Yearly discharge, in cubic feet per second, of San Bernard River near Boling, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1342	-	-	-	-	-	-	-
1955	1392	4,780	Feb. 9, 1955	3.9	169	122,000	163	118,200
1956	1442	1,520	Jan. 22, 1956	4.2	37.9	27,480	38.9	28,230
1957	1512	9,260	Mar. 21, 1957	2.4	414	300,000	-	-

220. Lake J. B. Thomas near Vincent, Tex.

Location.--Lat 32°35'09", long 101°12'18", at Big Spring pump station on south side of reservoir, 4.0 miles upstream from dam on Colorado River, 7.3 miles north of Vincent, Howard County, 12.5 miles west of Ira, and at mile 845.

Drainage area.--3,524 sq mi, of which 2,590 sq mi is probably noncontributing. Contributing area includes 363 sq mi above Bull Creek Diversion Dam.

Supplemental records available.--Records of diversions by Colorado River Municipal Water District for the period October 1953 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. From Nov. 4, 1953, to Feb. 7, 1955, Colorado River Municipal Water District staff gage located 4.0 miles downstream at same datum.

Extremes.--1953-57: Maximum contents, 186,000 acre-ft Oct. 5-7, 1955 (elevation, 2,255.7 ft); minimum contents since first appreciable storage, 72,340 acre-ft Apr. 29, May 2-4, 8, 9, 1955 (elevation, 2,250.2 ft).

Remarks.--Reservoir is formed by rolled earth-fill dam, 14,500 ft long; storage began in July 1952; dam completed in September 1952. Very little storage prior to July 1953. The service spillway, a reinforced concrete structure of cloverleaf design, has two 14- by 14-ft uncontrolled openings designed to discharge a total of 10,000 cfs. Two emergency spillways, one 500 ft wide at left end of dam and the other 1,600 ft wide at right end of dam, are designed to discharge 161,000 cfs at elevation 2,275.0 ft (maximum design level). Capacity of reservoir, 255,000 acre-ft at elevation 2,264.0 ft (top of lower emergency spillway); 204,000 acre-ft at elevation 2,258.0 ft (top of service spillway); 1,300 acre-ft at elevation 2,200.0 ft (lip of intake to service outlet). Dam built by Colorado River Municipal Water District to impound water for municipal and industrial use for the cities of Big Spring, Odessa, and Snyder. All flow of Bull Creek is diverted into Lake J. B. Thomas by means of a dam across the creek and a gravity canal through the intervening ridge, except that which will flow through the spillway at one end of the dam during extreme floods. In 1957, 10,850 acre-ft was diverted to nearby oilfields to repressurize oil wells by injection process.

Cooperation.--Capacity curve prepared and furnished by Freese & Nichols, Consulting Engineers. Record of elevations and diversions furnished by Colorado River Municipal Water District.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1954	25,310	23,780	22,940	22,510	21,690	20,880	47,890	68,150	89,260	86,650	83,240	79,900	+69,900
1955	77,880	76,260	74,300	73,510	73,120	75,080	72,730	111,700	112,200	132,700	128,600	170,000	+90,100
1956	180,800	175,000	172,200	169,300	166,500	161,800	161,100	167,900	167,900	161,800	153,800	148,000	-22,000
1957	145,500	141,100	138,700	136,300	141,700	137,500	139,300	173,600	183,700	177,900	170,800	165.900	+17,900

221. Bull Creek near Ira, Tex.

Location.--Lat 32°35', long 101°05', on left bank 267 ft upstream from county road crossing, 1.5 miles upstream from mouth and Colorado River, 5.5 miles downstream from Chimney Creek, 5.8 miles west of Ira, Scurry County, and 6.9 miles northwest of Cuthbert.

Drainage area.--388 sq mi, approximately (contributing area).

Supplemental records available.--Records of chemical analyses and water temperatures for the period April 1950 to September 1954 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,169.50 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1947-53), 12.7 cfs (9,190 acre-ft per year).

Extremes.--1947-53: Maximum discharge, 4,940 cfs July 6, 1948, and Oct. 4, 1953; maximum gage height, 11.70 ft July 6, 1948 (backwater from Colorado River); no flow at times.

Flood of Sept. 7, 1932, reached a stage of 23.0 ft (adjusted to present site from floodmark 1,100 ft downstream, on basis of correlation with peak stage of Apr. 12, 1954, gage height, 21.1 ft, from floodmarks; discharge, 22,400 cfs, on basis of slope-area measurement of peak flow). Flood of June 1939 was probably about 1 ft higher, from information by local resident.

Remarks.--No diversion above station prior to November 1953. All flow of Bull Creek has been diverted into Lake J. B. Thomas since closure of diversion dam Nov. 15, 1953, except during periods of extreme flooding when flow through spillway occurs. Dam was breached in two places by flood of Apr. 12, 1954, and was repaired May 30, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	0.44	0.45	8.10	0.05	0.07	0.06	0	38.4	167	241	1.87	2.47	38.5
1949	10.6	12.2	0	.08	.10	.05	31.8	29.3	27.9	1.33	16.6	23.4	12.8
1950	1.75	.08	.06	.09	.04	.08	4.40	42.2	46.7	22.3	.12	54.9	14.4
1951	.22	.01	.08	.08	.10	.12	.13	.62	1.59	5.56	79.1	.02	7.43
1952	0	0	.06	.10	.07	.05	.08	.10	.003	0	.01	3.35	.31
1953	0	.38	.46	.01	.06	.15	2.51	1.41	0	0	24.9	.63	2.58
1954	147	.30	.05	–	–	–	–	–	–	–	–	–	–

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	27	27	498	3.4	3.8	3.6	0	2,360	9,920	14,850	115	147	27,950
1949	651	725	0	5.2	5.6	3.0	1,890	1,800	1,660	82	1,020	1,400	9,240
1950	107	5.0	4.0	5.8	2.2	5.0	262	2,600	2,780	1,370	7.1	3,270	10,420
1951	13	.6	4.8	5.0	5.8	7.5	7.7	38	95	342	4,860	1.2	5,380
1952	0	0	3.6	6.4	4.0	3.0	4.6	6.1	.2	0	.8	200	229
1953	0	23	28	.8	3.6	9.1	149	86	0	0	1,530	38	1,870
1954	9,050	18	3.4	–	–	–	–	–	–	–	–	–	–

Yearly discharge, in cubic feet per second, of Bull Creek near Ira, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	4,940	July 6, 1948	0	38.5	27,950	39.6	28,780
1949	1148	862	Apr. 19, June 9, 1949	0	12.8	9,240	11.0	7,980
1950	1178	1,470	June 11, 1950	0	14.4	10,420	14.3	10,320
1951	1282	2,280	Aug. 23, 1951	0	7.43	5,380	7.41	5,370
1952	1282	116	Sept. 23, 1952	0	.31	229	.38	276
1953	1282	728	Aug. 19, 1953	0	2.58	1,870	15.0	10,890
1954	1282	-	-	-	-	-	-	-

222. Bluff Creek near Ira, Tex.

Location. --Lat 32°35'29", long 101°03'05", at bridge on State Farm Road 1606, 1.8 miles upstream from mouth, 2.8 miles west of Ira, Scurry County, and 11.6 miles southwest of Snyder.

Drainage area. --38 sq mi, approximately.

Supplemental records available. --Records of chemical analyses and water temperatures for the period April to September 1950 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 2,177.95 ft above mean sea level, datum of 1929. July 5, 1948, to Nov. 5, 1948, staff gage at present site and datum.

Average discharge. --10 years (1947-57), 2.58 cfs (1,870 acre-ft per year).

Extremes. --1947-57: Maximum discharge, 5,200 cfs July 5, 1948 (gage height, 16.22 ft, from floodmark), from rating curve extended above 1,600 cfs on basis of slope-area measurements at gage height 11.92 ft and of peak flow; no flow at times each year.
Maximum stage known, that of July 5, 1948.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	0.05	0.14	1.17	0	0.31	0	0.04	32.8	2.58	33.3	0.27	0	5.97
1949	1.59	.02	0	.05	.11	.10	2.65	2.40	2.85	0	4.37	.05	1.19
1950	.01	0	.01	.07	0	0	.21	22.6	1.36	.28	.02	.05	2.08
1951	0	.04	.04	.10	.21	.11	.04	.05	.75	6.41	2.36	.01	.86
1952	0	0	0	.03	0	0	.05	.05	0	0	.29	.48	.07
1953	0	1.00	0	0	0	0	.02	.30	0	.23	2.44	.03	.34
1954	1.18	0	.02	.05	0	0	5.30	21.0	1.40	.01	0	0	2.45
1955	0	0	0	0	0	0	0	31.7	1.37	0	0	0	2.80
1956	15.0	0	0	0	0	0	.04	7.96	5.33	0	.03	0	2.39
1957	.15	0	.03	0	19.9	.15	12.1	52.6	8.07	0	0	0	7.68

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	3.2	8.3	72	0	18	0	2.2	2,010	153	2,050	17	0	4,330
1949	98	1.2	0	3.4	6.3	6.1	158	147	170	0	269	3.2	862
1950	.8	0	.8	4.2	0	0	12	1,390	81	17	1.0	3.2	1,510
1951	0	2.2	2.4	6.1	12	6.7	2.2	3.4	44	394	145	.8	619
1952	0	0	0	1.8	0	0	2.8	3.0	0	0	18	29	55
1953	0	60	0	0	0	0	1.2	18	0	14	150	2.0	245
1954	72	0	1.4	3.4	0	0	315	1,290	83	.6	0	0	1,770
1955	0	0	0	0	0	0	0	1,950	82	0	0	0	2,030
1956	925	0	0	0	0	0	2.4	490	317	0	2.0	0	1,740
1957	9.5	0	1.8	0	1,100	9.3	722	3,230	480	0	0	0	5,550

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1282	5,200	July 5, 1948	0	5.97	4,330	6.00	4,350
1949	1282	488	Aug. 17, 1949	0	1.19	862	1.06	765
1950	1282	630	May 11, 25, 1950	0	2.08	1,510	2.09	1,510
1951	1282	942	July 1, 1951	0	.86	619	.85	614
1952	1282	63	Sept. 22, 1952	0	.07	55	.16	115
1953	1282	404	Aug. 18, 1953	0	.34	245	.36	259
1954	1342	1,490	May 11, 1954	0	2.45	1,770	2.34	1,700
1955	1392	1,100	May 23, 1955	0	2.80	2,030	4.08	2,960
1956	1442	868	June 17, 1956	0	2.39	1,740	1.13	823
1957	1512	1,820	Feb. 7, 1957	0	7.68	5,550	-	-

223. Colorado River near Ira, Tex.

Location. --Lat 32°32', long 101°03', 530 ft downstream from bridge on State Highway 350, 3¼ miles upstream from Willow Creek, 3¼ miles downstream from Bluff Creek, 4.4 miles southwest of Ira, Scurry County, and at mile 825.

Drainage area. --3,617 sq mi, of which 2,590 sq mi is probably noncontributing.

Gage. --Water-stage recorder. Datum of gage is 2,136 ft above mean sea level, datum of 1929.

Average discharge. --5 years (1947-52), 50.5 cfs (36,560 acre-ft per year).

Extremes. --1947-52: Maximum discharge, 20,500 cfs July 6, 1948 (gage height, 21.35 ft), from rating curve extended above 9,600 cfs by conveyance-slope method; no flow at times.
Maximum stage known, about 32 ft June 16, 1913, from information by local resident. Flood of May 1947 reached a stage of 25.1 ft, from floodmark at site of former bridge 269 ft upstream from gage.

Remarks. --Flow regulated since July 1952 by Lake J. B. Thomas (capacity, 204,000 acre-ft). Diversions from Lake J. B. Thomas for municipal and industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	0.88	2.63	24.1	0.73	1.34	0.31	0.07	154	280	822	16.9	5.80	110
1949	58.0	24.2	.59	3.24	2.34	.63	57.7	112	108	12.6	63.3	61.1	42.1
1950	4.35	.50	.18	.52	.63	.13	6.07	216	74.2	80.9	4.40	292	56.7
1951	.95	.50	.59	.66	.57	.36	.13	2.08	67.3	184	251	1.77	43.1
1952	.17	.10	.39	.56	.39	.21	.15	.01	0	0	2.23	4.05	.69

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	54	157	1,480	45	77	19	4.4	9,470	16,680	50,520	1,040	345	79,890
1949	3,570	1,440	36	199	130	38	3,430	6,910	6,440	777	3,890	3,640	30,500
1950	268	30	11	32	35	7.7	361	13,270	4,420	4,970	271	17,400	41,080
1951	59	30	36	41	32	22	7.9	128	4,000	11,330	15,410	105	31,200
1952	11	5.8	24	35	22	13	8.9	.8	0	0	137	241	498

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	20,500	July 6, 1948	0	110	79,890	115	83,250
1949	1148	3,040	May 28, 1949	0	42.1	30,500	35.6	25,760
1950	1178	7,210	May 11, 1950	0	56.7	41,080	56.5	40,890
1951	1212	6,220	Aug. 21, 1951	0	43.1	31,200	43.0	31,120
1952	1242	466	Aug. 11, 1952	0	.69	498	-	-

224. Deep Creek near Dunn, Tex.

Location. --Lat 32°33'50", long 100°53'55", at bridge on State Farm Road 1606, 2.0 miles northwest of Dunn, Scurry County, 3.0 miles upstream from Sulphur Draw, and 8.0 miles upstream from mouth.

Drainage area. --178 sq mi.

Supplemental records available. --Records of chemical analyses and water temperatures for the period March 1953 to October 1954 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 2,172.17 ft above mean sea level, datum of 1929. Prior to Apr. 21, 1955, staff or wire-weight gage at same site and datum.

Extremes. --1953-57: Maximum discharge, 4,700 cfs May 23, 1955 (gage height, 22.90 ft); no flow at times each year.
Maximum discharge known since at least 1881, 36,400 cfs June 19, 1939 (by slope-area measurement of peak flow at site 8.0 miles upstream from gage). Flood of 1892 reached a stage about equal to that of June 19, 1939, from information by local residents.

Remarks. --No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	-	-	-	14.5	2.05	0	2.10	42.1	0.98	-
1954	21.8	0.003	0	0.03	0.05	0	25.4	66.2	.18	0	.03	0	9.59
1955	0	0	0	0	6.67	19.6	0	204	6.95	3.00	.69	32.2	23.0
1956	96.9	0	.21	.19	1.09	.003	1.90	5.33	1.05	.25	0	0	9.04
1957	.003	0	0	0	58.3	0	88.3	253	48.3	10.1	.41	5.30	38.5

Monthly and yearly runoff, in acre-feet, of Deep Creek near Dunn, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	-	-	-	865	126	0	129	2,590	58	3,770
1954	1,340	0.2	0	2.0	3.0	0	1,510	4,070	11	0	2.0	0	6,940
1955	0	0	0	0	370	1,210	0	12,550	414	185	42	1,910	16,680
1956	5,960	0	13	12	63	.2	113	328	62	15	0	0	6,570
1957	.2	0	0	0	3,240	0	5,250	15,580	2,880	621	25	316	27,910

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	1342	-	-	-	-	-	-	-
1954	1342	2,740	May 11, 1954	0	9.59	6,940	7.73	5,600
1955	1392	4,700	May 23, 1955	0	23.0	16,680	31.3	22,650
1956	1442	2,240	Oct. 3, 1955	0	9.04	6,570	.82	593
1957	1512	3,850	May 25, 1957	0	38.5	27,910	-	-

225. Colorado River at Colorado City, Tex. 1/

Location. --Lat 32°23'33", long 100°52'42", on right bank at Colorado City, Mitchell County, 3,517 ft upstream from bridge on U. S. Highway 80, 4,100 ft upstream from Texas & Pacific Railway bridge, 1.6 miles upstream from Lone Wolf Creek, and at mile 796.

Drainage area. --4,082 sq mi; at site 1.4 miles downstream, 4,220 sq mi: of which 2,590 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses for the periods May 1946 to September 1954, August 1956 to September 1957, and water temperatures for the periods July 1952 to September 1954, August 1956 to September 1957, are published in reports of Geological Survey.

Gage. --Water-stage recorder. Concrete control since Aug. 6, 1946. Datum of gage is 2,030.16 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Nov. 28, 1923, to Aug. 31, 1925, chain gage at site 1.4 miles downstream at different datum. May 9 to Aug. 5, 1946, staff gage at site 185 ft upstream at present datum.

Average discharge. --11 years (1946-57), 74.7 cfs (54,080 acre-ft per year).

Extremes. --1923-25, 1946-57: Maximum discharge, 24,900 cfs July 6, 1948 (gage height, 22.37 ft, from floodmark); no flow at times. Maximum stage known since at least 1910, 35.9 ft June 20, 1939, present site and datum, based on floodmarks 1,000 ft upstream and 3,740 ft downstream from gage (discharge, 66,000 cfs, by slope-area measurement of peak flow at site 2.5 miles upstream from gage).

Remarks. --Flow slightly regulated since July 1952 by Lake J. B. Thomas (capacity, 204,000 acre-ft). Diversions from Lake J. B. Thomas for municipal and industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	13.7	3.45	0.28	0.35	56.2	152	56.8	14.4	46.1	39.5	-
1925	15.4	0.09	.28	1.19	1.14	.09	190	217	60.1	25.0	390	-	-
1946	-	-	-	-	-	-	-	-	40.6	.10	0	296	-
1947	198	3.06	25.1	4.22	2.18	3.49	2.76	1,431	28.4	7.08	.14	23.5	147
1948	19.9	8.39	43.4	1.95	86.2	3.22	.87	189	292	1,257	35.1	8.00	163
1949	99.6	24.9	1.80	5.86	3.94	1.74	139	197	135	18.9	66.2	66.9	63.6
1950	6.30	.86	1.35	1.95	1.87	.33	14.2	402	93.2	103	14.3	397	86.6
1951	2.79	.15	1.48	1.71	1.88	.86	.71	4.15	81.6	211	259	1.72	47.9
1952	.25	.12	.16	1.09	.78	.17	1.02	17.6	.45	14.1	1.20	16.5	4.47
1953	.05	2.51	2.78	.25	.41	2.10	15.0	30.7	0	5.92	108	7.53	14.9
1954	254	3.84	1.09	1.29	.55	.01	283	337	11.1	10.8	0	0	75.8
1955	.22	.34	.03	.12	1.72	16.8	.01	441	22.7	9.84	1.99	113	51.2
1956	160	0	.05	1.01	1.25	0	9.10	93.6	16.8	.02	0	0	23.8
1957	5.12	1.29	3.19	.64	99.0	1.99	332	1,048	205	9.05	6.27	3.60	143

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	839	212	16.1	21.2	3,340	9,330	3,380	888	2,830	2,350	-
1925	944	5.2	17.5	73.0	63.3	5.4	11,300	13,400	3,570	1,540	24,000	-	-
1946	-	-	-	-	-	-	-	-	2,420	6.3	0	17,620	-
1947	12,200	182	1,540	260	121	215	164	88,000	1,690	435	8.5	1,400	106,200
1948	1,220	499	2,670	120	4,960	198	52	11,630	17,350	77,290	2,160	476	118,600
1949	6,130	1,480	111	361	219	107	8,300	12,090	8,020	1,160	4,070	3,980	46,030
1950	388	51	83	120	104	20	843	24,720	5,550	6,350	879	23,610	62,720
1951	172	8.7	91	105	104	53	42	255	4,850	12,960	15,910	103	34,650
1952	15	7.3	9.9	67	45	11	61	1,080	27	870	74	982	3,250
1953	3.4	150	171	15	23	129	892	1,890	0	364	6,670	448	10,760
1954	15,600	228	67	79	31	.8	16,830	20,740	663	666	0	0	54,900
1955	13	20	1.6	7.5	96	1,030	.6	27,130	1,350	605	122	6,710	37,090
1956	9,850	0	3.2	62	72	0	541	5,750	1,000	1.2	0	0	17,280
1957	315	77	196	39	5,500	123	19,750	64,410	12,210	556	386	214	103,800

1/ Published as "at Colorado", 1924-25.

Yearly discharge, in cubic feet per second, of Colorado River at Colorado City, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	3,140	May 14, 1924	0	-	-	32.2	23,300
1925	608	5,180	Apr. 24, 1925	0	-	-	-	-
1946	1058	a5,620	Sept. 15, 1946	0	-	-	-	-
1947	1088	24,000	May 13, 1947	0	147	106,200	134	96,680
1948	1118	24,900	July 6, 1948	0	163	118,600	168	122,000
1949	1148	3,330	Oct. 9, 1948	0	63.6	46,030	53.6	38,830
1950	1178	7,550	May 11, 1950	0	86.6	62,720	86.3	62,470
1951	1212	5,390	Aug. 22, 1951	0	47.9	34,650	47.6	34,410
1952	1242	2,740	July 16, 1952	0	4.47	3,250	4.87	3,540
1953	1282	4,170	Aug. 20, 1953	0	14.9	10,760	36.4	26,330
1954	1342	10,500	Apr. 13, 1954	0	75.8	54,900	53.9	39,040
1955	1392	8,360	May 11, 1955	0	51.2	37,090	64.8	46,900
1956	1442	3,680	May 1, 1956	0	23.8	17,280	11.0	8,010
1957	1512	13,000	May 25, 1957	0	143	103,800	-	-

a Maximum during period May to September.

226. Morgan Creek near Westbrook, Tex.

Location.--Lat 32°23'42", long 101°01'32", at bridge on State Farm Road 670, 1.1 miles upstream from Graze Creek, 2.7 miles north of Westbrook, Mitchell County, and 14 miles upstream from mouth.

Drainage area.--249 sq mi, of which 21 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 2,076.64 ft above mean sea level, datum of 1929.

Extremes.--1954-57: Maximum discharge, 7,180 cfs May 13, 1957 (gage height, 21.92 ft); no flow at times.
Maximum stage known since at least 1882, 30.0 ft April 1922, from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	50.6	8.69	1.36	0	-
1955	0	0	0	0	0	0.01	0	67.6	8.49	24.9	11.6	0	9.54
1956	78.5	0	0	0	0	0	2.27	31.6	6.38	12.7	11.4	0	12.1
1957	.98	.12	1.67	0	.004	.50	188	361	64.6	.20	2.57	.80	52.0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	3,010	535	84	0	-
1955	0	0	0	0	0	0.4	0	4,150	505	1,530	714	0	6,910
1956	4,820	0	0	0	0	0	135	1,940	380	782	700	0	8,760
1957	60	7.1	103	0	.2	31	11,190	22,190	3,850	12	158	48	37,650

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1392	-	-	-	-	-	-	-
1955	1392	1,550	May 11, 1955	0	9.54	6,910	16.2	11,720
1956	1442	2,530	Oct. 2, 1955	0	12.1	8,760	5.66	4,110
1957	1512	7,180	May 13, 1957	0	52.0	37,650	-	-

227. Graze Creek near Westbrook, Tex.

Location.--Lat 32°25'03", long 101°01'10", 1.2 miles upstream from mouth and 4.2 miles north of Westbrook, Mitchell County.

Drainage area.--21.2 sq mi.

Gage.--Water-stage recorder. Datum of gage is 2,092.66 ft above mean sea level, datum of 1929.

Extremes.--1954-57: Maximum discharge, 1,800 cfs May 12 (gage height, 12.77 ft), from rating curve extended above 570 cfs on basis of slope-area measurement at gage height 12.23 ft; no flow at times.
Maximum stage known since at least 1919, 19.0 ft June 1939, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly discharge, in cubic feet per second, of Graze Creek near Westbrook, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	0.96	0.003	0	0	-
1955	0	0	0.003	0	0	0.01	0	7.54	.27	0	.36	.03	0.70
1956	1.42	0	0	0	0	0	3.10	12.2	0	0	0	0	1.41
1957	.54	0	.09	0	.01	0	48.2	44.4	3.67	0	.30	0	8.12

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	57	0.2	0	0	-
1955	0	0	0.2	0	0	0.6	0	464	16	0	22	2.0	505
1956	87	0	0	0	0	0	184	753	0	0	0	0	1,020
1957	33	0	5.4	0	.4	0	2,870	2,730	219	0	18	0	5,880

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1392	-	-	-	-	-	-	-
1955	1392	251	May 11, 1955	0	0.70	505	0.82	592
1956	1442	1,620	May 1, 1956	0	1.41	1,020	1.34	975
1957	1512	1,800	May 12, 1957	0	8.12	5,880	-	-

228. Morgan Creek near Colorado City, Tex.

Location.--Lat 32°23'17", long 100°56'59", at bridge on U. S. Highway 80, about 1 mile upstream from Texas & Pacific Railway bridge, 5 miles west of Colorado City, Mitchell County, 5 miles east of Westbrook, and 5½ miles downstream from Cherry Creek.

Drainage area.--262 sq mi (contributing area).

Supplemental records available.--Records of chemical analyses for the period May 1947 to July 1949 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,046.61 ft above mean sea level, datum of 1929. Prior to Mar. 24, 1948, staff gage 227 ft downstream at same datum.

Extremes.--1947-49: Maximum discharge, 7,910 cfs July 6, 1948 (gage height, 20.44 ft); no flow at times.
Maximum stage known since at least 1932, 24.2 ft June 19 or 20, 1939, from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	143	0.81	5.45	0.09	4.54	-
1948	23.2	4.06	15.4	0.03	28.3	0.11	0.27	1.60	3.54	325	7.45	3.60	34.8
1949	2.38	0	0	.09	.73	.03	151	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	8,810	48	335	5.4	270	-
1948	1,430	241	947	2.0	1,630	6.7	16	98	211	20,000	458	214	25,250
1949	146	0	0	5.8	40	1.8	8,970	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1118	a3,170	May 11, 1947	0	-	-	-	-
1948	1118	7,910	July 6, 1948	0	34.8	25,250	31.4	22,780
1949	1148	b3,320	Apr. 20, 1949	0	-	-	-	-

a Maximum during period May to September.
b Maximum during period October to May.

229. Lake Colorado City near Colorado City, Tex.

Location. --Lat 32°20'40", long 100°55'10", on left bank at municipal water-intake structure, 1.7 miles upstream from Lake Colorado City Dam on Morgan Creek, 2.2 miles downstream from Texas & Pacific Railway bridge, 2.5 miles upstream from mouth, and 4.0 miles southwest of Colorado City, Mitchell County.

Drainage area. --267 sq mi.

Supplemental records available. --Records of diversions for municipal use for the period April 1949 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Aug. 23, 1950, staff gages at or near powerplant about 0.7 mile downstream at same datum.

Extremes. --1949-57: Maximum contents, 38,520 acre-ft May 13, 1957 (elevation, 2,073.62 ft); minimum since first appreciable storage, 5,800 acre-ft Apr. 11-13, 1950 (elevation, 2,045.72 ft).

Remarks. --Reservoir is formed by a rolled earth-fill dam, 4,800 ft long; storage began in April 1949; dam completed in September 1949. Reservoir is operated by Texas Electric Service Co. for cooling purposes in operation of steam powerplant. Colorado City diverts water for municipal use.

Service spillway, of cloverleaf design, 100 ft upstream from dam has two uncontrolled openings 10 by 12 ft designed to discharge a total of 5,000 cfs. An emergency spillway, 1,200 ft wide designed to discharge 150,000 cfs directly into the Colorado River, is located 600 ft upstream and to left of dam. Capacity of reservoir, 38,700 acre-ft at elevation 2,073.7 ft (top of emergency spillway), 31,800 acre-ft at elevation 2,070.3 ft (top of service spillway), and 158 acre-ft dead storage at elevation 2,024.3 ft (bottom of service-outlet conduit). Water for municipal supply can be withdrawn down to elevation 2,045 ft.

Cooperation. --Capacity curve prepared and furnished by Texas Electric Service Co.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1949	-	-	-	-	-	-	4,880	6,950	6,600	6,250	6,250	6,720	-
1950	6,550	6,400	6,300	6,200	6,100	5,900	6,350	17,590	18,140	18,030	17,480	22,640	+15,920
1951	21,720	20,960	20,480	20,000	19,760	19,160	18,580	18,030	17,590	17,260	16,400	15,600	- 7,040
1952	15,000	14,600	14,240	14,060	13,700	13,250	12,890	12,800	11,900	11,180	10,380	15,000	- 600
1953	14,240	13,970	13,790	13,520	13,160	12,800	12,260	11,660	10,780	10,220	9,740	9,820	- 5,180
1954	13,830	13,560	13,200	13,020	12,570	12,060	15,700	26,260	27,540	26,260	24,750	23,250	+13,430
1955	22,450	21,930	21,440	21,200	20,840	20,240	19,400	23,100	22,580	22,710	22,060	21,320	- 1,930
1956	24,450	23,700	23,250	22,840	22,450	21,800	21,930	23,850	22,970	22,320	21,200	20,120	- 1,200
1957	19,640	19,070	18,850	18,520	18,410	17,970	30,840	33,400	31,200	29,580	28,380	27,700	+ 7,580

230. Champlin Creek near Colorado City, Tex.

Location. --Lat 32°19', long 100°49', on right bank 600 ft downstream from South Fork, 5 miles southeast of Colorado City, Mitchell County, and 5½ miles upstream from mouth.

Drainage area. --158 sq mi.

Gage. --Water-stage recorder. Datum of gage is 2,047.2 ft above mean sea level, datum of 1929 (State Highway Department survey). Prior to July 5, 1949, staff gage at same site and datum.

Average discharge. --10 years (1947-57), 15.0 cfs (10,860 acre-ft per year).

Extremes. --1947-57: Maximum discharge, 10,200 cfs Oct. 25, 1947 (gage height, 10.40 ft, from floodmark), from rating curve extended above 2,400 cfs on basis of slope-area measurements at gage heights 8.88 and 10.40 ft; no flow at times.

Maximum stage known since at least 1898, about 18.5 ft July 7 or 8, 1945, from floodmarks on left bank opposite gage.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	111	0.88	1.97	1.46	14.9	6.09	1.72	79.2	38.7	43.8	1.57	0.86	25.4
1949	12.3	.50	.62	1.82	3.10	.96	33.2	75.6	1.20	.34	.18	7.66	11.5
1950	.54	.52	.88	1.26	1.11	.55	6.82	28.2	.54	13.4	7.46	14.9	6.40
1951	.33	.54	1.21	1.12	1.41	1.08	.83	113	46.0	19.8	.25	.27	15.6
1952	.20	.17	.43	.89	1.20	.76	.34	9.93	.05	.47	.06	6.20	1.73
1953	.15	1.79	.39	.40	.55	.61	.33	3.77	.06	15.0	5.56	6.91	2.99
1954	27.1	.12	.15	.35	.29	.20	3.17	130	.27	.05	.10	.10	13.7
1955	.28	.06	.12	.19	1.82	.11	.10	96.2	19.9	34.6	.55	.25	13.0
1956	7.17	.12	.12	.15	.17	.16	15.2	59.0	20.0	.15	.01	0	8.56
1957	1.21	.11	1.06	.13	.19	1.34	225	205	126	.24	1.41	49.4	50.7

Monthly and yearly runoff, in acre-feet, of Champlin Creek near Colorado City, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	6,820	52	121	90	859	375	102	4,870	2,310	2,690	97	51	18,440
1949	755	30	38	112	172	59	1,980	4,650	71	21	11	456	8,360
1950	33	31	54	77	61	34	406	1,730	32	826	459	889	4,630
1951	20	32	74	69	79	66	49	6,930	2,740	1,220	16	16	11,310
1952	12	10	26	55	69	47	20	610	3.0	29	4.0	369	1,250
1953	9.1	107	24	25	31	37	19	232	3.6	925	342	411	2,170
1954	1,660	7.3	8.9	21	16	12	188	7,990	16	3.0	6.1	6.0	9,930
1955	17	3.8	7.5	12	101	6.5	6.1	5,910	1,180	2,130	34	15	9,420
1956	441	7.3	7.3	9.3	9.7	10	907	3,620	1,190	9.3	.4	0	6,210
1957	75	6.7	65	8.1	11	82	13,370	12,580	7,480	15	87	2,940	36,720

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	10,200	Oct. 25, 1947	0.2	25.4	18,400	16.9	12,270
1949	1148	2,760	May 27, 1949	.1	11.5	8,360	10.6	7,650
1950	1178	1,620	July 31, 1950	.1	6.40	4,630	6.41	4,640
1951	1212	5,530	May 18, 1951	.1	15.6	11,310	15.5	11,230
1952	1242	729	Sept. 22, 1952	0	1.73	1,250	1.85	1,350
1953	1282	1,260	Sept. 3, 1953	0	2.99	2,170	5.12	3,700
1954	1342	7,380	May 18, 1954	0	13.7	9,930	11.5	8,290
1955	1392	7,260	May 10, 1955	0	13.0	9,420	13.6	9,850
1956	1442	7,500	May 1, 1956	0	8.56	6,210	8.14	5,900
1957	1512	8,850	Apr. 19, 1957	0	50.7	36,720	-	-

231. Colorado River near Silver, Tex.

Location. --Lat 32°00', long 100°44', at county road bridge, 5.4 miles southwest of Silver, Coke County, 11 miles upstream from Pecan Creek, 18.5 miles downstream from Big Silver Creek, and at mile 743.

Drainage area. --15,480 sq mi, approximately, of which 11,600 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses and water temperatures for the period October 1956 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Mean sea level datum of gage, 1,875.09 ft above mean sea level (levels by Topographic Division). Prior to Feb. 7, 1957, wire-weight gage at same site and datum.

Extremes. --1956-57: Maximum discharge, 23,200 cfs May 12, 1957 (gage height, 24.19 ft, from floodmark in gage well); no flow at times. Maximum stage known since at least 1891, about 32 ft in April 1922, from information by local resident.

Remarks. --Some regulation by Lake J. B. Thomas and Lake Colorado City.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	116	6.50	34.2	0.06	106	51.6	1,016	3,124	1,169	35.8	67.4	195	496

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	7,150	387	2,100	3.6	5,880	3,170	60,480	192,100	69,550	2,200	4,140	11,600	358,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1957	1512	23,200	May 12, 1957	0	496	358,800	-	-

232. Colorado River at Robert Lee, Tex.[1]

Location.--Lat 31°53'05", long 100°28'45", at bridge on State Highway 208 in Robert Lee, Coke County, half a mile upstream from Mountain Creek and at mile 712.

Drainage area.--15,770 sq mi; at site 9 miles downstream, 15,900 sq mi: approximately, of which 11,600 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses and water temperatures for the period October 1947 to September 1951 and suspended-sediment loads for the period January 1949 to September 1951 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,771.70 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Oct. 23, 1923, to Dec. 31, 1929, inclined gage at site 9 miles downstream at different datum.

Average discharge.--19 years (1924-27, 1939-55), 207 cfs (149,900 acre-ft per year).

Extremes.--1923-27, 1939-56: Maximum discharge, 32,500 cfs Sept. 6, 1926 (gage height, 20.20 ft, at site and datum then in use), from rating curve extended above 15,000 cfs; no flow at times.
Maximum stage known since at least 1907, about 25.5 ft in April 1922, from information by local residents.

Remarks.--Flow slightly regulated since April 1949 by Lake Colorado City, and since July 1952 by Lake J. B. Thomas. (See elsewhere in this report.) Diversions above station for irrigation, and municipal and industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	334	36.3	7.04	3.99	3.37	189	430	105	0.01	59.6	257	-
1925	275	.99	3.92	.38	.51	.10	890	1,020	268	42.1	467	2,010	414
1926	263	17.6	4.99	6.46	2.44	118	815	383	807	171	921	1,920	451
1927	651	23.7	110	16.6	18.0	6.98	155	9.25	119	260	89.1	412	157
1928	94.6	1.53	1.52	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	529	2,240	188	368	3.07	-
1940	16.4	8.99	4.12	3.72	6.43	8.55	23.1	83.9	987	93.4	229	109	130
1941	23.0	31.1	13.5	3.12	62.7	343	1,460	1,660	1,458	559	225	99.0	495
1942	1,213	72.5	70.3	21.4	13.2	7.53	30.8	125	15.9	.43	899	422	244
1943	184	20.8	51.6	14.6	5.39	18.9	11.6	147	179	52.0	.02	.07	57.5
1944	.01	.03	.10	2.13	46.5	46.9	.24	483	135	775	65.5	103	140
1945	66.0	17.0	14.5	17.1	5.21	13.6	58.9	2.02	119	2,377	245	86.7	256
1946	387	13.5	11.8	12.6	6.44	3.35	5.23	133	15.8	2.26	44.2	508	95.5
1947	461	11.3	89.5	12.3	4.00	10.2	148	2,444	85.0	47.5	20.0	100	291
1948	258	29.3	89.9	8.87	214	58.4	1.79	292	373	2,114	89.0	92.3	304
1949	110	26.6	2.85	10.7	19.5	7.57	416	1,450	512	39.0	67.7	207	240
1950	16.1	3.89	2.74	4.68	3.90	.65	210	741	157	181	103	451	157
1951	9.96	.06	.44	.49	1.16	1.34	.76	161	270	211	239	6.03	75.8
1952	.04	.02	0	0	0	0	15.1	19.0	9.29	0	0	49.5	7.67
1953	.15	.01	.92	0	0	12.4	12.0	263	7.60	151	578	41.2	90.4
1954	386	49.0	1.20	.55	.19	.04	714	1,540	75.8	50.7	0	0	237
1955	0	0	0	0	9.06	3.63	.02	827	81.4	89.1	64.9	103	99.4
1956	258	1.5	0	0	0	0	0	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	19,900	2,230	433	229	207	11,300	26,500	6,230	0.6	3,660	15,300	-
1925	16,900	58.9	241	23.2	28.6	6.1	53,000	62,600	15,900	2,590	28,700	120,000	300,000
1926	16,200	1,050	307	397	135	7,230	48,500	23,600	48,000	10,500	56,600	114,000	327,000
1927	40,000	1,410	6,790	1,020	1,000	429	9,220	568	7,070	16,000	5,480	24,500	113,000
1928	5,820	91.0	93.6	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	32,540	133,300	11,550	22,600	182	-
1940	1,010	535	253	229	370	525	1,370	5,160	58,710	5,740	14,110	6,480	94,490
1941	1,420	1,850	831	192	3,480	21,060	86,900	102,100	86,770	34,360	13,850	5,890	358,700
1942	74,560	4,320	4,320	1,320	736	463	1,830	7,680	948	26	55,250	25,140	176,600
1943	11,330	1,240	3,170	898	299	1,160	689	9,030	10,630	3,200	1.2	4.2	41,650
1944	.4	1.6	6.1	131	2,670	2,890	14	29,710	8,040	47,640	4,030	6,130	101,300
1945	4,060	1,010	890	1,050	289	838	3,500	124	7,100	146,200	15,060	5,160	185,300
1946	23,770	801	725	772	358	206	311	8,170	943	139	2,720	30,200	69,120
1947	28,350	674	5,500	758	222	626	8,810	150,300	5,060	2,920	1,230	5,970	210,400
1948	15,860	1,750	5,530	545	12,320	3,590	107	17,960	22,180	130,000	5,470	5,490	220,800
1949	6,780	1,580	175	657	1,090	466	24,760	89,180	30,450	2,400	4,160	12,330	174,000
1950	993	231	168	288	217	40	12,470	45,560	9,320	11,120	6,340	26,860	113,600
1951	612	3.8	27	30	65	83	45	9,870	16,080	12,950	14,720	359	54,840
1952	2.6	1.2	0	0	0	0	898	1,170	553	0	0	2,940	5,560
1953	9.5	.4	57	0	0	761	717	16,180	452	9,300	35,560	2,450	65,490
1954	23,730	2,920	74	34	10	2.4	42,470	94,720	4,510	3,120	0	0	171,600
1955	0	0	0	0	503	223	1.4	50,830	4,840	5,480	3,990	6,110	71,980
1956	15,880	3.0	0	0	0	0	0	-	-	-	-	-	-

1/ Published as "near Robert Lee", 1923-27.

Yearly discharge, in cubic feet per second, of Colorado River at Robert Lee, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a13,200	Apr. 25, 1924	0	-	-	112	81,100
1925	608	22,700	Apr. 26, 1925	0	414	300,000	415	300,000
1926	628	32,500	Sept. 6, 1926	.5	451	327,000	493	357,000
1927	648	9,990	Apr. 13, 1927	0	157	113,000	98.5	71,300
1928	648	-	-	-	-	-	-	-
1939	898	31,700	June 22, 1939	-	-	-	-	-
1940	898	23,000	June 29, 1940	0	130	94,490	133	96,800
1941	928	22,400	Apr. 17, 1941	0	495	358,700	605	437,800
1942	958	17,500	Aug. 27, 1942	0	244	176,600	151	109,100
1943	978	6,400	Oct. 18, 1942	0	57.5	41,650	35.8	25,920
1944	1008	18,300	July 23, 1944	0	140	101,300	148	107,200
1945	1038	25,200	July 9, 1945	0	256	185,300	283	204,600
1946	1058	13,500	Sept. 14, 1946	0	95.5	69,120	108	78,340
1947	1088	23,700	May 11, 1947	0	291	210,400	275	199,000
1948	1118	28,000	July 8, 1948	0	304	220,800	284	206,200
1949	1148	12,200	May 8, 1949	0	240	174,000	231	166,900
1950	1178	9,450	May 12, 1950	0	157	113,600	156	112,900
1951	1212	5,920	June 16, 1951	0	75.8	54,840	74.9	54,210
1952	1242	2,760	Apr. 22, 1952	0	7.67	5,560	7.75	5,630
1953	1282	24,200	Aug. 19, 1953	0	90.4	65,490	127	92,140
1954	1342	14,600	May 12, 1954	0	237	171,600	200	144,900
1955	1392	7,940	May 12, 1955	0	99.4	71,980	-	-
1956	1442	-	-	-	-	-	-	-

a Maximum during period November to September.

233. Oak Creek Reservoir near Blackwell, Tex.

Location.--Lat 32°04', long 100°17', on left bank at municipal pump station 2 miles upstream from dam on Oak Creek, 3 miles southeast of Blackwell, Nolan County, 14 miles north of Bronte, and 20 miles upstream from mouth.

Drainage area.--222 sq mi.

Supplemental records available.--Records of diversions for the period May 1953 to September 1957 are published in reports of Geological Survey.

Gage.--Staff gage. Datum of gage is at mean sea level, datum of 1929.

Extremes.--1953-57: Maximum contents observed, 44,540 acre-ft June 2, 1957 (elevation, 2,002.10 ft); minimum observed since first appreciable storage, 7,060 acre-ft Aug. 1, 1953 (elevation, 1,976.2 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam, 3,800 ft long. Dam completed in May 1952; no appreciable storage prior to May 12, 1953. Reservoir is property of city of Sweetwater, built to impound water for municipal use by cities of Sweetwater, Blackwell, and Bronte. Uncontrolled service spillway is channel 300 ft wide located to right of dam with crest at elevation 2,000.0 ft (reservoir capacity, 39,360 acre-ft). Emergency spillway is channel 800 ft wide located between dam and service spillway with crest at elevation 2,005.0 ft (reservoir capacity, 52,940 acre-ft). Service outlet (elevation, 1,951.0 ft) can release water to Oak Creek through 24-inch pipeline. Dead storage is 100 acre-ft.

Cooperation.--Capacity curve furnished by Freese & Nichols, Consulting Engineers. Record of lake elevations and diversions furnished by city of Sweetwater.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1953	-	-	-	-	-	-	-	8,200	7,150	7,080	13,000	11,700	-
1954	12,520	12,060	11,520	11,250	10,820	10,310	15,120	18,730	18,600	17,070	15,770	14,800	+ 3,100
1955	14,180	14,590	14,180	13,780	14,590	14,280	13,780	19,410	19,000	19,130	18,730	18,470	+ 3,670
1956	18,870	18,070	17,560	17,190	16,820	16,110	15,540	21,280	19,830	18,730	17,310	16,460	- 1,750
1957	18,870	18,070	18,340	17,940	18,340	18,470	21,720	40,560	37,990	38,670	36,410	35,980	+19,520

234. Colorado River at Ballinger, Tex.

Location.--Lat 31°43'50", long 99°56'25", at bridge on U. S. Highway 83 in Ballinger, Runnels County, 2,000 ft upstream from Elm Creek and at mile 659.

Drainage area.--16,840 sq mi, approximately, of which 11,600 sq mi is probably noncontributing.

Supplemental records available.--Gage-height records collected in this vicinity from 1903-29 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,593.74 ft above mean sea level, datum of 1929. Prior to Nov. 29, 1930, staff, chain, or Mott gages at several sites upstream within 1 mile of present site at various datums.

Average discharge.--50 years (1907-57), 379 cfs (274,400 acre-ft per year).

Extremes.--1907-57: Maximum discharge, 75,400 cfs Sept. 18, 1936 (gage height, 28.6 ft); no flow at times.
Maximum stage since at least 1882, about 36 ft some time in 1884, present site and datum, from information by local residents. Flood of Aug. 6, 1906, reached a stage of about 32 ft, present site and datum, from floodmarks (backwater from Elm Creek).

Remarks.--Flow slightly regulated by Lake Colorado City since 1949, Lake J. B. Thomas since 1952, and Oak Creek Reservoir since 1953. (See elsewhere in this report.) Diversions above station for irrigation, municipal and industrial uses.

Monthly and yearly mean discharge, in cubic feet per second, of Colorado River at Ballinger, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	-	-	-	-	-	-	-	-	466	638	250	157	-
1908	1,280	819	61.7	8.41	0.17	18.7	1,520	1,190	28.7	704	48.8	211	492
1909	26.8	17.8	20.5	3.03	2.50	0	0	381	366	33.7	107	198	96.7
1910	212	+332	616	25.9	25	6.66	65.7	222	40.9	158	33	598	195
1911	205	51.9	75.4	45.7	1,970	79	143	159	31.8	1,000	646	527	401
1912	61	14.4	906	31.2	184	60.8	84.3	837	596	133	252	76.2	271
1913	716	53.7	51.4	10.9	18.0	48.0	571	1,840	969	1,780	165	1,550	651
1914	1,940	2,160	2,770	28.6	4.85	3.06	489	2,770	961	169	1,630	75.4	1,090
1915	494	205	72.5	71.2	30.2	39	1,920	372	286	71	728	870	429
1916	197	31.5	19.1	12.0	10.0	2.87	213	77.5	9.19	.19	7.13	331	70.0
1917	283	13.5	4.75	3.83	4.45	22.4	74.3	130	202	32.1	33.5	319	93.6
1918	.18	1.23	.36	.83	.38	.70	0	224	765	1.10	42.9	354	115
1919	2,380	295	62.5	14.5	5.71	1,100	645	730	3,280	1,990	983	1,020	1,050
1920	1,880	198	51.6	50.1	39.2	19.3	6.64	1,330	184	11.1	3,200	992	671
1921	179	129	29.6	29.9	18.1	31.1	24.5	64.8	959	6.44	0	76.4	128
1922	0	0	1.0	.5	.5	18.7	4,360	3,770	999	120	9.03	10.6	774
1923	2.0	78.2	10.5	69.9	49.4	15.6	3,180	409	448	178	111	249	396
1924	674	473	66.8	29.0	21.7	19.9	529	1,200	150	1.01	70.8	291	295
1925	432	5.89	30.0	4.14	5.55	4.64	1,380	1,270	602	55.4	566	1,980	527
1926	284	27.1	10.5	13.3	5.79	671	1,140	337	954	192	739	2,060	535
1927	838	44.0	349	27.7	58.0	68.9	282	78.1	159	369	165	617	256
1928	195	5.08	4.62	10.6	6.14	4.53	12.1	2,670	430	3,020	660	171	606
1929	11.9	68.3	15.4	13.1	13.4	171	65.8	1,790	90.2	221	4.05	652	262
1930	507	14.1	7.05	3.47	4.95	31.0	344	1,740	2,100	24.7	224	7.42	419
1931	1,020	50.3	508	17.6	201	32.1	33.7	50.9	20.8	56.3	18.1	35.6	172
1932	1,340	433	44.2	44.0	174	33.6	633	2,400	1,430	458	564	4,120	969
1933	188	69.8	253	99.2	53.7	70.2	25.9	237	18.5	47.8	365	141	132
1934	240	91.3	16.8	15.9	8.18	59.1	280	83.0	43.6	9.03	53.9	61.9	80.4
1935	3.66	224	6.51	.85	291	18.1	521	3,873	3,226	1,101	314	3,448	1,084
1936	89.9	74	52.3	18.8	13.5	124	20.6	345	97.2	86.6	3.33	6,806	636
1937	351	98.0	70.8	49.4	40.1	46.8	29.9	248	475	61.9	423	102	167
1938	22.2	17.8	18.1	153	551	153	566	254	1,202	1,533	88.7	8.43	378
1939	22.4	10.0	6.41	241	12.4	174	63.9	981	2,771	208	674	11.5	432
1940	41.3	16.9	9.74	7.23	16.0	11.2	230	210	1,243	213	435	156	215
1941	58.4	60.6	22.1	8.52	95.0	402	1,847	2,919	1,941	616	429	170	716
1942	1,765	169	125	51.6	34.6	26.4	129	375	40.4	2.76	985	621	364
1943	370	65.0	75.4	44.9	22.4	50.3	22.6	208	147	123	.26	5.82	95.6
1944	.86	2.23	2.08	5.47	63.1	64.1	1.78	764	178	803	190	190	190
1945	301	17.3	22.3	24.2	14.1	27.0	175	8.38	154	2,680	259	103	320
1946	533	18.2	16.5	22.6	13.6	7.26	8.67	381	49.8	8.26	108	886	172
1947	459	58.0	323	22.0	8.53	11.7	173	2,983	341	50.0	19.5	109	385
1948	482	41.4	155	10.9	239	80.5	22.3	264	484	2,731	100	113	397
1949	152	32.6	8.88	13.5	24.8	16.0	659	1,887	598	52.1	61.9	223	312
1950	103	10.8	10.7	8.49	4.83	1.26	218	712	160	165	142	499	170
1951	16.4	.54	.57	.42	.75	1.24	1.14	306	528	190	360	19.4	119
1952	.55	.48	.34	.33	.30	.14	113	38.6	163	0	0	65.8	31.5
1953	1.56	9.86	3.29	.42	.05	38.5	3.91	345	.01	127	1,224	75.3	155
1954	607	46.4	1.81	2.71	.86	0	1,432	1,993	272	52.1	.01	0	370
1955	0	.74	0	0	18.7	4.50	12.6	1,476	167	169	73.9	169	177
1956	208	.68	.36	.64	1.06	0	70.7	493	38.3	51.6	1.52	2.97	73.3
1957	546	46.8	81.5	1.27	102	62.8	972	5,066	2,392	83.6	61.3	286	813

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	-	-	-	-	-	-	-	-	27,700	39,200	15,400	9,340	-
1908	78,700	48,700	3,790	517	10	1,150	90,400	73,200	1,710	43,300	3,000	12,600	357,000
1909	1,650	1,060	1,260	186	139	0	0	23,400	21,800	2,070	6,580	11,800	69,900
1910	13,000	19,700	37,900	1,590	1,390	410	3,910	13,600	2,430	9,720	2,030	35,600	141,000
1911	12,600	3,090	4,640	2,810	109,400	4,860	8,510	9,780	1,890	61,500	39,700	31,400	290,000
1912	3,750	857	55,700	1,920	10,600	3,740	5,020	51,500	35,500	8,180	15,500	4,530	197,000
1913	44,000	3,200	3,160	670	1,000	2,950	34,000	113,000	57,700	109,000	10,100	92,200	471,000
1914	119,000	129,000	170,000	1,760	269	188	29,100	170,000	57,200	10,400	100,000	4,490	791,000
1915	30,400	12,200	4,480	4,380	1,680	2,400	114,000	22,900	17,000	4,370	44,800	51,800	310,000
1916	12,100	1,870	1,170	738	575	176	12,700	4,770	547	12	438	19,700	54,800
1917	17,400	803	292	236	247	1,380	4,420	7,990	12,000	1,970	2,060	19,000	67,800
1918	11	73	22	51	21	43	0	13,800	45,500	68	2,640	21,100	83,300
1919	146,000	17,600	3,840	892	317	67,600	38,400	44,900	195,000	122,000	60,400	60,700	758,000
1920	116,000	11,800	3,170	3,080	2,250	1,190	395	81,800	10,900	682	197,000	59,000	487,000
1921	11,000	7,680	1,820	1,840	1,000	1,910	1,460	3,980	57,100	396	0	4,550	92,700
1922	0	0	61	30	28	1,150	259,000	232,000	59,500	7,380	555	631	560,000
1923	123	4,660	644	4,300	2,740	957	189,000	25,100	26,700	11,000	6,840	14,800	287,000
1924	41,400	28,100	4,110	1,790	1,250	1,230	31,500	74,100	8,920	62	4,360	17,300	214,000
1925	26,500	350	1,850	254	308	285	82,300	77,800	35,800	3,410	34,800	118,000	382,000

Monthly and yearly runoff, in acre-feet, of Colorado River at Ballinger, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	17,500	1,610	647	817	321	41,200	67,900	20,700	56,800	11,800	45,400	122,000	387,000
1927	51,500	2,620	21,500	1,700	3,220	4,230	16,800	4,800	9,490	22,700	10,200	36,700	185,000
1928	12,000	302	284	652	353	279	720	164,000	25,600	186,000	40,600	10,200	441,000
1929	732	4,060	947	806	744	10,500	3,920	110,000	5,370	13,600	249	38,800	190,000
1930	31,200	839	433	213	275	1,910	20,500	107,000	125,000	1,520	13,800	442	303,000
1931	62,700	2,990	31,200	1,080	11,200	1,970	2,010	3,130	1,240	3,460	1,110	2,120	124,000
1932	82,400	25,800	2,720	2,710	10,000	2,070	37,700	148,000	85,100	28,200	34,700	245,000	704,000
1933	11,600	4,150	15,600	6,100	2,980	4,320	1,540	14,600	1,100	2,940	22,400	8,390	95,700
1934	14,800	5,430	1,030	978	454	3,630	16,700	5,100	2,590	555	3,310	3,680	58,300
1935	225	13,340	400	53	16,150	1,120	30,990	238,100	192,000	67,670	19,290	205,200	784,500
1936	5,530	4,400	3,220	1,160	776	7,600	1,230	21,230	5,780	5,320	205	405,000	461,500
1937	21,560	5,830	4,360	3,030	2,230	2,880	1,780	15,250	28,240	3,810	26,030	6,090	121,100
1938	1,360	1,060	1,110	9,420	30,600	9,400	33,670	15,590	71,520	94,280	5,460	502	274,000
1939	1,380	598	394	14,810	686	10,720	3,800	60,290	164,900	12,780	41,420	684	312,500
1940	2,540	1,010	599	444	918	691	13,700	12,900	73,980	13,090	26,720	9,280	155,900
1941	3,590	3,610	1,360	524	5,270	24,750	109,900	179,500	115,500	37,860	26,370	10,120	518,400
1942	108,500	10,050	7,660	3,180	1,920	1,620	7,650	23,040	2,400	170	60,570	36,950	263,700
1943	22,750	3,870	4,630	2,760	1,250	3,090	1,340	12,790	8,760	7,570	16	346	69,170
1944	53	133	128	337	3,630	3,940	106	46,970	10,560	49,350	11,680	11,300	138,200
1945	18,350	1,030	1,370	1,490	785	1,660	10,390	515	9,170	164,800	15,920	6,120	231,800
1946	32,790	1,080	1,010	1,390	758	447	516	23,420	2,960	508	6,660	52,700	124,200
1947	28,190	3,450	19,880	1,350	474	718	10,320	183,400	20,290	3,080	1,200	6,510	278,900
1948	29,610	2,460	9,500	671	13,750	4,950	1,330	16,250	28,810	167,900	6,180	6,710	288,100
1949	9,360	1,940	546	832	1,370	982	39,230	116,000	35,590	3,200	3,800	13,290	226,100
1950	6,350	640	656	522	268	78	12,970	43,800	9,540	10,150	8,730	29,680	123,400
1951	1,010	32	35	26	41	76	68	18,800	31,430	11,700	22,130	1,150	86,500
1952	34	28	21	20	17	8.3	6,750	2,370	9,710	0	0	3,910	22,870
1953	96	587	202	26	2.8	2,370	232	21,220	.4	7,840	75,240	4,480	112,300
1954	36,350	2,760	111	167	48	0	85,190	122,500	16,160	3,200	.4	0	266,500
1955	0	44	0	0	1,040	276	749	90,760	9,950	10,390	4,540	10,040	127,800
1956	12,770	39	22	38	61	0	4,210	30,320	2,280	3,170	94	177	53,180
1957	33,600	2,780	5,010	78	5,640	3,860	57,820	311,600	142,300	5,140	3,770	17,010	588,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1907	850	a4,595	June 12, July 10, 1907	0	-	-	-	-
1908	850	a23,400	Apr. 19, 1908	0	492	357,000	317	230,000
1909	850	a4,860	May 24, 1909	0	96.7	69,900	189	137,000
1910	850	a14,900	Dec. 1, 1909	1.0	195	141,000	126	91,000
1911	850	a18,300	Feb. 19, 1911	0	401	290,000	456	330,000
1912	850	a23,100	Dec. 10, 1911	5.5	271	197,000	257	187,000
1913	850	a23,700	May 4, 1913	1.0	651	471,000	1,158	839,000
1914	850	26,300	Nov. 23, 1913	1.0	1,090	791,000	582	420,000
1915	850	a13,500	Apr. 28, 1915	16	429	310,000	385	278,000
1916	438, 1512	b8,600	Sept. 25, 1916	0	70.0	54,800	80.0	58,200
1917	458, 1512	11,800	Oct. 17, 1916	0	93.6	67,800	68.2	49,400
1918	478	b12,800	June 4, 1918	0	115	83,300	347	251,000
1919	508, 1512	b21,200	July 21, 1919	0	1,050	758,000	996	721,000
1920	508, 1512	b18,400	Oct. 7, 1919	0	671	487,000	519	377,000
1921	528	15,100	June 7, 1921	0	128	92,700	99.8	72,300
1922	548, 1512	38,800	Apr. 26, 1922	0	774	560,000	781	566,000
1923	568, 1512	30,500	Apr. 25, 1923	.5	396	287,000	490	355,000
1924	588, 1512	18,900	Apr. 25, 1924	.5	295	214,000	233	169,000
1925	608, 1512	20,900	Apr. 27, 1925	.9	527	382,000	514	373,000
1926	628	26,500	Sept. 7, 1926	1.2	535	387,000	612	443,000
1927	648	13,700	Oct. 14, 1926	2.8	256	185,000	169	122,000
1928	668	32,500	July 27, 1928	1.0	606	441,000	597	434,000
1929	688	26,300	May 26, 1929	.8	262	190,000	299	216,000
1930	703	42,100	June 14, 1930	.4	419	303,000	375	368,000
1931	718	14,300	Oct. 13, 1930	1.0	172	124,000	191	138,000
1932	733	26,200	Sept. 2, 1932	1.0	969	704,000	860	625,000
1933	748	4,700	May 29, 1933	1.3	132	95,700	118	85,600
1934	763	5,180	Oct. 12, 1933	0	80.4	58,300	70.4	50,940
1935	788	45,300	May 18, 1935	0	1,084	784,500	1,080	783,700
1936	808	75,400	Sept. 18, 1936	.5	636	461,500	661	480,100
1937	828	9,110	Aug. 23, 1937	3.4	167	121,100	128	92,870
1938	858	21,100	July 26, 1938	3.4	378	274,000	377	272,800
1939	878	29,200	June 23, 1939	2.0	432	312,500	434	314,200
1940	898	21,800	June 30, 1940	1.5	215	155,900	221	160,300

a Maximum daily.
b Maximum observed

Yearly discharge, in cubic feet per second, of Colorado River at Ballinger, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	20,000	May 21, 1941	0.9	716	518,400	879	636,000
1942	958	14,000	Oct. 16, 1941, Aug. 27, 1942	.6	364	263,700	233	168,800
1943	978	5,550	Oct. 18, 1942	0	95.6	69,170	52.8	38,240
1944	1008	15,400	July 24, 1944	.7	190	138,200	219	158,800
1945	1038	25,200	July 10, 1945	.8	320	231,800	339	245,700
1946	1058	14,400	Sept. 15, 1946	0	172	124,200	195	140,900
1947	1088	21,200	May 12, 1947	2.1	385	278,900	371	268,900
1948	1118	28,300	July 9, 1948	1.2	397	288,100	356	258,400
1949	1148	16,400	May 8, 1949	1.9	312	226,100	307	221,900
1950	1178	8,020	May 13, 1950	.1	170	123,400	161	116,800
1951	1212	10,500	May 25, 1951	0	119	86,500	118	85,500
1952	1242	7,700	June 1, 1952	0	31.5	22,870	32.6	23,670
1953	1282	35,200	Aug. 20, 1953	0	155	112,300	209	150,600
1954	1342	(c)	Apr. 12, 1954	0	370	266,500	314	227,300
1955	1392	(c)	May 19, 1955	0	177	127,800	194	140,600
1956	1442	14,000	May 1, 1956	0	73.3	53,180	113	81,740
1957	1512	27,000	May 11, 1957	0	813	588,600	-	-

c Not determined; stage affected by backwater from Elm Creek.

235. Elm Creek at Ballinger, Tex.

Location.--Lat 31°45'00", long 99°56'50", 1,000 ft upstream from storage dam at Ballinger, Runnels County, and 1¼ miles upstream from mouth.

Drainage area.--458 sq mi.

Gage.--Water-stage recorder and concrete dam control. Datum of gage is 1,617.72 ft above mean sea level, datum of 1929.

Average discharge.--25 years (1932-57), 51.3 cfs (37,140 acre-ft per year).

Extremes.--1932-57: Maximum discharge, 38,500 cfs May 1, 1956 (gage height, 11.90 ft); no flow at times.
Flood in August 1906 reached a stage of about 14.6 ft, affected by backwater from Colorado River, from information by local residents.

Remarks.--Low flow affected by diversion of Ballinger city pumping plant which diverts water for a part of the municipal supply. Only the flow over the dam is recorded. An unknown amount of low flow is stored in the reservoir at gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	1.11	492	365	623	13.0	318	-
1933	4.97	6.60	28.9	13.1	6.18	5.05	1.38	189	2.54	0	0	.12	21.8
1934	0	1.06	0	0	0	28.8	120	.17	0	0	13.3	10.8	14.4
1935	0	0	0	0	84.0	0	290	822	605	92.9	10.9	1,248	261
1936	11.2	3.74	2.71	.51	.48	.33	2.63	38.5	.22	38.4	0	401	41.2
1937	31.1	5.85	6.34	4.50	3.52	7.77	1.15	.01	84.0	8.98	43.9	1.23	16.6
1938	0	0	0	2.05	.07	13.0	118	134	3.85	63.5	.01	0	28.1
1939	0	0	0	0	0	9.37	0	360	523	6.86	205	0	92.4
1940	0	0	0	0	23.8	0	85.2	156	92.9	.64	109	16.3	40.3
1941	0	17.4	.003	0	32.5	21.6	286	500	492	7.11	24.7	6.55	115
1942	288	28.3	13.0	8.18	5.11	1.00	220	211	13.7	13.0	9.03	16.4	69.3
1943	214	5.93	7.78	2.19	.64	11.0	1.00	12.2	0	9.86	0	0	22.4
1944	0	0	0	0	23.0	2.82	0	68.5	.57	14.6	59.5	16.9	15.6
1945	113	.04	.38	.21	.39	1.48	67.9	10.3	69.6	182	0	0	37.5
1946	.15	0	0	0	0	0	0	459	23.4	.98	.91	75.6	47.3
1947	0	17.2	.92	.17	0	.16	0	46.2	42.1	0	0	0	8.91
1948	147	1.47	57.1	6.85	.29	.02	16.2	5.69	16.4	20.9	3.73	.09	23.3
1949	17.9	0	0	0	0	0	17.6	135	23.2	7.92	0	.61	17.1
1950	14.2	.07	.88	.003	0	0	0	5.32	.01	.20	.36	83.2	8.63
1951	0	0	0	0	0	0	0	282	150	0	37.0	.17	39.4
1952	0	0	0	0	0	0	18.6	34.7	30.8	0	0	151	19.3
1953	0	.39	0	0	0	.86	0	124	0	30.3	131	3.08	24.7
1954	53.1	.66	0	0	0	0	538	497	15.0	0	0	0	92.2
1955	0	0	0	0	0	0	0	450	41.9	10.2	13.3	176	58.1
1956	64.9	0	0	0	0	0	40.5	780	.01	0	0	0	74.9
1957	8.54	7.55	0	0	0	0	96.9	749	245	1.50	0	8.97	93.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	66	30,300	21,700	38,300	799	18,900	-
1933	306	393	1,780	806	343	311	82	11,600	151	0	0	7.1	15,800
1934	0	63	0	0	0	1,770	7,140	10	0	0	818	643	10,400
1935	0	0	0	0	4,670	0	17,240	50,540	36,000	5,710	669	74,280	189,100

Monthly and yearly runoff, in acre-feet, of Elm Creek at Ballinger, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	686	222	167	32	27	20	156	2,360	13	2,360	0	23,850	28,890
1937	1,920	348	390	276	196	478	69	.8	5,000	552	2,700	73	12,000
1938	0	0	0	126	3.8	796	7,040	8,250	229	3,900	.8	0	20,350
1939	0	0	0	0	0	576	0	22,110	31,140	422	12,620	0	66,870
1940	0	0	0	0	1,370	0	5,070	9,580	5,530	39	6,700	971	29,260
1941	0	1,030	.2	0	1,810	1,330	17,010	30,730	29,280	437	1,520	390	83,540
1942	17,690	1,680	797	503	284	62	13,070	12,960	816	800	555	977	50,190
1943	13,150	353	478	134	36	677	60	749	0	606	0	0	16,240
1944	0	0	0	0	1,320	174	0	4,210	34	895	3,660	1,010	11,300
1945	6,940	2.4	23	13	22	91	4,040	635	4,140	11,220	0	0	27,130
1946	8.9	0	0	0	0	0	0	28,190	1,390	60	56	4,500	34,200
1947	0	1,030	57	11	0	9.9	0	2,840	2,510	0	0	0	6,460
1948	9,070	87	3,510	421	17	1.2	964	350	973	1,280	229	5.2	16,910
1949	1,100	0	0	0	0	0	1,050	8,300	1,380	487	0	36	12,350
1950	875	4.2	54	.2	0	0	0	327	.6	12	22	4,950	6,240
1951	0	0	0	0	0	0	0	17,320	8,950	0	2,280	10	28,560
1952	0	0	0	0	0	0	1,100	2,130	1,830	0	0	8,960	14,020
1953	0	29	0	0	0	53	0	7,650	0	1,860	8,070	183	17,840
1954	3,270	39	0	0	0	0	32,000	30,570	892	0	0	0	66,770
1955	0	0	0	0	0	0	0	27,680	2,490	629	819	10,440	42,060
1956	3,990	0	0	0	0	0	2,410	47,950	.8	0	0	0	54,350
1957	525	449	0	0	0	0	5,760	46,030	14,600	92	0	534	67,990

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	733	-	-	0	-	-	-	-
1933	748	4,760	May 15, 1933	0	21.8	15,800	18.5	13,400
1934	763	1,940	Apr. 4, 1934	0	14.4	10,400	14.3	10,350
1935	788, 1442	31,000	Sept. 3, 1935	0	261	189,100	263	190,200
1936	808	8,600	Sept. 17, 1936	0	41.2	29,890	43.4	31,480
1937	828	2,580	June 6, 1937	0	16.6	12,000	12.9	9,340
1938	858	5,180	Apr. 18, 1938	0	28.1	20,350	28.1	20,350
1939	878	15,600	June 19, 1939	0	92.4	66,870	92.4	66,870
1940	898	9,830	May 22, 1940	0	40.3	29,260	41.7	30,290
1941	928	12,200	May 21, 1941	0	115	83,540	142	102,700
1942	958	4,390	Apr. 8, 1942	0	69.3	50,190	60.8	44,010
1943	978	6,060	Oct. 17, 1942	0	22.4	16,240	3.12	2,260
1944	1008	3,540	Aug. 18, 1944	0	15.6	11,300	25.2	18,270
1945	1038	7,060	July 7, 1945	0	37.5	27,130	27.9	20,170
1946	1058, 1442	32,800	May 14, 1946	0	47.3	34,200	48.7	35,290
1947	1088	1,580	June 13, 1947	0	8.91	6,460	24.9	18,040
1948	1118	4,330	Oct. 25, 1947	0	23.3	16,910	7.36	5,340
1949	1148	2,410	May 8, 1949	0	17.1	12,350	16.8	12,190
1950	1178	8,510	Sept. 5, 1950	0	8.63	6,240	7.34	5,310
1951	1212	8,010	May 22, 1951	0	39.4	28,560	39.4	28,560
1952	1242	8,600	Sept. 10, 1952	0	19.3	14,020	19.4	14,050
1953	1282	8,140	Aug. 19, 1953	0	24.7	17,840	29.2	21,120
1954	1342	31,400	Apr. 12, 1954	0	92.2	66,770	87.7	63,460
1955	1392	15,600	May 18, 1955	0	58.1	42,060	63.6	46,050
1956	1442	38,500	May 1, 1956	0	74.9	54,350	70.7	51,330
1957	1512	7,060	June 2, 1957	0	93.9	67,990	-	-

236. South Concho Irrigation Co.'s canal at Christoval, Tex.

Location.--Lat 31°13', long 100°30', at Christoval, Tom Green County, 85 ft downstream from point of diversion, and 100 ft downstream from bridge on U. S. Highway 277.

Gage.--Water-stage recorder. Datum of gage is 2,017.02 ft above mean sea level, datum of 1929.

Average discharge.--17 years (1940-57), 8.46 cfs (6,120 acre-ft per year).

Extremes.--1939-57: Maximum daily diversion for irrigation (excluding flood flow), 21 cfs June 27, 28, 1941, and Sept. 18, 21, 1942; no flow Apr. 26 to July 9, 1957.

Remarks.--Canal diverts water from right bank of South Concho River, 600 ft upstream from station at Christoval, for irrigation downstream from station. Flood flow is excluded from records.

Monthly and yearly mean discharge, in cubic feet per second, of South Concho Irrigation Co.'s canal at Christoval, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	12.5	8.83	7.88	7.89	9.82	14.4	13.2	12.4	14.1	15.8	15.3	-
1941	15.0	14.1	14.0	14.4	8.00	8.08	9.68	12.6	14.8	18.9	18.2	7.98	13.0
1942	6.63	6.00	4.46	8.29	12.8	17.1	14.2	13.4	15.9	17.6	16.3	15.2	12.3
1943	10.4	7.68	13.4	12.8	12.9	10.8	14.5	18.6	15.2	15.9	16.9	17.4	13.9
1944	17.1	16.7	13.7	9.69	9.23	8.66	8.13	11.4	12.2	13.1	15.8	17.5	12.8
1945	12.9	10.7	9.21	9.22	8.52	7.86	12.3	13.0	11.7	14.7	13.3	11.9	11.3
1946	12.9	14.0	14.0	14.0	12.7	11.2	11.0	11.2	10.6	13.7	12.1	13.0	12.5
1947	13.3	9.21	5.50	4.45	9.34	7.15	7.54	8.89	10.8	11.6	11.2	10.2	9.10
1948	10.1	10.6	9.36	6.46	6.01	7.63	9.02	7.18	8.73	10.9	9.43	8.84	8.70
1949	10.7	9.96	9.74	8.67	7.70	8.26	7.83	8.29	9.61	10.0	10.7	10.2	9.32
1950	8.73	10.0	9.84	9.14	7.31	7.50	8.34	7.75	8.26	7.33	8.37	7.41	8.34
1951	7.41	8.46	8.78	8.17	8.17	6.74	6.16	4.72	7.34	6.12	5.86	7.18	7.08
1952	6.34	6.84	6.73	7.17	6.88	5.57	4.16	5.36	5.47	5.63	4.44	4.47	5.75
1953	1.03	.68	.66	.66	.47	.43	.44	.33	.40	.77	1.16	9.26	1.35
1954	7.66	6.26	7.42	7.17	6.56	4.73	3.72	3.50	3.62	3.40	4.00	2.84	5.07
1955	2.87	3.63	4.19	5.28	5.94	4.38	4.88	5.74	6.93	8.10	4.49	5.83	5.18
1956	6.89	6.07	5.97	5.30	5.17	2.47	2.97	4.52	5.31	4.21	4.49	3.73	4.76
1957	3.47	4.95	5.29	5.59	4.38	2.03	3.25	0	0	2.95	4.18	4.56	3.38

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	543	484	454	604	857	811	738	865	974	912	-
1941	922	839	861	883	444	497	576	778	879	1,160	1,120	475	9,430
1942	408	357	275	510	710	1,050	847	827	944	1,080	1,000	907	8,920
1943	640	457	822	789	716	663	864	1,150	906	976	1,040	1,030	10,050
1944	1,050	996	843	596	531	533	484	700	724	803	966	1,040	9,270
1945	793	635	566	567	473	484	730	797	698	904	819	706	8,170
1946	791	833	861	863	704	686	656	686	633	841	746	774	9,070
1947	819	548	338	274	518	439	449	547	642	716	689	608	6,590
1948	622	633	575	397	346	469	537	441	519	672	580	526	6,320
1949	659	593	599	533	428	508	466	510	572	617	660	606	6,750
1950	537	595	605	562	406	461	496	477	492	451	515	441	6,040
1951	456	504	540	502	454	415	367	290	437	376	360	427	5,130
1952	390	407	414	441	396	343	248	330	325	346	273	266	4,180
1953	63	40	41	41	26	27	26	20	24	47	71	551	977
1954	471	372	456	441	364	291	221	215	216	209	246	169	3,670
1955	177	216	257	324	330	269	290	353	412	499	276	347	3,750
1956	423	361	367	326	297	152	177	278	316	259	276	222	3,450
1957	214	295	325	344	243	125	194	0	0	182	257	271	2,450

237. South Concho River at Christoval, Tex.

Location.--Lat 31°13', long 100°30', at Panhandle & Santa Fe Railway bridge at Christoval, Tom Green County, about 700 ft downstream from U. S. Highway 277, and 12 miles upstream from Lake Nasworthy.

Drainage area.--434 sq mi.

Gage.--Water-stage recorder. Concrete control since August 1940. Datum of gage is 2,010.22 ft above mean sea level, datum of 1929. Prior to July 17, 1930, staff gage at same site and datum.

Average discharge.--27 years (1930-57), 37.9 cfs (27,440 acre-ft per year).

Extremes.--1930-57: Maximum discharge, 100,000 cfs July 23, 1938 (gage height, 21.95 ft, from floodmarks), from rating curve extended above 9,000 cfs on basis of slope-area measurement at gage height 20.5 ft; no flow Feb. 28, Mar. 1, 1955.
Maximum stage since at least 1882, about 23 ft Aug. 6, 1906, from information by local residents.

Remarks.--Low flow materially affected by diversion 600 ft upstream into South Concho Irrigation Co.'s Canal.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	5.30	24.1	9.42	165	7.31	4.75	4.07	-
1931	851	56.5	42.4	39.7	76.8	42.2	29.1	23.2	17.1	19.9	22.5	10.3	104
1932	9.94	9.98	12.7	18.9	14.6	16.0	12.0	66.6	25.5	83.8	16.0	55.2	28.5
1933	46.1	42.1	34.7	32.0	30.0	27.8	18.8	17.8	11.3	9.63	10.0	8.00	24.0
1934	7.71	10.7	7.87	8.50	10.9	12.4	31.3	9.49	3.10	2.33	29.8	5.64	11.6
1935	4.64	5.91	4.90	4.36	9.68	5.63	9.46	126	93.2	8.57	21.6	157	37.5
1936	31.2	23.0	19.6	19.4	19.0	18.0	15.5	8.36	4.92	6.64	3.58	2,352	207
1937	52.3	33.1	33.4	36.6	32.9	31.6	23.0	93.9	16.1	14.5	11.5	15.8	33.0
1938	15.0	13.4	74.5	23.4	27.5	25.0	16.1	19.9	8.95	1,445	54.3	48.0	150
1939	29.6	21.8	24.6	27.2	31.4	25.7	25.4	21.3	17.6	18.1	14.7	10.8	22.3
1940	11.3	15.4	18.8	19.1	20.1	19.7	23.6	15.3	47.1	26.2	20.3	14.6	20.9

Monthly and yearly mean discharge, in cubic feet per second, of South Concho River at Christoval, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	12.0	12.4	13.0	13.1	18.2	25.0	29.4	71.4	39.5	25.9	18.7	31.7	25.9
1942	62.1	37.9	36.5	31.3	25.8	19.7	25.2	23.4	15.0	10.1	76.5	69.0	36.1
1943	43.3	40.7	30.1	25.4	23.0	24.0	18.5	15.5	15.0	10.3	8.73	8.42	21.9
1944	9.34	10.3	12.4	17.4	19.4	19.3	18.0	12.4	12.0	9.21	6.18	7.37	12.8
1945	11.8	13.6	14.4	13.7	13.8	14.1	12.9	9.52	5.01	102	11.2	8.34	19.3
1946	20.9	14.8	11.5	9.11	9.31	9.43	8.16	6.68	44.7	10.2	5.48	56.8	17.2
1947	12.2	22.8	17.7	22.1	16.1	13.8	14.4	11.2	30.3	12.3	6.93	4.57	15.3
1948	4.49	4.79	4.50	7.92	7.82	5.40	5.98	17.0	5.40	12.6	4.22	11.6	7.65
1949	9.30	6.58	5.02	6.60	7.56	38.5	48.6	48.3	22.1	9.29	5.79	17.2	18.8
1950	116	25.4	17.2	15.2	14.6	12.1	7.45	7.25	6.46	5.55	6.37	6.24	20.2
1951	5.88	4.50	4.26	4.38	5.19	6.35	6.79	7.54	3.67	3.88	36.5	2.48	7.67
1952	3.90	3.23	3.36	3.20	2.50	3.46	6.28	5.14	3.93	1.08	1.08	1.26	3.20
1953	3.88	5.13	6.03	6.61	7.50	13.3	7.09	6.05	3.42	16.9	19.5	15.6	9.28
1954	19.3	5.44	3.97	2.23	2.10	3.86	2.88	2.83	1.08	1.13	1.22	.85	3.94
1955	.54	.51	.57	.40	.35	.39	1.09	13.9	26.8	94.8	9.44	6.71	13.1
1956	3.26	2.31	2.35	1.49	2.35	2.83	32.4	6.54	4.58	1.61	3.38	.89	5.30
1957	.90	.70	.57	.92	2.12	31.0	479	1,116	56.6	30.5	14.6	11.3	147

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	326	1,430	579	9,800	449	292	242	-
1931	52,320	3,360	2,610	2,440	4,270	2,590	1,730	1,430	1,020	1,220	1,380	613	74,980
1932	611	594	781	1,160	840	984	714	4,100	1,520	5,160	984	3,280	20,730
1933	2,830	2,510	2,130	1,970	1,670	1,710	1,120	1,090	672	592	615	476	17,400
1934	474	637	484	523	605	762	1,860	584	184	143	1,830	336	8,420
1935	285	352	301	268	537	346	563	7,750	5,550	527	1,330	9,330	27,140
1936	1,920	1,370	1,210	1,190	1,090	1,110	924	514	293	408	220	140,000	150,200
1937	3,220	1,970	2,050	2,250	1,830	1,940	1,370	5,770	956	891	707	942	23,900
1938	920	797	4,580	1,440	1,530	1,540	958	1,230	532	88,830	3,340	2,860	108,600
1939	1,820	1,300	1,510	1,670	1,740	1,580	1,510	1,310	1,050	1,110	902	642	16,140
1940	695	918	1,160	1,170	1,160	1,210	1,400	938	2,800	1,610	1,250	869	15,180
1941	740	740	799	803	1,010	1,540	1,750	4,390	2,350	1,590	1,150	1,890	18,750
1942	3,820	2,260	2,250	1,930	1,430	1,210	1,500	1,440	891	618	4,710	4,110	26,170
1943	2,660	2,420	1,850	1,560	1,280	1,480	1,100	954	891	635	537	501	15,870
1944	574	612	763	1,070	1,120	1,190	1,070	764	714	566	380	439	9,260
1945	725	810	887	845	768	868	768	586	298	6,250	692	496	13,990
1946	1,280	881	710	560	517	580	486	411	2,660	630	337	3,380	12,430
1947	750	1,360	1,090	1,360	897	847	859	690	1,810	756	426	272	11,120
1948	276	285	277	487	450	332	356	1,040	321	777	259	689	5,550
1949	572	392	308	406	420	2,370	2,890	2,970	1,320	571	356	1,020	13,600
1950	7,160	1,510	1,060	936	809	742	444	445	385	341	392	371	14,600
1951	361	268	262	269	288	390	404	464	218	239	2,240	148	5,550
1952	240	192	207	197	144	213	374	316	234	67	66	75	2,320
1953	239	305	371	406	417	815	422	372	204	1,040	1,200	929	6,720
1954	1,190	324	244	137	116	238	171	174	64	69	75	51	2,850
1955	33	31	35	25	20	24	65	853	1,590	5,830	580	399	9,480
1956	200	137	144	91	135	174	1,930	402	273	99	208	53	3,850
1957	55	42	35	57	118	1,910	28,520	68,590	3,370	1,870	895	673	106,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	718,808	-	-	-	-	-	-	-
1931	718,808	76,400	Oct. 13, 1930	3.4	104	74,980	25.8	18,680
1932	733,808	13,700	July 3, 1932	8.6	28.5	20,730	36.1	26,200
1933	748	278	May 14, 1933	5.0	24.0	17,400	15.9	11,500
1934	763	3,000	Aug. 24, 1934	2.1	11.6	8,420	10.7	7,760
1935	788	8,740	Sept. 5, 1935	2.8	37.5	27,140	42.4	30,700
1936	808	80,100	Sept. 17, 1936	3.0	207	150,200	211	153,000
1937	828	13,000	May 10, 1937	8.8	33.0	23,900	31.7	22,950
1938	858	100,000	July 23, 1938	6.6	150	108,600	148	106,900
1939	878	178	July 13, 1939	7.4	22.3	16,140	19.7	14,280
1940	898	4,600	June 9, 1940	5.1	20.9	15,180	20.2	14,690
1941	928	1,980	May 3, 1941	10	25.9	18,750	34.2	24,800
1942	958	9,450	Aug. 23, 1942	8.5	36.1	26,170	34.3	24,840
1943	978	138	May 23, 1943	7.3	21.9	15,870	15.0	10,890
1944	1008	24	Jan. 1, 1944	5.4	12.8	9,260	13.4	9,740
1945	1038	9,970	July 6, 1945	3.8	19.3	13,990	20.0	14,440
1946	1058	9,970	Sept. 26, 1946	3.8	17.2	12,430	17.6	12,760
1947	1088	1,720	June 18, 1947	3.7	15.3	11,120	12.1	8,760
1948	1118	1,400	May 26, 1948	1.8	7.65	5,550	8.25	5,980
1949	1148	3,640	Mar. 21, 1949	3.7	18.8	13,600	30.5	22,050
1950	1178	8,920	Oct. 24, 1949	4.4	20.2	14,600	7.95	5,760

Yearly discharge, in cubic feet per second, of South Concho River at Christoval, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	4,910	Aug. 20, 1951	1.8	7.67	5,550	7.32	5,300
1952	1242	45	Apr. 23, 1952	.8	3.20	2,320	3.58	2,600
1953	1282	3,000	Aug. 31, 1953	1.2	9.28	6,720	10.4	7,560
1954	1342	1,130	Oct. 4, 1953	.7	3.94	2,850	1.65	1,190
1955	1392	3,860	July 18, 1955	.1	13.1	9,480	13.6	9,870
1956	1442	3,520	Apr. 30, 1956	.5	5.30	3,850	4.82	3,500
1957	1512	84,000	May 9, 1957	.4	147	106,100	-	-

238. Middle Concho River near Tankersly, Tex.

Location.--Lat 31°22'35", long 100°36'50", on left bank 220 ft upstream from bridge on U. S. Highway 67, 3 miles northeast of Tankersly, Tom Green County, and 9.5 miles upstream from Spring Creek.

Drainage area.--1,280 sq mi, of which 152 sq mi is probably noncontributing.

Gage.--Water-stage recorder and masonry control. Datum of gage is 1,919.51 ft above mean sea level, datum of 1929.

Average discharge.--27 years (1930-57), 41.5 cfs (30,040 acre-ft per year).

Extremes.--1930-57: Maximum discharge, 27,500 cfs Sept. 26, 1946 (gage height, 24.30 ft, from floodmark); no flow at times. Maximum stage since at least 1900, about 27.2 ft in April 1922, from information by State Highway Department.

Remarks.--Small diversions for irrigation above station affects low flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	0	3.56	17.7	0.39	0	0	0	-
1931	215	0.78	4.43	0.25	0.17	0	9.98	.33	0	4.98	0	0	20.0
1932	0	0	0	0	0	0	13.4	765	52.7	116	2.95	197	96.4
1933	23.5	16.0	22.3	22.7	20.2	17.4	12.1	6.45	.31	0	0	0	11.7
1934	0	0	0	0	0	0	2.45	0	2.58	0	30.3	0	2.99
1935	0	31.6	0	0	95.7	0	42.6	341	156	36.8	7.97	23.9	61.0
1936	0	0	.006	.75	.39	.003	0	178	5.65	1.85	0	1,735	158
1937	55.7	21.5	17.6	12.9	11.9	15.5	8.51	98.6	188	.38	7.34	.29	36.5
1938	0	0	0	16.3	5.14	1.67	134	2.83	.35	34.1	.32	0	16.1
1939	0	0	0	0	0	0	16.6	88.3	9.11	24.0	29.6	0	14.2
1940	0	0	0	0	0	0	0	2.98	99.7	2.87	7.03	0	9.26
1941	0	0	0	0	7.36	43.4	87.8	400	743	81.5	97.8	34.3	125
1942	123	58.9	42.4	36.9	30.6	26.6	25.8	20.0	5.45	1.15	91.7	19.4	40.3
1943	9.61	11.4	15.2	15.4	13.0	14.0	9.98	35.7	3.66	0	0	0	10.7
1944	0	0	0	0	.10	0	0	8.40	32.6	0	0	199	19.7
1945	2.30	0	0	.13	.94	1.52	11.7	1.09	0	117	7.37	2.53	12.2
1946	.13	0	0	0	0	0	.23	0	0	0	18.1	280	24.6
1947	79.6	9.44	76.1	3.35	1.59	1.62	.31	56.2	51.6	1.56	1.56	0	23.8
1948	0	0	17.4	0	20.8	1.42	0	55.9	25.2	418	0	126	55.8
1949	.06	0	0	0	0	0	726	78.0	72.6	.003	0	.95	72.3
1950	.32	0	0	0	0	0	0	1.09	31.5	1.88	50.6	160	20.3
1951	.35	0	0	0	0	0	0	0	.87	0	70.5	0	6.09
1952	0	0	0	0	0	0	0	39.9	.31	0	0	0	3.41
1953	0	0	0	0	0	76.2	0	126	0	6.45	150	27.2	32.8
1954	138	4.37	0	0	0	0	358	212	68.0	5.74	0	0	65.6
1955	0	0	0	0	19.0	0	0	16.1	8.53	63.6	175	14.2	25.0
1956	11.1	0	0	0	0	0	45.7	69.7	0	49.7	0	14.2	16.0
1957	214	.22	0	0	0	0	447	892	114	20.0	0	0	142

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	0	212	1,090	23	0	0	0	-
1931	13,200	46	272	15	9.4	0	594	20	0	306	0	0	14,500
1932	0	0	0	0	0	0	797	47,000	3,140	7,130	181	11,700	69,900
1933	1,440	952	1,370	1,400	1,120	1,070	720	397	18	0	0	0	8,490
1934	0	0	0	0	0	0	146	0	154	0	1,860	0	2,160
1935	0	1,880	0	0	5,320	0	2,530	20,940	9,300	2,260	490	1,420	44,140
1936	0	0	.4	46	22	.2	0	10,950	336	114	0	103,300	114,800
1937	3,420	1,280	1,080	793	658	950	506	6,060	11,200	23	451	17	26,440
1938	0	0	0	999	285	103	7,980	174	21	2,100	20	0	11,680
1939	0	0	0	0	0	0	986	5,430	542	1,480	1,820	0	10,260
1940	0	0	0	0	0	0	0	183	5,930	177	432	0	6,720
1941	0	0	0	0	409	2,670	5,230	24,580	44,240	5,010	6,010	2,040	90,190
1942	7,540	3,500	2,600	2,270	1,700	1,630	1,540	1,230	324	70	5,640	1,150	29,190
1943	591	678	934	944	722	861	594	2,200	218	0	0	0	7,740
1944	0	0	0	0	5.8	0	0	516	1,940	0	0	11,860	14,320
1945	142	0	0	8.1	52	93	699	67	0	7,180	453	151	8,850

Monthly and yearly runoff, in acre-feet, of Middle Concho River near Tankersly, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	7.9	0	0	0	0	0	13	0	0	0	1,120	16,680	17,820
1947	4,900	562	4,680	206	88	99	19	3,460	3,070	96	96	0	17,280
1948	0	0	1,070	0	1,200	87	0	3,440	1,500	25,670	0	7,530	40,500
1949	3.6	0	0	0	0	0	43,190	4,800	4,320	.2	0	57	52,370
1950	20	0	0	0	0	0	0	67	1,880	116	3,110	9,510	14,700
1951	22	0	0	0	0	0	0	0	52	0	4,330	0	4,400
1952	0	0	0	0	0	0	0	2,450	19	0	0	0	2,470
1953	0	0	0	0	0	4,690	0	7,770	0	396	9,250	1,620	23,730
1954	8,510	260	0	0	0	0	21,280	13,050	4,050	353	0	0	47,500
1955	0	0	0	0	1,050	0	0	988	508	3,910	10,770	843	18,070
1956	682	0	0	0	0	0	2,720	4,280	0	3,060	0	848	11,590
1957	13,150	13	0	0	0	0	26,600	54,820	6,760	1,230	0	0	102,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	718,733	-	-	0	-	-	-	-
1931	718,733	8,830	Oct. 14, 1930	0	20.0	14,500	1.30	945
1932	733	15,200	May 11, 1932	0	96.4	69,900	102	73,770
1933	748	63	Dec. 23, 1932	0	11.7	8,490	6.53	4,730
1934	763	2,320	Aug. 25, 1934	0	2.99	2,160	5.59	4,050
1935	788	14,300	May 15, 1935	0	61.0	44,140	58.4	42,260
1936	808,1512	26,300	Sept. 26, 1936	0	158	114,800	166	120,500
1937	828	13,700	May 31, 1937	0	36.5	26,440	28.5	20,660
1938	858,1512	22,700	Apr. 24, 1938	0	16.1	11,680	16.1	11,680
1939	878	3,280	May 5, 1939	0	14.2	10,260	14.2	10,260
1940	898	5,680	June 28, 1940	0	9.26	6,720	9.26	6,720
1941	928	25,100	June 5, 1941	0	125	90,190	143	103,800
1942	958	3,880	Aug. 23, 1942	0	40.3	29,190	24.5	17,760
1943	978	1,450	May 23, 1943	0	10.7	7,740	7.65	5,540
1944	1008	8,700	Sept. 6, 1944	0	19.7	14,320	19.9	14,460
1945	1038	3,280	July 9, 1945	0	12.2	8,850	12.0	8,710
1946	1058,1512	27,500	Sept. 26, 1946	0	24.6	17,820	38.6	27,960
1947	1088	6,870	Dec. 11, 1946	0	23.8	17,280	11.3	8,200
1948	1118,1512	21,900	July 6, 1948	0	55.8	40,500	54.3	39,430
1949	1148,1512	22,700	Apr. 24, 1949	0	72.3	52,370	72.4	52,390
1950	1178	8,200	Sept. 22, 1950	0	20.3	14,700	20.3	14,700
1951	1212	6,240	Aug. 12, 1951	0	6.09	4,400	6.06	4,380
1952	1242	4,480	May 28, 1952	0	3.41	2,470	3.41	2,470
1953	1282	9,580	Aug. 20, 1953	0	32.8	23,730	44.9	32,500
1954	1342	9,840	Oct. 3, 1953	0	65.6	47,500	53.5	38,730
1955	1392	7,440	Aug. 5, 1955	0	25.0	18,070	25.9	18,750
1956	1442	2,930	May 1, 1956	0	16.0	11,590	33.2	24,070
1957	1512	13,700	Oct. 18, 1956	0	142	102,600	-	-

239. Dove Creek near Knickerbocker, Tex.

Location.--Lat 31°12', long 100°41', in Irion County, upstream from Knickerbocker-Rawls ranch road crossing, a quarter of a mile downstream from Stilson diversion dam, three-quarters of a mile upstream from Kepler Creek, 2 miles downstream from Dove Creek Spring, and 7 miles southwest of Knickerbocker, Tom Green County.

Extremes.--1944-49: Maximum gage height not determined; no flow at times due to regulation.

Remarks.--As the primary purpose of this station is to measure low or spring flow, discharge is not computed for flows greater than about 15 cfs. Large diversion upstream from station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	2.16	3.27	4.87	2.49	0.62	0.18	0.30	-	2.18	1.70	-
1946	3.63	5.53	2.81	4.62	4.62	1.54	1.02	-	.09	.27	.62	-	-
1947	.95	.74	1.29	1.41	1.65	1.94	2.24	4.95	1.06	2.15	3.75	.86	1.93
1948	1.94	1.49	.03	3.64	3.84	3.76	-	-	4.08	-	3.76	-	-
1949	-	4.36	3.63	4.04	6.44	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	133	201	270	153	37	11	18	-	134	101	-
1946	223	329	173	284	257	94	57	-	5.4	17	38	-	-
1947	59	44	79	87	92	119	133	304	63	132	231	51	1,390
1948	119	89	1.6	224	221	231	-	-	243	-	231	-	-
1949	-	260	223	248	357	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Dove Creek near Knickerbocker, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1945	1058	-	-	0	-	-	-	-
1946	1058	-	-	0	-	-	-	-
1947	1088	-	-	0	1.93	1,390	1.96	1,420
1948	1118	-	-	0	-	-	-	-
1949	1148	-	-	-	-	-	-	-

240. Spring Creek near Tankersly, Tex.

Location. --Lat 31°21'30", long 100°32'05", 2.8 miles upstream from mouth and 6.5 miles east of Tankersly, Tom Green County.

Drainage area. --734 sq mi.

Gage. --Water-stage recorder. Concrete low-water control since Sept. 12, 1933. Datum of gage is 1,874.61 ft above mean sea level, datum of 1929.

Average discharge. --27 years (1930-57), 35.6 cfs (25,770 acre-ft per year).

Extremes. --1930-57: Maximum discharge, 29,400 cfs May 9, 1957 (gage height, 21.35 ft); no flow at times.
Maximum stage known, about 26 ft in 1882, from information by local residents.

Remarks. --Many small diversions upstream from station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	1.82	18.4	13.7	4.37	0.01	0	0	-
1931	248	34.4	33.3	23.9	35.9	14.6	17.0	14.3	5.91	2.03	.59	1.00	36.2
1932	.02	2.35	14.4	22.5	14.4	11.8	74.9	397	40.7	241	14.3	140	81.6
1933	72.6	58.7	60.9	56.7	43.6	29.1	18.5	19.3	2.21	.31	.05	.03	30.2
1934	4.53	24.1	16.9	22.4	26.3	12.9	34.4	2.79	3.65	.09	0	0	12.2
1935	0	2.84	6.57	4.58	17.0	5.19	12.3	156	162	44.5	8.56	134	46.0
1936	25.6	31.3	23.1	16.5	7.90	4.21	.94	21.4	17.2	9.25	.22	637	65.4
1937	61.8	39.8	36.3	29.2	25.9	13.8	4.23	13.2	47.7	.92	.25	.04	22.7
1938	2.58	4.93	39.6	136	40.5	14.0	51.2	10.3	12.7	214	16.8	5.02	46.0
1939	3.19	7.92	10.9	23.3	18.2	5.38	17.3	147	13.6	16.4	26.7	.48	24.4
1940	.35	3.61	19.5	15.2	20.3	5.59	58.0	11.0	42.7	15.6	21.6	25.5	20.6
1941	12.4	26.0	22.1	25.4	27.0	112	55.3	162	142	46.7	46.2	46.8	60.5
1942	139	69.0	60.5	54.6	39.1	32.7	45.6	25.6	16.6	1.95	503	118	92.8
1943	68.2	60.8	56.8	53.3	35.9	21.8	19.9	24.6	17.8	7.98	3.51	16.1	32.2
1944	27.0	15.3	26.9	33.8	35.3	27.8	1.73	17.0	31.1	2.93	.53	72.4	24.2
1945	25.2	9.85	15.9	25.7	17.8	10.6	18.3	2.33	.27	164	2.31	3.26	24.9
1946	21.8	8.65	8.08	14.5	11.9	5.24	10.9	4.05	.20	0	0	175	21.5
1947	12.0	1.19	34.5	14.8	7.75	3.84	1.02	10.7	1.72	.09	0	0	7.36
1948	0	0	0	0	1.82	1.68	11.9	54.1	1.59	104	.15	78.6	21.2
1949	26.5	1.70	1.38	2.54	22.4	16.4	289	79.9	39.8	1.51	.96	3.93	40.2
1950	70.1	13.3	3.91	19.1	8.24	1.33	.88	.72	7.31	.31	1.48	15.8	11.9
1951	2.76	.44	.50	.72	1.59	1.13	.17	.20	.43	.003	8.76	.46	1.44
1952	0	0	0	0	0	0	0	32.2	.38	0	0	0	2.76
1953	0	0	0	0	0	120	.16	15.7	0	.16	68.3	10.8	18.3
1954	12.0	1.44	.25	.33	.35	.25	24.5	8.82	144	2.27	0	0	16.0
1955	0	0	0	0	0	0	0	29.0	3.21	224	36.6	1.00	25.0
1956	16.5	.04	0	0	0	0	94.3	12.1	1.71	0	0	0	10.3
1957	0	0	0	0	0	.96	457	1,356	142	2.77	.10	0	165

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	112	1,090	842	260	0.6	0	0	-
1931	15,200	2,050	2,050	1,470	1,990	898	1,010	879	352	125	36	60	26,100
1932	1.2	140	885	1,380	828	726	4,460	24,400	2,420	14,800	879	8,330	59,200
1933	4,460	3,490	3,740	3,490	2,420	1,790	1,100	1,190	132	19	3.1	1.8	21,800
1934	279	1,430	1,040	1,380	1,460	793	2,050	172	217	5.5	0	0	8,830
1935	0	169	404	282	944	319	729	9,570	9,620	2,740	526	8,000	33,300
1936	1,570	1,860	1,420	1,020	454	259	56	1,320	1,020	569	13	37,900	47,460
1937	3,800	2,370	2,230	1,790	1,440	846	252	809	2,840	56	15	2.2	16,450
1938	158	293	2,430	8,390	2,250	862	3,040	632	755	13,130	1,030	299	33,270
1939	196	471	670	1,430	1,010	331	1,030	9,040	810	1,010	1,640	28	17,670
1940	22	215	1,200	936	1,170	344	3,450	678	3,130	956	1,330	1,520	14,950
1941	761	1,550	1,360	1,560	1,500	6,860	3,290	9,930	8,450	2,870	2,840	2,780	43,750
1942	8,520	4,100	3,720	3,360	2,170	2,010	2,710	1,570	985	120	30,900	7,030	67,200
1943	4,190	3,620	3,490	3,280	2,000	1,340	1,180	1,510	1,060	491	216	957	23,330
1944	1,660	912	1,650	2,080	2,030	1,710	103	1,050	1,850	180	32	4,310	17,570
1945	1,550	586	976	1,580	987	649	1,090	143	16	10,110	142	194	18,020

Monthly and yearly runoff, in acre-feet, of Spring Creek near Tankersly, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	1,340	515	497	890	660	322	648	249	12	0	0	10,440	15,570
1947	737	71	2,120	908	430	236	61	658	102	5.6	0	0	5,330
1948	0	0	0	0	105	103	711	3,330	95	6,370	9.3	4,680	15,400
1949	1,630	101	85	156	1,250	1,010	17,210	4,910	2,370	93	59	234	29,110
1950	4,310	791	240	1,170	457	82	52	44	435	19	91	941	8,630
1951	169	26	31	44	88	70	10	12	26	.2	539	27	1,040
1952	0	0	0	0	0	0	0	1,980	22	0	0	0	2,000
1953	0	0	0	0	0	7,400	9.7	963	0	9.7	4,200	643	13,230
1954	736	86	16	20	19	15	1,460	543	8,570	140	0	0	11,600
1955	0	0	0	0	0	0	0	1,780	191	13,780	2,250	59	18,060
1956	1,020	2.4	0	0	0	0	5,610	742	102	0	0	0	7,480
1957	0	0	0	0	0	59	27,180	83,380	8,470	171	6.0	0	119,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	-	-	0	-	-	-	-
1931	718	16,100	Oct. 14, 1930	0	36.2	26,100	10.8	7,850
1932	733	17,000	May 10, 1932	0	81.6	59,200	96.3	69,900
1933	748	233	May 13, 1933	0	30.2	21,800	17.8	12,900
1934	763	381	June 4, 1934	0	12.2	8,830	9.17	6,650
1935	788	7,520	June 5, 1935	0	46.0	33,300	51.9	37,580
1936	808	23,900	Sept. 17, 1936	0	65.4	47,460	70.3	51,010
1937	828	2,800	June 7, 1937	0	22.7	16,450	15.1	10,930
1938	858	12,000	July 23, 1938	0	46.0	33,270	43.8	31,720
1939	878	11,000	May 4, 1939	.2	24.4	17,670	24.5	17,770
1940	898	5,080	Apr. 6, 1940	.1	20.6	14,950	23.7	17,180
1941	928	7,100	June 3, 1941	1.5	60.5	43,750	78.0	56,420
1942	958	26,900	Aug. 23, 1942	.7	92.8	67,200	85.9	62,160
1943	978	122	May 22, 1943	1.0	32.2	23,330	22.5	16,260
1944	1008	5,420	Sept. 6, 1944	.3	24.2	17,570	22.7	16,460
1945	1038	11,000	July 6, 1945	0	24.9	18,020	23.8	17,260
1946	1058	22,800	Sept. 26, 1946	0	21.5	15,570	22.3	16,150
1947	1088	2,560	Dec. 11, 1946	0	7.36	5,330	3.32	2,400
1948	1118	14,800	July 6, 1948	0	21.2	15,400	23.7	17,220
1949	1148	9,950	Apr. 28, 1949	.1	40.2	29,110	45.1	32,630
1950	1178	4,220	Oct. 24, 1949	.1	11.9	8,630	4.87	3,520
1951	1212	1,280	Aug. 12, 1951	0	1.44	1,040	1.13	816
1952	1242	2,590	May 28, 1952	0	2.76	2,000	2.76	2,000
1953	1282	9,220	Mar. 9, 1953	0	18.3	13,230	19.4	14,060
1954	1342	11,900	June 28, 1954	0	16.0	11,600	14.9	10,770
1955	1392	19,900	July 18, 1955	0	25.0	18,060	26.4	19,080
1956	1442	5,600	Apr. 30, 1956	0	10.3	7,480	8.90	6,450
1957	1512	29,400	May 9, 1957	0	165	119,300	-	-

241. Lake Nasworthy near San Angelo, Tex.

Location.--Lat 31°23'15", long 100°28'40", 250 ft upstream from Nasworthy Dam on South Concho River, 0.5 mile downstream from Middle Concho River, and 6 miles southwest of San Angelo, Tom Green County.

Drainage area.--2,659 sq mi, of which 152 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 1,840.00 ft above mean sea level, datum of 1929.

Extremes.--1930-57: Maximum contents, 26,900 acre-ft Sept. 15, 1936 (gage height, 38.36 ft); minimum, 480 acre-ft May 10, 1955 (gage height, 15.63 ft).

Remarks.--Lake is formed by 5,480-foot dam comprised of a 3,780-foot earthen section, two emergency spillways, 300 and 600 feet in length, and a concrete service spillway having a bank of fifteen 25-foot taintor gates and one collapsible floodgate. Dam completed and storage began Mar. 28, 1930. Spillway elevation raised in Sept. 1948. Capacity of reservoir, 27,740 acre-ft at gage height, 39.0 ft (top of 300-foot emergency spillway); 13,990 acre-ft at gage height, 33.2 ft (top of taintor gates); 12,390 acre-ft at gage height, 32.2 ft (top of collapsible floodgates). There is no dead storage. Beginning 1955 figures of contents adjusted for sedimentation. Siltation surveys made by the U. S. Department of Agriculture, Soil Conservation Service, in December 1938 and May 1953 show that for the period March 1930 to December 1938, 1,191 acre-ft of silt were deposited, and from December 1938 to May 1953, an additional 1,023 acre-ft were deposited, making a total siltation of 2,214 acre-ft at gage height 32.2. Water used for San Angelo municipal supply.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1930	-	-	-	-	-	126	1,000	1,020	7,540	5,100	3,700	3,050	-
1931	10,260	-	-	10,500	10,500	10,380	10,500	10,500	-	-	-	-	-
1932	8,420	-	10,620	10,740	10,740	10,380	10,980	10,380	10,740	9,540	10,140	10,140	-
1933	10,260	9,900	9,780	9,780	9,900	10,140	10,380	10,260	9,190	7,320	6,550	6,220	-3,920
1934	6,220	7,760	8,530	9,780	9,780	9,780	9,420	8,310	6,990	3,500	6,110	4,940	-1,280
1935	4,240	6,440	6,000	6,550	9,300	8,860	10,140	9,190	9,780	9,540	10,380	10,020	+5,080

Contents, in thousands of acre-feet, on last day of month, of Lake Nasworthy near San Angelo, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1936	10,020	9,190	9,660	9,780	10,380	9,300	8,090	10,380	10,260	9,540	5,910	1,160	- 8,860
1937	5,730	-	9,300	9,190	8,420	8,860	8,860	8,310	8,750	8,860	7,760	7,870	+ 6,710
1938	8,640	8,750	8,090	8,640	9,080	8,860	9,190	8,970	8,530	6,110	8,750	8,640	+ 770
1939	8,750	9,190	8,530	9,300	9,190	8,640	8,860	8,310	8,420	9,080	8,090	6,990	- 1,650
1940	7,210	7,870	8,860	9,300	8,530	8,200	8,530	8,310	7,980	7,430	8,750	7,980	+ 990
1941	8,640	8,420	7,870	9,190	8,970	7,210	8,640	9,080	8,200	7,980	8,970	9,080	+ 1,100
1942	9,300	7,760	7,870	8,970	8,750	8,860	8,970	8,420	8,970	8,090	9,080	9,540	+ 460
1943	8,750	7,100	7,980	7,870	8,970	8,310	8,530	8,640	8,420	7,760	5,280	6,110	- 3,430
1944	7,430	8,530	9,300	9,540	9,080	8,090	7,870	8,640	7,870	5,820	4,700	7,650	+ 1,540
1945	8,640	8,420	9,080	8,750	8,970	9,190	8,860	7,430	5,820	8,310	7,540	7,320	- 330
1946	7,650	7,650	7,870	6,550	8,310	8,310	7,210	6,990	7,980	5,730	4,620	8,200	+ 890
1947	8,200	8,200	7,980	6,990	7,100	8,310	7,870	8,750	9,420	7,100	4,940	3,550	- 4,650
1948	3,100	3,050	4,060	4,380	5,910	5,190	4,940	9,900	8,750	8,750	5,640	13,080	+ 9,530
1949	12,440	11,380	10,740	10,980	11,660	12,920	12,760	12,920	12,280	9,900	7,650	8,530	- 4,550
1950	13,240	13,240	13,240	13,240	13,240	12,440	11,660	11,380	11,100	8,860	9,900	13,080	+ 4,550
1951	11,520	10,620	10,260	10,020	10,020	8,970	7,430	5,550	5,460	3,600	9,080	6,220	- 6,860
1952	4,540	3,940	3,880	3,880	3,400	2,950	2,700	6,660	4,240	2,900	1,760	1,340	- 4,880
1953	1,300	1,300	1,300	1,280	1,300	11,240	9,300	12,120	8,750	10,620	13,400	11,800	+10,460
1954	13,720	13,240	12,600	12,120	11,100	9,900	13,720	13,720	13,400	10,500	7,320	5,020	- 6,780
1955	2,880	2,060	1,240	845	1,380	578	525	7,090	8,570	11,750	11,750	10,470	+ 6,370
1956	9,910	8,930	8,210	7,750	7,090	5,600	12,390	11,910	8,210	6,670	4,250	4,170	- 6,300
1957	10,790	9,290	8,330	7,640	7,200	7,860	12,230	9,290	12,710	11,750	8,210	7,200	+ 3,030

242. South Concho River at San Angelo, Tex.

Location.--Lat 31°26'45", long 100°25'30", at Lone Wolf bridge, about 400 ft upstream from San Angelo waterworks dam, 0.5 mile south of San Angelo, Tom Green County, 1 mile upstream from North Concho River, and 7,470 ft downstream from bridge on U. S. Highway 87 and 277.

Drainage area.--2,687 sq mi, of which 152 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 1,802.94 ft above mean sea level, datum of 1929.

Average discharge.--22 years (1931-53), 113 cfs (81,810 acre-ft per year).

Extremes.--1931-53: Maximum discharge, 111,000 cfs Sept. 17, 1936 (gage height, 23.4 ft, of which 2.4 ft was caused by backwater from North Concho River), by slope-area measurement; no flow at times.
Maximum stage since at least 1854, 29.7 ft Aug. 6, 1906 (not affected by backwater), from information by local residents.

Remarks.--Flow largely regulated by Lake Nasworthy $6\frac{1}{2}$ miles upstream. Many diversions upstream for municipal use, irrigation, and fish hatcheries.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	0.23	1.09	4.58	39.0	40.4	26.4	71.6	1,270	122	481	14.9	410	208
1933	137	121	120	121	98.2	64.6	31.1	43.3	6.64	13.3	.02	0	63.0
1934	4.39	8.98	9.26	15.0	29.9	29.3	117	11.8	4.99	25.5	5.44	.37	21.6
1935	0	1.03	17.9	2.56	73.3	4.46	29.2	866	468	90.9	.37	418	164
1936	56.4	78.1	45.0	36.6	12.4	27.1	10.5	153	7.52	11.5	23.8	7,323	639
1937	241	78.9	131	97.9	91.7	70.4	32.9	229	231	1.59	5.15	6.21	102
1938	3.22	17.7	160	186	76.4	41.8	305	47.7	22.5	1,899	42.7	30.0	239
1939	22.7	32.1	61.4	48.7	50.2	45.4	46.3	261	17.2	19.9	85.0	9.53	58.7
1940	12.9	15.7	24.8	30.1	64.1	25.0	85.1	56.5	261	35.9	34.6	49.8	57.4
1941	9.09	56.1	60.4	29.4	60.5	210	153	606	957	158	147	122	214
1942	331	209	155	107	102	75.3	113	72.3	6.89	2.96	849	215	188
1943	142	137	94.7	102	54.5	74.9	31.2	74.0	16.0	.50	7.76	3.73	61.8
1944	9.82	7.88	39.5	60.3	79.7	66.4	2.54	16.5	47.7	4.07	3.92	235	47.4
1945	19.5	18.8	26.0	44.7	35.9	27.7	74.7	11.9	.78	413	2.64	2.75	57.1
1946	52.8	29.9	28.2	64.2	2.08	5.32	62.9	1.50	1.09	.27	.30	563	67.1
1947	104	29.7	134	70.0	23.8	10.8	10.4	54.4	50.3	2.41	1.89	.46	41.1
1948	.49	0	.15	.01	.93	.95	1.00	9.31	14.5	544	.33	50.4	52.5
1949	10.0	11.5	7.98	12.1	17.3	55.6	1,172	246	114	3.40	5.68	6.45	137
1950	136	25.2	23.9	30.2	18.2	2.01	.79	2.23	4.64	.75	1.17	103	29.1
1951	4.72	3.12	2.27	.49	1.21	.94	.09	.003	.93	.04	.65	0	1.21
1952	.01	0	0	0	0	.24	0	0	0	0	0	0	.02
1953	0	0	0	0	0	79.0	0	87.0	0	15.0	144	49.4	31.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	14	65	282	2,400	2,320	1,620	4,260	78,100	7,260	29,600	916	24,400	151,000
1933	8,420	7,200	7,380	7,440	5,450	3,970	1,850	2,660	395	818	1.2	0	45,600
1934	270	534	569	922	1,660	1,800	6,960	726	297	1,570	334	22	15,660
1935	0	61	1,100	157	4,070	274	1,740	53,250	27,840	5,590	23	24,890	119,000

Monthly and yearly runoff, in acre-feet, of South Concho River at San Angelo, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	3,470	4,640	2,770	2,250	716	1,670	627	9,410	448	707	1,460	435,800	464,000
1937	14,800	4,690	8,070	6,020	5,090	4,330	1,960	14,090	13,760	98	317	370	73,600
1938	198	1,050	9,850	11,450	4,240	2,570	18,170	2,930	1,340	116,800	2,630	1,790	173,000
1939	1,390	1,910	3,780	2,990	2,790	2,790	2,760	16,070	1,020	1,220	5,230	567	42,520
1940	793	933	1,520	1,850	3,690	1,540	5,060	3,480	15,530	2,210	2,120	2,970	41,700
1941	559	3,340	3,710	1,800	3,360	12,940	9,100	37,290	56,950	9,700	9,060	7,240	155,000
1942	20,360	12,450	9,520	6,590	5,680	4,630	6,740	4,450	410	182	52,210	12,820	136,000
1943	8,710	8,160	5,820	6,300	3,030	4,610	1,860	4,550	950	31	477	222	44,720
1944	604	469	2,430	3,710	4,580	4,080	151	1,010	2,840	251	241	14,010	34,380
1945	1,200	1,120	1,600	2,750	1,990	1,700	4,440	730	46	25,410	163	164	41,310
1946	3,250	1,780	1,740	3,950	115	327	3,740	92	65	17	19	33,480	48,580
1947	6,400	1,770	8,270	4,310	1,320	663	621	3,350	2,990	148	116	27	29,980
1948	30	0	9.5	.8	54	59	59	572	864	33,450	20	3,000	38,120
1949	615	682	491	742	960	3,420	69,710	15,120	6,800	209	349	384	99,480
1950	8,360	1,500	1,470	1,860	1,010	124	47	137	276	46	72	6,150	21,050
1951	290	186	140	30	67	58	5.6	.2	55	2.6	40	0	874
1952	.8	0	0	0	0	15	0	0	0	0	0	0	16
1953	0	0	0	0	0	4,860	0	5,350	0	924	8,830	2,940	22,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	733	38,200	May 10, 1932	0	208	151,000	240	174,000
1933	748	237	Nov. 6, 1932	0	63.0	45,600	33.1	24,000
1934	763	12,000	Apr. 5, 1934	0	21.6	15,660	21.3	15,440
1935	788	30,500	May 9, 1935	0	164	119,000	178	128,700
1936	808	111,000	Sept. 17, 1936	0	639	464,000	662	480,600
1937	828	14,000	June 2, 1937	0	102	73,600	78.9	57,130
1938	858	80,100	July 23, 1938	0	239	173,000	233	169,000
1939	878	21,300	May 4, 1939	0	58.7	42,520	53.4	38,680
1940	898	9,440	June 29, 1940	.9	57.4	41,700	63.4	46,060
1941	928	23,500	June 5, 1941	2.8	214	155,000	262	189,800
1942	938	51,800	Aug. 23, 1942	0	188	136,000	161	116,400
1943	978	5,980	May 23, 1943	0	61.8	44,720	35.3	25,530
1944	1008	12,900	Sept. 6, 1944	0	47.4	34,380	47.9	34,790
1945	1038	21,500	July 6, 1945	0	57.1	41,310	61.0	44,160
1946	1058	61,400	Sept. 26, 1946	0	67.1	48,580	80.4	58,240
1947	1088	13,100	Dec. 11, 1946	0	41.4	29,980	18.8	13,580
1948	1118	30,400	July 6, 1948	0	52.5	38,120	54.9	39,870
1949	1148	25,200	Apr. 28, 1949	0	137	99,480	151	109,000
1950	1178	16,600	Oct. 24, 1949	0	29.1	21,050	14.3	10,340
1951	1212	92	Aug. 12, 1951	0	1.21	874	.36	259
1952	1242	17	Mar. 28, 1952	0	.02	16	.02	15
1953	1282	11,300	Aug. 20, 1953	0	31.6	22,900	-	-

243. North Concho River at Sterling City, Tex.

Location.--Lat 31°50', long 100°59', 100 ft upstream from bridge on Farm Road 379, 0.3 mile south of Sterling City, Sterling County, 3.5 miles downstream from Lacy Creek, and 4 miles upstream from Sterling Creek.

Drainage area.--690 sq mi, of which 75 sq mi is probably noncontributing.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,242.36 ft above mean sea level, datum of 1929. Prior to Dec. 6, 1939, chain gage at same site and datum.

Average discharge.--18 years (1939-57), 11.4 cfs (8,250 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 16,300 cfs July 6, 1948 (gage height, 23.70 ft); no flow at times each year.
Maximum stage known since at least 1891, that of July 6, 1948.

Remarks.--Small diversion above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	0	0	0.65	0.96	1.01	0.73	0.22	40.2	1.23	0.29	7.12	4.30
1941	.61	0	.50	.69	1.17	39.3	15.0	6.74	29.2	30.1	.88	3.74	10.7
1942	21.0	2.99	3.36	3.19	3.13	2.73	6.28	1.75	.59	0	.01	.59	3.82
1943	.40	.82	1.44	1.40	1.29	1.76	.74	1.88	.12	3.34	0	0	1.11
1944	0	0	.02	.18	1.13	.71	.35	.15	17.9	.06	1.96	0	1.85
1945	0	0	0	0	0	0	.13	0	2.00	405	.49	.03	34.6

Monthly and yearly mean discharge, in cubic feet per second, of North Concho River at Sterling City, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	0.18	0.27	0.83	1.47	1.46	0.91	0.60	0.08	0	0	0	3.77	.79
1947	7.18	0	0	.05	.11	.42	.03	45.8	.35	0	0	0	4.58
1948	1.05	0	0	0	1.18	9.34	.01	1.65	34.0	383	.16	17.1	37.8
1949	0	0	0	.50	.66	.79	80.1	112	33.2	.65	.02	.02	19.0
1950	0	.07	.69	1.22	1.66	1.00	76.2	7.28	.54	0	.27	20.0	8.97
1951	.01	.17	2.25	.62	1.49	.78	.49	.75	.08	0	0	0	.55
1952	0	0	0	0	0	0	5.98	8.83	1.87	0	0	0	1.39
1953	0	.003	0	0	0	.003	0	.20	3.50	.48	2.07	0	.52
1954	0	0	0	0	0	0	70.0	186	20.9	.52	0	0	23.3
1955	0	0	0	0	0	0	0	22.1	.03	8.22	0	1.24	2.68
1956	2.20	0	0	0	0	0	0	25.1	2.92	24.7	.03	0	4.64
1957	9.02	0.10	.81	0	0	0	166	201	94.4	.02	0	64.4	44.6

Monthly and year runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	0	0.2	40	55	62	43	13	2,390	76	18	423	3,120
1941	38	0	31	43	65	2,420	890	415	1,740	1,850	54	223	7,770
1942	1,290	178	207	196	174	168	374	108	35	0	.4	35	2,770
1943	24	49	89	86	72	108	44	115	7.3	205	0	0	799
1944	0	0	1.4	11	65	44	21	8.9	1,070	3.6	121	0	1,350
1945	0	0	0	0	0	0	7.7	0	119	24,900	30	1.8	25,060
1946	11	16	51	90	81	56	36	4.8	0	0	0	225	571
1947	441	0	0	3.2	6.1	26	1.8	2,810	21	0	0	0	3,310
1948	64	0	0	0	68	574	.6	101	2,030	23,540	9.7	1,020	27,410
1949	0	0	0	31	36	49	4,770	6,890	1,980	40	1.2	1.4	13,800
1950	0	4.4	42	75	92	62	4,530	448	32	0	16	1,190	6,490
1951	.8	10	139	38	83	48	29	46	4.8	0	0	0	399
1952	0	0	0	0	0	0	356	543	111	0	0	0	1,010
1953	0	.2	0	0	0	.2	0	12	208	29	128	0	377
1954	0	0	0	0	0	0	4,170	11,420	1,240	32	0	0	16,860
1955	0	0	0	0	0	0	0	1,360	1.8	505	0	74	1,940
1956	135	0	0	0	0	0	0	1,540	174	1,520	1.6	0	3,370
1957	554	6.0	50	0	0	0	9,890	12,380	5,620	1.2	0	3,830	32,330

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	0	-	-	-	-
1940	898	1,200	June 29, 1940	0	4.30	3,120	4.40	3,190
1941	928	2,950	Mar. 26, 1941	0	10.7	7,770	12.9	9,380
1942	958	1,780	Oct. 15, 1941	0	3.82	2,770	1.73	1,250
1943	978	726	July 14, 1943	0	1.11	799	.88	639
1944	1008	2,130	June 6, 1944	0	1.85	1,350	1.85	1,340
1945	1038	15,600	July 8, 1945	0	34.6	25,060	34.7	25,140
1946	1058	197	Sept. 4, 1946	0	.79	571	1.29	934
1947	1088	2,300	May 11, 1947	0	4.58	3,310	4.05	2,930
1948	1118	16,300	July 6, 1948	0	37.8	27,410	37.7	27,340
1949	1148	6,100	Apr. 19, 1949	0	19.0	13,800	19.1	13,840
1950	1178	3,860	Apr. 16, 1950	0	8.97	6,490	9.11	6,590
1951	1212	42	May 17, 1951	0	.55	399	.34	249
1952	1242	2,280	May 31, 1952	0	1.39	1,010	1.39	1,010
1953	1282	760	June 26, 1953	0	.52	377	.52	377
1954	1342	6,000	May 11, 1954	0	23.3	16,860	23.3	16,860
1955	1392	1,490	May 11, 1955	0	2.68	1,940	2.86	2,080
1956	1442	1,650	May 24, 1956	0	4.64	3,370	5.29	3,850
1957	1512	5,200	Apr. 28, 1957	0	44.6	32,330	-	-

244. North Concho River near Carlsbad, Tex.

Location.--Lat 31°36', long 100°39', at county road bridge, 0.6 mile southwest of Carlsbad, Tom Green County, 1.5 miles upstream from Mule Creek, and 16.2 miles upstream from San Angelo Dam.

Drainage area.--1,533 sq mi; at site used prior to Nov. 7, 1955, 1,529 sq mi: of which 123 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 1,968.02 ft above mean sea level, datum of 1929. Prior to Feb. 4, 1925, and from Sept. 27, 1936, to Feb. 7, 1937, staff gage; Feb. 4, 1925, to Sept. 26, 1936, and Feb. 8, 1937, to Nov. 6, 1955, water-stage recorder at site $2\frac{1}{2}$ miles upstream at datum 32.76 ft higher.

Average discharge.--33 years (1924-57), 47.6 cfs (34,460 acre-ft per year)

Extremes.--1924-57: Maximum discharge, 94,600 cfs Sept. 26, 1936 (gage height, 16.0 ft at former site, 29.1 ft at present site, from flood-marks), from rating curve extended above 11,000 cfs on basis of slope-area measurements at gage heights 14.45 ft and 16.0 ft at former site; no flow at times.
Maximum stage since at least 1853, that of Sept. 26, 1936.

Remarks.--Diversion by pumping above station affects low flow (combined capacity of pumps, 40 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	124	11.3	1.51	0	27.4	3.60	-
1925	5.0	5.0	5.0	7.60	5.65	1.50	631	1,355	49.3	6.12	108	11.4	184
1926	6.03	17.8	11.6	15.0	11.0	307	76.0	21.2	18.8	4.63	3.82	56.7	46.2
1927	10.6	12.2	12.9	10.8	12.1	7.76	69.5	24.8	6.22	38.2	.05	11.6	18.0
1928	4.60	1.81	4.04	4.82	5.91	7.19	9.19	48.0	13.0	353	7.65	5.01	39.2
1929	1.94	5.70	7.08	6.47	8.17	41.7	12.8	59.1	2.35	.70	0	43.8	15.9
1930	118	7.90	3.91	4.08	3.95	3.60	4.34	145	242	.54	0	0	44.6
1931	15.1	1.97	20.1	5.09	10.2	5.51	5.56	18.0	3.32	.08	0	0	7.10
1932	43.3	4.78	3.69	4.62	9.51	6.10	40.0	637	131	15.6	4.57	100	83.9
1933	9.66	12.3	18.1	14.0	11.9	12.0	9.55	6.15	1.25	0	2.95	.09	8.17
1934	0	0	.98	2.50	3.80	4.04	6.96	2.96	0	0	155	10.8	15.8
1935	0	65.2	1.26	1.45	85.0	4.13	41.5	1,007	33.9	37.1	8.43	29.8	111
1936	4.24	4.73	5.78	6.45	6.63	10.4	5.69	25.7	3.45	.10	.10	4,019	336
1937	43.1	20.6	19.7	16.0	15.2	22.4	12.2	9.35	252	6.20	1.31	.15	34.6
1938	.57	1.64	3.75	7.82	12.9	11.9	210	11.0	95.3	98.7	5.40	1.81	38.2
1939	3.64	5.62	5.96	7.03	6.02	6.20	6.50	22.0	1.37	.15	15.4	.08	6.71
1940	0	.22	2.69	2.98	3.88	2.51	3.12	5.59	50.8	5.88	38.6	55.7	14.2
1941	.10	.92	3.66	2.50	7.25	36.1	189	166	217	42.7	20.6	9.16	57.8
1942	37.9	11.3	12.8	12.3	12.1	11.6	13.1	9.78	3.92	.42	21.7	13.0	13.4
1943	5.40	4.99	6.09	7.09	6.74	8.33	6.43	14.8	2.41	13.3	.20	.16	6.36
1944	.10	.65	4.74	4.62	3.99	3.83	2.99	3.19	32.7	.10	3.99	4.77	5.43
1945	1.34	1.75	3.43	3.90	3.75	3.91	21.7	1.87	.59	806	3.79	1.10	72.3
1946	5.80	4.61	4.62	5.07	5.16	4.88	3.07	1.13	.20	.08	0	1.93	3.03
1947	3.31	.71	12.5	1.85	3.34	4.05	3.33	308	3.42	3.98	.34	.10	29.2
1948	0	0	7.47	4.52	7.44	9.32	5.00	.41	53.3	1,195	1.05	19.1	110
1949	1.27	1.72	2.41	3.79	3.69	3.48	350	205	53.5	3.20	1.13	.37	52.3
1950	.53	1.60	3.72	4.24	4.67	4.08	58.3	49.3	2.39	.10	16.8	95.3	20.0
1951	3.67	3.45	3.94	4.20	4.35	3.97	3.92	40.0	.57	.10	8.33	.04	6.44
1952	0	0	.33	1.37	1.50	1.65	4.47	.66	10.2	.05	0	0	1.67
1953	0	0	0	0	0	0	.07	192	.10	15.8	255	.15	39.3
1954	32.8	.46	.88	1.56	1.26	1.04	92.0	203	47.9	2.45	0	0	32.1
1955	0	0	0	0	0	2.40	.35	34.7	.09	32.8	4.15	6.51	6.86
1956	2.74	0	0	0	0	0	26.6	111	.03	26.3	0	.47	14.1
1957	40.2	1.07	10.4	.10	0	5.86	342	413	189	.09	0	161	96.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	7,360	692	89.8	0	1,680	214	-
1925	307	298	307	467	314	92.2	37,520	83,320	2,930	376	6,670	677	133,300
1926	371	1,060	716	922	610	18,900	4,520	1,310	1,120	284	235	3,380	33,400
1927	651	726	796	662	670	477	4,140	1,530	370	2,350	3.4	688	13,100
1928	283	108	248	296	340	442	547	2,950	774	21,700	470	298	28,500
1929	119	339	435	398	454	2,560	762	3,630	140	43	0	2,610	11,500
1930	7,260	470	240	251	219	221	258	8,920	14,400	33	0	0	32,300
1931	928	117	1,240	313	566	339	331	1,110	198	4.9	0	0	5,150
1932	2,660	284	227	284	547	375	2,380	39,200	7,800	959	281	5,950	60,900
1933	594	732	1,110	861	661	738	568	378	74	0	181	5.4	5,900
1934	0	0	60	154	211	248	414	182	0	0	9,530	643	11,400
1935	0	3,880	78	89	4,720	254	2,470	61,950	2,020	2,280	518	1,770	80,030
1936	261	281	355	396	382	638	339	1,580	205	6.3	6.1	239,200	243,600
1937	2,650	1,230	1,210	984	847	1,370	728	575	15,000	381	81	8.9	25,060
1938	35	98	231	481	717	734	12,470	677	5,670	6,070	332	108	27,620
1939	224	335	367	432	334	381	387	1,360	82	8.9	945	5.0	4,860
1940	0	13	165	183	223	154	185	344	3,020	362	2,370	3,320	10,340

Monthly and yearly runoff, in acre-feet, of North Concho River near Carlsbad, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	6.1	55	225	154	403	2,220	11,230	10,200	12,930	2,620	1,260	545	41,850
1942	2,330	673	789	756	674	716	781	601	233	26	1,330	775	9,680
1943	332	297	374	436	374	512	383	907	144	819	12	9.7	4,600
1944	6.1	39	291	284	230	235	178	196	1,940	6.1	245	284	3,930
1945	82	104	211	240	208	241	1,290	115	35	49,540	233	66	52,360
1946	357	275	284	312	287	300	182	69	12	4.8	0	115	2,200
1947	204	42	767	114	186	249	198	18,930	204	245	21	6.0	21,170
1948	0	0	459	278	428	573	298	25	3,170	73,460	64	1,140	79,900
1949	78	102	148	233	205	214	20,830	12,600	3,180	197	69	22	37,880
1950	32	95	229	260	259	251	3,470	3,030	142	6.1	1,030	5,670	14,470
1951	226	205	242	258	241	244	233	2,460	34	6.1	512	2.6	4,660
1952	0	0	20	84	86	101	266	41	609	3.0	0	0	1,210
1953	0	0	0	0	0	0	4.0	11,780	6.0	972	15,670	8.9	28,440
1954	2,020	27	54	96	70	64	5,470	12,470	2,850	151	0	0	23,270
1955	0	0	0	0	0	147	21	2,130	5.6	2,020	255	387	4,970
1956	168	0	0	0	0	0	1,580	6,820	2.0	1,620	0	28	10,220
1957	2,470	64	639	6.3	.8	360	20,370	25,400	11,270	5.4	0	9,560	70,150

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a17,600	Apr. 25, 1924	0	-	-	-	-
1925	608, 1512	60,100	May 30, 1925	0	184	133,300	186	135,000
1926	628	53,800	Mar. 21, 1926	.1	46.2	33,400	46.2	33,500
1927	648	5,360	Apr. 13, 1927	0	18.0	13,100	15.9	11,500
1928	668, 1512	30,000	July 26, 1928	0	39.2	28,500	39.6	28,700
1929	688	7,100	May 7, 1929	0	15.9	11,500	25.6	18,500
1930	703, 1512	37,900	June 13, 1930	0	44.6	32,300	36.7	26,600
1931	718	1,920	Oct. 13, 1930	0	7.10	5,150	8.34	6,040
1932	733	16,900	May 10, 1932	0	83.9	60,900	82.9	60,200
1933	748	101	Dec. 24, 1932	0	8.17	5,900	4.88	3,530
1934	763	7,400	Aug. 25, 1934	0	15.8	11,400	21.2	15,340
1935	788, 1512	27,200	May 15, 1935	0	111	80,030	106	76,970
1936	808	94,600	Sept. 26, 1936	0	336	243,600	341	247,800
1937	828	44,600	June 1, 1937	0	34.6	25,060	28.1	20,340
1938	858	31,400	Apr. 24, 1938	0	38.2	27,620	38.9	28,180
1939	878	1,660	Aug. 8, 1939	0	6.71	4,860	5.68	4,110
1940	898	5,130	Aug. 27, 1940	0	14.2	10,340	14.4	10,450
1941	928	45,400	June 5, 1941	0	57.8	41,850	62.7	45,350
1942	958	2,890	Aug. 23, 1942	.2	13.4	9,680	9.53	6,900
1943	978	1,380	July 15, 1943	.1	6.36	4,600	5.43	3,930
1944	1008	1,900	June 6, 1944	.1	5.43	3,930	5.51	4,000
1945	1038	36,600	July 8, 1945	.1	72.3	52,360	73.0	52,880
1946	1058	165	Oct. 5, 1945	0	3.03	2,200	3.17	2,290
1947	1088	27,200	May 11, 1947	.1	29.2	21,170	28.5	20,610
1948	1118	49,500	July 6, 1948	0	110	79,900	110	79,760
1949	1148	15,500	Apr. 19, 1949	.1	52.3	37,880	52.4	37,910
1950	1178	5,410	Sept. 22, 1950	.1	20.0	14,470	20.4	14,790
1951	1212	3,340	May 17, 1951	0	6.44	4,660	5.54	4,010
1952	1242	1,050	June 1, 1952	0	1.67	1,210	1.64	1,190
1953	1282	14,400	May 12, 1953	0	39.3	28,440	42.2	30,540
1954	1342	4,200	May 12, 1954	0	32.1	23,270	29.2	21,170
1955	1392	2,920	July 17, 1955	0	6.86	4,970	7.09	5,130
1956	1442	5,090	May 23, 1956	0	14.1	10,220	18.2	13,220
1957	1512	8,180	Apr. 28, 1957	0	96.9	70,150	-	-

a Maximum observed during period March to September.

245. San Angelo Reservoir at San Angelo, Tex.

Location.--Lat 31°29'04", long 100°28'53", at San Angelo Reservoir dam on North Concho River, 3.1 miles northwest of San Angelo, Tom Green County, 6.2 miles downstream from Dry Creek, and 10.1 miles downstream from Grape Creek.

Drainage area.--1,790 sq mi, of which 123 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to May 12, 1953, staff gage at same site and datum.

Extremes.--1952-57: Maximum contents, 93,240 acre-ft June 12, 1957 (elevation, 1,902.70 ft); minimum contents since first appreciable storage, 30,550 acre-ft Apr. 28, 29, 1956 (elevation, 1,882.40 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam 40,885 ft long including spillway. Main dam was completed May 3, 1951. Deliberate impoundment of water began Feb. 1, 1952. Reservoir is operated for flood control and part of municipal water supply for city of San Angelo. Outlet works consist of 6 gate-controlled outlets opening into two 18-foot diameter concrete conduits, and two 30-inch gate-controlled outlets for water supply outlet. The emergency spillway to the right of the dam is an uncontrolled off-channel concrete gravity dam with ogee weir section 1,150 ft long designed to discharge 356,000 cfs at elevation 1,958.0 ft (maximum design level). Data regarding the dam and reservoir are given in the following table:

San Angelo Reservoir at San Angelo, Tex.--Continued

	Elevation (feet)	Capacity (acre-feet)
Crest of dam	1,964.0	-
Crest of spillway	1,938.5	396,400
Top of conservation storage	1,908.0	119,200
Intake inverts to wet well for 30-inch outlets	1,878.5	22,970
Invert of 6 gate-controlled outlets	1,840.0	-

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1952	-	-	-	-	10	11	12	533	668	662	367	273	-
1953	198	178	156	137	122	866	734	12,350	10,830	13,310	32,960	32,580	+32,307
1954	36,020	34,820	33,790	33,320	32,350	31,300	41,350	52,310	58,140	55,160	52,680	50,560	+17,980
1955	48,690	47,360	46,230	45,530	44,990	43,480	41,300	41,020	38,590	38,470	37,840	36,580	-13,980
1956	35,310	34,090	33,290	32,930	32,290	31,190	31,580	40,060	37,470	35,870	34,180	31,820	- 4,760
1957	35,660	34,640	34,480	33,700	33,340	32,350	54,330	81,700	90,440	85,460	80,740	85,990	+54,170

246. North Concho River at San Angelo, Tex.

Location.--Lat 31°27'56", long 100°26'51", at Sixth Street Bridge in San Angelo, Tom Green County and 3.2 miles upstream from confluence with South Concho River.

Drainage area.--1,795 sq mi; at site 1.6 miles downstream, 1,800 sq mi: of which 123 sq mi is probably noncontributing.

Gage.--Water-stage recorder, concrete dam control since July 1947. Datum of gage is 1,813.42 ft above mean sea level, datum of 1929. Prior to Sept. 1, 1920, staff gage and Sept. 1, 1920, to Feb. 11, 1929, water-stage recorder, at site 1.6 miles downstream at datum 11.02 ft lower. Feb. 12, 1929, to Sept. 30, 1931, water-stage recorder at site 1.6 miles downstream at datum 13.02 ft lower.

Average discharge.--23 years (1916-27, 1929-31, 1947-57), 41.4 cfs (29,970 acre-ft per year).

Extremes.--1915-31, 1947-57: Maximum discharge, about 47,000 cfs June 13, 1930 (gage height, 22.52 ft, site and datum then in use); no flow at times.

Flood of Sept. 17, 1936, reached a stage of 34.6 ft, from floodmarks (discharge, 184,000 cfs, by slope-area measurement). Flood of June 1853 reached the highest stage known according to information obtained from local residents in 1925 (stage and discharge unknown).

Remarks.--Flow largely regulated by San Angelo Reservoir since February 1952.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	6.40	6.64	7.95	13.1	13.2	50.2	11.1	1.08	0	0	0	-
1917	10.6	.44	0	0	1.15	1.35	84.8	6.84	23.8	1.27	0	20.1	12.4
1918	0	0	0	0	0	0	0	93.7	38.5	12.2	0	2.82	12.4
1919	548	49.1	2.00	3.67	3.79	225	155	14.7	390	126	42.8	69.8	137
1920	655	19.7	22.0	18.5	11.5	13.7	7.04	2.71	6.71	.66	51.8	3.78	68.7
1921	6.81	9.19	7.94	7.67	7.48	9.75	7.81	2.57	11.0	.01	0	0	5.82
1922	0	0	0	0	0	0	974	331	26.4	229	.04	.06	130
1923	0	.03	.03	1.59	.50	1.09	32.9	6.01	.09	0	1.21	4.16	3.94
1924	32.8	2.76	2.53	3.06	4.72	7.27	157	18.6	.88	.01	21.4	39.4	24.0
1925	36.8	5.26	11.2	6.68	6.46	2.92	355	1,020	97.5	12.7	74.2	70.5	143
1926	-	-	-	-	-	-	-	-	-	-	-	-	69.5
1927	5.87	4.38	14.2	8.74	19.7	15.0	49.6	23.9	4.34	24.6	.15	84.4	21.1
1928	150	1.31	2.85	4.29	5.30	4.69	7.03	78.8	-	-	-	-	-
1929	-	-	-	-	-	49.2	15.2	78.6	2.49	.84	0	50.8	-
1930	148	.95	2.08	3.11	2.94	2.64	16.0	196	452	.80	0	0	68.7
1931	54.6	2.45	20.7	2.47	12.5	5.49	13.4	16.7	4.55	8.31	0	0	11.8
1947	-	-	-	-	-	-	-	-	-	-	.13	0	-
1948	1.90	0	1.90	0	15.3	6.69	1.43	29.9	77.5	1,177	286	44.6	115
1949	.90	.08	1.05	3.49	3.69	3.84	516	273	58.2	.79	.18	.14	71.5
1950	4.35	.01	.05	2.05	3.10	1.64	58.3	63.7	2.66	.05	13.3	154	25.2
1951	7.24	.92	4.13	2.74	5.21	3.80	1.95	35.9	2.83	.01	55.4	0	10.1
1952	0	0	.003	.01	0	0	.003	.23	0	0	1.07	0	.11
1953	0	0	0	0	0	2.20	0	4.60	0	2.56	10.2	5.31	2.10
1954	4.33	.13	0	.02	0	0	1.60	.31	3.27	0	0	0	.81
1955	0	0	0	.23	.41	4.88	14.2	12.6	7.18	8.81	3.18	.68	4.37
1956	.64	.94	1.74	1.24	1.06	1.24	1.95	2.03	2.38	13.3	26.4	20.1	6.11
1957	9.08	1.89	1.85	4.19	4.04	4.87	15.6	16.0	14.1	13.2	12.1	14.8	9.32

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	381	408	489	754	812	2,990	682	64	0	0	0	-
1917	652	26	0	0	64	83	5,050	421	1,420	78	0	1,200	8,980
1918	0	0	0	0	0	0	0	5,760	2,290	751	0	168	8,970
1919	33,700	2,920	123	226	211	13,900	9,230	902	23,200	7,750	2,630	4,150	93,900
1920	40,300	1,170	1,350	1,140	622	842	419	167	399	39	3,180	225	49,900

Monthly and yearly runoff, in acre-feet, of North Concho River at San Angelo, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	419	547	488	472	415	600	465	158	655	0.6	0	0	4,220
1922	0	0	0	0	0	0	58,000	20,400	1,570	14,100	2.4	3.8	94,100
1923	0	1.8	1.6	98	28	67	1,960	370	5.2	0	74	248	2,850
1924	2,020	164	155	188	271	447	9,330	1,140	52	.8	1,310	2,340	17,400
1925	2,270	313	686	411	359	180	21,100	62,800	5,800	780	4,560	4,200	103,000
1926	-	-	-	-	-	-	-	-	-	-	-	-	50,300
1927	361	261	876	538	1,090	919	2,950	1,470	258	1,510	9.5	5,020	15,300
1928	9,220	78	175	264	305	288	418	4,850	-	-	-	-	-
1929	-	-	-	-	-	3,030	904	4,830	148	52	0	3,020	-
1930	9,100	57	128	191	163	162	952	12,100	26,900	49	0	0	49,800
1931	3,360	146	1,270	152	694	338	797	1,030	271	511	0	0	8,570
1947	-	-	-	-	-	-	-	-	-	-	7.7	0	-
1948	117	0	117	0	881	412	85	1,840	4,610	72,390	176	2,650	83,280
1949	56	5.0	64	214	205	236	30,700	16,770	3,460	49	11	8.3	51,780
1950	268	.6	3.0	126	172	101	3,470	3,920	158	3.4	820	9,180	18,220
1951	445	55	254	168	290	233	116	2,210	168	.4	3,410	0	7,350
1952	0	0	.2	.6	0	0	.2	14	0	0	66	0	81
1953	0	0	0	0	0	135	0	283	0	157	627	316	1,520
1954	265	7.5	0	1.0	0	0	95	19	195	0	0	0	582
1955	0	0	0	14	23	300	847	777	427	542	196	41	3,170
1956	39	56	107	76	61	76	116	125	141	815	1,630	1,200	4,440
1957	558	112	114	258	224	300	928	982	837	809	744	879	6,740

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	438,568	a814	Apr. 14, 1916	0	-	-	8.90	6,470
1917	458,1512	6,960	Apr. 18, 1917	0	12.4	8,980	11.5	8,320
1918	568,1512	2,190	May 17, 1918	0	12.4	8,970	63.2	45,700
1919	568	9,220	Oct. 21, 1918	0	137	98,900	145	109,000
1920	568	7,240	Oct. 7, 1919	0	68.7	49,900	11.7	8,530
1921	568	890	Oct. 24, 1920	0	5.82	4,220	3.82	2,770
1922	568	-	Apr. 26, 1922	0	130	94,100	130	94,100
1923	568	1,730	Apr. 24, 1923	0	3.94	2,850	7.16	5,190
1924	588	24,500	Apr. 25, 1924	0	24.0	17,400	25.3	18,300
1925	608	43,000	May 30, 1925	0	143	103,000	-	-
1926	628,1312	28,500	Mar. 21, 1926	0	69.5	50,300	-	-
1927	648	2,840	Apr. 13, 1927	0	21.1	15,300	32.1	23,200
1928	668	-	-	-	-	-	-	-
1929	688	-	-	0	-	-	-	-
1930	703	47,000	June 13, 1930	0	68.7	49,800	62.5	45,300
1931	718	-	-	0	11.8	8,570	-	-
1947	1118	-	-	0	-	-	-	-
1948	1118	33,700	July 7, 1948	0	115	83,280	115	83,170
1949	1148	16,100	Apr. 19, 1949	0	71.5	51,780	71.7	51,920
1950	1178	7,030	Sept. 22, 1950	0	25.2	18,220	25.8	18,700
1951	1212	3,750	Aug. 12, 1951	0	10.1	7,350	9.11	6,600
1952	1242	286	Aug. 1, 1952	0	.11	81	.11	81
1953	1282	1,610	Aug. 20, 1953	0	2.10	1,520	2.48	1,790
1954	1342	874	June 7, 1954	0	.81	582	.43	310
1955	1392	530	Aug. 4, 1955	0	4.37	3,170	4.65	3,370
1956	1442	3,230	Aug. 19, 1956	.3	6.11	4,440	6.91	5,020
1957	1512	1,010	Apr. 26, 1957	1.4	9.32	6,740	-	-

a Maximum during period November to September.

247. Concho River near San Angelo, Tex.

Location.--Lat 31°27'10", long 100°24'40", 0.5 mile downstream from confluence of North and South Concho Rivers and 1.8 miles southeast of San Angelo, Tom Green County.

Drainage area.--4,492 sq mi, of which 275 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 1,776.79 ft above mean sea level, datum of 1929. Prior to Aug. 11, 1917, staff gage at same site and datum.

Average discharge.--42 years (1915-57), 162 cfs (117,300 acre-ft per year).

Extremes.--1915-57: Maximum discharge, 230,000 cfs Sept. 17, 1936 (gage height, 46.6 ft, from floodmarks), from rating curve extended above 110,000 cfs on basis of slope-area measurements at gage heights 42.6 and 46.6 ft; no flow at times in 1921, 1952 and 1953.
Maximum stage since 1853, 47.5 ft Aug. 6, 1906 (discharge, about 246,000 cfs), from information by local residents. Other large floods occurred in June 1853, August 1882, and April 1900.

Remarks.--Many diversions upstream from station for irrigation and municipal supply. Flow partially regulated by Lake Nasworthy on South Concho River since March 1930, and San Angelo Reservoir on North Concho since February 1952.

Monthly and yearly mean discharge, in cubic feet per second, of Concho River near San Angelo, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	106	72.9	85.5	88.6	67.2	40.1	121	41.6	7.02	4.46	4.46	139	64.5
1917	43.9	29.4	36.0	45.0	39.1	35.8	117	15.3	29.4	3.64	2.13	55.4	37.4
1918	2.70	3.28	1.90	6.31	9.22	5.93	3.03	346	169	15.3	.54	4.62	47.6
1919	728	69.2	28.2	43.8	27.8	342	166	188	1,140	627	122	173	306
1920	988	99.8	82.2	90.3	89.6	49.5	24.5	15.3	119	4.86	153	76.0	150
1921	45.9	56.4	45.4	42.3	23.1	39.9	18.9	13.6	81.5	3.07	28.2	11.8	34.2
1922	1.73	1.37	1.14	2.06	3.39	1.79	3,950	1,390	137	491	2.07	1.82	497
1923	1.40	10.1	21.6	34.5	73.9	68.3	120	39.4	4.35	15.3	66.4	264	58.7
1924	229	165	96.5	82.5	76.1	89.6	523	453	105	3.82	23.3	96.3	162
1925	77.3	39.8	67.3	49.4	40.1	17.6	535	1,673	222	45.9	151	151	258
1926	74.5	63.8	60.2	70.0	52.1	537	914	208	87.0	18.2	69.4	48.5	184
1927	81.0	38.1	141	67.7	84.4	74.4	72.6	39.3	14.3	31.9	2.75	93.9	61.6
1928	458	21.7	38.5	42.9	27.3	20.4	17.9	128	179	331	83.0	25.5	115
1929	34.2	47.5	48.5	38.7	31.9	95.3	153	151	11.8	2.31	1.75	79.1	58.0
1930	299	28.3	23.9	28.0	20.9	10.5	33.1	211	424	2.97	1.86	1.53	90.7
1931	1,260	104	113	62.7	143	50.0	70.2	49.2	19.1	44.0	14.7	9.90	163
1932	47.3	13.9	8.29	44.3	54.9	30.2	118	2,183	269	446	42.5	653	328
1933	153	137	146	128	107	79.5	38.6	47.3	7.47	15.8	1.66	.77	71.8
1934	5.16	8.73	7.92	13.4	30.2	32.4	130	14.7	11.0	25.8	183	10.1	39.4
1935	1.16	107	21.2	2.90	175	7.84	76.0	1,632	503	212	10.6	479	269
1936	69.4	90.4	60.1	49.6	21.9	42.0	18.0	177	15.0	23.6	31.2	13,190	1,132
1937	316	113	164	126	123	100	70.9	259	520	13.7	7.96	13.0	152
1938	7.01	20.3	170	205	92.8	82.1	613	58.5	124	2,137	48.3	36.2	302
1939	27.7	34.4	64.6	62.0	57.9	48.1	48.4	279	17.5	20.5	115	11.6	66.0
1940	14.7	18.3	27.9	36.1	64.7	26.4	87.6	92.9	582	53.9	88.6	102	98.8
1941	28.7	60.1	60.5	29.4	69.8	242	366	820	1,132	201	191	141	279
1942	405	237	180	125	119	95.0	135	95.4	14.8	6.03	900	241	214
1943	156	143	103	114	65.0	82.9	38.7	90.5	20.2	14.2	9.25	4.95	70.4
1944	12.1	11.3	40.1	63.2	78.8	66.2	5.36	34.5	77.4	5.13	7.25	253	54.1
1945	27.3	18.3	27.6	52.4	41.9	31.2	103	14.2	3.43	1,093	5.97	18.7	121
1946	68.3	34.8	31.1	68.9	7.84	11.5	70.2	4.23	2.82	1.71	1.50	567	71.9
1947	116	37.8	197	74.7	28.0	17.3	13.1	358	60.8	5.19	3.19	1.41	76.9
1948	7.01	2.03	4.02	2.21	20.2	10.6	6.09	48.7	103	1,689	5.49	1.11	169
1949	14.2	13.9	11.9	19.8	25.8	69.0	1,604	514	172	5.77	9.18	10.4	205
1950	149	29.1	28.9	37.6	23.4	6.40	67.0	79.4	11.5	6.01	17.5	312	63.9
1951	12.0	5.25	7.79	6.54	10.1	6.56	4.84	45.2	11.8	2.42	80.1	1.07	16.3
1952	1.39	1.63	1.66	2.40	1.44	1.97	1.92	3.67	.76	1.52	.74	.30	1.62
1953	.08	.24	.76	.72	.68	124	.73	133	.16	40.1	207	86.0	50.1
1954	212	2.71	1.33	1.77	1.46	1.41	325	254	197	.96	.55	.53	83.4
1955	6.21	1.97	.73	.23	.50	2.00	.30	12.0	11.6	347	208	4.09	50.4
1956	3.51	2.64	2.58	3.39	2.41	2.36	31.4	65.3	1.22	17.3	26.6	3.18	13.6
1957	87.5	2.08	2.30	4.17	5.10	2.88	1,568	3,984	344	25.0	15.4	20.0	509

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	6,500	4,340	5,260	5,450	3,870	2,470	7,220	2,560	418	274	255	8,260	46,900
1917	2,700	1,750	2,210	2,770	2,170	2,200	6,960	941	1,750	224	131	3,300	27,100
1918	166	195	117	388	512	365	180	21,300	10,000	942	33	275	34,400
1919	44,800	4,120	1,740	2,700	1,540	21,000	9,860	11,500	67,600	38,600	7,500	10,300	221,000
1920	60,800	5,940	5,050	5,550	5,150	3,040	1,460	941	7,080	299	9,410	4,520	109,000
1921	2,820	3,360	2,790	2,600	1,280	2,450	1,120	836	4,850	189	1,730	702	24,700
1922	107	81	70	127	188	110	235,000	85,500	8,170	30,200	127	108	360,000
1923	86	601	1,330	2,120	4,100	4,200	7,160	2,420	259	942	4,080	15,700	43,000
1924	14,100	9,840	5,930	5,080	4,380	5,510	31,100	27,800	6,270	235	1,430	5,730	117,000
1925	4,750	2,370	4,140	3,040	2,230	1,080	31,800	102,900	13,200	2,820	9,290	8,970	186,600
1926	4,580	3,790	3,700	4,300	2,900	33,000	54,380	12,800	5,170	1,120	4,270	2,890	132,900
1927	4,980	2,270	8,650	4,170	4,680	4,580	4,320	2,410	852	1,960	169	5,590	44,600
1928	28,200	1,290	2,370	2,640	1,570	1,250	1,070	7,870	10,700	20,400	5,100	1,520	84,000
1929	2,100	2,830	2,980	2,380	1,770	5,860	9,100	9,280	702	142	108	4,710	42,000
1930	18,400	1,680	1,470	1,720	1,160	646	1,970	13,000	25,240	183	114	91	65,670
1931	77,450	6,190	6,950	3,860	7,940	3,070	4,180	3,030	1,140	2,710	904	589	118,000
1932	2,910	827	510	2,720	3,160	1,860	7,020	134,200	16,000	27,400	2,610	38,900	238,100
1933	9,410	8,150	8,980	7,870	5,940	4,890	2,300	2,910	444	972	102	46	52,000
1934	317	519	487	824	1,680	1,990	7,740	904	655	1,590	11,300	601	28,600
1935	71	6,380	1,300	178	9,700	482	4,520	100,400	29,920	13,050	650	28,490	195,100
1936	4,270	5,380	3,700	3,050	1,260	2,580	1,070	10,880	893	1,450	1,920	785,100	821,600
1937	19,450	6,700	10,060	7,730	6,810	6,170	4,220	15,930	30,950	840	489	772	110,100
1938	431	1,210	10,460	12,580	5,160	5,050	36,470	3,600	7,420	131,400	2,970	2,150	218,900
1939	1,700	2,050	3,970	3,810	3,210	2,960	2,880	17,150	1,040	1,260	7,050	689	47,770
1940	906	1,090	1,710	2,220	3,720	1,620	5,210	5,710	34,660	3,310	5,450	6,070	71,680

Monthly and yearly runoff, in acre-feet, of Concho River near San Angelo, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	1,770	3,580	3,720	1,810	3,870	14,910	21,790	50,410	67,350	12,350	11,740	8,400	201,700
1942	24,900	14,090	11,070	7,690	6,590	5,840	8,030	5,870	880	371	55,330	14,320	155,000
1943	9,620	8,500	6,320	7,030	3,610	5,100	2,300	5,560	1,200	871	569	295	50,980
1944	744	672	2,460	3,890	4,530	4,070	319	2,120	4,610	316	446	15,080	39,260
1945	1,680	1,090	1,700	3,220	2,320	1,920	6,100	875	204	67,200	367	1,110	87,790
1946	4,200	2,070	1,910	4,240	436	705	4,180	260	168	105	92	33,720	52,090
1947	7,120	2,250	12,080	4,590	1,560	1,060	781	22,030	3,620	319	196	84	55,690
1948	431	121	247	136	1,160	655	362	2,990	6,130	103,800	338	6,600	123,000
1949	876	826	734	1,220	1,430	4,240	95,430	31,620	10,220	355	564	618	148,100
1950	9,140	1,730	1,780	2,310	1,300	394	3,990	4,880	682	369	1,080	18,590	46,240
1951	737	313	479	402	563	404	288	2,780	705	149	4,930	64	11,810
1952	86	97	102	148	83	121	114	226	45	94	45	18	1,180
1953	4.8	14	47	44	38	7,620	43	8,150	9.5	2,460	12,740	5,120	36,290
1954	13,060	161	82	109	81	87	19,340	15,620	11,710	63	34	32	60,380
1955	382	117	45	14	28	123	18	746	688	21,310	12,790	244	36,500
1956	216	157	159	208	139	145	1,870	4,010	73	1,070	1,640	189	9,880
1957	5,380	124	141	256	283	177	93,310	245,000	20,450	1,540	946	1,190	368,800

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	438,568	-	-	-	-	-	-	-
1916	438,568	9,700	Sept. 1, 1916	2.3	64.5	46,900	51.6	37,400
1917	458,1512	10,600	Apr. 18, 1917	1.3	37.4	27,100	28.9	20,900
1918	478,1512	10,700	May 17, 1918	.4	47.6	34,400	117	85,000
1919	568	31,800	July 8, 1919	.6	306	221,000	335	242,000
1920	568	17,100	Oct. 6, 1919	2.0	150	109,000	63.9	46,400
1921	568	11,900	Aug. 31, 1921	1.8	34.2	24,700	22.1	16,000
1922	568	92,000	Apr. 26, 1922	0	497	360,000	499	362,000
1923	568	5,800	Aug. 23, 1923	1.0	58.7	43,000	97.9	70,850
1924	588	36,300	Apr. 25, 1924	1.0	162	117,000	136	98,800
1925	608,1148	49,200	May 31, 1925	2.0	258	186,600	259	187,400
1926	628,1148	35,100	Apr. 21, 1926	2.0	184	132,900	189	136,700
1927	648	2,730	Oct. 15, 1926	1.9	61.6	44,600	83.6	60,590
1928	668	25,400	Oct. 1, 1927	1.6	115	84,000	82.5	60,000
1929	688,1148	6,000	Sept. 6, 1929	1.6	58.0	42,000	76.9	55,600
1930	703,1148	40,200	June 13, 1930	1.3	90.7	65,670	186	134,700
1931	718,1148	57,600	Oct. 13, 1930	.5	163	118,000	43.7	31,700
1932	733,1148	42,600	May 10, 1932	2.2	328	238,100	359	260,400
1933	748	286	Dec. 24, 1932	.4	71.8	52,000	37.0	26,800
1934	763	9,510	Apr. 5, 1934	.6	39.4	28,600	48.3	34,950
1935	788,1148	39,000	May 15, 1935	.8	269	195,100	277	200,700
1936	808,1148	230,000	Sept. 17, 1936	.3	1,132	821,600	1,163	844,400
1937	828,1148	23,400	June 2, 1937	1.9	152	110,100	119	86,000
1938	858	85,100	July 23, 1938	2.1	302	218,900	296	214,500
1939	878	19,100	May 4, 1939	1.8	66.0	47,770	60.4	43,760
1940	898	34,400	June 29, 1940	2.1	98.8	71,680	106	77,040
1941	928	27,600	June 5, 1941	3.3	279	201,700	335	242,700
1942	958	51,500	Aug. 23, 1942	1.4	214	155,000	179	129,400
1943	978	5,560	May 23, 1943	1.1	70.4	50,980	42.0	30,410
1944	1008	12,200	Sept. 6, 1944	1.5	54.1	39,260	54.9	39,850
1945	1038	20,000	July 6, 1945	1.1	121	87,790	126	91,500
1946	1058	56,000	Sept. 26, 1946	.9	71.9	52,090	90.3	65,360
1947	1088	15,000	May 11, 1947	1.1	76.9	55,690	48.4	35,000
1948	1118	47,500	July 6, 1948	1.0	169	123,000	172	124,600
1949	1148	25,100	Apr. 24, 1949	1.3	205	148,100	219	158,300
1950	1178	15,700	Oct. 24, 1949	.4	63.9	46,240	48.5	35,120
1951	1212	4,740	Aug. 12, 1951	.8	16.3	11,810	14.6	10,570
1952	1242	174	May 1, 1952	0	1.62	1,180	1.32	960
1953	1282	12,800	Aug. 20, 1953	0	50.1	36,290	68.4	49,530
1954	1342	14,600	Oct. 4, 1953	.2	83.4	60,380	65.8	47,620
1955	1392	25,500	July 18, 1955	.1	50.4	36,500	50.4	36,490
1956	1442	3,800	Apr. 30, 1956	.1	13.6	9,880	20.6	14,990
1957	1512	106,000	May 9, 1957	.1	509	368,800	-	-

248. Concho River near Paint Rock, Tex.

Location. --Lat 31°31', long 99°55', at bridge on U. S. Highway 83, 0.2 mile north of Paint Rock, Concho County, and 2 miles downstream from Kickapoo Creek.

Drainage area. --5,538 sq mi; at site 1.4 miles upstream, 5,532 sq mi: of which 275 sq mi is probably noncontributing.

Gage. --Water-stage recorder with masonry dam control. Datum of gage is 1,574.43 ft above mean sea level, datum of 1929. Prior to Sept. 16, 1920, staff gage and Sept. 17, 1920, to Sept. 17, 1936, water-stage recorder, at site 1.4 miles upstream at datum 13.16 ft higher. Oct. 2, 1936, to May 18, 1938, staff gage at site 1,000 ft downstream at present datum and May 19, 1938, to Jan. 14, 1940, wire-weight gage at present site and datum.

Average discharge. --42 years (1915-57), 218 cfs (157,800 acre-ft per year).

Extremes. --1915-57: Maximum discharge, 301,000 cfs Sept. 17, 1936 (gage height, 43.4 ft, from floodmarks), from rating curve extended a above 85,000 cfs on basis of slope-area measurements at gage heights 35.8 and 43.4 ft; no flow at times.
Flood in August 1882 reached a stage of about 40 ft and flood in August 1906 reached a stage of 39.5 ft, from information by local resident.

Remarks. --Many diversions upstream for irrigation and municipal supply. Flow slightly regulated by Lake Nasworthy on South Concho River since March 1930, and by San Angelo Reservoir on the North Concho River since February 1952.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	121	82.4	96.6	83.3	65.7	28.2	117	33.0	5.22	0.04	0	177	67.2
1917	60.6	22.1	28.2	35.1	26.4	16.9	262	48.4	52.2	.07	22.4	117	57.3
1918	.30	.11	.05	.02	.03	.52	.31	371	292	3.53	.25	6.84	56.5
1919	1,010	381	31.0	78.9	39.9	516	486	757	1,900	614	123	239	516
1920	1,540	139	99.0	102	93.2	53.3	15.2	12.2	148	10.7	207	78.9	210
1921	47.1	60.2	47.2	43.0	30.0	42.1	25.2	14.7	117	3.82	2.01	52.2	40.2
1922	.21	.32	.80	1.45	7.22	.88	3,870	1,690	137	553	.66	.49	521
1923	.26	50.1	27.2	29.2	73.5	64.5	163	51.0	5.73	5.22	43.2	279	65.2
1924	205	159	99.4	91.0	80.6	88.5	459	513	122	.92	12.8	132	164
1925	164	39.5	110	48.6	38.9	8.50	1,120	2,130	342	48.5	165	202	370
1926	80.1	67.0	61.2	72.7	52.4	634	1,160	242	123	16.4	62.4	77.6	221
1927	142	35.1	170	69.1	96.2	104	79.9	98.5	32.8	15.6	1.16	107	79.3
1928	710	26.5	40.1	48.1	30.7	26.3	15.0	255	492	423	87.7	77.5	187
1929	38.4	53.3	53.1	39.0	35.6	103	260	223	16.9	.51	0	152	81.2
1930	328	26.5	21.2	27.8	19.9	10.1	49.7	454	880	2.42	.66	21.5	154
1931	3,810	132	126	75.6	189	74.3	76.9	52.2	31.3	59.2	23.8	6.12	393
1932	47.9	15.7	10.9	47.0	55.7	37.1	128	2,670	315	522	24.3	1,130	419
1933	156	139	157	140	111	95.5	44.5	125	9.32	.84	1.80	.13	81.6
1934	1.98	9.00	9.28	15.3	40.5	40.3	456	28.9	6.40	0	160	8.10	64.3
1935	0	151	24.8	5.17	227	11.1	307	2,427	676	284	15.3	1,119	438
1936	73.6	74.7	81.8	56.6	28.9	45.7	11.6	211	30.7	71.9	7.24	17,220	1,470
1937	523	185	207	183	163	135	90.8	249	698	42.5	21.6	24.5	210
1938	25.7	36.1	168	175	105	96.5	672	84.9	116	3,519	86.7	48.5	433
1939	48.7	50.4	70.6	86.5	65.3	58.1	38.1	359	14.9	23.6	234	7.73	88.9
1940	18.4	21.7	33.6	36.8	91.6	27.0	275	169	686	91.1	81.3	121	136
1941	35.4	63.9	70.2	37.7	86.7	255	388	979	1,227	208	219	163	311
1942	446	245	206	131	136	119	167	231	22.1	7.45	980	288	250
1943	167	146	116	120	83.0	95.8	59.4	89.1	25.9	11.5	1.27	7.17	76.9
1944	9.47	14.4	48.5	80.6	91.3	75.1	10.6	115	78.0	1.00	37.2	343	74.9
1945	126	29.5	37.0	57.5	51.6	36.7	134	19.8	2.73	1,424	13.2	16.0	165
1946	78.7	37.2	39.0	73.2	23.7	16.4	52.3	47.4	7.36	.92	.13	650	84.9
1947	138	55.2	220	83.2	42.4	28.1	51.9	690	80.7	8.08	.84	.24	118
1948	34.6	3.66	14.0	6.37	19.6	15.8	17.0	102	115	1,980	5.13	86.6	202
1949	17.9	16.9	16.7	28.9	32.4	206	2,131	970	177	6.37	2.96	23.9	302
1950	232	31.9	29.8	44.8	33.4	9.30	59.2	115	19.4	6.69	12.8	401	82.9
1951	20.7	10.2	12.1	10.9	15.2	6.11	2.92	53.4	12.0	.81	95.9	.53	20.2
1952	.06	0	0	.23	1.08	.22	15.9	78.1	49.3	.03	0	18.6	13.6
1953	.23	.11	.12	.20	.20	209	.50	141	.20	33.9	253	88.0	61.5
1954	255	6.61	2.08	3.56	1.97	.24	399	590	212	10.8	.02	0	124
1955	0	0	0	0	0	0	0	360	185	544	175	.10	107
1956	3.87	.30	.20	3.09	3.35	.11	.62	212	1.63	.80	13.8	5.81	20.8
1957	170	28.1	3.41	3.58	3.01	18.2	1,695	4,756	576	23.6	1.68	64.0	617

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	7,440	4,900	5,940	5,120	3,780	1,730	6,960	2,030	311	2	0	10,500	48,700
1917	3,730	1,320	1,730	2,160	1,470	1,040	15,600	2,980	3,110	4	1,380	6,960	41,500
1918	18	6.6	3.1	1.2	1.7	32	18	22,800	17,400	217	15	407	40,900
1919	62,100	22,700	1,910	4,850	2,220	31,700	28,900	46,500	113,000	37,700	7,560	14,200	373,000
1920	94,800	8,270	6,090	6,270	5,360	3,280	904	750	8,810	658	12,700	4,690	152,000

Monthly and yearly runoff, in acre-feet, of Concho River near Paint Rock, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	2,900	3,580	2,900	2,640	1,670	2,590	1,500	904	6,960	235	124	3,110	29,100
1922	13	19	49	89	401	54	231,000	104,000	8,170	34,000	40	29	378,000
1923	16	2,980	1,670	1,800	4,080	3,960	9,670	3,140	341	321	2,660	16,600	47,200
1924	12,600	9,460	6,110	5,590	4,630	5,440	27,300	31,600	7,290	56.5	785	7,840	119,000
1925	10,100	2,350	6,760	2,990	2,160	523	66,400	131,000	20,300	2,980	10,100	12,000	268,000
1926	4,920	3,990	3,760	4,470	2,910	39,000	69,000	14,900	7,330	1,010	3,830	4,620	160,000
1927	8,720	2,090	10,400	4,250	5,340	6,380	4,750	6,050	1,950	957	71.6	6,370	57,300
1928	43,700	1,580	2,470	2,960	1,770	1,620	893	15,700	29,300	26,000	5,390	4,610	136,000
1929	2,360	3,170	3,260	2,400	1,980	6,330	15,500	13,700	1,010	31	0	9,040	58,800
1930	20,200	1,580	1,300	1,710	1,110	621	2,960	27,900	52,400	149	41	1,280	111,000
1931	234,000	7,860	7,750	4,650	10,500	4,570	4,580	3,210	1,860	3,640	1,460	364	284,000
1932	2,950	934	670	2,890	3,200	2,280	7,620	164,000	18,700	32,100	1,490	67,200	304,000
1933	9,590	8,270	9,650	8,610	6,160	5,870	2,650	7,690	555	52	111	7.7	59,200
1934	122	536	571	941	2,250	2,480	27,100	1,780	381	0	9,840	541	46,500
1935	0	9,000	1,520	318	12,580	682	18,290	149,200	40,220	17,460	944	66,610	316,800
1936	4,530	4,450	5,030	3,480	1,660	2,810	691	12,950	1,830	4,420	445	1,025,000	1,067,000
1937	32,170	11,030	12,750	11,270	9,040	8,320	5,400	15,290	41,530	2,620	1,330	1,460	152,200
1938	1,580	2,150	10,360	10,770	5,810	5,930	39,960	5,220	6,930	216,400	5,330	2,880	313,300
1939	3,000	3,000	4,340	5,320	3,630	3,570	2,270	22,070	884	1,450	14,380	460	64,370
1940	1,130	1,290	2,070	2,270	5,270	1,660	16,360	10,370	40,820	5,600	5,000	7,210	99,050
1941	2,180	3,800	4,320	2,320	4,810	15,700	23,110	60,210	73,000	12,810	13,490	9,720	225,500
1942	27,420	14,550	12,660	8,080	7,530	7,310	9,940	14,220	1,320	458	60,260	17,110	180,900
1943	10,270	8,660	7,120	7,390	4,610	5,890	3,530	5,480	1,540	709	78	427	55,700
1944	582	859	2,980	4,950	5,250	4,620	634	7,080	4,640	61	2,290	20,410	54,360
1945	7,740	1,760	2,280	3,540	2,870	2,260	7,990	1,220	162	87,570	813	951	119,200
1946	4,840	2,220	2,400	4,500	1,320	1,010	3,110	2,910	438	57	7.7	38,660	61,470
1947	8,490	3,280	13,510	5,110	2,350	1,730	3,090	42,410	4,800	497	51	14	85,330
1948	2,130	218	861	392	1,130	973	1,010	6,240	6,820	121,700	315	5,150	146,900
1949	1,100	1,010	1,030	1,780	1,800	12,670	126,800	59,640	10,530	392	182	1,420	218,400
1950	14,290	1,900	1,830	2,750	1,850	572	3,520	7,060	1,160	412	789	23,890	60,020
1951	1,270	608	742	669	847	376	174	3,280	715	50	5,900	32	14,660
1952	3.6	0	0	14	62	13	948	4,800	2,930	1.6	0	1,110	9,880
1953	14	6.5	7.3	12	11	12,860	30	8,650	12	2,080	15,580	5,240	44,500
1954	15,700	394	128	219	109	15	23,750	36,290	12,640	662	1.0	0	89,910
1955	0	0	0	0	0	0	0	22,110	11,000	31,440	10,770	6.1	75,320
1956	238	18	12	190	193	6.7	37	13,040	97	49	850	346	15,080
1957	10,470	1,670	210	220	167	1,120	100,900	292,400	34,270	1,450	103	3,810	446,800

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	458	-	-	-	-	-	-	-
1916	458	a2,820	Sept. 2, 1916	0	67.2	48,700	51.3	37,200
1917	458	7,150	Apr. 18, 1917	0	57.3	41,500	48.0	34,700
1918	478,568	7,150	May 18, 1918	0	56.5	40,900	176	128,000
1919	508,568	21,300	June 10, 1919	0	516	373,000	547	396,000
1920	508,568	16,900	Oct. 7, 1919	.8	210	152,000	72.8	52,800
1921	528	4,370	Sept. 1, 1921	.7	40.2	29,100	27.4	19,800
1922	548,568	76,500	Apr. 27, 1922	0	521	378,000	527	382,000
1923	568	2,020	Sept. 17, 1923	0	65.2	47,200	97.7	70,700
1924	588	24,000	Apr. 26, 1924	0	164	119,000	151	110,000
1925	608	42,000	May 31, 1925	0	370	268,000	361	261,000
1926	628	38,200	Apr. 22, 1926	0	221	160,000	233	168,000
1927	648	4,610	Oct. 14, 1926	0	79.3	57,300	116	83,900
1928	668	30,100	Oct. 1, 1927	0	187	136,000	134	97,000
1929	688	7,760	Sept. 6, 1929	0	81.2	58,800	101	73,100
1930	703	26,900	June 14, 1930	0	154	111,000	466	338,000
1931	718	72,000	Oct. 13, 1930	0	393	284,000	54.4	39,400
1932	733	40,800	May 11, 1932	0	419	304,000	451	327,000
1933	748	4,570	May 14, 1933	0	81.6	59,200	45.4	32,900
1934	763	19,500	Apr. 5, 1934	0	64.3	46,500	77.2	55,860
1935	788	38,400	Sept. 5, 1935	0	438	316,800	442	320,300
1936	808	301,000	Sept. 17, 1936	0	1,470	1,067,000	1,530	1,109,000
1937	828	16,100	June 2, 1937	8.3	210	152,200	152	110,400
1938	858	86,000	July 24, 1938	7.5	433	313,300	428	309,600
1939	878	12,800	May 5, 1939	.3	88.9	64,370	80.8	58,520
1940	898	25,100	June 29, 1940	5.7	136	99,050	144	104,900
1941	928	24,900	June 6, 1941	4.2	311	225,500	373	269,800
1942	958	37,400	Aug. 24, 1942	.2	250	180,900	210	152,300
1943	978	4,460	May 24, 1943	.3	76.9	55,700	47.1	34,080
1944	1008	13,200	Sept. 6 or 7, 1944	.1	74.9	54,360	85.0	61,720
1945	1038	21,300	July 7, 1945	.9	165	119,200	161	116,800

a Maximum daily.

Yearly discharge, in cubic feet per second, of Concho River near Paint Rock, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	32,700	Sept. 27, 1946	0	84.9	61,470	107	77,290
1947	1088	16,900	May 24, 1947	0	118	85,330	87.4	63,260
1948	1118	40,600	July 7, 1948	0	202	146,900	202	146,900
1949	1148	37,000	May 28, 1949	1.3	302	218,400	322	233,200
1950	1178	12,500	Oct. 25, 1949	.3	82.9	60,020	61.6	44,620
1951	1212	3,550	Aug. 13, 1951	.3	20.2	14,660	16.6	12,050
1952	1242	5,080	May 31, 1952	0	13.6	9,880	13.7	9,910
1953	1282	8,170	Aug. 21, 1953	0	61.5	44,500	83.8	60,700
1954	1342	12,900	May 23, 1954	0	124	89,910	102	73,680
1955	1392	24,100	May 17, 1955	0	107	75,320	104	75,590
1956	1442	6,060	May 14, 1956	0	20.8	15,080	37.4	27,160
1957	1512	79,300	May 10, 1957	.2	617	446,800	-	-

249. Mukewater Creek at Trickham, Tex.

Location.--Lat 31°36', long 99°13', at Trickham, Coleman County, 750 ft upstream from county road bridge, 2.9 miles upstream from Hay Creek, 6.9 miles upstream from mouth, and 11.8 miles southwest of Santa Anna.

Drainage area.--70.4 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,394.54 ft above mean sea level (State Highway Department bench mark).

Average discharge.--6 years (1951-57), 12.8 cfs (9,270 acre-ft per year).

Extremes.--1951-57: Maximum discharge, 15,000 cfs May 1, 1956 (gage height, 15.83 ft), from rating curve extended above 3,200 cfs on basis of contracted-opening measurement of peak flow; no flow at times.
Maximum stage known since at least 1919, about 18 ft in 1927, from information by local resident.

Remarks.--Station maintained to establish rainfall-runoff relationships and to assist the Soil Conservation Service in evaluating the effect of flood-detention structures to be constructed in the basin. No structures have been built. Nineteen rain gages (15 standard and 4 recording) were operating in the basin above this station. No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	0	-
1952	0	0	0	0	0	0	11.6	35.1	0.17	0	0	9.09	4.68
1953	0	6.01	2.36	.09	0	12.0	3.78	21.2	.63	.76	3.20	0	4.22
1954	30.3	0	0	0	0	10.2	16.4	11.3	.21	.05	.12	0	5.77
1955	.29	3.08	0	0	2.19	1.85	0	124	60.1	55.8	3.52	31.4	23.7
1956	.01	0	0	0	0	0	6.43	132	0	0	.16	.44	11.7
1957	4.25	3.04	0	0	0	5.25	128	163	12.7	.47	0	.54	26.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	0	-
1952	0	0	0	0	0	0	689	2,160	10	0	0	541	3,400
1953	0	357	145	5.4	0	740	225	1,300	38	47	197	0	3,050
1954	1,860	0	0	0	0	628	973	694	13	3.2	7.5	0	4,180
1955	18	183	0	0	121	114	0	7,630	3,580	3,430	217	1,870	17,160
1956	.8	0	0	0	0	0	383	8,090	0	0	10	26	8,510
1957	261	181	0	0	0	323	7,620	10,020	754	29	0	32	19,220

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1282	-	-	-	-	-	-	-
1952	1282	1,140	May 24, 1952	0	4.68	3,400	5.37	3,900
1953	1282	920	May 12, 1953	0	4.22	3,050	6.10	4,420
1954	1342	1,620	Oct. 4, 1953	0	5.77	4,180	3.48	2,520
1955	1392	4,320	May 10, 1955	0	23.7	17,160	23.4	16,950
1956	1442	15,000	May 1, 1956	0	11.7	8,510	12.3	8,950
1957	1512	6,760	Apr. 26, 1957	0	26.5	19,220	-	-

250. Colorado River at Winchell, Tex. 1/

Location. --Lat 31°28'05", long 99°09'45", at bridge on U. S. Highway 377, 0.3 mile south of Winchell, Brown County, 6.2 miles downstream from Home Creek, and at mile 561.

Drainage area. --24,580 sq mi; at site 4.2 miles downstream, 24,600 sq mi: approximately, of which 11,900 sq mi is probably noncontributing.

Gage. --Water-stage recorder. Datum of gage is 1,264.86 ft above mean sea level, datum of 1929. November 1923 to September 1934, combination staff and chain gage at site 4.2 miles downstream, at datum 10.14 ft lower. Jan. 13, 1939, to Mar. 24, 1940, wire-weight gage at present site and datum.

Average discharge. --28 years (1924-34, 1939-57), 724 cfs (524,200 acre-ft per year).

Extremes. --1923-34, 1939-57: Maximum discharge, 76,100 cfs Oct. 15, 1930, at site then in use (gage height, 51.8 ft, present site and datum); no flow at times.

Maximum stage since at least 1882, 62.2 ft Sept. 19, 1936, present site and datum, from information by Gulf, Colorado & Santa Fe Railway at railway bridge 1,000 ft above present gage.

Remarks. --Diversions above station for irrigation and municipal supply. Amount diverted unknown. Flow partly regulated since March 1930 by Lake Nasworthy, since April 1949 by Lake Colorado City, since February 1952 by San Angelo Reservoir, since July 1952 by Lake J. B. Thomas, since May 1953 by Oak Creek Reservoir.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	476	181	143	250	1,110	2,440	440	8.69	12.5	469	-
1925	589	45.0	181	59.0	43.4	18.3	2,180	2,600	2,220	151	808	2,320	933
1926	579	98.5	74.9	227	59.1	1,290	2,470	733	1,670	370	789	2,460	901
1927	1,600	90.1	1,040	118	221	372	777	308	399	946	152	663	561
1928	1,910	35.0	42.2	68.1	68.1	37.8	175	3,470	1,630	3,220	1,310	626	1,060
1929	58.9	131	76	60	80.1	254	668	3,420	112	432	5.61	900	521
1930	977	173	61.1	40.6	44.1	75.4	154	4,310	3,390	73.5	301	101	813
1931	9,880	226	844	268	599	272	204	171	447	76.1	40.9	48.5	1,100
1932	1,920	533	104	241	342	100	602	6,430	2,010	2,970	460	6,020	1,810
1933	463	266	439	352	203	195	97.6	1,320	81.4	33.8	349	225	338
1934	219	100	42.2	53.4	65.5	171	1,830	406	39.2	42.0	170	66.3	266
1939	-	-	-	-	101	266	240	1,908	2,984	323	987	20.7	-
1940	59.6	56.7	59.1	54.2	223	31.6	1,137	943	2,891	881	790	452	628
1941	92.3	172	118	45.5	315	858	2,942	5,756	5,313	1,128	768	470	1,500
1942	2,426	522	349	206	170	154	1,095	1,736	125	83.0	2,227	1,033	851
1943	932	232	217	168	127	133	98.8	451	211	147	2.12	32.4	231
1944	32.4	10.1	48.3	151	185	242	33.4	1,386	312	743	257	918	361
1945	744	58.5	76.0	110	123	133	518	88.0	340	4,746	286	50.5	614
1946	711	70.4	62.5	101	78.2	45.4	18.8	1,256	187	16.8	108	1,705	364
1947	665	259	525	135	64.5	66.3	240	4,045	491	79.3	2.86	109	564
1948	609	78.8	323	26.5	189	174	95.0	523	662	4,584	266	323	661
1949	192	45.1	19.3	55.3	108	768	4,576	3,855	1,014	69.5	228	292	936
1950	583	56.8	47.0	66.7	140	13.3	368	1,050	269	227	149	1,192	347
1951	64.0	7.72	11.0	12.8	14.1	9.41	6.52	1,272	1,225	199	512	76.8	286
1952	5.24	1.09	0	0	0	0	480	1,286	360	.04	0	1,517	303
1953	14.6	82.2	31.5	7.67	1.29	680	10.7	789	4.00	240	1,853	203	332
1954	1,193	106	11.2	6.48	6.68	19.6	2,443	3,699	568	173	25.8	0	692
1955	3.23	11.8	.54	.14	65.9	11.8	1.92	4,947	2,546	1,864	372	1,036	912
1956	421	2.87	.82	4.16	24.7	1.56	88.8	3,079	33.6	51.0	66.7	17.0	321
1957	1,000	194	78.4	11.0	103	368	4,167	13,910	4,040	139	73.0	597	2,070

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	29,300	11,100	8,240	15,400	66,100	150,000	26,200	534	771	27,900	-
1925	36,200	2,680	11,100	3,630	2,410	1,120	130,000	160,000	132,000	9,280	49,700	138,000	676,000
1926	35,600	5,860	4,610	14,000	3,280	79,300	147,000	45,000	99,400	22,700	49,100	147,000	653,000
1927	98,500	5,360	63,900	7,240	12,300	22,900	46,200	19,000	23,700	58,200	9,340	39,500	406,000
1928	117,000	2,080	2,590	4,190	3,920	2,320	10,400	213,000	97,000	198,000	80,600	37,200	768,000
1929	3,620	7,800	4,670	3,690	4,450	15,600	39,700	210,000	6,660	26,600	345	53,600	377,000
1930	60,100	10,300	3,760	2,500	2,450	4,640	9,160	265,000	202,000	4,520	18,500	6,010	589,000
1931	608,000	13,400	51,900	16,500	33,300	16,700	12,100	10,500	26,600	4,680	2,510	2,890	799,000
1932	118,000	31,700	6,400	14,800	19,700	6,150	35,800	395,000	120,000	183,000	28,300	358,000	1,320,000
1933	28,500	15,800	27,000	21,600	11,300	12,000	5,810	81,200	4,840	2,080	21,500	13,400	245,000
1934	13,500	5,950	2,590	3,280	3,640	10,500	109,000	25,000	2,330	2,580	10,500	3,950	192,800
1939	-	-	-	-	5,630	16,350	14,260	117,300	177,500	19,840	60,680	1,230	-
1940	3,660	3,370	3,630	3,330	12,810	1,950	67,630	57,980	172,000	54,190	48,560	26,900	456,000
1941	5,680	10,240	7,250	2,800	17,480	52,750	175,100	353,900	316,200	69,370	47,210	27,970	1,086,000
1942	149,200	31,080	21,430	12,680	9,460	9,480	65,130	106,800	7,440	5,100	136,900	61,490	616,200
1943	57,340	13,800	13,370	10,350	7,060	8,200	5,880	27,740	12,550	9,020	131	1,930	167,400
1944	1,990	604	2,970	9,270	10,640	14,880	1,990	85,190	18,580	45,700	15,810	54,610	262,200
1945	45,780	3,480	4,680	6,740	6,820	8,180	30,830	5,410	20,210	291,800	17,560	3,010	444,500

1/ Published as "near Milburn" November 1923 to September 1934.

Monthly and yearly runoff, in acre-feet, of Colorado River at Winchell, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	43,710	4,190	3,840	6,180	4,350	2,790	1,120	77,210	11,100	1,030	6,650	101,400	263,600
1947	40,900	15,420	32,280	8,320	3,580	4,070	14,270	248,700	29,210	4,870	176	6,460	408,300
1948	37,420	4,690	19,860	1,630	10,880	10,700	5,650	32,180	39,420	281,900	16,360	19,230	479,900
1949	11,830	2,690	1,190	3,400	6,010	47,220	272,300	237,000	60,330	4,270	14,040	17,370	677,600
1950	35,850	3,380	2,890	4,100	7,760	815	21,880	64,540	16,030	13,950	9,140	70,950	251,300
1951	3,940	459	675	786	785	579	388	78,180	72,870	12,230	31,490	4,570	207,000
1952	322	65	0	0	0	0	28,590	79,100	21,410	2.2	0	90,240	219,700
1953	896	4,890	1,940	472	72	41,820	636	48,520	238	14,730	113,900	12,100	240,200
1954	73,360	6,330	688	399	371	1,200	145,400	227,500	33,790	10,660	1,590	0	501,300
1955	199	701	32	7.1	3,660	728	114	304,200	151,500	114,600	22,840	61,650	660,200
1956	25,910	171	50	256	1,420	96	5,280	189,300	2,000	3,140	4,100	1,010	232,700
1957	61,470	11,540	4,820	678	5,730	22,640	248,000	855,100	240,400	8,530	4,490	35,550	1,499,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	608	20,500	Apr. 27, 1924	-	-	-	491	356,000
1925	608	31,300	June 1, 1925	8.0	933	676,000	928	672,000
1926	628	35,100	Apr. 23, 1926	16	901	653,000	1,070	775,000
1927	648	24,400	Apr. 21, 1927	13	561	406,000	498	360,000
1928	668	33,700	July 29, 1928	7.8	1,060	768,000	914	663,000
1929	688	28,400	May 26, 1929	0	521	377,000	601	435,000
1930	703	42,300	June 15, 1930	2.2	813	589,000	1,640	1,190,000
1931	718	76,100	Oct. 15, 1930	2.6	1,100	799,000	390	282,000
1932	733	41,800	May 12, 1932	1.3	1,810	1,320,000	1,700	1,230,000
1933	748	23,100	May 25, 1933	.8	338	245,000	270	196,000
1934	763	25,600	Apr. 6, 1934	0	266	192,800	-	-
1939	878	24,300	June 24, 1939	-	-	-	-	-
1940	898	32,000	June 19, 1940	9.4	628	456,000	645	468,500
1941	928	32,700	May 23, June 7, 1941	5.1	1,500	1,086,000	1,747	1,264,000
1942	958	25,800	Aug. 25, 1942	5.9	851	616,200	689	499,000
1943	978	7,670	Oct. 18, 1942	0	231	167,400	122	88,420
1944	1008	13,000	Sept. 7, 1944	2.5	361	262,200	428	310,600
1945	1038	41,100	July 8, 1945	12	614	444,500	611	442,300
1946	1058	24,700	May 16, 1946	0	364	263,600	415	300,400
1947	1088	22,400	May 12, 1947	0	564	408,300	527	381,600
1948	1118	46,000	July 9, 1948	2.7	661	479,900	597	433,700
1949	1148	39,700	Apr. 20, 1949	14	936	677,600	973	704,100
1950	1178	9,880	Oct. 25, 1949	.7	347	251,300	296	214,200
1951	1212	23,100	May 25, 1951	0	286	207,000	279	202,300
1952	1242	44,000	Sept. 11, 1952	0	303	219,700	313	227,100
1953	1282	33,600	Aug. 21, 1953	0	332	240,200	432	312,900
1954	1342	31,700	Apr. 13, 1954	0	692	501,300	583	421,800
1955	1392	64,600	May 19, 1955	0	912	660,200	947	685,400
1956	1442	57,800	May 1, 1956	0	321	232,700	392	284,400
1957	1512	63,000	May 13, 1957	0	2,070	1,499,000	-	-

251. Deep Creek subwatershed No. 3 near Placid, Tex.

Location.--Lat 31°17'10", long 99°09'25", at dam on tributary to Deep Creek, 2.8 miles southeast of Placid, McCulloch County.

Drainage area.--3.42 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,500.0 ft above mean sea level, datum of 1929. Prior to Dec. 1, 1953, staff gage at same site and datum.

Extremes.--1953-57: Maximum inflow, 1,800 cfs May 18, 1955; no inflow at times; maximum reservoir contents, 758 acre-ft May 19, 1955 (gage height, 20.79 ft).

Remarks.--Records given herein represent inflow into reservoir, computed by algebraic summation of outflow, and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed in 1953 and first storage began Oct. 3, 1953. Dam is earth-fill, 2,600 ft long, with a sodded spillway section at gage height 22.0 ft. Outlet structure is 2.5-foot square concrete drop outlet, gage height of crest 13.0 ft, connected to a 17-inch concrete outlet pipe at gage height 5.5 ft. There is also an 8-inch controlled water-supply outlet pipe connected to the drop outlet at gage height 5.5 ft. Reservoir capacity, 925 acre-ft at spillway crest, 149 acre-ft at concrete drop outlet, and 15 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service of U. S. Department of Agriculture for flood control and conservation of stock water.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	6.27	0	0.003	0.003	0	0.02	0.59	0.32	0	0	0	0.02	0.61
1955	.89	.37	0	.02	.84	.003	.23	12.7	2.95	.88	0	3.87	1.90
1956	.05	.03	.01	.02	.23	0	0	.20	.01	.03	.59	.01	.10
1957	.50	.003	.20	.01	.02	1.65	5.81	8.77	.04	.01	0	.92	1.50

Monthly and yearly runoff, in acre-feet, of Deep Creek subwatershed No. 3 near Placid, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	386	0	0.2	0.2	0	1.0	35	20	0	0	0	1.4	444
1955	55	22	0	1.4	46	.2	13	781	176	54	0	230	1,380
1956	2.8	1.6	.8	1.0	13	0	0	12	.4	2.0	36	.6	70
1957	31	.2	12	.4	1.2	102	346	539	2.2	.6	0	55	1,090

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954		742	Oct. 4, 1953	0	0.61	444	0.19	135
1955		1,800	May 18, 1955	0	1.90	1,380	1.81	1,310
1956		218	Aug. 28, 1956	0	.10	70	.15	108
1957		1,160	May 12, 1957	0	1.50	1,090	-	-

252. Deep Creek near Mercury, Tex.

Location. --Lat 31°24'10", long 99°07'15", at bridge on Farm Road 502, 1.5 miles upstream from Dry Prong Deep Creek, 2.3 miles southeast of Mercury, McCulloch County, and 2.5 miles southwest of Milburn.

Drainage area. --43.9 sq mi, of which 19.9 sq mi is above flood-detention structures.

Gage. --Water-stage recorder. Datum of gage is 1,325.64 ft above mean sea level, datum of 1929. Prior to Nov. 25, 1953, reference point at same site and datum.

Extremes. --1953-57: Maximum discharge, 5,500 cfs Oct. 4, 1953 (gage height, 18.27 ft, from floodmarks); no flow most of time. Maximum stage since at least 1890, about 21.3 ft July 23, 1938 (discharge, 33,600 cfs), by slope-area measurement. Flood of 1906 reached a stage of about 21 ft, from information by local resident.

Remarks. --The flow from 19.9 sq mi above this station was partly controlled by 5 floodwater-detention reservoirs (constructed during the period 1952-57) with a total combined capacity of 5,810 acre-ft below the flood-spillway crests, of which 5,200 acre-ft is floodwater-detention capacity and 610 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. Station operated as part of the Deep Creek basin hydrologic cooperative program of the Geological Survey and Soil Conservation Service to evaluate rainfall-runoff relation, soil-conservation practices, and the effects of flood-detention structures.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	76.2	0	0	0	0	0	10.5	4.74	0	0	0	0.53	7.78
1955	6.14	1.77	0	0	4.75	0	.34	166	31.0	13.6	3.27	40.6	22.5
1956	.15	0	0	0	1.72	0	0	5.10	0	0	11.7	.05	1.58
1957	1.31	.01	1.03	0	0	10.8	46.4	124	1.36	0	0	0	15.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	4,680	0	0	0	0	0	626	291	0	0	0	32	5,630
1955	377	105	0	0	264	0	20	10,230	1,850	836	201	2,420	16,300
1956	8.9	0	0	0	99	0	0	314	0	0	722	3.0	1,150
1957	81	.8	63	0	0	666	2,760	7,630	81	0	0	0	11,280

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1342	5,500	Oct. 4, 1953	0	7.78	5,630	1.98	1,430
1955	1392	5,200	May 17, 1955	0	22.5	16,300	21.9	15,830
1956	1442	2,540	Aug. 28, 1956	0	1.58	1,150	1.77	1,280
1957	1512	3,440	May 12, 1957	0	15.6	11,280	-	-

253. Deep Creek subwatershed No. 8 (Dry Prong Deep Creek), near Mercury, Tex.

Location. --Lat 31°23'05", long 99°08'30", at dam on Dry Prong Deep Creek, 1.9 miles southeast of Mercury, McCulloch County, and 3.5 miles upstream from mouth.

Drainage area. --4.32 sq mi.

Gage. --Water-stage recorder. Datum of gage is 1,377.13 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Average discharge. --5 years (1952-57), 1.40 cfs (1,010 acre-ft per year).

Extremes. --1952-57: Maximum inflow, 2,550 cfs May 17, 1955; no inflow most of time; maximum reservoir contents, 1,148 acre-ft May 19, 1955 (gage height, 22.13 ft).

253. Deep Creek subwatershed No. 8 (Dry Prong Deep Creek), near Mercury, Tex.--Continued

Remarks.--Records given herein represent inflow into reservoir, computed by algebraic summation of outflow, and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed in December 1951 but no appreciable storage before Apr. 18, 1952. Dam is earth-fill, 4,300 ft long, with a sodded spillway section at gage height 24.0 ft. Outlet structure is 3-foot square concrete box, gage height of crest 9.0 ft, connected to a 21-inch concrete outlet pipe at gage height -1.0 ft. There is an 8-inch controlled water-supply outlet pipe connected to drop outlet at gage height -1.0 ft. Reservoir capacity, 1,410 acre-ft at spillway crest, 215 acre-ft at concrete drop outlet, and 16 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service of U. S. Department of Agriculture for flood control and conservation of stock water. During 1957 calendar year, 21 acre-ft of water was diverted from the reservoir for irrigation of 20 acres of land.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	1.99	0.31	0	0.02	4.22	-
1953	0	3.39	0.76	0.06	0.004	1.33	0.11	1.95	.01	.01	.17	0	0.65
1954	11.6	.01	.003	.01	0	.01	1.00	1.05	.01	.01	0	.14	1.17
1955	1.98	.33	.01	.04	1.08	.003	.06	20.6	4.02	.71	.25	6.90	3.02
1956	.02	.01	0	.02	.39	0	.003	1.08	0	.03	2.21	0	.32
1957	.27	.02	.21	.02	.02	1.90	4.67	14.0	.58	.01	0	.10	1.84

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	122	19	0	1.4	251	-
1953	0	202	47	4.0	0.2	82	6.5	120	.4	.4	11	0	474
1954	713	.6	.2	.8	0	.4	60	65	.6	.8	0	8.3	850
1955	122	20	.8	2.4	60	.2	3.6	1,270	239	44	15	411	2,190
1956	1.0	.8	0	1.4	22	0	.2	66	0	2.0	136	0	229
1957	16	1.4	13	1.4	1.4	117	278	862	35	.4	0	5.8	1,330

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952		-	-	0	-	-	-	-
1953		900	May 12, 1953	0	0.65	474	1.29	938
1954		1,580	Oct. 4, 1953	0	1.17	850	.38	278
1955		2,550	May 17, 1955	0	3.02	2,190	2.82	2,050
1956		557	Aug. 28, 1956	0	.32	229	.36	258
1957		894	May 12, 1957	0	1.84	1,330	-	-

254. Dry Prong Deep Creek near Mercury, Tex.

Location.--Lat 31°24'10", long 99°08'10", at bridge on Farm Road 502, 1.3 miles southeast of Mercury, McCulloch County, 1.7 miles downstream from flood-detention reservoir, and 1.8 miles upstream from mouth.

Drainage area.--8.31 sq mi, of which 4.32 sq mi is above Dry Prong Deep Creek Reservoir.

Gage.--Water-stage recorder. Datum of gage is 1,339.02 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1951-57), 1.48 cfs (1,070 acre-ft per year).

Extremes.--1951-57: Maximum discharge, 2,000 cfs May 17, 1955 (gage height, 9.00 ft); from rating curve extended above 1,000 cfs by logarithmic plotting; no flow most of time.

Maximum stage since at least 1924, that of May 17, 1955. Flood of July 23, 1938, reached a stage of 8.7 ft, from information by local resident.

Remarks.--The flow from 4.32 sq mi above this station was partly controlled by one floodwater-detention reservoir with a total capacity of 1,410 acre-ft below the flood-spillway crest, of which 1,195 acre-ft is floodwater-detention capacity and 215 acre-ft is sediment-storage capacity. The capacity allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. Water can be diverted from reservoir to irrigate 104 acres. Station operated as part of the Deep Creek basin hydrologic cooperative program of the Geological Survey and Soil Conservation Service to evaluate rainfall-runoff relation, soil-conservation practices, and the effects of flood-detention structures.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	0	0	0	-
1952	0	0	0	0	0	0	0.60	0.18	0	0	0	.69	0.12
1953	0	.15	0	0	0	.26	.09	1.58	0	0	.32	0	.20
1954	15.9	0	0	0	0	0	.53	1.98	.003	0	0	.01	1.57
1955	.71	.29	0	0	.65	0	0	30.2	5.40	1.27	.40	12.1	4.28
1956	0	0	0	0	.12	0	0	3.44	0	0	1.49	0	.43
1957	.38	.003	.18	0	0	1.81	5.42	17.8	1.44	0	0	0	2.28

Monthly and yearly runoff, in acre-feet, of Dry Prong Creek near Mercury, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	0	0	0	-
1952	0	0	0	0	0	0	36	11	0	0	0	41	88
1953	0	9.1	0	0	0	16	5.4	97	0	0	20	0	147
1954	980	0	0	0	0	0	31	122	.2	0	0	.8	1,130
1955	44	17	0	0	36	0	0	1,860	321	78	25	721	3,100
1956	0	0	0	0	6.7	0	0	212	0	0	92	0	311
1957	23	.2	11	0	0	111	322	1,100	86	0	0	0	1,650

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	-	-	-	-	-	-	-
1952	1242	105	Apr. 18, 1952	0	0.12	88	0.13	97
1953	1282	293	May 12, 1953	0	.20	147	1.54	1,120
1954	1342	776	Oct. 4, 1953	0	1.57	1,130	.30	215
1955	1392	2,000	May 17, 1955	0	4.28	3,100	4.20	3,040
1956	1442	960	May 1, 1956	0	.43	311	.48	345
1957	1512	664	May 12, 1957	0	2.28	1,650	-	-

255. Hords Creek Reservoir near Valera, Tex.

Location.--Lat 31°50'00", long 99°33'35", at outlet-works structure near right end of dam on Hords Creek, 5.3 miles northwest of Valera, Coleman County, and 8.8 miles west of Coleman.

Drainage area.--48 sq mi, approximately.

Supplemental records available.--Records of monthly diversions for municipal use for the period September 1950 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is at mean sea level, datum of 1929.

Extremes.--1948-57: Maximum contents, 12,790 acre-ft May 1, 1956 (elevation, 1,906.86 ft); minimum since first appreciable storage, 1,220 acre-ft Oct. 9, 1948 (elevation, 1,873.38 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam 6,800 ft long including spillway. Deliberate impoundment of water began Apr. 7, 1948, and dam was completed June 1948. Reservoir is operated for flood control and part of municipal water supply for city of Coleman.

Outlet works consist of three concrete conduits, two of which are controlled by slide gates. The third conduit (service spillway) is uncontrolled. In addition, there is a 500-foot uncontrolled broad-crested emergency spillway located in a saddle on the right bank. Spillway capacity, 61,700 cfs at elevation 1,933.6 ft (maximum design level). Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Crest of dam	1,939.0	-
Crest of emergency spillway	1,920.0	25,310
Crest of service spillway (top of conservation storage)	1,900.0	8,640
Invert of lowest outlet for water supply	1,876.5	1,690
Invert of slide gates	1,856.0	-

Cooperation.--Records furnished by Corps of Engineers. Record of diversions for municipal use furnished by city of Coleman.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1948	-	-	-	-	-	-	190	167	170	1,470	1,340	1,250	-
1949	1,340	1,280	1,250	1,290	1,320	1,380	2,120	3,870	3,840	3,630	3,950	3,790	+2,540
1950	3,890	3,760	3,710	3,630	3,560	3,410	3,290	3,270	3,090	2,980	3,000	3,050	-740
1951	2,750	2,610	2,530	2,440	2,380	2,260	2,160	5,700	6,820	6,380	6,070	5,770	+2,720
1952	5,710	5,550	5,410	5,300	5,140	4,980	5,080	5,030	4,710	4,360	3,990	4,420	-1,350
1953	4,180	4,120	4,040	3,930	3,820	3,970	3,780	3,660	4,800	5,980	5,930	5,640	+1,220
1954	5,610	5,480	5,330	5,260	5,110	4,930	6,690	7,410	7,260	6,740	6,260	5,900	+260
1955	5,690	5,590	5,440	5,370	5,320	5,120	4,900	5,810	6,250	6,440	6,150	6,360	+460
1956	6,050	5,840	5,700	5,640	5,570	5,350	10,900	8,380	7,840	7,320	6,840	6,440	+80
1957	6,340	6,240	6,130	6,030	5,980	5,850	7,860	8,710	8,410	8,040	7,520	7,210	+770

256. Hords Creek near Valera, Tex.

Location.--Lat 31°50', long 99°33', on left bank about 7,500 ft downstream from Hords Creek Reservoir, 5.5 miles north of Valera, Coleman County, and 7.0 miles west of Coleman.

Drainage area.--53 sq mi, approximately, of which 48 sq mi is above Hords Creek Dam.

Gage.--Water-stage recorder. Datum of gage is 1,819.88 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge.--10 years (1947-57), 1.95 cfs (1,410 acre-ft per year).

Extremes.--1947-57: Maximum discharge, 3,860 cfs Apr. 30, 1956 (gage height, 14.73 ft, from rating curve extended above 1,900 cfs by logarithmic plotting); no flow at times each year.

Maximum stage known, 23.0 ft July 3, 1932, from information by local residents (discharge not determined). Flood in July or September 1900 reached a stage 3.7 ft higher than that of July 1932 at a site 12 miles downstream at Coleman, from information by local residents.

256. Hords Creek near Valera, Tex.--Continued

Remarks.--Flow largely regulated since April 1948 by Hords Creek Reservoir. At times runoff results from rainfall on area between reservoir and gage site.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	0.04	1.86	0.17	0.19	0.20	-
1948	4.33	1.32	0.72	0.10	0.10	0.01	0.68	.02	.02	6.57	.06	0	1.17
1949	.60	.04	.05	.08	.21	.28	2.17	4.00	.16	0	2.98	.05	.89
1950	.89	.10	.05	.10	.05	.05	.06	.21	.05	.15	0	.15	.16
1951	2.03	.02	0	.02	.004	0	0	6.52	3.99	.01	0	0	1.06
1952	.18	.08	.10	.06	0	.02	.72	1.02	.02	0	0	.85	.25
1953	0	.07	.03	0	0	.76	.01	.04	.90	2.10	.84	0	.40
1954	.49	.06	0	0	0	0	3.90	1.45	.19	0	0	0	.51
1955	0	.15	0	0	.04	0	0	1.14	1.65	2.24	.35	1.47	.59
1956	0	0	0	0	0	0	13.9	75.6	0	0	0	0	7.54
1957	.14	.46	.04	.05	.02	.16	3.99	50.4	27.4	.003	0	0	6.93

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	2.2	111	11	12	12	-
1948	266	79	44	6.1	6.0	0.8	40	1.0	1.0	404	3.8	0	852
1949	37	2.6	3.4	4.8	12	17	129	246	9.5	0	183	2.8	647
1950	55	5.8	3.2	6.1	2.8	2.8	3.6	13	3.2	9.5	0	8.9	114
1951	125	1.0	0	1.0	.2	0	0	401	237	.4	0	0	766
1952	11	4.6	6.1	4.0	0	1.2	43	63	1.2	0	0	51	185
1953	0	4.0	1.6	0	0	47	.8	2.4	54	129	52	0	291
1954	30	3.4	0	0	0	0	232	89	11	0	0	0	365
1955	0	8.7	0	0	2.2	0	0	70	98	137	21	87	424
1956	0	0	0	0	0	0	827	4,650	0	0	0	0	5,480
1957	8.3	28	2.2	3.4	1.0	9.9	237	3,100	1,630	.2	0	0	5,020

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1392	a338	June 13, 1947	0	-	-	-	-
1948	1392	1,490	July 31, 1948	0	1.17	852	0.70	506
1949	1392	1,320	Aug. 9, 1949	0	.89	647	.92	668
1950	1392	180	Oct. 24, 1949	0	.16	114	.24	176
1951	1392	2,440	May 21, 1951	0	1.06	766	.91	661
1952	1392	234	Sept. 10, 1952	0	.25	185	.23	169
1953	1392	326	July 15, 1953	0	.40	291	.44	319
1954	1392	637	Apr. 27, 1954	0	.51	365	.47	341
1955	1392	715	July 18, 1955	0	.59	424	.58	415
1956	1442	3,860	Apr. 30, 1956	0	7.54	5,480	7.59	5,520
1957	1512	878	May 12, 1957	0	6.93	5,020	-	-

a Maximum during period April to September.

257. Hords Creek at Coleman, Tex.

Location.--Lat 31°51', long 99°26', at bridge on U. S. Highways 84 and 283 and State Highway 206, 1 mile north of Coleman, Coleman County, 2.5 miles downstream from Batchelor Creek, and 12 miles downstream from Hords Creek Dam.

Drainage area.--107 sq mi, of which 48 sq mi is above Hords Creek Dam.

Gage.--Water-stage recorder. Datum of gage is 1,676.83 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Prior to May 23, 1946, staff gage at site 3,700 ft downstream at datum 6.38 ft lower.

Average discharge.--17 years (1940-57), 9.69 cfs (7,020 acre-ft per year).

Extremes.--1940-57: Maximum discharge, 25,100 cfs Apr. 30, 1956 (gage height, 21.50 ft), from rating curve extended above 4,800 cfs on basis of slope-area measurement at gage height 16.50 ft and contracted-opening measurement of peak flow; no flow at times.

Maximum stage since at least 1876 occurred in June or September 1900, and was about 6.3 ft higher than that of Apr. 30, 1956, at a point near municipal light and powerplant about 6,000 ft downstream from the present gage. Flood of July 3, 1932, reached a stage about 2.6 ft higher than that of Apr. 30, 1956, at the same downstream point. Data pertaining to stage of floods in 1900 and 1932 from information by local residents.

Remarks.--Flow largely regulated since April 1948 by Hords Creek Reservoir from which city of Coleman obtains part of its municipal supply. Water was spilling or being released from Hords Creek Reservoir during periods April 30 to May 5, 1956, and May 13 to June 4, 1957. Maximum discharge on April 30, 1956, was not affected by spill or release from Hords Creek Reservoir. Maximum discharge on May 23, 1957, was only slightly affected by flow released from Hords Creek Reservoir.

Monthly and yearly mean discharge, in cubic feet per second, of Hords Creek at Coleman, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	0	0	0	0	3.37	17.3	50.6	162	149	4.50	2.53	7.52	33.1
1942	31.4	3.25	.87	.26	.20	.11	97.8	67.1	4.50	.01	0	0	17.2
1943	43.0	1.57	.20	.17	.01	.67	.07	3.20	0	0	0	8.48	4.85
1944	.99	0	0	2.11	1.92	.67	0	9.06	.12	0	0	1.08	1.34
1945	35.0	0	0	0	0	2.46	2.52	9.85	52.4	139	.20	.10	20.3
1946	.10	.10	0	0	0	0	.82	20.0	.06	0	0	7.04	2.37
1947	0	15.7	3.31	.16	.09	.04	0	0	3.48	0	0	0	1.88
1948	11.3	1.34	0	0	.01	0	6.04	0	0	20.0	1.83	0	3.42
1949	.46	0	0	.01	.02	.24	18.2	40.6	.01	0	20.2	0	6.72
1950	6.67	0	.09	.08	.004	0	0	0	0	0	0	1.58	.71
1951	0	0	0	0	0	0	0	75.4	77.7	.01	0	0	12.8
1952	.84	0	0	0	0	0	.94	15.2	.07	0	0	.47	1.48
1953	0	0	0	0	0	1.34	3.32	5.66	1.27	6.69	6.26	0	2.07
1954	2.22	0	0	0	0	0	37.5	15.3	.02	0	0	0	4.57
1955	0	2.12	0	0	0	0	0	23.7	14.2	12.8	1.02	9.04	5.27
1956	0	0	0	0	0	0	127	158	0	0	0	0	23.8
1957	0	.22	0	0	0	0	50.9	163	59.1	.02	0	.03	22.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	0	0	0	0	187	1,060	3,010	9,940	8,870	276	155	448	23,950
1942	1,930	193	53	16	11	6.7	5,820	4,130	268	.6	0	0	12,430
1943	2,650	93	12	11	.8	41	4.2	197	0	0	0	505	3,510
1944	61	0	0	130	111	41	0	557	6.9	0	0	64	971
1945	2,150	0	0	0	0	151	150	606	3,120	8,520	12	6.0	14,720
1946	6.1	6.0	0	0	0	0	49	1,230	3.4	0	0	419	1,710
1947	0	932	203	9.9	5.0	2.2	0	0	207	0	0	0	1,360
1948	696	80	0	0	.4	0	360	0	0	1,230	112	0	2,480
1949	28	0	0	.6	1.0	15	1,080	2,500	.6	0	1,240	0	4,870
1950	410	0	5.8	5.0	.2	0	0	0	0	0	0	94	515
1951	0	0	0	0	0	0	0	4,640	4,620	.6	0	0	9,260
1952	52	0	0	0	0	0	56	932	4.0	0	0	28	1,070
1953	0	0	0	0	0	83	198	348	75	411	385	0	1,500
1954	136	0	0	0	0	0	2,230	943	1.2	0	0	0	3,310
1955	0	126	0	0	0	0	0	1,460	845	786	62	538	3,820
1956	0	0	0	0	0	0	7,550	9,700	0	0	0	0	17,250
1957	0	13	0	0	0	0	3,030	10,040	3,520	1.2	0	2.0	16,610

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	1178	10,600	June 26, 1941	0	33.1	23,950	36.1	26,130
1942	1178	6,470	Apr. 7, 1942	0	17.2	12,430	18.0	13,010
1943	1178	4,420	Oct. 17, 1942	0	4.85	3,510	1.13	820
1944	1178	433	May 1, 1944	0	1.34	971	4.22	3,060
1945	1178	7,030	July 7, 1945	0	20.3	14,720	17.4	12,580
1946	1178	1,240	May 15, 1946	0	2.37	1,710	3.92	2,840
1947	1178	740	Nov. 2, 1946	0	1.88	1,360	1.38	1,000
1948	1178	2,370	July 3, 1948	0	3.42	2,480	2.39	1,730
1949	1178	5,350	May 8, 1949	0	6.72	4,870	7.26	5,250
1950	1178	523	Oct. 24, 1949	0	.71	515	.14	99
1951	1212	8,640	May 22, 1951	0	12.8	9,260	12.9	9,310
1952	1242	1,890	May 17, 1952	0	1.48	1,070	1.40	1,020
1953	1282	780	May 15, 1953	0	2.07	1,500	2.26	1,640
1954	1342	1,760	Apr. 11, 1954	0	4.57	3,310	4.56	3,300
1955	1392	1,890	July 18, 1955	0	5.27	3,820	5.09	3,690
1956	1442	25,100	Apr. 30, 1956	0	23.8	17,250	23.8	17,260
1957	1512	4,900	May 23, 1957	0	22.9	16,610	-	-

258. Brownwood Reservoir near Brownwood, Tex.

Location.--Lat 31°50', long 99°00', at outlet structure for irrigation canal just upstream from right end of dam on Pecan Bayou, a quarter of a mile downstream from Jim Ned Creek, and 8 miles north of Brownwood, Brown County.

Drainage area.--1,535 sq mi.

Gage.--Staff gage. Datum of gage is 0.50 ft below mean sea level, datum of 1929. July 1933 to May 31, 1941, and Nov. 21, 1944, to Sept. 30, 1949, staff gages or water-stage recorder at various sites at dam at same datum.

Extremes.--1933-41, 1944-57: Maximum contents observed, 192,300 acre-ft May 2, 1956 (gage height, 1,431.4 ft); minimum observed, 11,900 acre-ft July 15, 1934 (gage height, 1,389.5 ft).

Remarks.--Reservoir first filled during flood of July 3, 4, 1932. Dam completed in 1933 and operation began July 1933. Reservoir is formed by earth-fill dam, 1,580 ft long. Uncontrolled emergency spillway consisting of broad-crested weir 479 ft long is located 800 ft to left of dam. Reservoir can be drained by two 12-foot (horseshoe-shaped) reinforced-concrete conduits. Water is withdrawn for irrigation canal through a 5-foot circular concrete conduit. Water used for irrigation, municipal and industrial supply for city of Brownwood. Figures given herein represent total contents. Data regarding the dam and reservoir are shown in the following table:

	Gage height (feet)	Capacity (acre-feet)
Crest of dam	1,450.0	-
Maximum design water surface	1,435.0	-
Crest of spillway (total capacity)	1,425.1	137,300
Invert to irrigation canal	1,406.0	41,200
Invert to 12-foot outlet conduits	1,330.0	-

Cooperation.--Record of daily gage height furnished by Brown County Water Improvement District No. 1. Capacity table furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1933	-	-	-	-	-	-	-	-	-	51,000	49,300	47,600	-
1934	45,400	44,400	44,100	44,100	43,500	49,600	68,600	76,400	64,600	-	-	-	-
1935	-	-	-	-	-	-	45,700	126,300	147,300	130,300	114,600	142,200	-
1936	129,600	110,700	105,300	104,200	103,700	101,600	109,100	121,800	125,700	135,800	125,000	162,800	+20,600
1937	145,900	128,300	115,800	107,400	105,300	105,300	104,200	101,600	120,600	120,000	114,100	112,400	-50,400
1938	113,500	111,800	114,100	115,200	114,100	114,600	114,600	103,700	111,800	150,300	134,400	118,800	+6,400
1939	120,600	118,800	117,600	125,000	123,800	121,800	121,800	154,900	148,100	133,000	133,700	114,600	-4,200
1940	111,300	109,600	108,500	106,900	106,900	-	-	-	-	-	-	-	-
1945	-	133,000	129,600	146,600	-	-	-	133,000	135,800	-	-	-	-
1946	-	125,000	121,800	122,500	123,100	127,600	128,300	-	-	-	-	-	-
1948	-	-	a121,600	116,400	115,800	113,200	113,200	111,400	112,600	114,500	108,900	109,500	-
1949	108,300	104,000	101,700	102,300	106,400	111,400	124,900	135,900	133,800	120,300	119,000	115,100	+5,600
1950	127,600	119,000	118,400	117,000	116,400	112,000	109,500	119,600	117,000	116,400	112,000	112,000	-3,100
1951	106,400	101,700	99,360	96,520	95,400	92,600	88,360	124,900	133,800	124,200	116,400	111,400	-600
1952	107,700	104,000	101,100	98,780	95,960	92,600	98,200	113,200	119,600	110,700	101,700	98,200	-13,200
1953	93,160	93,160	94,840	93,160	90,480	93,720	98,780	131,000	125,600	134,500	133,800	130,300	+32,100
1954	133,100	130,300	127,600	124,900	122,200	119,000	138,100	138,100	127,600	119,000	110,100	104,000	-26,300
1955	99,940	101,100	97,640	96,520	97,080	94,280	94,840	127,600	136,600	134,500	128,900	139,600	+35,600
1956	128,900	123,600	121,000	119,000	118,400	113,900	114,500	129,600	122,200	112,600	104,600	98,200	-41,400
1957	94,840	94,280	93,160	91,540	91,010	89,420	147,100	141,000	129,600	123,600	115,800	112,600	+14,400

a Contents by capacity table used beginning Oct. 1, 1947. Contents Apr. 30, 1946, by capacity table used since Oct. 1, 1947, was 123,100 acre-ft.

259. Pecan Bayou at Brownwood, Tex.

Location.--Lat 31°44'10", long 98°58'30", at pier of abandoned Gulf, Colorado & Santa Fe Railway bridge, 2,000 ft upstream from city dam, 1 mile north of Brownwood, Brown County, 6 miles downstream from Salt Creek, and 10 miles downstream from Brownwood Reservoir.

Drainage area.--1,614 sq mi, of which 1,535 sq mi is above Brownwood Reservoir.

Gage.--Water-stage recorder. Datum of gage is 1,318.58 ft above mean sea level, datum of 1929. May 25 to June 4, 1917, staff gage at site 2,000 ft downstream at datum 2.45 ft lower. June 8, 1917, to June 30, 1918, staff gage at site 1,300 ft downstream at datum 3.49 ft lower. Oct. 16, 1923, to July 10, 1929, staff gage at site 1,300 ft downstream at datum 0.10 ft lower. Dam raised about 3 ft in April 1918.

Average discharge.--32 years (1924-28, 1929-57), 166 cfs (120,200 acre-ft per year).

Extremes.--1917-18, 1923-57: Maximum discharge, 31,600 cfs Oct. 14, 1930 (gage height, 16.92 ft); no flow at times.
Maximum stage known, 21.7 ft in September 1900 (discharge not determined), from information by Gulf, Colorado & Santa Fe Railway Co. Flood of July 3, 1932, probably the greatest known, reached a discharge of about 235,000 cfs as it entered Brownwood Reservoir (computed from rate of change of contents in reservoir; data furnished by engineers of Brown County Water Improvement District No. 1).

Remarks.--Flow largely regulated by Brownwood Reservoir. Water diverted from Brownwood Reservoir, 10 miles upstream for irrigation, municipal and industrial uses.

Monthly and yearly mean discharge, in cubic feet per second, of Pecan Bayou at Brownwood, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	18.6	0	7.47	128	-
1918	0	0	0	0	0	0	0	-	-	-	-	-	-
1924	-	293	415	27.0	24.9	356	106	677	106	0	0	41.6	-
1925	3.89	0	0	0	0	0	113	525	9.96	89.5	81.0	98.9	77.6
1926	177	78.2	0	63.8	0	47.9	577	38.0	311	128	5.83	251	139
1927	55.6	2.10	96.4	5.88	65.9	53.4	346	77.9	75.8	133	2.76	111	85.2
1928	396	0	0	0	8.37	1.77	84.4	1,246	204	256	550	18.2	233
1929	0	-	-	-	-	-	-	-	-	0	0	43.5	-
1930	127	8.53	0	0	0	13.2	4.85	1,520	329	44.6	0	182	188
1931	2,780	64.9	131	53.4	154	31.2	16.7	70.0	377	65.9	0	0	315
1932	1,630	30.6	87.7	280	113	29.2	8.34	774	918	3,630	60.6	1,000	719
1933	30.9	11.6	242	81.2	.20	.20	85.2	159	.55	68.5	1.06	2.29	57.7
1934	4.26	9.48	3.30	.27	22.6	9.39	10.7	.74	174	993	7.37	3.22	104
1935	0	.08	.2	3.20	15.1	12.6	8.78	178	459	334	265	1,197	205
1936	346	324	90.0	4.28	8.25	7.86	2.71	19.1	51.0	240	103	2,424	299
1937	580	296	258	125	42.2	15.9	9.07	26.7	58.8	19.3	17.2	4.06	122
1938	17.4	4.13	10.8	71.5	4.71	3.33	39.4	237	3.07	487	253	81.2	103
1939	.50	12.2	2.93	3.64	1.59	1.94	10.1	619	1,145	205	109	176	191
1940	2.26	3.54	9.53	5.34	6.54	5.20	28.5	157	473	163	683	215	146
1941	6.80	20.3	12.0	13.7	329	319	972	2,518	783	283	31.4	275	464
1942	298	152	147	37.2	8.49	8.92	1,043	1,279	711	107	9.89	564	364
1943	910	201	28.4	38.1	88.3	7.25	3.64	20.8	5.07	.47	.12	25.4	111
1944	1.98	1.87	.43	8.57	3.07	2.89	2.30	66.2	10.2	71.7	75.1	87.3	30.0
1945	127	55.3	113	3.44	34.0	63.9	312	214	22.8	1,160	79.1	.51	184
1946	3.51	1.85	2.57	5.57	24.3	3.13	7.23	15.7	160	29.3	0	19.6	22.5
1947	.33	14.0	1.00	41.6	118	11.2	22.4	3.04	.91	0	1.25	0	17.1
1948	0	0	14.2	1.09	3.18	1.14	13.8	4.47	36.2	9.01	15.1	7.55	8.79
1949	0	.04	.05	5.08	7.02	17.4	31.9	475	85.8	113	.07	.01	62.1
1950	24.4	125	1.57	2.72	.90	13.2	3.47	27.0	6.40	3.33	12.7	.25	18.4
1951	.08	3.26	.35	.10	.38	.29	4.41	84.3	1,818	26.6	3.63	6.69	160
1952	.23	.54	.16	.18	.40	.41	2.11	50.1	.38	1.30	2.29	.61	4.96
1953	.16	4.20	5.92	.85	1.03	5.58	55.9	55.5	.43	87.0	30.0	.27	20.8
1954	31.8	.37	2.00	1.25	.58	2.55	309	248	50.6	.27	5.51	.11	78.7
1955	.10	7.10	.27	.42	4.75	1.80	49.4	31.7	595	220	6.67	292	100
1956	189	.88	13.7	8.14	2.11	.33	5.26	1,985	.91	.21	3.67	3.82	187
1957	9.11	3.72	6.30	.19	.37	3.75	629	4,037	1,033	5.01	.57	.20	482

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	1,110	0	459	7,620	-
1918	0	0	0	0	0	0	0	-	-	-	-	-	-
1924	-	17,400	25,500	1,660	1,430	21,900	6,300	41,600	6,290	0	0	2,470	-
1925	239	0	0	0	0	0	6,730	32,300	592	5,500	4,980	5,890	56,200
1926	10,900	4,650	0	3,920	0	2,950	34,300	2,330	18,500	7,880	359	14,900	101,000
1927	3,420	125	5,930	362	3,660	3,280	20,600	4,790	4,510	8,180	170	6,600	61,600
1928	24,370	0	0	0	482	109	5,020	76,630	12,170	15,750	33,840	1,080	169,500
1929	0	-	-	-	-	-	-	-	-	0	0	2,590	-
1930	7,810	508	0	0	0	812	289	93,200	19,600	2,740	0	10,800	136,000
1931	171,000	3,860	8,060	3,280	8,550	1,920	994	4,300	22,400	4,050	0	0	228,000
1932	100,000	1,820	5,390	17,200	6,500	1,800	496	47,600	54,600	223,000	3,730	59,600	521,000
1933	1,900	690	14,900	4,990	11	12	5,070	9,780	33	4,210	65	136	41,800
1934	262	564	203	17	1,260	577	637	46	10,400	61,100	453	192	75,700
1935	0	5.0	12	197	841	775	522	10,960	27,300	20,530	16,320	71,210	148,700
1936	21,300	19,250	5,530	263	474	484	161	1,170	3,040	14,780	6,320	144,200	217,000
1937	35,680	17,600	15,880	7,690	2,340	978	540	1,640	3,500	1,190	1,060	241	88,340
1938	1,070	246	665	4,400	262	205	2,350	14,580	183	29,960	15,540	4,830	74,290
1939	31	728	180	224	88	119	601	38,080	68,140	12,600	6,700	10,470	138,000
1940	139	211	586	328	376	320	1,690	9,620	28,130	10,010	41,970	12,810	106,200
1941	418	1,210	739	842	18,280	19,620	57,860	154,800	46,600	17,400	1,930	16,340	336,000
1942	18,300	9,020	9,020	2,290	472	549	62,060	78,620	42,310	6,570	608	33,550	263,400
1943	55,960	11,940	1,750	2,340	4,900	446	217	1,280	302	29	7.5	1,510	80,680
1944	122	111	26	527	1,770	178	137	4,070	607	4,410	4,620	5,190	21,770
1945	7,800	3,290	6,950	212	1,890	3,930	18,550	13,130	1,360	71,310	4,860	30	133,300
1946	216	110	158	343	1,350	192	430	966	9,530	1,800	0	1,170	16,260
1947	20	836	61	2,560	6,570	687	1,330	187	54	0	77	0	12,380
1948	0	0	875	67	183	70	824	275	2,160	554	926	449	6,380
1949	0	2.6	3.4	313	390	1,070	1,900	29,220	5,110	6,950	4.2	.6	44,960
1950	1,500	7,460	97	167	50	811	207	1,660	381	205	783	15	13,340
1951	5.2	194	22	6.1	21	18	263	5,180	108,200	1,630	223	398	116,200
1952	14	32	9.9	11	23	25	126	3,080	22	80	141	36	3,600
1953	9.7	250	364	52	57	343	3,330	3,410	25	5,350	1,840	16	15,050
1954	19,560	22	123	77	32	157	18,420	15,240	3,010	17	339	6.7	57,000

Monthly and yearly runoff, in acre-feet, of Pecan Bayou at Brownwood, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	6.1	422	16	26	264	110	2,940	1,950	35,400	13,500	410	17,370	72,410
1956	11,640	53	841	501	121	20	313	122,000	54	13	226	228	136,000
1957	560	221	387	12	20	231	37,420	248,200	61,500	308	35	12	348,900

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	458	a3,340	Sept. 3, 1917	0	-	-	-	-
1918	478	28,000	May 18, 1918	0	-	-	-	-
1924	588	9,110	May 14, 1924	0	-	-	113	81,900
1925	608	7,470	May 10, 1925	0	77.6	56,200	98.7	71,500
1926	628, 1512	8,350	Apr. 22, 1926	0	139	101,000	131	94,600
1927	648, 1512	12,400	Apr. 21, 1927	0	85.2	61,600	106	76,520
1928	1512	18,300	May 20, 1928	0	233	169,500	-	-
1929	688	-	-	0	-	-	-	-
1930	703, 1512	18,200	May 13, 1930	0	188	136,000	429	310,000
1931	718, 1512	31,600	Oct. 14, 1930	0	315	228,000	211	153,000
1932	733, 1512	20,900	Oct. 13, 1931	0	719	521,000	596	432,000
1933	748	6,930	May 11, 1933	.2	57.7	41,800	35.0	25,300
1934	763	3,620	June 28, 1934	.2	104	75,700	103	74,570
1935	788	11,600	Sept. 10, 1935	0	205	148,700	269	194,700
1936	808, 1512	16,500	Sept. 28, 1936	.1	299	217,000	331	240,100
1937	828	b2,580	June 6, 1937	.1	122	88,340	29.2	21,160
1938	858	5,290	July 26, 1938	0	103	74,290	101	73,250
1939	878	9,700	June 20, 1939	0	191	138,000	191	138,000
1940	898	5,700	Aug. 17, 1940	0	146	106,200	148	107,600
1941	928, 1512	19,800	May 4, 1941	1.9	464	336,000	511	370,000
1942	958	9,050	May 20, 1942	2.8	364	263,400	410	296,700
1943	978	12,300	Oct. 18, 1942	0	111	80,680	15.6	11,290
1944	1008	2,560	May 1, 1944	0	30.0	21,770	54.5	39,550
1945	1038	11,000	July 8, 1945	.1	184	133,300	160	115,800
1946	1058	2,070	Sept. 14, 1946	0	22.5	16,260	23.1	16,700
1947	1088	790	Nov. 3, 1946	0	17.1	12,380	17.0	12,340
1948	1118	1,710	Dec. 7, 1947	0	8.79	6,380	7.59	5,510
1949	1148	8,780	May 17, 1949	0	62.1	44,960	74.6	54,010
1950	1178	580	Oct. 24, 1949	0	18.4	13,340	6.21	4,500
1951	1212	20,200	June 12, 1951	0	160	116,200	160	116,000
1952	1242	2,690	May 23, 1952	.1	4.96	3,600	5.74	4,170
1953	1282	4,760	Apr. 28, 1953	.1	20.8	15,050	47.2	34,130
1954	1342	4,630	Oct. 4, 1953	0	78.7	57,000	52.1	37,740
1955	1392	7,240	Sept. 23, 1955	.1	100	72,410	117	84,500
1956	1442	26,500	May 2, 1956	.1	187	136,000	172	124,600
1957	1512	17,400	Apr. 26, 1957	.1	482	348,000	-	-

a Maximum during period May to September.
b Maximum peak discharge; maximum discharge during year 3,070 cfs at 12:01 a.m. Oct. 1, 1936, stage falling.

260. Noyes Canal at Menard, Tex.

Location.--Lat 30°55', long 99°47', at intersection of Canal and Gay Streets in Menard, Menard County, and 4½ miles downstream from headgates.

Gage.--Water-stage recorder. Datum of gage is 1,878.06 ft above mean sea level, datum of 1929. Prior to July 23, 1940, staff gage at site 2,000 ft upstream at datum 4.99 ft higher.

Average discharge.--33 years (1924-57), 14.1 cfs (10,210 acre-ft per year).

Extremes.--1924-57: Maximum daily discharge (exclusive of times canal was submerged by waters of San Saba River), 50 cfs Apr. 15, 1925 (probably affected by local runoff between point of diversion and station); no flow at times.

Remarks.--Discharge represents flow diverted from San Saba River, not including local runoff between point of diversion and station. Canal diverts water from right bank of river about 4½ miles upstream from station for irrigation near Menard. About 10 acres irrigated from canal upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	19.0	12.7	13.6	32.1	30.6	6.40	-
1925	10.4	27.5	26.1	1.92	16.8	26.0	18.9	24.2	21.2	23.1	23.8	14.2	19.5
1926	9.72	0	26.4	8.12	0	26.3	0	22.9	21.1	22.7	24.6	22.4	15.5
1927	16.6	16.3	27.6	24.7	1.32	22.7	25.0	26.5	6.50	23.3	21.5	21.6	19.6
1928	7.26	21.7	9.82	6.19	14.8	18.3	26.7	20.3	14.7	18.0	18.8	2.33	14.9
1929	8.85	18.7	8.18	6.71	2.30	12.7	20.8	13.5	13.5	15.1	16.0	18.0	12.9
1930	7.77	13.7	12.6	10.4	21.8	16.5	16.2	18.5	20.3	17.8	16.7	14.8	15.5
1931	14.7	9.19	6.78	13.2	12.1	10.8	17.2	19.9	19.7	19.7	21.0	20.1	15.4

Monthly and yearly mean discharge, in cubic feet per second, of Noyes Canal at Menard, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	17.6	11.4	6.82	0	10.1	18.4	15.6	16.1	21.9	18.3	20.8	8.69	13.8
1933	7.65	9.45	10.1	10.1	5.46	2.74	16.5	14.4	16.3	14.5	14.6	11.7	11.1
1934	16.2	21.3	20.8	3.19	0	8.88	6.14	20.6	18.4	15.7	18.0	15.8	13.8
1935	16.2	19.5	12.2	21.5	10.9	11.5	24.5	10.6	.40	20.6	16.1	8.34	14.4
1936	7.29	6.82	5.47	1.28	4.75	21.0	14.7	8.29	15.4	16.5	11.5	10.3	10.3
1937	0	0	0	0	4.82	24.2	22.3	14.0	13.6	31.8	21.4	14.5	12.3
1938	21.5	15.1	17.2	.17	0	18.1	19.7	15.0	22.1	14.8	0	0	12.1
1939	10.4	23.1	28.4	24.9	27.9	22.7	15.7	24.5	25.4	19.4	23.5	22.3	22.3
1940	11.4	25.3	10.4	0	15.0	21.4	21.2	18.4	8.90	16.2	21.8	14.5	15.3
1941	23.2	7.62	18.8	19.1	0	0	12.7	11.8	25.3	19.1	13.8	15.2	14.0
1942	4.34	0	17.8	27.8	26.5	26.4	14.4	23.8	20.2	24.3	12.9	13.2	17.6
1943	14.6	0	16.3	21.7	21.7	20.4	13.9	24.0	22.1	15.7	13.8	6.62	15.9
1944	3.25	21.8	23.2	21.3	13.7	0	15.5	16.2	19.6	13.2	20.4	4.81	14.4
1945	0	15.6	23.6	22.4	2.14	14.0	22.3	19.2	6.25	16.0	7.48	16.6	13.9
1946	19.9	20.5	20.9	7.35	4.52	20.4	18.6	13.8	15.0	15.4	11.3	10.8	14.9
1947	0	7.17	21.3	20.3	19.2	10.6	16.1	17.7	16.9	15.9	11.7	13.1	14.1
1948	12.7	16.7	18.6	18.7	9.90	6.64	16.4	12.2	9.33	5.03	9.14	5.90	11.8
1949	17.7	20.0	20.0	14.6	3.55	4.48	12.7	.58	8.09	22.3	15.4	21.7	13.5
1950	21.7	7.23	21.3	6.92	0	19.1	15.0	15.6	12.7	16.4	18.6	15.7	14.3
1951	19.1	21.6	23.5	20.1	18.9	14.2	8.38	13.2	12.7	7.28	5.85	10.7	14.6
1952	13.3	18.0	20.3	.41	8.95	18.0	15.9	3.12	4.61	8.29	7.17	7.86	10.5
1953	10.7	15.2	10.2	0	8.61	16.9	13.5	14.7	7.40	8.86	14.8	16.3	11.4
1954	11.4	19.0	20.4	18.9	17.2	16.4	13.1	8.58	12.2	8.33	6.34	8.0	13.4
1955	11.4	7.57	13.2	9.49	16.6	4.78	7.26	13.5	10.6	13.4	17.0	13.1	11.5
1956	13.1	16.3	20.7	3.00	18.7	15.0	11.1	0	.65	8.78	6.35	5.12	9.87
1957	5.06	8.81	9.78	12.7	9.92	13.9	10.6	0	1.22	21.8	16.0	13.4	10.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	1,130	779	809	1,970	1,880	381	-
1925	641	1,640	1,600	118	932	1,600	1,120	1,490	1,260	1,420	1,460	843	14,100
1926	598	0	1,620	499	0	1,620	0	1,410	1,260	1,400	1,520	1,330	11,300
1927	1,020	972	1,700	1,520	73	1,400	1,490	1,030	387	1,430	1,320	1,280	14,200
1928	446	1,290	604	381	853	1,130	1,590	1,250	873	1,110	1,160	138	10,800
1929	544	1,110	503	413	128	781	1,240	830	803	928	984	1,070	9,330
1930	478	813	778	639	1,210	1,010	964	1,140	1,210	1,090	1,030	881	11,200
1931	904	547	417	812	672	662	1,020	1,220	1,170	1,210	1,290	1,200	11,100
1932	1,080	678	419	0	581	1,130	928	990	1,300	1,130	1,280	517	10,000
1933	470	562	621	621	303	168	982	885	970	892	898	696	8,070
1934	996	1,270	1,280	196	0	546	365	1,270	1,090	965	1,110	940	10,000
1935	994	1,160	749	1,320	606	706	1,460	649	24	1,270	990	496	10,420
1936	448	406	336	79	273	1,290	876	510	916	1,020	705	615	7,470
1937	0	0	0	0	268	1,490	1,330	858	810	1,960	1,310	864	8,890
1938	1,320	897	1,060	11	0	1,110	1,170	924	1,320	910	0	0	8,720
1939	641	1,370	1,750	1,530	1,550	1,400	935	1,510	1,510	1,190	1,450	1,320	16,160
1940	698	1,510	637	0	863	1,320	1,260	1,130	529	998	1,340	865	11,150
1941	1,430	453	1,160	1,180	0	0	757	724	1,500	1,170	847	902	10,120
1942	267	0	1,100	1,710	1,470	1,620	859	1,470	1,200	1,490	793	786	12,760
1943	900	0	1,000	1,330	1,200	1,260	830	1,480	1,320	964	851	394	11,530
1944	200	1,300	1,420	1,310	790	0	922	997	1,160	809	1,250	286	10,440
1945	0	928	1,450	1,370	119	861	1,330	1,180	372	982	460	986	10,040
1946	1,220	1,220	1,290	452	251	1,250	1,100	846	895	946	696	644	10,810
1947	0	427	1,310	1,250	1,070	653	958	1,090	1,010	976	717	778	10,240
1948	781	992	1,140	1,150	569	408	974	749	552	309	562	351	8,540
1949	1,090	1,190	1,230	899	197	276	756	36	481	1,370	947	1,290	9,760
1950	1,340	430	1,310	425	0	1,170	893	957	755	1,010	1,140	936	10,370
1951	1,170	1,290	1,440	1,240	1,050	874	499	814	755	447	359	638	10,580
1952	821	1,070	1,250	25	515	1,110	948	192	275	510	441	468	7,620
1953	659	904	626	0	478	1,040	802	901	441	545	913	970	8,280
1954	701	1,130	1,260	1,160	958	1,010	780	527	729	512	390	476	9,630
1955	701	450	811	583	922	294	432	829	629	826	1,040	780	8,300
1956	804	972	1,270	185	1,070	922	662	0	38	540	391	305	7,160
1957	311	524	602	783	551	852	630	0	73	1,340	984	797	7,450

261. San Saba River at Menard, Tex.

Location.--Lat 30°55', long 99°48', at bridge on U. S. Highway 83, in Menard, Menard County, and 0.7 mile downstream from Las Moras Creek.

Drainage area.--1,151 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,863.05 ft above mean sea level, datum of 1929. Sept. 14, 1915, to Mar. 12, 1924, chain gage at site 635 ft downstream at datum 2.20 ft lower. Mar. 13, 1924, to Feb. 21, 1939, staff gage at site 1,000 ft upstream at datum 2.00 ft higher. Feb. 22, 1939, to Jan. 25, 1940, chain gage at present site and datum.

Average discharge.--42 years (1915-57), 70.6 cfs (51,110 acre-ft per year).

Extremes.--1915-57: Maximum discharge, 130,000 cfs July 23, 1938 (gage height, 22.2 ft, present site and datum, from floodmark), from rating curve extended above 60,000 cfs on basis of slope-area measurements at gage heights 21.0 and 22.2 ft; no flow at times caused by diversions to Noyes Canal.

Maximum stage known, 23.3 ft June 5 or 6, 1899, present site and datum, from information by local residents.

Remarks.--Low flow during irrigation season regulated by diversions to Noyes Canal 4 miles upstream, and diversions by pumping at several locations upstream from gage. Records of the Texas Board of Water Engineers show permits have been granted to irrigate 3,338 acres above the station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	70.0	41.0	36.2	36.0	36.1	44.9	61.5	58.2	16.9	13.9	14.5	25.6	37.9
1917	15.8	11.0	24.4	23.6	31.5	29.9	33.0	34.1	36.7	2.95	2.70	20.1	22.1
1918	1.88	9.81	23.7	27.1	30.2	26.5	190	23.2	221	1.83	5.18	47.2	50.0
1919	36.6	226	37.9	36.9	39.6	29.1	27.3	102	212	72.8	42.7	375	103
1920	40.6	51.4	48.2	41.8	42.9	30.6	33.8	29.5	38.1	32.3	161	32.8	48.7
1921	37.6	45.9	36.6	24.8	27.6	44.1	19.1	15.7	9.12	7.23	9.13	22.0	24.9
1922	35.3	3.65	10.8	5.72	4.31	251	1,210	258	53.6	18.5	6.87	11.1	155
1923	11.2	43.7	30.9	16.8	58.1	55.2	230	29.5	12.7	1.73	32.9	350	71.9
1924	38.1	383	90.4	74.2	55.2	71.9	52.9	138	72.9	27.5	30.4	47.7	89.9
1925	37.8	23.5	26.8	45.5	30.2	22.4	60.8	184	28.0	11.6	19.8	26.0	43.2
1926	40.3	51.3	30.2	57.1	53.4	29.4	53.1	18.6	63.3	29.3	5.94	10.0	36.6
1927	22.1	19.9	12.6	15.1	63.5	23.6	15.5	69.0	170	9.49	5.42	22.0	36.9
1928	107	16.0	30.6	32.8	25.5	18.2	12.9	12.3	34.0	21.0	6.63	37.3	29.5
1929	28.9	16.4	31.8	27.3	29.5	27.7	9.71	22.5	8.63	7.68	2.32	34.9	20.6
1930	266	15.3	23.4	24.2	7.01	12.6	9.65	15.8	139	.58	.50	101	51.5
1931	653	34.0	34.7	29.6	88.9	36.0	29.1	19.1	19.9	34.2	9.33	73.4	89.0
1932	11.1	20.6	31.0	37.3	27.8	16.3	19.2	242	21.8	346	12.6	457	104
1933	42.9	39.9	40.5	43.7	42.9	45.7	27.5	26.8	13.0	8.94	7.91	12.8	29.3
1934	7.74	7.76	13.2	35.7	34.6	24.9	271	30.1	6.30	43.9	4.19	4.87	40.0
1935	5.27	4.98	18.9	13.0	101	25.9	8.90	358	591	15.2	18.7	514	138
1936	48.5	49.0	46.7	42.6	36.2	12.4	19.6	49.9	18.7	188	17.7	2,870	280
1937	121	83.0	79.5	66.9	53.3	35.9	31.6	32.5	35.4	11.6	7.39	15.0	47.8
1938	14.3	28.2	95.9	65.7	57.2	34.0	37.2	42.3	11.3	5,140	105	85.5	485
1939	49.2	35.3	33.3	41.1	31.8	38.8	39.1	74.3	15.7	48.2	15.8	10.1	36.2
1940	27.8	19.7	34.8	43.9	37.0	21.8	26.2	20.2	95.7	33.4	16.8	16.9	32.8
1941	9.11	33.5	22.3	21.2	42.2	91.3	92.2	152	39.9	34.3	28.2	190	62.9
1942	914	83.3	57.3	43.3	40.0	36.7	49.6	29.1	29.4	14.9	41.3	242	133
1943	497	65.1	44.9	38.9	36.4	38.1	38.2	22.9	20.9	16.4	15.3	42.5	73.7
1944	42.0	24.2	32.3	41.5	45.4	55.4	50.1	156	32.0	22.9	16.2	40.8	46.7
1945	139	37.6	29.3	31.7	57.1	35.5	33.0	26.8	30.5	16.8	18.9	10.5	38.8
1946	17.1	19.2	20.8	38.7	36.6	17.8	18.1	22.5	11.2	5.33	4.27	473	56.4
1947	40.3	26.8	17.1	21.8	17.6	27.0	15.7	86.3	16.2	5.75	7.66	7.24	24.3
1948	7.42	7.14	10.4	10.2	21.0	19.4	7.16	6.04	5.13	8.84	6.46	44.7	12.7
1949	3.69	4.56	8.58	15.7	31.6	28.2	145	64.5	26.5	4.51	8.93	15.1	29.5
1950	60.8	32.7	15.9	34.2	42.0	10.3	26.6	14.2	11.7	33.1	3.53	6.43	24.2
1951	3.41	2.86	3.60	6.91	8.49	12.6	17.3	5.36	6.07	1.40	47.8	.73	9.75
1952	.79	2.56	2.78	23.5	8.07	2.78	3.01	17.9	6.58	0	0	5.39	6.12
1953	1.39	.82	11.9	21.5	4.42	1.65	1.25	3.96	0	1.12	30.4	3.30	6.89
1954	164	2.31	1.42	.78	1.36	2.04	36.5	26.1	1.94	0	0	0	20.0
1955	.01	2.34	0	6.10	.82	6.78	.89	90.0	46.4	61.8	102	15.9	28.0
1956	5.18	.01	.98	18.1	2.19	.99	221	560	19.0	10.3	0	0	70.3
1957	0	0	2.38	.04	10.6	8.96	851	1,631	92.9	10.5	1.72	3.10	219

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	4,300	2,440	2,230	2,210	2,080	2,760	3,660	3,580	1,010	855	892	1,520	27,500
1917	972	655	1,500	1,450	1,750	1,840	1,960	2,100	2,180	181	166	1,200	16,000
1918	116	584	1,460	1,670	1,680	1,630	11,300	1,430	13,200	113	319	2,810	36,300
1919	2,250	13,500	2,330	2,270	2,200	1,790	1,620	6,270	12,600	4,480	2,630	22,300	74,200
1920	2,500	3,060	2,960	2,570	2,470	1,880	2,010	1,810	2,270	1,990	9,880	1,950	35,400
1921	2,310	2,730	2,250	1,520	1,530	2,710	1,140	965	543	445	561	1,310	18,000
1922	2,170	217	663	351	239	15,400	71,800	15,900	3,190	1,140	422	663	112,000
1923	687	2,600	1,900	1,030	3,230	3,400	13,700	1,810	757	107	2,020	20,800	52,000
1924	2,340	22,800	5,560	4,560	3,180	4,420	3,150	8,510	4,340	1,690	1,870	2,840	65,300
1925	2,320	1,400	1,650	2,790	1,680	1,380	3,620	11,300	1,670	712	1,220	1,550	31,300

Monthly and yearly runoff, in acre-feet, of San Saba River at Menard, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	2,480	3,050	1,860	3,510	2,970	1,810	3,160	1,140	3,770	1,800	365	596	26,500
1927	1,360	1,190	778	928	3,520	1,450	924	4,240	10,100	583	333	1,310	26,700
1928	6,550	952	1,880	2,020	1,470	1,120	768	756	2,020	1,290	408	2,220	21,500
1929	1,780	976	1,960	1,680	1,640	1,700	578	1,380	514	472	143	2,080	14,900
1930	16,400	910	1,440	1,490	389	775	574	972	8,250	36	31	6,020	37,300
1931	40,200	2,020	2,130	1,820	4,940	2,210	1,730	1,170	1,180	2,100	574	4,370	64,400
1932	682	1,230	1,910	2,290	1,600	1,000	1,140	14,900	1,300	21,300	775	27,200	75,300
1933	2,640	2,370	2,490	2,690	2,380	2,810	1,640	1,650	774	550	486	762	21,200
1934	476	462	812	2,200	1,920	1,530	16,100	1,850	375	2,700	258	290	29,000
1935	324	296	1,160	801	5,620	1,600	530	21,990	35,160	932	1,150	30,600	100,200
1936	2,980	2,910	2,870	2,620	2,080	763	1,160	3,070	1,120	11,580	1,090	170,800	203,000
1937	7,420	4,940	4,890	4,120	2,960	2,210	1,880	2,000	2,110	713	455	896	34,590
1938	878	1,680	5,900	4,040	3,180	2,090	2,220	2,600	673	316,100	6,460	5,090	350,900
1939	3,030	2,100	2,050	2,530	1,760	2,380	2,330	4,570	932	2,960	970	601	26,210
1940	1,710	1,170	2,140	2,700	2,130	1,340	1,560	1,240	5,690	2,050	1,030	1,010	23,770
1941	560	2,000	1,370	1,300	2,340	5,620	5,490	9,320	2,380	2,110	1,730	11,330	45,550
1942	56,190	4,950	3,520	2,660	2,220	2,260	2,950	1,790	1,750	916	2,540	14,380	96,130
1943	30,540	3,880	2,760	2,390	2,020	2,340	2,270	1,410	1,240	1,010	942	2,530	53,330
1944	2,580	1,440	1,990	2,550	2,610	3,400	2,980	9,610	1,910	1,410	996	2,430	33,910
1945	8,520	2,240	1,800	1,950	3,170	2,180	1,960	1,650	1,820	1,030	1,160	625	28,100
1946	1,050	1,140	1,280	2,380	2,030	1,090	1,080	1,380	664	327	263	28,150	40,830
1947	2,480	1,590	1,050	1,340	978	1,660	936	5,300	964	353	471	431	17,550
1948	456	425	636	627	1,210	1,190	426	371	305	543	397	2,660	9,250
1949	227	271	528	967	1,760	1,730	8,630	3,970	1,580	277	549	898	21,390
1950	3,740	1,940	978	2,100	2,330	636	1,580	870	698	2,040	217	383	17,510
1951	210	170	221	425	472	774	1,030	329	361	86	2,940	44	7,060
1952	48	152	171	1,450	464	171	179	1,100	392	0	0	321	4,450
1953	85	49	732	1,320	245	101	74	244	0	69	1,870	197	4,990
1954	10,100	137	87	48	75	125	2,170	1,610	115	0	0	0	14,470
1955	.8	139	0	375	46	417	53	5,530	2,760	3,800	6,240	947	20,310
1956	319	.4	60	1,120	126	61	13,180	34,430	1,130	631	0	0	51,060
1957	0	0	147	2.2	589	551	50,660	100,300	5,530	644	106	184	158,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	438	a14,300	Sept. 16, 1915	-	-	-	-	-
1916	438	b195	Apr. 1, 1916	7.1	37.9	27,500	29.9	21,700
1917	458	b425	June 3, 1917	.7	22.1	16,000	20.7	15,000
1918	478, 1512	4,960	June 3, 1918	0	50.0	36,300	72.0	52,200
1919	508, 1512	14,300	Nov. 8, 1918	4.8	103	74,200	89.3	64,700
1920	508, 1512	3,690	Aug. 24, 1920	18	48.7	35,400	47.0	34,100
1921	528	b303	Nov. 26, 1920	3.0	24.9	18,000	19.0	13,800
1922	548, 1512	44,000	Apr. 26, 1922	1.6	155	112,000	158	114,000
1923	568, 1512	10,900	Sept. 5, 1923	.2	71.9	52,000	107	77,600
1924	588, 1512	b10,200	Nov. 1, 1923	20	89.9	65,300	55.0	39,900
1925	608, 1512	b6,750	May 29, 1925	3.1	43.2	31,300	46.0	33,300
1926	628	b1,330	June 2, 1926	2.8	36.6	26,500	31.0	22,400
1927	648, 1512	4,760	June 13, 1927	1.4	36.9	26,700	45.3	32,800
1928	668, 1512	2,780	Oct. 2, 1927	0	29.5	21,500	23.1	16,800
1929	688, 1512	1,840	Sept. 6, 1929	0	20.6	14,900	39.9	28,900
1930	703, 1512	43,400	Oct. 13, 1929	0	51.5	37,300	86.8	62,900
1931	718, 1512	57,200	Oct. 6, 1930	1.3	89.0	64,400	33.0	23,900
1932	733, 1512	31,300	Sept. 6, 1932	6.4	104	75,300	109	79,000
1933	748	123	Dec. 30, 1932	4.4	29.3	21,200	21.4	15,500
1934	763	17,600	Apr. 18, 1934	0	40.0	29,000	40.1	29,000
1935	788	18,100	Sept. 9, 1935	1.6	138	100,200	148	107,100
1936	808, 1512	101,000	Sept. 16, 1936	.4	280	203,000	291	211,500
1937	828	375	June 4, 1937	3.2	47.8	34,590	35.6	25,800
1938	858	130,000	July 23, 1938	5.1	485	350,900	483	349,600
1939	898	5,930	May 1, 1939	9.0	36.2	26,210	33.2	24,050
1940	898	1,360	June 29, 1940	6.4	32.8	23,770	31.2	22,680
1941	928	7,000	May 3, 1941	6.4	62.9	45,550	147	106,300
1942	958	49,200	Oct. 5, 1941	12	133	96,130	94.8	68,650
1943	978	30,800	Oct. 17, 1942	12	73.7	53,330	30.6	22,160
1944	1008	13,300	May 1, 1944	13	46.7	33,910	55.7	40,460
1945	1038	9,320	Oct. 4, 1944	8.8	38.8	28,100	26.3	19,020
1946	1058	60,000	Sept. 26, 1946	2.6	56.4	40,830	58.7	42,480
1947	1088	4,150	May 18, 1947	3.2	24.3	17,550	19.3	13,950
1948	1118	2,390	Sept. 9, 1948	0	12.7	9,250	12.1	8,760
1949	1148	6,310	Apr. 19, 1949	1.3	29.5	21,390	37.3	27,020
1950	1178	3,350	Oct. 24, 1949	2.0	24.2	17,510	15.8	11,460

a Maximum for period Sept. 14-30, 1936.
b Maximum observed.

Yearly discharge, in cubic feet per second, of San Saba River at Menard, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	3,540	Aug. 20, 1951	0	9.75	7,060	9.43	6,830
1952	1242	535	Sept. 10, 1952	0	6.12	4,450	6.80	4,940
1953	1282	4,150	Aug. 3, 1953	0	6.89	4,990	19.9	14,440
1954	1342	21,100	Oct. 4, 1953	0	20.0	14,470	5.91	4,280
1955	1392	8,120	May 19, 1955	0	28.0	20,310	28.4	20,550
1956	1442	48,000	May 1, 1956	0	70.3	51,060	70.0	50,820
1957	1512	41,000	Apr. 19, 1957	0	219	158,700	-	-

262. Brady Creek at Brady, Tex.

Location.--Lat 31°08'15", long 99°19'55", at bridge on U. S. Highway 377, in Brady, McCullough County, and 0.4 mile downstream from Liveoak Creek.

Drainage area.--575 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,646.50 ft above mean sea level, datum of 1929. Prior to July 9, 1940, staff gage at site 3,600 ft upstream at datum 8.24 ft higher.

Average discharge.--18 years (1939-57), 27.7 cfs (20,050 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 39,100 cfs Sept. 10, 1952 (gage height, 24.80 ft); no flow at times.
Maximum stage since at least 1904, 29.1 ft July 23, 1938, present site and datum (discharge at site 5 miles downstream, 86,000 cfs by slope-area measurement of peak flow). Flood of Oct. 6, 1930, reached a stage of 27.47 ft, present site and datum, from information by local residents.

Remarks.--City of Brady has permit to divert 730 acre-ft per year for municipal use which will affect extreme low stages. At the end of 1957, the flow from 106 sq mi above this station was partly controlled by 18 floodwater-detention reservoirs with a total combined capacity (constructed during the period 1955-57) of 35,490 acre-ft below the flood-spillway crests, of which 33,400 acre-ft is floodwater-detention capacity and 2,090 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	2.24	0	0.04	0	-
1940	0	0	0	0	0	0	30.7	77.9	127	12.0	6.42	.04	21.1
1941	.31	.44	1.64	.62	3.55	24.4	219	66.3	94.0	6.30	.41	15.2	35.8
1942	110	5.60	6.55	5.35	4.16	3.88	30.2	2.88	.51	0	13.0	7.10	15.9
1943	27.2	.22	.31	.25	.18	.57	2.28	2.59	24.9	.20	0	2.55	5.12
1944	.88	.11	.39	2.62	1.77	1.27	.17	70.0	1.77	.01	.07	73.6	12.7
1945	52.6	.85	1.66	2.50	7.02	7.93	21.8	.39	11.4	3.76	.03	0	9.19
1946	.03	0	.08	.36	.14	0	10.3	35.8	22.1	.31	.03	.67	5.83
1947	.01	.05	.05	.23	.07	.21	.07	31.9	.47	12.4	.01	.01	3.86
1948	0	0	11.3	.07	.05	.11	.06	41.7	.63	1.21	1.11	.96	4.84
1949	1.61	.12	.25	.70	4.63	14.8	270	24.5	10.9	.07	.15	0	27.0
1950	.09	0	.01	.08	.06	0	11.5	4.45	.97	.80	0	8.74	2.21
1951	.003	.03	.09	.10	.17	.14	6.35	84.2	3.05	.01	0	.003	7.96
1952	0	0	0	0	0	.04	.87	132	17.7	0	0	942	89.9
1953	.06	5.14	4.42	.64	.25	.34	.04	.09	0	2.44	26.1	.07	3.35
1954	3.05	0	0	0	0	0	7.15	41.8	.003	0	0	0	4.40
1955	2.21	1.77	0	0	9.16	0	.16	998	128	128	13.1	11.7	109
1956	.04	0	.02	0	7.89	0	.04	137	.08	0	20.1	.14	14.0
1957	0	0	0	.02	.18	31.1	482	853	48.8	.34	0	93.9	126

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	133	0	2.4	0	-
1940	0	0	0	0	0	0	1,820	4,790	7,590	741	395	2.6	15,340
1941	19	26	101	38	197	1,500	13,020	4,070	5,590	387	25	904	25,880
1942	6,780	333	403	329	231	238	1,790	177	31	0	802	422	11,540
1943	1,670	13	19	15	9.7	35	136	159	1,480	12	0	152	3,700
1944	54	6.3	24	161	102	78	10	4,300	106	.4	4.6	4,380	9,230
1945	3,240	51	102	154	390	487	1,300	24	676	231	1.6	0	6,660
1946	1.8	0	5.0	22	7.5	0	611	2,200	1,320	19	1.8	40	4,230
1947	.8	2.8	3.4	14	4.0	13	4.4	1,960	28	761	.6	.4	2,790
1948	0	0	694	4.6	3.0	6.9	3.6	2,570	37	74	68	57	3,520
1949	99	7.1	16	43	257	908	16,040	1,510	651	4.2	9.5	0	19,540
1950	5.4	0	.8	5.0	3.4	0	684	274	58	49	0	520	1,600
1951	.2	1.6	5.4	6.1	9.3	8.3	378	5,180	181	.4	0	.2	5,770
1952	0	0	0	0	0	2.2	52	8,090	1,050	0	0	56,060	65,250
1953	3.6	306	272	39	14	21	2.6	5.6	0	150	1,610	4.2	2,430
1954	188	0	0	0	0	0	426	2,570	.2	0	0	0	3,180
1955	136	105	0	0	509	0	9.3	61,340	7,600	7,860	808	694	79,060
1956	2.6	0	1.4	0	454	0	2.6	8,420	5.0	0	1,230	8.3	10,120
1957	0	0	0	1.4	9.7	1,910	28,670	52,460	2,900	21	0	5,590	91,560

Yearly discharge, in cubic feet per second, of Brady Creek at Brady, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	0	-	-	-	-
1940	898	7,500	May 8, 1940	0	21.1	15,340	21.3	15,480
1941	928	15,500	Apr. 27, 1941	0	35.8	25,880	45.9	33,250
1942	958	4,960	Oct. 1, 1941	0	15.9	11,540	7.92	5,720
1943	978	2,180	June 5, 1943	0	5.12	3,700	2.88	2,080
1944	1008	4,800	Sept. 7, 1944	0	12.7	9,230	17.3	12,540
1945	1038	5,940	Oct. 4, 1944	0	9.19	6,660	4.52	3,270
1946	1088	3,280	May 31, 1946	0	5.83	4,230	5.83	4,230
1947	1088	2,820	May 18, July 19, 1947	0	3.86	2,790	4.81	3,480
1948	1118	6,110	May 30, 1948	0	4.84	3,520	4.06	2,950
1949	1148	5,770	Apr. 19, 1949	0	27.0	19,540	26.8	19,430
1950	1178	1,210	Apr. 17, 1950	0	2.21	1,600	2.21	1,600
1951	1212	13,200	May 24, 1951	0	7.96	5,770	7.95	5,760
1952	1242	39,100	Sept. 10, 1952	0	89.9	65,250	90.7	65,840
1953	1282	2,280	Aug. 19, 1953	0	3.35	2,430	2.81	2,030
1954	1342	1,430	May 24, 1954	0	4.40	3,180	4.47	3,240
1955	1392	31,300	May 18, 1955	0	109	79,060	109	78,820
1956	1442	5,210	May 2, 1956	0	14.0	10,120	14.0	10,120
1957	1512	8,920	May 12, 1957	0	126	91,560	-	-

263. San Saba River at San Saba, Tex. 1/

Location. --Lat 31°12'50", long 98°42'40", at bridge on State Highway 16, 1.2 miles north of San Saba, San Saba County, 4.8 miles downstream from China Creek, 5.0 miles upstream from Simpson Creek, and 15.5 miles upstream from mouth.

Drainage area. --3,042 sq mi; at site prior to Aug. 30, 1930, 3,038 sq mi.

Supplemental records available. --December 1904 to December 1906, gage heights only collected at site 200 ft downstream from site used 1915-30.

Gage. --Water-stage recorder. Datum of gage is 1,162.16 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. September 1915 to Aug. 27, 1930, staff gage at site 2.4 miles upstream at datum 5.99 ft higher; Aug. 28, 1930, to Sept. 30, 1952, recording gage at site 1.8 miles downstream at datum 8.80 ft lower; Oct. 1, 1952, to July 8, 1953, wire-weight gage at present site and datum. Since Oct. 1, 1956, supplementary water-stage recorder on overflow channel, 2,780 ft to right of regular gage, at present datum, used for stages above 19 ft.

Average discharge. --42 years (1915-57), 251 cfs (181,700 acre-ft per year).

Extremes. --1915-57: Maximum discharge, 203,000 cfs July 23, 1938 (gage height, 45.18 ft, from floodmarks, at site and datum then in use), from rating curve extended above 41,000 cfs on basis of slope-area measurement of peak flow; no flow at times in 1918, 1930, 1954, 1955, and 1956.

Maximum stage since at least 1899, that of July 23, 1938. Flood of June 6, 1899, reached a stage of 42.6 ft at site and datum of gage in use 1930-52, from information by local resident.

Remarks. --Diversions above station for irrigation and municipal uses affect low flow. Since 1954, flow slightly affected by several flood-detention reservoirs on Brady Creek. (See Remarks for Brady Creek.)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	171	118	162	117	109	81.5	149	267	50.4	37.8	40.9	57.2	114
1917	48.1	51.4	65.1	68.6	57.7	52.7	43.9	139	250	14.3	35.2	128	79.2
1918	27.4	40.3	43.2	50.3	41.4	37.8	379	93.2	417	6.02	7.74	14.4	95.7
1919	526	748	329	294	166	200	87.0	449	1,260	602	387	1,210	521
1920	719	676	369	562	317	215	161	215	145	105	294	141	327
1921	97.0	146	119	97.6	97.3	137	83.8	63.5	98.5	29.6	29.7	41.8	86.6
1922	59.4	36.8	47.4	50.1	52.3	403	5,160	2,730	296	137	73.4	64.7	758
1923	67.4	97.6	80.9	76.8	160	156	648	182	98.7	137	48.5	807	212
1924	253	791	379	231	213	265	282	552	474	73.4	60.7	196	313
1925	102	93.7	103	110	94.1	73.2	102	399	99.1	17.8	179	130	126
1926	574	201	108	152	157	156	202	138	156	116	46.8	49.9	172
1927	113	95.2	106	89.9	358	127	86.7	159	568	70.2	60.6	97.0	159
1928	390	94.3	78.8	72.8	87.3	68.9	65.0	50.3	380	127	64.6	283	146
1929	100	74.4	78.5	66.3	62.9	152	68.8	468	139	35.0	33.0	352	136
1930	262	47.5	56.0	59.2	56.9	40.1	44.3	217	183	10.4	14.9	112	92.2
1931	2,150	141	113	208	420	202	128	109	124	111	49.7	66.8	320
1932	56.0	67.9	96.4	192	458	244	202	1,420	202	1,310	120	673	421
1933	139	128	124	132	116	134	92.8	385	64.8	33.1	38.5	44.2	120
1934	34.6	47.4	57.7	85.3	131	248	1,480	121	48.7	86.9	37.2	26.1	199
1935	26.7	61.6	49.4	61.3	330	101	63.0	2,030	1,873	163	107	1,661	542
1936	141	171	125	111	100	70.2	63.2	471	126	226	35.6	4,164	479
1937	664	414	312	208	177	167	123	163	489	73.3	55.5	75.8	244
1938	95.2	96.9	412	674	345	194	209	164	290	12,050	680	374	1,318
1939	221	186	206	345	171	144	151	286	129	88.7	149	56.6	178
1940	81.6	93.9	98.0	94.4	111	85.1	232	287	552	205	146	62.0	170

1/ Published as "near San Saba" prior to 1931.

Monthly and yearly mean discharge, in cubic feet per second, of San Saba River at San Saba, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	83.4	218	259	174	249	389	1,058	1,000	872	336	228	440	441
1942	1,251	235	200	168	150	134	307	208	147	80.9	230	387	293
1943	625	188	139	138	119	118	124	90.4	707	70.0	35.8	86.4	203
1944	130	87.9	118	241	247	184	134	781	231	93.4	63.0	180	208
1945	282	110	132	196	297	380	478	177	173	111	86.7	72.3	207
1946	97.5	88.8	99.1	126	133	96.2	82.4	267	114	36.5	34.7	381	129
1947	103	71.2	68.0	140	88.6	150	82.7	200	54.4	44.9	29.1	31.8	89.0
1948	28.2	41.7	96.7	57.0	78.7	61.7	62.4	224	104	76.6	84.9	160	89.7
1949	36.5	40.0	45.4	65.7	123	140	745	250	125	63.6	62.0	74.9	147
1950	96.9	65.7	64.5	92.2	107	51.2	88.7	160	78.3	77.5	32.3	77.3	82.5
1951	30.8	31.8	40.6	42.9	50.2	40.4	54.5	302	82.9	11.9	40.8	15.7	62.3
1952	12.7	17.7	24.3	34.7	28.7	22.9	60.4	668	109	10.4	2.87	1,625	216
1953	55.6	71.0	140	112	58.4	56.5	38.2	98.0	19.3	61.1	63.2	26.4	67.1
1954	350	39.4	38.2	43.3	29.2	24.6	80.2	228	15.0	.46	.25	5.40	71.9
1955	18.1	46.2	18.3	18.6	64.8	14.8	35.3	1,944	675	363	129	196	296
1956	42.4	22.0	24.5	33.1	64.8	19.8	423	1,292	26.7	12.7	13.3	18.6	167
1957	11.9	11.6	16.1	14.9	21.2	93.5	1,782	3,031	329	42.2	16.6	133	461

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	10,500	7,020	9,960	7,190	6,270	5,010	8,870	16,400	3,000	2,320	2,510	3,400	82,400
1917	2,960	3,060	4,000	4,220	3,200	3,240	2,610	8,550	14,900	879	2,160	7,620	57,400
1918	1,680	2,400	2,660	3,090	2,300	2,320	22,600	5,730	24,800	370	476	857	69,300
1919	32,400	44,500	20,200	18,100	9,220	12,300	5,180	27,600	75,000	37,000	23,800	72,000	377,000
1920	44,200	40,200	22,700	34,600	18,200	13,200	9,580	13,200	8,630	6,460	18,100	8,390	237,000
1921	5,960	8,690	7,320	6,000	5,400	8,420	4,990	3,900	5,860	1,820	1,830	2,490	62,700
1922	3,650	2,190	2,910	3,080	2,900	24,800	307,000	168,000	17,600	8,420	4,510	3,850	549,000
1923	4,150	5,810	4,970	4,720	8,910	9,590	38,600	11,200	5,870	8,450	2,990	48,000	153,000
1924	15,600	47,100	23,300	14,200	12,200	16,300	16,800	33,900	28,200	4,510	3,730	11,600	227,000
1925	6,270	5,570	6,360	6,770	5,220	4,500	6,100	24,600	5,900	1,090	11,000	7,730	91,100
1926	35,300	12,000	6,620	9,360	8,720	9,610	12,000	8,460	9,260	7,150	2,880	2,970	124,000
1927	6,930	5,670	6,490	5,530	19,900	7,830	5,160	9,750	33,800	4,320	3,730	5,770	115,000
1928	24,000	5,610	4,850	4,480	5,020	4,240	3,870	3,090	22,600	7,810	3,970	16,800	106,000
1929	6,150	4,430	4,830	4,080	3,490	9,350	4,090	28,800	8,270	2,150	2,030	20,900	98,600
1930	16,100	2,830	3,440	3,640	3,160	2,470	2,640	13,300	10,900	640	883	6,660	66,700
1931	132,000	8,390	6,950	12,800	23,300	12,400	7,620	6,700	7,380	6,820	3,060	3,970	231,000
1932	3,440	4,040	5,930	11,800	26,300	15,000	12,000	87,300	12,000	80,600	7,380	40,000	306,000
1933	8,550	7,620	7,620	8,120	6,440	8,240	5,520	23,700	3,860	2,040	2,370	2,630	86,700
1934	2,130	2,820	3,550	5,240	7,280	15,200	88,100	7,440	2,900	5,340	2,290	1,550	144,000
1935	1,640	3,670	3,040	3,770	18,300	6,210	3,750	124,800	111,500	10,040	6,600	98,830	392,200
1936	8,650	10,180	7,710	6,850	5,770	4,320	3,760	28,980	7,530	13,880	2,190	247,800	347,600
1937	40,800	24,630	19,210	12,790	9,820	10,260	7,340	10,000	29,070	4,500	3,410	4,510	176,300
1938	5,850	5,770	25,340	41,460	19,140	11,950	12,460	10,070	17,270	741,000	41,790	22,250	954,400
1939	13,580	11,050	12,640	21,200	9,480	8,840	9,000	17,610	7,690	5,450	9,150	3,370	129,100
1940	5,020	5,590	6,030	5,800	6,380	5,230	13,810	17,640	32,870	12,620	8,990	3,690	123,700
1941	5,130	12,980	15,930	10,670	13,820	23,890	62,950	61,510	51,880	20,670	14,020	26,160	319,600
1942	76,890	13,980	12,290	10,320	8,320	8,230	18,270	12,770	8,730	4,980	14,150	23,050	212,000
1943	38,410	11,170	8,550	8,470	6,590	7,260	7,410	5,560	42,080	4,300	2,200	5,140	147,100
1944	7,970	5,230	7,250	14,840	14,230	11,300	7,950	48,010	13,730	5,740	3,870	10,680	150,800
1945	17,310	6,550	8,130	12,060	16,470	23,340	28,420	10,910	10,310	6,810	5,330	4,300	149,900
1946	6,000	5,280	6,090	7,770	7,410	5,910	4,900	16,440	6,810	2,250	2,130	22,660	93,650
1947	6,300	4,240	4,180	8,620	4,920	9,220	4,920	12,330	3,240	2,760	1,790	1,890	64,410
1948	1,740	2,480	5,950	3,500	4,520	3,800	3,720	13,780	6,180	4,710	5,220	9,510	65,110
1949	2,240	2,380	2,790	4,040	6,840	8,580	44,300	15,360	7,410	3,910	3,810	4,560	106,200
1950	5,960	3,910	3,960	5,670	5,930	3,150	5,280	9,850	4,660	4,760	1,980	4,600	59,710
1951	1,890	1,890	2,500	2,640	2,790	2,480	3,240	18,570	4,930	731	2,510	936	45,110
1952	783	1,050	1,490	2,140	1,650	1,410	3,600	41,080	6,460	638	176	96,700	157,200
1953	3,420	4,230	8,620	6,900	3,240	3,470	2,270	6,030	1,150	3,760	3,890	1,570	48,550
1954	21,500	2,350	2,350	2,660	1,620	1,520	4,770	14,000	893	28	15	321	52,030
1955	1,110	2,750	1,120	1,140	3,600	911	2,100	119,500	40,190	22,310	7,950	11,670	214,400
1956	2,610	1,310	1,510	2,040	3,730	1,220	25,190	79,440	1,590	778	816	1,100	121,300
1957	733	689	991	916	1,180	5,750	106,100	186,400	19,590	2,600	1,020	7,930	333,900

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	458	-	-	-	-	-	-	-
1916	458	a4,150	May 1, 1916	22.0	114	82,400	89.6	65,000
1917	458	a6,020	June 3, 1917	6.8	79.2	57,400	74.7	54,100
1918	478	18,200	June 3, 1918	0	95.7	69,300	221	160,000
1919	508	30,500	Sept. 23, 1919	15.0	521	377,000	535	387,000
1920	508	a4,340	Oct. 17, 1919	70.0	327	237,000	210	152,000

a Maximum observed.

Yearly discharge, in cubic feet per second, of San Saba River at San Saba, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	528	a745	Nov. 26, 1920	18.0	86.6	62,700	68.4	49,500
1922	548, 1512	71,000	Apr. 26, 1922	30.0	758	549,000	766	555,000
1923	568	20,500	Sept. 17, 1923	18.0	212	153,000	310	224,000
1924	588	a6,500	Nov. 2, 1923	43.0	313	227,000	220	160,000
1925	608	4,660	May 11, Aug. 27, 1925	1.9	126	91,100	175	127,000
1926	628	8,640	Oct. 16, 1925	31.0	172	124,000	124	89,500
1927	648	8,640	Feb. 9, 1927	32.0	159	115,000	180	130,000
1928	668	8,460	Oct. 2, 1927	-	146	106,000	120	87,300
1929	688	7,460	May 30, 1929	18	136	98,600	146	106,000
1930	703	8,640	Oct. 14, 1929	0	92.2	66,700	265	192,000
1931	718	44,800	Oct. 7, 1930	24.0	320	231,000	135	97,500
1932	733	34,000	July 2, 1932	36.0	421	306,000	435	316,000
1933	748	7,350	May 25, 1933	21.0	120	86,700	98.5	71,400
1934	763	27,200	Apr. 6, 1934	8.5	199	144,000	199	144,000
1935	788, 1512	64,000	June 15, 1935	24.0	542	392,200	567	410,300
1936	808, 1512	67,200	Sept. 17, 1936	25.0	479	347,600	559	405,700
1937	828	5,110	Oct. 26, 1936	46.0	244	176,300	178	128,700
1938	858	203,000	July 23, 1938	39.0	1,318	954,400	1,319	954,700
1939	878	2,190	Jan. 12, 1939	51.0	178	129,100	150	108,400
1940	898	5,570	May 9, 1940	44.0	170	123,700	194	141,100
1941	928	27,200	Apr. 28, 1941	43.0	441	319,600	537	388,700
1942	958	25,200	Oct. 6, 1941	43	293	212,000	231	167,000
1943	978	20,400	June 5, 1943	29.0	203	147,100	151	109,500
1944	1008	4,670	May 2, 1944	44.0	208	150,800	224	162,300
1945	1038	4,780	Oct. 5, 1944	60.0	207	149,900	187	135,300
1946	1058	14,700	Sept. 27, 1946	23.0	129	93,650	126	91,010
1947	1088	2,490	May 19, 1947	22.0	89.0	64,410	82.7	59,860
1948	1118	4,660	May 11, 1948	19.0	89.7	65,110	85.9	62,350
1949	1148	6,290	Apr. 20, 1949	24.0	147	106,200	155	112,600
1950	1178	2,720	May 26, 1950	23.0	82.5	59,710	72.1	52,160
1951	1212	12,500	May 25, 1951	4.4	62.3	45,110	58.2	42,150
1952	1242	70,400	Sept. 11, 1952	.7	216	157,200	234	170,100
1953	1282	1,500	Dec. 30, 1952	11	67.1	48,550	80.8	58,480
1954	1342	7,150	Oct. 4, 1953	0	71.9	52,030	42.6	30,810
1955	1392	41,300	May 19, 1955	0	296	214,400	297	214,800
1956	1442	35,600	May 2, 1956	0	167	121,390	163	118,300
1957	1512	27,500	May 13, 1957	3.1	461	333,900	-	-

a Maximum observed.

264. Colorado River near San Saba, Tex. 1/

Location.--Lat 31°13'05", long 98°33'50", at bridge on U. S. Highway 190, 5.2 miles downstream from San Saba River, 9.2 miles east of San Saba, San Saba County, and at mile 474.

Drainage area.--30,600 sq mi; at site 44 miles downstream, 31,120 sq mi: approximately, of which 11,900 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses and water temperatures for the period September 1947 to September 1957, and records of sediment for the period December 1950 to September 1957, are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,096.22 ft above mean sea level, datum of 1929. October 1915 to October 1922, staff gage at site 1.2 miles upstream at datum 1.92 ft higher. October 1923 to Apr. 16, 1925, chain gage and Apr. 17, 1925, to December 1934, water-stage recorder at site 44 miles downstream at different datum. Aug. 30, 1930, to Mar. 21, 1940, water-stage recorder and Mar. 21 to May 23, 1940, staff gage, at site 2,230 ft downstream at present datum.

Average discharge.--39 years (1916-19, 1920-22, 1935-57), 1,475 cfs (1,068,000 acre-ft per year).

Extremes.--1915-57: Maximum discharge, 224,000 cfs July 23, 1938 (gage height, 63.2 ft, present site, based on floodmarks at site then in use); no flow Aug. 27-31, 1954.

Maximum stage during period 1878 to July 22, 1938, 58.4 ft Sept. 25, 1900 (discharge, 184,000 cfs), present site, from floodmarks at former site.

Remarks.--Diversions above station for irrigation, municipal use, and oilfield operation. Flow slightly regulated by 5 reservoirs in the Colorado and Concho Rivers and Oak Creek basins above Winchell, and by 2 reservoirs in the Pecan Bayou basin; combined capacity, 838,300 acre-ft. At the end of 1957, the flow from 138 sq mi above this station and below the Winchell station was partly controlled by 27 floodwater-detention reservoirs with a total combined capacity of 44,960 acre-ft below the flood-spillway crests, of which 41,780 acre-ft is floodwater-detention capacity and 3,180 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The first of these floodwater-detention reservoirs was completed in January 1952.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	240	387	362	210	123	1,100	1,340	184	42.8	39.9	517	-
1917	901	169	119	107	112	244	196	919	681	96.9	102	1,550	434
1918	41.5	56.2	65.8	52.3	38.6	29.0	1,430	1,060	2,020	31.0	34.5	918	478
1919	5,090	6,960	1,430	2,180	724	2,730	1,630	3,190	8,350	5,550	2,870	5,470	3,850
1920	-	-	-	1,240	648	-	326	4,340	685	298	3,140	3,380	-

1/ Published as "near Chadwick" October 1915 to October 1922, as "near Tow" October 1923 to December 1934 (October 1923 to August 1930 used herein).

Monthly and yearly mean discharge, in cubic feet per second, of Colorado River near San Saba, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	404	715	316	227	241	381	200	210	3,080	88.7	49.0	159	502
1922	87.9	52.3	66.4	70.0	70.2	474	18,200	19,400	2,100	1,190	137	107	3,510
1923	109	-	-	-	-	-	-	-	-	-	-	-	-
1924	1,290	2,470	1,610	569	492	1,120	1,570	3,890	1,370	114	86.6	875	1,290
1925	608	141	250	148	125	90.9	1,860	3,480	2,520	279	1,070	2,640	1,100
1926	2,060	938	261	666	291	1,440	4,130	1,850	2,190	995	761	2,670	1,520
1927	1,990	212	930	299	1,010	982	1,630	852	1,450	1,040	277	790	954
1928	3,070	258	225	185	277	195	355	4,040	2,670	2,820	2,170	1,180	1,460
1929	310	276	275	247	182	579	1,030	5,240	1,110	366	76.8	1,860	968
1930	1,530	183	139	122	113	159	94.6	6,610	3,920	122	221	404	1,140
1931	15,300	522	1,220	600	1,340	576	313	555	1,520	277	139	190	1,900
1932	3,340	644	380	1,090	1,660	610	741	8,490	3,160	7,840	814	7,920	3,070
1933	818	486	732	751	350	366	384	2,800	235	135	343	416	657
1934	307	166	116	205	248	594	4,320	594	241	1,210	245	139	697
1935	43.8	544	106	228	1,329	196	1,744	12,640	10,940	2,360	954	11,550	3,542
1936	1,405	685	532	294	201	312	162	1,883	702	1,087	142	29,380	3,030
1937	8,519	1,525	1,391	918	750	666	465	724	3,639	344	501	291	1,654
1938	493	227	980	2,507	1,516	544	2,012	1,154	2,047	32,210	1,676	621	3,880
1939	342	312	309	1,178	332	405	400	3,249	4,169	1,023	1,519	287	1,132
1940	173	193	190	182	368	148	1,582	1,473	3,984	1,942	1,770	814	1,066
1941	224	1,068	721	288	1,374	1,906	5,681	10,610	7,788	2,048	1,021	1,304	2,836
1942	3,880	924	700	475	363	342	3,015	4,516	1,594	390	2,881	2,116	1,776
1943	2,733	740	491	383	404	320	386	623	966	227	53.6	522	656
1944	408	123	213	664	763	650	350	3,197	811	905	406	1,283	817
1945	1,190	286	414	484	761	958	1,930	711	831	6,070	529	171	1,202
1946	863	192	201	296	507	221	146	1,586	510	124	84.7	2,188	575
1947	857	396	600	380	318	399	391	4,177	582	200	47.6	149	715
1948	598	176	621	124	270	412	256	1,052	828	4,455	559	549	832
1949	253	105	96.7	215	356	1,408	5,798	5,005	1,496	283	292	385	1,309
1950	796	282	132	182	432	86.0	595	1,319	436	411	232	1,195	508
1951	132	52.2	58.4	63.5	83.6	67.4	112	1,922	3,689	241	493	110	585
1952	29.5	39.3	40.8	46.9	40.5	24.4	676	2,429	506	12.8	2.68	4,007	651
1953	107	402	328	195	82.1	1,021	281	1,392	44.6	350	1,759	251	524
1954	2,427	195	72.3	71.1	48.5	64.9	2,613	4,447	603	205	21.9	11.9	906
1955	121	293	31.8	41.5	219	38.4	140	8,095	4,484	2,814	573	2,960	1,660
1956	801	56.5	54.1	59.5	145	37.2	227	7,356	105	49.8	197	44.6	772
1957	1,051	246	171	53.7	133	670	6,907	23,620	5,842	322	150	781	3,354

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	14,300	23,800	22,300	12,100	7,560	65,500	82,400	10,900	2,630	2,450	30,800	-
1917	55,400	10,100	7,320	6,580	6,220	15,000	11,700	56,500	40,500	5,960	6,270	92,200	314,000
1918	2,550	3,340	4,050	3,220	2,140	1,780	85,100	65,200	120,000	1,910	2,120	54,600	346,000
1919	313,000	414,000	87,900	134,000	40,200	168,000	97,000	196,000	497,000	341,000	176,000	325,000	2,790,000
1920	-	-	-	76,200	37,300	-	19,400	267,000	40,800	18,300	193,000	201,000	-
1921	24,800	42,500	19,400	14,000	13,400	23,400	11,900	12,900	183,000	5,450	3,010	9,460	363,000
1922	5,400	3,110	4,080	4,300	3,900	29,100	1,090,000	1,190,000	125,000	73,100	8,430	6,380	2,540,000
1923	6,730	-	-	-	-	-	-	-	-	-	-	-	-
1924	79,300	147,000	98,800	35,000	28,300	68,700	93,700	239,000	81,800	6,980	5,330	52,100	936,000
1925	37,400	8,380	15,400	9,070	6,970	5,590	111,000	214,000	150,000	17,200	65,900	157,000	798,000
1926	127,000	55,800	16,000	40,900	16,200	88,600	246,000	114,000	130,000	61,200	46,800	159,000	1,100,000
1927	122,000	12,600	57,200	18,400	56,400	60,400	97,000	52,400	86,200	64,100	17,000	47,000	691,000
1928	189,000	15,400	13,800	11,400	15,900	12,000	21,100	248,000	159,000	173,000	133,000	70,200	1,060,000
1929	19,100	16,400	16,900	15,200	10,100	35,600	61,300	322,000	66,000	22,500	4,720	111,000	701,000
1930	94,100	10,900	8,550	7,500	6,280	9,780	5,630	406,000	233,000	7,500	13,600	24,000	827,000
1931	941,000	31,100	75,000	36,900	74,400	35,400	18,600	34,100	90,400	17,000	8,550	11,300	1,370,000
1932	205,000	38,300	23,400	67,000	95,500	37,500	44,100	522,000	188,000	482,000	50,100	471,000	2,220,000
1933	50,300	28,900	45,000	46,200	19,400	22,500	22,800	172,000	14,000	8,300	21,100	24,800	475,000
1934	18,900	9,880	7,130	12,600	13,800	36,500	257,000	36,500	14,300	74,400	15,100	8,270	504,000
1935	2,700	32,370	6,500	14,000	73,800	12,030	103,800	777,100	651,200	145,100	58,690	687,000	2,564,000
1936	86,370	40,740	32,700	18,070	11,550	19,180	9,650	115,800	41,780	66,850	8,710	1,748,000	2,199,000
1937	523,800	90,760	85,520	56,440	41,660	40,980	27,660	44,500	216,500	21,150	30,790	17,340	1,197,000
1938	30,300	13,480	60,230	154,200	84,200	33,430	119,700	70,950	121,800	1,981,000	103,100	36,950	2,809,000
1939	21,000	18,590	18,980	72,410	18,470	24,900	23,790	199,800	248,100	62,920	93,390	17,080	819,400
1940	10,640	11,460	11,710	11,190	21,190	9,110	94,120	90,560	237,100	119,400	108,800	48,410	773,700
1941	13,770	63,560	44,350	17,700	76,290	117,200	338,100	652,300	463,400	125,900	62,800	77,610	2,053,000
1942	238,600	54,960	43,070	29,190	20,140	21,030	179,400	277,700	94,880	23,950	177,100	125,900	1,286,000
1943	168,100	44,020	30,200	23,550	22,450	19,690	22,980	38,290	57,480	13,970	3,290	31,070	475,100
1944	25,060	7,340	13,100	40,830	43,910	39,910	20,840	196,600	48,250	55,630	24,980	76,340	592,800
1945	73,160	17,000	25,480	29,760	42,260	58,890	114,800	43,690	49,450	373,200	32,530	10,150	870,400
1946	53,070	11,400	12,380	18,180	28,150	13,580	8,670	97,510	30,340	7,600	5,210	130,200	416,300
1947	52,710	23,540	36,920	23,380	17,670	24,530	23,260	256,800	34,640	12,280	2,930	8,880	517,500
1948	36,770	10,480	38,210	7,630	15,550	25,340	15,250	64,680	49,300	273,900	34,380	32,670	604,200
1949	15,530	6,230	5,950	13,220	19,790	86,590	345,000	307,800	89,000	17,380	17,980	22,930	947,400
1950	48,970	16,790	8,140	11,160	24,000	5,290	35,410	81,090	25,920	25,280	14,280	71,100	367,400

Monthly and yearly runoff, in acre-feet, of Colorado River near San Saba, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	8,090	3,110	3,590	3,900	4,640	4,140	6,670	118,200	219,500	14,800	30,290	6,530	423,500
1952	1,810	2,340	2,510	2,880	2,330	1,500	40,230	149,400	30,090	785	165	238,400	472,400
1953	6,560	23,930	20,160	12,010	4,560	62,790	16,740	85,620	2,660	21,550	108,200	14,930	379,700
1954	149,200	11,590	4,450	4,370	2,690	3,990	155,500	273,400	35,880	12,630	1,350	711	655,800
1955	7,430	17,450	1,950	2,550	12,140	2,360	8,330	497,800	266,800	173,000	35,230	176,200	1,201,000
1956	49,260	3,360	3,330	3,660	8,360	2,280	13,480	452,300	6,220	3,060	12,090	2,650	560,000
1957	64,640	14,630	10,510	3,300	7,410	41,190	411,000	1,452,000	347,600	19,800	9,240	46,490	2,428,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	458	a14,200	May 2, 1916	30	-	-	426	309,000
1917	458	a17,300	Sept. 4, 1917	18	434	314,000	347	251,000
1918	478	a25,500	June 4, 1918	1.5	478	346,000	1,590	1,150,000
1919	508	77,100	Nov. 10, 1918	29	3,850	2,790,000	-	-
1920	508	-	-	-	-	-	-	-
1921	528	a18,000	June 10, 1921	39	502	363,000	400	289,000
1922	548	130,000	Apr. 26, 1922	45	3,510	2,540,000	-	-
1923	548	-	-	-	-	-	-	-
1924	588	17,400	Apr. 28, 1924	46	1,290	936,000	926	672,000
1925	608	27,000	May 12, 1925	27	1,100	798,000	1,290	936,000
1926	628	26,500	Apr. 25, 1926	86	1,520	1,100,000	1,510	1,090,000
1927	648	18,900	Apr. 23, 1927	120	954	691,000	990	717,000
1928	668	27,200	Oct. 4, 1927	30	1,460	1,060,000	1,240	896,000
1929	688	35,000	May 29, 1929	35	968	701,000	1,050	762,000
1930	703	31,600	June 18, 1930	22	1,140	827,000	2,430	1,760,000
1931	718	78,900	Oct. 17, 1930	59	1,900	1,370,000	821	593,000
1932	733	39,800	May 11, 1932	46	3,070	2,220,000	2,870	2,080,000
1933	748	26,600	May 26, 1933	51	657	475,000	535	387,000
1934	763	45,300	Apr. 6, 1934	27	697	504,000	705	510,400
1935	788	86,000	May 19, 1955	33	3,542	2,564,000	3,705	2,683,000
1936	808	179,000	Sept. 21, 1936	40	3,030	2,199,000	3,774	2,740,000
1937	828	115,000	Oct. 1, 1936	109	1,654	1,197,000	830	601,000
1938	858	224,000	July 23, 1938	168	3,880	2,809,000	3,817	2,764,000
1939	878	20,400	June 25, 1939	93	1,132	819,400	1,098	794,700
1940	898	23,400	June 21, 1940	90	1,066	773,700	1,187	861,600
1941	928	42,600	May 6, 1941	70	2,836	2,053,000	3,133	2,268,000
1942	958	25,000	Oct. 6, 1941	135	1,776	1,286,000	1,646	1,192,000
1943	978	23,200	Oct. 19, 1942	42	656	475,100	384	278,300
1944	1008	19,200	May 25, 1944	104	817	592,800	913	662,900
1945	1038	32,300	July 10, 1945	115	1,202	870,400	1,149	831,600
1946	1058	16,300	May 17, 1946	34	575	416,300	625	452,600
1947	1088	19,400	May 15, 1947	35	715	517,500	677	489,800
1948	1118	34,100	July 11, 1948	37	832	604,200	753	546,400
1949	1148	32,800	Apr. 22, 1949	65	1,309	947,400	1,372	993,600
1950	1178	8,010	May 14, 1950	44	508	367,400	426	308,300
1951	1212	22,400	June 14, 1951	7.0	585	423,500	574	415,300
1952	1242	69,000	Sept. 11, 1952	.2	651	472,400	711	516,400
1953	1282	20,700	Aug. 23, 1953	24	524	379,700	683	494,300
1954	1342	24,900	Oct. 5, 1953	0	906	655,800	715	517,400
1955	1392	57,200	May 19, 1955	.4	1,660	1,201,000	1,699	1,230,000
1956	1442	54,100	May 3, 1956	7.9	772	560,000	818	593,900
1957	1512	66,200	May 14, 1957	7.7	3,354	2,428,000	-	-

a Maximum observed.

265. Buchanan Reservoir near Burnet, Tex.

Location.--Lat 30°45'05", long 98°25'00", in powerhouse at Buchanan Dam on Colorado River, 1 mile upstream from bridge on State Highway 29, 10 miles west of Burnet, Burnet County, and at mile 413.

Drainage area.--31,250 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Gage.--Selsyn indicator gage. Datum of gage is 0.48 ft above mean sea level, datum of 1929 (levels by Lower Colorado River Authority). Prior to July 1938, temporary staff and float gages at same site and datum.

Extremes.--1937-57: Maximum contents, 1,006,000 acre-ft May 15, 1954, and May 21, 1955, (gage height, 1,020.6 ft); minimum after filling of reservoir in July 1938, 483,000 acre-ft May 6, 1948.

Remarks.--Reservoir is formed by 2 reinforced concrete multiple-arch sections, 3 banks of taintor gates, and a 1,088-foot reinforced concrete spillway section. Dam completed and storage began May 20, 1937. Total capacity, 992,000 acre-ft (gage height, 1,020.0 ft, top of spillway section). Usable capacity for power development, 955,000 acre-ft between gage height 937.0 ft (sill of powerhouse penstock) and 1,020.0 ft (top of spillway section). Water below gage height 937.0 ft can be withdrawn through two 5-foot Bunger gates (emergency) down to gage height of 890.0 ft. Figures given herein represent total contents. Water used for power development and irrigation of rice in several districts below Columbus.

Cooperation.--Records of daily gage height and capacity table furnished by Lower Colorado River Authority.

Contents, in acre-feet, on last day of month, of Buchanan Reservoir near Burnet, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1937	-	-	-	-	-	-	-	1,700	191,200	180,000	180,800	175,200	+173,500
1938	202,800	214,500	290,000	474,000	568,300	603,200	717,900	785,000	828,600	902,000	816,000	775,000	+599,800
1939	773,000	765,000	763,000	826,500	803,400	789,000	763,000	851,700	932,800	864,600	904,200	862,400	+87,400
1940	813,900	777,000	735,000	693,200	662,800	601,400	670,400	714,100	919,600	950,600	985,100	904,200	+41,800
1941	850,000	909,000	960,000	937,000	980,000	976,000	969,000	971,000	980,000	960,000	931,000	933,000	+29,000
1942	992,000	931,000	920,000	895,000	848,000	835,000	985,000	992,000	967,000	933,000	974,000	948,000	+15,000
1943	978,000	931,000	895,000	880,000	833,000	767,000	720,000	710,000	701,000	676,000	643,000	663,000	-285,000
1944	655,000	619,000	578,000	609,000	645,000	627,000	584,000	783,000	741,000	731,000	667,000	665,000	+2,000
1945	697,000	662,800	681,800	704,600	747,000	791,000	915,200	921,800	939,400	969,000	932,800	910,800	+246,100
1946	926,200	902,000	860,200	828,600	787,000	717,900	648,200	741,000	729,300	642,800	576,800	679,900	*-230,900*
1947	681,800	633,800	619,400	653,600	662,800	657,200	659,000	893,200	884,400	828,600	773,000	716,000	+36,100
1948	674,200	619,400	610,400	575,100	543,400	521,000	490,600	533,800	532,200	751,000	721,700	695,100	-20,900
1949	678,000	655,400	621,200	597,800	597,800	693,200	998,900	994,300	966,700	895,000	845,400	789,000	+95,800
1950	795,000	761,000	763,000	773,000	803,400	769,000	777,000	830,700	803,400	787,000	743,000	777,000	-12,000
1951	765,000	731,200	719,800	714,100	689,400	685,600	662,800	704,600	795,000	691,300	561,500	477,000	-300,000
1952	442,500	429,000	429,000	424,800	409,400	410,800	463,500	619,400	594,200	477,000	350,600	623,000	+146,000
1953	610,400	615,800	653,600	659,000	644,600	706,500	704,600	847,500	797,100	795,000	871,200	828,600	+205,600
1954	928,400	915,200	891,000	862,400	851,700	837,000	964,400	982,800	913,000	834,900	791,000	761,000	-67,600
1955	745,000	763,000	759,000	747,000	763,000	755,000	745,000	989,700	957,500	966,700	884,400	989,700	+228,700
1956	919,600	860,200	828,600	797,100	803,400	795,000	779,000	937,200	858,000	813,900	789,000	747,000	-242,700
1957	781,000	783,000	777,000	757,000	741,000	777,000	975,900	996,600	969,000	913,000	791,000	789,000	+42,000

266. North Llano River near Junction, Tex.

Location.--Lat 30°30', long 99°47', on left bank about 1,000 ft upstream from remains of old Wilson Dam, 3 miles northwest of Junction, Kimble County, and 4 miles upstream from confluence with South Llano River.

Drainage area.--914 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,699.92 ft above mean sea level, datum of 1929. Prior to Aug. 1, 1925, chain gage at site 550 ft downstream at same datum. Aug. 1, 1925, to Sept. 16, 1936, water-stage recorder at site 520 ft downstream at same datum. Sept. 16, 1936, to June 22, 1940, staff gages at various sites at same datum.

Average discharge.--42 years (1915-57), 68.4 cfs (49,520 acre-ft per year).

Extremes.--1915-57: Maximum discharge, 94,800 cfs Sept. 16, 1936 (gage height, 29.2 ft, present site, based on gage-height relation curve), from rating curve extended above 68,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage since at least 1875, that of Sept. 16, 1936; maximum stage during period 1875 to Sept. 15, 1936, about 27 ft in 1889, from information by local resident.

Remarks.--Diversions for irrigation materially affect low flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	66.4	38.1	31.3	31.4	29.3	24.8	33.2	20.8	8.29	8.93	7.61	3.64	25.4
1917	3.95	7.57	12.5	14.2	14.4	14.5	12.4	36.5	5.91	.43	0	.86	10.3
1918	.02	0	1.82	6.36	6.51	6.89	886	12.9	79.0	.78	0	10.2	83.1
1919	10.5	118	20.0	30.2	28.6	29.3	28.6	54.1	162	62.9	256	860	138
1920	207	102	59.9	63.1	56.0	46.4	36.6	58.3	24.8	17.4	120	52.4	70.7
1921	33.1	31.7	29.5	27.3	24.9	30.1	20.9	13.7	9.73	2.74	.67	2.60	18.9
1922	3.36	6.74	15.1	16.8	13.9	69.4	290	173	65.6	15.8	9.04	3.45	56.9
1923	4.63	12.2	10.8	11.0	24.3	31.2	456	150	38.2	18.7	3.65	74.4	69.1
1924	426	662	203	124	87.3	103	77.7	140	110	28.3	16.8	22.1	167
1925	24.0	26.0	27.0	32.0	26.9	25.2	38.9	1,524	75.5	16.9	15.0	21.5	157
1926	130	35.3	31.5	32.7	27.6	33.4	26.1	44.0	11.9	9.32	1.64	1.17	32.2
1927	15.5	17.1	18.0	14.8	15.6	13.3	11.3	4.67	1.07	10.9	1.75	.21	10.3
1928	427	35.9	24.1	18.1	14.5	19.7	12.7	12.6	617	19.7	7.61	12.0	101
1929	20.1	17.7	19.5	14.6	12.9	12.9	15.8	27.2	4.79	.99	.41	6.34	12.8
1930	6.56	7.18	11.6	11.6	7.67	7.66	28.8	14.0	24.1	.98	.25	3.88	10.3
1931	944	32.2	29.2	23.3	38.1	39.3	72.9	52.4	22.1	19.2	7.25	1.71	108
1932	.81	4.62	14.6	14.6	15.8	20.1	11.7	99.7	14.4	73.7	1.25	2,730	247
1933	63.7	43.6	36.8	39.5	33.3	27.4	22.5	526	48.2	14.9	5.38	4.94	73.0
1934	4.71	7.22	11.5	20.2	14.2	20.4	64.2	23.0	2.65	.07	0	0	14.0
1935	0	0	.98	5.97	17.4	11.1	19.8	77.8	1,938	74.7	36.3	1,108	271
1936	69.2	98.8	43.9	34.9	29.6	36.3	21.7	89.2	38.8	16.5	5.27	2,130	215
1937	98.7	48.7	70.3	56.9	47.9	49.2	40.2	24.0	50.6	10.3	4.06	11.5	42.7
1938	14.0	20.1	109	65.3	47.4	33.3	26.4	30.5	69.1	2,924	131	54.3	298
1939	37.1	27.7	28.9	50.3	35.1	23.9	20.4	15.7	7.60	497	118	15.3	74.0
1940	91.2	27.1	28.4	25.4	26.8	18.9	61.8	35.6	31.0	35.5	81.9	21.1	40.5
1941	15.5	20.3	23.0	21.2	21.6	134	94.2	71.9	35.2	38.1	38.7	32.6	45.7
1942	35.0	29.0	25.9	22.8	18.2	14.0	19.5	14.6	6.19	3.18	286	256	61.0
1943	156	48.8	33.5	29.7	24.9	23.6	23.9	24.7	96.1	17.0	4.23	6.86	40.9
1944	25.3	15.6	19.6	44.8	34.3	32.1	68.4	183	27.9	9.53	4.43	15.0	40.2
1945	72.9	20.3	21.3	24.1	25.2	26.0	24.7	11.9	5.95	3.48	1.71	.59	19.9
1946	1.13	3.67	7.99	12.4	11.8	11.1	18.1	14.3	5.79	1.32	.35	14.2	8.45
1947	15.5	13.1	12.1	23.4	24.0	19.7	13.9	110	53.9	20.1	4.58	4.10	26.3

Monthly and yearly mean discharge, in cubic feet per second, of North Llano River near Junction, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	5.28	11.2	17.6	15.5	13.0	12.2	12.0	29.3	747	144	21.6	58.0	89.7
1949	21.0	18.5	22.3	23.3	54.7	48.9	38.3	53.4	73.3	24.0	17.1	22.3	34.6
1950	26.6	26.3	25.5	26.0	24.4	18.7	32.5	19.1	12.4	27.8	8.85	8.25	21.4
1951	6.07	6.77	9.92	10.9	10.7	9.41	8.22	6.35	22.5	1.04	40.5	2.18	11.2
1952	.96	.83	.62	2.03	4.80	5.47	15.9	56.8	5.73	.36	0	0	7.83
1953	0	0	.33	.01	.09	2.38	1.43	50.8	.46	0	0	0	4.71
1954	.07	0	.01	.55	.85	.69	1.21	5.57	.61	0	0	0	.80
1955	0	0	0	0	0	.44	.35	13.8	12.3	18.2	49.7	55.3	12.6
1956	22.9	9.04	8.53	8.82	12.9	7.16	5.19	22.2	1.93	.07	0	0	8.25
1957	.48	0	0	0	0	.18	36.1	843	156	22.1	27.3	6.69	92.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	4,080	2,270	1,920	1,930	1,690	1,520	1,980	1,280	493	549	468	217	18,400
1917	243	450	769	873	800	892	738	2,240	352	26	0	51	7,430
1918	1	0	112	391	362	424	52,700	793	4,700	48	0	607	60,100
1919	646	7,020	1,230	1,860	1,590	1,800	1,700	3,330	9,630	3,870	15,700	51,200	99,600
1920	12,700	6,070	3,680	3,880	3,220	2,850	2,180	3,580	1,480	1,070	7,350	3,120	51,200
1921	2,040	1,890	1,810	1,680	1,380	1,850	1,240	842	579	168	41.2	155	13,700
1922	206	401	928	1,030	770	4,270	17,300	10,700	3,900	973	556	205	41,200
1923	285	727	665	676	1,350	1,920	27,100	9,230	2,280	1,150	224	4,430	50,000
1924	26,200	39,400	12,500	7,620	5,020	6,330	4,630	8,600	6,560	1,740	1,030	1,320	121,000
1925	1,480	1,550	1,660	1,970	1,490	1,550	2,310	93,700	4,490	1,040	922	1,280	113,000
1926	7,980	2,100	1,940	2,010	1,530	2,050	1,550	2,710	710	573	101	69.8	23,300
1927	956	1,020	1,110	912	865	819	671	287	63.5	668	108	12.3	7,490
1928	26,200	2,140	1,480	1,110	834	1,210	756	775	36,700	1,210	468	714	73,600
1929	1,240	1,050	1,200	898	716	793	940	1,670	285	61	25	377	9,260
1930	403	427	713	713	426	471	1,710	861	1,430	60	15	231	7,460
1931	58,000	1,920	1,800	1,430	2,120	2,420	4,340	3,220	1,320	1,180	446	102	78,300
1932	50	275	898	898	909	1,240	696	6,130	857	4,530	77	162,000	179,000
1933	3,920	2,590	2,260	2,430	1,850	1,680	1,340	32,300	2,870	916	331	294	52,800
1934	290	430	707	1,240	789	1,250	3,820	1,410	158	4.3	0	0	10,100
1935	0	0	60	367	967	681	1,180	4,780	115,300	4,590	2,230	65,930	196,100
1936	4,250	5,880	2,700	2,140	1,700	2,230	1,290	5,490	2,310	1,020	324	126,700	156,000
1937	6,070	2,900	4,320	3,500	2,660	3,030	2,390	1,480	3,010	631	250	683	30,920
1938	860	1,200	6,700	4,020	2,630	2,050	1,570	1,880	4,110	179,800	8,060	3,230	216,100
1939	2,280	1,650	1,780	3,090	1,950	1,470	1,220	965	452	30,570	7,270	910	53,610
1940	5,610	1,610	1,740	1,560	1,540	1,160	3,680	2,190	1,840	2,180	5,040	1,260	29,410
1941	950	1,210	1,420	1,300	1,200	8,240	5,610	4,420	2,090	2,340	2,380	1,940	33,100
1942	2,150	1,730	1,590	1,400	1,010	859	1,160	900	368	196	17,580	15,230	44,170
1943	9,610	2,910	2,060	1,820	1,380	1,450	1,420	1,520	5,720	1,050	260	408	29,610
1944	1,550	930	1,200	2,760	1,970	1,970	4,070	11,280	1,660	586	272	891	29,140
1945	4,480	1,210	1,310	1,480	1,400	1,600	1,470	729	354	214	105	35	14,390
1946	69	219	492	760	655	680	1,080	876	345	81	21	845	6,120
1947	951	781	744	1,440	1,330	1,210	825	6,760	3,210	1,240	282	244	19,020
1948	325	664	1,080	950	750	750	716	1,800	44,430	8,840	1,330	3,450	65,080
1949	1,290	1,100	1,370	1,430	3,040	3,010	2,280	3,280	4,360	1,480	1,050	1,330	25,020
1950	1,630	1,570	1,570	1,600	1,350	1,150	1,930	1,170	739	1,710	544	491	15,450
1951	373	403	610	672	593	579	489	390	1,340	64	2,490	130	8,130
1952	59	49	38	125	276	337	945	3,490	341	22	0	0	5,680
1953	0	0	20	.4	5.0	146	85	3,120	27	0	0	0	3,400
1954	4.6	0	.8	34	47	42	72	343	36	0	0	0	579
1955	0	0	0	0	0	27	21	849	731	1,120	3,050	3,290	9,090
1956	1,410	538	524	542	742	440	309	1,360	115	4.4	0	0	[illegible],980
1957	30	0	0	0	0	11	2,150	51,820	9,250	1,360	1,680	398	66,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	438, 1512	a62,000	Sept. 15, 1915	-	-	-	-	-
1916	438	b103	Apr. 1, 1916	1.2	25.4	18,400	16.0	11,600
1917	458	c700	May 21, 1917	0	10.3	7,430	8.40	6,080
1918	478, 1512	c45,200	Apr. 15, 1918	0	83.1	60,100	95.2	68,900
1919	508, 1512	c22,900	Sept. 22, 1919	.3	138	99,600	156	113,000
1920	508, 568	c2,300	May 13, 1920	12	70.7	51,200	47.5	34,500
1921	528	d78	Oct. 1, 1920	0	18.9	13,700	13.1	9,470
1922	548, 568	c13,800	Apr. 3, 1922	.4	56.9	41,200	57.1	41,400
1923	568	69,000	Apr. 24, 1923	.4	69.1	50,000	175	126,000
1924	588, 1512	32,900	Oct. 29, 1923	11	167	121,000	65.5	47,500

a Maximum recorded during September 15-30.
b Maximum observed peak discharge; maximum discharge observed, 117 cfs 6:45 a.m. Oct. 1, 1915, stage falling.
c Maximum observed.
d Maximum observed at 9 a.m., stage falling.

Yearly discharge, in cubic feet per second, of North Llano River near Junction, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608, 1512	69,000	May 29, 1925	11	157	113,000	167	121,000
1926	628, 1512	14,200	Oct. 16, 1925	.8	32.2	23,300	19.9	14,400
1927	648	1,020	July 25, 1927	0	10.3	7,490	47.3	34,200
1928	668, 1512	50,000	Oct. 1, 1927	3.2	101	73,600	65.1	47,300
1929	688	1,530	May 24, 1929	.1	12.8	9,260	10.1	7,310
1930	703	3,920	Apr. 24, 1930	0	10.3	7,460	93.5	67,600
1931	718, 1512	82,300	Oct. 6, 1930	0	108	78,300	24.6	17,800
1932	733, 1512	62,000	Sept. 1, 1932	.5	247	179,000	257	186,000
1933	748, 1512	26,600	May 25, 1933	3.0	73.0	52,800	62.8	45,400
1934	763	5,200	Apr. 4, 1934	0	14.0	10,100	12.1	8,750
1935	788, 1512	80,900	June 14, 1935	0	271	196,100	289	208,900
1936	858	94,800	Sept. 16, 1936	2.7	215	156,000	216	156,500
1937	858	1,970	Oct. 29, 1936	2.5	42.7	30,920	36.4	26,390
1938	858	68,600	July 22, 1938	2.7	298	216,100	294	213,100
1939	878	33,000	July 13, 1939	4.4	74.0	53,610	78.5	56,860
1940	898	8,320	Oct. 10, 1939	9.9	40.5	29,410	33.1	24,030
1941	928	6,120	Mar. 25, 1941	12	45.7	33,100	48.3	34,990
1942	958	37,200	Aug. 22, 1942	1.7	61.0	44,170	73.6	53,280
1943	978	6,120	Oct. 17, 1942	2.6	40.9	29,610	25.9	18,710
1944	1008	15,600	Apr. 30, 1944	2.0	40.2	29,140	44.7	32,460
1945	1038	5,900	Oct. 4, 1944	.2	19.9	14,390	11.3	8,170
1946	1058	3,190	Sept. 26, 1946	0	8.45	6,120	10.8	7,820
1947	1088	7,440	May 18, 1947	2.1	26.3	19,020	25.7	18,610
1948	1118	38,300	June 24, 1948	1.8	89.7	65,080	92.0	66,780
1949	1148	2,580	June 12, 14, 1949	12	34.6	25,020	35.9	26,030
1950	1178	643	Apr. 16, 1950	3.4	21.4	15,450	16.7	12,070
1951	1212	5,500	Aug. 20, 1951	0	11.2	8,130	9.53	6,890
1952	1242	2,860	May 18, 1952	0	7.83	5,680	7.65	5,560
1953	1282	5,680	May 11, 1953	0	4.71	3,400	4.68	3,390
1954	1342	370	May 24, 1954	0	.80	579	.79	574
1955	1392	4,340	Aug. 19, 1955	0	12.6	9,090	16.0	11,560
1956	1442	1,620	Oct. 2, 1955	0	8.25	5,980	4.88	3,540
1957	1512	29,200	May 27, 1957	0	92.1	66,700	-	-

267. Llano River near Junction, Tex.

Location.--Lat 30°30', long 99°44', on right bank 250 ft north of old Kerrville-Junction road, about half a mile downstream from point where slough diverts floodwater from main channel, 3 miles east of Junction, Kimble County, 4 miles downstream from confluence of North Llano and South Llano Rivers, and $4\frac{3}{4}$ miles upstream from Johnson Fork.

Drainage area.--1,874 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,630.32 ft above mean sea level, datum of 1929. Prior to Aug. 14, 1925, staff gage, and Aug. 14, 1925, to May 17, 1940, water-stage recorder, at present site and datum. May 18, 1940, to Aug. 17, 1944, water-stage recorder at site 5,335 ft upstream at datum 6.0 ft higher and since Aug. 18, 1944, used as supplementary gage for stages above 5 ft.

Average discharge.--42 years (1915-57), 188 cfs (136,100 acre-ft per year).

Extremes.--1915-57: Maximum discharge, 319,000 cfs June 14, 1935 (gage height, 43.3 ft, present site and datum, from floodmarks; 41.4 ft at supplementary gage, from floodmarks), from rating curve extended above 54,000 cfs on basis of slope-area measurements at gage heights 32.8 and 41.4 ft; minimum, 3.1 cfs Aug. 16, 17, 1956.
Maximum stage since at least 1889, that of June 14, 1935.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	208	163	142	123	116	99.8	109	294	84.4	69.8	70.7	62.6	129
1917	72.1	61.2	66.1	69.5	66.4	59.4	56.1	52.8	34.0	26.2	25.6	47.6	53.0
1918	38.1	41.2	41.8	42.0	42.4	43.8	1,090	111	98.9	23.7	20.0	50.1	135
1919	55.8	244	93.0	114	102	84.8	69.7	575	383	116	939	2,810	464
1920	369	308	217	192	188	182	156	630	130	119	171	183	238
1921	151	150	143	142	141	162	108	86.8	112	86.4	84.6	70.1	120
1922	60.8	56.8	61.2	61.6	63.0	142	1,020	400	123	155	64.7	61.7	189
1923	63.0	70.7	68.7	70.5	139	116	308	768	139	73.5	59.3	1,440	275
1924	2,710	1,570	344	259	265	244	197	405	232	99.2	77.5	105	544
1925	101	101	110	110	99.2	87.3	116	2,400	228	89.8	96.9	109	307
1926	178	167	135	103	99.2	144	144	184	103	74.5	62.9	55.3	121
1927	80.5	95.7	99.9	81.4	96.5	101	74.3	61.8	54.3	61.5	52.8	53.7	76.0
1928	600	96.9	86.6	80.9	77.1	77.5	69.0	70.5	738	73.4	57.6	62.7	174
1929	72.2	74.0	77.1	75.0	65.0	65.8	68.0	85.8	52.5	48.8	36.7	56.7	64.8
1930	55.5	54.5	69.6	69.9	56.5	47.7	60.6	69.3	90.3	46.8	51.6	41.4	59.5
1931	1,070	109	90.7	81.6	107	99.9	305	216	90.3	79.8	57.8	44.4	198
1932	44.3	47.4	57.2	60.3	63.1	62.8	50.7	168	58.9	786	65.9	4,300	476
1933	237	165	130	129	117	101	88.2	786	139	78.7	56.4	57.5	175

Monthly and yearly mean discharge, in cubic feet per second, of Llano River near Junction, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	51.3	58.1	61.1	66.1	72.0	73.4	110	65.6	40.7	35.4	29.4	30.2	57.6
1935	30.5	41.1	45.2	44.8	50.4	51.5	61.3	414	5,797	251	138	1,663	708
1936	187	189	133	118	101	113	94.1	168	121	88.2	57.3	3,518	403
1937	371	255	192	148	129	125	109	90.0	98.3	58.6	52.1	57.3	141
1938	53.3	72.0	727	247	187	122	140	128	103	4,236	269	145	543
1939	118	100	100	117	100	83.9	67.1	76.8	69.3	1,165	212	84.8	193
1940	360	121	107	102	91.2	83.6	153	156	150	112	132	79.1	138
1941	70.3	83.9	89.5	78.4	77.6	184	197	234	109	120	102	105	121
1942	122	105	91.2	85.8	75.9	65.9	92.2	119	60.7	51.5	437	470	148
1943	340	151	120	108	93.0	91.1	93.4	106	423	150	73.4	88.2	153
1944	106	85.9	86.7	128	125	117	104	234	86.7	56.4	52.1	76.4	105
1945	120	78.9	78.5	80.0	81.3	99.1	97.6	58.4	47.1	42.9	37.0	33.0	71.2
1946	51.1	44.8	47.0	59.2	57.5	56.1	65.6	66.0	52.4	35.3	25.4	45.0	50.4
1947	105	57.6	58.4	98.6	87.4	75.9	65.1	139	97.2	52.1	40.6	37.9	76.3
1948	37.5	51.0	58.0	56.7	59.6	53.0	44.9	89.0	3,101	925	120	158	393
1949	102	80.8	78.1	78.7	507	181	148	139	148	85.7	140	94.3	146
1950	122	115	104	103	95.3	79.5	89.9	69.7	57.5	82.9	56.5	68.8	86.9
1951	69.9	62.8	62.6	60.6	59.0	57.9	55.3	51.5	83.2	28.3	62.6	30.5	57.0
1952	31.0	39.2	38.7	38.5	37.5	38.8	48.8	85.4	28.3	19.4	15.1	18.5	36.6
1953	22.2	32.5	37.0	35.7	31.9	34.2	26.0	68.7	12.4	13.5	19.9	22.5	29.8
1954	23.9	30.5	33.1	33.3	27.9	27.0	28.8	30.3	72.8	42.8	14.7	15.5	31.7
1955	21.8	27.9	31.3	32.4	31.0	28.8	21.3	35.3	40.2	95.5	85.1	590	86.2
1956	98.5	51.8	48.4	46.4	47.6	37.7	31.0	42.9	16.0	10.5	11.4	13.1	38.0
1957	15.8	21.5	25.3	26.2	28.5	31.5	942	1,684	492	107	103	78.6	298

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	12,800	9,700	8,730	7,560	6,670	6,140	6,490	18,100	5,020	4,290	4,350	3,720	93,600
1917	4,430	3,640	4,060	4,270	3,690	3,650	3,340	3,250	2,020	1,610	1,570	2,830	38,400
1918	2,340	2,450	2,570	2,580	2,350	2,690	64,600	6,820	5,890	1,460	1,230	2,980	98,000
1919	3,430	14,500	5,720	7,010	5,660	5,210	4,150	35,400	22,800	7,130	57,700	167,000	336,000
1920	22,700	18,300	13,300	11,800	10,800	11,200	9,280	38,700	7,740	7,320	10,500	10,900	173,000
1921	9,280	8,930	8,790	8,730	7,830	9,960	6,430	5,340	6,660	5,310	5,200	4,170	86,600
1922	3,740	3,380	3,760	3,790	3,500	8,720	60,700	24,600	7,320	9,520	3,980	3,670	137,000
1923	3,870	4,210	4,230	4,340	7,740	7,110	18,300	47,200	8,260	4,520	3,650	85,900	199,000
1924	167,000	93,500	21,100	16,000	15,200	15,000	11,700	24,900	13,800	6,100	4,760	6,260	395,000
1925	6,190	6,020	6,780	6,790	5,510	5,370	6,880	147,000	13,600	5,520	5,960	6,490	222,000
1926	11,000	9,950	8,270	6,340	5,510	8,870	8,580	11,300	6,150	4,580	3,870	3,290	87,700
1927	4,950	5,700	6,140	5,010	5,360	6,190	4,420	3,800	3,230	3,780	3,250	3,190	55,000
1928	36,900	5,770	5,320	4,970	4,430	4,770	4,110	4,330	43,900	4,510	3,540	3,730	126,000
1929	4,440	4,400	4,740	4,610	3,610	4,050	4,050	5,280	3,120	3,000	2,260	3,370	46,900
1930	3,410	3,240	4,280	4,300	3,140	2,930	3,610	4,260	5,370	2,880	3,170	2,460	43,000
1931	65,800	6,490	5,580	5,020	5,940	6,140	18,100	13,300	5,370	4,910	3,550	2,640	143,000
1932	2,720	2,820	3,520	3,710	3,630	3,860	3,020	10,300	3,500	48,300	4,050	256,000	345,000
1933	14,600	9,820	7,990	7,930	6,500	6,210	5,250	48,300	8,270	4,840	3,470	3,420	127,000
1934	3,150	3,460	3,760	4,060	4,000	4,510	6,550	4,030	2,420	2,180	1,810	1,800	41,700
1935	1,870	2,440	2,780	2,750	2,800	3,170	3,650	25,480	344,900	15,450	8,460	98,970	512,700
1936	11,500	11,260	8,190	7,230	5,780	6,950	5,600	10,320	7,230	5,420	3,520	209,300	292,300
1937	22,800	15,170	11,820	9,080	7,150	7,660	6,460	5,530	5,850	3,600	3,200	3,410	101,700
1938	3,280	4,290	44,670	15,210	10,400	7,490	8,310	7,870	6,150	260,500	16,540	8,620	393,300
1939	7,250	5,970	6,150	7,210	5,560	5,160	3,990	4,720	4,120	71,630	13,060	5,050	139,900
1940	22,120	7,170	6,600	6,280	5,250	5,140	9,130	9,570	8,930	6,880	8,090	4,710	99,870
1941	4,320	4,990	5,500	4,820	4,310	11,290	11,730	14,400	6,500	7,390	6,240	6,260	87,750
1942	7,520	6,250	5,610	5,270	4,210	4,050	5,490	7,340	3,610	3,170	26,880	27,960	107,400
1943	20,910	9,000	7,360	6,650	5,160	5,600	5,560	6,520	25,170	9,250	4,510	5,250	110,900
1944	6,520	5,110	5,330	7,860	7,190	7,220	6,170	14,390	5,160	3,470	3,200	4,550	76,170
1945	7,390	4,700	4,830	4,920	4,510	6,090	5,810	3,590	2,800	2,640	2,280	1,960	51,520
1946	3,140	2,670	2,890	3,640	3,190	3,450	3,900	4,060	3,120	2,170	1,560	2,680	36,470
1947	6,480	3,430	3,590	6,060	4,860	4,760	3,870	8,570	5,790	3,200	2,500	2,250	55,270
1948	2,300	3,030	3,560	3,490	3,430	3,260	2,670	5,470	184,500	56,870	7,380	9,430	285,400
1949	6,260	4,810	4,800	4,840	28,180	11,150	8,810	8,570	8,840	5,270	8,640	5,610	105,800
1950	7,470	6,840	6,380	6,310	5,290	4,890	5,350	4,290	3,420	5,100	3,470	4,100	62,910
1951	4,300	3,740	3,850	3,730	3,280	3,560	3,290	3,170	4,950	1,740	3,850	1,810	41,270
1952	1,900	2,330	2,380	2,370	2,160	2,390	2,910	5,250	1,690	1,190	930	1,100	26,600
1953	1,360	1,930	2,280	2,200	1,770	2,100	1,550	4,220	737	833	1,220	1,340	21,540
1954	1,470	1,810	2,040	2,050	1,550	1,660	1,710	1,860	4,330	2,630	902	924	22,940
1955	1,340	1,660	1,920	1,990	1,720	1,770	1,270	2,170	2,390	5,870	5,230	35,080	62,410
1956	6,050	3,080	2,980	2,850	2,740	2,320	1,840	2,640	954	648	699	778	27,580
1957	970	1,280	1,560	1,610	1,580	1,940	56,070	103,500	29,290	6,570	6,340	4,680	215,400

Yearly discharge, in cubic feet per second, of Llano River near Junction, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	438,568	a98,800	Sept. 16, 1915	-	-	-	-	-
1916	438,568	b11,100	May 22, 1916	46	129	93,600	103	74,500
1917	458	b192	May 11, 1917	17	53.0	38,400	46.4	33,600
1918	478,568	b14,900	Apr. 14, 1918	13	135	98,000	158	114,000
1919	508,568	b27,800	Sept. 27, 1919	35	464	336,000	506	366,000
1920	508,568	b13,700	May 14, 1920	109	238	173,000	200	145,000
1921	528	b880	Mar. 19, 1921	48	120	86,600	97.4	70,500
1922	548,568	b16,100	Apr. 3, 1922	52	189	137,000	191	138,000
1923	568	b35,700	Sept. 18, 1923	52	275	199,000	647	469,000
1924	588	b85,500	Oct. 29, 1923	63	544	395,000	183	133,000
1925	608	76,900	May 29, 1925	74	307	222,000	321	232,000
1926	628	5,600	Oct. 16, 1925	50	121	87,700	104	75,300
1927	648	607	July 23, 1927	42	76.0	55,000	119	86,200
1928	668	32,000	Oct. 1, 1927	50	174	126,000	127	91,900
1929	688	2,100	May 28, 1929	33	64.8	46,900	61.2	44,300
1930	703	2,770	Apr. 24, 1930	31	59.5	43,000	152	110,000
1931	718	89,700	Oct. 6, 1930	37	198	143,000	102	74,000
1932	733	106,000	Sept. 1, 1932	39	476	345,000	508	369,000
1933	748	15,800	May 25, 1933	46	175	127,000	144	105,000
1934	763	4,720	Apr. 4, 1934	27	57.6	41,700	53.1	38,420
1935	788	319,000	June 14, 1935	28	708	512,700	741	536,600
1936	808	158,000	Sept. 16, 1936	48	403	292,300	429	311,100
1937	828	2,000	Oct. 29, 1936	48	141	101,700	144	104,200
1938	858	137,000	July 22, 1938	48	543	393,300	498	360,500
1939	878	74,400	July 13, 1939	53	193	139,900	216	156,400
1940	898	6,000	Oct. 10, 1939	69	138	99,870	109	78,790
1941	928	7,250	Apr. 27, 1941	66	121	87,750	128	92,320
1942	958	43,000	Aug. 22, 1942	43	148	107,400	173	125,200
1943	1008	10,000	June 5, 1943	64	153	110,900	125	90,630
1944	1008	8,640	May 1, 1944	44	105	76,170	105	76,130
1945	1038	3,270	Oct. 4, 1944	31	71.2	51,520	59.8	43,300
1946	1058	1,290	Sept. 26, 1946	23	50.4	36,470	57.0	41,270
1947	1088	4,540	May 18, 1947	34	76.3	55,270	70.0	50,660
1948	1118	122,000	June 24, 1948	28	393	285,400	403	292,400
1949	1148	12,100	Feb. 23, 1949	61	146	105,800	153	110,600
1950	1178	568	Oct. 24, 1949	41	86.9	62,910	74.7	54,110
1951	1212	5,320	June 10, 1951	15	57.0	41,270	49.7	35,990
1952	1242	2,540	May 18, 1952	13	36.6	26,600	35.2	25,560
1953	1282	5,030	May 11, 1953	7.7	29.8	21,540	29.4	21,290
1954	1342	3,090	June 29, 1954	12	31.7	22,940	31.1	22,540
1955	1392	36,800	Sept. 24, 1955	8.4	86.2	62,410	96.1	69,600
1956	1442	1,020	Oct. 3, 1955	3.7	38.0	27,580	26.5	19,280
1957	1512	40,500	May 27, 1957	12	298	215,400	-	-

a Maximum recorded during period Sept. 13-30, 1915.
b Maximum observed.

268. Llano River near Castell, Tex.

Location.--Lat 30°43', long 98° 53', 400 ft upstream from low-water concrete bridge, 4 miles upstream from Hickory Creek and 4.5 miles east of Castell, Llano County.

Drainage area.--3,747 sq mi.

Gage.--Staff gage. Datum of gage is 1,121.77 ft above mean sea level, datum of 1929. Sept. 30, 1930, to June 14, 1935, water-stage recorder at same site and datum.

Average discharge.--15 years (1924-39), 413 cfs (299,000 acre-ft per year).

Extremes.--1923-39: Maximum discharge, 388,000 cfs June 14, 1935 (gage height, 37.0 ft, from floodmarks), by slope-area measurement; minimum, 6.4 cfs Aug. 26, 1934.
Maximum stage known from 1889 to 1935 was in 1889 when a stage of about 28½ ft occurred.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	904	459	396	433	359	404	487	116	78.6	122	-
1925	112	117	134	138	123	103	183	1,240	302	69.8	220	208	247
1926	851	947	179	258	172	527	514	336	460	108	59.8	53.8	373
1927	248	160	152	135	509	201	184	110	481	124	59.8	66.2	200
1928	1,280	178	113	104	112	93.9	86.2	118	971	94.7	70.6	80.5	275
1929	78.7	86.5	94.0	84.3	81.2	88.6	84.0	477	122	60.7	24.3	465	146
1930	67.7	61.8	83.3	78.5	68.3	62.1	82.0	167	644	32.4	31.1	156	127
1931	2,800	201	233	339	492	252	360	382	141	164	67.7	42.7	459

Monthly and yearly mean discharge, in cubic feet per second, of Llano River near Castell, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	45.5	62.4	105	126	186	222	97.3	391	104	2,130	73.3	4,950	704
1933	320	222	200	201	179	179	136	1,280	187	74.4	55.5	64.9	260
1934	59.2	68.2	75.1	96.0	117	101	503	162	40.4	22.5	12.2	33.1	107
1935	25.5	42.5	52.1	55.5	133	71.7	74.4	2,602	11,630	408	187	2,112	1,438
1936	259	248	212	170	159	164	109	371	147	111	54.5	6,787	724
1937	822	565	329	240	193	203	151	142	147	57.5	40.9	90.3	249
1938	93.0	135	1,132	828	473	231	234	222	270	3,846	362	162	672
1939	160	118	126	201	127	118	115	133	116	917	292	86.4	211

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	55,600	28,200	22,800	26,600	21,400	24,900	29,000	7,140	4,830	7,260	-
1925	6,900	6,980	8,240	8,490	6,810	6,360	10,900	76,000	18,000	4,290	13,500	12,400	179,000
1926	52,400	56,300	11,000	15,900	9,540	32,400	30,600	20,700	27,400	6,650	3,680	3,200	270,000
1927	15,200	9,510	9,320	8,310	28,300	12,400	11,000	6,740	28,600	7,620	3,680	3,940	145,000
1928	78,700	10,600	6,950	6,400	6,440	5,770	5,130	7,260	57,800	5,820	4,340	4,790	200,000
1929	4,840	5,150	5,780	5,180	4,510	5,450	5,000	29,300	7,260	3,730	1,490	27,700	105,000
1930	4,160	3,680	5,120	4,830	3,790	3,820	4,880	10,300	38,300	1,990	1,910	9,280	92,100
1931	172,000	12,000	14,300	20,800	27,300	15,500	21,400	23,500	8,390	10,100	4,160	2,540	332,000
1932	2,800	3,710	6,460	7,750	10,700	13,600	5,790	24,000	6,190	131,000	4,510	294,000	511,000
1933	19,700	13,200	12,300	12,400	9,940	11,000	8,090	78,700	11,100	4,570	3,410	3,860	188,000
1934	3,640	4,060	4,620	5,900	6,500	6,210	29,900	9,960	2,400	1,380	750	1,970	77,300
1935	1,560	2,530	3,200	3,420	7,390	4,410	4,430	160,000	691,900	25,070	11,530	125,700	1,041,000
1936	15,930	14,740	13,030	10,450	9,130	10,070	6,480	22,790	8,740	6,830	3,350	403,900	525,400
1937	50,540	33,640	20,260	14,780	10,730	12,500	8,980	8,760	8,730	3,540	2,520	5,370	180,400
1938	5,720	8,050	69,580	50,930	26,260	14,180	13,920	13,640	16,040	236,500	22,250	9,620	486,700
1939	9,830	7,020	7,730	12,340	7,060	7,270	6,830	8,190	6,930	56,350	17,940	5,140	152,600

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a7,230	Dec. 12, 1923	-	-	-	267	194,000
1925	608	59,500	May 30, 1925	45	247	179,000	382	276,000
1926	628	21,400	Nov. 6, 1925	41	373	270,000	254	184,000
1927	648	14,400	Feb. 9, 1927	39	200	145,000	286	207,000
1928	668	33,900	Oct. 2, 1927	39	275	200,000	165	120,000
1929	688	27,300	Sept. 7, 1929	16	146	105,000	142	103,000
1930	703	49,000	June 13, 1930	17	127	92,100	383	277,000
1931	718, 1512	122,000	Oct. 6, 1930	33	459	332,000	203	147,000
1932	733, 1512	92,500	Sept. 2, 1932	31	704	511,000	749	543,000
1933	748	22,800	May 25, 1933	42	260	188,000	215	155,000
1934	763	19,300	Apr. 5, 1934	6.4	107	77,300	99.8	72,270
1935	788	388,000	June 14, 1935	16	1,438	1,041,000	1,488	1,078,000
1936	808, 1512	130,000	Sept. 16, 1936	42	724	525,400	807	586,200
1937	828	3,720	Oct. 25, 1936	33	249	180,400	220	159,300
1938	858, 1512	110,000	July 23, 1938	44	672	486,700	591	427,900
1939	878, 1512	55,500	July 14, 1939	34	211	152,600	-	-

a Maximum during period November to September.

269. Llano River at Llano, Tex.

Location.--Lat 30°45', long 98°40', on right bank in Llano, Llano County, 0.4 mile downstream from bridge on State Highway 16, and 7 miles upstream from Little Llano River.

Drainage area.--4,233 sq mi.

Gage.--Water-stage recorder. Datum of gage is 970.01 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 270 cfs (195,500 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 232,000 cfs Sept. 10, 1952 (gage height, 32.6 ft), from rating curve extended above 129,000 cfs on basis of slope-area measurement of peak flow; no flow at times, 1952-56.
Maximum stage since at least 1879, 41.5 ft June 14, 1935 (discharge, 380,000 cfs), from information by local resident.

Remarks.--Low flow regulated at times by powerplant half a mile upstream. Many small diversions upstream. Part of low flow of Llano River disappears into fault zone between Llano and station near Junction.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	388	177	138	125	198	106	433	334	1,058	440	123	75.5	299
1941	143	372	757	212	480	613	1,177	1,066	430	260	245	288	503
1942	775	222	176	147	130	106	681	408	201	61.4	529	562	334
1943	596	509	200	166	131	146	138	122	1,359	318	57.3	171	325
1944	161	122	164	346	364	316	175	862	337	64.2	98.6	230	270

Monthly and yearly mean discharge, in cubic feet per second, of Llano River at Llano, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	148	124	190	457	506	344	496	141	86.4	44.0	43.4	43.3	217
1946	135	68.9	81.5	140	190	96.4	549	733	142	25.5	7.63	202	197
1947	200	105	89.2	679	185	306	173	237	241	59.2	35.3	28.2	195
1948	29.6	56.8	76.0	73.6	124	79.1	106	216	3,058	1,252	144	230	451
1949	96.3	88.8	91.2	118	653	301	672	351	264	162	159	196	259
1950	169	150	149	158	182	108	219	274	92.7	115	56.4	220	157
1951	74.8	65.5	70.8	68.5	79.7	70.4	65.0	201	89.6	8.59	41.9	61.0	74.8
1952	18.0	36.7	43.4	43.2	38.4	43.0	366	242	53.8	6.90	.09	3,891	393
1953	34.5	62.3	432	196	119	89.2	51.4	608	7.93	28.8	65.1	72.3	148
1954	96.5	33.8	35.6	46.0	37.7	23.7	38.7	151	35.7	96.3	.48	.56	50.0
1955	39.8	37.6	27.5	75.0	51.0	54.3	20.9	1,509	220	271	408	940	307
1956	170	65.4	57.4	54.9	73.0	38.4	26.5	136	9.61	0	13.1	3.31	54.2
1957	47.2	20.7	31.5	31.7	51.5	117	2,234	3,350	1,362	123	155	79.1	635

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	23,870	10,510	8,460	7,680	11,360	6,500	25,790	20,540	62,960	27,030	7,550	4,490	216,700
1941	8,790	22,140	46,560	13,040	26,690	37,720	70,020	65,570	25,560	15,990	15,090	17,160	364,300
1942	47,660	13,220	10,850	9,020	7,240	6,520	40,520	25,060	11,930	3,770	32,550	33,440	241,800
1943	36,620	30,270	12,300	10,220	7,300	8,960	8,200	7,500	80,850	19,540	3,520	10,190	235,500
1944	9,880	7,270	10,060	21,260	20,920	19,450	10,440	53,010	20,070	3,950	6,060	13,700	196,100
1945	9,120	7,400	11,710	28,080	28,110	21,180	29,520	8,700	5,140	2,710	2,670	2,580	156,900
1946	8,310	4,100	5,010	8,580	10,580	5,920	32,660	45,050	8,440	1,570	469	12,050	142,700
1947	12,300	6,260	5,490	41,730	10,260	18,830	10,270	14,560	14,360	3,640	2,170	1,680	141,600
1948	1,820	3,380	4,670	4,530	7,140	4,870	6,310	13,280	182,000	76,980	8,870	13,680	327,500
1949	5,920	5,280	5,610	7,280	36,280	18,530	40,000	21,550	15,740	9,940	9,810	11,660	187,600
1950	10,390	8,910	9,160	9,720	10,080	6,620	13,040	16,880	5,510	7,090	3,470	13,110	114,000
1951	4,600	3,900	4,360	4,210	4,430	4,330	3,870	12,380	5,330	528	2,580	3,630	54,150
1952	1,110	2,180	2,670	2,650	2,210	2,640	21,770	14,880	3,200	424	5.4	231,500	285,200
1953	2,120	3,710	26,550	12,050	6,610	5,490	3,060	37,360	472	1,770	4,000	4,300	107,500
1954	5,930	2,010	2,190	2,830	2,090	1,450	2,310	9,260	2,120	5,920	30	33	36,170
1955	2,440	2,240	1,690	4,610	2,830	3,340	1,250	92,810	13,090	16,670	25,090	55,910	222,000
1956	10,470	3,890	3,530	3,380	4,200	2,360	1,570	8,380	572	0	803	197	39,350
1957	2,900	1,230	1,940	1,950	2,860	7,190	132,900	206,000	81,030	7,590	9,550	4,710	459,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	898	28,200	June 20, 1940	-	299	216,700	346	251,400
1941	928	26,700	Apr. 27, 1941	37	503	364,300	495	358,600
1942	958	23,400	Aug. 23, 1942	12	334	241,800	344	249,200
1943	978	50,600	June 5, 1943	30	325	235,500	253	183,500
1944	1008	10,100	May 25, 1944	29	270	196,100	271	197,100
1945	1038	8,500	Jan. 18, 1945	17	217	156,900	202	146,100
1946	1058	18,200	May 17, 1946	3.0	197	142,700	206	149,400
1947	1088	8,500	Jan. 18, 1947	14	195	141,600	176	127,400
1948	1118	108,000	June 25, 1948	10	451	327,500	461	334,500
1949	1148	14,600	Apr. 25, 1949	60	259	187,600	275	199,200
1950	1178	7,770	May 16, 1950	22	157	114,000	136	98,380
1951	1212	13,900	May 25, 1951	.2	74.8	54,150	65.2	47,250
1952	1242	232,000	Sept. 10, 1952	0	393	285,200	429	311,700
1953	1282	16,500	May 12, 1953	0	148	107,500	118	85,240
1954	1342	3,460	Oct. 4, 1953	0	50.0	36,170	44.8	32,410
1955	1392	72,000	May 19, 1955	0	307	222,000	323	233,500
1956	1442	1,850	Aug. 31, 1956	0	54.2	39,350	37.9	27,530
1957	1512	47,200	May 27, 1957	.3	635	459,800	-	-

270. Pedernales River at Stonewall, Tex.

Location.--Lat 30°15', long 98°40', on right bank in Stonewall, Gillespie County, 600 ft upstream from county-road crossing and 5 miles downstream from South Grape Creek.

Drainage area.--647 sq mi.

Gage.--Staff gage. Datum of gage is 1,420.12 ft above mean sea level, datum of 1929.

Average discharge.--10 years (1924-34), 60.2 cfs (43,580 acre-ft per year).

Extremes.--1924-34: Maximum discharge, 28,300 cfs May 28, 1929 (gage height, 14.25 ft, from floodmarks); minimum, 1.2 cfs at times July to September 1934.

Maximum stage during period 1876-1950 was about 27½ ft in 1876, from information by local resident. Flood of Aug. 30, 1944, reached a stage of 23.4 ft. Floods in April 1900 and May 1906 reached stages of about 22 and 19 ft respectively, from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Pedernales River at Stonewall, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	5.92	9.70	-
1925	7.26	7.68	10.9	11.7	10.1	8.88	15.4	67.1	3.95	8.06	20.3	85.5	21.4
1926	307	107	13.6	17.9	12.8	85.6	91.6	68.7	38.7	116	6.77	4.31	73.1
1927	60.8	36.7	37.3	13.1	405	113	112	48.5	126	69.7	27.4	14.0	86.3
1928	113	11.4	13.8	12.2	18.4	14.3	13.0	55.3	62.6	9.75	4.50	9.06	28.2
1929	3.49	4.71	9.04	26.0	5.77	8.32	51.3	751	45.5	136	4.15	3.58	88.8
1930	4.60	6.02	6.98	4.34	4.52	8.78	7.74	405	74.5	3.65	2.58	14.3	45.8
1931	280	16.9	16.0	53.5	147	92.4	174	116	80.9	72.0	11.1	4.88	88.3
1932	4.72	98.6	25.5	60.2	71.7	160	61.7	96.0	18.2	410	54.5	172	103
1933	34.8	27.9	62.7	106	55.5	64.5	50.0	110	14.7	10.4	4.60	4.51	45.6
1934	3.47	5.03	5.68	66.2	25.8	40.1	61.7	41.2	3.82	2.02	1.83	1.28	21.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	364	577	-
1925	446	457	670	718	559	546	919	4,130	235	496	1,250	5,080	15,500
1926	18,900	6,360	837	1,100	710	5,260	5,450	4,220	2,300	7,130	416	256	52,900
1927	3,740	2,190	2,290	805	22,500	6,970	6,690	2,990	7,520	4,290	1,690	833	62,500
1928	6,950	678	848	750	1,060	879	774	3,400	3,720	600	277	539	20,500
1929	215	280	556	1,600	320	512	3,050	46,200	2,710	8,360	255	213	64,300
1930	283	358	429	267	251	540	461	24,900	4,430	224	159	851	33,200
1931	17,200	1,010	984	3,290	8,160	5,690	10,400	7,130	4,810	4,430	682	290	64,100
1932	290	5,870	1,570	3,700	4,120	9,840	3,670	5,900	1,080	25,200	3,350	10,200	74,800
1933	2,140	1,660	3,860	6,520	3,080	3,970	2,980	6,760	875	640	283	268	33,000
1934	213	299	349	4,070	1,430	2,470	3,670	2,530	227	124	113	76	15,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	-	-	-	-	-
1925	608	10,700	May 9, 1925	1.8	21.4	15,500	55.3	40,000
1926	628	8,950	Oct. 16, 1925	4.0	73.1	52,900	48.4	35,100
1927	648	7,380	Feb. 9, 1927	4.0	86.3	62,500	86.7	62,800
1928	668	5,600	Oct. 8, 1927	3.8	28.2	20,500	18.0	13,000
1929	688,733	28,300	May 28, 1929	3.1	88.8	64,300	88.8	64,300
1930	703,733	21,400	May 18, 1930	2.2	45.8	33,200	70.8	51,300
1931	718,733	12,400	Oct. 12, 1930	3.5	88.3	64,100	72.5	52,600
1932	733	18,800	July 2, 1932	4.3	103	74,800	103	74,700
1933	748	3,140	May 25, 1933	2.8	45.6	33,000	36.2	26,200
1934	763	4,240	Jan. 3, 1934	1.2	21.5	15,600	-	-

271. Pedernales River near Johnson City, Tex.

Location.--Lat 30°18', long 98°24', at bridge on U. S. Highway 281, 0.2 mile downstream from Flat Creek, 1.2 miles northeast of Johnson City, Blanco County, and 2.0 miles downstream from Buffalo Creek.

Drainage area.--947 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,096.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1942. May 4 to Sept. 13, 1939, wire-weight gage and Sept. 14, 1939, to Sept. 10, 1952, water-stage recorder, at upstream side of bridge at same datum. Sept. 11, 1952, to June 29, 1953, staff gage and June 30, 1953, to Oct. 7, 1954, water-stage recorder, at site 360 ft downstream at same datum.

Average discharge.--18 years (1939-57), 150 cfs (108,600 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 441,000 cfs Sept. 11, 1952 (gage height, 42.5 ft, from floodmark), from rating curve extended above 42,000 cfs on basis of slope-area measurements at gage heights 27.6 ft and 42.5 ft; no flow at times in 1951-52, 1954, 1956, 1957. Maximum stage since at least 1859, that of Sept. 11, 1952; flood of July 1869 reached a stage of about 33 ft, from information by local residents.

Remarks.--Some diversion above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	32.5	91.4	22.7	2.92	-
1940	497	30.0	18.1	17.4	127	135	303	149	590	156	22.6	12.7	171
1941	112	193	640	161	565	616	977	874	281	132	34.5	61.3	386
1942	243	57.5	54.4	45.4	43.6	37.2	154	79.4	49.6	47.2	276	94.8	99.1
1943	657	71.9	53.1	43.8	37.5	71.8	54.8	34.9	143	115	5.44	23.8	110
1944	12.6	11.3	18.4	40.5	52.0	104	42.9	1,091	130	25.7	984	231	231
1945	88.4	73.2	304	338	335	653	610	190	92.8	50.8	45.8	328	258
1946	190	65.5	84.0	128	135	97.5	266	365	135	29.1	11.7	53.0	130
1947	132	286	245	528	213	194	183	141	129	25.2	43.1	9.51	177
1948	9.95	17.7	37.5	22.7	34.0	31.4	170	82.2	32.2	60.4	10.6	15.5	43.6

Monthly and yearly mean discharge, in cubic feet per second, of Pedernales River near Johnson City, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	18.4	9.68	14.2	18.4	77.0	54.0	202	66.5	110	18.6	14.0	28.5	52.0
1950	17.6	9.08	23.5	18.4	31.3	14.9	23.5	54.0	57.0	5.61	26.3	22.9	25.3
1951	3.02	3.78	8.34	8.24	11.7	31.6	16.6	42.7	140	.58	.02	23.9	24.1
1952	.44	2.51	5.43	4.64	5.73	12.0	111	294	119	65.5	.10	6,332	571
1953	37.2	51.8	363	96.0	62.6	76.2	91.2	53.2	8.26	4.49	48.2	67.4	80.4
1954	65.1	19.4	19.5	16.9	10.2	7.70	57.2	29.4	3.64	.35	0	10.4	20.0
1955	56.0	9.57	2.44	34.6	62.2	6.15	2.21	283	50.1	88.3	94.5	153	70.4
1956	13.6	3.76	6.85	6.35	11.2	2.07	.06	2.05	1.25	.003	2.26	.10	4.12
1957	34.7	18.1	5.81	1.68	4.83	108	1,368	575	549	26.4	7.81	179	239

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	1,930	5,620	1,400	174	-
1940	30,530	1,790	1,110	1,070	7,330	8,290	18,050	9,140	35,080	9,590	1,390	753	124,100
1941	6,860	11,470	39,370	9,880	31,400	37,910	58,150	53,730	16,730	8,120	2,120	3,650	279,400
1942	14,960	3,420	3,340	2,790	2,420	2,290	9,170	4,880	2,950	2,900	16,990	5,640	71,750
1943	40,410	4,280	3,270	2,690	2,080	4,410	3,260	2,140	8,480	7,090	334	1,410	79,850
1944	778	671	1,130	2,490	2,990	6,400	2,550	67,100	7,760	1,580	60,480	13,730	167,700
1945	5,430	4,360	18,710	20,780	18,630	40,160	36,270	11,670	5,520	3,120	2,810	19,540	187,000
1946	11,680	3,900	5,170	7,850	7,510	6,000	15,860	22,470	8,040	1,790	719	3,150	94,140
1947	8,100	17,040	15,070	32,460	11,830	11,960	10,900	8,660	7,690	1,550	2,650	566	128,500
1948	612	1,050	2,300	1,390	1,960	1,930	10,140	5,050	1,910	3,710	650	925	31,630
1949	1,130	576	872	1,130	4,280	3,320	12,000	4,090	6,570	1,140	861	1,690	37,660
1950	1,080	540	1,450	1,130	1,740	916	1,400	3,320	3,390	345	1,620	1,360	18,290
1951	186	225	513	507	649	1,940	986	2,620	8,360	36	1.4	1,420	17,440
1952	27	150	334	285	330	736	6,620	18,050	7,060	4,020	6.0	376,800	414,400
1953	2,280	3,080	22,320	5,900	3,480	4,680	5,430	3,270	492	276	2,970	4,010	58,190
1954	4,000	1,150	1,200	1,040	564	473	3,400	1,810	217	21	0	620	14,500
1955	3,440	569	150	2,130	3,460	378	132	17,380	2,980	5,430	5,810	9,130	50,990
1956	834	224	421	391	647	127	3.6	126	74	.2	139	6.1	2,990
1957	2,130	1,080	357	104	268	6,610	81,400	35,350	32,640	1,620	480	10,640	172,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a4,820	July 13, 1939	-	-	-	-	-
1940	898	42,900	Oct. 25, 1939	1.3	171	124,100	204	148,400
1941	928	21,100	Apr. 27, 1941	8.4	386	279,400	336	243,400
1942	958	26,600	Aug. 22, 1942	5.0	99.1	71,750	135	97,990
1943	978	27,000	Oct. 18, 1942	2.7	110	79,850	47.7	34,470
1944	1008	104,000	Aug. 30, 1944	4.0	231	167,700	267	193,600
1945	1038	25,500	Sept. 29, 1945	13	258	187,000	248	179,200
1946	1058	9,680	May 25, 1946	8.9	130	94,140	157	113,600
1947	1088	10,200	Dec. 11, 1946	7.7	177	128,500	127	92,230
1948	1118	8,380	Apr. 13, 1948	.9	43.6	31,630	41.7	30,240
1949	1148	8,170	Apr. 24, 1949	3.0	52.0	37,660	52.7	38,150
1950	1178	2,910	Aug. 28, 1950	.2	25.3	18,290	22.3	16,140
1951	1212	11,800	June 12, 1951	0	24.1	17,440	23.5	17,030
1952	1242	441,000	Sept. 11, 1952	0	571	414,400	608	441,600
1953	1282	28,400	Dec. 19, 1952	.7	80.4	58,190	50.9	36,860
1954	1342	5,340	Apr. 30, 1954	0	20.0	14,500	17.0	12,300
1955	1392	13,600	Sept. 24, 1955	.2	70.4	50,990	66.7	48,310
1956	1442	164	Oct. 3, 1955	0	4.12	2,990	7.0	5,080
1957	1512	90,000	Apr. 24, 1957	0	239	172,700	-	-

a Maximum during period May to September.

272. Pedernales River near Spicewood, Tex.

Location.--Lat 30°25'15", long 98°04'50", in Travis County, 5.4 miles upstream from mouth and 8 miles southeast of Spicewood, Burnet County.

Drainage area.--1,294 sq mi.

Gage.--Staff gage. Datum of gage is 624.88 ft above mean sea level, datum of 1929.

Average discharge.--14 years (1924-38), 237 cfs (171,600 acre-ft per year).

Extremes.--1923-39: Maximum discharge, 155,000 cfs May 28, 1929 (gage height, 40.4 ft, from floodmarks), from rating curves extended above 7,000 cfs on basis of slope-area measurement of peak flow; no flow at times.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Pedernales River near Spicewood, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	714	218	352	534	434	478	583	36.5	10.3	116	-
1925	14.5	19.1	26.0	25.2	18.5	15.1	10.6	61.0	7.02	0	15.8	64.0	23.1
1926	615	373	33.4	121	61.6	237	969	325	86.6	606	23.5	6.69	289
1927	113	82.3	57.8	36.5	562	323	506	111	354	73.2	14.8	9.81	183
1928	268	25.9	30.1	28.3	47.2	47.6	25.6	46.9	82.4	9.33	5.83	23.7	53.6
1929	9.83	11.4	26.0	29.8	14.0	21.1	56.6	3,810	199	254	7.88	1.62	377
1930	2.72	33.0	30.6	18.6	16.5	17.0	11.2	1,110	80.6	6.71	.59	10.6	113
1931	371	49.8	51.0	190	632	379	378	298	85.4	240	31.8	4.85	224
1932	2.23	103	52.0	102	126	502	103	127	34.8	388	34.2	308	157
1933	43.2	38.3	70.8	135	71.6	82.0	55.4	122	15.2	13.0	21.5	7.13	56.4
1934	1.57	1.03	6.62	190	137	130	332	54.1	6.05	31.6	2.95	0	73.8
1935	0	64.6	6.77	10.6	71.2	6.45	8.93	1,176	3,264	135	53.1	1,250	500
1936	111	63.5	367	120	82.0	123	46.8	1,248	354	1,294	68.3	4,368	685
1937	519	396	407	332	257	576	239	122	364	140	17.7	57.1	286
1938	302	70.3	353	850	377	235	531	356	203	289	21.8	21.4	301
1939	11.0	18.5	21.3	74.2	39.5	31.5	38.9	65.6	76.0	76.3	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	43,900	13,400	20,200	32,900	25,800	29,400	34,700	2,240	631	6,910	-
1925	892	1,140	1,600	1,550	1,030	926	634	3,750	418	0	974	3,810	16,700
1926	37,800	22,200	2,050	7,450	3,420	14,600	57,600	20,000	5,150	37,300	1,440	398	209,000
1927	6,950	4,900	3,550	2,250	31,200	19,900	30,100	6,820	21,000	4,500	913	584	133,000
1928	16,500	1,540	1,850	1,740	2,720	2,930	1,520	2,880	4,900	574	358	1,410	38,900
1929	604	678	1,600	1,830	778	1,300	3,370	234,000	11,800	15,600	485	96	272,000
1930	167	1,960	1,880	1,140	916	1,050	666	68,200	4,800	413	36	631	81,900
1931	22,800	2,960	3,140	11,700	35,100	23,300	22,500	18,300	5,080	14,800	1,960	289	162,000
1932	137	6,130	3,200	6,270	7,250	30,900	6,130	7,810	2,070	23,900	2,100	18,300	114,000
1933	2,660	2,280	4,350	8,300	3,980	5,050	3,300	7,500	904	799	1,320	424	40,900
1934	97.0	61.0	407	11,700	7,610	7,990	19,800	3,330	360	1,940	181	0	53,500
1935	0	3,840	416	650	3,960	396	532	72,330	194,200	8,270	3,260	74,360	362,200
1936	6,820	3,780	22,600	7,390	4,720	7,540	2,790	76,750	21,090	79,540	4,200	259,900	497,100
1937	31,890	23,580	25,040	20,410	14,260	35,420	14,210	7,470	21,660	8,590	1,090	3,400	207,000
1938	18,580	4,180	21,730	52,280	20,930	14,450	31,610	21,920	12,070	17,760	1,340	1,280	218,100
1939	679	1,100	1,310	4,560	2,200	1,930	2,320	4,030	4,530	4,690	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a11,600	June 2, 1924	-	-	-	234	170,000
1925	608	1,360	May 10, 1925	0	23.1	16,700	104	75,100
1926	628	28,000	Apr. 21, 1926	2.8	289	209,000	225	163,000
1927	648	16,400	Apr. 8, 1927	1.8	183	133,000	189	137,000
1928	668	6,940	Oct. 2, 1927	0	53.6	38,900	30.2	21,900
1929	688	155,000	May 28, 1929	1.1	377	272,000	378	273,000
1930	703	36,600	May 10, 1930	0	113	81,900	148	107,000
1931	718	13,900	Oct. 13, 1930	1.4	224	162,000	197	142,000
1932	733	18,500	July 3, 1932	1.4	157	114,000	157	114,000
1933	748	2,020	May 26, 1933	0	56.4	40,900	44.3	32,100
1934	763	11,400	Apr. 6, 1934	0	73.8	53,500	78.9	57,140
1935	788	105,000	June 15, 1935	0	500	362,200	540	391,200
1936	808	85,300	Sept. 27, 1936	31.0	685	497,100	750	544,400
1937	828	10,000	July 11, 1937	12.0	286	207,000	236	171,000
1938	858	14,800	Jan. 23, 1938	12.0	301	218,100	244	176,700
1939	878	2,390	July 14, 1939	-	-	-	-	-

a Maximum during period November to September.

273. Lake Travis near Austin, Tex. 1/

Location. --Lat 30°23'20", long 97°54'35", in powerhouse at Mansfield Dam on Colorado River, 7.3 miles downstream from Sandy Creek, 12 miles northwest of Austin, Travis County, and at mile 318.

Drainage area. --38,130 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Gage. --Indicating gage. Datum of gage is 0.12 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to Dec. 26, 1940, staff gage on left bank near dam, datum at mean sea level (unadjusted). Dec. 26, 1940, to February 1942, mercury manometer in powerhouse, datum at mean sea level (unadjusted).

Extremes. --1940-57: Maximum contents observed, 1,770,000 acre-ft May 18, 1957 (gage height, 707.4 ft); minimum observed since first appreciable storage, 332,600 acre-ft Aug. 13, 14, 1951 (gage height, 614.2 ft).

Remarks. --Reservoir is formed by concrete gravity-type dam. Storage began Sept. 9, 1940; dam completed early in 1942. Capacity between gage heights 681.0 and 714.0 ft is 778,000 acre-ft and is reserved for flood control. Figures given herein represent total contents. Water used for power development and for irrigation of rice in several districts below Columbus.

1/ Published as "Marshall Ford Reservoir" prior to Oct. 1, 1948.

273. Lake Travis near Austin, Tex.--Continued

Data regarding the dam and reservoir are shown in the following table:

	Gage height (feet)	Capacity (acre-feet)
Maximum design level - top of spillway	714.0	1,950,000
Maximum power pool	681.0	1,172,000
Bottom of penstocks	552.0	54,800
Bottom of 24 8½-foot diameter paradox gates	535.8	27,900

Cooperation.--Records of daily gage heights and capacity curve furnished by Lower Colorado River Authority.

Contents, in thousands of acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1940	-	-	-	-	-	-	-	-	-	-	-	52.3	-
1941	47.8	211.0	339.0	331.0	338.0	331.0	335.0	323.0	331.0	316.0	342.0	337.0	+284.0
1942	484.0	583.0	587.0	582.0	595.0	571.0	693.0	972.0	1,030	987.0	1,055	1,218	+881.0
1943	1,354	1,280	1,222	1,121	1,069	1,064	1,003	954.0	968.0	913.0	823.0	794.0	-424.0
1944	757.0	732.0	719.0	730.0	743.0	852.0	871.0	1,107	1,138	1,006	1,016	1,021	+227.0
1945	933.5	932.0	922.6	976.9	1,018	1,076	1,160	1,118	1,091	1,188	1,058	1,034	+13.0
1946	993.0	924.2	892.2	889.2	956.8	1,001	1,080	1,100	1,053	1,020	913.4	836.7	-197.3
1947	776.1	838.2	854.7	918.0	866.7	859.2	857.7	808.6	738.9	663.6	605.7	564.0	-272.7
1948	559.7	560.8	559.7	544.3	547.4	550.5	566.2	553.6	655.3	669.5	617.5	606.9	+42.9
1949	584.5	558.7	565.1	568.3	605.7	581.0	663.6	950.6	966.0	933.5	883.2	872.7	+265.8
1950	845.7	820.3	780.2	742.8	719.4	709.3	727.2	699.4	654.1	581.0	528.8	520.6	-352.1
1951	496.9	479.4	446.4	396.8	399.4	408.8	397.7	352.6	339.8	346.2	359.8	398.5	-122.1
1952	407.1	407.1	400.2	400.2	391.6	383.0	380.5	376.2	337.4	359.8	384.8	1,100	+701.5
1953	1,076	1,082	1,164	1,180	1,170	1,162	1,136	1,141	1,064	959.8	922.6	958.3	-141.7
1954	1,020	1,030	1,032	1,062	1,064	1,030	993.0	1,138	1,102	1,028	950.6	935.0	-23.3
1955	927.3	908.8	887.7	884.7	886.2	859.2	807.1	1,112	1,170	1,162	1,162	1,194	+259.0
1956	1,160	1,118	1,109	1,129	1,118	1,069	1,021	1,172	1,107	986.6	913.4	905.8	-288.2
1957	895.2	911.9	922.6	925.8	939.7	964.5	1,566	1,677	1,320	1,116	1,060	1,018	+112.2

274. Barton Creek at Austin, Tex.

Location.--Lat 30°16', long 97°46', on left bank 200 ft downstream from Barton Springs, in Zilker Park at Austin, Travis County, about 1,400 ft upstream from Austin-Bee Cave highway bridge, and 0.6 mile upstream from Colorado River.

Drainage area.--Not applicable. Normal flow of Barton Creek comes from Barton Springs.

Gage.--Staff gage. Datum of gage not known. Elevation of spring pool, 431.82 ft above mean sea level, datum of 1929. Prior to May 24, 1917, staff gage at site 300 ft downstream at different datum.

Supplemental records available.--November 1894 to September 1957, periodic discharge measurements of flow of Barton Springs only.

Extremes.--1917-18: Maximum daily discharge, 24 cfs Apr. 20-21, 1918; minimum daily, 12 cfs Feb. 25, 1918.
1894-1957: Maximum discharge measured of Barton Springs, 166 cfs May 10, 1941; minimum measured of Barton Springs, 9.59 cfs Mar. 29, 1956.

Remarks.--Normal flow of creek comes from Barton Springs which emerges from Edwards limestone in Balcones fault zone and responds to rainfall on the Edwards Plateau. Water used for recreational purposes. All flow during period May 1917 to September 1918 was from Barton Springs.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	15.3	18.0	15.4	13.6	16.7	-
1918	14.9	15.0	13.8	13.1	13.6	13.6	20.6	18.6	15.3	15.0	14.1	13.3	15.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	941	1,070	947	836	994	-
1918	916	893	849	805	755	836	1,230	1,140	910	922	867	791	10,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	458	a19.0	June 1-4, 1917	-	-	-	-	-
1918	478	b24.0	Apr. 20-21, 1918	12.0	15.1	10,900	-	-

a Maximum daily April to September.
b Maximum daily.

275. Waller Creek at 38th Street at Austin, Tex.

Location.--Lat 30°17'49", long 96°43'36", on right bank 200 ft upstream from bridge on East 38th Street at Austin, Travis County, 1.1 miles upstream from West Branch of Waller Creek, and 3.3 miles upstream from mouth and Colorado River.

Drainage area.--2.31 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 555.442 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Extremes.--1955-57: Maximum discharge, 596 cfs May 26, 1957 (gage height, 5.75 ft); no flow at times.

Remarks.--Flow regulated at times by a small reservoir at St. Mary's Academy on West 41st Street, and a small swimming pool at the academy which is drained into the creek every week or two during the summer. Other swimming pools drain into the creek, causing rises which are not from rainfall.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	0.15	0.78	0.37	0.30	0.28	0.04	-
1956	0	0.04	0.24	0.21	0.29	0.05	.03	.62	.24	.20	.27	.04	0.19
1957	.05	.39	.38	.11	.84	.90	5.87	4.21	5.26	.77	.68	1.94	1.77

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	9.1	48	22	19	17	2.2	-
1956	0	2.4	15	13	17	3.2	2.0	38	14	12	17	2.4	136
1957	3.0	23	24	6.5	47	56	349	259	313	47	42	116	1,290

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	1512	-	-	-	-	-	-	-
1956	1512	108	May 1, 1956	0	0.19	136	0.23	169
1957	1512	596	May 26, 1957	0	1.77	1,290	-	-

276. Waller Creek at 23rd Street at Austin, Tex.

Location.--Lat 30°17'08", long 97°44'01", on San Jacinto Boulevard, 50 ft upstream from bridge on East 23rd Street at Austin, Travis County, and 2.1 miles upstream from mouth and Colorado River.

Drainage area.--4.13 sq mi.

Gage.--Water-stage recorder. Datum of gage is 509.946 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Extremes.--1954-57: Maximum discharge, 2,050 cfs June 12, 1957 (gage height, 5.85 ft); minimum daily, 0.2 cfs at times.
Maximum flood since about 1885, Apr. 22, 1915, when stream was 30 to 40 ft deep, probably near mouth of creek, from information by U. S. Weather Bureau.

Remarks.--Some regulation by small dam upstream. Diversion of city water into channel during the summer months from municipal and private swimming pools. Probability of diversions into and out of drainage area by storm sewers. Station is part of hydrologic research project to study rainfall-runoff relationships for small urban areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	1.29	3.92	1.21	0.86	3.70	1.80	1.04	0.81	0.56	-
1956	0.55	0.72	0.84	.75	1.21	.56	.59	2.53	.76	.79	1.08	.60	0.92
1957	.97	1.44	1.31	.52	2.35	3.55	12.7	9.02	11.1	1.82	1.42	4.39	4.19

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	80	218	74	51	228	107	64	50	33	-
1956	34	43	51	46	70	34	35	156	45	49	66	36	665
1957	60	85	80	32	130	219	755	555	668	112	87	231	3,040

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	1512	-	-	-	-	-	1.43	1,030
1956	1512	615	May 1, 1956	0.2	0.92	665	1.05	762
1957	1512	2,050	June 12, 1957	.2	4.20	3,040	-	-

277. Colorado River at Austin, Tex.

Location.--Lat 30°14'40", long 97°41'20", at Montopolis Bridge on U. S. Highway 183 at southeast edge of Austin, Travis County, 2.8 miles upstream from Walnut Creek, 3.8 miles downstream from Waller Creek, 5 miles downstream from Barton Creek, and at mile 290.

Drainage area.--38,400 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses and water temperatures for the period October 1947 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 407.28 ft above mean sea level, datum of 1929. Prior to June 18, 1915, combination staff and chain gages, June 18, 1915, to Apr. 27, 1918, water-stage recorder (pressure type), and Apr. 28, 1918, to Feb. 15, 1939, water-stage recorder at Congress Avenue Bridge, 4.0 miles upstream at datum 14.6 ft higher. Feb. 16, 1939, to June 19, 1939, wire-weight gage at present site and datum.

Average discharge.--59 years (1898-1957), 2,491 cfs (1,803,000 acre-ft per year).

Extremes.--1898-1957: Maximum discharge, 481,000 cfs June 15, 1935 (gage height, 45.0 ft, present site and datum, from floodmark); minimum, 13 cfs Aug. 18, 1918.
Maximum stage since at least 1833, 46.0 ft July 7, 1869, present site and datum (adjusted to present site on basis of record for flood of June 15, 1935).

Remarks.--Flow largely regulated by Buchanan Reservoir since May 1937 and Lake Travis since September 1940, and other smaller reservoirs, having a combined capacity of 3,979,000 acre-ft. About 36,000 acres irrigated above station. During 1957 city of Austin diverted an average of about 43 cfs for municipal use above station and returned about 20 cfs of treated sewage below station. Many other diversions above Buchanan Reservoir for irrigation, municipal supply and oilfield operations.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	-	-	-	-	-	367	1,590	2,110	7,350	996	636	1,190	-
1899	422	330	332	332	311	253	675	3,530	13,800	2,140	552	320	1,910
1900	512	2,160	2,930	1,510	848	1,250	21,800	10,100	3,250	4,860	3,480	14,600	5,600
1901	5,930	4,410	2,160	1,740	1,440	949	844	1,470	891	2,760	513	2,930	2,170
1902	431	1,040	454	423	445	797	1,870	3,200	918	7,330	2,910	1,630	1,800
1903	1,090	5,890	1,410	1,040	4,890	4,750	1,980	2,360	2,400	1,410	768	715	2,370
1904	4,530	423	345	352	614	367	666	3,180	6,440	2,520	1,050	2,930	1,950
1905	1,430	540	397	337	366	1,560	6,670	8,360	1,350	1,970	746	408	2,020
1906	546	381	222	177	191	204	692	1,060	3,270	5,750	12,300	8,830	2,820
1907	335	268	698	217	225	203	145	3,400	3,100	4,680	266	156	1,150
1908	3,480	3,920	949	515	885	589	11,600	11,600	2,070	2,030	1,580	1,610	3,400
1909	1,190	367	566	350	251	188	349	3,180	4,520	3,350	1,270	1,160	1,400
1910	2,610	768	2,120	298	417	263	3,840	2,090	238	444	130	1,770	1,250
1911	488	195	242	283	3,800	761	4,120	2,120	394	2,190	1,690	5,440	1,790
1912	549	245	1,600	594	701	999	1,040	1,490	1,560	343	793	592	877
1913	1,370	398	630	568	577	480	812	5,410	2,930	2,130	676	2,140	1,520
1914	7,070	9,440	23,800	2,040	1,160	1,160	3,060	18,400	11,300	1,730	8,380	2,140	7,530
1915	1,920	1,950	a1,730	1,390	a944	1,630	10,300	5,430	678	986	966	8,230	3,010
1916	1,420	617	1,160	767	660	350	3,510	3,990	571	701	416	264	1,200
1917	1,020	301	306	273	302	323	277	1,180	1,210	390	70.3	1,420	590
1918	148	159	209	565	193	143	3,220	1,420	2,950	520	131	775	865
1919	6,280	11,100	5,200	5,450	3,010	4,960	3,120	7,310	13,100	9,680	4,760	9,380	6,950
1920	14,200	7,050	3,410	5,460	3,340	2,120	1,190	6,450	1,600	806	6,720	5,260	4,820
1921	944	1,280	845	684	608	990	1,870	964	5,090	387	89.2	3,410	1,420
1922	416	214	268	254	261	358	19,500	30,700	3,380	1,720	380	274	4,840
1923	228	1,820	358	341	995	1,180	9,850	4,710	1,680	1,070	344	4,010	2,200
1924	3,710	8,320	5,280	2,050	2,190	2,920	3,180	5,410	4,040	444	228	1,470	3,260
1925	910	393	519	441	401	280	836	6,150	3,550	836	911	2,750	1,500
1926	4,680	3,570	625	1,430	723	3,100	8,130	4,160	2,820	1,790	991	2,700	2,900
1927	2,630	845	1,400	681	4,270	1,730	4,040	1,570	3,140	1,380	411	361	1,850
1928	6,470	928	449	408	682	493	563	4,900	4,510	2,060	3,960	1,190	2,230
1929	740	402	477	484	310	829	1,340	10,500	3,380	1,010	150	2,540	1,860
1930	1,750	479	273	299	324	326	218	9,440	5,160	266	197	817	1,640
1931	20,100	1,200	2,280	2,270	4,710	2,760	1,400	2,280	2,030	942	374	270	3,400
1932	3,300	1,140	855	1,780	2,750	2,450	890	10,000	3,630	11,500	1,220	13,600	4,430
1933	1,780	848	1,040	1,680	761	984	762	4,640	889	256	334	686	1,230
1934	400	264	258	742	875	1,210	6,360	1,010	259	1,230	186	241	1,080
1935	57.5	654	269	331	1,688	364	1,797	20,330	31,940	3,449	1,536	18,970	6,752
1936	2,495	1,392	2,043	838	635	728	356	6,904	2,013	4,908	744	42,630	5,433
1937	14,780	3,911	3,707	2,665	2,041	3,077	1,471	969	1,220	1,102	505	285	3,000
1938	808	551	2,457	4,574	1,902	971	1,802	1,712	1,479	36,110	5,862	797	4,985
1939	527	515	576	904	1,162	818	1,139	1,727	3,370	3,418	1,259	938	1,363
1940	2,005	1,134	1,046	885	1,320	1,408	1,832	1,488	3,410	4,690	1,330	1,486	1,838
1941	1,368	1,639	3,880	2,335	4,238	6,197	10,420	16,370	9,977	4,485	1,412	1,795	5,345
1942	2,168	855	1,209	1,350	1,292	1,226	994	1,120	1,835	1,390	1,459	1,435	1,362
1943	3,640	3,947	2,588	2,716	2,504	2,224	2,765	2,163	2,343	2,004	1,744	1,006	2,470
1944	1,381	1,300	1,338	1,234	1,442	1,245	1,232	1,921	2,710	3,166	3,073	2,962	1,918
1945	2,257	1,529	2,125	1,991	2,050	2,182	2,605	2,360	2,303	3,919	3,310	2,323	2,418

a Monthly figures reliable; daily discharges Dec. 13-26, 1914, and Feb. 9-17, 1915, are unreliable and should not be used.

Monthly and yearly mean discharge, in cubic feet per second, of Colorado River at Austin, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	1,926	2,041	2,111	2,174	1,796	1,866	1,916	2,723	2,092	1,920	2,758	2,412	2,148
1947	2,439	2,735	2,375	2,854	2,220	1,848	1,458	1,707	2,092	2,030	1,936	1,545	2,104
1948	1,136	1,150	947	917	1,026	1,007	1,056	1,304	1,918	2,125	2,036	1,193	1,319
1949	939	768	732	702	720	1,125	1,069	1,174	2,042	1,912	1,806	1,547	1,214
1950	1,215	1,299	1,225	884	947	720	856	1,643	1,887	1,878	1,636	935	1,263
1951	576	697	734	826	643	235	754	1,749	1,653	1,967	1,982	806	1,056
1952	394	244	198	185	202	188	448	1,023	1,733	1,801	1,707	901	754
1953	284	428	301	781	983	272	970	1,374	1,985	1,893	1,307	490	921
1954	334	271	505	487	223	405	954	1,952	1,963	2,138	1,527	512	945
1955	288	309	271	287	530	457	960	1,811	4,203	2,805	2,234	1,689	1,322
1956	2,243	1,733	506	328	547	485	966	2,300	2,273	2,382	1,583	581	1,331
1957	310	182	175	172	189	229	2,166	27,270	17,800	4,899	2,665	2,388	4,900

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	-	-	-	-	-	22,600	94,600	130,000	437,000	61,200	39,100	70,800	-
1899	25,900	19,600	20,400	20,400	17,300	15,600	40,200	217,000	821,000	132,000	33,900	19,000	1,380,000
1900	31,500	129,000	180,000	92,800	47,100	76,900	1,300,000	621,000	193,000	299,000	214,000	869,000	4,050,000
1901	365,000	262,000	133,000	107,000	80,000	58,400	50,200	90,400	53,000	170,000	31,500	174,000	1,570,000
1902	26,500	61,900	27,900	26,000	24,700	49,000	111,000	197,000	54,600	451,000	179,000	97,000	1,310,000
1903	67,000	350,000	86,700	64,000	272,000	292,000	118,000	145,000	143,000	86,700	47,200	42,500	1,710,000
1904	279,000	25,200	21,200	21,600	35,300	22,600	39,600	196,000	383,000	155,000	64,600	174,000	1,420,000
1905	87,900	32,100	24,400	20,700	20,300	95,900	397,000	514,000	80,300	121,000	45,900	24,300	1,460,000
1906	33,600	22,700	13,600	10,900	10,600	12,500	41,200	65,200	195,000	354,000	756,000	525,000	2,040,000
1907	20,600	15,900	42,900	13,300	12,500	12,500	8,630	209,000	184,000	288,000	16,400	9,280	833,000
1908	214,000	233,000	58,400	31,700	50,900	36,200	690,000	711,000	123,000	125,000	97,200	95,800	2,470,000
1909	73,200	21,800	34,800	21,500	13,900	11,600	20,800	196,000	269,000	206,000	78,100	69,000	1,020,000
1910	160,000	45,700	130,000	18,300	23,200	16,200	228,000	129,000	14,200	27,300	7,990	105,000	905,000
1911	30,000	11,600	14,900	17,400	211,000	46,800	245,000	130,000	23,400	135,000	104,000	324,000	1,290,000
1912	33,800	14,600	98,400	36,500	40,300	61,400	61,900	91,600	92,800	21,100	48,800	35,200	636,000
1913	84,200	23,700	38,700	34,900	32,000	29,500	48,300	333,000	174,000	131,000	41,600	127,000	1,100,000
1914	435,000	562,000	1,460,000	125,000	64,400	71,300	182,000	1,130,000	672,000	106,000	515,000	127,000	5,450,000
1915	118,000	116,000	a106,000	85,500	a52,400	100,000	613,000	334,000	40,300	60,600	59,400	490,000	2,180,000
1916	87,300	36,700	71,300	47,200	38,000	21,500	209,000	245,000	34,000	43,100	25,600	15,700	874,000
1917	62,700	17,900	18,800	16,800	16,800	19,900	16,500	72,600	72,000	24,000	4,320	84,500	427,000
1918	9,100	9,460	12,900	34,700	10,700	8,790	192,000	87,300	176,000	32,000	8,060	46,100	627,000
1919	386,000	660,000	320,000	335,000	167,000	305,000	186,000	449,000	780,000	595,000	293,000	558,000	5,030,000
1920	873,000	420,000	210,000	336,000	192,000	130,000	70,800	397,000	95,200	49,600	413,000	313,000	3,500,000
1921	58,000	76,200	52,000	42,100	33,800	60,900	111,000	59,300	303,000	23,800	5,480	203,000	1,030,000
1922	25,600	12,700	16,500	15,600	14,500	22,000	1,160,000	1,890,000	201,000	106,000	23,400	16,300	3,500,000
1923	14,000	109,000	22,000	21,000	55,200	72,800	586,000	289,000	99,900	65,700	21,200	239,000	1,590,000
1924	228,000	495,000	324,000	126,000	126,000	179,000	190,000	333,000	240,000	27,300	14,000	87,200	2,370,000
1925	56,000	23,400	31,900	27,100	22,300	17,200	49,700	378,000	212,000	51,400	56,000	164,000	1,090,000
1926	288,000	213,000	38,400	87,900	40,100	190,000	484,000	255,000	168,000	110,000	60,900	161,000	2,100,000
1927	161,000	50,300	86,200	41,900	237,000	106,000	240,000	96,400	187,000	84,900	25,300	21,500	1,340,000
1928	398,000	55,200	27,600	25,100	39,200	30,300	33,500	301,000	268,000	127,000	243,000	70,800	1,620,000
1929	45,500	23,900	29,300	29,800	17,200	51,000	79,700	646,000	201,000	62,100	9,220	151,000	1,350,000
1930	108,000	28,500	16,800	18,400	18,000	20,000	13,000	580,000	307,000	16,400	12,100	48,600	1,190,000
1931	1,240,000	71,400	140,000	140,000	262,000	170,000	83,300	140,000	121,000	57,900	23,000	16,100	2,460,000
1932	203,000	67,800	52,600	109,000	158,000	151,000	53,000	615,000	216,000	707,000	75,000	809,000	3,220,000
1933	109,000	50,500	64,000	103,000	42,300	60,500	45,300	285,000	52,900	15,700	20,500	40,800	890,000
1934	24,600	15,700	15,900	45,600	48,600	74,400	378,000	62,100	15,400	75,600	11,400	14,300	782,000
1935	3,540	38,920	16,540	20,350	93,720	22,410	106,900	1,250,000	1,901,000	212,100	94,430	1,129,000	4,889,000
1936	153,400	82,810	125,600	51,540	36,500	44,750	21,190	424,500	119,800	301,800	45,760	2,537,000	3,945,000
1937	908,900	232,700	228,000	163,900	113,400	189,200	87,510	59,600	72,580	67,790	31,070	16,970	2,172,000
1938	49,680	32,790	151,100	281,300	105,600	59,680	107,300	105,200	87,980	2,221,000	360,500	47,440	3,610,000
1939	32,420	30,630	35,410	55,570	64,540	50,300	67,760	106,200	200,500	210,100	77,400	55,800	986,600
1940	123,300	67,490	64,340	54,440	75,950	86,590	109,000	91,510	202,900	288,400	81,770	88,430	1,334,000
1941	84,100	97,530	238,600	143,600	235,400	381,000	619,900	1,006,000	593,700	275,800	86,820	106,800	3,869,000
1942	133,300	50,880	74,340	83,010	71,750	75,390	59,130	68,880	109,200	85,450	89,700	85,410	986,400
1943	223,800	234,900	159,200	167,000	139,000	136,700	164,500	133,000	139,400	123,200	107,200	59,870	1,788,000
1944	84,930	77,340	82,280	75,880	82,920	76,520	73,310	118,100	161,300	194,700	188,900	176,200	1,392,000
1945	138,800	90,970	130,700	122,400	113,900	134,200	155,000	145,100	137,000	241,000	203,500	138,200	1,751,000
1946	118,400	121,400	129,800	133,700	99,730	114,800	114,000	167,400	124,500	118,100	169,600	143,500	1,555,000
1947	150,000	162,700	146,100	175,500	123,300	113,600	86,780	104,900	124,500	124,800	119,000	91,930	1,523,000
1948	69,830	68,460	58,240	56,380	59,030	61,920	62,830	80,190	114,100	130,600	125,200	70,960	957,700
1949	57,740	45,730	44,990	43,160	40,010	69,190	63,610	72,170	121,500	117,600	111,000	92,030	878,700
1950	74,700	77,320	75,300	54,380	52,590	44,280	50,910	101,000	112,300	115,500	100,600	55,630	914,500

a Monthly figures reliable; daily discharges Dec. 13-26, 1914, and Feb. 9-17, 1915, are unreliable and should not be used.

Monthly and yearly runoff, in acre-feet, of Colorado River at Austin, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	35,410	41,490	45,120	50,790	35,710	14,470	44,890	107,600	98,330	120,900	121,900	47,950	764,600
1952	24,200	14,520	12,180	11,380	11,640	11,580	26,680	62,910	103,100	110,700	105,000	53,620	547,500
1953	17,470	25,480	18,520	48,020	54,580	16,700	57,730	84,460	118,100	116,400	80,370	29,170	667,000
1954	20,570	16,110	31,050	29,930	12,380	24,890	56,770	120,000	116,800	131,500	93,880	30,480	684,400
1955	17,710	18,390	16,670	17,630	29,410	28,090	57,100	111,400	250,100	172,500	137,400	100,500	956,900
1956	137,900	103,100	31,140	20,150	31,460	29,850	57,470	141,400	135,200	146,500	97,320	34,600	966,100
1957	19,090	10,830	10,750	10,590	10,500	14,110	128,900	1,677,000	1,059,000	301,200	163,900	142,100	3,548,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1898	548	a30,200	June 16, 1898	-	-	-	-	-
1899	548	113,000	June 8, 1899	178	1,910	1,380,000	2,290	1,660,000
1900	548	b236,000	Apr. 7, 1900	195	5,600	4,050,000	6,180	4,470,000
1901	548	c28,700	July 13, 1901	200	2,170	1,570,000	1,290	931,000
1902	548	c35,900	July 28, 1902	180	1,800	1,310,000	2,340	1,690,000
1903	548	c33,700	Feb. 27, 1903	262	2,370	1,710,000	2,120	1,540,000
1904	548	c31,500	June 8, 1904	225	1,950	1,420,000	1,700	1,240,000
1905	548	c52,900	Apr. 30, 1905	180	2,020	1,460,000	1,920	1,390,000
1906	548	c78,500	Aug. 12, 1906	140	2,820	2,040,000	2,830	2,050,000
1907	288	c28,100	May 29, 1907	50	1,150	833,000	1,740	1,260,000
1908	288, 1512	c100,000	Apr. 23, 1908	183	3,400	2,470,000	2,880	2,090,000
1909	288	c29,700	June 4, 1909	123	1,400	1,020,000	1,690	1,220,000
1910	288	c27,400	Sept. 9, 1910	40	1,250	905,000	865	626,000
1911	288, 548	c27,400	Sept. 7, 1911	110	1,790	1,290,000	1,910	1,380,000
1912	548	c17,400	Dec. 14, 1911	110	877	636,000	877	636,000
1913	548	47,100	May 9, 1913	30	1,520	1,100,000	4,710	3,410,000
1914	548	164,000	Dec. 4, 1913	-	7,530	5,450,000	4,610	3,330,000
1915	408	84,000	Sept. 17, 1915	-	3,010	2,180,000	2,760	2,000,000
1916	438	46,000	May 22, 1916	80	1,200	874,000	1,070	778,000
1917	458	11,100	Oct. 21, 1916	52	590	427,000	496	359,000
1918	478	51,500	Apr. 16, 1918	22	865	627,000	2,710	1,960,000
1919	508	74,800	Nov. 9, 1918	123	6,950	5,030,000	7,150	5,170,000
1920	508	50,300	Oct. 11, 1919	405	4,820	3,500,000	3,010	2,180,000
1921	528	75,700	Sept. 10, 1921	64	1,420	1,030,000	1,240	897,000
1922	548	120,000	May 1, 1922	160	4,840	3,500,000	4,960	3,590,000
1923	568	50,200	May 1, 1923	102	2,200	1,590,000	3,450	2,500,000
1924	588	53,000	Nov. 3, 1923	197	3,260	2,370,000	1,970	1,430,000
1925	608	32,000	May 31, 1925	91	1,500	1,090,000	2,090	1,520,000
1926	628	33,300	Apr. 21, 1926	161	2,900	2,100,000	2,560	1,850,000
1927	648	46,000	Feb. 10, 1927	125	1,850	1,340,000	2,100	1,520,000
1928	668	39,500	Oct. 3, 1927	80	2,230	1,620,000	1,700	1,240,000
1929	688	154,000	May 29, 1929	-	1,860	1,350,000	1,940	1,400,000
1930	703	37,300	May 11, 1930	45	1,640	1,190,000	3,430	2,480,000
1931	718	97,600	Oct. 7, 1930	110	3,400	2,460,000	1,840	1,340,000
1932	733	77,500	Sept. 3, 1932	105	4,430	3,220,000	4,300	3,120,000
1933	748	44,200	May 27, 1933	96	1,230	890,000	999	722,000
1934	763	45,300	Apr. 8, 1934	43	1,080	782,000	1,084	784,700
1935	788	481,000	June 15, 1935	32	6,752	4,889,000	7,170	5,192,000
1936	808, 1512	234,000	Sept. 28, 1936	154	5,433	3,945,000	6,841	4,952,000
1937	828	98,200	Oct. 2, 1936	191	3,000	2,172,000	1,430	1,036,000
1938	858	276,000	July 25, 1938	212	4,985	3,610,000	4,799	3,474,000
1939	878	20,400	July 15, 1939	428	1,363	986,600	1,579	1,143,000
1940	898	45,700	June 30, 1940	248	1,838	1,334,000	2,065	1,499,000
1941	928	47,600	Apr. 29, 1941	702	5,345	3,869,000	5,121	3,708,000
1942	958	5,800	Sept. 8, 1942	686	1,362	986,400	1,859	1,346,000
1943	978	11,900	Oct. 22, 1942	684	2,470	1,788,000	1,954	1,414,000
1944	1008	4,230	May 16, June 26, 1944	716	1,918	1,392,000	2,078	1,508,000
1945	1038	18,400	Aug. 6, 1945	822	2,418	1,751,000	2,431	1,760,000
1946	1058	14,200	Apr. 23, 1946	553	2,148	1,555,000	2,271	1,644,000
1947	1088	16,700	Nov. 3, 1946	620	2,104	1,523,000	1,742	1,261,000
1948	1118	4,060	Aug. 11, 1948	332	1,319	957,700	1,253	909,700
1949	1148	3,940	June 11, 1949	447	1,214	878,700	1,323	957,600
1950	1178	4,300	June 1, 1950	526	1,263	914,500	1,118	809,200
1951	1212	3,710	Aug. 7, 1951	121	1,056	764,600	958	693,400
1952	1242	3,720	Sept. 17, 1952	124	754	547,500	769	558,100
1953	1282	3,720	June 27, July 4, 1953	173	921	667,000	930	673,300
1954	1342	4,160	May 26, 1954	176	945	684,400	925	669,400
1955	1392	8,790	June 9, 1955	232	1,322	956,900	1,625	1,176,000
1956	1442	5,250	Oct. 1, 1955	233	1,331	966,100	1,012	734,600
1957	1512	40,800	June 4, 1957	131	4,900	3,548,000	-	-

a Maximum daily during period March to September.
b Peak caused by failure of Austin Dam; natural peak discharge, 151,000 cfs.
c Maximum daily.

278. Onion Creek near Del Valle, Tex.

Location.--Lat 30°11', long 97°39', at Del Valle-Creedmore highway crossing, 2 miles downstream from Williamson Creek and 2½ miles southwest of Del Valle, Travis County.

Drainage area.--337 sq mi.

Gage.--Staff gage. Altitude of gage is about 420 ft (from topographic map).

Average discharge.--5 years (1924-29), 82.3 cfs (59,580 acre-ft per year).

Extremes.--1924-30: Maximum discharge, 76,000 cfs May 28, 1929 (gage height, 24.75 ft); no flow at times.
Flood of Sept. 9, 1921, reached a stage of 33.6 ft.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	255	22.7	2.90	4.81	-
1925	2.39	2.04	1.97	1.78	1.65	1.83	2.15	1.87	.01	0	0	2.25	1.49
1926	282	124	13.3	39.0	35.7	168	847	351	39.3	73.0	4.93	2.06	165
1927	9.85	8.03	22.8	15.1	62.4	64.0	71.4	133	38.5	7.93	.34	2.80	36.2
1928	46.0	8.18	17.2	3.73	71.5	10.3	6.71	5.96	6.33	2.28	0	.05	14.6
1929	0	.61	1.45	5.55	2.07	3.78	15.6	1,770	353	130	13.9	4.89	194
1930	2.67	6.27	14.4	4.72	7.10	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	15,200	1,400	178	286	-
1925	147	122	121	110	91.6	112	128	115	.6	0	0	134	1,080
1926	17,300	7,350	817	2,400	1,980	10,300	50,400	21,600	2,340	4,490	303	123	119,000
1927	605	478	1,400	926	3,470	3,930	4,250	8,180	2,290	488	21	166	26,200
1928	2,830	487	1,060	229	4,110	633	399	366	377	140	0	3.0	10,600
1929	0	36	89	341	115	232	928	109,000	21,000	7,990	855	291	141,000
1930	164	373	885	290	394	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a8,240	June 22, 1924	-	-	-	-	-
1925	608	254	Sept. 12, 1925	0	1.49	1,080	36.2	26,200
1926	628	24,300	Apr. 21, 1926	0	165	119,000	133	96,400
1927	648	1,780	June 14, 1927	0	36.2	26,200	38.8	28,100
1928	668	4,850	Feb. 22, 1928	0	14.6	10,600	8.80	6,380
1929	688	76,000	May 28, 1929	0	194	141,000	196	142,000
1930	703	b701	Dec. 15, 1929	-	-	-	-	-

a Maximum during period May to September
b Maximum during period October to March.

279. Colorado River at Smithville, Tex.

Location.--Lat 30°01', long 97°10', on right bank 360 ft downstream from bridge on State Highway 71 in Smithville, Bastrop County, 850 ft downstream from Gazley Creek, 4 miles downstream from Alum Creek, and at mile 212.

Drainage area.--39,880 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Supplemental records available.--Gage-height records collected in this vicinity since 1920 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 270.14 ft above mean sea level, datum of 1929. Prior to Apr. 9, 1931, staff gage at same site and datum.

Average discharge.--27 years (1930-57), 2,758 cfs (1,997,000 acre-ft per year).

Extremes.--1930-57: Maximum discharge, 305,000 cfs June 16, 1935 (gage height, 42.5 ft, from floodmarks), from rating curve extended above 209,000 cfs on basis of slope-area measurement of peak flow; minimum, 76 cfs Nov. 2, 1934.
Maximum stage since 1869, about 47.4 ft Dec. 4, 1913; flood of July 8, 1869, was several feet higher, from information by local residents.

Remarks.--Many diversions above station for irrigation and municipal supply. Regulation is same as that for Colorado River at Austin.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	-	-	-	-	240	746	-
1931	20,400	1,580	2,860	3,370	6,070	3,890	2,070	3,140	2,190	1,220	535	386	3,980
1932	2,800	1,270	899	3,090	3,180	3,110	1,080	9,700	3,730	11,700	1,370	14,400	4,690
1933	2,110	1,100	1,080	2,260	1,090	1,410	945	4,070	1,190	852	570	750	1,460
1934	445	342	299	1,730	1,540	1,740	7,220	1,350	391	1,260	332	337	1,410
1935	117	754	720	496	2,151	461	1,563	20,390	31,510	3,975	1,962	17,590	6,780
1936	2,812	1,662	2,171	1,047	805	928	505	7,474	2,458	7,518	734	38,090	5,487

Monthly and yearly mean discharge, in cubic feet per second, of Colorado River at Smithville, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	17,420	4,490	3,949	3,093	2,228	3,646	1,719	1,131	2,242	1,117	617	365	3,526
1938	826	587	2,019	6,271	2,671	1,385	3,935	3,146	1,790	31,310	7,303	1,244	5,265
1939	734	716	619	960	1,216	1,050	1,456	1,896	3,142	3,550	1,366	983	1,475
1940	2,028	1,212	1,095	968	1,579	1,343	2,172	1,834	4,425	6,289	1,393	1,683	2,169
1941	1,443	2,897	5,738	2,860	4,652	7,109	11,300	19,490	14,530	5,501	1,672	1,803	6,587
1942	2,525	921	1,343	1,332	1,407	1,139	1,585	1,088	1,678	1,723	1,266	2,369	1,531
1943	3,950	4,058	2,721	2,717	2,480	2,216	2,761	2,301	2,167	1,918	1,705	1,099	2,508
1944	1,267	1,281	1,319	1,891	1,976	1,956	1,285	2,697	3,041	3,250	3,188	3,026	2,183
1945	2,521	1,854	3,115	3,005	3,026	2,814	3,479	2,375	2,787	3,776	3,532	2,332	2,886
1946	2,160	2,053	2,223	2,586	2,272	2,715	2,822	3,816	2,686	2,047	2,898	3,038	2,612
1947	2,439	4,875	2,991	4,145	2,685	2,626	1,991	1,974	2,186	2,199	2,314	1,685	2,676
1948	1,183	1,249	989	1,126	1,285	986	1,015	1,337	1,845	2,119	2,087	1,277	1,376
1949	956	869	798	868	1,047	1,289	3,166	1,312	2,140	2,033	1,794	1,707	1,497
1950	2,211	1,308	1,213	885	1,439	782	1,706	1,790	2,728	2,052	1,666	1,137	1,576
1951	588	706	733	796	894	401	608	1,699	2,225	1,918	1,768	917	1,106
1952	496	322	254	240	235	229	471	1,218	1,664	1,792	1,678	896	794
1953	337	817	553	770	1,258	491	2,305	1,327	1,705	1,690	1,318	701	1,102
1954	1,364	416	1,542	569	280	407	919	1,803	1,791	2,043	1,607	585	1,119
1955	354	329	312	403	881	510	957	2,508	4,149	2,880	2,197	1,630	1,427
1956	2,549	1,727	671	384	694	530	936	2,433	2,133	2,146	1,535	615	1,366
1957	303	206	212	190	244	701	5,915	27,980	22,900	5,329	2,813	3,514	5,880

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	-	-	-	-	14,800	44,400	-
1931	1,250,000	94,000	176,000	207,000	337,000	239,000	123,000	193,000	130,000	75,000	32,900	23,000	2,880,000
1932	172,000	75,600	55,300	190,000	183,000	191,000	64,300	596,000	222,000	719,000	84,200	857,000	3,410,000
1933	130,000	65,500	66,400	139,000	60,500	86,700	56,200	250,000	70,800	52,400	35,000	44,600	1,060,000
1934	27,400	20,400	18,400	106,000	85,300	107,000	430,000	83,000	23,300	77,500	20,400	20,100	1,020,000
1935	7,180	44,880	44,260	30,490	119,500	28,320	92,980	1,254,000	1,875,000	244,400	120,600	1,047,000	4,909,000
1936	172,900	98,920	133,500	64,360	46,330	57,070	30,050	459,500	146,200	462,300	45,160	2,267,000	3,983,000
1937	1,071,000	267,200	242,800	190,200	123,700	224,200	102,300	69,540	133,400	68,660	37,950	21,730	2,553,000
1938	50,810	34,900	124,200	385,600	148,400	85,140	234,100	193,400	106,500	1,925,000	449,000	74,020	3,811,000
1939	45,150	42,580	38,060	59,030	67,550	64,530	86,650	116,600	187,000	218,300	84,020	58,510	1,068,000
1940	124,700	72,130	67,300	59,550	90,820	82,560	129,200	112,700	263,300	386,700	85,650	100,200	1,575,000
1941	88,740	172,400	352,800	175,900	258,300	437,100	672,200	1,198,000	864,500	338,300	102,800	107,300	4,768,000
1942	155,300	54,800	82,600	81,920	78,140	70,060	94,290	66,880	99,870	106,000	77,850	141,000	1,109,000
1943	242,900	241,400	167,300	167,100	137,800	136,200	164,300	141,500	128,900	117,900	104,800	65,370	1,815,000
1944	77,890	76,210	81,100	116,300	113,700	120,300	76,470	165,800	181,000	199,900	196,000	180,000	1,585,000
1945	155,000	110,300	191,600	184,700	168,100	173,000	207,000	146,100	165,900	232,200	217,200	138,700	2,090,000
1946	132,800	122,100	136,700	159,000	126,200	166,900	167,900	234,600	159,800	125,900	178,200	180,800	1,891,000
1947	150,000	290,100	183,900	254,900	149,100	161,500	118,500	121,400	130,100	135,200	142,300	100,300	1,937,000
1948	72,740	74,300	60,810	69,240	73,910	60,640	60,400	82,210	109,800	130,300	128,300	75,970	998,600
1949	58,760	51,690	49,040	53,360	58,160	79,250	188,400	80,660	127,300	125,000	110,300	101,600	1,084,000
1950	135,900	77,820	74,610	54,400	79,900	48,090	101,500	110,100	162,300	126,100	102,400	67,670	1,141,000
1951	36,160	42,040	45,050	48,920	49,650	24,660	36,150	104,500	132,400	117,900	108,700	54,550	800,700
1952	30,500	19,190	15,620	14,760	13,500	14,070	28,020	74,910	99,000	110,200	103,200	53,340	576,300
1953	20,720	48,640	34,000	47,330	69,890	30,180	137,200	81,610	101,500	103,900	81,040	41,700	797,700
1954	83,880	24,740	94,840	34,980	15,580	25,030	54,710	110,900	106,600	125,600	98,820	34,840	810,500
1955	21,760	19,590	19,210	24,760	48,900	31,380	56,940	154,200	246,900	177,100	135,100	96,990	1,033,000
1956	156,700	102,800	41,240	23,590	39,900	32,560	55,710	149,600	126,900	132,000	94,380	36,610	992,000
1957	18,640	12,260	13,060	11,700	13,550	43,080	352,000	1,720,000	1,363,000	327,700	173,000	209,100	4,257,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	-	-	-	-	-	-	-
1931	718	67,500	Oct. 9, 19, 1930	224	3,980	2,880,000	2,300	1,660,000
1932	733	66,400	Sept. 4, 1932	177	4,690	3,410,000	4,630	3,370,000
1933	748	31,200	May 28, 1933	196	1,460	1,060,000	1,190	861,000
1934	763, 1512	39,200	Apr. 9, 1934	146	1,410	1,020,000	1,448	1,050,000
1935	788	305,000	June 16, 1935	79	6,780	4,909,000	7,207	5,218,000
1936	808	148,000	Sept. 29, 1936	394	5,487	3,983,000	7,106	5,159,000
1937	828	95,000	Oct. 3, 1936	303	3,526	2,553,000	1,632	1,182,000
1938	858	209,000	July 27, 1938	271	5,265	3,811,000	5,149	3,727,000
1939	878	17,200	July 16, 1939	542	1,475	1,068,000	1,666	1,206,000
1940	898	70,400	July 1, 1940	418	2,169	1,575,000	2,651	1,925,000
1941	928	93,700	June 8, 1941	910	6,587	4,768,000	6,143	4,447,000
1942	958	21,100	Sept. 9, 1942	645	1,531	1,109,000	2,027	1,468,000
1943	978	11,900	Oct. 19, 1942	673	2,508	1,815,000	1,933	1,399,000
1944	1008	12,900	Feb. 26, 1944	694	2,183	1,585,000	2,488	1,806,000
1945	1038	27,200	Dec. 5, 1944	833	2,886	2,090,000	2,796	2,024,000

Yearly discharge, in cubic feet per second, of Colorado River at Smithville, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	22,000	Apr. 24, 1946	585	2,612	1,891,000	2,933	2,123,000
1947	1088	40,000	Nov. 4, 1946	815	2,676	1,937,000	2,101	1,521,000
1948	1118	3,620	Aug. 13, 1948	710	1,376	998,600	1,309	950,300
1949	1148	31,900	Apr. 25, 1949	592	1,497	1,084,000	1,675	1,212,000
1950	1178	19,500	June 3, 1950	587	1,576	1,141,000	1,348	975,700
1951	1212	21,100	June 4, 1951	238	1,106	800,700	1,026	742,700
1952	1242	3,510	June 7, 1952	203	794	576,300	846	614,400
1953	1282	34,100	Apr. 29, 1953	241	1,102	797,700	1,240	897,800
1954	1342	32,200	Dec. 3, 1953	248	1,119	810,500	922	667,600
1955	1392	7,500	May 19, 1955	287	1,427	1,033,000	1,758	1,273,000
1956	1442	5,490	May 3, 1956	327	1,366	992,000	1,013	735,200
1957	1512	66,900	Apr. 28, 1957	164	5,880	4,257,000	-	-

280. Dry Creek at Buescher Lake near Smithville, Tex.

Location.--Lat 30°03', long 97°09', on left bank, 225 ft above dam in Bastrop-Buescher State Park, 1.9 miles upstream from mouth, and 2.2 miles north of Smithville, Bastrop County.

Drainage area.--1.48 sq mi (area above dam).

Gage.--Water-stage recorder. Datum of gage is 327.86 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 0.37 cfs (268 acre-ft per year).

Extremes.--1939-57: Maximum inflow, 1,870 cfs June 30, 1940; Maximum gage height, 24.96 ft June 30, 1940 (outflow, 1,670 cfs); no inflow most of time.

Remarks.--Records given herein represent flow into Buescher Lake. No runoff except during and immediately following precipitation. Discharge below gage height, 22.27 ft (spillway crest), determined from change in contents of lake; that above 22.27 ft determined by algebraic summation of flow over spillway and change in contents of lake (reduced to equivalent cfs). No adjustments made for evaporation or seepage losses. Capacity of lake, 248 acre-ft. No diversion above station or from lake.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	0	0.27	17.2	0.57	0	0	1.48
1941	.06	1.40	2.51	.95	.47	1.20	2.54	1.49	3.48	2.13	0	0	1.36
1942	1.35	0	.03	0	0	.02	.74	.02	.03	.40	0	.05	.22
1943	.01	.08	.02	.02	.03	.03	0	.05	.01	0	0	0	.02
1944	0	0	.003	.07	.04	.06	.03	.30	0	0	.05	0	.05
1945	0	.70	.53	1.22	.01	1.65	1.29	.01	.18	.09	.03	.04	.48
1946	.09	.02	.02	.55	.64	1.59	.17	.90	3.34	0	.21	.20	.64
1947	.02	.29	.03	.56	.01	1.18	.11	.07	.02	.04	2.15	0	.38
1948	.01	.01	.04	.02	.05	.01	.02	.18	.03	.03	.01	.01	.03
1949	0	0	.01	.04	.15	.003	3.33	0	.16	.06	.06	.13	.32
1950	.95	0	.06	.01	.71	0	1.03	.03	1.77	.01	.01	.10	.38
1951	0	.02	0	.003	.03	.03	0	.03	.06	0	.05	.07	.02
1952	0	0	0	.01	.01	0	.01	.01	0	.003	0	0	.004
1953	0	0	.52	.01	.01	.01	2.65	.34	.04	.03	.05	.46	.34
1954	.35	.04	.11	.01	0	0	.01	.02	0	.97	.04	0	.13
1955	0	0	0	.01	.02	0	0	.03	0	0	0	0	.004
1956	0	0	.04	0	.07	0	0	.03	0	0	0	0	.01
1957	0	0	0	0	0	.09	5.51	2.19	.06	.02	0	1.03	.74

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	0	17	1,020	35	0	0	1,070
1941	4.0	83	155	59	26	74	151	92	207	131	0	0	982
1942	83	0	1.6	0	0	1.2	44	1.2	1.6	25	0	3.2	161
1943	.4	5.0	1.4	1.4	1.8	1.8	0	3.0	.4	0	0	0	15
1944	0	0	.2	4.4	2.2	4.0	2.0	18	0	0	3.0	0	34
1945	0	42	33	75	.4	102	77	.4	11	5.4	1.6	2.4	350
1946	5.4	1.0	1.2	34	36	98	9.9	55	199	0	13	12	464
1947	1.0	17	1.8	35	.4	73	6.7	4.4	1.4	2.2	132	0	275
1948	.4	.6	2.2	1.4	2.8	.4	1.4	11	1.8	2.0	.4	.4	25
1949	0	0	.4	2.2	8.5	.2	198	0	9.7	3.8	4.0	7.7	234
1950	59	0	4.0	.8	40	0	61	1.8	105	.4	.4	6.1	278
1951	0	1.2	0	.2	1.6	1.6	0	1.8	3.8	0	2.8	4.4	17
1952	0	0	0	.8	.8	0	.8	.4	0	.2	0	0	3.0
1953	0	0	32	.4	.4	.4	158	21	2.2	1.6	3.2	27	246
1954	22	2.2	6.9	.8	0	0	.8	1.0	0	60	2.6	0	96
1955	0	0	0	.4	1.2	0	0	1.6	0	0	0	0	3.2
1956	0	0	2.6	0	4.0	0	0	1.8	0	0	0	0	8.4
1957	0	0	0	0	0	5.6	328	135	3.6	1.2	0	61	534

Yearly discharge, in cubic feet per second, of Dry Creek at Buescher Lake near Smithville, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	898	1,870	June 30, 1940	0	1.48	1,070	1.82	1,310
1941	928	903	June 7, 1941	0	1.36	982	1.14	825
1942	958	670	Oct. 30, 1941	0	.22	161	.11	83
1943	978	35	Nov. 4, 1942	0	.02	15	.01	8.6
1944	1008	-	May 9, 1944	0	.05	34	.15	109
1945	1038	1,200	Mar. 30, 1945	0	.48	350	.39	283
1946	1058	1,570	June 1, 1946	0	.64	464	.66	477
1947	1088	667	Aug. 26, 1947	0	.38	275	.36	258
1948	1118	86	May 25, 1948	0	.03	25	.03	22
1949	1148	595	Apr. 22, 1949	0	.32	234	.41	297
1950	1178	465	June 2, 1950	0	.38	278	.30	217
1951	1212	-	-	0	.02	17	.02	16
1952	1242	-	-	0	.004	3.0	.05	35
1953	1282	-	-	0	.34	246	.34	245
1954	1342	-	-	0	.13	96	.09	65
1955	1392	-	-	0	.004	3.2	.008	5.8
1956	1442	-	-	0	.01	8.4	.01	5.8
1957	1512	889	Apr. 28, 1957	0	.74	534	-	-

281. Colorado River at La Grange, Tex.

Location.--Lat 29°53'45", long 96°52'15", at bridge on U. S. Highway 77 in La Grange, Fayette County, 1.2 miles downstream from Buckner Creek, and at mile 174.

Drainage area.--40,430 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Supplemental records available.--July and August 1938, flood discharge measurements only.

Gage.--Wire-weight gage. Datum of gage is 211.23 ft above mean sea level, datum of 1929.

Average discharge.--16 years (1939-55), 2,372 cfs (1,717,000 acre-ft per year).

Extremes.--1938-55: Maximum discharge observed, 200,000 cfs July 27, 1938 (gage height, 42.95 ft); minimum observed, 210 cfs Apr. 9, 1952. Maximum stage known, about 57 ft probably July 9, 1869 (from marble high-water marker in La Grange). Stages of other floods are as follows: Dec. 5, 1913, stage 56.4 ft, from floodmarks; June 17, 1935, stage 50.84 ft, from floodmarks (discharge 255,000 cfs, from rating curve extended as a straight line above 200,000 cfs).

Remarks.--Diversions above station for irrigation and municipal supply. Regulation same as that for Colorado River at Austin.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	700	996	1,253	975	1,371	1,677	2,869	3,649	1,438	946	-
1940	2,015	1,161	1,075	993	1,565	1,226	2,049	1,994	7,311	9,224	1,451	1,630	2,643
1941	1,696	5,664	7,779	3,805	5,512	8,007	12,380	22,040	18,010	6,662	1,791	1,789	7,932
1942	2,504	1,028	1,395	1,448	1,577	1,194	2,341	1,164	1,687	3,614	1,480	2,554	1,833
1943	3,926	4,326	2,745	2,886	2,628	2,268	2,726	2,339	2,328	2,000	1,775	1,152	2,591
1944	1,258	1,275	1,327	2,283	2,463	2,636	1,391	3,163	3,037	3,268	3,421	3,387	2,410
1945	2,557	2,786	3,819	4,103	3,563	3,622	4,598	2,415	2,962	3,891	3,793	2,499	3,384
1946	2,394	2,172	2,299	3,160	2,786	3,665	2,782	4,094	3,777	2,216	3,033	3,507	2,991
1947	2,511	5,366	3,156	4,575	2,884	3,114	2,246	2,049	2,219	2,190	2,925	1,751	2,916
1948	1,180	1,354	1,083	1,229	1,383	1,093	1,057	1,626	1,879	2,042	2,194	1,431	1,463
1949	1,016	886	788	891	1,847	1,383	5,209	1,392	2,221	2,092	1,841	1,728	1,766
1950	2,620	1,367	1,551	1,157	1,965	901	2,325	1,977	3,387	2,034	1,670	1,335	1,854
1951	607	815	841	866	990	426	633	1,786	2,418	1,782	1,809	1,397	1,198
1952	567	329	280	268	247	236	587	1,760	1,687	1,797	1,616	1,042	871
1953	336	970	1,146	898	1,478	549	2,764	2,322	2,115	1,865	1,397	1,018	1,401
1954	1,611	536	1,626	637	312	403	1,082	2,031	1,983	2,199	1,784	644	1,247
1955	353	313	312	372	891	444	917	2,609	4,666	2,997	2,054	1,389	1,444

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	43,070	61,220	69,600	59,970	81,580	103,100	170,700	224,400	88,410	56,320	-
1940	123,900	69,070	66,070	61,080	90,010	75,410	121,900	122,600	435,000	567,200	89,220	97,010	1,918,000
1941	104,300	337,000	478,300	234,000	306,100	492,300	736,900	1,355,000	1,072,000	409,600	110,100	106,500	5,742,000
1942	154,000	61,170	85,800	89,020	87,570	73,400	139,300	71,580	100,400	222,200	91,010	152,000	1,327,000
1943	241,400	257,400	168,800	177,500	145,900	139,500	162,200	143,800	138,500	123,000	109,100	68,560	1,876,000
1944	77,350	75,860	81,610	140,400	141,700	162,100	82,750	194,500	180,700	200,900	210,400	201,600	1,750,000
1945	157,200	165,800	234,800	252,300	197,900	222,700	273,600	148,500	176,300	239,300	233,200	148,700	2,450,000
1946	147,200	129,200	141,400	194,300	154,700	225,300	165,500	251,700	224,800	136,200	186,500	208,700	2,166,000
1947	154,400	319,300	194,100	281,300	160,200	191,500	133,700	126,000	132,100	134,700	179,800	104,200	2,111,000
1948	72,560	80,540	66,620	75,550	79,540	67,210	62,910	99,970	111,800	125,600	134,900	85,140	1,062,000
1949	62,450	52,710	48,470	54,770	102,600	85,070	310,000	85,560	132,100	128,600	113,200	102,800	1,278,000
1950	161,100	81,370	95,360	71,160	109,200	55,390	138,400	121,600	201,600	125,100	102,700	79,430	1,342,000

Monthly and yearly runoff, in acre-feet, of Colorado River at La Grange, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	37,310	48,500	51,730	53,250	55,000	26,210	37,670	109,800	143,900	109,500	111,300	83,130	867,300
1952	34,850	19,550	17,240	16,490	14,230	14,490	34,900	108,200	100,400	110,500	99,370	62,020	632,200
1953	20,630	57,730	70,440	55,210	82,080	33,770	164,500	142,800	125,900	114,600	85,880	60,570	1,014,000
1954	99,080	31,900	99,960	39,160	17,340	24,780	64,390	124,900	118,000	135,200	109,700	38,310	902,700
1955	21,720	18,640	19,210	22,890	49,480	27,330	54,560	160,400	277,600	184,300	126,300	82,670	1,045,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	15,900	July 17, 1939	-	-	-	1,662	1,174,000
1940	898	182,000	June 30, 1940	457	2,643	1,918,000	3,553	2,579,000
1941	928	104,000	June 8, 1941	914	7,932	5,742,000	7,077	5,123,000
1942	958	59,200	July 5, 1942	794	1,833	1,327,000	2,340	1,694,000
1943	978	11,300	Oct. 20, 1942	742	2,591	1,876,000	1,993	1,443,000
1944	1008	12,200	Aug. 31, 1944	754	2,410	1,750,000	2,855	2,073,000
1945	1038	27,800	Jan. 19, 1945	1,150	3,384	2,450,000	3,191	2,310,000
1946	1058	34,700	June 1, 1946	1,070	2,991	2,166,000	3,336	2,416,000
1947	1088	36,100	Nov. 5, 1946	840	2,916	2,111,000	2,297	1,663,000
1948	1118	4,130	May 27, 1948	815	1,463	1,062,000	1,386	1,006,000
1949	1148	54,400	Apr. 26, 1949	576	1,766	1,278,000	2,006	1,453,000
1950	1178	26,100	June 3, 1950	669	1,854	1,342,000	1,577	1,142,000
1951	1212	19,000	June 5, 1951	273	1,198	867,300	1,107	801,400
1952	1242	10,100	May 28, 1952	212	871	632,200	977	709,400
1953	1282	46,800	Apr. 29, 1953	245	1,401	1,014,000	1,514	1,096,000
1954	1342	24,600	Dec. 3, 1953	223	1,247	902,700	1,010	731,300
1955	1392	12,400	May 18, 1955	267	1,444	1,045,000	-	-

282. Colorado River at Columbus, Tex. 1/

Location. --Lat 29°42'20", long 96°32'05", at bridge on U. S. Highway 90 at eastern edge of Columbus, Colorado County, 340 ft downstream from Texas & New Orleans Railroad bridge, 2.6 miles downstream from Cummins Creek, and at mile 135.

Drainage area. --41,070 sq mi, approximately, of which 11,900 sq mi is probably noncontributing; at site used 1931-39, 41,170 sq mi.

Supplemental records available. --Gage-height records collected in this vicinity since 1903 are contained in reports of U. S. Weather Bureau. Records of suspended sediment load for the period October 1956 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 155.52 ft above mean sea level, datum of 1929. Prior to May 1, 1919, various nonrecording gages at sites in the immediate vicinity at datum 3.00 ft lower. May 1, 1919, to Nov. 23, 1930, water-stage recorder at site about 300 ft downstream at datum 3.00 ft lower. Sept. 17, 1930, to June 12, 1939, water-stage recorder at site 23 miles downstream at different datum. May 17 to Nov. 14, 1939, wire-weight gage at present site and datum.

Average discharge. --41 years (1916-57), 3,332 cfs (2,412,000 acre-ft per year).

Extremes. --1916-57: Maximum discharge, 190,000 cfs June 18, 1935 (gage height, 38.5 ft), computed on basis of records for station near Eagle Lake; minimum, 93 cfs Sept. 1, 1918.

Maximum stage known, 41.6 ft in July 1869 and Dec. 6, 1913, from information by local residents. River divided each time and left Columbus on an island.

Data on other floods as follows: July 29, 1938, observed stage 38.4 ft, furnished by U. S. Weather Bureau (discharge, 175,000 cfs, computed on basis of records for station near Eagle Lake). Flood of June 18, 1935, reached a stage of 29.45 ft June 19, 1935, at station "near Eagle Lake" 23 miles downstream (discharge, 177,000 cfs).

Remarks. --Many diversions above station for irrigation and municipal use. Regulation same as that for Colorado River at Austin.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	981	996	697	433	-
1917	837	508	389	363	372	379	422	1,300	1,160	614	128	1,360	653
1918	235	197	218	513	386	276	4,100	2,410	2,750	670	151	667	1,040
1919	5,270	12,900	5,920	6,780	4,030	4,600	4,170	11,200	20,600	16,400	5,750	12,600	9,200
1920	20,700	7,140	4,280	10,900	4,320	2,180	1,390	8,030	2,320	1,230	6,030	6,160	6,250
1921	1,500	1,680	1,440	1,020	917	3,560	6,340	1,750	8,560	1,120	302	6,450	2,870
1922	1,010	455	576	649	788	1,930	17,300	40,600	4,530	1,880	827	492	5,970
1923	399	1,660	487	389	1,980	3,400	8,070	7,120	2,180	1,310	622	4,190	2,640
1924	2,560	10,300	10,800	3,560	6,630	4,760	4,950	7,380	6,600	871	337	1,540	5,000
1925	1,270	606	751	670	635	414	308	5,340	4,010	793	635	1,810	1,440
1926	11,400	5,050	1,010	2,870	1,150	5,040	16,400	7,440	3,410	2,340	1,180	3,200	5,050
1927	2,730	1,740	2,910	985	4,190	2,770	6,050	2,120	3,840	1,980	704	453	2,520
1928	5,330	1,180	729	653	1,390	969	726	3,520	3,890	806	4,500	1,270	2,080
1929	926	534	971	919	473	1,280	3,950	11,100	10,900	1,580	530	2,290	2,960
1930	1,520	2,990	600	1,150	870	672	424	8,860	4,580	724	313	845	1,970
1931	20,300	2,830	4,450	5,130	6,890	5,520	1,830	3,920	2,230	1,320	675	463	4,640
1932	2,490	1,510	1,240	6,550	4,980	3,900	1,050	9,000	3,840	10,800	1,630	14,000	5,090
1933	2,670	1,100	960	2,430	1,520	2,310	1,160	4,040	1,730	569	991	771	1,690
1934	445	427	355	1,830	2,280	3,260	8,120	1,380	574	1,070	502	347	1,700

1/ Published as "at Columbus" prior to Nov. 23, 1930, and since May 17, 1939 (records prior to Oct. 1, 1930, and since June 1, 1939, used herein), and as "near Eagle Lake" Sept. 17, 1930, to June 12, 1939 (Oct. 1, 1930 to May 31, 1939, used herein).

Monthly and yearly mean discharge, in cubic feet per second, of Colorado River at Columbus, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	204	797	1,496	682	2,604	593	1,794	23,700	30,060	4,026	2,266	16,620	7,050
1936	3,529	2,134	3,677	1,286	975	1,048	685	13,610	3,780	11,980	1,191	32,690	6,373
1937	25,310	4,786	3,927	3,309	2,502	3,804	1,906	1,257	2,270	1,191	756	498	4,329
1938	1,739	794	1,806	6,720	2,823	1,480	7,186	4,659	2,213	25,710	10,030	1,629	5,617
1939	970	818	863	1,152	1,526	1,035	1,312	1,771	3,063	4,035	1,406	986	1,578
1940	1,889	1,354	1,142	1,056	1,697	1,270	2,131	2,196	5,366	12,430	1,494	1,574	2,808
1941	2,053	9,864	9,280	4,100	5,635	9,042	13,200	23,540	18,590	7,885	2,260	1,847	8,947
1942	2,896	1,353	1,540	1,423	1,483	1,234	4,584	1,302	1,627	3,703	1,640	2,580	2,114
1943	3,811	4,646	2,999	3,241	2,854	2,637	2,613	2,429	2,348	2,142	1,815	1,240	2,730
1944	1,268	1,390	1,513	2,876	2,746	3,042	1,471	3,173	3,024	3,225	3,423	3,372	2,545
1945	2,549	3,022	4,235	4,908	3,917	3,813	5,914	2,625	3,339	3,809	4,163	2,593	3,739
1946	2,468	2,178	2,376	3,460	3,001	4,756	2,932	4,614	4,851	2,708	2,852	3,849	3,339
1947	2,713	6,299	3,436	5,114	2,991	3,289	2,320	2,092	2,255	2,220	3,242	2,039	3,168
1948	1,220	1,406	1,140	1,144	1,490	1,178	1,085	1,911	1,869	2,030	2,220	1,452	1,513
1949	969	863	808	964	3,064	1,694	5,907	1,558	2,286	2,288	1,942	1,729	1,990
1950	2,755	1,334	1,727	1,373	2,839	896	2,505	2,024	4,045	2,091	1,663	1,567	2,059
1951	655	763	867	855	992	472	543	1,520	2,730	1,755	1,648	1,423	1,185
1952	548	382	345	282	293	275	723	1,991	1,633	1,752	1,579	1,128	914
1953	374	801	1,772	1,050	1,565	651	2,285	3,410	2,116	1,975	1,407	1,099	1,542
1954	1,472	638	1,602	725	339	391	969	2,021	1,875	1,968	1,685	652	1,204
1955	370	321	331	342	1,146	411	864	2,445	4,309	2,893	2,234	1,462	1,426
1956	2,475	1,661	663	408	965	511	936	2,325	2,152	2,064	1,558	675	1,368
1957	352	235	322	214	347	1,314	6,907	27,680	24,310	5,230	2,691	5,729	6,293

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	58,400	61,200	42,900	25,800	-
1917	51,500	30,200	23,900	22,300	20,700	23,300	25,100	79,900	69,000	37,800	7,870	60,900	472,000
1918	14,400	11,700	13,400	31,500	21,400	17,000	244,000	148,000	164,000	41,200	9,280	39,700	756,000
1919	324,000	768,000	364,000	417,000	224,000	283,000	248,000	689,000	1,230,000	1,010,000	354,000	750,000	6,660,000
1920	1,270,000	425,000	263,000	670,000	248,000	134,000	82,700	494,000	138,000	75,600	371,000	367,000	4,540,000
1921	92,200	100,000	88,500	62,700	50,900	219,000	377,000	108,000	509,000	68,900	18,600	384,000	2,080,000
1922	62,300	27,100	35,400	39,900	43,800	119,000	1,030,000	2,500,000	269,000	116,000	50,900	29,300	4,320,000
1923	24,500	98,900	30,000	23,900	110,000	209,000	480,000	438,000	130,000	80,600	38,300	249,000	1,910,000
1924	157,000	611,000	663,000	219,000	381,000	293,000	295,000	454,000	393,000	53,500	20,700	91,900	3,630,000
1925	78,100	36,100	46,200	41,200	35,300	25,400	18,300	329,000	238,000	48,800	39,100	108,000	1,040,000
1926	701,000	301,000	61,800	177,000	64,100	310,000	978,000	457,000	203,000	144,000	72,600	190,000	3,660,000
1927	168,000	103,000	179,000	60,600	233,000	170,000	360,000	130,000	229,000	122,000	43,300	26,900	1,820,000
1928	328,000	70,200	44,800	40,200	80,000	59,600	43,200	216,000	231,000	49,600	277,000	75,600	1,520,000
1929	56,900	31,800	59,700	56,500	26,300	78,700	235,000	682,000	649,000	97,200	32,600	136,000	2,140,000
1930	93,500	178,000	36,900	70,700	48,300	41,300	25,200	545,000	273,000	44,500	19,200	50,300	1,430,000
1931	1,250,000	168,000	274,000	315,000	383,000	339,000	109,000	241,000	133,000	81,200	41,500	27,600	3,360,000
1932	153,000	89,800	76,200	403,000	286,000	240,000	62,500	553,000	228,000	664,000	100,000	833,000	3,690,000
1933	164,000	65,500	59,000	149,000	84,400	142,000	69,000	248,000	103,000	35,000	60,900	45,900	1,230,000
1934	27,400	25,400	21,800	113,000	127,000	200,000	483,000	84,800	34,200	65,800	30,900	20,600	1,230,000
1935	12,540	47,440	91,960	41,930	144,600	36,480	106,800	1,458,000	1,789,000	247,600	139,400	989,000	5,105,000
1936	217,000	127,000	226,100	79,100	59,060	64,430	40,730	836,600	224,900	736,300	73,240	1,945,000	4,626,000
1937	1,556,000	284,800	241,400	203,400	139,000	233,900	113,400	77,260	135,100	73,210	46,510	29,650	3,134,000
1938	106,900	47,260	111,000	413,200	156,800	90,980	427,600	286,500	131,700	1,581,000	616,900	96,910	4,067,000
1939	59,630	48,690	53,050	70,850	84,750	63,630	78,100	108,900	182,200	248,100	86,480	58,660	1,143,000
1940	116,100	80,600	70,200	64,960	97,590	78,100	126,800	135,000	319,300	764,300	91,850	93,680	2,038,000
1941	126,200	586,900	570,600	252,100	313,000	556,000	785,400	1,447,000	1,103,000	484,800	138,900	109,900	6,477,000
1942	178,100	80,490	94,690	87,490	82,350	75,870	272,800	80,070	96,790	227,700	100,900	153,500	1,531,000
1943	234,300	276,400	184,400	199,300	158,500	162,200	155,500	149,300	139,700	131,700	111,600	73,760	1,977,000
1944	77,970	82,710	93,040	176,900	157,900	187,100	87,550	195,100	179,900	198,300	210,500	200,600	1,848,000
1945	156,800	179,800	260,400	301,800	217,500	234,500	351,900	161,400	198,700	234,200	256,000	154,300	2,707,000
1946	151,700	129,600	146,100	212,700	166,700	292,400	174,400	283,700	288,600	166,500	175,400	229,100	2,417,000
1947	166,800	374,800	211,300	314,400	166,100	202,200	138,100	128,600	134,200	136,500	199,300	121,300	2,294,000
1948	75,000	83,690	70,100	70,340	85,730	72,440	64,540	117,500	111,200	124,800	136,500	86,430	1,098,000
1949	59,580	51,340	49,680	59,250	170,200	104,100	351,500	95,820	136,000	140,700	119,400	102,900	1,440,000
1950	169,400	79,350	106,200	84,430	157,700	55,110	149,100	124,400	240,700	128,600	102,200	93,220	1,490,000
1951	40,260	45,430	53,310	52,590	55,100	29,050	32,290	93,480	162,500	107,900	101,300	84,700	857,900
1952	33,710	22,730	21,210	17,360	16,860	16,920	43,040	122,400	97,140	107,700	97,070	67,140	663,300
1953	22,990	47,680	108,900	64,580	86,940	40,010	136,000	209,700	125,900	121,400	86,520	65,410	1,116,000
1954	90,520	37,940	98,490	44,590	18,820	24,060	57,670	124,300	111,600	121,000	103,600	38,820	871,400
1955	22,740	19,120	20,360	21,040	63,660	25,260	51,420	150,400	256,400	177,900	137,400	86,970	1,033,000
1956	152,200	98,830	40,740	25,060	55,480	31,410	55,680	143,000	128,100	126,900	95,780	40,180	993,400
1957	21,650	14,000	19,820	13,160	19,280	80,800	411,000	1,702,000	1,446,000	321,600	165,500	340,900	4,556,000

Yearly discharge, in cubic feet per second, of Colorado River at Columbus, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	438	a36,800	May 23, 1916	-	-	-	-	-
1917	458	a4,570	May 7, 1917	104	653	472,000	562	406,000
1918	478	a30,100	Apr. 18, 1918	93	1,040	756,000	3,000	2,170,000
1919	508	a55,100	Nov. 14, 1918	185	9,200	6,660,000	9,890	7,160,000
1920	508	63,900	Oct. 14, 1919	639	6,250	4,540,000	3,940	2,860,000
1921	528	67,400	Sept. 13, 1921	257	2,870	2,080,000	2,660	1,920,000
1922	548, 1562	117,000	May 5, 1922	364	5,970	4,320,000	6,010	4,350,000
1923	568	44,600	May 2, 1923	260	2,640	1,910,000	4,410	3,190,000
1924	588	42,000	Nov. 4, 1923	302	5,000	3,630,000	3,250	2,360,000
1925	608	21,100	May 14, 1925	132	1,440	1,040,000	2,690	1,950,000
1926	628	73,100	Apr. 22, 1926	570	5,050	3,660,000	4,210	3,050,000
1927	648	42,600	Apr. 14, 1927	212	2,520	1,820,000	2,510	1,820,000
1928	668	27,700	Oct. 5, 1927	295	2,080	1,520,000	1,680	1,220,000
1929	688	110,000	June 1, 1929	346	2,960	2,140,000	3,180	2,300,000
1930	703, 718	44,400	Nov. 9, 1929	211	1,970	1,430,000	3,835	2,810,000
1931	718	57,500	Oct. 21, 1930	186	4,640	3,360,000	2,749	1,989,000
1932	733	50,200	Jan. 5, 1932	256	5,090	3,690,000	5,045	3,658,000
1933	748	28,200	May 29, 1933	-	1,690	1,230,000	1,398	1,012,000
1934	763	37,100	Apr. 10, 1934	168	1,700	1,230,000	1,811	1,312,000
1935	788	177,000	June 19, 1935	135	7,050	5,105,000	7,628	5,523,000
1936	808	102,000	Sept. 26, 1936	580	6,373	4,626,000	8,457	6,139,000
1937	828	123,000	Oct. 2, 1936	402	4,329	3,134,000	1,819	1,317,000
1938	858	165,000	July 29, 1938	352	5,617	4,067,000	5,473	3,963,000
1939	878	15,000	July 17, 1939	682	1,578	1,143,000	1,723	1,249,000
1940	898	152,000	July 1, 1940	506	2,808	2,038,000	4,209	3,055,000
1941	928	136,000	Nov. 24, 1940	1,120	8,947	6,477,000	7,661	5,546,000
1942	958	59,400	Apr. 8, 1942	852	2,114	1,531,000	2,587	1,873,000
1943	978	11,100	Oct. 20, 1942	832	2,730	1,977,000	2,121	1,535,000
1944	1008	17,100	May 28, 1944	806	2,545	1,848,000	3,018	2,191,000
1945	1038	36,400	Apr. 1, 1945	1,230	3,739	2,707,000	3,505	2,538,000
1946	1058	47,700	Mar. 13, 1946	1,200	3,339	2,417,000	3,788	2,742,000
1947	1088	31,300	Nov. 5, 1946	868	3,168	2,294,000	2,444	1,769,000
1948	1118	10,200	May 26, 1948	756	1,513	1,098,000	1,419	1,030,000
1949	1148	45,200	Apr. 27, 1949	596	1,990	1,440,000	2,258	1,635,000
1950	1178	25,000	June 3, 1950	677	2,059	1,490,000	1,760	1,274,000
1951	1212	17,300	June 5, 1951	287	1,185	857,900	1,100	796,600
1952	1242	15,000	May 27, 1952	220	914	663,300	1,054	765,200
1953	1282	33,700	Apr. 30, 1953	268	1,542	1,116,000	1,607	1,163,000
1954	1342	15,700	Dec. 4, 1953	260	1,204	871,400	976	706,700
1955	1392	12,300	May 19, 1955	278	1,426	1,033,000	1,743	1,262,000
1956	1442	5,440	Feb. 9, 1956	362	1,368	993,400	1,043	757,100
1957	1512	61,600	Apr. 29, 1957	175	6,293	4,556,000	-	-

a Maximum observed.

Note.--Records for December 1902 to December 1911 published in W. S. P. 84, 99, 132, 174, 210, 288, and 308 have been found in error and should not be used.

283. Colorado River at Wharton, Tex.

Location.--Lat 29°18'30", long 96°06'15", at bridge on U. S. Highway 59, in Wharton, Wharton County, 1,000 ft downstream from Texas & New Orleans Railroad bridge, 12 miles upstream from Jones Creek, and at mile 67.

Drainage area.--41,380 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Supplemental records available.--July and August 1938, flood discharge measurements only. Records of chemical analyses for the period April 1944 to September 1957, and water temperatures for the periods October 1945 to September 1948 and March to September 1957, are published in reports of Geological Survey.

Gage-height records, collected in this vicinity since 1935, are contained in reports of U. S. Weather Bureau.

Gage.--Wire-weight gage. Datum of gage is 65.42 ft above mean sea level, datum of 1929. Prior to Mar. 19, 1919, staff gage, Mar. 19, 1919, to July 17, 1921, water-stage recorder, July 18 to Dec. 12, 1921, chain gage, and Dec. 13, 1921, to Sept. 30, 1925, water-stage recorder, at site about 700 ft upstream at different datum.

Average discharge.--24 years (1919-21, 1922-25, 1938-57), 2,792 cfs (2,021,000 acre-ft per year).

Extremes.--1916-25, 1938-57: Maximum discharge, 100,000 cfs July 3, 1940 (gage height, 35.99 ft); no flow Aug. 6, 1925 (result of pumping).

Maximum stage since 1869, 38.9 ft Dec. 8, 1913, present datum, from information by local residents; below Wharton floodwater combined with floodwater of Brazos River. Flood of July 12, 1869, reached about same stage. Flood of June 20, 1935, reached a stage of 38.2 ft, present datum (discharge, 159,000 cfs, from rating curve extended above 145,000 cfs), furnished by U. S. Weather Bureau. Flood of July 30, 1938, reached a stage of 37.4 ft, present datum, observed by Geological Survey engineers (discharge, 145,000 cfs).

Remarks.--Many diversions above station for irrigation, municipal supply, and oilfield operation. Regulation same as that for Colorado River at Austin.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Monthly and yearly mean discharge, in cubic feet per second, of Colorado River at Wharton, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	4,670	10,600	18,400	15,500	6,020	*11,100*	-
1920	19,100	7,830	4,440	11,300	5,120	2,590	1,830	8,360	2,440	1,230	5,880	6,580	6,420
1921	1,620	1,720	1,610	1,080	1,020	3,340	6,530	1,800	8,220	1,650	301	5,280	2,830
1922	1,110	614	737	873	883	2,210	13,100	-	4,840	2,160	718	573	-
1923	445	1,660	790	505	1,830	3,440	7,940	6,550	2,350	1,520	429	4,590	2,660
1924	2,830	9,600	11,100	3,880	6,770	5,120	5,120	7,050	6,880	1,020	414	1,410	5,080
1925	1,140	601	689	653	595	502	365	5,160	3,970	717	495	2,020	1,410
1939	1,129	937	1,067	1,580	1,943	1,372	1,268	1,596	2,329	3,569	973	929	1,557
1940	1,887	1,561	1,287	1,227	1,936	1,365	2,128	1,713	3,055	12,490	1,154	1,566	2,623
1941	2,030	11,440	10,870	4,967	5,894	9,507	13,670	23,930	17,910	8,794	2,392	1,983	9,458
1942	3,135	1,965	1,847	1,545	1,718	1,471	4,846	1,053	1,305	3,881	1,296	2,581	2,219
1943	3,594	4,807	3,195	3,421	3,323	3,012	2,786	2,233	1,671	1,520	1,357	1,097	2,663
1944	1,238	1,533	1,842	3,397	3,030	4,162	1,598	3,588	2,408	2,409	2,305	3,230	2,563
1945	2,577	3,027	4,595	5,640	4,081	3,544	7,128	2,600	2,810	2,798	3,916	2,513	3,766
1946	2,582	2,336	2,614	3,725	3,888	5,091	2,810	5,088	5,236	3,157	2,145	3,788	3,535
1947	2,966	6,671	3,725	5,753	3,329	3,631	2,429	1,946	1,399	1,309	2,317	1,616	3,090
1948	1,237	1,393	1,326	1,315	1,677	1,294	1,005	1,432	838	1,181	1,197	1,069	1,246
1949	845	871	815	949	2,940	2,082	5,816	1,673	1,630	1,567	1,167	1,490	1,804
1950	3,247	1,656	2,124	1,605	3,005	1,052	2,489	1,872	4,004	1,282	859	1,393	2,038
1951	662	744	825	843	994	486	566	829	2,028	739	757	1,277	892
1952	615	423	352	304	382	328	974	2,128	956	1,049	763	874	764
1953	383	659	1,864	1,391	1,845	749	1,202	3,849	950	1,162	879	1,210	1,345
1954	1,352	843	1,614	784	390	357	749	1,287	902	876	910	436	880
1955	370	345	348	403	1,341	360	701	1,829	3,444	2,304	1,779	1,168	1,196
1956	2,609	1,781	780	461	1,014	509	749	1,424	1,235	797	654	475	1,041
1957	296	220	316	251	361	1,715	5,626	27,300	23,460	4,277	2,151	5,079	5,937

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	278,000	652,000	1,090,000	953,000	370,000	660,000	-
1920	1,171,000	466,000	273,000	695,000	295,000	159,000	109,000	514,000	145,000	75,600	362,000	392,000	4,660,000
1921	99,600	102,000	99,000	66,400	56,600	205,000	389,000	111,000	489,000	101,000	18,500	314,000	2,050,000
1922	68,300	36,600	45,300	53,700	49,000	136,000	777,000	-	288,000	133,000	44,100	34,100	-
1923	27,400	99,000	48,600	31,100	102,000	212,000	472,000	403,000	140,000	93,700	26,400	273,000	1,930,000
1924	174,000	571,000	681,000	239,000	390,000	315,000	305,000	433,000	409,000	62,500	25,500	83,800	3,690,000
1925	70,200	35,800	42,400	40,200	33,100	30,800	21,700	317,000	236,000	44,100	30,400	120,000	1,020,000
1939	69,430	55,760	65,630	97,170	107,900	84,350	75,480	98,150	138,600	219,500	59,830	55,290	1,127,000
1940	116,100	92,910	79,120	75,450	111,300	83,900	126,700	105,400	181,800	767,800	70,940	93,180	1,905,000
1941	124,800	680,400	668,400	305,400	327,400	584,500	813,200	1,471,000	1,066,000	540,700	147,100	118,000	6,847,000
1942	192,700	116,900	113,600	95,010	95,420	90,450	288,400	64,750	77,650	238,600	79,700	153,600	1,607,000
1943	221,000	286,000	196,400	210,300	184,500	185,200	165,800	137,300	99,440	93,430	83,430	65,280	1,928,000
1944	76,100	91,230	113,300	208,900	174,300	255,900	95,090	220,600	143,300	148,100	141,800	192,200	1,861,000
1945	158,500	180,100	282,500	346,800	226,700	217,900	424,200	159,900	167,200	172,100	240,800	149,600	2,726,000
1946	158,700	139,000	160,700	229,100	215,900	313,000	167,200	312,900	311,500	194,100	131,900	225,400	2,559,000
1947	182,400	396,900	229,100	353,700	184,900	223,200	144,600	119,700	83,270	80,470	142,400	96,140	2,237,000
1948	76,050	82,870	81,560	80,830	96,480	79,560	59,790	88,040	49,880	72,620	73,610	63,620	904,900
1949	51,950	51,830	50,090	58,340	163,300	128,000	346,100	102,900	96,990	96,360	71,420	88,680	1,306,000
1950	199,700	98,560	130,600	98,720	166,900	64,710	148,100	115,100	238,200	78,850	52,830	82,880	1,475,000
1951	40,680	44,300	50,750	51,810	55,180	29,880	33,660	50,990	120,700	45,430	46,570	76,000	646,000
1952	37,790	25,140	21,620	18,670	21,990	20,150	57,930	130,800	56,870	64,490	46,910	52,020	554,400
1953	23,580	39,230	114,600	85,540	102,500	46,060	71,550	236,700	56,500	71,420	54,070	72,010	973,800
1954	83,110	50,190	99,260	48,200	21,630	21,970	44,560	79,150	53,640	53,870	55,920	25,920	637,400
1955	22,750	20,560	21,390	24,790	74,490	22,160	41,720	112,500	204,900	141,600	109,400	69,480	865,700
1956	160,400	106,000	47,970	28,350	58,340	31,320	44,570	87,550	73,470	49,020	40,230	28,250	755,500
1957	18,230	13,070	19,410	15,460	20,090	105,400	334,700	1,678,000	1,396,000	263,000	132,300	302,200	4,298,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	458	-	-	-	-	-	-	-
1917	458	-	-	-	-	-	-	-
1918	478	-	-	-	-	-	-	-
1919	508	37,600	June 18, 1919	-	-	-	-	-
1920	508	39,600	Oct. 15, 1919	570	6,420	4,660,000	4,200	3,050,000
1921	528	35,900	Sept. 14, 1921	45	2,830	2,050,000	2,630	1,900,000
1922	548	(a)	May 6, 1922	476	-	-	-	-
1923	568	29,300	May 3, 1923	181	2,660	1,930,000	4,390	3,180,000
1924	588	32,800	Nov. 5, 1923	236	5,080	3,690,000	3,320	2,410,000
1925	608	22,100	May 15, 1925	30	1,410	1,020,000	-	-
1939	878	12,600	July 18, 1939	442	1,557	1,127,000	1,691	1,224,000
1940	898	100,000	July 3, 1940	389	2,623	1,905,000	4,257	3,090,000

a Discharge not determined; stage was 9.2 ft higher than peak in 1921.

Yearly discharge, in cubic feet per second, of Colorado River at Wharton, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	92,000	Nov. 26, 1940	948	9,458	6,847,000	8,007	5,796,000
1942	958	38,900	Apr. 9, 1942	396	2,219	1,607,000	2,606	1,887,000
1943	978	8,330	Oct. 21, 1942	-	2,663	1,928,000	2,079	1,505,000
1944	1008	19,700	Mar. 17, 1944	748	2,563	1,861,000	3,032	2,201,000
1945	1038	36,400	Apr. 2, 1945	855	3,766	2,726,000	3,541	2,564,000
1946	1058	35,600	Mar. 14, 1946	1,100	3,535	2,559,000	4,019	2,909,000
1947	1088	27,300	Nov. 6, 1946	750	3,090	2,237,000	2,305	1,669,000
1948	1118	7,800	May 27, 1948	502	1,246	904,900	1,127	818,300
1949	1148	37,900	Apr. 27, 1949	563	1,804	1,306,000	2,184	1,581,000
1950	1178	28,600	June 4, 1950	700	2,038	1,475,000	1,633	1,182,000
1951	1212	13,200	June 6, 1951	328	892	646,000	821	594,800
1952	1242	17,400	May 29, 1952	82	764	554,400	892	647,200
1953	1282	29,900	May 1, 1953	227	1,345	973,800	1,421	1,029,000
1954	1342	13,300	Dec. 5, 1953	245	880	637,400	649	469,600
1955	1392	10,100	May 20, 1955	260	1,196	865,700	1,541	1,115,000
1956	1442	4,610	Oct. 7, 1955	329	1,041	755,500	677	491,810
1957	1512	54,200	Apr. 30, 1957	85	5,937	4,298,000	-	-

284. Colorado River near Bay City, Tex.

Location.--Lat 28°58'26", long 96°00'44", on right bank 6,300 ft downstream from bridge on State Highway 35, 7,100 ft downstream from Texas & New Orleans Railroad bridge, 2.8 miles west of Bay City, Matagorda County, and at mile 32.6.

Drainage area.--41,650 sq mi, approximately, of which 11,900 sq mi is probably noncontributing.

Supplemental records available.--Gage-height records collected in this vicinity since 1946 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, Houston supplementary adjustment of 1943. July 2-6, 1940, reference point at highway bridge, 6,300 ft upstream at datum 30.60 ft lower.

Average discharge.--9 years (1948-57), 1,644 cfs (1,190,000 acre-ft per year).

Extremes.--1940, 1948-57: Maximum discharge, 83,300 cfs July 4, 1940 (gage height, 48.2 ft, present datum at site 6,300 ft upstream at bridge on State Highway 35), observed by Corps of Engineers (stage, 46.6 ft, adjusted to present site); no flow June 1-3, 1951, June 23, 24, 27-30, 1952, Apr. 23, 1953, and July 5-7, 1956.

Maximum stage known, 56.1 ft Dec. 10, 1913. Flood of July 1869 probably reached about the same stage. Stages of other floods are as follows: May 8, 1922, 55.4 ft; June 1929, 55.0 ft; June 22, 1935, 54.6 ft; Oct. 5, 1936, 53.4 ft; Aug. 2, 1938, 53.4 ft; Nov. 27, 1940, 47.6 ft. All above flood data from information by Texas & New Orleans Railroad and adjusted to present site.

Remarks.--Diversions above station for irrigation and municipal supply. Regulation same as that for Colorado River at Austin.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	1,009	326	599	637	928	-
1949	875	895	795	943	2,850	2,093	6,018	1,457	889	936	525	1,115	1,599
1950	4,507	1,635	2,530	1,908	3,713	1,167	2,626	1,476	3,532	816	341	1,357	2,119
1951	692	680	788	841	1,045	529	295	446	1,489	71.4	299	1,289	700
1952	635	439	406	344	450	345	979	1,830	454	503	235	763	616
1953	390	622	1,940	1,374	1,612	714	458	4,924	178	619	898	1,508	1,273
1954	1,315	884	1,625	784	403	260	384	676	222	193	545	474	651
1955	453	378	362	485	1,646	296	436	1,418	2,640	1,511	1,541	1,073	1,014
1956	2,508	1,793	898	497	994	388	472	886	815	164	367	314	840
1957	286	226	297	249	348	2,037	5,027	27,750	24,560	4,058	1,757	4,975	5,980

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	62,050	19,390	36,850	39,170	55,240	-
1949	53,820	53,230	48,850	57,970	158,300	128,700	358,100	89,580	52,920	57,540	32,310	66,320	1,158,000
1950	277,200	97,310	155,600	117,300	206,200	71,750	156,200	90,730	210,200	50,140	20,990	80,760	1,534,000
1951	42,530	40,470	48,460	51,710	58,060	32,510	17,530	27,440	88,590	4,390	18,380	76,700	506,800
1952	39,030	26,150	24,950	21,150	25,860	21,200	58,270	112,500	27,000	30,930	14,480	45,420	446,900
1953	23,970	37,020	119,300	84,500	89,530	43,910	27,250	302,800	10,590	38,070	55,190	89,730	921,900
1954	80,850	52,590	99,950	48,230	22,370	16,000	22,830	41,570	13,200	11,880	33,530	28,210	471,200
1955	27,870	22,520	22,260	29,840	91,400	18,200	25,940	87,210	157,100	92,920	94,730	63,860	733,800
1956	154,200	106,700	55,240	30,550	57,170	23,860	28,110	54,490	48,470	10,090	22,580	18,660	610,100
1957	17,580	13,420	18,250	15,320	19,300	125,300	299,100	1,706,000	1,461,000	249,500	108,000	296,000	4,329,000

Yearly discharge, in cubic feet per second, of Colorado River near Bay City, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	6,390	May 28, 1948	a16	-	-	-	-
1949	1148	36,000	Apr. 28, 1949	81	1,599	1,158,000	2,116	1,532,000
1950	1178	24,800	June 4, 1950	137	2,119	1,534,000	1,569	1,136,000
1951	1212	12,000	June 7, 1951	0	700	506,800	643	465,400
1952	1242	20,100	May 29, 1952	0	616	446,900	740	537,100
1953	1282	23,300	May 1, 1953	0	1,273	921,900	1,347	975,000
1954	1342	10,000	Dec. 5, 1953	2.3	651	471,200	429	310,500
1955	1392	11,900	May 21, 1955	1.4	1,014	733,800	1,350	977,300
1956	1442	4,460	Oct. 10, 1955	0	840	610,100	473	343,200
1957	1512	53,000	May 1, 1957	92	5,980	4,329,000	-	-

a Minimum day during May to September.

285. Lavaca River at Hallettsville, Tex.

Location.--Lat 29°26', long 96°57', at bridge on U. S. Highway 77 in Hallettsville, Lavaca County, and 0.4 mile upstream from Texas & New Orleans Railroad bridge.

Drainage area.--101 sq mi.

Gage.--Water-stage recorder for high stages, and movable wire-weight gage read twice daily for discharges below about 75 cfs. Datum of gage is 186.72 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 38.2 cfs (27,660 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 93,100 cfs June 30, 1940 (gage height, 40.60 ft, from floodmarks), from rating curve extended above 23,000 cfs on basis of slope-area measurement of peak flow; no flow at times in 1953 and 1956.
Maximum stage since at least 1840, that of June 30, 1940; maximum stage from about 1870 to 1940, 32.8 ft July 16, 1938, from information by local resident.

Remarks.--No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	--	-	-	-	-	-	-	-	-	-	1.65	2.45	-
1940	0.64	1.55	1.86	2.18	15.1	2.43	3.90	20.6	1,174	95.2	2.47	1.16	109
1941	66.8	465	251	99.5	79.8	146	213	331	121	22.8	18.8	8.59	152
1942	60.0	17.1	8.97	7.92	7.54	6.26	325	8.06	3.96	177	10.0	25.8	54.8
1943	6.11	19.9	9.79	15.3	9.71	24.1	5.56	47.7	17.3	29.4	3.41	4.31	16.2
1944	2.45	4.09	21.4	82.1	15.7	157	15.0	76.7	12.1	11.0	67.3	7.15	39.8
1945	4.38	28.8	19.9	95.2	20.0	57.5	89.0	16.7	20.6	3.26	2.09	1.43	29.9
1946	9.20	3.23	4.72	11.6	80.9	38.6	32.1	12.6	169	10.5	68.1	77.8	42.6
1947	57.1	94.8	48.7	79.9	19.0	67.6	61.9	52.6	4.97	3.34	2.00	1.47	41.3
1948	1.55	11.5	12.5	5.95	24.7	10.5	5.92	85.0	2.96	4.22	1.96	2.21	14.1
1949	.83	2.10	2.23	4.29	22.8	10.6	171	10.5	3.60	3.68	7.74	9.21	20.4
1950	71.9	3.23	46.0	8.49	25.3	5.23	49.3	39.4	56.1	2.30	.78	1.39	25.8
1951	.88	.88	3.29	2.57	2.70	3.80	5.85	6.70	64.2	1.00	.23	9.72	8.41
1952	1.05	2.56	4.35	1.06	13.4	2.87	59.3	123	23.1	2.01	.94	1.88	19.6
1953	.38	14.7	32.1	3.21	7.88	4.02	27.5	35.6	1.12	.63	5.77	2.70	11.3
1954	12.2	2.62	3.13	2.24	1.67	1.24	35.2	18.9	.48	.31	.44	.30	6.60
1955	1.13	.45	.66	4.16	129	1.20	1.44	191	20.5	.53	37.1	2.11	32.0
1956	.55	.42	.83	.85	9.27	.65	.60	.84	.47	8.22	1.16	.05	1.97
1957	.09	.21	36.6	1.55	14.3	113	313	102	65.4	.84	.64	108	62.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	102	146	-
1940	39	92	114	134	867	149	232	1,270	69,890	5,860	152	69	78,870
1941	4,110	27,650	15,430	6,120	4,430	9,000	12,680	20,360	7,200	1,400	1,160	511	110,100
1942	3,690	1,020	552	487	419	385	19,340	496	236	10,870	615	1,540	39,650
1943	376	1,190	602	943	539	1,480	331	2,940	1,030	1,810	210	256	11,710
1944	151	244	1,320	5,050	902	9,660	895	4,710	720	674	4,140	425	28,890
1945	269	1,710	1,220	5,850	1,110	3,540	5,300	1,020	1,220	201	128	85	21,650
1946	565	192	290	712	4,490	2,380	1,910	774	10,070	648	4,190	4,630	30,850
1947	3,510	5,640	2,990	4,920	1,060	4,160	3,690	3,230	296	205	123	88	29,910
1948	95	685	767	366	1,420	647	352	5,220	176	259	120	132	10,240
1949	51	125	137	264	1,270	650	10,160	643	214	226	476	548	14,760
1950	4,420	192	2,830	522	1,410	321	2,930	2,430	3,340	141	48	83	18,670
1951	54	53	202	158	150	234	348	412	3,820	62	14	578	6,080
1952	65	152	267	65	772	177	3,530	7,540	1,370	124	58	112	14,230
1953	23	873	1,970	198	438	247	1,640	2,190	67	39	355	161	8,200
1954	751	156	193	138	93	76	2,100	1,160	29	19	27	18	4,760
1955	70	27	41	256	7,170	74	86	11,760	1,220	33	2,280	126	23,140
1956	34	25	51	53	533	40	36	51	28	506	71	2.8	1,430
1957	56	12	2,250	95	796	6,980	18,620	6,280	3,890	52	39	6,400	45,420

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	-	-
1940	898	93,100	June 30, 1940	0.5	109	78,870	173	125,800
1941	928	17,000	Nov. 24, 1940	.9	152	110,100	94.1	68,120
1942	1008	14,500	Apr. 8, 1942	2.6	54.8	39,650	50.5	36,560
1943	1008	2,500	May 25, 1943	2.0	16.2	11,710	15.5	11,250
1944	1008	11,000	Mar. 15, 1944	1.6	39.8	28,890	41.9	30,380
1945	1038	6,590	Jan. 18, 1945	.7	29.9	21,650	26.9	19,500
1946	1058	5,700	Feb. 18, 1946	1.2	42.6	30,850	57.9	41,940
1947	1088	5,460	Mar. 18, 1947	1.1	41.3	29,910	26.7	19,320
1948	1118	3,650	May 27, 1948	.3	14.1	10,240	12.4	9,000
1949	1148	5,860	Apr. 25, 1949	.3	20.4	14,760	30.2	21,890
1950	1178	4,130	May 27, 1950	.2	25.8	18,670	15.9	11,530

Yearly discharge, in cubic feet per second, Lavaca River at Hallettsville, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	4,600	June 12, 1951	0.1	8.41	6,080	8.65	6,260
1952	1242	12,800	May 27, 1952	.1	19.6	14,230	22.9	16,610
1953	1282	1,480	May 14, 1953	0	11.3	8,200	8.90	6,440
1954	1342	3,260	Apr. 8, 1954	.2	6.60	4,760	5.24	3,800
1955	1392	10,800	May 18, 1955	.2	32.0	23,140	31.9	23,120
1956	1442	1,310	Feb. 8, 1956	0	1.97	1,430	4.94	3,590
1957	1512	9,460	Apr. 29, 1957	0	62.7	45,420	-	-

286. Lavaca River near Edna, Tex.

Location.--Lat 28°57'35", long 96 41'10", at bridge on U. S. Highway 59, 660 ft upstream from Texas & New Orleans Railroad bridge, and 2.8 miles southwest of Edna, Jackson County.

Drainage area.--887 sq mi.

Gage.--Wire-weight gage or staff gage read twice daily, oftener during floods. Datum of gage is 13.88 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 6, 1939, chain gage (property of Corps of Engineers) and June 6, 1939, to Apr. 3, 1957, wire-weight or staff gage at site 110 ft downstream at same datum.

Average discharge.--19 years (1938-57), 237 cfs (171,600 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 73,000 cfs July 1, 1940 (gage height, 32.51 ft); no flow at times.
Maximum stage known, 33.8 ft May 25, 1936 (discharge, 83,400 cfs), from information by local resident.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	-	-	-	30.1	-
1939	14.7	26.3	43.5	37.9	47.3	38.6	29.2	148	252	928	30.1	51.0	138
1940	13.4	10.7	15.8	17.0	198	32.7	23.0	39.8	98.1	3,999	57.8	30.1	383
1941	195	3,431	1,667	607	457	1,341	1,267	2,783	2,028	417	197	88.8	1,207
1942	159	245	96.1	72.4	78.9	76.4	920	87.3	53.3	1,075	58.7	280	267
1943	82.5	87.6	69.6	97.0	60.4	208	58.9	112	135	132	54.7	36.0	94.9
1944	27.1	133	326	682	195	1,303	130	819	135	51.6	49.1	207	341
1945	35.1	102	161	367	113	127	617	55.5	132	32.2	42.8	16.5	150
1946	42.2	20.3	32.4	82.8	500	243	107	165	827	107	713	1,623	368
1947	1,413	662	176	635	122	206	171	585	68.9	32.6	26.1	16.7	346
1948	17.2	34.9	44.5	60.9	179	155	42.5	1,189	72.1	48.4	11.6	19.5	157
1949	11.3	13.7	16.1	37.0	178	71.5	1,044	154	61.6	66.4	86.2	35.2	146
1950	386	38.4	441	116	107	43.5	112	78.9	135	28.7	6.47	6.95	126
1951	5.13	5.66	10.9	14.8	17.9	19.5	15.8	11.3	322	6.77	1.92	141	47.2
1952	28.9	14.0	14.0	10.9	37.0	24.0	240	1,295	202	29.4	19.9	17.3	162
1953	4.16	287	386	49.8	58.5	32.6	50.1	682	27.2	18.5	232	112	163
1954	25.8	18.1	16.5	16.2	13.5	12.2	85.2	69.1	6.21	2.14	5.24	7.60	23.2
1955	1.58	.14	.28	9.73	649	15.7	32.0	695	110	12.2	151	51.6	141
1956	5.05	2.24	4.85	5.57	18.3	6.58	4.43	8.16	.94	16.7	.50	.41	6.12
1957	.95	.003	32.6	.05	83.0	447	1,424	460	310	15.4	5.09	169	244

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	-	-	-	1,790	-
1939	904	1,570	2,680	2,330	2,630	2,370	1,740	9,070	14,970	57,060	1,850	3,040	100,200
1940	824	636	970	1,050	11,400	2,010	1,370	2,450	5,840	245,900	3,550	1,790	277,800
1941	12,010	204,200	102,500	37,340	25,360	82,430	75,400	171,100	120,700	25,650	12,120	5,280	874,100
1942	9,770	14,610	5,910	4,450	4,380	4,700	54,720	5,370	3,170	66,080	3,610	16,690	193,500
1943	5,070	5,210	4,280	5,960	3,350	12,800	3,510	6,870	8,060	8,110	3,360	2,140	68,720
1944	1,660	7,940	20,060	41,920	11,230	80,110	7,740	50,360	8,030	3,170	3,020	12,330	247,600
1945	2,160	6,070	9,920	22,590	6,300	7,820	36,740	3,410	7,850	1,980	2,630	980	108,400
1946	2,600	1,210	1,990	5,090	27,790	14,920	6,380	10,130	49,230	6,560	43,840	96,590	266,300
1947	86,850	39,390	10,810	39,060	6,780	12,650	10,150	35,940	4,100	2,010	1,610	994	250,300
1948	1,060	2,080	2,730	3,740	10,280	9,560	2,530	73,130	4,290	2,980	716	1,160	114,300
1949	695	813	988	2,280	9,910	4,400	62,150	9,460	3,670	4,080	5,300	2,090	105,800
1950	23,720	2,280	27,140	7,120	5,940	2,670	6,650	4,850	8,010	1,760	398	413	90,970
1951	316	337	669	908	996	1,200	941	697	19,170	417	118	8,420	34,190
1952	1,780	834	861	673	2,130	1,480	14,300	79,630	12,000	1,810	1,220	1,030	117,700
1953	256	17,100	23,720	3,060	3,250	2,000	2,980	41,950	1,620	1,140	14,270	6,660	118,000
1954	1,590	1,080	1,020	994	748	749	5,070	4,250	370	132	322	452	16,770
1955	97	8.5	17	598	36,030	968	1,900	42,710	6,530	751	9,290	3,070	102,000
1956	310	133	298	343	1,050	405	263	502	56	1,020	31	25	4,440
1957	58	.2	2,010	3.4	4,610	27,470	84,760	28,300	18,450	947	313	10,060	177,000

Yearly discharge, in cubic feet per second, of Lavaca River near Edna, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	878	-	-	-	-	-	-	-
1939	878	13,600	July 13, 1939	6.2	138	100,200	135	97,490
1940	898	73,000	July 1, 1940	7.4	383	277,800	818	594,100
1941	928	51,200	Nov. 26, 1940	18	1,207	874,100	809	585,700
1942	958	12,800	Apr. 10, 1942	26	267	193,500	245	177,700
1943	978	3,200	Mar. 26, 1943	18	94.9	68,720	116	83,820
1944	1008	9,640	Mar. 19, 1944	18	341	247,600	325	236,100
1945	1038	6,280	Jan. 20, 1945	12	150	108,400	133	96,100
1946	1058	17,200	Aug. 31, 1946	14	368	266,300	549	397,600
1947	1088	19,600	Oct. 18, 1946	12	346	250,300	165	119,200
1948	1118	15,200	May 27, 1948	6.4	157	114,300	153	110,900
1949	1148	6,830	Apr. 27, 1949	5.0	146	105,800	216	156,500
1950	1178	7,000	Dec. 19, 1949	1.8	126	90,970	54.1	39,130
1951	1212	3,460	June 15, 1951	.2	47.2	34,190	50.2	36,340
1952	1242	23,000	May 29, 1952	3.6	162	117,700	214	155,300
1953	1282	8,560	May 19, 1953	2.5	163	118,000	111	80,620
1954	1342	2,070	Apr. 10, 1954	.2	23.2	16,770	18.2	13,210
1955	1392	9,490	May 21, 1955	0	141	102,000	142	102,600
1956	1442	690	July 12, 1956	0	6.12	4,440	794	5,760
1957	1512	9,440	Apr. 29, 1957	0	244	177,000	-	-

287. Navidad River near Ganado, Tex.

Location.--Lat 29°02', long 96°33', at bridge on U. S. Highway 59, 100 ft upstream from Texas & New Orleans Railroad bridge, a quarter of a mile downstream from Sandy Creek, and 2 1/4 miles southwest of Ganado, Jackson County.

Drainage area.--1,116 sq mi.

Gage.--Staff and wire-weight gage. Datum of gage is 13.62 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--18 years (1939-57), 423 cfs (306,200 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 64,500 cfs July 2, Nov. 26, 1940; maximum gage height, 36.54 ft July 2, 1940, from floodmark; no flow at times in 1956 and 1957.

Maximum stage known since at least 1909, 39.8 ft May 27, 1936, from information by Texas & New Orleans Railroad (discharge, 94,000 cfs, from rating curve extended above 60,000 cfs).

Remarks.--Small diversions for irrigation above station. Much of low-flow during irrigation season, April to September, is drainage from rice fields irrigated by water diverted from the Colorado River by way of Sandy Creek.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	375	817	47.0	32.5	-
1940	9.67	7.42	17.5	13.5	172	35.6	20.0	35.5	233	3,510	54.2	36.1	349
1941	314	6,450	2,709	897	579	1,642	2,315	3,032	1,957	1,396	519	176	1,833
1942	653	607	208	72.0	121	121	1,406	91.5	141	1,651	159	324	464
1943	101	231	121	276	75.5	571	62.0	255	114	159	102	77.6	180
1944	39.9	511	626	1,675	392	2,769	124	1,499	168	83.1	85.0	309	696
1945	55.4	324	820	660	261	140	2,121	66.4	107	92.6	607	187	453
1946	149	23.7	177	502	1,121	669	256	722	2,274	348	438	1,399	666
1947	1,003	1,281	227	1,278	112	309	179	854	73.1	95.0	138	117	476
1948	16.4	54.2	190	244	557	441	71.8	842	41.6	125	14.5	145	228
1949	12.7	22.4	11.8	36.1	558	298	1,862	212	54.8	173	172	160	293
1950	1,919	89.6	871	437	369	51.8	248	50.6	871	71.4	20.2	146	430
1951	17.9	4.94	9.51	11.3	14.7	65.2	32.6	18.1	947	15.0	34.9	404	130
1952	84.2	22.6	15.1	9.14	99.7	43.8	908	1,601	281	49.0	40.5	121	273
1953	12.0	398	704	106	117	34.5	31.6	1,410	32.2	83.4	549	1,012	376
1954	41.1	24.4	71.8	13.8	9.50	8.98	16.6	79.4	2.04	2.94	21.3	48.4	28.6
1955	23.8	.34	.36	14.0	831	5.38	28.8	619	185	23.5	107	288	172
1956	45.9	0	0	8.98	79.1	0	24.9	1.05	8.69	.21	22.6	39.5	18.9
1957	1.18	.65	44.7	.19	114	1,166	1,941	1,349	1,372	18.4	25.5	509	544

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	22,330	50,250	2,890	1,930	-
1940	595	442	1,070	829	9,870	2,190	1,190	2,190	13,870	215,800	3,330	2,150	253,500
1941	19,300	383,800	166,600	55,150	32,150	100,900	137,700	186,500	116,500	85,850	31,940	10,470	1,327,000
1942	40,130	36,110	12,780	4,430	6,750	7,460	83,690	5,630	8,400	101,500	9,770	19,280	335,900
1943	6,210	13,730	7,420	17,000	4,200	35,120	3,690	15,690	6,800	9,770	6,270	4,620	130,500
1944	2,450	30,410	38,510	103,000	22,530	170,200	7,390	92,140	10,020	5,110	5,230	18,370	505,400
1945	3,400	19,280	50,430	40,560	14,520	8,630	126,200	4,080	6,380	5,690	37,320	11,120	327,600
1946	9,180	1,410	10,890	30,860	62,270	41,130	15,260	44,370	135,300	21,410	26,920	83,220	482,200
1947	61,680	76,220	13,940	78,600	6,200	18,980	10,630	52,490	4,350	5,840	8,500	6,960	344,400
1948	1,010	3,230	11,660	15,010	32,010	27,140	4,270	51,780	2,470	7,690	894	8,620	165,800
1949	781	1,330	724	2,220	30,980	18,310	110,800	13,040	3,260	10,650	10,580	9,550	212,200
1950	118,000	5,330	53,560	26,900	20,480	3,190	14,750	3,110	51,840	4,390	1,240	8,710	311,500

Monthly and yearly runoff, in acre-feet, of Navidad River near Ganado, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,100	294	585	695	815	4,010	1,940	1,120	56,330	924	2,150	24,020	93,980
1952	5,180	1,340	929	562	5,730	2,690	54,010	98,440	16,710	3,010	2,490	7,190	198,300
1953	739	23,680	43,270	6,490	6,500	2,120	1,880	86,680	1,920	5,130	33,730	60,190	272,300
1954	2,530	1,450	4,410	847	528	552	990	4,880	121	181	1,310	2,880	20,680
1955	1,470	20	22	860	46,140	331	1,710	38,090	10,990	1,440	6,580	17,150	124,800
1956	2,820	0	0	552	4,550	0	1,480	64	517	13	1,390	2,350	13,740
1957	73	39	2,750	12	6,340	71,680	115,500	82,920	81,650	1,130	1,570	30,310	394,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a9,440	July 13, 1939	-	-	-	-	-
1940	898	64,500	July 2, 1940	4.1	349	253,500	1,131	821,100
1941	928	64,500	Nov. 26, 1940	9.5	1,833	1,327,000	1,169	846,200
1942	958	12,900	Apr. 11, 1942	38	464	335,900	379	274,300
1943	978	6,510	Mar. 26, 1943	26	180	130,500	241	174,500
1944	1008	15,600	Mar. 17, 1944	17	696	505,400	699	507,100
1945	1038	12,800	Apr. 3, 1945	13	453	327,600	381	276,000
1946	1058	9,740	June 24, 1946	20	666	482,200	846	612,600
1947	1088	6,790	Oct. 17, 1946	18	476	344,400	288	208,400
1948	1118	9,500	May 27, 1948	2.2	228	165,800	210	152,700
1949	1148	10,300	Apr. 25, 1949	5.0	293	212,200	534	386,300
1950	1178	14,200	Oct. 26, 1949	1.2	430	311,500	189	136,600
1951	1212	6,570	June 14, 1951	1.8	130	93,980	137	99,450
1952	1242	17,000	May 30, 1952	1.9	273	198,300	356	258,500
1953	1282	15,000	Sept. 1, 1953	.4	376	272,300	294	213,000
1954	1342	1,330	May 14, 1954	.2	28.6	20,680	19.1	13,790
1955	1392	7,210	Feb. 8, 1955	.2	172	124,800	174	126,100
1956	1442	984	Feb. 9, 1956	0	18.9	13,740	19.0	13,780
1957	1512	18,100	Apr. 30, 1957	0	544	394,000	-	-

a Maximum during period May to September.

GUADALUPE RIVER BASIN

288. Guadalupe River at Hunt, Tex.

Location.--Lat 30°03', long 99°19', at bridge on State Highway 39, half a mile downstream from confluence of North and South Forks, and 0.6 mile east of Hunt, Kerr County.

Drainage area.--276 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,722.7 ft above mean sea level, datum of 1929.

Extremes.--1941-49: Maximum gage height and discharge not determined; minimum discharge, 6.9 cfs June 17, 1948. Maximum stage known since 1900, 36.6 ft July 2, 1932, from information by local resident.

Remarks.--Small diversions for irrigation above station. Discharge not computed above 260 cfs.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	53.6	48.6	44.3	43.0	39.5	-	-	51.8	38.6	38.8	45.5	-
1943	71.4	49.7	43.1	40.0	38.0	40.5	37.0	34.7	59.2	30.0	22.5	28.0	41.2
1944	29.3	29.3	32.5	38.0	38.1	43.6	34.3	-	54.5	30.4	36.6	45.2	-
1945	35.7	35.3	41.9	66.7	51.9	49.9	59.3	37.6	33.9	29.2	22.6	21.5	40.4
1946	-	37.0	46.0	39.1	35.6	32.6	33.0	49.8	31.0	23.9	15.5	26.5	-
1947	-	-	39.8	-	55.2	49.7	-	56.1	-	47.8	38.1	29.9	-
1948	29.6	33.1	36.8	32.6	36.4	36.2	38.1	33.6	23.2	33.6	18.9	24.6	31.4
1949	22.9	25.8	26.1	27.6	-	63.5	-	48.6	47.1	29.5	-	34.5	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	3,190	2,990	2,720	2,390	2,430	-	-	3,080	2,380	2,390	2,710	-
1943	4,390	2,960	2,650	2,460	2,110	2,490	2,200	2,130	3,520	1,850	1,380	1,670	29,810
1944	1,800	1,750	2,000	2,340	2,190	2,680	2,040	-	3,240	1,870	2,250	2,690	-
1945	2,190	2,100	2,580	4,100	2,880	3,070	3,530	2,310	2,020	1,800	1,390	1,280	29,250
1946	-	2,200	2,830	2,400	1,980	2,000	1,960	3,060	1,850	1,470	954	1,570	-
1947	-	-	2,450	-	3,070	3,050	-	3,450	-	2,940	2,340	1,780	-
1948	1,820	1,970	2,260	2,000	2,090	2,220	2,270	2,070	1,380	2,060	1,160	1,460	22,760
1949	1,410	1,540	1,610	1,700	-	3,900	-	2,990	2,800	1,810	-	2,050	-

Yearly discharge, in cubic feet per second, of Guadalupe River at Hunt, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1942	958	-	May 7, 1942	-	-	-	-	-
1943	978	-	Oct. 17, 1942	18	41.2	29,810	35.0	25,360
1944	1008	-	May 25, 1944	20	-	-	-	-
1945	1038	355	Jan. 18, 1945	18	40.4	29,250	-	-
1946	1058	-	Oct. 10, 1945	11	-	-	-	-
1947	1088	-	Nov. 3, 1946	27	-	-	-	-
1948	1118	179	July 5, 1948	10	31.4	22,760	29.3	21,270
1949	1148	-	Feb. 25, 1949	17	-	-	-	-

289. Johnson Creek near Ingram, Tex.

Location.--Lat 39°05', long 99°16', on right bank, about 100 ft upstream from grouted rubble dam, 1.3 miles upstream from Henderson Branch, 3 miles northwest of Ingram, Kerr County, 4.5 miles upstream from mouth, and 9.5 miles northwest of Kerrville.

Drainage area.--115 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,721.30 ft above mean sea level, datum of 1929.

Average discharge.--16 years (1941-57), 11.2 cfs (8,110 acre-ft per year).

Extremes.--1941-57: Maximum discharge, 16,200 cfs June 23, 1947 (gage height, 11.76 ft), from rating curve extended above 1,800 cfs on basis on slope-area measurements at gage heights 9.67 and 11.76 ft; minimum daily, 0.4 cfs July 26, 27, 1956.
Maximum stage known since at least 1852, about 35 ft July 2, 1932 (from information by local resident), discharge, 138,000 cfs by slope-area measurement at site half a mile downstream from State Fish Hatchery and about 6 or 7 miles upstream from gage. Flood of June 14, 1935 reached a stage of about 31 or 32 ft, from information by local resident.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	31.2	17.1	16.0	14.7	15.3	13.4	18.2	33.2	14.2	10.8	9.30	11.4	17.1
1943	27.3	17.3	14.6	12.7	11.7	11.9	12.6	11.1	22.7	10.1	7.38	9.38	14.1
1944	8.52	9.45	10.2	11.5	11.8	12.0	10.1	22.0	12.3	7.24	7.70	11.0	11.1
1945	9.32	9.66	13.0	27.3	15.6	15.7	19.3	12.5	11.0	8.55	7.66	7.34	13.1
1946	10.9	9.51	8.95	10.2	9.45	8.63	8.97	10.4	6.83	4.07	6.95	5.89	8.39
1947	13.1	48.9	12.1	62.7	19.0	17.3	28.4	21.4	83.8	15.4	11.7	9.49	28.5
1948	9.04	10.7	11.4	11.2	12.2	10.1	13.5	15.8	8.30	11.2	12.6	11.6	11.5
1949	7.20	8.10	8.82	9.65	37.2	13.6	29.7	14.5	10.7	7.31	8.86	13.3	13.9
1950	11.0	8.96	9.28	10.1	9.94	9.21	8.65	8.11	7.55	5.86	5.25	7.26	8.42
1951	6.62	6.89	6.95	6.79	7.31	6.92	6.92	11.2	18.2	3.81	3.53	4.32	7.44
1952	4.80	5.80	6.52	6.14	6.05	7.18	8.61	7.09	29.8	6.05	2.90	22.5	9.39
1953	6.79	8.27	11.0	10.8	8.05	8.09	8.15	5.54	2.85	3.41	3.97	7.13	7.00
1954	7.31	6.54	6.01	7.18	6.54	5.50	4.20	5.87	2.98	1.16	1.13	3.02	4.78
1955	7.15	5.60	5.44	7.64	7.39	8.14	5.82	23.2	7.15	6.32	4.97	5.58	7.89
1956	6.29	8.02	6.66	5.31	6.33	5.27	5.44	5.67	2.84	1.52	1.56	3.74	4.88
1957	11.8	5.17	6.79	5.57	7.31	6.60	13.0	24.6	26.0	6.21	4.85	17.6	11.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	1,920	1,020	982	904	851	821	1,080	2,040	845	661	572	676	12,370
1943	1,680	1,030	899	781	649	729	752	681	1,350	622	454	558	10,180
1944	524	562	627	705	676	738	599	1,350	731	445	473	655	8,080
1945	573	575	799	1,680	869	968	1,150	768	655	525	471	437	9,470
1946	669	566	551	628	525	531	534	638	406	250	427	350	6,080
1947	803	2,910	742	3,860	1,060	1,070	1,690	1,320	4,990	946	718	565	20,670
1948	556	639	702	688	702	623	801	969	494	686	774	691	8,320
1949	443	482	542	593	2,060	839	1,770	889	637	449	545	794	10,040
1950	679	533	571	620	552	566	515	498	449	360	323	432	6,100
1951	407	410	428	417	406	425	412	689	1,080	234	217	257	5,380
1952	295	345	401	377	348	442	512	436	1,770	372	178	1,340	6,820
1953	418	492	676	661	447	498	485	340	169	210	244	424	5,060
1954	450	389	370	442	363	338	250	361	177	71	69	180	3,460
1955	439	333	335	470	410	500	346	1,430	425	389	305	332	5,710
1956	387	477	410	326	364	324	324	349	169	94	96	223	3,540
1957	727	307	417	343	406	406	775	1,510	1,550	382	299	1,040	8,160

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	1038	-	-	-	-	-	-	-
1942	1038,1058	1,380	Oct. 4, 1941	7.0	17.1	12,370	16.7	12,060
1943	1038,1058	864	Oct. 18, 1942	6.5	14.1	10,180	11.4	8,290
1944	1038,1058	448	May 25, 1944	5.1	11.1	8,080	11.5	8,320
1945	1038,1058	1,240	Jan. 18, 1945	6.3	13.1	9,470	12.9	9,310
1946	1058	49	Oct. 5, 1945	2.6	8.39	6,080	12.1	8,740
1947	1088	16,200	June 23, 1947	5.1	28.5	20,670	25.0	18,120
1948	1118	540	May 11, 1948	3.9	11.5	8,320	10.9	7,900
1949	1148	2,910	Apr. 24, 1949	3.8	13.9	10,040	14.3	10,360

Yearly discharge, in cubic feet per second, of Johnson Creek near Ingram, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1950	1178	30	Oct.24,1949;Junel,1950	3.8	8.42	6,100	7.68	5,560
1951	1212	2,220	June 3, 1951	2.9	7.44	5,380	7.16	5,180
1952	1242	6,420	June 5, 1952	2.4	9.39	6,820	10.1	7,360
1953	1282	51	Apr. 1, 1953	2.0	7.00	5,060	6.48	4,690
1954	1342	-	Apr. 30, 1954	-	4.78	3,460	4.64	3,360
1955	1512	749	May 6, 1955	2.9	7.89	5,710	8.12	5,880
1956	1512	92	Apr. 29, 1956	.4	4.88	3,540	5.12	3,720
1957	1512	1,120	Sept. 12, 1957	2.4	11.3	8,160	-	-

290. Guadalupe River near Comfort, Tex.

Location.--Lat 29°57', long 98°55', at low-water bridge and dam on State Highway 27, 2.6 miles west of Comfort, Kendall County.

Drainage area.--762 sq mi.

Gage.--Staff gage. Datum of gage approximately 1,380 ft above mean sea level (by comparison with Guadalupe River at Comfort, Tex.). Prior to Aug. 11, 1924, staff gage at site 1 mile upstream at datum 4.33 ft higher.

Average discharge.--10 years (1922-32), 139 cfs (100,600 acre-ft per year).

Extremes.--1918-32: Maximum discharge, 182,000 cfs July 1, 1932 (gage height, 27.65 ft) by slope-area measurement of peak flow; minimum, 0.4 cfs Aug. 2, 1918.

Maximum stage known since at least 1848, that of July 1, 1932; flood of July 16, 1900, reached about the same stage, from information by local residents.

Remarks.--Small diversions above station for irrigation. Slight regulation at low flow by powerplants upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	30.8	27.8	23.4	183	25.1	8.13	1.54	68.4	40.2	-
1919	33.2	-	-	-	105	156	111	169	179	285	-	-	-
1920	-	-	524	433	340	277	213	-	-	114	-	89.7	-
1921	70.0	-	168	101	87	141	131	83.8	-	65.3	43.8	-	-
1922	46.7	52.5	57.6	60.5	59.8	58.3	-	-	68.8	40.1	38.0	31.0	-
1923	30.6	49.9	40.5	40.6	63.1	63.0	135	62.8	34.3	12.5	9.14	356	74.1
1924	98.8	418	346	231	178	388	270	207	316	96.5	55.6	70.9	223
1925	62.5	64.9	67.2	68.2	62.3	58.6	46.4	61.8	35.2	20.1	25.7	41.5	51.1
1926	209	149	62.3	68.3	55.5	105	185	167	82.9	207	55.2	38.8	116
1927	61.6	80.2	96.0	67.5	271	222	178	78.6	112	48.7	28.9	43.7	106
1928	82.7	43.7	50.6	53.3	61.9	91.5	49.8	60.2	97.0	19.5	18.7	36.6	55.4
1929	37.0	39.8	44.3	45.4	42.8	43.8	36.5	708	81.6	151	20.2	51.3	110
1930	26.1	29.1	46.9	40.3	37.4	38.4	37.7	400	76.5	23.9	13.3	17.5	66.1
1931	771	99.3	89.2	140	208	183	358	328	124	135	69.4	43.0	213
1932	45.7	64.6	74.4	78.0	106	174	390	183	74.0	2,590	142	572	377

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	1,890	1,540	1,440	10,900	1,540	484	95	4,210	2,390	-
1919	2,040	-	-	-	5,830	9,590	6,600	10,400	10,700	17,500	-	-	-
1920	-	-	32,200	26,600	19,600	17,000	12,700	-	-	7,010	-	5,340	-
1921	4,300	-	10,300	6,210	4,830	8,670	7,800	5,150	-	4,020	2,690	-	-
1922	2,870	3,120	3,540	3,720	3,320	3,580	-	-	4,090	2,470	2,340	1,840	-
1923	1,880	2,970	2,490	2,500	3,510	3,870	8,030	3,860	2,040	769	562	21,200	53,700
1924	6,080	24,800	21,300	14,200	10,300	23,800	16,100	12,700	18,800	5,930	3,420	4,220	162,000
1925	3,840	3,860	4,130	4,190	3,460	3,600	2,760	3,800	2,090	1,240	1,580	2,470	37,000
1926	12,900	8,860	3,830	4,200	3,080	6,440	11,000	10,200	4,930	12,700	3,400	2,310	83,800
1927	3,790	4,770	5,900	4,150	15,100	13,700	10,600	4,830	6,640	2,990	1,780	2,600	76,800
1928	5,080	2,600	3,110	3,280	3,560	5,630	2,960	3,700	5,770	1,200	1,150	2,180	40,200
1929	2,280	2,370	2,720	2,790	2,380	2,690	2,170	43,500	4,860	9,280	1,240	3,050	79,300
1930	1,600	1,730	2,880	2,480	2,080	2,360	2,240	24,600	4,550	1,470	818	1,040	47,800
1931	47,400	5,910	5,480	8,610	11,600	11,300	21,300	20,200	7,380	8,300	4,270	2,560	154,000
1932	2,810	3,840	4,570	4,800	6,100	10,700	23,200	11,300	4,400	159,000	8,730	34,000	273,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	478	-	Apr. 5, 1918	0.6	-	-	-	-
1919	508	-	Aug. 21, 1919	6	-	-	-	-
1920	508	-	Oct. 16, 1919	61	-	-	-	-
1921	528	-	June 12, 1921	33	-	-	-	-
1922	548	-	Apr. 26, 1922	-	-	-	-	-
1923	568	-	Sept. 18, 1923	6.2	74.1	53,700	136	98,500
1924	588	-	June 22, 1924	34	223	162,000	167	121,000
1925	608	4,920	May 28, 1925	3.6	51.1	37,000	70.1	50,800
1926	628	5,460	July 23, 1926	30	116	83,800	101	72,700
1927	648	5,630	Feb. 28, 1927	21	106	76,800	101	73,200
1928	668	2,320	Mar. 10, 1928	-	55.4	40,200	50.7	36,800
1929	688	34,200	May 28, 1929	17	110	79,300	108	78,200

Yearly discharge, in cubic feet per second, of Guadalupe River near Comfort, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	20,100	May 18, 1930	9.2	66.1	47,800	139	100,000
1931	718	70,900	Oct. 6, 1930	18	213	154,000	147	107,000
1932	733	182,000	July 1, 1932	33	377	273,000	-	-

291. Guadalupe River at Comfort, Tex.

Location.--Lat 29°58', long 98°54', at bridge on U. S. Highway 87, a quarter of a mile downstream from Cypress Creek, half a mile east of Comfort, Kendall County, and at mile 397.

Drainage area.--836 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,372.03 ft above mean sea level, datum of 1929. Prior to Nov. 28, 1939, wire-weight gage at same site and datum.

Average discharge.--18 years (1939-57), 121 cfs (87,600 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 59,400 cfs May 26, 1944 (gage height, 29.4 ft) from rating curve extended above 33,000 cfs on basis of slope-area measurement at gage height 38.4 ft.
Maximum known stage since at least 1848, 38.4 ft (from floodmarks) July 1, 1932, from data furnished by Texas Highway Department (discharge, 182,000 cfs by slope-area measurement of peak flow at site 2-1/2 miles upstream). Flood of July 16, 1900, reached about the same stage as that of July 1, 1932, from information by local residents.

Remarks.--Small diversions above station for irrigation. Slight regulation at low-flow by powerplants upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	17.5	145	49.3	30.4	-
1940	130	52.1	50.0	51.5	80.6	94.7	308	241	187	139	82.2	45.3	122
1941	93.4	173	449	141	560	428	801	784	259	166	115	213	347
1942	313	151	134	122	112	93.4	466	638	172	96.6	70.4	94.7	206
1943	255	143	126	106	94.4	101	110	82.5	208	58.9	28.8	46.7	113
1944	51.9	50.3	65.3	88.3	109	187	117	1,114	367	96.2	103	126	207
1945	138	91.1	195	317	303	411	365	156	101	83.3	41.1	158	196
1946	190	91.0	198	122	138	138	127	223	130	45.7	24.6	68.0	125
1947	269	428	189	401	268	215	236	201	410	115	67.6	44.1	236
1948	42.8	60.5	68.9	63.3	85.0	75.8	82.8	67.3	56.5	67.8	23.9	32.0	60.4
1949	40.7	36.9	42.9	55.8	347	176	201	136	118	54.4	123	98.2	117
1950	60.9	53.3	61.6	69.3	77.8	60.0	87.3	92.3	58.3	29.0	17.2	30.5	58.0
1951	27.2	32.5	35.8	36.8	42.2	69.0	49.7	192	119	15.2	6.16	10.9	53.1
1952	13.0	27.5	29.7	29.5	30.9	38.2	83.6	132	110	25.0	3.20	382	74.8
1953	41.0	38.4	119	91.2	57.3	56.0	41.6	19.7	2.33	9.10	13.1	111	49.9
1954	59.4	40.5	36.4	38.0	32.7	22.7	62.5	63.5	9.66	2.12	0	0	30.6
1955	39.7	28.0	20.0	39.0	43.0	23.1	13.2	113	12.9	142	25.6	20.5	43.6
1956	16.1	17.1	24.6	21.5	27.1	16.6	15.5	14.9	.10	0	14.6	5.90	14.5
1957	0	3.63	10.5	16.8	24.4	92.8	603	345	226	23.3	4.28	51.7	116

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	1,040	8,890	3,030	1,810	-
1940	7,970	3,100	3,070	3,170	4,640	5,830	18,320	14,830	11,110	8,560	5,060	2,700	88,360
1941	5,740	10,310	27,590	8,690	31,090	26,310	47,660	48,190	15,420	10,200	7,090	12,650	250,900
1942	19,260	8,970	8,220	7,520	6,200	5,740	27,720	39,240	10,260	5,880	4,330	5,640	149,000
1943	15,670	8,490	7,740	6,510	5,240	6,240	6,570	5,070	12,370	3,620	1,770	2,780	82,070
1944	3,190	2,990	4,010	5,430	6,290	11,470	6,940	68,500	21,860	5,910	6,330	7,500	150,400
1945	8,480	5,420	11,970	19,520	16,820	25,290	21,720	9,610	6,010	5,120	2,530	9,410	141,900
1946	11,660	5,410	12,200	7,520	7,660	8,460	7,540	13,740	7,770	2,810	1,510	4,040	90,320
1947	16,540	25,470	11,610	24,680	14,880	13,230	14,030	12,360	24,400	7,070	4,160	2,620	171,000
1948	2,630	3,600	4,240	3,890	4,890	4,660	4,930	4,140	3,360	4,170	1,470	1,910	43,890
1949	2,510	2,200	2,640	3,430	19,260	10,800	11,970	8,350	7,020	3,340	7,590	5,840	84,950
1950	3,740	3,170	3,790	4,260	4,320	3,690	5,190	5,670	3,470	1,780	1,060	1,810	41,950
1951	1,670	1,940	2,200	2,270	2,350	4,240	2,960	11,790	7,060	932	379	646	38,440
1952	797	1,640	1,820	1,810	1,780	2,350	4,980	8,090	6,550	1,540	197	22,740	54,290
1953	2,520	2,280	7,320	5,610	3,180	3,440	2,470	1,210	139	559	807	6,610	36,140
1954	3,650	2,410	2,240	2,330	1,820	1,390	3,720	3,910	575	130	0	0	22,180
1955	2,440	1,660	1,230	2,400	2,390	1,420	787	6,970	766	8,710	1,570	1,220	31,560
1956	988	1,020	1,520	1,320	1,560	1,020	924	919	5.8	0	895	351	10,520
1957	0	216	645	1,030	1,360	5,710	35,900	21,240	13,450	1,430	263	3,080	84,320

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	678	3,820	July 13, 1939	3.2	-	-	-	-
1940	898	7,520	Oct. 10, 1939	17	122	88,360	162	117,900
1941	928	15,400	Apr. 27, 1941	36	347	250,900	337	243,800
1942	958	-	-	54	206	149,000	199	144,400
1943	978	3,870	Oct. 15, 1942	22	113	82,070	83.4	60,360
1944	1008	59,400	May 26, 1944	30	207	150,400	229	166,100
1945	1038	15,000	Sept. 29, 1945	30	196	141,900	201	145,300

Yearly discharge, in cubic feet per second, of Guadalupe River at Comfort, Tex.--Continued

Year	W.S.P no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	6,400	May 6, 1946	14	125	90,320	158	114,700
1947	1086	14,400	June 24, 1947	37	236	171,000	177	127,900
1948	1118	1,390	July 12, 1948	13	60.4	43,890	56.1	40,770
1949	1148	12,100	Feb. 26, 1949	22	117	84,950	122	88,300
1950	1178	2,630	Apr. 2, 1950	7.5	58.0	41,950	51.2	37,060
1951	1212	7,970	May 15, 1951	2.3	53.1	38,440	50.9	36,880
1952	1242	38,600	Sept. 10, 1952	0	74.8	54,290	85.6	62,160
1953	1282	4,430	Dec. 19, 1952	0	49.9	36,140	44.7	32,320
1954	1342	7,830	Apr. 30, 1954	0	30.6	22,180	26.5	19,200
1955	1392	9,030	July 17, 1955	0	43.6	31,560	41.1	29,760
1956	1442	2,450	Aug. 20, 1956	0	14.5	10,520	10.8	7,860
1957	1512	35,200	Apr. 24, 1957	0	116	84,320	-	-

292. Guadalupe River near Spring Branch, Tex.

Location.--Lat 29°51'40", long 98°23'00", at bridge on county road, 4 miles southeast of Spring Branch, Comal County, 6 miles downstream from Curry Creek, and at mile 334.

Drainage area.--1,282 sq mi.

Gage.--Water-stage recorder. Datum of gage is 948.13 ft above mean sea level, datum of 1929.

Average discharge.--35 years (1922-57), 244 cfs (176,600 acre-ft per year).

Extremes.--1922-57: Maximum discharge, 121,000 cfs July 3, 1932 (gage height, 42.10 ft), from rating curve extended above 70,000 cfs by logarithmic plotting; no flow at times in 1951-52, 1954-57.
Maximum stage known since at least 1859, about 53 ft in 1869; flood of July 1900 reached a stage of about 49 ft, from information by local resident.

Remarks.--Small diversions above station for irrigation. Slight regulation by powerplants upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	69.1	44.9	34.8	-
1923	42.3	60.6	52.2	52.2	78.8	86.7	292	133	46.0	22.9	10.2	842	142
1924	102	533	829	417	450	640	565	798	484	168	79.1	118	432
1925	78.0	87.1	95.4	88.9	80.3	69.3	58.9	72.9	32.9	21.4	30.0	45.0	63.3
1926	296	189	81.8	89.1	73.5	142	723	394	162	228	86.8	53.1	211
1927	67.7	109	132	93.5	301	419	362	193	404	105	46.8	50.2	189
1928	105	57.9	69.4	73.0	91.0	142	59.5	70.0	121	27.1	19.5	31.0	72.3
1929	39.9	36.7	42.6	45.2	46.4	56.8	84.7	1,090	240	443	52.0	43.1	187
1930	33.0	48.1	70.8	57.9	63.9	55.3	45.4	412	399	69.7	19.9	19.5	108
1931	870	173	151	299	554	472	700	919	274	256	128	65.6	405
1932	57.7	83.1	103	158	162	345	234	255	104	3,740	205	631	511
1933	260	176	204	352	234	231	185	232	121	65.3	51.0	54.7	181
1934	48.9	53.1	61.1	115	88.5	123	228	98.7	36.0	77.6	22.5	25.7	81.4
1935	17.7	31.3	41.1	40.7	84.4	49.9	55.8	933	3,997	425	163	983	565
1936	337	237	351	260	201	198	149	711	946	1,214	214	4,055	736
1937	1,131	662	531	454	374	400	285	182	622	143	70.6	79.1	411
1938	93.0	87.9	227	490	315	229	411	371	165	90.2	51.5	61.3	216
1939	47.4	54.5	56.1	101	74.1	67.5	66.3	74.3	22.2	151	54.2	23.7	66.2
1940	229	64.9	66.2	66.3	97.8	148	372	265	330	174	82.8	48.9	162
1941	69.1	216	646	232	1,274	1,039	1,504	1,820	585	378	181	269	680
1942	411	220	183	153	142	124	652	835	238	142	106	379	299
1943	480	283	233	207	164	161	184	127	294	140	47.7	91.1	201
1944	71.1	63.2	89.1	147	244	500	293	1,662	637	189	287	313	376
1945	256	175	482	733	761	960	726	304	187	151	94.6	245	421
1946	329	156	385	238	309	311	243	487	234	89.1	54.3	232	256
1947	389	758	447	964	605	432	415	345	444	170	93.3	58.6	425
1948	55.2	76.2	91.2	83.9	95.8	88.6	89.2	74.7	166	89.4	35.0	39.2	81.9
1949	56.9	44.4	52.4	69.0	377	215	402	300	170	78.7	128	112	165
1950	77.6	70.4	78.9	85.9	107	80.4	113	183	106	81.3	31.1	42.5	88.0
1951	32.6	36.0	48.2	47.9	53.6	82.4	66.0	182	119	13.3	.91	.91	56.9
1952	5.91	21.0	36.2	32.1	31.3	40.3	110	331	154	36.0	7.08	2,119	241
1953	75.6	78.5	187	163	107	109	83.3	45.1	10.4	15.7	15.9	247	94.7
1954	85.7	61.4	61.1	60.2	46.7	36.6	25.7	118	12.3	.54	.25	.29	42.6
1955	27.3	19.6	19.2	39.5	75.4	29.0	16.1	138	38.8	138	37.8	15.4	49.6
1956	14.2	13.6	23.3	24.6	29.3	16.8	6.11	19.3	0	0	5.65	6.85	13.3
1957	6.77	11.1	6.48	10.9	35.1	263	1,478	741	618	66.6	26.1	274	294

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	4,250	2,760	2,070	-
1923	2,600	3,610	3,210	3,210	4,380	5,330	17,400	8,190	2,740	1,410	628	50,100	103,000
1924	6,300	31,700	51,000	25,700	25,900	39,300	33,600	49,100	28,800	10,300	4,870	7,010	314,000
1925	4,800	5,180	5,870	5,470	4,460	4,260	3,500	4,480	1,960	1,320	1,840	2,680	45,800
1926	18,200	11,300	5,030	5,480	4,080	9,010	43,000	24,200	9,640	14,000	5,340	3,160	152,000
1927	4,170	6,490	8,110	5,750	16,700	25,800	21,500	11,900	24,000	6,430	2,880	2,990	137,000
1928	6,460	3,450	4,270	4,490	5,230	8,730	3,540	4,300	7,200	1,670	1,200	1,840	52,400
1929	2,450	2,180	2,620	2,780	2,580	3,490	5,040	66,900	14,300	27,200	3,200	2,560	135,000

Monthly and yearly runoff, in acre-feet, of Guadalupe River near Spring Branch, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	2,030	2,860	4,350	3,560	3,550	3,400	2,700	25,300	23,800	4,290	1,220	1,160	78,200
1931	53,500	10,300	9,280	18,400	30,800	29,000	41,700	56,500	16,300	15,700	7,870	3,900	293,000
1932	3,550	4,940	6,330	9,720	9,320	21,200	13,900	15,700	6,190	230,000	12,600	37,500	371,000
1933	16,000	10,500	12,500	21,600	13,000	14,200	11,000	14,300	7,200	4,020	3,140	3,250	131,000
1934	3,010	3,160	3,760	7,070	4,920	7,560	13,600	6,070	2,140	4,770	1,380	1,530	59,000
1935	1,090	1,860	2,530	2,510	4,690	3,070	3,320	57,350	237,900	26,100	9,990	58,500	408,900
1936	20,710	14,100	21,590	15,960	11,570	12,190	8,880	43,710	56,290	74,650	13,190	241,300	534,100
1937	69,540	39,380	32,640	27,890	20,790	24,610	16,960	11,180	36,980	8,780	4,340	4,700	297,800
1938	5,720	5,230	13,970	30,130	17,470	14,110	24,470	22,820	9,840	5,550	3,170	3,650	156,100
1939	2,920	3,240	3,450	6,190	4,120	4,150	3,940	4,570	1,320	9,290	3,330	1,410	47,930
1940	14,060	3,860	4,070	4,080	5,620	9,090	22,110	16,300	19,660	10,690	5,090	2,910	117,500
1941	4,250	12,870	39,730	14,290	70,760	63,860	89,490	111,900	34,840	23,270	11,120	16,000	492,400
1942	25,250	13,110	11,250	9,440	7,910	7,610	38,820	51,350	14,170	8,750	6,530	22,570	216,800
1943	29,480	16,850	14,320	12,750	9,120	9,890	10,960	7,790	17,490	8,610	2,930	5,420	145,600
1944	4,370	3,760	5,480	9,070	14,040	30,710	17,450	102,200	37,880	11,640	17,640	18,610	272,800
1945	15,730	10,440	29,660	45,040	42,270	59,010	43,180	18,720	11,150	9,250	5,820	14,590	304,900
1946	20,210	9,290	23,640	14,640	17,170	19,110	14,480	29,970	13,920	5,480	3,340	13,830	185,100
1947	23,940	45,110	27,470	59,290	33,610	26,570	24,680	21,180	26,440	10,440	5,740	3,490	308,000
1948	3,390	4,530	5,610	5,160	5,510	5,450	5,310	4,600	9,910	5,500	2,150	2,330	59,450
1949	3,500	2,640	3,220	4,240	20,950	13,200	23,920	18,420	10,140	4,840	7,880	6,670	119,600
1950	4,770	4,190	4,850	5,280	5,920	4,940	6,700	11,260	6,330	5,000	1,910	2,530	63,680
1951	2,010	2,140	2,960	2,950	2,980	5,070	3,930	11,170	7,090	821	56	54	41,230
1952	363	1,250	2,220	1,970	1,800	2,480	6,540	20,350	9,140	2,210	436	126,100	174,900
1953	4,650	4,670	11,500	10,030	5,960	6,700	4,960	2,770	617	967	980	14,720	68,520
1954	5,270	3,660	3,750	3,700	2,590	2,250	1,530	7,270	731	33	16	17	30,820
1955	1,680	1,170	1,180	2,430	4,190	1,780	957	8,460	2,310	8,500	2,330	919	35,910
1956	874	809	1,430	1,510	1,680	1,040	364	1,190	0	0	348	408	9,650
1957	416	659	398	671	1,950	16,140	87,960	45,560	36,750	4,100	1,610	16,290	212,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	548	-	-	-	-	-	-	-
1923	568,1562	18,200	Sept. 19, 1923	5.4	142	103,000	252	182,000
1924	588,1562	4,950	May 26, 1924	59	432	314,000	331	240,000
1925	608	2,380	May 29, 1925	-	63.3	45,800	89.0	64,500
1926	628,1562	19,800	Apr. 21, 1926	31	211	152,000	189	137,000
1927	648	7,070	June 5, 1927	30	189	137,000	183	132,000
1928	668	6,570	Mar. 9, 1928	11	72.3	52,400	62.7	45,400
1929	688,1562	18,600	May 29, 1929	24	187	135,000	190	137,000
1930	703	11,800	June 12, 1930	14	108	78,200	196	142,000
1931	718	24,000	Oct. 7, 1930	21	405	293,000	325	235,000
1932	733	121,000	July 3, 1932	51	511	371,000	545	395,000
1933	748	4,120	May 26, 1933	37	181	131,000	140	102,000
1934	763	3,400	Apr. 18, 1934	7.0	81.4	59,000	75.2	54,490
1935	788	114,000	June 15, 1935	15	565	408,900	635	459,800
1936	808	48,600	Sept. 28, 1936	103	736	534,100	853	619,300
1937	828	6,240	June 1, 1937	56	411	297,800	250	181,200
1938	858	6,520	Apr. 27, 1938	38	216	156,100	194	140,800
1939	878	3,870	July 14, 1939	2.8	66.2	47,930	83.3	60,310
1940	898	7,670	Oct. 10, 1939	18	162	117,500	210	152,400
1941	928	15,300	Feb. 1, 1941	40	680	492,400	670	485,100
1942	958	13,500	Sept. 8, 1942	65	299	216,800	315	227,800
1943	978	3,330	June 5, 1943	31	201	145,600	136	98,570
1944	1008	28,000	May 27, 1944	56	376	272,800	434	315,100
1945	1038	10,100	Sept. 30, 1945	53	421	304,900	417	302,200
1946	1058	7,070	May 16, 1946	37	256	185,100	316	228,500
1947	1088	10,100	June 25, 1947	48	425	308,000	311	225,000
1948	1118	7,770	June 24, 1948	13	81.9	59,450	76.1	55,280
1949	1148	8,540	Feb. 26, 1949	25	165	119,600	171	124,100
1950	1178	4,680	May 16, 1950	19	88.0	63,680	78.7	56,980
1951	1212	4,330	May 16, 1951	0	56.9	41,230	52.4	37,950
1952	1242	66,900	Sept. 11, 1952	0	241	174,900	264	191,800
1953	1282	4,320	Sept. 4, 1953	1.2	94.7	68,520	83.4	60,380
1954	1342	3,430	May 1, 1954	0	42.6	30,820	30.6	22,170
1955	1392	5,310	July 18, 1955	0	49.6	35,910	48.3	34,990
1956	1442	810	Aug. 20, 1956	0	13.3	9,650	11.0	8,010
1957	1512	25,600	Apr. 24, 1957	0	294	212,500	-	-

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

Location.--Lat29°42'55", long 98°06'40", on right bank at New Braunfels, Comal County, 1.1 miles upstream from Comal River and at mile 281.

Drainage area.--1,516 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 586.65 ft above mean sea level, datum of 1929.

Average discharge.--29 years (1928-57), 335 cfs (242,500 acre-ft per year).

Extremes.--1927-57: Maximum discharge, 101,000 cfs June 15, 1935 (gage height, 32.95 ft); no flow July 8, 9, July 17 to Aug. 20, 1956. Maximum stage known, 38 ft in 1869 and in December 1913, from information by local residents.

Remarks.--Small diversions above station for irrigation. Some regulation at low flow by small powerplants upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	84.3	195	243	93.3	88.7	148	34.2	21.6	31.2	-
1929	38.8	41.1	57.6	92.6	56.1	64.1	138	1,460	506	716	102	74.6	282
1930	55.2	71.5	85.6	74.1	78.7	69.9	55.7	626	474	106	30.8	22.7	146
1931	858	196	203	397	764	722	751	1,420	403	501	204	105	544
1932	79.3	101	133	282	269	470	283	293	127	3,440	224	667	535
1933	288	191	221	375	268	264	216	237	127	76.0	73.1	75.6	201
1934	55.9	60.7	66.2	149	169	273	379	138	53.5	90.5	47.4	28.5	126
1935	19.4	49.6	61.3	65.0	148	74.9	68.5	1,294	4,571	724	342	1,100	706
1936	463	290	400	308	227	248	179	741	760	1,951	301	4,200	837
1937	1,282	711	547	492	446	554	372	216	808	206	99.5	99.2	483
1938	123	108	361	822	526	347	654	698	266	142	86.5	88.2	351
1939	68.4	74.7	92.2	124	90.8	79.7	79.0	84.0	34.4	147	62.3	28.6	80.6
1940	206	64.5	65.6	71.2	103	146	392	259	354	213	76.7	47.4	166
1941	47.5	263	902	299	1,402	1,295	1,838	2,350	862	621	298	321	871
1942	527	292	231	196	186	160	759	859	272	218	138	818	388
1943	832	456	368	286	215	206	249	176	367	240	91.7	133	302
1944	105	86.9	109	301	488	879	487	1,970	935	337	331	436	539
1945	306	247	705	1,049	1,141	1,250	1,074	495	311	235	138	250	597
1946	451	207	410	341	478	589	374	615	416	150	104	509	386
1947	676	1,204	822	1,281	872	620	526	455	488	213	175	90.8	617
1948	78.5	90.8	107	96.3	109	104	93.3	112	192	120	35.1	41.2	98.2
1949	66.5	50.6	60.8	83.1	389	335	565	494	241	122	149	112	221
1950	152	99.5	104	106	194	120	140	218	143	97.9	33.3	41.5	120
1951	35.1	36.8	50.5	513	64.3	90.6	89.1	179	159	18.1	5.57	11.0	65.8
1952	7.68	20.8	40.9	38.7	34.6	41.0	139	378	230	43.8	10.9	3,079	335
1953	156	131	315	331	176	143	137	75.3	23.2	34.9	30.6	402	163
1954	200	116	166	95.4	75.2	52.4	37.1	112	25.2	6.87	6.05	3.82	74.9
1955	13.1	30.9	22.2	35.9	71.8	35.9	21.0	139	44.7	118	37.8	12.0	48.6
1956	17.7	11.8	25.0	25.3	31.2	19.6	9.35	13.7	.67	.05	6.64	4.87	13.8
1957	9.99	21.0	21.8	12.3	35.2	324	1,944	1,060	1,028	175	75.1	455	429

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	5,180	11,200	14,900	5,550	5,450	8,810	2,100	1,330	1,860	-
1929	2,390	2,450	3,540	5,690	3,120	3,940	8,210	89,800	30,100	44,000	6,270	4,440	204,000
1930	3,390	4,250	5,260	4,560	4,370	4,300	3,310	38,500	28,200	6,520	1,890	1,350	106,000
1931	52,800	11,700	12,500	24,400	42,400	44,400	44,700	87,300	24,000	30,800	12,500	6,250	394,000
1932	4,880	6,010	8,180	17,300	15,500	28,900	16,800	18,000	7,560	212,000	13,800	39,700	389,000
1933	17,700	11,400	13,600	23,100	14,900	16,200	12,900	14,600	7,560	4,670	4,490	4,500	146,000
1934	3,440	3,610	4,070	9,160	9,390	16,800	22,600	8,480	3,180	5,560	2,910	1,700	90,900
1935	1,190	2,950	3,770	3,990	8,200	4,600	4,080	79,560	272,000	44,530	21,000	65,430	511,300
1936	28,480	17,240	24,610	18,940	13,050	15,270	10,680	45,580	45,250	119,900	18,500	249,900	607,400
1937	78,850	42,330	33,660	30,230	24,760	34,060	22,150	13,270	48,090	12,640	6,120	5,900	352,100
1938	7,580	6,400	22,180	50,550	29,210	21,340	38,920	42,920	15,830	8,760	5,320	5,250	254,300
1939	4,200	4,450	5,670	7,640	5,040	4,900	4,700	5,160	2,050	9,020	3,830	1,700	58,360
1940	12,660	3,840	4,040	4,380	5,950	8,980	23,320	15,920	21,090	13,120	4,710	2,820	120,800
1941	2,920	15,640	55,490	18,410	77,850	79,610	109,300	144,500	51,310	38,180	18,320	19,120	630,600
1942	32,410	17,390	14,180	12,060	10,330	9,850	45,160	52,840	16,210	13,420	8,510	48,650	281,000
1943	51,170	27,150	22,620	17,580	11,960	12,660	14,810	10,820	21,820	14,740	5,640	7,890	218,900
1944	6,470	5,170	6,720	18,490	28,060	54,040	28,960	121,100	55,620	20,700	20,370	25,920	391,600
1945	18,800	14,720	43,360	64,500	63,380	76,830	63,900	30,450	18,520	14,440	8,510	14,860	432,300
1946	27,750	12,320	25,200	20,980	26,520	36,190	22,270	37,840	24,750	9,220	6,410	30,270	279,700
1947	41,540	71,670	50,540	78,760	48,420	38,120	31,320	28,000	29,040	13,080	10,780	5,400	446,700
1948	4,820	5,400	6,590	5,920	6,260	6,390	5,550	6,910	11,420	7,410	2,160	2,450	71,280
1949	4,090	3,010	3,740	5,110	21,590	20,600	33,610	30,370	14,320	7,490	9,170	6,670	159,800
1950	9,340	5,920	6,410	6,500	10,750	7,350	8,330	13,380	8,490	6,020	2,050	2,470	87,010
1951	2,160	2,190	3,110	3,150	3,570	5,570	5,300	10,990	9,450	1,110	343	657	47,600
1952	472	1,240	2,520	2,380	1,990	2,520	8,250	23,230	13,680	2,690	670	183,200	242,800
1953	9,570	7,800	19,380	20,350	9,790	8,790	8,120	4,630	1,380	2,140	1,880	23,900	117,700
1954	12,290	6,870	10,180	5,870	4,180	3,220	2,210	6,890	1,500	423	372	227	54,230
1955	803	1,840	1,360	2,210	3,990	2,210	1,250	8,540	2,660	7,260	2,320	715	35,160
1956	1,090	704	1,540	1,560	1,800	1,210	556	842	40	3.4	408	290	10,040
1957	614	1,250	1,340	755	1,960	19,910	115,700	65,200	61,150	10,740	4,620	27,080	310,300

Yearly discharge, in cubic feet per second, of Guadalupe River above Comal River, at New Braunfels, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	668	6,090	Mar. 10, 1928	-	-	-	89.2	64,800
1929	688	19,700	May 30, 1929	25	282	204,000	288	208,000
1930	703	9,760	June 13, 1930	20	146	106,000	235	170,000
1931	718	22,200	Oct. 8, 1930	22	544	394,000	464	336,000
1932	733,1562	95,200	July 3, 1932	71	535	389,000	567	412,000
1933	748	3,000	May 27, 1933	48	201	146,000	157	114,000
1934	763	2,960	Apr. 18, 1934	13	126	90,900	121	87,680
1935	788,898	101,000	June 15, 1935	16	706	511,300	792	573,700
1936	808	52,800	Sept. 28, 1936	117	837	607,400	953	691,900
1937	828	5,600	June 2, 1937	77	483	352,100	322	233,400
1938	858	5,600	Apr. 28, 1938	70	351	254,300	321	232,400
1939	878	3,070	July 15, 1939	9.6	80.6	58,360	89.2	64,580
1940	898	7,060	Oct. 11, 1939	19	166	120,800	240	174,300
1941	928	14,500	Apr. 29, 1941	39	871	630,600	857	620,600
1942	958	13,800	Sept. 8, 1942	81	388	281,000	439	318,000
1943	978	5,170	Oct. 15, 1942	56	302	218,900	188	136,300
1944	1008	26,500	May 27, 1944	78	539	391,600	620	450,100
1945	1038	10,100	Sept. 30, 1945	82	597	432,300	581	420,700
1946	1058	7,200	Sept. 1, 1946	82	386	279,700	522	378,200
1947	1088	10,200	June 25, 1947	74	617	446,700	414	299,700
1948	1118	6,910	June 25, 1948	21	98.2	71,280	90.0	65,310
1949	1148	9,080	Feb. 27, 1949	25	221	159,800	236	170,600
1950	1178	3,430	Oct. 8, 1949	24	120	87,010	101	72,800
1951	1212	2,560	May 17, 1951	4.1	65.8	47,600	61.3	44,370
1952	1242	72,900	Sept. 11, 1952	4.3	335	242,800	379	275,400
1953	1282	4,090	Sept. 4, 1953	7.0	163	117,700	152	110,300
1954	1342	11,600	Oct. 26, 1953	2.2	74.9	54,230	39.9	28,900
1955	1392	2,060	July 19, 1955	6.0	48.6	35,160	47.6	34,490
1956	1442	394	Aug. 31, 1956	0	13.8	10,040	13.6	9,910
1957	1512	26,900	Apr. 25, 1957	.2	429	310,300	-	-

294. Comal River at New Braunfels, Tex.

Location.--Lat 29°42'05", long 98°07'10", on right bank 200 ft upstream from San Antonio Street viaduct in New Braunfels, Comal County, and 1.1 miles upstream from mouth.

Drainage area.--117 sq mi. Normal flow of river comes from springs, drainage area of stream not applicable.

Supplemental records available.--1882 to November 1927, discharge measurements only are published in reports of Geological Survey.

Gage.--Water-stage recorder; concrete control since Oct. 1, 1955. Datum of gage is 582.80 ft above mean sea level, datum of 1929.

Average discharge.--25 years (1932-57), 284 cfs (205,600 acre-ft per year).

Extremes.--1927-57: Maximum discharge, 35,000 cfs Sept. 11, 1952 (gage height, 36.14 ft, from floodmarks), from rating curve extended above 1,600 cfs on basis of slope-area measurements at gage heights 14.87 and 36.14 ft; minimum daily discharge, 5.5 cfs June 7, 1956. Maximum stages known, 37.65 ft Oct. 17, 1870, and 36.91 ft July 8, 1869, at site half a mile downstream, from painted and dated marks in old Remmert Brewery (probably some backwater from Guadalupe River).

Remarks.--Diurnal fluctuations from steam powerplant half a mile upstream. Prior to June 7, 1956, entire flow of river from Comal Springs, about 1 mile upstream, except during periods of local rain. Comal Power Plant released daily about 10.5 cfs of pumpage from well in Edwards limestone June 7, 1956, to January 30, 1957, and August 1 to September 30, 1957. During the remainder of 1957 water year, daily releases averaged less than 1 cfs. Comal Springs did not flow from June 13 to about November 3, 1956. Flow of river from about June 13 to about November 3, 1956, consisted of releases from powerplant, runoff following local rains, seepage, and flow from small springs in vicinity of gage. Comal Springs emerge from the Edwards limestone in the Balcones fault zone.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	299	-	-	298	-	-	289	275	274	-
1929	283	277	280	282	274	273	277	-	306	-	310	300	-
1930	290	293	285	278	270	257	262	-	-	299	269	265	-
1931	-	260	269	289	323	356	-	-	345	-	322	329	-
1932	315	296	296	322	315	327	-	303	311	334	347	-	-
1933	324	316	321	311	299	311	340	333	305	322	306	311	317
1934	292	299	309	327	307	339	332	328	325	337	325	299	318
1935	309	291	295	296	297	294	302	396	362	343	342	350	323
1936	345	355	370	375	369	358	335	365	405	372	359	367	365
1937	366	361	354	348	351	364	375	385	470	359	341	337	368
1938	319	315	332	346	330	330	419	387	366	354	342	352	349
1939	340	338	331	324	329	320	316	304	305	270	289	308	314
1940	287	276	286	285	288	286	294	267	313	287	276	276	285
1941	274	274	327	297	313	325	421	459	392	358	361	342	345
1942	375	342	335	338	337	335	344	316	318	367	319	446	348
1943	453	405	416	408	390	374	356	333	336	328	318	326	370
1944	307	317	314	350	334	370	383	401	377	355	328	333	347
1945	325	314	343	372	415	430	432	414	376	346	341	335	370
1946	364	331	336	327	321	344	331	395	444	374	359	457	365
1947	395	431	401	422	407	407	394	397	345	329	327	320	381
1948	312	309	309	305	308	297	296	285	278	267	257	258	290
1949	258	261	256	259	249	271	317	313	317	312	306	288	284
1950	313	282	284	284	286	279	275	270	278	255	246	247	275

Monthly and yearly mean discharge, in cubic feet per second, of Comal River at New Braunfels, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	250	241	235	232	225	223	217	219	221	193	181	181	218
1952	184	192	203	192	182	182	186	183	182	163	135	663	220
1953	193	203	228	231	227	219	244	204	178	143	128	188	199
1954	196	205	205	206	204	172	148	150	121	105	85.4	78.4	156
1955	110	124	129	137	144	129	106	98.0	93.3	67.7	55.1	56.3	104
1956	60.2	73.0	91.2	91.9	94.1	70.6	45.2	31.7	11.5	12.0	15.4	15.0	50.6
1957	12.5	23.7	40.9	51.5	52.5	78.0	329	334	298	158	93.9	178	137

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	18,400	-	-	17,700	-	-	17,800	16,900	16,300	-
1929	17,400	16,500	17,200	17,300	15,200	16,800	16,500	-	18,200	-	19,100	17,900	-
1930	17,800	17,400	17,500	17,100	15,000	15,800	15,600	-	-	18,400	16,500	15,800	-
1931	-	15,500	16,500	17,800	17,900	21,900	-	-	20,500	-	19,800	19,600	-
1932	19,400	17,600	18,200	19,800	18,100	20,100	-	18,600	18,500	20,500	21,300	-	-
1933	19,900	18,800	19,700	19,100	16,600	19,100	20,200	20,500	18,100	19,800	18,800	18,500	229,000
1934	18,000	17,800	19,000	20,100	17,000	20,800	19,800	20,200	19,300	20,700	20,000	17,800	230,000
1935	18,990	17,320	18,120	18,220	16,480	18,050	17,990	24,330	21,560	21,070	21,000	20,840	234,000
1936	21,210	21,120	22,760	23,050	21,220	22,020	19,930	22,450	24,090	22,870	22,050	21,870	264,600
1937	22,490	21,470	21,760	21,420	19,480	22,410	22,320	23,700	27,970	22,100	20,960	20,070	266,200
1938	19,630	18,720	20,410	21,260	18,310	20,280	24,950	23,800	21,760	21,740	21,000	20,930	252,800
1939	20,880	20,140	20,350	19,910	18,250	19,700	18,780	18,710	18,130	16,570	17,770	18,320	227,500
1940	17,670	16,440	17,600	17,540	16,570	17,580	17,490	16,410	18,610	17,620	16,960	16,440	206,900
1941	16,830	16,280	20,100	18,280	17,380	20,000	25,030	28,210	23,300	22,020	22,190	20,330	250,000
1942	23,060	20,350	20,570	20,780	18,710	20,610	20,480	19,440	18,900	22,550	19,640	26,510	251,600
1943	27,840	24,120	25,560	25,060	21,660	23,020	21,180	20,470	19,970	20,170	19,570	19,410	268,000
1944	18,860	18,840	19,280	21,550	19,220	22,740	22,800	24,680	22,440	21,830	20,140	19,800	252,200
1945	19,980	18,680	21,080	22,900	23,050	26,430	25,690	25,480	22,370	21,290	20,980	19,910	267,800
1946	22,390	19,710	20,640	20,100	17,820	21,120	19,720	24,310	26,400	23,020	22,090	27,170	264,500
1947	24,300	25,620	24,650	25,980	22,610	25,010	23,420	24,390	20,550	20,230	20,120	19,020	275,900
1948	19,190	18,390	18,990	18,730	17,740	18,260	17,600	17,490	16,510	16,410	15,830	15,360	210,500
1949	15,850	15,530	15,760	15,900	13,830	16,680	18,840	19,240	18,880	19,180	18,820	17,160	205,700
1950	19,250	16,750	17,490	17,460	15,870	17,170	16,350	16,590	16,550	15,700	15,120	14,720	199,000
1951	15,370	14,330	14,470	14,270	12,490	13,700	12,890	13,440	13,130	11,840	11,150	10,790	157,900
1952	11,290	11,410	12,460	11,830	10,460	11,160	11,070	11,250	10,850	10,020	8,300	39,470	159,600
1953	11,880	12,070	14,040	14,190	12,600	13,490	14,540	12,540	10,590	8,820	7,840	11,190	143,800
1954	12,060	12,180	12,630	12,680	11,350	10,580	8,800	9,220	7,200	6,470	5,250	4,670	113,100
1955	6,790	7,390	7,960	8,420	8,000	7,950	6,310	6,030	5,550	4,160	3,390	3,350	75,300
1956	3,700	4,350	5,610	5,650	5,410	4,340	2,690	1,950	682	740	946	891	36,960
1957	768	1,410	2,520	3,170	2,920	4,800	19,590	20,510	17,720	9,740	5,780	10,610	99,540

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	668	-	Feb. 21, 1928	-	-	-	-	-
1929	688	-	May 30, 1929	-	-	-	-	-
1930	703	-	June 16, 1930	-	-	-	-	-
1931	718	-	July 18, 1931	246	-	-	-	-
1932	733	-	July 3, 1932	-	-	-	-	-
1933	748	1,020	May 25, 1933	-	317	229,000	312	229,000
1934	763	1,170	Mar. 1, 1934	286	318	230,000	318	230,200
1935	788	-	June 15, 1935	280	323	234,000	338	244,600
1936	808	-	Sept. 28, 1936	322	365	264,600	365	265,300
1937	828	-	June 4, 1937	333	368	266,200	358	259,200
1938	858	4,190	Apr. 27, 1938	304	349	252,800	353	255,400
1939	878	428	July 15, 1939	245	314	227,500	301	217,800
1940	898	2,190	Apr. 6, 1940	252	285	206,900	287	208,400
1941	928	-	Apr. 27, 1941	259	345	250,000	360	260,700
1942	958	-	Sept. 8, 1942	304	348	251,600	366	265,100
1943	978	-	Oct. 4, 1942	-	370	268,000	342	247,500
1944	1008	-	-	301	347	252,200	351	254,900
1945	1038	4,140	Mar. 30, 1945	309	370	267,800	374	270,800
1946	1058	6,700	June 20, 1946	301	365	264,500	382	276,300
1947	1088	4,540	Nov. 3, 1946	313	381	275,900	356	257,900
1948	1118	-	-	251	290	210,500	277	201,100
1949	1148	2,250	Apr. 28, 1949	238	284	205,700	293	212,000
1950	1178	2,460	Oct. 24, 1949	243	275	199,000	262	189,700
1951	1212	811	June 3, 1951	163	218	157,900	206	148,900
1952	1242	35,000	Sept. 11, 1952	118	220	159,600	224	162,400
1953	1282	3,420	Apr. 28, 1953	120	199	143,800	197	142,700
1954	1342	1,990	Dec. 2, 1953	72	156	113,100	136	98,360
1955	1392	590	June 6, 1955	41	104	75,300	92.3	66,820
1956	1442	1,200	Aug. 31, 1956	5.5	50.6	36,960	38.6	28,000
1957	1512	8,610	May 27, 1957	11	137	99,540	-	-

295. Guadalupe River at New Braunfels, Tex.

Location.--Lat 29°42', long 98°06', at San Antonio-Austin highway bridge, 700 ft downstream from the International-Great Northern Railway bridge, 1 mile northeast of the center of New Braunfels, Comal County, and 1 mile downstream from Comal River.

Drainage area.--1,624 sq mi.

Supplemental records available.--March 1898 to December 1899, gage heights and occasional discharge measurements; 1900-1902, occasional discharge measurements only: published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 572.36 ft above mean sea level. Prior to Sept. 28, 1917, staff gage at same site and datum.

Average discharge.--12 years (1915-27), 751 cfs (543,700 acre-ft per year).

Extremes.--1915-27: Maximum discharge, 56,600 cfs Sept. 10, 1921 (gage height, 28.6 ft); minimum daily, 270 cfs July 20, 1918.

Remarks.--Small diversions above station for irrigation. Some regulation by small powerplants upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	591	705	2,730	1,490	859	673	566	2,140	-
1916	594	514	518	523	474	425	1,550	1,950	627	550	483	410	719
1917	427	402	398	404	388	380	369	478	343	358	326	408	390
1918	297	320	327	331	335	328	542	420	297	277	318	339	344
1919	348	616	782	815	687	747	699	834	1,110	1,530	2,720	4,660	1,300
1920	5,670	2,270	1,430	1,560	1,370	1,120	971	1,300	961	671	831	600	1,570
1921	556	563	554	515	497	693	1,260	591	1,310	527	411	1,790	769
1922	574	512	483	455	442	448	1,120	1,330	665	505	438	403	616
1923	411	464	413	404	442	454	744	640	461	394	343	1,280	536
1924	581	1,040	1,510	1,030	1,030	1,260	1,160	1,780	1,190	857	732	594	1,060
1925	538	508	513	489	465	425	424	446	407	345	347	330	436
1926	646	565	409	438	469	558	1,910	1,240	665	690	537	437	714
1927	417	496	529	482	754	853	747	552	742	472	364	372	563
1928	460	385	391	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	32,800	43,300	162,000	91,600	51,100	41,400	34,800	127,000	-
1916	36,500	30,600	31,900	32,200	27,300	26,100	92,200	120,000	37,300	33,800	29,700	24,400	522,000
1917	26,300	23,900	24,500	24,800	21,500	23,400	22,000	29,400	20,400	22,000	20,000	24,300	282,000
1918	18,300	19,000	20,100	20,400	18,600	20,200	32,300	25,800	17,700	17,000	19,600	20,200	249,000
1919	21,400	36,700	48,100	50,100	38,200	45,900	41,600	51,300	66,000	94,100	167,000	277,000	937,000
1920	349,000	135,000	87,900	95,900	78,800	68,900	57,800	79,900	57,200	41,300	51,100	35,700	1,140,000
1921	34,200	33,500	34,100	31,700	27,600	42,600	75,000	36,300	78,000	32,400	25,300	107,000	558,000
1922	35,300	30,500	29,700	28,000	24,500	27,600	66,800	82,100	39,600	31,000	27,000	24,000	446,000
1923	25,300	27,600	25,400	24,800	24,500	27,900	44,300	39,300	27,400	24,200	21,100	76,000	388,000
1924	35,700	61,900	92,600	63,500	59,400	77,600	68,800	110,000	70,600	52,700	45,000	35,400	773,000
1925	33,100	30,200	31,600	30,100	25,900	26,100	25,200	27,400	24,200	21,200	21,300	19,600	316,000
1926	39,700	33,600	25,200	26,900	26,100	34,300	114,000	76,500	39,600	42,500	33,000	26,000	517,000
1927	25,600	29,500	32,500	29,600	41,900	52,500	44,400	33,900	44,100	29,000	22,400	22,100	408,000
1928	28,300	22,900	24,100	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408	51,300	Sept. 17, 1915	-	-	-	-	-
1916	438	28,500	May 22, 1916	370	719	522,000	686	498,000
1917	458	2,370	Sept. 7, 1917	305	390	282,000	366	265,000
1918	478	7,600	Apr. 7, 1918	270	344	249,000	411	298,000
1919	508	46,300	Aug. 23, 1919	274	1,300	937,000	1,940	1,400,000
1920	508	-	-	538	1,570	1,140,000	919	668,000
1921	528	56,600	Sept. 10, 1921	-	769	558,000	760	551,000
1922	548	6,190	Apr. 27, 1922	352	616	446,000	592	429,000
1923	568	17,500	Sept. 20, 1923	-	536	388,000	690	500,000
1924	588	7,280	May 27, 1924	516	1,060	773,000	933	678,000
1925	608	1,340	May 30, 1925	300	436	316,000	441	320,000
1926	628	35,300	Apr. 21, 1926	331	714	517,000	699	506,000
1927	648	3,610	June 6, 1927	-	563	408,000	546	395,000
1928	648	-	-	-	-	-	-	-

296. San Marcos River spring flow at San Marcos, Tex.

Location.--Lat 29°52', long 97°55', on left bank 500 ft downstream from the Cape Ginning Co.'s mill, about half a mile downstream from bridge on U. S. Highway 81, 1 mile southeast of San Marcos, Hays County, and 1.2 miles upstream from Blanco River.

Drainage area.--83.7 sq mi. Normal flow of river comes from springs, drainage area of stream not applicable.

Supplemental records available.--1894-1906, periodic measurements of springflow; June 1915 to September 1921, May to September 1956, daily discharge: published as San Marcos River at San Marcos.

Gage.--Water-stage recorder. Datum of Gage is 536.82 ft above mean sea level, datum of 1929.

Extremes.--1956-57: Maximum daily spring discharge, 240 cfs Apr. 28 to May 2, 1957; maximum gage height (backwater from Blanco River), 25.62 ft Apr. 25, 1957; minimum daily spring discharge, 46 cfs Aug. 15, 16, 1956.
Maximum stage since at least 1913, 38.6 ft (from floodmarks) Sept. 10, 1921 (backwater from Blanco River).

Remarks.--Flow slightly regulated by mill pond just above gage, and by utilities dam about 1-1/2 miles upstream. Entire flow of river from San Marcos Springs, about 1-3/4 miles upstream, except during periods of local runoff. Springs emerge from the Edwards limestone in the Balcones fault zone. Small diversion for operation of State fish hatchery, of which some is returned above gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	63.6	54.5	53.5	59.1	-
1957	64.6	70.3	72.0	74.3	72.4	93.1	133	200	193	154	136	134	117

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	3,790	3,350	3,290	3,520	-
1957	3,970	4,180	4,430	4,570	4,020	5,730	7,920	12,320	11,480	9,490	8,340	7,980	84,430

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1512	-	-	-	-	-	-	-
1957	1512	240	Apr. 28 to May 2, 1957	59	117	84,430	-	-

297. San Marcos River at San Marcos, Tex.

Location.--Lat 29°52', long 97°55', on left bank 500 ft downstream from Cape Ginning Co.'s mill, about half a mile downstream from bridge on U. S. Highway 81, 1 mile southeast of San Marcos, Hays County, and 1.2 miles upstream from Blanco River.

Drainage area.--83.7 sq mi. Normal Flow of river comes from springs, drainage area of stream not applicable.

Supplemental records available.--1894-1906, periodic measurements of springflow; June 1956 to September 1957, daily springflow: published as San Marcos River spring flow at San Marcos.

Gage.--Water-stage recorder. Datum of gage is 536.82 ft above mean sea level, datum of 1929. June 10, 1915, to Jan. 19, 1916, staff gage at site 1.2 mi upstream at unknown datum. Mar. 13, 1916, to Sept. 7, 1921, water-stage recorder near present site at datum about 537 ft above mean sea level, datum of 1929.

Extremes.--1915-21, 1956: Maximum gage height, 30 ft May 15, 1920 (discharge not determined, probably backwater from Blanco River); minimum daily discharge, 46 cfs Aug. 15, 16, 1957.
Maximum stage since at least 1913, 38.6 ft (from floodmark, present datum) Sept. 10, 1921 (backwater from Blanco River).

Remarks.--Flow slightly regulated by mill pond just above gage, and by utilities dam about 1-1/2 miles upstream. Entire flow of river from San Marcos Springs, about 1-3/4 miles upstream, except during periods of local runoff. Springs emerge from the Edwards limestone in the Balcones fault zone. Small diversions above station for irrigation, municipal use, and operation of State fish hatchery, of which some water is returned above gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	308	300	248	-
1916	164	174	175	-	-	-	139	130	131	127	118	121	-
1917	123	121	115	115	112	108	110	119	106	87.3	88.4	85.3	108
1918	88.1	93.7	93.1	88.7	91.5	97.0	146	120	93.3	80.6	83.7	84.4	96.6
1919	77.3	88.9	127	135	122	122	150	164	177	-	-	-	-
1920	-	-	-	-	-	-	200	-	-	186	-	189	-
1921	167	151	145	147	137	-	-	200	172	148	138	-	-
1956	-	-	-	-	-	-	-	-	63.6	54.5	54.8	59.8	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	18,900	18,400	14,800	-
1916	10,100	10,400	10,800	-	-	-	8,270	7,990	7,800	7,810	7,260	7,200	-
1917	7,560	7,200	7,070	7,070	6,220	6,640	6,550	7,320	6,310	5,370	5,440	5,080	77,800
1918	5,420	5,580	5,720	5,450	5,080	5,960	8,690	7,380	5,550	4,960	5,150	5,020	70,000
1919	4,750	5,290	7,810	8,300	6,780	7,500	8,930	10,100	10,500	-	-	-	-
1920	-	-	-	-	-	-	11,900	-	-	11,400	-	11,200	-
1921	10,300	8,980	8,920	9,040	7,610	-	-	12,300	10,200	9,100	8,480	-	-
1956	-	-	-	-	-	-	-	-	3,790	3,350	3,370	3,560	-

Yearly discharge, in cubic feet per second, of San Marcos River at San Marcos, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408	-	-	-	-	-	-	-
1916	438	-	-	-	-	-	-	-
1917	458	-	May 6, 1917	75	108	77,800	100	72,700
1918	478	-	Apr. 5, 1918	71	96.6	70,000	98.2	71,100
1919	508	-	July 21, 1919	71	-	-	-	-
1920	508	-	May 15, 1920	-	-	-	-	-
1921	528	-	Sept. 10, 1921	-	-	-	-	-
1956	1442	-	-	-	-	-	-	-

298. Blanco River at Wimberley, Tex.

Location.--Lat 29°59', long 98°04', on left bank 800 ft downstream from Cypress Creek, 1,200 ft upstream from bridge on State Highway 12, and a quarter of a mile south of Wimberley, Hays County.

Drainage area.--364 sq mi.

Gage.--Water-stage recorder. Datum of gage is 802.23 ft above mean sea level, datum of 1929. Aug. 6, 1924, to Sept. 30, 1926, staff gage at site 30 ft upstream at same datum.

Average discharge.--31 years (1924-26, 1928-57) 98.6 cfs (71,380 acre-ft per year).

Extremes.--1924-26, 1928-57: Maximum discharge, 113,000 cfs May 28, 1929 (gage height, 31.10 ft, from floodmarks), from rating curve extended above 30,000 cfs on basis of slope-area measurements at 30.1 and 31.10 ft; minimum, 0.6 cfs Aug. 16, 1956.
Maximum stage known since at least 1869, that of May 28, 1929, from information by local residents.

Remarks.--Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	-	62.5	-
1925	25.4	23.1	23.6	22.4	20.3	18.0	16.8	14.1	9.20	8.62	9.65	9.27	16.7
1926	(a)	(a)	(a)	(a)	(a)	87.2	776	289	111	(a)	(a)	(a)	152
1928	-	-	-	-	-	-	-	-	-	11.9	14.9	6.93	-
1929	8.10	11.4	17.5	21.8	11.9	13.7	97.2	1,470	311	295	55.0	31.9	198
1930	18.7	27.1	23.4	20.0	19.2	18.4	16.1	278	108	44.6	18.4	14.6	50.9
1931	79.6	38.1	69.1	158	404	360	344	311	104	201	50.5	32.4	178
1932	24.5	23.5	29.0	65.5	69.7	161	67.0	51.0	32.8	31.7	33.0	31.6	51.7
1933	20.0	19.8	17.4	28.5	28.9	35.1	33.2	31.1	18.8	19.4	27.0	19.7	24.9
1934	14.5	11.7	12.0	52.1	62.2	133	270	68.0	28.8	22.2	16.5	8.54	57.9
1935	11.3	35.4	18.2	15.4	38.6	16.0	13.5	423	736	105	40.8	126	131
1936	59.3	41.9	54.2	47.1	34.4	39.3	30.1	207	319	588	95.9	457	165
1937	141	112	101	150	143	237	133	60.5	85.1	54.8	24.8	28.4	106
1938	93.9	22.6	104	342	247	139	487	371	138	71.1	33.9	23.7	172
1939	19.9	15.7	21.5	25.0	19.9	17.7	39.0	14.3	11.4	30.9	11.3	8.84	19.6
1940	13.9	13.0	12.7	9.81	14.3	24.3	59.0	16.3	70.7	46.6	18.5	16.9	26.2
1941	6.24	130	414	128	519	562	567	744	604	177	58.1	40.0	327
1942	101	43.5	34.3	29.6	31.5	29.7	212	77.5	44.9	28.7	62.0	381	89.2
1943	257	162	107	84.8	64.4	71.7	95.2	58.3	46.6	63.3	24.1	48.6	90.5
1944	25.1	20.6	19.2	85.6	242	351	197	313	225	80.5	141	178	156
1945	46.6	51.1	252	335	403	494	280	125	95.7	61.5	33.7	34.0	183
1946	51.7	34.0	99.1	101	196	268	142	121	85.2	46.4	34.5	57.7	103
1947	77.1	509	329	396	243	153	115	82.9	55.1	33.4	28.2	22.1	170
1948	21.3	20.6	20.7	19.2	20.1	15.8	16.5	64.1	23.0	19.8	11.4	10.3	22.0
1949	31.6	13.2	12.9	15.1	45.6	47.8	294	180	55.9	31.6	22.0	14.5	63.5
1950	16.1	14.6	15.9	14.8	30.0	17.6	45.4	62.6	43.1	23.7	15.3	14.2	26.0
1951	11.8	11.5	10.8	10.1	11.0	13.5	13.9	18.7	53.7	8.12	5.84	13.2	15.1
1952	7.10	8.83	8.68	7.74	8.57	8.98	40.6	101	79.9	23.8	10.8	1,413	141
1953	62.4	46.6	78.3	124	71.3	59.5	87.6	52.7	25.9	18.7	58.6	214	74.8
1954	60.9	64.6	72.3	46.1	38.0	28.6	22.5	17.1	11.4	8.64	7.68	7.39	32.1
1955	10.9	7.84	9.68	11.4	14.9	9.28	8.38	92.3	17.4	9.82	9.92	7.53	17.5
1956	6.48	7.41	7.87	6.66	8.13	5.93	5.19	12.5	3.44	1.70	2.89	9.23	6.45
1957	35.4	29.5	26.5	9.16	25.3	187	953	335	368	58.7	27.9	238	190

a Mean for period October 1925 to February 1926 is 78.0 cfs and for July to September 1926 is 60.0 cfs; figures not available for individual months.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	-	3,720	-
1925	1,560	1,380	1,450	1,380	1,130	1,100	998	869	547	530	593	551	12,100
1926	(a)	(a)	(a)	(a)	(a)	5,360	46,200	17,800	6,600	(a)	(a)	(a)	110,000
1928	-	-	-	-	-	-	-	-	-	732	916	412	-
1929	498	678	1,070	1,340	661	842	5,780	90,400	18,500	18,100	3,380	1,900	143,000
1930	1,150	1,610	1,440	1,230	1,070	1,130	958	17,100	6,430	2,740	1,130	869	36,900
1931	4,890	2,270	4,250	9,720	22,400	22,100	20,500	19,100	6,190	12,400	3,110	1,930	129,000

a Total runoff for period October 1925 to February 1926 is 23,400 acre-ft and for July to September 1926 is 10,900 acre-ft; figures not available for individual months.

Monthly and yearly runoff, in acre-feet, of Blanco River at Wimberley, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	1,510	1,400	1,780	4,030	4,010	9,900	3,990	3,140	1,950	1,950	2,030	1,880	37,600
1933	1,230	1,180	1,070	1,750	1,600	2,160	1,980	1,910	1,120	1,190	1,660	1,170	18,000
1934	892	696	738	3,200	3,450	8,180	16,100	4,180	1,710	1,360	1,010	508	42,000
1935	696	2,110	1,120	946	2,140	986	801	26,040	43,770	6,480	2,510	7,480	95,080
1936	3,650	2,490	3,330	2,900	1,980	2,410	1,790	12,720	18,990	36,160	5,900	27,200	119,500
1937	8,670	6,690	6,190	9,250	7,970	14,600	7,900	3,720	5,060	3,370	1,530	1,690	76,640
1938	5,780	1,340	6,370	21,040	13,740	8,530	29,000	22,840	8,190	4,370	2,090	1,410	124,700
1939	1,220	934	1,320	1,540	1,110	1,090	2,320	877	677	1,900	697	526	14,210
1940	856	774	782	603	824	1,490	3,510	1,000	4,210	2,860	1,140	1,000	19,050
1941	383	7,730	25,480	7,860	28,810	34,530	33,730	45,740	35,920	10,910	3,570	2,380	237,000
1942	6,220	2,590	2,110	1,820	1,750	1,830	12,600	4,770	2,670	1,770	3,810	22,650	64,590
1943	15,770	9,640	6,590	5,220	3,580	4,410	5,660	3,590	2,770	3,890	1,480	2,890	65,490
1944	1,550	1,230	1,180	5,270	13,910	21,590	11,740	19,280	13,390	4,950	8,680	10,570	113,300
1945	2,860	3,040	15,520	20,590	22,400	30,380	16,680	7,700	5,690	3,780	2,070	2,020	132,700
1946	3,180	2,020	6,100	6,240	10,890	16,470	8,450	7,450	5,070	2,850	2,120	3,430	74,270
1947	4,740	30,290	20,230	24,350	13,480	9,420	6,830	5,100	3,280	2,050	1,730	1,310	122,800
1948	1,310	1,230	1,270	1,180	1,150	972	980	3,940	1,370	1,220	699	612	15,930
1949	1,940	787	793	930	2,530	2,940	17,480	11,060	3,320	1,940	1,350	861	45,930
1950	990	869	978	908	1,660	1,080	2,700	3,850	2,560	1,460	938	844	18,840
1951	724	684	661	624	614	828	828	1,150	3,200	499	359	784	10,960
1952	437	525	534	476	493	552	2,420	6,180	4,750	1,460	666	84,090	102,600
1953	3,830	2,770	4,810	7,610	3,960	3,660	5,210	3,240	1,540	1,150	3,600	12,740	54,120
1954	3,740	3,840	4,450	2,830	2,110	1,760	1,340	1,050	679	531	472	440	23,240
1955	669	466	595	703	825	571	499	5,670	1,030	604	610	448	12,690
1956	399	441	484	409	468	364	309	770	205	105	178	549	4,680
1957	2,180	1,750	1,630	564	1,410	11,520	56,700	20,570	21,920	3,610	1,720	14,170	137,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	-	-	-	-	-
1925	608	48	Apr. 28, 1925	5.8	16.7	12,100	30.3	21,900
1926	628,1562	37,700	Apr. 21, 1926	-	152	110,000	-	-
1928	668	-	-	-	-	-	-	-
1929	688,1562	113,000	May 28, 1929	7.4	198	143,000	200	145,000
1930	703	10,400	May 6, 1930	9.8	50.9	36,900	60.9	44,100
1931	718	13,100	July 18, 1931	11	178	129,000	169	122,000
1932	733	1,690	Mar. 5, 1932	17	51.7	37,600	50.0	36,400
1933	748	573	Aug. 29, 1933	9.2	24.9	18,000	23.3	16,900
1934	763	8,720	Apr. 19, 1934	3.5	57.9	42,000	60.2	43,550
1935	788	14,700	June 15, 1935	5.8	131	95,080	139	100,600
1936	808	29,600	July 1, 1936	22	165	119,500	181	131,600
1937	828	1,910	July 11, 1937	19	106	76,640	94.7	68,580
1938	858	12,900	Apr. 27, 1938	14	172	124,700	158	114,700
1939	878	-	-	5.2	19.6	14,210	18.2	13,150
1940	898	2,370	Apr. 6, 1940	5.2	26.2	19,050	69.2	50,230
1941	928	27,800	June 7, 1941	3.5	327	237,000	296	214,400
1942	958	13,100	Sept. 8, 1942	16	89.2	64,590	118	85,670
1943	978	2,980	July 12, 1943	19	90.5	65,490	51.7	37,450
1944	1008	10,900	May 26, 1944	16	156	113,300	180	130,800
1945	1038	5,340	Dec. 4, 1944	27	183	132,700	169	122,600
1946	1058	8,280	Mar. 12, 1946	29	103	74,270	163	118,200
1947	1088	15,600	Nov. 3, 1946	19	170	122,800	98.6	71,360
1948	1118	2,850	May 11, 1948	7.2	22.0	15,930	21.6	15,640
1949	1148	21,700	Apr. 25, 1949	8.4	63.5	45,930	62.5	45,250
1950	1178	561	Feb. 12, 1950	4.8	26.0	18,840	25.0	18,070
1951	1212	1,890	June 13, 1951	5.1	15.1	10,960	14.3	10,380
1952	1242	95,000	Sept. 11, 1952	6.1	141	102,600	155	112,500
1953	1282	6,320	Aug. 31, 1953	14	74.8	54,120	75.6	54,740
1954	1342	1,400	Oct. 25, 1953	5.1	32.1	23,240	17.9	12,940
1955	1392	4,800	May 17, 1955	6.7	17.5	12,690	17.0	12,280
1956	1442	1,360	May 2, 1956	.7	6.45	4,680	12.3	8,920
1957	1512	62,600	Apr. 24, 1957	3.9	190	137,700	-	-

299. Blanco River near Kyle, Tex.

Location.--Lat 29°58'42", long 97°54'30", on left bank 800 ft downstream from Tarbutton Ranch House (Hatchett Ranch), 2.3 miles west of Kyle, Hays County, 3.6 miles upstream from Kushla, 3.9 miles downstream from Halifax Creek, and 5 miles upstream from bridge on U. S. Highway 81.

Drainage area.--424 sq mi.

Gage.--Water-stage recorder. Datum of gage is 620.12 ft above mean sea level, Corps of Engineers' bench mark.

Extremes.--1956-57: Maximum discharge, 55,000 cfs Apr. 24, 1957 (gage height, 34.0 ft, from floodmark), from rating curve extended above 1,100 cfs on basis of slope-area measurements at gage heights 21.80 and 34.0 ft; no flow at times.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second, of Blanco River near Kyle, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	0	0	0	0	-
1957	13.9	9.22	9.13	0	8.92	150	728	326	384	45.6	13.1	227	159

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	0	0	0	0	-
1957	854	549	562	0	496	9,190	43,340	20,030	22,870	2,800	808	13,530	115,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1512	-	-	0	-	-	-	-
1957	1512	55,000	Apr. 24, 1957	0	159	115,000	-	-

300. San Marcos River at Luling, Tex.

Location.--Lat 29°39'55", long 97°39'05", on left bank 390 ft downstream from bridge on State Highway 80, 1 mile south of Luling, Caldwell County, and 8 miles upstream from Plum Creek.

Drainage area.--833 sq mi.

Gage.--Water-stage recorder. Datum of gage is 322.05 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 296 cfs (214,300 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 57,000 cfs Sept. 12, 1952 (gage height, 34.95 ft); minimum daily, 43 cfs Aug. 12, 1951. Maximum stage since at least 1859, 40.4 ft in 1869 or 1870, from information by State Highway Department. Flood of May 29, 1929, reached a stage of 37.1 ft and is the second highest known.

Remarks.--Regulation by powerplant 800 ft upstream. Base flow is mostly from large springs near San Marcos. Diversions above station for irrigation, municipal use, and operation of State fish hatchery.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	169	120	160	102	97.7	-
1940	97.0	96.3	94.3	94.2	105	119	191	129	624	191	96.8	100	161
1941	124	494	1,052	384	772	850	1,550	1,445	1,081	536	276	215	730
1942	319	194	186	173	153	151	376	213	167	977	175	1,358	370
1943	893	447	344	292	254	252	248	231	210	210	139	201	311
1944	141	153	148	310	446	848	441	887	622	303	285	272	405
1945	201	304	627	783	897	1,122	867	359	301	237	189	169	502
1946	197	172	207	318	438	669	372	336	355	187	305	535	340
1947	316	936	708	889	549	453	450	368	232	192	436	162	474
1948	147	136	139	133	141	134	117	196	110	110	91.9	92.2	129
1949	151	97.7	95.5	109	352	157	1,178	375	191	140	119	117	255
1950	747	124	125	122	192	134	296	188	485	119	99.3	105	228
1951	89.9	92.1	85.7	85.5	92.1	92.8	87.4	110	443	91.7	78.3	105	121
1952	79.7	83.6	84.7	84.5	81.0	86.3	106	284	221	115	88.6	1,577	239
1953	173	275	303	307	212	171	640	207	151	105	102	365	250
1954	270	218	347	185	161	153	130	202	91.4	79.2	74.5	72.0	166
1955	70.5	76.8	82.1	78.9	155	95.7	92.7	266	171	81.0	78.8	70.4	110
1956	59.7	63.1	86.5	79.8	81.6	73.8	78.5	116	58.5	58.9	64.2	83.4	75.3
1957	72.5	70.4	93.9	77.5	121	288	1,849	1,002	892	211	163	664	457

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	10,420	7,160	9,860	6,280	5,820	-
1940	5,960	5,730	5,800	5,790	6,070	7,300	11,390	7,920	37,140	11,720	5,950	5,980	116,800
1941	7,610	29,420	64,710	23,640	42,850	52,270	92,240	88,850	64,320	32,970	16,950	12,810	528,600
1942	19,630	11,550	11,410	10,660	8,510	9,310	22,370	13,070	9,960	60,050	10,730	80,810	268,100
1943	54,920	26,600	21,160	17,960	14,100	15,510	14,780	14,200	12,510	12,930	8,530	11,960	225,200
1944	8,680	9,090	9,090	19,030	25,650	52,140	26,240	54,540	37,010	18,620	17,500	16,190	293,800
1945	12,380	18,080	38,560	48,150	49,810	68,990	51,590	22,050	17,890	14,560	11,590	10,040	363,700
1946	12,130	10,210	12,710	19,550	24,300	41,120	22,140	20,640	21,130	11,500	18,740	31,810	246,000
1947	19,440	55,710	43,540	54,680	30,480	27,850	26,780	22,600	13,810	11,800	26,810	9,650	343,200
1948	9,040	8,060	8,520	8,190	8,130	8,260	6,950	12,040	6,520	6,760	5,650	5,490	93,610
1949	9,310	5,810	5,870	6,720	19,540	9,630	70,110	23,070	11,370	8,620	7,300	6,940	184,300
1950	45,950	7,360	7,680	7,530	10,640	8,270	17,630	11,580	28,880	7,290	6,110	6,220	165,100
1951	5,530	5,480	5,270	5,260	5,110	5,700	5,200	6,790	26,380	5,640	4,820	6,260	87,440
1952	4,900	4,980	5,210	5,190	4,660	5,310	6,300	17,460	13,130	7,080	5,450	93,820	173,500
1953	10,630	16,340	18,650	18,860	11,750	10,490	38,110	12,760	8,980	6,480	6,280	21,690	181,000
1954	16,600	12,970	21,320	11,360	8,960	9,400	7,740	12,410	5,440	4,870	4,580	4,280	119,900
1955	4,340	4,570	5,050	4,850	8,640	5,880	5,520	16,360	10,170	4,980	4,850	4,190	79,400
1956	3,670	3,750	5,320	4,910	4,690	4,540	4,670	7,110	3,480	3,620	3,950	4,960	54,670
1957	4,460	4,190	5,780	4,760	6,710	17,680	110,000	61,600	53,080	13,000	10,020	39,500	330,800

Yearly discharge, in cubic feet per second, of San Marcos River at Luling, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a2,140	July 12, 1939	-	-	-	-	-
1940	898,958	28,800	June 30, 1940	55	161	116,800	277	201,000
1941	928	15,300	Nov. 22, 1940	63	730	528,600	649	469,500
1942	958	29,500	July 5, 1942	114	370	268,100	453	328,200
1943	978	5,190	Oct. 18, 1942	114	311	225,200	206	149,300
1944	1008	6,720	May 28, 1944	125	405	293,800	463	335,900
1945	1038	9,480	Mar. 30, 1945	158	502	363,700	455	329,700
1946	1058	6,160	Mar. 13, 1946	149	340	246,000	455	329,600
1947	1088	10,600	Nov. 4, 1946	141	474	343,200	345	250,100
1948	1118	1,170	May 12, 1948	66	129	93,610	123	88,980
1949	1148	12,500	Apr. 25, 1949	78	255	184,300	310	224,300
1950	1178	17,200	Oct. 22, 1949	72	228	165,100	166	120,400
1951	1212	10,200	June 4, 1951	43	121	87,440	119	86,250
1952	1242	57,000	Sept. 12, 1952	58	239	173,500	281	204,000
1953	1282	27,000	Apr. 29, 1953	85	250	181,000	257	186,300
1954	1342	5,350	May 12, 1954	57	166	119,900	115	83,000
1955	1392	4,020	May 19, 1955	55	110	79,400	108	78,180
1956	1442	2,670	May 15, 1956	46	75.3	54,670	77.6	56,360
1957	1512	29,400	Apr. 25, 1957	46	457	330,800	-	-

a Maximum during period April to September.

301. Plum Creek near Lockhart, Tex.

Location.--Lat 29°49', long 97°35', at bridge on county road, 700 ft downstream from Dry Creek and 7 miles southeast of Lockhart, Caldwell County.

Drainage area.--184 sq mi.

Gage.--Wire-weight gage. Datum of gage is 371.39 ft above mean sea level. Prior to Nov. 11, 1927, staff gage at same site ard datum.

Extremes.--1925-30: Maximum discharge, 26,000 cfs Apr. 21, 1926 (gage height, 22.6 ft) from rating curve extended above 1,600 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage since at least 1900, 26.8 ft Dec. 3, 1913.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	2.80	2.80	19.6	9.15	1.10	0.01	0	15.3	-
1926	222	81.7	3.48	37.4	4.82	199	680	77.5	26.9	4.83	1.61	.81	112
1927	9.27	13.5	7.97	8.62	123	21.1	14.3	7.90	108	5.37	.53	.51	25.8
1928	22.4	2.35	8.44	2.25	131	59.9	5.59	11.7	57.6	20.7	.82	1.67	26.6
1929	.49	2.76	3.43	3.44	1.29	38.3	221	1,030	24.8	33.6	.29	.15	115
1930	.60	1.47	2.14	2.77	24.6	15.7	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	156	172	1,170	562	65.5	0.6	0	912	-
1926	13,700	4,860	214	2,300	268	12,300	40,500	4,770	1,600	297	99	48	81,000
1927	570	805	490	530	6,820	1,300	853	486	6,400	330	33	30	18,600
1928	1,380	140	519	138	7,540	3,680	333	719	3,430	1,270	50	99	19,300
1929	30	164	211	212	72	2,360	13,200	63,300	1,480	2,070	18	8.9	83,100
1930	37	87	132	170	1,370	965	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	a1,260	Apr. 29, 1925	-	-	-	-	-
1926	628	26,000	Apr. 21, 1926	0.6	112	81,000	88.4	64,000
1927	648	4,020	Feb. 9, 1927	.4	25.8	18,600	26.0	18,800
1928	668	11,200	Feb. 22, 1928	.3	26.6	19,300	24.3	17,700
1929	688	25,200	May 28, 1929	0	115	83,100	115	83,000
1930	703	b722	Feb. 4, 1930	-	-	-	-	-

a Maximum during period January to September.
b Maximum during period October to March.

302. Plum Creek near Luling, Tex.

Location.--Lat 29°42', long 97°37', at bridge on county road, 1 mile downstream from West Fork Plum Creek, 2 miles upstream from Texas & New Orleans Railroad bridge, and 3 miles northeast of Luling, Caldwell County.

Drainage area.--356 sq mi.

Gage.--Water-stage recorder. Datum of gage is 326.57 ft above mean sea level, datum of 1929.

Average discharge.--27 years (1930-57), 86.4 cfs (62,550 acre-ft per year).

Extremes.--1930-57: Maximum discharge, 78,500 cfs July 1, 1936 (gage height, 25.7 ft, from floodmarks), from rating curve extended above 54,000 cfs; no flow at times.
Maximum stage known, that of July 1, 1936; flood of December 1913 reached about same stage, from information by local residents.

302. Plum Creek near Luling, Tex.--Continued

Remarks.--Slight regulation at low flow by oilfield operation above station. No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	13.8	193	142	8.82	4.96	9.23	-
1931	15.7	9.68	37.6	398	310	201	63.8	106	6.84	24.4	9.43	2.61	97.9
1932	2.71	3.44	6.98	380	236	180	137	18.8	6.98	13.0	26.5	33.9	86.8
1933	4.23	7.28	11.4	19.8	17.1	25.9	38.7	10.4	2.73	123	49.5	32.8	28.8
1934	2.73	3.00	3.52	59.9	115	140	155	5.89	1.97	31.9	2.66	8.82	43.6
1935	2.51	30.7	129	39.4	225	10.8	12.0	575	557	11.7	4.72	258	153
1936	12.4	9.53	150	18.6	17.4	33.3	10.2	409	15.7	1,962	15.6	52.7	229
1937	88.4	18.9	51.8	36.7	23.9	218	31.2	10.7	293	6.95	6.35	4.70	65.9
1938	5.25	6.85	38.6	313	51.1	46.3	680	126	43.3	7.15	4.01	4.75	110
1939	3.14	5.43	6.64	7.19	7.13	8.68	13.7	28.5	6.29	18.8	3.15	2.84	9.33
1940	1.62	3.04	4.12	4.44	7.12	7.80	31.3	8.23	199	155	2.79	2.44	35.5
1941	17.0	332	532	121	144	186	790	407	372	138	21.9	8.08	255
1942	24.8	8.88	10.1	9.02	11.2	8.87	57.6	7.27	4.13	724	6.08	393	106
1943	222	61.6	67.3	43.9	13.5	23.3	14.4	34.6	10.1	36.8	2.15	8.43	45.3
1944	3.79	7.85	6.01	120	156	254	18.2	310	176	17.3	40.2	74.4	98.7
1945	4.91	173	313	312	201	181	374	46.4	110	10.5	7.89	6.83	144
1946	15.2	10.2	12.6	103	105	578	103	208	163	12.1	238	214	148
1947	52.5	483	159	354	42.1	106	148	58.8	11.7	8.20	538	10.4	165
1948	7.03	6.93	8.80	10.9	12.8	9.46	8.04	76.4	13.8	5.77	3.03	1.54	13.8
1949	6.46	2.69	3.19	13.3	207	10.5	633	32.0	9.97	9.38	2.83	1.24	75.6
1950	349	6.34	7.38	6.52	30.3	6.52	152	42.3	546	35.1	1.47	2.61	98.5
1951	1.16	2.03	2.65	3.69	3.61	8.38	4.37	22.0	424	1.13	.28	19.6	40.6
1952	.89	1.67	3.40	4.72	3.63	3.72	18.7	30.1	103	4.91	.05	69.0	20.1
1953	.53	214	75.8	13.0	10.9	6.79	662	29.4	7.79	2.83	.68	26.7	86.6
1954	123	19.7	79.3	10.7	4.57	2.93	3.13	26.5	1.25	5.04	1.29	1.26	23.6
1955	.53	.20	.60	1.02	48.1	1.82	23.5	67.6	35.2	.13	4.43	.66	15.0
1956	.13	.64	2.75	1.84	4.41	1.04	41.6	34.8	.29	0	0	0	7.27
1957	0	0	5.91	.80	13.5	86.2	864	54.1	56.2	.84	.12	485	129

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	821	11,900	8,450	542	305	549	-
1931	965	576	2,310	24,500	17,200	12,400	3,800	6,520	407	1,500	580	155	70,900
1932	167	205	429	23,400	13,600	11,100	8,150	1,160	415	799	1,630	2,020	63,100
1933	260	433	701	1,220	950	1,590	2,300	640	162	7,560	3,040	1,950	20,800
1934	168	179	216	3,680	6,390	8,610	9,220	362	117	1,960	164	525	31,600
1935	154	1,830	7,920	2,430	12,520	665	713	35,350	33,140	719	290	15,380	111,100
1936	765	567	9,220	1,140	1,000	2,050	605	25,120	932	120,600	958	3,140	166,100
1937	5,430	1,120	3,190	2,260	1,330	13,390	1,860	656	17,410	428	391	279	47,740
1938	323	408	2,370	19,230	2,840	2,850	40,460	7,740	2,580	440	247	283	79,770
1939	193	323	408	442	396	534	813	1,750	374	1,150	194	169	6,750
1940	99	181	253	273	410	480	1,860	506	11,850	9,520	172	145	25,750
1941	1,040	19,780	32,730	7,450	8,000	11,410	47,020	25,040	22,140	8,470	1,350	481	184,900
1942	1,520	528	619	554	624	545	3,430	447	246	44,510	374	23,400	76,800
1943	13,670	3,660	4,140	2,700	748	1,430	859	2,130	600	2,260	132	502	32,830
1944	233	467	370	7,360	9,000	15,630	1,080	19,070	10,450	1,070	2,470	4,430	71,630
1945	302	10,280	19,270	19,210	11,150	11,140	22,240	2,850	6,560	646	485	407	104,500
1946	933	609	777	6,350	5,830	35,560	6,120	12,800	9,720	746	14,610	12,750	106,800
1947	3,230	28,760	9,800	21,780	2,340	6,520	8,790	3,610	697	504	33,110	619	119,800
1948	432	412	541	671	734	582	478	4,700	821	355	186	91	10,000
1949	397	160	196	818	11,470	646	37,680	1,970	593	577	174	74	54,760
1950	21,470	377	454	401	1,680	401	9,040	2,600	32,490	2,160	91	155	71,320
1951	71	121	163	227	200	516	260	1,350	25,220	69	17	1,170	29,380
1952	55	100	209	290	209	228	1,110	1,850	6,140	302	3.0	4,100	14,600
1953	33	12,730	4,660	799	604	418	39,360	1,810	464	174	42	1,590	62,680
1954	7,560	1,170	4,870	656	254	180	186	1,630	75	310	79	75	17,040
1955	33	12	37	63	2,670	112	1,400	4,160	2,090	7.7	272	39	10,900
1956	8.1	38	169	113	254	64	2,470	2,140	17	0	0	0	5,270
1957	0	0	363	49	749	5,300	51,400	3,330	3,340	52	7.1	28,890	93,480

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	a4,270	June 16, 1930	-	-	-	-	-
1931	718	3,580	Jan. 11, 1931	2.1	97.9	70,900	93.6	67,900
1932	733	3,980	Jan. 5, 1932	1.8	86.8	63,100	87.6	63,700
1933	748	3,370	July 31, 1933	1.9	28.8	20,800	27.6	20,000
1934	763	2,880	Mar. 2, 1934	1.2	43.6	31,600	56.5	40,910
1935	788	4,060	May 5, 1935	1.8	153	111,100	154	111,800
1936	808	78,500	July 1, 1936	6.3	229	166,100	228	165,300
1937	828	4,820	June 4, 1937	3.1	65.9	47,740	56.8	41,100
1938	858	12,000	Apr. 18, 1938	2.8	110	79,770	107	77,590

a Not previously published as peak for year.

Yearly discharge, in cubic feet per second, of Plum Creek near Luling, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	707	July 12, 1939	1.5	9.33	6,750	8.79	6,360
1940	898	11,000	June 30, 1940	1.0	35.5	25,750	109	78,770
1941	928	10,800	Apr. 24, 1941	1.8	255	184,900	185	134,000
1942	958	37,000	July 5, 1942	3.0	106	76,800	132	95,600
1943	978	2,310	Oct. 19, 1942	1.6	45.3	32,830	17.2	12,430
1944	1008	3,700	May 27, 1944	2.3	98.7	71,630	138	100,400
1945	1038	6,350	Jan. 19, 1945	3.4	144	104,500	106	77,010
1946	1058	19,600	Mar. 13, 1946	4.6	148	106,800	202	146,300
1947	1088	20,000	Aug. 26, 1947	5.2	165	119,800	110	79,360
1948	1118	1,380	May 27, 1948	.6	13.8	10,000	12.9	9,370
1949	1148	7,500	Apr. 26, 1949	.4	75.6	54,760	105	76,300
1950	1178	19,000	June 3, 1950	.3	98.5	71,320	68.2	49,370
1951	1212	15,500	June 4, 1951	0	40.6	29,380	40.6	29,390
1952	1242	2,950	June 6, 1952	0	20.1	14,600	43.6	31,660
1953	1282	32,500	Apr. 29, 1953	.1	86.6	62,680	81.3	58,860
1954	1342	2,850	Dec. 3, 1953	0	23.6	17,040	4.87	3,530
1955	1392	1,360	May 19, 1955	0	15.0	10,900	15.2	11,030
1956	1442	2,620	Apr. 24, 1956	0	7.27	5,270	7.54	5,420
1957	1512	15,000	Apr. 27, 1957	0	129	93,480	-	-

303. San Marcos River at Ottine, Tex.

Location.--Lat29°36', long 97°35', at highway bridge a quarter of a mile southwest of Ottine, Gonzales County, and 4 miles downstream from Plum Creek.

Drainage area.--1,249 sq mi.

Gage.--Water-stage recorder. Datum of gage is 285.2 ft above mean sea level, datum of 1929. June 22, 1915, to Oct. 11, 1915, staff gage at same site, Oct. 12, 1915, to Mar. 14, 1920, staff gage at site 400 ft upstream and Mar. 15, 1920, to Mar. 26, 1925, chain gage at same site. All gages to same datum.

Average discharge.--27 years (1915-42), 456 cfs (330,100 acre-ft per year).

Extremes.--1915-43: Maximum discharge, 202,000 cfs May 29, 1929 (gage height, 43.32 ft), from rating curve extended above 12,000 cfs on basis of slope-area measurement at gage height 40.6 ft; minimum daily discharge, 40 cfs Sept. 16, 1917.
Maximum stage known since 1870, about 44 ft in December 1913, from information by local residents. Large flood also occurred in 1869 or 1870, according to information by State Highway Department.

Remarks.--Low flow regulated by several small powerplants above station. Most of base flow comes from large springs near San Marcos. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	297	256	243	-
1916	194	184	190	227	174	156	390	471	175	155	174	121	218
1917	117	117	121	114	122	119	254	551	107	114	84.6	93.2	160
1918	77.3	84.5	94.2	101	100	388	793	466	122	73.8	76.3	81.5	205
1919	242	120	489	591	281	248	561	1,150	2,500	1,820	656	1,210	823
1920	2,010	895	663	1,800	800	516	395	2,510	705	334	814	289	981
1921	238	249	224	217	201	1,220	1,720	360	641	331	156	1,030	547
1922	323	227	212	187	178	831	1,910	1,970	512	256	199	159	582
1923	140	154	141	152	978	585	747	273	191	183	133	253	322
1924	487	414	1,900	521	1,310	842	870	1,020	772	346	214	229	742
1925	191	160	174	145	146	138	156	126	116	137	157	174	152
1926	1,000	358	154	228	191	678	2,370	865	361	337	268	164	582
1927	213	248	181	164	394	354	378	209	382	205	116	103	244
1928	213	204	166	153	557	364	215	252	425	179	58.1	111	242
1929	96.9	125	161	188	132	310	889	6,270	878	600	261	230	854
1930	169	185	180	183	219	208	185	706	553	194	136	123	254
1931	212	162	242	920	1,040	958	559	768	293	422	209	145	491
1932	133	142	163	886	534	575	345	222	167	156	172	198	308
1933	124	130	134	153	171	188	215	171	120	330	245	176	180
1934	122	117	120	242	348	536	603	235	146	168	120	119	239
1935	111	137	305	184	468	162	147	1,963	1,963	369	224	781	567
1936	212	186	452	190	194	207	157	1,150	275	4,705	269	632	727
1937	423	266	293	365	379	878	324	209	1,104	212	154	157	396
1938	212	152	333	1,526	513	378	1,994	823	399	252	192	174	578
1939	149	156	149	156	155	149	174	200	136	190	110	100	152
1940	102	102	103	105	127	132	221	135	618	604	111	109	205
1941	142	916	1,702	544	942	1,063	2,442	2,025	1,455	660	326	253	1,038
1942	382	229	212	184	187	177	440	239	174	1,982	205	1,736	514
1943	1,074	515	421	370	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet, of San Marcos River at Ottine, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	18,300	15,700	14,500	-
1916	11,900	10,900	11,700	14,000	10,000	9,590	23,200	29,000	10,400	9,530	10,700	7,200	158,000
1917	7,190	6,960	7,440	7,010	6,780	7,320	15,100	33,900	6,390	7,010	5,200	5,550	116,000
1918	4,750	5,030	5,790	6,210	5,550	23,800	47,200	28,700	7,260	4,540	4,690	4,850	148,000
1919	14,900	7,140	30,000	36,400	15,600	15,200	33,400	70,800	149,000	112,000	40,300	71,700	596,000
1920	124,000	53,300	40,800	111,000	44,400	31,700	23,500	155,000	42,000	20,500	50,100	17,200	714,000
1921	14,600	14,800	13,800	13,300	11,200	74,800	102,000	22,100	38,200	20,300	9,590	61,200	396,000
1922	19,900	13,500	13,100	11,500	9,880	51,100	114,000	121,000	30,500	15,700	12,200	9,480	422,000
1923	8,620	9,140	8,640	9,320	54,300	36,000	44,400	16,800	11,400	11,200	8,190	15,100	233,000
1924	29,900	24,600	117,000	32,100	75,100	51,700	51,700	62,600	45,900	21,300	13,200	13,600	539,000
1925	11,700	9,490	10,700	8,900	8,120	8,470	9,270	7,770	6,920	8,400	9,680	10,300	110,000
1926	61,600	21,300	9,490	14,000	10,600	41,700	141,000	53,200	21,500	20,700	16,500	9,760	421,000
1927	13,100	14,700	11,100	10,100	21,900	21,800	22,500	12,800	22,800	12,600	7,120	6,110	177,000
1928	13,100	12,100	10,200	9,410	32,000	22,400	12,800	15,500	25,300	11,000	5,420	6,600	176,000
1929	5,960	7,440	9,900	11,600	7,330	19,100	52,900	386,000	52,200	36,900	16,000	13,700	619,000
1930	10,400	11,000	11,100	11,300	12,200	12,800	11,000	43,400	32,900	11,900	8,360	7,320	184,000
1931	13,000	9,640	14,900	56,600	57,800	58,900	33,300	47,200	17,400	25,900	12,900	8,630	356,000
1932	8,180	8,450	10,000	54,500	30,700	35,400	20,500	13,600	9,940	9,590	10,600	11,800	223,000
1933	7,620	7,740	8,240	9,410	9,500	11,600	12,800	10,500	7,140	20,300	15,100	10,500	130,000
1934	7,500	6,960	7,380	14,900	19,300	33,000	35,900	14,400	8,690	10,300	7,380	7,080	173,000
1935	6,840	8,170	18,760	11,320	26,000	9,980	8,730	120,700	116,800	22,710	13,790	46,470	410,300
1936	13,040	11,070	27,820	11,650	11,140	12,750	9,350	70,740	16,370	289,300	16,540	37,630	527,400
1937	26,010	15,820	18,020	22,450	21,060	54,000	19,260	12,830	65,720	13,010	9,470	9,360	287,000
1938	13,020	9,040	20,460	93,840	28,510	23,220	118,600	50,590	23,770	15,520	11,790	10,380	418,700
1939	9,170	9,270	9,160	9,570	8,590	9,190	10,340	12,300	8,120	11,660	6,760	5,950	110,100
1940	6,290	6,040	6,320	6,430	7,300	8,090	13,150	8,270	36,800	37,170	6,830	6,470	149,200
1941	8,760	54,500	104,600	33,430	52,320	65,380	145,300	124,500	86,590	40,580	20,050	15,070	751,100
1942	23,520	13,610	13,050	11,310	10,400	10,880	26,210	14,720	10,340	121,900	12,610	103,300	371,800
1943	66,070	30,630	25,910	22,740	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408	-	-	-	-	-	-	-
1916	438,588	5,800	May 22, 1916	55	218	158,000	200	145,000
1917	458,588	8,460	May 7, 1917	40	160	116,000	152	110,000
1918	478,588	11,800	Apr. 6, 1918	59	205	148,000	255	185,000
1919	508,588	21,300	July 23, 1919	62	823	596,000	1,050	762,000
1920	508,588	45,600	May 16, 1920	212	981	714,000	741	539,000
1921	528,588	26,100	Apr. 8, 1921	114	547	396,000	552	399,000
1922	548,588	37,000	Apr. 4, 1922	132	582	422,000	554	402,000
1923	568,588	18,800	Feb. 22, 1923	42	322	233,000	522	378,000
1924	588	12,900	Feb. 18, 1924	98	742	539,000	550	399,000
1925	608	1,480	Apr. 29, 1925	67	152	110,000	235	170,000
1926	628	125,000	Apr. 21, 1926	96	582	421,000	509	368,000
1927	648	4,280	Apr. 14, 1927	75	244	177,000	239	173,000
1928	668	16,000	Feb. 22, 1928	-	242	176,000	226	164,000
1929	688	202,000	May 29, 1929	72	854	619,000	867	628,000
1930	703	7,980	June 17, 1930	104	254	184,000	261	189,000
1931	718	7,150	Jan. 12, 1931	115	491	356,000	476	345,000
1932	733	8,160	Jan. 6, 1932	99	308	223,000	303	220,000
1933	748	5,820	July 31, 1933	88	180	130,000	178	129,000
1934	763	3,840	Mar. 3, 1934	86	239	173,000	255	184,800
1935	788	14,000	June 17, 1935	-	567	410,300	592	428,400
1936	808	165,000	July 1, 1936	83	727	527,400	737	535,300
1937	828	13,700	June 5, 1937	99	396	287,000	372	269,700
1938	858	16,800	Apr. 26, 1938	114	578	418,700	558	403,800
1939	878	2,350	July 13, 1939	-	152	110,100	140	101,100
1940	898	20,000	June 30, 1940	-	205	149,200	411	298,400
1941	928	17,400	Apr. 28, 1941	83	1,038	751,100	875	633,400
1942	958	72,200	July 6, 1942	122	514	371,800	614	444,300
1943	978	a5,210	Oct. 19, 1942	-	-	-	-	-

a Maximum during period October to February.

304. Peach Creek near Dilworth, Tex.

Location.--Lat 29°31', long 97°19', at San Antonio & Aransas Pass Railway bridge (abandoned in 1933), 1-1/2 miles west of Dilworth, Gonzales County, and 10 miles east of Gonzales.

Drainage area.--445 sq mi.

Gage.--Water-stage recorder. Datum of gage is 227.98 ft above mean sea level (levels by Corps of Engineers).

Extremes.--1930-33: Maximum discharge, 5,310 cfs May 13, 1930 (gage heignt, 21.09 ft) and Jan. 6, 1932 (gage height 21.1 ft); no flow at times.

Flood of June 30, 1936 reached a stage of 26.5 ft.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Peach Creek near Dilworth, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	1.09	335	21.0	2.11	0	0	-
1931	89.3	16.8	205	224	282	165	10.3	5.72	.13	19.6	13.8	.02	85.4
1932	0	0	2.11	547	240	82.2	69.1	37.9	1.78	23.8	396	245	137
1933	6.60	1.52	3.62	1.96	32.9	74.3	4.26	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	65	20,600	1,250	130	0	0	-
1931	5,490	1,000	12,600	13,800	15,700	10,100	613	352	7.7	1,210	848	1.2	61,700
1932	0	0	130	33,600	13,800	5,050	4,110	2,330	106	1,460	24,300	14,600	99,500
1933	406	90	223	121	1,830	4,570	253	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	a5,310	May 13, 1930	0	-	-	-	-
1931	718	3,120	Dec. 6, 1930	0	85.4	61,700	59.1	42,800
1932	733	5,310	Jan. 6, 1932	0	137	99,500	138	100,000
1933	748	b870	Mar. 7, 1933	-	-	-	-	-

a Maximum during period March to September.
b Maximum during period October to May.

305. Sandies Creek near Westhoff, Tex.

Location.--Lat 29°13', long 97°27', at bridge on Westhoff-Cheapside highway, about 2 miles northeast of Westhoff, DeWitt County.

Drainage area.--493 sq mi.

Gage.--Water-stage recorder. Datum of gage 179.13 ft above mean sea level (levels by Corps of Engineers).

Extremes.--1930-34: Maximum discharge, 5,780 cfs Apr. 30, 1932 (gage height, 21.79 ft); no flow Aug. 11, 1932.
Flood of July 2, 1936 reached a stage of 32.2 ft.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	5.47	20.9	34.1	7.12	0.73	0.60	-
1931	3.17	3.26	6.37	27.5	48.0	36.4	6.10	11.2	10.5	20.3	7.16	.48	14.9
1932	.36	1.19	5.62	379	91.3	31.2	250	104	2.78	.61	94.3	63.8	85.4
1933	3.37	1.69	3.38	7.33	30.0	81.5	6.40	45.0	8.22	121	248	43.6	50.5
1934	4.12	4.96	2.66	219	126	299	48.5	1.32	.32	137	10.4	4.72	71.7
1935	1.44	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	325	1,290	2,030	438	45	36	-
1931	195	194	392	1,690	2,670	2,240	363	689	625	1,250	440	29	10,800
1932	22	71	346	23,300	5,250	1,920	14,900	6,400	165	38	5,800	3,800	62,000
1933	207	101	208	451	1,670	5,010	381	2,770	489	7,440	15,200	2,590	36.500
1934	253	295	164	13,500	7,000	18,400	2,890	81	19	8,420	640	281	51,900
1935	88	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	a746	June 18, 1930	-	-	-	-	-
1931	718	454	Feb. 3, 1931	0.3	14.9	10,800	14.4	10,400
1932	733	5,780	Apr. 30, 1932	0	85.4	62,000	85.5	62,100
1933	748	5,320	Aug. 1, 1933	.3	50.5	36,500	50.8	36.700
1934	763	3,640	Mar. 3, 1934	.2	71.7	51,900	-	-
1935	-	-	-	-	-	-	-	-

a Maximum during period March to September.

306. Guadalupe River below Cuero, Tex. 1/

Location.--Lat 29°03', long 97°18', three quarters of a mile upstream from Heards Bridge on Arnickeville road and 2-1/2 miles southeast of Cuero, DeWitt County.

Drainage area.--4,923 sq mi; 4,870 sq mi, at site used prior to 1916.

Supplemental records available.--August 1915 to August 1916, gage heights only, at site 4 miles upstream at different datum.

Gage.--Water-stage recorder. Datum of gage is 125.45 ft above mean sea level, datum of 1929. December 1902 to 1904, reference point, and 1904 to December 1906, chain gage, at site 4 miles upstream at different datum.

1/ Published as "near Cuero" prior to Aug. 6, 1916.

306. Guadalupe River below Cuero, Tex.--Continued

Average discharge.--20 years (1903-6, 1916-18, 1920-35), 1,303 cfs (943,300 acre-ft per year).

Extremes.--1902-6, 1915-35: Maximum discharge, 101,000 cfs May 30, 1929 (gage height, 35.2 ft), from rating curve extended above 44,700 cfs; minimum daily discharge, 165 cfs Nov. 4, 1917.
Flood of Oct. 4, 1913, reached a stage of 37.57 ft (from flood mark by local resident) and flood of July 2, 1936 reached a stage of 39.8 ft (from floodmark).

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

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	1,659	4,474	5,659	1,825	1,660	1,212	6,096	3,343	1,021	-
1904	1,018	1,008	864	700	691	639	671	1,639	794	569	585	1,032	851
1905	839	570	1,095	840	1,094	1,530	3,192	2,997	1,378	1,207	708	666	1,340
1906	634	884	684	656	968	666	691	664	520	595	597	614	679
1907	575	568	606	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	594	-
1917	537	614	654	603	590	536	648	1,310	415	500	335	522	606
1918	361	368	374	397	1,429	1,160	1,840	1,960	596	341	326	499	722
1919	1,490	1,180	2,070	2,530	1,110	1,230	1,570	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	998	-
1921	871	900	890	873	817	1,910	2,940	1,140	2,380	1,250	600	2,440	1,410
1922	1,020	729	821	782	745	1,040	6,090	4,560	1,420	885	690	625	1,620
1923	580	764	602	659	1,410	1,720	1,780	1,030	753	691	519	1,560	1,000
1924	1,250	1,660	6,630	2,050	3,640	2,620	2,970	3,450	3,530	1,200	852	936	2,560
1925	743	664	737	740	677	621	540	587	544	480	411	506	604
1926	2,640	1,240	746	1,110	809	2,310	9,000	3,160	1,380	1,090	814	649	2,080
1927	1,180	1,390	876	740	1,140	1,460	3,550	934	1,430	890	491	381	1,200
1928	875	521	525	489	1,070	1,040	736	873	1,450	431	299	456	728
1929	430	845	848	1,010	511	1,850	2,670	6,340	7,640	2,900	786	659	2,210
1930	520	914	741	1,020	953	661	574	2,220	1,590	660	402	338	883
1931	1,380	723	984	1,860	2,750	2,580	1,520	2,690	1,080	1,550	625	534	1,520
1932	470	521	669	2,950	1,820	1,660	1,480	1,710	574	2,960	1,340	1,510	1,480
1933	938	723	826	1,090	975	1,260	830	984	673	545	1,270	647	897
1934	475	474	484	1,330	1,290	2,150	1,670	729	482	694	477	401	886
1935	412	1,013	1,695	644	1,822	637	1,036	8,300	9,786	1,798	1,150	5,300	2,791
1936	1,488	985	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	102,000	248,000	348,000	108,000	102,000	72,000	375,000	205,000	60,700	-
1904	62,700	60,100	53,100	43,040	39,750	39,290	39,930	100,800	47,250	34,990	35,970	61,410	618,000
1905	51,590	33,920	67,330	51,650	60,780	94,080	189,900	184,300	82,000	74,220	43,530	39,630	973,000
1906	38,980	52,600	42,060	40,300	53,800	41,000	41,100	40,800	30,900	36,600	36,700	36,500	491,000
1907	35,400	33,800	37,300	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	35,300	-
1917	33,000	36,500	40,200	37,100	32,800	33,000	38,600	80,600	24,700	30,700	20,600	31,100	439,000
1918	22,200	21,900	23,000	24,400	23,800	71,300	109,000	121,000	35,500	21,000	20,000	29,700	523,000
1919	91,600	70,200	127,000	156,000	61,600	75,600	93,400	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	59,400	-
1921	53,600	53,600	54,700	53,700	45,400	117,000	175,000	70,100	142,000	76,900	36,900	145,000	1,020,000
1922	62,600	43,400	50,500	48,100	41,400	63,800	362,000	280,000	84,300	54,400	42,400	37,200	1,170,000
1923	35,700	45,500	37,000	40,500	78,200	106,000	106,000	63,600	44,800	42,500	31,900	93,100	725,000
1924	76,700	98,900	408,000	126,000	209,000	161,000	177,000	212,000	210,000	73,700	52,400	55,700	1,860,000
1925	45,700	39,500	45,300	45,500	37,600	38,200	32,100	36,100	32,400	29,500	25,200	30,100	437,000
1926	162,000	73,500	45,900	68,000	44,900	142,000	535,000	194,000	82,100	67,300	50,000	38,600	1,500,000
1927	72,300	82,800	53,800	45,500	63,400	89,500	211,000	57,400	85,000	54,700	30,200	22,700	868,000
1928	53,800	31,000	32,300	30,100	61,600	64,000	43,800	53,700	86,300	26,500	18,400	27,100	529,000
1929	26,400	50,300	52,100	62,100	28,400	114,000	159,000	390,000	455,000	178,000	48,300	39,200	1,600,000
1930	32,000	54,400	45,600	62,700	52,900	40,600	34,200	136,000	94,600	40,600	24,700	20,100	638,000
1931	84,800	43,000	60,500	114,000	153,000	159,000	90,400	165,000	64,300	95,300	38,400	31,800	1,100,000
1932	28,900	31,000	41,100	181,000	105,000	102,000	88,100	105,000	34,200	182,000	82,400	89,800	1,070,000
1933	57,700	43,000	50,800	67,000	54,100	77,500	49,400	60,500	40,000	33,500	78,100	38,500	650,000
1934	29,200	28,200	29,800	81,800	71,600	132,000	99,400	44,800	28,700	42,700	29,300	23,900	641,000
1935	25,350	60,290	104,200	39,600	101,200	39,170	61,670	510,400	582,300	110,600	70,710	315,400	2,021,000
1936	91,490	58,640	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1903	99	a71,300	Mar. 1, 1903	-	-	-	2,487	1,798,000
1904	132	b6,890	May 7, 1904	465	851	618,000	819	595,300
1905	174	b10,600	Apr. 29, 1905	527	1,340	973,000	1,318	953,700
1906	210	b4,650	Feb. 15, 1906	370	679	491,000	643	464,000
1907	210	-	-	-	-	-	-	-

a Maximum recorded during period January to September.
b Maximum daily.

Yearly discharge, in cubic feet per second, of Guadalupe River below Cuero, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	438	-	-	-	-	-	-	-
1917	458	6,930	May 9, 1917	212	606	439,000	547	396,000
1918	478	10,200	Mar. 31, 1918	165	722	523,000	1,030	744,000
1919	508	55,000	(c)	-	-	-	-	-
1920	508	15,200	Oct. 24, 1919	-	-	-	-	-
1921	528	12,500	Sept. 15, 1921	-	1,410	1,020,000	1,410	1,020,000
1922	548	36,000	Apr. 7, 1922	-	1,620	1,170,000	1,560	1,130,000
1923	568	9,980	Mar. 3, 1923	339	1,000	725,000	1,640	1,190,000
1924	588	14,000	June 3, 1924	557	2,560	1,860,000	1,940	1,410,000
1925	608	1,600	May 1, 1925	328	604	437,000	813	588,000
1926	628	64,400	Apr. 24, 1926	-	2,080	1,500,000	1,980	1,430,000
1927	648	24,200	Apr. 16, 1927	280	1,200	868,000	1,070	776,000
1928	668	8,240	Feb. 25, 1928	187	728	529,000	744	540,000
1929	688	101,000	May 30, 1929	356	2,210	1,600,000	2,220	1,610,000
1930	703	8,500	June 19, 1930	-	883	638,000	960	695,000
1931	718	8,240	May 4, 1931	-	1,520	1,100,000	1,400	1,010,000
1932	733	17,500	July 8, 1932	344	1,480	1,070,000	1,540	1,120,000
1933	748	9,340	Aug. 2, 1933	334	897	650,000	809	586,000
1934	763	10,800	Mar. 4, 1934	242	886	641,000	1,027	743,800
1935	788	55,500	June 19, 1935	316	2,791	2,021,000	-	-
1936	788	-	-	-	-	-	-	-

c During period July 23-28, 1919.

307. Guadalupe River at Victoria, Tex.

Location.--Lat 28°47', long 97°01', at bridge on U. S. Highway 59 in Victoria, Victoria County, 1,300 ft upstream from Texas & New Orleans Railroad bridge, 10 miles upstream from Coleto Creek, and at mile 51.

Drainage area.--5,161 sq mi.

Supplemental records available.--Records of chemical analyses for the periods October 1945 to September 1946 and October 1948 to September 1957 and records of temperature for period October 1950 to September 1957 are published in reports of Geological Survey. Gage-height records collected in this vicinity since 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 29.15 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Average discharge.--22 years (1935-57), 1,466 cfs (1,061,000 acre-ft per year).

Extremes.--1934-57: Maximum discharge, 179,000 cfs July 3, 1936 (gage height, 31.22 ft); minimum daily, 14 cfs Aug. 20, 1956. Maximum stage known, that of July 3, 1936. Flood of June 1, 1929, reached a stage of 30.2 ft.

Remarks.--Many small diversions above station do not materially affect flow. Some regulation by powerplants above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	1,674	789	1,941	763	1,120	7,866	9,037	1,860	1,170	4,594	-
1936	1,981	1,081	2,057	1,412	1,038	1,056	817	4,818	2,328	18,430	1,311	3,246	3,326
1937	4,341	1,767	1,548	1,404	1,355	2,834	1,365	960	2,733	936	685	653	1,719
1938	810	660	1,154	2,632	1,722	1,453	5,228	4,920	1,367	953	772	703	1,864
1939	603	641	669	712	654	612	597	716	728	772	419	418	629
1940	516	450	496	513	723	632	972	745	1,110	6,633	524	460	1,155
1941	629	6,397	5,672	2,570	3,964	4,398	4,721	12,990	4,782	2,521	1,410	1,164	4,270
1942	1,359	1,195	934	864	804	793	2,619	1,598	916	6,290	932	4,381	1,895
1943	2,773	1,768	1,456	1,411	1,109	1,131	1,033	906	1,387	939	670	756	1,280
1944	658	651	732	1,337	1,645	2,968	1,519	3,399	3,044	1,208	893	1,757	1,650
1945	863	1,260	2,131	3,235	3,257	2,761	5,570	1,521	1,337	919	709	646	2,005
1946	1,268	802	1,037	1,264	1,846	3,086	1,542	2,067	2,348	808	1,045	4,834	1,823
1947	4,137	3,666	2,241	3,588	2,141	2,162	2,185	2,160	1,167	907	1,351	693	2,203
1948	583	638	720	669	824	768	552	1,414	561	744	548	395	702
1949	466	397	427	488	1,000	1,570	4,100	2,770	1,130	893	661	575	1,200
1950	2,731	854	991	707	900	675	1,285	911	2,340	588	368	381	1,061
1951	355	354	409	393	424	427	455	564	2,279	310	186	375	542
1952	238	315	326	336	401	335	590	1,350	1,355	472	180	3,993	819
1953	707	963	1,884	1,652	834	650	731	2,551	336	319	485	1,730	1,074
1954	1,684	693	886	582	505	413	484	702	246	147	108	107	548
1955	121	200	242	259	950	329	290	771	797	214	211	158	374
1956	100	107	183	195	255	158	157	224	59.7	53.9	37.6	51.6	132
1957	164	59.6	486	118	410	1,165	4,147	6,954	5,312	676	355	3,859	1,973

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	102,900	48,500	107,800	46,890	66,650	483,700	537,700	114,300	71,940	273,400	-
1936	121,800	64,320	126,500	86,800	59,700	64,910	48,630	296,300	138,500	1,133,000	80,610	193,100	2,414,000
1937	266,900	105,100	95,190	86,320	75,250	174,200	81,220	59,000	162,600	57,560	42,140	38,840	1,244,000
1938	49,800	39,250	70,960	161,900	95,660	89,320	311,100	302,500	81,360	58,590	47,460	41,810	1,350,000
1939	37,100	38,160	41,140	43,810	36,330	37,600	35,530	44,020	43,340	47,470	25,770	24,860	455,100
1940	31,740	26,760	30,480	31,560	41,610	38,860	57,860	45,810	66,080	407,800	32,220	27,390	838,200
1941	38,690	380,600	348,800	158,000	220,100	270,400	280,900	798,600	284,600	155,000	86,680	69,240	3,092,000
1942	83,570	71,090	57,450	53,150	44,670	48,770	155,800	98,240	54,530	386,700	57,300	260,700	1,372,000

Monthly and yearly runoff, in acre-feet, of Guadalupe River at Victoria, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	170,500	105,200	89,550	86,780	61,570	69,530	61,440	55,690	82,530	57,750	41,190	44,960	926,700
1944	40,460	38,740	45,020	82,180	94,630	182,500	90,370	209,000	181,200	74,290	54,930	104,500	1,198,000
1945	53,040	74,960	131,000	198,900	180,900	169,800	331,500	93,540	79,540	56,520	43,590	38,430	1,452,000
1946	77,990	47,730	63,730	77,710	102,500	189,700	91,740	127,100	139,700	49,660	64,260	287,700	1,320,000
1947	254,400	218,100	137,800	220,600	118,900	133,000	130,000	132,800	69,420	55,790	83,070	41,240	1,595,000
1948	35,860	37,940	44,250	41,160	47,400	47,240	32,860	86,920	33,380	45,760	33,690	23,520	510,000
1949	28,650	23,600	26,240	30,010	55,580	96,340	244,000	170,200	67,270	54,910	40,620	34,220	871,600
1950	167,900	50,820	60,920	43,500	49,980	41,510	76,460	55,990	139,200	36,140	22,650	22,680	767,800
1951	21,800	21,040	25,120	24,170	23,530	26,280	27,090	34,690	135,600	19,060	11,430	22,340	392,200
1952	14,640	18,720	20,050	20,680	23,080	20,570	35,110	83,010	60,640	29,000	11,090	237,600	594,200
1953	43,450	57,310	115,900	101,600	46,310	40,000	43,490	156,900	20,020	19,630	29,820	103,000	777,400
1954	103,500	41,210	54,460	35,770	28,050	25,370	28,770	43,170	14,650	9,010	6,630	6,380	397,000
1955	7,460	11,930	14,850	15,900	52,760	20,230	17,270	47,400	47,440	13,160	12,960	9,400	270,800
1956	6,150	6,360	11,230	11,970	14,680	9,720	9,350	13,800	3,550	3,310	2,310	3,070	95,500
1957	10,070	3,550	29,890	7,270	22,780	71,660	246,800	427,600	316,100	41,590	21,850	229,600	1,429,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1935	788	38,500	June 20, 1935	-	-	-	2,850	2,064,000
1936	808	179,000	July 3, 1936	690	3,326	2,414,000	3,539	2,569,000
1937	828	17,200	Oct. 4, 1936	532	1,719	1,244,000	1,295	937,100
1938	858	25,400	Apr. 30, 1938	520	1,864	1,350,000	1,804	1,306,000
1939	878	4,940	June 6, 1939	308	629	455,100	591	427,700
1940	898	55,900	July 3, 1940	328	1,155	838,200	2,090	1,517,000
1941	928	60,100	May 3, 1941	385	4,270	3,092,000	3,503	2,536,000
1942	958	53,200	July 9,10,1942	618	1,895	1,372,000	2,107	1,525,000
1943	978	7,710	Oct. 21, 1942	519	1,280	926,700	947	685,700
1944	1008	12,300	June 1, 1944	545	1,650	1,198,000	1,836	1,333,000
1945	1038	22,000	Apr. 6, 1945	454	2,005	1,452,000	1,909	1,382,000
1946	1058	17,900	Sept. 3, 1946	490	1,823	1,320,000	2,404	1,740,000
1947	1088	46,000	Oct. 17, 1946	516	2,203	1,595,000	1,523	1,103,000
1948	1118	6,970	May 28, 1948	275	702	510,000	648	470,400
1949	1148	20,600	Apr. 30, 1949	320	1,200	871,600	1,482	1,073,000
1950	1178	13,300	Oct. 28, 1949	313	1,061	767,800	768	556,100
1951	1212	12,300	June 8, 1951	98	542	392,200	522	377,600
1952	1242	28,400	Sept. 16, 1952	101	819	594,200	1,043	757,400
1953	1282	11,600	May 4, 1953	146	1,074	777,400	1,050	759,900
1954	1342	8,560	Oct. 26, 1953	68	548	397,000	321	232,000
1955	1392	4,950	May 22, 1955	76	374	270,800	360	260,300
1956	1442	1,730	May 18, 1956	14	132	95,500	159	115,300
1957	1512	35,300	May 2, 1957	20	1,973	1,429,000	-	-

308. Coleto Creek near Schroeder, Tex.

Location.--Lat 28°50', long 97°11', at bridge on Farm Road 622, 2-1/2 miles northeast of Schroeder, Goliad County, 4.8 miles downstream from Cottonwood Creek, 8.0 miles upstream from Perdido Creek, and 11.5 miles west of Victoria.

Drainage area.--365 sq mi.

Gage.--Water-stage recorder. Datum of gage is 87.59 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Prior to Dec. 31, 1933, staff gage at site 0.7 mile downstream at same datum; Oct. 20, 1952, to Jan. 17, 1955, staff gage at site 0.6 mile downstream at same datum.

Average discharge.--8 years (1930-33, 1952-57), 49.9 cfs (36,130 acre-ft per year).

Extremes.--1930-33, 1952-57: Maximum discharge, 39,000 cfs Apr. 28, 1957 (gage height, 21.00 ft); no flow July 16-25, Aug. 4-31, Oct. 10, 11, 1956.
Maximum stages since at least 1872 at site 0.7 mile downstream, 22.90 ft Oct. 16, 1946, and 20.0 ft in October 1925, from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	66.5	90.3	17.3	13.0	56.0	10.3	6.02	2.29	1.85	-
1931	11.5	7.62	9.62	77.8	64.3	105	29.8	9.77	178	257	36.3	7.80	66.3
1932	5.70	5.28	17.6	415	195	55.8	249	72.7	10.6	5.86	3.93	14.8	87.2
1933	18.5	6.75	8.86	9.98	111	109	9.07	13.8	57.2	65.2	41.8	150	49.6
1934	10.7	7.67	6.45	-	-	-	-	-	-	-	-	-	-
1953	8.51	126	46.5	7.85	8.84	4.81	4.27	225	6.65	.90	236	65.6	62.3
1954	27.4	6.46	3.44	3.66	2.87	2.01	4.03	32.4	.62	.24	.14	.21	7.03
1955	.58	.36	.29	.17	67.1	.70	1.45	57.4	3.95	.18	18.0	6.72	12.7
1956	1.31	.33	.38	1.05	.36	.33	.31	11.9	.22	.08	.01	9.81	2.18
1957	41.6	61.7	3.20	.25	4:55	91.0	560	264	240	1.92	.44	78.8	112

Monthly and yearly runoff, in acre-feet, of Coleto Creek near Schroeder, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	4,090	5,020	1,060	774	3,440	613	370	141	110	-
1931	707	453	592	4,780	3,570	6,460	1,770	601	10,600	15,800	2,230	464	48,000
1932	350	314	1,080	25,500	11,200	3,430	14,800	4,470	631	360	242	881	63,300
1933	1,140	402	545	614	6,160	6,700	540	848	3,400	4,010	2,570	8,930	35,900
1934	658	456	397	-	-	-	-	-	-	-	-	-	-
1953	523	7,480	2,860	483	491	296	254	13,810	396	55	14,540	3,900	45,090
1954	1,680	384	211	225	159	124	240	1,990	37	14	8.5	12	5,080
1955	36	21	18	11	3,730	43	86	3,530	235	11	1,110	400	9,230
1956	81	19	23	64	20	20	19	734	13	4.8	.6	583	1,580
1957	2,560	3,670	197	15	253	5,590	33,310	16,230	14,260	118	27	4,690	80,920

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703	4,600	Jan. 29, 1930	-	-	-	24.0	17,400
1931	718	7,800	July 17, 1931	1.7	66.3	48,000	66.3	48,000
1932	733	28,600	Jan. 4, 1932	2.6	87.2	63,300	87.7	63,600
1933	748	7,700	Mar. 5, 1933	3.0	49.6	35,900	48.8	35,300
1934	748	-	-	-	-	-	-	-
1953	1392	17,200	Aug. 30, 1953	.3	62.3	45,090	50.4	36,500
1954	1392	905	May 25, 1954	.1	7.03	5,080	3.99	2,880
1955	1392	2,040	Feb. 6, 1955	.1	12.7	9,230	12.8	9,280
1956	1442	869	May 15, 1956	0	2.18	1,580	10.9	7,890
1957	1512	39,000	Apr. 28, 1957	0	112	80,920	-	-

309. Coleto Creek near Victoria, Tex.

Location.--Lat 28°43', long 97°08', at bridge on U. S. Highway 59, 100 ft upstream from Texas & New Orleans Railroad bridge, 1.1 miles downstream from Perdido Creek, and 9.4 miles southwest of Victoria, Victoria County.

Drainage area.--514 sq mi.

Gage.--Water-stage recorder. Datum of gage is 49.18 ft above mean sea level, datum of 1929.

Average discharge.--15 years (1939-54), 82.9 cfs (60,020 acre-ft per year).

Extremes.--1939-54: Maximum discharge, 89,000 cfs Oct. 16, 1946 (gage height, 31.64 ft from floodmark), from rating curve extended above 40,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage known since at least 1875, that of Oct. 16, 1946. Flood of July 1, 1936 reached a stage of 27.2 ft at railroad bridge 100 ft downstream, from information by Texas & New Orleans Railroad.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	163	14.3	6.58	-
1940	2.55	2.63	3.24	4.77	61.7	7.85	5.31	45.4	685	236	70.7	4.72	93.5
1941	140	1,084	379	71.5	53.7	203	471	908	272	352	33.8	23.5	333
1942	21.2	21.9	17.3	16.8	48.8	26.1	22.9	10.4	5.51	1,012	21.9	45.6	107
1943	13.3	14.4	11.3	14.9	14.7	71.8	14.0	62.7	79.7	23.8	2.57	9.22	27.8
1944	5.40	13.2	22.8	62.2	23.9	224	18.8	298	28.9	6.87	130	79.1	76.8
1945	9.01	12.3	17.6	13.7	11.5	31.2	209	8.00	15.8	2.77	4.75	1.04	27.8
1946	3.89	2.05	4.93	9.04	71.1	9.33	7.18	184	230	9.09	138	97.7	63.6
1947	1,989	162	38.0	85.8	31.6	26.2	28.5	433	26.9	7.97	9.10	4.13	240
1948	2.70	5.21	9.83	9.27	26.3	16.2	9.33	69.1	5.27	9.35	1.71	1.90	13.9
1949	1.11	2.35	2.16	3.54	9.90	7.44	130	63.2	69.5	54.7	15.8	6.39	30.4
1950	132	15.4	61.3	14.0	9.69	6.96	8.16	4.31	3.24	2.45	.12	.86	21.8
1951	.36	.47	1.57	1.35	2.10	3.26	2.20	31.4	84.2	4.71	0	280	33.9
1952	7.05	9.98	3.73	2.91	6.67	12.5	66.2	322	43.6	3.68	.65	549	85.2
1953	8.74	186	50.3	9.60	9.97	6.91	5.14	211	7.46	.60	363	137	83.6
1954	20.1	7.53	4.32	4.65	3.39	2.81	4.13	21.3	.83	0	0	0	5.81

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	10,040	879	392	-
1940	157	156	199	293	3,550	483	316	2,790	40,740	14,530	4,350	281	67,840
1941	8,630	64,500	23,290	4,400	2,980	12,450	28,010	55,820	16,200	21,660	2,080	1,400	241,400
1942	1,300	1,310	1,060	1,040	2,710	1,600	1,360	638	328	62,240	1,340	2,710	77,640
1943	820	858	695	914	815	4,410	833	3,860	4,740	1,460	158	548	20,110
1944	332	786	1,400	3,820	1,370	13,770	1,120	18,310	1,720	422	8,000	4,710	55,760
1945	554	731	1,080	843	639	1,920	12,410	492	942	171	292	62	20,140
1946	239	122	303	556	3,950	574	427	11,330	13,690	559	8,510	5,810	46,070
1947	122,300	9,620	2,330	5,280	1,750	1,610	1,700	26,640	1,600	490	560	246	174,100
1948	166	310	604	570	1,510	996	555	4,250	313	575	105	113	10,070
1949	68	140	133	217	550	458	7,710	3,880	4,130	3,370	972	380	22,010
1950	8,140	918	3,770	863	538	428	486	265	193	151	7.3	51	15,810
1951	22	28	97	83	117	200	131	1,930	5,010	289	0	16,640	24,550

Monthly and yearly runoff, in acre-feet, of Coleto Creek near Victoria, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	433	594	229	179	384	767	3,940	19,830	2,600	227	40	32,660	61,880
1953	538	11,070	3,090	590	554	425	306	12,990	444	37	22,290	8,170	60,500
1954	1,240	448	266	286	188	173	246	1,310	50	0	0	0	4,210

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898,1562	a8,820	July 12, 1939	-	-	-	-	-
1940	898,1562	39,200	June 30, 1940	1.9	93.5	67,840	226	163,800
1941	928	48,200	Nov. 25, 1940	1.3	333	241,400	205	148,700
1942	958	34,300	July 6, 1942	3.7	107	77,640	105	76,340
1943	978	2,530	May 31, 1943	1.0	27.8	20,110	28.0	20,260
1944	1008	12,200	Mar. 18, 1944	1.6	76.8	55,760	76.6	55,610
1945	1038	2,700	Apr. 20, 1945	0	27.8	20,140	25.5	18,440
1946	1058	10,000	May 23, 1946	.7	63.6	46,070	248	179,700
1947	1088	89,000	Oct. 16, 1946	1.8	240	174,100	56.6	40,960
1948	1118	4,260	May 24, 1948	.1	13.9	10,070	12.9	9,330
1949	1148	2,700	Apr. 26, 1949	.5	30.4	22,010	47.7	34,500
1950	1178	2,290	Oct. 26, 1949	0	21.8	15,810	4.32	3,130
1951	1212	9,440	Sept. 13, 1951	0	33.9	24,550	35.4	25,660
1952	1242	17,300	May 28, 1952	0	85.2	61,880	104	75,320
1953	1282	14,400	Aug. 30, 1953	0	83.6	60,500	66.0	47,760
1954	1342	731	May 25, 1954	0	5.81	4,210	-	-

a Maximum during period June to September.

310. San Antonio River at San Antonio, Tex.

Location.--Lat 29°24'35", long 98°29'40", at South Alamo Street Bridge, in San Antonio, Bexar County, and 2.1 miles upstream from San Pedro Creek.

Drainage area.--42 sq mi, approximately. Normal flow of river formerly came from springs; drainage area of stream not applicable.

Supplemental records available.--Extimated monthly ground-water discharge for the periods February 1915 to October 1929, and November 1932 to December 1934, are published in WSP 773-B. Ground-water discharge into river is discussed by Pettit and George (1956, p. 45) Texas Board of Water Engineers' Bulletin 5608, Vol. 1. December 1895 to June 1906, periodic discharge measurements only.

Gage.--Water-stage recorder. Datum of gage is 612.26 ft above mean sea level, datum of 1929. Jan. 26, 1915, to Feb. 27, 1916, staff gage at site 2.2 miles upstream at different datum. Feb. 28, 1916, to Apr. 7, 1920, staff gage at site 1.9 miles upstream at different datum.

Average discharge.--32 years (1915-29, 1939-57), 56.8 cfs (41,110 acre-ft per year).

Extremes.--1915-29, 1939-57: Maximum discharge, 15,300 cfs Sept. 10, 1921 (gage height 20.14 ft, from floodmark), from rating curve extended above 2,000 cfs on basis of slope-area measurement of peak flow; no flow at times due to regulation.
Maximum stage known since at least 1819, that of Sept. 10, 1921; flood of July 5, 1819, equaled or exceeded that of Sept. 10, 1921.

Remarks.--Flood flow regulated by Olmos flood-control reservoir (capacity 15,500 acre-ft) about 8-1/2 miles upstream. Dam completed in 1926. Normal flow of river formerly came from springs located about 8 miles upstream, and in later years from release of pumpage from wells. Springs emerged from Edwards limestone in Balcones fault zone. Diurnal fluctuation caused by industrial pumping from wells (depleting the underground reservoir) above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	103	106	219	179	140	171	222	136	-
1916	116	102	94.4	92.7	85.0	75.3	111	98.9	86.2	81.6	95.9	110	95.7
1917	82.8	72.0	65.0	59.0	52.0	46.0	34.1	41.1	25.9	26.8	24.4	23.6	46.1
1918	23.9	23.4	23.8	23.4	22.9	22.2	48.3	82.9	16.5	14.8	30.9	14.0	29.0
1919	15.1	9.52	17.7	33.9	38.7	31.5	46.6	53.6	66.3	116	91.9	186	58.8
1920	295	233	208	258	216	204	183	168	158	143	134	123	194
1921	119	118	111	109	98.4	144	123	99.7	107	84.7	69.2	250	119
1922	108	98.3	80.6	75.0	63.6	62.3	101	101	115	88.4	76.9	68.5	86.4
1923	60.3	71.7	72.9	56.2	70.0	66.9	81.5	67.0	54.7	48.4	34.0	52.1	61.2
1924	53.0	75.5	139	133	134	160	172	185	201	166	132	123	140
1925	114	93.8	91.9	82.8	72.4	66.2	52.9	53.3	35.8	26.7	36.6	31.3	63.2
1926	30.2	33.7	30.4	36.6	33.4	42.2	101	132	94.7	66.4	46.3	36.9	57.0
1927	36.6	35.5	37.5	31.9	34.6	39.4	30.4	29.2	61.1	29.7	24.7	24.7	34.6
1928	25.8	22.5	22.0	21.7	20.0	21.9	20.5	30.5	21.7	15.6	17.9	22.9	21.9
1929	19.2	17.1	14.6	17.5	9.04	13.6	18.1	27.0	23.9	23.3	18.7	27.0	19.1
1930	31.4	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	40.5	29.4	28.9	20.0	19.1	31.3	24.9	-
1940	18.4	17.1	17.1	17.2	20.5	16.3	23.4	27.3	37.6	18.0	16.2	16.8	20.5
1941	30.1	17.7	27.2	26.9	60.7	76.2	131	157	132	101	69.2	80.9	75.7
1942	107	106	101	91.4	83.5	73.3	90.8	82.4	62.0	70.5	35.1	127	85.7
1943	214	167	136	122	102	97.9	80.7	57.8	49.5	55.4	34.6	34.1	96.1
1944	29.6	29.5	28.3	32.6	29.1	77.9	75.0	93.7	105	45.8	25.3	48.9	51.7
1945	39.8	45.5	96.4	124	163	145	154	123	81.2	55.9	33.8	30.4	90.7
1946	55.3	45.6	45.1	46.5	45.0	52.6	50.9	60.5	54.4	27.6	29.5	223	61.1
1947	139	138	125	137	128	118	102	80.3	43.3	32.0	40.7	27.8	92.4
1948	26.0	24.8	25.5	24.5	28.2	26.0	23.9	26.5	19.5	27.4	53.2	24.0	27.5
1949	29.2	21.0	20.2	20.1	30.4	26.3	62.4	43.5	58.0	33.4	26.3	26.6	33.0
1950	61.7	26.1	29.7	27.5	27.6	23.5	28.3	26.2	22.8	25.1	31.4	27.3	29.8

Monthly and yearly mean discharge, in cubic feet per second, of San Antonio River at San Antonio, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	23.6	20.6	19.4	19.0	25.2	24.7	20.5	30.7	46.4	21.2	24.2	28.2	25.3
1952	24.9	18.2	18.4	18.6	22.2	19.4	22.9	21.7	26.0	26.4	21.0	25.8	22.1
1953	15.1	17.2	21.7	14.3	15.5	14.0	13.9	12.7	15.0	10.6	17.3	26.5	16.1
1954	13.6	10.3	12.1	11.0	11.1	11.2	13.5	13.8	16.7	13.1	8.79	9.57	12.1
1955	13.3	10.9	8.79	10.4	18.8	7.11	8.03	22.6	12.2	15.8	15.6	8.65	12.7
1956	7.49	9.66	8.28	7.63	9.13	7.07	6.93	15.0	7.67	7.43	14.4	10.0	9.23
1957	14.5	13.2	13.3	8.10	12.6	17.8	93.2	73.7	37.4	9.70	8.28	64.8	30.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	5,720	6,520	13,000	11,000	8,330	10,500	13,600	8,090	-
1916	7,130	6,070	5,800	5,700	4,890	4,630	6,600	6,080	5,130	5,020	5,900	6,550	69,500
1917	5,090	4,280	4,000	3,630	2,890	2,830	2,030	2,530	1,540	1,650	1,500	1,400	33,400
1918	1,470	1,390	1,460	1,440	1,270	1,360	2,870	5,100	982	910	1,900	833	21,000
1919	928	566	1,090	2,080	2,150	1,940	2,770	3,300	3,950	7,130	5,650	11,100	42,700
1920	18,100	13,900	12,800	15,900	12,400	12,500	10,900	10,300	9,400	8,790	8,240	7,320	141,000
1921	7,320	7,020	6,820	6,700	5,460	8,850	7,320	6,130	6,370	5,210	4,250	14,900	86,400
1922	6,650	5,850	4,960	4,610	3,530	3,830	6,010	6,070	6,820	5,430	4,730	4,080	62,600
1923	3,710	4,260	4,480	3,460	3,890	4,110	4,850	4,120	3,250	2,980	2,090	3,100	44,300
1924	3,260	4,490	8,530	8,200	7,730	9,860	10,200	11,400	12,000	10,200	8,110	7,330	101,000
1925	7,020	5,580	5,650	5,090	4,020	4,070	3,150	3,270	2,130	1,640	2,250	1,860	45,700
1926	1,850	2,000	1,870	2,250	1,850	2,590	6,020	8,100	5,640	4,080	2,840	2,200	41,300
1927	2,250	2,110	2,310	1,960	1,920	2,420	1,810	1,800	3,640	1,830	1,520	1,470	25,000
1928	1,590	1,340	1,350	1,330	1,150	1,350	1,220	1,880	1,290	959	1,100	1,360	15,900
1929	1,180	1,020	898	1,080	502	836	1,080	1,660	1,420	1,430	1,150	1,610	13,900
1930	1,930	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	2,490	1,750	1,780	1,190	1,170	1,920	1,480	-
1940	1,130	1,020	1,050	1,060	1,180	1,000	1,390	1,680	2,240	1,100	998	1,000	14,850
1941	1,850	1,060	1,670	1,660	3,370	4,680	7,780	9,630	7,840	6,210	4,250	4,810	54,810
1942	6,570	6,320	6,180	5,620	4,640	4,500	5,400	5,070	3,690	4,340	2,160	7,570	62,060
1943	13,170	9,950	8,380	7,520	5,660	6,020	4,800	3,560	2,950	3,410	2,130	2,030	69,580
1944	1,820	1,750	1,740	2,010	1,670	4,790	4,460	5,760	6,270	2,810	1,560	2,910	37,550
1945	2,450	2,710	5,920	7,630	9,080	8,930	9,180	7,570	4,830	3,440	2,080	1,810	65,630
1946	3,400	2,720	2,770	2,860	2,500	3,230	3,030	3,720	3,240	1,700	1,810	13,270	44,250
1947	8,530	8,200	7,700	8,410	7,090	7,260	6,080	4,940	2,570	1,970	2,500	1,650	66,900
1948	1,600	1,480	1,570	1,500	1,620	1,600	1,420	1,630	1,160	1,680	3,270	1,430	19,960
1949	1,800	1,250	1,240	1,230	1,690	1,620	3,710	2,680	3,450	2,050	1,620	1,580	23,930
1950	3,790	1,560	1,830	1,690	1,540	1,450	1,690	1,610	1,360	1,540	1,930	1,620	21,610
1951	1,450	1,230	1,190	1,170	1,400	1,520	1,220	1,890	2,760	1,300	1,490	1,680	18,300
1952	1,530	1,080	1,130	1,140	1,280	1,190	1,360	1,330	1,550	1,620	1,290	1,530	16,030
1953	928	1,020	1,330	877	859	863	827	783	895	650	1,060	1,570	11,660
1954	836	615	745	678	615	688	805	849	992	803	540	569	8,740
1955	815	647	540	640	1,040	437	478	1,390	726	972	962	515	9,160
1956	461	575	509	469	525	435	413	920	457	457	885	598	6,700
1957	891	787	815	498	698	1,100	5,550	4,530	2,230	596	509	3,860	22,060

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408	-	-	-	-	-	-	-
1916	438	2,650	Sept. 25, 1916	72	95.7	69,500	87.9	63,900
1917	458	147	Mar.24,25,May20,1917	23	46.1	33,400	33.6	24,300
1918	478	-	May 5, 1918	11	29.0	21,000	26.6	19,200
1919	508	2,380	Sept. 15, 1919	7.0	58.8	42,700	117	84,900
1920	508	2,430	Oct. 16, 1919	119	194	141,000	161	117,000
1921	528	15,300	Sept. 10, 1921	64	119	86,400	114	82,600
1922	548	-	-	-	86.4	62,600	79.5	57,600
1923	568	390	July 21, 1923	25	61.2	44,300	66.5	48,100
1924	588	648	May 26, 1924	48	140	101,000	142	103,000
1925	608	641	May 10, 1925	18	63.2	45,700	45.9	33,200
1926	628	1,940	Apr. 20, 1926	-	57.0	41,300	58.4	42,200
1927	648	845	June 14, 1927	17	34.6	25,000	31.3	22,600
1928	668	755	June 2, 1928	13	21.9	15,900	20.3	14,700
1929	688	588	May 24, 1929	7.0	19.1	13,900	-	-
1930	688	-	-	-	-	-	-	-
1939	898	a1,600	May 30, 1939	-	-	-	-	-
1940	898	1,040	June 29, 1940	10	20.5	14,850	22.4	16,230
1941	928	1,470	Apr. 28, 1941	10	75.7	54,810	95.7	69,300
1942	958	1,680	Sept. 4, 1942	27	85.7	62,060	103	74,490
1943	978	2,350	Oct. 4, 1942	20	96.1	69,580	59.9	43,390
1944	1008	1,260	Sept. 6, 1944	14	51.7	37,550	59.7	43,320
1945	1038	1,820	Dec. 4, 1944	23	90.7	65,630	87.6	63,440
1946	1058	5,740	Sept. 27, 1946	19	61.1	44,250	82.6	59,790
1947	1088	984	Nov. 10, 1946	23	92.4	66,900	65.1	47,120
1948	1118	2,840	Aug. 26, 1948	14	27.5	19,960	27.0	19,600
1949	1148	1,640	June 25, 1949	16	33.0	23,930	37.0	26,810
1950	1178	1,390	Oct. 22, 1949	17	29.8	21,610	25.3	18,300

a Maximum during period February to September.

Yearly discharge, in cubic feet per second, of San Antonio River at San Antonio, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	1,800	June 3, 1951	12	25.3	18,300	25.1	18,170
1952	1242	363	Sept. 18, 1952	12	22.1	16,030	21.5	15,570
1953	1282	1,610	Sept. 4, 1953	6.6	16.1	11,660	14.6	10,580
1954	1342	758	June 26, 1954	4.7	12.1	8,740	11.8	8,540
1955	1392	810	Feb. 4, 1955	.6	12.7	9,160	12.0	8,700
1956	1442	1,230	May 15, 1956	1.2	9.23	6,700	10.5	7,650
1957	1512	1,850	May 27, 1957	2.1	30.5	22,060	-	-

311. San Pedro Creek at San Antonio, Tex.

Location.--Lat 29°25', long 98°30', at Missouri-Kansas-Texas Railway culvert, 200 ft below Arsenal Street in San Antonio, Bexar County, three-quarters of a mile upstream from Apache and Alazan Creeks, and 2-1/2 miles upstream from mouth and San Antonio River.

Drainage area.--2.64 sq mi. Normal flow of creek comes from San Pedro Springs 2 miles upstream; drainage area not applicable.

Gage.--Water-stage recorder. Datum of gage unknown. July 19, 1916, to Mar. 13, 1921, staff gage at Commerce Street bridge, about half a mile upstream at different datum.

Average discharge.--12 years (1916-20, 1921-29), 8.11 cfs (5,870 acre-ft per year).

Extremes.--1916-29: Maximum gage height, 8.6 ft Sept. 9, 1921 (discharge not determined - possible backwater from Alazan Creek); no flow Aug. 16, 1926, and May 23, 1928.
Flood in 1913 (probably October from weather records) reached a stage of 10.2 ft (from floodmark) at site used prior to Mar. 13, 1921.

Remarks.--No diversion. Flow partly regulated by small swimming pool dam upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	5.71	6.70	-
1917	8.49	7.89	8.94	13.3	11.8	5.42	4.56	4.89	4.86	3.32	2.82	2.52	6.54
1918	3.05	3.52	2.98	3.79	4.58	4.32	4.15	4.59	4.23	3.63	3.06	3.05	3.74
1919	3.29	3.88	3.35	7.25	5.71	6.14	12.0	8.93	13.9	15.6	14.0	15.5	9.13
1920	22.7	18.2	14.6	12.6	13.7	13.1	15.0	13.5	11.6	9.84	10.9	8.65	13.7
1921	11.7	11.9	9.02	8.71	9.07	13.6	8.89	8.37	9.19	7.76	6.44	-	-
1922	9.76	7.73	8.12	7.95	9.08	8.64	10.4	12.2	11.6	9.26	8.43	7.88	9.25
1923	8.25	8.49	7.65	7.73	8.49	6.52	8.51	7.40	5.30	7.28	6.65	7.63	7.48
1924	7.14	8.88	8.57	10.2	11.2	11.9	18.1	22.9	19.5	11.3	10.9	11.5	12.7
1925	5.81	8.61	9.28	7.44	7.90	6.75	7.31	8.22	6.00	6.12	8.54	9.54	7.62
1926	7.65	7.23	6.44	7.88	7.48	9.12	16.2	15.8	11.8	9.40	7.46	7.99	9.54
1927	7.32	7.99	6.39	5.50	7.30	7.39	8.11	7.98	11.9	6.24	5.35	4.89	7.18
1928	5.23	4.93	6.30	5.07	6.10	6.80	4.94	6.92	7.89	4.46	3.18	5.55	5.61
1929	4.04	3.66	4.18	5.69	3.74	5.25	4.80	8.39	4.66	5.41	4.23	4.28	4.88
1930	3.64	4.56	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	351	399	-
1917	522	469	550	818	655	333	271	301	289	204	173	150	4,740
1918	188	209	183	233	254	266	247	282	252	223	188	181	2,710
1919	202	231	206	446	317	378	714	549	827	959	861	922	6,610
1920	1,400	1,080	898	775	788	806	893	830	690	605	670	515	9,950
1921	719	708	555	536	504	836	529	515	547	477	396	-	-
1922	600	460	499	489	504	531	619	751	688	569	518	469	6,700
1923	507	505	470	475	471	401	507	455	315	448	409	454	5,420
1924	439	528	527	624	642	732	1,080	1,410	1,160	698	671	687	9,200
1925	357	513	570	457	439	415	435	505	357	376	525	567	5,520
1926	470	430	396	484	416	561	961	972	704	578	459	476	6,910
1927	450	475	393	338	405	455	483	491	708	384	329	291	5,200
1928	322	293	387	312	351	418	294	425	469	274	196	330	4,070
1929	248	218	257	350	208	323	286	516	277	333	260	255	3,530
1930	224	271	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	458	a700	Sept. 25, 1916	-	-	-	-	-
1917	458	b85	Dec. 30, 31, 1916	2.2	6.54	4,740	5.21	3,770
1918	478	380	Apr. 5, 1918	2.2	3.74	2,710	3.82	2,760
1919	508	335	Sept. 15, 1919	.6	9.13	6,610	12.9	9,350
1920	508	170	Oct. 16, 1919	8.2	13.7	9,950	11.8	8,550
1921	528	-	Sept. 10, 1921	-	-	-	-	-
1922	548	788	May 2, 1922	5.6	9.25	6,700	9.15	6,620
1923	568	404	Aug. 28, 1923	3.4	7.48	5,420	7.50	5,430
1924	588	1,070	Apr. 25, 1924	4.0	12.7	9,200	12.6	9,140
1925	608	680	May 10, 1925	4.0	7.62	5,520	7.42	5,370
1926	628	1,070	Apr. 20, 1926	4.0	9.54	6,910	9.57	6,930
1927	648	728	June 15, 1927	2.5	7.18	5,200	6.75	4,890
1928	668	1,170	Mar. 9, 1928	1.1	5.61	4,070	5.23	3,790

a Maximum observed during period July to September.
b Maximum observed

Yearly discharge, in cubic feet per second, of San Pedro Creek at San Antonio, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	688	728	May 23, 1929	1.1	4.88	3,530	-	-
1930	688	-	-	-	-	-	-	-

312. Medina River near Pipe Creek, Tex.

Location.--Lat 29°40', long 98°59', on left bank 600 ft upstream from Bandera Falls, 0.8 mile upstream from Red Bluff Creek and 4 miles southwest of town of Pipe Creek, Bandera County.

Drainage area.--457 sq mi; at site 2 miles upstream, 454 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,067.37 ft above mean sea level, unadjusted. December 1922 to September 1934, water-stage recorder at site 2 miles upstream at different datum.

Average discharge.--15 years (1923-34, 1953-57) 86.7 cfs (62,770 acre-ft per year).

Extremes.--1922-34, 1953-57: Maximum discharge, 64,000 cfs July 1, 1932 (gage height, 33.8 ft, from floodmarks, datum then in use), by slope-area measurement of peak flow; minimum, 0.2 cfs July 14-16, 1956.

Remarks.--Small diversion above gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	35	27	27.2	27.4	39.6	37.0	199	48.0	24.3	37.4	7.80	131	53.1
1924	65.8	317	375	176	170	295	216	210	120	70.7	37.5	39.6	174
1925	20.6	16.1	20.9	23.7	20.4	20.2	18.9	67.9	12.1	13.0	3.73	10.5	20.7
1926	127	90.5	28.6	34.1	30.5	54.0	306	197	85.6	131	41.4	14.6	95.3
1927	33.5	44.6	89.6	54.4	228	315	198	95.6	102	33.5	12.4	8.30	102
1928	22.8	15.6	22.1	24.8	37.3	44.5	23.6	21.1	107	11.7	4.40	3.26	28.0
1929	21.1	9.98	31.3	19.5	16.3	18.1	15.4	413	78.5	87.5	11.8	15.4	62.2
1930	10.3	18.6	36.5	22.1	19.0	15.9	14.7	227	132	36.0	10.5	5.73	45.9
1931	367	93.0	89.0	203	307	272	486	596	146	249	63.1	26.8	242
1932	21.2	25.9	47.8	50.8	69.4	109	117	106	42.7	1,690	150	435	241
1933	203	126	124	197	150	134	106	81.0	44.4	23.1	18.0	20.4	102
1934	13.1	15.7	20.1	34.6	35.2	21.0	70.9	24.0	5.24	15.4	4.60	2.03	21.7
1935	1.87	2.84	14.7	13.2	21.1	15.5	49.4	544	1,260	-	-	-	-
1953	-	-	-	39.4	26.1	23.1	15.4	7.15	1.65	9.27	42.0	130	-
1954	187	46.9	32.8	24.4	21.9	18.2	15.3	73.7	18.6	5.97	1.95	2.34	37.8
1955	1.51	1.27	1.45	8.31	20.9	11.2	8.43	67.2	8.33	56.4	19.5	4.27	17.5
1956	2.74	2.02	3.08	4.15	6.10	6.19	3.77	6.51	.88	.50	21.2	4.23	5.13
1957	2.51	8.82	1.21	1.17	2.84	100	629	334	339	51.3	16.3	183	139

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	2,150	1,610	1,670	1,680	2,200	2,280	11,900	2,950	1,450	2,300	480	7,820	38,500
1924	4,040	18,900	23,100	10,800	9,780	18,100	12,900	12,900	7,160	4,350	2,300	2,350	127,000
1925	1,270	958	1,280	1,460	1,130	1,240	1,120	4,170	718	802	229	626	15,000
1926	7,820	5,390	1,760	2,090	1,700	3,320	18,200	12,100	5,090	8,080	2,540	871	69,000
1927	2,060	2,650	5,510	3,340	12,700	19,400	11,800	5,880	6,040	2,060	762	492	72,700
1928	1,400	928	1,360	1,520	2,150	2,740	1,400	1,300	6,370	719	271	194	20,400
1929	1,300	594	1,920	1,200	905	1,110	916	25,400	4,670	5,380	726	916	45,000
1930	633	1,110	2,240	1,360	1,060	977	875	14,000	7,860	2,210	646	341	33,300
1931	22,600	5,530	5,470	12,500	17,000	16,700	28,900	36,600	8,690	15,300	3,880	1,590	175,000
1932	1,300	1,540	2,940	3,120	3,990	6,700	6,960	6,520	2,540	104,000	9,220	25,900	175,000
1933	12,500	7,500	7,620	12,100	8,330	8,240	6,310	4,980	2,640	1,420	1,110	1,210	74,000
1934	806	934	1,240	2,130	1,950	1,290	4,220	1,480	312	947	283	121	15,700
1935	115	169	906	811	1,170	954	2,940	33,400	75,100	-	-	-	-
1953	-	-	-	2,420	1,450	1,420	917	440	98	570	2,580	7,750	-
1954	11,520	2,790	2,020	1,500	1,220	1,120	913	4,530	1,110	367	120	139	27,350
1955	93	76	89	511	1,160	689	502	4,130	496	3,470	1,200	254	12,680
1956	169	120	189	255	351	381	224	400	52	31	1,300	252	3,720
1957	155	525	74	72	157	6,170	37,440	20,540	20,150	3,150	1,000	10,910	100,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1923	568	14,700	Apr. 25, 1923	5.4	53.1	38,500	109	78,900
1924	588	4,080	May 26, 1924	13	174	127,000	116	84,100
1925	608	10,000	May 28, 1925	2.7	20.7	15,000	36.6	26,500
1926	628	23,200	Apr. 21, 1926	6.8	95.3	69,000	88.8	64,200
1927	648	4,760	Mar. 7, 1927	2.2	102	72,700	91.2	66,200
1928	668	1,530	June 2, 1928	2.7	28	20,400	28.2	20,500
1929	688	19,800	May 13, 1929	2.7	62.2	45,000	62.4	45,200
1930	703	5,230	May 12, 1930	3.2	45.9	33,300	86.8	62,900
1931	718	17,900	Oct. 6, 1930	8.0	242	175,000	203	147,000
1932	733	64,000	July 1, 1932	17	241	175,000	271	197,000
1933	748	-	-	8.5	102	74,000	68.1	49,300
1934	763	1,520	Apr. 19, 1934	.8	21.7	15,700	19.2	13,900
1935	-	40,400	July 24, 1935	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Medina River near Pipe Creek, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	1282	-	-	-	-	-	46.9	33,960
1954	1342	11,700	Oct. 4, 1953	1.2	37.8	27,350	15.6	11,270
1955	1392	4,340	May 19, 1955	.9	17.5	12,680	17.8	12,890
1956	1442	4,230	Aug. 20, 1956	.3	5.13	3,720	5.51	4,000
1957	1512	26,000	Apr. 24, 1957	.8	139	100,300	-	-

313. Red Bluff Creek near Pipe Creek, Tex.

Location.--Lat 29°40'48", long 98°57'20", on left bank 0.8 mile upstream from bridge on county road, 1.7 miles downstream from Pipe Creek, 1.9 miles upstream from mouth, and 3.2 miles south of town of Pipe Creek, Bandera County.

Drainage area.--55.3 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,107.2 ft above mean sea level, unadjusted.

Extremes.--1956-57: Maximum discharge, 2,700 cfs May 14, 1957 (gage height, 8.59 ft); no flow most of time.
Maximum stage known since at least 1905, about 17 ft in July 1937. Flood of October 1953 reached a stage of 13.8 ft.

Remarks.--Small dams on tributaries regulate flow during periods of storm runoff. No known diversion.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	0	0	0	0	0	0.9	-
1957	0	2.1	0	0	0	3.71	30.0	55.8	38.7	.05	0	.94	10.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	0	0	0	0	0	54	-
1957	0	127	0	0	0	228	1,780	3,430	2,300	3.2	0	56	7,920

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1512	-	-	-	-	-	-	-
1957	1512	2,700	May 14, 1957	0	10.9	7,920	-	-

314. Medina Lake near San Antonio, Tex.

Location.--Lat 29°32', long 98°56', at Medina Dam on Medina River, 4 miles upstream from Medina diversion dam, 13 miles north of Castroville, and about 28 miles west of San Antonio, Bexar County.

Drainage area.--609 sq mi.

Gage.--Wire-weight gage. Datum of gage is 7.5 ft below mean sea level (levels by Corps of Engineers). Prior to Sept. 30, 1948, staff gage at same site and datum.

Extremes.--1913-57: Maximum contents observed, 288,800 acre-ft Sept. 16, 1919 (gage height, 1,078.0); minimum observed since reservoir filled, 780 acre-ft about Apr. 11, 1948 (gage height, 944.0 ft).

Remarks.--Reservoir is formed by gravity-type concrete dam. Dam completed and storage began May 7, 1913. Spillway section is located near right end of dam and is of natural rock, 880 ft long, with a 3-foot wide cutoff wall. Total capacity, 254,000 acre-feet (gage height, 1,072.0 ft, top of spillway section). Water for irrigation is supplied by three 60-inch pipes equipped with vertical lift gates, at gage height 966.5 ft (capacity, 4,780 acre-ft). Reservoir can be emptied by two 30-inch sluice pipes equipped with vertical lift gates, at gage height 920.0 ft. Water is used for irrigation of lands in the Bexar, Medina, and Atascosa Counties Water Control & Improvement District No. 1, which has a permit from the Texas Board of Water Engineers to divert 300,000 acre-ft of water to irrigate 150,000 acres. No power is developed.

Cooperation.--Gage-height records and capacity table furnished by Bexar, Medina, Atascosa Counties Water Control & Improvement District No. 1.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1913	-	-	-	-	-	-	0	3,850	12,700	13,180	13,180	17,950	-
1914	56,380	71,430	147,500	151,600	152,500	147,800	158,400	224,800	239,900	235,900	238,900	232,300	+214,400
1915	225,300	220,700	215,700	211,200	208,100	205,100	258,100	258,100	250,000	239,400	234,400	233,400	+1,100
1916	226,800	219,200	214,200	210,200	205,100	196,500	227,300	251,700	243,000	241,900	237,400	230,300	-3,100
1917	226,300	220,200	213,200	208,100	203,100	192,500	184,900	182,300	173,100	163,400	152,500	145,700	-84,600
1918	136,800	132,900	125,100	119,500	115,600	106,500	109,600	104,200	93,020	80,740	70,960	63,980	-81,720
1919	64,440	61,850	71,660	75,150	77,010	77,940	80,740	85,160	92,450	117,400	217,700	260,400	+196,400
1920	259,800	256,300	255,700	256,900	255,700	255,200	253,400	254,000	250,000	239,400	234,400	226,300	-34,100
1921	218,200	215,700	211,200	207,600	202,600	201,600	200,100	194,000	218,200	206,600	194,500	203,100	-23,200
1922	196,500	190,700	186,100	181,900	178,100	173,100	187,800	201,100	197,500	187,400	178,100	168,900	-34,200
1923	161,300	156,700	150,400	145,000	145,700	144,300	152,100	148,200	137,200	126,900	117,700	124,100	-44,800
1924	125,500	139,000	158,800	165,100	170,600	183,600	196,000	205,100	211,700	203,100	191,200	184,900	+60,800
1925	177,300	172,200	166,800	160,900	155,000	145,700	137,200	135,100	120,500	108,500	105,300	101,300	-83,600
1926	106,200	108,200	103,900	102,200	98,470	97,320	123,700	134,000	132,600	131,500	124,100	117,000	+15,700
1927	112,200	110,200	108,800	105,900	110,200	118,800	128,700	126,900	126,900	125,100	118,100	108,800	-8,200
1928	103,100	97,320	93,020	87,290	85,860	84,700	82,370	77,710	76,550	69,560	63,050	57,100	-51,700
1929	51,630	47,070	42,910	40,070	37,240	33,260	29,920	29,590	46,160	51,260	47,620	40,780	-16,320
1930	34,680	29,590	25,950	23,420	20,440	17,330	14,010	21,880	23,970	17,880	10,860	3,930	-36,850

Contents, in acre-feet, on last day of month, of Medina Lake near San Antonio, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1931	21,320	22,870	24,740	32,840	48,160	62,580	77,710	120,200	120,900	127,300	121,300	111,900	+108,000
1932	104,800	99,040	97,610	97,040	97,320	99,900	101,000	101,600	94,460	190,300	187,000	217,700	+105,800
1933	224,300	221,800	221,800	229,800	232,800	233,400	229,800	223,300	215,200	202,600	191,600	183,200	-34,500
1934	173,500	165,100	157,100	154,600	151,200	147,100	148,500	140,700	127,600	119,800	108,200	99,040	-84,160
1935	99,310	84,700	81,670	79,810	79,810	72,120	71,190	103,900	219,700	248,200	244,200	256,900	+157,900
1936	254,600	252,300	254,600	254,000	252,900	251,700	247,100	256,300	278,300	253,400	245,900	261,000	+4,100
1937	255,700	254,600	254,000	254,000	253,400	254,000	252,900	241,900	252,300	244,700	231,300	219,200	-41,800
1938	210,200	200,600	197,500	203,600	205,100	204,100	206,600	207,600	196,000	184,000	170,100	161,700	-57,500
1939	144,300	135,100	128,700	126,900	122,700	114,200	102,500	88,730	77,710	79,340	70,960	60,020	-101,700
1940	59,300	54,370	49,440	44,510	45,610	36,670	37,780	34,680	29,700	25,620	16,020	7,080	-52,940
1941	1,770	5,920	25,290	25,070	61,850	84,230	112,800	153,700	156,700	149,200	145,000	142,200	+135,100
1942	142,200	137,900	135,100	129,800	126,200	118,100	116,300	130,500	118,100	113,900	103,900	105,600	-36,600
1943	135,800	137,900	136,100	133,300	126,900	120,200	115,900	117,000	118,100	110,200	95,890	90,160	-15,440
1944	82,600	76,550	73,520	72,360	75,380	84,930	83,070	105,900	108,800	97,900	90,160	87,010	-3,150
1945	80,510	75,620	78,410	94,170	105,900	113,900	123,400	132,200	107,600	94,460	78,880	80,970	-6,040
1946	89,870	84,460	82,600	79,810	80,270	75,150	69,560	82,140	80,040	67,240	58,200	64,910	-16,060
1947	81,440	83,300	84,930	97,900	104,500	105,600	101,600	94,460	86,150	72,820	60,570	46,880	-18,030
1948	29,700	21,320	15,600	9,230	5,530	2,310	2,220	2,790	13,260	9,300	1,380	2,140	-44,740
1949	5,000	5,110	4,940	6,290	14,430	18,910	31,700	39,820	48,160	41,780	37,380	30,990	+28,850
1950	28,710	25,620	24,630	23,310	24,630	20,220	17,950	18,500	20,440	15,950	7,670	3,010	-27,980
1951	2,160	3,050	3,960	4,330	5,130	5,850	7,410	14,360	15,880	14,570	13,120	11,570	+8,560
1952	10,080	9,620	9,180	9,020	8,320	8,780	11,380	13,460	15,880	15,260	14,260	26,060	+14,490
1953	24,890	24,680	27,380	28,600	29,040	25,320	19,450	12,580	11,180	10,890	14,630	25,510	-550
1954	34,400	35,740	36,100	36,640	36,360	35,820	35,110	37,450	36,670	35,110	33,400	24,080	-1,430
1955	17,050	11,640	2,160	2,720	3,770	4,250	4,330	9,100	9,100	11,570	12,280	11,700	-12,380
1956	11,120	10,780	10,340	10,010	9,620	9,360	8,900	8,320	7,600	6,780	7,660	7,130	-4,570
1957	6,730	7,410	7,020	6,630	6,370	13,320	49,800	79,340	104,800	97,560	86,430	89,300	+82,170

315. Medina River near Riomedina, Tex.

Location.--Lat 29°30', long 98°54', on left bank 233 ft upstream from bridge at Haby's Crossing, 0.8 mile downstream from Bexar, Medina, Atascosa Counties Water Control & Improvement District No. 1 diversion dam, 4.3 miles northwest of Riomedina, Medina County, 9 miles upstream from San Geronimo Creek, and 10 miles north of Castroville.

Drainage area.--623 sq mi.

Gage.--Water-stage recorder. Datum of gage is 857.6 ft above mean sea level, datum of 1929 (river-profile survey). Jan. 21, 1922, to Sept. 30, 1934, water-stage recorder on upstream side of diversion dam 0.8 mile upstream at different datum.

Extremes.--1922-34, 1953-57: Maximum discharge, about 11,800 cfs Apr. 21, 1926; no flow at times.

Remarks.--Flow regulated by Medina Lake, about 5 miles upstream, and diversion dam, 0.8 mile upstream. All flow is seepage under and around dam except for occasional flow over spillway of dam. Diversion for irrigation above station. Average diversion from diversion reservoir through Medina Canal near Riomedina, 11 years (1922-33), 28.3 cfs (20,490 acre-ft per year).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	-	-	-	-	-	23.8
1924	-	-	-	-	-	-	-	-	-	-	-	-	35.6
1925	-	-	-	-	-	-	-	-	-	-	-	-	23.3
1926	-	-	-	-	-	-	-	-	-	-	-	-	31.4
1927	-	-	-	-	-	-	-	-	-	-	-	-	24.5
1928	-	-	-	-	-	-	-	-	-	-	-	-	24.3
1929	-	-	-	-	-	-	-	-	-	-	-	-	23.3
1930	-	-	-	-	-	-	-	-	-	-	-	-	21.4
1931	-	-	-	-	-	-	-	-	-	-	-	-	23.0
1932	-	-	-	-	-	-	-	-	-	-	-	-	24.7
1933	-	-	-	-	-	-	-	-	-	-	-	-	28.6
1934	-	-	-	-	-	-	-	-	-	-	-	-	31.0
1953	-	-	-	-	0	2.23	14.0	15.8	6.52	0.22	0	5.01	-
1954	1.11	0	0	0	0	.24	0	0	0	0	0	10.8	1.00
1955	13.7	12.0	14.5	6.99	.70	0	0	0	0	0	0	0	4.03
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	2.82	4.05	5.99	13.0	9.34	2.96

Note.--Annual figures only are available for the water years 1923-34 which are comprised of total seepage through and flow over diversion dam above gage.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	-	-	-	-	-	17,200
1924	-	-	-	-	-	-	-	-	-	-	-	-	25,800
1925	-	-	-	-	-	-	-	-	-	-	-	-	16,900
1926	-	-	-	-	-	-	-	-	-	-	-	-	22,800
1927	-	-	-	-	-	-	-	-	-	-	-	-	17,700
1928	-	-	-	-	-	-	-	-	-	-	-	-	17,600
1929	-	-	-	-	-	-	-	-	-	-	-	-	16,900
1930	-	-	-	-	-	-	-	-	-	-	-	-	15,500
1931	-	-	-	-	-	-	-	-	-	-	-	-	16,700

Note.--Annual figures only are available for the water years 1923-34, which are comprised of total seepage through and flow over diversion dam above gage.

Monthly and yearly runoff, in acre-feet, of Medina River near Riomedina, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	-	-	-	17,900
1933	-	-	-	-	-	-	-	-	-	-	-	-	20,700
1934	-	-	-	-	-	-	-	-	-	-	-	-	22,400
1953	-	-	-	-	0	137	834	970	388	13	0	298	-
1954	68	0	0	0	0	15	0	0	0	0	0	644	727
1955	841	716	895	430	39	0	0	0	0	0	0	0	2,920
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	173	241	368	801	556	2,140

Note.--Annual figures only are available for the water years 1923-34, which are comprised of total seepage through and flow over diversion dam above gage.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	1282	-	-	-	-	-	-	-
1954	1342	22	Sept. 30, 1954	0	1.00	727	4.30	3,110
1955	1392	31	Oct. 7, 1954	0	4.03	2,920	.65	469
1956	1442	0	-	0	0	0	0	0
1957	1512	18	Sept. 22, 1957	0	2.96	2,140	-	-

316. Medina River near San Antonio, Tex.

Location.--Lat 29°15', long 98°28', at bridge on U. S. Highway 281, 5.2 miles upstream from mouth and 9 miles south of San Antonio, Bexar County.

Drainage area.--1,225 sq mi (587 sq mi is above dam forming Medina Lake).

Supplemental records available.--October 1929 to December 1930, daily records below about 50 cfs in connection with seepage investigation (published as "at Losoya") are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 439.0 ft above mean sea level (levels by Corps of Engineers). October 1929 to December 1930, staff gage at Losoya, 1.5 miles downstream, at different datum.

Average discharge.--18 years (1939-57), 91.1 cfs (65,950 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 31,800 cfs Aug. 29, 1946; maximum gage height, 41.57 ft Sept. 27, 1946 (backwater from San Antonio River); minimum daily discharge, 3.3 cfs Apr. 18 and Nov. 1, 1956, Jan. 24, 1957.
Maximum stage known, about 55 ft sometime prior to construction of Medina Dam in 1913, from information by State Highway Department.

Remarks.--Flow slightly regulated by Medina Lake 60 miles upstream, and by diversion dam reservoir (capacity, 4,500 acre-ft). The Bexar, Medina, Atascosa Counties Water Control & Improvement District No. 1 has a permit to divert 300,000 acre-ft of water to irrigate 150,000 acres of land. Several small diversions below diversion dam reservoir. The City of San Antonio discharges sewage effluent from Mitchell Lake into the river above the gage during periods of high water. A considerable part of the low flow is waste water from Kelly Field which enters via Leon Creek.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	36.6	34.9	-
1940	37.1	37.2	64.5	41.0	65.1	44.2	81.7	77.2	131	106	39.5	35.1	63.2
1941	81.9	128	138	73.0	377	98.8	237	202	96.3	64.1	55.0	62.7	132
1942	66.5	65.0	75.8	61.9	89.8	60.5	129	135	60.0	232	68.0	850	157
1943	606	148	102	124	104	89.0	83.1	80.5	87.0	89.4	60.0	100	140
1944	77.1	98.4	77.3	106	86.7	82.3	75.4	107	63.2	59.7	123	98.3	87.9
1945	92.8	83.9	147	213	232	143	142	105	142	78.4	85.3	97.2	129
1946	103	80.4	91.0	118	96.9	101	128	124	150	78.6	839	907	235
1947	246	154	139	142	115	109	94.7	94.2	88.5	81.2	82.7	78.0	119
1948	82.2	99.2	107	92.2	109	81.2	84.0	43.2	59.3	66.6	64.7	29.6	76.4
1949	46.4	37.0	28.9	43.0	119	36.2	250	76.2	389	56.2	39.7	42.5	95.9
1950	267	58.5	112	110	72.0	78.6	95.7	79.3	111	49.6	93.8	89.7	102
1951	55.0	65.6	61.2	20.2	69.7	47.1	22.2	140	49.1	12.7	12.0	54.4	50.6
1952	13.9	13.6	15.1	17.0	60.5	30.8	24.1	25.3	10.6	8.15	6.40	46.5	22.4
1953	8.71	25.1	36.0	12.5	12.7	41.2	34.3	8.71	7.58	6.96	33.6	356	48.2
1954	19.6	16.1	19.5	17.4	13.2	13.1	35.8	29.2	7.88	6.13	6.88	8.24	16.1
1955	25.6	12.2	12.7	28.8	73.5	38.0	10.7	53.8	11.2	7.03	35.1	13.6	26.6
1956	7.60	8.50	15.7	21.0	14.9	9.77	6.63	17.0	6.52	6.73	27.9	29.0	14.3
1957	73.4	8.53	19.4	5.58	26.2	24.6	557	315	283	17.5	9.68	152	124

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	2,250	2,080	-
1940	2,280	2,220	3,970	2,520	3,740	2,720	4,860	4,750	7,810	6,530	2,430	2,090	45,920
1941	5,040	7,590	8,510	4,490	20,940	6,080	14,080	12,420	5,730	3,940	3,380	3,730	95,930
1942	4,090	3,870	4,660	3,810	4,990	3,720	7,660	8,290	3,570	14,250	4,180	50,560	113,600
1943	37,280	8,810	6,300	7,610	5,780	5,470	4,950	4,950	5,170	5,490	3,690	5,950	101,400
1944	4,740	5,860	4,750	6,550	4,980	5,060	4,490	6,550	3,760	3,670	7,540	5,850	63,800
1945	5,710	4,990	9,010	13,100	12,880	8,770	8,450	6,430	8,450	4,820	5,250	5,790	93,650
1946	6,310	4,790	5,600	7,240	5,380	6,190	7,640	7,640	8,940	4,830	51,610	53,970	170,100
1947	15,150	9,170	8,540	8,760	6,380	6,720	5,640	5,790	5,270	4,990	5,090	4,640	86,140
1948	5,050	5,900	6,610	5,670	6,250	4,990	5,000	2,660	3,530	4,100	3,980	1,760	55,500
1949	2,850	2,200	1,780	2,650	6,630	2,230	14,870	4,680	23,150	3,460	2,440	2,530	69,470

Monthly and yearly runoff, in acre-feet, of Medina River near San Antonio, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	16,390	3,480	6,910	6,740	4,000	4,830	5,690	4,880	6,590	3,050	5,770	5,340	73,670
1951	3,380	3,900	3,760	1,240	3,870	2,900	1,320	8,610	2,920	783	740	3,240	36,660
1952	857	809	930	1,050	3,480	1,890	1,430	1,550	628	501	394	2,770	16,290
1953	535	1,500	2,210	766	706	2,530	2,040	536	451	428	2,060	21,160	34,920
1954	1,200	958	1,200	1,070	732	805	2,130	1,800	469	377	423	490	11,650
1955	1,570	725	780	1,770	4,080	2,340	636	3,310	664	432	2,160	807	19,270
1956	468	506	963	1,290	856	601	395	1,040	388	414	1,720	1,720	10,360
1957	4,510	507	1,190	343	1,460	1,510	33,160	19,400	16,870	1,080	595	9,050	89,680

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	928	-	-	-	-	-	-	-
1940	928	2,540	June 30, 1940	22	63.2	45,920	80.7	58,590
1941	1038	6,890	Feb. 2, 1941	33	132	95,930	121	87,410
1942	1038	17,500	Sept. 5, 1942	49	157	113,600	212	153,400
1943	1038	12,100	Oct. 18, 1942	53	140	101,400	89.0	64,410
1944	1038	2,000	Aug. 28, 1944	54	87.9	63,800	93.9	68,160
1945	1038	3,540	Feb. 12, 1945	63	129	93,650	125	90,640
1946	1058	31,800	Aug. 29, 1946	59	235	170,100	257	186,300
1947	1088	1,470	Oct. 9, 1946	75	119	86,140	97.8	70,840
1948	1118	2,050	Aug. 27, 1948	7.4	76.4	55,500	61.7	44,770
1949	1148	17,400	June 26, 1949	12	95.9	69,470	123	89,420
1950	1178	5,660	Oct. 25, 1949	32	102	73,670	80.0	57,930
1951	1212	2,150	May 16, 1951	12	50.6	36,660	39.0	28,220
1952	1242	801	Sept. 12, 1952	4.6	22.4	16,290	24.7	17,940
1953	1282	4,960	Sept. 4, 1953	5.0	48.2	34,920	47.0	34,040
1954	1342	865	Apr. 8, 1954	4.6	16.1	11,650	15.7	11,370
1955	1392	1,200	Feb. 6, 1955	4.8	26.6	19,270	25.0	18,140
1956	1442	1,750	Sept. 1, 1956	3.3	14.3	10,360	20.2	14,630
1957	1512	5,180	Apr. 29, 1957	3.3	124	89,680	-	-

317. Calaveras Creek near Elmendorf, Tex.

Location.--Lat 29°15'30", long 98°17'30", at bridge on U. S. Highway 181, 2.5 miles east of Elmendorf, Bexar County, 5 miles upstream from mouth, and 10 miles southeast from City limits of San Antonio.

Drainage area.-- 77.2 sq mi, of which 25.47 sq mi is above 7 flood-detention structures.

Gage.--Water-stage recorder. Datum of gage is 406.45 ft above mean sea level, datum of 1929, supplementary adjustment of 1943.

Extremes.--1954-57: Maximum discharge, 5,310 cfs Sept. 25, 1957 (gage height 21.83 ft); no flow most of time.
Maximum stage known since at least 1860, about 35 ft Sept. 29, 1946, from information by local residents.

Remarks.--Station operated as part of the Calaveras Creek hydrologic program to evaluate rainfall-runoff relation, soil-conservation practices, and the effects of flood-detention structures. At the end of 1957 the flow from 25.47 sq mi above this station was partly controlled by 7 floodwater-detention reservoirs (constructed during the period 1954-57) with a total combined capacity of 9,570 acre-ft below the flood-spillway crests, of which 8,050 acre-ft is floodwater-detention capacity and 1,520 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	-	0	-
1955	0.10	1.90	0	2.39	10.0	5.51	0	22.1	5.69	0.11	4.64	.63	4.40
1956	3.64	0	4.20	0	0	0	0	2.76	0	4.08	.42	3.62	1.57
1957	3.33	.09	49.2	.02	1.80	10.9	145	92.1	52.6	0	0	160	42.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	-	0	-
1955	6.3	113	0	147	556	339	0	1,360	338	6.5	285	37	3,190
1956	224	0	258	0	0	0	0	170	0	251	26	215	1,140
1957	204	5.6	3,030	1.0	100	673	8,610	5,670	3,130	0	0	9,530	30,950

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1392	-	-	-	-	-	-	-
1955	1392	568	May 16, 1955	0	4.40	3,190	4.90	3,550
1956	1442	607	Oct. 11, 1955	0	1.57	1,140	5.37	3,900
1957	1512	5,310	Sept. 25, 1957	0	42.7	30,950	-	-

318. San Antonio River at Calaveras, Tex.

Location.--Lat 29°13', long 98°15', a quarter of a mile south of Calaveras, Wilson County, and 1 mile below mouth of Calaveras Creek.

Drainage area.--1,786 sq mi.

Gage.--Staff gage. Datum of gage is 361.23 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--6 years (1918-24), 402 cfs (291,000 acre-ft per year).

Extremes.--1918-25: Maximum discharge, 18,500 cfs Sept. 11, 1921 (gage height, 42.0 ft, observed); minimum, 15 cfs Sept. 14, 1918.

Remarks.--Flow partly regulated by Medina Lake (capacity, 254,000 acre-ft). Storage began in Medina Reservoir in 1913. Water diverted above station from Medina River for irrigation in vicinity of Devine and Lytle and some water diverted for irrigation near San Antonio. Water used industrially in San Antonio.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	383	633	79.3	35.1	60.6	52.5	-
1919	158	86.9	190	473	105	89.0	228	224	301	536	202	3,630	516
1920	3,870	1,270	658	750	610	418	332	411	354	217	222	166	777
1921	178	250	213	216	176	529	298	202	221	137	95.4	1,220	311
1922	222	172	229	206	157	355	662	759	296	157	105	96.5	285
1923	94.8	215	138	148	309	230	289	155	118	102	94.0	175	171
1924	128	248	439	288	372	304	392	486	867	295	193	237	353
1925	168	186	230	159	143	130	104	149	75.3	63.6	80.1	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	22,800	38,900	4,720	2,160	3,730	3,120	-
1919	9,720	5,170	11,700	29,100	5,830	5,470	13,600	13,800	17,900	33,000	12,400	216,000	374,000
1920	238,000	75,600	40,500	46,100	35,100	25,700	19,800	25,300	21,100	13,300	13,600	9,880	564,000
1921	10,900	14,900	13,100	13,300	9,780	32,500	17,700	12,400	13,200	8,420	5,870	72,800	225,000
1922	13,600	10,300	14,100	12,600	8,700	21,800	39,400	46,600	17,600	9,660	6,440	5,740	207,000
1923	5,830	12,800	8,500	9,080	17,100	14,100	17,200	9,500	7,050	6,260	5,780	10,400	124,000
1924	7,850	14,700	27,000	17,700	21,400	18,700	23,300	29,900	51,600	18,200	11,800	14,100	256,000
1925	10,300	11,100	14,100	9,770	7,950	7,990	6,170	9,170	4,480	3,910	4,930	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	478	11,200	May 6, 1918	-	-	-	-	-
1919	508	15,100	Sept. 24, 1919	31	516	374,000	968	701,000
1920	508	10,800	Oct. 7, 1919	146	777	564,000	343	249,000
1921	528	18,500	Sept. 11, 1921	89	311	225,000	309	224,000
1922	548	7,440	May 3, 1922	83	285	207,000	270	196,000
1923	568	2,340	Sept. 7, 1923	48	171	124,000	202	146,000
1924	588	6,080	June 23, 1924	67	353	256,000	334	242,000
1925	608	1,600	Dec. 3, 1924	-	-	-	-	-

319. San Antonio River near Falls City, Tex.

Location.--Lat 28°57'05", long 98°03'55", at bridge on Farm Road 791, 0.9 mile upstream from Scared Dog Creek and 3.6 miles southwest of Falls City, Karnes County.

Drainage area.--2,071 sq mi.

Gage.--Water-stage recorder. Datum of gage is 285.49 ft above mean sea level, datum of 1929.

Average discharge.--32 years (1925-57), 293 cfs (212,100 acre-ft per year).

Extremes.--1925-57: Maximum discharge, 47,400 cfs Sept. 29, 1946 (gage height, 33.80 ft from floodmark); minimum, 15 cfs June 27-28, 1956.

Maximum stage since at least 1875, that of Sept. 29, 1946. Flood of October 1913 reached a stage of 28.4 ft, from information by local resident.

Remarks.--Flow partly regulated by Medina Lake and Olmos flood-control reservoir (combined capacity, 269,500 acre-ft). Storage began in Medina Lake in 1913, and Olmos dam was completed in 1926. Flow also slightly regulated by Soil Conservation Service floodwater-detention reservoirs. (See Remarks for Calaveras Creek near Elmendorf.) Water diverted above station from Medina River for irrigation in vicinity of Devine and Lytle; some water is diverted for irrigation near San Antonio. Water used industrially in San Antonio.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	-	201	99.6	95.6	84.1	146	-
1926	106	189	121	143	116	213	1,450	739	238	153	101	88.3	304
1927	101	122	149	150	169	198	221	127	364	92.3	62.4	84.5	153
1928	174	68.7	117	121	101	162	136	334	285	87.9	51.8	172	151
1929	125	208	157	129	120	163	199	1,330	232	229	74.6	108	258
1930	132	113	150	141	129	132	130	196	211	105	57.6	57.7	130
1931	98.4	102	85.6	204	188	356	175	205	158	284	130	106	175
1932	89.3	123	147	225	225	150	139	175	96.9	163	122	349	167
1933	203	161	176	163	220	159	144	196	168	212	159	162	177
1934	113	114	107	276	180	218	467	148	90.0	165	102	100	173
1935	117	189	377	162	208	156	307	1,710	3,321	439	255	781	667

Monthly and yearly mean discharge, in cubic feet per second, of San Antonio River near Falls City, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	517	308	336	308	273	296	242	1,263	586	2,492	386	1,199	687
1937	1,370	606	500	417	356	352	306	208	1,801	291	188	168	547
1938	211	183	570	541	295	359	679	445	247	178	137	142	333
1939	115	148	165	190	178	155	119	102	124	134	136	105	139
1940	84.6	85.9	124	112	163	120	293	181	352	394	180	104	183
1941	205	777	461	284	640	321	699	876	521	232	198	387	464
1942	318	198	227	207	230	182	373	292	195	1,480	230	1,923	488
1943	1,504	434	307	330	286	285	251	236	268	307	179	266	390
1944	200	224	204	352	234	325	240	503	260	196	218	271	269
1945	206	203	350	527	640	473	554	300	376	234	219	199	355
1946	344	224	216	300	288	341	428	540	591	198	862	4,100	699
1947	1,010	599	439	535	410	424	331	330	260	202	320	202	423
1948	185	230	242	220	249	203	186	157	136	277	348	177	218
1949	212	136	121	146	300	155	988	336	1,268	297	227	145	358
1950	576	210	259	230	179	207	227	199	248	144	173	162	235
1951	109	116	117	90.4	165	172	136	326	330	95.0	72.4	203	161
1952	121	119	114	114	196	133	229	125	105	147	62.6	194	138
1953	69.7	117	172	161	121	140	139	159	58.8	78.0	168	644	168
1954	108	110	125	119	95.3	91.0	130	207	73.0	55.3	40.4	58.7	101
1955	95.7	81.5	70.6	104	228	130	65.5	197	96.0	60.8	102	109	111
1956	57.5	67.3	105	106	94.9	75.6	61.2	84.7	38.0	76.6	87.7	252	92.0
1957	175	78.7	204	89.0	135	193	1,300	1,312	948	106	68.9	923	460

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	-	12,400	5,930	5,880	5,170	8,670	-
1926	6,510	11,200	7,420	8,770	6,430	13,100	86,100	45,500	14,200	9,410	6,210	5,250	220,000
1927	6,200	7,250	9,160	9,240	9,370	12,200	13,100	7,800	21,700	5,670	3,840	5,030	111,000
1928	10,700	4,090	7,190	7,440	5,810	9,960	8,090	20,500	17,000	5,400	3,190	10,200	110,000
1929	7,690	12,400	9,650	7,930	6,660	10,000	11,800	81,800	13,800	14,100	4,590	6,430	187,000
1930	8,120	6,720	9,220	8,670	7,160	8,120	7,740	12,100	12,600	6,460	3,540	3,430	93,900
1931	6,050	6,070	5,260	12,500	10,400	21,900	10,400	12,600	9,400	17,500	7,990	6,310	126,000
1932	5,490	7,320	9,040	13,800	12,900	9,220	8,270	10,800	5,770	10,000	7,500	20,800	121,000
1933	12,500	9,580	10,800	10,000	12,200	9,780	8,570	12,100	10,000	13,000	9,780	9,640	128,000
1934	6,950	6,780	6,580	17,000	10,000	13,400	27,800	9,100	5,360	10,100	6,270	5,950	125,000
1935	7,180	11,220	23,160	9,950	11,530	9,590	18,280	105,200	197,600	27,000	15,650	46,460	482,800
1936	31,810	18,320	20,690	18,910	15,700	18,190	14,420	77,670	34,890	153,200	23,750	71,370	498,900
1937	84,240	36,070	30,730	25,650	19,800	21,620	18,190	12,760	107,100	17,870	11,590	9,990	395,600
1938	12,970	10,900	35,080	33,250	16,410	22,090	40,410	27,380	14,700	10,970	8,430	8,440	241,000
1939	7,060	8,810	10,160	11,670	9,880	9,530	7,090	6,280	7,390	8,250	8,380	6,260	100,800
1940	5,200	5,110	7,650	6,880	9,380	7,390	17,410	11,140	20,970	24,240	11,090	6,180	132,600
1941	12,600	46,250	28,330	17,470	35,520	19,730	41,620	53,840	30,990	14,250	12,160	23,030	335,800
1942	19,550	11,760	13,960	12,720	12,770	11,180	22,210	17,980	11,610	91,030	14,130	114,500	353,400
1943	92,500	25,830	18,910	20,320	15,870	17,520	14,910	14,520	15,960	18,890	11,010	15,820	282,100
1944	12,270	13,340	12,540	21,650	13,450	19,960	14,310	30,950	15,460	12,030	13,410	16,100	195,500
1945	12,660	12,110	21,490	32,390	35,550	29,090	32,940	18,460	22,360	14,360	13,440	11,830	256,700
1946	21,160	13,310	13,310	18,430	15,980	20,950	25,450	33,200	35,180	12,160	53,020	243,900	506,000
1947	62,120	35,660	27,020	32,910	22,750	26,060	19,720	20,270	15,450	12,400	19,660	12,000	306,000
1948	11,380	13,690	14,860	13,550	14,300	12,500	11,050	9,660	8,100	17,040	21,370	10,550	158,000
1949	13,020	8,100	7,430	8,990	16,670	9,560	58,770	20,660	75,450	18,270	13,970	8,600	259,500
1950	35,390	12,520	15,920	14,150	9,930	12,720	13,480	12,240	14,780	8,850	10,650	9,630	170,300
1951	6,680	6,930	7,170	5,560	9,160	10,600	8,090	20,030	19,640	5,840	4,450	12,050	116,200
1952	7,430	7,100	7,040	7,030	11,250	8,190	13,650	7,700	6,230	9,030	3,850	11,550	100,000
1953	4,280	6,970	10,560	9,910	6,710	8,590	8,260	9,800	3,500	4,800	10,300	38,310	122,000
1954	6,610	6,520	7,710	7,340	5,290	5,590	7,730	12,700	4,340	3,400	2,480	3,490	73,200
1955	5,880	4,850	4,340	6,410	12,680	7,990	3,900	12,130	5,710	3,740	6,300	6,480	80,410
1956	3,540	4,000	6,440	6,510	5,460	4,650	3,640	5,210	2,260	4,710	5,390	15,000	66,810
1957	10,760	4,680	12,560	5,470	7,500	11,860	77,340	80,650	56,380	6,510	4,240	54,900	332,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	a3,290	July 11, 1925	-	-	-	-	-
1926	628	9,260	Apr. 23, 1926	65	304	220,000	300	218,000
1927	648	2,220	June 16, 1927	57	153	111,000	152	110,000
1928	668	5,550	Oct. 1, 1927	36	151	110,000	162	117,000
1929	688	10,100	May 29, 1929	54	258	187,000	250	181,000
1930	703	1,290	May 16, 1930	43	130	93,900	120	87,200
1931	718	2,540	July 20, 1931	47	175	126,000	181	131,000
1932	733	1,660	Feb. 20, 1932	64	167	121,000	182	132,000
1933	748	5,990	July 30, 1933	78	177	128,000	159	115,000
1934	763	3,400	Apr. 7, 1934	68	173	125,000	202	146,500
1935	788	14,300	June 15, 1935	81	667	482,800	707	512,100
1936	808	16,200	July 3, 1936	185	687	498,900	798	579,100
1937	828	14,600	June 2, 1937	149	547	395,600	419	303,500
1938	858	4,320	Apr. 26, 1938	113	333	241,000	287	208,100
1939	878	1,280	July 14, 1939	69	139	100,800	128	92,690

a Maximum during period April to September.

Yearly discharge, in cubic feet per second, of San Antonio River near Falls City, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	898	3,700	Apr. 7, 1940	69	183	132,600	278	201,900
1941	928	6,620	Nov. 6, 1940	87	464	335,800	406	293,900
1942	958	18,500	July 6, 1942	152	488	353,400	615	445,400
1943	978	7,880	Oct. 20, 1942	159	390	282,100	253	183,000
1944	1008	5,170	May 28, 1944	141	269	195,500	280	203,600
1945	1038	3,820	Jan. 20, 1945	148	355	256,700	357	258,200
1946	1058	47,400	Sept. 29, 1946	152	699	506,000	805	583,100
1947	1088	11,900	Oct. 1, 1946	170	423	306,000	305	221,200
1948	1118	10,900	Aug. 26, 1948	70	218	158,000	202	146,700
1949	1148	14,800	June 28, 1949	92	358	259,500	407	294,800
1950	1178	4,020	Oct. 27, 1949	82	235	170,300	176	127,200
1951	1212	2,640	June 5, 1951	56	161	116,200	162	117,000
1952	1242	2,100	July 18, 1952	35	138	100,000	138	100,300
1953	1282	5,040	May 18, 1953	38	168	122,000	167	121,000
1954	1342	1,950	May 25, 1954	27	101	73,200	93.2	67,430
1955	1392	1,660	Feb. 7, 1955	33	111	80,410	110	79,320
1956	1442	3,590	Sept. 2, 1956	19	92.0	66,810	111	80,830
1957	1512	6,920	Apr. 27, 1957	39	460	332,800	-	-

320. Cibolo Creek near Bulverde, Tex.

Location.--Lat 29°43'35", long 98°25'40", on left bank at William Classen ranchhouse, 1.8 miles downstream from bridge on U. S. Highway 281, 2 miles southeast of Bulverde, Comal County, and 4.7 miles upstream from Dripping Springs Creek.

Drainage area.--198 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 1,013 ft (by altimeter).

Average discharge.--11 years (1946-57), 6.49 cfs (4,700 acre-ft per year).

Extremes.--1946-57: Maximum discharge, 11,700 cfs Sept. 11, 1952 (gage height, 15.16 ft from floodmarks), from rating curve extended above 4,400 cfs on basis of slope-area measurement of peak flow; no flow most of time.

Remarks.--The purpose of the station is to determine the streamflow losses during periods of medium and low flow. Samll diversion upstream from station. Much of the flow enters sink holes and caverns in the Glen Rose limestone above the station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	5.58	0	0	0	123	-
1947	11.7	30.4	5.90	16.5	0.02	0	0	0	0	0	0	0	5.40
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	.03	50.6	2.61	0	0	0	0	4.38
1950	.01	0	0	0	0	0	0	0	0	4.24	0	0	.36
1951	0	0	0	0	0	0	0	.07	0	0	0	0	.006
1952	0	0	0	0	0	0	0	0	0	0	0	171	14.0
1953	0	.11	.02	0	0	0	0	0	0	2.32	2.99	17.1	1.86
1954	.07	0	0	0	0	0	0	0	0	0	0	0	.006
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	.40	0	.03
1957	0	0	0	0	0	37.8	201	197	109	0	0	.13	45.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	343	0	0	0	7,300	-
1947	719	1,810	363	1,020	1.0	0	0	0	0	0	0	0	3,910
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	1.6	3,010	161	0	0	0	0	3,170
1950	.4	0	0	0	0	0	0	0	0	261	0	0	261
1951	0	0	0	0	0	0	0	4.2	0	0	0	0	4.2
1952	0	0	0	0	0	0	0	0	0	0	0	10,200	10,200
1953	0	6.7	1.2	0	0	0	0	0	0	143	184	1,020	1,350
1954	4.4	0	0	0	0	0	0	0	0	0	0	0	4.4
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	24	0	24
1957	0	0	0	0	0	2,320	11,950	12,080	6,500	0	0	7.5	32,860

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	8,510	Sept. 27, 1946	-	-	-	-	-
1947	1088	5,610	Nov. 9, 1946	0	5.40	3,910	1.41	1,020
1948	1118	0	-	0	0	0	0	0
1949	1148	1,100	Apr. 28, 1949	0	4.38	3,170	4.38	3,170
1950	1178	510	July 14, 1950	0	.36	261	.36	261
1951	1212	15	May 4, 1951	0	.006	4.2	.006	4.2
1952	1242	11,700	Sept. 11, 1952	0	14.0	10,200	14.1	10,210
1953	1282	1,840	Sept. 1, 1953	0	1.86	1,350	1.86	1,350
1954	1342	34	Oct. 25, 1953	0	.006	4.4	0	0
1955	1392	0	-	0	0	0	0	0

Yearly discharge, in cubic feet per second, of Cibolo Creek near Bulverde, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1442	73	Aug. 20, 1956	0	0.03	24	0.03	24
1957	1512	11,600	May 27, 1957	0	45.4	32,860	-	-

321. Cibolo Creek above Bracken, Tex.

Location.--Lat 29°40'30", long 98°23'00", 0.1 mile downstream from West Fork Creek and 5.8 miles northwest of Bracken, Comal County.

Drainage area.--251 sq mi.

Gage.--Water-stage recorder. Datum of gage unknown.

Extremes.--1946-51: Maximum gage height, 11.04 ft Sept. 27, 1946, from floodmark (discharge not determined); no flow most of time.

Remarks.--Discharge not computed above about 500 cfs. Purpose of station is to determine the streamflow losses during periods of medium and low flow. There are no surface diversions, but much of surface flow enters sink holes and caverns in Glen Rose limestone above Station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	0	-	0	0	0	-	-
1947	9.98	-	13.1	14.3	1.14	0	0	0	0	0	0	0	-
1948	0	0	0	0	0	0	0	2.69	0	0	0	0	0.23
1949	0	0	0	0	0	0	-	5.47	0	0	0	0	-
1950	.22	0	0	0	0	0	0	0	0	0	0	0	.02
1951	0	0	0	0	0	0	0	0	0	0	0	0	0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	0	-	0	0	0	-	-
1947	613	-	807	878	63	0	0	0	0	0	0	0	-
1948	0	0	0	0	0	0	0	165	0	0	0	0	165
1949	0	0	0	0	0	0	-	337	0	0	0	0	-
1950	13	0	0	0	0	0	0	0	0	0	0	0	13
1951	0	0	0	0	0	0	0	0	0	0	0	0	0

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	-	-	-	-	-	-	-
1947	1088	-	-	0	-	-	1.30	941
1948	1118	468	May 11, 1948	0	0.23	165	.23	165
1949	1148	-	-	0	-	-	-	-
1950	1178	6.6	Oct. 24, 1949	0	.02	13	0	0
1951	1212	0	-	0	0	0	-	-

322. Cibolo Creek at Selma, Tex.

Location.--Lat 29°35'35", long 98°18'40", on right bank 0.6 mile downstream from Missouri-Kansas-Texas Railroad bridge and 0.8 mile upstream from bridge on U. S. Highway 81 at Selma, Bexar County.

Drainage area.--280 sq mi.

Gage.--Water-stage recorder. Datum of gage is 728.34 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1946-57), 8.54 cfs (6,180 acre-ft per year).

Extremes.--1946-57: Maximum discharge, 36,400 cfs Sept. 11, 1952 (gage height, 19.37 from rating curve extended above 7,000 cfs on basis of slope-area measurement of peak flow; no flow most of time.
Maximum stage known since at least 1869, about 26 ft in 1889; flood of 1913 was probably about 1 ft lower, from information by local residents.

Remarks.--Small diversion above station. Most of low flow enters the Edwards limestone in the Balcones fault zone which crosses the basin between this station and station near Bulverde.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-		0	26.1	2.08	0	0	117	-
1947	1.25	44.7	4.34	0.15	0	0	0	0	0	0	0	0	4.16
1948	0	0	0	0	0	0	0	0	0	.11	0	0	.01
1949	.04	0	0	0	0	0	32.3	1.34	0	0	0	0	2.77
1950	.28	0	0	0	0	0	0	0	0	0	0	0	.02
1951	0	0	0	0	0	0	0	0	5.25	0	0	0	.43
1952	0	0	0	0	0	0	0	0	0	0	0	370	30.4
1953	.02	0	0	0	0	0	.01	0	0	0	.02	4.11	.34
1954	0	0	.71	0	0	0	0	0	0	0	0	0	.06
1955	0	0	0	0	0	0	0	.01	0	0	0	0	.0008
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	18.0	217	287	141	0	0	3.47	55.7

Monthly and yearly runoff, in acre-feet, of Cibolo Creek at Selma, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	0	1,600	124	0	0	6,940	-
1947	77	2,660	267	8.9	0	0	0	0	0	0	0	0	3,010
1948	0	0	0	0	0	0	0	0	0	6.7	0	0	6.7
1949	2.2	0	0	0	0	0	1,920	82	0	0	0	0	2,000
1950	17	0	0	0	0	0	0	0	0	0	0	0	17
1951	0	0	0	0	0	0	0	0	312	0	0	0	312
1952	0	0	0	0	0	0	0	0	0	0	0	22,040	22,040
1953	1.2	0	0	0	0	0	.8	0	0	0	1.0	244	247
1954	0	0	44	0	0	0	0	0	0	0	0	0	44
1955	0	0	0	0	0	0	0	.6	0	0	0	0	.6
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	1,110	12,930	17,670	8,410	0	0	207	40,330

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	a7,240	Sept. 27, 1946	0	-	-	-	-
1947	1088	4,900	Nov. 10, 1946	0	4.16	3,010	0.01	8.9
1948	1118	37	July 5, 1948	0	.01	6.7	.01	8.9
1949	1148	996	Apr. 29, 1949	0	2.77	2,000	2.79	2,020
1950	1178	69	Oct. 24, 1949	0	.02	17	0	0
1951	1212	1,180	June 3, 1951	0	.43	312	.43	312
1952	1242	36,400	Sept. 11, 1952	0	30.4	22,040	30.4	22,040
1953	1282	189	Sept. 5, 1953	0	.34	247	.40	290
1954	1342	262	Dec. 2, 1953	0	.06	44	0	0
1955	1392	8.2	May 19, 1955	0	.0008	.6	.0008	.6
1956	1442	6.6	May 15, 1956	0	0	0	0	0
1957	1512	16,900	May 27, 1957	0	55.7	40,330	-	-

a Maximum during period March to September.

323. Cibolo Creek at Sutherland Springs, Tex.

Location.--Lat 29°17', long 98°03', at bridge on county road at Sutherland Springs, Wilson County, 5-1/2 miles downstream from Elm Creek and about 25 miles upstream from mouth and San Antonio River.

Drainage area.--665 sq mi.

Gage.--Staff gage. Altitude of gage is about 370 ft above mean sea level (from topographic map).

Extremes.--1924-29: Maximum discharge, 23,800 cfs Apr. 21, 1926 (gage height, 28.5 ft), from rating curve extended above 1,500 cfs on basis of slope-area measurements at gage heights 28.5 and 27.9 ft; minimum, 4.4 cfs Nov. 11, 12, 1928.
Flood in September 1913 reached a stage of about 39 ft, from information by local residents.

Remarks.-- Much of the flow of the creek enters sink holes and caverns in the Glen Rose limestone and in the Edwards limestone in the Balcones fault zone which crosses the basin above station at Selma.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	24.7	19.7	18.9	-
1925	12.6	20.4	16.7	16.0	17.8	13.6	16.2	14.5	12.1	13.2	13.0	10.1	14.7
1926	37.7	21.4	13.3	19.0	16.1	71.5	1,870	122	32.1	16.4	13.9	11.0	186
1927	16.1	14.3	18.5	16.5	22.1	142	62.9	15.0	44.6	12.4	10.2	14.7	32.5
1928	35.7	11.0	13.0	14.9	14.0	14.1	16.6	142	178	11.6	7.84	9.18	39.0
1929	14.4	71.5	26.5	20.6	12.0	16.4	95.9	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	1,520	1,210	1,120	-
1925	774	1,210	1,030	984	990	839	964	893	718	809	799	599	10,600
1926	2,320	1,270	819	1,170	897	4,400	112,000	7,500	1,910	1,010	857	657	135,000
1927	992	852	1,140	1,010	1,220	8,750	3,740	920	2,660	765	625	875	23,500
1928	2,200	655	799	916	805	867	988	8,730	10,600	713	482	546	28,300
1929	885	4,250	1,630	1,270	666	1,010	5,710	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	-	-	-	-	-
1925	608	32	Dec. 2, 1924	7.7	14.7	10,600	16.6	12,000
1926	628	23,800	Apr. 21, 1926	7.7	186	135,000	184	133,000
1927	648	3,890	Mar. 26, 1927	8.4	32.5	23,500	33.5	24,200
1928	668	5,480	May 13, 1928	5.8	39.0	28,300	43.3	31,400
1929	688	-	-	-	-	-	-	-

324. Cibolo Creek near Falls City, Tex.

Location.--Lat 29°01', long 97°56', at bridge on State Highway 123, 5.5 miles northeast of Falls City, Karnes County, and 9 miles upstream from mouth.

Drainage area.--831 sq mi.

Gage.--Water-stage recorder. Datum of gage is 264.28 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Nov. 4, 1930, to Aug. 4, 1940, water-stage recorder at site 1,600 ft upstream at datum 0.56 ft higher. Aug. 5 to Sept. 13, 1940, wire-weight gage at present site and datum.

Average discharge.--27 years (1930-57), 110 cfs (79,640 acre-ft per year).

Extremes.--1930-57: Maximum discharge, 33,600 cfs July 6, 1942 (gage height, 34.45 ft); no flow July 30-31, Aug. 4-22, 1956. Flood in October 1913 reached a stage about half a foot higher than that of July 6, 1942.

Remarks.--Diversions upstream from station for irrigation. Much of the flow of the creek enters sink holes and caverns in the Glen Rose limestone and in the Edwards limestone in the Balcones fault zone which crosses the basin above station at Selma.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	12.1	10.7	11.5	71.1	69.8	144	27.5	98.9	44.4	146	13.4	11.3	55.2
1932	8.49	8.08	12.1	87.7	128	51.6	128	56.9	11.7	15.7	9.63	35.6	45.7
1933	10.5	10.5	13.0	13.3	14.3	13.0	20.0	200	10.5	276	34.1	19.3	53.6
1934	14.4	10.3	11.5	95.2	44.5	87.8	209	20.0	9.12	273	16.0	16.5	67.6
1935	14.8	152	154	25.8	124	25.0	200	1,130	1,476	74.0	35.4	265	305
1936	45.9	27.2	69.0	26.0	24.6	40.2	28.5	395	37.0	895	30.4	78.1	143
1937	53.8	32.1	30.0	30.1	26.3	43.8	28.7	16.8	719	24.0	19.6	35.3	87.5
1938	26.0	16.0	374	269	36.7	164	769	120	51.3	26.1	19.3	18.2	158
1939	15.6	19.4	22.2	20.0	19.3	18.3	14.7	23.7	15.8	16.4	31.0	9.88	18.9
1940	9.94	8.58	11.3	13.0	14.9	13.5	107	25.1	378	109	9.05	8.85	58.6
1941	70.6	565	503	167	292	154	778	723	309	50.2	33.3	176	317
1942	175	27.6	26.4	23.5	23.1	22.1	86.4	48.6	18.7	1,357	58.7	1,476	279
1943	564	78.3	52.7	50.6	41.5	49.2	30.2	74.2	71.5	71.5	17.1	39.0	95.8
1944	19.0	41.9	23.2	121	36.1	83.5	60.0	643	56.9	27.4	28.4	40.7	99.3
1945	20.1	25.7	66.6	188	260	178	216	27.5	73.8	18.5	17.4	11.6	90.7
1946	63.0	18.5	19.7	32.1	38.8	85.5	271	619	238	21.2	909	837	264
1947	251	118	59.3	175	39.9	81.0	50.3	252	35.6	23.7	29.3	18.5	95.3
1948	15.6	19.8	22.3	21.8	26.4	21.3	18.3	64.8	19.9	43.6	162	27.9	38.9
1949	39.2	14.5	15.1	18.7	53.0	19.8	776	90.9	273	34.5	37.0	17.9	115
1950	514	34.7	62.1	26.2	32.6	23.0	51.8	19.6	268	19.2	19.3	19.7	91.2
1951	11.8	12.4	14.8	15.5	17.4	19.5	16.5	39.6	176	9.42	7.75	35.7	31.1
1952	10.5	13.4	14.1	14.7	28.3	15.4	45.8	58.4	17.2	12.7	6.32	821	87.0
1953	19.4	26.5	71.5	25.5	19.5	16.8	50.7	69.2	13.2	8.72	96.8	284	58.4
1954	27.4	17.6	59.7	18.0	16.2	14.5	16.3	40.7	15.0	7.29	4.75	6.21	20.4
1955	15.2	12.3	9.99	12.1	41.0	51.3	12.6	47.3	68.1	7.25	17.1	25.0	26.5
1956	10.8	8.41	14.0	10.3	9.64	7.04	7.57	18.2	2.04	8.21	2.40	26.3	10.4
1957	44.2	11.1	141	11.2	23.9	98.2	1,058	642	494	25.2	14.1	563	259

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	742	637	707	4,370	3,880	8,850	1,640	6,080	2,640	8,980	824	672	40,000
1932	522	481	744	5,390	7,360	3,170	7,620	3,500	696	965	592	2,120	33,200
1933	646	625	799	818	794	799	1,190	12,300	625	17,000	2,100	1,150	38,800
1934	885	613	707	5,850	2,470	5,400	12,400	1,230	543	16,800	984	982	48,900
1935	908	9,030	9,470	1,590	6,860	1,540	11,870	69,470	87,840	4,550	2,180	15,750	221,100
1936	2,820	1,620	4,240	1,600	1,410	2,470	1,700	24,300	2,200	55,050	1,870	4,650	103,900
1937	3,310	1,910	1,840	1,850	1,460	2,690	1,710	1,030	42,770	1,470	1,210	2,100	63,350
1938	1,600	954	23,020	16,550	2,040	10,060	45,780	7,390	3,050	1,610	1,190	1,080	114,300
1939	960	1,160	1,360	1,230	1,070	1,120	877	1,460	943	1,010	1,900	588	13,680
1940	611	511	697	799	857	829	6,370	1,550	22,510	6,730	556	527	42,550
1941	4,340	33,590	30,930	10,260	16,220	9,470	46,260	44,470	18,360	3,080	2,040	10,460	229,500
1942	10,790	1,640	1,620	1,450	1,280	1,360	5,140	2,990	1,110	83,450	3,610	87,800	202,200
1943	34,650	4,660	3,240	3,110	2,300	3,020	1,800	4,560	4,250	4,400	1,050	2,320	69,360
1944	1,170	2,490	1,430	7,440	2,080	5,140	3,570	39,540	3,390	1,680	1,740	2,420	72,090
1945	1,230	1,530	4,100	11,540	14,460	10,930	12,860	1,690	4,390	1,140	1,070	691	65,630
1946	3,880	1,100	1,210	1,970	2,160	5,260	16,100	38,060	14,140	1,300	55,890	49,790	190,900
1947	15,440	7,000	3,650	10,790	2,220	4,980	2,990	15,480	2,120	1,460	1,800	1,100	69,030
1948	958	1,180	1,370	1,340	1,520	1,310	1,090	3,980	1,190	2,680	9,930	1,660	28,210
1949	2,410	861	930	1,150	2,940	1,220	46,200	5,590	16,240	2,120	2,280	1,070	83,010
1950	31,580	2,060	3,820	1,610	1,810	1,410	3,080	1,210	15,930	1,180	1,190	1,170	66,050
1951	725	740	912	956	966	1,200	984	2,430	10,450	579	477	2,120	22,540
1952	645	795	869	906	1,630	946	2,730	3,590	1,020	782	389	48,850	63,150
1953	1,190	1,570	4,400	1,570	1,080	1,030	3,020	4,250	784	536	5,950	16,880	42,260
1954	1,690	1,050	3,670	1,110	902	893	968	2,500	890	448	292	370	14,780
1955	933	730	614	746	2,280	3,150	753	2,910	4,050	446	1,050	1,490	19,150
1956	665	501	863	635	555	433	450	1,120	121	505	147	1,570	7,560
1957	2,720	659	8,670	688	1,330	6,040	62,930	39,470	29,420	1,550	865	33,510	187,900

Yearly discharge, in cubic feet per second, of Cibolo Creek near Falls City, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	718,733	7,020	July 19, 1931	-	55.2	40,000	54.8	39,700
1932	733	4,200	Apr. 29, 1932	7.2	45.7	33,200	46.2	33,500
1933	748,1562	9,550	July 30, 1933	-	53.6	38,800	53.8	39,000
1934	763	4,670	July 27, 1934	7.0	67.6	48,900	91.4	66,130
1935	788,1058	28,600	June 14, 1935	9.2	305	221,100	291	210,300
1936	808	16,200	July 2, 1936	17	143	103,900	141	102,300
1937	828	15,000	June 5, 1937	13	87.5	63,350	113	81,860
1938	858	10,300	Apr. 25, 1938	13	158	114,300	127	92,230
1939	878	764	Aug. 6, 1939	7.0	18.9	13,680	16.6	12,020
1940	898	7,880	June 29, 1940	5.4	58.6	42,550	151	109,600
1941	928	11,500	(a)	5.4	317	229,500	241	174,700
1942	958	33,600	July 6, 1942	11	279	202,200	319	230,700
1943	978	8,090	Oct. 5, 1942	14	95.8	69,360	44.1	31,900
1944	1008	7,640	May 28, 1944	13	99.3	72,090	102	73,860
1945	1038	5,230	Feb. 13, 1945	8.8	90.7	65,630	89.7	64,960
1946	1058	29,500	Aug. 29, 1946	14	264	190,900	291	210,800
1947	1088	6,000	May 25, 1947	16	95.3	69,030	64.1	46,450
1948	1118	11,500	Aug. 26, 1948	4.4	38.9	28,210	39.8	28,900
1949	1148	7,800	Apr. 26, 1949	9.8	115	83,010	161	116,300
1950	1178	8,000	Oct. 25, 1949	8.8	91.2	66,050	42.8	30,970
1951	1212	4,060	June 4, 1951	6.6	31.1	22,540	31.0	22,470
1952	1242	18,200	Sept. 11, 1952	4.9	87.0	63,150	93.7	68,000
1953	1282	3,570	Sept. 14, 1953	3.4	58.4	42,260	57.3	41,510
1954	1342	1,850	Dec. 3, 1953	2.2	20.4	14,780	14.7	10,650
1955	1392	3,750	June 21, 1955	2.0	26.5	19,150	26.1	18,900
1956	1442	900	Sept. 2, 1956	0	10.4	7,560	24.2	17,580
1957	1512	13,400	May 29, 1957	6.0	259	187,900	-	-

a Nov. 5, 1940, Apr. 28, 1941

325. Escondido Creek subwatershed No. 1 near Kenedy, Tex.

Location.--Lat 28°47', long 97°54', at dam on an unnamed fork of Panther Creek, 500 ft upstream from State Highway 72 and 3 miles southwest of Kenedy, Karnes County.

Drainage area.--3.29 sq mi.

Gage.--Water-stage recorder. Datum of gage is 350 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Extremes.--1954-57: Maximum inflow, 2,120 cfs Aug. 11, 1955; no inflow at times; maximum reservoir contents, May 27, 1957 (gage height, 22.10 ft).

Remarks.--Records given herein represent flow into reservoir, computed by algebraic summation of flow over spillway, flow through outlet structure and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed in 1954, but no appreciable storage before July 1955. Dam is rolled earth-fill about 2,000 ft long, with earthen spillway section at gage height 27.7 ft. Outlet structure is 2-1/2 ft square concrete drop inlet, gage height of crest 18.0 ft, with a 10-inch pipe auxiliary opening in the upstream face of the drop inlet with flow line at 16.00 ft. Outlet structure is connected to a 12-inch concrete outlet pipe at gage height 9.2 ft. There is also an 8-inch controlled emergency outlet to drop inlet at gage height 9.2 ft. Reservoir capacity, 1,018 acre-ft at spillway crest, 263 acre-ft at drop-inlet crest, 187 acre-ft at 10-inch uncontrolled pipe, and 34.8 acre-ft at 8-inch controlled outlet. Dam built by Soil Conservation Service of U. S. Department of Agriculture for flood control and to study rainfall-runoff relations in connection with the effects of land-treatment practices.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	0	0.32	0	0	0.06	0	0	0.15	0	1.61	2.87	0.09	0.43
1956	0	0	0	0	0	0	0	.35	.77	.01	0	0	.09
1957	.25	.15	.25	0	.07	.68	5.35	5.60	.80	0	.14	3.25	1.38

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	0	19	0	0	3.2	0	0	9.3	0	99	176	5.6	312
1956	0	0	0	0	0	0	0	21	46	.6	0	0	68
1957	16	8.7	15	0	4.6	42	319	345	48	0	8.7	193	1,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955		2,120	Aug. 11, 1955	0	0.43	312	0.41	293
1956		486	June 19, 1956	0	.09	68	.15	107
1957		1,810	May 27, 1957	0	1.38	1,000	-	-

326. Escondido Creek at Kenedy, Tex.

Location.--Lat 28°49', long 97°52', at bridge on U. S. Highway 181, in the northwest edge of Kenedy, Karnes County, 3-1/2 miles upstream from dry Escondido Creek, and 8-1/2 miles upstream from mouth.

Drainage area.--82.2 sq mi, of which 36.5 sq mi is above flood-detention structures.

Gage.--Water-stage recorder. Datum of gage is 246.40 ft above mean sea level, datum of 1929.

326. Escondido Creek at Kenedy, Tex.--Continued

Extremes.--1954-57: Maximum discharge, 3,370 cfs Aug. 31, 1955 (gage height, 19.82 ft); no flow most of time.
Maximum stage since at least 1887, 22.81 ft (gage datum, at site a quarter of a mile downstream) Aug. 29, 1946, from information by local residents.

Remarks.--At the end of 1957, the flow from 36.5 sq mi above this station was partly controlled by 10 floodwater-detention reservoirs (constructed during the period 1954-57) with a total combined capacity of 13,870 acre-ft below the flood-spillway crests, of which 11,340 acre-ft is floodwater-detention capacity and 2,520 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. Station operated as part of the Escondido Creek basin hydrologic-cooperative program of the Geological Survey and Soil Conservation Service to evaluate rainfall-runoff relationships, soil-conservation practices, and to assist the SCS in evaluating the effect of flood-detention structures.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	0	0	-
1955	0.06	5.84	0	0.003	3.95	0	0	10.4	0.01	0.59	37.1	1.26	4.97
1956	.25	0	0	0	0	0	0	2.71	.03	0	0	12.6	1.29
1957	9.07	.60	3.83	0	.07	14.2	81.9	45.9	15.2	0	0	72.8	20.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	0	0	-
1955	4.0	347	0	0.2	220	0	0	639	0.4	36	2,280	75	3,600
1956	15	0	0	0	0	0	0	167	1.6	0	0	751	935
1957	558	36	236	0	4.0	871	4,870	2,820	906	0	0	4,330	14,630

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1392	-	-	0	-	-	-	-
1955	1392	3,370	Aug. 31, 1955	0	4.97	3,600	4.51	3,270
1956	1442	1,250	Sept. 2, 1956	0	1.29	935	2.41	1,750
1957	1512	2,160	Sept. 23, 1957	0	20.2	14,630	-	-

327. Dry Escondido Creek near Kenedy, Tex.

Location.--Lat 28°52', long 97°50', at bridge on Farm Road 792, 3.5 miles north of Kenedy, Karnes County, 4.0 miles upstream from mouth and Escondido Creek, and 4.0 miles southeast of Karnes City.

Drainage area.--9.43 sq mi.

Gage.--Water-stage recorder. Datum of gage is 276.55 ft above mean sea level, datum of 1929.

Extremes.--1954-57: Maximum discharge, 706 cfs Apr. 21, 1957 (gage height, 10.53 ft); no flow most of time.
Maximum stage known since at least 1906, about 15.9 ft May 18, 1953, from information by local resident.

Remarks.--Station maintained to establish rainfall-runoff relationships and to assist the Soil Conservation Service in evaluating the effect of a floodwater-detention structure to be constructed in the basin.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	--	-	-	-	-	-	-	-	0	0	-
1955	0.003	0.53	0	0	0.16	0	0	1.34	0	0	.60	.02	.22
1956	0	0	0	0	0	0	0	.50	0	.003	.27	.97	.14
1957	.02	0	.06	0	0	.56	6.60	.80	.08	0	.10	12.8	1.73

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	0	0	-
1955	0.2	32	0	0	9.1	0	0	82	0	0	37	1.0	161
1956	0	0	0	0	0	0	0	31	0	.2	16	58	105
1957	1.2	0	3.6	0	0	35	393	49	4.8	0	6.0	762	1,250

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1954	1392	-	-	-	-	-	-	-	-	-	-
1955	1392	290	May 12, 1955	0	0.22	0.023	0.31	161	0.18	0.25	129
1956	1442	215	Sept. 3, 1956	0	.14	.015	.20	105	.15	.21	110
1957	1512	706	Apr. 21, 1957	0	1.73	.183	2.50	1,250	-	-	-

328. San Antonio River at Goliad, Tex.

Location.--Lat 28°39', long 97°22' at bridge on U. S. Highway 183, 1.3 miles southeast of courthouse in Goliad, Goliad County, and 10 miles upstream from Manahuilla Creek.

Drainage area.--3,918 sq mi.

Supplementary records available.--Records of chemical analyses for period October 1945 to September 1946 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 91.08 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Prior to Mar. 31, 1929, chain gage at Texas & New Orleans Railroad bridge 0.9 mile upstream at same datum.

Average discharge.--22 years (1924-28, 1939-57) 503 cfs (364,200 acre-ft per year).

Extremes.--1924-29, 1939-57: Maximum discharge, 33,800 cfs July 9, 1942 (gage height, 44.9 ft); minimum observed, 1.2 cfs June 16, 1956. Floods of October 1913 and June 15, 1935, reached about the same stage as that of July 9, 1942.

Remarks.--Diversions and regulation above station. (See Remarks for San Antonio River near Falls City, and Escondido Creek at Kenedy.)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	362	233	283	-
1925	214	205	279	222	220	194	152	211	104	145	113	215	190
1926	872	222	153	203	132	385	2,020	1,070	299	248	138	100	488
1927	233	185	188	162	204	299	492	149	418	115	53.7	91.2	215
1928	292	91.6	107	117	112	173	145	420	503	91.4	51.0	391	208
1929	136	764	289	-	121	845	-	-	-	-	-	-	-
1939	-	-	-	-	-	175	146	138	166	258	185	120	-
1940	95.0	98.1	135	133	250	135	373	207	594	1,392	396	138	330
1941	302	2,574	1,655	612	1,082	692	1,438	3,610	1,628	886	455	918	1,319
1942	555	480	314	284	311	235	522	432	280	4,196	410	4,924	1,080
1943	2,161	666	510	484	408	464	394	453	871	480	253	339	626
1944	256	316	283	458	369	467	292	1,860	522	276	356	560	503
1945	268	268	466	714	871	533	1,144	401	505	260	240	214	487
1946	438	254	262	341	397	501	742	1,583	1,097	266	834	4,313	916
1947	5,531	927	561	795	516	553	454	933	345	257	348	272	966
1948	225	275	284	261	301	254	239	309	136	399	763	288	312
1949	330	167	163	187	299	264	2,288	717	1,010	779	296	209	557
1950	1,195	312	425	270	222	231	273	228	618	188	213	179	364
1951	131	126	132	125	199	174	195	493	1,113	121	90.2	790	306
1952	150	156	150	137	214	175	316	499	176	166	77.4	3,306	456
1953	149	226	256	271	164	171	206	941	85.0	124	324	1,319	353
1954	234	156	196	150	124	112	159	261	126	82.5	49.9	66.8	143
1955	124	133	86.5	127	352	177	89.3	314	166	69.0	165	243	169
1956	75.1	76.2	115	104	107	83.9	86.8	192	26.2	52.4	60.6	200	98.2
1957	368	156	382	110	167	492	2,515	2,904	2,321	164	109	2,025	974

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	22,300	14,300	16,900	-
1925	13,200	12,200	17,100	13,700	12,200	11,900	9,020	13,000	6,200	8,930	6,960	12,800	137,000
1926	53,600	13,200	9,410	12,500	7,340	23,700	120,000	65,600	17,800	15,300	8,460	5,970	353,000
1927	14,300	11,000	11,600	9,980	11,400	18,400	29,300	9,180	24,900	7,040	3,300	5,430	156,000
1928	18,000	5,450	6,580	7,190	6,440	10,600	8,630	25,800	29,900	5,620	3,140	23,300	151,000
1929	8,360	45,500	17,800	-	6,720	52,000	-	-	-	-	-	-	-
1939	-	-	-	-	-	10,770	8,660	8,510	9,880	15,850	11,380	7,120	81,980
1940	5,840	5,840	8,290	8,180	14,370	8,280	22,190	12,730	35,360	85,570	24,330	8,230	239,200
1941	18,570	153,100	101,700	37,660	60,080	42,560	85,590	221,900	96,890	54,490	27,960	54,600	955,100
1942	34,150	28,560	19,310	17,460	17,280	14,430	31,050	26,530	16,640	258,000	25,190	293,000	781,600
1943	132,900	39,630	31,360	29,770	22,660	28,550	23,410	27,830	51,850	29,500	15,540	20,180	453,200
1944	15,760	18,810	17,410	28,130	21,250	28,700	17,350	114,400	31,050	16,970	21,920	33,310	365,100
1945	16,470	15,970	28,680	43,910	48,350	32,780	68,050	24,660	30,060	16,020	14,760	12,750	352,500
1946	26,950	15,110	16,130	20,990	22,050	30,810	44,140	97,310	65,250	16,380	51,260	256,700	663,100
1947	340,100	55,180	34,520	48,880	28,640	34,010	27,000	57,390	20,520	15,780	21,370	16,170	699,600
1948	13,820	16,340	17,490	16,040	17,320	15,640	14,200	18,970	8,120	24,510	46,930	17,130	226,500
1949	20,270	9,960	10,020	11,490	16,580	16,230	136,100	44,070	60,090	47,870	18,190	12,460	403,300
1950	73,450	18,590	26,160	16,590	12,310	14,220	16,230	14,000	36,750	11,590	13,120	10,680	263,700
1951	8,070	7,520	8,110	7,660	11,030	10,730	11,610	30,340	66,210	7,470	5,540	46,980	221,300
1952	9,250	9,260	9,250	8,420	12,330	10,760	18,820	30,660	10,440	10,200	4,760	196,800	331,000
1953	9,180	13,420	15,730	16,680	9,090	10,520	12,290	57,840	5,060	7,600	19,950	78,510	255,900
1954	14,370	9,270	12,050	9,200	6,860	6,910	9,470	16,060	7,470	5,070	3,070	3,970	103,800
1955	7,650	7,910	5,320	7,790	19,560	10,900	5,320	19,320	9,900	4,240	10,150	14,430	122,500
1956	4,620	4,530	7,070	6,400	6,130	5,160	5,160	11,820	1,560	3,220	3,730	11,910	71,310
1957	22,630	9,260	23,510	6,760	9,260	30,260	149,700	178,600	138,100	10,100	6,690	120,500	705,400

Yearly discharge, in cubic feet per second, of San Antonio River at Goliad, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	-	-	-	-	-
1925	608	1,830	July 13, 1925	58	190	137,000	236	171,000
1926	628	11,900	Apr. 25, 1926	85	488	353,000	433	314,000
1927	648	5,410	Apr. 16, 1927	44	215	156,000	205	149,000
1928	668	3,880	May 16, 1928	-	208	151,000	265	192,000
1929	688	13,100	Jan. 11, 1929	-	-	-	-	-
1939	878	1,900	July 12, 1939	-	-	-	-	-
1940	898	11,600	July 2, 1940	86	330	239,200	679	492,600
1941	928	15,700	May 1, 1941	108	1,319	955,100	1,055	763,800
1942	958	33,800	July 9, 1942	196	1,080	781,600	1,248	903,500
1943	978	7,330	Oct. 8, 1942	225	626	453,200	416	301,300
1944	1008	9,880	May 30, 1944	202	503	365,100	515	374,200
1945	1038	5,170	Apr. 3, 1945	175	487	352,500	483	349,500
1946	1058	25,500	Sept. 1, 1946	177	916	663,100	1,429	1,035,000
1947	1088	29,400	Oct. 2, 1946	204	966	699,600	438	317,400
1948	1118	10,200	Aug. 28, 1948	98	312	226,500	302	219,100
1949	1148	14,100	Apr. 28, 1949	126	557	403,300	665	481,300
1950	1178	6,420	Oct. 27, 1949	120	364	263,700	234	169,200
1951	1212	8,370	Sept. 14, 1951	71	306	221,300	311	225,300
1952	1242	23,900	Sept. 14, 1952	52	456	331,000	470	341,500
1953	1282	8,560	May 20, 1953	51	353	255,900	350	253,200
1954	1342	2,050	May 27, 1954	36	143	103,800	123	88,960
1955	1392	2,320	Sept. 2, 1955	40	169	122,500	163	117,800
1956	1442	2,420	May 16, 1956	2.1	98.2	71,310	152	110,500
1957	1512	10,300	May 2, 1957	44	974	705,400	-	-

MISSION RIVER BASIN

329. Mission River at Refugio, Tex.

Location.--Lat28°17'30", long 97°16'44", at bridge on U. S. Highway 77, 500 ft upstream from Missouri-Pacific Railroad bridge, and a quarter of a mile southwest of Refugio, Refugio County.

Drainage area.--643 sq mi.

Gage.--Wire-weight or staff gage. Datum of gage is 1.68 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 70.5 cfs (51,040 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 41,700 cfs July 7, 1942 (gage height, 33.3 ft); minimum observed, 0.7 cfs Oct. 7, 9, 1940, Aug. 18-20, Sept. 5, 1945, Dec. 29, 31, 1949, and Jan. 1, 1950.
Maximum stage known since about 1899, that of July 7, 1942. Floods in August 1914 and May 1938 reached a stage of 32.3 ft, from information by local residents.

Remarks.--No large diversion upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	70.6	7.33	11.0	-
1940	1.70	1.51	2.38	3.23	4.14	2.61	1.90	4.38	135	135	1.80	1.36	24.6
1941	176	316	185	11.3	96.3	65.2	535	1,115	138	450	140	28.5	273
1942	21.9	9.59	11.5	8.85	47.0	14.6	8.75	8.50	4.44	1,588	1,076	479	277
1943	43.9	29.1	22.4	22.4	17.4	26.4	11.9	24.4	366	9.95	4.27	3.83	48.1
1944	4.48	10.7	15.4	40.0	11.0	256	11.0	231	31.8	6.58	41.1	107	64.4
1945	7.76	6.69	8.02	6.32	5.30	102	423	17.6	20.2	2.75	8.37	1.98	50.6
1946	2.92	2.23	5.22	7.15	93.8	11.0	5.67	58.6	72.8	5.16	50.1	118	35.4
1947	733	50.0	22.9	36.3	12.7	17.9	77.8	524	42.8	17.9	12.9	6.49	131
1948	5.83	6.94	14.0	8.79	13.2	17.9	6.35	6.34	2.52	23.2	2.07	3.33	9.23
1949	2.88	3.22	3.26	4.12	28.7	5.77	230	65.4	11.4	31.6	10.5	7.17	33.4
1950	7.71	4.87	2.62	4.92	5.29	4.30	7.18	4.10	2.95	2.90	1.75	2.33	4.23
1951	2.33	3.01	3.51	3.47	3.18	3.18	3.11	8.97	27.8	3.03	3.36	399	38.2
1952	8.93	4.36	5.00	4.20	12.2	4.16	14.4	253	15.8	6.88	4.25	859	98.5
1953	23.7	16.8	15.1	11.1	9.78	8.35	9.65	67.5	5.15	3.48	96.3	231	41.5
1954	171	10.9	7.01	6.11	5.35	5.02	6.73	4.66	3.28	3.18	3.23	3.79	19.5
1955	24.2	3.74	3.83	4.36	4.33	3.97	3.70	3.18	3.64	3.99	4.82	19.8	6.97
1956	5.09	4.20	3.38	5.65	3.16	29.1	3.76	30.5	2.15	2.02	3.57	2.32	7.99
1957	2.07	1.47	46.2	2.23	2.18	93.5	504	269	256	7.02	2.52	71.6	105

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	4,340	451	656	-
1940	105	90	147	199	238	160	113	270	8,050	8,280	111	81	17,840
1941	10,830	18,810	11,390	695	5,350	4,010	31,820	68,560	8,200	27,700	8,580	1,690	197,600
1942	1,340	571	705	544	2,610	899	521	523	264	97,640	66,160	28,530	200,300
1943	2,700	1,730	1,380	1,380	966	1,620	709	1,500	21,750	612	263	228	34,840
1944	276	634	946	2,460	635	15,770	655	14,200	1,890	404	2,530	6,360	46,760
1945	477	398	493	389	294	6,290	25,190	1,080	1,200	169	515	118	36,610

Monthly and yearly runoff, in acre-feet, of Mission River at Refugio, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	180	132	321	439	5,210	674	338	3,600	4,330	317	3,080	7,010	25,630
1947	45,040	2,980	1,410	2,230	705	1,100	4,630	32,200	2,540	1,100	793	386	95,110
1948	358	413	858	540	757	1,100	378	390	150	1,430	128	198	6,700
1949	177	192	201	253	1,590	355	13,670	4,020	676	1,940	644	426	24,140
1950	474	290	161	302	294	264	427	252	175	179	107	139	3,060
1951	143	179	216	213	176	195	185	552	1,650	186	207	23,740	27,640
1952	549	259	307	258	705	256	856	15,550	940	423	262	51,130	71,500
1953	1,460	998	930	684	543	513	574	4,150	306	214	5,920	13,750	30,040
1954	10,540	649	431	375	297	309	400	286	195	196	199	226	14,100
1955	1,490	223	235	268	240	244	220	195	216	245	296	1,180	5,050
1956	313	250	208	347	182	1,790	224	1,870	128	124	220	138	5,790
1957	128	87	2,840	137	121	5,750	29,980	16,570	15,210	431	155	4,260	75,670

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	-	-
1940	898	3,770	June 30, 1940	1.0	24.6	17,840	80.6	58,530
1941	928	10,500	May 4, 1941	.7	273	197,600	220	159,200
1942	958	41,700	July 7, 1942	3.2	277	200,300	281	203,500
1943	978	4,910	June 5, 1943	2.2	48.1	34,840	42.7	30,880
1944	1008	4,950	Mar. 19, 1944	2.2	64.4	46,760	63.7	46,270
1945	1038	4,470	Apr. 21, 1945	.7	50.6	36,610	49.6	35,880
1946	1058	2,150	June 11, 1946	1.6	35.4	25,630	103	74,430
1947	1088	15,400	Oct. 17, 1946	5.6	131	95,110	65.4	47,310
1948	1118	342	July 1, 1948	1.2	9.23	6,700	7.77	5,640
1949	1148	4,670	Apr. 26, 1949	1.2	33.4	24,140	33.8	24,500
1950	1178	49	Oct. 29, 1949	.8	4.23	3,060	3.70	2,680
1951	1212	5,380	Sept. 15, 1951	1.0	38.2	27,640	39.0	28,220
1952	1242	22,300	Sept. 12, 1952	2.3	98.5	71,500	102	73,770
1953	1282	2,980	Aug. 31, 1953	2.8	41.5	30,040	52.9	38,270
1954	1342	2,170	Oct. 24, 1953	2.4	19.5	14,100	6.12	4,430
1955	1392	429	Oct. 24, 1954	2.0	6.97	5,050	5.35	3,880
1956	1442	951	Mar. 22, 1956	1.6	7.99	5,790	11.1	8,080
1957	1512	4,180	Apr. 29, 1957	1.2	105	75,670	-	-

NUECES RIVER BASIN

330. Nueces River at Laguna, Tex.

Location.--Lat 29°25'45", long 99°59'50", on right bank 0.5 mile downstream from Sycamore Creek, 1 mile northeast of Laguna, Uvalde County, and at mile 395.

Drainage area.--764 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,119.72 ft above mean sea level, datum of 1929. Prior to Jan. 26, 1925, staff gage at site about 2 miles downstream at different datum.

Average discharge.--34 years (1923-57), 128 cfs (92,670 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 307,000 cfs Sept. 24, 1955 (gage height, 29.95 ft, in gage well, 32.7 ft, from floodmarks), from rating curve extended above 40,000 cfs on basis of slope-area measurement of peak flow; minimum. 2.6 cfs Mar. 14-16, 1957.
Maximum stage since at least 1854, that of Sept. 24, 1955. Flood of Sept. 21, 1923, reached a stage of 26.5 ft (discharge, 266,000 cfs based on rating curve mentioned above); flood of June 1913 reached a stage of about 29 ft, from information by local resident.

Remarks.--Many samll diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	470	544	235	148	119	126	142	90.2	74.7	38.6	16.0	12.9	168
1925	14.6	18.4	23.9	31.5	41.9	40.0	32.1	641	238	79.1	36.9	41.9	104
1926	248	161	91.8	69.1	66.3	67.0	73.6	107	48.1	531	129	49.4	138
1927	30.1	38.0	56.7	60.7	164	120	142	60.3	70.4	67.0	29.0	14.9	70.3
1928	243	55.1	43.1	43.6	47.7	41.1	38.3	64.5	173	26.5	58.6	17.3	71.2
1929	54.6	42.8	36.5	32.6	31.0	29.8	28.3	290	114	111	34.4	33.6	70.4
1930	19.8	17.4	34.8	37.0	38.7	33.0	26.8	37.3	888	81.8	24.7	19.8	104
1931	592	124	102	103	218	160	180	431	159	259	171	86.8	216
1932	63.5	63.2	67.4	64.8	60.3	82.6	82.5	99.1	52.8	796	244	2,010	306
1933	369	210	148	128	112	97.3	78.9	62.5	52.6	28.1	18.2	19.2	111
1934	23.4	23.6	30.1	32.3	34.8	37.6	46.6	55.8	27.0	16.2	11.1	9.21	29.0
1935	8.56	8.26	10.5	13.7	18.8	21.8	23.7	868	5,407	392	225	384	611
1936	163	120	118	101	86.8	87.1	78.8	81.4	130	150	65.1	2,257	284
1937	399	277	177	126	101	114	96.8	64.2	82.1	49.3	32.6	24.2	129
1938	27.4	40.9	266	222	138	98.5	125	127	68.3	156	85.3	50.4	117
1939	47.1	41.8	42.9	53.9	50.8	48.0	41.9	34.7	26.4	1,580	142	76.2	185
1940	377	77.8	79.5	69.3	76.3	68.1	89.5	169	103	68.6	52.8	44.2	107
1941	33.4	40.8	57.9	57.0	64.0	73.7	125	241	130	140	80.9	81.4	94.0
1942	238	115	84.8	68.2	58.6	53.4	56.3	94.7	54.7	41.2	57.9	414	111
1943	400	175	116	78.9	68.8	65.0	77.7	68.6	119	52.3	33.6	31.2	108
1944	35.8	40.1	50.7	79.6	90.8	123	107	79.7	66.4	36.7	31.3	214	79.2

Monthly and yearly mean discharge, in cubic feet per second, of Nueces River at Laguna, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	97.6	64.4	66.9	137	101	87.1	90.7	54.0	33.3	22.9	18.9	15.1	65.7
1946	81.8	60.7	53.0	54.7	57.0	46.6	41.5	70.1	134	56.2	23.5	28.1	58.8
1947	392	119	79.8	132	143	115	89.6	124	155	137	62.4	40.7	133
1948	30.8	31.5	37.0	41.3	47.4	45.8	41.1	38.9	48.7	252	33.7	22.7	56.2
1949	24.5	26.7	27.5	33.6	1,160	322	176	194	127	79.5	457	194	229
1950	146	124	102	94.3	90.7	75.4	61.1	74.1	90.5	66.9	48.4	47.4	85.1
1951	47.4	42.0	45.8	41.0	39.6	44.4	48.2	36.6	30.8	21.9	15.9	10.8	35.4
1952	8.69	11.1	14.3	16.9	21.3	24.5	79.2	109	43.8	21.8	14.2	10.0	31.3
1953	7.39	7.45	8.58	14.5	20.7	27.3	30.9	18.2	12.2	8.11	6.99	116	23.1
1954	49.0	37.6	30.5	26.9	25.8	21.9	36.1	178	372	167	50.3	27.8	85.4
1955	27.9	23.9	22.2	27.0	30.0	30.8	24.8	21.9	18.4	60.5	33.2	2,668	246
1956	175	106	62.8	49.0	43.5	39.4	31.1	26.5	18.6	13.9	9.04	8.60	48.7
1957	10.5	5.41	5.58	5.46	5.10	7.04	79.1	172	284	64.5	32.5	32.9	58.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	29,200	32,400	14,500	9,070	6,840	7,770	8,440	5,540	4,440	2,380	986	769	122,000
1925	899	1,090	1,470	1,930	2,330	2,460	1,910	39,400	14,200	4,860	2,270	2,490	75,300
1926	15,200	9,590	5,640	4,250	3,680	4,120	4,380	6,590	2,860	32,600	7,940	2,940	99,800
1927	1,850	2,260	3,490	3,730	9,080	7,380	8,430	3,710	4,190	4,120	1,780	889	50,900
1928	14,900	3,280	2,650	2,680	2,740	2,530	2,280	3,970	10,300	1,630	3,600	1,030	51,600
1929	3,360	2,550	2,240	2,000	1,720	1,830	1,680	17,800	6,780	6,820	2,120	2,000	50,900
1930	1,220	1,040	2,140	2,280	2,150	2,030	1,590	2,290	52,800	5,030	1,520	1,180	75,300
1931	36,400	7,380	6,270	6,330	12,100	9,840	10,700	26,500	9,460	15,900	10,500	5,160	157,000
1932	3,900	3,760	4,140	3,980	3,470	5,080	4,910	6,090	3,140	49,000	15,000	120,000	222,000
1933	22,700	12,500	9,100	7,870	6,220	5,980	4,690	3,840	3,130	1,730	1,120	1,140	80,000
1934	1,440	1,400	1,850	1,990	1,930	2,310	2,770	3,430	1,610	996	682	548	21,000
1935	526	492	643	845	1,040	1,340	1,410	53,360	321,800	24,110	13,860	22,820	442,200
1936	10,000	7,170	7,260	6,200	4,990	5,360	4,690	5,000	7,710	9,210	4,000	134,300	205,900
1937	24,540	16,510	10,890	7,750	5,620	7,030	5,760	3,950	4,890	3,030	2,010	1,440	93,420
1938	1,690	2,430	16,390	13,640	7,660	6,050	7,440	7,790	4,060	9,560	5,240	3,000	84,950
1939	2,890	2,490	2,640	3,320	2,820	2,950	2,490	2,130	1,570	97,170	8,760	4,540	133,800
1940	23,150	4,630	4,890	4,260	4,390	4,190	5,330	10,380	6,140	4,220	3,240	2,630	77,450
1941	2,050	2,430	3,560	3,500	3,560	4,530	7,430	14,810	7,750	8,600	4,980	4,840	68,040
1942	14,650	6,820	5,220	4,190	3,260	3,280	3,350	5,820	3,260	2,530	3,560	24,640	80,580
1943	24,570	10,400	7,160	4,850	3,820	4,000	4,620	4,220	7,080	3,210	2,060	1,860	77,850
1944	2,200	2,390	3,120	4,900	5,220	7,560	6,370	4,900	3,950	2,260	1,920	12,700	57,490
1945	6,000	3,830	4,110	8,430	5,630	5,360	5,400	3,320	1,980	1,410	1,160	897	47,530
1946	5,030	3,610	3,260	3,360	3,160	2,860	2,470	4,310	7,960	3,460	1,440	1,670	42,590
1947	24,090	7,080	4,910	8,110	7,940	7,060	5,330	7,620	9,200	8,400	3,840	2,420	96,000
1948	1,900	1,870	2,280	2,540	2,730	2,820	2,440	2,390	2,900	15,490	2,070	1,350	40,780
1949	1,510	1,590	1,690	2,070	64,420	19,780	10,480	11,940	7,550	4,890	28,080	11,530	165,500
1950	8,960	7,380	6,280	5,800	5,040	4,640	3,630	4,550	5,390	4,110	2,980	2,820	61,580
1951	2,920	2,500	2,810	2,520	2,200	2,730	2,870	2,250	1,830	1,350	976	643	25,600
1952	535	663	877	1,040	1,230	1,510	4,710	6,720	2,600	1,340	875	595	22,700
1953	454	443	527	893	1,150	1,680	1,840	1,120	727	498	430	6,930	16,690
1954	3,010	2,240	1,880	1,660	1,430	1,350	2,150	10,930	22,150	10,270	3,090	1,650	61,810
1955	1,710	1,420	1,360	1,660	1,670	1,900	1,480	1,340	1,090	3,720	2,040	158,700	178,100
1956	10,740	6,280	3,860	3,010	2,500	2,420	1,850	1,630	1,100	857	556	512	35,320
1957	645	322	343	336	283	433	4,710	10,570	16,930	3,960	2,000	1,960	42,490

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	2,220	Oct. 30, 1923	8.9	168	122,000	68.5	49,700
1925	608	15,600	May 30, 1925	12	104	75,300	141	102,000
1926	628	27,000	July 23, 1926	30	138	99,800	106	77,000
1927	648	660	June 21, 1927	12	70.3	50,900	88.6	64,100
1928	668	7,440	Oct. 2, 1927	13	71.2	51,600	53.6	38,900
1929	688	21,200	May 28, 1929	16	70.4	50,900	65.2	47,200
1930	703,1562	87,200	June 15, 1930	-	104	75,300	167	121,000
1931	718	34,400	Oct. 6, 1930	17	216	157,000	163	118,000
1932	733,1562	67,400	Sept. 1, 1932	35	306	222,000	351	255,000
1933	748	a124	Apr. 4, 1933	13	111	80,000	55.8	40,400
1934	763	1,470	Apr. 4, 1934	8.9	29.0	21,000	24.8	17,920
1935	788	213,000	June 14, 1935	7.8	611	442,200	642	465,000
1936	808	114,000	Sept. 16, 1936	47	284	205,900	322	233,400
1937	828	755	Oct. 1, 1936	19	129	93,420	85.6	61,990
1938	858	10,000	Dec. 29, 1937	17	117	84,950	100	72,460
1939	878,1562	222,000	July 13, 1939	20	185	133,800	219	158,400
1940	898	9,760	Oct. 10, 1939	30	107	77,450	72.7	52,820
1941	928	1,060	May 3, 1941	32	94.0	68,040	120	86,690
1942	958	19,600	Oct. 24, 1941	23	111	80,580	133	96,020
1943	978	7,100	Oct. 15, 1942	28	108	77,850	60.0	43,430
1944	1008	6,190	Sept. 6, 1944	23	79.2	57,490	87.8	63,720
1945	1038	2,580	Jan. 18, 1945	14	65.7	47,530	62.8	45,490

a Maximum peak discharge; maximum discharge during year 572 cfs, 12:01 a.m. Oct. 1, stage falling.

Yearly discharge, in cubic feet per second, of Neuces River at Laguna, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	7,380	June 20, 1946	11	58.8	42,590	92.2	66,770
1947	1088	9,380	Oct. 9, 1946	33	133	96,000	91.1	65,970
1948	1118	10,300	July 5, 1948	19	56.2	40,780	54.4	39,520
1949	1148	45,800	Feb. 25, 1949	22	229	165,500	253	183,400
1950	1178	276	May 16, 1950	36	85.1	61,580	65.2	47,190
1951	1212	78	Mar. 25, 1951	10	35.4	25,600	26.9	19,440
1952	1242	4,680	May 27, 1952	7.5	31.3	22,700	30.4	22,040
1953	1282	3,360	Sept. 1, 1953	5.1	23.1	16,690	30.9	22,400
1954	1342	9,960	June 27, 1954	15	85.4	61,810	81.7	59,170
1955	1392	307,000	Sept. 24, 1955	13	246	178,100	269	194,500
1956	1442	406	Nov. 8, 1955	7.6	48.7	35,320	21.8	15,740
1957	1512	6,490	May 27, 1957	3.0	58.7	42,490	-	-

331. West Nueces River near Brackettville, Tex.

Location.--Lat 29°28'55", long 100°14'20", at Wilson Ranch, 9 miles downstream from Loss Creek, 11 miles upstream from Liveoak Creek, and 15.8 miles northeast of Brackettville, Kinney County.

Drainage area.--700 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,326.79 ft above mean sea level, datum of 1929. Prior to Mar. 14, 1940, staff gage at same site and datum.

Average discharge.--12 years (1939-50, 1956-57), 14.6 cfs (10,570 acre-ft per year).

Extremes.--1939-50, 1956-57: Maximum discharge, 51,000 cfs June 25, 1948 (gage height, 20.95 ft, from floodmarks), from rating curve extended above 1,300 cfs on basis of slope-area measurements at 11.56 and 20.95 ft; no flow most of time.

Maximum stage since at least 1879, about 40 ft (present site) June 14, 1935, from gage-height relationship of 1935 and 1955 flood peaks at site 0.6 mi upstream (discharge at site 33 miles upstream from gage, 580,000 cfs, by slope-area measurement; and discharge at site 24 miles downstream from gage, 536,000 cfs, by slope-area measurement). Flood in 1900 reached a stage of about 34 ft, and flood of Sept. 24, 1955, reached a stage of 27.1 ft, from floodmark at present site (discharge, 150,000 cfs, by slope-area measurement).

Remarks.--In ordinary years most of runoff from basin is lost by seepage into Edwards limestone upstream from station. No diversion upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	158	1.26	0	0	0	0	0.12	2.98	0.45	3.41	0	0	14.1
1941	0	0	0	0	0	.25	.33	2.62	.14	0	0	0	.28
1942	.36	.06	0	0	0	0	0	0	0	0	0	1.44	.15
1943	61.2	.73	0	0	0	0	0	.61	.55	0	0	0	5.36
1944	0	0	0	0	.04	.04	0	0	.14	0	0	0	.02
1945	0	0	0	.18	0	0	0	0	0	0	0	0	.02
1946	0	0	0	0	0	0	0	0	.25	0	0	.37	.05
1947	122	1.37	.003	1.59	.14	0	.24	4.44	27.7	6.66	.25	0	13.9
1948	0	0	0	0	0	0	0	0	429	.94	0	0	35.2
1949	0	0	0	0	978	34.8	.44	0	0	0	23.8	5.52	80.5
1950	.46	.12	0	0	0	0	0	0	0	0	0	.05	.05
1956	-	-	-	-	-	-	0	0	0	0	0	0	-
1957	2.82	0	0	0	0	0	29.9	266	2.21	0	0	0	25.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	9,730	75	0	0	0	0	7.1	183	27	210	0	0	10,230
1941	0	0	0	0	0	15	20	161	8.1	0	0	0	204
1942	22	3.8	0	0	0	0	0	0	0	0	0	85	111
1943	3,770	43	0	0	0	0	0	37	33	0	0	0	3,880
1944	0	0	0	0	2.6	2.6	0	0	8.3	0	0	0	14
1945	0	0	0	11	0	0	0	0	0	0	0	0	11
1946	0	0	0	0	0	0	0	0	15	0	0	22	37
1947	7,500	82	.2	98	7.5	0	14	273	1,650	409	16	0	10,050
1948	0	0	0	0	0	0	0	0	25,510	58	0	0	25,570
1949	0	0	0	0	54,320	2,140	26	0	0	0	1,460	328	58,270
1950	28	7.1	0	0	0	0	0	0	0	0	0	3.0	38
1956	-	-	-	-	-	-	0	0	0	0	0	0	-
1957	174	0	0	0	0	0	1,780	16,370	132	0	0	0	18,460

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	958	10,100	Oct. 27, 1939	0	14.1	10,230	0.59	427
1941	958	7.6	May 6, 1941	0	.28	204	.32	230
1942	958	6.8	Sept. 11, 1942	0	.15	111	5.38	3,900
1943	978	1,540	Oct. 18, 1942	0	5.36	3,880	.10	70
1944	1008	1.0	June 9, 1944	0	.02	14	.02	14
1945	1038	1.1	Jan. 21, 22, 1945	0	.02	11	.02	11
1946	1058	2.5	Sept. 29, 1946	0	.05	37	10.5	7,620
1947	1088	6,720	Oct. 8, 1946	0	13.9	10,050	3.40	2,470

Yearly discharge, in cubic feet per second, of West Nueces River near Brackettville, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	51,000	June 25, 1948	0	35.2	25,570	35.2	25,570
1949	1148	37,000	Feb. 25, 1949	0	80.5	58,270	80.5	58,310
1950	1178	1.0	Oct. 1, 1949	0	.05	38	-	-
1956	1442	-	-	0	-	-	-	-
1957	1512	31,000	May 16, 1957	0	25.5	18,460	-	-

332. Nueces River near Uvalde, Tex.

Location.--Lat 29°11', long 99°54', at Tom Nunn crossing, 4-1/2 miles downstream from Texas & New Orleans (Southern Pacific) Railroad bridge and 7 miles southwest of Uvalde, Uvalde, County.

Drainage area.--1,930 sq mi.

Gage.--Staff gage. Datum of gage is 854.23 ft above mean sea level. Nov. 22, 1927, to June 14, 1935, recording gage at same site and datum.

Average discharge.--11 years (1927-38), 241 cfs (174,500 acre-ft per year).

Extremes.--1927-39: Maximum discharge, 616,000 cfs June 14, 1935 (gage height, 36.9 ft, from floodmarks), by slope-area measurement; minimum, 0.2 cfs Feb. 12-22, 1929.
Maximum stage since at least 1836, that of June 14, 1935.

Remarks.--Part of flow of Nueces River enters Edwards limestone in Balcones fault zone which crossed basin just north of Uvalde. At low stages most of headwater flow enters this formation. Many small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	143	6.81	4.12	4.00	4.20	3.83	3.43	5.55	41.5	4.81	5.75	5.33	19.5
1929	1.79	1.41	1.85	1.46	.67	1.54	.94	187	12.0	42.0	1.94	6.84	21.9
1930	11.7	1.74	1.07	.77	.85	.78	.56	.46	1,060	7.66	2.60	1.28	89.6
1931	735	8.18	5.52	4.63	59.9	37.0	46.5	457	75.1	191	83.2	17.4	145
1932	9.74	9.23	9.43	7.87	7.50	7.57	6.39	7.18	6.63	3,100	52.6	7,020	848
1933	376	214	122	89.0	64.7	44.4	31.4	27.7	20.7	16.4	14.6	16.0	86.8
1934	13.8	12.0	10.7	8.76	11.4	9.28	5.60	7.32	6.00	6.55	5.47	5.30	8.50
1935	5.11	4.16	4.07	3.59	3.37	3.21	4.31	1,297	10,140	331	156	405	1,020
1936	124	57.4	52.4	41.8	32.8	35.3	24.0	22.0	80.3	131	36.5	2,131	228
1937	361	241	128	85.3	57.4	50.5	41.9	26.4	23.1	19.0	18.1	15.2	89.3
1938	13.3	11.2	392	109	49.3	28.7	22.8	44.8	23.1	304	40.5	22.2	89.5
1939	17.5	15.1	12.3	11.1	9.85	9.40	9.52	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	8,780	405	253	246	242	236	204	341	2,470	296	354	317	14,140
1929	110	84	114	90	37	95	56	11,500	714	2,580	119	407	15,900
1930	719	104	66	47	47	48	33	28	63,100	471	160	76	64,900
1931	45,200	487	339	285	3,330	2,280	2,770	28,100	4,470	11,700	5,120	1,040	105,000
1932	599	549	580	484	431	465	380	441	395	191,000	3,230	417,000	616,000
1933	23,100	12,700	7,500	5,470	3,590	2,730	1,870	1,700	1,230	1,010	898	952	62,800
1934	848	714	658	539	633	571	333	450	357	403	336	315	6,160
1935	314	248	250	221	187	197	257	79,740	603,200	20,320	9,600	24,080	738,600
1936	7,650	3,420	3,220	2,570	1,880	2,170	1,430	1,350	4,780	8,030	2,250	126,800	165,600
1937	22,210	14,340	7,860	5,240	3,190	3,110	2,490	1,620	1,370	1,170	1,110	902	64,610
1938	815	664	24,090	6,730	2,740	1,770	1,360	2,760	1,370	18,700	2,490	1,320	64,810
1939	1,080	899	756	682	547	578	566	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	668	10,000	Oct. 2, 1927	2.8	19.5	14,140	6.90	5,010
1929	688	14,500	May 29, 1929	.2	21.9	15,900	22.7	16,500
1930	703,1562	68,200	June 15, 1930	.3	89.6	64,900	152	110,000
1931	718	27,000	Oct. 6, 1930	1.0	145	105,000	84.0	60,800
1932	733,1562	207,000	Sept. 1, 1932	5.3	848	616,000	906	657,000
1933	748	a246	Aug. 30, 1933	13	86.8	62,800	29.9	21,700
1934	763	45	July 26, 1934	4.9	8.50	6,160	6.56	4,750
1935	788,1562	616,000	June 14, 1935	2.3	1,020	738,600	1,039	752,100
1936	808	74,800	Sept. 16, 1936	21	228	165,600	270	195,700
1937	828	765	Oct. 1, 1936	15	89.3	64,610	63.2	45,770
1938	858	18,200	Dec. 29, 1937	10	89.5	64,810	58.0	41,980
1939	878	-	-	-	-	-	-	-

a Maximum peak discharge; maximum discharge, 643 cfs at 12:01 a.m. Oct. 1, 1932, stage falling.

333. Nueces River below Uvalde, Tex.

Location.--Lat 29°08', long 99°54', on right bank at McDaniel Ranch, 5-3/4 miles upstream from bridge on U. S. Highway 83, 9 miles southwest of Uvalde, Uvalde County, 15 miles downstream from West Nueces River, and at mile 366.

Drainage area.--1,947 sq mi.

Gage.--Water-stage recorder. Datum of gage is 796.12 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 49.8 cfs (36,050 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 189,000 cfs Sept. 24, 1955 (gage height, 24.61 ft., from floodmark), from rating curve extended above 34,000 cfs on basis of slope-area measurement of peak flow; no flow at times 1951-57.
Maximum stage since at least 1836, 40.4 ft June 14, 1935, from floodmarks (discharge at former site, 616,000 cfs, by slope-area measurement).

Remarks.--Some diversion upstream for irrigation, extent unknown. Part of flow of river enters Edwards limestone in Balcones Fault zone which crosses the basin just north of Uvalde. At low stages most of headwater flow enters this formation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	14.5	12.4	1,002	35.3	25.1	-
1940	192	44.0	31.3	25.6	22.1	18.5	18.5	19.2	20.1	18.0	15.0	13.8	36.8
1941	12.5	10.7	15.0	11.8	12.4	14.1	16.8	98.5	48.5	37.6	27.4	24.2	27.6
1942	145	41.5	35.0	29.4	23.6	20.8	18.8	21.8	14.8	15.0	11.4	142	43.3
1943	271	74.8	41.6	31.8	21.8	19.1	19.5	18.1	16.9	15.7	12.0	12.2	46.6
1944	13.6	12.3	11.2	10.0	11.6	9.60	8.51	12.2	33.3	8.98	31.6	48.8	17.6
1945	22.2	16.6	15.5	14.6	12.6	13.1	11.9	10.7	9.40	7.46	5.98	7.08	12.3
1946	7.41	6.84	7.11	7.15	7.13	6.15	5.50	10.4	24.5	13.5	8.74	25.1	10.8
1947	214	29.6	22.7	16.1	15.0	15.7	16.3	15.8	43.1	36.9	25.9	20.3	39.6
1948	16.0	14.6	13.6	12.4	12.0	10.8	8.90	7.86	391	128	18.0	12.4	53.4
1949	8.99	7.09	6.54	6.55	2,487	212	44.2	54.2	35.5	26.6	332	54.9	257
1950	44.4	38.5	34.9	28.5	24.5	20.1	17.2	14.7	12.9	10.8	6.27	7.73	21.7
1951	7.95	5.94	6.49	5.85	4.64	4.83	3.34	5.59	2.44	0	0	0	3.93
1952	.57	.46	0	0	0	0	0	48.6	3.67	.13	0	0	4.51
1953	0	0	0	0	0	0	0	0	0	0	0	168	13.8
1954	3.25	1.33	0	0	0	0	0	155	649	92.4	5.72	1.89	75.4
1955	1.48	.62	.25	0	0	0	0	0	0	1.07	.06	2,456	202
1956	28.8	8.09	3.26	2.18	.84	0	0	0	0	0	0	0	3.63
1957	0	0	0	0	0	0	9.56	147	142	11.6	5.70	4.16	26.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	891	737	61,580	2,170	1,500	-
1940	11,830	2,620	1,920	1,570	1,270	1,140	1,100	1,180	1,200	1,110	924	819	26,680
1941	768	639	922	726	690	868	1,000	6,060	2,890	2,310	1,680	1,440	19,990
1942	8,920	2,470	2,150	1,800	1,310	1,280	1,120	1,340	881	924	704	8,430	31,330
1943	16,650	4,450	2,560	1,960	1,210	1,180	1,160	1,110	1,000	968	736	727	33,710
1944	839	730	686	615	668	590	506	752	1,980	552	1,950	2,900	12,770
1945	1,360	990	954	900	700	807	708	660	560	459	368	421	8,890
1946	455	407	437	440	396	378	327	636	1,460	831	538	1,500	7,800
1947	13,130	1,760	1,400	992	835	964	968	970	2,560	2,270	1,590	1,210	28,650
1948	984	867	837	764	690	662	529	483	23,240	7,870	1,110	740	38,780
1949	553	422	402	403	138,100	13,050	2,630	3,330	2,110	1,630	20,410	3,270	186,300
1950	2,730	2,290	2,150	1,750	1,360	1,230	1,020	904	766	662	385	460	15,710
1951	489	354	399	359	258	297	199	344	145	0	0	0	2,840
1952	35	28	0	0	0	0	0	2,990	219	7.9	0	0	3,280
1953	0	0	0	0	0	0	0	0	0	0	0	9,990	9,990
1954	200	79	0	0	0	0	0	9,550	38,620	5,680	352	113	54,590
1955	91	37	15	0	0	0	0	0	0	66	4.0	146,200	146,400
1956	1,770	481	201	134	49	0	0	0	0	0	0	0	2,640
1957	0	0	0	0	0	0	569	9,020	8,440	716	350	248	19,340

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	928	89,000	July 13, 1939	-	-	-	-	-
1940	928	4,990	Oct. 10, 1939	12	36.8	26,680	17.4	12,640
1941	928	212	May 4, 1941	8.8	27.6	19,990	43.1	31,200
1942	958	11,200	Oct. 24, 1941	8.9	43.3	31,330	57.3	41,450
1943	978	2,380	Oct. 18, 1942	6.5	46.6	33,710	17.0	12,310
1944	1008	3,370	Aug. 30, 1944	6.0	17.6	12,770	19.0	13,820
1945	1038	70	Mar. 17, 1945	4.8	12.3	8,890	9.51	6,880
1946	1058	3,010	Sept. 27, 1946	4.4	10.8	7,800	31.5	22,800
1947	1088	4,490	Oct. 9, 1947	13	39.6	28,650	20.8	15,050
1948	1118	23,600	June 25, 1948	4.4	53.4	38,780	51.6	37,460
1949	1148	63,000	Feb. 26, 1949	5.8	257	186,300	256	192,100
1950	1178	384	Oct. 22, 1949	4.0	21.7	15,710	13.5	9,780
1951	1212	46	May 24, 1951	0	3.93	2,840	2.30	1,660
1952	1242	5,020	May 28, 1952	0	4.51	3,280	4.42	3,220
1953	1282	6,160	Sept. 1, 1953	0	13.8	9,990	14.2	10,270
1954	1342	18,400	June 29, 1954	0	75.4	54,590	75.2	54,460

Yearly discharge, in cubic feet per second, of Nueces River below Uvalde, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	1392	189,000	Sept. 24, 1955	0	202	146,400	205	148,700
1956	1442	186	Oct. 1, 1955	0	3.63	2,640	.25	182
1957	1512	3,090	May 18, 1957	0	26.7	19,340	-	-

334. Nueces River near Cinonia, Tex.

Location.--Lat 28°47', long 99°50', at bridge on Farm Road 1025, 2 miles east of Cinonia and 8 miles northeast of Crystal City, Zavalla County.

Drainage area.--2,150 sq mi.

Gage.--Staff gage. Datum of gage unknown.

Average discharge.--7 years (1915-18, 1919-22, 1923-24), 64.8 cfs (46,910 acre-ft per year).

Extremes.--1915-25: Maximum gage height, 50.0 ft May 31, 1925 (discharge not determined); no flow at times.
Flood of 1913 reached a stage of about 53 ft.

Remarks.--Considerable water diverted above station for irrigation. Part of flow of river and its headwater tributaries enters Edwards limestone in Balcones Fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	18.1	-	-
1916	44.8	21.8	17.2	14.3	18.4	16.6	47.3	71.1	14.2	37.5	78.5	22.7	33.9
1917	13.0	13.2	16.0	14.6	13.3	13.2	8.28	9.66	5.10	2.13	.26	.85	9.13
1918	1.05	2.09	4.06	4.11	4.18	2.79	1.56	50.9	7.99	0	1.76	.02	6.77
1919	86.3	12.3	19.7	110	13.6	8.18	14.3	56.8	18.5	46.2	242	-	-
1920	1,150	425	242	177	128	85.1	53.1	31.6	30.9	19.5	26.6	12.6	200
1921	14.2	15.9	14.4	17.0	16.0	32.7	28.1	24.0	17.9	6.34	2.32	3.98	16.1
1922	3.52	4.95	6.90	7.25	7.52	20.4	285	268	386	85.0	14.1	10.1	91.5
1923	21.0	13.4	14.0	13.7	18.9	24.8	17.6	9.23	26.1	4.03	.96	-	-
1924	125	553	156	93.0	44.1	33.6	43.1	35.4	41.0	18.5	10.5	8.90	96.5
1925	9.94	8.63	10.5	11.3	10.6	11.3	8.19	-	-	23.7	14.3	15.2	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	1,110	-	-
1916	2,750	1,300	1,060	879	1,060	1,020	2,810	4,370	845	2,310	4,830	1,350	24,600
1917	799	786	984	898	739	812	493	594	303	131	16	51	6,610
1918	65	124	250	253	232	172	93	3,130	475	0	108	1.2	4,900
1919	5,310	732	1,210	6,760	755	503	851	3,490	1,100	2,840	14,900	-	-
1920	70,700	25,300	14,900	10,900	7,360	5,230	3,160	1,940	1,840	1,200	1,510	750	145,000
1921	873	946	885	1,050	889	2,010	1,670	1,480	1,070	390	143	237	11,600
1922	216	295	424	446	418	1,250	17,000	16,500	23,000	5,220	867	601	66,200
1923	1,290	799	861	845	1,050	1,530	1,050	567	1,560	248	59	-	-
1924	7,700	32,900	9,580	5,720	2,540	2,070	2,560	2,180	2,440	1,130	645	529	70,000
1925	611	514	644	692	586	694	487	-	-	1,460	877	904	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408	-	-	-	-	-	-	-
1916	438	1,600	Aug. 19, 1916	3.8	33.9	24,600	30.4	22,040
1917	458	90	May 20, 1917	0	9.13	6,610	6.18	4,480
1918	478	920	May 4, 1918	0	6.77	4,900	16.2	11,720
1919	508	-	Sept. 23, 1919	0	-	-	-	-
1920	508	4,190	Oct. 17, 1919	11	200	145,000	50.4	36,590
1921	528	339	Mar. 1, 1921	1.9	16.1	11,600	13.6	9,870
1922	548	3,530	June 13, 1922	2.6	91.5	66,200	94.2	68,250
1923	568	-	Sept. 19, 1923	.3	-	-	-	-
1924	588	2,690	Oct. 31, 1923	7.4	96.5	70,000	29.7	21,580
1925	608	-	May 31, 1925	-	-	-	-	-

335. Nueces River near Asherton, Tex.

Location.--Lat 28°30', long 99°42', at bridge on Farm-to-Market Road 190 (between Asherton and Brundage), 1.2 miles downstream from El Moro Creek, 5.5 miles northeast of Asherton, Dimmit County, and at mile 288.

Drainage area.--4,082 sq mi.

Gage.--Water-stage recorder. Datum of gage is 470.92 ft above mean sea level, datum of 1929. Prior to Feb. 2, 1940, chain gage at same site and datum.

Average discharge.--18 years (1939-57), 140 cfs (101,400 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 24,000 cfs Sept. 2, 1944 (gage height, 30.40 ft); no flow at times.
Maximum stage since at least 1900, about 33 ft June 17, 1935, present site and datum (based on relation determined from levels to floodmarks for floods of June 17, 1935, and Sept. 2, 1944, at farmhouse on left bank 0.8 mile upstream from gage.)

335. Nueces River near Asherton, Tex.--Continued

Remarks.--Part of flow of river and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. Considerable losses of flood flows into various permeable formations occur downstream from the Balcones fault zone. Flow slightly regulated by several small reservoirs above station. Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	643	14.2	0.53	0	2.48	18.0	305	380	488	164	87.3	35.6	179
1941	0	0	.57	101	444	.92	169	398	18.2	.55	1.60	82.2	98.9
1942	5.97	1.37	0	0	0	0	59.2	220	4.07	104	8.16	1,075	122
1943	160	22.2	0	0	0	0	0	10.1	467	1.99	0	3.11	55.1
1944	55.5	27.8	.30	0	0	30.1	.01	445	205	0	1,681	2,480	410
1945	61.7	0	.30	.72	.24	128	509	50.7	0	0	0	378	93.4
1946	799	.35	0	0	0	0	616	290	103	2.18	25.8	114	163
1947	146	.18	.26	0	0	0	0	57.9	503	17.4	23.3	2.20	62.3
1948	.49	1.13	0	0	0	0	0	4.09	543	194	0	210	78.6
1949	57.8	1.44	0	0	1,498	1,347	284	105	315	3.11	325	13.8	322
1950	104	3.01	0	0	0	0	0	39.1	288	53.2	160	120	64.0
1951	3.69	0	0	0	0	0	0	442	21.1	0	0	.77	39.6
1952	5.60	.21	0	0	0	0	0	340	23.2	.16	0	0	31.2
1953	0	0	0	0	0	0	0	30.6	0	0	26.9	1,112	96.3
1954	151	.42	0	0	0	0	3.63	678	263	513	0	0	136
1955	168	0	0	0	0	0	0	1.77	.49	387	16.1	1,566	177
1956	64.9	0	0	0	0	0	0	0	0	65.8	38.9	4.71	14.8
1957	68.9	.04	0	0	0	0	1,256	1,738	1,477	0	0	26.9	380

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	39,550	844	33	0	143	1,110	18,120	23,360	29,050	10,090	5,370	2,120	129,800
1941	0	0	35	6,190	24,680	57	10,040	24,470	1,080	34	99	4,890	71,580
1942	367	81	0	0	0	0	3,520	13,560	242	6,400	502	63,970	88,640
1943	9,840	1,320	0	0	0	0	0	624	27,800	122	0	185	39,890
1944	3,410	1,650	18	0	0	1,850	.8	27,360	12,230	0	103,400	147,600	297,500
1945	3,790	0	19	44	13	7,870	30,300	3,120	0	0	0	22,490	67,650
1946	49,140	21	0	0	0	0	36,650	17,840	6,120	134	1,590	6,780	118,300
1947	8,990	11	16	0	0	0	0	3,560	29,930	1,070	1,430	131	45,140
1948	30	67	0	0	0	0	0	252	32,290	11,900	0	12,500	57,040
1949	3,550	86	0	0	83,210	82,840	16,900	6,430	18,720	191	20,010	818	232,800
1950	6,400	179	0	0	0	0	0	2,400	17,130	3,270	9,820	7,140	46,340
1951	227	0	0	0	0	0	0	27,170	1,260	0	0	46	28,700
1952	344	13	0	0	0	0	0	20,930	1,380	10	0	0	22,680
1953	0	0	0	0	0	0	0	1,880	0	0	1,650	66,190	69,720
1954	9,270	25	0	0	0	0	216	41,700	15,660	31,570	0	0	98,440
1955	10,360	0	0	0	0	0	0	109	29	23,800	992	93,200	128,500
1956	3,990	0	0	0	0	0	0	0	0	4,050	2,390	280	10,710
1957	4,230	2.4	0	0	0	0	74,740	106,900	87,890	0	0	1,600	275,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	898	5,200	Apr. 7, 1940	0	179	129,800	123	89,400
1941	928	3,140	Feb. 4, 1941	0	98.9	71,580	99.4	71,990
1942	958	5,000	Sept. 5, 1942	0	122	88,640	137	99,350
1943	978	3,530	June 6, 1943	0	55.1	39,890	46.7	33,810
1944	1008,1118	24,000	Sept. 2, 1944	0	410	297,500	408	296,200
1945	1038	9,340	Sept. 30, 1945	0	93.4	67,650	156	113,000
1946	1058	10,600	Oct. 10, 1945	0	163	118,300	108	78,130
1947	1088	2,910	June 28, 1947	0	62.3	45,140	50.0	36,220
1948	1118	5,830	June 26, 1948	0	78.6	57,040	83.5	60,580
1949	1148	19,600	Feb. 28, 1949	0	322	232,800	326	235,700
1950	1178	2,750	Aug. 30, 1950	0	64.0	46,340	55.2	39,990
1951	1212	2,870	May 28, 1951	0	39.6	28,700	39.8	28,830
1952	1242	2,510	May 28, 1952	0	31.2	22,680	30.7	22,320
1953	1282	6,500	Sept. 6, 1953	0	96.3	69,720	109	79,020
1954	1342	5,430	July 2, 1954	0	136	98,440	137	99,510
1955	1392	15,100	Sept. 27, 1955	0	177	128,500	169	122,100
1956	1442	1,840	July 4, 1956	0	14.8	10,710	15.1	10,950
1957	1512	7,750	June 2, 1957	0	380	275,400	-	-

336. Nueces River at Cotulla, Tex.

Location.--Lat 28°26', long 99°16', at bridge on U. S. Highway 81, at Cotulla, La Salle County, a third of a mile upstream from International-Great Northern Railroad bridge, and at mile 236.

Drainage area.--5,260 sq mi.

Supplemental Records available.--Gage-height records collected in this vicinity, 1914-17 and since 1922, are contained in reports of U. S. Weather Bureau.

Gages.--Wire-weight gage. Datum of gage is 368.08 ft above mean sea level, datum of 1929. Oct. 31, 1923, to Aug. 3, 1924, staff gage at approximate site of present gage at datum 7.28 ft higher; Aug. 4, 1924, to Nov. 19, 1934, staff gage at site 5,000 ft downstream at datum 8.42 ft higher. Nov. 20, 1934, to July 14, 1938, water-stage recorder at present site and datum.

Average discharge.--33 years (1924-57), 272 cfs (196,900 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 82,600 cfs June 18, 1935 (gage height, 32.4 ft, from floodmarks), from rating curve extended above 41,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage since at least 1899, that of June 18, 1935. Flood of June 19, 1899, reached a stage of 29.7 ft, from information by local residents.

Remarks.--Part of Nueces River and its headwater tributaries enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages, most of the headwater flow enters this formation. Considerable losses of flood flows into various permeable formations occur downstream from the Balcones fault zone. Low flow slightly regulated by small storage reservoirs above station; most of it is diverted above station by pumping.

Cooperation.--Gage-height record furnished by U. S. Weather Bureau.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	564	239	65.4	24.3	4.37	10.3	353	241	0	0	186	-
1925	4.32	0	18.9	.48	0	5.53	.80	19.1	3,843	23.6	189	248	358
1926	a83.8	a14.4	a0	a5.82	a0	a1.13	a1,120	a353	a478	a194	a70.1	a0	a192
1927	197	4.83	0	0	44.5	1.71	40.3	.19	116	71.0	13.7	14.7	41.9
1928	1,290	.45	0	0	0	0	0	314	236	0	35.2	947	236
1929	52.1	0	0	0	0	98.6	137	2,130	241	52.8	93.4	1,790	384
1930	79.1	3.44	162	.51	0	85.6	240	651	1,420	11.5	0	0	221
1931	457	119	.66	23.3	144	5.75	7.63	742	432	468	98.7	3.86	210
1932	0	0	0	0	54.4	6.45	0	341	0	3,610	116	6,330	869
1933	941	237	150	155	125	69.3	53.9	18.0	4.30	0	0	0	147
1934	24.8	.57	0	13.0	14.3	.32	140	105	152	3.84	8.01	209	55.4
1935	56.0	228	65.6	26.1	.35	11.3	260	2,130	10,680	1,679	479	1,640	1,430
1936	156	77.3	58.5	38.5	23.0	14.0	12.9	175	81.6	2,122	9.92	3,558	525
1937	901	255	153	83.5	43.2	35.8	15.8	1.25	202	.46	0	0	142
1938	0	0	32.0	689	55.3	20.6	215	44.4	4.35	646	871	0	218
1939	0	0	2.57	.50	.30	.63	0	1,820	189	476	142	1.12	223
1940	655	8.66	1.42	.33	1.07	72.5	508	641	1,095	478	1.57	107	298
1941	.44	.45	.52	.41	585	2.99	141	960	37.7	10.4	.21	103	151
1942	1.73	7.20	.31	.32	.30	.21	46.1	209	14.3	293	3.13	1,791	196
1943	221	25.1	.49	1.98	.65	.03	.12	.03	724	82.0	1.00	13.5	88.7
1944	86.5	21.0	3.82	.58	.17	38.7	1.21	685	636	.06	2,934	3,578	665
1945	44.3	.41	8.61	.45	1.23	74.9	1,030	213	.20	0	0	0	114
1946	2,965	2.89	.74	.61	.22	1.53	1,417	608	326	5.21	16.3	379	480
1947	382	.96	.16	.51	.05	0	0	98.0	846	195	7.05	4.22	128
1948	0	0	0	0	0	0	0	0	438	573	0	195	100
1949	98.7	5.85	0	0	160	2,351	740	148	751	51.7	264	7.17	383
1950	136	7.89	4.65	.17	.04	0	0	51.6	356	63.5	9.19	333	79.8
1951	32.3	0	0	0	0	0	0	411	63.3	0	0	0	42.9
1952	8.29	1.13	0	0	0	0	0	350	211	0	0	0	47.7
1953	0	0	0	0	0	0	0	22.6	0	0	26.3	1,368	117
1954	357	6.89	0	0	0	0	37.9	326	599	614	0	0	163
1955	124	0	0	0	0	0	0	17.9	.35	224	2.21	778	95.2
1956	652	0	0	0	0	0	0	0	0	374	15.8	4.10	88.5
1957	89.6	.75	0	0	0	.61	1,444	1,873	2,334	0	0	189	493

a Monthly figure usable but daily figures are not reliable and should not be used.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	33,530	14,690	4,020	1,400	269	614	21,690	14,360	0	0	11,090	-
1925	266	0	1,160	29	0	340	48	1,180	228,700	1,450	11,640	14,730	259,500
1926	5,150	833	0	358	0	69	66,400	21,700	28,400	11,900	4,310	0	139,000
1927	12,100	288	0	0	2,470	105	2,400	12	6,920	4,370	845	874	30,400
1928	79,300	27	0	0	0	0	0	19,300	14,000	0	2,160	56,400	171,000
1929	3,200	0	0	0	0	6,060	8,150	131,000	14,300	3,250	5,740	107,000	279,000
1930	4,860	205	9,960	31	0	5,260	14,300	40,000	84,500	707	0	0	160,000
1931	28,100	7,080	41	1,430	8,000	354	454	45,600	25,700	28,800	6,070	230	152,000
1932	0	0	0	0	3,130	397	0	21,000	0	222,000	7,130	377,000	631,000
1933	57,900	14,100	9,220	9,530	6,940	4,260	3,210	1,110	256	0	0	0	107,000
1934	1,520	34	0	799	794	20	8,330	6,460	9,040	236	493	12,400	40,100
1935	3,440	13,560	4,030	1,610	20	694	15,470	130,900	635,300	103,200	29,440	97,580	1,035,000
1936	9,560	4,600	3,590	2,360	1,320	862	766	10,730	4,850	130,500	610	211,700	381,400
1937	55,390	15,200	9,420	5,140	2,400	2,200	940	77	12,020	28	0	0	102,800
1938	0	0	1,970	42,340	3,070	1,270	12,820	2,730	259	39,730	53,560	0	157,700
1939	0	0	158	31	17	39	0	111,900	11,260	29,290	8,710	66	161,500
1940	40,280	515	87	20	61	4,460	30,220	39,400	65,140	29,390	96	6,360	216,000

Monthly and yearly runoff, in acre-feet, of Nueces River at Cotulla, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	27	27	32	25	32,490	184	8,410	59,010	2,250	642	13	6,120	109,200
1942	107	428	19	19	17	13	2,740	12,880	852	18,040	192	106,600	141,900
1943	13,560	1,490	30	122	36	1.8	7.3	1.6	43,090	5,040	61	804	64,240
1944	5,320	1,250	235	36	9.7	2,380	72	42,090	37,820	4.0	180,400	212,900	482,500
1945	2,730	24	529	28	68	4,610	61,320	13,120	12	0	0	0	82,440
1946	182,300	172	45	38	12	94	84,300	37,400	19,380	320	1,000	22,550	347,600
1947	23,460	57	10	31	3.0	0	0	6,020	50,360	11,980	434	251	92,610
1948	0	0	0	0	0	0	0	0	26,060	35,210	0	11,630	72,900
1949	6,070	348	0	0	8,880	144,600	44,060	9,090	44,680	3,180	16,230	426	277,600
1950	8,380	469	286	11	2.2	0	0	3,170	21,160	3,910	565	19,810	57,760
1951	1,990	0	0	0	0	0	0	25,290	3,770	0	0	0	31,050
1952	510	67	0	0	0	0	0	21,530	12,530	0	0	0	34,640
1953	0	0	0	0	0	0	0	1,390	0	0	1,620	81,410	84,420
1954	21,950	410	0	0	0	0	2,250	20,070	35,660	37,730	0	0	118,100
1955	7,600	0	0	0	0	0	0	1,100	21	13,760	136	46,310	68,930
1956	40,070	0	0	0	0	0	0	0	0	22,990	969	244	64,270
1957	5,510	45	0	0	0	37	85,920	115,200	138,900	0	0	11,230	356,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	2,920	Sept. 26, 1924	0	-	-	75.6	54,870
1925	608	35,200	June 3, 1925	0	358	259,500	365	264,100
1926	628	9,820	Apr. 28, 1926	0	192	139,000	201	146,000
1927	648	1,440	Oct. 22, 1926	0	41.9	30,400	134	97,300
1928	668	11,400	Oct. 11, 1927	0	236	171,000	131	95,000
1929	688	22,100	May 29, 1929	0	384	279,000	400	291,000
1930	703	6,940	June 22, 1930	0	221	160,000	249	180,000
1931	718	2,920	Oct. 12, 1930	0	210	152,000	161	117,000
1932	733	40,500	Sept. 7, 1932	0	869	631,000	980	712,000
1933	748	4,520	Oct. 1, 1932	0	147	107,000	37.1	26,900
1934	763	2,140	Sept. 18, 1934	0	55.4	40,100	82.3	59,590
1935	788	82,600	June 18, 1935	0	1,430	1,035,000	1,426	1,032,000
1936	808	14,500	Sept. 16, 1936	0	525	381,400	611	443,700
1937	828	4,120	Oct. 1, 1936	0	142	102,800	34.2	24,780
1938	858	9,960	July 31, 1938	0	218	157,700	215	155,900
1939	878	9,240	May 16, 1939	0	223	161,500	279	202,200
1940	898	5,400	June 23, 1940	0	298	216,000	241	175,200
1941	928	4,220	May 2, 1941	0	151	109,200	152	109,700
1942	958	10,200	Sept. 8, 1942	0	196	141,900	216	156,400
1943	978	3,940	June 9, 1943	0	88.7	64,240	77.3	55,970
1944	1008	40,900	Aug. 30, 1944	0	665	482,500	660	479,000
1945	1038	6,480	Apr. 4, 1945	0	114	82,440	361	261,700
1946	1058	17,900	Oct. 11, 1945	0	480	347,600	261	188,600
1947	1088	8,600	June 27, 1947	0	128	92,610	95.4	69,080
1948	1118	4,470	June 27, 1948	0	100	72,900	109	79,320
1949	1148	17,200	Mar. 3, 1949	0	383	277,600	387	280,300
1950	1178	2,680	June 7, 1950	0	79.8	57,760	69.9	50,620
1951	1212	-	-	0	42.9	31,050	40.9	29,640
1952	1242	2,130	May 31, 1952	0	47.7	34,640	46.9	34,060
1953	1282	5,820	Sept. 8, 1953	0	117	84,420	147	106,800
1954	1342	4,610	June 2, 1954	0	163	118,100	143	103,300
1955	1392	10,900	Sept. 30, 1955	0	95.2	68,930	140	101,400
1956	1442	10,900	Oct. 1, 1955	0	88.5	64,270	41.0	29,760
1957	1512	12,000	Apr. 22, 1957	0	493	356,800	-	-

337. Nueces River near Tilden, Tex.

Location.--Lat 28°18', long 98°34', at bridge on State Highway 173, 2 miles upstream from Cow Creek, 10.5 miles south of Tilden, McMullen County, and at mile 141.

Drainage area.--8,192 sq mi.

Supplemental Records Available.--Records of chemical analyses, sediment, and water temperatures for the period December 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 183.5 ft above mean sea level, datum of 1929 (levels by Topographic Division).

Average discharge.--14 years (1943-57), 385 cfs (278,700 acre-ft per year).

Extremes.--1942-57: Maximum discharge, 70,000 cfs Oct. 11, 1946 (gage height, 26.46 ft), from rating curve extended above 46,400 cfs; no flow at times.

Remarks.--Part of flow of Nueces River and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stage most of headwater flow enters this formation. Considerable losses of flood flows into various permeable formations occur downstream from the Balcones fault zone. Diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second, of Nueces River near Tilden, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	-	-	0.95	0.67	0.54	4.85	0.41	5.53	1,189	139	0.32	267	-
1944	155	46.3	31.2	.28	.04	39.5	6.45	1,155	2,201	13.5	129	6,442	842
1945	56.5	.67	4.10	.88	21.3	245	1,377	443	26.4	44.1	.16	34.3	187
1946	3,405	6.39	.50	.45	.24	4.51	404	1,529	1,286	39.7	20.8	1,125	657
1947	5,579	5.40	.89	2.57	.64	.45	71.9	2,307	230	644	186	10.6	767
1948	2.97	84.9	5.19	.55	1.21	6.43	1.88	45.9	2.79	834	.70	154	95.9
1949	228	30.7	2.55	.09	15.9	2,104	2,028	1,308	889	184	445	31.1	609
1950	175	49.3	75.1	1.67	17.8	1.45	34.6	768	1,510	62.1	.38	265	246
1951	248	.02	0	0	.19	15.3	1.44	248	1,067	4.48	0	576	179
1952	109	7.18	.36	.06	4.18	2.33	1.88	230	1,082	37.8	0	0	122
1953	0	0	.09	.23	.83	.25	209	260	.09	0	220	2,550	268
1954	779	251	.55	.15	4.95	0	21.8	128	1,768	1,303	14.6	26.8	359
1955	146	99.3	.02	.34	.40	0	0	209	187	89.3	15.9	340	90.6
1956	688	3.40	.09	.21	.20	0	7.79	49.0	3.37	162	215	48.3	99.5
1957	92.6	5.00	.09	.08	.38	32.8	1,605	4,122	3,745	.79	0	800	867

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	-	-	59	41	30	298	25	340	70,730	8,540	20	15,900	-
1944	9,530	2,760	1,920	17	2.2	2,430	384	70,990	130,900	830	7,920	383,300	611,000
1945	3,480	40	252	54	1,180	15,090	81,920	27,270	1,570	2,710	9.7	2,040	135,600
1946	209,400	380	31	28	13	277	24,050	94,020	76,490	2,440	1,280	66,940	475,300
1947	343,100	322	55	158	36	28	4,280	141,900	13,660	39,610	11,440	629	555,200
1948	183	5,050	319	34	69	395	112	2,820	166	51,280	43	9,140	69,610
1949	14,000	1,820	157	5.6	884	129,400	120,700	80,410	52,900	11,310	27,340	1,850	440,800
1950	10,770	2,940	4,620	103	990	89	2,060	47,220	89,870	3,820	23	15,770	178,300
1951	15,270	1.0	0	0	11	943	85	15,220	63,500	276	0	34,270	129,600
1952	6,730	427	22	3.8	241	143	112	14,120	64,410	2,320	0	0	88,530
1953	0	0	5.6	14	46	15	12,450	15,990	5.4	0	13,540	151,700	193,800
1954	47,870	14,960	34	9.1	275	0	1,300	7,840	105,200	80,100	899	1,590	260,100
1955	8,970	5,910	1.2	21	22	0	0	12,820	11,120	5,490	978	20,240	65,570
1956	42,290	202	5.6	13	12	0	464	3,010	201	9,970	13,200	2,870	72,240
1957	5,690	298	5.8	5.2	21	2,020	95,480	253,500	222,800	49	0	47,610	627,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1943	978	4,060	June 10, 1943	0	-	-	152	110,100
1944	1008	29,900	Sept. 3, 1944	0	842	611,000	827	600,500
1945	1038	3,550	Apr. 27, 1945	0	187	135,600	472	341,700
1946	1058	17,200	Oct. 16, 1945	0	657	475,300	841	609,000
1947	1088,1512	70,000	Oct. 11, 1946	0	767	555,200	300	217,300
1948	1118	2,430	July 8, 1948	0	95.9	69,610	110	80,040
1949	1148	14,700	Mar. 7, 1949	0	609	440,800	612	443,100
1950	1178	6,780	June 7, 1950	0	246	178,300	242	175,200
1951	1212	7,690	June 6, 1951	0	179	129,600	168	121,500
1952	1242	3,720	June 2, 1952	0	122	88,530	112	81,360
1953	1282	9,650	Sept. 8, 1953	0	268	193,800	355	256,600
1954	1342	18,400	June 29, 1954	0	359	260,100	293	212,100
1955	1392	1,710	June 3, 1955	0	90.6	65,570	129	93,190
1956	1442	3,570	Oct. 8, 1955	0	99.5	72,240	49.2	35,730
1957	1512	27,600	Apr. 30, 1957	0	867	627,500	-	-

338. Frio River at Concan, Tex.

Location.--Lat 29°29', long 99°42', on left bank half a mile southeast of Concan, Uvalde County, and 15 miles upstream from Dry Frio River.

Drainage area.--405 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,203.71 ft above mean sea level, datum of 1929. Oct. 26, 1923, to July 28, 1924, staff gage at site 86 ft upstream at datum 5.08 ft lower. July 29, 1924, to Oct. 3, 1930, combination staff and chain gage on left and right banks, respectively, and Oct. 4, 1930, to May 18, 1939, water-stage recorder on right bank, at site 130 ft downstream at present datum.

Average discharge.--32 years (1924-29, 1930-57), 92.0 cfs (66,610 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 162,000 cfs July 1, 1932 (gage height, 34.44 ft, from floodmarks), from rating curve extended above 7,400 cfs on basis of slope-area measurements at gage heights 16.40 and 34.44 ft; no flow Aug. 5, 1956, to Jan. 6, 1957. Maximum stage since at least 1869, that of July 1, 1932.

Remarks.--Part of flow of Frio River enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde and below this station. Most of low flow enters this formation. Many small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	313	177	117	95.6	125	145	159	104	46.2	22.0	25.2	-
1925	25.8	27.8	28.8	28.4	34.6	34.0	32.1	78.8	45.4	19.8	17.7	27.3	33.4

Monthly and yearly mean discharge, in cubic feet per second, of Frio River at Concan, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	72.7	54.4	47.3	45.7	43.4	45.1	56.2	46.5	35.6	444	87.0	53.8	86.8
1927	53.8	39.4	51.8	49.8	164	155	115	78.7	63.7	54.3	36.0	26.2	73.3
1928	42.4	31.5	31.7	32.0	33.6	33.2	31.4	37.5	33.5	15.6	41.5	25.2	32.4
1929	35.9	24.0	24.2	24.2	20.8	20.0	16.6	66.9	46.2	65.2	19.2	23.2	32.4
1930	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	509	99.0	84.8	110	198	161	216	423	155	435	146	78.7	219
1932	129	71.5	73.5	78.3	92.9	126	97.4	127	75.1	2,820	203	1,150	423
1933	363	177	133	134	108	93.2	76.8	71.4	58.4	39.5	35.9	38.6	111
1934	32.4	34.7	35.6	42.6	38.8	38.2	63.8	66.2	23.6	17.6	15.9	10.8	35.0
1935	10.6	12.2	19.9	24.3	29.1	24.6	32.2	1,040	2,470	566	240	490	413
1936	172	118	129	113	96.4	87.3	90.9	95.3	95.0	88.7	56.0	1,330	205
1937	396	270	165	129	110	118	92.1	67.9	86.8	50.3	33.6	29.1	129
1938	35.2	44.2	101	134	116	99.1	95.9	106	71.4	52.1	39.9	31.1	77.0
1939	28.1	25.1	30.0	42.7	43.7	39.5	31.6	23.8	18.9	374	91.6	42.2	66.5
1940	63.8	50.3	45.6	41.5	50.0	45.0	74.9	112	91.8	107	48.0	37.2	64.0
1941	29.8	41.6	66.1	59.0	76.3	87.1	253	337	149	98.4	154	195	129
1942	218	161	112	84.8	74.2	64.0	95.3	119	65.8	55.7	56.1	167	106
1943	147	109	80.5	67.8	56.7	53.4	59.7	49.0	57.4	40.4	22.3	26.4	64.2
1944	30.0	29.1	40.1	51.1	52.3	90.3	78.2	105	124	60.6	73.4	94.4	69.0
1945	75.7	56.5	65.2	136	119	103	118	95.6	54.7	34.4	20.1	16.3	74.4
1946	61.2	47.4	52.5	45.8	48.4	40.7	38.0	49.7	36.3	28.1	14.3	27.9	40.8
1947	279	106	69.0	106	100	83.6	86.4	99.4	164	107	55.6	38.9	108
1948	31.4	37.2	43.8	40.5	43.0	39.7	33.7	28.4	31.9	28.1	13.7	14.0	32.1
1949	19.0	20.1	23.1	29.0	499	178	138	115	86.0	51.6	51.1	55.2	103
1950	60.7	53.6	53.9	55.7	58.0	55.9	48.1	48.6	43.2	29.1	23.3	22.9	46.0
1951	23.7	19.5	24.9	20.9	25.2	33.1	37.7	122	43.7	14.4	7.05	38.7	34.3
1952	11.8	16.5	19.9	20.4	20.1	23.0	32.0	42.7	27.0	11.8	4.03	1.53	19.2
1953	1.54	6.97	20.0	28.6	23.8	20.9	16.5	7.71	1.19	1.25	2.95	14.3	12.1
1954	20.9	20.6	19.7	17.5	15.9	12.7	10.9	174	59.4	44.0	18.4	8.78	35.5
1955	5.83	7.38	9.23	13.1	17.9	17.4	11.6	41.6	14.4	37.0	14.5	33.3	18.6
1956	18.1	15.3	15.4	13.4	12.7	11.8	8.52	6.48	1.08	2.71	.02	0	8.80
1957	0	0	0	3.01	8.25	27.8	178	90.8	141	32.2	11.7	22.5	42.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	18,600	10,900	7,220	5,500	7,680	8,600	9,760	6,190	2,840	1,350	1,500	-
1925	1,590	1,650	1,770	1,750	1,920	2,090	1,910	4,850	2,700	1,220	1,090	1,620	24,200
1926	4,470	3,240	2,910	2,810	2,410	2,770	3,340	2,860	2,120	27,300	5,350	3,200	62,800
1927	3,310	2,340	3,180	3,060	9,090	9,510	6,830	4,840	3,790	3,340	2,220	1,560	53,100
1928	2,610	1,870	1,950	1,970	1,930	2,040	1,870	2,310	1,990	959	2,550	1,500	23,500
1929	2,210	1,430	1,490	1,490	1,160	1,230	988	4,110	2,750	4,010	1,180	1,380	23,400
1930	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	31,300	5,890	5,210	6,760	11,000	9,900	12,900	26,000	9,220	26,700	8,980	4,680	159,000
1932	7,910	4,250	4,520	4,810	5,340	7,750	5,800	7,810	4,470	174,000	12,500	68,300	307,000
1933	22,300	10,500	8,180	8,240	6,000	5,730	4,570	4,390	3,480	2,430	2,210	2,300	80,300
1934	1,990	2,060	2,190	2,620	2,150	2,350	3,800	4,070	1,400	1,080	978	643	25,300
1935	649	728	1,230	1,500	1,620	1,510	1,920	64,040	146,900	34,780	14,750	29,150	298,800
1936	10,580	7,000	7,940	6,930	5,550	5,370	5,410	5,860	5,650	5,460	3,450	79,300	148,500
1937	24,330	16,090	10,150	7,920	6,110	7,240	5,480	4,180	5,160	3,090	2,070	1,730	93,550
1938	2,160	2,630	6,220	8,250	6,430	6,090	5,710	6,540	4,250	3,200	2,450	1,850	55,780
1939	1,730	1,490	1,840	2,630	2,430	2,430	1,880	1,460	1,130	22,980	5,640	2,510	48,150
1940	3,930	2,990	2,800	2,550	2,870	2,770	4,450	6,890	5,460	6,590	2,950	2,210	46,460
1941	1,830	2,480	4,060	3,630	4,240	5,350	15,070	20,690	8,880	6,050	9,480	11,600	93,360
1942	13,420	9,570	6,910	5,220	4,120	3,940	5,670	7,330	3,910	3,420	3,450	9,950	76,910
1943	9,040	6,510	4,950	4,170	3,150	3,280	3,550	3,010	3,420	2,480	1,370	1,570	46,500
1944	1,850	1,730	2,470	3,140	3,010	5,550	4,660	6,460	7,360	3,730	4,510	5,620	50,090
1945	4,650	3,360	4,010	8,340	6,620	6,360	7,050	5,880	3,260	2,110	1,240	972	53,850
1946	3,760	2,820	3,230	2,820	2,690	2,500	2,260	3,060	2,160	1,730	877	1,660	29,570
1947	17,150	6,320	4,240	6,510	5,580	5,140	5,140	6,110	9,750	6,590	3,420	2,310	78,260
1948	1,930	2,220	2,690	2,490	2,470	2,440	2,010	1,750	1,900	1,730	842	834	23,310
1949	1,170	1,200	1,420	1,780	27,720	10,960	8,190	7,080	5,120	3,170	3,140	3,280	74,230
1950	3,730	3,190	3,310	3,430	3,220	3,440	2,860	2,990	2,570	1,790	1,430	1,360	33,320
1951	1,460	1,160	1,530	1,290	1,400	2,030	2,250	7,520	2,600	888	433	2,300	24,860
1952	728	984	1,230	1,260	1,150	1,410	1,900	2,620	1,610	727	248	91	13,960
1953	95	415	1,230	1,760	1,320	1,280	980	474	71	77	181	851	8,730
1954	1,290	1,220	1,210	1,080	885	781	650	10,710	3,530	2,700	1,130	522	25,710
1955	358	439	567	807	994	1,070	692	2,560	856	2,270	894	1,980	13,490
1956	1,110	908	946	823	730	726	507	399	64	166	1.2	0	6,380
1957	0	0	0	185	458	1,710	10,600	5,590	8,380	1,980	720	1,340	30,960

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	1,200	Nov. 2, 1923	-	-	-	76.7	55,600
1925	608	1,800	May 28, 1925	12	33.4	24,200	41.1	29,800
1926	628,1512	24,000	July 23, 1926	27	86.8	62,800	84.3	61,000
1927	648	800	July 15, 1927	25	73.3	53,100	70.0	50,700
1928	668	-	-	8.1	32.4	23,500	30.6	22,200

Yearly discharge, in cubic feet per second, of Frio River at Concan, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	688	2,000	May 29, July 3, 1929	13	32.4	23,400	-	-
1930	703	-	-	-	-	-	-	-
1931	718,1512	52,600	Oct. 6, 1930	19	219	159,000	183	133,000
1932	735,1512	162,000	July 1, 1932	52	423	307,000	456	332,000
1933	748	a388	May 25, 1933	29	111	80,300	63.0	45,600
1934	763	3,100	Apr. 4, 1934	9.7	35.0	25,300	30.0	21,690
1935	788,1512	106,000	June 14, 1935	8.9	413	298,800	444	321,700
1936	808,1512	119,000	Sept. 16, 1936	43	205	148,500	239	173,600
1937	828	b622	June 4, 1937	26	129	93,550	74.6	53,990
1938	858	668	Dec. 29, 1937	23	77.0	55,780	68.8	49,830
1939	898	21,300	July 13, 1939	11	66.5	48,150	72.9	52,810
1940	898	1,360	July 3, 1940	29	64.0	46,460	62.2	45,110
1941	928	6,720	Apr. 27, 1941	24	129	93,360	159	114,900
1942	958	5,260	Oct. 24, 1941	32	106	76,910	93.2	67,510
1943	978	1,200	Oct. 15, 1942	14	64.2	46,500	44.3	32,050
1944	1008	2,080	June 6, 1944	26	69.0	50,090	77.2	56,060
1945	1038	1,560	Jan. 18, 1945	13	74.4	53,850	71.3	51,640
1946	1058	1,250	Sept. 27, 1946	10	40.8	29,570	65.6	47,470
1947	1088	15,000	Oct. 8, 1946	15	108	78,260	79.3	57,390
1948	1118	195	June 11, 1948	8.2	32.1	23,310	27.9	20,260
1949	1148	29,300	Feb. 25, 1949	15	103	74,230	111	80,670
1950	1178	370	May 16, 1950	17	46.0	33,320	37.6	27,240
1951	1212	13,900	May 15, 1951	3.4	34.3	24,860	32.7	23,650
1952	1242	906	May 27, 1952	.9	19.2	13,960	17.6	12,760
1953	1282	105	Sept. 1, 1953	.2	12.1	8,730	14.8	10,710
1954	1342	15,800	May 25, 1954	6.4	35.5	25,710	32.3	23,350
1955	1392	2,760	May 19, 1955	4.0	18.6	13,490	20.9	15,090
1956	1442	231	July 3, 1956	0	8.80	6,380	4.71	3,420
1957	1512	13,400	Apr. 24, 1957	0	42.8	30,960	-	-

a Maximum peak discharge; maximum discharge 584 cfs, 12:01 a.m. Oct. 1, 1932, stage falling
b Maximum peak discharge; maximum discharge 778 cfs, 12:01 a.m. Oct. 1, 1936, stage falling.

339. Dry Frio River near Reagan Wells, Tex.

Location.--Lat 29°30', long 99°47', on right bank about 1,000 ft upstream from Aldine School, 2 miles upstream from Rock Creek and 4 miles southeast of Reagan Wells, Uvalde County.

Drainage area.--117 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,335.2 ft above mean sea level, adjustment unknown (levels by Ground Water Branch).

Average discharge.--5 years (1952-57), 10.6 cfs (7,670 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 23,200 cfs Sept. 24, 1955 (gage height, 18.68 ft, from floodmarks), from rating curve extended above 700 cfs on basis of slope-area measurements at gage heights 14.12 and 26.0 ft (made at site 2.6 miles upstream); no flow at times.

Flood of June 14, 1935, reached a stage of 26.0 ft, from information by local resident (discharge at site 2.6 miles upstream, 64,700 cfs, by slope-area measurement).

Remarks.--Part of flow of Dry Frio River enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde and below station. Most of low flow enters this formation. Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	0.11	-
1953	0.10	0.47	3.77	6.35	4.24	4.62	3.71	1.34	0.19	0.08	0.24	26.7	4.28
1954	8.60	6.92	4.40	3.62	3.20	2.24	1.60	87.0	27.0	17.7	4.05	1.88	14.2
1955	2.67	2.01	1.99	3.03	4.40	4.09	2.61	2.61	1.95	7.66	3.54	104	11.6
1956	14.3	5.02	4.33	3.28	3.30	2.71	1.50	.86	.32	.21	0	0	2.99
1957	0	0	.05	.51	.84	4.33	26.7	46.6	130	8.17	2.99	19.6	19.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	6.5	-
1953	6.1	28	232	391	235	284	221	82	12	4.8	15	1,590	3,100
1954	529	412	271	223	178	138	95	5,350	1,610	1,090	249	112	10,260
1955	164	120	122	186	244	252	155	160	116	471	218	6,190	8,400
1956	877	299	266	202	190	167	89	53	19	13	0	0	2,180
1957	0	0	3.4	32	48	266	1,590	2,870	7,750	502	184	1,170	14,420

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	-	-	-	-	-
1953	1282	327	Sept. 1, 1953	0	4.28	3,100	5.59	4,050
1954	1342	11,400	May 25, 1954	1.0	14.2	10,260	13.0	9,450
1955	1392	23,200	Sept. 24, 1955	.4	11.6	8,400	13.0	9,430
1956	1442	34	Oct. 2, 1955	0	2.99	2,180	1.01	736
1957	1512	8,000	June 1, 1957	0	19.9	14,420	-	-

340. Frio River below Dry Frio River near Uvalde, Tex. 1/

Location.--Lat 29°14'55', long 99°40'24", on right bank 1 mile upstream from crossing of Old Uvalde-Sabinal road, 4.3 miles downstream from Dry Frio River, 5 miles downstream from bridge on U. S. Highway 90, and 7.4 miles northeast of Uvalde, Uvalde County.

Drainage area.--661 sq mi.

Gage.--Water-stage recorder. Datum of gage is 882.47 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1952-57), 9.28 cfs (6,720 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 24,400 cfs May 25, 1954 (gage height, 15.18 ft, from floodmark), from rating curve extended above 4,800 cfs on basis of slope-area measurement of peak flow; no flow most of time.
Maximum stage since at least 1887, about 35 ft in 1894. Flood of July 1, 1932, reached a stage of about 30 ft. A higher flood than that of 1894 occurred prior to 1887. Above information by local residents.

Remarks.--Part of flow of Frio River enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde and above station. Most of low flow enters this formation. Many diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	0	-
1953	0	0	0	0	0	0	0	0	0	0	0.28	0	0.02
1954	0	0	0	0	0	0	0	254	0	0	0	0	21.6
1955	0	0	0	0	0	0	0	0	0	0	0	87.6	7.20
1956	0	0	0	0	0	0	0	0	0	0	.006	0	.0005
1957	0	0	0	0	0	0	53.5	65.4	80.8	0	0	11.8	17.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	0	-
1953	0	0	0	0	0	0	0	0	0	0	17	0	17
1954	0	0	0	0	0	0	0	15,610	0	0	0	0	15,610
1955	0	0	0	0	0	0	0	0	0	0	0	5,210	5,210
1956	0	0	0	0	0	0	0	0	0	0	.4	0	.4
1957	0	0	0	0	0	0	3,180	4,020	4,810	0	0	705	12,720

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	0	-	-	-	-
1953	1282	-	-	0	0.02	17	0.02	17
1954	1342	24,400	May 25, 1954	0	21.6	15,610	21.6	15,610
1955	1392	8,680	Sept. 24, 1955	0	7.20	5,210	7.20	5,210
1956	1442	4.0	Aug. 20, 1956	0	.0005	.4	.0005	.4
1957	1512	10,300	May 27, 1957	0	17.6	12,720	-	-

1/ Sum of records published as Frio River at Knippa (no flow during entire period), and Dry Frio River at Knippa for period September 1952 to September 1953 is equivalent to record for this station and is included in the average discharge.

Note.--Figures shown in tables for 1952 and 1953 are sum of records published for Frio River at Knippa and Dry Frio River at Knippa (each of which was established Sept. 3, 1952, and discontinued Sept. 30, 1953) which are equivalent to record for this station (established Sept. 18, 1953). There was no flow at Frio River at Knippa during the period of record.

341. Sabinal River near Sabinal, Tex.

Location.--Lat 29°30', long 99°29', on right bank 470 ft upstream from low-water road crossing on Sabinal-Utopia road, 3.5 miles downstream from Onion Creek, and 12 miles north of Sabinal, Uvalde County.

Drainage area.--206 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,131.20 ft above mean sea level, datum of 1929.

Average discharge.--15 years (1942-57), 18.2 cfs (13,180 acre-ft per year).

Extremes.--1942-57: Maximum discharge, 15,800 cfs May 24, 1954 (gage height, 14.18 ft), from rating curve extended above 1,000 cfs on basis of slope-area measurements at gage heights 9.60, 11.10, and 14.18 ft; no flow at times.
Flood of July 2, 1932, reached a stage of about 29 ft, from information by local residents.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	83.3	42.8	28.8	21.6	16.8	15.7	29.5	14.8	36.6	26.9	7.19	3.02	27.3
1944	3.22	3.12	5.27	13.8	22.8	70.9	46.6	45.9	63.9	28.1	41.1	22.1	30.6
1945	16.2	13.5	26.2	99.8	65.5	85.3	106	55.9	28.1	13.3	4.30	9.46	43.5
1946	16.2	11.3	15.9	12.3	13.2	10.0	17.0	19.1	11.7	4.95	.45	31.7	13.6
1947	79.0	47.4	27.8	35.5	36.8	29.9	27.9	30.9	67.4	25.4	11.9	5.25	35.4
1948	1.26	1.21	3.35	4.45	6.90	7.34	3.47	.80	4.67	2.46	0	5.84	3.46
1949	4.97	.71	1.36	4.68	96.8	61.8	92.4	79.5	49.6	24.5	23.0	21.9	37.9
1950	28.8	22.1	18.5	20.6	26.4	26.2	20.8	20.3	31.0	14.1	3.15	.85	19.3
1951	.49	.47	1.08	1.77	2.20	4.13	4.91	81.8	21.6	3.55	.05	0	10.3
1952	0	0	0	0	0	0	4.50	25.2	20.1	3.17	.17	.05	4.44
1953	0	0	.44	1.64	3.27	2.39	.16	0	0	0	.26	4.64	1.05
1954	20.3	9.84	8.09	4.01	2.06	.56	0	92.7	17.6	9.07	1.41	0	14.2

Monthly and yearly mean discharge, in cubic feet per second, of Sabinal River near Sabinal, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	0	0	0	0	0	0	0	5.68	0.22	3.71	0	0	0.82
1956	0	0	0	0	0	0	0	0	0	18.7	0	0	1.59
1957	0	0	0	0	0	22.4	102	43.1	93.6	8.15	.01	87.9	29.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	5,120	2,550	1,770	1,330	930	964	1,760	909	2,180	1,660	442	180	19,800
1944	198	186	324	851	1,310	4,360	2,770	2,820	3,800	1,730	2,530	1,310	22,190
1945	998	801	1,610	6,140	3,640	5,240	6,340	3,440	1,670	820	264	563	31,530
1946	995	672	978	754	732	617	1,010	1,170	696	305	28	1,890	9,850
1947	4,860	2,820	1,710	2,180	2,040	1,840	1,660	1,900	4,010	1,560	731	312	25,620
1948	78	72	206	274	397	451	206	49	278	151	0	348	2,510
1949	306	42	84	288	5,380	3,800	5,500	4,890	2,950	1,510	1,420	1,300	27,470
1950	1,770	1,310	1,140	1,270	1,460	1,610	1,240	1,250	1,840	869	193	50	14,000
1951	30	28	67	109	122	254	292	5,030	1,290	219	3.4	0	7,440
1952	0	0	0	0	0	0	268	1,550	1,190	195	11	3.2	3,220
1953	0	0	27	101	181	147	9.3	0	0	0	16	276	757
1954	1,250	585	498	247	114	35	0	5,700	1,050	558	87	0	10,120
1955	0	0	0	0	0	0	0	349	13	228	0	0	590
1956	0	0	0	0	0	0	0	0	0	1,150	0	0	1,150
1957	0	0	0	0	0	1,380	6,090	2,650	5,570	501	.8	5,230	21,420

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1943	1058	7,180	Oct. 18, 1942	1.6	27.3	19,800	15.3	11,060
1944	1058	6,620	Aug. 30, 1944	2.2	30.6	22,190	34.3	24,890
1945	1058	5,650	Jan. 18, 1945	.2	43.5	31,530	42.5	30,760
1946	1058	4,260	Sept. 27, 1946	0	13.6	9,850	22.9	16,590
1947	1088	8,490	June 24, 1947	2.9	35.4	25,620	22.9	16,590
1948	1118	282	Sept. 4, 1948	0	3.46	2,510	3.56	2,590
1949	1148	5,320	Feb. 25, 1949	0	37.9	27,470	43.2	31,260
1950	1178	1,010	Oct. 22, 1949	.4	19.3	14,000	13.7	9,910
1951	1212	10,600	May 15, 1951	0	10.3	7,440	10.1	7,320
1952	1242	2,370	May 25, 1952	0	4.44	3,220	4.47	3,240
1953	1282	202	Sept. 4, 1953	0	1.05	757	4.23	3,060
1954	1342	15,800	May 24, 1954	0	14.2	10,120	10.8	7,790
1955	1392	644	May 19, 1955	0	.82	590	.82	590
1956	1442	2,420	July 2, 1956	0	1.59	1,150	1.59	1,150
1957	1512	9,900	Sept. 22, 1957	0	29.6	21,420	-	-

342. Sabinal River at Sabinal, Tex.

Location.--Lat 29°19', long 99°29', at bridge on U. S. Highway 90, about 1,000 ft downstream from Texas & New Orleans Railroad bridge, 0.8 mile west of Sabinal, Uvalde County, and 6.5 miles upstream from Ranchero Creek.

Drainage area.--247 sq mi.

Gage.--Wire-weight gage. Datum of gage is 882.17 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1952-57), 7.81 cfs (5,650 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 15,900 cfs May 24, 1954 (gage height, 19.56 ft, from floodmark), from rating curve extended above 3,500 cfs on basis of slope-area measurement of peak flow; no flow at times.

Maximum stage since at least 1890 about 40 ft Aug. 24, 1919, from information by local residents. Flood of July 2, 1932, reached a stage of 31 ft from information by Southern Pacific Railway Co. (discharge, 71,700 cfs by slope-area measurement of peak discharge at site 1.5 miles upstream). Local residents report a flood occurred in 1858 that may have been the highest since at least 1850, stage unknown.

Remarks.--Small diversions for irrigation above station. Most of low flow of the Sabinal River enters Edwards and associated limestones in Balcones fault zone which crosses basin upstream from this station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	0.06	-
1953	0	0	0	0	0	0.08	0.08	0	0	0	0.41	14.3	1.22
1954	10.3	1.48	1.84	.73	.39	.21	.15	131	3.90	1.05	.95	.15	12.9
1955	1.07	.08	.07	.25	.39	.44	.53	.07	.28	.04	.19	.43	.32
1956	.08	0	0	0	0	0	0	0	0	10.9	1.04	.14	1.03
1957	.53	.01	0	0	0	6.22	99.2	50.7	53.2	1.23	2.71	71.4	23.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	3.8	-
1953	0	0	0	0	0	5.2	4.6	0	0	0	25	852	887
1954	634	88	113	45	22	13	8.7	8,070	232	64	59	8.9	9,360
1955	66	4.8	4.6	15	22	27	31	4.4	16	2.4	12	25	230
1956	5.2	0	0	0	0	0	0	0	0	672	64	8.3	750
1957	33	.6	0	0	0	383	5,900	3,120	3,170	76	167	4,250	17,100

Yearly discharge, in cubic feet per second, of Sabinal River at Sabinal, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	0	-	-	-	-
1953	1282	1,700	Sept. 4, 1953	0	1.22	887	2.38	1,720
1954	1342	15,900	May 24, 1954	0	12.9	9,360	11.9	8,600
1955	1392	51	Oct. 6, 1954	0	.32	230	.22	160
1956	1442	1,100	July 3, 1956	0	1.03	750	1.07	778
1957	1512	8,350	Apr. 24, 1957	0	23.6	17,100	-	-

343. Frio River near Frio Town, Tex.

Location.--Lat 29°05', long 99°24', on left bank 300 feet below Frio ford, 1-1/2 miles downstream from Sabinal River and 7 miles northwest of Frio Town, Frio County.

Drainage area.--1,460 sq mi.

Gage.--Combination staff and chain gage. Datum of gage unknown.

Extremes.--1924-27: Maximum discharge, 30,200 cfs Apr. 20, 1956 (gage height, 30.5 ft), from rating curve extended above 140 cfs on basis of slope-area measurement of peak flow; no flow most of time.
Highest known flood since about 1894 occurred in September 1913, gage height 51.9 ft, from information by local resident.

Remarks.--Part of flow of Frio River and its headwater tributaries enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	24.7	21.8	0.05	0	0	-
1925	0	0	0	0	0	0	0	52.6	0	0	0	0	4.46
1926	28.6	0	0	0	0	0	1,140	0	0	230	0	0	116
1927	0	0	0	0	0	0	12.3	0	13.2	44.3	0	0	5.86

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	1,520	1,300	3.0	0	0	-
1925	0	0	0	0	0	0	0	3,230	0	0	0	0	3,230
1926	1,760	0	0	0	0	0	68,100	0	0	14,100	0	0	84,000
1927	0	0	0	0	0	0	730	0	787	2,730	0	0	4,250

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a500	Apr. 26, 1924	0	-	-	-	-
1925	608	1,100	May 11, 1925	0	4.46	3,230	6.89	4,990
1926	628	30,200	Apr. 20, 1926	0	116	84,000	114	82,200
1927	648	2,260	July 26, 1927	0	5.86	4,250	-	-

a Maximum for period April to September.

344. Hondo Creek near Tarpley, Tex.

Location.--Lat 29°34', long 99°15', on left bank 460 ft downstream from county low-water crossing, 6.2 miles southeast of Tarpley, Bandera County, and 16.7 miles northwest of Hondo.

Drainage area.--86.2 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,169.1 ft above mean sea level, adjustment unknown (Magnolia Oil Co. bench-mark).

Average discharge.--5 years (1952-57) 11.3 cfs (8,180 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 25,300 cfs Sept. 22, 1957 (gage height, 17.8 ft, from floodmark), from rating curve extended above 290 cfs on basis of slope-area measurements at gage heights 7.77 and 15.46 ft; no flow at times.
Maximum stage known since at least 1907, 26.0 ft in July 1932, from information by local resident.

Remarks.--Small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	7.26	-
1953	0.01	2.28	10.8	4.54	2.66	2.01	1.21	0.07	0.68	0.03	6.45	36.5	5.58
1954	49.2	11.4	5.74	3.74	2.09	1.53	2.13	36.4	8.69	1.39	.18	.32	10.4
1955	1.57	0	0	.15	1.12	6.25	.25	2.09	.01	1.86	.09	0	1.13
1956	0	0	0	0	0	0	0	0	.67	2.74	.55	.97	.41
1957	6.59	.02	0	0	0	38.6	144	69.7	77.2	9.60	1.72	122	38.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	432	-
1953	0.4	136	665	279	148	124	72	4.6	40	1.8	397	2,170	4,040
1954	3,030	676	353	230	116	94	127	2,240	517	85	11	19	7,500
1955	97	0	0	9.1	62	384	15	128	.8	114	5.4	0	815

Monthly and yearly runoff, in acre-feet, of Hondo Creek near Tarpley, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	0	0	0	0	0	0	0	0	40	168	34	58	300
1957	405	1.4	0	0	0	2,370	8,580	4,290	4,600	590	106	7,240	28,180

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	0	-	-	-	-
1953	1282	3,340	Sept. 4, 1953	0	5.58	4,040	10.1	7,300
1954	1342	18,600	May 24, 1954	0	10.4	7,500	4.89	3,540
1955	1392	1,570	Mar. 20, 1955	0	1.13	815	.99	718
1956	1442	510	Sept. 6, 1956	0	.41	300	.97	706
1957	1512	25,300	Sept. 22, 1957	0	38.9	28,180	-	-

345. Hondo Creek near Hondo, Tex.

Location.--Lat 29°27', long 99°11', on left bank 43 ft upstream from Schlentz's Crossing, 7.8 miles northwest of Hondo, Medina County, and 13.5 miles upstream from Verde Creek.

Drainage area.--132 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 986.4 ft above mean sea level (Western Geophysical bench-mark).

Average discharge.--5 years (1952-57), 12.0 cfs (8,690 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 20,500 cfs Sept. 22, 1957 (gage height, 13.5 ft, from floodmarks), from rating curve extended above 450 cfs on basis of slope-area measurement at gage height 10.34 ft; no flow most of time.

Remarks.--Most of the low flow of Hondo Creek enters Edwards and associated limestones in Balcones fault zone which crosses basin upstream from station. Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	3.98	-
1953	0	0	7.97	0	0	0	0	0	0	0	3.81	93.2	8.67
1954	68.4	.02	0	0	0	0	0	42.4	.26	0	0	0	9.43
1955	0	0	0	0	0	7.29	0	0	0	0	0	0	.62
1956	0	0	0	0	0	0	0	0	0	3.56	0	0	.30
1957	0	0	0	0	0	31.0	148	133	64.8	0	0	116	41.0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	237	-
1953	0	0	490	0	0	0	0	0	0	0	234	5,550	6,270
1954	4,200	1.2	0	0	0	0	0	2,610	15	0	0	0	6,830
1955	0	0	0	0	0	448	0	0	0	0	0	0	448
1956	0	0	0	0	0	0	0	0	0	219	0	0	219
1957	0	0	0	0	0	1,910	8,820	8,200	3,850	0	0	6,910	29,690

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	0	-	-	-	-
1953	1282	12,500	Sept. 4, 1953	0	8.67	6,270	13.8	9,990
1954	1342	13,700	May 24, 1954	0	9.43	6,830	3.62	2,620
1955	1392	1,260	Mar. 20, 1955	0	.62	448	.62	448
1956	1442	516	July 3, 1956	0	.30	219	.30	219
1957	1512	20,500	Sept. 22, 1957	0	41.0	29,690	-	-

346. Seco Creek near Utopia, Tex.

Location.--Lat 29°33', long 99°24', on right bank half a mile downstream from county road crossing, 7.6 miles upstream from Bartz Spring Creek, and 9 miles southeast of Utopia, Uvalde County.

Drainage area.--53.2 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,245.8 ft above mean sea level, adjustment unknown (Magnolia Oil Co. bench-mark).

Average discharge.--5 years (1952-57), 4.77 cfs (3,450 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 12,100 cfs Sept. 22, 1957 (gage height, 11.63 ft, from floodmark), from rating curve extended above 80 cfs on basis of slope-area measurements at gage heights 5.88 and 10.3 ft; no flow at times.

Remarks.--No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Seco Creek near Utopia, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	2.32	-
1953	0	0.38	2.32	0.15	0	0.01	0	0	0.32	0.36	4.05	20.6	2.34
1954	10.8	3.89	1.25	.78	.04	0	1.33	40.5	2.63	.07	0	0	5.19
1955	1.76	0	0	0	0	1.28	0	3.05	0	2.03	.18	.57	.75
1956	.52	0	0	0	0	0	0	0	0	3.00	.59	.21	.37
1957	.26	0	0	0	0	22.3	35.0	23.9	40.5	2.38	0	59.1	15.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	138	-
1953	0	23	143	8.9	0	.6	0	0	19	22	249	1,230	1,700
1954	662	232	77	48	2.2	0	79	2,490	156	4.6	0	0	3,750
1955	108	0	0	0	0	79	0	188	0	125	11	34	545
1956	32	0	0	0	0	0	0	0	0	184	36	12	264
1957	16	0	0	0	0	1,370	2,080	1,470	2,410	146	0	3,520	11,010

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	0	-	-	-	-
1953	1282	1,930	Sept. 2, 1953	0	2.34	1,700	3.45	2,500
1954	1342	9,040	May 24, 1954	0	5.19	3,750	3.99	2,890
1955	1392	633	May 19, 1955	0	.75	545	.65	469
1956	1442	393	July 3, 1956	0	.37	264	.32	248
1957	1512	12,100	Sept. 22, 1957	0	15.2	11,010	-	-

347. Seco Creek near D'Hanis, Tex.

Location.--Lat 29°29', long 99°23', on right bank a quarter of a mile downstream from concrete dam and road crossing at Woodward Ranch headquarters, 2.8 miles upstream from Bartz Spring Creek, and 12.8 miles northwest of D'Hanis, Medina County.

Drainage area.--87.4 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,142.8 ft above mean sea level (levels by Ground Water Branch).

Average discharge.--5 years (1952-57), 4.62 cfs (3,340 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 12,400 cfs Sept. 22, 1957 (gage height, 11.18 ft, from floodmark), from rating curve extended above 110 cfs on basis of slope-area measurements at gage heights 5.03 and 9.30 ft; no flow most of time.
Maximum stage known since at least 1866, 26.2 ft in May 1935. Flood of Aug. 31, 1894, reached a stage about 10 ft lower than that of May 1935 and was the second highest, from information by local residents.

Remarks.--All of low flow of Seco Creek enters Edwards and associated limestones in the Balcones fault zone which crosses basin just north of Uvalde and above this station. No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	0	-
1953	0	0	0	0	0	0	0	0	0	0	2.81	21.4	2.00
1954	6.98	.03	0	0	0	0	0	19.7	0	0	0	0	2.27
1955	0	0	0	0	0	5.88	0	3.31	0	.89	0	0	.86
1956	0	0	0	0	0	0	0	0	0	5.58	0	0	.47
1957	0	0	0	0	0	18.2	53.6	30.8	44.1	.30	0	64.8	17.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	0	-
1953	0	0	0	0	0	0	0	0	0	0	173	1,280	1,450
1954	429	2.0	0	0	0	0	0	1,210	0	0	0	0	1,640
1955	0	0	0	0	0	361	0	203	0	55	0	0	619
1956	0	0	0	0	0	0	0	0	0	343	0	0	343
1957	0	0	0	0	0	1,120	3,190	1,900	2,620	18	0	3,850	12,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1282	-	-	0	-	-	-	-
1953	1282	2,090	Sept. 2, 1953	0	2.00	1,450	2.60	1,880
1954	1342	8,110	May 24, 1954	0	2.27	1,640	1.67	1,210
1955	1392	1,730	Mar. 20, 1955	0	.86	619	.86	619
1956	1442	680	July 3, 1956	0	.47	343	.47	343
1957	1512	12,400	Sept. 22, 1957	0	17.5	12,700	-	-

348. Leona River spring flow near Uvalde, Tex.

Location.--Lat 29°09', long 99°44', on right bank at old road crossing on White's ranch, 3-1/2 miles downstream from Cooks Slough and 4.6 miles southeast of Uvalde, Uvalde County.

Supplemental records available.--Occasional discharge measurements since 1925 in connection with seepage investigations.

Gage.--Water-stage recorder. Datum of gage is 838.39 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 8.30 cfs (6,010 acre-ft per year).

Extremes.--1939-57: Maximum daily spring discharge, 33 cfs Feb. 15-18, 1942; maximum gage height 18.42 ft Aug. 31, 1953, from floodmarks, result of surface flood; no flow at times in 1948, and 1949. No spring discharge since Mar. 5, 1951.

Remarks.--Discharge represents flow from several springs that enter river above station and below Uvalde. Surface runoff from precipitation is excluded. A few small diversions by pumping from river channel above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	25	25	24	20	18	15.7	14.6	18.9	20.0	-
1940	20.1	22.2	24.4	25.4	23.9	21.3	20.4	19.5	18.0	17.3	15.5	15.2	20.3
1941	13.5	13.8	13.6	13.0	12.2	12.7	13.4	18.1	21.9	23.5	22.1	24.1	16.8
1942	26.7	29.7	30.5	31.4	32.0	30.6	29.6	28.3	23.4	22.6	20.1	22.4	27.3
1943	25.0	26.1	27.0	27.0	27.0	27.4	27.7	21.8	21.2	19.6	16.4	17.0	23.6
1944	17.3	15.0	13.9	11.8	9.36	9.11	8.35	7.77	9.92	9.52	6.41	11.3	10.8
1945	12.7	13.6	14.4	14.2	14.9	17.1	16.4	16.0	14.1	10.9	8.26	7.28	13.3
1946	6.68	5.64	5.39	5.38	4.10	3.31	1.92	1.97	1.22	.65	.48	1.05	3.15
1947	2.35	4.38	6.64	7.68	8.11	10.2	12.0	11.8	11.7	15.9	16.3	14.1	10.1
1948	12.4	14.2	14.0	12.1	11.1	8.42	5.46	3.21	.90	.81	.09	.23	6.90
1949	.25	.42	.12	.25	.32	.32	1.43	4.29	6.28	6.09	7.47	8.94	3.02
1950	12.6	16.7	18.1	20.0	19.5	17.3	15.1	12.8	11.7	7.56	5.77	4.95	13.5
1951	4.13	1.89	.83	.20	.22	.01	0	0	0	0	0	0	.62
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	1,540	1,390	1,480	1,190	1,110	934	900	1,160	1,190	-
1940	1,240	1,320	1,500	1,560	1,370	1,310	1,210	1,200	1,070	1,070	952	906	14,710
1941	833	819	837	799	676	781	795	1,110	1,310	1,440	1,360	1,440	12,200
1942	1,640	1,770	1,880	1,930	1,780	1,880	1,760	1,740	1,390	1,390	1,240	1,330	19,730
1943	1,540	1,550	1,660	1,660	1,500	1,680	1,650	1,340	1,260	1,210	1,010	1,010	17,070
1944	1,060	891	855	728	538	560	497	478	590	585	394	672	7,850
1945	781	809	885	875	827	1,050	976	986	837	672	508	433	9,640
1946	411	336	331	331	228	204	114	121	72	40	30	63	2,280
1947	145	261	408	472	450	626	714	726	695	978	1,000	839	7,310
1948	762	843	863	742	637	518	325	198	54	50	5.4	14	5,010
1949	15	25	7.3	15	18	20	85	264	374	374	460	532	2,190
1950	774	996	1,110	1,230	1,080	1,070	899	789	698	465	355	295	9,760
1951	254	113	51	18	12	.6	0	0	0	0	0	0	449
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	20.6	15,000
1940	898	27	Jan. 10, 11, 1940	14	20.3	14,710	18.1	13,140
1941	928	26	(a)	12	16.8	12,200	20.7	15,000
1942	958	33	Feb. 15-18, 1942	18	27.3	19,730	26.5	19,190
1943	978	30	Apr. 2,3,8, 1943	15	23.6	17,070	20.9	15,130
1944	1008	18	Oct. 3-6,10-13, 1943	4.9	10.8	7,850	10.4	7,520
1945	1038	18	(b)	6.2	13.3	9,640	11.4	8,240
1946	1058	7.1	Oct. 10-20, 1945	.4	3.15	2,280	2.78	2,020
1947	1088	18	June 27,28, 1947	1.8	10.1	7,310	12.4	8,970
1948	1118	15	(c)	0	6.90	5,010	3.57	2,590
1949	1148	12	Sept. 29,30, 1949	0	3.02	2,190	6.94	5,020
1950	1178	21	Feb. 12, 1950	4.2	13.5	9,760	10.1	7,300
1951	1212	5.4	Oct. 1-5, 1950	0	.62	449	.04	31
1952	1242	0	-	0	0	0	0	0
1953	1282	0	-	0	0	0	0	0

a July 15, 1941, Sept. 19-26, 1941.
b Mar. 12-14, 29-31, Apr. 1, 2, 1945.
c Nov. 18-30, Dec. 1-8, 15, 16, 1948.

Yearly discharge, in cubic feet per second, of Leona River spring flow near Uvalde, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1342	0	-	0	0	0	0	0
1955	1392	0	-	0	0	0	0	0
1956	1442	0	-	0	0	0	0	0
1957	1512	0	-	0	0	0	-	-

349. Leona River near Divot, Tex.

Location.--Lat 28°47', long 99°13', at bridge on Divot-Pearsall road, 2-1/2 miles northeast of Divot, Frio County, and 12 miles above mouth.

Drainage area.--565 sq mi.

Gage.--Staff gage. Datum of gage unknown.

Extremes.--1924-29: Maximum discharge, 6,130 cfs May 26, 1929 (gage height, 15.5 ft); no flow at times.
Maximum stage known since at least 1872, 20.2 ft July 4, 1932, from levels to flood marks (discharge, 49,300 cfs, by slope-area measurement).

Remarks.--Several small diversions upstream from station for irrigation. Low-flow regulated by dams upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	17.8	110	1.46	0	0	-
1925	0	0	22.6	6.65	1.72	0	0	27.7	7.41	0	0	0	5.58
1926	0	0	0	0	0	0	187	37.9	88.5	1.17	22.5	0	27.9
1927	12.8	0	0	0	0	0	8.3	0	3.4	-	-	-	-
1928	0	0	0	0	0	0	0	5.23	56.2	15.4	3.36	4.91	7.05
1929	-	-	-	-	-	-	0	287	.17	0	0	17.0	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	1,090	6,570	89.9	0	0	-
1925	0	0	1,390	409	95.8	0	0	1,700	441	0	0	0	4,040
1926	0	0	0	0	0	0	11,100	2,330	5,270	72	1,380	0	20,200
1927	790	0	0	0	0	0	496	0	202	-	-	-	-
1928	0	0	0	0	0	0	0	322	3,340	947	207	292	5,110
1929	-	-	-	-	-	-	0	17,600	10	0	0	1,010	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	3,310	June 24, 1924	0	-	-	-	-
1925	608	a304	May 11, 1925	0	5.58	4,040	3.66	2,650
1926	628	4,810	Apr. 23, 1926	0	27.9	20,200	29.0	20,900
1927	648	-	-	0	-	-	-	-
1928	668	559	July 29, 1928	0	7.05	5,110	-	-
1929	688	6,130	May 26, 1929	0	-	-	-	-

a Maximum observed.

350. Frio River near Derby, Tex.

Location.--Lat 28°44'10", long 99°08'45", at bridge on U. S. Highway 81, 150 ft upstream from International-Great Northern Railroad bridge, 750 ft downstream from Leona River, and 2.4 miles south of Derby, Frio County.

Drainage area.--3,493 sq mi.

Gage.--Water stage recorder and concrete control. Datum of gage is 449.47 ft above mean sea level, datum of 1929. Aug. 1, 1915, to Apr. 21, 1931, staff gage, and Apr. 22, 1931, to Mar. 6, 1940, water-stage recorder, at railroad bridge 150 ft downstream at same datum.

Average discharge.--42 years (1915-57), 133 cfs (96,290 acre-ft per year).

Extremes.--1915-57: Maximum discharge, 230,000 cfs July 4, 1932 (gage height, 29.60 ft, present site, from floodmarks at former site), from rating curve extended above 46,000 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage since at least 1860, that of July 4, 1932.

Remarks.--Part of flow of Frio River and its headwater tributaries enters Edwards Limestone in Balcones fault zone which crosses basin north of Uvalde. At low stages most of headwater flow enters this formation. Considerable losses of flood flows into various permeable formations occur downstream from the Balcones fault zone. Diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	116	303	-
1916	18.2	0	0	0	0	0	1,040	224	0.47	5.29	40.4	21.0	111
1917	70.4	0	0	0	0	0	0	0	3.90	.89	0	46.5	10.2
1918	0	1.28	0	0	0	0	44.6	313	0	0	5.29	3.47	31.1
1919	317	.19	443	489	22.0	92.1	30.4	347	700	990	2,040	3,250	730
1920	1,810	674	108	72.5	63.7	32.3	13.9	122	6.95	7.48	20.2	3.55	247
1921	3.62	8.54	7.46	7.30	7.99	69.6	22.8	13.7	165	1.84	0	83.1	32.4

Monthly and yearly mean discharge, in cubic feet per second, of Frio River near Derby, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	1.95	0	0	0.01	0.65	27.6	827	1,090	126	6.03	0.29	0	174
1923	12.8	34.1	2.66	3.37	22.8	25.8	102	8.52	6.41	7.06	0	395	51.0
1924	21.1	84.4	62.8	23.8	9.47	15.8	83.4	32.8	289	2.81	.50	2.09	51.9
1925	.35	.87	13.7	4.78	2.47	2.17	1.34	34.7	9.46	1.47	0	0	6.00
1926	3.09	0	0	0	.07	1.65	1,070	97.8	56.0	173	15.3	0	117
1927	12.6	0	0	.71	1.33	1.46	21.1	0	83.2	27.7	.15	0	12.3
1928	0	0	0	0	0	0	0	62.1	120	14.5	49.3	3.53	20.8
1929	0	0	0	0	0	0	32.0	769	28.7	101	0	1.11	78.9
1930	0	0	15.8	.44	.38	.58	23.1	69.4	380	.12	0	0	40.5
1931	318	1.02	.94	5.94	64.2	9.59	4.11	1,080	12.3	287	2.72	.23	151
1932	3.73	.03	.12	.18	.63	.36	.25	20.8	.33	8,940	41.2	1,870	917
1933	342	57.9	31.1	57.5	48.6	34.6	20.6	15.4	8.54	4.57	5.91	7.03	53.2
1934	6.71	8.69	12.5	22.1	14.8	10.8	68.0	9.45	.33	.90	.62	.14	12.8
1935	15.8	20.4	17.3	.92	3.60	1.94	30.0	2,320	8,069	1,820	162	624	1,087
1936	93.0	27.0	49.2	46.1	34.9	29.5	62.4	97.4	46.5	611	12.1	1,195	191
1937	432	124	77.5	59.1	51.7	53.5	40.9	25.3	72.1	16.4	11.4	14.1	81.9
1938	14.8	14.6	84.1	103	27.3	37.9	80.0	41.5	10.5	11.4	4.70	4.76	36.4
1939	4.93	7.22	11.5	14.7	14.9	15.4	7.17	24.4	6.90	552	83.3	6.05	63.4
1940	213	14.8	16.0	19.2	19.7	15.3	28.1	31.2	80.2	17.2	1.11	0	38.2
1941	0	26.8	56.1	19.1	872	145	379	608	106	36.8	121	111	202
1942	180	23.2	18.9	21.2	28.4	22.5	43.2	22.3	6.21	167	19.9	581	94.3
1943	228	12.6	12.7	19.6	20.8	19.4	19.0	13.8	271	7.93	0	5.95	52.5
1944	5.86	29.3	6.55	6.30	4.83	39.6	3.39	65.9	51.6	.24	203	142	46.6
1945	248	1.05	6.36	116	14.6	12.8	79.5	1.29	17.9	0	0	138	53.2
1946	295	0	0	0	0	0	53.3	17.0	2.15	0	265	485	93.5
1947	134	.29	.24	.19	.18	.16	.17	0	339	2.92	.88	0	39.7
1948	0	0	0	0	0	0	0	0	408	36.7	0	4.34	36.9
1949	84.4	0	0	0	435	93.8	257	36.1	88.4	.37	64.0	0	85.4
1950	221	.19	0	0	0	0	0	32.5	.52	2.65	0	0	21.8
1951	0	0	0	0	0	0	0	993	11.9	0	0	0	85.4
1952	1.70	0	0	0	0	0	0	5.74	2.44	0	0	11.4	1.76
1953	0	0	0	0	0	0	0	0	0	0	10.2	1,335	111
1954	129	1.56	0	0	0	0	0	313	1.09	0	2.06	0	37.9
1955	0	0	0	0	0	0	0	112	0	0	.65	23.5	11.5
1956	.16	0	0	0	0	0	7.33	0	0	113	26.9	0	12.5
1957	19.8	0	0	0	0	9.13	1,072	1,211	819	0	0	165	274

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	-	7,120	18,000	-
1916	1,120	0	0	0	0	0	61,600	13,800	28	325	2,480	1,250	80,600
1917	4,330	0	0	0	0	0	0	0	232	55	0	2,770	7,390
1918	0	76.2	0	0	0	0	2,660	19,200	0	0	325	206	22,500
1919	19,500	11.5	27,300	30,100	1,220	5,660	1,810	21,400	41,700	60,800	126,000	193,000	529,000
1920	111,000	40,100	6,640	4,460	3,660	1,990	827	7,500	414	460	1,240	211	179,000
1921	223	508	459	449	444	4,280	1,360	842	9,810	113	0	4,940	23,400
1922	120	0	0	.6	35.9	1,700	49,200	66,900	7,500	371	18.0	0	126,000
1923	789	2,030	163	207	1,270	1,590	6,060	524	381	434	0	23,500	36,900
1924	1,300	5,020	3,860	1,460	545	970	4,960	2,020	17,200	173	30.5	124	37,700
1925	22	52	842	294	137	133	80	2,130	563	91	0	0	4,340
1926	190	0	0	0	4.2	101	63,600	6,010	3,330	10,600	944	0	84,800
1927	778	0	0	44	74	90	1,260	0	4,950	1,700	9.5	0	8,900
1928	0	0	0	0	0	0	0	3,820	7,140	892	3,030	210	15,100
1929	0	0	0	0	0	0	1,900	47,300	1,710	6,210	0	66	57,200
1930	0	0	972	27	21	36	1,370	4,270	22,600	7.4	0	0	29,300
1931	19,600	61	58	365	3,570	590	245	66,400	732	17,600	167	14	109,000
1932	229	1.8	7.4	11	36	22	15	1,280	20	550,000	2,530	111,000	665,000
1933	21,000	3,450	1,910	3,540	2,700	2,130	1,230	947	508	281	363	418	38,500
1934	413	517	769	1,360	822	664	4,050	581	20	55	38	8.3	9,300
1935	970	1,210	1,070	56	200	119	1,780	142,600	480,100	111,900	9,970	37,120	787,100
1936	5,720	1,610	3,030	2,830	2,010	1,810	3,710	5,990	2,770	37,570	744	71,080	138,900
1937	26,530	7,360	4,760	3,640	2,870	3,290	2,430	1,560	4,290	1,010	704	837	59,280
1938	910	871	5,170	6,350	1,520	2,330	4,760	2,550	623	702	289	283	26,360
1939	303	430	705	906	825	948	427	1,500	410	33,940	5,120	360	45,870
1940	13,090	883	986	1,180	1,130	942	1,670	1,920	4,770	1,060	68	0	27,700
1941	0	1,600	3,450	1,170	48,420	8,950	22,550	37,360	6,330	2,260	7,440	6,630	146,200
1942	11,090	1,380	1,160	1,310	1,580	1,390	2,570	1,370	369	10,280	1,230	34,560	68,290
1943	14,020	748	780	1,200	1,150	1,190	1,130	851	16,110	488	0	354	38,020
1944	361	1,740	403	388	278	2,430	202	4,050	3,070	14	12,480	8,430	33,850
1945	15,250	62	391	7,120	811	785	4,730	79	1,070	0	0	8,230	38,530
1946	18,120	0	0	0	0	0	3,170	1,050	128	0	16,300	28,880	67,650
1947	8,270	17	15	12	10	9.7	10	0	20,180	180	54	0	28,760
1948	0	0	0	0	0	0	0	0	24,300	2,260	0	258	26,820
1949	5,190	0	0	0	24,150	5,770	15,290	2,220	5,260	23	3,940	0	61,840
1950	13,580	11	0	0	0	0	0	2,000	31	163	0	0	15,780
1951	0	0	0	0	0	0	0	61,090	709	0	0	0	61,800
1952	105	0	0	0	0	0	0	353	145	0	0	677	1,280
1953	0	0	0	0	0	0	0	0	0	0	630	79,410	80,040
1954	7,900	93	0	0	0	0	0	19,260	65	0	127	0	27,440
1955	0	0	0	0	0	0	0	6,890	0	0	40	1,400	8,330

Monthly and yearly runoff, in acre-feet, of Frio River near Derby, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	9.9	0	0	0	0	0	436	0	0	6,950	1,650	0	9,050
1957	1,220	0	0	0	0	561	63,810	74,430	48,760	0	0	9,820	198,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408,568	a3,800	Sept. 18, 1915	0	-	-	-	-
1916	438,568	15,000	Apr. 3, 1916	0	111	80,600	115	83,800
1917	458	2,380	Oct. 18, 1916	0	10.2	7,390	4.32	3,130
1918	478,568	7,800	May 7, 1918	0	31.1	22,500	95.5	69,200
1919	508,568	34,400	Sept. 18, 1919	0	730	529,000	883	639,000
1920	508,568	8,200	Oct. 19, 1919	0	247	179,000	30.2	22,000
1921	528,568	2,540	June 14, 1921	0	32.4	23,400	30.9	22,400
1922	548,568	10,600	May 2, 1922	0	174	126,000	178	129,000
1923	568	5,600	Sept. 20, 1923	0	51.0	36,900	61.0	44,100
1924	588	6,400	June 25, 1924	0	51.9	37,700	39.1	28,400
1925	608	874	May 12, 1925	0	6.00	4,340	5.00	3,620
1926	628	18,300	Apr. 23, 1926	0	117	84,800	118	85,400
1927	648	874	June 8, 1927	0	12.3	8,900	11.2	8,130
1928	668	1,480	June 4, 1928	0	20.8	15,100	20.8	15,100
1929	688	7,200	May 26, 1929	0	78.9	57,200	80.3	58,200
1930	703	5,400	June 17, 1930	0	40.5	29,300	66.3	48,100
1931	718	6,200	May 4, 1931	0	151	109,000	124	89,900
1932	733	230,000	July 4, 1932	0	917	665,000	953	691,000
1933	748	1,000	Oct. 1, 1932	1.7	53.2	38,500	19.1	13,800
1934	763	755	Apr. 6, 1934	0	12.8	9,300	15.0	10,850
1935	788	68,300	June 2, 1935	0	1,087	787,100	1,097	794,200
1936	808	13,700	Sept. 29, 1936	10	191	138,900	230	167,200
1937	828	3,540	Oct. 1, 1936	9.8	81.9	59,280	38.1	27,580
1938	858	1,290	Dec. 31, 1937	1.8	36.4	26,360	28.8	20,840
1939	878	13,700	July 15, 1939	0	63.4	45,870	82.0	59,400
1940	898	2,370	Oct. 13, 1939	0	38.2	27,700	24.5	17,790
1941	928	20,000	Feb. 3, 1941	0	202	146,200	214	154,700
1942	958	5,080	Sept. 9, 1942	1.8	94.3	68,290	97.0	70,210
1943	978	4,900	June 7, 1943	0	52.5	38,020	34.5	24,980
1944	1008	2,270	Aug. 30, 1944	0	46.6	33,850	64.8	47,040
1945	1038	6,460	Sept. 30, 1945	0	53.2	38,530	56.6	40,940
1946	1058	b5,800	Sept. 29, 1946	0	93.5	67,650	79.9	57,830
1947	1088	3,820	June 22, 1947	0	39.7	28,760	28.3	20,460
1948	1118	9,200	June 28, 1948	0	36.9	26,820	44.1	32,010
1949	1148	6,900	Feb. 27, 1949	0	85.4	61,840	97.0	70,240
1950	1178	4,110	Oct. 26, 1949	0	21.8	15,780	3.03	2,190
1951	1212	26,900	May 17, 1951	0	85.4	61,800	85.5	61,900
1952	1242	436	Sept. 13, 1952	0	1.76	1,280	1.62	1,180
1953	1282	15,000	Sept. 5, 1953	0	111	80,040	122	88,030
1954	1342	5,980	May 27, 1954	0	37.9	27,440	26.9	19,450
1955	1392	1,550	May 21, 1955	0	11.5	8,330	11.5	8,340
1956	1442	2,440	July 4, 1956	0	12.5	9,050	14.1	10,260
1957	1512	10,400	May 29, 1957	0	274	198,600	-	-

a Maximum observed during period August to September 1915.
b Maximum peak discharge; maximum discharge 6,240 cfs, 12:01 a.m. Oct. 1, 1945, stage falling.

351. Frio River at Calliham, Tex.

Location.--Lat 28°29'30", long 98°20'45', at bridge on Calliham-Whitsett highway 1 mile north of Calliham, McMullen County, and 9.7 miles downstream from San Miguel Creek.

Drainage area.--5,491 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 153.47 ft above mean sea level, datum of 1929. Prior to Apr. 30, 1926, staff gage at same site and datum.

Average discharge.--26 years (1924-25, 1932-57), 243 cfs (175,900 acre-ft per year).

Extremes.--1924-26, 1932-57: Maximum discharge, 70,000 cfs July 6, 1932 (gage height, 39.20 ft, from floodmarks), from rating curve extended above 16,000 cfs on basis of logarithmic extension; no flow at times.
Maximum stage since at least 1870, that of July 6, 1932, from information by local residents.

Remarks.--Part of flow of Frio River and its headwater tributaries enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. Considerable losses of flood flows into various permeable formations occur downstream from the Balcones fault zone. Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	0.40	0	11.4	0.66	0.20	150	1.47	35.9	4.76	52.5	114	57.2	36.2
1926	36.1	284	1.99	52.4	2.10	269	849	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	8.64	3.71	6,100	147	1,810	-
1933	520	82.3	35.7	63.6	63.3	37.7	22.5	20.3	41.9	27.7	40.6	55.2	84.8
1934	4.23	6.34	6.95	210	91.8	29.7	281	22.5	25.9	280	30.0	25.7	84.4
1935	125	403	107	24.1	182	57.5	163	2,047	9,250	1,149	505	1,401	1,277

Monthly and yearly mean discharge, in cubic feet per second, of Frio River at Calliham, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	211	63.1	74.3	63.9	47.6	46.5	67.7	282	398	2,286	47.2	439	338
1937	844	138	90.9	69.3	56.9	65.1	41.0	28.2	147	18.8	7.01	26.6	129
1938	22.8	10.4	689	797	37.6	43.0	479	168	18.4	13.3	5.19	7.60	193
1939	.27	6.53	76.6	25.3	14.0	11.3	4.79	155	122	420	112	264	102
1940	174	16.1	11.6	16.1	36.1	14.8	488	259	1,153	800	310	13.6	274
1941	62.8	167	216	212	775	177	1,443	2,271	370	112	86.3	1,886	644
1942	172	41.5	31.8	23.6	30.0	19.7	100	179	14.6	2,875	178	1,767	456
1943	469	38.3	24.9	27.6	25.6	33.7	22.7	65.4	521	446	2.78	39.6	144
1944	10.8	43.3	12.0	20.4	12.3	62.0	22.0	1,175	236	30.1	151	331	177
1945	157	11.6	29.7	89.8	173	42.7	459	12.2	287	34.5	.08	19.6	108
1946	726	7.99	8.02	11.8	8.59	37.0	276	301	244	.94	718	1,797	345
1947	1,938	37.6	21.0	26.2	11.7	25.8	14.9	172	241	107	27.7	1.32	222
1948	0	15.9	4.28	1.36	5.49	1.64	.08	.06	27.1	441	.07	.38	42.0
1949	235	2.30	2.19	1.98	127	391	1,297	258	814	240	96.2	.37	287
1950	284	32.9	180	3.71	1.92	1.09	8.48	192	159	7.31	0	0	73.4
1951	0	0	0	.08	.15	.28	1.44	998	611	1.07	.31	850	205
1952	104	9.26	2.17	1.74	121	29.7	120	224	78.3	.55	0	.74	57.4
1953	0	.48	.13	.05	.16	.29	11.7	511	1.53	3.33	209	3,033	312
1954	505	24.0	3.04	2.23	1.25	.55	107	122	335	18.5	0	1.19	93.7
1955	19.3	10.0	.14	.80	29.4	.11	0	472	46.1	6.20	62.8	32.4	57.2
1956	40.2	0	.17	.55	.42	0	0	63.5	21.0	55.6	296	287	63.8
1957	194	2.29	1.50	.52	.96	84.4	1,314	2,316	1,722	5.19	.13	562	517

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	24	0	702	40.9	11	9,240	88	2,210	283	3,230	7,010	3,400	26,200
1926	2,220	16,900	122	3,220	117	16,600	50,500	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	531	221	375,000	9,040	108,000	-
1933	32,000	4,900	2,200	3,910	3,520	2,320	1,340	1,250	2,490	1,700	2,500	3,280	61,400
1934	260	377	427	12,900	5,100	1,830	16,700	1,380	1,540	17,200	1,840	1,530	61,100
1935	7,690	23,990	6,570	1,480	10,120	3,530	9,700	125,800	550,400	70,660	31,080	83,380	924,400
1936	12,990	3,760	4,570	3,930	2,740	2,860	4,030	17,320	23,690	140,500	2,900	26,130	245,400
1937	51,920	8,190	5,590	4,260	3,160	4,000	2,440	1,730	8,760	1,150	431	1,590	93,220
1938	1,400	621	42,360	48,990	2,090	2,650	28,530	10,320	1,100	835	319	452	139,700
1939	17	389	4,710	1,560	776	694	285	9,510	7,290	25,800	6,860	15,730	73,620
1940	10,670	960	711	988	2,080	910	29,020	15,950	68,610	49,180	19,060	809	198,900
1941	3,860	9,920	13,270	13,010	43,040	10,910	85,870	139,600	22,040	6,870	5,310	112,200	465,900
1942	10,600	2,470	1,960	1,450	1,670	1,210	5,960	10,990	872	176,800	10,960	105,200	330,100
1943	28,830	2,280	1,530	1,700	1,420	2,070	1,350	4,020	30,990	27,450	171	2,360	104,200
1944	662	2,570	736	1,250	706	3,810	1,310	72,250	14,050	1,850	9,260	19,700	128,200
1945	9,670	693	1,830	5,520	9,590	2,620	27,330	749	17,050	2,120	5.2	1,170	78,350
1946	44,630	476	493	726	477	2,280	16,400	18,490	14,550	58	44,150	106,900	249,600
1947	119,200	2,240	1,290	1,610	647	1,580	889	10,570	14,350	6,590	1,700	78	160,700
1948	0	944	263	84	316	101	4.6	4.0	1,610	27,140	4.4	23	30,490
1949	14,450	137	134	122	7,040	24,010	77,150	15,870	48,430	14,740	5,920	22	208,000
1950	17,460	1,960	11,070	228	107	67	504	11,800	9,480	450	0	0	53,130
1951	0	0	0	5.2	8.5	17	86	61,350	36,350	66	19	50,570	148,500
1952	6,420	551	133	107	6,940	1,830	7,160	13,800	4,660	34	0	44	41,680
1953	0	28	7.9	2.8	8.7	18	695	31,420	91	205	12,880	180,500	225,900
1954	31,060	1,430	187	137	69	34	6,360	7,470	19,910	1,140	0	71	67,870
1955	1,190	595	8.7	49	1,630	6.9	0	29,000	2,740	381	3,860	1,930	41,390
1956	2,470	0	10	34	24	0	0	3,900	1,250	3,420	18,180	17,060	46,350
1957	11,940	136	92	32	53	5,190	78,170	142,400	102,500	319	7.7	33,440	374,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	a4,140	Mar. 22, 1925	0	36.2	26,200	61.8	44,800
1926	628	b7,320	Apr. 28, 1926	0	-	-	-	-
1932	733	70,000	July 6, 1932	0	-	-	-	-
1933	748	2,340	Oct. 4, 1932	0	84.8	61,400	32.3	23,400
1934	763	3,860	Apr. 7, 1934	0	84.4	61,100	136	98,310
1935	788	28,600	June 6, 1935	0	1,277	924,400	1,254	907,500
1936	808	22,400	July 1, 1936	20	338	245,400	399	289,800
1937	828	5,390	Oct. 4, 1936	4.3	129	93,220	99.3	71,900
1938	858	12,900	Dec. 29, 1938	0	193	139,700	139	100,400
1939	878	5,000	July 19, 1939	0	102	73,620	112	80,850
1940	898	9,490	July 1, 1940	.3	274	198,900	294	213,700
1941	928	21,900	Sept. 18, 1941	.7	644	465,900	627	453,900
1942	958	23,700	July 7, 1942	3.8	456	330,100	480	347,800
1943	978	5,670	July 15, 1943	0	144	104,200	104	75,500
1944	1008	10,400	May 30, 1944	0	177	128,200	188	136,400
1945	1038	5,070	June 19, 1945	0	108	78,350	154	111,800
1946	1058	15,700	Sept. 1, 1946	0	345	249,600	451	326,800

a Maximum observed,
b Maximum during period October to April.

Yearly discharge, in cubic feet per second, of Frio River at Calliham, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1088	17,000	Oct. 17, 1946	0	222	160,700	54.2	39,220
1948	1118	4,760	July 2, 1948	0	42.0	30,490	60.6	44,010
1949	1148	13,200	Apr. 26, 1949	0	287	208,000	309	223,800
1950	1178	2,770	May 13, 1950	0	73.4	53,130	31.3	22,640
1951	1212	8,070	Sept. 14, 1951	0	205	148,500	215	155,600
1952	1242	2,180	Feb. 22, 1952	0	57.4	41,680	47.7	34,610
1953	1282	14,800	Sept. 5, 1953	0	312	225,900	357	258,500
1954	1342	3,100	June 27, 1954	0	93.7	67,870	51.1	36,980
1955	1392	2,040	May 14, 1955	0	57.2	41,390	58.1	42,080
1956	1442	6,600	Aug. 28, 1956	0	63.8	46,350	77.2	56,040
1957	1512	8,700	June 3, 1957	0	517	374,300	-	-

352. Atascosa River near McCoy, Tex.

Location.--Lat 28°50'45", long 98°20'10", on left bank 0.7 mile upstream from Liveoak creek, 1.3 miles southwest of McCoy, Atascosa County, and 2.2 miles downstream from bridge on county road.

Drainage area.--530 sq mi.

Gage.--Water-stage recorder. Datum of gage is 243.1 ft above mean sea level, datum of 1929 (from planetable traverse by Topographic Division).

Extremes.--1953-57: Maximum discharge not determined; no flow at times.

Remarks.--Discharge not computed above 74 cfs. Samll diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	0	-	-
1952	-	6.61	5.56	5.62	-	-	-	-	3.89	1.25	0	-	-
1953	2.66	3.17	-	5.65	5.17	6.33	-	-	.36	1.00	-	-	-
1954	-	8.16	5.58	6.30	4.97	3.37	3.67	-	-	-	.41	2.21	-
1955	6.43	2.27	1.98	-	-	6.71	2.60	-	-	-	1.56	.38	-
1956	.31	.32	1.71	2.31	2.62	1.71	-	-	-	.94	-	-	-
1957	-	3.09	-	4.61	5.08	-	-	-	-	5.73	1.76	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	0	-	-
1952	-	393	342	345	-	-	-	-	231	77	0	-	-
1953	164	189	-	348	287	389	-	-	21	61	-	-	-
1954	-	486	343	388	276	207	218	-	-	-	25	131	-
1955	395	135	122	-	-	413	155	-	-	-	96	22	-
1956	19	19	105	142	151	105	-	-	-	58	-	-	-
1957	-	184	-	283	282	-	-	-	-	352	108	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1242	-	-	0	-	-	-	-
1952	1242	-	-	0	-	-	-	-
1953	1282	-	-	0	-	-	-	-
1954	1342	-	-	0	-	-	-	-
1955	1392	-	-	0	-	-	-	-
1956	1442	-	-	0	-	-	-	-
1957	1512	-	-	0	-	-	-	-

353. Atascosa River at Whitsett, Tex.

Location.--Lat 28°37'20", long 98°17'05", on right bank 1,400 ft upstream from bridge on Farm Road 99, 1.2 miles west of Whitsett, live Oak County, 4 miles downstream from La Parita Creek, and about 13 miles upstream from mouth and Frio River.

Drainage area.--1,171 sq mi.

Gage.--Water-stage recorder and low-water concrete control. Datum of gage is 159.04 ft above mean sea level, datum of 1929. Prior to May 8, 1926, chain gage at old bridge 1,600 ft downstream at datum 1.38 ft higher.

Average discharge.--26 years (1924-25, 1932-57), 134 cfs (97,010 acre-ft per year).

Extremes.--1924-26, 1932-57: Maximum discharge, 39,300 cfs July 7, 1942 (gage height, 38.3 ft, from floodmark), from rating curve extended above 12,000 cfs on basis of slope-area measurement at gage height 38.0 ft; no flow at times.

Remarks.--Small diversion upstream from station. Beginning in 1951, a considerable part of low flow results from the flow of several artesian wells near Campbellton discharging into the river above this station to supplement the supply for the city of Corpus Christi. Considerable losses of flood flows into various permeable formations occur upstream from station.

Monthly and yearly mean discharge, in cubic feet per second, of Atascosa River at Whitsett, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	a21.5
1926	49.2	62.5	10.2	39.5	5.91	104	72.0	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	0.56	42.0	62.7	161	-
1933	29.3	3.61	9.16	9.46	16.1	9.78	11.5	20.0	10.3	34.5	72.2	27.8	21.3
1934	.65	13.1	2.16	264	106	68.9	157	6.30	1.53	33.1	2.29	15.6	55.6
1935	35.5	110	114	14.1	160	46.3	176	551	3,445	53.4	12.4	1,010	472
1936	72.6	22.1	42.0	24.3	16.9	82.0	14.1	795	169	744	44.0	69.1	177
1937	37.3	14.3	15.5	15.5	11.8	13.0	8.88	13.9	53.5	21.9	1.24	.13	17.3
1938	15.8	3.31	399	201	23.0	19.9	269	45.5	10.9	6.91	1.39	11.5	84.5
1939	.29	8.67	29.1	12.6	10.1	7.39	1.59	30.2	104	132	44.6	96.4	39.9
1940	3.67	1.11	3.55	5.62	20.9	12.4	134	119	333	149	142	17.7	78.3
1941	75.3	399	278	97.6	151	92.3	1,173	1,175	440	58.4	110	1,409	453
1942	166	18.5	17.4	15.9	24.8	15.2	115	53.3	8.92	2,879	188	1,958	458
1943	118	30.9	22.7	24.8	23.3	35.0	18.3	40.4	58.6	31.9	2.69	127	44.5
1944	11.2	25.4	16.7	99.9	22.4	91.6	14.0	432	23.8	20.7	27.4	12.4	67.2
1945	3.35	40.1	41.5	21.5	84.3	31.1	401	10.7	147	15.4	2.14	23.4	67.4
1946	345	9.32	9.04	21.0	27.6	141	141	252	388	8.77	1,207	1,183	312
1947	788	56.2	39.3	71.2	29.8	57.6	32.0	244	15.8	11.1	118	7.20	124
1948	4.16	37.1	14.5	11.2	19.0	13.1	11.4	5.23	46.3	192	84.9	7.08	37.4
1949	41.5	6.85	7.93	10.8	89.6	17.0	984	51.7	310	1,016	79.5	28.0	220
1950	90.8	19.3	65.9	16.6	15.4	12.3	29.7	98.6	115	180	2.06	6.14	54.7
1951	.47	.58	2.70	4.88	6.39	10.0	6.98	188	239	1.60	6.49	445	75.5
1952	20.0	20.7	13.9	17.5	48.5	14.9	65.4	39.2	6.76	114	6.74	246	50.7
1953	7.58	16.4	24.6	22.5	17.2	17.4	59.4	542	30.3	32.1	50.4	591	118
1954	76.3	13.9	10.0	9.97	15.6	15.2	62.3	43.8	39.8	7.59	0	3.29	24.8
1955	21.6	27.2	9.27	19.2	128	16.2	12.2	130	60.6	19.2	39.4	19.5	41.3
1956	.78	5.21	11.7	11.6	11.3	10.6	31.9	62.8	21.6	14.5	68.0	177	35.5
1957	204	6.86	58.7	14.6	18.6	108	1,208	1,365	321	13.7	8.91	703	336

a Yearly figure only; no monthly figures available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	a15,500
1926	3,020	3,720	629	2,430	328	6,420	4,290	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	33	2,580	3,860	9,580	-
1933	1,800	215	563	582	894	601	684	1,230	613	2,120	4,440	1,650	15,400
1934	40	780	133	16,200	5,890	4,240	9,340	387	91	2,040	141	928	40,200
1935	2,180	6,570	7,020	866	8,880	2,840	10,460	33,870	205,000	3,280	762	60,090	341,800
1936	4,460	1,320	2,580	1,490	972	5,040	837	48,860	10,050	45,720	2,700	4,110	128,100
1937	2,300	851	954	956	658	800	528	854	3,180	1,350	76	7.9	12,510
1938	974	197	24,520	12,360	1,280	1,230	15,990	2,800	647	425	86	682	61,190
1939	18	516	1,790	776	562	455	95	1,860	6,220	8,110	2,740	5,740	28,880
1940	226	66	218	345	1,200	763	7,990	7,330	19,800	9,150	8,700	1,050	56,840
1941	4,630	23,730	17,110	6,000	8,380	5,670	69,790	72,260	26,180	3,590	6,770	83,820	327,900
1942	10,200	1,100	1,070	976	1,370	936	6,870	3,270	531	177,000	11,580	116,500	331,400
1943	7,270	1,840	1,390	1,530	1,290	2,150	1,090	2,490	3,480	1,960	165	7,550	32,200
1944	690	1,510	1,030	6,140	1,290	5,630	831	26,580	1,420	1,270	1,680	740	48,810
1945	206	2,390	2,550	1,320	4,680	1,910	23,840	656	8,750	949	132	1,390	48,780
1946	21,190	555	556	1,290	1,530	8,680	8,400	15,470	23,090	540	74,240	70,400	225,900
1947	48,450	3,340	2,420	4,380	1,660	3,540	1,900	15,030	940	681	7,280	429	90,050
1948	256	2,210	893	691	1,090	805	677	321	2,750	11,830	5,220	421	27,160
1949	2,550	407	488	661	4,980	1,040	58,540	3,180	18,450	62,470	4,890	1,670	159,300
1950	5,580	1,150	4,050	1,020	855	758	1,760	6,060	6,820	11,040	127	365	39,580
1951	29	35	166	300	355	615	416	11,550	14,210	98	399	26,460	54,630
1952	1,230	1,230	852	1,080	2,790	915	3,890	2,410	402	7,000	415	14,610	36,820
1953	466	974	1,510	1,380	956	1,070	3,540	33,350	1,800	1,970	3,100	35,170	85,290
1954	4,690	828	617	613	865	936	3,710	2,700	2,370	467	0	196	17,990
1955	1,330	1,620	570	1,180	7,080	996	725	8,000	3,610	1,180	2,420	1,160	29,870
1956	48	310	721	716	649	652	1,900	3,860	1,290	889	4,180	10,530	25,740
1957	12,560	408	3,610	900	1,040	6,610	71,870	83,900	19,080	845	548	41,830	243,200

a Yearly figure only; no monthly figures available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	2,780	July 12, 1925	0	21.5	15,500	-	-
1926	628	1,200	Apr. 11, 1926	0	-	-	-	-
1932	733	a1,430	Sept. 3, 1932	0	-	-	-	-
1933	748	1,800	Oct. 4, 1932	.2	21.3	15,400	19.0	13,800
1934	763	2,760	Feb. 1, 1934	0	55.6	40,200	76.1	55,070
1935	788	38,300	June 14, 1935	0	472	341,800	462	334,400
1936	808	11,400	July 1 or 2, 1936	8.3	177	128,100	171	123,900

a Maximum during period May to September; stage was higher in April.

Yearly discharge, in cubic feet per second, of Atascosa River at Whitsett, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	828	990	June 3, 1937	0	17.3	12,510	47.1	34,100
1938	858	4,760	Dec. 30, 1937	0	84.5	61,190	52.2	37,820
1939	878	2,280	June 1, 1939	0	39.9	28,880	37.4	27,070
1940	898	5,100	June 30, 1940	.2	78.3	56,840	140	101,800
1941	928	25,300	Sept. 18, 1941	2.7	453	327,900	407	294,800
1942	958	39,300	July 7, 1942	2.9	458	331,400	455	329,500
1943	978	1,530	Sept. 7, 1943	.4	44.5	32,200	34.4	24,940
1944	1008	5,900	May 29, 1944	0	67.2	48,810	69.9	50,730
1945	1038	2,980	Apr. 22, 1945	0	67.4	48,780	91.1	65,930
1946	1058	23,300	Aug. 30, 1946	0	312	225,900	356	257,800
1947	1088	10,800	Oct. 17, 1946	-	124	90,050	54.1	39,200
1948	1118	2,650	Aug. 27, 1948	0	37.4	27,160	37.6	27,250
1949	1148	18,200	July 27, 1949	.6	220	159,300	230	166,700
1950	1178	3,070	July 15, 1950	0	54.7	39,580	40.1	29,040
1951	1212	6,060	Sept. 14, 1951	.2	75.5	54,630	79.7	57,720
1952	1242	4,000	Sept. 10, 1952	.6	50.7	36,820	50.2	36,460
1953	1282	6,550	Sept. 5, 1953	2.6	118	85,290	122	88,470
1954	1342	1,050	Apr. 9, 1954	0	24.8	17,990	21.2	15,380
1955	1392	1,570	Feb. 7, 1955	.7	41.3	29,870	37.9	27,430
1956	1442	2,960	Sept. 3, 1956	0	35.5	25,740	56.8	41,240
1957	1512	8,410	May 29, 1957	1.6	336	243,200	-	-

354. Nueces River near Three Rivers, Tex.

Location.--Lat 28°26'10", long 98°11'10", on left bank 100 ft downstream from San Antonio, Uvalde & Gulf (Missouri Pacific) Railroad bridge, half a mile downstream from Frio River, 2 miles southeast of Three Rivers, Live Oak County, and at mile 103.

Drainage area.--15,600 sq mi.

Supplemental records available.--Records of chemical analyses for the period October 1945 to September 1946, and records of chemical analyses, water temperatures, and sediments, for the period October 1950 to September 1952, are published in reports of the Geological Survey.

Gage-height records collected at this site since 1922 published in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder and concrete control. Datum of gage is 101.13 ft above mean sea level, datum of 1929, Houston Supplementary Adjustment of 1943. Prior to Apr. 5, 1932, staff gage at railroad bridge 100 ft upstream at same datum.

Average discharge.--42 years (1915-57), 836 cfs (605,200 acre-ft per year).

Extremes.--1915-57: Maximum discharge observed, 85,000 cfs Sept. 18, 1919 (gage height, 46.0 ft) from rating curve extended above 55,000 cfs; no flow at times.

Maximum stage since at least 1875, that of Sept. 18, 1919.

Remarks.--Part of flow of Nueces and Frio Rivers and their headwater tributaries enters Edwards Limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages, most of headwater flow enters this formation. Considerable losses of flood flows into various permeable formations occur downstream from the Balcones fault zone. Some diversions upstream from station for irrigation. Beginning in 1951, a considerable part of low flow results from the flow of several artesian wells near Campbellton discharging into the Atascosa River to supplement the supply for the city of Corpus Christi.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	7.65	274	914	-
1916	848	21.1	4.95	4.31	1.25	0.05	788	275	117	746	2,990	2,110	661
1917	436	232	3.54	24.1	3.19	.43	50.4	18.3	0	38.9	10.8	75.3	74.9
1918	.28	48.4	0	0	5.12	159	596	2,110	360	4.01	10.1	1,004	359
1919	1,790	1,720	1,790	1,140	788	2,190	1,970	2,090	2,410	2,990	1,810	7,100	2,320
1920	9,740	4,410	905	339	297	139	74.3	480	275	1,300	428	65.5	1,550
1921	40.2	94.3	11.8	11.9	11.1	888	1,200	478	814	103	11.8	1,100	396
1922	59.6	1.41	13.7	5.18	4.38	303	3,050	4,970	2,670	828	27.4	240	1,020
1923	241	1,080	12.2	14.6	5,050	3,030	2,170	130	28.7	76.7	758	3,520	1,310
1924	843	819	1,680	180	256	102	112	695	1,130	61.8	1.92	258	512
1925	121	.75	255	9.37	7.50	249	10.2	90.5	2,680	200	554	1,020	431
1926	637	397	11.8	142	13.6	434	894	2,160	510	939	279	10.0	541
1927	723	57.9	33.1	7.74	32.2	144	147	109	1,970	224	47.3	92.7	298
1928	1,920	6.08	11.6	4.08	13.4	45.7	37.4	1,760	808	37.3	240	347	439
1929	503	145	93.2	80.5	3.23	1,340	955	3,890	4,970	421	53.8	294	1,070
1930	923	46.3	240	14.2	8.56	125	854	3,410	3,510	698	.75	6.10	823
1931	463	357	8.76	216	872	52.0	79.0	2,350	682	1,950	503	9.05	630
1932	0	0	32.4	58.4	123	36.1	202	347	10.4	8,290	250	7,260	1,390
1933	2,420	301	182	187	196	117	68.8	88.5	297	204	255	403	396
1934	67.6	19.4	5.77	1,370	389	121	647	141	118	543	512	265	350
1935	331	1,688	299	127	467	261	1,149	3,447	25,230	2,089	2,313	5,148	3,519
1936	1,021	149	212	142	71.3	427	147	1,613	824	5,546	110	2,344	1,058
1937	2,995	484	316	204	135	123	75.7	79.4	369	58.4	273	106	439
1938	41.5	14.0	1,432	2,791	152	82.7	1,688	749	54.4	21.8	771	78.1	663
1939	2.88	58.6	169	43.1	25.6	18.8	4.96	1,912	1,005	823	323	659	423
1940	576	26.1	18.6	22.2	64.6	300	2,025	1,246	3,828	4,456	990	315	1,157
1941	265	605	569	288	1,429	293	2,553	7,907	2,294	1,362	205	3,824	1,797
1942	406	88.7	56.3	47.4	60.9	38.7	256	426	155	9,013	300	7,430	1,530
1943	850	159	60.9	62.2	55.6	82.6	47.8	89.3	1,791	648	7.21	466	360
1944	182	109	66.9	123	38.8	170	50.3	1,834	2,946	85.2	368	5,698	964
1945	257	55.8	83.4	127	312	364	2,251	663	728	91.4	1.25	28.7	410

Monthly and yearly mean discharge, in cubic feet per second, of Nueces River near Three Rivers, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	4,033	26.9	19.1	34.4	39.2	198	654	2,456	2,146	63.1	1,251	4,397	1,281
1947	8,210	147	64.5	107	43.1	92.8	254	2,361	689	846	372	28.3	1,119
1948	5.51	128	31.4	13.0	28.8	22.3	10.1	37.4	43.7	1,508	128	143	177
1949	496	50.7	9.95	11.7	249	2,285	3,534	2,334	1,925	1,316	626	66.0	1,079
1950	557	160	325	24.4	30.1	16.1	68.2	903	1,885	230	2.91	206	368
1951	281	.03	.63	3.72	5.80	18.8	9.81	1,512	2,348	9.43	4.36	2,574	561
1952	254	43.0	14.2	16.8	186	25.0	214	518	1,117	134	3.97	235	228
1953	6.12	17.7	19.1	25.5	15.7	16.5	259	1,412	12.7	48.7	487	5,875	679
1954	1,185	433	14.0	13.5	20.2	14.1	168	216	1,177	2,027	17.0	9.51	445
1955	179	179	6.80	15.4	142	13.9	9.06	698	302	93.1	136	401	181
1956	642	5.41	14.3	10.3	9.87	9.07	58.0	241	48.3	208	516	572	196
1957	616	24.7	69.2	14.2	22.8	404	3,407	8,645	7,091	27.0	7.59	2,472	1,901

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	-	470	16,900	54,400	-
1916	52,100	1,260	304	265	72	3	46,900	16,900	6,960	45,900	184,000	126,000	481,000
1917	26,800	13,800	218	1,480	177	26	3,000	1,130	0	2,390	664	4,480	54,200
1918	17	2,880	0	0	284	9,780	35,500	130,000	21,400	247	621	59,700	260,000
1919	110,000	102,000	110,000	70,200	43,800	135,000	117,000	129,000	143,000	184,000	111,000	423,000	1,680,000
1920	599,000	263,000	55,700	20,900	17,100	8,560	4,420	29,500	16,400	79,800	26,300	3,900	1,120,000
1921	2,470	5,610	726	732	616	54,600	71,400	29,400	48,400	6,320	726	65,700	287,000
1922	3,670	84	844	318	243	18,700	181,000	305,000	159,000	50,900	1,680	14,300	736,000
1923	14,800	64,300	748	895	280,000	187,000	129,000	8,020	1,710	4,720	46,600	209,000	947,000
1924	51,800	48,700	103,000	11,100	14,700	6,290	6,640	42,800	67,200	3,800	118	15,400	372,000
1925	7,430	44	15,700	576	417	15,300	607	5,560	160,000	12,300	34,000	60,700	313,000
1926	39,200	23,600	725	8,750	754	26,700	53,200	133,000	30,300	57,700	17,200	596	392,000
1927	44,400	3,450	2,030	476	1,790	8,870	8,770	6,680	117,000	13,800	2,910	5,520	216,000
1928	118,000	362	713	251	771	2,810	2,230	108,000	48,100	2,290	14,800	20,600	319,000
1929	30,900	8,630	5,730	4,950	179	82,400	56,800	239,000	296,000	25,900	3,310	17,500	771,000
1930	56,800	2,760	14,800	873	475	7,690	50,800	210,000	209,000	42,900	46	363	597,000
1931	28,500	21,200	539	13,300	48,400	3,200	4,700	144,000	40,600	120,000	30,900	539	456,000
1932	0	0	1,990	3,590	7,080	2,220	12,000	21,300	619	510,000	15,400	432,000	1,010,000
1933	149,000	17,900	11,200	11,500	10,900	7,190	4,090	5,440	17,700	12,500	15,700	24,000	287,000
1934	4,160	1,150	355	84,200	21,600	7,440	38,500	8,670	7,020	33,400	31,500	15,800	254,000
1935	20,350	100,500	18,380	7,780	25,920	16,030	68,390	211,900	1,501,000	128,400	142,200	306,300	2,547,000
1936	62,770	8,860	13,040	8,740	4,100	26,230	8,750	99,180	49,010	341,000	6,760	139,500	767,900
1937	184,200	28,800	19,400	12,550	7,520	7,570	4,510	4,880	21,940	3,590	16,790	6,300	318,000
1938	2,550	831	88,070	171,600	8,420	5,090	100,500	46,070	3,240	1,340	47,380	4,640	479,700
1939	177	3,490	10,380	2,650	1,420	1,150	295	117,600	59,800	50,610	19,830	39,200	306,600
1940	35,450	1,560	1,150	1,360	3,720	18,450	120,500	76,620	227,800	274,000	60,860	18,720	840,200
1941	16,270	35,990	34,970	17,710	79,340	18,030	151,900	486,200	136,500	83,720	12,630	227,600	1,301,000
1942	24,970	5,280	3,460	2,910	3,380	2,380	15,240	26,170	9,230	554,200	18,470	442,100	1,108,000
1943	52,290	9,480	3,740	3,820	3,090	5,080	2,850	5,490	106,600	39,830	443	27,760	260,500
1944	11,190	6,480	4,120	7,570	2,230	10,430	3,000	112,800	175,300	5,240	22,630	339,100	700,100
1945	15,770	3,320	5,130	7,820	17,340	22,350	133,900	40,740	43,290	5,620	77	1,710	297,100
1946	248,000	1,600	1,170	2,120	2,180	12,200	38,930	151,000	127,700	3,880	76,920	261,700	927,400
1947	504,800	8,770	3,960	6,560	2,390	5,710	15,090	145,200	41,020	51,990	22,890	1,680	810,100
1948	339	7,640	1,930	798	1,650	1,370	599	2,300	2,600	92,710	7,870	8,500	128,300
1949	30,480	3,020	612	720	13,840	140,500	210,300	143,500	114,600	80,910	38,500	3,930	780,900
1950	34,270	9,530	19,980	1,500	1,670	988	4,060	55,550	112,200	14,110	179	12,250	266,300
1951	17,270	2.0	38	228	322	1,160	584	92,980	139,700	580	268	153,200	406,300
1952	15,610	2,560	874	1,030	10,700	1,540	12,730	31,850	66,480	8,210	244	13,980	165,800
1953	376	1,060	1,170	1,570	873	1,020	15,440	86,810	753	2,990	29,930	349,600	491,600
1954	72,870	25,750	859	833	1,120	867	10,030	13,260	70,050	124,700	1,050	566	322,000
1955	11,010	10,660	418	944	7,890	855	539	42,940	18,000	5,720	8,340	23,850	131,200
1956	39,510	322	879	632	567	558	3,450	14,800	2,880	12,760	31,730	34,020	142,100
1957	37,870	1,470	4,250	871	1,270	24,860	202,700	531,600	421,900	1,660	467	147,100	1,376,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	408	a2,400	Aug. 28, 1915	-	-	-	-	-
1916	438,1562	9,550	Aug. 25, 1916	0	661	481,000	643	468,000
1917	458	2,960	Nov. 10, 1916	0	74.9	54,200	22.4	16,200
1918	478,1562	9,110	Sept. 21, 1918	0	359	260,000	801	580,000
1919	508,1562	b85,000	Sept. 18, 1919	2.4	2,320	1,680,000	3,140	2,270,000
1920	548,1562	16,200	Oct. 19, 1919	15	1,550	1,120,000	297	216,000
1921	548,1562	9,800	Sept. 10, 1921	0	396	287,000	390	282,000
1922	548	15,000	May 5, 1922	.9	1,020	736,000	1,120	811,000
1923	568,1562	39,300	Feb. 24, 1923	.1	1,310	947,000	1,480	1,070,000
1924	588	10,200	Dec. 3, 1923	0	512	372,000	263	191,000
1925	608	17,600	June 10, 1925	0	431	313,000	487	353,000
1926	628	6,980	May 19, 1926	0	541	392,000	522	378,000
1927	648	11,600	June 16, 1927	0	298	216,000	394	285,000
1928	668	6,760	May 14, 1928	0	439	319,000	338	245,000

a Maximum for period July 1 to September 30.
b Maximum observed.

Yearly discharge, in cubic feet per second, of Nueces River near Three Rivers, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	688,1562	37,900	May 31, 1929	0	1,070	771,000	1,110	800,000
1930	703	10,100	June 14, 1930	0	823	597,000	790	572,000
1931	718	6,040	May 11, 1931	0	630	456,000	564	408,000
1932	733	56,000	July 8, 1932	0	1,390	1,010,000	1,630	1,180,000
1933	748	5,980	Oct. 5, 1932	0	396	287,000	158	115,000
1934	763	5,730	Jan. 17, 1934	0	350	254,000	535	387,200
1935	788	66,700	June 15, 1935	.6	3,519	2,547,000	3,444	2,493,000
1936	808	28,300	July 3, 1936	39	1,058	767,900	1,261	915,700
1937	828	8,860	Oct. 5, 1936	4.1	439	318,000	245	177,100
1938	858	14,300	Dec. 30, 1937	.2	663	479,700	556	402,300
1939	878	6,420	Sept. 13, 1939	0	423	306,600	457	330,700
1940	898	19,600	July 3, 1940	2.4	1,157	840,200	1,225	889,300
1941	928	34,400	Sept. 19, 1941	6.2	1,797	1,301,000	1,723	1,247,000
1942	958	55,000	July 9, 1942	7.4	1,530	1,108,000	1,574	1,140,000
1943	978	5,090	June 12, 1943	1.0	360	260,500	299	216,800
1944	1008	20,500	Sept. 6, 1944	.5	964	700,100	968	702,500
1945	1038	6,670	June 19, 1945	.2	410	297,100	723	523,600
1946	1058	24,600	Sept. 1, 1946	.4	1,281	927,400	1,649	1,194,000
1947	1088	40,700	Oct. 13, 1946	2.3	1,119	810,100	418	302,400
1948	1118	5,950	July 3, 1948	0	177	128,300	210	152,500
1949	1148	22,000	Apr. 27, 1949	.4	1,079	780,900	1,120	810,600
1950	1178	5,650	June 9, 1950	0	368	266,300	304	219,800
1951	1212	18,800	Sept. 15, 1951	0	561	406,300	564	408,100
1952	1242	5,570	May 29, 1952	0	228	165,800	206	149,400
1953	1282	18,100	Sept. 6, 1953	2.8	679	491,600	813	588,500
1954	1342	12,800	July 2, 1954	0	445	322,000	338	244,600
1955	1392	2,890	May 14, 1955	0	181	131,200	207	149,800
1956	1442	6,700	Aug. 29, 1956	0	196	142,100	200	145,000
1957	1512	22,200	May 3, 1957	1.6	1,901	1,376,000	-	-

355. Lake Corpus Christi near Mathis, Tex.

Location.--Lat 28°02'52", long 97°52'16", near left end of Mathis Dam on Nueces River, 0.8 mile upstream from bridge on State Highway 359, 4 miles southwest of Mathis, San Patricio County, and at mile 48.

Drainage area.--16,656 sq mi.

Supplemental records available.--The Soil Conservation Service, U. S. Department of Agriculture, in cooperation with Texas Board of Water Engineers, has collected fragmentary gage-height records in connection with sedimentation studies since February 1942.

Gage.--Wire-weight gage. Datum of gage is 0.52 ft above mean sea level, datum of 1929. Prior to Sept. 10, 1948, a painted staff gage at same site and datum.

Extremes.--1948-57: Maximum contents observed, 57,000 acre-ft Apr. 30, 1949 (gage height, 77.05 ft); minimum observed, 14,740 acre-ft May 5, 1951 (gage height, 67.10 ft).
Maximum gage height observed since completion of dam, 79.0 ft July 12, 1942, contents unknown.

Remarks.--Reservoir is formed by a rolled earth-fill dam containing an unregulated concrete-service spillway, 1,048 ft long, and five taintor gates, each 35 ft wide. Dam completed and storage began July 24, 1934. Capacity, 39,400 acre-ft at gage height 74.0 ft (top of taintor gates and service spillway). Dead storage is negligible. Reservoir is used for municipal water supply for city of Corpus Christi. Water for city is released through sluice gates at gage height 43.0 ft. Figures given herein represent total storage. A siltation survey made by the Soil Conservation Service, U. S. Department of Agriculture, found the original capacity of the reservoir to have been 54,000 acre-ft, and the capacity as of March 1942 as 43,400 acre-ft at spillway crest. A resurvey by that agency completed Mar. 31, 1948, found the capacity to be 39,400 acre-ft at spillway crest.

Cooperation.--Capacity curve furnished by Soil Conservation Service, U. S. Department of Agriculture. Gage-height record furnished by City of Corpus Christi.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1948	-	-	-	-	-	-	-	-	-	-	-	39,400	-
1949	39,910	35,830	33,400	31,150	37,360	39,910	57,000	39,400	43,480	39,910	39,400	37,360	-2,040
1950	42,460	37,870	38,890	36,340	34,300	31,600	32,050	41,950	37,870	38,380	30,700	34,300	-3,060
1951	34,810	28,630	24,850	21,840	19,600	17,680	15,200	40,930	38,890	30,700	23,800	42,460	+8,160
1952	39,910	37,360	34,300	31,600	39,400	34,300	39,400	44,500	37,360	37,360	29,410	37,360	-5,100
1953	31,600	29,800	28,240	26,290	24,500	21,840	30,700	39,400	30,700	24,850	44,500	38,380	+1,020
1954	45,070	37,870	34,810	32,950	30,020	26,290	33,400	37,870	45,070	36,850	29,800	27,070	-11,310
1955	34,300	37,360	32,500	29,410	33,400	28,240	22,400	39,400	37,870	33,400	33,850	39,140	+12,070
1956	36,340	32,350	29,410	26,420	23,100	19,120	20,720	37,360	32,500	32,500	41,950	34,300	-4,840
1957	39,910	33,400	38,380	33,850	31,600	39,400	49,630	47,920	39,400	32,050	23,100	49,060	+14,760

356. Nueces River near Mathis, Tex.

Location.--Lat 28°02'17", long 97°51'36", at bridge on State Highway 359, 200 ft downstream from Texas & New Orleans Railroad bridge, 0.8 mile downstream from Mathis Dam 4 miles southwest of Mathis, San Patricio County and at mile 47.

Drainage area.--16,660 sq mi.

Supplemental records available.--Records of chemical analyses and water temperatures for the period October 1947 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 27.53 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 843 cfs (610,300 acre-ft per year).

356. Nueces River near Mathis, Tex.--Continued

Extremes.--1939-57: Maximum discharge, 49,400 cfs July 12, 1942 (gage height, 37.38 ft); minimum daily, 6.8 cfs, Aug. 15, 1940. Maximum stage known since at least 1888, 39.9 ft (discharge 59,000 cfs) about Sept. 20, 1919, from information by Texas & New Orleans Railroad.

Remarks.--Flow largely regulated by Lake Corpus Christi. (See preceding station.) Diversions above station for irrigation. Water for municipal and industrial use at Corpus Christi is released from Lake Corpus Christi above gage and is diverted from river at Calallen 36 miles downstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	773	-
1940	505	31.0	27.9	28.1	26.5	58.8	2,096	1,254	3,895	5,067	894	301	1,184
1941	303	777	556	111	1,554	288	1,321	10,500	2,313	1,561	193	3,687	1,933
1942	338	151	119	101	24.3	90.8	112	164	158	10,440	143	8,720	1,721
1943	815	210	70.7	38.5	35.3	39.7	39.4	64.0	1,948	522	41.6	320	345
1944	187	76.6	94.8	91.6	93.3	228	75.0	1,241	3,589	169	210	6,315	1,020
1945	223	85.5	92.6	53.5	257	303	1,966	721	685	72.0	64.9	44.0	378
1946	3,776	57.7	63.7	52.7	52.0	172	446	2,572	2,337	110	541	5,327	1,294
1947	9,588	239	83.7	88.4	83.8	83.2	166	2,794	681	875	250	101	1,273
1948	83.0	65.2	32.6	39.7	30.3	31.0	37.3	39.3	43.7	1,174	46.0	135	148
1949	518	128	31.8	39.8	48.7	2,372	3,365	3,976	1,821	1,590	650	67.0	1,225
1950	459	254	299	62.8	42.5	39.3	45.5	652	1,955	146	69.3	62.5	340
1951	216	59.6	47.6	42.4	45.0	42.7	48.1	970	2,318	67.0	67.4	3,126	583
1952	313	69.2	40.5	44.3	59.3	75.3	157	399	1,381	155	76.4	175	244
1953	55.3	45.5	44.1	51.2	46.2	52.8	70.0	1,320	73.4	82.4	386	6,725	741
1954	1,068	687	44.1	44.4	58.8	60.4	52.5	60.4	929	2,363	86.6	77.8	465
1955	72.4	129	58.4	48.5	54.4	69.2	74.1	281	255	90.3	99.6	385	135
1956	672	61.5	45.4	52.0	52.9	59.0	49.0	70.1	106	110	183	740	184
1957	635	108	93.3	60.4	63.6	321	2,663	9,482	8,142	109	106	1,735	1,962

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	46,000	-
1940	31,060	1,850	1,720	1,730	1,520	3,620	124,700	77,080	231,700	311,500	54,950	17,930	859,400
1941	18,640	46,240	34,180	6,850	86,310	17,700	78,620	645,900	137,600	95,960	11,850	219,400	1,399,000
1942	20,780	9,010	7,300	6,190	1,350	5,580	6,690	10,110	9,430	642,000	8,810	518,900	1,246,000
1943	50,140	12,490	4,350	2,370	1,960	2,440	2,350	3,940	115,900	32,120	2,560	19,020	249,600
1944	11,490	4,560	5,830	5,630	5,370	14,020	4,460	76,310	213,500	10,400	12,940	375,800	740,300
1945	13,730	5,090	5,690	3,290	14,250	18,640	117,000	44,330	40,760	4,430	3,990	2,620	273,800
1946	232,100	3,430	3,920	3,240	2,890	10,580	26,510	158,200	139,000	6,760	33,280	317,000	936,900
1947	589,500	14,210	5,150	5,430	4,660	5,120	9,910	171,800	40,500	53,790	15,380	6,010	921,500
1948	5,100	3,880	2,010	2,440	1,750	1,910	2,220	2,410	2,600	72,180	2,830	8,030	107,400
1949	31,860	7,600	1,960	2,450	2,700	145,800	200,200	244,500	108,400	97,800	39,980	3,990	887,200
1950	28,220	15,090	18,360	3,860	2,360	2,420	2,710	40,070	116,300	9,000	4,260	3,720	246,400
1951	13,290	3,550	2,930	2,610	2,500	2,620	2,860	59,640	137,900	4,120	4,140	186,000	422,200
1952	19,250	4,120	2,490	2,720	3,410	4,630	9,360	24,510	82,160	9,520	4,700	10,440	177,300
1953	3,400	2,710	2,710	3,150	2,570	3,250	4,170	81,150	4,370	5,070	23,720	400,200	536,500
1954	65,690	40,890	2,710	2,730	3,260	3,710	3,120	3,710	55,260	145,300	5,320	4,630	336,300
1955	4,450	7,650	3,590	2,980	3,020	4,260	4,410	17,260	15,180	5,550	6,120	22,930	97,400
1956	41,310	3,660	2,790	3,200	3,040	3,630	2,920	4,310	6,310	6,790	11,280	44,030	133,300
1957	39,030	6,440	5,740	3,710	3,530	19,710	158,500	583,000	484,500	6,720	6,500	103,300	1,421,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	-	-	-	-	-	-	-
1940	898	18,400	July 6, 1940	6.8	1,184	859,400	1,273	923,800
1941	928	29,600	May 3, 1941	19	1,933	1,399,000	1,847	1,337,000
1942	958	49,400	July 12, 1942	11	1,721	1,246,000	1,763	1,276,000
1943	978	5,070	June 13, 1943	25	345	249,600	283	204,500
1944	1008	19,000	Sept. 9, 1944	37	1,020	740,300	1,023	742,900
1945	1038	5,010	Apr. 3, 1945	-	378	273,800	675	488,800
1946	1058	20,800	Sept. 4, 1946	44	1,294	936,900	1,804	1,306,000
1947	1088	33,700	Oct. 16, 1946	61	1,273	921,500	447	323,600
1948	1118	3,830	July 5, 1948	17	148	107,400	190	137,800
1949	1148	23,000	Apr. 30, 1949	13	1,225	887,200	1,253	907,500
1950	1178	5,290	June 11, 1950	11	340	246,400	282	204,500
1951	1212	15,600	Sept. 18, 1951	24	583	422,200	592	428,200
1952	1242	4,600	May 30, 1952	25	244	177,300	221	160,300
1953	1282	17,200	Sept. 9, 1953	34	741	536,500	880	636,900
1954	1342	11,000	July 5, 1954	15	465	336,300	335	242,700
1955	1392	1,540	May 23, 1955	39	135	97,400	179	129,500
1956	1442	3,820	Sept. 5, 1956	23	184	133,300	188	136,700
1957	1512	19,500	May 5, 1957	28	1,962	1,421,000	-	-

357. Rio Grande at El Paso, Tex.1/

Location.--Lat 31°49', long 106°33', 1 mile upstream from Courchesne Quarry, 1.9 miles upstream from the American Dam (completed in 1938), 5 miles northwest of El Paso, El Paso County, 6 miles northwest of Juarez, Chihuahua, Mexico, and at mile 1,243.4.

Drainage area.--29,267 sq mi (contributing area), all in the United States.

Supplemental records available.--Gage-height records collected in this vicinity for the period 1901-17 are contained in reports of U.S. Weather Bureau.

Gage.-- Water-stage recorder. Datum of gage is 3,722.30 ft above mean sea level, U.S.C. & G. S. datum. May 1889 to June 1893, staff gage at Old Fort Bliss 4 miles downstream at datum 10.56 ft lower. January 1895 to April 1897, staff gage at site 2 miles downstream at different datum. May 1897 to September 1918, staff gage or water-stage recorder, one mile downstream at datum 10.78 ft lower. September 1918 to June 1931, staff gage or water-stage recorder one mile downstream at datum 1.78 ft lower.

Average discharge.--68 years (1889-1957), 895 cfs (648,000 acre-ft per year).

Extremes.--1889-1957: Maximum discharge, 24,000 cfs June 12, 1905 (gage height, 6.0 ft, at site and datum then in use); no flow at times.

Remarks.--Flow regulated by Elephant Butte Dam (capacity, 2,185,400 acre-ft) since 1916. Numerous diversions above station for irrigation and municipal supply.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to 1927, and subsequent to June 30, 1931. Records furnished by the U. S. Bureau of Reclamation from 1927 to July 31, 1928.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1889	-	-	-	247	268	468	1,111	3,095	2,638	237	0	0	-
1890	0	0	71	196	290	424	2,190	5,771	4,404	854	734	176	1,260
1891	65	284	535	451	809	1,866	4,302	11,852	6,714	2,271	662	768	2,548
1892	1,488	341	344	326	476	752	3,147	7,093	2,943	668	13	0	1,470
1893	0	0	0	125	144	35	808	3,764	225	346	124	100	473
1894	218	106	88	143	156	272	644	1,794	1,689	673	242	194	518
1895	424	207	171	342	371	642	1,529	4,258	4,013	1,600	574	460	1,216
1896	1,008	491	407	106	111	200	474	1,322	1,246	497	179	143	515
1897	313	153	126	305	194	72	1,740	8,312	6,095	1,330	132	705	1,623
1898	1,758	1,132	680	496	606	326	1,646	2,280	1,875	3,192	508	37	1,211
1899	3	2	93	210	204	114	148	168	0	318	7	0	106
1900	0	0	46	132	102	8	5	729	1,565	1	0	277	239
1901	0	0	12	5	81	60	0	2,571	1,295	205	986	353	464
1902	87	215	130	135	104	10	133	9	5	0	236	156	102
1903	23	5	29	10	23	368	831	3,312	9,863	2,573	70	17	1,430
1904	33	5	40	16	7	0	0	0	0	0	120	184	34
1905	5,960	813	621	584	780	3,065	3,326	8,879	14,304	956	322	56	3,310
1906	69	428	610	439	571	412	1,480	5,676	4,548	1,571	799	47	1,380
1907	621	997	1,240	983	839	976	2,951	4,381	7,438	5,487	2,200	2,801	2,580
1908	813	923	612	536	542	777	1,347	1,901	675	265	954	240	799
1909	0	85	380	363	309	468	1,034	4,392	3,932	403	310	1,979	1,140
1910	575	347	371	707	376	1,511	1,966	4,450	557	1	0	2	905
1911	0	0	10	151	214	708	535	4,031	3,850	7,081	871	195	1,470
1912	4,790	1,997	1,014	790	562	982	1,613	6,220	8,643	2,049	501	341	2,460
1913	20	309	439	306	630	254	852	1,442	723	92	0	0	422
1914	110	288	344	356	417	630	1,227	4,212	3,832	2,391	1,140	138	1,257
1915	1,107	857	1,097	639	577	361	635	2,329	3,090	1,250	1,440	1,080	1,210
1916	316	32.5	463	56.0	283	594	904	1,530	1,880	874	900	435	689
1917	649	10.0	1,050	1,050	1,180	957	911	1,190	1,280	2,300	1,320	1,310	1,100
1918	1,380	736	1,070	38	575	793	816	757	481	461	552	327	668
1919	551	341	104	57.3	308	697	948	1,470	1,190	1,090	1,010	855	721
1920	438	277	118	393	228	805	846	1,180	1,390	1,370	1,740	1,260	838
1921	1,300	474	668	108	447	1,090	906	1,250	1,570	1,700	1,850	1,950	1,110
1922	1,630	1,160	714	290	863	1,100	1,440	1,220	1,330	1,350	1,830	1,380	1,190
1923	879	616	615	268	607	768	1,210	1,420	1,520	1,480	2,000	1,020	1,040
1924	839	391	525	285	844	924	1,530	1,990	1,650	1,800	1,740	1,300	1,150
1925	520	354	450	189	526	922	1,260	1,190	1,150	1,300	1,580	1,470	910
1926	412	257	242	199	278	671	1,100	1,130	1,260	1,450	1,030	1,090	762
1927	342	353	306	226	442	619	991	1,170	1,240	1,410	1,480	1,360	829
1928	493	495	335	207	462	708	1,346	1,116	1,225	1,403	1,586	1,131	876
1929	516	375	232	215	324	603	1,050	1,150	944	1,350	1,740	866	783
1930	422	241	207	134	293	697	1,050	956	1,140	1,340	1,350	872	725
1931	419	280	262	148	250	658	955	873	1,060	1,240	1,440	882	706
1932	435	374	230	148.5	293	562	962	1,016	1,237	1,276	1,395	1,133	755
1933	567	410	366	192	448	645	1,117	1,030	1,329	1,343	1,555	1,121	844
1934	547	344	403	183	596	707	952	987	1,040	1,200	1,300	807	756
1935	298	191	156	138	158	299	754	774	953	1,140	1,560	1,110	628
1936	328	193	190	139	185	477	854	1,020	1,060	1,240	1,300	848	653
1937	290	210	195	139	183	426	1,020	1,130	1,230	1,240	1,440	1,150	721
1938	322	287	295	177	303	715	1,120	1,160	1,320	1,270	1,120	1,020	759
1939	444	279	252	168	282	597	941	969	1,080	1,200	1,180	1,030	703
1940	448	306	268	175	221	629	971	848	1,150	1,120	992	700	653
1941	310	200	179	138	130	431	1,030	953	1,040	1,210	1,340	1,200	682
1942	419	280	273	212	940	1,020	2,340	5,800	5,110	3,220	2,560	2,880	2,091
1943	942	353	417	246	393	851	1,320	1,340	1,380	1,390	1,380	1,070	927
1944	441	358	274	194	270	751	1,250	1,170	1,210	1,370	1,530	1,330	846
1945	480	281	276	185	300	797	1,150	1,080	1,060	1,240	1,330	1,020	769

1/ Published as "near El Paso" by the U. S. Geological Survey from 1927 to July 31, 1928.

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande at El Paso, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	575	309	351	196	274	625	1,030	1,030	993	1,160	1,260	758	717
1947	410	256	228	160	164	606	1,090	843	1,060	1,130	1,270	682	661
1948	237	175	154	126	113	362	867	809	1,010	1,220	1,170	703	579
1949	307	225	216	176	147	560	961	914	992	1,190	1,070	866	638
1950	327	250	199	160	183	781	969	922	1,000	1,280	1,120	748	664
1951	298	184	158	138	118	400	542	291	570	740	777	288	377
1952	113	94.8	86.2	69.7	55.5	146	438	559	792	836	943	550	391
1953	121	86.0	81.3	70.3	51.7	568	554	401	592	690	761	451	308
1954	89.9	72.0	60.0	52.8	36.2	88.9	381	207	210	263	190	40.8	141
1955	61.6	9.1	7.1	8.7	5.1	74.5	177	34.7	101	243	196	232	96.3
1956	24.0	6.6	4.4	3.8	3.7	179	299	19.8	123	161	79.2	72.3	81.3
1957	2.5	3.8	3.4	3.6	2.4	29.1	115	8.8	244	601	772	465	189

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1889	-	-	-	15,160	14,900	28,800	66,100	190,300	157,000	14,600	0	0	-
1890	0	0	4,370	12,100	16,100	26,100	130,000	355,000	266,000	52,500	45,100	10,500	917,770
1891	4,000	16,900	32,900	27,700	45,300	115,000	256,000	727,000	399,000	140,000	40,700	45,700	1,850,200
1892	91,500	20,300	21,200	20,000	27,400	46,200	187,000	436,000	175,000	41,100	800	0	1,066,500
1893	0	0	0	7,680	8,020	2,150	48,100	231,000	13,400	21,280	7,640	5,940	345,210
1894	13,420	6,320	5,400	8,800	8,640	16,700	38,300	110,300	100,520	41,400	14,900	11,540	376,240
1895	26,100	12,300	10,500	21,000	20,600	39,500	91,000	261,800	238,800	98,400	35,300	27,400	882,700
1896	62,000	29,200	25,000	6,500	6,400	12,300	28,230	81,300	74,150	30,560	11,000	8,500	375,140
1897	19,230	9,100	7,730	18,800	10,800	4,410	104,000	511,000	363,000	81,800	8,120	42,000	1,179,990
1898	108,000	67,400	41,800	30,500	33,700	20,000	97,900	140,000	112,000	196,000	31,200	2,230	880,730
1899	160	119	5,720	12,900	11,300	7,040	8,810	10,300	0	19,600	430	0	76,379
1900	0	0	2,830	8,110	5,680	466	300	44,800	93,100	70	0	16,500	171,856
1901	0	0	732	278	4,500	3,670	0	158,000	77,000	12,600	60,700	21,000	338,480
1902	5,340	12,800	7,990	8,290	5,770	635	7,900	526	307	20	14,500	9,310	73,388
1903	1,430	298	1,780	615	1,290	22,600	49,500	204,000	587,000	158,000	4,330	1,030	1,031,873
1904	2,030	298	2,440	972	387	0	0	0	0	0	7,400	11,000	24,527
1905	366,000	48,400	38,200	35,900	43,300	188,500	198,000	546,000	851,000	58,800	19,800	3,320	2,397,220
1906	4,220	25,500	37,500	27,000	31,700	25,300	88,000	349,000	271,000	96,600	49,200	2,820	1,007,840
1907	38,200	59,300	76,300	60,400	46,600	60,000	176,000	269,000	443,000	337,000	135,000	167,000	1,867,800
1908	50,000	54,900	37,600	33,000	31,200	47,800	80,100	117,000	40,200	16,300	58,600	14,300	581,000
1909	0	5,080	23,400	22,300	17,200	28,800	61,500	270,000	234,000	24,800	19,000	118,000	824,080
1910	35,300	20,600	22,800	43,500	20,900	92,900	117,000	274,000	33,100	69	0	129	660,298
1911	0	0	595	9,260	11,900	43,500	31,900	248,000	229,000	435,000	53,600	11,600	1,074,355
1912	295,000	119,000	62,400	48,600	32,300	60,400	96,000	382,000	514,000	126,000	30,800	20,300	1,786,800
1913	1,230	18,400	27,000	18,800	35,000	15,600	50,700	88,600	43,100	5,680	0	0	304,110
1914	6,740	17,100	21,100	21,900	23,200	38,800	73,000	259,000	228,000	147,000	70,100	8,210	914,150
1915	68,100	51,000	67,500	39,300	32,000	22,200	37,800	143,000	184,000	76,700	88,300	59,900	869,800
1916	19,500	1,930	28,500	3,440	16,300	36,500	53,800	93,800	112,000	53,700	55,300	25,900	500,670
1917	39,900	595	64,600	64,800	65,700	58,800	54,200	73,300	76,200	141,000	81,100	78,300	798,495
1918	85,100	43,800	65,900	2,340	32,000	48,700	48,600	46,600	28,600	28,300	33,900	19,500	483,340
1919	33,900	20,300	6,400	3,520	17,100	42,900	56,400	90,200	71,100	67,200	62,000	50,900	521,920
1920	26,900	16,500	7,260	24,200	13,100	49,500	50,400	72,500	82,600	84,100	107,000	74,800	608,860
1921	79,700	28,200	41,100	6,640	24,800	67,000	53,900	76,600	93,600	105,000	114,000	116,000	806,540
1922	100,000	69,200	43,900	17,800	47,900	67,500	85,500	74,900	79,000	83,200	112,000	82,300	863,200
1923	54,100	36,700	37,800	16,500	33,700	47,200	72,200	87,300	90,300	90,900	123,000	60,400	750,100
1924	51,600	23,300	32,300	17,500	48,500	56,800	91,000	122,000	98,200	111,000	107,000	77,400	836,600
1925	32,000	21,100	27,700	11,600	29,200	56,700	75,100	73,200	68,400	79,800	96,900	87,400	659,100
1926	25,300	15,300	14,900	12,200	15,400	41,300	65,400	69,400	75,200	88,900	63,100	65,000	551,400
1927	21,100	21,000	18,800	13,900	24,600	38,100	59,000	71,700	73,800	86,800	90,700	80,600	600,100
1928	30,300	29,500	20,600	12,700	26,600	43,500	80,100	68,600	72,900	86,300	97,500	67,300	635,900
1929	31,700	22,300	14,300	13,200	18,000	37,100	62,500	70,700	56,200	83,000	107,000	51,500	567,500
1930	25,900	14,300	12,700	8,210	16,300	42,900	62,500	58,800	67,800	82,400	83,300	51,900	527,010
1931	25,800	16,700	16,100	9,100	13,900	40,500	56,800	53,700	63,100	76,440	88,640	52,480	513,260
1932	26,740	22,250	14,130	9,130	16,880	34,530	57,240	62,460	73,630	78,460	85,750	67,440	548,640
1933	34,860	24,370	22,490	11,820	24,870	39,650	66,470	63,490	79,110	82,600	95,640	66,680	612,050
1934	33,630	20,460	24,760	11,200	33,100	43,500	56,700	60,700	62,000	73,800	80,200	48,000	548,050
1935	18,300	11,400	9,590	8,510	8,800	18,400	44,900	47,600	56,700	69,900	95,900	65,800	455,800
1936	20,200	11,500	11,700	8,600	10,700	29,400	50,800	62,500	62,800	76,500	79,700	50,500	474,900
1937	17,800	12,500	12,000	8,540	10,200	26,200	60,400	69,500	73,300	76,300	88,500	68,200	523,440
1938	19,800	17,100	18,200	10,900	16,800	43,900	66,300	71,100	78,500	78,000	69,000	61,000	550,600
1939	27,300	16,600	15,500	10,300	15,700	36,700	56,000	59,600	64,100	73,500	72,300	61,200	508,800
1940	27,500	18,200	16,500	10,700	12,700	38,700	57,800	52,200	68,300	68,900	61,000	41,700	474,200
1941	19,000	11,900	11,000	8,500	7,230	26,500	61,400	58,600	61,600	74,200	82,500	71,600	494,030
1942	25,800	16,700	16,800	13,000	52,200	62,500	139,000	357,000	304,000	198,000	158,000	171,000	1,514,000
1943	57,900	21,000	25,600	15,100	21,800	52,400	78,600	82,500	82,100	65,600	84,900	63,500	671,000
1944	27,100	21,300	16,900	11,900	15,500	46,200	74,500	71,700	71,800	83,900	94,000	79,200	614,000
1945	29,500	16,700	17,000	11,400	16,700	49,000	68,300	66,700	63,100	76,200	81,600	60,500	556,700
1946	35,400	18,400	21,600	12,000	15,200	38,400	61,400	63,500	59,100	71,100	77,000	45,100	518,900
1947	25,200	15,200	14,000	9,860	9,140	37,300	65,000	51,800	63,200	69,700	77,800	40,600	478,800
1948	14,600	10,400	9,460	7,770	6,510	22,300	51,600	49,700	59,800	74,800	71,800	41,800	420,540
1949	18,900	13,400	13,300	10,800	8,140	34,400	57,200	56,200	59,100	73,500	65,500	51,500	461,940
1950	20,100	14,900	12,200	9,830	10,200	48,000	57,700	56,700	59,600	78,400	68,800	44,500	480,930
1951	18,300	10,900	9,700	8,460	6,570	24,600	32,300	17,900	33,900	45,500	47,800	17,100	273,000
1952	6,930	5,640	5,300	4,290	3,190	8,970	26,100	34,400	47,100	51,400	58,000	32,700	284,000

Monthly and yearly runoff, in acre-feet, of Rio Grande at El Paso, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	7,410	5,120	5,000	4,320	2,870	34,900	33,000	24,700	35,200	42,400	46,800	26,800	268,500
1954	5,530	4,290	3,690	3,250	2,010	5,470	22,700	12,700	12,500	16,200	11,700	2,430	102,500
1955	3,790	540	435	533	283	4,580	10,500	2,130	6,020	15,000	12,100	13,800	69,710
1956	1,480	391	272	234	211	11,000	17,800	1,220	7,340	9,920	4,870	4,300	59,040
1957	151	229	206	220	136	1,790	6,820	540	14,600	37,000	47,500	27,700	136,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1889	358(12)	-	-	-	-	-	678	491,230
1890	358(13)	a7,200	May 29 to June 1, 1890	0	1,260	917,770	1,330	967,200
1891	358(13)	-	-	0	2,548	1,850,200	2,656	1,929,400
1892	358(13)	a10,000	May 8,9, 1892	0	1,470	1,066,500	1,280	933,500
1893	358(12)	-	-	-	473	345,210	507	370,350
1894	(12)	-	-	-	518	376,240	551	400,000
1895	(12)	-	-	-	1,216	882,700	1,308	950,000
1896	(12)	-	-	-	515	375,140	406	295,000
1897	358(13)	-	-	-	1,623	1,179,990	1,871	1,361,130
1898	358(13)	-	-	0	1,211	880,730	922	669,529
1899	358(13)	-	-	0	106	76,379	101	73,210
1900	358(13)	-	-	0	239	171,856	236	169,758
1901	358(13)	-	-	0	464	338,480	499	363,878
1902	358(13)	a2,140	Aug. 29, 1902	0	102	73,388	70	50,766
1903	358(13)	a18,070	June 21, 1903	0	1,430	1,031,873	1,430	1,033,133
1904	358(13)	a655	Sept. 6, 1904	0	34	24,527	643	472,359
1905	358(13)	24,000	June 12, 1905	15	3,310	2,397,220	2,780	2,011,840
1906	358(13)	a8,700	May 27, 1906	10	1,380	1,007,840	1,530	1,114,420
1907	358(13)	a10.750	June 24, 1907	425	2,580	1,867,800	2,530	1,836,500
1908	358(13)	a3,420	Apr. 22, 1908	0	799	581,000	642	466,980
1909	358(13)	a6,850	May 13, 1909	0	1,140	824,080	1,21	874,300
1910	358(13)	-	-	0	905	660,298	79	582,193
1911	358(13)	a10,240	July 25, 1911	0	1,470	1,074,355	2,120	1,550,160
1912	358(13)	a15,980	June 3, 1912	0	2,460	1,786,800	1,872	1,357,030
1913	358(13)	a3,900	June 15, 1913	0	422	304,110	420	302,420
1914	388	-	-	-	1,257	914,150	1,450	1,055,810
1915	568	4,440	June 10, 1915	65	1,210	869,800	1,018	733,130
1916	568	-	-	-	689	500,670	764	555,835
1917	568	5,300	Oct. 15, 1916	7	1,100	798,495	1,224	888,200
1918	568	1,900	Aug. 12, 1918	20	668	483,340	483	349,140
1919	568	2,090	May 11, 1919	50	721	521,920	705	511,980
1920	568	3,170	Aug. 15, 1920	47	838	608,860	971	707,200
1921	568	3,110	Aug. 19, 1921	60	1,110	806,540	1,198	870,640
1922	568	2,400	Aug. 21,22, 1922	123	1,190	863,200	1,076	778,700
1923	568	3,190	Aug. 11, 1923	88	1,040	750,100	1,004	728,700
1924	588	2,900	Aug. 16, 1924	145	1,150	836,600	1,116	810,200
1925	608	9,160	Sept. 3, 1925	140	910	659,100	875	633,800
1926	628	4,910	July 12, 1926	136	762	551,400	767	556,800
1927	648	3,750	July 26, 1927	127	829	600,100	855	619,600
1928	668	-	-	-	876	635,900	859	623,800
1929	688	5,830	Aug. 11, 1929	128	783	567,500	759	552,100
1930	703	-	-	-	725	527,010	733	532,710
1931	718 (1)	4,710	Aug. 3, 1931	122	706	513,260	712	517,780
1932	(1,2)	2,630	Aug. 31, 1932	106	755	548,640	794	567,240
1933	(2,3)	5,010	Aug. 5, 1933	148	844	612,050	841	609,180
1934	(3,4)	3,610	Aug. 26, 1934	135	756	548,050	702	508,490
1935	(4,5)	7,120	Aug. 31, 1935	120	628	455,800	635	459,910
1936	(5,6)	3,910	Aug. 30, 1936	122	653	474,900	653	473,800
1937	(6,7)	4,740	June 28, 1937	128	721	523,440	741	536,240
1938	(7,8)	5,330	Sept. 2, 1938	130	759	550,600	766	554,900
1939	(8,9)	3,710	Sept. 16, 1939	126	703	508,800	707	511,600
1940	(9,10)	3,250	June 23, 1940	131	653	474,200	625	453,900
1941	(10,11)	5,000	Sept. 30, 1941	117	682	494,030	706	511,430
1942	(11,12)	7,000	May 20, 1942	176	2,091	1,514,000	2,154	1,559,200
1943	(12,13)	4,020	June 30, 1943	196	927	671,000	873	631,800
1944	(13,14)	4,800	Aug. 19, 1944	139	846	614,000	843	611,900
1945	(14,15)	2,150	July 30, 1945	166	769	556,700	786	568,900
1946	(15,16)	1,680	Apr. 1, 1946	145	717	518,900	688	497,900
1947	(16,17)	3,470	Oct. 5, 1946	139	661	478,800	634	458,860
1948	(17,18)	3,110	Apr. 12, 1948	85.8	579	420,540	595	431,680
1949	(18,19)	3,940	Sept. 16, 1949	124	638	461,940	640	463,540
1950	(19,20)	7,740	July 14, 1950	117	664	480,930	653	472,630
1951	(20,21)	2,840	Mar. 26, 1951	50.5	377	273,000	348	252,000
1952	(21,22)	4,390	Aug. 25, 1952	19.0	391	284,000	391	283,680
1953	(22,23)	4,650	July 13, 1953	35.8	308	268,500	365	264,500
1954	(23,24)	3,690	Aug. 21, 1954	3.9	141	102,500	129	93,725
1955	(24,25)	4,800	July 20, 1955	.3	96.3	69,710	92.7	67,089
1956	(25,26)	752	Mar. 27, 1956	.5	81.3	59,040	79.2	57,481
1957	(26,27)	5,780	Aug. 31, 1957	.1	189	136,900	193	139,669

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

358. Rio Grande below American Dam

Location.--Lat 31°47', long 106°32', 3,200 ft below the American Dam, 1.5 miles above the International Dam west of El Paso, El Paso County, Texas, and at mile 1,247.6.

Drainage area.--29,271 sq mi (contributing area), all in the United States.

Gage.-- Water-stage recorder. Datum of gage is 3,712.30 ft above mean sea level, U.S.C. & G.S. datum. May 1, 1939, to Mar. 1, 1941, staff gage at same site at datum 3.98 ft higher. June 2, 1938, to Apr. 30, 1939, water-stage recorder 3,200 ft upstream at datum 10.00 ft higher.

Average discharge.--19 years (1938-57), 174 cfs (126,000 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 6,770 cfs May 18, 1942; maximum gage height, 10.95 ft Aug. 31, 1957; no flow at times.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station. Flow largely regulated by Elephant Butte Reservoir.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	410	297	130	294	-
1939	14.7	74.9	31.1	167	34.3	33.6	107	219	164	209	217	261	128
1940	3.2	87.1	126	173	66.2	92.8	201	203	271	193	98.2	59.3	131
1941	94.5	104	41.0	136	37.1	32.8	112	209	175	223	381	501	171
1942	146	146	81.2	105	590	284	1,250	4,880	4,210	2,530	1,850	2,080	1,516
1943	308	2.6	2.0	114	46.8	36.5	129	220	277	315	166	158	149
1944	20.4	4.0	3.4	167	70.1	36.5	125	224	166	215	337	271	137
1945	6.2	3.0	3.0	156	18.6	29.5	110	216	162	190	165	165	103
1946	15.8	2.0	34.9	196	77.2	31.2	122	218	167	162	165	169	115
1947	39.6	13.2	11.1	126	17.6	44.4	128	215	172	159	314	127	115
1948	6.1	8.5	11.9	67.9	9.1	32.5	166	191	262	188	220	192	113
1949	59.7	12.1	11.5	159	99.3	22.5	158	232	165	192	161	227	125
1950	118	62.9	6.3	147	65.0	48.6	111	211	172	304	230	172	138
1951	19.1	86.0	7.0	127	72.8	32.1	37.5	92.1	129	143	170	15.5	77.7
1952	11.4	5.3	7.2	69.7	55.5	24.8	68.8	175	188	167	191	73.2	86.5
1953	37.7	57.7	49.8	70.3	36.6	28.1	79.6	141	96.1	157	147	115	85.0
1954	43.8	45.5	8.7	52.8	36.2	1.5	74.4	69.8	5.0	33.7	50.0	3.3	35.4
1955	23.9	.5	7.0	8.7	5.1	2.9	80.2	.9	.6	69.1	19.6	40.8	21.6
1956	.6	3.1	4.4	3.8	1.9	2.7	117	5.9	1.3	15.7	.6	8.7	13.6
1957	2.5	3.8	3.4	3.6	2.4	1.3	38.0	.4	47.5	159	224	102	49.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	24,400	18,300	7,980	17,500	-
1939	901	4,460	1,910	10,300	1,900	2,060	6,360	13,500	9,770	12,900	13,300	15,500	92,861
1940	197	5,180	7,760	10,600	3,810	5,710	12,000	12,500	16,100	11,900	6,040	3,530	95,327
1941	5,810	6,220	2,520	8,370	2,060	2,020	6,640	12,800	10,400	13,700	23,400	29,800	123,740
1942	8,990	8,700	4,990	6,480	32,800	17,500	74,500	300,000	250,000	155,000	114,000	124,000	1,096,960
1943	19,000	153	120	7,020	2,600	2,240	7,680	13,500	16,500	19,400	10,200	9,410	107,823
1944	1,260	236	210	10,300	4,030	2,240	7,430	13,800	9,880	13,200	20,700	16,100	99,386
1945	381	179	184	9,610	1,030	1,820	6,570	13,300	9,660	11,700	10,200	9,800	74,434
1946	970	119	2,140	12,000	4,290	1,920	7,230	13,400	9,940	9,940	10,200	10,000	82,149
1947	2,430	788	683	7,760	979	2,730	7,630	13,200	10,300	9,800	19,300	7,580	83,180
1948	375	507	730	4,170	521	2,000	9,860	11,700	15,600	11,500	13,500	11,400	81,863
1949	3,670	720	708	9,780	5,510	1,390	9,430	14,200	9,840	11,800	9,890	13,500	90,438
1950	7,280	3,750	389	9,030	3,610	2,990	6,610	13,000	10,200	18,700	14,200	10,200	99,959
1951	1,180	5,120	431	7,810	4,040	1,970	2,230	5,660	7,700	8,780	10,400	925	56,250
1952	702	317	440	4,290	3,190	1,530	4,090	10,700	11,200	10,200	11,700	4,350	62,710
1953	2,320	3,440	3,060	4,320	2,040	1,730	4,730	8,680	5,720	9,670	9,060	6,820	61,590
1954	2,690	2,700	538	3,250	2,010	91.0	4,430	4,290	300	2,070	3,070	198	25,640
1955	1,470	28.0	433	533	283	176	4,770	55.7	35.5	4,250	1,200	2,430	15,660
1956	38.1	183	272	234	112	164	6,950	360	74.6	967	37.5	516	9,910
1957	151	229	206	220	136	81.9	2,260	25.2	2,820	9,800	13,800	6,070	35,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	(8)	-	-	-	-	-	-	-
1939	(8,9)	2,670	Sept. 16, 1939	2.1	128	92,861	136	98,727
1940	(9,10)	1,610	June 23, 1940	1.2	131	95,327	133	96,740
1941	(10,11)	5,090	Sept. 30, 1941	1.6	171	123,740	182	131,870
1942	(11,12)	6,770	May 18, 1942	3.1	1,516	1,096,960	1,510	1,093,553
1943	(12,13)	3,250	June 30, 1943	1.8	149	107,823	125	90,256
1944	(13,14)	3,640	Sept. 26, 1944	2.2	137	99,386	136	98,424
1945	(14,15)	945	July 30, 1945	3.0	103	74,434	106	76,919
1946	(15,16)	798	Oct. 10, 1945	2.0	115	82,149	114	82,821
1947	(16,17)	3,150	Aug. 13, 1947	2.0	115	83,180	112	80,891
1948	(17,18)	1,900	June 20, 1948	2.0	113	81,863	118	85,349

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

Yearly discharge, in cubic feet per second, of Rio Grande below American Dam--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	(18,19)	2,920	Sept. 16, 1949	2.0	125	90,438	134	96,759
1950	(19,20)	6,240	July 14, 1950	3.4	138	99,959	132	95,271
1951	(20,21)	1,190	Mar. 26, 1951	.7	77.7	56,250	70.4	50,974
1952	(21,22)	3,100	Aug. 25, 1952	.8	86.5	62,710	96.5	70,070
1953	(22,23)	3,440	July 13, 1953	2.9	85.0	61,590	81.1	58,698
1954	(23,24)	3,210	Aug. 21, 1954	.3	35.4	25,640	29.9	21,640
1955	(24,25)	4,800	July 20, 1955	.1	21.6	15,660	19.7	14,226
1956	(25,26)	832	Mar. 28, 1956	0	13.6	9,910	13.8	10,001
1957	(26,27)	4,610	Aug. 31, 1957	.1	49.4	35,800	49.5	35,838

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

359. Rio Grande at Cd. Juarez, Chihuahua, Mex.

Location.--Lat 31°45', long 106°26', 2.9 miles downstream from El Paso, Texas, and Juarez, Chihuahua, Mexico, 4.9 miles downstream from the Mexican Dam, 7.0 miles downstream from the American Dam, and at mile 1,241.2.

Drainage area.--29,350 sq mi (contributing area), of which 38 sq mi is in Mexico and 29,312 sq mi is in the United States.

Gage.-- Water-stage recorder. Datum of gage is 3,683.98 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--17 years (1938-55), 421 cfs (304,800 acre-ft per year).

Extremes.--1938-55: Maximum discharge, 7,630 cfs July 21, 1955; maximum gage height, 11.15 ft May 18, 1942; minimum discharge, 2.5 cfs Aug. 3, 1955.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station. Flow largely regulated by Elephant Butte Reservoir.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	562	456	744	803	651	714	-
1939	212	204	161	165	146	358	589	477	607	689	717	594	411
1940	291	221	167	199	158	352	519	381	675	696	629	374	389
1941	189	157	122	153	85.1	230	678	515	540	730	951	823	433
1942	303	224	207	216	769	745	1,870	5,290	4,580	2,640	2,070	2,420	1,780
1943	738	145	285	216	214	570	881	782	851	870	897	596	590
1944	254	163	129	197	187	540	850	644	699	936	1,010	853	539
1945	330	217	158	195	157	517	767	532	580	733	817	535	463
1946	521	230	294	196	179	423	609	514	500	664	761	389	442
1947	307	134	148	163	123	425	691	319	572	683	799	343	394
1948	140	82.6	45.9	128	96.2	290	535	357	611	719	648	266	328
1949	145	60.1	151	180	131	335	525	388	508	712	600	498	354
1950	221	127	141	156	144	533	533	422	535	839	590	352	385
1951	187	115	95.5	120	77.7	289	262	75.1	247	327	327	116	187
1952	63.8	61.5	59.5	62.0	45.8	108	213	188	363	381	458	300	192
1953	72.2	61.8	55.4	61.0	37.9	390	247	117	248	263	313	219	175
1954	52.2	50.6	40.4	52.9	46.6	60.3	129	55.9	74.1	28.1	124	22.7	61.5
1955	31.5	22.1	23.9	22.4	20.5	25.9	18.6	20.2	22.0	115	30.8	68.1	35.3
1956	22.1	17.4	18.8	18.4	21.0	109	40.3	20.9	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	33,420	28,010	44,280	49,350	40,000	42,470	-
1939	13,050	12,140	9,930	10,130	8,130	22,020	35,060	29,330	36,140	42,390	44,060	35,330	297,710
1940	17,900	13,170	10,270	12,230	9,090	21,650	30,940	23,380	40,070	42,730	38,670	22,280	282,380
1941	11,630	9,360	7,510	9,440	4,730	14,140	40,350	31,650	32,140	44,900	58,480	48,970	313,300
1942	18,600	13,350	12,750	13,270	42,690	45,790	111,500	325,100	272,400	162,500	127,300	143,800	1,289,050
1943	45,390	8,640	17,510	13,270	11,900	35,050	52,440	48,090	50,610	53,470	55,170	35,470	427,010
1944	15,640	9,700	7,910	12,130	10,740	33,200	50,610	39,590	41,620	57,540	62,180	50,770	391,630
1945	20,290	12,900	9,740	11,980	8,740	31,670	45,660	32,720	34,480	45,050	50,240	31,850	335,320
1946	32,020	13,670	18,060	12,060	9,960	26,030	36,260	31,600	29,740	40,830	46,770	23,170	320,170
1947	18,880	7,960	9,120	10,050	6,840	26,130	41,120	19,590	34,050	42,020	49,140	20,400	285,300
1948	8,610	4,910	2,820	7,860	5,540	17,830	31,830	21,960	36,370	44,210	39,850	15,850	237,640
1949	8,900	3,570	9,280	11,050	7,250	20,600	31,240	23,850	30,220	43,790	36,890	29,630	256,270
1950	13,570	7,590	8,700	9,580	8,000	32,800	31,720	25,940	31,810	51,580	36,270	20,920	278,480
1951	11,510	6,820	5,870	7,390	4,320	17,750	15,610	4,620	14,710	20,100	20,120	6,880	135,700
1952	3,920	3,660	3,660	3,810	2,640	6,640	12,680	11,530	21,620	23,440	28,140	17,870	139,610
1953	4,440	3,680	3,410	3,750	2,110	23,950	14,720	7,180	14,770	16,200	19,260	13,030	126,500
1954	3,210	3,010	2,480	3,260	2,590	3,710	7,670	3,440	4,410	1,730	7,660	1,350	44,520
1955	1,940	1,320	1,470	1,380	1,140	1,590	1,110	1,240	1,310	7,100	1,900	4,050	42,650
1956	1,360	1,030	1,150	1,130	1,210	6,720	2,400	1,280	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Rio Grande at Juarez, Chihuahua, Mex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	(8)	-	-	-	-	-	-	-
1939	(8,9)	3,270	Sept. 16, 1939	38.8	411	297,710	420	303,930
1940	(9,10)	2,710	June 23, 1940	20.5	389	282,380	371	269,540
1941	(10,11)	5,190	Aug. 13, 1941	24.7	433	313,300	455	329,500
1942	(11,12)	6,600	May 18, 1942	50.5	1,790	1,289,050	1,820	1,315,890
1943	(12,13)	3,850	June 30, 1943	21.9	590	427,010	537	388,720
1944	(13,14)	4,170	Sept. 26, 1944	26.1	539	391,630	553	401,310
1945	(14,15)	1,570	Apr. 9, 1945	17.0	463	335,320	467	356,140
1946	(15,16)	2,240	Oct. 10, 1945	56.1	442	320,170	404	292,380
1947	(16,17)	3,140	Aug. 18, 1947	25.8	394	285,300	367	265,680
1948	(17,18)	2,910	June 20, 1948	34.3	327	237,640	335	243,050
1949	(18,19)	3,110	Sept. 16, 1949	42.7	354	256,270	365	264,380
1950	(19,20)	6,140	July 14, 1950	41.0	385	278,480	377	272,820
1951	(20,21)	2,490	Mar. 26, 1951	28.6	187	135,700	170	122,740
1952	(21,22)	2,680	Aug. 25, 1952	18.7	192	139,610	193	139,900
1953	(22,23)	1,550	Mar. 16, 1953	24.7	175	126,500	171	123,670
1954	(23,24)	6,290	Aug. 23, 1954	9.2	61.5	44,520	56.0	40,550
1955	(24,25)	7,630	July 21, 1955	9.5	35.3	42,650	33.6	24,360
1956	(25,26)	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

360. Rio Grande at Island Station, near El Paso, Tex.

Location.--Lat 31°32', long 106°15', in the rectified channel near Clint, El Paso County, Texas and San Augustin, Chihuahua, Mexico, 27.1 miles downstream from the American Dam and at mile 1,221.1.

Drainage area.--29,951 sq mi (contributing area), of which 493 sq mi is in Mexico and 29,458 sq mi is in the United States.

Gage.--Water-stage recorder. Datum of gage is 3,608.99 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--19 years (1938-57), 136 cfs (98,460 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 6,490 cfs May 19, 1942 (gage height, 16.06 ft); no flow at times.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	-	-	-	495	-
1939	26.4	37.2	40.4	143	52.8	14.2	36.3	17.1	22.0	78.8	168	201	69.9
1940	29.0	5.0	53.7	145	70.8	15.5	19.9	25.6	176	94.3	89.5	29.5	62.8
1941	43.3	.2	17.1	129	76.8	60.2	92.0	118	44.1	118	429	477	134
1942	180	32.7	112	186	667	340	1,180	4,880	4,050	1,930	1,620	2,000	1,433
1943	696	98.1	210	194	174	167	143	183	207	365	81.2	179	228
1944	99.7	35.7	20.4	163	104	66.6	165	100	108	206	342	303	143
1945	52.4	18.4	73.3	167	60.4	58.3	103	22.8	20.2	97.4	75.9	27.5	65.0
1946	420	122	128	162	71.6	77.1	35.8	54.8	20.2	62.9	40.0	50.7	105
1947	106	13.5	73.2	129	80.4	29.9	51.0	49.6	51.4	34.2	240	18.2	73.3
1948	32.7	24.4	18.7	97.4	69.8	23.8	25.2	21.5	80.3	69.5	54.6	49.7	47.2
1949	19.1	38.6	37.2	146	118	40.6	42.4	28.9	22.3	139	36.0	272	77.9
1950	58.2	7.5	32.7	110	64.5	66.1	15.2	24.0	17.6	346	51.8	96.2	74.6
1951	76.2	12.0	15.8	86.8	17.9	14.7	7.6	2.8	1.9	3.9	9.2	1.6	21.1
1952	0	0	0	32.8	2.8	.3	.1	.3	2.6	1.3	27.3	7.2	6.30
1953	4.7	1.2	12.5	40.9	20.2	44.7	6.6	1.0	1.1	42.1	4.5	4.6	15.4
1954	0	0	1.1	33.9	20.6	1.4	3.4	0	0	0	40.3	0	8.37
1955	.1	4.8	0	14.2	1.3	0	0	0	0	36.1	1.6	.1	4.92
1956	0	0	0	3.6	.1	.1	.2	0	0	0	0	0	.33
1957	0	0	0	0	0	0	0	0	0	41.0	47.0	18.0	8.95

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The Year
1938	-	-	-	-	-	-	-	-	-	-	-	29,400	-
1939	1,620	2,220	2,480	8,800	2,930	876	2,160	1,050	1,310	4,840	10,300	12,000	50,586
1940	1,780	296	3,300	8,900	4,070	954	1,190	1,570	10,500	5,800	5,500	1,760	45,620
1941	2,660	11.5	1,050	7,900	4,260	3,700	5,470	7,260	2,620	7,290	26,400	28,400	97,022
1942	11,100	1,950	6,920	11,400	37,000	21,000	70,500	299,800	241,000	118,500	99,400	119,200	1,037,770
1943	42,800	5,840	12,900	11,900	9,650	10,300	8,520	11,300	12,300	22,500	4,990	10,700	163,700
1944	6,130	2,130	1,260	10,000	6,010	4,100	9,810	6,150	6,400	12,700	21,000	18,000	103,690
1945	3,220	1,090	4,510	10,300	3,350	3,590	6,110	1,400	1,200	6,000	4,660	1,640	47,070
1946	25,800	7,270	7,890	9,960	3,980	4,740	2,130	3,370	1,200	3,870	2,460	3,010	75,680
1947	6,490	804	4,500	7,920	4,470	1,840	3,040	3,050	3,060	2,100	14,700	1,090	53,064
1948	2,010	1,450	1,150	5,990	4,020	1,470	1,500	1,320	4,780	4,270	3,360	2,960	34,280
1949	1,170	2,300	2,290	8,990	6,560	2,500	2,520	1,770	1,330	8,560	2,220	16,200	56,410
1950	3,580	446	2,010	6,760	3,580	4,060	905	1,480	1,050	21,300	3,190	5,720	54,081
1951	4,690	711	972	5,340	996	904	455	175	114	240	563	97.0	15,260
1952	0	0	0	2,020	161	20.2	5.0	21.0	158	81.1	1,680	431	4,580

Monthly and yearly runoff, in acre-feet, of Rio Grande at Island Station, near El Paso, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The Year
1953	289	73.2	769	2,510	1,120	2,750	394	58.9	62.7	2,590	277	272	11,170
1954	0	0	64.9	2,090	1,140	84.9	201	1.4	0	0	2,480	0	6,060
1955	6.9	286	.6	874	73.0	0	0	0	0	2,220	100	4.8	3,570
1956	0	0	0	221	4.2	3.2	9.7	0	0	0	0	0	238
1957	0	0	0	0	0	0	0	0	0	2,520	2,890	1,070	6,480

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	(8)	-	-	-	-	-	-	-
1939	(8,9)	2,970	Sept. 16, 1939	0	69.9	50,586	68.6	49,642
1940	(9,10)	1,640	June 23, 1940	.4	62.8	45,620	60.6	43,965.5
1941	(10,11)	4,360	Sept. 30, 1941	0	134	97,021.5	156	113,270
1942	(11,12)	6,490	May 19, 1942	1.5	1,433	1,037,770	1,490	1,079,340
1943	(12,13)	3,140	June 30, 1943	0	228	163,700	154	111,680
1944	(13,14)	3,540	Sept. 26, 1944	9.6	143	103,690	142	102,990
1945	(14,15)	1,790	Apr. 1, 1945	10.8	65.0	47,070	109	79,210
1946	(15,16)	1,940	Oct. 10, 1945	10.6	105	75,680	64.2	46,514
1947	(16,17)	2,440	Aug. 17, 1947	1.8	73.3	53,064	63.4	45,880
1948	(17,18)	1,660	June 20, 1948	1.3	47.2	34,280	48.8	35,430
1949	(18,19)	2,460	Sept. 16, 1949	5.7	77.9	56,410	78.3	56,686
1950	(19,20)	4,770	July 14, 1950	4.6	74.6	54,081	75.3	54,538
1951	(20,21)	1,300	Mar. 26, 1951	0	21.1	15,260	12.3	8,884
1952	(21,22)	670	Aug. 26, 1952	0	6.30	4,580	7.9	5,708.5
1953	(22,23)	2,380	July 13, 1953	0	15.4	11,170	14.0	10,099.5
1954	(23,24)	1,990	Aug. 23, 1954	0	8.37	6,060	8.7	6,290.8
1955	(24,25)	3,660	July 21, 1955	0	4.92	3,570	4.5	3,271.8
1956	(25,26)	26.5	Jan. 29, 1956	0	.33	238	.3	238.1
1957	(26,27)	2,900	Aug. 31, 1957	0	8.95	6,480	9.0	6,480

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

361. Rio Grande at Tornillo Bridge near Fabens, Tex.

Location.--Lat 31° 26', long 106°08', at bridge 2 miles west of Tornillo, El Paso County, 3.7 miles north of Guadalupe, Chihuahua, Mexico, 4-1/2 miles southeast of Fabens, El Paso County, and at mile 1,211.2.

Drainage area.--Unknown.

Gage.--Water-stage recorder. Datum of gage is 3,578.63 ft above mean sea level, U.S.C. & G.S. datum. Prior to Feb. 12, 1926, at datum 10 ft higher.

Average discharge.--13 years (1924-37), 239 cfs (173,000 acre-ft per year).

Extremes.--1924-37: Maximum daily discharge, 6,500 cfs Sept. 5, 1925; no flow at times.

Remarks.--Reservoirs, diversions and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to Oct. 1, 1927, and subsequent to June 30, 1931, and by the U. S. Bureau of Reclamation Oct. 1, 1927, to July 30, 1928.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	190	626	513	590	936	606	1,010	637	682	-
1925	239	185	306	192	139	120	168	185	229	180	886	734	297
1926	221	118	103	192	60	142	262	374	434	658	162	449	265
1927	289	120	189	209	246	225	244	326	419	509	845	785	367
1928	198	301	262	134	181	132	471	435	229	359	962	463	345
1929	226	283	174	133	63.7	75.9	172	414	85.5	347	970	173	262
1930	207	162	120	140	79.5	149	170	159	332	399	448	178	213
1931	168	129	180	135	123	145	338	139	146	331	664	299	238
1932	168	209	154	115.5	183	115	117	204	243	287	440	392	219
1933	542	218	252	172	221	89.8	261	192	521	398	457	380	309
1934	283	155	233	165	368	221	58.3	98.6	43.2	149	114	135	169
1935	109	53.0	65.7	111	37	7.4	10.8	9.9	25.5	26.4	352	742	129
1936	114	87.4	130	149	98.6	50.4	35.3	80.9	87.3	143	228	440	137
1937	124	95.1	141	141	85.6	42.8	62.8	219	235	116	207	409	157
1938	140	139	222	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	11,700	36,000	31,600	35,100	57,600	36,000	61,900	39,200	40,600	-
1925	14,700	11,000	18,800	11,800	7,730	7,370	10,000	11,300	13,600	10,900	54,500	43,700	215,400
1926	13,600	7,000	6,330	11,800	3,310	8,710	15,600	23,000	25,800	40,500	9,980	26,700	192,330
1927	17,700	7,150	11,600	12,900	13,700	13,900	14,500	20,000	24,900	31,300	51,900	46,700	266,250
1928	12,200	17,900	16,100	8,240	10,400	8,120	28,000	26,700	13,600	22,100	59,200	27,600	250,160
1929	13,900	16,800	10,700	8,150	3,540	4,670	10,200	25,500	5,090	21,300	59,600	10,300	189,750
1930	12,700	9,640	7,350	8,640	4,420	9,160	10,100	9,750	19,800	24,500	27,500	10,600	154,160
1931	10,300	7,680	11,100	8,300	6,830	8,920	20,100	12,200	8,690	20,330	40,840	17,770	173,060
1932	10,350	12,440	9,460	7,100	10,470	7,100	6,960	12,530	14,490	17,640	27,070	23,300	158,910

Monthly and yearly runoff, in acre-feet, of Rio Grande at Tornillo Bridge near Fabens, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	33,360	12,950	15,510	10,590	12,250	5,520	15,520	11,800	31,010	24,490	28,110	22,640	233,750
1934	17,430	9,250	14,300	10,100	20,400	13,600	3,470	6,060	2,570	9,180	7,040	8,040	121,440
1935	6,680	3,150	4,040	6,810	2,060	457	640	609	1,520	1,620	21,700	44,100	93,386
1936	7,000	5,200	8,020	9,160	5,670	3,100	2,100	4,980	5,200	8,820	14,000	26,200	99,450
1937	7,590	5,660	8,680	8,670	4,750	2,630	3,740	13,500	14,000	7,150	12,700	24,400	113,470
1938	8,600	8,250	13,600	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	(13,5)	1,700	Sept. 1, 1924	0	-	-	543	394,200
1925	(13,5)	a6,500	Sept. 5, 1925	5	297	215,400	273	197,830
1926	(13,5)	2,280	July 15, 1926	0	265	192,330	279	201,850
1927	(13,5)	2,030	July 31, 1927	3	367	266,250	381	276,000
1928	668(13)	1,710	Aug. 15, 1928	1.0	345	250,160	338	245,360
1929	688(13)	3,440	Aug. 14, 1929	1	262	189,750	246	178,040
1930	703(13)	1,640	Aug. 11,12, 1930	1.4	213	154,160	212	153,550
1931	718 (1)	2,850	Aug. 6, 1931	6.4	238	173,060	243	176,230
1932	(1,2)	1,350	Sept. 30, 1932	8.8	219	158,910	260	188,480
1933	(2,3)	1,680	Aug. 8, 1933	.7	309	223,750	280	202,910
1934	(3,4)	828	Feb. 7, 1934	0	169	121,440	130	94,330
1935	(4,5)	5,130	Sept. 1, 1935	0	129	93,386	138	99,736
1936	(5,6)	1,880	Aug. 31, 1936	.1	137	99,450	139	101,160
1937	(6,7)	2,410	May 31, 1937	2.6	157	113,470	168	121,990
1938	(7)	-	-	-	-	-	-	-

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

362. Rio Grande at County Line Station, near El Paso, Tex.

Location.--Lat 31°23', long 106°00', on the rectified channel 0.8 mile downstream from El Paso-Hudspeth County line, 47.3 miles downstream from the American Dam at El Paso, and at mile 1,200.9.

Drainage area.--30,610 sq mi of which 667 sq mi is in Mexico and 29,943 sq mi is in the United States.

Gage.--Water-stage recorder. Datum of gage is 3,547.59 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--19 years (1938-57),223 cfs (161,400 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 6,340 cfs May 19, 1924 (gage height, 8.66 ft); no flow at times.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	268	310	247	265	227	462	689	257	783	-
1939	216	214	226	235	167	104	161	121	115	185	309	401	205
1940	252	227	209	245	153	127	132	113	286	229	253	139	197
1941	182	138	143	184	133	161	298	368	298	395	762	764	320
1942	510	293	338	325	862	632	1,420	4,920	4,020	2,280	2,000	2,360	1,666
1943	998	344	483	303	331	348	388	355	375	616	292	404	438
1944	342	301	280	237	183	180	364	319	285	485	727	633	362
1945	295	245	274	287	214	246	375	252	208	266	322	271	272
1946	645	323	386	311	207	207	219	242	170	211	166	185	274
1947	257	202	246	199	165	89.6	150	114	132	21.4	339	54.1	164
1948	25.8	134	149	158	59.6	5.9	4.9	3.3	71.2	38.1	34.6	91.1	64.5
1949	156	170	200	206	170	37.6	17.1	51.5	39.0	42.3	3.0	365	121
1950	220	204	133	165	107	49.9	22.6	18.3	31.6	279	34.0	56.9	110
1951	94.7	129	56.0	90.6	3.3	.4	0	0	.3	0	0	0	31.4
1952	0	0	0	0	0	0	0	0	.1	0	0	.1	.02
1953	0	4.9	7	2.9	.4	2.5	0	0	0	24.8	0	0	3.05
1954	0	0	.1	0	0	0	0	0	0	0	5.7	0	.49
1955	0	0	0	0	0	0	0	0	0	5.8	.1	0	.50
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	13.3	3.9	36.8	4.48

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	16,500	17,200	15,200	15,800	13,900	27,500	42,400	15,800	46,600	-
1939	13,300	12,800	13,900	14,500	9,270	6,370	9,570	7,460	6,870	11,400	19,000	23,900	148,340
1940	15,500	13,500	12,900	15,100	8,800	7,840	7,870	6,980	17,000	14,100	15,500	8,290	143,380
1941	11,200	8,230	8,770	11,300	7,360	9,870	17,700	22,600	17,750	24,300	46,800	45,400	231,280
1942	31,400	17,400	20,800	20,000	47,900	38,900	84,200	303,000	239,000	140,000	123,000	140,000	1,205,600
1943	61,400	20,400	29,700	18,700	18,400	21,400	23,100	21,800	22,300	37,900	18,000	24,100	317,200
1944	21,000	17,900	17,200	14,600	10,500	11,100	21,700	19,600	17,000	29,800	44,700	37,700	262,800
1945	18,100	14,600	16,800	17,600	11,900	15,100	22,300	15,500	12,400	16,400	19,800	16,100	196,600

Monthly and yearly runoff in acre-feet, of Rio Grande at County Line Station, near El Paso, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	39,700	19,200	23,700	19,100	11,500	12,700	13,000	14,900	10,100	13,000	10,200	11,000	198,100
1947	15,800	12,000	15,100	12,300	9,160	5,510	8,940	6,990	7,840	1,320	20,900	3,220	119,080
1948	1,590	7,980	9,140	9,730	3,430	360	290	200	4,240	2,340	2,130	5,420	46,850
1949	9,620	10,100	12,300	12,700	9,440	2,310	1,020	3,170	2,320	2,600	182	21,700	87,462
1950	13,500	12,200	8,180	10,100	5,950	3,070	1,340	1,120	1,880	17,100	2,090	3,380	79,910
1951	5,820	7,690	3,440	5,570	181	28	0	0	17	0	0	0	22,750
1952	0	0	0	0	0	0	0	0	7	0	0	5	12
1953	0	290	45	180	21	151	0	0	0	1,520	0	0	2,210
1954	0	0	0	0	0	0	0	0	0	0	349	0	349
1955	0	0	0	0	0	0	0	0	0	359	5	0	364
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	817	240	2,190	3,250

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar Year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	(8)	-	-	-	-	-	347	250,900
1939	(8,9)	2,980	Sept. 16, 1939	46.8	205	148,340	208	150,240
1940	(9,10)	1,550	June 24, 1940	60.6	197	143,380	179	129,680
1941	(10,11)	3,450	Sept. 30, 1941	56.1	320	231,280	377	272,680
1942	(11,12)	6,340	May 19, 1942	148	1,666	1,205,600	1,720	1,247,500
1943	(12,13)	3,010	Oct. 2, 1942	178	438	317,200	362	261,800
1944	(13,14)	3,150	Sept. 27, 1944	93.4	362	262,800	353	256,200
1945	(14,15)	1,590	Apr. 1, 1945	88.4	272	196,600	317	299,700
1946	(15,16)	1,940	Oct. 10, 1945	55.0	274	198,100	219	158,400
1947	(16,17)	4,340	Aug. 18, 1947	6.4	164	119,080	131	94,890
1948	(17,18)	728	July 25, 1948	0	64.5	46,850	82.9	60,160
1949	(18,19)	2,370	Sept. 16, 1949	0	121	87,462	123	89,322
1950	(19,20)	3,530	July 14, 1950	0	110	79,910	87.1	62,980
1951	(20,21)	392	Oct. 7, 1950	0	31.4	22,750	8.0	5,795.3
1952	(21,22)	11.0	June 4, 1952	0	.02	12	.5	347.5
1953	(22,23)	577	July 13, 1953	0	3.05	2,210	2.6	1,881.1
1954	(23,24)	357	Aug. 24, 1954	0	.49	349	.5	349
1955	(24,25)	640	July 21, 1955	0	.50	364	.5	363.6
1956	(25,26)	0	-	0	0	0	0	0
1957	(26,27)	1,300	Sept. 1, 1957	0	4.48	3,250	4.5	3,247

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

363. Rio Grande near Fort Hancock, Tex.

Location.--Lat 31°17', long 105°52', 1-1/2 miles east of Fort Hancock, El Paso County.

Drainage area.--Not measured.

Gage.--Unknown.

Extremes.--Unknown.

Remarks.--No data on diversions or regulation.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	0	293	964	0	0	65	-
1901	43	0	0	0	0	0	0	1,742	1,015	67	622	241	311
1902	94	210	123	112	57	0	0	0	0	26	47	122	66
1903	17	0	0	0	0	133	436	2,182	5,459	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	0	18,050	57,350	0	0	3,870	-
1901	2,640	0	0	0	0	0	0	107,100	60,400	4,130	38,200	14,300	226,770
1902	5,750	12,480	7,740	6,880	3,150	0	0	0	0	1,590	2,920	7,240	47,750
1903	1,060	0	0	0	0	8,150	25,960	134,100	324,800	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358(13)	-		0	-	-	-	-
1901	358(13)	a2,780	June 8, 1901	0	311	226,770	343	250,100
1902	358(13)	a1,090	Aug. 31, 1902	0	66	47,750	31.8	22,840
1903	358(13)	-	-	0	-	-	-	-

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

364. Rio Grande at Fort Quitman, Tex.1/

Location.--Lat 31°05', long 105°33', on the rectified channel of the Rio Grande, 1.5 miles downstream from Fort Quitman, 11-1/2 miles south of Finlay, Hudspeth County, and at mile 1,167.1.

Drainage area.--32,035 sq mi (contributing area), of which 30,606 sq mi is in the United States and 1,429 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 3,450.57 ft above mean sea level, U.S.C. & G.S. datum. Prior to Jan. 15, 1926, staff gage at site 100 ft downstream at datum 0.30 ft lower.

Average discharge.--34 years (1923-57), 269 cfs (194,700 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 10,600 cfs Oct. 5, 1946 (gage height, 10.00 ft); no flow at times.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to Oct. 1, 1926, and subsequent to June 30, 1931. Records furnished by the State of Colorado Engineering Department Oct. 1, 1926, to Sept. 15, 1928.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	240	391	364	302	356	420	482	965	660	-
1924	620	318	381	312	529	464	531	824	521	1,000	475	704	552
1925	286	216	310	225	284	298	227	239	314	144	945	999	374
1926	338	222	205	225	156	184	383	505	458	785	321	444	354
1927	488	293	315	220	254	126	190	219	327	228	737	709	342
1928	345	339	300	203	228	121	353	413	162	200	1,080	617	364
1929	391	352	235	173	156	150	127	358	120	234	1,010	263	299
1930	397	287	212	187	168	175	193	189	429	358	415	169	266
1931	372	207	246	153	184	165	583	353	147	280	595	296	298
1932	232	277	237	132	211	188	119.9	149	158	227	405	461	233
1933	743	347	341	208	281	198	212	175	488	334	310	486	344
1934	357	219	281	203	368	271	131	119	75.3	74.9	72.0	152	194
1935	73.6	83.8	91.6	87.4	63.1	17.7	20.2	14.3	61	69.9	396	961	162
1936	337	176	207	186	139	94	78	125	134	108	179	628	199
1937	328	230	248	160	118	69.8	89.1	197	327	174	200	570	226
1938	415	296	337	237	268	284	252	235	378	990	139	987	402
1939	247	308	254	198	212	108	112	129	85.3	134	373	366	210
1940	309	250	245	248	183	106	53.9	91.0	228	178	343	117	197
1941	170	170	161	151	115	124	175	332	587	358	864	1,190	365
1942	745	411	426	326	901	632	1,290	5,030	4,030	2,280	2,060	2,470	1,720
1943	1,082	400	505	340	305	326	250	293	338	584	92.6	393	411
1944	403	291	247	280	251	189	231	303	377	463	681	690	367
1945	389	332	325	302	259	162	321	170	70.9	103	149	131	226
1946	951	374	438	286	204	140	82.5	195	69.9	50.6	40.6	218	255
1947	487	180	222	248	201	66.1	75.5	92.8	93.1	32.5	269	92.1	172
1948	89.5	126	124	135	87.2	33.5	25.8	37.7	127	63.2	82.6	103	85.9
1949	174	198	180	196	134	74.4	65.1	90.7	97.9	129	114	501	162
1950	317	290	217	175	108	69.9	72.5	108	119	534	171	196	199
1951	163	182	141	86.3	52.9	27.8	8.0	.3	.3	15.8	128	21.5	69.2
1952	22.1	27.4	33.9	26.9	18.2	5.4	0	0	6.4	37.0	3.0	4.4	15.4
1953	13.8	25.4	42.9	23.3	10.2	6.5	3.8	.6	1.6	240	37.0	4.4	34.6
1954	.8	2.4	2.1	2.7	3.0	2.3	2.1	26.8	9.8	20.1	139	1.8	18.0
1955	32.9	1.1	.7	.5	.4	.2	0	0	.1	24.1	11.6	11.4	7.02
1956	47.2	.4	.4	.4	.4	.1	0	1.1	0	3.8	91.0	0	12.3
1957	.9	0	0	0	0	0	0	12.0	0	8.7	24.9	15.0	5.18

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	14,700	21,700	22,400	17,900	21,900	25,000	29,700	59,400	39,300	-
1924	38,100	18,900	23,400	19,200	30,400	28,500	31,600	50,700	31,000	61,800	29,200	41,900	404,700
1925	17,600	12,900	19,000	13,800	15,800	18,300	13,500	14,700	18,700	8,880	58,100	59,500	270,780
1926	20,800	13,200	12,600	13,900	8,650	11,300	22,800	31,100	27,300	48,300	19,700	26,400	256,050
1927	30,000	17,400	19,400	13,500	14,100	7,720	11,300	13,500	19,500	14,000	45,300	42,200	247,920
1928	21,200	20,200	18,400	12,500	13,100	7,440	21,000	25,400	9,670	12,300	66,400	36,700	264,310
1929	24,000	20,900	14,400	10,600	8,660	9,220	7,560	22,000	7,140	14,400	62,100	15,600	216,580
1930	24,400	17,100	13,000	11,500	9,330	10,800	11,500	11,600	25,500	22,000	25,500	10,000	192,230
1931	22,900	12,300	15,100	9,410	10,200	10,100	34,700	21,700	8,750	17,220	36,600	17,640	216,620
1932	14,300	16,480	14,550	8,130	12,140	11,560	7,130	9,180	9,410	13,940	24,910	27,410	169,140
1933	45,720	20,620	20,970	12,810	15,620	12,200	12,630	10,760	29,010	20,530	19,090	28,910	248,870
1934	21,950	13,030	17,250	12,500	20,500	16,600	7,770	7,340	4,480	4,600	4,430	9,050	139,500
1935	4,520	4,990	5,640	5,370	3,510	1,090	1,200	880	3,630	4,300	24,300	57,200	116,630
1936	20,700	10,500	12,700	11,400	7,990	5,750	4,650	7,710	7,960	6,630	11,000	37,400	144,390
1937	20,200	13,700	15,200	9,850	6,550	4,290	5,300	12,100	19,500	10,700	12,300	33,900	163,590
1938	25,500	17,600	20,700	14,600	14,900	17,500	15,000	14,500	22,500	60,900	8,540	58,700	290,940
1939	15,200	18,300	15,600	12,200	11,800	6,610	6,670	7,910	5,080	8,210	22,900	21,800	152,280
1940	19,000	14,900	15,100	15,300	10,600	6,510	3,210	5,600	13,600	10,900	21,100	6,980	142,800
1941	10,500	10,100	9,920	9,260	6,380	7,650	10,400	19,700	34,900	22,000	53,100	70,600	264,510
1942	45,800	24,500	26,200	20,100	50,100	38,900	77,000	309,000	240,000	140,000	127,000	147,000	1,245,600
1943	66,500	23,800	31,000	20,900	17,000	20,100	14,900	18,000	20,100	35,900	5,690	23,400	297,290
1944	24,800	17,300	15,200	17,200	14,500	11,600	13,700	18,600	22,400	28,400	41,800	41,000	266,500
1945	23,900	19,700	20,100	18,600	14,400	9,970	19,100	10,400	4,220	6,340	9,160	7,820	163,710

1/ Published by the U. S. Geological Survey as "near Finlay", 1923-24, and as "below Old Fort Quitman, near Finlay," 1925-31.

Monthly and yearly runoff, in acre-feet, of Rio Grande at Fort Quitman, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	58,500	22,300	26,900	17,600	11,300	8,610	4,910	12,000	4,160	3,110	2,490	13,000	184,880
1947	29,900	10,700	13,600	15,200	11,200	4,060	4,490	5,710	5,540	2,000	16,500	5,480	124,380
1948	5,500	7,500	7,600	8,330	5,020	2,060	1,530	2,130	7,550	3,880	5,080	6,160	62,340
1949	10,700	11,800	11,100	12,000	7,470	4,580	3,870	5,580	5,820	7,900	7,010	29,800	117,630
1950	19,500	17,200	13,300	10,800	5,980	4,300	4,320	6,670	7,100	32,800	10,500	11,600	144,070
1951	10,000	10,800	8,660	5,300	2,940	1,710	478	19	20	973	7,900	1,280	50,080
1952	1,360	1,630	2,080	1,650	1,040	332	0	0	384	2,280	185	260	11,200
1953	848	1,510	2,640	1,440	566	402	226	39	98	14,700	2,270	262	25,000
1954	52	143	131	165	164	140	124	1,650	584	1,240	8,570	108	13,070
1955	2,030	68	43	33	20	9.9	0	.6	3.8	1,480	714	680	5,080
1956	2,900	23	24	25	23	4.2	0	65	0	235	5,600	0	8,900
1957	58	0	0	0	0	0	0	738	0	532	1,530	893	3,750

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1923	568 (13)	-	-	-	-	-	458	332,400
1924	588 (13)	2,200	July 10, 1924	75	552	404,700	514	373,800
1925	608 (13)	2,600	Sept. 11, 1925	20	374	270,780	370	267,880
1926	628 (13)	2,450	Sept. 28, 1926	45	354	256,050	380	276,250
1927	648 (13)	1,440	Sept. 21, 1927	45	342	247,920	333	240,920
1928	668 (13)	1,730	Aug. 15, 1928	34	364	264,310	363	263,810
1929	688 (13)	2,460	Aug. 20, 1929	43	299	216,580	291	211,780
1930	703 (13)	1,360	Aug. 14. 1930	64	266	192,230	259	188,030
1931	718 (1)	2,330	Apr. 17, 1931	45.7	298	216,620	292	211,650
1932	(1,2)	1,820	Sept. 30, 1932	66.6	233	169,140	291	211,120
1933	(2,3)	1,530	Oct. 4,5, 1932	74	344	248,870	295	213,790
1934	(3,4)	1,850	Oct. 13, 1933	3.4	194	139,500	141	102,420
1935	(4,5)	2,140	Aug. 31, 1935	.9	162	116,630	201	145,380
1936	(5,6)	1,840	Aug. 20, 1936	19.9	199	144,390	206	149,590
1937	(6,7)	3,040	Sept. 11, 1937	14.9	226	163,590	246	178,290
1938	(7,8)	3,180	Sept. 8, 1938	53.7	402	290,940	382	276,240
1939	(8,9)	3,390	July 30, 1939	22.3	210	152,280	210	152,180
1940	(9,10)	6,620	Aug. 26, 1940	15.8	197	142,800	171	124,320
1941	(10,11)	9,780	June 5, 1941	35.5	365	264,510	457	330,490
1942	(11,12)	6,540	Apr. 22, 1942	242	1,720	1,245,600	1,750	1,270,400
1943	(12,13)	2,840	July 1, 1943	25.8	411	297,290	322	233,290
1944	(13,14)	3,750	July 24, 1944	41.5	367	266,500	374	272,900
1945	(14,15)	1,860	Apr. 2, 1945	30.9	226	163,710	287	207,710
1946	(15,16)	7,570	Oct. 6, 1945	26.0	255	184,880	181	131,380
1947	(16,17)	10,600	Oct. 5, 1946	20.6	172	124,380	125	90,780
1948	(17,18)	5,290	Aug. 29, 1948	12.7	85.9	62,340	104	75,340
1949	(18,19)	4,170	Sept. 19, 1949	37.2	162	117,630	185	134,030
1950	(19,20)	5,490	Sept. 24, 1950	47.1	199	144,070	171	123,530
1951	(20,21)	10,400	Aug. 30, 1951	0	69.2	50,080	35.5	25,689.8
1952	(21,22)	2,780	July 15, 1952	0	15.4	11.200	15.3	11,129
1953	(22,23)	9,660	July 13, 1953	0	34.6	25,000	28.1	20,328.7
1954	(23,24)	3,250	Aug. 6, 1954	0	18.0	13,070	20.6	14,885.8
1955	(24,25)	2,400	Aug. 20, 1955	0	7.02	5,080	8.1	5,888
1956	(25,26)	4,380	Aug. 2, 1956	0	12.3	8,900	8.3	6,009.9
1957	(26,27)	2,300	Aug. 30, 1957	0	5.18	3,750	6.7	4,843

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

365. Rio Grande at La Nutria, Tex.

Location.--Lat 30°14', long 104°43', at La Nutria Station, Presidio County, 9.5 miles upstream from Candelaria, Texas and San Antonio, Chihuahua, Mexico, 62 miles upstream from Ojinaga, Chihuahua, Mexico, 64 miles upstream from Presidio, Texas, and at mile 1,040.3.

Drainage area.--33,672 sq mi (contributing area), of which 31,647 sq mi is in the United States and 2,025 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 2,871.42 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--6 years (1935-41), 283 cfs (204,900 acre-ft per year).

Extremes.--1935-41: Maximum discharge, 7,480 cfs Aug. 31, 1935 (gage height, 13.2 ft); no flow at times.

Remarks.--Reservoirs in the United States as well as many irrigation diversions and drainage returns in the United States and Mexico modify the river flow.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	48.8	45.0	8.1	0	0	88.9	45.2	655	1,050	-
1936	397	187	219	179	136	80.3	51.8	76.0	92.6	102	198	932	221
1937	331	208	224	148	115	59.3	58.1	178	234	110	216	594	206
1938	694	259	286	244	260	222	218	172	235	942	170	1,210	409
1939	220	214	212	213	174	131	76.8	112	124	117	355	255	184
1940	275	231	256	241	189	120	35.2	115	178	103	454	221	201

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande at La Nutria, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	195	174	169	160	136	133	183	344	637	556	1,250	1,780	476
1942	1,290	466	365	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	3,000	2,500	500	0	0	5,290	2,780	40,300	62,700	-
1936	24,400	11,100	13,500	11,000	7,810	4,940	3,080	4,670	5,510	6,260	12,200	55,500	159,970
1937	20,400	12,400	13,800	9,070	6,380	3,650	3,460	10,900	13,900	6,730	13,300	35,300	149,290
1938	42,700	15,400	17,600	15,000	14,400	13,600	13,000	10,500	14,000	57,900	10,500	71,800	296,400
1939	13,500	12,700	13,100	13,100	9,690	8,030	4,570	6,890	7,360	7,210	21,800	15,200	133,150
1940	16,900	13,800	15,800	14,800	10,800	7,360	1,500	7,060	10,600	6,330	27,900	13,100	145,950
1941	12,000	10,300	10,400	9,850	7,540	8,160	10,900	21,100	37,900	34,200	76,600	105,600	344,550
1942	79,300	27,700	22,400	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1935	(5,13)	a7,480	Aug. 31, 1935	-	-	-	229	166,070
1936	(5,6)	6,190	Sept. 25, 1936	0.3	221	159,970	217	157,570
1937	(6,7)	3,060	Aug. 21, 1937	0	206	149,290	246	178,390
1938	(7,8)	5,670	Sept. 14, 1938	38.5	409	296,400	359	260,000
1939	(8,9)	2,300	Aug. 16, 1939	5.6	184	133,150	194	140,350
1940	(9,10)	4,140	Oct. 23, 1939	4.9	201	145,950	182	132,150
1941	(10,11)	6,880	Sept. 25, 1941	3.5	476	344,550	608	441,250

a Maximum for period January to September.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

366. Rio Grande above Presidio, Tex. (Upper Presidio Station)

Location.--Lat 29°37', long 104°29', 7.8 miles upstream from Rio Conchos, 10 miles northwest of Presidio, Presidio County, Texas and Ojinaga, Chihuahua, Mexico, and at mile 962.5.

Drainage area.--34,988 sq mi (contributing area), of which 32,227 sq mi is in the United States and 2,761 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 2,576.66 ft above mean sea level, U.S.C. & G.S. datum. May 1900 to September 1904 and July 1909 to March 1914, staff gage at site one mile downstream at different datum. September 1904 to July 1909, staff gage at site 7 miles upstream at different datum. September 1919 to March 1920, staff gage at present site at unknown datum.

Average discharge.--47 years (1900-13, 1923-57), 418 cfs (302,600 acre-ft per year).

Extremes.--1900-14, 1923-57: Maximum discharge, 14,000 cfs June 14, 1905 (gage height, 9.12 ft at site and datum then in use); maximum gage height, 11.30 ft June 18, 1957; no flow at times.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	64	787	160	41	204	-
1901	181	0	0	0	0	0	0	701	699	137	462	453	220
1902	185	157	81	77	29	0	0	0	3	568	102	205	118
1903	3	28	8	0	0	49	280	1,217	1,734	2,709	262	79	535
1904	5	0	0	0	0	0	0	0	198	2	1	292	41
1905	3,403	870	471	384	421	2,206	1,937	4,253	10,154	2,329	523	382	2,282
1906	75	160	595	371	516	355	673	3,701	3,887	1,179	994	210	1,062
1907	251	686	1,018	834	770	585	1,904	2,630	5,379	4,421	1,685	2,905	1,923
1908	985	972	571	497	454	486	838	1,373	558	187	675	426	669
1909	0	0	42	134	94	71	185	2,385	2,575	805	71	1,375	645
1910	228	112	163	304	224	550	1,127	3,619	368	38	0	4	566
1911	0	0	0	0	18	22	26	2,268	2,631	4,743	1,450	152	953
1912	2,249	1,374	856	835	464	402	1,148	2,578	7,171	1,967	992	728	1,728
1913	136	65	364	129	357	183	114	788	409	90	14	97	229
1914	25	9	133	89	39	194	-	-	-	-	-	-	-
1920	492	179	39	121	31	86	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	1,343	746	-
1924	753	309	353	278	469	394	397	657	324	1,202	603	713	538
1925	312	195	265	174	221	210	112	234	242	306	1,208	1,049	377
1926	543	224	185	203	133	190	309	477	390	1,080	555	682	414
1927	716	296	306	171	182	99.5	82.8	104	197	52.5	623	763	299
1928	521	450	309	189	209	85.7	221	432	54.5	43.0	1,220	500	353
1929	348	435	302	170	159	141	68	244	94	156	1,020	320	288
1930	642	402	214	198	181	109	106	94	481	200	672	112	284
1931	714	224	221	162	184	127	452	381	56.5	283	512	300	301
1932	244	173	166	144	175	165	25.5	35.4	14.0	109	554	605	201
1933	1,000	373	347	233	251	193	64.7	70.6	245	325	192	549	320
1934	372	291	241	190	280	235	68.7	29.2	15.6	.22	35.3	52.7	151
1935	0	0	6.08	10.5	25.6	4.6	0	0	164	55.7	222	1,150	137

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande above Presidio, Tex. (Upper Presidio Station)--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	371	116	151	158	117	74.2	3.4	22.7	16.2	45.8	195	1,110	198
1937	409	190	209	136	91.0	29.7	5.2	2.2	232	119	159	648	186
1938	592	267	250	213	219	163	131	79.4	159	1,040	177	995	357
1939	195	176	160	186	176	103	25.2	41.2	41.8	33.7	451	225	151
1940	204	187	204	202	174	66.2	10.9	23.1	155	83.5	519	243	173
1941	142	127	124	136	123	67.5	142	626	672	694	1,130	1,290	441
1942	1,700	580	470	354	734	636	699	3,900	3,640	2,530	2,160	2,530	1,670
1943	1,290	459	503	396	345	367	158	211	316	686	45.3	208	417
1944	410	268	335	323	267	238	85.1	127	282	359	649	607	330
1945	433	330	315	277	242	134	249	34.3	32.6	521	17.8	10.1	217
1946	907	327	361	323	216	131	15.0	43.0	7.5	114	2.1	350	234
1947	636	170	201	241	185	64.2	6.8	86.6	3.7	.2	118	125	154
1948	9.8	9.3	63.2	75.3	44.8	4.7	1.4	.1	61.9	10.5	41.4	48.7	30.8
1949	61.1	81.5	94.0	182	135	22.9	5.2	24.3	10.0	44.2	208	586	120
1950	214	203	167	154	65.6	7.5	1.2	0	79.2	407	197	237	145
1951	321	107	89.6	54.4	18.2	1.5	.3	4.8	9.6	75.0	27.6	94.1	67.5
1952	0	0	0	0	0	0	4.3	0	40.8	162	2.0	0	17.6
1953	0	0	0	0	0	0	0	0	5.8	80.1	52.3	7.4	12.3
1954	2.6	0	0	0	0	0	4.8	26.9	107	59.4	392	66.5	55.5
1955	152	0	0	.7	0	0	.3	0	3.8	36.4	65.5	115	31.4
1956	177	.1	0	0	0	0	0	0	0	.8	38.2	0	18.3
1957	1.9	0	0	0	0	0	3.1	18.3	26.5	1.8	.5	11.6	5.29

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	3,930	46,800	9,830	2,500	12,100	-
1901	11,100	0	0	0	0	0	0	43,100	41,600	8,450	28,400	26,900	159,600
1902	11,400	9,320	4,980	4,740	1,610	0	0	0	159	34,900	6,290	12,200	85,600
1903	198	1,680	496	0	0	3,040	16,600	74,800	103,000	167,000	16,100	4,720	387,600
1904	317	0	0	0	0	0	0	0	11,810	99	40	17,360	29,630
1905	209,000	51,800	29,000	23,600	23,400	136,000	115,000	262,000	604,000	143,000	32,200	22,800	1,652,000
1906	4,630	9,510	36,600	22,800	28,700	21,800	40,000	228,000	231,000	72,500	61,100	12,500	769,100
1907	15,500	40,800	62,600	51,300	42,800	36,000	113,000	162,000	320,000	272,000	104,000	173,000	1,393,000
1908	60,600	57,800	35,100	30,500	26,100	29,900	49,900	84,400	33,200	11,500	41,500	25,400	485,900
1909	0	0	2,560	8,250	5,250	4,340	11,000	147,000	153,000	49,500	4,360	81,800	467,060
1910	14,000	6,660	10,000	18,700	12,400	33,800	67,100	223,000	21,900	2,340	0	248	410,148
1911	0	0	0	0	982	1,330	1,550	139,000	157,000	292,000	89,200	9,040	690,102
1912	138,000	81,800	52,600	51,300	26,700	24,700	68,300	159,000	427,000	121,000	61,000	43,300	1,254,700
1913	8,380	3,850	22,400	7,930	19,800	11,300	6,810	48,500	24,300	5,540	883	5,770	165,463
1914	1,530	535	8,150	5,440	2,140	12,000	-	-	-	-	-	-	-
1920	30,300	10,700	2,400	7,440	1,780	5,290	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	82,600	44,400	-
1924	46,300	18,400	21,700	17,100	27,000	24,200	23,600	40,400	19,300	73,900	37,100	42,400	391,400
1925	19,200	11,600	16,300	10,700	12,300	12,900	6,640	14,400	14,400	18,800	74,300	62,400	273,940
1926	33,400	13,300	11,400	12,500	7,400	11,700	18,400	29,300	23,200	66,400	34,100	40,600	301,700
1927	44,000	17,600	18,800	10,500	10,100	6,120	4,930	6,400	11,700	3,230	38,300	45,400	217,080
1928	32,100	26,800	19,000	11,600	12,000	5,270	13,200	26,500	3,240	2,640	75,200	29,800	257,350
1929	21,400	25,900	18,600	10,480	8,820	8,660	4,070	14,990	5,610	9,600	62,580	19,050	209,760
1930	39,460	23,930	13,170	12,190	10,030	6,690	6,300	5,770	28,610	12,290	41,340	6,650	206,430
1931	43,900	13,310	13,620	10,090	10,170	7,740	26,830	23,440	3,430	17,380	31,450	17,780	219,140
1932	14,900	10,240	10,280	8,860	10,040	10,160	1,520	2,170	830	6,700	34,000	36,000	145,700
1933	61,480	22,220	21,330	14,300	13,940	11,890	3,850	4,340	14,590	20,000	11,810	32,670	232,420
1934	22,870	17,290	14,790	11,700	15,600	14,500	4,090	1,800	928	13	2,170	3,140	108,891
1935	0	0	374	644	1,420	285	0	0	9,780	3,420	13,600	68,500	98,023
1936	22,800	6,920	9,130	9,690	6,740	4,560	201	1,400	965	2,810	12,000	66,000	143,216
1937	25,200	11,300	12,900	8,330	5,060	1,830	307	132	13,800	7,350	9,800	38,600	134,609
1938	36,400	15,900	15,400	13,100	12,200	9,990	7,800	4,880	9,460	63,900	10,900	59,200	259,130
1939	12,000	10,500	9,840	11,500	9,780	6,350	1,500	2,530	2,490	2,070	27,700	13,400	109,660
1940	12,600	11,100	12,500	12,400	10,000	4,070	647	1,420	9,230	5,140	31,900	14,400	125,407
1941	8,730	7,600	7,600	8,350	6,830	4,150	8,450	38,500	40,000	42,700	69,800	76,600	319,310
1942	105,000	34,500	28,900	21,800	40,800	39,100	41,600	240,000	216,000	156,000	133,000	151,000	1,207,700
1943	79,200	27,300	30,900	24,400	19,200	22,600	9,420	13,000	18,800	42,200	2,790	12,400	302,210
1944	25,200	16,000	20,600	19,800	15,400	14,600	5,060	7,780	16,800	22,100	39,900	36,100	239,340
1945	26,600	19,600	19,400	17,000	13,400	8,230	14,800	2,110	1,940	32,000	1,090	602	156,772
1946	55,800	19,500	22,200	19,900	12,000	8,040	895	2,640	446	6,990	128	20,800	169,339
1947	39,100	10,100	12,400	14,800	10,300	3,940	405	5,320	218	13	7,270	7,420	111,286
1948	604	552	3,880	4,630	2,570	288	81.5	3.6	3,680	648	2,540	2,900	22,377
1949	3,760	4,850	5,780	11,200	7,480	1,410	312	1,500	592	2,720	12,800	34,900	87,304
1950	13,200	12,100	10,300	9,450	3,640	463	69	0	4,710	25,100	12,100	14,100	105,232
1951	19,700	6,370	5,510	3,350	1,010	91	18	296	574	4,610	1,700	5,600	48,830
1952	.6	0	0	0	0	0	257	.6	2,430	9,990	120	0	12,800
1953	0	0	0	0	0	0	0	0	348	4,920	3,220	438	8,930
1954	159	0	0	0	0	0	289	1,650	6,360	3,690	24,100	3,960	40,170
1955	9,340	.6	0	42	0	0	19	0	226	2,240	4,030	6,830	10,900
1956	10,900	5.0	0	0	0	0	0	0	0	49	2,350	0	13,300
1957	115	0	0	0	0	0	186	1,120	1,580	108	29.4	692	3,830

Yearly discharge, in cubic feet per second, of Rio Grande above Presidio, Tex. (Upper Presidio Station)

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1901	358(13)	a1,780	Sept. 5, 1901	0	220	159,600	241	174,200
1902	358(13)	a2,740	July 23, 1902	0	118	85,600	86	62,300
1903	358(13)	a6,600	July 8,9, 1903	0	535	387,600	532	385,300
1904	358(13)	a2,140	Sept. 6, 1904	0	41	29,630	440	319,200
1905	358(13)	14,000	June 14, 1905	0	2,282	1,652,000	1,951	1,413,000
1906	358(13)	a7,680	June 3, 1906	35	1,062	769,100	1,156	837,300
1907	358(13)	a6,570	Aug. 31, 1907	35	1,923	1,393,000	1,971	1,427,000
1908	358(13)	a2,510	Apr. 26, Aug. 5, 1908	0	669	485,900	461	334,900
1909	358(13)	a6,060	Sept. 15, 1909	0	645	467,060	684	495,000
1910	358(13)	a6,590	May 15, 1910	0	561	410,148	524	379,000
1911	358(13)	a7,030	July 22, 1911	0	953	690,000	1,329	962,500
1912	358(13)	15,200	June 12, 1912	30	1,728	1,254,000	1,400	1,016,000
1913	358(13)	a1,380	May 10, 1913	0	229	165,500	195	141,100
1914	358(13)	-	-	0	-	-	-	-
1920	508	-	-	-	-	-	-	-
1923	(13)	-	-	-	-	-	-	-
1924	(13)	-	-	-	538	391,400	484	352,100
1925	(13)	-	-	-	377	273,940	392	284,940
1926	(13)	-	-	-	414	301,700	445	324,000
1927	(13)	-	-	-	299	217,080	296	214,580
1928	(4)	5,750	Aug. 18, 1928	0	353	257,350	338	245,350
1929	(3,4)	3,200	Sept. 10, 1929	0	288	209,760	304	220,420
1930	(3)	2,450	Aug. 11, 1930	30	284	206,430	277	200,700
1931	(3,1)	4,850	Sept. 1931	0	301	219,140	254	183,730
1932	(20,1,2)	2,400	Oct. 1, 1931	0	201	145,700	297	215,310
1933	(2,3)	3,200	Oct. 2, 1932	19.1	320	232,420	252	182,340
1934	(3,4)	1,770	Aug. 27, 1934	0	151	108,891	75.0	54,315
1935	(4,5)	1,970	July 3, 1935	0	137	98,023	189	136,679
1936	(5,6)	2,730	Sept. 28, 1936	0	198	143,216	212	153,766
1937	(6,7)	2,020	July 12, 1937	0	186	134,609	211	152,909
1938	(7,8)	2,520	July 25, 1938	2.1	357	259,130	309	223,770
1939	(8,9)	1,640	Aug. 16, 1939	.4	151	109,660	157	113,520
1940	(9,10)	2,040	Sept. 3, 1940	0	173	125,407	156	113,137
1941	(10,11)	3,970	Sept. 30, 1941	2.2	441	319,310	641	463,780
1942	(11,12)	5,160	May 26, 1942	224	1,670	1,207,700	1,630	1,176,700
1943	(12,13)	2,420	Oct. 1, 1942	11.6	420	302,210	313	226,610
1944	(13,14)	2,130	July 24, 1944	11.4	330	239,340	335	243,140
1945	(14,15)	3,600	July 4, 1945	4.0	217	156,772	261	188,672
1946	(15,16)	2,550	Oct. 6, 1945	1.0	234	169,339	184	133,439
1947	(16,17)	3,290	Oct. 8, 1946	0	154	111,286	75.6	54,722
1948	(17,18)	1,710	Sept. 9, 1948	0	30.8	22,377	43.7	31,731
1949	(18,19)	1,920	Sept. 20, 1949	0	120	87,304	150	108,514
1950	(19,20)	1,580	July 31, 1950	0	145	105,232	140	101,212
1951	(20,21)	1,720	Oct. 1, 1950	0	67.5	48,830	23.8	17,250
1952	(21,22)	1,020	June 28, 1952	0	17.6	12,800	17.6	12,798
1953	(22,23)	731	July 14, 1953	0	12.3	8,930	12.5	9,085
1954	(23,24)	1,220	Aug. 29, 1954	0	55.5	40,170	68.2	49,350
1955	(24,25)	1,010	Sept. 25, 1955	0	31.4	10,900	33.6	24,292
1956	(25,26)	960	Oct. 4, 1955	0	18.3	13,300	3.5	2,514
1957	(26,27)	632	June 18, 1957	0	5.29	3,830	8.6	6,195

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

367. Rio Grande above Presidio, Tex. (Lower Presidio Station)

Location.--Lat 29°34', long 104°25', 1.7 miles upstream from the International bridge between Presidio, Presidio County, Texas and Ojinaga, Chihuahua, Mexico, 2.0 miles downstream from the Rio Conchos, and at mile 952.7.

Drainage area.--64,285 sq mi (contributing area), of which 32,248 sq mi is in the United States and 32,037 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 2,556.42 ft above mean sea level, U.S.C. & G.S. datum. Prior to June 14, 1932, staff gage 5-1/2 miles downstream at different datum.

Average discharge.--44 years (1900-13, 1923-54), 1,887 cfs (1,366,000 acre-ft per year).

Extremes.--1900-15, 1923-54: Maximum discharge, 162,000 cfs Sept. 11, 1904 (gage height, 26.35 ft); no flow at times in 1953.

Remarks.--Flow regulated by reservoirs in the United States and Mexico.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	274	1,057	4,576	6,201	2,916	-
1901	1,720	410	237	181	314	198	41	720	763	999	1,793	2,206	798
1902	1,223	593	300	259	141	59	24	11	48	5,918	5,702	10,755	2,090
1903	1,305	590	493	357	1,153	489	405	1,305	2,530	3,134	1,823	2,512	1,341
1904	1,959	391	251	179	118	76	25	85	853	621	928	24,894	2,501
1905	9,903	2,636	2,062	1,109	1,199	2,932	2,396	4,608	11,065	5,465	7,152	7,879	4,885

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande above Presidio, Tex. (Lower Presidio Station)--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	4,724	4,387	4,852	1,819	3,883	1,646	1,085	3,912	4,279	10,240	18,260	7,491	5,606
1907	2,088	1,461	1,728	1,455	1,166	775	1,945	2,792	5,802	5,471	3,709	8,852	3,121
1908	2,325	5,286	4,562	1,146	855	651	857	1,436	691	1,385	6,332	6,960	2,710
1909	546	416	528	635	558	274	349	2,709	3,064	5,876	6,596	7,541	2,435
1910	1,175	569	1,139	1,486	840	828	1,432	3,641	1,159	2,140	715	2,120	1,443
1911	520	248	84	36	190	126	201	3,139	6,359	8,487	3,914	4,376	2,319
1912	4,928	3,157	1,844	1,443	945	706	1,230	2,719	7,289	2,219	5,964	10,718	3,589
1913	2,967	772	899	426	1,582	1,740	294	998	1,040	518	1,116	2,502	1,236
1914	376	77	210	222	167	301	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	3,188	13,344	-
1924	3,285	1,586	1,854	2,667	1,462	1,085	899	1,098	887	1,439	774	2,034	1,589
1925	2,033	1,034	1,015	1,096	1,098	1,122	1,329	2,635	1,459	3,757	10,980	11,230	3,232
1926	5,074	2,067	1,659	1,773	1,567	1,299	1,144	1,343	1,271	1,952	5,025	5,630	2,484
1927	4,228	2,084	1,821	1,594	1,559	1,400	1,413	1,203	1,444	1,457	2,358	2,555	1,926
1928	1,935	1,659	1,740	1,643	1,733	1,299	1,257	1,472	1,278	1,756	4,098	1,949	1,818
1929	1,903	2,118	1,887	1,558	1,622	1,454	1,368	1,579	1,397	1,566	2,732	2,538	1,810
1930	2,082	1,618	1,316	1,273	911	503	375	371	867	1,018	3,188	286	1,151
1931	1,483	711	688	494	708	881	1,294	1,174	1,012	1,605	1,919	1,294	1,105
1932	1,316	1,099	1,137	973	1,080	892	515	324	170	560	2,769	9,103	1,662
1933	13,970	1,425	1,170	1,060	958	902	866	648	1,786	1,303	1,567	9,512	2,931
1934	3,622	1,521	1,369	1,240	1,400	1,200	891	808	986	989	736	703	1,289
1935	667	765	724	735	611	345	75	59.5	1,050	737	1,200	5,350	1,027
1936	2,260	873	584	550	670	468	186	201	155	388	827	6,640	1,150
1937	2,030	1,070	1,190	919	930	605	189	323	829	713	618	3,430	1,071
1938	1,750	780	1,040	1,210	939	611	261	295	1,410	9,180	4,160	20,200	3,486
1939	2,970	1,640	1,130	1,130	1,260	894	310	256	315	741	3,450	954	1,260
1940	1,160	1,180	906	1,010	923	515	214	539	986	1,390	2,010	1,490	1,030
1941	706	635	510	647	1,050	620	960	2,870	1,500	2,970	4,940	8,710	2,180
1942	14,100	2,360	1,570	1,350	1,520	1,410	1,090	4,390	4,490	3,330	8,410	22,200	5,530
1943	5,200	2,290	1,780	1,420	1,400	1,420	557	665	1,100	3,670	477	1,460	1,790
1944	2,670	890	1,220	1,290	897	874	467	395	535	1,040	1,030	6,890	1,510
1945	2,210	963	894	1,160	975	655	489	170	255	3,750	512	124	1,020
1946	4,100	1,350	722	1,030	873	783	479	326	366	875	299	3,950	1,260
1947	3,300	1,060	897	1,160	1,050	612	141	314	220	145	2,120	3,290	1,190
1948	550	1,020	882	712	796	764	205	251	383	534	401	508	583
1949	640	833	613	775	1,240	852	249	293	230	1,200	2,330	2,220	954
1950	1,520	1,270	912	1,000	939	802	296	312	769	2,040	1,280	1,900	1,090
1951	1,520	810	707	564	970	637	273	514	633	860	424	438	688
1952	326	348	317	287	237	159	49.3	73.6	834	3,430	300	204	551
1953	195	178	188	233	203	133	7.8	28.7	76.3	286	166	402	175
1954	98.4	160	162	189	192	87.8	21.1	66.9	121	312	2,580	928	412
1955	617	265	195	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	16,800	62,900	281,000	381,000	173,500	-
1901	106,000	24,400	14,600	11,100	17,400	12,200	2,420	44,300	45,400	61,400	110,000	131,000	580,200
1902	75,200	35,300	18,500	15,900	7,840	3,610	1,450	674	2,870	364,000	351,000	640,000	1,516,000
1903	80,200	35,100	30,300	22,000	64,000	30,100	24,100	80,300	151,000	193,000	112,000	149,000	971,100
1904	120,000	23,200	15,500	11,000	6,810	4,670	1,520	5,230	50,800	38,200	57,100	1,480,000	1,814,000
1905	609,000	157,000	127,000	68,200	66,600	180,000	143,000	283,000	658,000	336,000	440,000	469,000	3,536,800
1906	290,000	261,000	298,000	112,000	216,000	101,000	64,600	241,000	255,000	630,000	1,140,000	446,000	4,055,000
1907	128,000	86,900	106,000	89,500	64,800	47,600	116,000	172,000	345,000	336,000	240,000	527,000	2,259,000
1908	143,000	315,000	281,000	70,400	49,200	40,000	51,000	88,300	41,100	85,200	389,000	414,000	1,967,000
1909	33,600	24,800	32,400	39,100	31,000	16,800	20,800	167,000	182,000	361,000	406,000	449,000	1,763,000
1910	72,200	33,900	70,000	91,400	46,600	50,900	85,200	224,000	69,000	132,000	44,000	126,000	1,045,000
1911	32,000	14,800	5,140	2,230	10,600	7,780	12,000	193,000	378,000	522,000	241,000	260,000	1,679,000
1912	303,000	188,000	113,000	88,700	54,300	43,400	73,200	167,000	434,000	136,000	367,000	638,000	2,606,000
1913	182,000	45,900	55,300	26,200	87,900	107,000	17,500	61,400	61,900	31,900	68,600	149,000	894,600
1914	23,100	4,570	12,900	13,600	9,260	18,500	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	196,000	794,000	-
1924	202,000	94,400	114,000	164,000	84,100	66,700	53,500	67,500	52,800	88,500	47,600	121,000	1,156,100
1925	125,000	61,500	62,400	67,400	61,000	69,000	79,100	162,000	86,800	231,000	675,000	668,000	2,348,200
1926	312,000	123,000	102,000	109,000	87,000	79,900	68,100	82,600	75,600	120,000	309,000	335,000	1,803,200
1927	260,000	124,000	112,000	98,000	86,600	86,100	84,100	74,000	85,900	89,600	145,000	152,000	1,397,300
1928	119,000	98,700	107,000	101,000	99,700	79,900	74,800	90,500	75,900	108,000	252,000	116,000	1,322,500
1929	117,000	126,000	116,000	95,800	90,100	89,400	81,400	97,100	83,100	96,300	168,000	151,000	1,311,200
1930	128,000	96,300	80,900	78,300	50,600	30,900	22,300	22,800	51,600	62,600	196,000	17,000	837,300
1931	91,200	42,300	42,300	30,400	39,300	54,200	77,000	72,200	60,200	98,700	118,000	77,000	802,800
1932	80,900	65,400	69,900	59,800	62,100	54,900	30,700	19,900	10,100	34,400	170,000	542,000	1,200,100
1933	859,000	84,800	72,200	65,000	53,200	55,400	51,500	39,800	106,000	80,100	96,400	566,000	2,129,400
1934	223,000	90,500	84,200	76,200	77,900	73,600	53,000	49,700	58,700	60,800	45,200	41,800	934,600
1935	41,000	45,500	44,500	45,200	33,900	21,200	4,460	3,660	62,300	45,300	73,500	318,000	738,520
1936	139,000	51,900	35,900	33,800	38,500	28,800	11,000	12,300	9,250	23,900	50,900	395,000	830,250
1937	125,000	63,400	73,000	56,500	51,700	37,200	11,200	19,900	49,300	43,800	38,000	204,000	773,000
1938	107,000	46,400	64,000	74,400	52,200	37,600	15,600	18,100	83,800	564,000	256,000	1,200,000	2,519,100
1939	183,000	97,600	69,500	69,200	70,000	55,000	18,400	15,800	19,400	45,600	212,000	56,800	912,300
1940	71,200	70,400	55,700	62,300	53,100	31,600	12,700	33,200	58,700	85,700	124,000	88,800	747,400

Monthly and yearly runoff, in acre-feet, of Rio Grande above Presidio, Tex. (Lower Presidio Station)--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	43,400	37,800	31,400	39,800	58,200	38,100	57,200	177,000	89,500	183,000	304,000	518,000	1,577,400
1942	864,000	141,000	96,300	83,300	84,400	87,000	65,000	270,000	267,000	204,000	517,000	1,324,000	4,003,000
1943	320,000	136,000	109,000	87,000	78,000	87,100	33,100	40,900	65,500	226,000	29,300	87,100	1,299,000
1944	164,000	53,000	74,900	79,500	51,600	53,700	27,800	24,300	31,900	63,800	63,400	410,000	1,097,900
1945	136,000	57,300	55,000	71,100	54,100	40,300	29,100	10,500	15,200	230,000	31,500	7,370	737,470
1946	252,000	80,200	44,400	63,600	48,500	48,100	28,500	20,100	21,800	53,800	18,400	235,000	914,400
1947	203,000	63,200	55,200	71,400	58,300	37,700	8,410	19,300	13,100	8,910	131,000	196,000	865,520
1948	33,800	60,400	54,300	43,800	45,800	47,000	12,200	15,500	22,800	32,900	24,600	30,200	423,300
1949	39,400	49,600	37,700	47,600	68,600	52,400	14,800	18,000	13,700	73,500	144,000	132,000	691,300
1950	93,500	75,900	56,100	61,600	52,200	49,300	17,600	19,200	45,700	126,000	78,900	113,000	789,000
1951	93,500	48,200	43,500	34,700	53,900	39,200	16,200	31,600	37,700	52,900	26,100	26,100	503,600
1952	20,100	20,700	19,500	17,700	13,600	9,790	2,930	4,530	49,600	211,000	18,400	12,100	400,000
1953	12,000	10,600	11,600	14,300	11,300	8,170	464	1,760	4,540	17,600	10,200	23,900	126,400
1954	6,050	9,510	9,940	11,600	10,700	5,400	1,250	4,110	7,210	19,200	158,000	55,200	298,200
1955	37,900	15,700	12,000	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358	a13,640	Aug. 8, 1900	-	-	-	-	-
1901	358	a5,410	Sept. 18, 1901	20	798	580,200	780	564,220
1902	358	a45,000	Sept. 7, 1902	10	2,090	1,516,000	2,117	1,532,944
1903	358(13)	a7,200	July 9, 1903	105	1,341	971,100	1,360	984,200
1904	358(13)	162,000	Sept. 11, 1904	5	2,501	1,814,000	3,511	2,548,330
1905	358(13)	a18,900	Oct. 16, 1904	800	4,885	3,536,800	4,826	3,492,800
1906	358(13)	a37,400	Aug. 28, 1906	670	5,606	4,055,000	4,876	3,526,500
1907	358(13)	a13,500	Sept. 8, 1907	820	3,121	2,259,000	3,696	2,676,900
1908	358	a34,000	Aug. 11, 1908	30	2,710	1,967,000	1,818	1,319,000
1909	358	a14,820	July 10, 1909	160	2,435	1,763,000	2,553	1,848,800
1910	358(13)	a6,910	June 29, 1910	125	1,443	1,045,000	1,272	921,040
1911	358(13)	a30,190	June 15, 1911	15	2,319	1,679,000	3,082	2,230,610
1912	358(13)	a22,400	Sept. 15, 1912	330	3,589	2,606,000	3,148	2,284,800
1913	358	a9,830	Sept. 9, 1913	130	1,236	894,600	900	651,970
1914	(13)	-	-	-	-	-	-	-
1924	(13)	-	-	-	1,589	1,156,100	1,369	994,600
1925	(13)	-	-	-	3,232	2,348,200	3.626	2,636,300
1926	(13)	-	-	-	2,484	1,803,200	2,428	1,762,200
1927	(13)	-	-	-	1,926	1,397,300	1,693	1,226,000
1928	(13)	-	-	-	1,818	1,322,500	1,866	1,356,800
1929	(13)	-	-	-	1,810	1,311,200	1,736	1,257,400
1930	(13)	-	-	-	1,151	837,300	973	707,900
1931	(13,1)	-	-	-	1,105	802,800	1,161	843,200
1932	(1,2)	-	-	-	1,662	1,200,100	2,746	1,999,900
1933	(2,3)	106,450	Oct. 2, 1932	421	2,931	2,129,400	2,087	1,511,100
1934	(3,4)	6,230	Oct. 7, 1933	375	1,289	934,600	923	667,900
1935	(4,5)	14,800	Sept. 5, 1935	25	1,027	738,520	1,150	834,320
1936	(5,6)	26,700	Sept. 26, 1936	36.9	1,150	830,250	1,190	864,850
1937	(6,7)	14,900	Sept. 24, 1937	23.2	1,071	773,000	1,010	729,000
1938	(7,8)	68,100	Sept. 22, 1938	48.4	3,486	2,519,100	3,660	2,651,800
1939	(8,9)	14,500	Aug. 8, 1939	121	1,260	912,300	1,050	759,500
1940	(9,10)	25,200	May 8, 1940	104	1,030	747,400	913	662,700
1941	(10,11)	31,600	May 25, 1941	102	2,180	1,577,400	3,540	2,566,100
1942	(11,12)	59,400	Sept. 8, 1942	527	5,530	4,003,000	4,790	3,466,700
1943	(12,13)	14,100	Oct. 1, 1942	173	1,790	1,299,000	1,420	1,025,900
1944	(13,14)	43,900	Sept. 14, 1944	190	1,510	1,097,900	1,450	1,054,300
1945	(14,15)	14,800	July 9, 1945	59.6	1,020	737,470	1,200	865,770
1946	(15,16)	23,900	Oct. 10, 1945	88.1	1,260	914,400	1,190	859,200
1947	(16,17)	12,700	Oct. 4, 1946	68.4	1,190	865,520	957	692,620
1948	(17,18)	7,860	July 31, 1948	80.0	583	423,300	553	401,500
1949	(18,19)	11,100	Aug. 11, 1949	97.0	954	691,300	1,090	790,100
1950	(19,20)	11,000	Sept. 22, 1950	198	1,090	789,000	1,030	748,700
1951	(20,21)	8,310	Oct. 1, 1950	160	668	503,600	523	378,700
1952	(21,22)	22,500	July 14, 1952	6.6	551	400,000	515	373,850
1953	(22,23)	4,100	June 10, 1953	.1	175	126,400	163	117,734
1954	(23,24)	14,200	Aug. 25, 1954	.7	412	298,200	467	338,270
1955	(24,25)	-	-	-	-	-	-	-

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

368. Alamito Creek near Presidio, Texas

Location.--Lat 29°31', long 104°18', 1,800 ft upstream from mouth and 6 miles downstream from Presidio, Presidio County, Texas, and Ojinaga, Chihuahua, Mexico.

Drainage area.--1,504 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is 2,541.61 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--25 years (1932-57), 20.4 cfs (14,770 acre-ft per year).

Extremes.--1932-57: Maximum discharge, 16,400 cfs Sept. 24, 1955; maximum gage height, 8.33 ft Oct. 2, 1932 (backwater from the

368. Alamito Creek near Presidio, Tex.--Continued

Rio Grande); minimum discharge, 0.1 cfs July 25, 1953.

Remarks.--A small irrigation reservoir (San Estaban) 10.5 miles south of Marfa, Tex., and irrigation diversions below the reservoir modify the flow.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	2.5	3.0	3.0	3.0	3.2	87.7	61.0	266.0	89.2	-
1933	2.6	2.8	3.4	2.59	3.01	2.97	2.82	3.08	80.1	4.05	22.4	56.2	15.5
1934	8.42	5.37	3.90	3.0	3.0	3.0	3.22	10.0	3.47	5.85	63.4	3.0	9.64
1935	2.68	2.0	2.1	2	2	2	2	10	107	108	70.1	174	40.3
1936	47.2	3.8	3.8	3.8	3.8	3.7	2.7	138	14.8	92.7	59.0	330	58.6
1937	5.0	4.0	4.0	4.3	4.1	3.4	3.5	3.5	4.3	48.4	115	37.6	19.8
1938	36.2	8.8	3.0	3.0	3.0	2.7	3.2	3.4	19.3	97.6	6.1	64.0	20.9
1939	3.0	3.0	3.4	4.0	4.2	4.4	8.7	5.9	43.2	29.1	35.0	14.0	13.2
1940	4.0	4.0	4.0	4.0	4.0	4.0	4.0	19.3	32.6	27.1	51.9	4.2	13.7
1941	100	2.2	1.9	3.0	3.2	3.4	12.5	116	78.6	36.6	68.8	7.1	36.5
1942	313	13.6	6.4	3.5	3.1	3.0	3.0	3.0	20.0	50.8	45.8	60.9	44.4
1943	9.0	4.0	6.6	3.7	3.5	3.5	3.0	33.6	19.6	22.6	3.5	5.1	9.88
1944	3.4	3.3	3.5	3.6	3.5	3.5	3.5	25.6	63.0	60.1	82.3	219	39.4
1945	8.2	3.5	3.5	3.5	3.5	3.5	3.6	3.9	3.6	75.5	15.0	3.5	11.0
1946	42.1	3.5	3.5	3.5	3.5	3.5	3.5	5.4	4.8	9.3	4.2	24.2	9.30
1947	109	3.5	3.5	3.5	3.5	3.5	3.5	4.1	3.9	3.8	73.9	13.3	19.3
1948	6.0	3.5	4.0	3.5	3.5	3.5	4.2	3.5	8.6	56.3	5.0	9.9	9.36
1949	4.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	26.7	32.8	24.8	14.4	10.4
1950	5.2	3.0	3.0	3.0	3.0	3.0	6.4	11.3	12.2	32.7	7.6	44.3	11.2
1951	37.0	1.3	1.4	1.3	1.4	1.3	1.2	1.4	.9	2.0	8.5	30.1	7.35
1952	1.4	1.0	1.2	1.3	1.3	1.2	2.0	5.2	99.6	301	1.2	2.9	35.2
1953	1.4	1.2	1.5	1.1	1.2	3.2	1.0	2.1	1.8	39.6	35.6	16.3	8.94
1954	.6	.6	.6	.8	.7	.8	18.0	2.2	57.6	7.7	91.1	2.2	15.3
1955	2.8	1.1	1.2	1.1	1.1	1.2	4.8	1.6	27.3	88.8	34.1	67.4	19.5
1956	47.3	1.7	1.8	1.9	1.7	1.6	1.3	26.0	4.3	.8	21.9	2.3	9.48
1957	37.7	.9	1.0	1.0	56.2	1.2	15.9	15.5	14.9	29.1	31.9	44.8	20.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	154	173	185	179	200	5,220	3,750	16,330	5,310	-
1933	157	166	207	159	167	183	168	189	477	249	1,380	3,340	6,842
1934	518	319	240	184	167	184	191	612	206	359	4,000	179	7,159
1935	165	119	131	123	111	123	119	613	6,360	6,650	4,310	10,400	29,224
1936	2,900	226	234	234	219	226	159	8,520	882	5,700	3,630	19,600	42,530
1937	310	238	246	265	225	210	208	216	256	2,980	7,100	2,200	14,454
1938	2,200	524	184	184	167	164	188	207	1,150	6,000	378	3,810	15,156
1939	184	179	207	246	234	270	519	365	2,570	1,790	2,150	833	9,547
1940	246	238	246	246	230	246	238	1,190	1,940	1,660	3,190	250	9,920
1941	6,160	128	117	186	180	210	743	7,140	4,680	2,250	4,230	424	26,448
1942	19,200	807	394	216	171	184	179	184	1,190	3,120	2,820	3,630	32,095
1943	550	238	408	228	194	215	179	2,070	1,160	1,390	216	305	7,153
1944	207	194	215	219	201	215	208	1,570	3,750	3,690	5,060	13,000	28,529
1945	504	209	215	215	194	215	214	242	214	4,640	925	208	7,995
1946	2,590	208	215	215	194	215	208	331	288	571	256	1,440	6,731
1947	6,680	208	215	215	194	215	208	249	229	232	4,540	793	13,978
1948	371	208	248	215	201	215	250	216	514	3,460	305	591	6,794
1949	246	179	184	184	167	184	193	197	1,590	2,020	1,520	854	7,518
1950	323	179	184	185	168	184	382	696	726	2,010	466	2,640	8,143
1951	2,270	80	84	78	80	83	72	88	51	122	520	1,790	5,320
1952	86	62	76	80	72	71	117	322	5,930	18,500	73	175	25,570
1953	89	73	90	68	64	200	58	130	109	2,440	2,190	970	6,480
1954	37	36	39	46	42	46	1,070	135	3,430	473	5,600	128	11,080
1955	172	64	74	70	60	74	289	101	1,620	5,460	2,100	4,010	14,090
1956	2,910	99	108	116	98	97	78	1,600	258	47	1,340	134	6,890
1957	2,320	53	60	60	3,120	76	948	951	884	1,790	1,960	2,660	14,880

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	-	-	-	-	-	44.1	32,031
1933	(2,3)	4,490	Aug. 27, 1933	1.60	15.5	6,842	10.21	7,389
1934	(3,4)	8,200	Aug. 25, 1934	2.0	9.64	7,159	8.97	6,497
1935	(4,5)	7,250	Sept. 4, 1935	1	40.3	29,224	44.4	32,169
1936	(5,6)	7,120	May 28, 1936	2.4	58.6	42,530	55.0	39,964
1937	(6,7)	9,670	July 20, 1937	2.5	19.8	14,454	22.7	16,568
1938	(7,8)	8,000	Oct. 13, 1937	2.5	20.9	15,156	17.7	12,818
1939	(8,9)	4,600	June 21, 1939	3.0	13.2	9,547	13.4	9,707
1940	(9,10)	2,700	Aug. 12, 1940	4.0	13.7	9,920	21.5	15,595
1941	(10,11)	9,550	June 28, 1941	1.9	36.5	26,448	55.9	40,444
1942	(11,12)	6,450	Oct. 24, 1941	3.0	44.4	32,095	17.8	12,890

Yearly discharge, in cubic feet per second, of Alamito Creek near Presidio, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1943	(12,13)	6,950	May 28, 1943	3.0	9.88	7,153	9.1	6,573
1944	(13,14)	4,400	Sept. 4, 1944	3.0	39.4	28,529	39.7	28,841
1945	(14,15)	7,400	July 3, 1945	3.0	11.0	7,995	13.9	10,080
1946	(15,16)	4,300	Sept. 19, 1946	3.0	9.30	6,731	14.9	10,821
1947	(16,17)	8,320	Aug. 15, 1947	3.5	19.3	13,978	10.6	7,702
1948	(17,18)	7,910	July 31, 1948	2.0	9.36	6,794	9.1	6,576
1949	(18,19)	2,940	July 25, 1949	2.5	10.4	7,518	10.5	7,595
1950	(19,20)	7,250	July 31, 1950	2.0	11.2	8,143	13.7	9,891
1951	(20,21)	9,600	Sept. 10, 1951	.4	7.35	5,320	4.3	3,109
1952	(21,22)	13,900	July 8, 1952	.6	35.2	25,570	35.3	25,593
1953	(22,23)	6,290	July 26, 1953	.1	8.94	6,480	8.8	6,341
1954	(23,24)	15,200	June 5, 1954	.3	15.3	11,080	15.6	11,280
1955	(24,25)	16,400	Sept. 24, 1955	.2	19.5	14,090	23.3	16,900
1956	(25,26)	7,000	Oct. 4, 1955	.2	9.48	6,890	8.4	6,201
1957	(26,27)	14,300	Sept. 22, 1957	.2	20.6	14,880	18.2	13,188

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

369. Rio Grande below Presidio, Tex. (Lower Presidio Station)

Location.--lat 29°31', long 104°17', 0.4 mile downstream from Alamito Creek, 10.1 miles downstream from the International Highway bridge between Presidio, Presidio County, Texas and Ojinaga, Chihuahua, Mexico, and at mile 940.9.

Drainage area.--66,203 sq mi (contributing area), of which 34,098 sq mi is in the United States and 32,105 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 2,527.99 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1955-57: Maximum discharge, 12,800 cfs Sept. 24, 1955 (gage height, 13.75 ft); minimum, 0.2 cfs at times in 1955.

Remarks.--Flow regulated by reservoirs in the United States and Mexico.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	243	240	125	5.2	3.6	43.7	1,300	2,650	1,590	611
1956	2,310	523	351	284	325	209	51.6	116	166	116	480	521	457
1957	391	387	360	372	480	232	136	517	387	252	826	395	395

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	14,900	13,300	7,710	309	219	2,600	79,900	163,000	94,900	-
1956	142,000	31,100	21,600	17,400	18,700	12,900	3,070	7,130	9,870	7,120	29,500	31,000	331,400
1957	24,000	23,000	22,100	22,900	26,700	14,200	8,100	31,800	23,000	15,500	50,800	23,500	285,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	(24,25)	-	-	-	-	-	789	571,538
1956	(25,26)	9,390	Oct. 4, 1955	14.3	457	331,400	283	205,790
1957	(26,27)	7,090	June 18, 1957	.7	395	285,600	474	343,100

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

370. Terlingua Creek near Terlingua, Tex.

Location.--lat 29°12', long 103°36', 2.7 miles upstream from mouth, and 12 miles south of Terlingua, Brewster County, Tex.

Drainage area.--1,070 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is 2,200.64 ft above mean sea level, U.S.C. & G.S. datum. Prior to June 11, 1954, water-stage recorder 0.3 mile downstream at datum 4.65 ft lower. June 11, 1954, to June 7, 1956, water-stage recorder at present site at datum 2.88 ft higher.

Average discharge.--25 years (1932-57), 44.2 cfs (32,000 acre-ft per year).

Extremes.--1932-57: Maximum discharge, 34,900 cfs May 24, 1935 (gage height, 17.59 ft, at site and datum then in use); no flow Sept. 29-30, 1937.

Remarks.--Irrigation diversions modify the flow of this spring-fed creek at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	3.0	2.5	2.5	2.5	36	16.6	17.4	434	303	-
1933	22.6	2.78	2.69	3.00	3.00	3.00	3.63	3.49	7.25	10.1	28.0	65.3	12.9
1934	130	4.37	3.48	2.55	2.00	1.44	1.12	1.90	38.6	25.7	4.14	26.7	20.2
1935	.83	1.1	1.5	1.3	1.6	1.2	.9	64.6	353	176	110	413	93.8

Monthly and yearly mean discharge, in cubic feet per second, of Terlingua Creek near Terlingua, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	132	3.9	1.9	1.48	1.60	6.50	3.90	423	40.2	89.2	36.9	378	93.2
1937	4.0	3.2	3.8	3.2	3.0	2.9	8.6	284	922	67.9	73.7	228	134
1938	98.3	18.4	50.1	12.1	4.0	8.0	6.1	28.6	181	435	17.0	137	83.0
1939	2.3	2.4	1.9	2.7	2.1	2.3	20.7	347	264	274	157	3.8	90.9
1940	3.0	50.1	1.9	1.5	2.0	2.1	2.0	13.4	6.8	15.7	23.8	5.2	10.6
1941	88.2	2.0	2.0	2.8	1.3	1.8	261	55.2	76.9	110.0	30.8	42.1	56.2
1942	24.2	1.9	3.7	1.5	1.5	1.2	2.1	3.7	22.7	25.5	22.6	44.8	13.0
1943	5.0	2.7	7.4	1.7	1.5	1.5	2.7	6.9	1.0	19.4	2.0	20.6	6.1
1944	2.0	3.6	2.5	2.1	2.7	2.0	2.0	23.6	16.1	25.2	86.3	30.5	16.7
1945	9.6	3.0	3.0	3.0	3.0	3.0	8.3	2.9	4.7	80.0	13.5	22.2	13.1
1946	55.2	3.0	2.8	7.5	4.8	4.3	5.2	55.5	15.6	32.6	5.3	33.1	18.9
1947	36.6	2.8	6.3	3.8	2.9	3.2	3.3	20.1	20.6	23.1	56.8	3.9	15.5
1948	2.6	3.1	3.1	3.5	2.9	2.6	2.3	21.9	64.4	196	21.6	29.3	29.6
1949	5.1	2.0	2.2	2.8	2.5	2.1	11.6	3.3	31.4	180	138	125	42.6
1950	73.7	3.2	3.5	2.8	2.8	3.3	14.4	11.9	182	229	123	324	81.2
1951	88.2	3.8	3.4	3.2	2.9	39.3	2.6	75.8	37.8	21.8	35.3	69.0	48.9
1952	7.2	2.2	2.3	2.1	2.2	2.3	43.2	57.4	163	467	2.2	2.1	63.2
1953	2.1	2.1	21.9	2.0	2.3	3.2	1.9	9.8	24.1	143	32.3	55.2	25.2
1954	10.1	1.5	1.5	1.5	1.5	1.5	108	76.5	146	8.4	37.5	6.5	33.2
1955	2.1	1.9	1.8	1.9	1.9	1.9	9.3	114	64.5	168	17.6	190	48.1
1956	9.0	2.4	2.2	3.1	2.5	2.8	2.3	55.4	35.3	30.5	43.7	24.0	17.9
1957	74.0	2.2	1.9	1.9	79.3	2.2	10.7	76.6	48.1	85.4	26.5	45.3	37.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	185	144	154	149	2,220	988	1,070	26,680	18,040	-
1933	1,390	160	160	184	167	184	216	215	431	621	1,720	3,890	9,338
1934	7,970	260	214	157	111	88.7	66.8	117	2,300	1,580	254	1,590	14,708
1935	50.8	64.9	90.0	82.7	91.0	74.4	55.1	3,970	21,000	10,900	6,740	24,600	67,719
1936	8,100	233	115	91.0	90.6	400	232	26,000	2,390	5,490	2,270	22,500	67,912
1937	248	190	234	198	169	176	514	17,400	54,800	4,200	4,530	13,600	96,260
1938	6,040	1,100	3,080	743	223	489	365	1,760	10,800	26,800	1,050	8,120	60,570
1939	144	141	119	163	116	140	1,230	21,300	15,700	16,800	9,630	223	65,706
1940	184	2,980	117	92.2	113	131	120	826	407	966	1,460	310	7,706
1941	5,420	119	123	170	73.4	111	15,500	3,390	4,580	6,790	1,890	2,510	40,676
1942	1,490	115	230	92.2	83.3	72.4	127	229	1,350	1,570	1,390	2,670	9,419
1943	310	159	454	104	83.3	92.2	161	425	59.5	1,190	123	1,230	4,391
1944	123	213	154	127	153	123	119	1,450	956	1,550	5,310	1,820	12,098
1945	589	179	184	184	167	184	491	176	277	4,900	831	1,320	9,482
1946	3,400	178	173	461	267	267	307	3,410	925	2,000	327	1,970	13,685
1947	2,250	169	388	230	161	197	195	1,240	1,230	1,420	3,490	233	11,203
1948	158	185	188	212	165	159	135	1,350	3,830	12,000	1,330	1,740	21,452
1949	316	122	138	172	139	129	689	204	1,870	11,100	8,500	7,440	30,819
1950	4,530	191	213	169	155	202	854	732	10,800	14,100	7,570	19,300	58,816
1951	5,430	227	208	194	161	2,410	155	4,660	2,250	13,400	2,170	4,100	35,360
1952	445	128	142	130	126	139	2,570	3,530	9,720	28,700	136	123	45,890
1953	130	126	1,350	122	128	196	116	603	1,440	8,800	1,990	3,280	18,280
1954	624	89.9	91.0	92.2	83.3	92.2	6,420	4,700	8,670	518	2,300	388	24,070
1955	131	114	111	115	108	119	554	7,040	3,840	10,300	1,080	11,300	34,810
1956	553	140	138	192	146	171	137	3,410	2,100	1,870	2,690	1,430	12,980
1957	4,550	129	114	115	4,400	135	634	4,710	2,860	5,250	1,630	2,700	27,230

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	-	-	-	-	-	70.7	51,340
1933	(2,3)	8,430	Sept. - 1933	1.8	12.9	9,338	22.2	16,072
1934	(3,4)	22,090	Oct. 10, 1933	.5	20.2	14,708	8.94	6,470
1935	(4,5)	34,900	May 24, 1935	.6	93.8	67,719	105	75,961
1936	(5,6)	29,500	May 27, 1936	.8	93.2	67,912	82.8	60,136
1937	(6,7,8)	29,100	June 1, 1937	0	134	96,260	147	105,807
1938	(7,8)	17,900	July 19, 1938	1.2	83.0	60,570	70.1	50,754
1939	(8,9)	20,400	June 21, 1939	1.2	90.9	65,706	94.7	68,583
1940	(9,10)	7,390	May 8, 1940	1.4	10.6	7,706	13.9	10,087
1941	(10,11)	9,200	Oct. 12, 1940	1.0	56.2	40,676	50.9	36,849
1942	(11,12)	8,990	Oct. 1, 1941	1.0	13.0	9,419	11.8	8,507
1943	(12,13)	1,900	Sept. 3, 1943	1.0	6.1	4,391	5.5	3,958
1944	(13,14)	4,000	Aug. 26, 1944	2.0	16.7	12,098	17.3	12,560
1945	(14,15)	2,560	July 3, 1945	1.6	13.1	9,482	17.0	12,281
1946	(15,16)	7,800	Sept. 16, 1946	2.2	18.9	13,685	17.6	12,741
1947	(16,17)	1,880	June 30, 1947	2.1	15.5	11,203	12.3	8,927
1948	(17,18)	3,550	July 24, 1948	1.4	29.6	21,452	29.6	21,497
1949	(18,19)	5,800	June 11, 1949	1.2	42.6	30,819	48.6	35,177
1950	(19,20)	11,700	July 17, 1950	.1	81.2	58,816	82.5	59,747
1951	(20,21)	7,660	June 3, 1951	2.0	48.9	35,360	41.7	30,215
1952	(21,22)	7,890	July 8, 1952	1.4	63.2	45,890	64.4	46,780
1953	(22,23)	8,200	July 14, 1953	1.1	25.2	18,280	24.1	17,480
1954	(23,24)	7,260	Apr. 14, 1954	1.1	33.2	24,070	32.6	23,620
1955	(24,25)	18,000	May 4, 1955	1.1	48.1	34,810	48.7	35,287

Yearly discharge, in cubic feet per second, of Terlingua Creek near Terlingua, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	(25,26)	4,150	July 30, 1956	0.8	17.9	12,980	23.3	16,939
1957	(26,27)	13,000	Sept. 21, 1957	.9	37.6	27,230	36.4	26,383

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

371. Rio Grande at Johnson Ranch, Tex.

Location.--Lat 29°02', long 103°24', 2 miles upstream from Johnson Ranch, 14 miles downstream from Castolon, Brewster County, Texas and Santa Elena Ranch, Chihuahua, Mexico, and at mile 855.3.

Drainage area.--70,715 sq mi (contributing area), of which 36,261 sq mi is in the United States and 34,454 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 2,045.30 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--21 years (1936-57), 1,414 cfs (1,024,000 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 58,800 cfs Sept. 23, 1938 (gage height, 19.75 ft); no flow at times.
Flood of Oct. 3, 1932, reached a stage of 24.6 ft (discharge, 97,000 cfs, estimated).

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	151	997	297	834	1,240	8,530	-
1937	2,350	1,090	1,230	907	943	644	212	583	1,860	714	847	3,980	1,280
1938	2,140	906	1,230	1,220	887	622	213	324	2,140	10,100	4,690	19,200	3,640
1939	3,390	1,700	1,170	1,130	1,300	936	339	425	706	945	3,700	1,000	1,400
1940	1,230	1,320	923	981	926	509	191	801	1,060	1,430	2,200	1,410	1,080
1941	1,550	681	481	584	952	612	1,330	3,380	2,170	3,620	5,300	9,340	2,500
1942	15,100	2,760	1,750	1,350	1,460	1,310	934	3,910	4,220	3,250	7,880	23,600	5,640
1943	5,480	2,260	1,790	1,410	1,330	1,390	527	863	1,210	3,720	586	1,390	1,840
1944	2,780	929	1,170	1,260	941	801	424	454	784	908	1,330	6,980	1,560
1945	2,380	1,010	886	1,090	961	633	510	144	212	4,440	618	336	1,110
1946	4,870	1,370	771	1,060	911	790	488	655	621	995	277	4,520	1,450
1947	3,920	1,170	1,040	1,220	1,100	641	133	365	242	175	2,130	3,830	1,330
1948	638	913	913	677	776	736	225	253	396	700	525	501	605
1949	649	828	616	710	1,260	840	402	367	779	1,390	2,930	2,300	1,090
1950	1,740	1,330	966	1,030	989	850	296	326	1,180	2,410	1,880	2,760	1,310
1951	1,970	861	772	597	959	745	252	505	703	1,020	498	592	789
1952	376	359	318	287	248	165	131	185	774	4,880	317	157	689
1953	191	168	199	223	201	152	7.7	0	55.0	414	199	369	182
1954	80.3	145	155	184	170	72.2	341	188	718	326	3,250	1,050	560
1955	668	275	211	244	247	128	93.5	405	183	1,440	2,810	2,150	743
1956	2,470	539	379	302	336	198	42.7	125	165	96.5	486	569	478
1957	453	357	339	366	619	233	59.1	911	405	229	747	404	426

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	8,990	61,300	17,700	51,300	76,100	508,000	-
1937	144,000	65,000	75,400	55,800	52,400	39,600	12,600	35,800	111,000	43,900	52,100	237,000	924,600
1938	131,000	53,900	75,800	74,900	49,300	38,300	12,700	19,900	127,000	620,000	288,000	1,144,000	2,634,800
1939	208,000	101,000	71,900	69,500	72,300	57,600	20,100	26,100	42,000	58,100	228,000	59,800	1,014,400
1940	75,600	78,500	56,700	60,300	53,300	31,100	11,400	49,200	62,800	88,000	136,000	83,800	786,700
1941	95,300	40,500	29,600	35,900	52,900	37,600	79,300	208,000	129,000	222,000	326,000	556,000	1,812,100
1942	929,000	164,000	107,000	83,200	80,900	80,700	55,600	240,000	251,000	200,000	485,000	1,404,000	4,080,400
1943	337,000	134,000	110,000	86,400	73,700	85,300	31,400	53,100	72,100	229,000	36,000	82,700	1,330,700
1944	171,000	55,300	72,000	77,600	54,100	49,200	25,200	27,900	46,700	55,900	82,000	416,000	1,132,900
1945	146,000	59,900	54,500	67,100	53,400	38,900	30,400	8,830	12,600	273,000	38,000	20,000	802,630
1946	299,000	81,700	47,400	65,400	50,600	48,500	29,100	40,300	37,000	61,200	17,000	269,000	1,046,200
1947	241,000	69,700	63,800	75,000	60,900	39,400	7,940	22,400	14,400	10,700	131,000	228,000	964,240
1948	39,200	54,300	56,200	41,600	44,600	45,300	13,400	15,600	23,600	43,100	32,300	29,800	439,000
1949	39,900	49,300	38,000	43,600	69,800	51,600	23,900	22,600	46,400	85,300	180,000	137,000	787,400
1950	107,000	78,900	59,400	63,300	54,900	52,300	17,600	20,000	70,400	148,000	115,000	164,000	950,800
1951	121,000	51,300	47,400	36,700	53,200	45,800	15,000	31,000	41,800	62,500	30,600	35,200	571,500
1952	23,100	21,300	19,600	17,600	14,300	10,200	7,790	11,400	46,000	300,000	19,500	9,350	500,100
1953	11,700	9,980	12,200	13,700	11,200	9,370	457	0	3,270	25,500	12,300	21,900	131,600
1954	4,940	8,600	9,510	11,300	9,460	4,440	20,300	11,600	42,700	20,000	200,000	62,600	405,400
1955	41,100	16,400	13,000	15,000	13,700	7,850	5,570	24,900	10,900	88,800	173,000	128,000	538,200
1956	152,000	32,100	23,300	18,500	19,300	12,200	2,540	7,690	9,800	5,930	29,900	33,800	347,100
1957	27,800	21,200	20,800	22,500	34,400	14,300	3,520	56,000	24,100	14,100	45,900	24,000	308,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	(6)	-	-	-	-	-	-	-
1937	(6,7)	26,000	June 2, 1937	31.2	1,280	924,600	1,240	900,900
1938	(7,8)	58,800	Sept. 23, 1938	27.2	3,640	2,634,800	3,810	2,755,000
1939	(8,9)	11,800	June 21, 1939	125	1,400	1,014,400	1,170	844,300
1940	(9,10)	18,300	May 9, 1940	98.6	1,080	786,700	1,020	741,300

Yearly discharge, in cubic feet per second, of Rio Grande at Johnson Ranch, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	(10,11)	32,200	Sept. 23, 1941	48.7	2,500	1,812,100	3,930	2,846,700
1942	(11,12)	57,700	Sept. 10, 1942	593	5,640	4,080,400	4,780	3,461,400
1943	(12,13)	16,100	Oct. 1, 1942	229	1,840	1,330,700	1,450	1,048,000
1944	(13,14)	38,600	Sept. 15, 1944	176	1,560	1,132,900	1,510	1,095,000
1945	(14,15)	18,000	July 4, 1945	42.5	1,110	802,630	1,340	970,330
1946	(15,16)	25,000	Sept. 16, 1946	99.0	1,450	1,046,200	1,370	992,600
1947	(16,17)	20,700	Sept. 10, 1947	44.1	1,330	964,240	1,020	739,440
1948	(17,18)	8,780	July 31, Aug. 1, 1948	48.6	605	439,000	574	416,500
1949	(18,19)	28,900	June 11, 1949	80.9	1,090	787,400	1,250	905,500
1950	(19,20)	28,200	Sept. 24, 1950	187	1,310	950,800	1,280	925,200
1951	(20,21)	17,900	Oct. 2, 1950	172	789	571,500	574	415,800
1952	(21,22)	35,900	July 8, 1952	2.3	689	500,100	647	470,020
1953	(22,23)	8,120	July 14, 1953	0	182	131,600	167	120,747
1954	(23,24)	19,300	June 14, 1954	.2	560	405,400	626	452,900
1955	(24,25)	21,000	Sept. 25, 1955	.1	743	538,200	933	675,120
1956	(25,26)	10,300	Oct. 5, 1955	12.6	478	347,100	289	209,460
1957	(26,27)	20,900	May 30, 1957	0	426	308,600	503	364,220

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

372. Rio Grande at Boquillas, Tex.

Location.--Lat 29°11', long 102°56', a quarter of a mile south of Boquillas, Brewster County, 4 miles downstream from Tornillo Creek, and at mile 800.5.

Drainage area.--70,657 sq mi (contributing area), of which 36,732 sq mi is in the United States and 33,925 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 1,802.73 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--7 years (1928-35), 1,636 cfs (1,184,000 acre-ft per year).

Extremes.--1928-36: Maximum discharge, 95,030 cfs Oct. 4, 1932 (gage height, 24.50 ft); minimum, 86.4 cfs May 16, 1935.
Flood of September 1904, reached a stage of 32.4 ft (discharge, 158,000 cfs, estimated), from information by local residents.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission after June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	1,880	4,050	2,280	-
1929	1,820	2,030	1,770	1,580	1,570	1,360	1,230	1,470	1,470	1,570	2,530	2,430	1,740
1930	1,830	1,490	1,280	1,120	832	483	299	277	850	806	3,250	284	1,070
1931	1,720	625	575	498	586	710	1,230	1,290	1,050	1,630	1,820	966	1,058
1932	1,220	1,160	1,190	938	1,050	852	502	449	358	780	3,334	12,197	2,002
1933	12,590	1,469	1,202	1,083	969	919	867	655	1,637	1,554	1,599	9,616	2,847
1934	4,739	1,698	1,357	1,330	1,460	1,280	927	1,090	1,240	1,210	1,030	732	1,508
1935	632	738	675	731	628	444	168	496	1,660	1,080	1,340	6,090	1,224
1936	2,870	1,220	663	653	757	580	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	116,000	249,000	136,000	-
1929	112,000	121,000	109,000	97,200	87,200	83,600	73,200	90,400	87,500	96,500	156,000	145,000	1,260,000
1930	113,000	88,700	78,700	68,900	46,200	29,700	17,800	17,000	50,600	49,600	200,000	16,900	777,000
1931	106,000	37,200	35,400	30,600	32,600	43,700	73,200	79,250	62,500	100,610	112,060	57,510	770,630
1932	75,180	69,110	72,950	57,680	60,560	52,360	29,850	27,620	21,280	47,950	204,980	725,800	1,445,320
1933	774,060	87,410	73,930	66,610	53,790	56,510	51,580	40,260	97,400	95,500	98,330	572,200	2,067,580
1934	291,380	101,020	83,430	81,800	81,000	78,900	55,200	66,900	73,700	74,500	63,300	43,600	1,094,730
1935	38,900	43,900	41,500	44,900	34,900	27,300	9,980	30,500	98,500	66,200	82,600	362,000	881,180
1936	176,000	72,400	40,800	40,100	43,600	35,600	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	668(5,6)	-	-	-	-	-	-	-
1929	688 (6)	27,600	Sept. 11, 1929	816	1,740	1,260,000	1,651	1,197,000
1930	703 (6)	10,400	Aug. 15, 1930	135	1,070	777,000	927	675,300
1931	718(1,6)	19,000	Oct. 5, 1930	328	1,058	770,630	1,118	809,270
1932	(1,2)	87,000	Sept. 13, 1932	139	2,002	1,455,320	2,980	2,163,480
1933	(2,3)	95,030	Oct. 4, 1932	414	2,847	2,067,630	2,221	1,608,060
1934	(3,4)	13,550	Oct. 14, 1933	505	1,508	1,094,730	1,030	743,200
1935	(4,5)	19,200	June 12, 1935	90	1,224	881,180	1,440	1,046,080
1936	(5,6)	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

373. Rio Grande at Agua Verde Station

Location.--Lat 29°48'10", long 102°01'15", near Agua Verde Dam site, about 18 miles south of Dryden, Terrell County, Texas, and at mile 676.5.

Drainage area.--82,232 sq mi (contributing area), of which 40,861 sq mi is in the United States and 41,371 sq mi is in Mexico.

Supplemental records available.--April to September, and December 1947; January through June 1948; May 1949; and January through May 1950 (fragmentary)

Gage.--Water-stage recorder. Datum of gage is 1,241.07 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1952-56: Maximum discharge, 26,900 cfs Sept. 25, 1955 (gage height, 24.10 ft); minimum, 132 cfs Apr. 29, 1953.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	391	358	373	201	182	192	553	402	545	-
1954	287	294	311	339	338	251	722	759	1,380	586	3,460	1,450	851
1955	827	459	406	436	456	348	215	963	833	1,750	3,170	3,040	1,079
1956	2,680	790	606	545	566	411	266	299	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	24,000	19,900	22,900	11,900	11,200	11,400	34,000	24,700	32,400	-
1954	17,600	17,500	19,100	20,900	18,800	15,400	43,000	46,700	81,900	36,000	213,000	86,400	616,300
1955	50,900	27,300	25,000	26,800	25,300	21,400	12,800	59,200	49,600	108,000	195,000	181,000	782,300
1956	165,000	47,000	37,300	33,500	32,500	25,300	15,800	18,400	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	(22,23)	-	-	-	-	-	341	246,600
1954	(23,24)	14,600	May 23, 1954	166	851	616,300	919	665,300
1955	(24,25)	26,900	Sept. 25, 1955	181	1,079	782,300	1,280	928,400
1956	-	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

374. Lozier Creek near Langtry, Tex.

Location.--Lat 29°48', long 101°47', about 1 mile upstream from mouth and 21 miles west of Langtry, Val Verde County.

Drainage area.--1,728 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage not known.

Extremes.--1932-35: Maximum discharge, 197,000 cfs Sept. 4, 1935 (gage height, 26.64 ft); no flow at times.

Remarks.--No known regulation or diversion above station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	0	0	0	0	17	0	73.9	43.4	1,166	-
1933	13.1	0	0	0	0	0	23.3	0	0	0	36.1	.03	6.04
1934	5.68	0	0	0	0	0	8.16	0	2.07	0	0	0	1.33
1935	0	0	0	0	0	0	7.5	473	104	0	78.7	2,470	261
1936	0	0	0	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	0	0	0	0	1,040	0	4,540	2,670	69,360	-
1933	805	0	0	0	0	0	1,390	0	0	0	2,220	2	4,417
1934	350	0	0	0	0	0	485	0	123	0	0	0	958
1935	0	0	0	0	0	0	446	29,100	6,190	0	4,840	147,000	187,576
1936	0	0	0	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	-	-	0	-	-	108	78,415
1933	(2,3)	11,150	Aug. 30, 1933	0	6.04	4,417	5.47	3,962
1934	(3,4)	510	Apr. 19, 1934	0	1.33	958	.84	608
1935	(4,5)	197,000	Sept. 4, 1935	0	261	187,576	259	187,576
1936	(5)	-	-	0	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

375. Rio Grande at Langtry, Tex.

Location.--Lat 29°48', long 101°34', at Langtry, Val Verde County, 24.1 miles upstream from Pecos River, and at mile 634.1.

Drainage area.--84,795 sq mi (contributing area), of which 42,855 sq mi is in the United States and 41,940 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 1,091.69 ft above mean sea level, U.S.C. & G.S. datum. May 10 to June 2, 1928, staff gage at same site and datum. Prior to May 10, 1928, staff gage 900 ft downstream at approximately the same datum.

Average discharge.--46 years (1900-13, 1924-57), 2,372 cfs (1,717,000 acre-ft per year).

Extremes.--1900-13, 1924-57: Maximum discharge, 149,000 cfs Sept. 4, 1935 (gage height, 46.70 ft); minimum, 208 cfs July 12, 1953. Highest stage known, 56.9 ft June 17, 1922 (discharge, 204,000 cfs, by extension of rating curve). Flood of Sept. 16, 1919 reached a stage of 46.9 ft (discharge, 152,000 cfs, by float measurement).

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to January 1924, and subsequent to June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	1,008	1,994	5,255	8,635	3,867	-
1901	2,915	903	678	600	599	627	425	1,163	1,465	1,314	2,306	3,418	1,372
1902	1,900	1,367	684	663	542	435	611	544	745	4,848	5,672	11,160	2,435
1903	1,948	1,190	917	711	1,277	960	738	1,507	3,993	3,383	1,983	2,922	1,794
1904	3,134	811	642	550	476	405	369	1,182	2,805	834	972	25,550	3,113
1905	13,190	4,056	2,232	1,290	1,181	3,230	2,677	4,427	12,170	6,646	9,026	8,536	5,747
1906	5,936	4,541	5,227	2,132	3,763	2,044	1,455	3,648	4,822	10,730	22,000	8,855	6,298
1907	2,762	1,981	2,310	1,977	1,631	1,312	1,628	2,908	5,701	5,792	4,123	9,796	3,495
1908	3,106	5,401	5,162	1,753	1,332	999	1,161	1,482	1,449	2,659	9,789	8,707	3,589
1909	1,124	740	673	690	643	513	440	2,429	3,855	7,567	7,428	7,673	2,828
1910	1,890	1,036	1,073	1,991	1,055	1,024	1,514	3,687	1,864	2,280	859	2,741	1,756
1911	923	588	557	480	622	533	869	5,472	5,190	8,458	4,810	4,567	2,773
1912	5,028	3,707	2,057	1,732	1,252	827	1,624	2,682	7,329	2,542	6,131	13,052	3,985
1913	3,944	1,288	1,486	1,095	1,884	2,115	891	1,483	2,525	1,184	1,336	4,114	1,943
1914	1,372	679	890	741	598	635	-	-	-	-	-	10,672	-
1920	-	-	1,320	1,530	1,550	1,070	-	-	-	-	-	-	-
1924	-	-	-	3,990	2,040	1,780	1,480	1,610	1,710	1,980	1,290	2,890	-
1925	2,800	1,520	1,500	1,500	1,440	1,470	1,710	3,790	2,030	4,280	11,900	12,400	3,980
1926	5,510	2,410	2,000	2,130	1,900	1,640	1,630	2,060	2,200	2,490	6,630	6,700	3,280
1927	5,510	2,460	2,190	2,110	2,060	1,920	1,770	1,530	1,970	1,970	2,510	3,280	2,500
1928	2,350	1,840	2,090	1,960	2,020	1,720	1,400	1,870	1,580	2,160	5,440	3,100	2,300
1929	2,240	2,260	2,130	1,930	1,890	1,720	1,510	1,680	1,910	1,720	2,750	2,690	2,040
1930	2,060	1,820	1,580	1,440	1,130	793	611	525	1,210	913	3,580	600	1,360
1931	1,950	951	810	851	880	978	1,590	1,980	1,410	1,981	2,158	1,157	1,390
1932	1,476	1,383	1,478	1,157	1,240	1,135	804	1,182	627	1,312	3,243	18,488	2,790
1933	13,923	2,203	1,679	1,503	1,413	1,303	1,253	985	1,562	2,001	1,822	10,554	3,350
1934	5,200	1,916	1,590	1,620	1,690	1,550	1,220	1,410	1,700	1,490	1,270	1,080	1,810
1935	898	1,040	961	1,050	979	782	505	1,840	2,450	1,850	1,790	9,120	1,940
1936	3,320	1,600	1,010	1,000	1,080	1,010	591	1,570	794	1,020	1,510	9,100	1,970
1937	3,620	1,480	1,590	1,330	1,310	1,040	651	1,010	2,690	1,180	1,540	4,040	1,790
1938	3,090	1,330	1,470	1,660	1,280	1,020	550	684	2,500	11,700	5,640	18,100	4,090
1939	4,490	2,050	1,560	1,430	1,620	1,220	671	1,020	967	1,380	4,640	1,490	1,890
1940	1,550	1,660	1,260	1,260	1,240	872	571	1,810	1,530	1,900	2,910	2,000	1,550
1941	2,300	1,170	868	889	1,260	960	1,590	4,410	2,380	4,770	5,880	9,050	2,970
1942	17,300	3,550	2,110	1,740	1,810	1,750	1,220	4,350	5,030	3,680	8,390	23,700	6,230
1943	7,190	2,820	2,200	1,750	1,690	1,740	982	1,560	1,600	4,360	1,100	1,090	2,360
1944	3,400	1,320	1,450	1,580	1,280	1,140	732	699	1,300	1,090	1,800	7,030	1,900
1945	2,940	1,330	1,170	1,340	1,320	923	1,160	438	427	6,120	958	734	1,580
1946	5,610	1,710	1,120	1,290	1,210	1,060	936	1,190	1,320	1,360	550	4,620	1,830
1947	4,740	1,480	1,270	1,410	1,420	1,030	478	1,020	581	516	2,020	4,480	1,710
1948	1,060	1,130	1,200	917	1,110	988	582	623	759	953	893	739	913
1949	1,030	1,050	842	855	1,420	1,150	1,030	787	1,940	1,670	4,040	3,390	1,600
1950	2,490	1,670	1,260	1,290	1,260	1,200	656	752	1,630	2,980	2,520	3,410	1,780
1951	2,200	1,150	1,070	916	1,170	1,120	568	1,360	1,750	1,260	787	966	1,195
1952	627	649	585	543	486	410	435	559	806	5,280	668	329	955
1953	485	415	427	488	455	475	298	263	266	624	506	869	464
1954	377	380	403	443	450	378	1,880	1,210	4,340	749	3,530	1,670	1,317
1955	976	533	483	499	517	422	280	1,160	1,260	1,820	3,570	3,840	1,284
1956	2,840	907	694	621	648	498	356	456	545	329	684	737	778
1957	1,540	594	582	609	910	542	1,500	3,120	1,150	566	922	825	1,073

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	62,000	119,000	323,000	531,000	230,000	-
1901	179,000	53,700	41,700	36,900	33,300	38,600	25,300	71,500	87,200	80,800	142,000	203,000	993,000
1902	117,000	81,300	42,000	40,800	30,100	26,700	36,400	33,500	44,300	298,000	349,000	664,000	1,763,100
1903	120,000	70,800	56,400	43,700	70,900	59,000	43,900	92,700	238,000	208,000	122,000	174,000	1,299,400
1904	193,000	48,300	39,500	33,800	27,400	24,900	21,900	72,700	167,000	51,300	59,700	1,520,000	2,259,500
1905	811,000	241,000	137,000	79,300	65,600	199,000	159,000	272,000	724,000	409,000	555,000	508,000	4,160,000
1906	365,000	270,000	321,000	131,000	209,000	126,000	86,600	224,000	287,000	660,000	1,353,000	527,000	4,560,000
1907	170,000	118,000	142,000	122,000	90,600	80,700	96,900	179,000	339,000	356,000	254,000	583,000	2,531,000

Monthly and yearly runoff, in acre-feet, of Rio Grande at Langtry, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	191,000	321,000	317,000	108,000	76,600	61,400	69,100	91,100	86,300	164,000	602,000	518,000	2,606,000
1909	69,100	44,000	41,400	42,400	35,700	31,500	26,200	149,000	229,000	465,000	457,000	457,000	2,047,000
1910	116,000	61,700	66,000	122,000	58,600	63,000	90,100	227,000	111,000	140,000	52,800	163,000	1,271,000
1911	56,700	35,000	34,300	29,500	34,600	32,800	51,700	336,000	309,000	520,000	296,000	272,000	2,007,600
1912	309,000	221,000	127,000	106,000	72,000	50,900	96,700	165,000	436,000	156,000	377,000	777,000	2,893,600
1913	242,000	76,700	91,400	67,300	105,000	130,000	53,000	91,200	150,000	72,800	82,200	245,000	1,406,600
1914	84,300	40,400	54,700	45,560	33,210	39,050	-	-	-	-	-	635,000	-
1920	-	-	81,200	94,100	89,200	65,800	-	-	-	-	-	-	-
1924	-	-	-	245,000	117,000	110,000	87,800	99,000	102,000	121,000	79,400	172,000	-
1925	172,000	90,400	92,200	92,200	80,000	90,100	102,000	233,000	121,000	263,000	730,000	738,000	2,803,900
1926	339,000	144,000	123,000	131,000	106,000	101,000	96,800	127,000	131,000	153,000	407,000	399,000	2,257,800
1927	339,000	147,000	134,000	130,000	115,000	118,000	105,000	94,100	117,000	121,000	154,000	195,000	1,769,100
1928	144,000	109,000	128,000	121,000	116,000	106,000	83,300	115,000	94,000	133,000	334,000	184,000	1,667,300
1929	138,000	134,000	131,000	119,000	105,000	106,000	89,800	103,000	114,000	106,000	169,000	160,000	1,474,800
1930	127,000	108,000	97,200	88,500	62,800	48,800	36,400	32,300	72,000	56,100	220,000	35,700	984,800
1931	120,000	56,600	49,800	52,300	48,900	60,100	94,600	122,000	83,900	121,790	132,680	68,840	1,011,510
1932	90,780	82,300	90,860	71,150	71,070	69,800	47,820	72,680	37,310	80,700	199,380	1,100,130	2,013,980
1933	856,120	131,070	103,240	92,430	78,490	80,110	74,580	60,580	92,960	123,040	112,040	628,000	2,432,660
1934	319,720	114,010	97,750	99,700	94,000	95,000	72,900	86,700	101,000	91,600	78,100	64,400	1,314,880
1935	55,200	62,100	59,100	64,800	54,400	48,100	30,100	113,000	146,000	114,000	110,000	543,000	1,399,800
1936	204,000	95,000	61,900	61,800	61,900	62,400	35,200	96,700	47,300	62,700	92,800	542,000	1,423,700
1937	223,000	88,100	97,900	81,900	72,600	63,700	38,700	62,400	160,000	72,300	94,500	240,000	1,295,100
1938	190,000	79,300	90,400	102,000	71,400	62,600	32,800	42,100	149,000	719,000	347,000	1,075,000	2,960,600
1939	276,000	122,000	96,100	87,600	90,000	74,800	39,900	62,400	57,500	84,800	285,000	88,900	1,365,000
1940	95,200	99,100	77,400	77,700	71,600	53,600	34,000	111,000	91,100	117,000	179,000	119,000	1,125,700
1941	141,000	69,500	53,400	54,700	70,200	59,000	94,400	271,000	142,000	294,000	361,000	538,500	2,148,700
1942	1,063,000	211,000	130,000	107,000	101,000	108,000	72,500	267,000	299,000	226,000	516,000	1,410,000	4,510,500
1943	442,000	168,000	135,000	107,000	93,700	107,000	58,400	95,800	95,000	270,000	67,700	64,900	1,704,500
1944	209,000	78,200	89,200	97,400	73,700	69,900	43,600	43,000	77,500	67,200	110,000	418,000	1,376,700
1945	181,000	79,100	71,800	82,400	73,100	56,700	68,800	26,900	25,400	376,000	58,900	43,700	1,143,800
1946	345,000	102,000	68,900	79,300	67,100	65,100	55,700	73,100	78,400	83,500	33,800	275,000	1,326,900
1947	291,000	87,800	78,000	86,900	78,700	63,200	28,500	62,900	34,600	31,700	124,000	267,000	1,234,300
1948	65,400	67,200	73,600	56,400	63,600	60,800	34,600	38,300	45,200	58,600	54,900	44,000	662,600
1949	63,300	62,400	51,800	54,400	78,800	70,900	61,200	48,400	115,000	103,000	248,000	202,000	1,159,200
1950	165,000	99,600	77,700	79,400	69,900	73,800	39,100	46,200	96,800	183,000	155,000	203,000	1,288,500
1951	135,000	68,700	65,900	56,300	64,700	69,000	33,800	83,600	104,000	77,700	48,400	57,500	864,600
1952	38,600	38,600	36,000	33,400	28,000	25,200	25,900	34,400	48,000	325,000	41,100	19,600	693,800
1953	29,900	24,700	26,300	30,000	25,300	29,200	17,800	16,200	15,800	38,400	31,100	51,700	336,400
1954	23,200	22,600	24,800	27,300	25,000	23,300	112,000	74,200	258,000	46,000	217,000	99,200	952,600
1955	60,000	31,700	29,700	30,700	28,700	26,000	16,700	71,500	75,200	112,000	219,000	229,000	990,200
1956	175,000	54,000	42,600	38,200	37,200	30,600	21,200	28,000	32,400	20,200	42,100	43,800	565,300
1957	94,800	35,300	35,800	37,400	50,600	33,400	89,000	192,000	68,200	34,800	56,700	49,100	777,100

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358 (7)	-	-	-	-	-	-	-
1901	358 (7)	a14,700	Sept. 8, 1901	370	1,372	993,000	1,325	958,800
1902	358 (7)	a38,200	Sept. 9, 1902	285	2,435	1,763,100	2,444	1,769,000
1903	358 (7)	a18,000	June 12, 1903	530	1,794	1,299,400	1,840	1,332,000
1904	358(7,9)	a110,000	Sept. 13, 1904	270	3,113	2,259,500	4,365	3,170,000
1905	358 (7)	a29,300	June 30, 1905	760	5,747	4,160,000	5,425	3,927,000
1906	358(7,9)	a51,700	Aug. 11, 1906	1,180	6,298	4,560,000	5,571	4,033,000
1907	358 (7)	a16,060	Sept. 20, 1907	1,020	3,495	2,531,000	4,047	2,930,200
1908	358 (7)	a30,700	Aug. 14, 1908	470	3,589	2,606,000	2,659	1,931,000
1909	358 (7)	a16,510	July 12, 1909	380	2,828	2,047,000	2,952	2,137,000
1910	358 (7)	a7,550	Sept. 6, 1910	510	1,756	1,271,000	1,593	1,154,000
1911	358 (7)	a33,100	May 16, 1911	440	2,773	2,007,600	3,505	2,538,000
1912	358 (7)	a24,620	Sept. 19, 1912	660	3,985	2,893,600	3,647	2,648,000
1913	358 (7)	a11,810	Sept. 10, 1913	625	1,943	1,406,600	1,624	1,176,000
1914	388	-	-	-	-	-	-	-
1915	408	-	-	-	-	-	-	-
1920	508	-	-	-	-	-	-	-
1924	588 (4)	-	-	-	-	-	2,050	1,487,800
1925	608 (4)	50,000	May 29, 1925	995	3,980	2,803,900	4,220	3,055,300
1926	628 (4)	24,500	Aug. 25, 1926	1,340	3,280	2,257,800	3,140	2,271,800
1927	648 (4)	25,600	July 2, 1927	1,340	2,500	1,769,100	2,110	1,530,100
1928	668 (6)	46,400	Aug. 9, 1928	1,190	2,300	1,667,300	2,320	1,689,300
1929	688 (6)	22,000	Sept. 12, 1929	1,150	2,040	1,474,800	1,940	1,404,000
1930	703 (6)	9,700	Aug. 16, 1930	412	1,360	984,800	1,210	879,000
1931	718(1,6)	14,400	Oct. 7, 1930	650	1,390	1,011,510	1,450	1,049,050
1932	(1,2,6)	64,070	Sept. 8, 1932	405	2,790	2,013,980	3,918	2,840,470
1933	(2,3,6)	77,610	Oct. 5, 1932	752	3,350	2,432,660	2,588	1,873,710
1934	(3,4,6)	14,630	Oct. 14, 1933	787	1,810	1,314,800	1,330	959,800
1935	(4,5,6)	149,000	Sept. 4, 1935	348	1,940	1,399,800	2,190	1,584,300
1936	(5,6)	32,600	Sept. 24, 1936	351	1,970	1,423,700	2,030	1,471,800
1937	(6,7)	25,900	June 4, 1937	480	1,790	1,295,100	1,720	1,245,800

a Maximum daily.

Yearly discharge, in cubic feet per second, of Rio Grande at Langtry, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	(7,8)	57,300	Sept. 26, 1938	359	4,090	2,960,600	4,270	3,095,000
1939	(8,9)	15,700	Aug. 9, 1939	478	1,890	1,365,000	1,580	1,142,600
1940	(9,10)	25,800	May 22, 1940	406	1,550	1,125,700	1,540	1,117,900
1941	(10,11)	35,200	May 2, 1941	429	2,970	2,148,700	4,540	3,288,800
1942	(11,12)	58,900	Sept. 12, 1942	947	6,230	4,510,500	5,320	3,851,500
1943	(12,13)	20,600	Oct. 1, 1942	532	2,360	1,704,500	1,850	1,335,900
1944	(13,14)	33,300	Sept. 17, 1944	516	1,900	1,376,700	1,836	1,332,200
1945	(14,15)	31,600	July 11, 1945	327	1,580	1,143,800	1,830	1,327,800
1946	(15,16)	31,900	Oct. 7, 1945	450	1,830	1,326,200	1,750	1,267,800
1947	(16,17)	22,300	May 11, 1947	339	1,710	1,234,300	1,360	983,700
1948	(17,18)	9,740	July 3, 1948	327	913	662,600	873	633,900
1949	(18,19)	23,200	June 26, 1949	422	1,600	1,159,200	1,830	1,324,000
1950	(19,20)	27,500	July 13, 1950	490	1,780	1,288,500	1,680	1,215,800
1951	(20,21)	18,000	May 24, 1951	456	1,195	864,600	978	708,200
1952	(21,22)	18,600	July 16, 1952	255	955	693,800	911	661,500
1953	(22,23)	8,060	Sept. 3, 1953	216	464	336,400	450	326,100
1954	(23,24)	169,000	June 27, 1954	269	1,317	952,600	1,390	1,003,400
1955	(24,25)	39,100	Sept. 25, 1955	255	1,284	990,200	1,490	1,080,400
1956	(25,26)	9,710	Oct. 7, 1955	235	778	565,300	633	459,600
1957	(26,27)	34,400	Oct. 18, 1956	268	1,073	777,100	1,107	801,700

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

376. Pecos River at Red Bluff, N. Mex.

Location.--Lat 32°04'40", long 104°02'20", sec. 1, T. 26 S., R. 28 E., on right bank, at Red Bluff, 0.2 mile downstream from Red Bluff Creek and 5.5 miles upstream from Delaware River.

Drainage area.--19,540 sq mi, approximately (contributing area).

Supplemental records available.--Records of chemical analyses for the period October 1937 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,850.05 ft above mean sea level, datum of 1929.

Average discharge.--20 years (1937-57), 269 cfs (194,700 acre-ft per year).

Extremes.--1937-57: Maximum discharge, 52,600 cfs May 24, 1921 (gage height, 28.3 ft), from rating curve extended above 30,000 cfs on basis of slope-area measurement of peak flow; minimum, 1.4 cfs Aug. 21, 1954.
Maximum stage known, that of May 24, 1941. Flood of October 1904 reached a stage of 28.0 ft, from information by Panhandle & Santa Fe Railway.

Remarks.--Flow largely regulated by Alamogordo Reservoir (capacity, 122,100 acre-ft) Lake McMillan (capacity, 38,660 acre-ft) and Lake Avalon (capacity, 6,600 acre-ft). Many diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	271	192	198	194	221	150	114	102	251	208	85.6	198	182
1939	153	185	184	192	187	133	112	136	118	125	148	108	148
1940	135	163	156	156	140	109	91.9	211	132	106	113	111	135
1941	234	124	151	158	145	154	110	6,954	3,181	1,273	819	6,521	1,655
1942	5,255	1,382	813	703	534	295	681	1,157	244	177	167	1,753	1,102
1943	413	1,159	492	406	274	214	135	160	173	245	106	164	327
1944	178	193	224	248	252	180	123	126	112	100	120	168	168
1945	150	196	210	241	183	121	104	112	84.3	93.5	136	90.7	143
1946	119	111	130	135	153	103	63.5	92.6	65.5	61.3	84.0	137	104
1947	251	263	156	253	181	133	86.7	113	72.4	39.0	35.1	61.6	137
1948	50.7	72.3	83.7	86.9	92.0	61.2	30.6	112	773	69.2	65.4	50.5	128
1949	88.1	85.0	76.5	122	127	78.7	44.1	99.3	190	88.3	77.0	808	156
1950	381	288	252	273	154	140	87.0	112	74.7	455	180	210	218
1951	470	322	214	192	131	130	95.8	107	75.1	90.4	59.6	69.5	164
1952	74.0	77.5	81.1	88.7	85.6	59.0	33.8	44.5	34.8	53.3	17.1	28.5	56.5
1953	64.5	63.0	68.0	71.1	65.1	45.5	19.1	35.1	22.6	15.1	10.8	20.6	41.6
1954	131	44.5	36.4	53.7	50.9	41.4	73.5	45.1	27.5	7.98	138	18.1	55.9
1955	2,656	137	84.3	107	43.1	32.0	30.0	27.6	36.1	57.1	49.8	198	292
1956	767	111	118	96.3	52.0	54.4	43.1	39.2	30.1	34.4	30.4	30.8	118
1957	52.7	44.1	64.7	66.9	40.4	22.8	19.1	53.3	25.7	18.6	122	28.5	46.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	16,640	11,420	12,190	11,940	12,290	9,220	6,760	6,280	14,960	12,810	5,270	11,780	131,600
1939	9,420	11,000	11,330	11,820	10,380	8,170	6,660	8,390	6,990	7,700	9,100	6,460	107,400
1940	8,320	9,710	9,580	9,590	8,040	6,710	5,470	12,950	7,860	6,510	6,970	6,630	98,340
1941	14,360	7,350	9,270	9,270	8,050	9,500	6,550	427,600	189,300	78,250	50,360	388,000	1,198,000
1942	323,100	82,220	50,000	43,200	29,670	18,140	40,520	71,140	14,500	10,860	10,250	104,300	797,900
1943	25,410	68,980	30,230	24,620	15,210	13,130	8,020	9,810	10,280	15,050	6,500	9,740	237,000
1944	10,970	11,490	13,760	15,230	14,520	11,070	7,300	7,730	6,670	6,170	7,400	10,000	122,300
1945	9,240	11,680	12,890	14,840	10,170	7,430	6,210	6,890	5,010	5,750	8,330	5,400	103,800
1946	7,310	6,630	8,000	8,270	8,500	6,340	3,780	5,690	3,900	3,770	5,160	8,180	75,530
1947	15,420	15,670	9,600	15,570	10,050	8,160	5,160	6,950	4,310	2,400	2,160	3,660	99,110
1948	3,120	4,300	5,150	5,350	5,290	3,760	1,820	6,900	46,000	4,260	4,020	3,000	92,970

Monthly and yearly runoff, in acre-feet, of Pecos River at Red Bluff, N. Mex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	5,410	5,060	4,700	7,500	7,070	4,840	2,630	6,110	11,330	5,430	4,730	48,070	112,900
1950	23,410	17,150	15,500	16,810	8,550	8,630	5,170	6,910	4,440	27,960	11,060	12,520	158,100
1951	28,910	19,160	13,140	11,800	7,270	7,980	5,700	6,600	4,470	5,560	3,670	4,140	118,400
1952	4,550	4,610	4,990	5,460	4,920	3,630	2,010	2,740	2,070	3,270	1,050	1,690	40,990
1953	3,960	3,750	4,180	4,370	3,610	2,800	1,140	2,160	1,340	926	620	1,230	30,090
1954	8,050	2,650	2,240	3,300	2,830	2,550	4,380	2,770	1,640	491	8,480	1,080	40,460
1955	163,300	8,140	5,180	6,550	2,390	1,970	1,790	1,700	2,150	3,510	3,060	11,750	211,500
1956	47,150	6,620	7,270	5,920	2,990	3,340	2,570	2,410	1,790	2,110	1,870	1,830	85,870
1957	3,240	2,630	3,980	4,120	2,240	1,400	1,140	3,270	1,530	1,140	7,520	1,700	33,910

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	858	3,100	June 28, 1938	84	301	127,600	170	123,000
1939	878	1,090	Aug. 15, 1939	65	148	107,400	143	103,300
1940	898	2,820	May 22, 1940	60	135	98,340	140	101,700
1941	928	52,600	May 24, 1941	62	1,655	1,198,000	2,241	1,623,000
1942	958	19,800	Oct. 4, 1941	73	1,102	797,900	645	467,200
1943	978	4,830	Nov. 8, 1942	58	327	237,000	205	148,600
1944	1008	535	Jan. 4, 1944	79	168	122,300	165	119,900
1945	1038	3,070	Aug. 22, 1945	29	143	103,800	127	91,970
1946	1058	2,950	Sept. 18, 1946	16	104	75,530	130	94,280
1947	1088	1,700	Oct. 5, 1946	17	137	99,110	98.0	70,990
1948	1118	13,100	June 2, 1948	23	128	92,970	132	95,570
1949	1148	4,570	Sept. 16, 1949	22	156	112,900	212	153,800
1950	1178	5,700	July 25, 1950	42	218	158,100	226	163,300
1951	1212	3,800	Oct. 4, 1950	24	164	118,400	98.5	71,340
1952	1242	366	July 11 or 12, 1952	7.8	56.5	40,990	53.4	38,730
1953	1282	476	June 1, 1953	5.4	41.6	30,090	43.0	31,140
1954	1342	4,660	Aug. 23, 1954	1.7	55.9	40,460	282	204,100
1955	1392	26,600	Oct. 8, 1954	17	292	211,500	132	95,910
1956	1442	6,480	Oct. 4, 1955	22	118	85,870	47.8	34,680
1957	1512	3,090	Aug. 19, 1957	11	46.8	33,910	-	-

377. Delaware River near Red Bluff, N. Mex.1/

Location.--lat 32°01', long 104°03', sec. 23, T. 26 S., R. 28 E., at bridge on U. S. Highway 285, 3.5 miles upstream from mouth, 4 miles south of Red Bluff, and 14 miles south of Malaga.

Drainage area.--689 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,900.66 ft above mean sea level, datum of 1929. Apr. 20, 1912, to Sept. 25, 1913, water-stage recorder at site 3 miles upstream at different datum. May 26, 1914, to June 19, 1915, water-stage recorder at site 2-1/2 miles downstream at different datum.

Average discharge.--20 years (1937-57), 15.6 cfs (11,290 acre-ft per year).

Extremes.--1912-13, 1914-15, 1937-57: Maximum discharge, 81,400 cfs Oct. 2, 1955 (gage height, 27.0 ft, from floodmarks), from rating curve extended above 1,500 cfs on basis of slope-area measurement of peak flow; no flow at times.
Maximum stage known since at least 1911, that of Oct. 2, 1955.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	4.84	19.7	7.06	24.1	6.16	-
1913	7.47	3.56	3.41	3.72	3.82	3.95	4.34	25.0	55.8	4.24	3.93	-	-
1914	-	-	-	-	-	-	-	-	-	-	12.3	4.21	-
1915	3.36	7.68	2.36	1.92	3.71	6.01	-	-	-	-	-	-	-
1938	9.01	3.49	4.39	4.89	4.17	2.74	1.96	.95	281	27.6	2.60	67.7	33.9
1939	6.62	2.41	2.81	3.56	3.56	3.61	2.52	6.20	56.1	11.6	20.7	2.12	10.1
1940	2.88	2.81	3.11	3.39	2.97	2.17	1.32	3.61	4.84	.40	6.35	7.29	3.42
1941	67.7	2.75	2.33	2.29	2.14	2.54	21.7	233	30.9	31.7	30.1	62.6	41.2
1942	24.7	6.59	6.83	7.57	6.99	6.73	11.2	7.75	9.39	4.96	27.0	17.7	11.5
1943	7.57	6.83	7.77	6.95	6.15	5.62	3.75	3.65	11.7	18.0	1.51	2.17	6.82
1944	3.32	4.43	5.39	5.45	5.15	4.04	3.23	2.30	8.81	2.48	24.8	26.3	7.96
1945	3.80	4.45	4.70	4.69	4.00	3.39	2.78	3.92	.42	10.3	16.2	1.83	5.07
1946	3.29	2.27	2.72	3.10	2.63	2.22	1.49	.69	.59	5.58	3.68	33.9	5.16
1947	19.3	2.65	2.84	2.80	2.47	2.56	1.92	1.76	.24	0	.63	.21	3.14
1948	.64	1.72	2.24	2.23	2.14	1.64	1.08	21.0	9.65	.83	4.61	.01	4.00
1949	.47	1.33	1.96	3.07	2.22	1.84	3.76	28.1	10.8	7.66	.66	94.4	13.0
1950	5.09	1.64	1.83	1.67	1.58	1.28	.66	.003	0	63.2	1.75	49.8	10.8
1951	93.0	2.34	2.20	2.05	2.29	2.07	1.54	1.02	0	13.6	.06	1.59	10.3
1952	0	.92	1.81	1.75	1.59	1.29	9.83	.26	.76	166	3.06	.70	15.9
1953	.31	1.38	1.65	1.46	1.57	1.27	.53	.78	5.01	24.8	2.28	0	3.45
1954	43.6	1.46	1.55	1.59	1.35	1.09	135	14.7	16.2	4.27	109	.98	27.7
1955	91.3	1.61	1.80	1.92	1.64	1.33	.75	7.03	.60	33.2	8.29	15.5	13.9
1956	748	3.04	2.44	2.43	2.50	1.84	1.28	6.06	6.13	3.38	4.08	0	66.1
1957	3.96	1.76	1.79	1.70	2.14	2.69	2.61	5.09	.91	14.7	168	4.68	17.8

1/ Published as "near Malaga" 1912-13 and as "near Angeles" 1914-15.

Monthly and yearly runoff, in acre-feet, of Delaware River near Red Bluff, N. Mex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	298	1,170	434	1,480	367	-
1913	459	212	210	229	212	243	258	1,540	3,320	261	242	-	-
1914	-	-	-	-	-	-	-	-	-	-	756	251	-
1915	207	457	145	118	206	370	-	-	-	-	-	-	-
1938	554	208	270	301	231	168	116	58	16,720	1,690	160	4,030	24,510
1939	407	143	173	219	198	222	150	381	3,340	711	1,270	126	7,340
1940	177	167	191	208	171	133	79	222	288	25	390	434	2,480
1941	4,160	164	143	141	119	156	1,290	14,300	1,840	1,950	1,850	3,720	29,830
1942	1,520	392	420	466	388	414	668	476	559	305	1,660	1,050	8,320
1943	466	407	478	427	341	346	223	224	699	1,110	93	129	4,940
1944	204	263	331	335	296	249	192	142	524	153	1,530	1,570	5,790
1945	234	265	289	288	222	208	166	241	25	633	994	109	3,670
1946	202	135	167	190	146	136	89	43	35	343	227	2,020	3,730
1947	1,190	157	175	172	137	157	114	108	14	0	39	12	2,280
1948	39	102	137	137	123	101	64	1,290	574	51	283	.8	2,900
1949	29	79	121	189	123	113	224	1,730	641	471	40	5,620	9,380
1950	313	97	112	103	87	79	39	.2	0	3,880	108	2,970	7,790
1951	5,720	139	135	126	127	128	92	62	0	838	3.8	95	7,470
1952	0	55	111	108	91	79	585	16	45	10,190	188	42	11,510
1953	19	82	101	90	87	78	31	48	298	1,530	140	0	2,500
1954	2,680	87	95	98	75	67	8,040	907	965	263	6,710	58	20,040
1955	5,610	96	110	118	91	82	45	432	36	2,040	510	920	10,090
1956	46,000	181	150	149	144	113	76	373	365	208	251	0	48,010
1957	244	105	110	105	119	165	155	313	54	905	10,360	279	12,910

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	328	-	-	-	-	-	-	-
1913	358	-	-	-	-	-	-	-
1914	388	-	-	-	-	-	-	-
1915	408	-	-	-	-	-	-	-
1938	858	34,600	June 27, 1938	0	33.9	24,510	33.4	24,200
1939	878	10,600	June 20, 1939	.4	10.1	7,340	9.88	7,150
1940	898	457	Sept. 1, 1940	0	3.42	2,480	8.84	6,420
1941	928	28,700	May 23, 1941	.4	41.2	29,830	38.3	27,700
1942	958	3,710	Oct. 24, 1941	2.9	11.5	8,320	10.1	7,340
1943	978	915	July 1, 1943	1.0	6.82	4,940	6.06	4,390
1944	1008	3,450	Aug. 17, 1944	.3	7.96	5,790	7.95	5,780
1945	1038	2,080	July 6, 1945	0	5.07	3,670	4.68	3,390
1946	1058	3,320	Sept. 29, 1946	0	5.16	3,730	6.56	4,750
1947	1088	3,120	Oct. 4, 1946	0	3.14	2,280	1.43	1,030
1948	1118	8,040	May 31, 1948	0	4.00	2,900	3.93	2,850
1949	1148	6,460	Sept. 9, 1949	0	13.0	9,380	13.4	9,670
1950	1178	5,310	Sept. 6, 1950	0	10.8	7,790	18.3	13,260
1951	1212	8,140	Oct. 1, 1950	0	10.3	7,470	2.26	1,640
1952	1242	14,100	July 11, 1952	0	15.9	11,510	15.9	11,550
1953	1282	2,600	July 21, 1953	0	3.45	2,500	7.13	5,160
1954	1342	21,700	Apr. 11, 1954	0	27.7	20,040	31.8	23,000
1955	1392	8,480	Oct. 7, 1954	0	13.9	10,090	69.9	50,600
1956	1442	81,400	Oct. 2, 1955	0	66.1	48,010	2.94	2,140
1957	1512	19,600	Aug. 18, 1957	0	17.8	12,910	-	-

378. Pecos River near Angeles, Tex.

Location.--Lat 32°02', long 104°00', in T. 26 S., R. 29 E., half a mile downstream from Delaware River, 2 miles north of Texas-New Mexico state line, 8-1/2 miles northwest of Angeles, Reeves County, and 17.9 miles upstream from Red Bluff Dam (completed in 1936).

Drainage area.--20,540 sq mi.

Gage.--Water-stage recorder. Datum of gage is 2,830.8 ft above mean sea level, datum of 1929. Prior to June 8, 1934, datum of gage was 1.00 ft higher.

Average discharge.--23 years (1914-37) 381 cfs (275,800 acre-ft per year).

Extremes.--1914-37: Maximum discharge, 85,000 cfs Aug. 8, 1916 (gage height, 22.5 ft, present datum), from rating curve extended above 20,000 cfs on basis of area-velocity studies, comparison with stations upstream and downstream, shape of later ratings defined by current-meter measurements, and logarithmic plotting; the channel capacity has been greatly reduced since 1916 due to heavy growth of salt cedars; minimum discharge, 23 cfs Aug. 20, 1934.

Remarks.--Station affected by backwater from Red Bluff Dam June 6 to Sept. 30, 1937. Large part of natural flow above Carlsbad, N. Mex. diverted for irrigation; considerable water is returned by seepage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	983	1,300	412	400	-
1915	363	489	469	416	425	475	5,180	603	340	311	466	970	870
1916	517	234	211	230	181	217	228	413	184	195	3,560	424	555
1917	473	258	331	458	241	174	191	161	126	129	157	298	250
1918	148	150	170	188	180	146	147	101	130	134	160	159	151
1919	150	166	194	211	209	2,340	1,450	1,310	1,770	1,280	422	2,930	1,040
1920	1,100	351	347	577	522	291	188	206	531	247	251	250	405

Monthly and yearly mean discharge, in cubic feet per second, of Pecos River near Angeles, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	266	242	258	271	243	179	156	160	3,670	1,110	1,180	258	665
1922	289	303	305	264	275	195	323	256	275	189	129	142	245
1923	156	148	127	148	170	207	102	105	151	97.4	158	420	165
1924	1,390	494	576	563	414	306	136	142	153	146	135	178	387
1925	179	185	158	137	132	128	95.8	112	81.3	142	1,320	943	303
1926	320	345	304	261	184	171	110	948	669	628	220	362	378
1927	453	411	366	397	311	196	118	119	108	101	92.8	155	235
1928	156	154	160	169	187	138	106	124	102	176	801	212	208
1929	421	611	418	241	190	184	121	209	114	139	147	188	249
1930	332	307	311	367	196	139	122	160	180	98.2	111	154	207
1931	1,270	405	284	305	291	223	313	963	229	118	203	161	399
1932	212	278	317	331	310	237	124	493	352	182	166	1,200	349
1933	2,120	424	399	408	359	272	129	138	95.9	90.2	97.8	309	405
1934	208	247	229	179	122	144	103	149	102	54.7	62.8	89.9	141
1935	115	104	113	115	81.4	84.7	57.2	112	547	74.9	79.0	563	170
1936	214	263	261	270	203	130	68.9	220	98.2	107	73.6	277	182
1937	158	174	169	158	149	150	93.8	506	7,083	253	290	559	805

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	58,500	79,900	25,300	23,800	-
1915	22,300	29,100	28,800	25,600	23,600	29,200	308,000	37,100	20,200	19,100	28,700	57,700	629,000
1916	31,800	13,900	13,000	14,100	10,400	13,400	13,600	25,400	10,900	12,000	219,000	25,200	403,000
1917	29,100	15,400	20,400	28,200	13,400	10,700	11,400	9,900	7,500	7,930	9,650	17,700	181,000
1918	9,100	8,930	10,500	11,600	10,000	8,980	8,750	6,210	7,740	8,240	9,820	9,460	110,000
1919	9,220	9,880	11,900	13,000	11,600	144,000	86,300	80,600	105,000	78,700	25,900	174,000	750,000
1920	67,600	20,900	21,300	35,500	30,000	17,900	11,200	12,700	31,600	15,200	15,400	14,900	294,000
1921	16,400	14,400	15,900	16,700	13,500	11,000	9,280	9,840	218,000	68,200	72,600	15,400	481,000
1922	17,800	18,000	18,800	16,200	15,300	12,000	19,200	15,700	16,400	11,600	7,930	8,450	177,000
1923	9,590	8,810	7,790	9,110	9,460	12,700	6,080	6,480	8,990	5,990	9,740	25,000	120,000
1924	85,500	29,400	35,400	34,600	23,800	18,800	8,080	8,740	9,090	8,960	8,280	10,600	281,000
1925	11,000	11,000	9,720	8,440	7,360	7,890	5,700	6,870	4,840	8,760	81,400	56,100	219,000
1926	19,700	20,500	18,700	16,000	10,200	10,500	6,550	58,300	39,800	38,600	13,500	21,500	274,000
1927	27,900	24,500	22,500	24,400	17,300	12,100	7,000	7,300	6,420	6,200	5,700	9,210	171,000
1928	9,590	9,160	9,840	10,400	10,800	8,480	6,310	7,620	6,070	10,800	49,300	12,600	151,000
1929	25,900	36,400	25,700	14,800	10,600	11,300	7,200	12,900	6,780	8,550	9,040	11,200	180,000
1930	20,400	18,300	19,100	22,600	10,900	8,550	7,260	9,840	10,700	6,040	6,820	9,160	150,000
1931	78,100	24,100	17,500	18,800	16,200	13,700	18,600	59,200	13,600	7,260	12,500	9,580	289,000
1932	13,000	16,500	19,500	20,400	17,800	14,600	7,380	30,300	20,900	11,200	10,200	71,400	253,000
1933	130,000	25,200	24,500	25,100	19,900	16,700	7,680	8,480	5,710	5,550	6,010	18,400	293,000
1934	12,800	14,700	14,100	11,000	6,780	8,850	6,130	9,160	6,070	3,360	3,860	5,350	102,000
1935	7,080	6,190	6,950	7,080	4,520	5,210	3,400	6,890	32,570	4,600	4,860	33,530	122,900
1936	13,150	15,650	16,040	16,570	11,670	8,010	4,100	13,520	5,840	6,590	4,530	16,500	132,200
1937	9,730	10,380	10,390	9,720	8,300	9,240	5,580	31,090	421,400	15,580	17,840	33,280	582,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1914	388	-	-	-	-	-	-	-
1915	408	54,900	Apr. 17, 1915	132	870	629,000	840	608,000
1916	438,458	85,000	Aug. 8, 1916	156	555	403,000	565	409,000
1917	458	3,860	Oct. 14, 1916	104	250	181,000	200	145,000
1918	478	1,030	June 6, 1918	71	151	110,000	154	112,000
1919	508	22,400	Sept. 20, 1919	101	1,040	750,000	1,145	829,000
1920	508	5,490	Oct. 13, 1919	-	405	294,000	318	231,000
1921	528	-	-	88	665	481,000	676	489,000
1922	548	9,200	Apr. 25, 1922	105	245	177,000	206	149,000
1923	568	12,400	Sept. 16, 1923	68	165	120,000	336	244,000
1924	588	12,600	Oct. 14, 1923	98	387	281,000	224	163,000
1925	608	12,700	Aug. 10, 1925	45	303	219,000	340	246,000
1926	628	14,000	May 29, 1926	82	378	274,000	400	290,000
1927	648	1,210	Oct. 5, 1926	59	235	171,000	171	124,000
1928	668	16,600	Aug. 10, 1928	70	208	151,000	290	210,000
1929	688	5,610	May 17, 1929	59	249	180,000	207	150,000
1930	703	2,370	May 17, 1930	63	207	150,000	292	212,000
1931	718	7,570	Apr. 29, 1931	67	399	289,000	302	218,000
1932	733	14,400	Sept. 30, 1932	78	349	253,000	529	384,000
1933	748	15,900	Oct. 1, 1932	48	405	293,000	214	155,000
1934	763	3,880	May 22, 1934	24	141	102,000	112	80,780
1935	788	23,500	June 13, 1935	29	170	122,900	204	147,500
1936	808	6,680	Sept. 20, 1936	28	182	132,200	162	117,800
1937	828	38,900	June 1, 1937	61	805	582,000	-	-

379. Red Bluff Reservoir near Orla, Tex.

Location.--Lat 31°54'05", long 103°54'40", at right end of Red Bluff Dam on Pecos River, 3 miles upstream from Salt (Screwbean) Draw, and 4.5 miles north of Orla, Reeves County.

Drainage area.--20,720 sq mi (contributing area).

Gage.--Staff gage. Datum of gage is 0.30 ft below mean sea level, datum of 1929.

Extremes.--1937-57: Maximum contents observed, 352,000 acre-ft Sept. 27, 28, 1941 (gage height, 2,846.2 ft, observed on staff gage at service spillway, affected by variable drawdown due to flow through taintor gates); minimum observed, 11,080 acre-ft May 13, 1948 (gage height, 2,781.4 ft).

Remarks.--Reservoir is formed by earth-fill dam, rock-faced. Storage began in 1936. Dam completed early in 1937. Capacity, 307,000 acre-ft between gage heights 2,764.0 ft (penstock intake sill) and 2,842.0 ft (top of taintor gates). Dead storage, 3,000 acre-ft. Figures given herein represent total contents. Water is used for power development and for irrigation from Mentone to Grandfalls. Contents computed from intermittent gage readings.

Cooperation.--Gage-height record and capacity curve furnished by Red Bluff Water Power Control District.

Contents, in acre-feet, on last of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1937	-	-	-	-	-	-	-	34,800	296,000	268,000	251,000	263,000	+219,000
1938	266,000	264,000	262,000	261,000	260,000	248,000	219,000	199,200	201,000	190,200	146,800	145,500	-117,500
1939	141,600	144,200	146,200	152,700	156,900	152,000	123,400	113,900	101,000	78,200	66,700	47,000	-98,500
1940	46,400	50,000	58,200	65,900	73,100	70,700	50,900	57,200	53,700	33,400	31,300	28,400	-18,600
1941	43,000	49,700	57,200	66,300	73,100	80,900	53,000	330,000	319,000	316,000	317,000	327,000	+298,600
1942	320,000	315,000	312,000	313,000	310,000	308,000	310,000	310,000	300,000	272,000	253,000	302,000	-25,000
1943	294,000	301,000	301,000	297,000	300,000	296,000	272,000	255,000	243,000	227,000	183,000	177,000	-125,000
1944	185,000	196,000	208,000	224,000	234,000	227,000	196,000	174,000	156,000	126,000	106,000	116,000	-61,000
1945	122,200	131,200	142,200	155,500	156,200	144,200	124,600	103,500	77,800	62,800	39,500	28,000	-88,200
1946	38,000	43,000	49,100	57,900	60,700	56,600	35,300	28,500	27,600	14,400	17,600	29,500	+1,500
1947	43,250	56,150	62,800	75,950	82,700	79,550	49,400	45,500	38,280	17,670	11,820	13,400	-16,100
1948	17,020	21,100	25,750	30,110	34,400	36,380	15,080	16,140	32,930	21,100	13,700	16,630	+3,230
1949	21,800	24,900	28,220	35,060	40,500	39,000	24,900	29,160	32,100	16,500	13,400	59,300	+42,670
1950	75,500	87,650	98,000	110,000	115,000	104,600	80,450	66,300	52,400	55,100	30,300	40,500	-18,800
1951	71,100	85,400	95,000	103,000	101,500	104,000	83,150	62,500	55,800	32,100	25,240	28,590	-11,910
1952	31,300	34,400	37,080	41,000	44,000	40,750	30,900	29,920	26,260	27,860	15,190	14,420	-14,170
1953	18,840	21,950	25,750	28,780	31,100	31,900	30,700	30,500	28,780	26,960	24,580	23,300	+8,880
1954	33,350	33,770	34,620	36,840	37,080	24,740	37,080	36,380	31,700	20,680	28,220	18,970	-4,330
1955	163,500	162,800	162,000	164,200	162,000	141,600	115,600	102,500	80,900	53,000	25,410	31,700	+12,700
1956	94,500	96,500	100,000	102,500	103,000	99,000	81,350	74,700	60,000	40,750	26,960	23,150	-8,550
1957	24,740	25,660	28,400	28,900	12,750	15,540	16,400	16,380	18,840	18,970	27,140	17,400	-5,750

380. Salt (Screwbean) Draw near Orla, Tex.

Location.--Lat 31°52'40", long 103°56'50", at bridge on U. S. Highway 285, 157 ft upstream from Panhandle & Santa Fe Railway bridge, 4.1 miles northwest of Orla, Reeves County, and 5 miles upstream from mouth.

Drainage area.--464 sq mi.

Supplemental records available.--Records of chemical analyses for periods October 1940 to January 1941 and December 1943 to September 1944 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,804.19 ft above mean sea level, datum of 1929. Aug. 16 to Sept. 9, 1939, staff gage, Sept. 19, 1939, to Dec. 31, 1940, water-stage recorder, and Oct. 1 to Nov. 15, 1943, staff gage, all at present site and datum.

Average discharge.--15 years (1939-40, 1943-57), 4.59 cfs (3,320 acre-ft per year).

Extremes.--1939-40, 1943-57: Maximum discharge, 40,600 cfs Oct. 2, 1955 (gage height, 28.65 ft in gage well, 29.1 ft from floodmarks); no flow on many days each year.

Maximum stage known, that of Oct. 2, 1955. Maximum stage prior to 1939 was 21 or 22 ft present datum, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	1.78	0	0	0	0	0	0	13.5	16.1	0.05	24.8	.36	4.75
1941	14.2	.12	.10	-	-	-	-	-	-	-	-	-	-
1944	0	0	.61	.57	.34	.14	.02	0	1.73	0	56.3	5.83	5.53
1945	.24	.78	.54	1.06	.34	.18	.52	4.38	0	50.5	5.80	.20	5.47
1946	.59	.22	.49	.77	.24	.15	.02	0	0	1.10	0	22.1	2.12
1947	10.9	.21	.36	.46	.20	.27	0	.75	0	0	0	0	1.12
1948	0	0	0	0	.02	0	0	2.83	7.48	.04	1.47	1.45	1.10
1949	.01	0	0	.37	.10	.01	0	0	3.70	.26	3.56	34.8	3.53
1950	3.17	.08	.01	.08	.05	.003	0	0	0	47.9	.36	2.12	4.56
1951	9.60	.003	.18	.24	.22	.17	.06	.27	0	2.60	.11	0	1.14
1952	0	0	0	0	0	0	39.3	0	5.44	.13	.12	0	3.69
1953	0	0	0	0	0	0	0	0	0	.28	1.21	0	.13
1954	31.8	.28	0	0	0	0	27.9	3.82	2.10	0	.06	0	5.51
1955	.80	0	0	0	0	0	.003	1.49	.25	2.90	0	8.63	1.17
1956	273	0	0	0	0	0	.97	16.6	.20	.05	.05	0	24.6
1957	.07	0	0	0	.18	2.04	0	1.55	6.62	41.8	.27	0	4.44

Monthly and yearly runoff, in acre-feet, of Salt (Screwbean) Draw near Orla, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	110	0	0	0	0	0	0	830	957	2.8	1,530	22	3,450
1941	876	7.3	6.1	-	-	-	-	-	-	-	-	-	-
1944	0	0	38	35	20	8.3	1.0	0	103	0	3,460	347	4,010
1945	14	46	33	65	19	11	31	269	0	3,110	356	12	3,970
1946	36	13	30	47	13	8.9	1.0	0	0	68	0	1,320	1,540
1947	671	12	22	28	11	16	0	46	0	0	0	0	806
1948	0	0	0	0	1.0	0	0	174	445	2.6	90	86	799
1949	.6	0	0	23	5.6	.4	0	0	220	16	219	2,070	2,550
1950	195	5.0	.4	4.8	2.6	.2	0	0	0	2,940	22	126	3,300
1951	590	.2	11	15	12	11	3.6	16	0	160	6.9	0	826
1952	0	0	0	0	0	0	2,340	0	324	7.7	7.1	0	2,680
1953	0	0	0	0	0	0	0	0	0	17	74	0	91
1954	1,950	17	0	0	0	0	1,660	235	125	0	4.0	0	3,990
1955	49	0	0	0	0	0	.2	92	15	179	0	513	848
1956	16,760	0	0	0	0	0	58	1,020	12	3.4	2.8	0	17,860
1957	4.6	0	0	0	10	125	0	96	394	2,570	16	0	3,220

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	0	-	-	-	-
1940	898,1512	3,220	Aug. 18, 1940	0	4.75	3,450	5.82	4,230
1941	898	-	-	0	-	-	-	-
1944	1008,1512	3,780	Aug. 18, 1944	0	5.53	4,010	5.60	4,070
1945	1038,1512	3,600	July 3, 1945	0	5.47	3,970	5.45	3,950
1946	1058,1512	3,050	Sept. 19, 1946	0	2.12	1,540	2.90	2,160
1947	1088	586	Oct. 4, 1946	0	1.12	806	.14	101
1948	1118	840	May 31, 1948	0	1.10	799	1.10	799
1949	1148,1512	3,540	Sept. 10, 1949	0	3.53	2,550	3.80	2,750
1950	1178	2,320	July 19, 1950	0	4.56	3,300	5.11	3,700
1951	1212	688	Oct. 3, 1950	0	1.14	826	.31	225
1952	1242	4,070	Apr. 17, 1952	0	3.69	2,680	3.69	2,680
1953	1282	188	Aug. 5, 1953	0	.13	91	2.85	2,060
1954	1342	2,320	Oct. 23, 1953	0	5.51	3,990	2.86	2,070
1955	1392	575	Sept. 23, 1955	0	1.17	848	24.2	17,560
1956	1442	40,600	Oct. 2, 1955	0	24.6	17,860	1.51	1,100
1957	1512	6,740	July 2, 1957	0	4.44	3,220	-	-

381. Pecos River near Orla, Tex.

Location.--Lat 31°49', long 103°48', on left bank 600 ft upstream from Pasotex pipeline crossing, 6 miles southeast of Orla, Reeves County, 11 miles downstream from Salt (Screwbean) Draw, and 14 miles downstream from Red Bluff Dam.

Drainage area.--21,300 sq mi, approximately (contributing area).

Supplemental records available.--Records of chemical analyses for period July 1937 to September 1957 and water temperatures for the period 1953 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,718.05 ft above mean sea level, datum of 1929.

Average discharge.--20 years (1937-57), 269 cfs (194,700 acre-ft per year).

Extremes.--1937-57: Maximum discharge 23,700 cfs Sept. 29, 1941 (gage height, 20.74 ft); no flow Sept. 9-14, Nov. 4, 1946.

Remarks.--Flow regulated by Red Bluff Reservoir, and reservoirs above Carlsbad, N. Mex. Occasional runoff from draws between dam and station. Many diversions above Red Bluff Reservoir for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	-	1,806	509	560	232	-
1938	175	158	155	177	178	259	489	349	454	411	554	241	301
1939	183	90.6	79.2	70.4	67.7	187	482	284	398	498	344	386	256
1940	148	107	36.3	27.2	8.41	114	382	120	179	379	163	156	152
1941	63.7	4.71	4.41	8.26	9.88	3.19	537	2,717	3,481	1,425	686	6,515	1,284
1942	5,717	1,474	838	712	617	277	601	1,034	307	579	454	682	1,115
1943	455	944	476	411	176	215	497	336	303	462	660	183	428
1944	38.2	23.4	15.2	13.8	68.1	219	530	365	361	534	466	68.3	226
1945	28.5	38.1	26.0	14.0	143	280	402	403	469	355	517	248	244
1946	5.50	30.1	36.7	5.09	86.8	142	381	187	68.4	245	55.2	20.7	105
1947	15.5	14.1	10.1	4.04	17.9	146	529	162	154	287	111	49.6	125
1948	1.78	8.91	5.19	6.37	3.44	6.66	320	99.0	511	237	163	13.1	114
1949	7.31	21.0	8.90	10.6	8.78	72.7	247	50.1	106	295	119	107	88.1
1950	10.1	8.07	14.0	8.91	10.1	228	404	310	262	456	522	86.9	195
1951	44.6	35.2	12.6	10.9	114	52.2	384	387	150	468	147	19.6	152
1952	6.63	8.13	28.1	11.0	10.5	75.7	218	43.5	71.5	127	177	37.6	68.0
1953	4.61	3.59	5.09	6.12	11.9	15.0	8.67	8.38	17.2	40.1	26.7	8.70	13.1
1954	50.3	14.4	14.1	10.2	23.5	230	47.6	89.2	144	209	143	148	94.3
1955	14.1	24.3	28.0	30.5	29.3	288	399	210	377	528	507	154	217

Monthly and yearly mean discharge, in cubic feet per second, of Pecos River near Orla, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	250	29.8	32.0	31.5	31.3	69.5	284	140	225	307	236	79.0	143
1957	25.0	21.2	22.4	47.7	265	10.3	7.96	39.1	24.9	69.8	116	157	65.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	-	107,500	31,290	34,460	13,800	-
1938	10,780	9,390	9,540	10,870	9,880	15,940	29,080	21,470	27,030	25,300	34,050	14,320	217,600
1939	11,280	5,390	4,870	4,330	3,760	11,480	28,680	17,450	23,680	30,640	21,130	22,940	185,600
1940	9,090	6,360	2,230	1,670	484	6,980	22,750	7,380	10,630	23,310	9,990	9,300	110,200
1941	3,920	280	271	508	548	196	31,980	167,100	207,200	87,640	42,160	387,700	929,500
1942	351,500	87,690	51,550	43,760	34,250	17,010	35,730	63,590	18,270	35,610	27,900	40,560	807,400
1943	27,950	56,160	29,290	25,240	9,780	13,250	29,560	20,650	18,030	28,430	40,610	10,900	309,800
1944	2,350	1,390	936	848	3,920	13,450	31,560	22,470	21,470	32,820	28,630	4,060	163,900
1945	1,750	2,270	1,600	858	7,960	17,200	23,940	24,780	27,880	21,840	31,810	14,790	176,700
1946	338	1,790	2,250	313	4,820	8,710	22,660	11,500	4,070	15,060	3,390	1,230	76,130
1947	952	836	620	249	992	8,960	31,480	9,990	9,150	17,660	6,810	2,950	90,650
1948	109	530	319	392	198	409	19,010	6,090	30,390	14,550	10,010	780	82,790
1949	449	1,250	547	649	488	4,470	14,670	3,080	6,330	18,130	7,320	6,390	63,770
1950	618	480	858	548	562	14,000	24,060	19,040	15,600	28,020	32,090	5,170	141,000
1951	2,740	2,100	776	673	6,340	3,210	22,840	23,820	8,910	28,750	9,030	1,160	110,300
1952	407	484	1,730	678	607	4,650	12,990	2,670	4,250	7,780	10,860	2,240	49,350
1953	284	214	313	376	663	922	516	516	1,020	2,460	1,640	518	9,440
1954	3,090	855	867	629	1,300	14,140	2,830	5,520	8,570	12,820	8,820	8,810	68,250
1955	867	1,440	1,720	1,880	1,630	17,730	23,730	12,910	22,440	32,450	31,160	9,160	157,000
1956	15,380	1,770	1,970	1,930	1,800	4,270	16,900	8,620	13,400	18,890	14,500	4,700	104,100
1957	1,540	1,260	1,370	2,930	14,700	632	474	2,400	1,480	4,290	7,110	9,350	47,540

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	828,928	-	-	-	-	-	-	-
1938	858	2,280	June 28, 1938	84	301	217,600	289	209,500
1939	878	2,690	June 21, 1939	58	256	185,600	251	181,800
1940	898	770	June 29, 1940	2.7	152	110,200	134	96,960
1941	928	23,700	Sept. 29, 1941	2.0	1,284	929,500	1,955	1,416,000
1942	958	15,700	Oct. 5, 1941	30	1,115	807,400	594	430,100
1943	978	2,060	Nov. 10, 11, 1942	49	428	309,800	278	201,100
1944	1008	2,470	Aug. 18, 1944	8.8	226	163,900	227	164,800
1945	1038	2,130	July 4, 1945	8.8	244	176,700	242	175,400
1946	1058	1,280	Sept. 20, 1946	0	105	76,130	102	74,160
1947	1088	562	Apr. 18, 19, 1947	0	125	90,650	123	89,200
1948	1118	1,320	June 1, 1948	.4	114	82,790	116	84,080
1949	1148	1,380	Sept. 11, 1949	.3	88.1	63,770	87.7	63,480
1950	1178	1,790	July 19, 1950	5.9	195	141,000	200	144,700
1951	1212	755	May 2-4, 1951	6.9	152	110,300	148	107,400
1952	1242	2,000	Apr. 17, 1952	3.2	68.0	49,350	65.5	47,540
1953	1282	460	June 9, 1953	2.3	13.1	9,440	18.6	13,440
1954	1342	1,830	Oct. 23, 1953	1.8	94.3	68,250	93.2	67,470
1955	1392	804	June 30, 1955	4.6	217	157,100	238	172,200
1956	1442	8,050	Oct. 2, 1955	22	143	104,100	123	89,180
1957	1512	2,110	July 2, 1957	5.1	65.7	47,540	-	-

382. Pecos River near Porterville, Tex.

Location.--Lat 31°40', long 103°37', half a mile east of Arno station on Atchison, Topeka & Santa Fe Railway, 2 miles west of Mentone (formerly Porterville), Loving County, and 20 miles north of Pecos.

Drainage area.--21,600 sq mi, approximately (contributing area).

Gage.--Chain gage. Altitude of gage about 2,640 ft (interpolated between Orla and Pecos).

Extremes.--1922-26: Maximum discharge, 5,690 cfs, Aug. 12, 1925 (gage height, 12.70 ft); minimum daily, 20 cfs, July 25, 1925.

Remarks.--Diversions above station for irrigation. Some regulation by reservoirs near Carlsbad, N. Mex.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	280	180	272	243	231	167	101	133	-
1923	150	143	132	139	168	171	118	92.6	140	96.1	141	480	164
1924	1,190	568	565	509	373	296	125	123	132	132	110	165	358
1925	160	165	152	142	144	125	62.9	110	69.6	80.2	968	706	241
1926	317	342	325	319	236	188	111	751	703	-	-	-	-

Monthly and yearly runoff, in acre-feet, of Pecos River near Porterville, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	15,600	11,100	16,200	14,900	13,700	10,300	6,210	7,910	-
1923	9,250	8,490	8,090	8,550	9,320	10,500	7,020	5,700	8,340	5,910	8,640	28,600	118,000
1924	73,000	33,800	34,700	31,300	21,400	18,200	7,450	7,560	7,840	8,140	6,780	9,790	260,000
1925	9,840	9,790	9,370	8,730	7,990	7,700	3,740	6,780	4,140	4,930	59,500	42,000	175,000
1926	19,500	20,400	20,000	19,600	13,100	11,600	6,620	46,200	41,800	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	548	-	-	-	-	-	-	-
1923	568	4,110	Sept. 16, 1923	58	164	118,000	323	234,000
1924	588	5,250	Oct. 11, 1923	77	358	260,000	203	147,000
1925	608	5,690	Aug. 12, 1925	20	241	175,000	284	205,000
1926	628	5,140	May 30, 1926	70	-	-	-	-

383. Pecos River above Barstow (above Barstow Canal), Tex.

Location.--Lat 31°35', long 103°30', on right bank 1 mile east of Patrole siding on Panhandle & Santa Fe Railway, 1-1/4 miles above headgate of Ward County Irrigation District No. 1 canal (formerly Barstow Irrigation Co.), 10 miles north of Pecos, Reeves County, and 14 miles northwest of Barstow, Ward County.

Drainage area.--21,800 sq mi, approximately (contributing area).

Gage.--Water-stage recorder. Altitude of gage about 2,590 ft, interpolated.

Extremes.--1916-21: Maximum stage, 12.1 ft Aug. 10, 1916 (discharge not determined); minimum discharge not determined.

Remarks.--Diversions upstream from station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	175	108	310	83.2	69.7	1,180	-	-
1917	339	230	322	589	310	157	94.5	81.8	69.3	55.5	59.7	150	205
1918	76.6	87.0	110	106	124	76.2	65.4	56.1	53.2	47.1	54.2	64.6	76.4
1919	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	1,340	-	-	-	-	-	-	-	-	-	170	-	-
1921	-	237	-	-	151	142	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	10,800	6,430	19,100	4,950	4,290	72,600	-	
1917	20,800	13,700	19,800	36,200	17,200	9,650	5,620	5,030	4,120	3,410	3,670	8,930	148,000
1918	4,710	5,180	6,760	6,520	6,890	4,690	3,890	3,450	3,170	2,900	3,330	3,840	55,300
1919	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	82,400	-	-	-	-	-	-	-	-	-	10,500	-	-
1921	-	14,100	-	-	8,390	8,730	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	438	-	-	-	-	-	-	-
1917	458	2,820	Oct. 15, 1916	22	205	148,000	153	110,480
1918	478	176	Jan. 15, 1918	25	76.4	55,300	-	-
1919	508	-	-	-	-	-	-	-
1920	508	4,000	Oct. 14, 1919	-	-	-	-	-
1921	528	-	-	-	-	-	-	-

384. Pecos River at Pecos, Tex.1/

Location.--Lat 31°26', long 103°28', at bridge on U. S. Highway 80, 195 ft downstream from Texas & Pacific Railway bridge, 1.7 miles east of Pecos, Reeves County, and 11 miles upstream from Toyah Creek.

Drainage area.--22,100 sq mi (contributing area).

Supplemental records available.--Records of chemical analyses for period October 1939 to June 1941 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,552.00 ft above mean sea level, datum of 1929. Prior to July 26, 1926, staff-gage or water-stage recorder at several sites within 10 miles of present site at various datums. Aug. 15, 1939, to Oct. 12, 1946, water-stage recorder at site 284 ft upstream at datum 2.00 ft higher.

Average discharge.--21 years (1899-1900, 1902-04, 1922-25, 1939-54), 214 cfs (154,900 acre-ft per year).

Extremes.--1899-1907, 1914-15, 1922-26, 1939-54: Maximum gage height about 20 ft, present datum, at railroad bridge 195 ft upstream, Oct. 5, 1904, (discharge not determined); flood of Sept. 30, 1941, reached a stage of 19.68 ft, present datum, at site 284 ft upstream (discharge 22,200 cfs); no flow at times in 1953-54.

1/ Published as "near Pecos" 1899-1907, as "near Barstow" 1914-15, and as "above Barstow" 1922-26.

384. Pecos River at Pecos, Tex.--Continued

Remarks.--Low flow largely regulated by diversion upstream for irrigation. Flood flow largely regulated by the following reservoirs above Orla: Almagorda Reservoir, completed in 1938, capacity, 132,200 acre-ft; Lake McMillan, completed in 1906, capacity, 38,660 acre-ft; Lake Avalon, completed in 1906, capacity, 6,600 acre-ft; and Red Bluff Reservoir, completed in 1936, capacity, 307,000 acre-ft. Total combined capacity, 484,500 acre-ft.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	-	-	-	-	-	-	-	-	-	-	-	-	-
1899	-	-	-	320	304	130	84.7	33.9	31.5	36.9	217	132	
1900	76.2	164	357	464	351	99.2	29.3	698	319	184	283	1,190	351
1901	1,080	369	138	-	-	-	-	-	-	150	633	675	-
1902	213	1,540	264	381	304	-	-	-	-	-	383	167	-
1903	112	102	205	351	303	172	49.0	30.5	1,070	113	47.4	44.2	217
1904	50.3	58.8	77.5	56.7	48.9	18.4	9.2	62.7	44.3	14.4	94.4	291	69.0
1905	-	-	-	340	682	1,370	596	1,090	1,240	3,550	1,660	-	-
1906	-	592	764	643	568	196	343	355	279	622	277	120	-
1907	129	208	843	531	337	185	12.3	29.9	231	-	-	-	-
1914	-	-	-	-	-	-	-	567	1,210	862	166	378	-
1915	341	-	421	325	250	291	-	-	184	-	-	-	-
1922	-	-	-	-	-	-	146	75.1	47.5	2.24	.55	1.04	-
1923	18.0	66.3	52.1	44.2	102	36.1	1.81	.35	1.46	.23	4.65	129	37.4
1924	982	454	523	494	255	130	1.54	1.15	.74	.60	.43	4.14	238
1925	11.6	35.5	35.7	13.6	10.3	1.06	.35	.60	.66	.45	584	422	93.5
1926	231	-	-	-	-	17.7	6.71	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	167	-
1940	66.0	66.9	45.7	29.4	17.8	63.1	204	61.8	106	208	100	73.2	86.9
1941	34.9	15.1	11.6	9.87	10.4	9.45	346	1,133	4,271	966	523	3,013	857
1942	7,336	1,830	878	711	591	172	401	808	130	314	320	567	1,181
1943	386	774	439	412	115	128	275	242	149	249	322	118	302
1944	29.8	16.9	13.3	11.7	17.7	129	333	243	224	247	308	64.5	137
1945	27.9	19.3	19.8	17.2	64.7	206	234	269	269	183	261	150	144
1946	30.9	12.3	12.9	9.59	18.1	111	199	110	15.9	148	13.8	7.39	57.8
1947	6.85	11.1	9.90	6.68	12.5	104	362	127	34.4	169	19.0	6.83	72.6
1948	5.17	5.76	6.62	6.18	5.92	5.61	187	38.7	283	112	33.7	20.1	58.8
1949	4.08	9.94	6.60	11.5	7.94	40.6	173	17.3	14.7	132	77.8	52.1	45.8
1950	5.78	4.53	5.78	4.79	5.89	157	222	192	110	257	301	90.4	114
1951	30.8	9.04	12.7	9.09	74.2	25.9	234	262	53.3	261	61.9	4.17	86.8
1952	2.78	2.86	11.7	3.54	5.26	37.8	147	16.5	19.2	80.1	80.2	9.73	34.8
1953	1.45	1.86	1.85	2.01	2.00	1.18	.33	.12	0	3.77	1.04	0	1.30
1954	34.6	.53	.63	.49	.45	83.8	4.18	49.4	1.92	34.6	43.2	49.9	25.6
1955	0	0	0	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	-	-	-	-	-	-	-	-	-	-	-	-	-
1899	-	-	-	19,700	16,900	7,990	5,040	2,080	1,870	22,700	13,300	7,860	-
1900	4,690	9,760	22,000	28,500	19,500	6,100	1,740	42,900	19,000	11,300	17,400	70,800	254,000
1901	66,400	22,000	8,480	-	-	-	-	-	-	9,220	38,900	40,200	-
1902	13,100	91,600	16,200	23,400	16,900	-	-	-	-	-	23,600	9,940	-
1903	6,890	6,070	12,600	21,600	16,800	10,600	2,920	1,880	63,700	6,950	2,910	2,630	156,000
1904	3,090	3,500	4,770	3,490	2,810	1,130	547	3,860	2,640	885	5,800	17,400	49,900
1905	-	-	-	20,900	37,900	84,400	35,500	67,100	74,000	218,000	102,000	-	-
1906	-	35,200	47,000	39,500	31,500	12,100	20,400	21,800	16,600	38,200	17,000	7,140	-
1907	7,930	12,400	51,800	32,600	18,700	11,400	732	1,840	13,700	-	-	-	-
1914	-	-	-	-	-	-	-	34,900	72,000	53,000	10,200	22,500	-
1915	21,000	-	25,900	20,000	-	17,900	-	-	10,900	-	-	-	-
1922	-	-	-	-	-	-	8,690	4,620	2,830	138	34	62	-
1923	1,110	3,940	3,200	2,720	5,690	2,220	108	21	87	14	286	7,660	27,100
1924	60,400	27,000	32,100	30,400	14,700	7,970	92	70	44	37	27	246	173,000
1925	714	2,110	2,200	835	574	65.5	21	37	39	28	35,900	25,100	67,600
1926	14,200	-	-	-	-	1,090	399	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	9,930	-
1940	4,060	3,980	2,810	1,810	1,030	3,880	12,120	3,800	6,320	12,770	6,170	4,350	63,100
1941	2,150	899	714	607	576	581	20,580	69,640	254,100	59,410	32,180	179,300	620,700
1942	451,100	108,900	53,980	43,690	32,810	10,550	23,880	49,680	7,750	19,300	19,650	33,750	855,000
1943	23,730	46,080	26,990	25,320	6,390	7,850	16,360	14,860	8,850	15,290	19,810	7,050	218,600
1944	1,830	1,010	819	720	1,020	7,920	19,840	14,940	13,320	15,160	18,920	3,840	99,340
1945	1,720	1,150	1,220	1,060	3,590	12,640	13,920	16,550	15,990	11,230	16,070	8,910	104,000
1946	1,900	733	791	590	1,000	6,840	11,840	6,770	946	9,110	848	440	41,810
1947	421	659	609	411	695	6,420	21,520	7,830	2,050	10,400	1,170	407	52,590
1948	318	343	407	380	340	345	11,160	2,380	16,840	6,920	2,070	1,200	42,700
1949	251	591	406	705	441	2,500	10,300	1,060	875	8,110	4,780	3,100	33,120
1950	356	270	355	295	327	9,650	13,230	11,790	6,550	15,820	18,510	5,380	82,530
1951	1,890	538	778	559	4,120	1,590	13,940	16,130	3,170	16,050	3,800	248	62,810
1952	171	170	722	217	302	2,330	8,760	1,010	1,140	4,930	4,930	579	25,260

Monthly and yearly runoff, in acre-feet, of Pecos River at Pecos, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	89	111	114	124	111	72	20	7.3	0	232	64	0	944
1954	2,130	31	39	30	25	5,150	249	3,040	114	2,130	2,660	2,970	18,570
1955	0	0	0	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1898	358	-	-	-	-	-	-	-
1899	358	a1,070	July 27, 1899	2	-	-	185	133,850
1900	358	a2,350	Sept. 23, 1900	20	351	254,000	434	314,430
1901	358	a2,600	Oct. 18, 1900	-	-	-	-	-
1902	358	a4,270	Nov. 7, 1901	-	-	-	-	-
1903	358	a2,670	June 22, 1903	20	217	156,000	197	141,350
1904	358	a1,260	Sept. 25, 1904	6	69.0	49,900	-	-
1905	358	-	-	-	-	-	-	-
1906	358	a2,340	July 18, 1906	10	-	-	382	276,000
1907	358	-	-	-	-	-	-	-
1914	388	-	-	-	-	-	-	-
1915	408	-	-	-	-	-	-	-
1922	548	-	-	-	-	-	-	-
1923	568	2,900	Sept. 17, 1923	.2	37.4	27,100	191	138,000
1924	588	5,000	Oct. 15, 1923	.3	238	173,000	80.7	58,600
1925	608	4,720	Aug. 13, 1925	.3	93.5	67,600	-	-
1926	628	-	-	-	-	-	-	-
1939	898	-	-	-	-	-	-	-
1940	898	528	June 30, 1940	10	86.9	63,100	77.2	56,010
1941	928	22,200	Sept. 30, 1941	7.8	857	620,700	1,700	1,231,000
1942	958	b4,800	Oct. 27, 1941	24	1,181	855,000	467	337,900
1943	978	1,590	Nov. 12, 1942	31	302	218,600	173	125,400
1944	1008	1,220	Aug. 19, 1944	11	137	99,340	137	99,770
1945	1038	828	July 5, 1945	9.2	144	104,000	143	103,400
1946	1058	418	Mar.23,July 24,1946	4.0	57.8	41,810	55.4	40,070
1947	1088	449	Apr. 18, 1947	5.7	72.6	52,590	71.8	51,970
1948	1118	560	Sept. 10, 1948	1.2	58.8	42,700	59.1	42,880
1949	1148	286	Apr. 14, 1949	3.2	45.8	33,120	45.4	32,850
1950	1178	766	July 20, 1950	3.6	114	82,530	117	84,760
1951	1212	506	May 8, 1951	2.5	86.8	62,810	83.8	60,670
1952	1242	888	Apr 19, 1952	1.4	34.8	25,260	33.8	24,510
1953	1282	51	July 15, 1953	0	1.3	944	3.91	2,830
1954	1342	1,060	Oct. 24, 1953	0	25.6	18,570	22.6	16,370
1955	1392	-	-	-	-	-	-	-

a Maximum daily discharge.
b Maximum peak discharge; maximum discharge during year 21,500 cfs at 12:01 a.m. Oct. 1, 1941, stage falling.

385. Madera Canyon near Toyahvale, Tex.

Location.--Lat 30°52', long 103°58', in Jeff Davis County, 11 miles upstream from Aguja Canyon, and 12 miles southwest of Toyahvale, Reeves County.

Drainage area.--53.8 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 4,200 ft (from topographic map). Prior to Dec. 16, 1932, staff gage at same site and datum.

Average discharge.--17 years (1932-49), 4.34 cfs (3,140 acre-ft per year).

Extremes.--1932-49: Maximum discharge, 5,120 cfs Sept. 29, 1932 (gage height, 8.00 ft, from floodmark), from rating curve extended above 200 cfs on basis of slope-area measurement at gage height 6.82 ft; no flow for long periods each year.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	-	40.4	206	-
1933	37.5	1.56	1.35	0.47	0.22	0.16	0	0	0.96	0.30	18.0	38.3	8.28
1934	1.12	.06	0	0	0	0	0	.15	.81	.71	1.14	0	.34
1935	0	0	0	0	0	0	0	0	1.41	2.30	1.61	5.25	.88
1936	.12	.003	0	0	0	0	0	16.5	2.75	.06	.07	50.5	5.78
1937	6.66	.93	.91	.13	.04	0	0	.30	1.33	0	1.57	1.92	1.16
1938	4.25	.31	.39	.47	.18	0	0	.10	14.9	86.4	6.35	2.21	9.77
1939	.05	0	0	.05	0	0	0	0	.57	1.22	6.05	.12	.68
1940	.28	.01	0	0	0	0	0	0	11.6	2.30	20.5	.64	2.96
1941	3.11	.31	.07	.05	.13	.06	4.32	9.27	10.2	15.3	18.9	58.2	9.99
1942	88.8	9.43	1.12	.48	.19	.13	0	0	0	0	32.5	16.4	12.6
1943	.41	.03	0	0	0	0	0	1.67	4.47	17.1	.06	0	2.00
1944	0	0	0	0	0	0	0	0	0	.13	21.3	75.4	8.00
1945	5.96	.71	.31	.20	0	.06	.53	0	0	36.8	.18	0	3.80
1946	4.81	.18	0	3.26	2.30	.21	0	0	0	0	.03	34.8	3.76
1947	29.3	.89	.39	.45	.18	.02	0	7.01	0	.31	0	0	3.27

Monthly and yearly mean discharge, in cubic feet per second, of Madera Canyon near Royahvale, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	0	0	0	0	0	0	0	0	0	.58	0	0	.05
1949	0	0	0	.05	.80	.39	.06	.28	0	.80	2.94	.40	.48

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	-	2,480	12,300	-
1933	2,310	93	83	29	12	9.8	0	0	57	18	1,110	2,280	6,000
1934	69	3.6	0	0	0	0	0	9.2	48	44	70	0	244
1935	0	0	0	0	0	0	0	0	84	142	99	312	637
1936	7.5	.2	0	0	0	0	0	1,010	164	3.6	4.0	3,010	4,200
1937	410	55	56	7.9	2.2	0	0	19	79	0	96	114	839
1938	261	19	24	29	10	0	0	6.0	887	5,320	391	131	7,080
1939	2.8	0	0	3.2	0	0	0	0	34	75	372	7.1	494
1940	17	.4	0	0	0	0	0	0	693	141	1,260	38	2,150
1941	191	18	4.4	2.8	7.1	4.0	257	570	610	943	1,160	3,460	7,230
1942	5,460	561	69	30	11	7.9	0	0	0	0	2,000	978	9,120
1943	25	1.8	0	0	0	0	0	103	266	1,050	3.6	0	1,450
1944	0	0	0	0	0	0	0	0	0	8.1	1,310	4,490	5,810
1945	367	42	19	12	0	3.8	32	0	0	2,260	11	0	2,750
1946	296	11	0	200	128	13	0	0	0	0	1.8	2,070	2,720
1947	1,800	53	24	27	9.7	1.0	0	431	0	19	0	0	2,360
1948	0	0	0	0	0	0	0	0	0	36	0	0	36
1949	0	0	0	3.2	45	24	3.4	17	0	49	181	24	347

Yearly discharge, in cubic feet per second

Year	W.S.P. no	Water year ending Sept. 30					Calendar year	
		Momentary maximum		minimum	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date	day				
1932	748	5,120	Sept. 29, 1932	0	-	-	-	-
1933	748	1,520	Sept. 19, 1933	0	8.28	6,000	4.95	3,590
1934	763	660	June 4, 1934	0	.34	244	.24	171
1935	788	148	Sept. 4, 1935	0	.88	637	.89	645
1936	808	870	Sept. 22, 1936	0	5.78	4,200	6.49	4,710
1937	828	255	Aug. 21, 1937	0	1.16	839	.86	622
1938	858	1,690	July 19, 1938	0	9.77	7,080	9.35	6,780
1939	878	102	Aug 14, 1939	0	.68	494	.70	508
1940	898	1,200	June 24, 1940	0	2.96	2,150	3.23	2,350
1941	928	2,810	Sept. 1, 1941	0	9.99	7,230	18.1	13,100
1942	958	4,760	Oct. 25, 1941	0	12.6	9,120	4.22	3,050
1943	978	1,600	May 21, 1943	0	2.00	1,450	1.96	1,420
1944	008	1,560	Sept. 5, 1944	0	8.00	5,810	8.59	6,240
1945	038	2,360	July 2, 1945	0	3.80	2,750	3.63	2,630
1946	058	2,610	Sept. 20, 1946	0	3.76	2,720	5.92	4,290
1947	088	1,400	Oct. 7, 1946	0	3.27	2,360	.67	488
1948	118	377	July 23, 1948	0	.05	36	.05	36
1949	148	102	Aug. 18, 1949	0	.48	347	-	-

386. Phantom Lake Spring near Toyahvale, Tex.

Location.--Lat 30°56', long 103°51', on left bank of concrete outlet canal, 375 ft below source of spring, 4.0 miles southwest of Toyahvale, Reeves County and 8.0 miles southwest of Balmorhea.

Gage.--Water-stage recorder and Parshall flume since October 1948. Datum of gage is 3,472.69 ft above mean sea level (Bureau of Reclamation bench mark). Dec. 21, 1931, to Dec. 31, 1933, water-stage recorder at site 425 ft downstream at datum 3.05 ft higher.

Average discharge.--16 years (1932-33, 1942-57), 14.6 cfs (10,570 acre-ft per year).

Extremes.--1931-33, 1942-57: Maximum daily discharge, 114 cfs Oct. 2, 3,1932; minimum daily, 10 cfs Jan. 5 to Feb. 28 and Sept. 5-16, 1957.

Remarks.--Discharge represents total flow of spring. Spring flow fluctuates slowly; check gates below gage affect stage-discharge relation frequently; daily discharge determined from hydrograph based on discharge measurements. Water used for irrigation in vicinity of Toyahvale and Balmorhea.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	13.0	15.3	18.3	14.4	13.5	12.8	12.8	12.7	34.3	-
1933	62.3	24.8	19.7	17.9	16.9	16.0	16.0	16.3	15.2	14.3	14.7	35.1	22.5
1934	17.2	15.9	16.0	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	18	15	15	13	13	13	20	-
1943	17	15	14	14	13	13	13	13	13	14	14	13	13.8
1944	12	12	11	12	13	12	12	13	13	13	13	29	13.8
1945	28	19	16	16	15	15	15	15	14	41	20	19	19.4
1946	21	17	15	17	20	17	15	14	14	14	14	13	15.9
1947	14	14	14	14	15	16	16	16	15	15	15	14	14.8
1948	14	14	14	14	14	14	14	14	14	13	13	13	13.8
1949	13.8	15.0	14.4	14.0	14.0	14.0	14.0	14.0	13.0	14.0	15.8	15.2	14.2	14.3
1950	14.4	14.8	14.0	14.0	14.0	14.6	14.6	13.3	14.0	14.2	15.8	16.8	14.5
1951	25.2	16.4	15.0	15.0	15.0	15.0	14.5	14.0	14.0	13.9	12.7	13.8	15.4
1952	14.0	14.0	14.0	13.3	13.0	13.0	13.0	13.0	13.0	18.6	16.5	13.0	14.0
1953	12.0	12.9	13.0	13.0	14.0	14.0	13.0	13.0	13.0	13.0	13.0	12.4	13.0

Monthly and yearly mean discharge, in cubic feet per second, of Phantom Lake Spring near Toyahvale, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	12.0	12.2	13.0	12.3	12.0	12.0	12.2	13.0	12.1	12.8	13.7	13.0	12.5
1955	13.0	12.3	13.0	13.0	13.0	13.0	12.1	12.0	12.0	13.2	14.0	13.5	12.8
1956	15.2	13.5	13.0	13.0	13.0	13.0	13.0	11.7	11.1	12.0	12.0	12.0	12.7
1957	12.0	12.0	11.5	10.1	10.0	11.0	11.9	11.8	11.0	11.1	11.4	10.6	11.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	799	880	1,130	857	830	762	787	781	2,040	-
1933	3,830	1,480	1,210	1,100	939	984	952	1,000	904	879	904	2,090	16,300
1934	1,060	946	984	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	1,110	893	922	774	799	799	1,190	-
1943	1,050	893	861	861	722	799	774	799	774	861	861	774	10,030
1944	738	714	676	738	722	738	714	799	774	799	799	1,730	9,940
1945	1,720	1,130	984	984	833	922	893	922	833	2,520	1,230	1,130	14,100
1946	1,290	1,010	922	1,040	1,110	1,050	893	861	833	861	861	774	11,500
1947	861	833	861	861	833	984	952	984	893	922	922	833	10,740
1948	861	833	861	861	778	861	833	861	833	799	799	774	9,950
1949	847	893	883	861	778	861	833	799	831	972	936	843	10,340
1950	883	879	861	861	778	899	871	819	833	873	974	1,000	10,530
1951	1,550	976	922	922	833	922	863	861	833	855	783	819	11,140
1952	861	833	861	817	748	799	774	799	774	1,150	1,010	772	10,200
1953	738	770	799	799	776	861	776	799	774	799	799	740	9,430
1954	738	724	799	758	666	738	728	799	720	787	845	774	9,080
1955	799	730	799	799	722	799	720	738	714	809	859	803	9,290
1956	932	803	799	799	748	799	774	718	659	738	738	714	9,220
1957	738	714	706	623	555	676	708	726	655	682	702	631	8,120

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	748	-	-	-	-	-	21.2	15,400
1933	748	-	-	14	22.5	16,300	17.6	12,700
1934	748	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-
1943	-	-	-	-	13.8	10,030	12.9	9,350
1944	-	-	-	-	13.8	9,940	16.1	11,650
1945	-	-	-	-	19.4	14,100	18.6	13,490
1946	-	-	-	-	15.9	11,500	15.0	10,840
1947	-	-	-	-	14.8	10,740	14.8	10,740
1948	-	-	-	-	13.8	9,950	13.8	10,020
1949	1148	-	-	13	14.3	10,340	14.3	10,340
1950	1178	-	-	13	14.5	10,530	15.7	11,360
1951	1212	-	-	12	15.4	11,140	14.2	10,250
1952	1242	-	-	12	14.0	10,200	13.7	9,950
1953	1282	-	-	12	13.0	9,430	13.0	9,380
1954	1342	-	-	12	12.5	9,080	12.6	9,140
1955	1392	-	-	12	12.8	9,290	13.1	9,500
1956	1442	-	-	11	12.7	9,220	12.2	8,840
1957	1512	-	-	10	11.2	8,120		

387. Giffin Springs at Toyahvale, Tex.

Location.--Lat 30°57', long 103°47', on right bank of canal, 125 ft below the spring, about 400 ft north of U. S. Highway 290, about 550 ft northwest of Toyahvale, Reeves County, about 800 ft northwest of San Solomon Springs, and 4.0 miles southwest of Balmorhea.

Supplemental records available.--Miscellaneous measurements of total flow of springs, made at fairly regular intervals beginning in 1942, are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage unknown.

Remarks.--Discharge records represent total flow of springs. Water used for irrigation in vicinity of Toyahvale and Balmorhea.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	4.75	3.89	3.61	3.88	4.55	4.61	4.70	4.61	4.65	4.64	4.64	5.06	4.46
1933	6.10	5.90	5.60	5.29	4.94	5.07	5.00	4.94	4.94	4.81	4.70	5.54	5.24

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	292	231	222	239	262	283	280	283	277	285	285	301	3,240
1933	375	351	344	325	274	312	298	304	294	296	289	330	3,790

Yearly discharge, in cubic feet per second, of Giffin Springs at Toyahvale, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	748	-	-	-	4.46	3,240	4.91	3,560
1933	748	-	-	-	5.24	3,790	-	-

388. San Solomon Springs at Toyahvale, Tex.

Location.--Lat 30°56', long 103°47', on left bank of South Canal at Toyahvale, Reeves County, 540 ft downstream from spring pool.

Supplemental records available.--Records of miscellaneous measurements made infrequently in 1900, 1904, 1919, 1922-25, and 1934-36, are published in reports of Geological Survey.

Gage.--Water-stage recorder and sharp-crested weir. Datum of gage is 3,311.02 ft above mean sea level, datum of 1929. Prior to Nov. 18, 1931, water-stage recorder at site 0.6 mile downstream at different datum.

Average discharge.--18 years (1931-33, 1941-57), 35.0 cfs (25,340 acre-ft per year).

Extremes.--1931-33, 1941-57: Maximum daily discharge, 71 cfs Oct. 7-9, 1932, Oct. 26-30, 1941; minimum daily, 27 cfs Jan. 1-31, 1957.

Remarks.--Discharge represents total flow of springs and is determined by combining flows in South Canal and two additional outlets (flow measured periodically), Middle and North Canals. Flow into each canal regulated by operation of headgates. Water used for irrigation in vicinity of Balmorhea.

Monthly and yearly mean discnarge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	31.9	35.0	36.2	33.3	30.9	34.1	32.3	32.1	32.5	32.9	32.7	57.0	35.1
1933	68.9	62.2	50.1	42.6	40.5	38.1	36.0	36.5	35.3	36.6	35.4	54.8	44.7
1934	47.4	41.0	40.0	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	32.9	33.2	38.0	39.0	39.6	40.1	53.3	-
1942	68.6	66.7	60.2	52.0	46.8	44.5	42.2	41.4	40.4	39.8	38.1	48.3	49.1
1943	45.1	43.2	39.6	39.0	37.8	37.7	38.0	38.2	38.1	40.5	39.6	36.0	39.5
1944	36.3	34.4	33.0	33.9	34.2	33.3	32.3	32.8	33.0	33.8	36.4	51.3	35.4
1945	50.0	43.2	38.9	36.3	36.4	37.5	36.4	36.3	35.0	55.2	49.0	42.4	41.4
1946	37.8	35.4	35.0	34.0	35.0	36.4	37.8	36.3	34.8	34.5	35.6	36.4	35.8
1947	46.6	42.9	42.0	38.9	36.6	34.2	34.6	35.6	34.4	33.9	32.6	31.5	37.0
1948	31.6	31.2	31.4	32.8	31.3	31.0	31.9	32.5	31.8	31.2	31.2	31.1	31.6
1949	30.0	30.0	29.2	28.8	28.1	30.5	31.0	31.1	32.6	33.0	32.3	31.4	30.7
1950	30.5	29.6	30.7	31.0	31.0	30.3	31.0	31.0	31.0	31.5	33.4	34.0	31.2
1951	32.4	31.1	30.7	29.5	30.0	30.0	30.0	30.5	31.3	32.0	31.1	31.3	30.8
1952	31.2	31.3	30.0	30.0	29.3	30.5	31.0	30.2	31.4	38.6	36.1	33.5	31.9
1953	32.5	30.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.4	31.3	31.6	30.5
1954	30.0	29.7	29.8	28.8	28.7	29.3	29.7	31.1	31.6	32.6	34.5	37.7	31.1
1955	34.5	32.7	32.0	32.0	33.2	32.7	31.2	30.6	31.7	32.9	33.0	31.2	32.3
1956	34.5	31.0	30.9	30.7	30.7	31.1	31.1	31.3	30.7	33.6	32.6	31.3	31.6
1957	30.9	30.2	28.5	27.0	28.0	29.0	30.0	29.5	30.9	29.7	30.1	29.2	29.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	1,960	2,080	2,230	2,050	1,780	2,100	1,920	1,970	1,930	2,020	2,010	3,390	25,440
1933	4,240	3,700	3,080	2,620	2,250	2,340	2,140	2,240	2,100	2,250	2,180	3,260	32,400
1934	2,910	2,440	2,460	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	2,020	1,980	2,340	2,320	2,440	2,470	3,170	-
1942	4,220	3,970	3,700	3,200	2,600	2,730	2,510	2,540	2,410	2,450	2,340	2,880	35,550
1943	2,770	2,570	2,430	2,400	2,100	2,320	2,260	2,350	2,270	2,490	2,440	2,170	28,570
1944	2,230	2,040	2,030	2,080	1,970	2,050	1,920	2,020	1,960	2,080	2,240	3,050	25,670
1945	3,070	2,570	2,390	2,230	2,020	2,310	2,170	2,230	2,080	3,390	3,010	2,520	29,990
1946	2,320	2,110	2,150	2,090	1,940	2,240	2,250	2,230	2,070	2,120	2,190	2,170	25,880
1947	2,870	2,550	2,580	2,390	2,030	2,100	2,060	2,190	2,040	2,080	2,010	1,870	26,770
1948	1,940	1,860	1,930	2,020	1,800	1,910	1,900	2,000	1,890	1,920	1,920	1,850	22,940
1949	1,840	1,790	1,800	1,770	1,560	1,880	1,840	1,910	1,940	2,030	1,990	1,870	22,220
1950	1,870	1,760	1,890	1,910	1,720	1,860	1,840	1,910	1,840	1,930	2,050	2,020	22,600
1951	1,990	1,850	1,890	1,820	1,670	1,840	1,790	1,880	1,860	1,970	1,910	1,860	22,330
1952	1,920	1,860	1,840	1,840	1,680	1,870	1,840	1,850	1,870	2,370	2,220	1,990	23,150
1953	2,000	1,800	1,840	1,840	1,670	1,840	1,790	1,840	1,790	1,870	1,930	1,880	22,090
1954	1,840	1,770	1,830	1,770	1,590	1,800	1,770	1,910	1,880	2,000	2,120	2,240	22,520
1955	2,120	1,950	1,970	1,970	1,850	2,010	1,860	1,880	1,890	2,030	2,030	1,860	23,420
1956	2,120	1,850	1,900	1,890	1,770	1,910	1,850	1,930	1,830	2,070	2,000	1,860	22,980
1957	1,900	1,800	1,750	1,660	1,560	1,780	1,780	1,810	1,840	1,830	1,850	1,740	21,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	748	66	Sept. 30, 1932	-	35.1	25,440	41.6	30,200
1933	748	71	Oct. 7-9, 1932	34	44.7	32,400	40.3	29,200
1934	748	-	-	-	-	-	-	-
1941	928	-	-	-	-	-	-	-
1942	958	71	Oct. 26-30, 1941	36	49.1	35,550	43.4	31,430
1943	978	46	Oct. 3,4, 1942	35	39.5	28,570	37.4	27,100
1944	008	56	Sept. 11-13, 1944	32	35.4	25,670	37.8	27,400
1945	038	60	July 6,7, 1945	34	41.4	29,990	39.4	28,540

Yearly discharge, in cubic feet per second, of San Solomon Springs at Toyahvale, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	40	Sept.22-24,30,1946	34	35.8	25,880	37.7	27,300
1947	1088	51	Oct.11-13, 1946	31	37.0	26,770	33.9	24,500
1948	1118	34	May 10, 11, 1948	30	31.6	22,940	31.2	22,640
1949	1148	33	June 13 to Aug.10,1949	28	30.7	22,220	30.8	22,310
1950	1178	34	Aug.18 to Sept.30,1950	29	31.2	22,600	31.5	22,810
1951	1212	33	Oct. 1-11, 1950	29	30.8	22,330	30.7	22,220
1952	1242	43	July 20-23, 1952	29	31.9	23,150	32.0	23,170
1953	1282	33	Oct.1-18, 1952	30	30.5	22,000	30.2	21,890
1954	1342	39	Aug.27,28,31,1954	28	31.1	22,520	31.9	23,120
1955	1392	38	Oct. 8, 1954	30	32.3	23,420	32.1	23,250
1956	1442	39	Oct. 5, 1955	29	31.6	22,980	31.1	22,560
1957	1512	33	Aug. 2, 1957	27	29.4	21,300	-	-

389. West Sandia Spring at Balmorhea, Tex.

Location.--Lat 30°59', long 103°44', 500 ft south of U. S. Highway 290, in the eastern edge of town of Balmorhea, Reeves County, and about three-quarters of a mile below the spring.

Supplementary records available.--Periodic miscellaneous measurements for the period 1942-53 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is unknown.

Extremes.--1931-33: Maximum daily discharge, about 2.0 cfs in October 1932;minimum daily, 1.0 cfs during July and August 1932.

Remarks.--Discharge records represent total natural flow of spring. Water used for irrigation in vicinity of Balmorhea. Small amount of flow diverted upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	1.13	1.10	1.21	1.29	1.21	1.11	1.12	1.06	1.03	1.61	-
1933	1.89	1.72	1.68	1.66	1.63	1.47	1.28	1.20	1.15	1.10	1.06	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	69	68	70	79	72	68	67	65	63	96	-
1933	116	102	103	102	91	90	76	74	68	68	65	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	748	-	-	-	-	-	1.34	969
1933	748	-	-	-	-	-	-	-

390. East Sandia Spring at Balmorhea, Tex.

Location.--Lat 30°59', long 103°43'30", 400 ft downstream from the spring, and about 1 mile east of Balmorhea, Reeves County.

Supplementary records available.--Miscellaneous measurements for the period 1942-53 have been made at fairly regular intervals and are published in reports of Geological Survey.

Gage.--Staff gage. Datum of gage unknown.

Extremes.--1931-33: Maximum daily discharge, 1.5 cfs Sept. 3-7, 1932; minimum daily, 0.9 cfs Aug. 2-28, 1933.

Remarks.--Discharge records represent total natural flow of spring, except that at times some surface runoff as well as a portion of flow from West Sandia Spring, is included.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	1.06	1.10	1.22	1.27	1.20	1.20	1.05	1.07	1.04	1.35	-
1933	1.35	1.23	1.21	1.28	1.34	1.32	1.30	1.16	1.09	1.00	.92	1.07	1.19

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	65	68	70	78	71	74	62	66	64	80	-
1933	83	73	74	79	74	81	77	71	65	61	57	64	859

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	748	-	-	-	-	-	1.19	863
1933	748	-	-	-	1.19	859	-	-

391. Toyah Creek near Pecos, Tex.

Location.--Lat 31°17', long 103°28', at bridge on county road (formerly U. S. Highway 285), 0.8 mile upstream from Toyah Lake, 3-1/2 miles upstream from U. S. Highway 285, and 10 miles southeast of Pecos, Reeves County.

Drainage area.--1,024 sq mi (contributing area).

391. Toyah Creek near Pecos, Tex.--Continued

Supplemental records available.--Records of chemical analyses for the periods October 1939 to September 1940 and October 1943 to September 1944 are published in reports of Geological Survey.

Gage.--Water-stage recorder and low-water control. Altitude of gage approximately 2,620 ft (from topographic map). Prior to Dec. 31, 1940, water-stage recorder at same site and datum.

Extremes.--1939-40, 1943-45: Maximum discharge, 12,000 cfs July 3, 1945 (gage height, 13.64 ft); no flow at times.

Remarks.--Several diversions above station for irrigation. Flood flow materially affected by spread-out dams upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	1.16	-
1940	0.16	0.34	0.35	0.42	0.50	1.57	0.68	0.38	4.97	0.15	0.19	.02	0.80
1941	14.4	1.13	.90	-	-	-	-	-	-	-	-	-	-
1944	.30	.39	.54	.67	.98	.82	.68	.77	1.66	.29	.23	34.6	3.45
1945	2.03	3.68	10.7	11.7	6.82	6.33	6.28	1.10	.42	275	1.53	.55	27.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	69	-
1940	10	20	21	26	29	97	41	23	296	8.9	12	1.0	585
1941	883	67	56	-	-	-	-	-	-	-	-	-	-
1944	18	23	33	41	57	51	41	48	99	18	14	2,060	2,500
1945	125	219	660	720	379	389	374	68	25	16,880	94	33	19,970

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	-	-
1940	898	282	June 25, 1940	0	0.80	585	2.12	1,540
1941	898	-	-	0	-	-	-	-
1944	1008	780	Sept. 8, 1944	.1	3.45	2,500	4.73	3,430
1945	1038	12,000	July 3, 1945	.2	27.6	19,970	-	-

392. Salt Draw near Pecos, Tex.

Location.--Lat 31°19', long 103°29', at county road (formerly U. S. Highway 285), 1 mile upstream from confluence with Toyah Lake, and 7-1/2 miles south of Pecos, Reeves County.

Drainage area.--1,882 sq mi (contributing area).

Supplemental records available.--Records of chemical analyses for the periods October 1939 to September 1940 and October 1943 to September 1944 are published in reports of Geological Survey.

Gage.--Water-stage recorder and low-water artificial control. Altitude of gage about 2,620 ft (from topographic map).

Extremes.--1939-40, 1943-45: Maximum discharge, 19,900 cfs Aug. 6, 1940 (gage height, 11.46 ft), from slope-area measurement of peak flow; minimum, 0.1 cfs at times.

Remarks.--No known diversion above station. Flood flow affected by spread-out dams upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0.37	-
1940	0.26	0.22	0.30	0.30	0.36	0.96	0.51	0.35	0.52	0.19	302	.21	25.9
1941	37.3	.43	.37	-	-	-	-	-	-	-	-	-	-
1944	.21	.24	.35	.46	.33	.43	.41	3.23	6.21	.38	.23	1.60	1.17
1945	.32	.53	.45	.54	.49	1.04	.92	.32	.30	.33	.10	.39	.48

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	22	-
1940	16	13	19	18	21	59	31	22	31	12	18,540	12	18,790
1941	2,290	25	23	-	-	-	-	-	-	-	-	-	-
1944	13	14	22	28	19	26	25	199	370	24	14	95	849
1945	20	32	27	33	27	64	55	20	18	20	6.1	23	345

Yearly discharge, in cubic feet per second, of Salt Draw near Pecos, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	-	-
1940	898	19,900	Aug. 6, 1940	0.1	25.9	18,790	29.0	21,080
1941	898	-	-	-	-	-	-	-
1944	1038	1,280	May 30, 1944	.1	1.17	849	1.21	879
1945	1038	88	Mar. 31, 1945	.1	.48	345	-	-

393. Limpia Creek near Fort Davis, Tex.

Location.--Lat 30°47', long 103°45', at State Highway 17 (formerly No. 3), 3 miles downstream from Short Canyon Creek, 14 miles south of Balmorhea, and 16 miles northeast of Fort Davis, Jeff Davis County.

Drainage area.--303 sq mi.

Gage.--Water-stage recorder and artificial control. Altitude of gage is about 4,200 ft (from topographic map).

Average discharge.--5 years (1926-31), 3.08 cfs (2,230 acre-ft per year).

Extremes.--1925-32: Maximum discharge, 14,200 cfs Aug. 30, 1932 (gage height, 10.42 ft); by slope-area measurement of peak flow; no flow for long periods each year.

Records.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	0	0	9.97	0	0	38.7	31.8	-
1926	4.28	0.85	0.32	0.13	0.67	0.70	-	-	-	-	1.06	1.30	-
1927	.50	.50	.50	.47	.56	.18	.14	0	.11	4.70	0	3.25	0.91
1928	0	0	0	0	0	0	0	0	.003	15.2	88.9	12.6	9.85
1929	1.11	.62	.47	.13	0	3.10	.49	3.66	.49	2.17	1.33	.13	1.16
1930	2.99	.10	.14	.03	0	0	0	1.16	.92	2.01	7.22	0	1.24
1931	4.81	0	0	.01	.10	.09	.24	.86	.37	.49	19.2	0	2.22
1932	.02	0	0	0	8.92	.36	.26	1.08	12.5	2.73	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	0	0	613	0	0	2,380	1,890	-
1926	263	51	20	7.9	37	43	-	-	-	-	66	77	-
1927	31	30	31	29	31	11	8.3	0	6.5	289	0	194	661
1928	0	0	0	0	0	0	0	0	.2	935	5,470	750	7,160
1929	68	37	29	8.0	0	191	29	225	29	133	82	7.7	839
1930	184	6.0	8.6	1.8	0	0	0	71	55	124	444	0	894
1931	296	0	0	.6	5.6	5.6	14	53	22	30	1,180	0	1,610
1932	1.2	0	0	0	513	22	15	66	744	168	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	-	-	0	-	-	-	-
1926	628	-	-	0	-	-	-	-
1927	648	685	Sept. 18, 1927	0	0.91	661	0.78	569
1928	668	3,420	Aug. 26, 1928	0	9.85	7,160	10.0	7,290
1929	688	858	July 28, 1929	0	1.16	839	1.25	903
1930	703	790	July 23, 1930	0	1.24	894	1.37	992
1931	718	925	Aug. 1931	0	2.22	1,610	11.8	1,310
1932	733	14,200	Aug. 30, 1932	0	-	-	-	-

394. Barilla Creek near Saragosa, Tex.

Location.--Lat 30°58', long 103°28', at U. S. Highway 290, 13 miles southeast of Saragosa and 17 miles east of Balmorhea, Reeves County.

Drainage area.--612 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 4,100 ft (from topographic map).

Extremes.--1924-26, 1932: Maximum discharge, 15,500 cfs Aug. 30, 1932 (gage height, 10.45 ft); no flow for long periods each year.

Remarks.--Several diversions upstream and downstream from station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	0	0	0	0	31.7	32.4	1.72	47.5	51.2	29.5	-
1926	0	0	0	0	0	0	0	9.25	0	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	1.72	208	-	-

Monthly and yearly runoff, in acre-feet, of Barilla Creek near Saragosa, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	0	0	0	0	1,890	1,990	102	2,920	3,150	1,760	-
1926	0	0	0	0	0	0	0	569	0	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	106	12,800	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	-	-	0	-	-	16.3	11,800
1926	628	-	-	0	-	-	-	-
1932	733	-	-	0	-	-	-	-

395. Toyah Creek below Toyah Lake, near Pecos, Tex.

Location.--Lat 31°21', long 103°24', at bridge on county road between Pecos and Grandfalls, at lower end of Toyah Lake, 6 miles upstream from mouth of Pecos River, and 7.4 miles southeast of Pecos, Reeves County.

Drainage area.--3,709 sq mi (contributing area).

Supplemental records available.--Records of chemical analyses for the periods October to May 1940 and October 1943 to September 1944 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Altitude of gage is about 2,560 ft (from topographic map).

Average discharge.--12 years (1939-51), 6.64 cfs (4,810 acre-ft per year).

Extremes.--1939-51: Maximum discharge, 5,850 cfs Aug. 7, 1940 (gage height, 4.17 ft); no flow most of time.
Flood of September 1932 reached a stage of 7.7 ft, from information by local residents.

Remarks.--Several diversions upstream from station for irrigation. Flood flow materially affected by use of spread-out dams upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	0	0	0	0	0	2.11	0	5.32	0	206	.01	18.1
1941	57.5	.37	.65	.96	.45	.03	0	13.9	31.1	1.57	.07	1.66	9.11
1942	186	48.7	21.3	13.1	6.77	.19	.40	0	0	0	1.06	5.95	23.9
1943	.28	0	.36	0	0	0	0	0	0	.07	0	0	.06
1944	0	0	0	0	0	0	0	7.45	7.34	0	1.08	7.54	1.94
1945	0	0	0	1.96	.93	.10	6.91	0	0	220	0	0	19.5
1946	3.58	0	0	2.54	.02	.003	0	0	.27	.30	0	0	.57
1947	.15	0	0	0	0	0	0	1.04	0	0	.47	0	.14
1948	0	0	0	0	0	0	0	0	0	1.15	1.52	0	.23
1949	0	0	0	.06	0	0	0	.03	51.1	0	0	0	4.21
1950	0	0	0	0	0	0	0	0	0	.27	.34	20.4	1.73
1951	1.92	0	0	0	0	0	0	0	0	0	.23	0	.18

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	0	0	0	0	0	125	0	317	0	12,690	.4	13,130
1941	3,540	22	40	59	25	2.0	0	853	1,850	97	4.2	99	6,590
1942	11,470	2,900	1,310	804	376	12	24	0	0	0	65	354	17,320
1943	17	0	22	0	0	0	0	0	0	4.4	0	0	43
1944	0	0	0	0	0	0	0	458	437	0	66	448	1,410
1945	0	0	0	121	52	6.3	411	0	0	13,520	0	0	14,110
1946	220	0	0	156	1.4	.2	0	0	16	19	0	0	413
1947	9.5	0	0	0	0	0	0	64	0	0	29	0	102
1948	0	0	0	0	0	0	0	0	0	71	94	0	165
1949	0	0	0	4.0	0	0	0	1.8	3,040	0	0	0	3,050
1950	0	0	0	0	0	0	0	0	0	17	21	1,220	1,260
1951	118	0	0	0	0	0	0	0	0	0	14	0	132

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	0	-	-	-	-
1940	898	5,850	Aug. 7, 1940	0	18.1	13,130	23.0	16,730
1941	928	518	Oct. 15, 1940	0	9.11	6,590	25.8	18,670
1942	958	1,660	Oct. 27, 1941	0	23.9	17,320	2.31	1,670
1943	978	16	Dec. 21, 1942	0	.06	43	.01	4.4
1944	1008	425	May 30, 1944	0	1.94	1,410	1.94	1,410
1945	1038	4,160	July 4, 1945	0	19.5	14,110	19.8	14,330
1946	1058	20	Oct. 10, 1945	0	.57	413	.28	202
1947	1088	12	May 11, 1947	0	.14	102	.13	93

Yearly discharge, in cubic feet per second, of Toyah Creek below Toyah Lake, near Pecos, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	19	July 31, 1948	0	0.23	165	0.23	165
1949	1148	815	June 7, 1949	0	4.21	3,050	4.21	3,050
1950	1178	540	Sept. 4, 1950	0	1.73	1,260	1.89	1,380
1951	1212	10	Oct. 6, 1950	0	.18	132	-	-

396. Pecos River below Barstow, Tex.

Location.--Lat 31°25', long 103°15', 20 ft downstream from Grandfalls-Big Valley diversion dam, 6 miles downstream from Toyah Creek, and 8-1/2 miles southeast of Barstow, Ward County.

Drainage area.--25,980 sq mi, approximately (contributing area).

Gage.--Water-stage recorder. Datum of gage is 2,512.2 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Extremes.--1939-40: Maximum discharge, 1,600 cfs Oct. 14, 1940 (gage height, 11.04 ft), from rating curve extended above 1,100 cfs; minimum daily, 17 cfs (regulated) Aug 25, 1940.

Remarks.--Flow regulated to large extent by reservoirs upstream from Orla. Several diversions for irrigation upstream from station. Some water from drains and wasteways returns to river between this station and the station at Pecos.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	204	-
1940	110	100	69.6	54.5	40.8	75.3	239	83.5	127	207	202	84.5	116
1941	178	47.0	34.8	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	12,160	-
1940	6,770	5,960	4,280	3,350	2,340	4,630	14,230	5,140	7,540	12,740	12,420	5,030	84,430
1941	10,960	2,800	2,140	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	-	-
1940	898	-	-	17	116	84,430	115	83,320
1941	898	-	-	-	-	-	-	-

397. Pecos River near Grandfalls, Tex.

Location.--Lat 31°19', long 102°53', at site of old abandoned road crossing 1-1/2 miles upstream from bridge on State Highway 82, 2 miles downstream from diversion for low-line canal of Imperial Irrigation Co., 3 miles southwest of Grandfalls, Ward County, and 4-1/2 miles upstream from diversion dam of Zimmerman Irrigation project (destroyed in 1941).

Drainage area.--27,810 sq mi, approximately (contributing area).

Gage.Water-stage recorder. Prior to Aug. 4, 1917, water-stage recorder at site 1-1/2 miles downstream at different datum. Approximate altitude of gages, 2,410 ft, from map of Pecos River Joint Investigation.

Average discharge.--6 years (1916-19, 1922-25), 154 cfs (111,500 acre-ft per year).

Extremes.--1915-26: Maximum discharge, 13,000 cfs Sept . 25, 1919 (gage height, 9.6 ft); minimum, less than 0.5 cfs for several periods during 1925.
Maximum stage known, about 13.0 ft in April 1915.

Remarks.--Extensive regulation and diversion in vicinity of gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	101	34.0	17.5	12.5	56.7	8.82	16.7	1,090	675	-
1917	234	111	213	309	68.3	41.9	28.4	19.3	15.8	20.4	14.0	24.9	92.3
1918	9.56	8.50	6.04	4.04	3.41	2.79	17.3	3.28	8.08	6.53	13.0	16.9	8.28
1919	15.8	11.4	10.6	9.16	53.5	997	935	821	1,270	886	221	1,990	601
1920	-	621	-	653	-	121	35.8	31.0	-	-	-	-	-
1921	57.1	169	206	245	81.2	19.0	15.0	-	-	-	-	-	-
1922	-	-	-	-	4.78	3.58	95.9	47.5	110	14.5	19.5	8.65	-
1923	22.1	73.6	37.4	9.76	11.7	11.3	11.2	6.95	5.24	2.89	4.92	75.0	22.6
1924	671	216	368	290	102	67.7	4.61	2.50	3.49	5.68	3.45	11.6	147
1925	13.7	4.25	2.38	1.51	3.89	1.15	1.69	1.99	1.82	3.51	456	137	52.9
1926	-	-	61.7	48.5	17.9	29.7	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet, of Pecos River near Grandfalls, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	6,150	1,960	1,080	744	3,490	525	1,030	67,000	40,200	-
1917	14,400	6,600	13,100	19,000	3,790	2,580	1,690	1,190	940	1,250	861	1,480	66,900
1918	588	506	371	248	189	172	1,030	202	481	402	799	1,010	6,000
1919	972	678	652	563	2,970	61,300	55,600	50,500	75,600	54,500	13,600	118,000	435,000
1920	-	37,000	-	40,200	-	7,440	2,130	1,910	-	-	-	-	-
1921	3,510	10,100	12,700	15,100	4,510	1,170	892	-	-	-	-	-	-
1922	-	-	-	-	265	220	5,710	2,920	6,550	892	1,200	515	-
1923	1,360	4,380	2,300	600	652	693	665	427	312	178	302	4,460	16,300
1924	41,300	12,800	22,600	17,800	5,870	4,160	274	154	207	349	212	689	106,000
1925	843	253	146	93	216	70.8	101	122	108	216	28,000	8,140	38,300
1926	-	-	3,800	2,990	996	1,830	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	438	-	-	-	-	-	214	156,300
1917	458	1,640	Oct. 16, 1916	3.9	92.3	66,900	47.3	34,200
1918	478	71	Apr. 6, 7, 1918	2.6	8.28	6,000	9.44	6,835
1919	508	13,000	Sept. 25, 1919	3.0	601	435,000	-	-
1920	508	-	-	-	-	-	-	-
1921	528	-	-	-	-	-	-	-
1922	548	-	-	-	-	-	-	-
1923	568	1,990	Sept. 18, 1923	1.9	22.6	16,300	117	85,000
1924	588	3,040	Oct. 18, 1923	1.8	147	106,000	42.7	31,600
1925	608	2,920	Aug. 16, 1925	.7	52.9	38,300	-	-
1926	628	-	-	-	-	-	-	-

398. Pecos River below Grandfalls, Tex.1/

Location.--Lat 31°18', long 102°46', at bridge on Farm Road 11 between Grandfalls and Imperial, 7.1 miles southeast of Grandfalls, Ward County, and 10 miles downstream from State Highway 82.

Drainage area.--27,820 sq mi, approximately (contributing area).

Supplemental records available.--Records of chemical analyses for the periods April 1939 to June 1942 and October 1946 to September 1956 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,373.0 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to July 1926, water-stage recorder at site 12 miles downstream at different datum. Aug. 22 to Oct. 5, 1939, staff gage at present site and datum.

Average discharge.--20 years (1922-25, 1939-56), 135 cfs (97,740 acre-ft per year).

Extremes.--1921-26, 1939-56: Maximum discharge, 22,000 cfs Oct. 2, 1941 (gage height, 20.98 ft); minimum daily 3.4 cfs June 19, 1956.

Remarks.--Flow largely regulated by reservoirs above Orla. Many large diversions for irrigation between Red Bluff Reservoir and this station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	91.5	71.3	73.8	127	96	110	45.3	34.1	29.2	-
1923	31.3	32.5	39.4	37.1	37.9	37.7	37.0	28.5	30.3	18.1	28.6	85.0	36.8
1924	518	197	306	303	116	133	100	48.4	27.3	26.3	25.6	23.9	153
1925	27.3	30.2	27.4	27.1	25.0	24.0	22.3	23.7	26.0	16.3	350	216	68.3
1926	117	144	112	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	42.7	-
1940	66.1	68.0	79.7	57.9	86.3	64.9	23.9	45.5	35.0	31.3	51.8	23.9	52.8
1941	74.3	79.5	69.2	62.1	61.5	56.4	41.7	292	3,965	665	255	1,101	556
1942	7,846	2,372	917	826	739	206	78.4	514	178	69.9	105	578	1,211
1943	428	773	509	478	130	66.7	53.5	67.8	53.6	57.4	48.0	69.6	229
1944	87.2	70.3	76.8	72.3	73.3	79.5	58.7	42.9	36.5	42.2	80.2	81.1	66.8
1945	86.8	77.4	79.2	75.3	67.1	51.3	58.0	37.8	40.3	169	60.3	46.9	70.9
1946	104	70.3	70.1	76.6	83.8	65.8	30.9	26.6	21.5	17.6	18.8	17.5	50.2
1947	21.1	19.3	31.2	32.0	31.0	42.6	28.3	32.7	43.2	24.1	18.4	14.4	28.2
1948	14.7	12.4	31.4	24.5	20.6	19.6	20.3	15.8	17.4	21.9	15.1	17.9	19.3
1949	16.8	26.3	30.3	36.5	33.9	29.0	25.7	25.5	24.3	15.4	22.5	22.1	25.6
1950	28.4	20.7	28.0	30.2	27.3	34.8	19.6	20.0	13.9	19.3	18.9	40.3	25.1
1951	65.9	26.2	41.2	39.1	30.4	24.3	22.7	35.1	20.5	23.3	14.3	31.2	31.3
1952	17.3	16.1	18.0	24.7	21.3	25.5	19.2	30.8	18.4	16.0	12.6	12.4	19.4
1953	13.5	14.7	18.8	18.3	19.8	18.2	13.0	10.6	8.15	6.87	6.70	8.16	13.0
1954	9.24	10.2	11.3	11.2	10.6	9.42	19.7	9.11	57.6	14.4	7.38	7.16	14.7
1955	21.0	10.6	12.9	17.9	23.2	17.5	13.7	12.4	11.1	24.9	17.2	29.4	17.6
1956	33.6	15.9	19.1	34.8	34.2	30.3	16.5	11.3	7.81	7.95	10.5	12.9	19.6

1/ Published as "near Buena Vista", 1921-26

Monthly and yearly runoff, in acre-feet, of Pecos River below Grandfalls, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	5,630	3,960	4,540	7,560	5,900	6,550	2,790	2,100	1,740	-
1923	1,930	1,930	2,420	2,280	2,100	2,320	2,200	1,750	1,800	1,110	1,760	5,060	26,700
1924	31,900	11,700	18,800	18,600	6,660	8,180	5,950	2,980	1,630	1,620	1,570	1,420	111,000
1925	1,680	1,800	1,680	1,660	1,390	1,480	1,330	1,460	1,550	1,000	21,600	12,800	49,400
1926	7,180	8,590	6,880	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	2,540	-
1940	4,070	4,050	4,900	3,560	4,960	3,990	1,420	2,800	2,080	1,930	3,180	1,420	38,360
1941	4,570	4,730	4,260	3,820	3,410	3,470	2,480	17,950	235,900	40,910	15,650	65,490	402,600
1942	482,400	141,100	56,360	50,810	41,030	12,690	4,660	31,620	10,610	4,300	6,450	34,420	876,400
1943	26,290	46,000	31,300	29,360	7,240	4,100	3,190	4,170	3,190	3,530	2,950	4,140	165,500
1944	5,360	4,180	4,720	4,440	4,220	4,890	3,490	2,640	2,170	2,590	4,930	4,820	48,450
1945	5,340	4,610	4,870	4,630	3,730	3,150	3,450	2,320	2,400	10,360	3,710	2,790	51,360
1946	6,400	4,180	4,310	4,710	4,660	4,050	1,840	1,640	1,280	1,080	1,150	1,040	36,340
1947	1,300	1,150	1,920	1,970	1,720	2,620	1,680	2,010	2,570	1,480	1,130	855	20,400
1948	904	738	1,930	1,510	1,180	1,210	1,210	972	1,040	1,350	928	1,070	14,040
1949	1,030	1,570	1,860	2,250	1,880	1,790	1,530	1,570	1,450	944	1,380	1,310	18,560
1950	1,770	1,230	1,720	1,860	1,520	2,140	1,160	1,230	829	1,190	1,160	2,400	18,190
1951	4,050	1,560	2,530	2,410	1,690	1,500	1,350	2,160	1,220	1,430	877	1,850	22,630
1952	1,060	960	1,110	1,520	1,230	1,570	1,140	1,900	1,090	986	774	740	14,080
1953	833	873	1,160	1,120	1,100	1,120	776	650	485	423	412	486	9,440
1954	568	604	695	687	587	579	1,170	560	3,430	885	454	426	10,640
1955	1,290	631	795	1,100	1,290	1,080	813	764	658	1,530	1,060	1,750	12,760
1956	2,070	946	1,170	2,140	1,970	1,860	980	697	465	489	645	765	14,200

Yearly discharge in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	548	-	-	-	-	-	64.9	47,100
1923	568	992	Sept. 19, 1923	15	36.8	26,700	114	82,800
1924	588	2,640	Oct. 19, 1923	18	153	111,000	74.1	53,800
1925	608	2,250	Aug. 16, 1925	8.0	68.3	49,400	92.4	66,900
1926	628	-	-	-	-	-	-	-
1939	898	-	-	-	-	-	-	-
1940	898	700	Aug. 10, 1940	17	52.8	38,360	53.6	38,900
1941	928	8,080	June 6, 1941	19	556	402,600	1,477	1,069,000
1942	958	22,000	Oct. 2, 1941	46	1,211	876,400	415	300,200
1943	978	1,380	Nov. 14, 1942	34	229	165,500	105	76,130
1944	1008	595	Aug. 21, 1944	29	66.8	48,450	67.5	49,010
1945	1038	1,200	July 7, 1945	30	70.9	51,360	71.1	51,430
1946	1058	272	Oct. 4, 1945	14	50.2	36,340	35.6	25,800
1947	1088	822	June 5, 1947	13	28.2	20,400	27.1	19,610
1948	1118	50	Sept. 12, 1948	12	19.3	14,040	20.5	14,930
1949	1148	92	June 6, 1949	12	25.6	18,560	26.0	18,800
1950	1178	162	Mar. 16, 1950	12	25.1	18,190	29.9	21,630
1951	1212	253	Sept. 13, 1951	11	31.3	22,630	24.3	17,620
1952	1242	280	May 28, 1952	11	19.4	14,080	19.0	13,820
1953	1282	23	Mar. 3, 1953	5.7	13.0	9,440	11.7	8,440
1954	1342	1,040	June 13, 1954	5.5	14.7	10,640	15.9	11,490
1955	1392	350	Oct. 6, 1954	7.2	17.6	12,760	19.7	14,230
1956	1442	232	Oct. 7, 1955	3.4	19.6	14,200	-	-

399. Comanche Springs at Fort Stockton, Tex.

Location.--Lat 30°53', long 102°52', on outlet canal of Pecos County Water Improvement District No. 1, in eastern outskirts of Fort Stockton, Pecos County, 0.2 mile upstream from bridge on U. S. Highway 290, and 0.5 mile downstream from head of springs.

Gage.--Water-stage recorder since February 1941. Datum of gage is 2,922.82 ft above mean sea level, datum of 1929.

Average discharge.--22 years (1935-57), 34.3 cfs (24,830 acre-ft per year).

Extremes.--1941-57: Maximum daily discharge, 56 cfs June 4, 1955 (affected by surface water released from flood-control reservoir); no flow at times 1955-57.
Maximum discharge measured prior to 1941, 66 cfs June 23, 1899; minimum measured, 38.7 cfs July 14, 1936.

Remarks.--Discharge represents total flow of springs exclusive of surface runoff from precipitation. About 6,000 acres of land irrigated downstream from station. Since about 1950, flow of springs greatly reduced at times by withdrawal from underground reservoir by irrigation wells. Beginning 1954, flow supplemented after heavy rains by surface water released directly and by underground leakage from small flood-control reservoir located several hundred feet above springs.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	44	44	44	44	43	43	42	42	41	39	38	40	42.0
1937	42	45	47	48	48	49	45	41	41	40	39	40	43.8
1938	41	42	43	44	46	45	44	43	43	43	43	43	43.3
1939	41	41	41	42	42	42	42	42	42	41	41	41	41.5
1940	41	41	41	43	45	45	42	42	42	41	41	41	42.1
1941	41	41	43	42	44	44.1	42.9	42.6	46.1	45.4	42.7	43.2	43.2
1942	43.7	46.0	41.5	47.6	46.9	45.2	44.1	43.0	41.9	41.4	41.5	41.5	43.7

Monthly and yearly mean discharge, in cubic feet per second, of Comanche Springs at Fort Stockton, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	42.4	43.9	43.7	43.6	43.6	44.1	43.4	42.9	43.0	43.8	41.5	41.0	43.1
1944	42.0	42.3	43.6	44.9	45.2	46.2	43.4	41.4	41.8	40.8	40.3	41.7	42.8
1945	42.9	43.7	43.5	44.5	44.4	45.6	44.6	42.8	41.5	42.0	39.4	39.3	42.9
1946	41.6	44.0	44.5	44.2	45.6	45.5	44.4	44.0	43.8	42.5	42.0	42.8	43.7
1947	43.0	42.2	41.1	42.1	44.1	44.2	43.0	42.8	40.9	40.0	40.0	39.4	41.9
1948	38.3	38.6	39.0	39.0	38.5	38.0	37.7	36.7	38.0	35.7	33.2	34.1	37.2
1949	37.0	38.0	38.7	39.1	40.0	40.0	38.4	37.1	37.6	36.4	34.9	35.0	37.7
1950	35.1	36.0	36.9	38.0	38.0	37.1	34.2	33.3	30.9	30.0	30.0	30.0	34.1
1951	34.2	34.0	33.4	36.3	35.2	33.6	24.1	20.1	28.4	14.0	11.7	15.9	26.7
1952	22.6	28.6	32.9	34.6	33.4	31.3	22.5	26.8	25.3	24.2	10.1	14.4	25.6
1953	23.5	27.0	28.4	30.0	30.0	27.9	17.1	18.5	11.0	7.06	5.57	15.9	20.1
1954	21.0	28.0	31.2	33.3	36.4	30.5	14.9	22.0	42.5	20.3	20.7	15.8	26.3
1955	20.2	23.8	30.5	35.7	33.5	25.5	5.96	6.51	14.3	3.54	.03	0	16.6
1956	15.5	26.8	32.3	28.1	33.0	14.7	0	0	.16	0	0	0	12.5
1957	0	0	8.67	14.9	17.3	8.01	0	0	0	0	0	0	4.01

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	2,710	2,620	2,710	2,710	2,470	2,640	2,500	2,580	2,440	2,400	2,340	2,380	30,500
1937	2,580	2,680	2,890	2,950	2,670	3,010	2,680	2,520	2,440	2,460	2,400	2,380	31,660
1938	2,520	2,500	2,640	2,710	2,550	2,770	2,620	2,640	2,560	2,640	2,640	2,560	31,350
1939	2,520	2,440	2,520	2,580	2,330	2,580	2,500	2,580	2,500	2,520	2,520	2,440	30,030
1940	2,520	2,440	2,520	2,640	2,590	2,770	2,500	2,580	2,500	2,520	2,520	2,440	30,540
1941	2,520	2,440	2,640	2,580	2,440	2,710	2,550	2,620	2,740	2,790	2,630	2,570	31,230
1942	2,690	2,740	2,550	2,930	2,600	2,780	2,620	2,650	2,490	2,540	2,550	2,470	31,610
1943	2,610	2,610	2,690	2,680	2,420	2,710	2,580	2,640	2,560	2,700	2,550	2,440	31,190
1944	2,580	2,520	2,680	2,760	2,600	2,840	2,580	2,540	2,490	2,510	2,480	2,480	31,060
1945	2,640	2,600	2,680	2,740	2,470	2,810	2,650	2,630	2,470	2,580	2,420	2,340	31,030
1946	2,560	2,620	2,740	2,720	2,530	2,800	2,640	2,710	2,610	2,610	2,580	2,550	31,670
1947	2,640	2,510	2,520	2,590	2,450	2,720	2,560	2,630	2,430	2,460	2,460	2,340	30,310
1948	2,350	2,290	2,400	2,400	2,220	2,340	2,250	2,260	2,260	2,190	2,040	2,030	27,030
1949	2,280	2,260	2,380	2,400	2,220	2,460	2,290	2,280	2,240	2,240	2,150	2,080	27,280
1950	2,160	2,140	2,270	2,330	2,110	2,280	2,040	2,050	1,840	1,840	1,840	1,790	24,690
1951	2,100	2,020	2,050	2,230	1,960	2,060	1,430	1,240	1,690	863	719	943	19,300
1952	1,390	1,700	2,030	2,130	1,920	1,920	1,340	1,650	1,510	1,490	624	859	18,560
1953	1,440	1,610	1,750	1,840	1,670	1,720	1,020	1,140	655	434	343	945	14,570
1954	1,290	1,660	1,920	2,050	2,020	1,870	885	1,360	2,530	1,250	1,270	942	19,050
1955	1,240	1,410	1,870	2,200	1,860	1,570	355	400	852	218	2.0	0	11,980
1956	951	1,600	1,980	1,730	1,900	905	0	0	9.3	0	0	0	9,080
1957	0	0	533	916	962	492	0	0	0	0	0	0	2,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	-	-	-	-	42.0	30,500	42.2	30,580
1937	-	-	-	-	43.8	31,660	43.1	31,170
1938	-	-	-	-	43.3	31,350	43.1	31,170
1939	-	-	-	-	41.5	30,030	41.5	30,030
1940	-	-	-	-	42.1	30,540	42.2	30,660
1941	928	-	-	-	43.2	31,230	43.7	31,610
1942	958	-	-	40	43.7	31,610	43.6	31,540
1943	978	-	-	41	43.1	31,190	42.9	31,060
1944	1008	-	-	40	42.8	31,060	43.0	31,200
1945	1038	-	-	39	42.9	31,030	42.9	31,030
1946	1058	-	-	40	43.7	31,670	43.4	31,420
1947	1088	-	-	39	41.9	30,310	41.0	29,680
1948	1118	-	-	33	37.2	27,030	37.0	26,910
1949	1148	-	-	34	37.7	27,280	37.2	26,930
1950	1178	-	-	30	34.1	24,690	33.6	24,290
1951	1212	-	-	8.4	26.7	19,300	25.2	18,260
1952	1242	-	-	1.1	25.6	18,560	25.1	18,240
1953	1282	-	-	2.8	20.1	14,570	20.2	14,640
1954	1342	-	-	7.8	26.3	19,050	25.8	18,700
1955	1392	-	-	0	16.6	11,980	16.6	11,990
1956	1442	-	-	0	12.5	9,080	6.98	5,080
1957	1512	-	-	0	4.01	2,900	-	-

400. Pecos River near Girvin, Tex.

Location.--Lat 31°07', long 102°25', on right bank 2.4 miles upstream from Comanche Creek, 2.6 miles northwest of Girvin, Pecos County, and 7.8 miles upstream from bridge on U. S. Highway 67.

Drainage area.--29,560 sq mi, approximately (contributing area of supplementary gage 7.8 miles downstream).

Supplemental records available.--Records of chemical analyses for periods October 1939 to June 1941 and October 1946 to September 1947 are published in reports of Geological Survey.

Gage.--Water-stage recorder with combination concrete control and measuring flume. Datum of gage not determined. Supplementary water-stage recorder (used as regular gage prior to July 17, 1951, now used only for flows exceeding about 250 cfs) 7.8 miles downstream at datum 2,269.65 ft above mean sea level, datum of 1929.

400. Pecos River near Girvin, Tex.--Continued

Average discharge.--18 years (1939-57), 162 cfs (117,300 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 20,000 cfs Oct. 5, 1941 (gage height, 20.49 ft, at supplementary gage); minimum daily, 4.3 cfs Sept. 27, 28, 1954.
Maximum stage known since at least 1932, that of Oct. 5, 1941.

Remarks.--Flow largely regulated by reservoirs above Orla. Many diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	54.9	-
1940	84.6	88.0	101	85.1	103	84.2	48.6	63.4	52.4	43.1	66.3	36.7	71.3
1941	91.1	98.9	88.1	82.3	81.2	84.3	72.5	292	3,556	813	376	1,168	564
1942	8,506	3,007	1,192	935	769	314	126	538	268	107	145	618	1,386
1943	483	769	556	541	214	109	88.5	123	86.2	88.7	72.9	88.3	269
1944	120	97.6	101	103	103	106	81.7	67.1	53.9	53.6	90.5	108	90.3
1945	104	96.6	101	94.5	90.5	78.2	82.7	55.4	57.4	186	67.8	63.4	90.0
1946	120	89.8	87.4	106	97.4	85.5	60.6	47.8	41.9	33.7	42.9	38.8	70.9
1947	39.7	37.0	52.9	58.1	51.2	55.7	42.3	71.3	74.1	43.0	25.1	25.4	48.0
1948	22.6	26.7	49.3	45.6	35.4	35.2	37.2	32.2	28.8	34.4	27.4	26.9	33.5
1949	29.3	37.3	47.7	52.8	49.3	40.3	46.8	40.9	45.9	29.4	33.6	35.0	40.6
1950	40.8	35.0	38.0	45.5	44.9	39.4	32.0	80.6	25.9	29.2	35.2	45.9	41.1
1951	80.7	46.7	58.6	58.5	49.9	42.0	39.7	45.9	28.6	29.6	24.7	40.7	45.5
1952	28.0	29.6	31.6	37.0	36.3	38.0	28.4	25.0	24.7	25.8	19.4	19.2	28.6
1953	20.8	24.8	31.0	31.2	32.4	27.7	18.2	14.0	11.4	9.96	10.5	11.6	20.2
1954	21.8	18.3	20.7	21.6	22.8	22.4	28.4	20.7	61.9	22.7	12.3	6.92	23.3
1955	87.4	22.9	24.5	28.2	33.7	30.0	19.1	18.4	20.5	31.6	27.1	33.8	31.5
1956	40.6	24.7	27.7	43.7	44.3	38.8	25.7	12.6	10.6	18.9	13.6	15.5	26.4
1957	21.6	23.6	24.1	22.2	54.7	43.2	142	46.9	27.0	18.0	14.8	19.7	37.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	3,260	-
1940	5,200	5,230	6,190	5,230	5,900	5,180	2,890	3,900	3,120	2,650	4,080	2,190	51,760
1941	5,600	5,880	5,420	5,060	4,510	5,180	4,320	17,960	211,600	49,970	23,100	69,530	408,100
1942	523,000	178,900	73,290	57,480	42,700	19,280	7,510	33,090	15,940	6,590	8,900	36,800	1,003,000
1943	29,670	45,770	34,200	33,260	11,860	6,670	5,260	7,580	5,130	5,450	4,480	5,260	194,600
1944	7,380	5,810	6,210	6,310	5,900	6,500	4,860	4,130	3,210	3,290	5,560	6,410	65,570
1945	6,380	5,750	6,220	5,810	5,030	4,810	4,920	3,410	3,420	11,460	4,170	3,770	65,150
1946	7,360	5,350	5,370	6,550	5,410	5,260	3,600	2,940	2,490	2,070	2,640	2,310	51,350
1947	2,440	2,200	3,250	3,570	2,840	3,430	2,520	4,390	4,410	2,640	1,540	1,510	34,740
1948	1,390	1,590	3,030	2,800	2,040	2,170	2,210	1,980	1,710	2,110	1,680	1,600	24,310
1949	1,800	2,220	2,930	3,250	2,740	2,480	2,780	2,520	2,730	1,800	2,070	2,080	29,400
1950	2,510	2,080	2,340	2,790	2,500	2,420	1,900	4,960	1,540	1,800	2,170	2,730	29,740
1951	4,960	2,780	3,610	3,600	2,770	2,580	2,360	2,820	1,700	1,820	1,520	2,420	32,940
1952	1,720	1,760	1,940	2,270	2,090	2,340	1,690	1,540	1,470	1,590	1,190	1,140	20,740
1953	1,280	1,470	1,900	1,920	1,800	1,700	1,080	859	680	612	644	692	14,640
1954	1,340	1,090	1,270	1,330	1,270	1,380	1,690	1,270	3,680	1,390	755	412	16,880
1955	5,370	1,360	1,510	1,730	1,870	1,840	1,130	1,130	1,220	1,940	1,670	2,010	22,780
1956	2,500	1,470	1,710	2,690	2,550	2,390	1,530	774	632	1,160	839	922	19,170
1957	1,330	1,410	1,480	1,370	3,040	2,660	8,480	2,880	1,600	1,100	910	1,170	27,430

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	-	-	-	-	-
1940	898	469	Aug. 11, 1940	30	71.3	51,760	71.7	52,040
1941	928	6,870	June 16, 1941	39	564	408,100	1,611	1,166,000
1942	958	20,000	Oct. 5, 1941	85	1,386	1,003,000	467	337,900
1943	978	1,290	Nov. 15, 1942	58	269	194,600	144	104,400
1944	1008	450	Aug. 22, 1944	33	90.3	65,570	88.9	64,520
1945	1038	1,080	July 8, 1945	43	90.0	65,150	89.6	64,880
1946	1058	201	Oct. 6, 1945	32	70.9	51,350	56.9	41,160
1947	1088	652	May 16, 1947	21	48.0	34,740	45.4	32,860
1948	1118	259	May 25, 1948	20	33.5	24,310	34.8	25,250
1949	1148	198	June 13, 1949	22	40.6	29,400	40.6	29,380
1950	1178	1,800	May 26, 1950	20	41.1	29,740	47.2	34,160
1951	1212	189	Sept. 15, 1951	20	45.5	32,940	37.3	27,010
1952	1242	164	July 11, 1952	15	28.6	20,740	27.5	19,970
1953	1282	43	Aug. 20, 1953	8.0	20.2	14,640	18.9	13,690
1954	1342	784	June 15, 1954	4.3	23.3	16,880	29.6	21,420
1955	1392	2,000	Oct. 6, 1954	4.8	31.5	22,780	27.9	20,220
1956	1442	230	July 5, 1956	9.4	26.4	19,170	24.4	17,710
1957	1512	3,800	Apr. 26, 1957	12	37.9	27,430	-	-

401. Pecos River near Sheffield, Tex.

Location.--Lat 30°39', long 101°45', at bridge on U. S. Highway 290, 3-1/2 miles southeast of Sheffield, Pecos County, and 4 miles upstream from Liveoak Creek.

Drainage area.--31,660 sq mi, approximately, contributing area.

Supplemental records available.--Records of chemical analyses for the period November 1939 to June 1941, October to November 1946 and March to September 1947 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,026.30 ft above mean sea level, datum of 1929. Oct. 10, 1921, to Apr. 30, 1925, chain gage at site three-quarters of a mile upstream at datum 2.90 ft higher.

Average discharge.--13 years (1921-24, 1939-49), 247 cfs (178,000 acre-ft per year).

Extremes.--1921-25, 1939-49: Maximum discharge, 13,800 cfs Oct. 8, 1941 (gage height, 16.75 ft); minimum, 15 cfs Aug. 15, 1923. Maximum stage known, about 23.5 ft in September 1916, site and datum in use prior to May 1, 1925, from information by local residents.

Remarks.--Flow regulated to large extent by reservoirs above Orla. Many diversions between Orla and this station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	127	164	171	138	96.5	183	170	142	174	80.0	42.3	45.3	128
1923	59.9	62.2	65.0	64.2	63.4	58.6	105	56.4	47.3	29.3	61.6	117	65.6
1924	551	260	310	386	136	174	131	98.3	46.3	39.8	31.6	42.5	185
1925	45.0	52.7	55.0	55.0	50.0	48.0	40.0	-	-	-	-	-	-
1940	91.0	99.0	112	102	116	97.4	69.4	94.3	124	54.2	104	48.2	92.5
1941	93.8	109	105	107	101	115	169	301	3,045	883	448	1,110	546
1942	7,581	3,085	1,282	1,032	897	404	217	529	348	152	295	593	1,375
1943	530	760	591	560	261	162	131	149	110	110	89.8	100	297
1944	133	116	119	126	121	121	98.5	105	84.3	73.0	107	118	110
1945	114	110	119	116	117	91.8	94.4	63.8	66.3	209	80.2	59.5	104
1946	132	112	109	129	117	118	76.0	57.3	45.5	41.5	37.5	51.3	85.4
1947	82.9	57.6	71.6	79.2	69.5	74.4	59.6	137	108	47.5	43.9	35.4	72.3
1948	39.8	51.8	64.2	72.7	79.6	55.0	56.4	96.4	79.5	68.4	44.1	51.8	63.3
1949	35.7	43.4	59.2	63.1	71.4	53.0	180	192	73.8	133	60.7	70.8	86.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	7,820	9,760	10,500	8,480	5,360	11,300	10,100	8,730	10,400	4,920	2,600	2,700	92,670
1923	3,680	3,700	4,000	3,950	3,520	3,600	6,230	3,470	2,810	1,800	3,790	6,970	47,500
1924	33,900	15,500	19,100	23,700	7,800	10,700	7,790	6,040	2,760	2,450	1,940	2,530	134,000
1925	2,770	3,140	3,380	3,380	2,780	2,950	2,380	-	-	-	-	-	-
1940	5,600	5,890	6,870	6,270	6,650	5,990	4,130	5,800	7,370	3,330	6,390	2,870	67,160
1941	5,770	6,490	6,480	6,600	5,580	7,100	10,060	18,510	181,200	54,300	27,520	66,030	395,600
1942	466,100	183,600	78,800	63,460	49,830	24,810	12,920	32,540	20,710	9,320	18,140	35,290	995,500
1943	32,590	45,240	36,310	34,450	14,500	9,980	7,820	9,140	6,560	6,790	5,520	5,950	214,800
1944	8,180	6,920	7,320	7,720	6,940	7,420	5,860	6,450	5,020	4,490	6,580	7,040	79,940
1945	6,990	6,530	7,330	7,150	6,490	5,640	5,620	3,920	3,950	12,880	4,930	3,540	74,970
1946	8,120	6,650	6,680	7,920	6,500	7,290	4,520	3,520	2,710	2,550	2,300	3,050	61,810
1947	5,100	3,430	4,400	4,870	3,860	4,570	3,550	8,430	6,420	2,920	2,700	2,110	52,360
1948	2,450	3,080	3,950	4,470	4,580	3,380	3,360	5,930	4,730	4,200	2,710	3,080	45,920
1949	2,200	2,580	3,640	3,880	3,960	3,260	10,690	11,790	4,390	8,190	3,730	4,210	62,520

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	548	a1,820	Mar. 25, 1922	-	128	92,670	105	76,000
1923	568	a2,360	Sept. 7, 1923	-	65.6	47,500	144	105,000
1924	588	a2,460	Oct. 20, 1923	-	185	134,000	103	75,000
1925	608	-	-	-	-	-	-	-
1940	898	2,870	June 24, 1940	34	92.5	67,160	93.0	67,540
1941	928	5,700	June 20, 1941	36	546	395,600	1,527	1,105,000
1942	958	13,800	Oct. 8, 1941	126	1,375	995,500	527	381,200
1943	978	3,820	Oct. 17, 1942	83	297	214,800	170	123,100
1944	1008	1,330	Aug. 26, 1944	54	110	79,940	108	78,370
1945	1038	1,480	July 7, 1945	53	104	74,970	104	75,570
1946	1058	384	May 9, 1946	34	85.4	61,810	73.6	53,290
1947	1088	3,410	May 18, 1947	26	72.3	52,360	67.5	48,910
1948	1118	1,450	Feb. 26, 1948	36	63.3	45,920	61.8	44,860
1949	1148	5,560	July 26, 1949	33	86.4	62,520	-	-

a Maximum observed.

402. Pecos River near Shumla, Tex.

Location.--Lat 29°50', long 101°23', 4-1/2 miles north of Shumla, Val Verde County, 13 miles upstream from Pecos High Bridge, and 18.5 miles above mouth.

Drainage area.--35,162 sq mi (contributing area), all in the United States.

Gage.--Water-stage recorder. Datum of gage is 1,159.52 ft above mean sea level, U.S.C. & G.S. datum.

402. Pecos River near Shumla, Tex.--Continued

Extremes.--1954-57: Maximum discharge, 38,400 cfs May 10, 1957 (gage height, 22.22 ft); minimum, 75.9 cfs Aug. 16, 1956. Flood of June 28, 1954, reached a stage of 121.7 ft (discharge, 948,000 cfs by slope-area measurement of peak flow).

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station. Flow largely regulated by the following reservoirs above Orla, Tex: Alamogordo Reservoir (capacity, 132,200 acre-ft); Lake McMillan (capacity, 38,660 acre-ft); Lake Avalon (capacity, 6,600 acre-ft); Red Bluff Reservoir (capacity, 307,000 acre-ft); and other smaller reservoirs and diversion dams.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	206	199	202	185	187	161	243	331	485	431	496	-
1956	299	204	200	201	201	163	135	159	97.8	89.7	85.0	108	162
1957	354	153	148	145	178	164	671	2,820	694	274	212	270	510

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	12,200	12,200	12,400	10,300	11,500	9,570	15,000	19,700	29,800	26,500	29,500	-
1956	18,400	12,200	12,300	12,400	11,600	10,000	8,040	9,780	5,820	5,520	5,220	6,410	117,700
1957	21,800	9,100	9,100	8,890	9,880	10,100	39,900	173,000	41,300	16,900	13,000	16,000	369,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	(24,25)	-	-	-	-	-	286	207,170
1956	(25,26)	434	Oct. 1, 1955	78.0	162	117,700	158	114,790
1957	(26,27)	38,400	May 10, 1957	87.4	510	369,000	540	390,670

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

403. Pecos River near Comstock, Tex.1/

Location.--Lat 29°46', long 101°21', at the Pecos High Bridge of the Southern Pacific Railroad, 5.5 miles above mouth and 12 miles northwest of Comstock, Val Verde County.

Drainage area.--35,293 sq mi (contributing area), all in the United States.

Gage.--Water-stage recorder. Datum of gage is 1,058.01 ft above mean sea level, U.S.C. & G.S. datum. Prior to May 11, 1942, staff gage at same site and datum.

Average discharge.--54 years (1900-54), 557 cfs (403,300 acre-ft per year).

Extremes.--1900-54: Maximum discharge, 948,000 cfs June 28, 1954 (gage height, 96.24 ft), by slope-area measurement of peak flow; minimum, 71.3 cfs July 2, 1953.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station. Flow largely regulated by the following reservoirs above Orla, Tex: Alamogordo Reservoir (capacity, 132,200 acre-ft); Lake McMillan (capacity, 38,660 acre-ft); Lake Avalon (capacity, 6,600 acre-ft); and Red Bluff Reservoir (capacity, 307,000 acre-ft); and other smaller reservoirs and diversion dams.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to Apr. 1, 1914, and subsequent to June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	816	843	555	497	972	-
1901	1,511	829	489	508	563	443	306	348	321	341	688	1,295	637
1902	561	1,435	790	675	559	421	411	640	319	885	1,074	678	704
1903	430	425	414	524	545	483	244	368	1,011	552	218	304	460
1904	193	219	235	204	201	170	132	332	1,743	486	243	1,769	490
1905	2,719	1,533	795	605	772	1,354	1,668	1,681	1,745	1,068	2,617	938	1,463
1906	616	670	1,220	830	779	555	498	672	829	849	3,610	641	986
1907	539	525	710	574	595	496	434	421	415	324	275	239	462
1908	594	1,461	869	767	553	404	763	359	337	1,053	719	889	730
1909	409	384	347	424	331	295	245	294	297	401	507	393	361
1910	282	313	380	311	304	259	270	270	190	172	392	1,232	364
1911	419	294	231	240	465	280	854	590	274	226	867	243	415
1912	250	242	289	303	282	270	288	187	204	163	146	140	230
1913	166	207	283	305	259	240	1,061	1,509	848	675	264	771	549
1914	451	632	453	425	313	255	250	1,540	2,020	971	945	694	748
1915	2,510	1,350	911	792	627	617	2,410	2,540	649	413	523	791	1,180
1916	878	510	433	448	339	307	308	278	225	258	651	1,760	532
1917	485	458	429	465	337	256	223	236	181	173	154	164	297
1918	156	174	198	201	200	187	167	190	456	129	404	152	218
1919	340	265	259	254	252	472	1,460	1,160	1,030	1,230	593	5,920	1,100
1920	2,480	1,160	727	782	780	514	374	353	490	333	560	439	751
1921	362	428	459	491	423	370	302	287	2,460	981	660	440	637
1922	307	317	340	304	255	318	1,180	836	1,990	318	256	257	555
1923	241	257	243	237	245	242	352	252	198	175	195	313	245
1924	569	422	457	523	340	350	305	289	271	156	141	485	359
1925	331	235	229	223	196	181	188	2,540	551	278	756	441	517

1/ Published as "near Moorhead" prior to 1915.

Monthly and yearly mean discharge, in cubic feet per second, of Pecos River near Comstock, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	479	354	362	321	315	290	300	268	991	384	256	214	377
1927	608	477	480	549	488	253	317	175	272	211	155	323	358
1928	238	188	211	212	210	199	160	1,240	357	494	819	574	410
1929	376	639	600	386	271	288	244	236	224	189	153	213	319
1930	347	235	283	285	223	202	211	188	292	124	124	104	218
1931	1,500	374	325	360	361	331	427	1,080	451	259	264	194	494
1932	203	240	257	373	404	391	250	472	568	301	338	5,452	771
1933	3,130	1,231	882	909	703	535	402	355	300	272	286	356	780
1934	397	285	319	323	300	258	295	217	513	209	151	149	285
1935	155	173	199	209	210	185	240	2,060	2,270	565	315	3,400	832
1936	484	355	379	349	278	432	288	315	261	680	204	1,090	426
1937	407	304	294	294	270	281	254	270	972	278	251	328	350
1938	437	347	373	465	450	310	243	337	259	1,370	443	319	446
1939	354	307	296	328	263	261	243	534	240	209	400	174	302
1940	266	275	285	279	293	261	225	361	603	281	347	237	309
1941	270	312	284	283	284	309	713	727	3,310	1,260	702	1,470	824
1942	7,900	3,520	1,490	1,270	1,120	661	438	734	580	338	712	943	1,650
1943	810	986	818	781	503	363	317	398	288	322	217	236	504
1944	268	260	304	333	303	293	232	240	225	199	261	536	287
1945	306	280	291	283	266	262	257	186	157	737	207	209	288
1946	886	300	247	279	297	296	274	315	356	191	164	240	321
1947	1,470	269	262	277	236	235	197	490	369	193	205	270	375
1948	187	197	227	215	226	197	160	200	149	685	128	177	230
1949	208	198	217	220	241	205	640	484	322	848	513	339	370
1950	365	276	219	216	203	189	203	236	213	574	199	362	272
1951	238	203	227	247	258	222	178	326	160	116	139	129	204
1952	121	153	159	157	169	149	155	171	137	141	93.3	121	144
1953	98.4	123	155	163	168	161	125	102	80.8	142	270	200	149
1954	221	151	151	150	140	142	1,240	755	29,500	789	362	253	2,789

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	50,100	50,100	34,100	30,600	57,800	-
1901	92,900	49,300	30,100	31,200	31,300	27,200	18,200	21,400	19,100	20,900	42,300	77,100	461,000
1902	34,500	85,400	48,600	41,500	31,000	25,900	24,500	39,300	19,000	54,400	66,000	40,300	510,400
1903	26,400	25,300	25,500	32,200	30,300	29,700	14,500	22,600	60,100	34,000	13,400	18,100	332,100
1904	11,900	13,100	19,500	12,600	11,500	10,500	7,840	20,400	104,000	29,900	14,900	105,000	356,100
1905	167,000	91,200	48,900	37,200	42,900	83,200	99,300	103,000	104,000	65,600	161,000	55,800	1,059,000
1906	37,900	39,800	75,000	51,000	43,300	34,100	29,600	41,300	49,300	52,200	222,000	38,200	713,800
1907	33,100	31,300	43,600	35,300	33,100	30,500	25,820	25,900	24,700	19,900	16,900	14,200	334,300
1908	36,500	86,900	53,400	47,200	31,800	24,800	45,400	22,100	20,100	64,700	44,200	52,900	530,000
1909	25,200	22,900	21,300	26,100	18,400	18,100	14,600	18,100	17,700	24,600	31,200	23,400	261,500
1910	17,300	18,600	23,400	19,100	16,900	15,900	16,100	16,600	11,300	10,600	24,100	73,300	263,300
1911	25,800	17,500	14,200	14,800	25,800	17,200	50,800	36,300	16,300	13,900	53,300	14,400	300,400
1912	15,300	14,400	17,800	18,600	16,200	16,600	17,100	11,500	12,100	10,000	9,000	8,300	166,900
1913	10,200	12,300	17,400	18,800	14,400	14,800	63,100	92,800	50,500	41,500	16,300	45,900	398,000
1914	27,800	37,600	27,800	26,100	17,400	15,700	14,900	94,700	120,000	59,700	58,100	41,300	541,100
1915	154,000	80,300	56,000	48,700	34,800	37,900	143,000	156,000	38,600	25,400	32,200	47,100	854,000
1916	54,000	30,300	26,600	27,500	19,500	18,900	18,300	17,100	13,400	15,900	40,000	105,000	386,500
1917	29,800	27,300	26,400	26,600	18,700	15,700	13,300	14,500	10,800	10,600	9,470	9,760	214,930
1918	9,590	10,400	12,200	12,400	11,100	11,500	9,940	11,700	27,100	7,930	24,800	9,040	157,700
1919	20,900	15,800	15,900	15,600	14,000	29,000	86,900	71,300	61,300	75,600	36,500	352,000	794,800
1920	152,000	69,000	44,700	48,100	44,900	31,600	22,300	21,700	29,200	20,500	34,400	26,100	544,500
1921	22,300	26,500	28,200	30,200	23,500	22,800	18,000	17,600	146,000	60,300	40,600	26,200	461,200
1922	18,900	18,900	20,900	18,700	14,200	19,600	70,200	51,400	118,000	19,600	15,700	15,300	401,400
1923	14,800	15,300	15,000	14,600	13,600	14,900	21,000	15,500	11,800	10,800	12,000	18,600	177,900
1924	35,000	25,100	28,100	32,200	19,600	21,500	18,100	17,800	16,100	9,590	8,660	28,800	260,550
1925	20,300	14,000	14,100	13,700	10,900	11,100	11,200	156,000	32,800	17,100	46,500	26,300	374,000
1926	29,400	21,100	22,300	19,700	17,500	17,900	17,800	16,500	58,900	23,600	15,700	12,700	273,100
1927	37,400	28,400	29,500	33,800	27,100	15,500	18,900	10,800	16,200	13,000	9,510	19,200	259,310
1928	14,600	11,200	13,000	13,000	12,100	12,200	9,520	76,200	21,200	30,400	50,400	34,200	298,020
1929	23,100	38,000	36,900	23,700	15,100	17,700	14,500	14,500	13,300	11,600	9,410	12,700	230,510
1930	21,300	14,000	17,400	17,500	12,400	12,400	12,600	11,600	17,400	7,620	7,620	6,190	158,030
1931	92,200	22,300	20,000	22,100	20,000	20,400	25,400	66,400	26,800	15,950	16,250	11,540	359,340
1932	12,480	14,280	15,770	22,970	23,250	24,040	14,890	29,040	33,780	18,540	20,820	324,420	554,280
1933	192,240	73,260	54,260	55,880	39,060	32,870	23,900	21,830	17,860	16,730	17,590	21,180	566,660
1934	24,430	16,950	19,610	19,900	16,600	15,900	17,500	13,300	30,600	12,800	9,270	8,890	205,750
1935	9,520	10,300	12,200	12,900	11,600	11,400	14,300	126,000	135,000	34,700	19,300	202,000	599,220
1936	29,800	21,100	23,300	21,400	16,000	26,600	17,100	19,400	15,500	41,800	12,500	64,700	309,200
1937	25,100	18,100	18,100	18,100	15,000	17,300	15,100	16,600	57,900	17,100	15,400	19,500	253,300
1938	26,900	20,700	23,000	28,600	25,000	19,000	14,400	20,700	15,400	84,200	27,200	19,000	324,100
1939	21,800	18,300	18,200	20,200	14,600	16,000	14,400	32,900	14,300	12,900	24,600	10,400	218,600
1940	16,300	16,400	17,600	17,200	16,800	16,100	13,400	22,200	35,900	17,300	21,300	14,100	224,600
1941	16,600	18,600	17,500	17,400	15,800	19,000	42,400	44,700	197,000	77,200	43,200	87,400	596,800
1942	486,000	209,000	91,800	78,200	62,300	40,700	26,100	45,100	34,500	20,800	43,800	56,100	1,194,400
1943	49,800	58,700	50,300	48,000	27,900	22,300	18,900	24,500	17,100	19,800	13,400	14,100	364,800
1944	16,500	15,500	18,700	20,500	17,400	18,000	13,800	14,700	13,400	12,200	16,000	31,900	208,600
1945	18,800	16,600	17,900	17,400	14,800	16,100	15,300	11,400	9,340	45,300	12,700	12,500	208,140
1946	54,500	17,800	15,200	17,100	16,500	18,200	16,300	19,400	21,200	11,700	10,100	14,300	232,300

Monthly and yearly runoff, in acre-feet, of Pecos River near Comstock, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	90,200	16,000	16,100	17,100	13,100	14,400	11,700	30,100	22,000	11,900	12,600	16,100	271,300
1948	11,500	11,700	14,000	13,200	13,000	12,100	9,520	12,300	8,840	42,100	7,860	10,600	166,720
1949	12,800	11,800	13,300	13,500	13,400	12,600	38,100	29,800	19,200	52,100	31,500	20,200	268,300
1950	22,400	16,400	13,400	13,300	11,300	11,600	12,100	14,500	12,700	35,300	12,200	21,600	196,800
1951	14,700	12,100	14,000	15,200	14,300	13,600	10,600	20,100	9,520	7,120	8,560	7,680	147,500
1952	7,440	9,130	9,750	9,680	9,700	9,140	9,210	10,500	8,150	8,680	5,740	7,220	104,300
1953	6,050	7,300	9,550	10,000	9,330	9,870	7,440	6,280	4,810	8,750	16,600	11,900	107,900
1954	13,600	9,000	9,300	9,210	7,800	8,710	73,500	46,400	1,756,000	48,500	22,200	15,100	2,019,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358(7)	-	-	-	-	-	-	-
1901	358(7)	a9,200	Sept. 8, 1901	160	637	461,000	633	457,200
1902	358(7)	a11,100	May 18, 1902	210	704	510,400	578	419,100
1903	358(7)	a2,140	June 29, 1903	180	460	332,100	408	294,400
1904	358(7)	a17,500	Sept. 20, 1904	110	490	356,100	861	623,740
1905	358(7)	a14,570	Apr. 23, 1905	510	1,463	1,059,000	1,250	904,700
1906	358(7)	a35,570	Aug. 11, 1906	415	986	713,800	920	669,000
1907	358(7)	a880	Dec. 10, 1906	180	462	334,300	558	403,120
1908	358(7)	a11,700	July 7, 1908	210	730	530,000	582	422,600
1909	358(7)	a1,780	Aug. 1, 1909	150	361	261,500	347	251,500
1910	358(7)	a26,000	Sept. 6, 1910	150	364	263,300	362	261,400
1911	358(7)	a10,770	Apr. 3, 1911	190	415	300,400	402	290,300
1912	358(7)	a1,110	Apr. 7, 1912	125	230	166,900	220	159,300
1913	358(7)	a18,340	Apr 24, 1913	135	549	398,000	622	451,300
1914	388	a9,280	May 23, 1914	228	748	541,100	1,020	738,200
1915	408	36,700	Oct. 23, 1914	366	1,180	854,000	932	674,600
1916	438	-	Sept. 1, 1915	205	532	386,500	496	359,100
1917	458	1,590	May 12, 1917	145	297	214,930	226	163,620
1918	478	7,140	Aug. 15, 1918	106	218	157,700	246	178,110
1919	508	-	Sept. 16, 1919	126	1,100	794,800	390	1,007,900
1920	508	5,220	Oct. 4, 1919	288	751	544,500	490	354,800
1921	528	18,500	June 13, 1921	262	637	461,200	615	443,900
1922	548	-	June 18, 1922	220	555	401,400	538	387,800
1923	568	1,500	Sept. 17, 1923	149	245	177,900	305	221,000
1924	588(6)	12,800	Sept. 21, 1924	129	359	260,550	305	220,750
1925	608(6)	65,000	May 28, 1925	134	517	374,000	546	398,400
1926	628(6)	4,380	July 23, 1926	179	377	273,100	409	295,600
1927	648(6)	14,600	June 13, 1927	113	358	259,310	282	202,810
1928	668(6)	19,800	May 13, 1928	139	410	298,020	490	357,220
1929	688(6)	3,970	June 30, 1929	134	319	230,510	256	185,210
1930	703(6)	6,320	Oct. 14, 1929	98	218	158,030	329	239,830
1931	718(11)	20,100	Oct. 14, 1930	113	494	359,340	369	267,370
1932	(1,2)	116,000	Sept. 1, 1932	191	771	554,280	1,145	831,510
1933	(2,3)	6,360	Oct. 16, 1932	238	780	566,660	425	307,890
1934	(3,4)	8,220	June 4, 1934	137	285	205,750	244	176,780
1935	(4,5)	84,400	Sept. 4, 1935	141	832	599,220	886	641,400
1936	(5,6)	31,100	Sept. 27, 1936	174	426	309,200	408	296,300
1937	(6,7)	2,800	May 10, 1937	183	350	253,300	363	262,600
1938	(7,8)	31,500	July 24, 1938	192	446	324,100	431	311,800
1939	(8,9)	5,800	May 5, 1939	139	302	218,600	291	210,600
1940	(9,10)	5,610	June 25, 1940	163	309	224,600	313	227,000
1941	(10,11)	18,700	Sept. 18, 1941	186	824	596,800	1,840	1,330,900
1942	(11,12)	14,300	Oct. 10, 1941	263	1,650	1,194,400	782	566,400
1943	(12,13)	11,200	July 15, 1943	198	504	364,800	355	256,700
1944	(13,14)	8,960	Sept. 6, 1944	160	287	208,600	291	211,200
1945	(14,15)	8,730	July 8, 1945	144	288	208,140	335	242,340
1946	(15,16)	27,700	Oct. 7, 1945	153	321	232,300	369	267,100
1947	(16,17)	65,000	Oct. 6, 1946	154	375	271,300	257	186,200
1948	(17,18)	51,300	July 4, 1948	114	230	166,720	231	167,420
1949	(18,19)	98,500	July 26, 1949	139	370	268,300	390	282,600
1950	(19,20)	44,900	July 13, 1950	102	272	196,800	256	185,400
1951	(20,21)	8,180	May 24, 1951	93.5	204	147,500	184	133,000
1952	(21,22)	3,570	May 27, 1952	83.2	144	104,300	139	100,920
1953	(22,23)	14,800	Aug. 24, 1953	71.7	149	107,900	161	116,880
1954	(23,24)	948,000	June 28, 1954	118	2,789	2,019,000	-	-

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

404. Goodenough Spring near Comstock, Tex.

Location.--Lat 29°32', long 101°15', 4,000 ft upstream from point of discharge into the Rio Grande and 11.75 miles southwest of Comstock, Val Verde County.

Gage.--Water-stage recorder. Datum of gage is 967.42 ft above mean sea level, U.S.C. & G.S. datum. Prior to June 23, 1946, water-stage recorder, June 23, 1946, to Oct. 11, 1954, staff gage, and Oct. 12-22, 1954, water-stage recorder at same site at datum 1 ft higher.

Average discharge.--28 years (1929-57), 131 cfs (94,840 acre-ft per year).

Extremes.--1929-57: Maximum discharge, 846 cfs Sept. 18, 1941; maximum gage height, 43.35 ft June 28, 1954 (backwater from Rio Grande); minimum discharge, 65.8 cfs Feb. 27, 1957.

Remarks.--No regulation or diversion above station. Entire flow is from spring.

Cooperation.--Records furnished by the International Boundary and Water Commission after June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	139	127	127	135	138	137	136	-
1930	136	126	116	107	106	101	98.3	113	139	136	121	110	117
1931	123	134	143	145	160	153	139	147	155	172	162	164	150
1932	157	152	140	133	132	123	112	144	137	135	123	420	159
1933	421	367	333	319	307	289	279	274	270	268	258	245	302
1934	241	233	218	203	188	175	168	165	161	159	174	170	188
1935	162	157	148	145	140	138	138	142	193	174	168	172	156
1936	161	152	149	143	139	136	135	134	147	142	143	149	144
1937	148	151	143	132	132	130	128	126	130	122	113	123	132
1938	113	111	109	109	111	106	116	113	118	152	152	156	122
1939	136	126	117	115	109	113	105	133	123	117	120	119	120
1940	118	118	118	111	107	105	131	131	127	126	124	115	119
1941	111	114	108	104	104	106	114	130	127	138	136	199	124
1942	182	169	168	159	148	140	134	130	123	118	112	130	143
1943	125	120	111	106	96.3	96.0	106	119	132	124	120	120	115
1944	116	110	104	99.7	101	98.1	93.5	121	109	96.4	88.6	114	104
1945	136	125	115	101	103	104	105	95.1	89.5	134	123	120	113
1946	128	133	128	110	100	106	103	138	182	260	212	200	150
1947	238	210	205	203	199	194	187	183	179	174	169	169	193
1948	163	154	143	135	130	125	126	117	118	128	126	119	132
1949	133	132	120	112	113	150	157	170	154	141	137	140	113
1950	136	130	123	117	114	108	103	104	103	106	106	104	113
1951	105	96.3	97.7	93.6	93.9	91.5	91.7	94.1	116	110	98.4	90.1	98.2
1952	90.6	86.6	77.8	73.5	79.7	81.8	83.6	83.9	84.6	90.1	89.5	86.1	84.0
1953	83.7	79.9	80.6	77.7	77.8	91.4	91.3	79.2	75.2	73.1	93.1	108	84.3
1954	102	91.6	85.2	80.6	81.2	77.1	109	115	129	138	121	110	103
1955	123	116	103	97.7	90.7	90.9	92.4	102	109	98.3	109	128	105
1956	118	104	98.2	87.4	91.7	86.3	87.2	83.3	77.2	82.5	78.7	97.0	90.9
1957	78.4	76.3	73.2	72.4	69.4	70.6	104	182	162	118	110	106	102

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	8,550	7,560	7,810	8,030	8,480	8,420	8,090	-
1930	8,360	7,500	7,130	6,580	5,890	6,210	5,850	6,950	8,270	8,360	7,440	6,550	85,090
1931	7,560	7,970	8,790	8,920	8,890	9,410	8,270	9,040	9,220	10,570	10,000	9,760	108,400
1932	9,630	9,020	8,630	8,180	7,570	7,570	6,680	8,830	8,130	8,290	7,580	25,000	115,110
1933	25,870	21,850	20,470	19,620	17,030	17,770	16,580	16,840	16,040	16,460	15,840	14,580	218,950
1934	14,810	13,840	13,430	12,500	10,400	10,700	10,000	10,100	9,600	9,750	10,700	10,100	135,930
1935	9,960	9,330	9,120	8,890	7,760	8,460	8,230	8,750	11,500	10,700	10,300	10,200	113,200
1936	9,920	9,050	9,150	9,687	8,639	9,028	8,298	8,981	9,310	9,546	9,240	13,242	114,091
1937	11,323	10,322	10,087	8,120	7,350	8,010	7,610	7,730	7,730	7,230	6,960	7,320	99,792
1938	6,950	6,600	6,730	6,680	6,170	6,520	6,870	6,950	7,020	9,350	9,350	9,290	88,480
1939	8,380	7,480	7,220	7,080	6,060	6,950	6,240	8,210	7,310	7,170	7,350	7,090	86,540
1940	7,240	7,010	7,290	6,810	6,130	6,450	7,790	8,040	7,570	7,740	7,630	6,870	86,570
1941	6,840	6,790	6,660	6,380	5,780	6,540	6,780	7,980	7,560	8,510	8,390	11,800	90,010
1942	11,200	10,100	10,300	9,790	8,230	8,640	8,000	7,970	7,320	7,260	6,890	7,720	103,420
1943	7,660	7,120	6,830	6,520	5,350	5,900	6,330	7,330	7,880	7,650	7,380	7,110	83,060
1944	7,150	6,540	6,380	6,130	5,780	6,030	5,560	7,430	6,500	5,930	5,450	6,810	75,690
1945	8,370	7,410	7,090	6,230	5,720	6,380	6,270	5,850	5,330	8,230	7,550	7,140	81,570
1946	7,890	7,890	7,870	6,780	5,570	6,520	6,120	8,500	10,800	16,000	13,000	11,900	108,840
1947	14,600	12,500	12,600	12,700	11,100	11,900	11,100	11,300	10,700	10,700	10,400	10,000	139,600
1948	10,000	9,190	8,770	8,320	7,460	7,680	7,470	7,220	7,030	7,890	7,740	7,070	95,840
1949	8,150	7,830	7,380	6,890	6,290	9,250	9,350	10,400	9,140	8,690	8,420	8,350	100,140
1950	8,380	7,720	7,570	7,180	6,350	6,630	6,140	6,410	6,150	6,520	6,520	6,210	81,780
1951	6,460	5,730	6,010	5,760	5,220	5,630	5,460	5,780	6,910	6,750	6,050	5,360	71,120
1952	5,570	5,150	4,780	4,520	4,580	5,030	4,980	5,160	5,030	5,540	5,500	5,120	60,960
1953	5,150	4,750	4,960	4,780	4,320	5,620	5,430	4,870	4,470	4,500	5,720	6,460	61,030
1954	6,290	5,450	5,240	4,950	4,510	4,740	6,490	7,060	7,660	8,460	7,420	6,530	74,800
1955	7,580	6,870	6,320	6,000	5,040	5,590	5,500	6,280	6,470	6,040	6,680	7,590	75,960
1956	7,240	6,160	6,040	5,370	5,270	5,310	5,190	5,120	4,600	5,070	4,840	5,770	65,980
1957	4,820	4,540	4,500	4,450	3,860	4,340	6,200	11,200	9,660	7,230	6,750	6,330	73,880

Yearly discharge, in cubic feet per second, of Goodenough Spring near Comstock, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	688	-	-	124		-	-	-
1930	703	-	Apr. 28, 1930	96	117	85,090	119	86,420
1931	718(1)	236	July 19, 1931	104	150	108,400	154	111,360
1932	(1,2,15)	-	Sept. 1, 1932	110	159	115,110	215	156,020
1933	(2,3)	742	Nov. 5, 1932	236	302	218,950	266	192,840
1934	(3,4)	290	Oct. 1, 1933	149	188	135,930	169	122,260
1935	(4,5)	338	May 29, 1935	130	156	113,200	156	112,910
1936	(5,6)	380	May 23, 1936	130	144	114,091	143	103,460
1937	(6,7)	211	Oct. 6, 1936	111	132	99,792	122	88,340
1938	(7,8)	466	July 20, 1938	102	122	88,480	126	91,280
1939	(8,9)	582	Aug. 4, 1939	102	120	86,540	117	85,000
1940	(9,10)	444	Aug. 13, 1940	100	119	86,570	118	85,320
1941	(10,11)	846	Sept. 18, 1941	100	124	90,010	140	101,320
1942	(11,12)	273	May 19, 1942	109	143	103,420	129	93,430
1943	(12,13)	358	Mar. 24, 1943	83.2	115	83,060	113	81,520
1944	(13,14)	151	Sept. 28, 1944	82.9	104	75,690	108	78,490
1945	(14,15)	196	July 6, 1945	84.1	113	81,570	114	82,350
1946	(15,17)	574	June 23, 1946	96.1	150	108,840	173	124,890
1947	(17)	268	Oct. 8, 1946	163	193	139,600	177	127,860
1948	(17,18)	165	Nov. 15, 1947	114	132	95,840	126	91,240
1949	(18,19)	182	May 10, 1949	104	138	100,140	139	100,450
1950	(19,20)	138	Oct. 1, 1949	102	113	81,780	105	76,310
1951	(20,21)	122	June 25, 1951	83.4	98.2	71,120	94.5	68,420
1952	(21,22)	94.7	Oct. 24, 1951	72.1	84.0	60,960	83.1	60,320
1953	(22,23)	110	Sept. 12, 1953	71.2	84.3	61,030	87.2	63,150
1954	(23,24)	145	July 26, 1954	74.4	103	74,800	109	78,590
1955	(24,25	385	May 15, 1955	87.5	105	75,960	103	74,630
1956	(25,26)	128	Oct. 1, 1955	74.4	90.9	65,980	83.2	60,400
1957	(26,27)	654	May 31, 1957	66.8	102	73,880	107.8	78,080

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Bounday and Water Commission.

405. Devils River near Juno, Tex.

Location.--Lat 29°58', long 101°09', on left bank 500 ft downstream from Walter Baker ranch house, 2 miles upstream from Phillips Creek and 13-1/2 miles southwest of Juno, Val Verde County.

Drainage area.--2,733 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,489.7 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge.--24 years (1925-49), 196 cfs (141,900 acre-ft per year).

Extremes.--1925-49: Maximum discharge, 370,000 cfs Sept. 1, 1932 (gage height, 33.8 ft, from floodmarks), by slope-area measurement; minimum, 38 cfs May 1, 2, 4, 5, 1948.

Remarks.--No known diversion upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	-	-	189	125	115	106	-
1926	106	99.5	92.1	89.6	83.5	82.1	79.3	84.9	82.0	83.1	76.0	76.2	86.2
1927	101	85.2	97.9	88.6	88.1	90.7	136	85.1	80.1	71.9	67.3	501	124
1928	341	98.7	86.9	81.5	75.6	72.7	76.5	209	558	121	103	108	161
1929	104	96.9	94.4	94.2	86.2	85.9	82.3	74.0	133	376	105	83.4	118
1930	76.4	76.2	75.0	67.8	62.7	63.2	65.4	56.5	72.5	66.8	55.5	55.1	66.1
1931	2,900	131	117	108	111	97.4	225	225	170	134	123	112	376
1932	114	100	90.1	88.8	86.5	80.3	75.2	75.8	74.6	111	78.5	4,390	441
1933	346	233	206	178	168	159	150	149	140	130	122	118	175
1934	114	108	105	104	98.6	97.6	95.6	90.5	225	91.1	88.2	89.5	109
1935	79.7	78.3	75.2	70.6	68.3	67.9	144	1,122	2,064	193	127	2,645	558
1936	170	152	146	141	131	123	116	120	126	571	124	2,463	363
1937	157	142	127	118	116	108	102	93.1	160	95.4	83.3	79.8	115
1938	79.4	80.0	80.9	109	96.9	89.2	83.6	81.1	78.8	4,662	136	122	482
1939	110	102	101	94.0	87.3	84.4	84.3	152	114	134	96.3	92.6	105
1940	93.5	91.6	89.0	84.0	79.0	75.3	89.0	119	92.8	88.5	89.5	80.6	89.4
1941	80.7	78.0	71.7	67.5	67.4	64.9	68.6	96.5	90.1	86.4	82.8	87.2	78.5
1942	113	95.1	95.3	97.7	94.7	90.7	87.3	80.0	76.1	76.6	91.2	132	94.1
1943	600	138	138	130	119	113	105	207	122	106	94.0	97.1	165
1944	90.4	90.5	90.2	89.1	81.8	78.2	77.0	73.2	67.4	63.7	65.3	400	105
1945	85.2	76.9	68.4	76.8	73.8	71.4	70.4	62.5	60.3	84.4	66.1	61.3	71.5
1946	763	80.9	76.5	75.1	67.6	64.0	61.2	62.7	560	83.9	72.1	89.4	172
1947	226	83.5	83.5	87.4	81.1	77.9	73.4	106	69.6	62.7	60.7	57.7	89.4
1948	56.8	55.5	56.1	54.0	53.1	49.6	46.5	57.5	192	3,454	87.6	89.6	359
1949	92.5	78.5	72.4	66.5	116	89.4	391	742	136	294	246	134	206

Monthly and yearly runoff, in acre-feet, of Devils River near Juno, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	-	-	11,300	7,670	7,080	6,320	-
1926	6,530	5,920	5,660	5,510	4,640	5,050	4,720	5,220	4,880	5,110	4,670	4,540	62,400
1927	6,180	5,070	6,020	5,450	4,890	5,580	8,120	5,230	4,770	4,420	4,140	29,800	89,700
1928	21,000	5,870	5,340	5,010	4,350	4,470	4,550	12,900	33,200	7,440	6,330	6,430	117,000
1929	6,400	5,770	5,800	5,790	4,790	5,280	4,900	4,550	7,910	23,100	6,460	4,960	85,700
1930	4,700	4,530	4,610	4,170	3,480	3,890	3,890	3,470	4,310	4,110	3,410	3,280	47,900
1931	178,000	7,800	7,190	6,640	6,110	5,990	13,400	13,800	10,100	8,240	7,560	6,660	271,000
1932	7,010	5,950	5,540	5,460	4,980	4,940	4,470	4,660	4,440	6,820	4,830	261,000	320,000
1933	21,300	13,900	12,700	10,900	9,330	9,780	8,930	9,160	8,330	7,990	7,500	7,020	127,000
1934	7,010	6,430	6,460	6,400	5,480	6,000	5,690	5,560	13,400	5,600	5,420	5,330	78,800
1935	4,900	4,660	4,620	4,340	3,790	4,170	8,600	68,960	122,800	11,840	7,790	157,400	403,900
1936	10,460	9,020	8,990	8,670	7,540	7,550	6,890	7,410	7,520	35,100	7,620	146,500	263,300
1937	9,670	8,450	7,800	7,280	6,420	6,670	6,070	5,720	9,530	5,860	5,120	4,750	83,340
1938	4,880	4,760	4,970	6,680	5,380	5,480	4,970	4,990	4,690	286,600	8,380	7,260	349,000
1939	6,790	6,100	6,200	5,780	4,850	5,190	5,020	9,360	6,780	8,240	5,920	5,510	76,740
1940	5,750	5,450	5,470	5,160	4,540	4,630	5,300	7,310	5,520	5,440	5,500	4,800	64,870
1941	4,960	4,640	4,410	4,150	3,740	3,990	4,080	5,930	5,360	5,310	5,090	5,190	56,850
1942	6,960	5,660	5,860	6,010	5,260	5,580	5,190	4,920	4,530	4,710	5,610	7,850	68,140
1943	36,900	8,230	8,470	8,010	6,620	6,970	6,260	12,720	7,270	6,530	5,780	5,780	119,500
1944	5,560	5,390	5,540	5,480	4,710	4,810	4,580	4,500	4,010	3,920	4,010	23,810	76,320
1945	5,240	4,570	4,200	4,720	4,100	4,390	4,190	3,850	3,590	5,190	4,060	3,650	51,750
1946	46,920	4,820	4,710	4,620	3,760	3,940	3,640	3,850	33,300	5,160	4,430	5,320	124,500
1947	13,920	4,970	5,130	5,380	4,500	4,790	4,370	6,520	4,140	3,860	3,730	3,430	64,740
1948	3,490	3,300	3,450	3,320	3,060	3,050	2,770	3,540	11,400	212,400	5,390	5,330	260,500
1949	5,690	4,670	4,450	4,090	6,420	5,490	23,300	45,600	8,110	18,100	15,110	7,950	149,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	-	-	-	-	-	-	-
1926	628	136	Oct. 16, 1925	74	86.2	62,400	85.1	61,600
1927	648	27,000	Sept. 28, 1927	64	124	89,700	144	105,000
1928	668	28,200	June 14, 1928	70	161	117,000	141	103,000
1929	688	16,000	July 26, 1929	69	118	85,700	113	81,600
1930	703	510	June 15, 1930	48	66.1	47,900	314	227,000
1931	718	71,000	Oct. 6, 1930	53	376	271,000	134	97,000
1932	733,858	370,000	Sept. 1, 1932	72	441	320,000	482	350,000
1933	748	-	-	116	175	127,000	137	98,800
1934	763	8,570	June 4, 1934	80	109	78,800	101	73,010
1935	788	46,200	Sept. 4, 1935	66	558	403,900	578	418,200
1936	808	38,300	Sept. 17, 1936	112	363	263,300	359	260,700
1937	828	2,580	June 7, 1937	78	115	83,340	99.5	72,030
1938	858	65,100	July 24, 26, 1938	74	482	349,000	488	353,500
1939	878	10,500	4, 1939	79	105	75,740	101	73,320
1940	898	2,580	May 9, 1940	72	89.4	64,870	85.7	62,210
1941	928	652	May 2, 1941	61	78.5	56,850	84.7	61,320
1942	958	1,680	Oct. 15, 1941	71	94.1	68,140	143	103,300
1943	978	25,400	Oct. 18, 1942	89	165	119,500	114	82,430
1944	1008	18,700	Sept. 6, 1944	61	105	76,320	102	73,840
1945	1038	357	July 7, 1945	56	71.5	51,750	130	94,190
1946	1058	52,400	Oct. 7, 1945	58	172	124,500	127	92,040
1947	1088	6,140	Oct. 8, 1946	53	89.4	64,740	70.4	50,960
1948	1118	240,000	July 4, 1948	39	359	260,500	365	265,100
1949	1148	47,600	July 26, 1949	59	206	149,000	-	-

406. Devils River near Comstock, Tex. (Upper Devils River Station)

Location.--Lat 29°44'45", long 101°00'30", 11 miles northeast of Comstock, Val Verde County, 26.4 miles upstream from bridge on U. S. Highway 90, and 30.9 miles upstream from mouth.

Drainage area.--3,903 sq mi.

Gage.--Water-stage recorder. Datum of gage not determined.

Extremes.--1954-57: Maximum daily discharge, 39,000 cfs Sept. 24, 1955; minimum discharge, 44.2 cfs Aug. 14, 1956. Flood of June 1954 reached a stage of 35.9 ft at this station.

Remarks.--No known diversion above station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	-	242	-
1955	230	205	182	166	146	123	106	131	84.5	282	174	1,760	298
1956	221	165	140	142	124	107	91.4	68.4	66.3	53.3	50.8	53.5	107
1957	54.3	54.0	52.4	54.6	58.2	304	-	1,050	310	298	286	935	-

Monthly and yearly runoff, in acre-feet, of Devils River near Comstock, Tex. (Upper Devils River Station)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	-	14,400	-
1955	14,200	12,200	11,200	10,200	8,130	7,590	6,280	8,030	5,030	17,300	10,700	105,000	215,900
1956	13,600	9,790	8,610	8,700	7,130	6,560	5,440	4,210	3,940	3,280	3,130	3,180	77,570
1957	3,340	3,210	3,220	-	3,040	3,580	18,100	-	62,300	19,100	18,300	17,000	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	(23,24)	-	-	-	-	-	-	-
1955	(24,25)	39,000	Sept. 24, 1955	72.4	298	215,900	290	210,260
1956	(25,26)	312	Oct. 1, 1955	44.2	107	77,570	76.2	55,340
1957	(26,27)	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

407. Devils River near Del Rio, Tex.1/

Location.--Lat 29°29', long 101°00', at bridge on U. S. Highway 90, 4.5 miles above the mouth and 12 miles northwest of Del Rio, Val Verde County.

Drainage area.--4,185 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is 951.80 ft above mean sea level, U.S.C. & G.S. datum. Dec. 7, 1923, to Nov. 20, 1924, staff gage and Nov. 21, 1924, to Sept. 1, 1932, water-stage recorder at site 1.8 miles downstream at datum 16.17 ft lower. May 1900 to March 1914, staff gage at site 2.8 miles downstream at different datum.

Average discharge.--45 years (1900-1913, 1924-56), 565 cfs (409,000 acre-ft per year).

Extremes.--1900-1914, 1924-57: Maximum discharge, 597,000 cfs Sept. 1, 1932 (gage height, 36.60 ft) present site and datum; no flow at times (caused by regulation).

Remarks.--The monthly flow of this spring-fed river is not modified, but the daily flow is modified by two power dams with a combined hydroelectric generating capacity of 3,100 kva, the operation of which began in 1929.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to 1924, and subsequent to June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	1,321	1,516	970	1,113	4,634	-
1901	1,216	1,075	879	831	801	748	685	665	604	583	556	529	764
1902	520	515	489	488	480	494	469	815	491	443	414	510	511
1903	433	436	414	453	443	476	421	523	1,282	608	530	585	550
1904	603	575	550	538	520	503	523	519	578	479	464	596	537
1905	570	495	460	446	433	555	1,107	851	945	677	561	736	653
1906	594	515	582	456	421	395	401	403	772	1,329	2,743	926	799
1907	793	713	697	693	657	616	549	518	520	548	525	517	612
1908	606	682	553	508	510	500	574	676	606	697	647	507	589
1909	481	476	477	460	430	420	420	391	391	617	526	478	464
1910	399	403	407	412	400	385	578	1,015	438	417	405	483	509
1911	536	396	384	381	451	491	722	445	387	377	332	306	434
1912	331	370	425	394	385	374	399	344	341	282	301	375	360
1913	358	318	335	332	322	293	278	1,110	387	395	395	378	410
1914	550	816	835	554	541	508	-	-	-	-	-	-	-
1924	-	-	-	473	468	467	457	559	525	406	385	469	-
1925	454	410	408	398	387	364	351	5,800	766	539	527	500	909
1926	495	464	441	427	407	451	715	468	441	401	378	373	455
1927	429	403	539	409	445	381	663	402	466	377	326	811	470
1928	1,460	453	431	399	366	334	307	541	873	384	351	552	539
1929	466	370	339	246	322	323	186	434	632	768	350	267	393
1930	306	295	294	290	272	302	367	170	556	328	252	234	305
1931	5,670	622	522	533	620	529	1,140	1,010	661	587	516	483	1,070
1932	483	507	433	429	386	350	323	386	303	435	829	15,057	1,660
1933	1,192	947	805	736	664	641	564	567	596	498	485	445	678
1934	442	403	379	342	326	334	336	305	488	337	291	334	360
1935	317	267	258	235	239	228	260	1,090	4,790	558	472	6,810	1,290
1936	738	578	566	562	508	478	497	903	486	1,490	456	2,980	854
1937	585	477	457	448	384	369	337	434	397	333	302	293	401
1938	302	323	331	364	376	357	329	301	271	6,120	491	421	832
1939	408	378	364	360	341	322	310	458	362	323	292	279	350
1940	308	300	311	299	284	263	421	371	397	319	471	339	340
1941	323	295	278	261	256	232	306	425	321	345	326	409	315
1942	687	377	338	319	299	282	322	288	253	340	625	637	398
1943	960	1,010	415	383	385	360	349	584	423	392	309	335	493
1944	313	298	308	310	301	310	270	315	282	235	266	1,050	354
1945	320	297	268	274	268	257	237	201	187	225	196	188	246
1946	2,100	330	280	269	243	214	330	236	842	255	216	252	466
1947	465	251	245	317	262	250	211	222	210	240	263	343	274
1948	214	233	219	206	208	180	166	237	6,390	4,290	377	381	1,090
1949	348	320	292	259	982	705	1,040	1,460	544	1,370	1,740	698	813

1/ Published as "at Devils River" prior to 1924.

Monthly and yearly mean discharge, in cubic feet per second, of Devils River near Del Rio, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	785	528	466	441	418	371	330	317	296	675	341	361	445
1951	309	294	279	259	233	217	196	262	212	166	143	146	226
1952	171	165	152	149	167	150	175	352	165	138	131	190	175
1953	159	188	215	201	202	251	135	164	136	158	176	261	187
1954	226	195	185	180	154	141	809	357	11,400	593	421	360	1,239
1955	383	340	316	295	262	218	194	230	172	349	305	1,930	415
1956	384	311	279	251	213	182	162	134	121	105	110	121	198
1957	174	123	123	129	130	126	449	5,430	1,190	433	434	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	81,200	90,200	59,600	69,700	276,000	-
1901	74,800	64,000	54,000	51,100	44,500	46,000	40,800	40,900	35,900	35,800	34,200	31,500	554,000
1902	32,000	30,700	30,100	30,000	26,600	30,400	27,900	50,100	29,200	27,200	25,500	30,400	370,000
1903	26,600	25,900	25,400	27,800	24,600	29,300	25,100	32,200	76,300	37,400	32,600	34,800	398,000
1904	37,100	34,200	33,800	33,100	29,900	30,900	31,100	31,900	34,400	29,500	28,500	35,500	390,000
1905	35,100	29,500	28,300	27,400	24,000	34,100	65,900	52,400	56,300	41,700	34,500	43,800	473,000
1906	36,500	30,600	35,800	28,000	23,400	24,300	23,900	24,800	45,900	81,700	169,000	55,100	579,000
1907	48,800	42,400	42,800	42,600	36,500	37,900	32,600	31,800	31,000	33,700	32,300	30,800	443,000
1908	37,300	40,600	34,000	31,300	29,400	30,700	34,200	41,600	36,100	42,900	39,800	30,200	428,000
1909	29,600	28,300	29,300	28,300	23,900	25,800	25,000	24,100	23,300	37,900	32,400	28,400	336,000
1910	24,500	24,000	25,000	25,300	22,200	23,700	34,400	62,400	26,100	25,600	24,900	50,200	368,000
1911	32,900	23,600	23,600	23,400	25,000	30,200	43,000	27,300	23,000	23,200	20,400	18,200	314,000
1912	20,400	22,000	26,100	24,200	22,100	23,000	23,800	21,100	20,300	17,300	18,500	22,300	261,000
1913	22,000	18,900	20,600	20,400	17,900	18,000	16,600	68,200	23,000	24,300	24,300	22,500	297,000
1914	33,800	48,500	51,300	34,000	30,040	31,260	-	-	-	-	-	-	-
1924	-	-	-	29,100	26,900	28,700	27,200	34,300	31,200	25,000	23,600	27,900	-
1925	27,900	24,400	25,100	24,500	21,500	22,400	20,900	356,900	45,600	33,200	32,400	29,800	664,600
1926	30,400	27,600	27,100	26,300	22,600	27,700	42,600	28,800	26,300	24,700	23,300	22,200	330,000
1927	26,400	24,000	33,100	25,100	24,700	23,400	39,500	24,700	27,700	23,200	20,100	48,300	340,000
1928	89,800	27,000	26,500	24,500	21,100	20,500	18,300	33,300	51,900	23,600	21,600	32,800	391,000
1929	28,700	22,000	20,800	15,100	17,900	19,900	11,100	26,700	37,600	47,200	21,500	15,900	284,000
1930	18,800	17,600	18,100	17,800	15,100	18,600	21,800	10,500	33,100	20,200	15,500	13,900	221,000
1931	349,000	37,000	32,100	32,800	34,400	32,500	67,800	62,100	39,300	36,110	31,740	28,750	783,600
1932	29,680	30,150	26,650	26,400	22,220	21,520	19,230	23,770	18,010	26,760	51,000	895,990	1,191,380
1933	73,310	56,350	49,520	45,250	36,880	39,420	33,570	34,870	35,490	30,630	29,800	26,480	491,570
1934	27,170	23,950	23,300	21,000	18,100	20,600	20,000	18,800	29,100	20,700	17,900	19,900	260,520
1935	19,500	15,900	15,900	14,500	13,300	14,000	15,400	66,800	285,000	34,300	29,000	405,000	928,600
1936	45,400	34,400	34,800	34,500	29,200	29,400	29,600	55,500	28,900	91,700	28,100	177,000	618,500
1937	36,000	28,400	28,100	27,500	21,300	22,700	20,000	26,700	23,600	20,700	18,600	17,400	291,000
1938	18,600	19,200	20,300	22,400	20,900	21,900	19,600	18,500	16,100	377,000	30,200	25,100	609,800
1939	25,100	22,500	22,400	22,200	18,900	19,800	18,400	28,200	21,600	19,800	17,900	16,600	253,400
1940	18,900	17,900	19,100	18,400	16,300	16,200	25,100	22,800	23,600	19,600	29,000	20,200	247,100
1941	19,900	17,600	17,100	16,100	14,200	14,300	18,200	26,100	19,100	21,200	20,100	24,400	228,300
1942	42,300	22,400	20,800	19,600	16,600	17,400	19,200	17,700	15,000	20,900	38,400	37,900	288,200
1943	59,000	60,300	25,500	23,600	21,400	22,100	20,800	35,900	25,200	24,100	19,000	19,900	356,800
1944	19,300	17,700	19,000	19,100	17,300	19,100	16,100	19,400	16,800	14,500	16,300	62,600	257,200
1945	19,600	17,700	16,500	16,800	14,900	15,800	14,100	12,300	11,100	13,900	12,100	11,200	176,000
1946	129,000	19,600	17,200	16,500	13,500	13,100	19,600	14,500	50,100	15,700	13,300	15,000	337,100
1947	28,600	14,900	15,100	19,500	14,500	15,400	12,500	13,700	12,500	14,800	16,100	20,400	198,000
1948	13,200	13,900	13,500	12,700	12,000	11,100	9,910	14,600	380,000	264,000	23,200	22,700	790,810
1949	21,400	19,000	17,900	15,900	54,500	43,300	61,800	89,600	32,400	84,400	107,000	41,500	588,700
1950	48,200	31,400	28,700	27,100	23,200	22,800	19,600	19,500	17,600	41,500	20,900	21,500	322,000
1951	19,000	17,500	17,200	15,900	12,900	13,300	11,700	16,100	12,600	10,200	8,820	8,660	163,900
1952	10,500	9,820	9,330	9,150	9,630	9,250	10,400	21,600	9,810	8,460	8,050	11,300	127,300
1953	9,780	11,200	13,200	12,400	11,200	15,400	8,030	10,100	8,080	9,720	10,800	15,500	135,400
1954	13,900	11,600	11,400	11,100	8,570	8,650	48,100	21,900	678,000	36,400	25,900	21,400	896,900
1955	23,600	20,200	19,400	18,200	14,500	13,400	11,500	14,100	10,200	21,500	18,700	115,000	300,300
1956	23,600	18,500	17,200	15,500	12,300	11,200	9,630	8,250	7,180	6,460	6,760	7,210	143,790
1957	10,700	7,330	7,590	7,960	7,210	7,730	26,700	334,000	70,700	26,600	26,700	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358(7)	-	-	-	-	-	-	-
1901	358(7)	a2,410	Nov. 1, 1900	500	764	554,000	627	453,500
1902	358(7)	a5,380	May 18, 1902	405	511	370,000	491	355,200
1903	358(7)	a10,400	June 13, 1903	380	550	398,000	587	425,200
1904	358(7)	a1,580	Apr. 22, 1904	410	537	390,000	520	377,700
1905	358(7)	a6,470	Apr. 1, 1905	425	653	473,000	667	483,000
1906	358(7)	a30,000	Aug. 12, 1906	350	795	579,000	837	610,100
1907	358(7)	a960	Oct. 14, 1906	465	612	443,000	582	421,100
1908	358(7)	a2,550	May 24, 1908	470	589	428,000	555	403,400
1909	358(7)	a3,590	July 24, 1909	335	464	336,000	445	322,600

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

Yearly discharge, in cubic feet per second, of Devils River near Del Rio, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1910	358(7)	a11,000	May 20, 1910	375	508	368,000	487	374,900
1911	358(7)	a3,370	Apr. 2, 1911	295	434	314,000	418	302,200
1912	358(7)	a1,140	Sept. 29, 1912	245	360	261,000	350	254,100
1913	358(7)	a10,550	May 4, 1913	255	408	297,000	508	368,800
1914	358(7)	-	-	-	-	-	-	-
1924	588(6)	-	-	-	-	-	457	331,300
1925	608(6,13)	-	May 29, 1925	324	909	665,000	919	672,300
1926	628(6)	20,900	Apr. 29, 1926	366	455	330,000	453	328,000
1927	648(6)	30,200	Sept. 28, 1927	308	470	340,000	552	400,000
1928	668(6)	38,700	Oct. 1, 1927	291	539	391,000	440	319,100
1929	688(6)	26,500	June 30, 1929	-	393	284,000	369	267,400
1930	703(6)	10,200	June 16, 1930	130	305	221,000	799	584,600
1931	718(1,6)	a61,900	Oct. 6, 1930	268	1,070	783,600	625	451,980
1932	(1,2)	597,000	Sept. 1, 1932	219	1,660	1,191,380	1,769	1,284,080
1933	(2,3)	3,160	Nov. 5, 1932	328	678	491,570	534	386,810
1934	(3,4)	3,420	June 5, 1934	228	360	260,520	328	237,400
1935	(4,5)	243,000	June 14, 1935	163	1,290	928,600	1,370	991,900
1936	(5,6)	61,400	July 6, 1936	362	854	618,500	822	596,400
1937	(6,7,13)	12,500	May 29, 1937	109	401	291,000	354	256,600
1938	(7,8)	107,000	July 23, 1938	220	832	609,800	859	621,700
1939	(8,9)	5,000	May 4, 1939	194	350	253,400	331	239,300
1940	(9,10)	7,440	June 9, 1940	197	340	247,100	339	245,800
1941	(10,11)	2,830	July 11, 1941	104	315	228,300	358	259,200
1942	(11,12)	8,240	Aug. 31, 1942	222	398	288,200	480	347,500
1943	(12,13)	25,100	Nov. 6, 1942	174	493	356,800	370	268,000
1944	(13,14)	26,100	Sept. 6, 1944	195	354	257,200	351	255,000
1945	(14,15)	1,190	Jan. 18, 1945	164	246	176,000	398	288,000
1946	(15,16)	59,300	Oct. 9, 1945	164	466	337,100	318	229,900
1947	(16,17)	8,140	Sept. 12, 1947	159	274	198,000	249	180,000
1948	(17,18)	476,000	June 24, 1948	147	1,090	790,810	1,110	808,510
1949	(18,19)	128,000	July 26, 1949	216	813	588,700	882	638,700
1950	(19,20)	22,800	July 13, 1950	229	445	322,000	369	267,400
1951	(20,21)	2,790	May 24, 1951	120	226	163,900	193	139,830
1952	(21,22)	10,800	May 27, 1952	84.5	175	127,300	182	131,830
1953	(22,23)	2,440	Sept. 1, 1953	80.6	187	135,400	191	138,130
1954	(23,24)	585,000	June 28, 1954	103	1,239	896,900	1,280	923,220
1955	(24,25)	86,700	Sept. 24, 1955	112	415	300,300	409	296,400
1956	(25,26)	1,130	Oct. 6, 1955	75.7	198	143,800	152	110,110
1957	(26,27)	-	-	-	-	-	-	-

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

408. Devils River near Mouth

Location.--Lat 29°28'10", long 101°03'25", 0.8 mile above mouth, 3.7 miles downstream from bridge on U. S. Highway 90, and 12 miles northwest of Del Rio, Val Verde County.

Drainage area.--4,305 sq mi, all in the United States.

Gage.--Water-stage recorder and low-water control. Datum of gage is 911.00 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1954-57: Maximum discharge, 86,500 cfs Sept. 24, 1955 (gage height, 21.02 ft); minimum, 51.9 cfs Feb. 7, 1957.
During the flood of June 1954, an elevation of 969.00 ft was reached at the steam electric plant, located approximately 2,000 ft upstream (backwater from the Rio Grande).

Remarks.--The monthly flow of this spring-fed river is not modified, but the daily flow is modified by two power dams with a combined hydroelectric generating capacity of 3,100 kva, the operation of which began in 1929.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	508	456	-
1955	489	428	396	364	322	287	253	297	216	396	336	1,980	479
1956	437	362	341	292	273	242	212	187	170	158	159	162	250
1957	222	170	162	158	161	169	505	5,650	1,280	532	522	522	846

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	31,200	27,200	-
1955	30,100	25,500	24,300	22,400	17,900	17,600	15,100	18,300	12,900	24,300	20,600	118,000	347,000
1956	26,900	21,500	21,000	18,000	15,700	14,900	12,600	11,500	10,100	9,710	9,760	9,650	181,300
1957	13,600	10,100	9,980	9,700	8,950	10,400	30,000	347,000	76,300	32,700	32,100	31,100	611,930

Yearly discharge, in cubic feet per second, of Devils River near Mouth

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	-	-	-	-	-	-	-	-
1955	(23,24)	86,500	Sept. 24, 1955	152	479	347,000	465	336,500
1956	(25,26)	698	Oct. 7, 1955	122	250	181,300	201	145,600
1957	(26,27)	50,700	May 13, 1957	82.6	846	611,930	992	718,350

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

409. Rio Grande below Diablo Dam Site

Location.--Lat 29°25', long 101°02', 2.9 miles downstream from Devils River, 10.6 miles upstream from the International Highway Bridge between Del Rio, Val Verde County, Texas and Cd. Acuna, Coahuila, Mexico, and at mile 565.2.

Drainage area.--126,423 sq mi (contributing area), of which 82,690 sq mi is in the United States and 43,733 sq mi is in Mexico.

Supplemental records available.--Records for Rio Grande near Devils River (1900-13) and for Rio Grande near Del Rio (1924-54), published in International Boundary and Water Commission Water Bulletins, are equivalent to records for this station.

Gage.--Water-stage recorder. Datum of gage is 893.79 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1954-57: Maximum discharge, 96,800 cfs Sept. 24, 1955 (gage height, 18.70 ft); minimum, 550 cfs July 26, 1956.
Flood of June 28, 1954, reached a stage of 55.72 ft (discharge, 1,158,000 cfs by slope-area measurement of peak flow).

Remarks.--Reservoirs, diversions, and drainage and powerplant returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	-	2,820	-
1955	2,190	1,440	1,340	1,320	1,280	1,120	930	2,450	2,100	2,970	4,540	6,610	2,362
1956	3,880	1,770	1,410	1,340	1,290	1,090	908	986	955	749	1,100	1,210	1,393
1957	2,360	1,150	1,060	1,080	1,400	1,120	3,490	13,200	4,170	1,650	1,930	1,870	2,887

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	-	-	-	-	168,000	-
1955	135,000	85,900	82,300	81,000	71,000	69,100	55,400	151,000	125,000	183,000	279,000	393,000	1,711,000
1956	239,000	105,000	86,800	82,400	74,300	66,800	54,100	60,700	56,800	46,000	67,500	71,900	1,011,000
1957	145,000	68,200	65,200	66,100	78,000	68,700	208,000	812,000	248,000	101,000	119,000	111,000	2,090,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	(23,24)	-	-	-	-	-	-	-
1955	(24,25)	96,800	Sept. 24, 1955	836	2,362	1,711,000	2,539	1,838,300
1956	(25,26)	9,610	Oct. 7, 1955	604	1,393	1,011,000	1,180	858,900
1957	(26,27)	85,100	May 11, 1957	746	2,887	2,090,000	3,090	2,234,800

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

410. Cienegas Creek near Del Rio, Tex.

Location.--Lat 29°21', long 100°57', 900 ft upstream from mouth, 1-1/2 miles upstream from the Del Rio gaging station on the Rio Grande, and 3 miles northwest of Del Rio, Val Verde County.

Drainage area.--18 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage unknown. Prior to Apr. 28, 1934, staff gage at same site and datum.

Extremes.--1931-35: Maximum discharge, 11,300 cfs June 14, 1935 (gage height, 24.40 ft); minimum, not determined.

Remarks.--The flow of this spring-fed creek is modified by diversions for irrigation above this station (amount unknown).

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	5.24	-
1932	6.40	7.15	7.95	7.6	4.9	4.3	1.4	10.8	3.2	1	36	14	8.72
1933	14	13.1	11.7	12.1	12	8.47	6.32	6.09	5.75	4.02	4.0	8.67	8.85
1934	9.28	8.52	8.72	8.57	5.79	5.33	4.41	9.01	2.81	2.57	2.70	21.4	7.43
1935	12.3	2.88	2.60	2.4	3.3	45.7	3.7	7.2	107	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	312	-
1932	394	426	489	468	282	263	85	663	189	61.5	222	861	4,403.5
1933	861	780	738	747	669	521	376	374	342	247	246	516	6,417
1934	570	507	536	527	322	328	262	554	167	158	166	1,280	5,377
1935	757	171	163	149	184	2,810	219	440	6,360	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	(1)	-	-	-	-	-	-	-
1932	(1,2)	-	-	-	8.72	4,403.5	7.5	5,470
1933	(2,3)	-	-	-	8.85	6,417	7.81	5,651
1934	(3,4)	2,510	Sept. 3, 1934	1.8	7.43	5,377	6.71	4,855
1935	(4,5)	11,300	June 14, 1935	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

411. Rio Grande near Del Rio, Tex. 1/

Location.--Lat 29°20', long 100°56', at international bridge between Del Rio, Val Verde County, Texas and Cd. Acuna, Coahuila, Mexico, 500 ft downstream from Arroyo Las Vagas, and at mile 554.6.

Drainage area.--126,940 sq mi (contributing area), of which 82,750 sq mi is in the United States and 44,190 sq mi is in Mexico.

Supplemental records available.--Records for station below Diablo Dam Site (1954-57) published by the International Boundary and Water Commission are equivalent to these records.

Gage.--Water-stage recorder. Datum of gage is 864.30 ft above mean sea level, U.S.C. & G.S. datum. May 1900 to April 1915, inclined staff gage at site 11 miles upstream at different datum. December 1919 to March 1920, staff gage at site 7-1/2 miles upstream at McKees Switch, at different datum. December 1923 to July 2, 1941, water-stage recorder 900 ft upstream at datum 1 ft higher. July 3, 1941, to Feb. 20, 1942, water-stage recorder at present site at datum 1.0 ft higher.

Average discharge.--42 years (1900-1913, 1924-53), 3,949 cfs (2,859,000 acre-ft per year).

Extremes.--1900-1915, 1923-54: Maximum discharge, 1,140,000 cfs June 28, 1954 (gage height, 38.25 ft) by slope-area measurement of peak flow at site 10.6 miles upstream. Peak reduced 18,000 cfs for estimated flattening of the flood wave between the two sites; minimum, 519 cfs July 1, 1953.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to Dec. 17, 1923, and subsequent to June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	3,553	4,451	6,506	10,550	10,140	-
1901	5,749	3,171	2,472	2,277	2,260	2,180	1,719	2,365	2,737	2,335	3,959	5,933	3,100
1902	3,588	3,632	2,198	2,028	1,931	1,595	1,535	3,121	1,679	6,822	7,273	12,980	4,039
1903	3,037	2,400	2,080	2,068	2,544	2,292	1,640	2,745	6,265	4,829	3,027	4,392	3,108
1904	4,136	2,009	1,744	1,614	1,498	1,368	1,323	2,107	5,115	2,788	1,956	33,050	4,851
1905	17,900	6,041	3,496	2,539	2,513	5,574	5,326	6,925	19,950	10,409	12,835	10,790	8,723
1906	7,464	6,216	7,155	3,625	5,661	3,476	2,706	4,559	6,308	12,740	29,980	12,547	8,611
1907	4,442	3,289	4,013	3,270	2,979	2,453	2,694	4,542	7,511	7,664	5,190	11,380	4,954
1908	5,518	8,584	7,989	3,361	2,688	2,133	2,717	4,624	3,081	4,379	11,390	10,278	5,571
1909	2,422	1,866	1,830	1,866	1,709	1,535	1,354	3,142	4,644	9,974	8,449	8,385	3,948
1910	2,896	2,048	1,703	2,723	1,895	1,847	2,762	4,570	3,032	3,060	1,651	5,548	2,813
1911	2,557	1,499	1,355	1,243	1,906	1,596	2,789	5,605	5,615	8,515	6,262	5,682	3,732
1912	6,206	4,709	2,997	2,488	1,971	1,533	2,728	3,142	8,013	3,257	7,049	14,830	4,897
1913	5,098	1,946	2,148	1,795	2,581	2,778	2,170	4,577	4,518	2,533	2,264	5,170	3,133
1914	3,446	2,750	2,721	1,841	1,637	1,622	-	-	-	-	-	12,410	-
1915	-	6,152	4,662	4,684	3,665	2,970	4,284	-	-	-	-	-	-
1920	-	-	3,610	4,180	4,240	2,820	-	-	-	-	-	-	-
1924	-	-	-	5,590	3,340	3,160	2,740	2,790	2,950	2,600	2,220	4,270	-
1925	4,110	2,420	2,480	2,490	2,350	2,350	2,520	11,380	4,740	6,310	14,100	14,200	5,790
1926	6,720	3,610	3,040	3,050	2,840	2,690	3,300	2,830	4,120	3,200	7,950	8,140	4,300
1927	7,310	3,810	3,550	3,260	3,320	2,740	2,790	2,300	2,950	2,840	3,330	4,560	3,570
1928	4,260	2,790	2,950	2,890	2,790	2,420	2,200	4,370	3,090	3,010	6,650	4,580	3,510
1929	3,500	3,580	3,490	2,840	2,740	2,610	2,230	2,720	3,080	2,840	3,410	3,420	3,040
1930	2,940	2,650	2,410	2,200	1,830	1,540	1,400	1,110	2,440	1,590	4,050	1,220	2,120
1931	9,340	2,490	2,150	2,170	2,280	2,180	3,230	4,520	2,970	3,250	3,260	2,180	3,340
1932	2,560	2,400	2,610	2,368	2,404	2,247	1,678	2,755	1,852	2,445	4,143	46,292	6,150
1933	22,920	6,320	4,800	4,570	4,140	3,650	3,130	2,707	3,005	3,632	3,315	12,320	6,210
1934	6,871	3,177	2,677	2,630	2,670	2,540	2,260	2,490	3,020	2,250	2,010	1,960	2,880
1935	1,790	1,820	1,760	1,810	1,730	1,660	1,430	5,610	11,800	3,630	3,000	21,400	4,790
1936	5,200	2,980	2,340	2,170	2,150	2,220	1,780	3,080	2,140	3,590	2,460	12,700	3,570
1937	5,420	2,620	2,780	2,410	2,360	2,100	1,530	1,860	4,390	2,050	2,250	4,590	2,860
1938	4,160	2,260	2,460	2,730	2,360	1,980	1,450	1,630	3,080	20,000	7,450	18,200	5,650
1939	5,860	3,060	2,620	2,460	2,540	2,080	1,520	2,320	1,800	2,180	5,560	2,270	2,870
1940	2,440	2,520	2,180	2,030	2,030	1,610	1,780	2,950	3,000	2,790	4,190	2,820	2,530
1941	2,960	2,030	1,660	1,670	2,140	1,810	3,360	6,490	5,990	6,650	7,110	11,500	4,450
1942	26,570	7,850	4,530	3,610	3,540	3,030	2,310	5,670	6,170	4,620	9,730	25,900	8,650
1943	9,270	4,970	3,880	3,250	2,840	2,700	2,050	2,880	2,770	5,360	2,070	1,830	3,670
1944	4,320	2,210	2,320	2,490	2,190	2,000	1,570	1,640	2,060	1,620	2,460	9,190	2,810
1945	4,260	2,180	1,940	2,100	1,990	1,680	1,920	1,110	1,040	7,410	1,650	1,370	2,400
1946	8,740	2,650	2,020	2,120	1,990	1,800	1,960	2,350	4,700	2,270	1,220	5,270	3,090
1947	7,070	2,310	2,100	2,440	2,340	1,940	1,290	2,210	1,590	1,340	2,720	5,680	2,760
1948	1,810	1,900	2,000	1,600	1,750	1,580	1,180	1,320	8,280	7,120	1,820	1,920	2,690
1949	2,150	2,030	1,690	1,680	4,700	2,850	3,740	3,520	3,240	4,220	6,910	4,770	3,450
1950	4,130	2,840	2,400	2,390	2,200	2,040	1,520	1,560	2,340	4,390	3,130	4,480	2,790
1951	3,300	1,910	1,840	1,650	1,900	1,810	1,210	2,200	2,470	1,670	1,320	1,470	1,898
1952	1,090	1,220	1,050	1,050	1,040	925	998	1,810	1,320	5,850	1,120	786	1,529
1953	913	892	941	959	922	1,060	731	652	626	1,050	1,330	1,800	991
1954	1,110	901	913	916	900	796	4,620	2,750	49,900	3,970	4,350	-	-

1/ Published as "near Devils River" prior to 1924.

Monthly and yearly runoff, in acre-feet, of Rio Grande near Del Rio, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	218,000	265,000	400,000	648,000	604,000	-
1901	353,000	189,000	152,000	140,000	125,000	134,000	102,000	145,000	163,000	144,000	243,000	353,000	2,243,000
1902	221,000	216,000	135,000	125,000	107,000	98,100	91,400	192,000	99,900	419,000	447,000	772,000	2,923,400
1903	187,000	143,000	128,000	127,000	141,000	141,000	97,600	169,000	373,000	297,000	186,000	261,000	2,250,600
1904	254,000	120,000	107,000	99,200	86,200	84,100	78,700	130,000	304,000	171,000	120,000	1,970,000	3,524,000
1905	1,100,000	359,000	215,000	156,000	140,000	343,000	317,000	426,000	1,190,000	640,000	789,000	642,000	6,317,000
1906	484,000	370,000	440,000	223,000	314,000	214,000	161,000	280,000	375,000	784,000	1,840,000	747,000	6,232,000
1907	273,000	196,000	247,000	201,000	165,000	151,000	160,000	279,000	447,000	471,000	319,000	677,000	3,586,000
1908	339,000	511,000	491,000	207,000	155,000	131,000	162,000	284,000	183,000	269,000	700,000	612,000	4,044,000
1909	149,000	111,000	113,000	115,000	94,900	94,400	80,600	193,000	276,000	613,000	520,000	499,000	2,858,900
1910	178,000	122,000	105,000	167,000	105,000	114,000	164,000	281,000	180,000	188,000	102,000	330,000	2,036,000
1911	157,000	89,200	83,300	76,400	106,000	98,100	166,000	345,000	334,000	524,000	385,000	338,000	2,702,000
1912	382,000	280,000	184,000	153,000	113,000	94,200	162,000	193,000	477,000	200,000	433,000	883,000	3,554,200
1913	313,000	116,000	132,000	110,000	143,000	171,000	129,000	281,000	269,000	156,000	139,000	308,000	2,267,000
1914	212,000	164,000	167,000	113,200	90,900	99,700	-	-	-	-	-	738,500	-
1915	-	366,100	286,700	288,000	203,500	182,000	254,900	-	-	-	-	-	-
1920	-	-	222,000	257,000	244,000	173,000	-	-	-	-	-	-	-
1924	-	-	-	344,000	192,000	194,000	163,000	172,000	176,000	160,000	136,000	254,000	-
1925	252,000	144,000	153,000	153,000	131,000	145,000	150,000	700,000	282,000	388,000	865,000	844,000	4,207,000
1926	413,000	215,000	187,000	188,000	157,000	166,000	196,000	174,000	245,000	197,000	489,000	485,000	3,110,000
1927	449,000	227,000	218,000	201,000	184,000	168,000	166,000	142,000	176,000	174,000	205,000	271,000	2,580,000
1928	262,000	166,000	181,000	178,000	160,000	149,000	131,000	269,000	184,000	185,000	409,000	273,000	2,550,000
1929	215,000	213,000	215,000	175,000	152,000	160,000	133,000	167,000	183,000	175,000	210,000	204,000	2,200,000
1930	181,000	158,000	148,000	135,000	102,000	94,700	83,300	68,200	145,000	97,800	249,000	72,600	1,530,000
1931	574,000	148,000	132,000	133,000	127,000	134,000	192,000	278,000	177,000	199,760	200,790	129,800	2,425,350
1932	157,450	142,490	160,330	145,610	138,310	138,190	99,850	169,390	110,200	150,510	254,720	2,754,590	4,421,640
1933	1,409,020	376,150	295,180	281,160	229,970	224,670	185,990	166,460	178,830	223,340	203,860	733,080	4,507,710
1934	422,490	189,070	164,630	162,000	148,000	156,000	135,000	153,000	180,000	138,000	124,000	117,000	2,089,190
1935	110,000	108,000	108,000	111,000	96,200	102,000	85,200	345,000	704,000	223,000	185,000	1,274,000	3,451,400
1936	320,000	177,000	144,000	134,000	124,000	137,000	106,000	189,000	128,000	221,000	151,000	758,000	2,589,000
1937	333,000	156,000	171,000	148,000	131,000	129,000	91,300	115,000	261,000	126,000	138,000	273,000	2,072,300
1938	256,000	134,000	151,000	168,000	131,000	122,000	86,300	100,000	183,000	1,228,000	458,000	1,084,000	4,101,300
1939	360,000	182,000	161,000	151,000	141,000	128,000	90,700	143,000	107,000	134,000	342,000	135,000	2,074,700
1940	150,000	150,000	134,000	125,000	117,000	98,900	106,000	181,000	179,000	172,000	257,000	168,000	1,837,900
1941	182,000	121,000	102,000	103,000	119,000	111,000	200,000	399,000	357,000	409,000	437,000	682,000	3,222,000
1942	1,634,000	467,000	279,000	222,000	197,000	187,000	137,000	349,000	367,000	284,000	599,000	1,541,000	6,263,000
1943	570,000	296,000	239,000	200,000	158,000	166,000	122,000	177,000	165,000	330,000	127,000	109,000	2,659,000
1944	266,000	132,000	143,000	153,000	126,000	123,000	93,300	101,000	123,000	99,800	151,000	547,000	2,058,100
1945	262,000	130,000	119,000	129,000	111,000	103,000	114,000	68,200	61,700	455,000	101,000	81,700	1,735,600
1946	537,000	158,000	124,000	130,000	111,000	111,000	117,000	144,000	280,000	140,000	74,700	314,000	2,240,700
1947	435,000	137,000	129,000	150,000	130,000	120,000	76,900	136,000	94,900	82,400	167,000	338,000	1,996,200
1948	111,000	113,000	123,000	98,200	101,000	97,200	70,200	81,200	493,000	438,000	112,000	114,000	1,951,800
1949	132,000	121,000	104,000	104,000	261,000	175,000	222,000	216,000	193,000	259,000	425,000	284,000	2,496,000
1950	254,000	169,000	147,000	147,000	122,000	126,000	90,700	96,100	139,000	270,000	192,000	267,000	2,019,800
1951	203,000	114,000	113,000	101,000	106,000	111,000	72,200	135,000	147,000	103,000	81,300	87,300	1,374,000
1952	67,000	72,500	64,700	64,800	60,000	56,900	59,400	111,000	78,400	360,000	68,700	46,800	1,110,000
1953	56,200	53,100	57,900	59,000	51,200	65,300	43,500	40,100	37,200	64,400	81,900	107,000	716,800
1954	68,300	53,600	56,200	56,300	50,000	48,900	275,000	169,000	2,972,000	244,000	267,000	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358(7)	a26,750	Aug. 9, 1900	-	-	-	-	-
1901	358(7)	b34,280	Sept. 9, 1901	1,600	3,100	2,243,000	2,931	2,121,000
1902	358(7)	b40,000	Sept. 10, 1902	1,240	4,039	2,923,400	3,881	2,809,400
1903	358(7)	b28,180	June 13, 1903	1,330	3,108	2,250,600	3,141	2,273,600
1904	358(7)	b138,800	Sept. 14, 1904	1,120	4,851	3,524,200	6,496	4,717,200
1905	358(7)	b95,000	June 29, 1905	2,000	8,723	6,317,000	8,195	5,937,000
1906	358(7)	b121,000	Aug. 12, 1906	2,460	8,611	6,232,000	7,813	5,654,000
1907	358(7)	b17,260	Sept. 21, 1907	2,070	4,954	3,586,000	5,819	4,211,000
1908	358(7)	b24,500	Aug. 15, 1908	1,870	5,571	4,044,000	4,239	3,076,000
1909	358(7)	b34,260	July 23, 1909	1,280	3,948	2,858,900	3,993	2,892,900
1910	358(7)	b27,440	Sept. 6, 1910	1,050	2,813	2,036,000	2,709	1,960,500
1911	358(7)	b21,380	May 17, 1911	1,140	3,732	2,702,000	4,445	3,218,500
1912	358(7)	b27,000	Sept. 15, 1912	1,350	4,879	3,554,200	4,505	3,269,200
1913	358(7)	b31,600	May 4, 1913	1,100	3,133	2,267,000	3,107	2,249,000
1914	388	-	-	-	-	-	-	-
1915	408	-	-	-	-	-	-	-
1920	508	-	-	-	-	-	-	-
1924	588(6)	-	-	-	-	-	3,220	2,340,000
1925	608(6)	-	May 29, 1925	1,770	5,790	4,207,000	6,150	4,473,000
1926	628(6)	25,100	Aug. 26, 1926	2,140	4,300	3,110,000	4,370	3,191,000
1927	648(6)	25,900	Sept. 28, 1927	-	3,570	2,580,000	3,170	2,296,000
1928	668(6)	35,600	Aug. 10, 1928	1,950	3,510	2,550,000	3,550	2,581,000
1929	688(6)	-	-	-	3,040	2,200,000	2,820	2,046,000

a Maximum daily during period May to September.
b Maximum daily.

Yearly discharge, in cubic feet per second, of Rio Grande near Del Rio, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	703(6)	11,200	Aug. 17, 1930	946	2,120	1,530,000	2,610	1,901,600
1931	718(1,6)	77,900	Oct. 6, 1930	1,040	3,340	2,425,350	2,800	2,031,620
1932	(1,2)	604,590	Sept. 1, 1932	1,350	6,150	4,412,640	8,328	6,041,720
1933	(2,3)	86,520	Oct. 6, 1932	2,380	6,210	4,507,710	4,425	3,203,550
1934	(3,4)	17,540	Oct. 15, 1933	1,540	2,880	2,089,190	2,260	1,639,000
1935	(4,5)	224,000	Sept. 5, 1935	976	4,790	3,451,400	5,200	3,766,400
1936	(5,6)	66,200	Sept. 28, 1936	1,420	3,570	2,589,000	3,590	2,608,000
1937	(6,7)	21,800	June 4, 1937	1,100	2,860	2,072,300	2,700	1,953,300
1938	(7,8)	118,000	July 24, 1938	1,060	5,650	4,101,300	5,890	4,263,300
1939	(8,9)	16,700	Oct. 1, 1938	1,160	2,870	2,074,700	2,490	1,805,700
1940	(9,10)	21,200	May 23, 1940	989	2,530	1,837,900	2,490	1,808,900
1941	(10,11)	81,600	Sept. 18, 1941	1,180	4,450	3,222,000	7,180	5,197,000
1942	(11,12)	65,700	Sept. 13, 1942	2,010	8,650	6,263,000	6,890	4,988,000
1943	(12,13)	28,900	July 11, 1943	1,400	3,670	2,659,000	2,890	2,095,000
1944	(13,14)	42,100	Sept. 7, 1944	1,140	2,810	2,058,100	2,800	2,028,100
1945	(14,15)	50,200	Oct. 3, 1944	920	2,400	1,735,600	2,820	2,043,600
1946	(15,16)	112,000	June 23, 1946	1,010	3,090	2,240,700	2,930	2,122,700
1947	(16,17)	58,400	Oct. 7, 1946	1,050	2,760	1,996,200	2,270	1,642,200
1948	(17,18)	475,000	June 24, 1948	793	2,690	1,951,800	2,700	1,961,800
1949	(18,19)	107,000	July 26, 1949	1,300	3,450	2,496,000	3,740	2,709,000
1950	(19,20)	58,200	July 14, 1950	1,160	2,790	2,019,800	2,600	1,879,800
1951	(20,21)	18,600	May 24, 1951	960	1,898	1,374,000	1,590	1,148,000
1952	(21,22)	43,500	May 27, 1952	656	1,529	1,110,000	1,480	1,073,200
1953	(22,23)	13,800	Aug. 23, 1953	542	991	716,800	1,010	727,700
1954	(23,24)	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

412. San Felipe Creek near Del Rio, Tex.

Location.--Lat 29°20', long 100°53', at Silos farm road bridge, 1.75 miles south of Del Rio, Val Verde County, 2 miles upstream from the mouth which is 1.6 miles downstream from the Del Rio-Cd. Acuna International Bridge.

Drainage area.--46 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is 875.05 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--26 years (1931-57), 56.9 cfs (41,190 acre-ft per year).

Extremes.--1931-57: Maximum discharge, 45,000 cfs June 14, 1935; maximum stage, 26.89 ft June 28, 1954 (backwater from Rio Grande); minimum discharge, 0.4 cfs July 20, 1953.

Remarks.--Municipal diversions at Del Rio and irrigation diversions greatly modify the flow of this spring-fed creek at this station. Backwater from the Rio Grande reaches this station when the Rio Grande near Del Rio reaches a stage of 15 ft or a flow of about 60,000 cfs.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	66.6	-
1932	58.7	56.8	58.9	60.8	66.5	60.9	44.6	109	41.8	47.3	90.8	165	71.8
1933	103	93.5	94.7	115	98.9	63.6	65.1	65.2	61.9	69.7	64.0	55.6	79.2
1934	62.2	56.7	50.4	55.3	40.8	25.4	25.2	44.6	25.3	25.2	20.8	51.4	40.3
1935	37.5	8.8	8.1	15.2	8.8	25.4	9.5	47.5	805	87	63.9	321	120
1936	88.1	81.5	83.4	101	74.9	68.2	103	86	96.7	71.2	59.3	67.2	81.7
1937	66.8	72.3	71.5	86.9	53.6	51.9	52.2	37.6	36.4	37.0	38.2	34.8	53.3
1938	27.8	36.2	42.5	69.9	54.1	41.7	48.7	46.2	33.4	65.4	42.9	44.9	46.1
1939	42.1	46.4	52.2	84.6	52.3	47.3	40.4	96.2	44.6	28.6	82.6	41.8	55.1
1940	44.4	48.4	53.1	49.8	30.3	42.3	76.7	57.4	133	48.6	66.3	47.1	58.1
1941	40.9	33.1	31.9	51.8	31.0	26.2	28.6	39.0	30.3	83.5	25.7	50.4	39.5
1942	99.4	45.7	34.6	48.2	25.0	21.2	29.6	97.0	24.2	18.1	34.9	102	48.5
1943	69.5	67.0	64.4	81.5	55.1	50.7	64.3	90.1	84.8	108	54.7	60.6	71.0
1944	63.3	59.4	55.9	62.5	78.4	40.4	44.4	46.7	56.3	35.5	37.7	53.1	52.7
1945	138	47.1	50.3	59.5	53.1	43.9	29.4	28.7	18.6	17.6	13.6	14.6	42.9
1946	68.5	34.4	29.5	42.3	30.2	18.2	45.0	40.9	55.1	23.3	15.7	23.9	35.6
1947	35.6	38.1	37.9	45.2	45.2	25.7	29.0	39.5	88.6	37.1	49.2	34.5	42.0
1948	29.1	35.2	27.6	45.4	30.4	13.0	12.8	22.8	182	143	60.0	73.9	56.2
1949	74.6	65.5	51.9	56.9	155	78.5	136	90.5	92.5	81.7	98.5	126	91.7
1950	98.8	93.6	95.5	109	97.4	81.7	82.3	82.0	71.7	66.6	61.4	66.2	83.8
1951	61.6	49.1	48.5	57.7	40.0	37.0	26.7	31.8	19.2	15.1	14.9	37.1	36.6
1952	19.4	24.5	19.5	17.4	20.2	18.0	19.3	241	46.6	31.4	17.2	16.3	41.1
1953	16.3	18.0	17.5	17.9	19.4	22.5	12.1	12.0	5.0	4.6	13.1	102	21.6
1954	38.3	27.9	28.0	29.8	15.1	11.2	38.9	36.8	84.4	81.5	61.4	76.4	44.2
1955	105	79.1	76.4	85.5	59.1	57.1	36.2	54.9	28.0	21.1	34.6	30.1	55.7
1956	49.6	61.0	62.9	67.3	44.7	30.3	23.6	18.7	8.8	6.8	5.7	21.6	33.4
1957	89.7	20.5	18.9	22.5	10.1	16.7	174	286	81.2	58.5	61.4	71.1	76.3

Monthly and yearly runoff, in acre-feet, of San Felipe Creek near Del Rio, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	3,860	-
1932	3,510	3,310	3,550	3,730	3,820	3,750	2,660	6,700	2,490	2,910	5,590	9,790	51,810
1933	6,320	5,560	5,820	7,070	5,490	3,910	3,870	4,010	3,680	4,290	3,940	3,310	57,270
1934	3,820	3,370	3,100	3,400	2,270	1,560	1,500	2,740	1,510	1,550	1,280	3,060	29,160
1935	2,310	526	496	934	487	1,560	566	2,920	47,900	5,350	3,930	19,100	86,079
1936	5,410	4,850	5,130	6,190	4,310	4,190	6,120	5,290	5,750	4,380	3,650	4,000	59,270
1937	4,110	4,300	4,390	5,340	2,970	3,190	3,100	2,310	2,170	2,280	2,350	2,070	38,580
1938	1,710	2,200	2,610	4,300	3,000	2,560	2,900	2,840	1,990	4,020	2,640	2,670	33,440
1939	2,590	2,760	3,210	5,200	2,900	2,910	2,400	5,920	2,650	1,760	5,080	2,490	39,870
1940	2,730	2,880	3,260	3,060	1,740	2,600	4,560	3,530	7,910	2,990	4,070	2,810	42,140
1941	2,520	1,970	1,960	3,190	1,720	1,610	1,700	2,400	1,810	5,130	1,580	3,000	28,590
1942	6,110	2,720	2,130	2,960	1,390	1,300	1,760	5,970	1,440	1,120	2,150	6,080	35,130
1943	4,270	3,980	3,960	5,010	3,060	3,120	3,830	5,540	5,040	6,650	3,360	3,610	51,430
1944	3,890	3,540	3,440	3,850	4,510	2,490	2,640	2,870	3,350	2,100	2,320	3,160	38,240
1945	8,470	2,800	3,090	3,660	2,950	2,700	1,750	1,770	1,110	1,080	838	872	31,090
1946	4,210	2,050	1,810	2,600	1,680	1,120	2,680	2,520	3,280	1,430	966	1,420	25,766
1947	2,190	2,270	2,330	2,780	2,510	1,580	1,730	2,430	5,270	2,280	3,030	2,050	30,450
1948	1,790	2,090	1,700	2,790	1,750	798	764	1,400	10,900	8,800	3,690	4,400	40,872
1949	4,580	3,900	3,190	3,500	8,630	4,830	8,120	5,570	5,500	5,020	6,060	7,490	66,390
1950	6,080	5,570	5,870	6,710	5,410	5,030	4,890	5,040	4,270	4,090	3,770	3,940	60,670
1951	3,780	2,920	2,980	3,550	2,220	2,280	1,590	1,960	1,140	929	918	2,200	26,470
1952	1,190	1,460	1,200	1,070	1,160	1,100	1,150	14,800	2,770	1,930	1,060	968	29,860
1953	1,000	1,070	1,080	1,100	1,080	1,390	720	739	301	285	806	6,040	15,610
1954	2,360	1,660	1,720	1,830	840	689	2,320	2,260	5,020	5,010	3,770	4,550	32,030
1955	6,440	4,710	4,700	5,260	3,280	3,510	2,160	3,380	1,670	1,300	2,120	1,790	40,320
1956	3,050	3,630	3,870	4,140	2,570	1,860	1,400	1,150	526	421	350	1,290	24,260
1957	5,520	1,220	1,160	1,380	559	1,030	10,400	17,600	4,830	3,600	3,770	4,230	55,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	(1)	-	-	-	-	-	-	-
1932	(1,2)	3,030	Aug. 31, 1932	33.6	71.8	51,810	81.4	59,140
1933	(2,3)	554	Nov. 5, 1932	49.1	79.2	57,270	68.9	49,860
1934	(3,4)	11,300	Sept. 3, 1934	7.27	40.3	29,160	30.4	22,202
1935	(4,5)	45,000	June 14, 1935	2.4	120	86,079	136	98,137
1936	(5,6)	6,060	Apr. 27, 1936	53.1	81.7	59,270	78.1	56,680
1937	(6,7)	99	Jan. 6, 1937	28.4	53.3	38,580	44.6	32,300
1938	(7,8)	5,320	July 24, 1938	19.2	46.1	33,440	49.0	35,480
1939	(8,9)	9,440	Aug. 4, 1939	20.9	55.1	39,870	55.5	40,180
1940	(9,10)	9,360	June 9, 1940	27.8	58.1	42,140	54.7	39,720
1941	(10,11)	6,450	July 11, 1941	21.5	39.5	28,590	45.7	33,100
1942	(11,12)	12,900	May 19, 1942	12.5	48.5	35,130	50.3	36,380
1943	(12,13)	8,750	July 11, 1943	42.5	71.0	51,430	69.2	50,090
1944	(13,14)	2,950	June 6, 1944	26.9	52.7	38,240	57.5	41,730
1945	(14,15)	14,800	Oct. 3, 1944	9.9	42.9	31,090	34.3	24,800
1946	(15,16)	4,570	Oct. 9, 1945	14.1	35.6	25,766	33.8	24,486
1947	(16,17)	10,300	June 19, 1947	15.1	42.0	30,450	40.4	29,240
1948	(17,18)	20,600	July 4, 1948	8.9	56.2	40,872	64.7	46,962
1949	(18,19)	7,200	Feb. 25, 1949	44.1	91.7	66,390	99.8	72,240
1950	(19,20)	464	Oct. 23, 1949	52.3	83.8	60,670	73.0	52,830
1951	(20,21)	5,450	Sept. 16, 1951	12.8	36.6	26,470	28.5	20,637
1952	(21,22)	39,400	May 27, 1952	8.9	41.1	29,860	40.2	29,158
1953	(22,23)	7,600	Sept. 1, 1953	1.7	21.6	15,610	25.1	18,201
1954	(23,24)	5,900	Sept. 30, 1954	6.1	44.2	32,030	58.2	42,139
1955	(24,25)	5,260	Oct. 1, 1954	15.2	55.7	40,320	48.4	35,020
1956	(25,26)	2,830	Sept. 6, 1956	3.6	33.4	24,260	29.8	21,607
1957	(26,27)	13,300	May 11, 1957	6.6	76.3	55,300	88.2	63,849

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

413. Sycamore Creek near Del Rio, Tex.

Location.--Lat 29°23', long 100°40', just upstream from bridge on U. S. Highway 277 between Del Rio and Eagle Pass, 2 miles upstream from the mouth, and 11 miles southeast of Del Rio, Val Verde County.

Drainage area.--524 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage not known.

Extremes.--1932-35: Maximum discharge, 215,000 cfs June 14, 1935 (gage height, 30.20 ft); no flow at times.

Remarks.--Flow of this spring-fed creek is modified by small irrigation diversions above the station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	4.1	4.6	4.4	2.0	2.0	2.1	40.3	399	729	-
1933	30.8	16.5	16.0	16.4	15.4	13.5	10.6	8.4	5.8	2.63	1.33	.05	11.5
1934	0	1.70	2.21	3.55	3.54	2.80	1.61	1.99	.57	0	0	3.9	1.82
1935	1.9	.1	0	0	0	3.6	3.7	81.7	-	-	-	-	-

Monthly and yearly runoff, in acre-feet, of Sycamore Creek near Del Rio, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	252	262	272	118	124	127	2,480	24,500	43,400	-
1933	1,900	983	985	1,010	855	829	628	514	346	161	81.5	2.8	8,295
1934	0	101	136	219	196	169	95.8	123	33.9	0	0	234	1,308
1935	119	4.2	0	0	0	220	223	5,020	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	44,800	Sept. 2, 1932	-	-	-	104	75,400
1933	(2,3)	a81	May 23, 1933	0	11.5	8,295	6.44	4,664
1934	(3,4)	480	Sept. 3, 1934	0	1.82	1,307.7	1.65	1,194
1935	(4,5)	215,000	June 14, 1935	0	-	-	-	-

a Maximum peak discharge; maximum discharge during year 108 cfs 12:01 a.m. Oct. 1, 1932, stage falling.
Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

414. Rio Grande below Maverick Dam

Location.--Lat 29°08'15", long 100°44'00", 3.1 miles downstream from Maverick Irrigation District diversion dam, about 23 miles southwest of Brackettville, Kenney County, Texas, and at mile 531.5.

Gage.--Water-stage recorder. Datum of gage is 804.79 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1956: Maximum discharge, 23,310 cfs Oct. 18, 1956 (gage height, 9.55 ft); minimum, 2.8 cfs at times.

Remarks.--Irrigation diversions a few miles upstream largely control the flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	342	343	186	41.6	124	104	22.1	215	340	-
1957	1,640	250	161	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	21,010	19,720	11,420	2,480	7,630	6,170	1,360	13,220	20,250	-
1957	101,000	14,860	9,910	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	(25,26)	-	-	-	-	-	316	229,030
1957	(26,27)	-	-	-	-	-	-	-

Note.--Numbers shown in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

415. Pinto Creek near Del Rio, Tex.

Location.--Lat 29°09', long 100°43', 0.6 mile downstream from bridge on U. S. Highway 277 between Del Rio and Eagle Pass, 1.6 miles upstream from the mouth, and 18 miles southeast of Del Rio, Val Verde County.

Drainage area.--249 sq mi, all in the United States.

Gage.--Water-stage recorder and concrete control. Datum of gage is 813.68 ft above mean sea level, U.S.C. & G.S. datum. Prior to Sept. 1, 1955, water-stage recorder at site 3.9 miles upstream at datum 40.93 ft higher.

Average discharge.--28 years (1929-57), 24.2 cfs (17,520 acre-ft per year).

Extremes.--1928-57: Maximum discharge, 186,000 cfs June 24, 1948 (gage height, 32.0 ft, site and datum then in use); no flow frequently. Maximum stage known, 28.8 ft (present site and datum) June 28, 1954 (backwater from Rio Grande).

Remarks.--Small irrigation diversions modify the flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission after June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	1.60	1.53	1.09	0.84	0.72	75.7	0.73	73.0	0.25	8.08	-
1930	0	0	7.56	.19	.15	.07	12.6	.45	6.81	0	0	0	2.31
1931	65.1	7.07	10.0	13.0	13.5	12.6	21.7	29.8	19.7	16.5	12.1	9.8	19.2
1932	6.2	7.7	11.9	8.5	7.7	6.2	3.8	4.7	.2	29.9	792	291	97.5
1933	35.9	36.2	35.4	34.4	33.6	26.0	17.2	16.1	18.9	33.4	7.44	3.30	24.8
1934	4.33	3.19	2.93	4.44	3.50	2.54	2.49	13.9	0	0	0	31.5	5.74
1935	49.5	.1	0	0	.25	40.7	60.4	334	505	33.5	16	168	101
1936	31.2	25.2	27.5	23.5	20.7	17.0	11.8	12.7	36.5	10.4	2.5	7.5	18.9
1937	10.5	14.8	15.2	11.8	8.0	6.7	2.9	2.0	2.5	1.1	0	0	6.29
1938	0	0	9.1	5.0	7.7	7.7	37.8	9.3	2.3	488	9.9	7.9	48.7
1939	7.8	8.8	8.2	6.8	5.8	12.6	3.4	27.0	10.3	.7	22.4	1.9	9.71
1940	3.4	3.0	4.3	5.5	6.4	7.5	6.4	30.0	11.0	3.2	10.6	1.4	7.74
1941	2.8	1.3	1.7	1.6	2.4	2.8	2.0	2.7	.3	192	1.5	2.7	18.1
1942	5.6	1.5	2.1	3.2	3.1	1.4	3.1	22.6	0	0	1.6	11.6	4.66
1943	0	0	0	1.9	2.7	2.1	39.7	47.7	10.3	0	0	38.8	11.9

Monthly and yearly mean discharge, in cubic feet per second, of Pinto Creek near Del Rio, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	14.0	2.6	2.4	7.1	17.8	7.7	5.7	35.0	19.4	1.1	0.1	1.3	9.50
1945	7.4	1.7	2.5	3.1	3.3	5.8	2.3	1.5	1.2	0	0	0	2.41
1946	4.8	0	0	0	0	0	5.1	45.6	36.7	.2	0	0	7.73
1947	0	0	0	0	0	0	1.2	65.2	70.1	26.9	7.8	3.0	14.6
1948	1.6	4.3	4.7	3.9	3.8	2.4	2.7	2.2	953	74.8	1.5	.8	86.8
1949	3.4	.8	.8	1.3	104	13.5	26.1	14.4	13.6	8.7	21.0	11.4	17.6
1950	10.3	10.3	13.2	11.9	9.2	6.6	3.6	2.3	2.1	1.1	0	1.2	5.98
1951	.1	0	0	0	0	2.6	.3	9.8	.1	0	0	.6	1.15
1952	33.6	.7	0	0	.3	0	.8	32.7	.5	.8	0	0	5.87
1953	0	0	0	0	0	.6	0	0	0	0	23.7	94.2	9.81
1954	.3	0	0	0	0	0	.9	17.1	212	4.6	1.2	4.1	19.8
1955	7.8	6.5	5.9	6.2	4.3	3.0	2.2	32.2	24.3	1.1	7.8	79.5	15.0
1956	.9	2.2	3.5	4.1	3.6	2.0	.8	.2	0	.1	0	0	1.45
1957	145	0	0	0	0	6.8	456	478	61.7	8.8	3.6	61.6	102

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	98	94	61	52	43	4,650	43	4,490	15	481	-
1930	0	0	465	12	8.3	4.3	750	28	405	0	0	0	1,673
1931	4,000	421	615	799	750	775	1,290	1,830	1,170	1,020	744	582	13,996
1932	380	456	732	523	444	383	227	290	12.3	1,840	48,700	17,300	71,287
1933	2,210	2,150	2,180	2,110	1,860	1,600	1,020	992	1,130	2,050	457	197	17,956
1934	266	190	180	273	194	156	148	856	0	0	0	1,880	4,143
1935	3,040	6.9	0	0	13.9	2,500	3,600	20,500	30,000	2,060	983	9,980	72,684
1936	1,920	1,500	1,690	1,450	1,190	1,040	705	780	2,170	638	154	448	13,685
1937	647	876	936	723	445	413	175	121	149	66	0	0	4,551
1938	0	0	559	307	429	471	2,250	569	136	30,000	608	467	35,796
1939	480	524	501	419	320	777	202	1,660	615	45	1,380	114	7,037
1940	206	179	262	336	366	462	382	1,840	654	196	651	82	5,616
1941	173	79	106	100	132	170	117	166	20	11,800	95	160	13,118
1942	345	90	131	195	172	84.5	182	1,390	0	0	97	692	3,378
1943	0	0	0	115	152	130	2,360	2,940	612	0	0	2,310	8,619
1944	863	154	150	435	1,030	475	339	2,150	1,150	68	5.6	77	6,897
1945	458	101	154	192	185	356	135	94	70	0	0	0	1,745
1946	293	0	0	0	0	0	304	2,800	2,190	12.3	0	0	5,599
1947	0	0	0	0	0	0	69	4,010	4,170	1,650	477	176	10,552
1948	98	256	289	241	221	147	158	138	56,700	4,600	90	47	62,985
1949	208	47	52	82	5,760	830	1,550	887	807	535	1,290	677	12,725
1950	630	611	812	735	509	404	217	144	124	69	0	72	4,328
1951	7.9	0	0	0	0	159	17	601	8.3	0	0	36	d29
1952	2,070	39	0	0	19	2.6	49	2,010	28	49	0	0	4,270
1953	0	0	0	0	0	39	0	0	0	0	1,460	5,610	7,111
1954	17	0	0	0	0	0	53	1,050	12,600	281	74	243	14,320
1955	479	386	362	379	241	187	133	1,980	1,440	65	483	4,730	10,860
1956	58	134	218	249	210	124	50	9.9	0	3.6	0	0	1,060
1957	8,940	0	0	0	0	419	27,100	29,400	3,670	539	223	3,670	73,960

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	688(6)	-	-	0	-	-	14.1	10,394
1930	703(6)	2,000	Apr. 28, 1930	0	2.31	1,673	8.54	6,243
1931	718(1)	a851	Oct. 4, 1930	0	19.2	13,996	14.5	10,528
1932	(1,2)	54,650	Aug. 31, 1932	0	97.5	71,287	105	76,260
1933	(2,3)	2,100	July 29, 1933	2.45	24.8	17,956	16.6	12,052
1934	(3,4)	7,700	Sept. 3, 1934	0	5.74	4,143	9.05	6,554
1935	(4,5)	15,200	May 18, 1935	0	101	72,684	103	74,765
1936	(5,6)	5,600	June 29, 1936	2.0	18.9	13,685	15.2	11,036
1937	(6,7)	158	May 29, 1937	0	6.29	4,551	3.7	2,651
1938	(7,8)	14,200	July 24, 1938	0	48.7	35,796	50.8	36,742
1939	(8,9)	3,170	Mar. 24, 1939	0	9.71	7,037	8.5	6,179
1940	(9,10)	2,660	May 23, 1940	0	7.74	5,616	7.3	5,326
1941	(10,11)	48,600	July 14, 1941	0	18.1	13,118	18.4	13,326
1942	(11,12)	4,700	May 18, 1942	0	4.66	3,378	3.9	2,812
1943	(12,13)	3,380	May 22, 1943	0	11.9	8,619	13.5	9,786
1944	(13,14)	3,720	June 6, 1944	0	9.50	6,897	8.9	6,443
1945	(14,15)	304	May 9, 1945	0	2.41	1,745	1.8	1,325
1946	(15,16)	4,500	June 20, 1946	0	7.73	5,599	7.3	5,306
1947	(16,17)	5,240	June 25, 1947	0	14.6	10,552	15.5	11,195
1948	(17,18)	186,000	June 24, 1948	0	86.8	62,985	86.3	62,649
1949	(18,19)	8,490	Feb. 25, 1949	.2	17.6	12,725	20.0	14,471
1950	(19,20)	120	Oct. 23, 1949	0	5.98	4,328	3.2	2,283
1951	(20,21)	2,510	May 24, 1951	0	1.15	829	4.0	2,930
1952	(21,22)	12,800	May 27, 1952	0	5.87	4,270	3.0	2,158
1953	(22,23)	10,400	Sept. 1, 1953	0	9.81	7,111	9.8	7,126
1954	(23,24)	18,500	June 15, 1954	0	19.8	14,320	21.4	15,528
1955	(24,25)	5,830	June 4, 1955	0	15.0	10,860	13.9	10,048

a Maximum day.

Note.-- Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

Yearly discharge, in cubic feet per second, of Pinto Creek near Del Rio, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	(25,26)	9.2	Nov. 8, 1955	0	1.45	1,060	13.2	9,586
1957	(26,27)	21,900	Oct. 18, 1956	0	102	73,960	94.9	68,704

Note.--Numbers shown in parentheses refer to water bulletins of the International Boundary and Water Commission.

416. Las Moras Creek near Eagle Pass, Tex.

Location.--Lat 29°00', long 100°38', at the Las Moras Creek siphon on the Maverick County Canal, 0.1 mile upstream from bridge on U. S. Highway 277 between Eagle Pass and Del Rio, 0.6 mile upstream from the mouth, and 25 miles northwest from Eagle Pass, Maverick County.

Drainage area.--166 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is 783.76 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1932-35: Maximum discharge, 8,860 cfs Aug. 31, 1932; maximum gage height, 13.2 ft Sept. 2, 1932 (backwater from the Rio Grande); no flow at times.

Remarks.--The flow of this spring-fed creek is modified by small irrigation diversions above the station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	11.2	12.2	11.9	5.6	10.4	0	109	154	340	-
1933	15.3	2.2	2.3	1.93	1.72	1.98	2.11	2.46	3.57	0	.07	0	2.80
1934	0	0	0	1.73	2.89	3.32	1.67	10.7	2.47	.81	.57	18.6	3.56
1935	3.3	1.0	.5	.5	.5	.8	23.2	151	221	46.3	24.1	66.7	44.9
1936	32.9	33.7	28.6	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	688	700	730	335	638	0	6,710	9,490	20,260	-
1933	943	131	141	118	95	122	126	151	213	0	4.0	0	2,044
1934	0	0	0	106	161	204	100	655	147	50	35	1,110	2,568
1935	201	60	31	31	28	51	1,380	9,290	13,200	2,850	1,480	3,970	32,570
1936	2,030	2,000	1,760	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	8,860	Aug. 31, 1932	0	-	-	56.2	40,766
1933	(2,3)	a47	Apr. 22, 1933	0	2.80	2,044	1.15	829
1934	(3,4)	2,700	Sept. 3, 1934	0	3.56	2,568	3.95	2,859
1935	(4,5)	4,840	May 16, 1935	.5	44.9	32,570	52.6	38,069
1936	(5)	-	-	-	-	-	-	-

a Maximum peak discharge; maximum discharge during year 139 cfs 12:01 a.m. Oct. 1, 1932, stage falling.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

417. Rio Grande at Eagle Pass, Tex.

Location.--Lat 28°43', long 100°30', on left bank 0.5 mile upstream from the international bridge between Eagle Pass, Maverick County, Texas and Piedras Negras, Coahuila, Mexico, and at mile 491.8.

Drainage area.--130,575 sq mi (contributing area), of which 84,245 sq mi is in the United States and 46,330 sq mi is in Mexico.

Supplemental records available.--Gage-height records collected at this site or in this vicinity since 1901 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 682.91 ft above mean sea level, U.S.C. & G.S. datum. May 1, 1900, to Apr. 30, 1916, staff gage 0.4 mile downstream at different datum. May 1, 1916, to Sept. 29, 1922, and Sept. 16, 1923, to Nov. 26, 1923, staff gage at site 2,820 ft downstream at datum 0.08 ft lower than present datum. Sept. 30, 1922, to Sept. 16, 1923, and Nov. 27, 1923, to March 1927, staff gage at site 1,970 ft downstream at datum 0.08 ft lower than present datum. Apr. 23, 1927, to Apr. 11, 1928, staff gage at site 650 ft downstream at datum 1.08 ft higher than present datum.

Average discharge.--47 years (1900-1913, 1914-15, 1924-57), 4,277 cfs (3,096,000 acre-ft per year).

Extremes.--1900-1916, 1923-57: Maximum discharge, 964,100 cfs June 29, 1954 (gage height, 53.51 ft), by slope-area measurement of peak flow); minimum, 24.4 cfs June 22, 1953.
Maximum flood known since 1746, 56.00 ft (present site and datum) in June 1865.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to Nov. 26, 1923, and subsequent to June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	9,155	5,952	8,289	12,590	13,370	-
1901	8,518	5,509	4,121	3,054	2,651	2,277	1,934	3,108	3,373	2,376	4,192	5,596	3,900
1902	3,444	3,739	2,245	2,052	1,892	1,599	1,529	3,382	1,648	6,094	6,975	12,950	3,968
1903	3,088	2,385	2,904	2,385	2,761	2,508	2,174	3,880	9,446	6,156	3,630	5,492	3,899
1904	5,248	2,490	2,175	2,002	1,844	1,665	1,577	2,167	5,886	3,088	1,843	34,100	5,296

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande at Eagle Pass, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1905	18,730	6,898	3,840	3,452	3,219	6,488	5,975	7,931	23,000	13,600	14,500	11,570	9,965
1906	9,451	6,950	7,186	4,199	5,899	3,823	2,593	4,918	6,628	16,460	29,900	15,300	9,488
1907	6,200	4,568	5,494	4,479	4,035	3,066	3,053	4,712	7,666	7,902	5,158	11,579	5,661
1908	5,591	6,922	8,337	4,058	3,022	2,408	3,373	5,588	3,209	4,070	12,130	11,090	5,992
1909	2,959	2,228	2,199	2,233	2,053	1,841	1,644	3,042	5,208	10,000	9,423	8,859	4,324
1910	3,392	2,305	1,974	3,024	2,100	1,921	3,091	4,738	3,328	3,443	1,574	6,510	3,118
1911	2,866	1,593	1,425	1,271	1,837	1,756	2,711	5,185	5,389	8,013	6,890	5,933	3,753
1912	7,265	5,038	3,220	2,622	2,132	1,498	2,465	2,998	10,450	3,644	5,842	14,943	5,160
1913	5,394	2,188	2,314	1,941	2,580	2,829	2,033	4,868	5,324	2,975	2,350	5,175	3,330
1914	3,837	3,014	3,596	2,279	2,052	1,883	-	11,000	18,300	-	-	14,558	-
1915	21,210	8,454	5,362	4,689	3,988	3,576	6,065	5,410	3,979	3,505	3,612	8,361	6,537
1916	5,974	3,218	2,841	2,500	2,245	3,155	3,110	-	-	-	-	11,100	-
1917	-	-	-	-	-	-	-	-	-	-	-	21,100	-
1918	10,200	-	-	-	-	-	-	-	-	-	-	-	-
1919	5,320	-	-	-	-	-	-	-	-	-	-	46,200	-
1920	17,800	-	-	-	-	-	-	-	-	-	20,900	37,300	-
1922	-	-	-	-	-	-	-	-	31,500	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	18,100	-
1924	-	-	4,710	5,936	3,477	3,188	2,857	3,692	3,260	2,944	2,439	6,540	-
1925	5,399	3,180	2,895	2,765	2,431	2,716	3,025	14,900	6,168	6,180	15,400	15,700	6,730
1926	7,600	4,185	3,390	3,340	2,990	2,850	3,670	3,860	4,700	3,318	7,221	8,033	4,596
1927	8,180	4,168	3,800	3,420	3,500	2,790	2,860	2,340	3,060	3,110	3,230	4,570	3,752
1928	5,180	3,010	3,180	3,150	2,970	2,430	2,200	4,650	3,160	2,930	7,290	7,010	3,930
1929	4,170	4,040	3,760	3,210	2,920	2,710	2,290	3,180	2,840	3,550	3,690	4,090	3,370
1930	3,090	2,840	2,830	2,380	1,910	1,560	1,650	1,260	3,690	2,070	4,070	1,360	2,400
1931	10,600	4,180	3,040	3,020	3,370	2,970	3,680	5,740	3,880	3,990	4,020	2,440	4,240
1932	2,820	2,620	2,800	2,610	2,636	2,446	1,765	3,005	1,905	2,695	5,230	51,700	6,853
1933	27,000	8,174	6,014	5,241	4,578	4,024	3,263	3,020	3,142	3,732	2,874	11,940	6,917
1934	7,179	3,309	2,851	2,950	2,830	2,640	2,420	2,840	3,180	2,330	2,260	2,790	3,130
1935	1,970	1,830	1,820	1,890	1,790	1,760	1,990	8,510	16,900	4,340	3,370	21,600	5,650
1936	6,250	3,870	2,930	2,810	2,490	2,620	2,030	3,430	4,820	4,050	2,710	12,800	4,230
1937	6,110	3,020	2,940	2,570	2,420	2,210	1,670	1,900	4,610	2,040	2,200	4,390	3,010
1938	4,620	2,340	2,710	3,070	2,580	2,080	1,650	1,660	2,840	20,400	8,010	18,000	5,830
1939	6,230	3,120	2,680	2,530	2,610	2,170	1,550	2,520	1,970	2,250	6,190	2,350	3,020
1940	2,680	2,680	2,220	2,140	2,120	1,720	2,240	3,280	3,100	2,770	4,430	3,070	2,710
1941	3,010	2,050	1,720	1,700	2,200	1,850	2,870	6,630	6,040	6,740	6,780	13,640	4,600
1942	27,330	8,620	4,790	3,670	3,270	2,760	2,350	5,690	5,580	4,310	8,760	25,900	8,600
1943	9,320	5,370	3,670	3,200	2,800	2,530	2,130	3,320	3,290	5,300	2,010	1,820	3,750
1944	4,390	2,500	2,330	2,460	2,130	2,050	1,510	1,890	2,210	1,510	2,540	8,940	2,860
1945	4,860	2,450	2,150	2,460	2,200	1,810	1,930	1,140	819	6,630	1,470	1,180	2,430
1946	8,540	2,740	2,040	2,230	1,990	1,780	2,320	3,260	5,800	3,010	1,400	5,270	3,370
1947	7,560	2,640	2,250	2,630	2,450	1,990	1,310	2,480	2,710	1,450	2,780	5,970	3,020
1948	1,760	1,900	2,040	1,560	1,700	1,520	1,010	1,180	15,390	10,240	2,150	2,750	3,590
1949	2,580	2,330	1,860	1,850	7,170	3,430	4,550	4,550	4,050	3,910	8,440	5,820	4,190
1950	5,060	3,360	2,660	2,730	2,440	2,000	1,450	1,690	2,410	4,310	3,270	4,600	3,000
1951	3,270	1,690	1,640	1,470	1,610	1,670	1,010	2,820	2,630	1,290	1,160	1,450	1,811
1952	1,060	1,090	925	933	857	654	822	2,200	1,170	5,420	815	455	1,375
1953	513	599	667	694	600	795	248	137	76.1	476	1,500	4,830	924
1954	966	686	761	764	747	439	3,680	3,410	46,950	4,520	4,260	2,990	5,805
1955	3,210	1,530	1,290	1,200	1,070	819	512	2,110	1,740	2,670	4,480	6,720	2,286
1956	3,790	1,670	1,340	1,190	1,210	763	512	508	380	283	581	958	1,101
1957	2,440	808	802	899	1,380	944	6,970	18,030	5,580	1,220	1,470	1,910	3,552

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	563,000	354,000	510,000	774,000	796,000	-
1901	524,000	328,000	253,000	188,000	147,000	140,000	115,000	191,000	201,000	146,000	258,000	333,000	2,824,000
1902	212,000	222,000	138,000	126,000	105,000	98,300	91,000	208,000	98,100	375,000	429,000	770,000	2,862,400
1903	190,000	142,000	179,000	147,000	153,000	154,000	129,000	239,000	562,000	379,000	223,000	327,000	2,824,000
1904	323,000	148,000	134,000	123,000	106,000	102,000	93,800	133,000	350,000	190,000	113,000	2,028,000	3,843,800
1905	1,150,000	410,000	236,000	212,000	179,000	399,000	356,000	488,000	1,368,000	835,000	891,000	688,000	7,214,000
1906	581,000	414,000	442,000	258,000	328,000	235,000	154,000	302,000	394,000	1,012,000	1,838,000	911,000	6,869,000
1907	381,000	272,000	338,000	275,000	224,000	189,000	182,000	290,000	456,000	486,000	317,000	689,000	4,099,000
1908	344,000	531,000	513,000	250,000	174,000	148,000	201,000	344,000	191,000	250,000	746,000	660,000	4,352,000
1909	182,000	133,000	135,000	137,000	114,000	113,000	97,800	187,000	310,000	615,000	579,000	527,000	3,130,000
1910	209,000	137,000	121,000	186,000	117,000	118,000	184,000	291,000	198,000	212,000	96,800	388,000	2,258,000
1911	176,000	94,800	87,600	78,100	102,000	108,000	161,000	319,000	321,000	493,000	424,000	353,000	2,717,500
1912	447,000	300,000	198,000	161,000	123,000	92,100	147,000	184,000	622,000	224,000	359,000	889,000	3,746,100
1913	332,000	130,000	142,000	119,000	143,000	174,000	121,000	299,000	317,000	183,000	145,000	308,000	2,413,000
1914	236,000	179,000	221,000	140,100	114,000	115,800	-	677,000	1,092,000	-	-	866,300	-
1915	1,304,000	503,100	329,700	288,300	221,500	219,900	360,900	332,700	236,800	215,500	222,100	497,500	4,732,000
1916	367,300	191,500	174,700	153,700	129,100	196,300	185,000	-	-	-	-	663,000	-
1917	-	-	-	-	-	-	-	-	-	-	-	1,258,000	-
1918	625,000	-	-	-	-	-	-	-	-	-	-	-	-
1919	327,000	-	-	-	-	-	-	-	-	-	-	2,751,000	-
1920	1,092,000	-	-	-	-	-	-	-	-	-	1,284,000	2,221,000	-
1922	-	-	-	-	-	-	-	-	1,876,000	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	1,076,000	-

Monthly and yearly runoff, in acre-feet, of Rio Grande at Eagle Pass, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	290,000	365,000	200,000	196,000	170,000	227,000	194,000	181,000	150,000	389,000	-
1925	332,000	189,000	178,000	170,000	135,000	167,000	180,000	918,000	367,000	380,000	947,000	933,000	4,896,000
1926	467,000	249,000	209,000	205,000	166,000	175,000	219,000	237,000	280,000	204,000	444,000	478,000	3,333,000
1927	503,000	248,000	234,000	210,000	194,000	172,000	170,000	144,000	182,000	191,000	193,000	272,000	2,718,000
1928	319,000	179,000	196,000	194,000	171,000	149,000	131,000	286,000	188,000	180,000	448,000	417,000	2,858,000
1929	256,000	240,000	231,000	197,000	162,000	167,000	136,000	196,000	169,000	218,000	227,000	243,000	2,442,000
1930	190,000	169,000	174,000	146,000	106,000	95,900	98,200	77,500	220,000	127,000	250,000	80,900	1,734,500
1931	654,000	249,000	187,000	186,000	187,000	182,260	219,000	353,000	231,000	245,500	247,360	145,130	3,086,250
1932	173,280	155,760	172,250	160,480	151,640	150,410	105,030	184,760	113,340	165,700	322,000	3,079,000	4,933,650
1933	1,658,000	486,390	369,760	332,240	254,250	247,440	194,180	185,680	186,960	229,490	176,690	710,510	5,021,590
1934	440,950	196,880	175,320	181,000	157,000	162,000	144,000	175,000	189,000	143,000	139,000	166,000	2,269,150
1935	121,000	109,000	112,000	116,000	99,200	108,000	118,000	523,000	1,005,000	267,000	207,000	1,285,000	4,070,200
1936	384,000	230,000	180,000	173,000	143,000	161,000	121,000	211,000	287,000	249,000	167,000	762,000	3,068,000
1937	376,000	180,000	181,000	158,000	134,000	136,000	99,600	117,000	274,000	125,000	136,000	261,000	2,177,600
1938	284,000	139,000	166,000	189,000	143,000	128,000	98,100	102,000	169,000	1,255,000	493,000	1,071,000	4,237,100
1939	383,000	186,000	165,000	156,000	145,000	133,000	92,100	155,000	117,000	138,000	381,000	138,000	2,189,100
1940	165,000	160,000	136,000	131,490	121,870	106,060	133,350	201,430	184,680	170,500	272,290	182,500	1,965,170
1941	184,860	121,810	105,620	104,400	122,000	113,800	170,700	407,600	359,700	414,600	417,100	811,400	3,333,590
1942	1,680,300	512,800	294,500	225,800	181,400	169,800	139,000	349,900	331,000	264,100	538,200	1,541,400	6,228,200
1943	573,300	320,100	225,800	196,500	155,700	155,800	126,500	204,300	195,800	326,000	123,500	108,100	2,711,400
1944	270,100	148,800	143,400	151,000	122,600	125,800	89,790	116,300	131,300	92,890	156,000	531,800	2,079,780
1945	298,700	145,900	132,100	151,100	122,200	111,300	114,800	70,210	48,710	407,600	90,440	69,920	1,762,980
1946	525,300	163,100	125,700	136,900	110,500	109,200	138,100	200,500	345,000	184,900	86,400	313,400	2,439,000
1947	465,200	157,000	138,600	161,900	136,200	122,400	77,780	152,500	161,000	89,040	170,600	355,500	2,187,720
1948	108,100	112,800	125,700	96,060	97,510	93,510	60,250	72,640	915,900	629,800	132,200	163,800	2,602,270
1949	158,700	138,800	114,600	113,700	398,200	211,100	270,700	279,600	241,200	240,700	519,100	346,300	3,032,700
1950	311,200	200,100	163,300	168,000	135,400	122,800	86,000	104,100	143,300	265,300	201,000	273,900	2,174,400
1951	200,900	100,400	100,800	90,660	89,260	102,500	60,230	173,400	156,300	79,180	71,070	86,170	1,311,000
1952	65,490	64,870	56,880	57,340	49,310	40,230	48,920	135,100	69,410	333,600	50,080	27,050	998,300
1953	31,560	35,630	41,000	42,690	33,320	48,910	14,770	8,430	4,530	29,300	91,980	287,200	669,300
1954	59,370	40,790	46,820	46,990	41,470	26,970	219,000	209,500	2,794,000	277,900	262,200	178,000	4,203,000
1955	197,400	90,980	79,480	73,550	59,620	50,350	30,480	130,000	103,800	163,900	275,400	399,900	1,655,000
1956	233,300	99,190	82,530	72,960	69,720	46,900	30,440	31,210	22,620	17,380	35,730	57,000	799,000
1957	150,200	48,050	49,310	55,250	76,660	58,070	414,600	1,108,000	332,200	75,280	90,250	113,500	2,571,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	358(7,15)	a53,700	Sept. 24, 1900	-	-	-	-	-
1901	358(7)	b21,460	Sept. 9, 1901	1,600	3,900	2,824,000	3,165	2,291,000
1902	358(7)	b32,000	Sept. 11, 1902	1,260	3,968	2,862,400	3,883	2,811,000
1903	358(7,15)	b53,500	June 14, 1903	1,640	3,899	2,824,000	4,030	2,917,000
1904	358(7,15)	b153,000	Sept. 16, 1904	1,250	5,296	3,843,000	6,940	5,039,000
1905	358(7,15)	b173,000	June 30, 1905	2,600	9,965	7,214,000	9,465	6,852,000
1906	358(7,15)	b100,000	Aug. 13, 1906	2,400	9,488	6,869,000	8,873	6,424,000
1907	358(7)	b16,980	Sept. 21, 1907	2,530	5,661	4,099,000	6,209	4,495,000
1908	358(7)	b49,560	May 24, 1908	1,850	5,992	4,352,000	4,700	3,412,000
1909	358(7)	b26,100	July 24, 1909	1,440	4,324	3,130,000	4,348	3,148,000
1910	358(7,15)	b47,000	Sept. 7, 1910	1,090	3,118	2,258,000	2,968	2,148,000
1911	358(7)	b23,050	May 17, 1911	1,230	3,753	2,717,500	4,562	3,303,000
1912	358(7,15)	b60,700	June 18, 1912	1,320	5,160	3,746,100	4,691	3,405,000
1913	358(7)	b33,000	June 24, 1913	1,110	3,330	2,413,000	3,378	2,445,000
1914	388(15)	-	-	-	-	-	-	-
1915	408(15)	b249,700	Oct. 22, 1914	2,700	6,537	4,732,000	4,598	3,329,000
1916	438(15)	-	-	-	-	-	-	-
1917	(15)	-	-	-	-	-	-	-
1918	(15)	-	-	-	-	-	-	-
1919	(15)	-	-	-	-	-	-	-
1920	(15)	-	-	-	-	-	-	-
1922	(15)	-	-	-	-	-	-	-
1923	(15)	-	-	-	-	-	-	-
1924	588(6)	-	-	-	-	-	3,817	2,771,000
1925	608(6,15)	252,000	May 30, 1925	-	6,730	4,896,000	7,038	5,122,000
1926	628(6,15)	25,000	Aug. 27, 1926	-	4,596	3,333,000	4,678	3,393,000
1927	648(6)	-	-	-	3,752	2,718,000	3,350	2,427,000
1928	668(6,15)	50,800	Sept. 10, 1928	1,890	3,930	2,858,000	3,980	2,891,000
1929	688(6)	20,100	July 1, 1929	1,870	3,370	2,440,000	3,100	2,248,000
1930	703(6)	14,300	Dec. 14, 1929	950	2,400	1,734,500	3,150	2,291,500
1931	718(1)	66,800	Oct. 7, 1930	1,100	4,240	3,086,250	3,450	2,497,540
1932	(1,2)	569,000	Sept. 2, 1932	1,420	6,853	4,933,650	9,598	6,946,510
1933	(2,3)	96,700	Oct. 1, 1932	2,160	6,917	5,021,500	4,587	3,320,590
1934	(3,4)	41,800	Sept. 3, 1934	1,590	3,130	2,269,150	2,480	1,798,000
1935	(4,5)	199,000	June 15, 1935	961	5,650	4,070,200	5,250	4,522,200
1936	(5,6)	79,500	June 29, 1936	1,550	4,230	3,068,000	4,150	3,011,000
1937	(6,7)	25,000	Oct. 1, 1936	1,060	3,010	2,177,600	2,800	2,029,600
1938	(7,8)	109,000	July 24, 1938	960	5,830	4,237,100	6,050	4,382,100
1939	(8,9)	19,300	Oct. 1, 1938	1,210	3,020	2,189,100	2,650	1,916,100
1940	(9,10)	23,410	Aug. 13, 1940	954	2,710	1,965,170	2,640	1,916,460

a Maximum daily during period May to September.
b Maximum daily.

Yearly discharge, in cubic feet per second, of Rio Grande at Eagle Pass, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	date					
1941	(10,11)	89,350	Sept. 19, 1941	1,190	4,600	3,333,590	7,470	5,408,900
1942	(11,12)	68,200	Sept. 18, 1942	1,830	8,600	6,228,200	6,710	4,860,700
1943	(12,13)	32,240	May 25, 1943	1,260	3,750	2,711,400	2,980	2,154,500
1944	(13,14)	29,660	Sept. 16, 1944	1,070	2,860	2,079,780	2,880	2,094,180
1945	(14,15)	31,040	Oct. 4, 1944	646	2,430	1,762,980	2,760	2,000,380
1946	(15,16)	62,500	June 24, 1946	1,050	3,370	2,439,000	3,300	2,385,700
1947	(16,17)	36,020	Oct. 7, 1946	858	3,020	2,187,720	2,450	1,773,520
1948	(17,18)	519,100	June 25, 1948	614	3,590	2,602,270	3,680	2,673,770
1949	(18,19)	82,280	Feb. 26, 1949	1,480	4,190	3,032,700	4,550	3,295,200
1950	(19,20)	36,730	July 14, 1950	1,020	3,000	2,174,400	2,630	1,901,900
1951	(20,21)	22,600	May 24, 1951	682	1,811	1,311,000	1,510	1,096,010
1952	(21,22)	45,910	May 28, 1952	283	1,375	998,300	1,270	919,230
1953	(22,23)	58,620	Sept. 1, 1953	30.7	924	669,300	978	708,110
1954	(23,24)	964,100	June 29, 1954	275	5,805	4,203,000	6,110	4,423,890
1955	(24,25)	59,330	Sept. 25, 1955	410	2,286	1,655,000	2,350	1,702,020
1956	(25,26)	9,820	Oct. 8, 1955	129	1,101	799,000	870	631,520
1957	(26,27)	75,600	May 29, 1957	385	3,552	2,571,000	3,840	2,779,210

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

418. Rio Grande at San Antonio Crossing, near Villa Guerrero, Coahuila, Mexico

Location.--Lat 29°21', long 100°18', 0.5 mile downstream from Cuervo Creek, 5 miles northeast of Villa Guerrero, Coahuila, 34.8 miles downstream from Eagle Pass, Maverick County, Texas and Piedras Negras, Coahuila, and at mile 455.8.

Drainaga area.--132,347 sq mi (contributing area), of which 84,482 sq mi is in the United States and 47,865 sq mi is in Mexico.

Gage.--Water-stage recorder reestablished May 27, 1955. Datum of gage is 581.61 ft above mean sea level, U.S.C. & G.S. datum. March to May 1952, water-stage recorder at site 1,100 ft upstream at datum 2.09 ft lower. October 1952 to Dec. 31, 1953, water-stage recorder at site 1,100 ft upstream at datum 0.08 ft lower. Jan. 1, 1954, to June 1954, water-stage recorder at present site at datum 1.89 ft lower.

Extremes.--1952-57: Maximum discharge, 912,000 cfs June 29, 1954 (gage height, 42.70 ft, present datum), by slope-area measurement; minimum, not determined.

Remarks.--Station operated in connection with a loss-and-gain study on the Rio Grande. Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	847	-	-	-	-	-	-	-
1953	-	739	865	874	779	978	453	295	139	457	-	-	-
1954	1,160	866	954	984	888	620	3,540	3,740	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	1,880	2,860	-	6,210	-
1956	3,670	1,660	1,370	1,330	1,260	986	716	821	594	445	719	1,360	1,246
1957	2,290	992	989	1,030	1,390	1,120	7,270	17,200	5,190	1,360	1,610	2,040	3,552

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	52,050	-	-	-	-	-	-	-
1953	-	43,970	53,190	53,730	43,270	60,150	26,970	18,140	8,260	28,130	-	-	-
1954	71,220	51,520	58,690	60,500	49,300	38,100	211,000	230,000	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	112,000	176,000	-	369,000	-
1956	226,000	98,600	84,200	81,600	72,600	60,600	42,600	50,500	35,300	27,400	44,200	81,200	904,800
1957	141,000	59,000	60,800	63,200	77,000	69,100	432,000	1,056,000	309,000	83,900	98,700	121,000	2,571,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	(21,22)	-	-	-	-	-	-	-
1953	(22,23)	-	-	-	-	-	-	-
1954	(23,24)	-	-	-	-	-	-	-
1955	(24,25)	-	-	-	-	-	-	-
1956	(25,26)	11,700	Sept. 2, 1956	299	1,246	904,800	1,040	756,800
1957	(26,27)	73,500	May 29, 1957	519	3,552	2,571,000	3,790	2,745,900

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

419. Rio Grande at Laredo, Tex.

Location.--Lat 27°30', long 99°31', 0.9 mile downstream from the International Highway Bridge between Laredo, Webb County, Texas and Nuevo Laredo, Tamaulipas, Mexico, and at mile 357.4.

Drainage area.--135,976 sq mi (contributing area), of which 85,718 sq mi is in the United States and 50,258 sq mi is in Mexico.

Supplemental records available.--Gage-height records collected in the vicinity since 1901 are contained in reports of U. S. Weather Bureau.

419. Rio Grande at Laredo, Tex.--Continued

Gage.--Water-stage recorder. Datum of gage is 347.90 ft above mean sea level, U.S.C. & G.S. datum. May 1, 1900, to July 31, 1903, staff gage at site three-quarters of a mile upstream at different datum. Aug. 1, 1903, to Mar. 31, 1914, and Nov. 1, 1922, to July 1924, staff gage, and July 1924 to September 1925, water-stage recorder, at site 3 miles upstream at datum 5.43 ft higher than present datum. October 1925 to Aug. 25, 1930, water-stage recorder at site 1-1/2 miles upstream at datum 4.75 ft higher than present datum. Aug. 26, 1930, to July 14, 1954, water-stage recorder at site 1-1/2 miles upstream at datum 3.61 ft higher than present datum. July 15, 1954, to Dec. 31, 1954, water-stage recorder at site 1.4 miles upstream at datum 3.61 ft higher than present datum. Jan. 1, 1955, to Aug. 31, 1955, water-stage recorder at site 100 ft upstream at datum 3.06 ft lower than present datum.

Average discharge.--47 years (1900-1913, 1923-57), 4,432 cfs (3,209,000 acre-ft per year).

Extremes.--1900-1913, 1922-57: Maximum discharge, 716,900 cfs June 30, 1954 (gage height, 61.35 ft, site and datum then in use) by slope-area measurement; no flow in 1953 and 1956.
Maximum stage since 1746, about 62-1/2 ft in June 1865 (at site and datum used 1930-54).

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	11,390	8,236	9,090	13,910	14,450	-
1901	9,140	5,800	4,570	3,058	2,647	2,293	1,933	3,285	3,361	2,391	4,196	5,596	4,032
1902	3,448	3,764	2,391	2,082	1,891	1,594	1,613	3,594	1,647	5,839	7,101	13,090	4,003
1903	3,578	2,638	2,911	2,505	2,791	2,553	2,168	4,570	12,880	7,790	3,878	8,079	4,692
1904	5,508	2,531	2,116	2,243	2,198	1,676	3,177	2,544	4,806	3,522	1,854	35,690	5,610
1905	18,250	7,501	5,308	3,196	2,898	5,927	5,886	8,009	16,410	15,400	15,030	12,440	9,734
1906	10,020	6,966	7,771	4,715	5,695	3,933	2,716	5,703	6,317	16,300	27,820	16,310	9,561
1907	6,614	4,801	5,386	4,771	4,221	3,110	3,225	5,286	8,163	8,468	5,050	11,400	5,877
1908	5,917	8,633	8,612	4,529	3,077	2,410	5,765	4,957	3,041	3,201	12,040	11,830	6,171
1909	3,214	2,289	2,115	2,314	2,218	2,348	1,981	3,307	4,992	9,765	9,420	8,813	4,415
1910	3,738	2,347	1,972	2,966	2,119	1,749	3,393	4,723	3,187	3,250	1,515	7,072	3,169
1911	3,386	1,562	1,475	1,300	1,955	1,898	2,699	5,568	5,503	8,510	7,065	5,510	3,885
1912	8,097	5,464	3,275	2,701	2,184	1,593	2,818	3,340	13,740	4,115	5,853	14,030	5,577
1913	5,803	2,410	2,835	2,138	2,715	3,376	2,179	4,327	5,319	3,069	2,342	5,235	3,482
1914	5,556	3,725	4,399	2,533	2,171	1,947	-	-	-	-	-	-	-
1923	-	2,920	2,720	2,540	3,990	2,950	4,100	2,260	3,580	3,220	4,670	21,500	-
1924	6,450	4,620	4,040	5,720	3,220	2,870	2,620	3,480	3,720	2,750	2,300	7,030	4,070
1925	5,310	3,010	2,750	2,570	2,260	2,510	2,550	13,900	8,340	6,110	14,400	16,200	6,660
1926	7,230	4,140	3,280	3,180	2,810	2,650	5,240	4,940	4,410	3,650	7,440	8,490	4,790
1927	9,660	4,080	3,810	3,120	3,550	2,830	2,740	2,350	3,540	3,750	2,840	3,660	3,830
1928	5,910	2,830	2,830	2,900	2,860	2,340	2,100	4,490	3,370	2,750	6,930	9,430	4,060
1929	4,400	4,020	3,740	2,990	2,560	2,450	2,000	3,010	2,270	2,800	3,630	5,110	3,250
1930	3,500	2,730	2,960	2,195	1,970	1,556	1,995	1,865	4,711	2,094	4,128	1,446	2,600
1931	10,216	4,381	3,111	2,890	3,290	2,820	2,850	6,410	3,970	4,030	3,840	2,260	4,170
1932	2,720	2,260	2,600	2,490	2,260	2,040	1,610	3,250	1,500	2,700	3,900	49,500	6,400
1933	31,700	9,590	5,740	4,904	4,274	3,627	3,171	2,681	2,653	3,532	2,848	12,460	7,260
1934	8,103	3,161	2,673	2,900	2,760	2,580	2,670	2,820	3,710	2,580	2,180	2,890	3,250
1935	2,040	2,050	1,740	1,850	1,790	1,870	2,060	9,620	22,800	5,250	3,300	22,300	6,390
1936	7,030	4,120	3,400	3,030	2,650	3,020	2,030	3,690	5,400	5,770	2,760	15,500	4,870
1937	7,460	3,210	3,160	2,510	2,420	2,340	1,740	1,910	5,140	2,330	2,070	3,820	3,180
1938	4,870	2,320	2,670	3,180	2,620	2,160	2,320	1,830	2,280	20,300	9,160	17,400	5,930
1939	6,960	3,250	2,880	2,680	2,640	2,210	1,720	4,730	2,440	2,120	6,480	2,380	3,390
1940	2,850	2,710	2,250	2,260	2,250	1,950	2,290	5,110	4,320	3,450	4,830	3,390	3,140
1941	4,010	2,160	1,910	2,170	2,400	1,970	2,450	8,580	6,680	6,360	7,110	13,420	4,940
1942	26,150	8,950	4,820	4,320	3,760	3,110	2,870	7,210	6,060	7,610	8,010	26,140	9,110
1943	10,540	5,630	4,230	3,500	2,980	2,730	2,390	3,430	4,710	5,360	2,210	2,010	4,160
1944	4,700	2,680	2,520	2,710	2,430	2,130	1,560	2,370	2,200	1,360	7,120	10,110	3,490
1945	5,080	2,700	2,470	2,620	2,420	1,960	3,150	1,330	787	6,610	1,520	1,110	2,650
1946	11,470	2,850	2,240	2,280	2,090	1,740	2,890	5,110	6,240	3,350	2,020	5,540	3,400
1947	8,470	2,970	2,540	2,830	2,610	2,030	1,310	3,280	4,680	1,510	3,250	5,830	3,450
1948	2,040	1,920	2,120	1,660	1,750	1,590	1,000	1,110	13,770	9,520	1,980	4,960	3,610
1949	2,620	2,450	2,000	1,890	7,630	3,630	5,320	4,570	5,640	3,700	8,690	5,590	4,450
1950	5,090	3,260	2,790	2,690	2,380	2,040	1,450	2,120	2,950	4,020	3,200	4,520	3,050
1951	3,340	1,740	1,650	1,590	1,650	1,690	1,060	4,680	2,950	1,140	1,230	1,920	2,058
1952	1,110	1,220	1,060	1,070	960	756	847	2,410	1,420	5,620	912	519	1,500
1953	519	725	849	891	739	1,110	476	542	5.5	284	3,050	6,850	1,335
1954	1,250	829	852	896	824	504	4,050	4,640	33,520	10,660	4,620	4,240	5,557
1955	4,070	1,870	1,710	1,590	1,520	930	596	2,190	1,730	3,050	5,330	6,540	2,601
1956	4,150	2,020	1,650	1,490	1,260	803	609	641	303	752	601	1,700	1,335
1957	2,690	1,090	1,050	995	1,280	1,130	7,800	22,000	6,160	1,150	1,550	2,840	4,160

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	700,000	490,000	559,000	855,000	860,000	-
1901	562,000	345,000	281,000	188,000	147,000	141,000	115,000	202,000	200,000	147,000	258,000	333,000	2,919,000
1902	212,000	224,000	147,000	128,000	105,000	98,000	96,000	221,000	98,000	359,000	431,000	779,000	2,898,000
1903	220,000	157,000	179,000	154,000	155,000	157,000	129,000	281,000	766,000	479,000	238,000	481,000	3,397,000
1904	339,000	151,000	130,000	138,000	126,000	103,000	190,000	156,000	286,000	217,000	113,000	2,123,000	4,072,000
1905	1,122,000	446,000	326,000	197,000	161,000	364,000	350,000	492,000	976,000	947,000	924,000	740,000	7,045,000
1906	616,000	415,000	478,000	290,000	316,000	236,000	162,000	351,000	376,000	1,000,000	1,711,000	971,000	6,922,000

Monthly and yearly runoff, in acre-feet, of Rio Grande at Laredo, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	407,000	286,000	331,000	293,000	234,000	191,000	192,000	325,000	486,000	521,000	310,000	678,000	4,254,000
1908	364,000	514,000	530,000	278,000	177,000	148,000	343,000	305,000	181,000	197,000	740,000	704,000	4,481,000
1909	198,000	136,000	130,000	142,000	123,000	144,000	118,000	203,000	297,000	600,000	579,000	524,000	3,194,000
1910	230,000	140,000	121,000	182,000	118,000	108,000	202,000	290,000	190,000	200,000	93,200	421,000	2,294,000
1911	208,000	93,000	90,700	79,900	109,000	117,000	161,000	342,000	327,000	523,000	434,000	328,000	2,813,000
1912	493,000	325,000	201,000	166,000	121,000	98,300	168,000	205,000	818,000	253,000	360,000	835,000	4,049,000
1913	357,000	143,000	174,000	131,000	151,000	208,000	130,000	266,000	316,000	189,000	144,000	311,000	2,521,000
1914	342,000	222,000	271,000	156,000	121,000	120,000	-	-	-	-	-	-	-
1923	-	174,000	167,000	156,000	222,000	181,000	244,000	139,000	213,000	198,000	287,000	1,279,000	-
1924	397,000	275,000	248,000	352,000	185,000	176,000	156,000	214,000	221,000	169,000	141,000	418,000	2,952,000
1925	327,000	179,000	169,000	158,000	125,000	154,000	152,000	856,000	496,000	376,000	883,000	962,000	4,837,000
1926	445,000	246,000	202,000	196,000	156,000	163,000	312,000	304,000	262,000	225,000	457,000	505,000	3,473,000
1927	518,000	243,000	234,000	192,000	197,000	174,000	163,000	144,000	211,000	231,000	174,000	218,000	2,699,000
1928	364,000	168,000	174,000	178,000	164,000	144,000	125,000	276,000	201,000	169,000	426,000	561,000	2,950,000
1929	271,000	239,000	230,000	183,870	142,020	150,550	118,910	185,160	135,270	172,170	223,140	304,170	2,355,260
1930	215,510	162,490	181,990	135,000	109,410	95,680	118,710	114,700	280,310	128,770	253,830	87,260	1,883,660
1931	628,170	260,690	191,270	177,570	182,880	173,260	169,450	394,290	236,090	247,810	236,240	134,330	3,032,050
1932	167,260	135,710	159,820	153,300	129,930	125,350	95,640	199,950	89,190	166,270	240,000	2,943,000	4,605,420
1933	1,951,000	570,800	352,680	301,550	237,380	223,020	188,720	164,850	157,850	217,150	175,120	741,430	5,281,550
1934	498,240	188,070	164,350	178,000	153,000	159,000	159,000	174,000	221,000	159,000	134,000	172,000	2,359,660
1935	126,000	122,000	107,000	114,000	99,400	115,000	122,000	591,000	1,357,000	323,000	203,000	1,326,000	4,605,400
1936	432,000	245,000	209,000	186,000	153,000	186,000	121,000	227,000	321,000	355,000	170,000	924,000	3,529,000
1937	459,000	191,000	194,000	154,000	134,000	144,000	103,000	117,000	306,000	144,000	127,000	227,000	2,300,000
1938	300,000	138,000	164,000	195,000	146,000	133,000	138,000	113,000	136,000	1,250,000	563,000	1,036,000	4,312,000
1939	428,000	193,000	177,000	165,000	147,000	136,000	103,000	291,000	145,000	131,000	399,000	141,000	2,456,000
1940	175,000	162,000	138,000	139,000	129,400	119,600	136,200	314,100	256,800	212,400	296,800	201,400	2,280,700
1941	246,700	128,300	117,800	133,100	133,000	121,300	145,800	527,400	397,700	391,100	437,200	798,400	3,577,800
1942	1,608,000	532,300	296,400	265,900	208,600	191,300	171,000	443,000	360,900	467,700	492,800	1,555,300	6,593,200
1943	648,100	335,100	260,300	215,200	165,800	168,100	142,000	210,800	280,200	329,700	135,600	119,800	3,010,700
1944	289,200	159,300	154,800	166,800	139,600	131,200	92,900	145,800	131,000	83,570	437,900	601,800	2,533,870
1945	312,500	160,700	151,700	160,900	134,500	120,300	187,500	81,540	46,850	406,200	93,740	65,840	1,922,270
1946	705,300	169,400	137,600	140,300	116,200	107,100	172,200	314,100	371,500	205,900	124,300	328,900	2,893,800
1947	520,900	176,700	156,200	173,800	144,800	125,000	77,970	201,800	278,600	92,780	199,700	346,700	2,494,950
1948	125,400	114,100	130,100	102,000	100,800	97,700	59,530	68,300	819,500	585,300	121,500	295,000	2,619,230
1949	161,300	145,700	122,700	116,100	423,700	223,400	316,300	280,800	335,400	227,600	534,400	332,800	3,220,200
1950	313,100	194,200	171,800	165,100	131,900	125,400	86,220	130,500	175,500	247,100	196,600	268,800	2,206,220
1951	205,200	103,800	101,500	98,020	91,440	103,800	63,040	287,800	175,300	70,210	75,590	114,100	1,490,000
1952	68,060	72,320	65,060	65,960	55,210	46,500	50,390	148,400	84,540	345,600	56,080	30,900	1,089,000
1953	31,910	43,110	52,230	54,800	41,050	68,250	28,300	33,360	337	17,470	187,300	407,800	965,900
1954	76,850	49,350	52,360	55,100	45,770	30,960	240,800	285,100	1,994,000	655,500	284,200	252,500	4,022,000
1955	250,000	111,100	105,000	97,870	84,340	57,210	35,480	134,800	103,000	187,600	327,900	388,900	1,883,000
1956	255,200	120,000	101,700	91,720	72,680	49,380	36,250	39,430	18,040	46,220	36,970	101,400	969,000
1957	165,400	64,760	64,390	61,190	70,870	69,180	464,000	1,351,000	366,700	70,550	95,140	169,200	3,012,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	(7)	-	-	-	-	-	-	-
1901	(7)	-	-	-	4,032	2,919,000	3,196	2,314,000
1902	(7)	-	-	-	4,003	2,898,000	3,966	2,871,000
1903	(7,15)	-	-	-	4,692	3,397,000	4,779	3,460,000
1904	(7,15)	a136,000	Sept. 17, 1904	1,110	5,610	4,072,000	7,367	5,347,000
1905	(7,15)	a109,000	July 1, 1905	2,720	9,734	7,045,000	9,200	6,661,000
1906	(7,15)	a98,900	Aug. 14, 1906	2,390	9,561	6,922,000	8,891	6,437,000
1907	(7)	a18,390	Sept. 22, 1907	2,570	5,877	4,254,000	6,406	4,638,000
1908	(7)	a33,000	Aug. 16, 1908	2,060	6,171	4,481,000	4,872	3,537,000
1909	(7)	a19,350	July 16, 1909	1,730	4,415	3,194,000	4,452	3,223,000
1910	(7,15)	a31,200	Sept. 8, 1910	1,020	3,169	2,294,000	3,032	2,195,900
1911	(7)	a24,260	May 18, 1911	1,190	3,885	2,813,000	4,759	3,446,000
1912	(7,15)	a90,900	June 19, 1912	1,390	5,577	4,049,000	5,095	3,699,000
1913	(7)	a35,100	June 25, 1913	1,080	3,482	2,521,000	3,702	2,680,000
1914	(15)	-	-	-	-	-	-	-
1923	568(15)	-	-	-	-	-	-	-
1924	588(4)	a36,500	Sept. 22, 1924	1,600	4,070	2,952,000	3,730	2,707,000
1925	608(4,15)	a189,000	May 31, 1925	1,850	6,660	4,837,000	6,960	5,055,000
1926	628(4,15)	a56,800	Apr. 21, 1926	1,950	4,790	3,473,000	4,930	3,575,000
1927	(4)	a25,000	Oct. 16, 1926	1,930	3,830	2,699,000	3,330	2,410,000
1928	(4)	a51,600	Sept. 23, 1928	1,690	4,060	2,950,000	4,120	2,984,000
1929	(3,4)	a27,000	Sept. 17, 1929	1,350	3,250	2,355,260	3,000	2,175,250
1930	(3)	a15,650	Apr. 29, 1930	680	2,600	1,883,660	3,320	2,403,800
1931	(1,3)	53,300	Oct. 8, 1930	1,030	4,170	3,032,050	3,330	2,414,710
1932	(1,2,15)	335,000	Sept. 3, 1932	870	6,400	4,605,420	9,690	7,017,110
1933	(2,3)	79,500	Oct. 2, 1932	2,040	7,260	5,281,550	4,500	3,257,730
1934	(3,4,9)	47,700	June 3, 1934	1,440	3,250	2,359,660	2,580	1,864,000
1935	(4,5)	176,000	June 16, 1935	1,080	6,390	4,605,400	7,090	5,136,400
1936	(5,6)	87,600	June 30, 1936	1,540	4,870	3,529,000	4,800	3,487,000

a Maximum daily.

Note.--Figures in parentheses in W.S.P. column refer to bulletins of the International Boundary and Water Commission.

Yearly discharge, in cubic feet per second, of Rio Grande at Laredo, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	(6,7)	34,300	Oct. 1, 1936	953	3,180	2,300,000	2,840	2,058,000
1938	(7,8)	106,600	July 26, 1938	819	5,930	4,312,000	6,230	4,508,000
1939	(8,9)	55,100	May 14, 1939	1,210	3,390	2,456,000	2,950	2,133,000
1940	(9,10)	26,500	June 30, 1940	936	3,140	2,280,700	3,170	2,298,500
1941	(10,11)	68,860	Sept. 20, 1941	1,180	4,940	3,577,800	7,630	5,521,700
1942	(11,12)	55,440	Sept. 15, 1942	2,170	9,110	6,593,200	7,460	5,400,000
1943	(12,13)	50,500	June 5, 1943	1,210	4,160	3,010,700	3,270	2,370,500
1944	(13,14)	73,100	Aug. 29, 1944	943	3,490	2,533,870	3,520	2,555,470
1945	(14,15)	26,900	Apr. 21, 1945	593	2,650	1,922,270	3,190	2,309,670
1946	(15,16)	79,800	Oct. 10, 1945	1,020	3,400	2,893,800	3,780	2,735,300
1947	(16,17)	55,800	June 24, 1947	904	3,450	2,494,950	2,780	2,010,750
1948	(17,18)	299,500	June 26, 1948	569	3,610	2,619,230	3,690	2,679,330
1949	(18,19,20)	67,540	Feb. 27, 1949	1,420	4,450	3,220,200	4,790	3,469,600
1950	(19,20)	27,690	July 15, 1950	939	3,050	2,206,220	2,680	1,937,620
1951	(20,21)	55,800	May 16, 1951	692	2,058	1,490,000	1,770	1,284,740
1952	(21,22)	32,770	May 29, 1952	336	1,500	1,089,000	1,390	1,010,830
1953	(22,23)	53,680	Sept. 3, 1953	0	1,335	965,900	1,410	1,017,227
1954	(23,24)	716,900	June 30, 1954	269	5,557	4,022,000	5,950	4,310,030
1955	(24,25)	43,440	Sept. 27, 1955	445	2,601	1,883,000	2,620	1,894,000
1956	(25,26)	24,540	July 3, 1956	9.9	1,335	969,000	1,080	786,640
1957	(26,27)	64,630	May 30, 1957	413	4,160	3,012,000	4,450	3,220,330

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

420. Dolores Creek near San Ignacio, Tex.

Location.--Lat 27°14', long 99°25', about 3.2 miles above mouth, and 14 miles north of San Ignacio, Zapata County.

Drainage area.--606 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U.S.C. & G.S. datum. Prior to January 1933, water-stage recorder at same site at datum 317.66 ft higher.

Extremes.--1932-36: Maximum discharge, 21,300 cfs Sept. 6, 1933 (gage height, 327.17 ft); minimum gage height, 343.06 ft Sept. 4, 1932 (backwater from Rio Grande); no flow most of time.

Remarks.--No known regulation or diversion.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	0	0	0	26	123	56	14.6	0.04	336	-
1933	0	0	0	0	.59	0	.08	4.01	6.2	60.3	61.5	388	43.4
1934	8.29	0	0	21.1	0	0	23.9	9.8	.78	37.2	3.12	65.6	14.1
1935	.16	0	0	.42	.89	26.6	158	82.5	187	0	0	88.1	45.3
1936	2.8	0	0	0	0	0	42.6	290	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	0	0	0	1,570	7,726	3,374	897	2.8	20,000	-
1933	0	0	0	0	32	0	4.8	247	370	3,710	3,780	23,110	31,254
1934	510	0	0	1,300	0	0	1,420	602	46	2,290	192	3,910	10,270
1935	9.9	0	0	26	50	1,630	9,420	5,070	11,100	0	0	5,240	32,545
1936	170	0	0	0	0	0	2,530	17,800	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2,6)	-	-	0	-	-	46.2	33,570
1933	(2,3)	21,300	Sept. 6, 1933	0	43.4	31,254	43.9	31,764
1934	(3,4)	2,360	July 25, 1934	0	14.1	10,270	13.5	9,770
1935	(4,5)	13,000	Apr. 26, 1935	0	45.3	32,545	45.2	32,705
1936	(5,6)	-	-	0	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

421. Rio Grande near Zapata, Tex.

Location.--Lat 26°52', long 99°18', 1.4 miles downstream from Rio Salado, about 3 miles downstream from Zapata, Zapata County, 7.5 miles northeast of Guerrero, Tamulipas, Mexico, and at mile 297.

Drainage area.--163,327 sq mi (contributing area), of which 86,815 sq mi is in the United States and 76,512 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U.S.C. & G.S. datum.

Average discharge.--20 years (1932-52), 4,813 cfs (3,484,000 acre-ft per year).

Extremes.--1932-53: Maximum discharge, 261,000 cfs Sept. 4, 1932 (gage height, 262.07 ft); no flow May 10, and June 10 to July 1, 1953. Maximum flood known since 1746 occurred in 1865.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande near Zapata, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	2,941	2,605	2,635	2,332	3,816	2,060	2,884	3,918	48,657	-
1933	38,974	12,570	9,618	7,880	6,510	4,100	3,637	3,046	3,040	4,105	3,976	18,550	9,650
1934	10,527	3,958	3,282	3,540	3,130	2,870	3,800	3,350	4,200	3,200	2,660	3,410	3,990
1935	2,680	2,240	1,930	1,940	1,990	2,240	2,800	9,500	25,500	6,450	4,010	25,800	7,260
1936	7,510	4,200	3,560	3,140	2,810	3,170	2,240	6,140	4,340	7,320	3,520	16,500	5,370
1937	8,180	3,290	3,370	2,930	2,690	2,560	1,840	2,180	5,750	2,290	2,650	3,980	3,480
1938	5,240	2,400	2,810	3,380	2,750	2,530	2,520	2,540	1,930	20,100	10,800	18,200	6,270
1939	7,600	3,230	2,950	2,700	2,660	2,280	1,870	6,210	3,000	2,150	6,630	2,890	3,700
1940	3,680	2,710	2,330	2,320	2,260	4,750	2,580	5,260	6,040	3,860	5,970	4,690	3,880
1941	5,750	2,250	1,880	2,320	2,490	2,020	2,460	11,100	8,640	6,550	7,270	14,100	5,580
1942	25,500	9,280	5,090	4,390	3,750	3,280	2,840	7,840	6,000	9,830	7,730	28,300	9,500
1943	11,500	5,770	3,910	3,540	3,030	2,760	2,390	4,190	5,310	5,590	2,350	3,190	4,480
1944	5,220	2,930	2,900	2,770	2,490	2,400	1,640	4,100	2,910	1,500	11,730	15,000	4,640
1945	6,140	3,040	2,620	2,780	2,610	2,090	3,920	1,460	911	7,240	1,760	1,280	3,000
1946	13,100	2,970	2,370	2,400	2,120	1,790	3,050	7,680	7,040	3,400	2,740	6,200	4,590
1947	9,650	2,910	2,600	2,800	2,680	2,110	1,460	4,040	6,110	1,650	7,050	6,660	4,150
1948	2,190	2,060	2,170	1,730	1,840	1,720	1,100	1,330	11,900	10,100	2,130	7,450	3,800
1949	4,080	2,580	2,090	2,020	7,190	3,870	11,100	5,700	6,070	3,970	9,090	5,980	5,280
1950	5,260	3,440	2,930	2,740	2,400	2,100	1,650	4,300	4,140	4,000	3,210	4,580	3,410
1951	3,560	1,890	1,760	1,610	1,700	1,890	1,190	5,310	4,270	1,100	1,210	5,900	2,614
1952	2,150	1,280	1,050	1,040	894	702	801	2,680	1,630	5,440	888	712	1,615
1953	461	653	787	816	660	1,040	769	781	.3	188	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	180,820	149,830	161,990	138,770	234,650	122,580	177,320	240,940	2,895,330	-
1933	2,396,440	748,020	591,380	484,450	361,350	252,080	216,400	187,300	180,880	252,380	233,440	1,103,840	7,007,960
1934	647,300	235,520	201,780	218,000	174,000	176,000	226,000	206,000	250,000	197,000	164,000	203,000	2,898,600
1935	165,000	133,000	119,000	119,000	111,000	138,000	166,000	584,000	1,517,000	397,000	247,000	1,533,000	5,229,000
1936	462,000	250,000	219,000	193,000	162,000	195,000	133,000	377,000	258,000	450,000	216,000	980,000	3,895,000
1937	503,000	196,000	207,000	180,000	149,000	157,000	110,000	134,000	342,000	141,000	163,000	237,000	2,519,000
1938	322,000	143,000	173,000	208,000	153,000	156,000	150,000	156,000	115,000	1,238,000	665,000	1,081,000	4,560,000
1939	467,000	192,000	181,000	166,000	148,000	140,000	111,000	382,000	178,000	132,000	408,000	172,000	2,677,000
1940	226,000	162,000	143,000	143,000	130,000	292,000	153,000	323,000	359,000	237,000	367,000	279,000	2,814,000
1941	354,000	134,000	116,000	142,500	138,000	124,000	146,000	682,000	514,000	403,000	447,000	841,000	4,041,500
1942	1,565,000	552,000	313,000	270,000	208,000	202,000	169,000	482,000	357,000	604,000	475,000	1,680,000	6,897,000
1943	710,000	343,000	240,000	218,000	168,000	170,000	142,000	258,000	316,000	344,000	145,000	189,000	3,243,000
1944	321,000	175,000	178,000	170,000	143,000	148,000	97,800	252,000	173,000	92,300	721,000	894,000	3,365,100
1945	378,000	181,000	161,000	171,000	145,000	128,000	233,000	89,900	59,000	445,000	108,000	76,400	2,175,300
1946	808,000	177,000	146,000	147,000	118,000	110,000	181,000	472,000	419,000	209,000	168,000	369,000	3,324,000
1947	594,000	173,000	160,000	172,000	149,000	129,000	86,800	249,000	364,000	102,000	433,000	396,000	3,007,800
1948	135,000	123,000	133,000	106,000	106,000	106,000	65,200	81,800	711,000	620,000	131,000	443,000	2,761,000
1949	251,000	153,000	128,000	124,000	399,000	238,000	662,000	350,000	361,000	244,000	559,000	356,000	3,825,000
1950	323,000	205,000	183,000	169,000	133,000	129,000	98,500	265,000	247,000	246,000	197,000	273,000	2,468,500
1951	219,000	112,000	108,000	98,700	94,300	116,000	70,600	326,000	254,000	67,900	74,100	351,000	1,892,000
1952	132,000	76,100	64,800	64,100	51,400	43,200	47,700	165,000	96,700	335,000	54,600	42,400	1,173,000
1953	28,300	38,900	48,400	50,200	36,600	64,200	45,800	48,000	19	11,600	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	261,000	Sept. 4, 1932	-	-	-	11,072	8,038,070
1933	(2,3)	97,380	Oct. 2, 1932	2,540	9,650	7,007,960	6,018	4,356,720
1934	(3,4)	42,750	Oct. 15, 1933	1,490	3,990	2,898,600	3,080	2,231,000
1935	(4,5)	161,000	June 17, 1935	1,210	7,260	5,229,000	7,930	5,743,000
1936	(5,6)	75,000	May 9, 1936	1,560	5,370	3,895,000	5,330	3,870,000
1937	(6,7)	38,900	Oct. 1, 1936	906	3,480	2,519,000	3,110	2,251,000
1938	(7,8)	105,000	July 27, 1938	924	6,270	4,560,000	6,610	4,762,000
1939	(8,9)	33,200	May 6, 1939	1,080	3,700	2,677,000	3,270	2,368,000
1940	(9,10)	57,500	Mar. 24, 1940	1,000	3,880	2,814,000	3,980	2,887,000
1941	(10,11,15)	57,900	Sept. 21, 1941	1,270	5,580	4,041,500	8,105	5,867,500
1942	(11,12	88,700	Sept. 8, 1942	2,070	9,500	6,877,000	7,930	5,740,000
1943	(12,13)	36,400	June 6, 1943	1,170	4,480	3,243,000	3,620	2,624,000
1944	(13,14)	91,600	Aug. 30, 1944	903	4,640	3,365,000	4,700	3,411,100
1945	(14,15)	26,600	(a)	655	3,000	2,175,300	3,570	2,586,300
1946	(15,16)	72,100	Oct. 10, 1945	1,060	4,590	3,324,000	4,310	3,120,000
1947	(16,17)	61,500	Oct. 9, 1946	894	4,150	3,007,000	3,410	2,471,800
1948	(17,18)	209,000	June 27, 1948	521	3,800	2,761,000	4,000	2,902,000
1949	(18,19)	94,100	Apr. 25, 1949	1,470	5,280	3,825,000	5,530	4,004,000
1950	(19,20)	50,900	May 28, 1950	1,000	3,410	2,468,500	3,030	2,196,500
1951	(20,21)	61,300	Sept. 15, 1951	619	2,614	1,892,000	2,380	1,725,500
1952	(21,22)	34,600	May 29, 1952	308	1,615	1,173,000	1,400	1,015,700
1953	(22,23)	-	-	-	-	-	-	-

a Oct. 5, 1944, Apr. 21, 1945.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

422. El Tigre Arroyo near Zapata, Tex.

Location.--Lat 26°40', long 99°10', 6,400 ft upstream from bridge on U. S. Highway 83 between Laredo and Roma, 2.7 miles upstream from mouth, and 21 miles southeast of Zapata, Zapata County.

Drainage area.--261 sq mi, all in the United States.

Gage.--Water-stage recorder. Datum of gage is 212.99 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1932-36: Maximum discharge, 7,500 cfs May 25, 1933; maximum gage height, 27.64 ft Sept. 5, 1932 (backwater from Rio Grande); no flow most of time.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	0	0	0	0	0	0	0.4	0	-	-
1933	0	0	0	0	0	0	8.2	38.8	10.2	8.68	9.6	26.7	8.52
1934	1.74	0	0	3.00	.54	0	1.83	.58	0	0	0	.60	.69
1935	1.60	0	0	0	0	5	2.2	2	10.3	4.2	0	22	3.94
1936	.5	10.5	12.9	0	0	0	18.3	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	0	0	0	0	0	0	14	0	9,000	-
1933	0	0	0	0	0	0	488	2,390	605	534	591	1,590	6,198
1934	107	0	0	185	30	0	109	36	0	0	0	37	504
1935	97	0	0	0	0	307	132	123	614	261	0	1,310	2,844
1936	32.3	627	795	0	0	0	1,090	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	-	-	0	-	-	12.4	9,014
1933	(2,3)	7,500	May 25, 1933	0	8.52	6,198	8.71	6,305
1934	(3,4)	720	Oct. 9, 1933	0	.69	504	.68	494
1935	(4,5)	546	July 26, 1935	0	3.94	2,844	5.8	4,201
1936	(5,6)	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

423. International Falcon Reservoir near Falcon Heights, Tex.

Location.--Lat 26°33'29", long 99°09'48", at International Falcon Dam on the Rio Grande, 2-1/2 miles west of Falcon Heights, Starr County, 86 miles downstream from Laredo, and at mile 270.5.

Drainage area.--164,482 sq mi (contributing area), of which 87,760 sq mi is in the United States and 76,722 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is mean sea level, U.S.C. & G.S. datum.

Extremes.--1953-57: Maximum contents, 2,423,300 acre-ft Nov. 14, 1954 (elevation, 296.18 ft); minimum since first appreciable storage, 143,500 acre-ft Feb. 16, 1957 (elevation, 235.10 ft).

Remarks.--Reservoir is formed by an earth-fill dam and a reinforced concrete spillway structure having a combined length of 26,294 ft, of which 10,133 ft are in the United States and 16,161 ft are in Mexico. Storage began Aug. 25, 1953. The spillway has a crest length of 350 ft, a chute length of 1,300 ft, and is equipped with six 50- by 50-foot fixed wheel gates. Two powerplants, each equipped with three 10,500 kw generators, are located one in each country. Water may also be released through one or more of four by-pass lines, two of which are installed in each country. Conservation-storage capacity is allocated 58.6% to the United States and 41.4% to Mexico. Water used for power development and for irrigation in both the United States and Mexico.

Data regarding the dam and reservoir are shown in the following table:

	Elevation (feet)	Capacity (acre-feet)
Maximum Water Surface	314.2	4,150,971
Top of Spillway Gates	306.7	3,349,287
Top of Conservation Storage	296.4	2,440,528
Lowest Outlet (Mexican Penstock)	204.34	16,455
River Bed at Dam Axis	175.0	0

Capacity above elevation 296.4 ft is reserved for flood control. During the winter months, 400,000 acre-ft of flood-control capacity may by utilized for additional conservation storage.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Contents, in thousands of acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1953	-	-	-	2.1	2.2	3.9	0.7	0.7	0.3	3.8	564.5	902.2	-
1954	1,017.8	979.0	945.5	805.6	554.2	310.2	490.2	542.1	1,336.3	2,169.2	2,212.9	2,266.1	+1,363.9
1955	2,407.0	2,405.4	2,347.6	2,059.8	1,884.0	1,748.0	1,418.6	1,024.2	668.5	744.9	896.7	1,440.7	-825.4
1956	1,576.3	1,573.4	1,467.5	1,203.2	919.5	785.0	656.0	470.2	193.2	207.6	211.1	363.2	-1,077.5
1957	383.8	400.1	274.8	160.0	185.1	259.4	661.1	1,757.3	1,973.9	1,863.1	1,699.9	1,733.7	+1,370.5

424. Rio Grande at Chapeno, Tex.

Location.--Lat 26°32', long 99°09', at Chapeno, Starr County, 2.5 miles downstream from International Falcon Dam, and at mile 271.3.

Drainage area.--164,538 sq mi (contributing area), of which 87,762 sq mi is in the United States and 76,776 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 171.52 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1952-57: Maximum discharge, 22,600 cfs Aug. 27, 1953 (gage height, 7.68 ft); no flow June 17 to July 1, 1953, before storage began at International Falcon Dam.

Remarks.--Flow controlled since Aug. 25, 1953, by releases from International Falcon Reservoir.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	801	624	1,110	882	811	7.8	179	842	2,580	-
1954	1,070	1,170	1,240	3,270	5,350	4,480	1,760	4,920	5,830	1,590	2,400	1,790	2,889
1955	660	1,150	1,810	5,980	4,410	2,670	5,830	8,550	7,350	1,280	3,160	263	3,586
1956	1,410	1,850	3,020	5,610	6,070	2,720	2,560	3,850	4,630	298	421	1,360	2,802
1957	440	506	3,060	2,640	766	42.9	413	3,530	2,770	1,810	3,340	2,530	1,833

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	49,200	34,700	68,200	52,500	49,800	461	11,000	51,800	153,000	-
1954	65,900	69,400	76,500	201,000	297,000	276,000	105,000	302,000	347,000	97,700	147,000	107,000	2,092,000
1955	40,600	68,600	111,000	368,000	245,000	164,000	347,000	526,000	437,000	78,700	195,000	15,600	2,596,000
1956	86,400	110,000	186,000	345,000	349,000	167,000	152,000	237,000	276,000	18,300	25,900	80,900	2,034,000
1957	27,100	30,100	188,000	163,000	42,600	2,640	24,600	217,000	165,000	111,000	206,000	151,000	1,328,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	(22,23)	-	-	-	-	-	943	682,461
1954	(23,24)	16,900	June 29, 1954	10.0	2,889	2,092,000	2,900	2,099,900
1955	(24,25)	13,300	May 10, 1955	38.0	3,586	2,596,000	3,810	2,758,700
1956	(25,26)	11,100	June 2, 1956	7.3	2,802	2,034,000	2,610	1,896,300
1957	(26,27)	13,100	May 26, 1957	1.5	1,833	1,328,000	2,060	1,488,340

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

425. Rio Grande at Roma, Tex.

Location.--Lat 26°24', long 99°01', at international bridge between Roma, Starr County, Texas and Cd. Miguel Aleman (formerly San Pedro), Tamaulipas, Mexico, 14.9 miles downstream from Rio San Juan, and at mile 254.2.

Drainage area.--166,464 sq mi (contributing area), of which 87,847 sq mi is in the United States and 78,617 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 142.65 ft above mean sea level, U.S.C. & G.S. datum. On Apr. 23, 1929, the datum of the Mexico gage was 4 ft higher than the gage established Apr. 19, 1929, by the Geological Survey. Prior to Jan. 1, 1951, at datum 3.28 ft higher.

Average discharge.--44 years (1900-1913, 1923-54), 5,465 cfs (3,956,000 acre-ft per year).

Extremes.--1900-1913, 1922-54: Maximum discharge, 203,000 cfs Sept. 5, 1932 (gage height, 35.4 ft, datum then in use); no flow several days in June and July 1953.
Maximum stage known since 1746 was 43.0 ft in June 1865.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission prior to Mar. 6, 1929, and subsequent to June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	12,240	-	-	-	15,240	-
1901	12,460	5,821	4,539	3,273	2,796	2,525	2,046	5,862	4,419	2,289	4,617	6,214	4,775
1902	4,592	4,929	2,788	2,230	2,097	1,653	2,671	5,036	1,695	5,656	7,572	13,450	4,538
1903	6,861	2,967	4,001	2,722	2,841	2,621	1,721	5,893	18,310	11,850	7,053	7,806	6,232
1904	6,471	2,736	2,319	2,204	2,006	1,745	2,556	4,723	7,018	4,087	1,978	37,370	6,224
1905	24,430	11,900	7,433	4,511	3,442	7,706	7,760	10,250	17,250	20,170	16,290	15,170	12,260
1906	12,020	7,753	9,055	5,962	6,331	4,498	2,820	5,981	7,548	21,200	28,620	20,710	10,150
1907	10,150	8,320	10,250	5,583	4,893	3,616	3,325	6,598	8,653	11,300	5,229	11,820	7,494
1908	8,052	10,290	10,100	5,303	3,324	2,650	7,723	6,068	3,367	4,391	14,040	12,470	7,324
1909	4,317	2,536	2,194	2,459	2,219	2,232	1,995	3,511	5,497	22,320	16,560	17,182	6,958
1910	4,389	2,817	2,757	4,170	2,708	2,514	4,332	6,358	4,445	4,028	1,379	18,870	4,886
1911	5,545	2,241	1,922	1,683	2,320	2,323	3,099	6,341	6,558	8,797	7,136	6,627	4,567
1912	11,460	6,030	3,310	2,750	2,336	1,646	2,823	3,454	17,810	4,532	5,613	13,860	6,293
1913	7,514	2,717	2,890	2,361	2,676	3,349	2,106	4,728	6,728	3,725	2,416	9,067	4,181
1914	12,530	4,084	4,336	-	-	-	-	-	-	-	-	-	-
1923	-	3,620	3,060	3,010	7,000	4,400	4,170	2,530	3,170	3,360	4,330	38,000	-
1924	11,500	6,640	6,350	7,580	4,780	4,000	3,310	4,130	4,650	3,010	2,570	17,100	6,302
1925	8,780	5,180	4,460	3,850	3,310	3,270	3,020	8,250	13,800	6,250	14,700	19,500	7,860
1926	12,600	5,900	4,240	4,130	3,750	3,270	4,790	6,470	5,300	4,990	7,810	8,740	6,000

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande at Roma, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	9,270	4,710	4,260	3,660	4,070	3,220	3,260	2,910	8,590	6,160	3,450	4,030	4,800
1928	7,330	3,180	3,110	3,400	3,130	2,940	2,520	11,100	3,900	2,440	6,510	13,600	5,260
1929	5,840	4,760	4,210	3,370	2,930	3,020	3,110	5,300	3,100	3,900	4,490	5,680	4,140
1930	4,100	2,880	3,130	2,370	2,480	1,610	3,750	6,600	10,000	2,130	4,000	1,970	3,750
1931	11,900	5,650	3,460	3,380	3,970	3,270	3,020	7,700	4,880	8,820	4,640	2,570	5,270
1932	2,940	2,550	3,130	2,714	2,648	2,522	2,243	3,797	1,894	3,178	3,709	51,216	6,880
1933	38,574	12,368	9,191	7,601	6,284	4,238	3,757	3,180	2,995	4,316	3,946	21,280	9,810
1934	10,961	4,267	3,376	3,560	3,180	2,830	4,010	3,560	4,250	3,080	2,550	3,300	4,080
1935	2,660	2,130	1,850	1,940	1,950	2,050	2,760	9,280	26,700	6,500	4,030	25,200	7,250
1936	7,660	4,240	3,750	3,090	2,770	3,060	2,420	7,060	3,400	8,380	3,570	16,100	5,460
1937	8,710	3,260	3,260	2,850	2,650	2,520	1,740	2,160	6,060	2,340	2,640	3,650	3,490
1938	5,590	2,330	2,670	3,390	2,670	2,600	2,470	2,720	1,560	19,800	12,100	18,200	6,340
1939	8,190	3,200	2,900	2,760	2,650	2,150	2,110	7,380	3,240	2,210	6,550	3,340	3,910
1940	4,700	2,580	2,260	2,180	2,180	5,290	2,450	5,170	7,170	4,230	5,650	5,490	4,120
1941	6,170	2,330	2,400	2,400	2,540	2,020	2,380	11,490	10,230	6,680	7,320	14,770	5,873
1942	26,660	9,960	5,110	4,270	3,650	3,220	2,950	7,940	6,550	10,870	7,980	28,400	9,820
1943	11,850	5,690	3,970	3,680	3,020	2,690	2,280	3,890	5,460	6,040	2,320	4,110	4,600
1944	5,480	2,880	2,920	2,690	2,370	2,290	1,540	4,860	3,100	1,530	14,210	16,700	5,050
1945	6,490	3,130	2,680	2,760	2,590	2,270	4,360	1,490	907	7,270	1,780	1,170	3,090
1946	13,460	2,890	2,240	2,350	2,140	1,720	3,040	8,710	7,320	3,470	2,790	6,840	4,770
1947	10,060	2,910	2,470	2,850	2,700	2,100	1,410	4,190	6,350	1,660	7,930	6,890	4,304
1948	2,240	2,170	2,140	1,690	1,860	1,900	1,080	1,770	11,540	9,890	2,280	13,850	4,350
1949	4,420	2,590	2,080	1,950	7,240	4,080	14,380	6,320	5,930	3,910	9,210	6,510	5,690
1950	5,650	3,550	3,070	2,760	2,460	2,090	1,820	4,550	4,310	3,950	3,180	4,700	3,510
1951	3,620	1,770	1,660	1,520	1,490	1,720	1,250	5,230	4,970	878	1,230	7,680	2,749
1952	2,340	1,330	1,080	1,030	846	702	704	2,940	1,960	5,420	866	686	1,667
1953	391	594	703	816	607	1,130	904	786	1.8	203	4,760	4,390	1,278
1954	3,070	1,290	1,260	3,190	5,320	4,410	2,380	4,940	5,830	1,600	2,350	1,750	3,101
1955	757	1,150	1,730	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	753,000	-	-	-	907,000	-
1901	766,000	346,000	279,000	201,000	155,000	155,000	122,000	360,000	263,000	141,000	284,000	370,000	3,443,000
1902	282,000	293,000	171,000	137,000	116,000	102,000	159,000	310,000	101,000	348,000	466,000	800,000	3,285,000
1903	422,000	177,000	246,000	167,000	158,000	161,000	102,000	362,000	1,090,000	729,000	434,000	465,000	4,512,000
1904	398,000	163,000	143,000	136,000	115,000	107,000	152,000	290,000	417,000	251,000	122,000	2,224,000	4,518,000
1905	1,500,000	708,000	457,000	277,000	191,000	474,000	462,000	630,000	1,030,000	1,240,000	1,000,000	903,000	8,870,000
1906	739,000	461,000	557,000	367,000	352,000	277,000	168,000	368,000	449,000	1,300,000	1,760,000	1,230,000	8,031,000
1907	624,000	495,000	630,000	343,000	272,000	222,000	198,000	406,000	515,000	695,000	322,000	703,000	5,426,000
1908	495,000	613,000	621,000	326,000	191,000	163,000	460,000	373,000	200,000	270,000	863,000	742,000	5,317,000
1909	265,000	151,000	135,000	151,000	123,000	137,000	119,000	216,000	327,000	1,370,000	1,018,000	1,020,000	5,036,000
1910	270,000	168,000	170,000	256,000	150,000	155,000	258,000	391,000	265,000	248,000	84,800	1,123,000	3,537,000
1911	341,000	133,000	118,000	103,000	129,000	143,000	184,000	390,000	390,000	541,000	439,000	394,000	3,306,000
1912	705,000	359,000	204,000	169,000	130,000	101,000	168,000	212,000	1,060,000	279,000	345,000	825,000	4,556,000
1913	462,000	162,000	178,000	145,000	149,000	206,000	125,000	291,000	400,000	222,000	149,000	540,000	3,027,000
1914	770,000	243,000	267,000	-	-	-	-	-	-	-	-	-	-
1923	-	215,000	188,000	185,000	389,000	271,000	248,000	155,000	189,000	207,000	266,000	2,260,000	-
1924	707,000	395,000	390,000	466,000	275,000	246,000	197,000	254,000	277,000	185,000	158,000	1,020,000	4,570,000
1925	540,000	308,000	274,000	237,000	184,000	201,000	180,000	507,000	823,000	384,000	904,000	1,159,000	5,701,000
1926	773,000	351,000	261,000	254,000	208,000	201,000	285,000	398,000	318,000	307,000	480,000	520,000	4,356,000
1927	570,000	280,000	262,000	225,000	226,000	198,000	194,000	179,000	511,000	379,000	212,000	240,000	3,476,000
1928	451,000	189,000	191,000	209,000	180,000	181,000	150,000	683,000	232,000	150,000	400,000	809,000	3,825,000
1929	359,000	283,000	259,000	207,000	163,000	186,000	185,000	326,000	184,000	240,000	276,000	338,000	3,006,000
1930	252,000	171,000	192,000	146,000	138,000	99,000	223,000	406,000	595,000	131,000	246,000	117,000	2,716,000
1931	732,000	336,000	213,000	208,000	220,000	201,000	180,000	473,000	290,000	542,530	285,110	152,750	3,833,390
1932	180,820	151,820	192,580	166,910	152,330	155,070	133,470	233,460	112,700	195,410	228,080	3,047,630	4,950,280
1933	2,371,870	735,960	565,140	467,370	349,000	260,610	223,560	195,530	178,240	265,390	242,620	1,266,270	7,121,560
1934	673,950	253,890	207,590	219,000	177,000	174,000	239,000	219,000	253,000	189,000	157,000	196,000	2.958,430
1935	163,000	127,000	114,000	119,000	108,000	126,000	164,000	570,000	1,586,000	400,000	248,000	1,499,000	5,224,000
1936	471,000	252,000	231,000	190,000	159,000	188,000	144,000	434,000	202,000	515,000	220,000	958,000	3,964,000
1937	536,000	194,000	200,000	175,000	147,000	155,000	104,000	133,000	361,000	144,000	162,000	217,000	2,528,000
1938	344,000	138,000	164,000	209,000	148,000	160,000	147,000	167,000	92,600	1,217,000	743,000	1,083,000	4,612,600
1939	504,000	190,000	178,000	170,000	147,000	132,000	125,500	454,000	193,000	136,000	402,000	199,000	2,830,500
1940	289,000	153,000	139,000	133,800	125,100	325,600	145,900	317,900	426,400	260,000	347,600	326,900	2,990,200
1941	379,400	138,600	125,100	147,600	141,100	123,900	141,500	706,300	609,000	410,700	450,200	878,700	4,252,100
1942	1,639,300	592,900	314,200	262,800	203,000	197,900	175,500	487,900	389,500	668,600	490,900	1,690,000	7,112,500
1943	728,800	338,700	244,000	226,200	168,000	165,400	135,500	239,100	324,900	371,200	142,900	244,500	3,329,200
1944	337,100	171,300	179,700	165,600	136,400	140,500	91,400	299,000	184,200	94,100	873,800	993,500	3,666,600
1945	399,200	186,500	164,900	169,800	144,000	139,800	259,200	91,320	53,990	447,000	109,400	69,900	2,235,010
1946	827,900	172,200	137,700	144,500	118,600	105,700	180,700	535,400	435,300	213,300	171,800	407,100	3,450,200
1947	618,700	173,200	151,600	175,100	149,900	129,000	83,710	257,300	377,900	101,900	487,700	410,000	3,116,010
1948	137,700	129,200	131,400	103,600	107,000	117,100	64,250	108,900	686,800	608,000	140,500	823,900	3,158,350
1949	271,800	154,000	128,200	120,000	402,000	251,000	855,700	388,400	353,000	240,700	566,600	387,400	4,118,800
1950	347,600	211,200	188,600	169,600	136,900	128,400	108,100	279,800	256,400	243,000	195,700	279,400	2,544,700
1951	222,700	105,100	101,900	93,660	82,570	105,700	74,610	321,700	295,500	54,020	75,640	457,000	1,990,000
1952	144,000	78,860	66,120	63,170	48,690	43,160	41,870	180,500	116,800	333,200	53,280	40,800	1,210,000
1953	24,040	35,340	43,200	50,170	33,730	69,760	53,780	48,340	109	12,500	292,800	261,400	925,200
1954	189,000	76,520	77,350	196,400	295,500	271,100	141,600	303,500	346,900	98,370	144,400	104,200	2,245,000
1955	46,570	68,590	106,200	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Rio Grande at Roma, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	(7)	-	-	-	-	-	-	-
1901	(7)	a18,600	Oct. 2, 1900	1,600	4,775	3,443,000	3,865	2,797,000
1902	(7)	a30,200	Sept. 12, 1902	1,110	4,538	3,285,000	4,672	3,384,000
1903	(7)	a69,300	June 16, 1903	1,550	6,232	4,512,000	6,037	4,372,000
1904	(7)	a139,000	Sept. 16, 17, 1904	1,170	6,224	4,518,000	8,930	6,479,000
1905	(7)	a95,000	July 2, 1905	3,090	12,260	8,870,000	11,000	7,964,000
1906	(7)	a55,000	Aug. 15, 1906	2,410	10,150	8,031,000	11,080	8,020,000
1907	(7)	a35,000	July 4, 1907	2,900	7,494	5,426,000	7,465	5,404,000
1908	(7)	a27,000	Aug. 16, 17, 1908	2,130	7,324	5,317,000	5,702	4,139,000
1909	(7)	a55,000	July 3, 1909	1,140	6,958	5,036,000	7,035	5,092,000
1910	(7)	a75,900	Sept. 16, 1910	1,000	4,886	3,537,000	4,866	3,522,800
1911	(7)	a21,930	May 19, 1911	1,450	4,567	3,306,000	5,499	3,981,000
1912	(7)	a83,000	June 20, 1912	1,500	6,293	4,556,000	5,650	4,091,000
1913	(7)	a52,800	Sept. 26, 1913	1,050	4,181	3,027,000	4,842	3,507,000
1914	(7)	b87,000	Oct. 3, 1913	-	-	-	-	-
1923	568	82,000	Sept. 9, 1923	1,393	-	-	7,870	5,662,000
1924	588(5)	-	-	-	6,302	4,570,000	5,790	4,200,000
1925	608(5,15)	a161,000	June 2, 1925	-	7,860	5,701,000	8,220	5,964,000
1926	(5,15)	a97,000	Oct. 1, 1925	-	6,000	4,356,000	5,620	4,083,000
1927	(5)	a41,000	June 26, 1927	1,900	4,800	3,476,000	4,410	3,195,000
1928	(5)	a71,000	May 14, 1928	1,700	5,260	3,825,000	5,370	3,895,000
1929	688(5)	a27,400	May 27, 1929	1,730	4,140	3,006,000	3,760	2,720,000
1930	703	59,000	June 12, 1930	1,100	3,750	2,716,000	4,660	3,382,000
1931	718(1)	90,400	July 18, 1931	1,080	5,270	3,833,390	4,240	3,077,610
1932	(1,2)	203,420	Sept. 5, 1932	1,210	6,880	4,950,280	11,155	8,098,030
1933	(2,3)	100,000	Sept. 7, 1933	2,410	9,810	7,121,560	6,332	4,584,020
1934	(3,4)	34,900	Oct. 16, 1933	1,620	4,080	2,958,430	3,080	2,227,000
1935	(4,5)	141,000	June 17, 1935	1,140	7,250	5,224,000	7,980	5,774,000
1936	(5,6)	68,400	May 9, 1936	1,760	5,460	3,964,000	5,430	3,940,000
1937	(6,7)	c21,200	June 7, 1937	962	3,490	2,528,000	3,100	2,244,000
1938	(7,8)	100,000	July 27, 1938	960	6,340	4,612,600	6,680	4,838,600
1939	(8,9)	d32,600	May 6, 1939	1,060	3,910	2,830,500	3,510	2,539,500
1940	(9,10)	55,100	Mar. 25, 1940	904	4,120	2,990,200	4,200	3,052,300
1941	(10,11)	55,400	Oct. 25, 1940	1,110	5,873	4,252,100	8,500	6,155,400
1942	(11,12)	75,900	July 7, 1942	2,150	9,820	7,112,500	8,120	5,877,600
1943	(12,13)	40,600	June 6, 1943	1,160	4,600	3,329,200	3,740	2,705,800
1944	(13,14)	97,110	Aug. 29, 1944	809	5,050	3,666,600	5,140	3,729,100
1945	(14,15)	29,660	Apr. 21, 1945	618	3,090	2,235,010	3,620	2,622,210
1946	(15,16)	82,300	May 30, 1946	1,120	4,770	3,450,200	4,500	3,255,900
1947	(16,17)	67,500	Oct. 9, 1946	908	4,304	3,116,010	3,550	2,570,810
1948	(17,18)	176,900	Sept. 11, 1948	572	4,350	3,158,350	4,570	3,314,050
1949	(18,19)	98,530	Apr. 26, 1949	1,380	5,690	4,118,800	5,960	4,312,200
1950	(19,20)	47,320	May 28, 1950	858	3,510	2,544,700	3,080	2,227,000
1951	(20,21)	78,750	Sept. 15, 1951	477	2,749	1,990,000	2,550	1,849,380
1952	(21,22)	31,710	May 30, 1952	219	1,667	1,210,000	1,410	1,024,050
1953	(22,23)	56,500	Aug. 27, 1953	0	1,278	925,200	1,610	1,165,459
1954	(23,24)	36,370	Oct. 22, 1953	48.7	3,101	2,245,000	2,930	2,123,330
1955	(24,25)	-	-	-	-	-	-	-

a Maximum daily.
b Maximum daily during period October to December.
c Maximum peak discharge; maximum discharge during year 43,300 cfs at 12:01 a. m. Oct. 1, 1936, stage falling.
d Maximum peak discharge; maximum discharge during year 38,000 cfs at 12:01 a. m. Oct. 1, 1938, stage falling.
Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

426. Rio Grande at Fort Ringgold, Rio Grande City, Tex.

Location.--Lat 26°22', long 98°48', about 1 mile downstream from Rio Grande City, Starr County, 4.9 miles downstream from Rio San Juan, and at mile 233.9.

Drainage area.--180,396 sq mi (contributing area), of which 87,982 sq mi is in the United States and 92,414 sq mi is in Mexico.

Supplemental records available.--Records for the station Rio Grande near Rio Grande City, Tex. for the period 1932-54, published by the International Boundary and Water Commission, are equivalent to records for this station.

Gage.--Water-stage recorder. Datum of gage is 100.00 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1955-57: Maximum discharge, 23,800 cfs Apr. 28, 1957 (gage height, 39.34 ft); minimum, 12.6 cfs Apr. 13, 1957.

Remarks.--Flow regulated by releases from International Falcon Reservoir, 41 miles upstream. Reservoirs, diversions, and drainage returns modify the river flow at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	5,670	4,440	2,560	5,710	8,480	7,300	1,440	3,080	1,800	-
1956	1,450	1,970	2,880	5,500	6,160	2,700	2,500	3,760	4,820	362	406	1,500	2,819
1957	488	505	3,000	2,610	973	235	1,260	4,100	3,260	1,770	3,220	2,780	2,030

Monthly and yearly runoff in acre-feet, of Rio Grande at Fort Ringgold, Rio Grande City, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	349,000	247,000	157,000	340,000	521,000	434,000	88,300	190,000	107,000	-
1956	89,500	117,000	177,000	338,000	354,000	166,000	149,000	231,000	287,000	22,300	25,000	89,400	2,045,000
1957	30,000	30,000	184,000	160,000	54,000	14,400	75,100	252,000	197,000	109,000	198,000	165,000	1,468,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	(24,25)	-	-	-	-	-	3,890	2,816,800
1956	(25,26)	10,600	June 4, 1956	64.1	2,819	2,045,000	2,630	2,361,250
1957	(26,27)	23,800	Apr. 28, 1957	14.6	2,030	1,468,000	2,260	1,637,900

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

427. Rio Grande near Rio Grande City, Tex.

Location.--Lat 26°20', long 98°47', 4 miles downstream from Rio Grande City, Starr County, Texas, 3.7 miles northeast of Camargo, Tamaulipas, Mexico, 7.9 miles downstream from Rio San Juan, and at mile 230.9.

Drainage area.--180,941 sq mi (contributing area), of which 88,525 sq mi is in the United States and 92,416 sq mi is in Mexico.

Supplemental records available.--Records for the station Rio Grande at Fort Ringgold, Rio Grande City, Tex., subsequent to Dec. 31, 1954, published by the International Boundary and Water Commission, are equivalent to records for this station.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U.S.C. & G.S. datum.

Average discharge.--22 years (1932-54), 5,792 cfs (4,193,000 acre-ft per year).

Extremes.--1932-54: Maximum discharge, 198,800 cfs Sept. 5, 1932 (gage height, 157.4 ft); no flow several days in June and July 1953.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station.
Prior to January 1946, when flow exceeded about 160,000 cfs at the gaging station on the Rio San Juan at Santa Rosalia, Tamaulipas, Mexico, water began to overflow the right bank of that stream, by-passing this station on the Rio Grande near Rio Grande City, and entering the Rio Grande about 9 miles downstream. Subsequent to this time water was released from the Presa Marta R. Gomez Reservoir into a canal which enters the Rio Grande downstream from this gaging station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	3,068	2,630	2,528	2,238	4,128	1,997	3,611	4,727	55,673	-
1933	46,387	13,936	10,169	8,270	6,640	4,543	3,959	4,216	3,759	7,423	11,617	42,105	13,590
1934	23,596	7,953	5,656	5,230	4,350	3,600	5,710	5,360	4,640	4,450	3,120	4,410	6,510
1935	4,100	2,630	2,330	2,270	2,250	2,160	3,190	9,810	29,200	7,970	4,390	29,600	8,320
1936	9,980	5,930	5,380	4,660	3,490	3,550	2,740	9,620	3,550	12,100	4,460	20,400	7,160
1937	10,800	4,430	4,420	3,600	3,210	2,960	1,990	2,480	6,350	3,550	2,650	4,400	4,240
1938	6,480	2,910	3,200	3,890	2,900	2,940	2,860	3,220	1,580	20,200	20,600	25,600	8,030
1939	9,660	3,980	3,560	3,230	2,930	2,370	2,640	10,400	3,910	2,480	6,800	4,770	4,750
1940	7,540	2,980	2,600	2,440	2,340	6,520	2,580	5,860	11,000	5,570	6,790	8,780	5,420
1941	7,670	3,110	3,500	3,530	3,180	2,650	3,600	13,600	18,000	9,250	7,780	20,900	8,070
1942	27,900	10,400	6,190	5,150	4,160	3,490	3,300	8,220	10,800	14,000	8,460	30,600	11,100
1943	15,600	6,620	4,680	4,690	3,380	2,840	2,490	3,770	5,480	5,970	2,440	4,090	5,190
1944	5,580	2,840	2,920	2,830	2,480	2,510	1,640	5,410	4,000	2,750	20,600	30,200	6,980
1945	12,300	4,180	2,950	3,600	3,260	2,520	4,840	1,610	1,250	7,130	1,970	1,330	3,930
1946	18,100	3,880	3,030	3,010	2,530	1,870	3,140	9,380	7,600	3,660	2,630	6,960	5,510
1947	11,200	3,070	2,470	2,770	2,650	2,140	1,550	4,400	6,470	1,700	9,340	7,180	4,600
1948	2,310	2,310	2,140	1,700	1,950	1,940	1,030	1,850	11,100	9,810	2,360	17,700	4,660
1949	7,040	3,460	2,140	2,030	7,380	4,280	14,300	7,600	5,670	3,840	9,080	6,160	6,060
1950	5,420	3,540	2,990	2,810	2,470	2,110	1,830	4,400	4,330	3,840	3,150	4,600	3,470
1951	3,670	1,880	1,770	1,660	1,660	1,870	1,370	5,420	5,370	985	1,290	7,490	2,867
1952	2,390	1,340	1,060	1,020	796	663	670	2,690	2,080	5,230	908	727	1,639
1953	399	642	749	787	585	1,170	935	806	1.2	242	5,660	9,910	1,823
1954	6,900	1,800	1,400	3,170	5,270	4,390	2,550	4,950	5,880	1,670	2,390	1,800	3,506
1955	920	1,260	1,770	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	188,670	151,300	155,430	133,170	253,810	118,850	222,050	290,660	3,312,800	-
1933	2,852,270	829,260	625,260	508,390	368,690	279,340	236,560	259,260	223,660	456,440	714,300	2,505,480	9,858,910
1934	1,450,910	473,260	347,790	321,000	242,000	221,000	340,000	330,000	276,000	274,000	192,000	263,000	4,730,960
1935	252,000	156,000	143,000	140,000	125,000	133,000	190,000	603,000	1,737,000	490,000	270,000	1,759,000	5,998,000
1936	613,000	353,000	331,000	286,000	201,000	218,000	163,000	591,000	211,000	746,000	274,000	1,213,000	5,200,000
1937	665,000	264,000	272,000	221,000	178,000	182,000	118,000	153,000	378,000	218,000	163,000	263,000	3,075,000
1938	399,000	173,000	197,000	239,000	161,000	181,000	170,000	198,000	94,300	1,240,000	1,280,000	1,522,000	5,854,300
1939	594,000	237,000	219,000	198,000	163,000	146,000	157,000	638,000	232,000	152,000	418,000	284,000	3,438,000
1940	463,000	177,000	160,000	150,000	134,000	401,000	154,000	361,000	655,000	343,000	417,000	522,000	3,937,000
1941	471,000	185,000	215,000	217,000	177,000	163,000	214,000	833,000	1,070,000	569,000	478,000	1,250,000	5,842,000
1942	1,720,000	619,000	381,000	316,000	231,000	215,000	196,000	505,000	642,000	860,000	520,000	1,821,000	8,026,000
1943	959,000	394,000	288,000	288,000	188,000	175,000	148,000	232,000	326,000	367,000	150,000	243,000	3,758,000
1944	343,000	169,000	180,000	174,000	142,000	154,000	97,700	333,000	238,000	169,000	1,269,000	1,795,000	5,063,700
1945	757,000	249,000	181,000	221,000	181,000	155,000	288,000	98,900	74,500	439,000	121,000	79,400	2,844,800
1946	1,115,000	231,000	186,000	185,000	140,000	115,000	187,000	576,000	453,000	225,000	162,000	414,000	3,989,000

Monthly and yearly runoff, in acre-feet, of Rio Grande near Rio Grande City, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	689,000	183,000	152,000	171,000	147,000	132,000	92,100	270,000	385,000	105,000	574,000	427,000	3,327,100
1948	142,000	138,000	131,000	105,000	112,000	120,000	61,500	114,000	659,000	603,000	145,000	1,053,000	3,383,500
1949	433,000	206,000	132,000	125,000	410,000	263,000	850,000	467,000	338,000	236,000	558,000	367,000	4,385,000
1950	333,000	211,000	184,000	173,000	137,000	130,000	109,000	270,000	258,000	236,000	194,000	274,000	2,509,000
1951	226,000	112,000	109,000	102,000	92,300	115,000	81,600	333,000	320,000	60,600	79,600	445,000	2,076,000
1952	147,000	79,400	65,100	62,700	45,800	40,800	39,900	165,000	124,000	321,000	55,800	43,200	1,190,000
1953	24,600	38,200	46,100	48,400	32,500	72,000	55,600	49,600	72	14,900	348,000	590,000	1,320,000
1954	424,000	107,000	86,100	195,000	293,000	270,000	152,000	304,000	350,000	103,000	147,000	107,000	2,538,000
1955	56,500	74,900	109,000	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(2)	198,750	Sept. 5, 1932	-	-	-	12,572	9,133,530
1933	(2,3)	160,500	Sept. 8, 1933	2,590	13,590	9,858,910	10,806	7,823,080
1934	(3,4)	59,780	Oct. 5, 1933	1,880	6,510	4,730,960	4,160	3,010,000
1935	(4,5)	122,000	June 18, 1935	1,380	8,320	5,998,000	9,320	6,744,000
1936	(5,6)	71,200	May 10, 1936	2,000	7,160	5,200,000	7,030	5,104,000
1937	(6,7)	54,300	Oct. 1, 1936	1,040	4,240	3,075,000	3,650	2,643,000
1938	(7,8)	147,000	Aug. 31, 1938	1,000	8,030	5,854,300	8,460	6,135,300
1939	(8,9)	49,500	May 14, 1939	1,290	4,750	3,438,000	4,400	3,188,000
1940	(9,10)	73,100	Oct. 12, 1939	976	5,420	3,937,000	5,520	4,008,000
1941	(10,11)	72,100	Sept. 11, 1941	1,550	8,070	5,842,000	10,600	7,691,000
1942	(11,12)	72,900	Sept. 9, 1942	1,970	11,100	8,026,000	9,600	6,947,000
1943	(12,13)	37,000	Oct. 7, 1942	1,180	5,190	3,758,000	3,880	2,809,000
1944	(13,14)	106,000	Aug. 31, 1944	1,120	6,980	5,063,700	7,660	5,558,700
1945	(14,15)	28,400	Oct. 6, 1944	652	3,930	2,844,800	4,410	3,189,800
1946	(15,16)	77,300	May 31, 1946	1,110	5,510	3,989,000	4,810	3,481,000
1947	(16,17)	68,900	Oct. 10, 1946	923	4,600	3,327,100	3,750	2,714,100
1948	(17,18)	145,000	June 28, 1948	540	4,660	3,383,500	5,160	3,743,500
1949	(18,19)	79,500	Apr. 26, 1949	1,410	6,060	4,385,000	6,000	4,342,000
1950	(19,20)	38,000	May 28, 1950	951	3,470	2,509,000	3,080	2,228,000
1951	(20,21)	65,600	Sept. 16, 1951	512	2,867	2,076,000	2,650	1,920,600
1952	(21,22)	26,500	May 30, 1952	212	1,639	1,190,000	1,390	1,007,100
1953	(22,23)	46,400	Aug. 28, 1953	0	1,823	1,320,000	2,530	1,828,172
1954	(23,24)	29,500	Oct. 5, 1953	106	3,506	2,538,000	2,990	2,161,400
1955	(24,25)	-	-	-	-	-	-	-

Note.--Figures in parentheses in W.S.P column refer to water bulletins of the International Boundary and Water Commission.

428. North Floodway south of McAllen, Tex.

Location.--Lat 26°10', long 98°14', at bridge on State Highway 336, 2-1/2 miles south of McAllen, Hidalgo County.

Gage.--Water-stage recorder. Datum of gage is 79.45 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1928-57: Maximum discharge, 38,710 cfs Sept. 7, 1932 (gage height, 21.37 ft); no flow most of time.

Remarks.--This floodway diverts only excess flood water from the Rio Grande at an inlet about 7-1/2 miles upstream from the Hidalgo gaging station. Only flood flow from the Rio Grande is computed at this station.

Cooperation.--Records after June 30, 1931, furnished by the International Boundary and Water Commission.

Monthly and yearly runoff, in acre-feet,

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	0	0	-
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	179,420	179,420
1933	259,690	0	0	0	0	0	0	0	0	0	0	79,140	338,830
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	8,530	0	0	46,700	55,230
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	2,380	948	68,600	71,928
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	207	207
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	2,218	29,448	31,666
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	649	10,430	0	25,200	36,300
1949	0	0	0	0	0	0	4,630	104	0	0	0	0	4,730
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0

Monthly and yearly runoff, in acre-feet, of North Floodway south of McAllen, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0

429. Rio Grande below Anzalduas Dam Site

Location.--Lat 26°09', long 98°20', half a mile downstream from headworks of Anzalduas Canal and Anzalduas Dam site, 11.7 miles upstream from the international bridge between Hidalgo, Hidalgo County, Texas and Reynosa, Tamaulipas, Mexico, and at mile 171.1.

Drainage area.--182,138 sq mi (contributing area), of which 88,934 sq mi is in the United States and 93,204 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 82.61 ft above mean sea level, U.S.C. & G.S. datum.

Average discharge.--5 years (1952-57), 1,252 cfs (906,400 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 27,900 cfs Sept. 6, 1953 (gage height, 21.85 ft); no flow at times.

Remarks.--After Aug. 25, 1953, flow regulated by releases from International Falcon Reservoir, 102.2 miles upstream, and by diversions into Anzalduas Canal.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	882	690	833	476	2,110	2,180	4,110	794	643	-
1953	349	447	587	517	419	854	940	572	24.9	94.9	3,920	7,870	1,381
1954	5,840	906	30.8	983	2,050	1,760	1,510	2,670	3,610	876	1,280	1,070	1,883
1955	636	860	1,360	2,420	1,580	1,710	2,620	3,290	3,510	1,020	1,110	394	1,708
1956	842	1,270	1,090	2,700	1,380	1,300	833	2,440	1,310	196	29.7	66.7	1,124
1957	60.7	35.0	44.3	48.9	19.1	5.5	624	832	132	32.4	59.3	65.8	164

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	54,220	39,660	51,200	28,310	129,800	129,800	252,400	48,850	38,290	-
1953	21,480	26,600	36,070	31,800	23,290	52,540	55,910	35,190	1,480	5,830	241,200	468,500	999,900
1954	359,200	53,940	1,900	60,460	114,100	108,500	89,570	164,300	214,900	53,840	78,910	63,600	1,363,000
1955	39,100	51,190	83,320	149,000	87,820	105,100	155,700	202,400	208,900	62,730	67,980	23,440	1,237,000
1956	51,770	75,590	67,000	166,200	79,580	80,160	49,570	149,900	78,170	12,030	1,830	3,970	815,800
1957	3,730	2,080	2,720	3,000	1,060	339	37,130	51,140	7,850	2,000	3,650	3,920	118,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	(21,22)	-	-	-	-	-	1,180	856,680
1953	(22,23)	27,900	Sept. 6, 1953	0	1,381	999,900	1,840	1,330,780
1954	(23,24)	24,160	Oct. 6, 1953	0	1,883	1,363,000	1,550	1,121,790
1955	(24,25)	4,380	May 15, 1955	109	1,708	1,237,000	1,740	1,257,430
1956	(25,26)	6,490	Dec. 28, 1955	0	1,124	815,800	868	629,940
1957	(26,27)	11,700	Apr. 29, 1957	0	164	118,600	158	114,749

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

430. South Floodway south of McAllen, Tex.

Location.--Lat 26°09', long 98°15', at bridge on State Highway 336, 4-1/2 miles south of McAllen, Hidalgo County, Tex.

Gage.--Water-stage recorder. Datum of gage is 79.65 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1928-57: Maximum discharge, 29,120 cfs Sept. 8, 1932 (gage height, 22.16 ft); no flow most of time.

Remarks.--This floodway diverts only excess flood water from the Rio Grande at an inlet about 3 miles upstream from the Hidalgo gaging station. Only flood flow from the Rio Grande is computed at this station.

Cooperation.--Records after June 30, 1931, furnished by the International Boundary and Water Commission.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	0	0	-
1929	0	0	0	0	0	0	0	0	0	0	0	0	0
1930	0	0	0	0	0	0	0	0	0	0	0	0	0
1931	0	0	0	0	0	0	0	0	0	0	0	0	0
1932	0	0	0	0	0	0	0	0	0	0	0	97,960	97,960
1933	146,330	0	0	0	0	0	0	0	0	0	0	86,220	232,550
1934	0	0	0	0	0	0	0	0	0	0	0	0	0
1935	0	0	0	0	0	0	0	0	6,170	0	0	45,300	51,470
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	0	0	0	0	0	0	0
1938	0	0	0	0	0	0	0	0	0	926	1,390	55,400	57,716
1939	0	0	0	0	0	0	0	0	0	0	0	0	0
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	0	0	0	0	0	0	0	0
1942	0	0	0	0	0	0	0	0	0	0	0	948	948
1943	0	0	0	0	0	0	0	0	0	0	0	0	0

Monthly and yearly runoff, in acre-feet, of South Floodway south of McAllen, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	0	0	0	0	0	0	0	0	0	0	24,137	105,390	129,527
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	565	7,640	0	40,800	49,000
1949	0	0	0	0	0	0	19,500	0	0	0	0	0	19,500
1950	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0	0	0

431. Rio Grande at Hidalgo, Tex.

Location.--Lat 26°06', long 98°16', at International Highway Bridge between Hidalgo, Hidalgo County, Texas and Reynosa, Tamaulipas, Mexico, and at mile 158.9.

Drainage area.--182,159 sq mi (contributing area), of which 88,940 sq mi is in the United States and 93,219 sq mi is in Mexico.

Supplemental records available.--Peak flows in September 1933, September 1934, and May and October 1936; mean daily gage-height record and discharge during peaks 1940 to Nov. 16, 1948; mean daily gage-heights and peak discharges during periods of high flow from Nov. 16, 1948, to Dec. 31, 1951, are contained in reports of International Boundary and Water Commission.

Gage-height records collected in this vicinity since 1932 are contained in reports of U. S. Weather Bureau.

Records of chemical analyses for the period July 1945 to September 1950 for the Rio Grande at Mission Pumping Plant near Mission, Tex. (12.7 miles upstream from Hidalgo) are published in reports of the Geological Survey.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U.S.C. & G.S. datum.

Extremes.--1928-51: Maximum discharge, 83,870 cfs Oct. 2, 1932 (gage height, 104.88 ft); minimum not determined.

Remarks.--The river flow at this station is greatly modified by many irrigation diversions and reservoirs. When the river at this station reaches a stage of about 100.5 ft, or a flow of about 60,000 cfs, water begins to flow into two floodway inlets on the United States side, viz.: Hackney Lake inlet about 4 miles upstream, and Mission inlet about 15 miles upstream, from this station.

Cooperation.--Records furnished by the International Boundary and Water Commission after June 30, 1931.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	6,450	15,900	-
1929	5,900	5,260	4,390	3,340	2,540	2,660	3,080	4,580	3,070	4,100	4,340	7,090	4,210
1930	4,600	3,160	3,380	2,400	2,370	1,490	3,240	7,510	17,000	3,060	3,690	2,380	4,520
1931	17,300	9,010	4,470	4,150	5,930	4,070	3,400	8,820	5,630	9,090	6,510	3,530	6,830
1932	3,170	2,800	3,430	-	-	-	-	-	-	-	-	40,873	-
1933	41,972	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	2,240	2,080	1,860	2,940	9,340	25,600	7,580	-	26,400	-
1936	-	-	-	-	-	-	-	-	-	11,300	-	18,800	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	2,950	1,180	16,100	15,900	28,200	-
1939	10,600	3,780	3,470	3,230	2,870	2,050	2,080	9,790	4,010	2,220	6,050	4,630	4,590
1940	6,700	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	397,000	946,000	-
1929	363,000	313,000	270,000	205,000	141,000	164,000	183,000	282,000	183,000	252,000	267,000	422,000	3,040,000
1930	283,000	188,000	208,000	148,000	132,000	91,600	193,000	462,000	1,010,000	188,000	227,000	142,000	3,270,000
1931	1,060,000	536,000	275,000	255,000	329,000	250,000	202,000	542,000	335,000	558,930	400,270	209,830	4,953,000
1932	195,180	166,750	211,120	-	-	-	-	-	-	-	-	2,432,150	-
1933	2,580,790	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	138,000	115,000	115,000	175,000	574,000	1,522,000	466,000	-	1,570,000	-
1936	-	-	-	-	-	-	-	-	-	692,000	-	1,116,000	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	181,000	70,500	989,000	978,000	1,681,000	-
1939	653,000	225,000	214,000	199,000	159,000	126,000	124,000	602,000	239,000	136,000	372,000	275,000	3,324,000
1940	412,000	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	668(6)	a47,500	Sept. 25, 1928	-	-	-	-	-
1929	688(6)	-	-	1,290	4,210	3,040,000	-	2,778,000
1930	703(6)	43,200	June 15, 1930	-	4,520	3,270,000	-	4,464,600
1931	718(1,6)	38,200	July 20, 1931	-	6,830	4,953,000	5,050	3,655,080
1932	(1,2)	83,830	Sept. 7, 1932	-	-	-	-	-
1933	(2,3)	83,870	Oct. 2, 1932	-	-	-	-	-
1934	(3,4)	52,820	Oct. 5, 1933	-	-	-	-	-

a Maximum during period July to September.

Yearly discharge, in cubic feet per second, of Rio Grande at Hidalgo, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1935	(4;5)	69,000	Sept. 12, 1935	-	-	-	-	-
1936	(5,6)	47,400	July 2, 1936	-	-	-	-	-
1937	(6)	47,400	Oct. 1, 1936	-	-	-	-	-
1938	(8)	83,200	Sept. 2, 1938	-	-	-	-	-
1939	(8,9)	49,900	Oct. 1, 1938	1,000	4,590	3,324,000	-	-
1940	(9)	54,000	June 27, 1940	-	-	-	-	-

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

432. Rio Grande at Progreso Bridge, Tex.

Location.--Lat 26°03'20", long 97°56'40", at bridge 2 miles south of Progreso, Hidalgo County, 0.8 mile downstream from Progreso pumping plant, and at mile 123.8.

Drainage area.--182,173 sq mi (contributing area), of which 88,947 sq mi is in the United States and 93,226 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is 52.56 ft above mean sea level, U.S.C. & G.S. datum.

Extremes.--1953-57: Maximum discharge recorded, 10,810 cfs Apr. 11, 1954 (gage height, 14.50 ft); no flow at times.

Remarks.--Flow regulated by reservoirs and diversions for irrigation. When the Rio Grande flow at the Hidalgo-Reynosa International Highway Bridge exceeds about 60,000 cfs, a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels which branch from the Rio Grande in both countries within the reach 44.4 miles upstream and 120.6 miles downstream from this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	339	254	487	620	335	5.1	21.3	-	-	-
1954	-	-	1,070	1,840	1,500	1,260	1,380	1,820	2,580	736	875	809	-
1955	792	679	1,010	1,870	1,220	1,190	1,970	2,380	2,620	855	701	364	1,303
1956	413	899	753	2,110	995	977	605	1,690	1,080	276	169	772	894
1957	228	303	120	282.1	316	81.2	539	1,620	1,060	682	776	692	559

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	20,800	14,100	30,000	36,900	20,600	305	1,310	-	-	-
1954	-	-	65,900	112,920	83,210	77,520	82,390	112,000	153,600	45,280	53,820	48,150	-
1955	48,690	40,430	62,410	114,900	67,740	72,870	117,400	146,100	155,700	52,580	43,100	21,650	943,600
1956	25,390	53,470	46,290	129,500	57,220	60,100	35,980	103,600	64,460	16,970	10,400	45,940	649,300
1957	14,030	18,000	7,370	17,340	17,530	4,990	32,060	99,390	63,350	41,910	47,690	41,150	404,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	(22,23)	-	-	-	-	-	-	-
1954	(23,24)	a10,810	Apr. 11, 1954	-	-	-	1,270	920,420
1955	(24,25)	3,520	May 16, 1955	84.4	1,303	943,600	1,270	917,190
1956	(25,26)	4,030	May 28, 1956	32.8	894	649,300	776	563,570
1957	(26,27)	8,790	Apr. 30, 1957	11.3	559	404,800	666	482,410

a Maximum recorded December 1953 to September 1954.

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

433. Rio Grande near San Benito, Tex.

Location.--Lat 26°02'10", long 97°42'35", on left bank 5.6 miles downstream from San Benito pumping plant, 9 miles southwest of San Benito, Cameron County, and at mile 96.5.

Drainage area.--182,187 sq mi (contributing area), of which 88,954 sq mi is in the United States and 93,233 sq mi is in Mexico.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U.S.C. & G.S. datum.

Extremes.--1952-57: Maximum discharge, 8,040 cfs Apr. 11, 1954 (gage height, 50.15 ft); no flow at times.

Remarks.--Flow regulated by releases from International Falcon Reservoir, 172 miles upstream. When the Rio Grande flow at the Hidalgo-Reynosa International Bridge reaches about 60,000 cfs, a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels which branch from the Rio Grande in both countries within the reach 69.4 miles upstream and 95.6 miles downstream from this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	102	117	195	237	126	0.9	0.6	-	-	-
1954	-	-	460	462	388	257	762	512	1,040	332	269	251	-
1955	456	96.5	295	408	283	237	585	600	696	353	196	194	367
1956	91.4	209	248	602	293	205	193	329	270	127	50.5	142	230
1957	62.4	94.7	39.5	88.9	109	41.7	212	929	322	76.3	159	130	189

Monthly and yearly runoff, in acre-feet, of Rio Grande near San Benito, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	6,260	6,510	12,000	14,100	7,770	54	35	-	-	-
1954	-	-	28,300	28,400	21,500	15,800	45,400	31,500	62,100	20,400	16,600	15,000	-
1955	28,000	5,740	18,100	25,100	15,700	14,600	34,800	36,900	41,400	21,700	12,000	11,500	265,500
1956	5,620	12,400	15,300	37,000	16,900	12,600	11,500	20,200	16,100	7,790	3,100	8,420	166,900
1957	3,840	5,640	2,430	5,460	6,060	2,560	12,600	57,100	19,200	4,690	9,750	7,710	137,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30.					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	(22,23)	-	-	-	-	-	-	-
1954	(23,24)	8,040	Apr. 11, 1954	0	-	-	1,270	920,420
1955	(24,25)	2,140	Oct. 7, 1954	0	367	265,500	341	247,020
1956	(25,26)	1,630	May 29, 1956	2.8	230	166,900	200	145,520
1957	(26,27)	5,700	Apr. 30, 1957	2.2	189	137,000	217	157,090

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

434. Rancho Viejo Floodway near Brownsville, Tex.

Location.--Lat 25°59', long 97°36', at the Military Highway Bridge about 9 miles northwest of Brownsville, Cameron County.

Gage.--Staff gage. Datum of gage is at mean sea level, U.S.C. & G.S. datum.

Extremes.--1935-47: Maximum discharge, 3,420 cfs June 6, 1935 (gage height, 44.9 ft); no floodflow most of time.

Remarks.--Through a gate-controlled inlet upstream from this gaging station this floodway diverts only excess flood water from the Rio Grande. When the water reaches a stage of 16.4 ft at the Matamoros gaging station, water will begin to flow into this floodway at a point 18.4 miles upstream from the Matamoros gaging station. Only floodflow from the Rio Grande is computed at this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	0	0	0	0	19,500	90,000	0	0	46,500	-
1936	0	0	0	0	0	0	0	4,360	0	10,900	0	31,400	46,660
1937	19,600	0	0	0	0	0	0	0	0	0	0	0	19,600
1938	0	0	0	0	0	0	0	0	0	3,800	5,570	22,900	32,270
1939	9,860	0	0	0	0	0	0	664	0	0	0	0	10,524
1940	638	0	0	0	0	399	0	0	750	0	0	0	1,787
1941	331	0	0	0	0	0	0	0	2,080	0	0	756	3,167
1942	3,620	0	0	0	0	0	0	0	0	2,160	0	6,120	8,280
1943	0	0	0	0	0	0	0	0	0	0	0	0	0
1944	0	0	0	0	0	0	0	0	0	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	0	0	0	0	0	0	0	0	0	0	0	0	0

435. Rio Grande at Matamoros, Tamaulipas, Mex. 1/

Location.--Lat 25°53', long 97°31', at railroad bridge between Matamoros, Tamaulipas, and Brownsville, Cameron County, Texas, and at mile 56.3.

Drainage area.--182,211 sq mi (contributing area), of which 88,966 sq mi is in the United States and 93,245 sq mi is in Mexico.

Supplemental records available.--Gage-height records collected in this vicinity since 1926 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 12.11 ft above mean sea level, U.S.C. & G.S. datum. Prior to July 1, 1924, staff gage, and July 1, 1924, to October 3, 1930, water-stage recorder at site 0.3 mile upstream at datum 8.27 ft higher. Oct. 3, 1930, to May 1, 1950, water-stage recorder at site 0.3 mile upstream at datum 3.27 ft higher.

Average discharge.--44 years (1900-1913, 1922-53), 4,926 cfs (3,556,000 acre-ft per year).

Extremes.--1900-1913, 1922-54: Maximum daily discharge, 36,320 cfs June 22, 1903 (gage height, 13.2 ft, site and datum then in use); no flow at times.

Remarks.--Reservoirs, irrigation and flood-flow diversions, and drainage returns greatly modify the flow at this station. During floods, only a small part of the water discharges past this station through the channel of the Rio Grande, as the greater part finds outlet to the Gulf of Mexico through channels and floodways in both countries.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	16,120	12,650	10,870	19,120	15,050	-
1901	12,700	6,200	4,703	3,320	2,770	2,415	1,865	4,825	3,579	3,460	3,757	7,692	4,790
1902	6,476	4,751	3,746	2,573	2,062	1,637	2,510	3,702	1,405	3,380	7,430	13,840	4,549
1903	8,408	3,087	3,940	2,531	2,490	2,585	1,647	5,380	15,950	10,430	12,030	8,926	6,472
1904	6,733	3,036	2,216	1,996	1,947	1,541	2,304	4,448	6,615	5,062	2,390	20,090	4,846
1905	26,110	13,610	8,278	4,911	3,452	7,189	7,105	9,605	15,910	17,860	16,350	13,500	12,060
1906	12,630	9,706	8,904	6,688	5,542	5,015	3,210	5,629	7,201	20,010	24,270	23,280	11,050

1/ Published by the Geological Survey as "near Brownsville, Tex." prior to Sept. 30, 1926.

Monthly and yearly mean discharge, in cubic feet per second, of Rio Grande at Matamoros, Tamaulipas, Mex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	11,810	7,248	7,591	5,529	5,946	3,644	3,044	8,405	8,243	11,220	5,130	10,870	7,327
1908	7,804	9,903	9,609	5,267	2,560	2,241	7,541	6,080	3,678	3,839	13,690	12,710	7,086
1909	4,244	2,730	1,799	2,175	1,920	1,839	1,741	2,556	5,091	19,550	16,620	24,740	7,124
1910	7,522	3,865	3,137	3,833	2,520	1,897	3,442	4,076	3,200	2,897	838	14,380	4,294
1911	7,298	2,745	2,205	1,830	1,696	1,994	3,345	5,917	5,294	6,884	7,476	5,782	4,395
1912	9,363	7,576	3,247	2,508	2,127	1,375	2,263	2,594	11,650	5,336	4,053	14,520	5,532
1913	10,200	2,841	2,906	2,364	2,094	3,209	1,335	4,704	5,815	5,235	2,621	6,356	4,158
1914	22,200	5,376	6,050	-	-	-	-	-	-	-	-	-	-
1923	8,390	5,360	3,470	2,320	5,060	5,450	4,100	1,830	1,900	3,360	2,750	18,600	5,190
1924	14,700	9,220	8,010	7,980	4,660	3,360	1,700	3,530	5,870	2,050	1,190	10,200	6,030
1925	10,000	4,390	4,190	3,480	1,380	1,260	1,710	2,160	9,890	4,830	13,600	18,800	6,310
1926	13,300	6,160	4,350	4,800	3,470	2,830	5,340	7,500	6,200	8,430	6,230	8,630	6,440
1927	8,260	6,450	3,770	2,950	3,090	1,280	1,700	1,620	10,300	9,060	2,850	3,550	4,570
1928	7,500	2,470	2,640	2,880	2,130	1,160	970	7,740	3,290	885	4,800	12,100	4,050
1929	5,540	4,280	3,730	2,960	1,280	1,480	2,730	3,120	3,010	3,680	3,280	6,380	3,460
1930	4,530	3,120	3,260	2,080	1,730	453	1,530	6,520	19,840	4,030	4,040	2,080	4,430
1931	14,820	9,480	3,980	3,630	5,910	3,570	2,680	7,780	4,670	8,830	5,650	2,580	6,130
1932	2,020	1,930	2,900	2,400	1,580	1,720	1,270	3,660	581	2,550	3,050	21,070	3,730
1933	20,840	13,910	9,660	7,546	5,826	3,916	2,529	2,426	3,634	6,234	10,478	21,168	9,010
1934	18,374	8,035	4,975	4,860	4,250	2,970	4,070	4,390	2,970	2,970	2,780	3,420	5,340
1935	3,180	1,670	1,610	1,720	1,470	553	2,050	7,510	19,500	7,290	4,190	16,000	5,560
1936	10,300	5,910	4,950	4,570	3,100	2,450	1,500	7,860	3,110	10,200	2,470	17,100	6,130
1937	10,700	4,030	4,030	3,370	2,840	2,360	956	1,860	4,180	2,970	1,290	2,690	3,440
1938	5,530	1,900	2,730	3,630	2,360	2,340	1,560	1,890	533	9,020	11,100	18,200	5,070
1939	9,840	3,170	2,800	2,760	2,270	1,030	957	8,190	3,830	1,110	4,800	3,850	3,740
1940	4,250	1,610	1,130	1,500	495	3,410	1,830	3,650	8,090	4,930	3,840	6,590	3,450
1941	4,090	3,160	2,950	2,630	3,400	2,430	2,770	11,730	15,860	9,600	6,100	15,330	6,670
1942	22,910	10,470	5,530	4,690	3,250	1,840	1,350	5,690	7,690	12,300	6,240	22,900	8,760
1943	13,800	5,620	3,120	3,640	1,870	1,020	1,120	1,470	4,110	2,640	1,030	2,470	3,510
1944	4,160	2,020	2,280	2,030	929	830	260	1,820	3,100	1,400	6,580	22,000	3,930
1945	11,510	3,290	1,790	2,950	2,780	685	2,620	563	44.3	3,790	540	416	2,590
1946	13,070	2,260	1,800	2,500	2,190	297	863	4,070	7,000	1,590	200	4,600	3,380
1947	8,550	1,460	1,000	1,660	613	487	279	2,470	3,280	373	6,890	4,570	2,660
1948	458	451	1,460	564	1,540	1,410	40.5	625	1,750	7,960	465	10,060	2,230
1949	5,830	2,460	548	544	2,800	5,100	7,160	7,340	2,220	1,270	6,810	3,870	3,840
1950	3,180	2,160	1,610	898	209	838	211	1,440	2,750	1,020	760	1,060	1,350
1951	2,450	80.4	91.2	13.7	38.8	50.6	45.1	2,680	1,630	124	116	4,830	1,014
1952	1,430	528	82.6	36.6	20.2	12.2	10.5	218	1,500	1,520	180	63.6	469
1953	48.6	48.2	36.3	30.4	23.7	27.0	76.9	15.2	.3	0	1,130	5,370	563
1954	3,720	478	379	196	145	64.5	602	158	663	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	991,000	753,000	668,000	1,180,000	895,000	-
1901	781,000	369,000	289,000	204,000	154,000	149,000	111,000	297,000	213,000	213,000	231,000	458,000	3,469,000
1902	398,000	342,000	230,000	158,000	115,000	101,000	149,000	228,000	83,600	208,000	457,000	824,000	3,293,600
1903	517,000	184,000	242,000	156,000	138,000	159,000	98,000	331,000	949,000	641,000	740,000	531,000	4,686,000
1904	414,000	181,000	136,000	123,000	112,000	94,700	137,000	274,000	394,000	311,000	147,000	1,195,000	3,519,000
1905	1,606,600	810,000	509,000	302,000	192,000	442,000	423,000	591,000	947,000	1,098,000	1,006,000	803,000	8,729,000
1906	776,000	578,000	548,000	411,000	308,000	308,000	191,000	346,000	429,000	1,230,000	1,492,000	1,385,000	8,002,000
1907	726,000	431,000	467,000	340,000	275,000	224,000	181,000	517,000	490,000	690,000	315,000	647,000	5,303,000
1908	480,000	589,000	591,000	324,000	147,000	138,000	449,000	374,000	219,000	236,000	842,000	756,000	5,145,000
1909	261,000	162,000	111,000	134,000	107,000	113,000	104,000	157,000	313,000	1,202,000	1,022,000	1,472,000	5,158,000
1910	463,000	230,000	193,000	236,000	140,000	117,000	205,000	251,000	190,000	178,000	51,500	856,000	3,110,000
1911	449,000	163,000	136,000	113,000	94,200	123,000	199,000	364,000	315,000	423,000	460,000	344,000	3,183,000
1912	576,000	451,000	200,000	154,000	122,000	84,500	135,000	160,000	693,000	328,000	249,000	864,000	4,016,000
1913	627,000	169,000	179,000	145,300	116,300	197,300	79,400	289,200	346,000	322,000	161,000	378,200	3,010,000
1914	1,365,000	320,000	372,000	-	-	-	-	-	-	-	-	-	-
1923	516,000	319,000	214,000	142,000	281,000	335,000	244,000	112,000	113,000	206,000	169,000	1,110,000	3,761,000
1924	904,000	549,000	493,000	491,000	268,000	207,000	101,000	217,000	349,100	126,000	73,200	607,000	4,385,200
1925	615,000	261,000	258,000	214,000	76,400	77,200	102,000	133,000	589,000	297,000	834,000	1,120,000	4,576,600
1926	820,000	367,000	268,000	295,000	193,000	174,000	318,000	461,000	369,000	519,000	383,000	513,000	4,680,000
1927	508,000	384,000	232,000	181,000	172,000	78,700	101,000	99,400	611,000	557,000	175,000	211,000	3,310,100
1928	461,000	147,000	163,000	177,000	123,000	71,500	57,700	476,000	196,000	54,400	295,000	720,000	2,941,600
1929	341,000	255,000	230,000	181,730	71,350	90,950	162,610	191,810	179,310	226,020	201,420	379,440	2,510,640
1930	278,840	185,890	200,370	127,780	95,960	27,860	90,760	400,770	1,180,380	247,540	248,290	124,060	3,208,500
1931	911,480	563,910	244,660	223,150	328,330	219,290	159,230	478,410	277,810	542,960	347,230	153,380	4,449,840
1932	124,280	114,640	177,970	147,290	90,770	105,530	75,810	225,010	34,590	156,920	187,270	1,253,590	2,693,670
1933	1,287,410	827,490	594,220	463,980	323,546	240,770	150,460	149,180	216,230	383,320	644,280	1,259,620	6,540,500
1934	1,129,760	478,130	305,890	299,000	236,000	183,000	242,000	270,000	177,000	183,000	171,000	204,000	3,878,780
1935	195,000	99,600	98,700	106,000	81,600	32,700	122,000	462,000	1,162,000	448,000	258,000	951,000	4,016,600
1936	632,000	352,000	305,000	281,000	178,000	150,000	89,100	483,000	185,000	629,000	152,000	1,017,000	4,453,100
1937	661,000	240,000	248,000	207,000	158,000	145,000	56,900	114,000	249,000	183,000	79,000	160,000	2,500,900
1938	340,000	113,000	168,000	223,000	131,000	144,000	92,800	116,000	31,700	554,000	685,000	1,082,000	3,680,500
1939	605,000	189,000	172,000	170,000	126,000	63,400	56,900	503,000	228,000	68,100	295,000	229,000	2,705,400
1940	262,000	95,700	69,700	92,230	28,470	209,480	108,740	224,670	481,590	303,050	236,160	391,860	2,503,650
1941	251,460	188,170	181,690	161,900	188,700	149,100	164,600	721,200	943,950	590,500	375,300	912,200	4,828,770
1942	1,408,600	623,300	340,200	288,500	180,300	113,400	80,180	349,700	457,600	756,600	383,500	1,363,200	6,345,080

Monthly and yearly runoff, in acre-feet, of Rio Grande at Matamoros, Tamaulipas, Mex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	846,300	334,500	192,000	223,800	104,000	62,780	66,590	90,390	244,600	162,600	63,200	146,800	2,537,560
1944	255,600	120,100	139,900	124,600	53,420	51,020	15,450	112,200	184,300	86,040	404,600	1,309,000	2,856,230
1945	707,500	195,800	110,300	181,500	154,300	42,110	155,600	34,630	2,580	232,800	33,200	24,740	1,875,060
1946	803,600	134,400	110,400	153,900	121,500	18,240	51,340	250,200	416,800	97,870	12,290	274,000	2,444,540
1947	525,600	87,150	61,560	102,100	34,070	29,960	16,570	152,200	194,900	22,940	423,600	271,900	1,922,550
1948	28,150	26,820	89,770	34,690	88,850	86,790	2,410	38,440	104,300	489,700	28,580	598,900	1,617,400
1949	358,400	146,200	33,690	33,450	155,300	313,600	425,800	451,400	132,100	77,870	419,000	230,300	2,777,110
1950	195,300	128,800	98,910	55,190	11,620	51,520	12,540	88,530	163,900	62,430	46,740	62,820	978,300
1951	150,400	4,790	5,610	842	2,160	3,110	2,690	165,000	97,190	7,630	7,110	287,500	734,000
1952	87,940	31,420	5,080	2,250	1,160	748	627	13,390	89,210	93,570	11,050	3,780	340,200
1953	2,990	2,870	2,230	1,870	1,310	1,660	4,580	935	20	0	69,640	319,400	407,500
1954	228,800	28,440	23,300	12,080	8,050	3,970	35,830	9,750	39,460	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	(7)	a32,500	Aug. 14, 1900	-	-	-	-	-
1901	(7)	b19,200	Oct. 1, 1900	1,640	4,790	3,469,000	4,143	3,000,000
1902	(7)	b24,000	Sept. 16, 1902	1,080	4,549	3,293,600	4,510	3,266,600
1903	(7)	b36,320	June 22, 1903	1,430	6,472	4,686,000	6,180	4,474,000
1904	(7)	b29,770	Sept. 22, 1904	1,160	4,846	3,519,000	7,868	5,721,700
1905	(7)	b29,170	July 6, 1905	3,100	12,060	8,729,000	10,640	7,712,000
1906	(7)	b30,140	July 16, 1906	2,500	11,050	8,002,000	10,670	7,727,000
1907	(7)	b30,610	May 30, 1907	2,830	7,327	5,303,000	7,376	5,339,000
1908	(7)	b27,790	Aug. 19, 1908	1,950	7,086	5,145,000	5,535	4,019,000
1909	(7)	b31,650	Sept. 7, 1909	1,330	7,124	5,158,000	7,609	5,504,000
1910	(7)	b25,140	Sept. 24, 1910	600	4,294	3,110,000	4,104	2,972,500
1911	(7)	b18,000	Oct. 6, 1910	1,040	4,395	3,183,000	5,056	3,662,200
1912	(7)	b25,210	Nov. 5, 1911	855	5,532	4,016,000	5,187	3,764,500
1913	(7)	b20,000	Oct. 3, 1912	950	4,158	3,010,000	5,652	4,085,400
1914	(7)	c33,000	Oct. 6, 12, 1913	-	-	-	-	-
1923	568	25,500	Sept. 12, 13, 1923	386	5,190	3,761,000	6,440	4,658,000
1924	588(6)	23,800	Sept. 28, 1924	300	6,030	4,385,200	4,930	3,573,200
1925	608(6)	26,700	Sept. 12, 1925	225	6,310	4,576,600	6,740	4,897,600
1926	628(3,5)	29,000	Apr. 25, 1926	1,675	6,440	4,680,000	6,010	4,349,000
1927	(3,5)	b28,400	June 28, 1927	147	4,570	3,310,100	4,080	2,957,100
1928	(3,5)	b25,500	May 17, 1928	0	4,050	2,941,600	4,130	2,996,600
1929	(3,5)	b18,000	May 28, 1929	20	3,460	2,510,640	3,246	2,349,740
1930	(3,5)	b32,000	June 14, 1930	0	4,430	3,208,500	5,889	4,263,450
1931	(1)	27,600	July 22, 1931	1,000	6,130	4,449,840	4,340	3,146,680
1932	(1,2)	27,500	Sept. 6, 1932	42.0	3,730	2,693,620	6,860	4,985,900
1933	(2,3)	26,420	Sept. 9, 1933	777	9,010	6,540,500	7,936	5,745,160
1934	(3,4)	22,670	Oct. 19, 1933	780	5,340	3,878,780	3,260	2,358,300
1935	(4,5)	31,400	June 10, 1935	50	5,560	4,016,600	6,790	4,912,300
1936	(5,6)	29,100	Sept. 18, 1936	533	6,130	4,453,100	5,940	4,313,100
1937	(6,7)	29,600	Oct. 2, 1936	118	3,440	2,500,900	2,730	1,972,900
1938	(7,8)	27,000	July 28, 1938	13.4	5,070	3,680,500	5,560	4,025,500
1939	(8,9)	29,300	May 15, 1939	72.4	3,740	2,705,400	2,990	2,166,800
1940	(9,10)	30,300	Mar. 27, 1940	12.4	3,450	2,503,650	3,720	2,697,570
1941	(10,11)	28,920	June 29, 1941	119	6,670	4,828,770	9,090	6,579,500
1942	(11,12)	32,300	Sept. 16, 1942	523	8,760	6,345,080	7,384	5,345,780
1943	(12,13)	23,700	Oct. 9, 1942	18.7	3,510	2,537,560	2,320	1,680,360
1944	(13,14)	29,950	Aug. 28, 1944	2.8	3,930	2,856,230	4,620	3,354,230
1945	(14,15)	21,470	Oct. 1, 1944	5.0	2,590	1,875,060	2,640	1,909,860
1946	(15,16)	31,570	Oct. 13, 1945	1.8	3,380	2,444,540	2,860	2,070,450
1947	(16,17)	27,330	Oct. 12, 1946	1.8	2,660	1,922,550	1,924	1,392,980
1948	(17,18)	27,720	Sept. 17, 1948	.7	2,230	1,617,400	2,770	2,010,960
1949	(18,19)	32,950	Apr. 30, 1949	24.4	3,840	2,777,110	3,680	2,661,830
1950	(19,20)	16,100	May 31, 1950	.7	1,350	978,300	989	716,090
1951	(20,21)	25,460	Sept. 19, 1951	0	1,014	734,000	964	697,672
1952	(21,22)	12,960	June 1, 1952	0	469	340,200	308	223,875
1953	(22,23)	15,290	Sept. 8, 1953	0	563	407,500	939	679,955
1954	(23,24)	-	-	-	-	-	-	-

a Maximum daily during period May to September.
b Maximum daily.
c Maximum daily during period October to December.
Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

436. Rio Grande at Lower Brownsville, Tex.

Location.--Lat 25°52', long 97°23', 1,000 ft downstream from El Jardin pumping plant, 6.6 miles downstream from Brownsville, Cameron County, and at mile 48.8.

Drainage area.--182,215 sq mi (contributing area), of which 88,968 sq mi is in the United States and 93,247 sq mi is in Mexico.

Supplemental records available.--Records of chemical analyses for the period March 1943 to February 1944 for Rio Grande near Brownsville, Tex. (0.2 mile upstream from this station) are published in reports of the Geological Survey.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, U.S.C. & G.S. datum.

Average discharge.--23 years (1934-57), 2,889 cfs (2,092,000 acre-ft per year).

436. Rio Grande at Lower Brownsville, Tex.--Continued

Extremes.--1934-57: Maximum discharge, 31,700 cfs Oct. 8, 1945 (gage height, 31.48 ft); no flow at times.

Remarks.--Reservoirs, diversions, and drainage returns modify the river flow at this station. During floods, a portion of the upstream river flow finds outlet to the Gulf of Mexico through flood channels in both countries; which divert from the Rio Grande within 124.6 miles upstream from this station.

Cooperation.--Records furnished by the International Boundary and Water Commission.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	4,870	4,270	2,980	4,060	4,990	3,250	3,150	2,980	3,650	-
1935	3,260	1,740	1,620	1,730	1,400	483	1,960	7,470	19,500	7,190	4,170	15,900	5,540
1936	10,200	5,860	4,910	4,520	3,060	2,360	1,430	7,310	3,010	9,550	2,580	14,800	5,800
1937	9,540	3,860	3,910	3,360	2,860	2,210	852	1,790	4,280	2,890	1,270	2,530	3,280
1938	5,120	1,860	2,640	3,580	2,220	2,310	1,530	1,930	538	7,910	11,000	17,600	4,850
1939	9,830	2,950	2,640	2,680	2,230	953	848	7,980	3,580	1,070	4,660	3,920	3,630
1940	4,110	1,580	1,050	1,430	458	3,230	1,810	3,500	7,580	4,990	3,930	6,650	3,370
1941	3,900	3,140	2,930	2,590	3,720	2,460	2,740	11,700	15,500	9,340	6,030	14,800	6,560
1942	23,200	10,300	5,540	4,590	3,220	1,740	1,320	5,530	7,440	12,300	5,990	22,500	8,670
1943	13,700	5,410	3,010	3,660	1,850	966	1,090	1,340	4,270	2,540	1,020	2,250	3,420
1944	4,220	2,020	2,310	1,870	848	762	210	1,480	3,330	1,320	5,450	20,740	3,700
1945	10,800	3,070	1,570	2,680	2,520	635	2,260	487	23.1	3,310	431	357	2,360
1946	12,300	1,880	1,520	2,300	2,080	302	866	3,720	6,750	1,510	97.5	4,230	3,140
1947	7,940	1,250	916	1,450	439	404	200	2,250	2,990	252	6,260	4,410	2,420
1948	353	361	1,380	514	1,390	1,300	19.0	533	1,600	7,640	184	9,660	2,070
1949	5,650	2,680	436	455	2,500	5,050	6,260	7,030	2,170	1,180	6,600	3,670	3,650
1950	3,060	2,130	1,630	873	170	811	179	1,220	2,660	988	735	874	1,280
1951	2,620	60.4	43.4	.9	9.9	9.8	18.9	2,370	1,360	98.3	159	4,390	930
1952	1,270	526	54.4	3.9	2.4	.7	3.7	160	1,360	1,330	150	16.5	408
1953	13.8	18.0	5.5	9.0	11.3	5.7	20.0	1.1	0	0	1,020	5,220	523
1954	3,780	482	277	118	110	33.4	534	74.1	615	249	85.5	79.0	541
1955	461	96.6	112	105	119	52.6	152	101	133	252	98.4	207	158
1956	30.7	75.7	69.0	80.8	86.0	44.3	95.4	67.3	40.8	21.4	13.3	16.0	53.2
1957	12.3	21.6	9.3	4.6	19.0	34.8	14.7	524	372	18.2	3.5	22.1	88.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	299,000	237,000	183,000	242,000	307,000	193,000	193,000	183,000	217,000	-
1935	200,000	104,000	99,800	106,000	78,000	29,700	117,000	459,000	1,161,000	442,000	257,000	948,000	4,001,500
1936	629,000	349,000	302,000	278,000	176,000	145,000	85,000	449,000	179,000	587,000	159,000	883,000	4,221,000
1937	586,000	230,000	240,000	207,000	159,000	136,000	50,700	110,000	255,000	178,000	77,900	150,000	2,379,600
1938	315,000	111,000	162,000	220,000	124,000	142,000	91,200	118,000	32,000	486,000	679,000	1,045,000	3,525,200
1939	605,000	175,000	162,000	165,000	124,000	58,600	50,500	491,000	213,000	65,900	287,000	233,000	2,630,000
1940	252,000	94,200	64,800	88,200	26,300	199,000	108,000	215,000	451,000	307,000	242,000	396,000	2,443,500
1941	240,000	187,000	180,000	159,000	207,000	151,000	163,000	717,000	921,000	574,000	371,000	881,000	4,751,000
1942	1,427,000	614,000	341,000	282,000	179,000	107,000	78,400	340,000	443,000	759,000	369,000	1,337,000	6,276,400
1943	840,000	322,000	185,000	225,000	103,000	59,400	65,100	82,600	254,000	156,000	62,600	134,000	2,488,700
1944	259,000	120,000	142,000	115,000	48,800	46,900	12,500	90,800	198,000	81,300	335,000	1,234,000	2,683,300
1945	666,000	183,000	96,500	165,000	140,000	39,100	134,000	29,900	1,380	204,000	26,500	21,300	1,706,680
1946	759,000	112,000	93,500	142,000	115,000	18,600	51,500	229,000	401,000	92,800	6,000	252,000	2,272,400
1947	489,000	74,200	56,400	88,900	24,400	24,800	11,900	138,000	178,000	15,500	385,000	262,000	1,748,100
1948	21,700	21,500	84,800	31,600	79,700	79,800	1,130	32,800	95,000	470,000	11,300	575,000	1,504,330
1949	348,000	159,000	26,800	28,000	139,000	311,000	372,000	432,000	129,000	72,500	406,000	218,000	2,641,300
1950	188,000	127,000	100,000	53,700	9,450	49,800	10,600	74,700	159,000	60,800	45,200	52,000	930,250
1951	161,000	3,590	2,670	56	552	605	1,120	146,000	81,000	6,040	9,750	261,000	673,400
1952	78,100	31,300	3,350	242	137	40	221	9,850	81,200	81,800	9,200	981	296,400
1953	850	1,070	337	552	626	349	1,190	54	0	0	63,000	310,000	378,000
1954	232,000	28,700	17,000	7,240	6,080	2,050	31,800	4,550	36,600	15,300	5,250	4,700	391,300
1955	28,400	5,750	6,890	6,470	6,630	3,230	9,060	6,220	7,910	15,500	6,050	12,300	114,400
1956	1,890	4,500	4,240	4,970	4,950	2,730	5,680	4,140	2,430	1,310	818	950	38,610
1957	756	1,290	572	283	1,060	2,140	875	32,200	22,200	1,120	218	1,310	64,020

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	(4)	-	-	-	-	-	3,390	2,457,800
1935	(4,5)	31,000	June 10, 1935	0	5,540	4,001,500	6,740	4,877,700
1936	(5,6)	25,600	Sept. 3, 1936	419	5,800	4,221,000	5,510	3,997,000
1937	(6,7)	21,200	Oct. 2, 1936	74.9	3,280	2,379,600	2,640	1,911,600
1938	(7,8)	24,000	Sept. 2, 1938	0	4,850	3,525,200	5,360	3,879,200
1939	(8,9)	25,500	May 16, 1939	259	3,630	2,630,000	2,900	2,099,000
1940	(9,10)	28,300	June 28, 1940	0	3,370	2,443,500	3,640	2,639,500
1941	(10,11)	28,300	June 27, 1941	67	6,560	4,751,000	9,010	6,526,000
1942	(11,12)	31,000	Sept. 14, 1942	484	8,670	6,276,400	7,240	5,241,400
1943	(12,13)	22,700	Oct. 9, 1942	0	3,420	2,488,700	2,300	1,662,700
1944	(13,14)	26,200	Sept. 15, 1944	0	3,700	2,683,300	4,280	3,107,800
1945	(14,15)	17,900	Oct. 1, 1944	0	2,360	1,706,680	2,380	1,725,680

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.

Yearly discharge, in cubic feet per second, of Rio Grande at Lower Brownsville, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	(15,16)	31,700	Oct. 8, 1945	0	3,140	2,272,400	2,660	1,927,500
1947	(16,17)	25,000	Oct. 12, 1946	0	2,420	1,748,100	1,740	1,256,500
1948	(17,18)	26,400	Sept. 17, 1948	0	2,070	1,504,330	2,630	1,910,130
1949	(18,19)	28,000	Apr. 26, 1949	0	3,650	2,641,300	3,480	2,522,500
1950	(19,20)	15,700	May 31, 1950	0	1,280	930,250	943	682,510
1951	(20,21)	21,000	Sept. 19, 1951	0	930	673,400	855	618,870
1952	(21,22)	9,430	June 1, 1952	0	408	296,400	256	185,930
1953	(22,23)	15,100	Sept. 8, 1953	0	523	378,000	903	653,470
1954	(23,24)	12,300	Oct. 8, 1953	0	541	391,300	214	154,610
1955	(24,25)	1,980	Oct. 8, 1954	0	158	114,400	116	84,000
1956	(25,26)	606	Nov. 11, 1955	0	53.2	38,610	42.1	30,600
1957	(26,27)	3,800	May 2, 1957	0	88.4	64,020	92.8	67,160

Note.--Figures in parentheses in W.S.P. column refer to water bulletins of the International Boundary and Water Commission.