharge, 93 second-feet Apr. 4, 1930 (gage height, 0.27 foot).

REMARKS.—Records fair. Discharge interpolated Nov. 28–30, Dec. 3 to Jan. 12. No diversions above station. Some surface run-off may pass station during local rains.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	104	124	143		171	155	147	143	155
2	104	124	143		171	155	147	144	155
3	104	124			171	155	147	143	155
4	104	124			167	155	147	143	155
5	110	124			167	155	143	143	155
6	118	124		143	163	155	143	147	151
7	132	124			163	155	143	147	151
8	135	124			163	151	143	147	151
9	132	132			159	151	139	147	155
10	132	135			159	155	139	147	151
11	128	132			159	155	139	147	155
12	128	132			159	155	139	147	155
13	124	135		143	159	155	135	147	155
14	128	135		139	155	151	135	147	155
15	132	139		139	159	151	135	147	155
16	132	139	143	143	159	151	135	147	155
17	132	139		143	159	151	135	147	155
18	128	139		143	155	155	135	147	155
19	128	139		143	155	155	135	147	155
20	124	139		143	155	155	135	147	155
21	124	139		143	155	151	135	147	155
22	124	139		143	155	151	135	147	155
23	124	139		143	155	151	135	147	155
24	124	139		143	155	151	135	147	155
25	124	139		143	155	151	135	147	155
26	124	139		143	155	151	135	147	155
27	124	139		143	155	151	135	147	155
28	121	140		147	155	151	135	147	160
29	121	141		155	-------	151	142	147	159
30	124	142		167	-------	151	143	151	167
31	124	-------		171	-------	147	-------	155	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	135	104	123	7,560
November	142	124	134	7,970
December	-------	-------	143	8,790
January	-------	-------	145	8,920
February	171	155	160	8,890
March	155	147	153	9,410
April	147	135	139	8,270
May	155	143	147	9,040
June	167	151	155	9,220
The period	-------	-------	-------	78,100

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, 1931.

EXTREMES.—Maximum stage during year, 19.22 feet Oct. 6 (discharge not determined); minimum discharge, 53 second-feet Oct. 1–3 (gage height, 2.20 feet).

1925–1931: Maximum stage, that of Oct. 6, 1930; minimum discharge, 48 second-feet June 4–6, 1930.

Maximum stage known, 22.1 feet about Sept. 1, 1916.

REMARKS.—Records good except those for Oct. 6, 14. No diversions above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	126	128	109	122	101	94	584	243	141	128	118
2	53	126	126	109	124	99	94	481	228	139	128	118
3	57	124	124	109	124	99	94	286	216	137	126	118
4	59	122	124	110	122	99	94	181	208	137	126	116
5	4,250	122	122	110	120	99	94	186	199	135	126	116
6	45,500	120	124	110	118	99	96	163	194	141	126	114
7	7,150	120	122	109	118	99	96	153	191	135	126	114
8	881	126	122	109	116	99	98	148	183	133	126	114
9	336	130	122	107	112	99	98	141	181	133	126	114
10	231	137	122	109	112	99	96	137	175	133	128	114
11	194	139	122	107	112	96	96	135	170	135	128	114
12	178	139	120	105	112	96	96	133	168	130	126	114
13	170	141	120	105	110	98	98	130	165	130	126	114
14	21,900	143	118	103	109	98	98	128	163	133	124	112
15	5,700	141	118	103	112	99	96	126	160	133	124	112
16	732	141	116	107	107	99	96	124	158	133	122	112
17	352	141	116	103	107	98	96	130	158	133	122	112
18	243	139	116	103	107	98	99	812	155	133	122	110
19	202	137	116	103	105	98	99	194	153	135	120	110
20	186	135	116	103	105	96	98	165	151	139	122	110
21	170	137	114	103	105	96	96	155	148	139	120	110
22	165	133	114	103	107	96	96	148	148	137	122	110
23	158	133	114	103	105	96	99	146	146	137	122	110
24	153	128	112	103	105	96	98	143	146	135	120	110
25	148	128	112	103	103	94	96	141	143	133	120	110
26	143	128	112	103	103	96	96	141	143	130	120	110
27	141	128	110	112	103	96	98	139	148	130	120	110
28	143	126	110	124	103	96	101	148	151	128	120	109
29	137	126	110	126	------	96	1,410	557	148	128	120	109
30	133	126	110	126	------	96	2,630	454	146	128	118	109
31	130	------	110	124	------	94	------	275	------	130	118	------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	45,500	53	2,900	178,000
November	143	120	131	7,800
December	128	110	117	7,190
January	126	103	108	6,640
February	124	103	111	6,110
March	101	94	97.4	5,990
April	2,630	94	225	13,400
May	812	124	225	13,800
June	243	143	170	10,100
July	141	128	134	8,240
August	128	118	123	7,560
September	118	109	112	6,660
The year	45,500	53	376	271,000

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 square miles.

RECORDS AVAILABLE.—December, 1923, to June, 1931. Station maintained by International Water Commission after June, 1931. May, 1900, to March, 1914, at Devils River, 1 mile downstream.

EXTREMES.—Maximum stage during period Oct. 1, 1930, to June 30, 1931, 20.9 feet Oct. 6 (discharge not determined); minimum discharge not determined.

1900–1914, 1923–1931: Maximum stage, 24.96 feet May 29, 1925 (discharge not determined); minimum stage and discharge not determined.

Maximum stages known, 25.4 feet, former gage datum, Apr. 6, 1900, and 30.15 feet, present gage datum, in October, 1914.

REMARKS.—Records fair. No diversions above station. Flow partly regulated by power dams above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	270	628	558		766	405	426	3,320	921
2	288	618	548		799	519	418	1,710	877
3	270	608	548		722	670	608	4,320	821
4	1,740	588	548		722	608	510	1,550	777
5	12,000	608	548		702	436	347	1,280	744
6	61,900	608	500		702	558	510	1,050	722
7	23,400	578	538		702	638	528	978	712
8	5,300	628	568		680	406	431	921	702
9	2,320	638	548	500	660	519	528	877	689
10	1,650	702	568		660		510	821	832
11	1,360	733	414		618	540	519	744	712
12	1,210	755	598		598		377	733	670
13	1,150	638	568		608	459	428	391	649
14	24,800	638	588		618	638	473	436	649
15	20,800	638	568		608	584	361	578	638
16	4,140	608	377		598	660	473	588	628
17	1,890	608	558	588	568	501	473	628	608
18	1,370	608	548	360	578	588	568	649	588
19	1,050	660	568	568	578	441	394	360	578
20	933	618	558	568	548	350	344	832	568
21	854	638	338	588	548	548	568	766	588
22	810	618	510	338	491	702	482	702	528
23	788	598	578	598	437	411	360	691	578
24	733	649	558	608	598	588	377	670	510
25	722	608	436	405	578	451	568	660	548
26	680	598	394	427	511	476	433	680	542
27	722	558	568	618	588	608	294	660	598
28	712	558	486	649	578	618	455	660	618
29	670	558		680	-------	268	16,600	691	628
30	649	558	500	722	-------	480	4,920	843	618
31	618	-------		821	-------	649	-------	1,070	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	61,900	270	5,670	349,000
November	755	558	622	37,000
December	598	338	522	32,100
January	-------	-------	533	32,800
February	799	437	620	34,400
March	702	268	529	32,500
April	16,600	294	1,140	67,800
May	4,320	391	1,010	62,100
June	921	510	661	39,300
The period	-------	-------	-------	687,000

PINTO CREEK NEAR DEL RIO, TEX.

LOCATION.—Water-stage recorder 500 feet above Del Rio-Eagle Pass highway crossing, 4.5 miles above confluence with Rio Grande, and 16 miles southeast of Del Rio, Val Verde County.

DRAINAGE AREA.—242 square miles.

RECORDS AVAILABLE.—November, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum stage during period Oct. 1, 1930, to June 30, 1931, 7.00 feet Oct. 4 (discharge not determined); no flow Oct. 1–3.

1928–1931: Maximum stage, 9.77 feet July 3, 1929 (discharge not determined); no flow at times.

REMARKS.—Records good below and poor above 200 second-feet. Small diversions above station for irrigation.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	3.6	9.0	13	14	12	13	43	25
2	0	3.8	9.0	8.4	41	11	13	43	21
3	0	3.8	10	6.9	14	11	13	93	19
4	641	3.8	11	6.2	14	12	13	72	19
5	229	4.4	11	7.4	13	12	12	77	19
6	851	5.6	10	8.4	13	12	12	33	17
7	146	4.4	11	12	13	12	13	33	17
8	26	6.2	11	12	12	12	13	25	17
9	8.4	7.9	12	16	12	12	12	23	17
10	4.4	6.2	13	17	12	12	12	21	19
11	4.1	6.9	13	19	12	11	12	19	25
12	6.6	6.2	12	12	12	11	11	19	17
13	6.9	6.6	10	10	13	12	11	19	16
14	6.2	10	8.4	9.0	12	12	12	17	14
15	3.5	10	7.9	9.0	14	19	12	19	14
16	3.1	9.0	7.9	13	19	21	11	17	14
17	5.1	7.4	9.0	17	14	16	12	19	14
18	5.9	7.4	7.9	14	12	13	13	19	14
19	6.2	6.6	9.0	12	12	12	13	19	14
20	7.4	6.2	10	12	11	11	13	19	14
21	5.6	6.6	11	11	11	11	12	19	14
22	4.7	7.9	10	12	11	11	11	19	14
23	5.6	9.0	10	11	11	12	6.6	19	14
24	8.4	8.4	8.4	11	11	12	13	19	14
25	5.1	7.9	7.9	11	11	12	13	19	13
26	4.2	7.9	7.9	12	11	13	13	19	13
27	5.1	8.4	7.4	17	11	12	14	19	16
28	5.1	9.0	7.4	16	12	13	16	21	50
29	5.9	11	9.0	25	-------	13	192	31	71
30	4.0	10	13	27	-------	13	115	56	27
31	3.6	-------	16	17	-------	13	-------	35	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	851	0	65.1	4,000
November	11	3.6	7.07	421
December	16	7.4	10.0	615
January	27	6.2	13.0	799
February	41	11	13.5	750
March	21	11	12.6	775
April	192	6.6	21.7	1,290
May	93	17	29.8	1,830
June	71	13	19.7	1,170
The period				11,600

GOODWIN CANAL ABOVE PENITAS, TEX.

LOCATION.—Two Venturi meters at point of diversion 2 miles above Penitas, Hidalgo County.

RECORDS AVAILABLE.—August, 1928, to June, 1931. Records obtained by International Water Commission after June, 1931.

EXTREMES—Maximum mean daily discharge for period Oct. 1, 1930, to June 30, 1931, 49 second-feet Mar. 12, June 17, 23; no flow at times.

1928–1931: Maximum mean daily discharge, that of Mar. 12, June 17, 23, 1931. Capacity of pumping plant, 102 second-feet.

REMARKS.—Daily discharge computed from pumping plant record and not sufficiently accurate for publication; monthly records poor. Station is above all diversions from canal. Canal diverts by pumping from left bank of Rio Grande for irrigation near Mission. Base data furnished by Hidalgo County Water Control and Improvement District No. 6.

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (9 days)	31	3.1	17.1	306
December (10 days)	32	6.2	21.5	427
January (8 days)	17	9.2	13.9	221
March (9 days)	49	.2	16.1	288
June (6 days)	49	9.7	29.3	348
The period				1,590

NOTE.—No flow during November, February, April, and May.

EDINBURG CANAL AT PENITAS, TEX.

LOCATION.—Six Venturi meters at point of diversion in Penitas, Hidalgo County.
RECORDS AVAILABLE.—July, 1928, to June, 1931. Records obtained by International Water Commission after June, 1931.
EXTREMES.—Maximum mean daily discharge for period Oct. 1, 1930 to June 30, 1931, 182 second-feet May 21; no flow at times.
1928–1931: Maximum mean daily discharge, 316 second-feet Feb. 22, 1929. Capacity of pumping plant, about 350 second-feet.
REMARKS.—Records good. Station is above all diversions from canal. Canal diverts by pumping 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, 1930–31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	103	0	0	0	0	0	0
2	50	17	0	0	0	0	28	138	0
3	61	81	78	0	0	0	91	0	0
4	79	0	0	0	0	0	0	0	0
5	80	0	68	130	0	0	0	0	0
6	80	0	0	157	0	0	33	0	0
7	77	108	0	80	0	0	120	0	26
8	107	0	0	0	0	0	112	0	142
9	122	0	0	89	0	121	88	17	111
10	110	0	99	0	0	137	15	0	99
11	95	0	104	0	0	80	0	18	93
12	75	0	0	0	0	53	0	0	106
13	12	0	52	0	0	0	0	118	139
14	0	0	0	0	0	0	0	120	141
15	78	0	0	0	0	0	0	89	156
16	130	0	71	0	0	0	0	58	159
17	30	93	0	0	0	0	0	0	126
18	0	0	0	0	0	11	0	83	123
19	0	0	71	0	0	0	0	104	96
20	0	0	0	0	0	0	0	139	54
21	0	0	0	0	0	0	22	182	0
22	0	64	78	0	0	0	52	120	105
23	0	0	73	0	0	0	59	0	106
24	0	0	0	0	117	0	56	0	57
25	0	0	0	0	62	128	57	69	0
26	0	0	0	0	0	0	0	117	95
27	108	0	63	0	0	77	0	105	0
28	92	92	0	0	0	75	0	57	0
29	0	0	92	0	-------	0	0	79	0
30	0	0	114	0	-------	0	0	27	0
31	73	-------	78	0	-------	73	-------	0	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (18 days)	130	12	81.1	2,890
November (6 days)	108	17	75.8	902
December (14 days)	114	52	81.7	2,270
January (4 days)	157	80	114	904
February (2 days)	117	62	89.5	355
March (9 days)	137	11	83.9	1,500
April (12 days)	120	15	61.1	1,450
May (18 days)	182	17	91.1	3,250
June (18 days)	159	26	107	3,840
The period				17,400

MISSION CANAL NEAR MISSION, TEX.

LOCATION.—Water-stage recorder 1,200 feet downstream from Mission pumping plant and 3.4 miles south of Mission, Hidalgo County. Zero of gage is 116.82 feet above mean sea level.

RECORDS AVAILABLE.—August, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June, 30, 1931, not determined; no flow at times.

1928–1931: Maximum discharge, 290 second-feet July 9, 1929 (gage height, 5.36 feet).

REMARKS.—Daily records not sufficiently accurate for publication; monthly records fair. Discharge record Dec. 4 to Mar. 8 computed from pumping-plant record. Canal diverts by pumping from left bank of Rio Grande 3½ miles south of Mission for irrigation near Mission. Granjeno Canal diverts water from this canal above station.

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (19 days)	128	12	62.4	2,350
November (13 days)	83	1.1	40.2	1,040
December (13 days)	136	10	61.6	1,590
January (7 days)	117	20	59.7	829
February (2 days)	98	40	69.0	274
March (9 days)	128	1.8	61.1	1,090
April (19 days)	141	3.1	47.7	1,800
May (10 days)	127	3.1	55.7	1,100
June (17 days)	217	2.1	102	3,440
The year				13,500

GRANJENO CANAL NEAR MISSION, TEX.

LOCATION.—Water-stage recorder near Mission pumping plant, 3.6 miles south of Mission, Hidalgo County. Zero of gage is 116.0 feet above mean sea level.

RECORDS AVAILABLE.—August, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 69 second-feet Apr. 9 (gage height, 2.60 feet); maximum stage, 4.80 feet Dec. 29; no flow at times.

1928–1931: Maximum discharge, 108 second-feet Feb. 28, 1929.

REMARKS.—Monthly records fair; daily records not sufficiently accurate for publication. Station above all diversions from canal. Canal diverts from Mission Canal 200 feet above station for irrigation near Mission.

Monthly discharge, in second-feet, 1930–31

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (16 days)	36	2.4	18.1	575
November (12 days)	18	.3	7.82	186
December (13 days)	37	4.5	15.3	395
January (4 days)	24	3.3	15.3	122
February (1 day)	.5	.5	.50	1.0
March (9 days)	18	.5	8.98	160
April (11 days)	61	4.1	26.6	579
May (14 days)	49	1.0	25.8	718
June (16 days)	40	3.2	23.9	759
The period				3,500

McALLEN CANAL NEAR HIDALGO, TEX.

LOCATION.—Water-stage recorder 200 feet upstream from West McAllen-Hidalgo highway crossing and 1.1 miles north of Hidalgo, Hidalgo County. Zero of gage is 104.2 feet above mean sea level.

RECORDS AVAILABLE.—July, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—Maximum discharge during period Oct. 1, 1930, to June 30, 1931, 60 second-feet Oct. 6 (gage height, 4.90 feet); no flow at times.

1928–1931: Maximum discharge, 72 second-feet Feb. 13, 1930 (gage height, 4.62 feet).

REMARKS.—Records fair. During period Dec. 22 to Apr. 9 McAllen Canal Co. obtained 1,000 acre-feet of water from the Pharr-San Juan pumping plant below McAllen diversion, not included in record. Canal diverts water by pumping from Rio Grande 1.3 miles northwest of Hidalgo for irrigation near McAllen. Rio Bravo Canal diverts from this canal above station.

Daily and monthly discharge, in second-feet, 1930–31

Day	Oct.	Nov.	Dec.	Apr.	May	June	Day	Oct.	Nov.	Dec.	Apr.	May	June
1	8.6	0	0	0	0	0	16	23	0	0	0	2.1	44
2	5.8	2.7	0	0	0	0	17	12	0	0	0	0	24
3	11	4.3	0	0	0	0	18	0	0	0	0	1.7	19
4	0	7.2	0	0	0	4.4	19	0	0	0	0	15	14
5	0	11	0	0	10	0	20	0	6.4	0	0	19	12
6	5.5	0	0	0	.0	0	21	0	6.2	0	0	18	11
7	16	0	0	0	0	0	22	0	0	0	0	14	21
8	15	0	0	0	1.2	6.0	23	0	0	0	1.8	0	29
9	25	0	0	0	.9	14	24	0	1.1	0	7.7	0	13
10	18	0	0	0	0	22	25	0	.3	0	0	6.4	11
11	0	0	0	0	1.9	29	26	0	2.2	0	0	22	14
12	0	0	.1	0	.9	31	27	0	.8	0	0	23	3.8
13	0	0	0	0	3.7	16	28	0.1	.7	0	0	17	0
14	8.9	0	0	0	14	2.9	29	0	0	0	0	4.4	0
15	18	0	0	0	9.2	32	30	0	0	0	0	5.5	0
							31	0		0		0	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October (13 days)	25	0.1	12.8	331
November (11 days)	11	.3	3.90	85.1
December (1 day)	.1	.1	.10	.2
April (2 days)	7.7	1.8	4.75	18.8
May (21 days)	23	.9	9.33	389
June (21 days)	44	2.9	17.8	740
The period				1,560

NOTE.—No flow past station January to March.

RIO BRAVO CANAL NEAR HIDALGO, TEX.

LOCATION.—Flow meter at head gates of Rio Bravo Canal, 1.3 miles northwest of Hidalgo, Hidalgo County.

RECORDS AVAILABLE.—July, 1928, to June, 1931. Station maintained by International Water Commission after June, 1931.

EXTREMES.—1928–1931: Maximum discharge not determined; no flow at times.

REMARKS.—No flow Oct. 1, 1930, to June 30, 1931. Canal diverts water from left bank of McAllen Canal for irrigation near Hidalgo.

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, 1931

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
Jan. 8	Trinity River	Gulf of Mexico	Liberty, Tex	10.34	3,640
Mar. 17	do	do	do	21.52	15,700
May 11	do	do	do	16.81	8,840
July 9	do	do	do	4.50	650
Aug. 8	do	do	do	5.08	766
29	do	do	do	4.00	368
31	do	do	do	4.14	309
Sept. 24	Sulphur Creek	Lampasas River	Llano crossing above Hancock Park, Lampasas, Tex.		.91
24	do	do	Above city pumping plant, in Hancock Park, Lampasas, Tex.		1.63
24	do	do	Road crossing just below Hancock Park, Lampasas, Tex.		7.53
24	do	do	Below McComb's dam, Lampasas, Tex.		6.97
24	do	do	Donovan's dam, below mill return, Lampasas, Tex.		11.9
24	Rock Spring	Sulphur Creek	Hancock Park, Lampasas, Tex		2.64
24	Swimming Pool Spring.	do	do		.24
Dec. 11	Irrigation canal	South Concho River.	Head of canal, Christoval, Tex		2.08
Feb. 6	do	do	do		2.77
Apr. 1	do	do	do		[a].50
May 5	do	do	do		[a].80
June 2	do	do	do		11.7
July 13	do	do	do		13.2
Sept. 12	do	do	do		14.4
Oct. 6	Brady Creek	San Saba River	Brady, Tex		[b]48,400
June 16	Springs on Maxwell ranch.	do	Joiner ranch house, 15 miles west of San Saba, Tex.		1.90
16	do	do	do		2.20
Apr. 22	East Fork of Johnson Fork of Llano River.	Johnson Fork of Llano River.	3,400 feet above Moody Dam, 13 miles southeast of Segovia, Tex.		5.51
24	do	do	do		6.59
23	do	do	3,000 feet above Moody Dam		5.59
24	do	do	do		6.74
22	Johnson Fork of Llano River.	Llano River	600 feet below Moody Dam		7.77
24	do	do	do		7.07
22	do	do	700 feet below Moody Dam		6.60
24	do	do	do		7.43
22	do	do	Three-fourths mile below Moody Dam.		9.04
24	do	do	do		9.12
24	do	do	1 mile below Moody Dam		9.00
22	do	do	1½ miles below Moody Dam		7.80
24	do	do	do		9.07
22	West Fork of Johnson Fork of Llano River.	Johnson Fork of Llano River.	4,000 feet above Moody Dam, 13 miles southeast of Segovia, Tex.		1.54
24	do	do	do		1.78
Nov. 22	Barton Creek	Colorado River	Above Barton Springs, Austin, Tex		0
Jan. 15	do	do	do		0
Feb. 5	do	do	do		85.4
Mar. 4	do	do	do		168
Apr. 9	do	do	do		32.0
May 14	do	do	do		38.1
June 3	do	do	do		8.04
July 6	do	do	do		3.14
Aug. 4	do	do	do		[a].25
28	do	do	do		0
Nov. 22	do	do	Below Barton Springs and above Old Mill Spring, Austin, Tex.		30.2
Aug. 28	do	do	do		43.7
Jan. 15	do	do	Below Old Mill Spring, Austin, Tex		51.7
Feb. 5	do	do	do		166
Mar. 4	do	do	do		264
Apr. 9	do	do	do		119
May 14	do	do	do		131

[a] Estimated.
[b] Determined by slope-area method.

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending September 30, 1931—Continued

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
June 3	Barton Creek	Colorado River	Below Old Mill Spring, Austin, Tex.		85.3
July 6	do	do	do		66.5
Aug. 4	do	do	do		55.2
Apr. 23	North Fork of Guadalupe River.	Guadalupe River	4,500 feet above Segraves Dam, 18 miles west of Ingram, Tex.		12.2
23	do	do	3,500 feet above Segraves Dam		12.0
Jan. 24	San Marcos River	do	San Marcos-Luling highway crossing, San Marcos, Tex.		150
Feb. 24	do	do	Austin-San Antonio highway crossing, San Marcos, Tex.		173
Mar. 21	do	do	do		188
Apr. 21	do	do	do		232
May 25	do	do	do		181
June 22	do	do	do		187
Aug. 5	do	do	do		151
Sept. 18	do	do	do		143
May 28	Nueces River	Gulf of Mexico	Former Cinonia gaging station, 7.2 miles north of Crystal City, Tex.	6.75	138
Nov. 27	do	do	Highway crossing 2 miles south of Mathis, Tex.		301
June 18	West Nueces River.	Nueces River	500 feet above Kickapoo Springs, 75 miles above mouth of West Nueces River and 32 miles north of Brackettville, Tex.		7.39
May 29	do	do	0.3 mile below Kickapoo Springs, 74.7 miles above mouth.		20.7
June 18	do	do	0.4 mile below Kickapoo Springs, 74.6 miles above mouth.		13.3
18	do	do	2 miles below Kickapoo Springs, 73 miles above mouth.		20.2
18	do	do	At Dobson's ranch, 72 miles above mouth.		17.3
18	do	do	Road crossing 71 miles above mouth.		0
18	do	do	Road crossing 69.8 miles above mouth.		0
18	do	do	Hillcoat ranch crossing, 57 miles above mouth.		0
19	do	do	Head of Silver Lake, 49.8 miles above mouth.		2.19
19	do	do	Lower end of Silver Lake, 47.8 miles above mouth.		4.80
19	do	do	Road crossing 46.6 miles above mouth.		5.61
19	do	do	Road crossing 44.5 miles above mouth.		0
19	do	do	Road crossing 43.8 miles above mouth.		6.06
19	do	do	Road crossing 40.4 miles above mouth.		0
19	do	do	Brackettville-Laguna highway crossing, 29.3 miles above mouth.		1.41
19	do	do	Edwards waterhole, 25.2 miles above mouth.		10.3
19	do	do	Road crossing, 23 miles above mouth.		0
20	do	do	Mustang water hole, 10 miles above mouth.		0
May 29	Kickapoo Springs	West Nueces River.	Thurman ranch, 32 miles north of Brackettville, Tex.		1.96
June 18	do	do	do		1.90
19	Silver Lake Spring	do	Silver Lake, 25.8 miles above mouth of West Nueces River, Tex.		6.11
July 18	Sabinal River	Frio River	75 feet above Anglin Creek, near Utopia, Tex.		16.0
9	Hondo River	do	Below Williams Creek, 1 mile below Tarpley, Tex.		7.43
9	do	do	Second crossing on Tarpley-Hondo road, 7.4 miles from Tarpley, Tex.		13.9
9	do	do	First crossing on Hondo-Tarpley road 12 miles north of Hondo, Tex.		6.22
9	do	do	On Hondo-Tarpley road, 7.3 miles from Hondo, Tex.		0
Jan. 21	Leona River	do	Former gaging station near Divot, Tex.	1.33	1.88
Oct. 1	San Felipe Springs.	Rio Grande	Del Rio, Tex.		42.7
Dec. 19	do	do	do		82.9
May 16	do	do	do		96.4
June 15	do	do	do		116
July 15	do	do	do		103
May 2	Arroyo Los Olmos.	do	Rio Grande City, Tex.		437

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