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WATER BULLETIN NUMBER 5

Flow of the Rio Grande and Tributary Contributions

From San Marcial, New Mexico, to the Gulf of Mexico

1935

ANALYSES OF WATER SAMPLES

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

STREAM FLOW RECORDS AT CERTAIN RIO GRANDE AND TRIBUTARY STATIONS

RAINFALL AND EVAPORATION MAPS — RIO GRANDE BASIN

FLOW SUMMATION CURVES OF RIO GRANDE AND TRIBUTARY STATIONS

FLOW DURATION CURVES OF RIO GRANDE AND TRIBUTARY STATIONS

AVERAGE MONTHLY FLOW OF RIO GRANDE AND TRIBUTARY STATIONS

MONTHLY AND ANNUAL FLOW OF THE RIO GRANDE AT RIO GRANDE CITY

AUTHENTICATED DISCHARGE RECORDS OF RIO GRANDE AND TRIBUTARY FLOW

1924 to 1935

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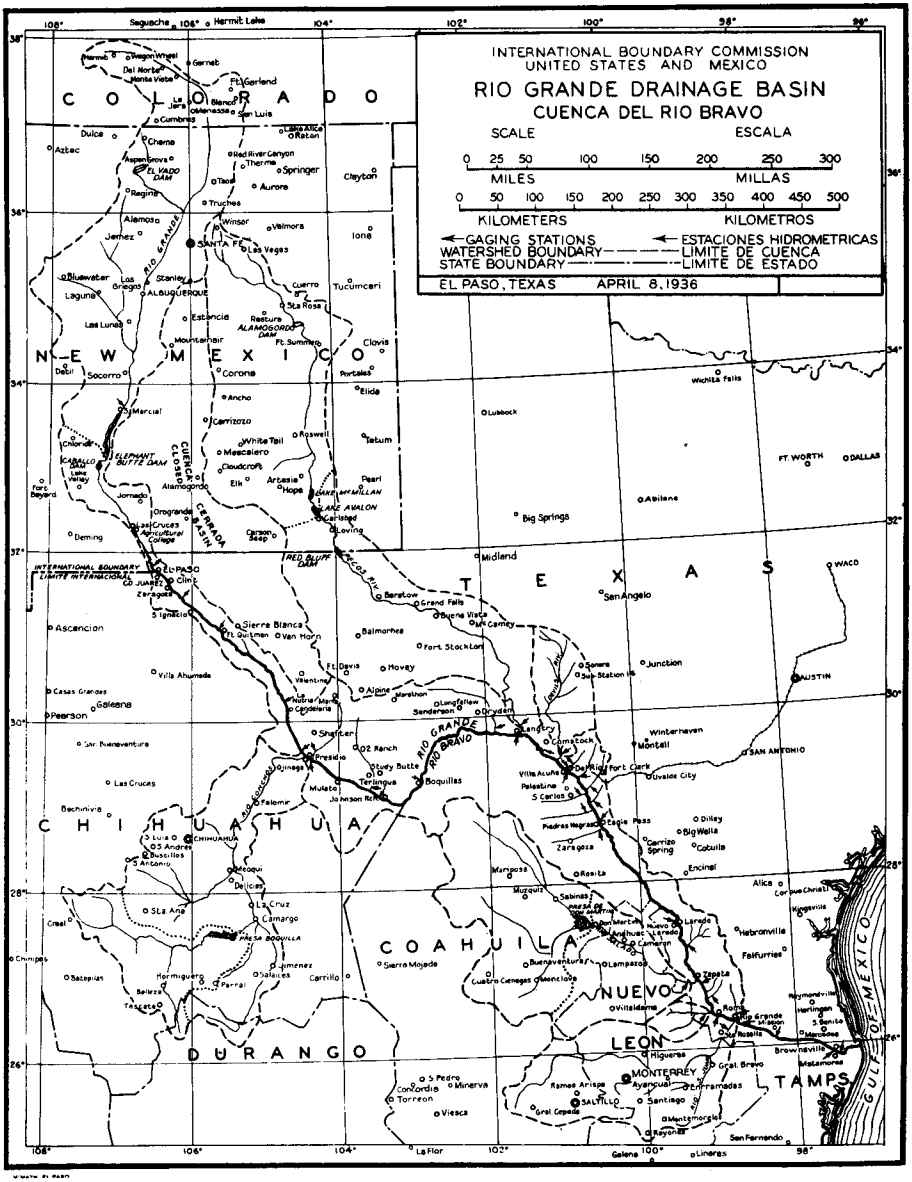


RIO GRANDE DRAINAGE BASIN

CUENCA DEL RIO BRAVO

FOREWORD

This compilation of stream discharge and related data is the fifth unified publication relative to the cooperative determination of the flow of the international portion of the Rio Grande. The first such publication was Water Bulletin No. 1 covering the year 1931. These data are published jointly by the United States and Mexican sections of the International Boundary Commission and represent the results of stream flow measurements made on the Rio Grande and on important tributaries near their confluence, from San Marcial, New Mexico, which is at the head of Elephant Butte reservoir, to the Gulf of Mexico, for the year 1935, as well as adjustments to and authentications of certain old hydrographic records.

International stream gaging was begun in 1889, with the operation of the station at El Paso, Texas. A number of stations on the Lower Rio Grande and tributaries below El Paso were established in 1900 and operated until 1914. From 1914 to 1923 all such work was suspended except for a few months in 1919. In 1923 the work was resumed and carried on independently by the two countries until 1931, when the present cooperative work began.

The duties and functions of the United States Section of the International Water Commission were transferred to the United States Section of the International Boundary Commission by Act of June 30,1932. On January 1, 1932, the Mexican Section of the International Boundary Commission similarly took over the duties of the Mexican Section of the International Water Commission.

This cooperative arrangement for obtaining hydrographic data is the result of the concurrence and agreement by both sections of the International Commission that a coordinated result should be insured and that an accurate and complete hydrographic record of international flow was necessary.

Of stream gaging stations on the Rio Grande, those at Laredo, Texas, and Matamoros, Tamaulipas, were operated in 1935 by the Mexican Section of the Commission, the others by the United States Section. Each section operated the gaging stations on tributaries entering the Rio Grande from its own country,or on floodways or diversions within its borders.

ACKNOWLEDGMENTS

Most of the data published herein relative to chemical and bacteriological analyses, silt, stored water, and evaporation, have been furnished by the following agencies within the two countries: United States Department of Agriculture, United States Bureau of Reclamation, Agricultural and Mechanical College of Texas, State Engineer of New Mexico, Federal Board of Public Improvements of Nuevo Laredo, Tamaulipas, National Irrigation Commission of Mexico, Cia. Agricola y de Fuerza Electrica Del Rio Conchos, S. A., and the Mexican Department of Agriculture and Development. Specific acknowledgment is made where the date appears.

STREAM GAGING STATION RECORDS – 1935

The records of the various gaging stations appear in this publication in the same sequence as they naturally occur in passing down the river.

There is here reported the results of measurements at nineteen points along the Rio Grande and the contributing flow from twenty tributaries. The flow of the Rio Conchos was not measured directly, but its flow was calculated and is shown. Rio Grande flood flows at Hidalgo and Mercedes, Texas, and flood flows into floodways in Hidalgo and Cameron counties, Texas, are also reported here.

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES – 1935

Collected here are the available data with reference to the quality of the water of the Rio Grande for the year 1935, with reference to its use particularly for irrigation.

CHEMICAL AND BACTERIOLOGICAL ANALYSES OF RIO GRANDE WATER

For the year 1935 there is shown the chemical and bacteriological analyses of water from the Rio Grande at Nuevo Laredo, Tamaulipas, with reference to its use for domestic water supply purposes.

SILT SAMPLING OF RIO GRANDE WATER

Silt sampling data are presented here for the year 1935. They are of particular value when considering the probable life of storage reservoirs on the river.

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

There is shown here the quantity of water in storage in the large reservoirs of the Rio Grande basin on the last day of each month - (a) by tabulation, for each reservoir for 1935, (b) by graph, for the total in all reservoirs from 1924 to 1935, inclusive.

FOREWORD—continued

PRECIPITATION MAP

A map is presented showing lines of equal average annual precipitation within the Rio Grande basin for the years 1924 - 1935.

EVAPORATION MAP

For estimating evaporation losses from reservoirs, there is reproduced here a map showing lines of equal average annual evaporation within the basin of the Rio Grande for the twelve years 1924 - 1935.

SUMMATION CURVES OF RIO GRANDE AND TRIBUTARY FLOW

Summation curves are presented showing the Rio Grande flow at San Marcial since 1895 and at El Paso since 1889. Similar curves show the flow of the Rio Grande and certain tributaries at points below El Paso, Texas, for the twelve years 1924 - 1935.

DURATION CURVES OF RIO GRANDE AND TRIBUTARY FLOW

Curves showing the percentage of time during the past twelve years when the stream flow equaled or exceeded any amount, are shown for the principal Rio Grande and tributary gaging stations below El Paso.

AVERAGE MONTHLY RIO GRANDE AND TRIBUTARY FLOW

For the principal Rio Grande and tributary gaging stations there are here shown,by graphs, the average monthly flow for the twelve years 1924 - 1935.

MONTHLY AND ANNUAL FLOW OF THE RIO GRANDE AT RIO GRANDE CITY

The amount of water entering the Lower Rio Grande Valley below Rio Grande City is here shown graphically. It includes 411,000 acre feet of water which on the last three days of September, 1932, during a flood from the Rio San Juan, overflowed the right San Juan bank and cut across country, reaching the Rio Grande below the Rio Grande City gaging station.

STREAM GAGING RECORDS 1924-1934

Stream flow records for certain points on the Rio Grande and tributaries are published here for the years 1924 - 1935.

AUTHENTICATED DISCHARGE RECORDS 1924-1935

A table is presented which shows where may be found all stream gaging records for points on the Rio Grande and its tributaries which have been authenticated by this Commission.

RIO GRANDE AT SAN MARCIAL STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car and winch located at railroad bridge about one mile below San Marcial, New Mexico. Zero of gage is 4,455.38 feet above U. S. C. & G. S. sea level datum.

RECORDS: Based upon 126 meter measurements, by wading, and from cable about 1,000 feet above railroad bridge. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: January, 1895 to December, 1935.

REMARKS: A history of the locations and elevations of gages from January, 1895, to March, 1932, is given in Water Bulletin Number 4.

El Vado reservoir on the Rio Chama in New Mexico and many irrigation diversions above this station in Colorado and New Mexico modify the river flow. With all closed basins eliminated the drainage area above this station is 27,806 square miles, all in the United States.

COMPARATIVE FLOWS FROM PREVIOUS RECORDS: Momentary Peak: Max., Sept. 24, 1929, 47,000 sec. ft. with 7.80 feet gage. Min., sometimes dry. See previous Water Bulletins for numerous peaks. Daily: Max., Oct. 11, 1904, 33,000 sec. ft. average. Min., sometimes dry. Monthly: Max., May, 1905, 15,649 sec. ft. average. Min., sometimes dry. Yearly: Max., 1905, 3,350 sec. ft. average. Min., 1902, 277 sec. ft. average. Two Successive Years: Max., 1905 & 1906, 2,750 sec. ft. average. Min., 1899 & 1900, 487 sec. ft. average. Three Successive Years: Max., 1905 to 1907, 2,830 sec. ft. average. Min., 1900 to 1902, 609 sec. ft. average. Four Successive Years: Max., 1905 to 1908, 2,390 sec. ft. average. Min., 1899 to 1902, 539 sec. ft. average. Five Successive Years: Max., 1905 to 1909, 2,260 sec. ft. average. Min., 1898 to 1902, 697 sec. ft. average. Ten Successive Years: Max., 1905 to 1912, 1,980 sec. ft. average. Min., 1922 to 1931, 1,540 sec. ft. average. Forty-one Years: Average 1,540 sec. ft.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	697	605	585	76.6	391	6,640	2,750	12.3	3,050	2,170	732	960
2	713	595	484	87.3	405	6,740	2,130	23.3	1,980	1,330	1,360	853
3	698	632	422	105	480	6,740	1,790	159	2,160	933	1,410	813
4	709	642	393	118	853	7,080	1,510	2,300	1,760	738	1,520	748
5	732	831	400	95.9	1,010	6,870	1,290	5,700	1,150	662	1,760	855
6	775	889	481	82.3	1,500	6,490	1,340	11,500	844	562	1,160	897
7	934	976	552	83.1	1,330	5,640	1,170	2,100	750	771	604	1,020
8	975	972	559	86.4	811	6,790	870	800	659	730	445	1,090
9	930	921	620	62.1	543	6,990	710	590	496	828	613	1,000
10	1,000	917	526	78.4	460	7,230	587	525	1,220	794	1,060	954
11	810	926	546	171	363	7,450	322	514	655	557	1,450	960
12	720	793	512	179	335	7,580	268	510	356	409	1,460	899
13	734	662	394	174	494	7,550	290	434	276	388	855	904
14	737	650	344	198	1,220	7,800	254	814	153	394	593	880
15	791	697	287	187	1,540	7,400	162	985	100	356	469	814
16	851	661	268	134	1,630	6,930	129	711	77	365	388	839
17	674	712	263	91.5	2,330	7,020	126	598	57	379	340	855
18	630	614	221	65.2	2,650	7,050	137	1,050	36	309	328	904
19	727	575	713	39.8	4,470	6,650	131	690	90	328	416	917
20	797	518	878	167	4,970	6,490	131	528	155	328	455	892
21	*725	477	499	1,170	4,670	6,540	205	781	182	328	432	894
22	*569	454	379	879	5,490	5,300	516	6,480	234	280	402	860
23	*622	444	290	1,060	7,190	4,450	387	2,980	429	580	408	788
24	683	474	227	1,190	6,760	4,510	314	1,040	543	529	431	810
25	632	505	196	1,020	5,400	4,460	188	705	699	484	487	850
26	543	763	201	953	4,700	4,410	105	862	767	550	833	863
27	666	1,040	161	801	5,100	4,380	64.8	725	1,410	566	1,160	771
28	*714	780	124	628	6,020	*4,610	50.4	781	2,930	590	1,640	752
29	*630		102	485	6,070	*4,120	23.9	1,120	5,800	539	1,490	740
30	*612		82.8	354	6,110	*3,560	9.3	3,320	3,570	438	1,090	810
31	*611		74.4		6,290		.9	4,970		516		854

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	6.62	*5.56	10	1,110	23	*404	730	44,900	
February	7.13	5.98	26	1,180	24	307	700	39,100	
March	7.27	5.17	19	1,380	31	65.2	380	23,400	
April	7.45	5.17	23	1,610	19	33.6	361	21,500	
May	8.80	5.71	23	7,890	12	262	2,950	182,000	
June	9.49	*8.22	13	8,310	30	*3,040	6,180	368,000	
July	8.25	4.37	1	3,040	31	0	579	36,000	
August	10.65	4.35	22	15,000	1	0	1,750	108,000	
September	10.00	4.88	29	10,300	18	33	1,090	64,600	
October	7.15	6.10	1	1,980	22	257	604	37,200	
November	7.92	6.14	5	1,940	18	272	860	51,200	
December	7.55	7.10	8	1,240	15	686	872	53,600	
The Year	10.65	4.35		15,000		0	1,420	1,029,500	37.0

*Partly estimated.

RIO GRANDE AT EL PASO STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car and winch located in the pass opposite Courchesne quarry, four miles northwest of El Paso, Texas. Zero of gage is 3,720.65 feet above United States Coast and Geodetic Survey mean sea level datum.

RECORDS: Based upon 142 meter measurements during the year. Computation by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: 1889* to 1935, inclusive, when combined with records at old Fort Bliss and at Smelter pump house, 3 miles and 1 mile downstream, respectively.

REMARKS: El Vado reservoir on the Rio Chama and Elephant Butte reservoir on the Rio Grande, as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modify the river flow. With all closed basins eliminated the drainage area above this station is 32,819 square miles, all in the United States.

COMPARATIVE FLOWS FROM PREVIOUS RECORDS: Momentary Peak: Max., June 12, 1905, 24,000 sec. ft. with 6.0 feet gage (present datum). This is the greatest flood in the past 107 years, or since 1828. Min., sometimes dry. See previous Water Bulletins for numerous peaks. Daily: Max., June 12, 1905, 23,680 sec. ft. average. Min., sometimes dry. Monthly: Max., June 1905, 14,300 sec. ft. average. Min., sometimes dry. Yearly: Max., 1905, 2,780 sec. ft. average. Min., 1902, 70.1 sec. ft. average. Two Successive Years: Max., 1905 and 1906, 2,160 sec. ft. average. Min., 1899 and 1900, 168 sec. ft. Average. Three Successive Years: Max., 1905 to 1907, 2,280 sec. ft. average. Min., 1900 to 1902,269 sec. ft. average. Four Successive Years: Max., 1904 to 1907, 1,880 sec. ft. average. Min., 1899 to 1902, 227 sec. ft. average. Five Successive Years: Max., 1903 to 1907, 1,790 sec. ft. average. Min., 1898 to 1902, 669 sec. ft. average. Ten Successive Years: Max., 1903 to 1912, 1,560 sec. ft. average.Min., 1926 to 1935, 766 sec. ft. average. Forty-seven Years: Average 1,020 sec. ft.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	147	137	229	1,090	632	762	1,090	1,110	2,840	780	183	192
2	142	134	183	895	679	801	983	1,120	1,950	682	185	178
3	142	134	166	821	769	792	994	1,150	3,920	637	178	158
4	142	132	155	725	*763	777	1,330	2,010	3,180	614	177	162
5	144	129	158	734	970	812	1,370	2,260	1,380	482	174	160
6	152	127	137	829	830	835	1,260	1,700	962	394	175	170
7	158	127	134	767	701	*858	1,150	1,480	1,040	309	213	160
8	150	124	134	777	657	*839	1,110	1,270	724	263	219	160
9	152	124	127	671	648	848	1,130	1,400	649	259	226	157
10	147	127	122	730	666	948	1,020	1,650	551	234	202	160
11	144	129	124	765	691	1,110	1,020	1,900	602	227	223	164
12	139	127	124	894	643	1,100	962	1,700	499	214	229	174
13	137	124	120	824	708	1,100	974	1,210	524	206	190	170
14	134	122	120	721	877	969	1,070	1,040	590	213	208	158
15	134	120	124	704	718	917	1,120	990	650	212	195	156
16	129	120	126	769	690	867	1,010	894	773	276	188	157
17	127	122	147	801	638	909	1,120	951	836	323	180	172
18	134	124	169	790	833	916	1,190	1,080	836	364	180	222
19	132	127	218	731	1,070	889	1,240	1,620	876	413	171	266
20	129	127	292	689	831	880	1,160	1,090	840	490	170	316
21	120	147	325	675	686	941	1,150	1,220	723	378	175	308
22	134	183	398	696	712	1,030	1,050	943	760	252	181	307
23	134	228	577	678	736	1,140	1,080	942	796	221	186	266
24	134	222	526	680	694	1,160	1,160	1,070	965	211	184	238
25	137	261	459	618	756	1,030	1,150	1,460	1,080	224	210	189
26	137	292	491	737	935	1,030	1,190	1,290	1,150	228	217	162
27	137	296	614	743	1,100	1,070	1,230	1,210	752	230	190	162
28	137	269	625	695	904	1,050	1,400	1,690	755	235	187	156
29	137		687	716	870	1,120	1,200	1,330	867	219	196	154
30	134		693	669	803	1,080	1,160	3,780	1,090	193	192	160
31	134		759		817		1,160	5,790		174		162

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.55	1.33	7	166	21	111	138	8,510	
February	1.99	1.38	27	321	20	122	158	8,800	
March	2.98	1.32	31	803	15	118	299	18,400	
April	3.03	2.44	1	1,150	26	570	754	44,900	
May	3.19	2.33	19	1,220	9	578	774	47,600	
June	3.32	2.65	29	1,210	4	685	953	56,700	
July	3.84	2.92	5	1,940	2	912	1,140	69,900	
August	7.56	2.63	31	7,120	16	879	1,560	95,900	
September	6.10	1.77	1	4,940	13	470	1,110	65,800	
October	2.73	1.17	1	936	31	172	328	20,200	
November	1.46	1.15	9	268	6	167	193	11,500	
December	1.79	1.22	20	344	14	151	190	11,700	
The Year	7.56	1.15		7,120		111	635	459,910	14.0

*Partly estimated.

*Records estimated from up-river stations and weather records for January to April, inclusive, 1889, July to December, 1893, and annuals for 1894, 1895 and 1896.

RIO GRANDE AT TORNILLO BRIDGE STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at highway bridge two miles west of Tornillo, El Paso County, Texas. Zero of gage is 3,578.63 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 81 meter measurements during the year. Computation by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: January, 1924, to December, 1935. Station maintained prior to August, 1928, by United States Bureau of Reclamation.

REMARKS: El Vado reservoir on the Rio Chama and Elephant Butte reservoir on the Rio Grande, as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modify the river flow.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on September 5, 1925, when the mean daily flow was 6,500 second feet. The river is sometimes dry. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	108	108	40.9	60.6	5.4	10.9	67.8	20.2	2,880	608	91	*1.0
2	37.7	119	36.7	20.2	9.3	10.2	34.7	19.5	3,320	475	144	109
3	56.3	168	27.2	1.6	4.8	23.5	4.6	25.8	2,080	301	155	200
4	75.2	145	15.0	40.7	55.6	13.2	1.8	254	1,660	213	155	183
5	56.4	92	5.1	4.4	12.1	2.1	42.4	285	1,880	180	134	175
6	30.1	14.5	6.1	5.4	58.5	5.0	185.0	473	2,300	191	168	164
7	20.4	13.8	2.6	7.5	49.9	6.5	*39.4	654	1,230	127	140	162
8	97.1	6.8	1.0	6.6	6.0	5.5	63.1	751	975	76	127	178
9	155	5.5	.5	12.5	4.8	9.8	*15.6	478	738	26	96	166
10	139	80	3.1	6.3	4.7	9.7	17.5	437	615	13.9	78	149
11	146	3.5	8.8	7.6	10.9	12.8	*8.4	589	525	14.5	37.6	145
12	141	15.2	.6	11.6	7.5	65.7	7.5	493	360	4.7	29.7	143
13	136	20.9	5.3	24.9	5.8	98.0	12.5	639	150	9.5	15.8	143
14	136	9.2	1.7	28.7	.7	56.8	22.5	695	120	33.6	8.9	123
15	135	9.8	1.2	4.7	.7	53.6	14.1	291	115	118	7.5	142
16	132	8.4	3.5	9.1	0	24.4	20.9	167	118	112	6.1	52
17	129	4.8	4.7	7.7	.8	25.9	18.6	85	111	130	11.1	8.8
18	129	4.6	1.0	16.4	2.2	14.1	13.5	146	144	179	9.5	8.2
19	128	*1.0	3.5	7.9	1.6	14.5	14.0	156	88	170	56.7	10.2
20	126	24.4	4.2	2.5	4.0	11.9	8.5	406	50	158	75.9	63
21	117	41.3	6.9	4.5	1.9	5.4	22.1	412	104	81	40.2	124
22	115	5.7	5.2	2.5	1.3	9.0	19.4	235	45	125	5.5	140
23	114	7.9	3.5	1.8	1.0	16.0	20.2	88	83	69	39.4	133
24	126	20.7	2.6	3.8	3.9	7.5	18.4	47.2	196	40.3	110	209
25	128	44.8	3.2	5.7	4.1	16.1	16.3	116	269	14.5	171	262
26	118	61.9	3.0	0	2.2	7.5	25.4	218	336	14.8	201	204
27	132	38.2	2.1	0	10.9	8.5	15.5	247	465	18.2	202	153
28	130	42.1	1.1	8.0	21.3	25.5	25.2	53	419	21.8	200	129
29	118		4.5	1.5	2.7	51.1	16.3	308	376	4.4	104	98
30	120		12.2	8.1	6.4	147.0	16.1	906	473	2.6	2.2	134
31	100		13.4		5.9		10.7	1,230		*.4		133

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	10.66	9.71	9	175	7	14.5	111	6,810	
February	10.73		3	207	10	*0	37	2,060	
March	9.87		1	50.5	10	0	7.4	457	
April	10.13		1	101	26	0	10.8	640	
May	10.51		6	150	16	0	9.9	609	
June	10.85	8.79	30	265	21	*0	25.5	1,520	
July	11.33	8.62	6	421	4	*0	26.4	1,620	
August	13.95	9.02	31	1,500	2	1.3	352	21,700	
September	16.30	8.96	1	5,130	20	12.1	742	44,100	
October	12.27	8.35	1	650	31	0	114	7,000	
November	10.52	8.39	27	244	18	*0	87.4	5,200	
December	10.72	8.66	25	290	1	*0	130	8,020	
The Year	16.30			5,130		0	138	99,736	

*Partly estimated.
&Estimated

RIO GRANDE AT FORT QUITMAN STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at lower end of El Paso Valley, 1-1/2 miles below Old Fort Quitman and 11-1/2 miles south of Finlay, in Hudspeth County, Texas. Zero of gage is 3,454.06 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 56 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: January 1923 to December, 1935.

REMARKS: El Vado reservoir on the Rio Chama and Elephant Butte reservoir on the Rio Grande, as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modify the river flow. With all closed basins eliminated the drainage area above this station is 34,450 square miles; 33,616 being in the United States and 834 in Mexico.

COMPARATIVE FLOWS FROM PREVIOUS RECORDS: The greatest recorded flow was on September 11, 1925, when the extreme mean daily gage height was 7.02 feet and the mean daily flow was 2,600 second feet. The lowest recorded flow occurred July 19, 1934, when the flow was 3.0 second feet. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	66.5	74.3	42.0	23.8	13.3	*.9	130	87	1,210	683	185	289
2	67.6	71.0	43.6	30.1	11.1	*.9	109	410	1,120	667	157	256
3	76.5	68.8	39.7	35.7	10.4	*.9	122	476	1,200	682	137	224
4	88.8	69.9	30.2	25.5	11.8	*.9	166	554	1,290	671	139	158
5	52.1	65.4	36.2	26.4	16.1	*5.9	150	332	1,530	549	172	190
6	62.8	76.5	29.7	21.9	28.7	16.2	84.7	275	1,600	461	178	195
7	65.4	84.1	24.0	17.4	44.4	*10.7	85.1	309	1,690	412	172	197
8	65.4	91.5	23.0	23.0	41.9	*6.3	114	362	1,730	387	186	196
9	73.4	90.1	27.3	20.2	36.1	25.7	104	371	1,740	327	177	190
10	91.5	80.2	26.1	15.6	24.7	18.7	102	422	1,740	266	165	199
11	82.6	74.3	25.1	11.7	*8.8	31.0	82.2	392	1,700	214	158	196
12	90.1	68.8	22.5	16.1	*6.5	48.7	55.2	322	1,640	216	185	184
13	94.2	66.5	19.8	17.5	*5.1	79.5	38.0	371	1,460	206	144	183
14	104	75.4	18.2	18.1	*5.8	154	*29.5	454	1,280	190	142	178
15	110	93.8	9.6	30.1	*12.9	102	*27.3	487	867	193	165	176
16	110	84.2	4.9	31.4	*7.7	111	30.1	569	571	187	175	168
17	117	60.5	5.2	25.2	*5.5	83.6	31.4	430	439	194	174	181
18	114	49.4	5.4	14.4	8.1	91.7	27.2	396	366	832	184	215
19	101	40.5	6.1	15.2	8.5	71.1	19.9	217	330	243	184	161
20	95.5	51.1	6.1	20.2	*4.5	34.7	18.1	217	353	223	159	172
21	94.2	38.9	6.7	22.7	*1.9	23.5	45.1	168	330	222	149	187
22	94.2	32.0	19.6	17.5	*10.3	*27.8	49.0	223	341	253	146	213
23	108	32.7	11.8	24.2	*10.7	*86.8	96.2	285	446	272	185	268
24	105	29.1	11.0	16.2	15.9	*93.6	54.5	262	351	302	188	283
25	85.1	36.8	8.1	15.5	38.9	*86.0	54.6	169	351	275	150	269
26	83.9	52.0	8.1	12.1	19.6	*116	48.1	143	514	261	184	244
27	87.6	57.5	6.1	12.8	*17.0	*130	47.9	152	598	233	222	248
28	81.4	52.0	4.3	17.4	*10.7	128	47.9	193	635	204	229	227
29	76.5		3.2	13.4	*4.6	120	59.2	247	705	204	230	197
30	77.7		2.7	14.0	*1.4	125	67.4	1,160	711	214	230	186
31	83.1		2.7		*.9		71.8	*1,820		196		193

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.41	.74	17	119	5	42	87.4	5,370	
February	1.35	.51	15	110	24	26.7	63.1	3,510	
March	.88		4	53.8	30	*0	17.7	1,090	
April	.65	.05	3	40.1	1	3.2	20.2	1,200	
May	1.38	-.09	25	108	31	.8	*14.3	*880	
June	1.68	-.08	14	185	1	*.9	61	3,630	
July	3.36	.27	4	587	19	15.3	69.9	4,300	
August	6.48	.38	31	*2,140	1	36	396	24,300	
September	7.22	2.07	9	1,750	22	271	961	57,200	
October	5.62	1.49	18	1,490	14	185	337	20,700	
November	2.06	1.24	1	253	3	132	176	10,500	
December	2.21	1.35	23	289	4	149	207	12,700	
The Year	7.22	-.09		*2,140		0	201	145,380	4.22

*Partly estimated.

RIO GRANDE AT LA NUTRIA STATION

DESCRIPTION: Automatic water-stage recorder about 9-1/2 miles above Candelaria, Texas, and 64 miles above Presidio, Texas. Zero of gage is 2,875.00 feet above mean sea level, International Boundary Commission datum.

RECORDS: Based upon 17 meter measurements during the year. Computations by open channel methods. 1935 records good.

RECORDS AVAILABLE: June 15 to December 31, 1935.

REMARKS: El Vado reservoir on the Rio Chama and Elephant Butte reservoir on the Rio Grande, as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modify the river flow. With all closed basins eliminated the drainage area above this station is 36,292 square miles.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1							46.7	1.0	*4,660	604	229	232
2							50.9	4.2	*1,210	601	241	234
3							51.0	29.7	1,200	597	213	255
4							81.9	83.2	1,310	597	194	280
5							162.0	312	1,390	615	166	259
6							172.0	431	1,060	611	148	209
7							60.7	280	1,090	551	162	178
8							98.2	220	1,110	480	178	200
9							77.4	201	1,180	445	178	199
10							43.7	220	1,310	430	175	203
11							23.5	255	1,560	390	185	192
12							17.0	344	1,720	355	176	199
13							25.6	433	1,640	311	171	201
14							17.0	666	1,470	275	168	204
15						*257	22.3	254	1,200	270	191	199
16						86.7	58.0	353	866	248	162	195
17						59.6	19.1	311	611	229	162	185
18						78.5	14.8	1,030	526	542	184	178
19						49.4	17.0	616	467	594	200	168
20						52.7	14.8	398	414	535	201	195
21						32.2	197.0	*317	400	312	209	256
22						27.4	19.1	*298	658	256	202	249
23						373.0	3.4	*245	790	259	179	194
24						44.8	2.0	*226	702	231	168	188
25						21.5	2.0	*218	*728	269	165	232
26						6.8	59.7	*238	429	299	201	281
27						27.5	34.6	235	378	301	209	280
28						19.9	4.8	136	456	282	181	252
29						4.9	2.0	106	536	267	188	251
30						12.9	1.5	*4,540	548	329	224	242
31							1.2	*7,330		236		211

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
June**	5.96	1.62	23	1,290	29	4.3	72.2	2,290	
July	4.16	1.38	21	524	31	1.0	45.2	2,780	
August	*13.20	1.33	31	7,480	1	.7	655	40,300	
September	8.58	3.62	5	2,920	27	361	1,050	62,700	
October	6.23	3.20	18	1,430	24	224	397	24,400	
November	3.30	2.82	2	248	6	139	187	11,100	
December	3.70	2.92	21	347	18	152	219	13,500	
Period	*13.20	1.33		7,480		.7	396	157,070	4.33

*Partly estimated.
**June 15 to June 30, inclusive.

RIO GRANDE AT UPPER PRESIDIO STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located 8 miles above the confluence of the Rio Conchos and about 10 miles northwest of the towns of Ojinaga, Chihuahua, and Presidio, Texas. Zero of gage is 2,579.40 feet above mean sea level, International Boundary Commission datum.

RECORDS: Based on 32 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: April, 1900, to March, 1914; September, 1919, to March, 1920; August, 1923, to December, 1935.

REMARKS: El Vado reservoir on the Rio Chama and Elephant Butte reservoir on the Rio Grande, as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modify the river flow.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on June 12, 1912, when peak discharge was 15,000 second feet. The river is sometimes dry. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.0	6.0	14.9	0	0	0	13.5	0	1,500	642	229.0	113
2	9.8	9.4	19.8	0	0	0	4.7	0	1,090	662	*168.0	130
3	10.4	13.6	23.6	0	0	0	936	96	1,740	654	*165.0	144
4	12.2	14.7	15.9	0	0	0	180	48	1,740	630	*162.0	154
5	13.5	16.3	9.9	0	0	0	141	10.3	1,710	622	*146.0	185
6	13.5	14.5	6.3	0	0	0	156	7.1	1,600	623	*133.0	181
7	12.2	16.2	4.1	0	0	0	113	246	1,210	606	120.0	158
8	12.2	18.8	3.3	0	0	0	77	77	1,280	537	107.0	119
9	11.5	18.7	2.5	0	0	0	30.4	51	1,330	462	107.0	106
10	10.9	24.3	1.9	0	0	*3.8	26.6	37	1,400	419	108.0	113
11	10.3	24.8	1.9	0	0	*3.8	22.0	31	1,510	*390	104.0	114
12	9.7	26.6	2.2	0	0	*496	14.4	29	1,700	*363	102.0	113
13	9.7	28.4	2.4	0	0	*171	7.6	46	1,870	327	103.0	106
14	11.6	30.2	2.6	0	0	*440	3.2	519	1,870	254	99.6	102
15	7.8	30.8	2.6	0	0	*920	.7	305	1,570	190	93.6	108
16	5.5	38.2	2.9	0	0	342	.1	85	1,260	147	98.6	117
17	4.0	46.0	2.8	0	0	177	0	317	909	138	111.0	118
18	3.9	48.4	2.8	0	0	155	0	387	715	*99	99.0	108
19	3.4	44.1	2.7	0	0	145	0	1,000	633	*356	94.1	105
20	4.2	41.4	2.5	0	0	139	0	698	583	*358	95.6	114
21	4.4	32.3	2.5	0	0	132	0	416	552	*511	105.0	125
22	10.2	29.3	2.2	0	0	127	0	252	705	*316	104.0	137
23	21.3	30.0	1.6	0	0	660	0	253	745	*198	113.0	244
24	19.6	29.6	*1.4	0	0	277	0	112	841	185	109.0	176
25	16.9	29.0	*1.5	0	0	194	0	84	1,260	177	93.0	158
26	16.2	25.5	*1.9	0	0	175	0	59	891	*183	92.6	162
27	14.7	16.5	*2.1	0	0	148	0	109	584	*226	92.6	215
28	12.7	13.3	*1.5	0	0	118	0	183	520	283	110.0	230
29	8.7		*.9	0	0	74.0	0	160	551	259	112.0	238
30	8.2		*.4	0	0	31.6	0	83	650	228	107.0	230
31	8.5		*0		0		0	1,180		242		231

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	.48	.13	24	22.3	20	3.2	10.5	644	
February	.72	.21	18	52.9	2	5.2	23.6	1,420	
March	.53	.05	2	28.9	31	0	4.6	283	
April							0	0	
May							0	0	
June	4.73		12	1,910	1-9	0	164	9,780	
July	4.81		3	1,970	17-31	0	55.7	3,420	
August	5.12		31	1,420	1-2	0	222	13,600	
September	6.05	2.22	25	1,950	29	494	1,150	68,500	
October	3.75	*1.34	19	907	18	*89	371	22,800	
November	1.72	1.14	1	314	27	83.1	116	6,920	
December	1.60	1.12	23	266	14	89.2	151	9,310	
The Year	6.05			1,970		0	189	136,679	3.65

*Partly estimated.

RIO GRANDE AT LOWER PRESIDIO STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car and winch, located about 2-1/4 miles above the international highway bridge at Presidio, Texas, and 1-1/2 miles below the confluence of the Rio Conchos with the Rio Grande. Zero of gage is 2,560.00 feet above mean sea level, International Boundary Commission datum.

RECORDS: Based on 50 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: May, 1900, to July,1915; September,1919, to March, 1920; August, 1923, to December, 1935.

REMARKS: Station moved to its present location on June 14, 1932. The El Vado reservoir on the Rio Chama, Elephant Butte reservoir on the Rio Grande, and Boquilla reservoir on the Rio Conchos, as well as many irrigation diversions in the United States and Mexico, greatly modify the river flow.

PREVIOUS EXTREME FLOWS: The greatest recorded flow occurred in September, 1904, with a peak flow estimated at 168,000 second feet at the present station. The lowest recorded flow was 3.5 second feet in May, 1904. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	775	662	516	80	60.7	104	324	383	*2,040	*5,730	2,040	594
2	805	681	510	78	63.7	103	291	*571	*2,240	*5,710	1,570	583
3	734	509	482	71	*60.6	86	1,880	*865	*5,010	*4,530	1,370	609
4	826	425	504	65	*57.4	63	975	*744	*5,770	*3,950	1,260	740
5	801	607	592	80	57.5	49.6	774	*2,720	*10,100	*3,600	1,250	623
6	837	698	585	91	64.9	102	989	1,980	5,970	*3,350	1,010	602
7	628	513	566	88	44.5	155	1,320	1,180	5,210	3,130	1,050	607
8	1,100	477	480	88	34.8	337	2,110	1,370	*5,220	2,810	949	590
9	788	446	499	66	38.8	344	1,560	1,620	*4,730	2,050	912	621
10	831	590	466	68	35.8	323	909	886	*3,410	2,180	864	680
11	781	551	415	85	32.9	3,110	902	638	*3,080	1,890	835	714
12	698	631	392	81	25.0	6,890	702	632	*3,130	1,680	914	568
13	697	777	403	90	25.0	1,850	506	483	*3,230	1,640	832	558
14	917	577	365	85	28.8	2,860	568	783	*3,490	1,490	681	533
15	741	562	371	86	34.1	3,210	542	762	*3,230	1,430	705	504
16	871	678	432	84	36.8	1,550	558	513	*2,610	1,210	724	490
17	822	604	364	69	39.5	1,580	537	515	*2,440	1,320	731	531
18	744	747	327	67	36.8	1,210	553	*4,230	1,730	1,060	714	507
19	617	717	304	69	32.7	718	548	*2,790	2,030	1,140	714	480
20	698	871	282	69	35.1	603	518	*2,860	1,530	1,400	747	535
21	639	639	268	59	34.8	634	469	*2,700	3,470	1,250	636	589
22	672	564	264	57	33.2	594	403	*1,480	7,680	1,070	752	604
23	634	576	237	51	97.3	1,080	575	*1,090	7,940	1,360	712	598
24	654	554	210	48.6	91.0	733	360	*758	6,880	1,070	655	533
25	550	547	190	53	55.9	872	421	*677	*11,000	988	613	667
26	669	574	150	62	48.6	506	345	*557	*13,800	983	617	556
27	724	736	129	97	58.4	364	517	*594	*10,900	1,490	627	536
28	589	584	110	109	111	485	544	*470	9,110	2,770	551	591
29	594		106	85	140	481	852	480	*7,690	3,210	556	549
30	743		100	69	167	401	772	351	*5,700	2,440	594	600
31	606		82		162		511	1,370		2,220		626

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	2.48	1.56	8	1,180	25	503	735	45,200	
February	2.28	1.35	20	958	4	394	611	33,900	
March	1.81	.45	5	651	31	77.8	345	21,200	
April	.63	.29	28	125	24	47.2	75	4,460	
May	.90	.01	23	233	13	*20	59.5	3,660	
June	7.10	.13	12	9,650	5	33.1	1,050	62,300	
July	4.00	.95	8	3,000	2	231	737	45,300	
August	5.35	1.11	18	5,980	2	275	*1,200	*73,500	
September	8.93	2.71	5	14,800	20	1,320	*5,350	*318,000	
October	6.13	1.93	2	7,220	26	885	2,260	139,000	
November	3.46	1.19	1	2,320	29	518	873	51,900	
December	1.68	1.11	4	775	19	470	584	35,900	
The Year	8.93	.01		14,800		*20	1,150	834,320	13.9

*Partly estimated.

ALAMITO CREEK STATION NEAR PRESIDIO, TEXAS

DESCRIPTION: Automatic water-stage recorder, about 1,000 feet above confluence with the Rio Grande, and six miles below Presidio, Texas. Zero of gage is 2,545.00 feet above mean sea level, International Boundary Commission datum.

RECORDS: Based upon 9 meter measurements and previous rating curve, and by numerous estimates by the hydrographer at low flow. 1935 records fair.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: The flow of this spring fed creek is modified by a small irrigation diversion 1/4 mile above the station. The low flow is steady, being from springs. The high flow is erratic, being from storms. The drainage area above this station is 1,504 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The greatest recorded flow occurred August 25, 1934, with a gage height of 4.04 feet and flow of 8,200 second feet. The lowest recorded flow was .87 second foot on several days in 1932. On October 2, 1932, backwater from the Rio Grande caused a gage height of 8.33 feet.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*2	*2	*2	*2	*2	*2	*2	*2	207	*3.8	*3.8	*3.8
2	*2	*2	*2	*2	*2	*2	828	*2	458	*3.8	*3.8	*3.8
3	*2	*2	*2	*2	*2	*2	888	37	685	*3.8	*3.8	*3.8
4	*2	*2	*2	*2	*2	*2	292	572	1,130	*3.8	*3.8	*3.8
5	*2	*2	*2	*2	*2	*2	*3	549	1,050	*3.8	*3.8	*3.8
6	*2	*2	*2	*2	*2	*2	*2	*3	*243	*3.8	*3.8	*3.8
7	*2	*2	*2	*2	*2	*2	*2	*2	*42	*3.8	*3.8	*3.8
8	*2	*2	*2	*2	*2	*2	*2	*2	*1	*3.8	*3.8	*3.8
9	*2	*2	*2	*2	*2	*2	*2	*2	*1	*3.8	*3.8	*3.8
10	*2	*2	*2	*2	*2	126	*2	*2	6	*3.8	*3.8	*3.8
11	*2	*2	*2	*2	*2	1,810	*2	*2	*1	*3.8	*3.8	*3.8
12	*2	*2	*2	*2	*2	1,090	*2	*2	*1	*3.8	*3.8	*3.8
13	*2	*2	*2	*2	*2	34	*2	*3	*1	*3.8	*3.8	*3.8
14	*2	*2	*2	*2	*2	35	228	114	*1	*3.8	*3.8	*3.8
15	*2	*2	*2	*2	*2	3	35	3	*1	*3.8	*3.8	*3.8
16	*2	*2	*2	*2	*2	3	*2	61	*1	*3.8	*3.8	*3.8
17	*2	*2	*2	*2	*2	*2	*3	214	*1	14.5	*3.8	*3.8
18	*2	*2	*2	*2	*2	*2	*3	380	*1	566.0	*3.8	*3.8
19	*2	*2	*2	*2	*2	*2	*3	160	*1	*3.8	*3.8	*3.8
20	*2	*2	*2	*2	*2	*2	*2	29	*1	*3.8	*3.8	*3.8
21	*2	*2	*2	*2	*2	64	7	20	69	*3.8	*3.8	*3.8
22	*2	*2	*2	*2	*2	*2	2	*2	362	*3.8	*3.8	*3.8
23	*2	*2	*2	*2	*2	*2	733	*1	224	438.0	*3.8	*3.8
24	*2	*2	*2	*2	*37.8	*2	268	*1	48	330.0	*3.8	*3.8
25	*2	*2	*2	*2	213	*2	*3	*1	165	16.0	*3.8	*3.8
26	*2	*2	*2	*2	*2	*2	*3	*1	126	*3.8	*3.8	*3.8
27	*2	*2	*2	*2	*2	*2	*2	*1	234	*3.8	*3.8	*3.8
28	*2	*2	*2	*2	*2	*2	*2	*1	151	*3.8	*3.8	*3.8
29	*2		*2	*2	*2	*2	*2	*1	*3.8	*3.8	*3.8	*3.8
30	*2		*2	*2	*2	*2	*2	*1	*3.8	*3.8	*3.8	*3.8
31	*2		*2		*2		*2	*3		*3.8		*3.8

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	.38	.33	6	-	20	-	*2	*123	
February	.37	.32	3	-	28	-	*2	*111	
March	.37	.32	9	-	4	-	*2	*123	
April	.36	.33	29	-	13	-	*2	*119	
May	2.34	.33	24	2,350	18	*2	*10	*613	
June	4.85	.87	10	7,120	28	*2	*107	*6,360	
July	3.70	.87	23	4,310	1	*2	108	6,650	
August	3.31	.98	5	3,360	23-30	*1	70.1	4,310	
September	4.90	1.27	4	7,250	11-20	*1	*174	*10,400	
October	3.10	1.95	18	1,450	3	*3.8	*47.2	*2,900	
November	2.11	2.02	26	-	1	-	*3.8	*226	
December	2.16	2.07	19	*4.0	20	*3.8	*3.8	*234	
The Year	4.90	.32		7,250		*1	*44.4	*32,169	*21.4

*Partly estimated.

TERLINGUA CREEK STATION NEAR TERLINGUA, TEXAS

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located about 12 miles south of Terlingua, Texas, and 2-1/2 miles above the confluence with the Rio Grande at the lower end of Santa Helena Canyon. Zero of gage is 2,191.04±.5 feet above mean sea level, United States Geological Survey datum.

RECORDS: Based upon 29 meter measurements, and previous rating curve. 1935 records fair.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: The flow of this spring fed creek is modified by small irrigation diversions above the station. The low flow is steady, being from springs. The high flows are erratic, being from storms. The drainage area above this station is 1,070 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on May 28, 1932, when the extreme gage height was 15.30 feet, with a discharge of 24,080 second feet. The lowest flow recorded was on July 11, 1934, when the discharge was .45 of a second foot.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.4	1.6	1.9	1.0	.8	4.2	1.6	2.4	590	8.6	13.6	*2.4
2	1.4	1.0	1.5	.9	.9	30.3	152	27.4	890	5.7	7.2	2.4
3	1.5	*.6	1.1	1.0	1.0	350	48	2.4	1,840	3.9	6.2	1.9
4	1.3	*.6	1.1	1.0	1.0	*2	25.6	250.0	2,330	2.6	5.8	1.9
5	1.3	.9	1.1	1.0	1.0	*2	6.6	1,200.0	1,430	2.5	4.9	2.4
6	1.3	1.6	1.1	1.0	1.0	*2	2.4	142.0	257	2.9	4.1	2.4
7	1.2	1.6	1.2	.9	1.0	359	2.2	36.4	38	2.9	4.1	1.9
8	1.3	1.4	1.2	1.0	1.0	14	2.2	10.6	18.8	2.9	3.7	1.9
9	1.4	1.6	1.4	.9	.9	31.5	2.2	5.8	349	2.9	3.7	1.9
10	1.4	1.5	1.3	.9	.8	6.6	2.2	4.3	3.7	2.9	3.7	1.6
11	1.1	1.6	.8	1.0	.8	4,270	2.2	2.9	3.7	2.9	3.7	1.6
12	1.1	2.2	.8	.9	.8	2,300	2.2	28.0	3.7	2.9	3.4	1.9
13	1.1	2.4	.8	1.0	.8	347	2.2	8.1	3.7	2.6	3.0	1.9
14	1.4	1.9	.9	.9	.7	602	2.4	2.9	3.7	2.5	3.0	1.6
15	1.8	1.8	1.0	.9	.8	392	2.2	2.2	3.7	2.5	3.4	1.6
16	1.6	1.4	1.0	.9	1.0	182	2.2	129.0	4.0	2.5	3.4	1.4
17	1.8	2.1	1.1	.9	1.6	*2	2.9	386.0	3.7	1,240	3.0	1.2
18	1.9	2.1	1.2	.8	2.1	*2	3.1	290.0	3.7	2,340	3.4	1.2
19	1.8	2.2	1.2	1.0	2.8	*2	3.4	5.2	3.4	302	3.0	1.0
20	1.6	1.4	1.5	1.0	3.6	*2	3.7	2.2	3.7	65.1	3.0	1.0
21	1.6	1.1	1.6	.9	4.1	*2	5.5	2.1	61	15.3	2.7	6.2
22	1.8	1.4	1.8	.9	*155	467	15.0	2.1	1,280	6.7	2.7	1.6
23	1.6	2.1	1.8	.9	*69	48	2,510	2.1	520	8.8	3.0	1.6
24	1.2	1.8	1.5	.8	*1,050	57	1,030	718.0	549	9.4	3.0	1.9
25	.9	1.9	1.5	.9	266	*2	1,510	127.0	690	25.3	3.0	1.9
26	.6	1.9	1.0	.9	156	39	46.6	2.4	1,030	3.7	3.0	1.9
27	.7	2.1	1.0	1.0	143	300	36.4	2.1	305	3.4	3.0	1.6
28	1.2	1.9	1.0	.9	79	35	22.2	2.1	134	3.4	2.7	1.4
29	1.2		1.2	.9	30.2	549	13.4	1.9	38	3.0	2.4	1.4
30	1.2		1.1	.8	16.4	*2	7.1	2.6	12.4	3.0	2.7	1.6
31	1.0		1.0		9.0		3.1	15.7		3.4		1.6

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.51	1.15	31	4.1	27	*.2	1.3	82.7	
February	1.41	1.21	13	2.8	3	*.2	1.6	91.0	
March	1.45	1.28	23	2.1	11	.7	1.2	74.4	
April	1.47	1.36	20	1.5	30	.7	.9	55.1	
May	17.59	1.36	24	34,900	14	*.3	64.6	3,970	
June	15.20	-	11	24,000	-	*2.0	353	21,000	
July	8.30	.01	23	8,290	1	1.6	176	10,900	
August	6.10	.97	4	4,760	29	1.9	110	6,740	
September	8.80	.62	4	9,210	10	3.7	413	24,600	
October	12.50	.85	17	17,300	14	2.5	132	8,100	
November	.62	.18	1	31.8	29	1.9	3.9	233	
December	.62	.11	21	35.5	20	.8	1.9	115	
The Year	17.59	.01		34,900		*.2	105	75,961.2	71.0

*Partly estimated.

RIO GRANDE AT BOQUILLAS STATION

DESCRIPTION: Automatic water-stage recorder and cable with stand up cable car and winch, located 4 miles below mouth of Tornillo Creek and a quarter of a mile east of Boquillas, Brewster County, Texas. Zero of gage is 1,802.73 feet above mean sea level, United States Geological Survey datum.

RECORDS: Based on 36 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: From June, 1928, to December, 1935.

REMARKS: El Vado reservoir on the Rio Chama, Elephant Butte reservoir on the Rio Grande and Boquilla reservoir on the Rio Conchos, as well as many irrigatic u -rsions in the United States and Mexico, greatly modify the river flow. With all closed basins eliminated the drainage area above this station is 69,373 square miles; 39,734 being in the United States and 29,639 in Mexico.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on October 4, 1932, when the extreme gage height was 24.50 feet and the extreme flow was 95,030 second feet. An extreme gage height of 32.4 was reported by local residents to have occurred in September, 1904, discharge unknown. The lowest flow ever recorded was on September 29, 1930, when the extreme gage height was 0.35 foot and the extreme flow was 123 second feet. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	654	679	551	272	*115	*250	*1,090	849	819	5,930	2,740	647
2	596	705	6,C	267	*110	*600	*1,420	690	4,800	6,170	2,680	663
3	645	654	555	265	*105	*1,500	*1,360	1,510	7,420	6,260	2,390	671
4	679	662	508	260	104	*1,000	*2,310	1,430	9,780	4,590	1,960	679
5	797	662	484	246	106	*600	*2,080	3,010	12,200	3,930	1,760	650
6	768	566	489	225	105	*225	*1,150	2,530	13,600	3,650	1,570	672
7	725	528	487	220	105	*244	*919	2,640	5,460	3,530	1,520	698
8	787	687	529	215	104	*462	*932	1,710	4,610	3,330	1,300	651
9	714	687	540	203	101	*371	1,250	1,440	7,020	3,190	1,280	652
10	777	637	515	188	98	*371	1,400	1,380	6,010	2,700	1,160	653
11	907	573	497	177	98	*937	1,260	1,390	3,680	2,420	1,120	675
12	750	566	501	172	95	*12,100	914	1,020	3,140	2,320	1,120	713
13	865	654	498	165	95	*6,760	826	750	3,090	2,120	1,090	743
14	759	627	503	158	95	*3,720	*737	655	3,220	1,890	1,100	692
15	696	737	500	151	90	*2,840	*596	715	3,460	1,760	1,120	649
16	846	699	476	146	91	*3,020	*560	686	3,410	1,600	1,030	649
17	856	566	480	142	256	*2,200	*709	1,090	2,980	1,560	1,040	625
18	807	56.	470	136	202	*1,480	*572	934	2,450	4,770	1,030	595
19	875	618	462	131	180	*1,470	448	1,100	2,400	3,200	961	610
20	846	616	459	127	173	*960	429	2,510	1,950	1,700	897	652
21	725	664	470	124	170	*793	544	2,260	1,960	1,470	849	631
22	679	731	474	120	577	*539	436	2,380	3,010	1,690	812	612
23	696	731	405	116	*1,990	*892	550	1,990	8,020	2,640	821	660
24	705	569	348	113	*678	*1,500	2,500	1,480	8,400	2,420	807	691
25	654	615	293	112	*2,510	*950	2,410	1,590	7,360	1,770	793	713
26	654	542	278	113	*3,600	*895	2,630	989	11,300	1,420	763	662
27	645	509	269	110	*1,900	*617	840	764	14,300	1,300	719	685
28	589	507	281	110	*791	*662	641	629	11,000	1,300	705	715
29	670		275	*120	*326	*688	614	554	8,610	2,020	683	643
30	679		274	*130	*250	*1,040	618	581	6,990	3,310	677	664
31	612		269		*183		610	608		2,970		680

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.62	1.15	16	1,000	28	566	731	44,900	
February	1.51	1.09	15	882	27	495	628	34,900	
March	1.31	.59	2	664	28	268	444	27,300	
April	.62	.21	1	277	28	107	168	9,980	
May	5.50	.00	25	7,190	16	86.4	496	30,500	
June	8.80	.22	12	*19,200	1	*139	*1,660	*98,500	
July	5.30	1.98	26	4,400	23	391	1,080	66,200	
August	6.50	2.23	5	7,130	16	472	1,340	82,600	
September	9.04	2.63	3	16,500	1	733	6,090	362,000	
October	7.50	3.21	18	10,000	28	1,240	2,870	176,000	
November	4.35	2.50	1	2,810	30	647	1,220	72,400	
December	2.64	2.40	25	766	18	588	663	40,800	
The Year	9.04	.00		*19,200		86.4	1,440	1,046,080	15.1

*Partly estimated.

LOZIER CREEK STATION NEAR LANGTRY, TEXAS

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located 21 miles west of Langtry, Texas, and about one mile above the confluence with the Rio Grande.

RECORDS: Based upon previous rating curve and one area-slope measurement. 1935 records poor.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: On September 4, 1935, the gage well and recorder were washed away. Record for the period of flood was obtained from a slope-area measurement and frequent observations of stage. The peak stage of this flood was about 3 feet higher than the 1905 flood, the highest known previous flood, and the peak discharge reached a rate of run-off of 114 second feet per square mile of water shed. This creek is dry except during storms. The drainage area above this station is 1,728 square miles, all in the United States.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	*9.1	0	*54.7	0	0	*328	0	0	0
2	0	0	0	0	0	*7.4	0	0	*213	0	0	0
3	0	0	0	0	0	0	0	0	*213	0	0	0
4	0	0	0	0	0	16.2	0	0	*56,100	0	0	0
5	0	0	0	0	0	2,910	0	0	*13,200	0	0	0
6	0	0	0	0	0	*51.1	0	0	*3,330	0	0	0
7	0	0	0	0	0	0	0	0	*721	0	0	0
8	0	0	0	0	0	0	0	0	*94	0	0	0
9	0	0	0	0	0	0	0	0	*1	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	265	0	0	0	0	0	0	0
16	0	0	0	0	42.3	0	0	0	0	0	0	0
17	0	0	0	0	695	0	0	0	0	0	0	0
18	0	0	0	0	342	0	0	0	0	0	0	0
19	0	0	0	0	6.2	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	*141	0	*71.6	0	0	0	0	0	0
23	0	0	0	*73.8	571	*9.5	0	0	0	0	0	0
24	0	0	0	*1	213	0	0	0	0	0	0	0
25	0	0	0	0	80.8	0	0	*1.6	0	0	0	0
26	0	0	0	0	0	0	0	*16.9	0	0	0	0
27	0	0	0	0	147	0	0	*51.8	0	0	0	0
28	0	0	0	0	474	0	0	*456	0	0	0	0
29	0		0	0	11,200	0	0	*213	0	0	0	0
30	0		0	0	498	0	0	*400	0	0	0	0
31	0		0		*132		0	*1,300		0		0

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January							0	0	
February							0	0	
March							0	0	
April	7.91		22	*1,350		0	*7.5	*446	
May	17.60		29	25,300		0	473	29,100	
June	13.61		5	10,400		0	104	6,190	
July							0	0	
August	5.00		31	*9,700		0	*78.7	*4,840	
September	26.64		4	*197,000		0	2,470	*147,000	
October							0	0	
November							0	0	
December							0	0	
The Year	26.64			*197,000		0	*259	*187,576	109

*Partly estimated.

RIO GRANDE AT LANGTRY STATION, TEXAS

DESCRIPTION: Automatic water-stage recorder and cable with stand up cable car and winch, located at Langtry, Val Verde County, Texas. Zero of gage is 1,091.69 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 25 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: May, 1900, to October, 1914; December, 1919, to March, 1920; and January, 1924, to December, 1935.

REMARKS: El Vado reservoir on the Rio Chama, Elephant Butte reservoir on the Rio Grande, and Boquilla reservoir on the Rio Conchos, as well as many irrigation diversions in the United States and Mexico, greatly modify the river flow. With all closed basins eliminated, the drainage area above this station is 77,518 square miles; 45,779 being in the United States and 31,739 in Mexico.

PREVIOUS EXTREME FLOWS: The highest recorded gage height was on June 18, 1922, when the extreme gage height was 56.9 feet; the estimated discharge for this stage from extension of the rating curve was about 200,000 second feet. The lowest flow ever recorded was in May, 1903, with an extreme of 270 second feet. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,050	1,030	930	596	416	1,670	*2,520	753	1,010	7,960	3,510	999
2	1,110	973	912	608	393	1,440	*1,860	723	810	6,690	2,900	991
3	1,020	947	924	546	387	1,330	*2,390	888	5,620	6,330	2,690	952
4	938	1,030	1,040	539	373	1,450	*2,860	2,030	64,400	7,040	2,640	944
5	936	995	987	531	365	5,340	*2,500	2,030	42,600	5,570	2,390	982
6	995	1,020	898	516	366	1,530	*2,860	3,180	14,200	4,700	2,040	982
7	1,060	1,040	871	494	373	950	*1,920	3,220	11,600	4,240	1,960	985
8	1,060	980	842	465	364	1,350	*1,370	3,580	8,170	3,850	1,840	995
9	1,060	888	862	471	377	*1,470	*1,260	2,660	5,630	3,570	1,810	1,070
10	1,050	937	901	470	391	*872	*1,180	1,880	7,180	3,370	1,610	1,020
11	1,070	1,040	921	456	368	*872	*1,520	1,620	7,970	3,110	1,540	995
12	995	963	902	449	358	*704	*1,920	1,620	4,720	2,610	1,450	997
13	1,210	931	834	440	357	6,060	*1,700	1,760	3,850	2,620	1,410	1,020
14	1,090	890	814	424	348	13,300	*1,560	1,370	3,540	2,320	1,390	1,020
15	1,120	938	806	424	995	6,120	*1,430	1,330	3,440	2,110	1,340	1,050
16	1,100	946	777	432	437	2,870	*1,420	1,020	3,560	1,960	1,310	1,060
17	1,040	965	745	438	750	3,700	*1,280	1,010	3,980	1,880	1,340	994
18	1,080	1,060	726	430	2,290	*2,580	*1,520	912	3,490	1,760	1,260	966
19	1,180	975	726	422	418	*2,050	*1,360	1,420	3,150	3,480	1,210	964
20	1,110	916	718	415	452	*1,900	*1,920	1,150	2,790	4,330	1,200	954
21	1,160	978	712	406	437	*1,800	*2,580	2,150	2,600	2,620	1,190	959
22	1,140	959	724	540	391	*1,740	*1,500	2,530	2,460	1,800	1,150	981
23	1,080	1,030	710	1,560	1,340	*1,510	*2,350	2,710	2,480	1,660	1,140	1,010
24	1,010	1,060	690	550	1,590	*1,280	*1,530	2,700	6,380	1,980	1,140	985
25	1,050	1,130	662	434	1,630	*1,460	*2,080	2,090	8,020	3,250	1,120	999
26	1,010	996	640	420	948	*1,880	*2,980	1,610	7,180	2,600	1,110	1,040
27	1,040	897	619	413	2,830	*1,970	*3,300	1,770	8,910	1,930	1,090	1,050
28	979	899	592	436	6,840	*1,530	*1,790	1,290	12,800	1,700	1,070	1,060
29	987		591	422	25,700	*1,250	*1,140	1,030	11,700	1,550	1,050	1,010
30	941		583	415	2,770	*1,470	*980	968	9,280	1,520	1,010	1,110
31	975		569		2,020		*930	2,510		2,830		1,080

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.45	1.12	13	1,240	31	915	1,050	64,800	
February	1.35	1.06	25	1,160	10	868	979	54,400	
March	1.25	.65	4	1,070	31	562	782	48,100	
April	2.76	.43	23	2,900	22	390	505	30,100	
May	20.20	.38	29	49,300	15	347	1,840	113,000	
June	11.15	.89	14	20,000	12	620	*2,450	*146,000	
July	3.16	*1.00	4	3,590	31	*810	*1,850	*114,000	
August	3.93	.87	31	4,830	2	703	1,790	110,000	
September	46.70	.95	4	149,000	2	762	9,120	543,000	
October	5.18	1.38	19	6,970	30	1,500	3,320	204,000	
November	3.27	.80	1	3,780	30	1,000	1,600	95,000	
December	.84	.71	30	1,130	4	928	1,010	61,900	
The Year	46.70	.38		149,000		347	2,190	1,584,300	20.4

*Partly estimated.

PECOS RIVER STATION NEAR COMSTOCK, TEXAS

DESCRIPTION: Staff-gage and cable with sit down cable car and winch, located at the Pecos high bridge of the Southern Pacific Railroad 12 miles northwest of Comstock, Val Verde County, Texas, and 5-1/2 miles above the confluence with the Rio Grande. Zero of gage is 1,058.01 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 12 meter measurements during the year and one slope-area determination during 1935 flood. Staff-gage read twice daily and more frequently during large changes of stage. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: March 17, 1898, to December 3, 1898; and May, 1900, to December, 1935.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and by the reservoirs of the Carlsbad irrigation project in New Mexico. With all closed basins eliminated, the drainage area above this station is 38,283 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on September 1, 1932, when the extreme gage height was 38.25 feet and the extreme flow was 116,000 second feet. An extreme gage height of 35.75 feet was reported on April 6, 1900, discharge based upon 1935 rating curve was 107,000 second feet. These extreme discharges are based upon additional data and correct the figures published in previous Water Bulletins. The lowest flow ever recorded was on August 31, 1930, when the extreme gage height was -0.15 foot and the extreme flow was 97 second feet. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	205	216	195	154	154	1,570	321	413	422	510	257	338
2	205	213	200	154	154	14,700	321	391	400	501	586	325
3	205	213	200	154	159	2,550	321	382	1,760	487	442	316
4	205	211	200	154	184	2,420	314	358	23,700	535	417	307
5	205	216	200	252	164	17,300	310	349	37,600	501	333	320
6	205	219	200	222	159	12,200	298	341	9,290	496	355	346
7	205	219	200	490	164	1,750	287	333	2,140	463	355	342
8	205	213	195	655	159	990	276	318	8,470	445	351	346
9	211	222	195	346	154	764	266	302	2,430	431	355	342
10	205	216	205	252	157	683	298	298	964	463	355	346
11	211	213	197	216	148	640	276	298	848	427	346	355
12	211	211	195	200	145	712	244	294	788	413	351	346
13	205	213	192	195	145	613	241	287	1,140	413	342	342
14	211	216	192	182	154	2,280	234	306	1,220	409	325	338
15	211	211	184	176	1,690	1,160	258	294	1,090	391	338	351
16	211	211	179	179	541	706	250	262	912	378	346	346
17	211	211	176	184	250	570	1,010	258	856	370	329	379
18	211	211	184	184	3,180	576	315	258	794	370	329	402
19	211	205	179	490	2,140	570	459	248	747	382	346	412
20	211	200	179	360	802	510	362	244	700	374	351	412
21	211	200	182	211	432	625	284	248	678	370	351	422
22	211	200	184	187	312	782	2,050	230	656	370	346	437
23	208	200	182	325	618	672	1,580	227	629	1,290	342	432
24	205	202	176	205	2,900	545	1,300	227	625	827	338	432
25	211	205	179	211	771	492	1,690	227	607	505	346	442
26	211	200	176	184	422	436	921	224	565	556	365	432
27	216	200	169	182	484	400	700	221	525	528	346	427
28	213	200	162	174	11,200	362	555	221	520	494	342	427
29	213		159	167	19,000	325	492	224	515	463	342	427
30	211		159	159	14,200	329	468	283	520	432	342	427
31	211		159		2,590		454	488		407		427

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	.34	.30	27	216	6	205	209	12,900	
February	.36	.28	9	222	28	200	210	11,600	
March	.30	.12	10	205	31	159	185	11,400	
April	2.56	.10	19	1,540	1	154	240	14,300	
May	17.20	.06	29	34,200	12	145	2,060	126,000	
June	20.20	.50	5	45,700	30	298	2,270	135,000	
July	5.70	.30	22	5,120	14	227	565	34,700	
August	2.50	.28	30	1,490	27	221	315	19,300	
September	29.30	.76	4	84,400	1	404	3,400	202,000	
October	5.50	.68	23	4,840	17	370	484	29,800	
November	1.20	.39	2	615	1	230	355	21,100	
December	.90	.60	25	447	4	307	379	23,300	
The Year	29.30	.06		84,400		145	886	641,400	16.8

GOODENOUGH SPRING STATION NEAR COMSTOCK, TEXAS

DESCRIPTION: Automatic water-stage recorder, located 1/2 mile above confluence with Rio Grande and 11-3/4 miles southwest of Comstock, Val Verde County, Texas.

RECORDS: Based upon 9 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: February, 1929, to December, 1935.

REMARKS: The flow of this spring channel is very uniform and is not modified by diversions or storage. The surface drainage area above this station is one square mile, all in the United States.

PREVIOUS EXTREME FLOWS: The highest recorded gage height was on November 5, 1932, when the extreme gage height was 3.85 feet, discharge 742 second feet. The lowest flow ever recorded was on April 4,1930,when the extreme gage height was 0.27 foot and the extreme flow was 93 second feet. Backwater from the Rio Grande reached gage height 17.30 on September 1, 1932.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	139	141	136	138	133	203	172	175	160	166	156	148
2	140	142	137	137	133	201	170	174	160	166	155	148
3	142	143	138	136	131	197	169	174	160	166	156	149
4	145	142	137	136	131	198	169	173	*173	165	156	149
5	152	143	136	141	131	210	169	173	*176	165	154	149
6	151	144	135	156	132	214	169	172	*176	165	155	150
7	151	144	135	149	131	209	169	172	*176	164	154	150
8	149	144	136	148	130	203	169	172	*176	164	155	*150
9	148	143	135	147	130	197	168	170	*176	164	155	*149
10	147	142	136	145	130	194	168	169	*176	163	154	*149
11	145	141	136	142	130	209	167	169	*176	164	152	*149
12	145	141	135	140	130	213	167	168	*176	164	152	*149
13	143	141	135	139	130	211	168	168	*176	164	152	*149
14	144	141	133	139	131	209	192	168	*176	163	152	*149
15	144	140	134	139	131	203	197	167	*176	162	152	*149
16	145	139	134	139	131	197	191	167	*176	162	152	*148
17	145	139	133	138	134	192	186	167	*176	162	152	*148
18	145	139	134	137	138	189	182	166	*176	163	152	*149
19	145	138	135	135	140	186	180	166	174	160	152	*148
20	144	137	135	135	141	184	179	166	174	161	152	*148
21	140	137	136	134	141	182	176	165	172	160	152	151
22	144	137	141	134	141	180	174	165	169	159	150	150
23	143	137	145	134	141	179	172	165	169	158	150	150
24	144	138	145	134	142	178	170	165	169	157	149	149
25	145	136	145	133	143	176	172	165	169	157	149	148
26	145	135	145	133	143	176	172	165	168	157	150	147
27	143	135	143	132	143	174	170	165	168	157	149	148
28	143	134	141	133	143	174	170	165	167	156	148	148
29	143		140	132	201	172	169	165	167	155	147	*148
30	143		140	132	222	174	168	164	167	155	148	*148
31	141		138		201		168	164		155		*148

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	.92	.72	4	165	1	138	145	8,890	
February	.71	.60	9	146	28	133	140	7,760	
March	.76	.59	21	148	17	132	138	8,460	
April	.88	.58	6	159	30	131	138	8,250	
May	2.00	.56	29	338	15	129	142	8,750	
June	1.73	1.02	4	292	29	172	193	11,500	
July	1.40	.97	19	257	13	167	174	10,700	
August	.99	.88	1	175	31	163	168	10,300	
September	**1.93	.88	4	326	1	159	*172	*10,200	
October	1.37	.83	18	230	31	154	161	9,920	
November	.85	.72	4	156	29	146	152	9,050	
December	.75	.69	21	152	28	146	*149	9,150	
The Year	2.00	.56		338		129	156	112,910	112,910

*Partly estimated.
**Backwater from Rio Grande reached G. H. 13.86 on Sept. 5.

DEVILS RIVER STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Automatic water-stage recorder on main highway bridge, 12 miles northwest of Del Rio. High stage measurements from highway bridge, low stage measurements by wading. Zero of gage is 951.80 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 13 meter measurements, during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: May, 1900, to March, 1914, at a point .8 mile below Southern Pacific Railroad bridge; December, 1923, to September 1, 1932, at a point .2 mile above Southern Pacific Railroad bridge; Sept. 2, 1932, to December 31, 1935, at highway bridge 2 miles upstream from railroad bridge.

REMARKS: The monthly flow of this spring-fed river is not modified, but the hourly flow is modified by 2 power dams. The drainage area above this station is 4,060 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The highest recorded gage height was on September 1, 1932, when the extreme gage height was 41.00 feet at present station and the extreme flow was 597,000 second feet. This is a corrected figure from that given in previous Water Bulletins as a result of additional data. This flood flow of 147 second feet per square mile of water shed is the greatest ever recorded in North America for drainage areas of from 1 to 10 thousand square miles.** The lowest flow ever recorded was on April 20, 1933, when the extreme gage height was .35 foot and the extreme flow 25 second feet. Numerous records of extreme flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	252	260	230	236	215	919	527	492	429	921	607	586
2	249	258	232	246	197	1,260	504	492	387	896	606	550
3	252	208	201	237	191	3,160	527	550	515	875	590	560
4	249	230	239	241	233	1,180	550	515	20,700	856	617	562
5	247	259	254	295	175	10,400	492	515	33,200	848	591	552
6	196	255	247	218	184	1,180	481	550	26,100	840	578	554
7	242	248	227	177	210	2,260	562	550	8,420	820	578	555
8	263	251	224	163	196	910	504	550	60,300	813	589	568
9	251	255	222	208	178	633	414	349	20,400	792	601	547
10	252	203	184	237	193	667	418	368	8,200	810	601	560
11	264	247	209	183	210	2,460	460	398	2,940	802	622	623
12	242	239	235	158	164	4,420	504	429	1,810	769	540	586
13	186	253	211	176	176	12,800	481	440	1,450	762	574	553
14	217	250	209	177	205	69,600	527	460	1,380	754	573	578
15	248	261	215	172	206	18,200	481	482	1,350	747	597	556
16	247	259	218	187	893	3,080	562	492	1,350	726	572	547
17	260	195	176	217	1,140	1,410	677	482	1,330	718	548	559
18	249	194	187	189	1,620	963	408	515	1,280	686	539	561
19	258	245	226	358	*498	804	790	538	1,250	716	569	575
20	208	242	225	679	*686	991	585	504	1,210	684	569	564
21	239	242	561	647	*403	903	527	504	1,160	676	580	578
22	183	258	431	417	388	790	542	440	1,130	656	567	579
23	192	259	214	345	320	697	538	471	1,100	724	567	581
24	210	215	177	271	2,660	633	471	429	1,090	653	548	560
25	196	243	164	238	1,450	596	1,070	429	1,070	633	554	572
26	218	211	184	239	576	562	918	429	1,060	625	577	563
27	203	233	184	229	319	608	659	418	842	618	589	540
28	254	230	193	228	739	646	573	471	837	586	563	566
29	260		208	215	12,300	527	538	515	948	641	563	579
30	259		196	206	4,720	541	538	440	921	620	574	569
31	244		177		2,050		538	418		619		571

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.35	.98	21	464	14	135	235	14,500	
February	1.30	1.00	1	398	12	145	239	13,300	
March	2.22	.99	21	3,130	18	140	228	14,000	
April	2.10	.94	20	1,180	28	116	260	15,400	
May	6.35	.87	29	20,000	28	86	1,090	66,800	
June	6.95		5	23,000					
June	21.50	.78	14	243,000	30	*20	4,790	285,000	
July	2.35	.65	17	1,830	9	*1	558	34,300	
August	1.56	1.18	7	562	9	196	472	29,000	
September	12.60		4	81,400					
September	18.97	1.17	8	188,000	2	189	6,810	405,000	
October	1.91	.98	27	1,040	28	70	738	45,400	
November	1.81	.84	18	862	18	*0	578	34,400	
December	1.68	1.55	11	687	7	520	566	34,800	
The Year	21.50	.65		243,000		*0	1,370	991,900	244

*Partly estimated.
**See Special Flood Report 1932 by United States Section of this Commission.

CIENEGAS CREEK STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Automatic water-stage recorder, located 900 feet above confluence with Rio Grande, 3 miles northwest of Del Rio, Texas, and 1-1/2 mile above the Del Rio gaging station on the Rio Grande.

RECORDS: Based upon previous rating curve and area-slope computations at high stages. 1935 records poor. Station destroyed by flood of June 14, 1935. Record estimated to end of June.

RECORDS AVAILABLE: September 1, 1931, to June 30, 1935.

REMARKS: The peak discharge of the flood, June 14, 1935, reached a rate of run-off of 628 second feet per square mile of water shed. The flow of this spring-fed creek is modified by diversions for irrigation above this station. The drainage area above this station is 18 square miles, all in the United States.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.7	2.3	3.0	8 3.5	*5.1	*4.7						
2	2.7	2.6	2.9	8 3.5	*4.7	*5.6						
3	2.7	2.5	2.9	8 3.5	*4.3	*6.6						
4	2.7	2.6	2.9	8 3.5	*4.2	*5.6						
5	2.6	2.8	2.9	8 3.5	*4.1	*24.0						
6	2.5	2.9	2.9	8 3.5	*4.1	*7.6						
7	2.4	2.8	2.8	8 3.5	*4.1	*6.2						
8	2.4	*2.7	2.8	8 3.5	*4	*6.0						
9	2.4	*2.7	2.8	8 3.5	*4	*6.0						
10	2.4	*2.8	2.7	8 3.5	*4	*53.7						
11	2.4	*2.8	2.7	8 3.5	*4	*197.0						
12	2.4	*3.1	2.7	8 3.5	*4	*16.7						
13	2.4	*5.1	2.7	8 3.5	*4	*105.0						
14	2.4	5.6	2.8	8 3.5	*4	*2,540.0						
15	2.4	5.1	2.8	8 3.5	*4	*97.6						
16	2.4	4.2	2.9	8 3.5	*4	*26.8						
17	2.3	4.5	3.0	8 3.5	*43.3	*15.0						
18	2.3	3.8	3.1	8 3.5	*63.4	*11.1						
19	2.3	3.6	3.2	8 3.5	*4.3	8 6						
20	2.3	*3.3	3.2	8 3.5	*3.5	8 6						
21	2.3	*3.3	*245.0	8 3.5	*3.2	8 6						
22	2.3	*3.2	*1,050	8 3.5	*3.5	8 6						
23	2.4	*3.2	*30.7	8 3.5	*3.3	8 6						
24	2.4	*3.1	*5.5	8 3.7	*3.5	8 6						
25	2.4	*3.1	*3.8	*4.0	*3.5	8 6						
26	2.5	*3.0	*3.8	*4.1	*3.3	8 6						
27	2.5	*3.0	*3.8	*4.0	*3.3	8 6						
28	2.4	*3.0	8 3.8	*4.1	*4.6	8 6						
29	2.3		8 3.8	*4.7	*4.8	8 6						
30	2.3		8 3.8	*5.1	*4.3	8 6						
31	2.3		8 3.8		*4.7							

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	10.66	10.60	1	2.7	26	2.2	2.4	149	
February	10.99	10.60	14	7.8	3	2.2	3.3	184	
March	22.20	10.66	22	*3,940	11	2.7	*45.7	*2,810	
April	-	-	30	*5.1	1-23	8 3.5	8 3.7	8 219	
May	12.70	10.30	18	*512	24	*3.1	*7.2	*440	
June	*24.40	*10.42	14	*11,300	1	*4.7	*107	*6,360	
The Period	*24.40			*11,300		2.2	28.3	*10,162	565

8 Estimated.
*Partly estimated.

RIO GRANDE AT DEL RIO STATION

DESCRIPTION: Automatic water-stage recorder, located 900 feet upstream from international highway bridge at Del Rio, Val Verde County, Texas. High stage measurements from highway bridge, low stage measurements from boat on cable at gage well. Zero of gage is 864.80 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 25 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: December, 1923, to December, 1935. Records are also available for station 11 miles upstream from May, 1900, to April, 1915; and for station 7-1/2 miles upstream at McKee's Switch from December, 1919, to March, 1920. Several springs but no important tributaries enter the river between the various station sites.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla reservoir in Mexico. With all closed basins eliminated, the drainage area above this station is 123,318 square miles; 88,539 being in the United States and 34,779 in Mexico.

PREVIOUS EXTREME FLOWS: The highest recorded gage height was on September 1, 1932, when the extreme gage height was 34.5 feet, discharge 605,000 second feet. This is the greatest rate of discharge ever recorded at any time on the Rio Grande. (See Special Flood Report 1932 by American Section of this Commission). The lowest flow ever recorded was in May, 1930, when the extreme gage height was 1.42 foot and the extreme flow 938 second feet. Numerous records of previous flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,810	1,780	1,690	1,250	1,140	5,760	*5,520	2,470	3,580	*11,000	4,500	2,340
2	1,810	1,820	1,660	1,320	1,140	10,300	*5,910	2,310	2,330	*9,700	4,940	2,320
3	1,840	1,760	1,650	1,370	1,080	11,800	*5,280	2,250	2,680	*8,490	4,530	2,290
4	1,770	1,620	1,590	1,270	1,120	5,500	*5,820	2,300	23,800	*8,200	4,130	2,310
5	1,720	1,760	1,740	3,390	1,140	18,400	*4,870	3,340	186,000	*8,650	3,920	2,340
6	1,720	1,780	1,720	1,380	1,030	33,400	*5,860	3,280	83,600	*7,190	3,650	2,370
7	1,690	1,800	1,640	1,270	1,090	8,620	*4,290	4,860	27,300	*6,240	3,350	2,350
8	1,780	1,810	1,590	1,340	1,080	4,550	*5,280	4,460	85,200	*5,770	3,260	2,340
9	1,820	1,780	1,600	1,530	1,060	3,750	*2,690	4,760	32,700	*5,460	3,160	2,320
10	1,810	1,720	1,610	1,560	1,040	3,790	*2,510	3,570	20,800	*5,260	3,110	2,390
11	1,800	1,610	1,550	1,290	1,070	8,140	*2,510	3,060	14,700	*5,100	2,910	2,530
12	1,860	1,810	1,640	1,170	1,070	7,150	*2,870	2,800	11,100	*4,820	2,800	2,370
13	1,750	1,760	1,610	1,150	976	25,200	*5,210	2,690	8,430	*4,510	2,740	2,310
14	1,890	1,740	1,550	1,140	1,050	91,000	*5,060	2,870	7,730	*4,050	2,710	2,310
15	1,860	1,690	1,520	1,100	1,090	43,400	*2,870	2,610	7,230	*4,000	2,720	2,280
16	1,870	1,680	1,520	1,130	4,400	11,700	*2,820	2,560	6,880	*5,880	2,630	2,320
17	1,880	1,700	1,470	1,180	6,320	7,580	*2,910	2,300	6,830	*5,620	2,600	2,350
18	1,890	1,620	1,390	1,190	12,300	7,700	*5,280	2,290	6,860	*5,620	2,600	2,310
19	1,840	1,770	1,460	1,330	6,020	5,840	*5,410	2,280	6,360	*5,490	2,570	2,280
20	1,920	1,740	1,470	1,720	3,600	5,000	*5,000	2,600	5,870	5,530	2,510	2,300
21	1,860	1,680	3,710	2,120	2,330	4,340	*5,390	2,390	5,510	5,310	2,490	2,300
22	1,840	1,710	3,920	1,570	1,910	4,220	*5,980	3,210	5,190	*5,980	*2,480	2,310
23	1,810	1,710	1,580	1,510	1,720	4,170	*4,660	3,610	5,030	*5,400	*2,480	2,290
24	1,800	1,770	1,470	2,290	5,820	3,640	*4,970	3,800	5,300	4,350	*2,480	2,340
25	1,760	1,740	1,380	1,540	6,240	3,100	*4,670	3,730	*10,300	4,080	*2,490	2,340
26	1,760	1,740	1,390	1,270	3,350	3,150	*5,260	3,120	*10,700	4,660	*2,450	2,340
27	1,800	1,720	1,550	1,250	2,250	3,770	*5,130	2,700	*10,100	*4,090	2,390	2,330
28	1,780	1,640	1,320	1,200	9,720	3,820	*5,470	2,870	*12,000	*5,490	2,380	2,360
29	1,790		1,290	1,180	38,400	3,120	*5,700	2,550	*14,500	3,370	2,360	2,380
30	1,810		1,310	1,150	42,100	2,770	*2,890	2,300	*13,500	3,140	2,330	2,350
31	1,790		1,270		11,400		*2,630	3,190		3,090		2,420

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.94	1.52	20	2,050	5	1,620	1,810	111,000	
February	1.82	1.42	2	1,920	28	1,530	1,730	96,200	
March	8.61	1.06	21	22,600	31	1,220	1,660	102,000	
April	3.08	.80	3	9,720	30	1,010	1,430	85,200	
May	8.82		18	25,400					
May	15.13	.12	30	33,700	10	954	5,610	345,000	
June	13.88		6	45,100					
June	23.63	2.21	14	195,000	30	2,420	11,800	704,000	
July	3.98	2.33	26	6,300	11	2,490	3,630	223,000	
August	3.69	2.05	7	5,470	19	2,170	3,000	185,000	
September	24.73	2.01	3	224,000	2	2,120	21,400	1,274,000	
September	21.67		8	151,000					
October	*2.73	2.34	1	*12,000	31	3,060	*5,200	*320,000	
November	3.38	*1.82	1	5,080	18	*2,260	2,980	177,000	
December	2.03	1.79	11	2,620	15	2,260	2,340	144,000	
The Year	24.73	.72		224,000		954	5,200	3,766,400	30.5

*Partly estimated.

SAN FELIPE CREEK STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Automatic water-stage recorder at Silos farm road bridge 1-3/4 mile south of Del Rio, Texas, 2 miles above the confluence with the Rio Grande, and 4 miles below the Del Rio gaging station on the Rio Grande. Zero of gage is 875.05 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 7 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: September 1, 1931, to December 31, 1935.

REMARKS: The flow of this spring fed creek is greatly modified by irrigation and municipal diversions above this station. The drainage area above this station is 62 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The highest previous recorded flow was on September 3, 1934, when a flow of 11,300 second feet was reached with a gage of 14.47 feet. The lowest flow was 2.2 second feet on December 19, 1934. Backwater from the Rio Grande reached a gage height of 15.05 feet on September 1, 1932.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.7	6.8	13.9	12.9	16.5	43.7	δ 72.6	69.9	52.3	80.3	93.5	73.1
2	15.2	6.8	13.5	7.1	24.3	156.0	δ 72.7	70.6	49.3	78.1	93.6	72.1
3	22.2	7.0	13.9	7.4	15.4	122.0	δ 72.7	68.6	60.1	78.9	94.8	71.1
4	22.2	7.3	13.1	8.0	59.3	60.1	δ 72.8	73.1	641.0	78.7	94.9	72.2
5	32.3	7.3	9.1	13.4	16.6	234.0	δ 72.9	74.1	3,870.0	78.6	94.9	73.3
6	30.3	7.6	4.6	9.4	15.8	59.8	δ 73.0	70.0	717.0	79.5	96.2	72.4
7	25.0	7.6	4.6	9.8	15.5	58.0	δ 73.0	64.4	93.0	81.6	94.0	73.5
8	25.0	6.9	4.4	10.5	15.2	56.3	δ 73.1	62.5	*2,110.0	84.8	90.6	72.5
9	25.0	5.8	4.0	10.5	14.8	52.6	δ 73.2	63.1	*336.0	86.0	90.7	73.6
10	22.3	6.1	3.8	10.2	15.4	263.0	δ 73.3	68.5	*86.9	86.1	87.4	71.7
11	22.3	6.1	3.7	5.0	15.5	*1,580	δ 73.3	62.8	80.3	86.1	88.6	100.0
12	19.3	8.1	3.5	5.0	15.6	δ 141	δ 73.4	63.6	73.9	86.2	84.2	94.0
13	16.7	9.5	4.1	5.1	15.7	83,660	δ 210.0	65.2	76.9	84.0	84.3	91.7
14	15.7	11.5	3.9	6.0	16.3	816,200	δ 80.5	65.0	77.7	83.0	84.3	88.2
15	13.9	11.0	4.3	6.0	47.6	δ 252	δ 76.5	64.9	76.6	82.0	86.6	88.1
16	13.4	7.8	6.0	7.2	48.2	δ 90.0	δ 73.6	64.7	73.4	82.0	80.2	89.2
17	14.2	7.9	8.0	7.8	48.1	δ 71.6	70.0	63.5	74.1	83.2	73.1	90.2
18	14.2	7.9	6.8	5.4	*223.0	δ 71.7	70.9	66.2	74.0	88.9	76.2	89.1
19	13.4	7.9	4.4	6.7	*59.6	δ 71.7	219.0	66.0	73.8	89.0	74.1	89.0
20	13.4	8.6	5.5	7.7	*53.9	δ 71.8	80.9	65.9	72.7	90.2	70.1	88.9
21	13.2	8.6	372.0	9.2	*56.1	δ 71.9	77.0	64.8	72.5	90.2	69.3	88.8
22	12.4	9.2	84.3	9.3	*54.8	δ 71.9	76.0	65.6	73.3	90.3	70.3	87.5
23	12.4	9.7	21.6	9.8	*53.4	δ 72.0	77.1	65.4	81.5	98.7	70.4	84.1
24	9.6	10.8	21.6	8.9	*52.1	δ 72.1	79.1	64.4	94.9	101.0	70.4	80.8
25	7.2	11.2	24.7	18.4	*51.5	δ 72.2	188.0	58.9	92.5	99.9	71.5	81.7
26	6.9	11.7	24.7	11.8	33.0	δ 72.2	80.2	56.0	90.0	98.9	70.6	82.7
27	6.9	12.5	26.0	13.0	33.7	δ 72.3	74.5	54.0	90.9	97.8	70.7	87.0
28	6.1	16.2	26.7	14.1	43.8	δ 72.4	72.4	53.8	90.8	97.9	69.8	90.3
29	6.1		16.8	14.6	380.0	δ 72.5	70.4	54.7	90.6	96.8	71.8	89.1
30	6.0		16.8	15.1	33.7	δ 72.5	72.1	54.5	86.1	96.8	77.1	89.0
31	6.5		17.9		44.0		70.1	53.3		94.5		88.9

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.02	.42	5	35.4	1	5.3	15.2	934	
February	1.50	.46	28	79.8	9	5.8	8.8	487	
March	11.90	.33	21	6,100	12	3.4	25.4	1,560	
April	1.50	.33	25	81.7	11	3.9	9.5	566	
May	7.17	.57	29	2,000	15	13.7	47.5	2,920	
June	25.20	1.05	14	45,000	1	43.3	*805	*47,900	
July	4.76	1.28	25	843	30	67.4	*87	*5,350	
August	1.46	1.13	4	84.2	29	49.1	63.9	3,930	
September	11.42	1.11	5	5,490	2	46.5	321	19,100	
October	1.78	1.44	25	112	31	73.7	88.1	5,410	
November	1.65	1.34	7	97.5	21	65.4	81.5	4,850	
December	2.13	1.29	11	166	18	61.5	83.4	5,130	
The Year	25.20	.33		45,000		3.4	136	98,137	1,580

δEstimated.
*Partly estimated.

SYCAMORE CREEK STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Automatic water-stage recorder 2 miles above the confluence with the Rio Grande, 11 miles southeast of Del Rio, Texas, and just above the highway between Del Rio and Eagle Pass, Texas. Permanent station control. High stage measurements by area-slope, low stage measurements by wading with meter.

RECORDS: Based upon one meter measurement and one area-slope measurement. Computations by stable rating curve. 1935 records fair. Station was destroyed by flood of June 14, 1935.

RECORDS AVAILABLE: January, 1932, to May 31, 1935.

REMARKS: The flow of this spring-fed creek is modified by small irrigation diversions above the station. The drainage area above this station is 524 square miles, all in the United States. The flood of June 14, 1935, reached a rate of run-off of 410 second feet per square mile of water shed. This is the second highest known recorded flood in North America for water sheds of 400 to 800 square miles.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on September 2, 1932, when the extreme gage height was 17.10 feet and the extreme flow was 44,800 second feet. This creek is sometimes dry.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	1.8	2.8							
2	0	0	0	1.6	2.3							
3	0	0	0	1.6	2.3							
4	0	0	0	3.5	6.0							
5	0	0	0	3.1	4.8							
6	0	0	0	2.1	3.1							
7	0	0	0	2.1	2.5							
8	0	0	0	2.3	2.3							
9	0	0	0	2.1	1.8							
10	0	0	0	2.1	1.6							
11	0	0	0	2.1	1.2							
12	0	0	0	2.1	1.1							
13	0	0	0	1.8	.9							
14	0	0	0	1.8	.9							
15	0	0	0	1.8	16.8							
16	0	0	0	1.8	98.3							
17	0	0	0	1.6	274.0							
18	0	0	0	1.6	1,620							
19	0	0	0	28.4	375							
20	0	0	0	7.3	*54							
21	0	0	14.1	4.0	8 11							
22	0	0	59.7	3.7	8 5							
23	0	0	16.4	2.6	8 5							
24	0	0	7.3	2.3	8 5							
25	0	0	3.4	7.8	8 5							
26	0	0	2.3	5.6	8 5							
27	0	0	2.1	3.7	8 5							
28	0	0	2.1	3.7	8 5							
29	0		2.1	3.1	8 5							
30	0		1.8	3.1	8 5							
31	0		1.8		8 5							

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January							0	0	
February							0	0	
March	1.85		21	240		0	3.6	220	
April	1.62	.38	19	172	18	1.6	3.7	223	
May	4.64**	.34	18	2,250	15	.9	*81.7	*5,020	
June	30.20#	-	14	215,000		-	-	-	
The Period							*18.2	*5,463	*10.4

*Partly estimated.
#Peak discharge calculated.
**Recorder chart lost from May 21 to June 14 when unprecedented flood destroyed station.
8 Estimated.

PINTO CREEK STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Automatic water-stage recorder, cable with sit down cable car, and concrete control dam, 500 feet above Del Rio-Eagle Pass highway and 5-1/2 miles above confluence with Rio Grande.

RECORDS: Based upon 4 meter measurements and permanent rating curve. 1935 records good.

RECORDS AVAILABLE: November, 1928, to December, 1935.

REMARKS: The flow of this spring-fed creek is modified by small irrigation diversions above the station. The drainage area above this station is 229 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on August 31, 1932, when the extreme gage height was 21.08 feet and the extreme flow 54,650 second feet. This flood flow of 239 second feet per square mile of water shed is the seventh largest ever recorded in North America for drainage areas of from 200 to 300 square miles. The Creek is often dry.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.	0	0	1.8	3.4	15.5	25.0	20.5	16.5	25.0	25.0	26.0
2	0	0	0	1.6	3.0	307.0	24.0	19.5	16.5	26.0	25.0	26.0
3	0	0	0	1.4	2.7	200.0	24.0	20.5	3,660.0	26.0	25.0	25.0
4	0	0	0	1.5	123.0	54.0	25.0	20.5	101.0	27.5	24.0	26.0
5	0	0	0	288.0	18.5	1,370.0	25.0	20.5	61.2	27.5	24.0	27.5
6	0	0	0	3.4	8.9	78	25.0	20.5	122	29.0	24	27.5
7	0	0	0	.3.4	4.2	36	25.0	20.5	72	29.0	24	26.0
8	0	0	0	3.7	3.1	58	21.5	20.5	292	30.0	24	26.0
9	0	0	0	2.8	2.6	26	20.5	19.5	95	30.0	25	25.0
10	0	0	0	2.5	2.5	50	20.5	18.5	58	30.0	26	25.0
11	0	.3	0	2.0	2.2	2,800	19.5	17.5	33.5	31.5	25	31.5
12	0	.5	0	1.6	2.0	615	19.5	17.5	29.0	31.5	25	29.0
13	0	.5	0	1.2	1.9	434	19.5	16.5	29.0	31.5	25	26.0
14	0	.6	0	.6	1.8	7,810	24.0	16.5	27.5	33.5	25	26.0
15	0	.6	0	.6	32.3	725	21.5	17.5	27.5	33.5	26	26.0
16	0	.6	0	.6	715.0	95	20.5	17.5	26.0	33.5	26	25.0
17	0	.5	0	.6	1,420.0	58	30.0	14.0	26.0	33.5	26	25.0
18	0	.5	0	.6	6,730.0	48	25.0	10.0	26.0	48.0	25	26.0
19	0	.5	0	1,040.0	122.0	41	29.0	11.5	26.0	45.0	26	29.0
20	0	.4	0	48.0	33.5	36	24.0	11.0	25.0	36.0	26	29.0
21	0	.4	0	15.5	20.5	33.5	23.0	11.0	25.0	35.0	26	29.0
22	0	.4	1,190	7.2	14.5	31.5	21.5	11.0	25.0	33.5	26	29.0
23	0	.4	38	4.6	91.0	30.5	25.0	11.0	27.5	35.0	24	29.0
24	0	.3	13	3.7	22.5	29.0	47.1	11.0	31.5	31.5	24	29.0
25	0	.2	5.8	215.0	14.0	27.5	311.0	11.0	29	30.0	25	30.0
26	0	.2	3.8	116.0	11.5	26	41.0	11.5	26	29.0	26.0	30.0
27	0	.1	3.0	19.4	10.0	26	25.0	12.5	25	29.0	26.0	30.0
28	0	.0	2.4	9.8	781.0	25	23.0	16.5	25	29.0	27.5	30.0
29	0		2.1	5.8	96.0	25	21.5	16.5	24	27.5	26.0	*29.0
30	0		2.0	4.0	29.0	25	20.5	16.5	25	26.0	26.0	*27.5
31	0		2.0		21.5		20.5	16.5		25.0		*27.5

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January							0	0	
February	2.44		15	.6		0	.25	13.9	
March	7.54		22	5,000		0	40.7	2,500	
April	7.18		19	4,000		.6	60.4	3,600	
May	11.40	3.07	18	15,200	15	1.6	334	20,500	
June	11.15	3.53	14	14,600	2	14	505	30,000	
July	5.47	3.58	25	1,080	13	18.5	33.5	2,060	
August	3.60	3.47	1	20.5	18	10	16	985	
September	9.78	3.56	3	10,600	1	16.5	168	9,980	
October	4.20	3.63	18	180	1	24	31.2	1,920	
November	3.67	3.63	28	29	7	24	25.2	1,500	
December	3.71	3.63	11	35	3	24	27.5	1,690	
The Year	11.40			15,200		0	103	74,746.9	326

*Partly estimated.

RIO SAN DIEGO STATION AT JIMENEZ, COAHUILA

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car. Masonry Cipoletti weir control for measuring discharges up to 617 second feet. The station is located 4.4 miles west of Jimenez, Coahuila, and five miles above the confluence with the Rio Grande.

RECORDS: Based upon 50 meter measurements. Computations by shifting channel methods. Records for 1935 good.

RECORDS AVAILABLE: 1924 to 1935.

REMARKS: This station was constructed by the Mexican Section of the Commission and completed in November, 1932. From 1924 to 1932 there was a staff-gage at Paso del Salto, 3.1 miles upstream from the present station. Readings were made by agents of the Department of Agriculture, Monterrey, N. L. There is another gaging station on Rio San Diego at "Cabeceras", 31 miles upstream from the present station which is operated by the Mexican National Irrigation Commission. The flow of this spring-fed stream is modified by small storage reservoirs at San Miguel and Centenario on the National Irrigation System No. 6 at San Carlos, Coahuila, and by irrigation of Dolores Hacienda just above this station. One-fourth mile downstream from this gaging station water is diverted for the Jimenez Community. The drainage area above this station is 840 square miles, entirely in Mexico.

PREVIOUS EXTREME FLOWS: From reports by local inhabitants, the water level in 1905 reached a height of 20.67 feet on the present gage scale, the discharge being unknown. The stream never runs dry. The lowest flow recorded was 15.9 second feet on June 20, 1934.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	51.2	51.2	37.8	37.8	31.4	646	342	342	327	590	403	327
2	51.2	51.2	37.8	37.8	31.4	664	342	342	295	572	403	327
3	51.2	51.2	37.8	37.8	*600	978	327	342	2,390	572	388	311
4	51.2	51.2	37.8	*5,010	*212	724	327	342	1,450	572	357	311
5	58.6	51.2	37.8	*2,000	44.1	879	327	342	3,250	572	342	295
6	58.6	51.2	37.8	58.6	44.1	664	327	342	1,690	519	388	295
7	58.6	51.2	37.8	58.6	44.1	646	327	342	1,140	371	403	279
8	58.6	51.2	44.1	58.6	44.1	554	342	342	5,690	311	420	311
9	58.6	44.1	44.1	58.6	44.1	519	342	327	1,170	342	434	311
10	58.6	37.8	44.1	58.6	44.1	519	342	311	953	434	434	295
11	58.6	37.8	37.8	58.6	44.1	1,480	342	311	858	501	434	279
12	58.6	44.1	37.8	58.6	44.1	953	342	295	812	501	434	279
13	58.6	44.1	37.8	58.6	44.1	6,890	388	279	812	484	420	279
14	58.6	44.1	37.8	58.6	*44.1	4,940	452	279	788	470	388	279
15	58.6	44.1	37.8	58.6	*353	1,030	470	279	766	484	388	279
16	58.6	44.1	37.8	58.6	*22,600	904	388	262	745	501	403	295
17	58.6	44.1	37.8	58.6	*14,800	833	342	262	724	484	388	262
18	58.6	44.1	37.8	58.6	*3,530	788	342	262	703	470	388	262
19	58.6	44.1	37.8	58.6	*706	703	342	247	703	519	388	262
20	58.6	44.1	37.8	58.6	*353	703	342	247	685	484	388	262
21	58.6	44.1	37.8	58.6	*353	664	342	262	664	452	388	279
22	58.6	44.1	66.7	58.6	*353	625	342	279	664	434	371	279
23	58.6	44.1	51.2	58.6	*353	607	342	279	685	484	371	279
24	58.6	44.1	51.2	58.6	*353	572	342	279	646	434	388	279
25	51.2	44.1	51.2	58.6	*353	537	342	279	685	434	357	295
26	44.1	44.1	51.2	51.2	*353	537	342	279	685	434	357	311
27	44.1	44.1	44.1	37.8	*3,530	537	342	295	664	434	357	311
28	44.1	44.1	37.8	31.4	*8,120	501	342	295	646	434	357	295
29	44.1		37.8	31.4	*1,770	420	342	279	625	434	342	295
30	44.1		37.8	31.4	*706	357	342	279	607	434	327	279
31	37.8		37.8		*664		342	295		403		279

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	2.03	1.90		58.6	31	31.4	54.4	3,340	
February	2.03	1.94	5	58.6		37.8	45.7	2,540	
March	2.76	1.94	22	342		37.8	41.3	2,540	
April	8.14	1.90	5	9,610		31.4	283	16,800	
May	& 11.19	1.90	16	25,400		31.4	1,950	120,000	
June	12.11	2.76	14	32,100	30	342	1,050	62,200	
July	3.02	2.72	15	470		327	350	21,500	
August	2.79	2.56	6	357		247	297	18,200	
September	9.78	2.66	8	16,800		295	1,080	64,500	
October	3.28	2.69	1	607		311	470	28,900	
November	2.95	2.72		434		327	387	23,000	
December	2.72	2.56		327	17	247	290	17,800	
The Year	12.11	1.90		32,100		31.4	527	381,320	454

*Partly estimated.
&Estimated.

LAS MORAS CREEK STATION NEAR EAGLE PASS, TEXAS

DESCRIPTION: Automatic water-stage recorder 0.6 mile above the confluence with the Rio Grande, 25 miles northwesterly from Eagle Pass, 0.1 mile above the main Eagle Pass-Del Rio highway, at the Las Moras Creek siphon on the Maverick County Canal. Zero of gage is 783.76 feet above mean sea level, United States Coast and Geodetic Survey datum. The Maverick County Canal siphon forms a fixed control for this station.

RECORDS: Based upon two current meter measurements and dependable station rating curve. 1935 records good.

RECORDS AVAILABLE: January, 1932, to December, 1935.

REMARKS: The flow of this spring-fed creek is modified by small irrigation diversions above the station. The drainage area above this station is 166 square miles, all in the United States. Occasionally waste water from Maverick County Canal is passed into this creek; but it is not included in the discharge records.

PREVIOUS EXTREME FLOWS: The highest recorded gage height was on August 31, 1932, when the extreme gage height was 7.07 feet with a discharge of 8,860 second feet. The creek is sometimes dry. Rio Grande back water at this station reached a gage height of 13.2 feet on September 2, 1932‡ Large floods are known to have occurred in this creek on May 28, 1880; October 1, 1881; and June 14, 1889.‡‡

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*.5	*.5	*.5	*1.0	*1.0	34.1	41.5	27.4	24	32.9	*36.6	30.2
2	*.5	*.5	*.5	*1.0	*1.0	31.1	39.0	26.8	24	32.0	*36.6	30.2
3	*.5	*.5	*.5	*1.0	*1.0	30.3	36.6	26.1	675	32.0	*36.6	30.2
4	*.5	*.5	*.5	10.2	2.1	31.1	35.0	26.1	165	32.0	*36.6	30.2
5	*.5	*.5	*.5	549.0	*1.0	111.0	33.3	26.1	185	32.0	*36.6	*30.2
6	*.5	*.5	*.5	56.5	*1	78.5	32.6	25.4	47.4	31.1	*36.6	*30.2
7	*.5	*.5	*.5	31.1	*1	385	31.8	25.4	39.8	31.1	*36.6	*30.2
8	*.5	*.5	*.5	9.8	*1	385	31.1	24.7	47.4	*30.2	*36.6	*30.2
9	*.5	*.5	*.5	5.9	*1	135	30.3	24.0	64.5	*30.2	*36.6	*29.3
10	*.5	*.5	*.5	3.9	*1	85.5	29.6	23.4	71.5	*30.2	*36.6	*29.3
11	*.5	*.5	*.5	4.5	*1	843	29.6	23.4	44.1	*30.2	*36.6	*29.3
12	*.5	*.5	*1	3.3	*1	1,540	28.9	24.0	39.0	*30.2	*35.6	*29.3
13	*.5	*.5	*1	1.9	*1	511	28.2	24.0	35.8	*30.2	*33.8	*29.3
14	*.5	*.5	*1	1.2	*1	326	27.4	24.0	33.3	*30.2	*32.9	*29.3
15	*.5	*.5	*1	1	*1	1,130	27.4	24.7	32.6	*30.2	*32.9	*28.4
16	*.5	*.5	*1	*1	644	284	27.4	24.7	31.8	30.2	*32.9	*28.4
17	*.5	*.5	*1	*1	1,750	116	27.4	24.7	31.1	30.2	*32.9	*28.4
18	*.5	*.5	*1	*1	1,050	58.3	27.4	24.0	31.1	31.1	*32	*28.4
19	*.5	*.5	*1	*1	766	51.0	103.0	24.0	31.1	*35.6	*32	*28.4
20	*.5	*.5	*1	*1	121	46.6	50.2	23.4	31.1	*35.6	*32	*28.4
21	*.5	*.5	*1	*1	41.5	42.4	41.5	23.4	31.1	*35.6	*32	*27.5
22	*.5	*.5	*1	*1	28.9	39.8	37.4	22.1	31.1	35.6	*32.0	*27.5
23	*.5	*.5	*1	*1	26.1	38.2	35.0	22.1	32.6	*34.7	*31.1	*27.5
24	*.5	*.5	*1	*1	*27.4	37.4	101.0	22.7	32.6	*34.7	*31.1	*27.5
25	*.5	*.5	*1	*1	*27.4	36.6	305.0	22.1	31.8	*34.7	*31.1	*27.5
26	*.5	*.5	*1	*1	*27.4	35.8	41.5	22.7	31.8	*35.6	*31.1	*27.5
27	*.5	*.5	*1	*1	*27.4	46.6	37.4	22.7	31.1	*36.6	*31.1	*27.5
28	*.5	*.5	*1	*1	27.4	57.4	32.6	22.7	31.1	*36.6	*30.2	*26.7
29	*.5		*1	*1	30.3	48.3	29.6	22.7	31.1	*36.6	*30.2	*26.7
30	*.5		*1	*1	35.8	44.1	28.9	22.7	31.1	*36.6	*30.2	*26.7
31	*.5		*1		39.0		28.2	23.4		*36.6		*26.7

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	**1.68	.87	5	41	21	*.5	*.5	*30.7	
February	**1.60	.85	11	34.5	25	*.5	*.5	*27.8	
March	**1.62	.84	24	36.6	8	*.5	*.8	*50.6	
April	4.66	.86	5	3,990	4	*1	23.2	1,380	
May	5.14	.87	16	4,840	2	*1	151	9,290	
June	3.22	1.53	11	1,840	3	29.6	221	13,200	
July	3.27	1.50	25	1,910	16	27.4	46.3	2,850	
August	**1.66	1.42	1	39.8	22	22.1	24.1	1,480	
September	4.37	1.44	3	3,510	1	23.4	66.7	3,970	
October	**1.90	*1.53	20	71	8	*30.2	32.9	*2,030	
November	**1.85	1.53	16	64.6	30	30.2	*33.7	*2,000	
December	**1.88	δ 1.49	13	68.5	31	*26.7	28.6	*1,760	
The Year	5.14	.84		4,840		.5	52.6	38,069.1	229

*Partly estimated.
δEstimated
**High gage height caused by spill from Maverick County Canal. Canal spill eliminated from record.
‡See Special Flood Report 1932 by United States Section of this Commission.
‡‡See U. S. G. S. Water Supply Paper No. 50, p. 344.

RIO SAN RODRIGO STATION NEAR EL MORAL, COAHUILA

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located 11.2 miles west of the town of El Moral, Coahuila, 19.9 miles northward from Piedras Negras and 11.8 miles above the confluence with the Rio Grande.

RECORDS: Based upon 56 meter measurements. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: 1922 to 1935.

REMARKS: From 1922 to 1932 there were made daily 3 staff-gage readings at this station by agents of the Mexican Department of Agriculture at Monterrey, N. L. This station was constructed by the Mexican Section of the Commission and completed in October, 1932. Meter measurements began August 4, 1932. The automatic water-stage record began November 8, the same year. The flow of this spring-fed river is modified by irrigation diversions at El Remolino, 27.3 miles upstream. At Casa Roja, 7.5 miles downstream, some water is diverted for irrigation. The drainage area above this station is 750 square miles, entirely in Mexico.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on September 7, 1932, when the extreme gage height was 16.08 feet and the extreme flow 81,200 second feet. The lowest recorded flow since January, 1932, occurred July 21, 1934, when discharge was 1.4 second feet.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	33.2	22.2	19.1	9.89	3.88	487	176	145	89.7	185	176	127
2	33.2	19.1	19.1	9.89	3.88	434	175	136	89.7	176	175	119
3	29.3	19.1	19.1	9.89	4.94	523	176	127	89.7	175	176	119
4	23.4	19.1	19.1	9.89	9.89	657	164	127	427	176	164	111
5	22.2	19.1	19.1	45.20	13.80	523	155	127	1,700	175	164	111
6	22.2	19.1	19.1	9.89	8.48	434	155	119	675	176	175	112
7	22.2	22.2	16.2	8.48	7.06	388	145	119	269	175	164	111
8	22.2	22.2	16.2	8.48	7.06	344	136	119	1,180	164	164	111
9	22.2	22.2	19.1	8.48	6	305	136	119	318	176	164	120
10	19.1	25.4	19.1	8.48	6	305	127	111	406	175	155	136
11	19.1	22.2	16.2	7.06	6	724	127	111	452	176	145	164
12	19.1	22.2	13.8	7.06	6	1,920	127	112	388	175	145	127
13	19.1	22.2	13.8	7.06	6	2,370	119	111	343	176	145	119
14	22.2	22.2	13.8	7.06	1,150	1,840	119	111	305	175	145	119
15	22.2	22.2	13.8	7.06	2,960	1,310	119	112	281	176	136	120
16	22.2	19.1	16.2	7.06	3,110	1,030	119	111	257	175	136	119
17	22.2	16.2	13.8	7.06	5,400	844	119	111	257	176	136	119
18	19.1	16.2	16.2	7.06	6,600	682	119	112	247	185	136	120
19	19.1	16.2	16.2	7.06	293	579	127	111	221	185	136	119
20	19.1	19.1	13.8	7.06	154	487	119	111	209	185	136	119
21	19.1	19.1	11.7	6	103	434	111	104	197	175	136	120
22	16.2	16.2	11.6	6	83.70	388	111	96.8	197	176	136	119
23	16.2	16.2	11.7	6	77.70	344	111	96.8	221	175	127	119
24	19.1	16.2	11.6	6	61.10	305	136	96.8	221	176	136	120
25	19.1	16.2	11.7	4.94	56.50	269	175	96.8	209	175	136	119
26	19.1	16.2	11.6	3.88	51.90	237	145	96.8	197	176	136	127
27	19.1	16.2	11.7	4.94	51.90	209	127	96.8	197	175	127	119
28	19.1	16.2	11.6	3.88	56.50	222	145	96.8	185	176	127	120
29	19.1		11.7	3.88	77.70	185	176	89.7	185	175	127	112
30	19.1		11.6	3.88	477	185	164	89.7	185	176	127	104
31	19.1		11.7		480		155	89.7		175		104

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.38	1.21	2	33.2	21	16.2	21.3	1,310	
February	1.31	1.21	10	25.4	25	16.2	19.3	1,070	
March	1.28	1.12	3	22.2	31	9.89	14.9	914	
April	2.46	.92	3	305	30	3.88	8.28	493	
May	12.47	.92	15	45,200	2	3.88	688	42,300	
June	6.10	2.10	12	5,010	30	176	632	37,600	
July	2.36	1.87	25	269		111	139	8,560	
August	2.00	1.77	1	145		89.7	110	6,770	
September	6.33	1.74	5	5,650	3	83.3	340	20,200	
October	2.20	2.07	18	209	8	164	176	10,800	
November	2.10	1.94		176		127	146	8,700	
December	2.10	1.84	11	176		104	120	7,350	
The Year	12.47	.92		45,200		3.88	202	146,067	195

RIO GRANDE AT EAGLE PASS STATION

DESCRIPTION: Automatic water-stage recorder and cable with stand up cable car and winch, located 1/2 mile above the international highway bridge at Eagle Pass, Texas. Zero of gage is 682.91 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 43 meter measurements. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: May, 1900, to April, 1916; November, 1923, to December, 1935.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States and by irrigation diversions and Boquilla reservoir in Mexico. With all closed basins eliminated the drainage area above this station is 126,962 square miles; 90,043 being in the United States and 36,919 in Mexico.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on September 2, 1932, when the extreme gage height was 49.00 feet, discharge 569,000 second feet. The lowest flow ever recorded was on May 26, 1930, when the extreme gage height was 2.51 feet and the extreme flow 940 second feet. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,820	1,850	1,670	1,160	1,070	9,540	*3,730	3,060	3,880	12,200	4,160	2,920
2	1,920	1,850	1,640	1,140	1,060	5,900	*4,410	2,850	3,420	10,900	5,850	2,860
3	1,900	1,870	1,640	1,230	1,070	19,700	*4,660	2,790	9,830	9,740	5,700	2,830
4	1,980	1,820	1,670	1,290	1,910	8,340	*4,180	2,780	10,500	9,000	5,120	2,840
5	1,920	1,680	1,570	14,700	1,740	13,400	5,500	2,940	57,600	9,580	5,010	2,860
6	1,880	1,830	1,720	3,270	1,280	32,100	*5,350	3,990	137,000	8,710	4,730	2,930
7	1,830	1,870	1,640	1,850	1,030	27,600	*4,640	3,760	64,100	7,640	4,530	2,920
8	1,760	1,870	1,570	1,500	1,030	8,790	*5,130	5,250	50,900	6,980	4,290	2,880
9	1,880	1,900	1,540	1,460	1,040	5,060	*3,990	4,770	86,200	6,640	4,200	2,830
10	1,920	1,920	1,560	1,700	1,020	5,230	*3,380	4,700	33,900	6,250	4,120	2,840
11	1,920	1,800	1,530	1,450	1,010	11,400	*3,000	3,810	17,300	6,050	3,990	3,120
12	1,920	1,720	1,440	1,360	982	16,800	*2,980	3,360	14,600	5,800	3,760	3,090
13	2,000	1,950	1,570	1,190	1,010	19,100	*3,320	3,280	10,400	5,360	3,680	2,830
14	1,870	1,850	1,510	1,140	961	*59,100	3,620	3,240	8,910	4,910	3,580	2,810
15	1,980	1,780	1,420	1,160	3,910	144,000	3,460	3,320	8,380	4,870	3,640	2,820
16	1,980	1,720	1,380	1,100	2,340	*34,000	3,140	3,060	7,890	4,690	3,680	2,830
17	2,020	1,720	1,330	1,110	38,100	*12,200	3,220	2,960	7,640	4,460	3,520	2,840
18	1,980	1,730	1,320	1,160	40,900	9,800	3,260	2,700	7,730	4,580	3,480	2,860
19	1,900	1,650	1,230	1,720	16,600	8,440	*3,860	2,680	7,450	4,640	3,420	2,890
20	1,920	1,780	1,280	2,390	7,380	6,880	3,880	2,760	6,900	4,460	3,390	2,900
21	1,950	1,750	1,320	1,950	4,410	6,340	3,260	2,940	6,350	7,120	3,330	2,910
22	1,900	1,670	8,650	2,220	3,120	5,720	3,810	2,790	6,170	5,850	3,330	2,920
23	1,880	1,700	2,990	1,680	3,140	5,520	4,330	3,750	5,920	4,820	3,270	2,940
24	1,830	1,730	1,880	1,530	2,360	5,280	5,700	3,880	6,020	4,460	3,230	2,970
25	1,820	1,780	1,670	2,410	7,550	*4,570	8,120	4,010	7,980	5,360	3,230	3,040
26	1,800	1,750	1,450	1,860	5,190	*4,410	6,030	3,770	11,000	5,260	3,250	3,110
27	1,800	1,750	1,380	1,370	3,440	*4,290	6,000	3,340	10,500	5,580	3,250	3,050
28	1,820	1,720	1,290	1,240	6,230	*4,990	5,600	3,140	10,800	4,960	3,140	3,090
29	1,800		1,260	1,160	22,200	*4,520	5,620	3,140	14,500	4,460	3,160	3,100
30	1,850		1,220	1,110	47,500	*3,830	3,960	2,830	14,200	4,250	3,120	3,080
31	1,870		1,250		33,100		3,400	2,940		4,080		3,040

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	3.69	3.45	4	2,130	28	1,720	1,890	116,000	
February	3.65	3.37	13	2,060	22	1,590	1,790	99,200	
March	9.00	3.08	22	20,000	31	1,160	1,760	108,000	
April	10.76	2.92	5	29,200	30	1,010	1,990	118,000	
May	16.16	2.85	18	55,800	14	924	8,510	523,000	
June	33.23	4.53	15	199,000	30	3,710	16,900	1,005,000	
July	7.00	*4.11	25	10,300	12	*2,870	4,340	267,000	
August	5.32	3.94	8	5,520	20	2,560	3,370	207,000	
September	30.45	4.07	6	156,000	3	2,790	21,600	1,285,000	
October	8.20	4.93	1	13,300	31	3,990	6,250	384,000	
November	5.79	4.48	3	5,970	30	3,100	3,870	230,000	
December	4.67	4.41	12	3,210	3	2,790	2,930	180,000	
The Year	33.23	2.85		199,000		924	6,250	4,522,200	35.6

*Partly estimated.

RIO ESCONDIDO STATION AT VILLA FUENTE, COAHUILA

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located 3.1 miles southwest of the City of Piedras Negras on the outskirts of Villa de Fuente, 5 miles above the confluence with the Rio Grande and 5.6 miles below the confluence of the Rio San Antonio.

RECORDS: Based upon 104 meter measurements. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: 1922 to 1935.

REMARKS: From 1922 to 1932 there were made daily 3 staff-gage readings 2,300 feet downstream from the present station by Agents of the Mexican Department of Agriculture at Monterrey, N. L. The zero of this old gage was 0.79 foot above the zero of the gage at the present station, but the water surface is practically level between the two gages. The present station was constructed by the Mexican Section of this Commission and completed in September, 1932. The flow of this spring-fed stream is modified by irrigation diversions in the drainage basins of the San Antonio and the Escondido. The drainage area above this station is 1,170 square miles, entirely in Mexico.

PREVIOUS EXTREME FLOWS: The greatest recorded flow since January, 1932, was July 24, 1934, when the extreme gage height was 11.42 feet and the extreme discharge was 4,450 second feet. The lowest recorded flow occurred November 4, 1934, when the extreme gage height was .75 feet and extreme flow was .35 second feet.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.60	3.18	5.30	3.18	3.53	243	30.7	32.5	6.36	96.1	60.7	33.9
2	26.50	2.47	3.88	4.24	3.53	484	30.7	27.2	6.36	98.9	62.9	39.2
3	28.60	2.12	2.83	131.0	4.24	196	30.7	27.2	12.4	96.1	60.7	39.2
4	26.50	2.47	2.83	25.80	6.36	93.9	30.7	27.2	24.7	96.1	60.7	42.0
5	24.40	4.24	4.94	31.40	6.36	77.7	30.7	22.6	20.5	96.1	60.7	45.2
6	9.89	3.88	4.24	19.40	4.24	71.3	30.7	15.2	16.6	92.9	60.7	48.4
7	9.18	6.0	3.88	11.60	3.88	94.3	27.2	15.2	12.4	96.1	60.7	48.4
8	9.18	6.0	4.24	17.0	3.88	63.2	20.5	15.2	99.6	96.1	58.6	45.2
9	9.18	6.71	3.18	13.40	3.53	63.2	20.5	10.9	1,275	96.1	56.5	45.2
10	9.89	4.94	2.83	11.60	3.53	403	20.5	12.4	706	96.1	54.4	45.2
11	9.89	8.12	2.83	9.89	3.88	477	20.5	12.4	215	92.9	54.4	77.0
12	9.89	19.10	3.18	11.60	4.24	155	18.0	15.2	138	84.8	56.5	65.0
13	10.90	22.60	3.18	13.40	4.59	639	11.3	18.4	114	79.8	54.4	62.9
14	10.90	24.40	3.18	4.24	742	770	18.0	29.7	98.9	79.8	54.4	65.0
15	10.90	22.60	3.18	11.60	1,010	256	18.0	72.4	96.1	77.0	52.3	69.9
16	9.89	17.30	3.88	5.65	146	165	18.0	32.5	92.9	72.4	50.5	67.5
17	5.30	19.10	3.18	3.53	982	116	18.0	20.5	92.9	69.9	50.5	62.9
18	4.24	15.90	4.94	3.18	4,520	101	18.0	16.6	90.1	79.8	50.5	56.5
19	4.24	17.30	4.24	3.88	883	93.9	27.2	9.89	92.9	82.3	48.4	56.5
20	4.24	17.30	2.47	3.53	225	87.2	20.5	7.06	92.9	72.4	48.4	58.6
21	3.88	14.80	4.24	3.53	137	84.0	18.0	6.36	87.6	69.9	54.4	60.7
22	2.83	10.90	3.18	3.18	108	80.5	18.0	6.36	87.6	69.9	56.5	60.7
23	1.41	8.12	2.83	3.53	1,110	77.7	18.0	6.36	90.1	74.5	52.3	60.7
24	1.41	4.94	2.83	3.18	249	74.5	57.2	6.36	98.9	82.3	42.0	62.9
25	1.41	6.71	2.83	3.53	108	84.0	338.0	6.36	96.1	82.3	42.0	69.9
26	2.47	6.71	3.88	3.18	84	142.0	54.0	6.36	92.9	79.8	39.2	67.4
27	2.47	6.71	3.18	3.18	74.50	137.0	42.4	5.65	90.1	74.5	36.7	67.5
28	2.47	6.0	2.83	3.18	68.50	77.7	35.3	5.65	87.6	79.8	36.7	72.4
29	3.18		3.18	3.53	74.50	48.4	32.5	5.65	90.1	82.3	36.7	69.9
30	3.88		5.30	3.53	278	35.3	32.5	5.65	96.1	77.0	33.9	69.9
31	3.18		3.88		1,160		32.5	6.36		69.9		69.9

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.90	.95		28.6	24	1.41	9.4	577	
February	2.17	1.05	12	50.5	2	2.12	10.4	576	
March	1.67	1.08	18	15.9	4	2.12	3.5	219	
April	4.92	1.15	3	660	1	2.83	12.4	739	
May	17.06	1.38	14	17,700	1	3.18	388	23,800	
June	6.76	1.71	10	1,540		35.3	183	10,900	
July	5.71	1.25	25	982	13	4.24	36.7	2,260	
August	2.69	1.54	15	90.1		5.65	16.2	1,010	
September	8.86	1.54	9	3,160	2	5.65	141	8,370	
October	3.22	2.30	18	140	31	60.7	83.7	5,140	
November	2.36	1.90	2	65	30	31.4	51.6	3,070	
December	2.69	1.90	11	90.1	1	31.4	58.2	3,580	
The Year	17.06	.95		17,700		1.41	83.2	60,241	51.5

RIO GRANDE AT LAREDO STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car. Cable and car located about 2 1/2 miles above the cities of Laredo, Texas, and Nuevo Laredo, Tamaulipas. Water-stage recorder is attached to north abutment of railroad bridge at Laredo. Zero of gage at the cable is elevation 353.15 feet. The water-stage recorder was first located near the cable using the above gage. The recorder was moved to its present location in October, 1925, and zero of gage was elevation 352.65 feet. On August 25, 1930, zero of gage at recorder was changed to elevation 351.50 feet. All gage elevations are on United States Coast and Geodetic Survey sea level datum.

RECORDS: Based on 185 meter measurements. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: May, 1900, to March, 1914; from October, 1922, to December, 1935.

REMARKS: The river flow at this station is modified by many irrigation diversions and El Vado, Elephant Butte, and Carlsbad reservoirs in the United States and by many irrigation diversions and Boquilla reservoir in Mexico. With all closed basins eliminated the drainage area above this station is 132,915 square miles, of which 91,516 are in the United States and 41,399 in Mexico.

PREVIOUS EXTREME FLOWS: The greatest previous recorded flow was on September 3, 1932, when the peak gage reading was 52.20 feet, the flow being 402,000 second feet. In 1910 a minimum flow of 939 second feet was reached. Numerous records of extreme flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,840	1,840	1,680	1,410	1,240	39,600	4,200	3,740	2,630	15,000	4,380	3,390
2	1,840	1,790	1,680	1,300	1,170	12,600	3,740	3,210	2,770	13,100	4,200	3,320
3	1,790	1,840	1,640	1,300	2,920	9,530	3,640	2,760	3,740	11,500	5,090	3,280
4	1,840	1,790	1,640	1,300	6,140	20,500	4,310	2,630	6,290	10,200	5,900	3,280
5	1,840	1,790	1,640	1,600	2,280	12,400	3,890	2,630	20,200	9,360	5,370	3,280
6	1,900	1,720	1,640	9,460	1,680	16,000	4,490	2,700	52,600	9,850	5,090	3,320
7	1,900	1,680	1,600	5,720	1,790	35,200	5,720	2,980	118,700	9,250	4,980	3,390
8	1,840	1,790	1,600	2,480	1,370	30,200	5,540	3,810	91,500	8,120	4,800	3,390
9	1,840	1,840	1,640	1,790	1,210	10,900	4,870	4,410	54,400	7,350	4,560	3,320
10	1,730	1,900	1,640	1,530	2,670	6,850	4,490	4,870	85,500	6,960	4,480	3,320
11	1,840	2,070	1,600	1,450	1,300	7,240	3,570	5,090	38,800	6,640	4,380	4,130
12	1,900	2,070	1,560	1,600	1,140	16,800	3,050	4,100	19,000	6,360	4,200	3,740
13	1,900	1,900	1,490	1,490	1,110	20,300	2,840	3,570	15,900	6,070	4,100	3,670
14	1,900	1,680	1,450	1,410	1,080	22,500	2,910	3,640	11,600	5,830	3,880	3,530
15	1,900	1,900	1,450	1,300	1,080	97,100	3,640	4,100	9,710	5,300	4,200	3,390
16	1,840	1,840	1,490	1,270	8,050	163,200	3,390	3,210	8,900	5,120	4,100	3,320
17	1,900	1,790	1,490	1,240	3,570	67,800	3,050	3,050	8,330	4,980	3,880	3,320
18	1,950	1,680	1,370	1,240	40,300	15,100	2,840	2,840	7,840	4,980	3,810	3,280
19	1,950	1,720	1,370	1,240	47,700	11,300	3,810	2,700	7,840	6,180	3,670	3,320
20	1,900	1,720	1,370	1,300	20,900	10,100	3,810	2,480	7,840	6,360	3,670	3,320
21	1,900	1,680	1,300	2,170	14,700	8,330	3,880	2,430	7,490	4,980	3,670	3,320
22	1,790	1,840	1,300	2,070	9,150	7,630	3,570	2,570	7,240	6,250	3,600	3,320
23	1,840	1,840	3,990	1,840	22,400	6,960	3,280	2,630	7,060	6,570	3,530	3,390
24	1,840	1,720	5,400	2,120	9,220	6,180	6,360	2,700	9,080	5,470	3,530	3,390
25	1,840	1,720	2,370	1,640	4,480	5,900	19,500	3,640	6,850	4,870	3,460	3,390
26	1,790	1,680	1,790	1,910	6,040	5,190	16,000	3,740	7,200	5,300	3,460	3,390
27	1,790	1,640	1,600	3,780	6,750	4,480	7,350	3,810	12,700	5,250	3,460	3,390
28	1,790	1,640	1,560	1,950	5,090	4,310	7,060	3,480	11,100	5,830	3,460	3,390
29	1,730		1,410	1,490	4,870	4,870	6,850	3,050	10,800	5,470	3,390	3,390
30	1,790		3,670	1,330	19,600	4,870	6,180	2,910	14,900	4,870	3,390	3,390
31	1,790		2,560		47,700		4,770	2,840		4,560		3,460

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	4.92	4.76	18	2,010		1,720	1,850	114,000	
February	5.09	4.66	11	2,300	26	1,600	1,790	99,400	
March	7.87	4.40	23	10,800		1,300	1,870	115,000	
April	9.55	4.30	6	19,100	19	1,210	2,060	122,000	
May	16.86	4.13	31	58,600	14	1,050	9,620	591,000	
June	35.10	5.84	16	176,000	28	4,100	22,800	1,357,000	
July	11.58	5.31	25	29,500	13	2,760	5,250	323,000	
August	6.27	5.12	15	5,470	22	2,370	3,300	203,000	
September	32.28	5.22	7	133,000	1	2,570	22,300	1,326,000	
October	8.92	5.87	1	15,500	31	4,430	7,030	432,000	
November	6.43	5.38	4	5,900	31	3,320	4,120	245,000	
December	5.97	5.31	11	4,730	3	3,180	3,400	209,000	
The Year	35.10	4.13		176,000		1,050	7,090	5,136,400	38.6

DOLORES CREEK STATION NEAR SAN IGNACIO, TEXAS

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located about 3.2 miles above the confluence with the Rio Grande, and 14 miles north of San Ignacio, Zapata County, Texas. Zero of gage mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon previous rating curve and one meter measurement. 1935 records fair.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: This creek is dry except during storms. The drainage area above this station is 606 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: On September 4, 1932, Rio Grande backwater reached a gage height of 343.06 feet at this station. On September 6, 1933, a peak flow of 21,300 second feet was reached with a gage reading of 327.17 feet.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	*21.0	δ 10	*5	0	0	0	0	0	0
2	0	0	0	*15.5	δ 3	446	0	0	0	0	0	0
3	0	0	0	δ 10.0	δ 2.5	2,150	0	0	0	0	0	0
4	0	0	0	δ 8.5	22	1,020	0	0	0	0	0	0
5	0	0	0	δ 7.0	δ 10	110	0	0	0	0	0	0
6	0	0	0	δ 5.5	δ 5	26	0	0	0	0	0	0
7	0	0	0	δ 4.0	δ 5	7.4	0	0	0	0	0	0
8	0	0	0	δ 2.5	δ 5	35.9	0	0	0	0	0	0
9	0	0	0	δ 1.0	δ 4	39	0	0	0	0	0	0
10	0	0	0	δ 1.0	δ 34	158	0	0	0	0	0	0
11	0	0	0	0	δ 29	480	0	0	0	0	0	0
12	0	δ 10	0	0	δ 24	225	0	0	0	0	0	0
13	0	δ 10	0	0	δ 19	350	0	0	0	0	0	0
14	0	δ 5	0	0	δ 14	84	0	0	0	0	0	0
15	0	0	0	0	δ 9	88	0	0	0	0	0	0
16	0	0	0	0	δ 4	9	0	0	0	0	0	0
17	0	0	0	0	3	*5	0	0	0	0	0	0
18	0	0	0	0	2	*5	0	0	0	*18	0	0
19	0	0	0	0	1	*5	0	0	0	*57.5	0	0
20	0	0	0	0	0	*5	0	0	0	*10	0	0
21	δ 10	0	0	0	0	*5	0	0	0	0	0	0
22	δ 2	0	0	0	0	*5	0	0	0	0	0	0
23	δ 1	0	0	0	1,810	*2	0	0	122	0	0	0
24	0	0	0	0	454	*1	0	0	648	0	0	0
25	0	0	0	0	*27	0	0	0	690	0	0	0
26	0	0	0	4,430	*10	0	0	0	640	0	0	0
27	0	0	0	194	*10	0	0	0	360	0	0	0
28	0	0	*728	*30	*10	0	0	0	110	0	0	0
29	0		*57.5	*10	*10	*330	0	0	63	0	0	0
30	0		*32	*10	*10	25	0	0	*10	0	0	0
31	0		*265		*10		0	0		0		0

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	-		21	-		0	δ .42	δ 25.8	
February	-		12	-		0	δ .89	δ 49.6	
March	321.00		28	*2,500		0	*26.6	*1,630	
April	325.25		26	13,000		0	*158	*9,420	
May	322.25		25	4,700	20-22	0	*82.5	*5,070	
June	321.89		2	4,000	25-28	0	*187	*11,100	
July							0	0	
August							0	0	
September	320.75		24	2,120		0	88.1	5,240	
October	318.30		18	127		0	*2.8	*170	
November							0	0	
December							0	0	
The Year	325.25			13,000		0	45.2	*32,705.4	*54.0

δEstimated.
*Partly estimated.

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles southward of Ciudad Guerrero, Tamaulipas. Zero of gage is 265.74 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on 209 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: 1901 to 1912; 1923 to 1935.

REMARKS: The flow of the Rio Salado is greatly modified by the Don Martin reservoir, which forms a part of National Irrigation System No. 4, Coahuila-Nuevo Leon, and by irrigation. This station was entirely rebuilt by the Mexican Section of this Commission in December, 1932, when an automatic water-stage recorder was installed. The drainage area above this station is 21,830 square miles, entirely in Mexico.

PREVIOUS EXTREME FLOWS: The greatest recorded flow at this station was on September 7, 1933, when an extreme gage height of 18.86 feet was reached with a corresponding discharge of 43,800 second feet. The stream has not been dry since irrigation commenced in System No. 4 in 1931. Numerous extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	76.3	98.2	134	494	124	448	341	118.0	124.0	314	162	140
2	82.6	103.0	162	445	103	915	259	93.6	103.0	251	259	152
3	85.4	113.0	169	374	108	2,320	192	82.6	98.2	192	283	134
4	79.4	134.0	146	225	1,150	1,930	152	79.5	103.0	169	180	129
5	70.3	108.0	124	157	840	1,740	152	82.6	7,910.0	187	152	140
6	65.0	85.5	129	129	245	819	152	82.6	16,200	180	140	134
7	62.5	76.3	134	129	298	2,430	146	108.0	10,600	157	134	140
8	62.5	70.3	124	124	212	2,480	146	124.0	14,800	146	129	140
9	62.5	67.8	124	113	140	862	146	89.7	12,100	157	134	140
10	59.7	70.3	113	108	367	3,410	212	82.6	5,790	140	146	206
11	59.7	85.5	129	103.0	1,020	5,370	187	73.4	5,510	134	152	1,470
12	59.7	256	212	98.2	650	2,830	152	76.3	1,690	152	134	756
13	56.8	332	225	103.0	445	2,500	197	93.6	777	152	118	1,070
14	56.9	187	192	85.5	298	1,050	1,100	2,390	664	146	118	463
15	59.7	163	211	85.5	231	1,310	2,040	326	367	129	113	307
16	56.8	187	245	89.7	157	4,730	1,460	169	275	124	118	245
17	56.9	134	192	113.0	129	15,300	614	124	231	118	267	198
18	56.9	103	146	118.0	140	9,360	357	113	212	113	307	262
19	59.7	89.7	157	98.2	537	2,950	809	118	204	169	267	157
20	59.7	118.0	175	103.0	367	901	742	140	192	463	193	152
21	59.7	113.0	180	98.2	809	576	307	152	204	1,480	162	152
22	73.4	93.6	192	175	2,950	403	225	129	283	738	146	152
23	108.0	85.5	198	187	4,480	290	245	98.2	936	473	140	152
24	93.6	93.6	175	204	2,360	219	2,920	89.7	1,420	298	140	162
25	76.3	85.5	162	146	857	198	10,600	108.0	1,300	267	152	175
26	65.0	98.2	140	124	434	192	466	152.0	576	252	169	180
27	59.7	98.2	140	108	298	180	341	124.0	314	219	146	275
28	59.7	108.0	562	134	219	607	238	124.0	132	198	129	259
29	65.0		357	124	169	897	225	118.0	855	187	129	231
30	79.5		332	129	140	259	212	93.6	463	187	140	219
31	103.0		307		118		157	93.6		187		219

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	2.10	1.54	23	113	13	54.4	68.8	4,230	
February	3.61	1.71	13	452	9	67.8	120	6,660	
March	4.49	2.07	28	819	10	108	194	11,900	
April	3.87	1.87	1	540	14	82.6	157	9,370	
May	7.74	1.87	23	5,050	3	82.6	657	40,400	
June	12.83	2.13	17	17,400	1	118	2,250	134,000	
July	14.24	2.23	24	22,400	31	134	823	50,600	
August	7.12	1.77	14	4,100	11	73.5	189	11,600	
September	13.06	1.97	6	18,100	1	93.6	2,810	167,000	
October	5.51	2.07	21	1,670	18	108	260	16,000	
November	3.48	2.10	2	403	15	113	165	9,840	
December	5.74	2.20	11	1,920	4	129	278	17,100	
The Year	14.24	1.54		22,400		54.4	661	478,700	21.9

RIO GRANDE AT ZAPATA STATION

DESCRIPTION: Automatic water-stage recorder and cable with stand up cable car and winch located about 3 miles by river below the town of Zapata, Zapata County, Texas, and 1.3 mile below the confluence of the Rio Salado with the Rio Grande. Zero of the gage is at mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 37 meter measurements. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: January, 1932, to December, 1935.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla and Don Martin reservoirs in Mexico. With all closed basins eliminated the drainage area above this station is 156,714 square miles; 92,613 being in the United States and 64,101 in Mexico.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on September 4, 1932, when the extreme gage height was 262.07 feet and the extreme flow was 261,160 second feet. The lowest flow recorded was on June 23, 1932, when the extreme gage height was 219.18 feet and the extreme flow 992 second feet.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,060	1,930	1,730	4,220	1,360	44,200	5,210	4,620	3,340	*15,300	4,440	3,310
2	2,020	1,960	1,810	2,210	1,440	22,100	4,480	3,850	3,080	*14,800	4,200	3,300
3	2,020	1,960	1,830	1,740	1,640	23,700	3,880	3,500	3,210	*12,900	4,150	3,270
4	1,990	1,970	1,810	1,500	6,280	19,100	3,900	*3,310	3,890	*11,400	5,540	3,210
5	1,970	1,970	1,750	1,340	6,900	19,800	4,600	3,110	26,700	*10,500	6,090	3,200
6	1,970	1,980	1,730	1,740	2,710	14,300	4,120	3,150	48,300	*10,000	5,300	3,230
7	1,970	1,970	1,720	11,700	2,030	25,900	4,900	3,180	94,600	*10,300	5,100	3,290
8	1,970	1,900	1,690	4,140	2,140	38,700	5,900	3,470	136,000	*8,580	4,960	3,340
9	1,980	1,890	1,670	2,420	1,640	18,800	4,770	4,030	89,000	*7,630	4,770	3,350
10	1,940	1,970	1,700	1,880	2,880	14,200	5,210	4,760	77,400	*7,100	4,470	3,380
11	1,870	2,010	1,720	1,620	3,630	14,100	4,790	4,980	73,000	*6,730	4,380	5,450
12	1,860	2,730	1,660	1,440	2,240	16,200	3,710	5,290	27,900	*6,480	4,250	5,530
13	1,880	2,910	1,660	1,590	1,640	25,500	3,460	4,170	18,000	*6,080	4,090	4,660
14	1,870	2,290	1,640	1,530	1,390	18,700	*5,560	11,700	*14,200	*5,840	4,020	3,920
15	1,880	2,010	1,600	1,430	1,210	46,300	*4,510	5,200	*10,800	*5,600	3,980	3,540
16	1,880	2,100	1,640	1,360	2,460	114,000	*5,220	4,130	*9,070	*5,370	4,480	3,350
17	1,870	2,070	1,670	1,300	6,740	148,000	*3,860	3,670	*8,140	5,270	4,040	3,310
18	1,890	1,950	1,580	1,270	15,200	41,800	*3,650	3,540	*7,810	5,530	4,030	3,310
19	1,970	1,880	1,510	1,280	39,500	16,900	*4,520	3,330	*7,760	5,660	3,970	3,240
20	1,990	1,840	1,490	1,220	35,400	13,400	5,230	3,270	*7,600	7,220	3,800	3,240
21	2,150	1,890	1,520	1,230	15,900	10,900	4,190	3,110	*8,400	7,220	3,740	3,320
22	2,010	1,840	1,520	2,120	20,700	8,500	3,970	3,080	*9,000	5,590	3,730	3,340
23	1,990	1,830	1,530	2,270	21,800	7,650	3,840	3,140	*9,300	7,840	3,650	3,360
24	1,930	1,850	5,210	2,000	26,900	6,940	6,820	3,200	*12,500	6,680	3,620	3,390
25	1,930	1,800	3,980	2,300	8,270	6,560	24,500	3,330	*10,000	5,340	3,610	3,440
26	1,920	1,760	2,540	11,800	3,930	5,960	22,800	3,860	*8,000	4,860	3,600	3,440
27	1,870	1,750	2,040	7,460	7,360	5,200	12,200	3,920	*9,000	5,600	3,550	3,460
28	1,850	1,720	4,530	3,640	5,620	5,100	8,480	3,960	*12,500	5,410	3,490	3,540
29	1,870		2,430	2,320	3,930	6,640	8,230	3,810	*11,500	5,960	3,440	3,560
30	1,880		2,220	1,800	8,860	5,850	6,980	3,400	*13,000	5,400	3,360	3,590
31	1,900		8,440		32,600		6,560	3,320		4,740		3,590

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	220.63	220.42	21	2,270	12	1,820	1,940	119,000	
February	221.22	220.39	12	3,550	28	1,720	1,990	111,000	
March	222.91	220.25	31	11,600	22	1,510	2,240	138,000	
April	226.98	220.11	26	28,800	20	1,200	2,800	166,000	
May	230.62	220.03	20	45,900	16	1,120	9,500	584,000	
June	251.00	221.75	17	161,000	28	4,970	25,500	1,517,000	
July	228.50	221.16	25	36,000	13	3,320	6,450	397,000	
August	223.80	221.02	14	15,400	22	3,080	4,010	247,000	
September	247.60	221.04	8	140,000	2	3,040	*25,800	*1,533,000	
October	*223.78	221.62	1	*15,300	31	4,490	*7,510	*462,000	
November	222.01	221.18	4	6,200	30	3,290	4,200	250,000	
December	222.36	221.15	11	8,100	5	3,180	3,560	219,000	
The Year	251.00	220.03		161,000		1,120	7,930	5,743,000	36.6

*Partly estimated.

EL TIGRE ARROYO STATION NEAR ZAPATA, TEXAS

DESCRIPTION: Automatic water-stage recorder located 21 miles southeast from Zapata, Zapata County, Texas, and about 2.7 miles above the confluence with the Rio Grande. Zero of gage is 212.99 feet above mean sea level, United States Coast and Geodetic Survey datum. Meter measurements at flood stages are made from highway bridge 6,400 feet below the recorder. Zero of gage at highway bridge is 208.13 feet above same datum.

RECORDS: Based upon previous rating curve and 3 meter measurements. 1935 records fair.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: This creek is dry most of the time and carries only storm flow. The drainage area above this station is 261 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: On September 5, 1932, Rio Grande backwater reached a gage height of 27.64 feet at this station.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	*54.7	0	0	*12.3	0	0	*.2	*45.2	0
2	0	0	0	*11.1	0	0	*8.4	0	0	0	*271	0
3	0	0	0	*1	0	173	*4.4	0	0	0	0	0
4	0	0	0	0	0	26.1	0	0	0	0	0	0
5	0	0	0	0	0	*5.0	0	0	*80.7	0	0	0
6	0	0	0	0	0	*5.0	0	0	*165	0	0	0
7	0	0	0	0	0	44.1	0	0	*82	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	14.3	0	0	0	0	0	0	*251
11	0	0	0	0	0	0	0	0	0	0	0	*119
12	0	0	0	0	0	24.6	0	0	0	0	0	*10
13	0	0	0	0	0	0	*4.3	0	0	0	0	*8
14	0	0	0	0	0	0	*1.6	0	*57.8	0	0	*6
15	0	0	0	0	0	0	0	0	*17.1	0	0	*4
16	0	0	0	0	0	0	0	0	*15.1	0	0	*2
17	0	0	0	0	0	0	0	0	0	0	0	*1
18	0	0	0	0	0	0	0	0	0	*1.2	0	0
19	0	0	0	0	0	0	0	0	0	*13.4	0	0
20	0	0	0	0	0	0	0	0	0	*1.5	0	0
21	0	0	0	0	8.2	0	0	0	*2	0	0	0
22	0	0	0	0	24.7	0	0	0	0	0	0	0
23	0	0	0	0	*15	0	0	0	*11.5	0	0	0
24	0	0	0	0	0	0	0	0	*7.4	0	0	0
25	0	0	0	0	0	0	0	0	*173	0	0	0
26	0	0	0	0	0	0	*84.6	0	*46	0	0	0
27	0	0	0	0	0	0	*13.3	0	*1	0	0	0
28	0	0	0	0	0	0	*2.6	0	*1	0	0	0
29	0		0	0	0	3.1	0	0	*.8	0	0	0
30	0		0	0	0	28.9	0	0	*.5	0	0	0
31	0		155		0		0	0		0		0

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January							0	0	
February							0	0	
March	2.75		31	508		0	5	307	
April	1.50		1	162		0	2.2	132	
May	2.75		22	508		0	2	123	
June	#2.76		7	508		0	10.3	614	
July	2.85		26	546		0	4.2	261	
August						0	0	0	
September	**8.04		25	*527		0	*22	1,310	
October	.67		19	45.7		0	*.5	*32.3	
November	*3.67		2	*916		0	*10.5	*627	
December	5.08		10	1,820		0	*12.9	*795	
The Year	5.08			1,820		0	*5.8	*4,201.3	*16.1

*Partly estimated.
#Caused by backwater June 17.
**Caused by backwater September 8.

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located about 3 miles from the confluence of the Rio Alamo with the Rio Grande and 2/3 of a mile west of Ciudad Mier, Tamaulipas, Mexico, at a point called "Paso del Cantaro." Zero of gage is 187.04 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 139 meter measurements. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: July 5, 1923, to December 31, 1935.

REMARKS: The flow of this spring-fed stream is somewhat modified by irrigation diversions above the station. The drainage area above this station is 1,840 square miles, all in Mexico.

PREVIOUS RECORDED FLOWS: The greatest recorded flow occurred on September 7, 1933, with an extreme gage height of 26.9 feet and a corresponding flow of 76,600 second feet. The river is often dry. Numerous records of extreme flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.1	15.2	9.89	23.0	2.12	200.0	36.4	13.1	2.83	15.2	99.9	20.1
2	20.1	15.2	9.89	15.2	2.12	15.2	23.0	9.89	1.41	15.2	639.0	20.1
3	18.0	15.2	9.89	13.1	2.12	371.0	18.0	8.12	1.41	13.1	139.0	20.1
4	18.0	10.9	10.9	10.9	2,570.0	1,030.0	15.2	7.06	.71	13.1	49.4	20.1
5	18.0	10.9	10.9	9.89	480.0	191.0	10.9	7.06	166	13.1	25.8	20.1
6	18.0	10.9	13.1	8.12	20.1	98.9	8.12	6.00	193	13.1	18.0	20.1
7	18.0	10.9	13.1	7.06	9.89	802.0	7.06	6.00	392	13.1	15.2	20.1
8	18.0	10.9	13.1	7.06	6.00	710.0	3.88	6.00	470	13.1	15.2	20.1
9	18.0	10.9	13.1	7.06	3.88	59.3	2.12	4.94	364	15.2	15.2	20.1
10	18.0	13.1	13.1	7.06	8.12	57.6	1.41	4.94	272	13.1	15.2	533.0
11	18.0	11.0	10.9	7.06	4.94	572	.71	2.83	65.0	9.89	15.2	158.0
12	18.0	23.0	9.89	6.00	13.10	773	.71	2.12	32.5	8.12	15.2	126.0
13	18.0	36.4	9.89	4.94	6.00	1,090	291.0	2.12	25.8	8.12	15.2	54.0
14	18.0	25.8	9.89	4.94	3.88	221	904.0	1,095.0	23.0	7.06	15.2	29.0
15	18.0	18.0	9.89	4.94	2.82	424	403.0	131.0	15.2	6.00	15.2	23.0
16	18.0	13.1	9.89	4.94	2.12	225	29.0	25.8	13.1	6.00	18.0	20.1
17	18.0	13.1	9.89	4.94	2.12	65.0	18.0	10.9	15.2	6.00	20.1	20.1
18	23.0	11.0	9.89	4.94	1.41	32.5	18.0	8.12	10.9	308	23.0	20.1
19	23.0	10.9	9.89	4.94	1.41	25.8	21.5	6.00	9.89	1,148	20.1	20.1
20	23.0	10.9	35.0	4.94	.71	20.1	126.0	3.88	7.06	312	23.0	20.1
21	23.0	10.9	49.4	6.00	65.0	18.0	54.0	3.88	44.5	65.0	23.0	20.1
22	20.1	10.9	25.8	49.4	129.0	18.0	32.5	2.83	830	25.8	20.1	20.1
23	20.1	10.9	18.0	44.5	165.0	15.2	18.0	2.83	1,040	25.8	20.1	20.1
24	23.0	10.9	13.1	15.2	59.3	15.2	10.9	2.12	752	15.2	23.0	20.1
25	23.0	10.9	13.1	9.89	25.8	13.1	1,460	1.41	494	13.1	23.0	23.0
26	23.0	9.89	13.1	7.06	10.9	13.1	971	1.41	105	13.1	23.0	49.4
27	23.0	9.89	13.1	7.06	7.06	13.1	158	.71	94.3	13.1	23.0	164.0
28	23.0	9.89	254.0	4.94	4.94	388	65	6.00	32.5	13.1	20.1	77.7
29	23.0		108.0	2.82	3.88	618	551	10.90	20.1	13.1	20.1	40.3
30	23.0		32.5	2.82	2.12	136	117	3.88	18.0	13.1	20.1	32.5
31	18.0		71.0		192.0		23	2.12		13.1		29.0

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.05	.92	21	23.8		15.2	20.0	1,230	
February	1.28	.82	13	54.0		9.89	13.6	757	
March	3.31	.82	28	646		9.89	27.5	1,690	
April	1.67	.59	22	121	30	2.12	10.4	616	
May	6.53	.52	4	3,570	20	.71	123	7,550	
June	6.33	.79	7	3,360	3	8.12	274	16,300	
July	5.84	.49	25	2,860	3	.35	174	10,700	
August	5.12	.49	14	2,210	28	.35	45.1	2,770	
September	6.50	.52	22	3,530	4	.71	184.0	10,900	
October	4.92	.72	18	2,040		6.00	70.3	4,320	
November	4.13	.85	2	1,230	1	10.9	47.6	2,830	
December	5.18	.98	10	2,270		20.1	54.8	3,370	
The Year	6.53	.49		3,570		.35	87.1	63,033	34.3

RIO GRANDE AT ROMA STATION

DESCRIPTION: Automatic water-stage recorder at international bridge at Roma, Starr County, Texas. Zero of gage is 145.93 feet above mean sea level, United States Coast and Geodetic Survey datum.
RECORDS: Based upon 45 meter measurements during the year from bridge. Computations by shifting channel methods. 1935 records good.
RECORDS AVAILABLE: August, 1900, to March, 1914; November, 1922, to December, 1935.
REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla and Don Martin reservoirs in Mexico. With all closed basins eliminated the drainage area above this station is 160,014 square miles; 93,645 being in the United States and 66,369 in Mexico. After March, 1929, the station was operated by the United States, and previously by Mexico. Datum of present gage is 1.1 foot lower than that used prior to 1922. Backwater from the Rio San Juan sometimes reaches this station. See Water Bulletin No. 3, page 50.
PREVIOUS EXTREME FLOWS: The greatest previous recorded flow was on September 5, 1932, when the extreme gage height was 35.4 feet and the extreme flow 203,000 second feet. The lowest flow ever recorded was on May 29, 1925, when the extreme flow was 975 second feet. Records of other extreme flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,190	1,860	1,680	6,930	1,780	43,800	5,790	*5,690	*3,250	15,700	4,880	3,190
2	2,000	1,860	1,700	3,780	1,540	32,400	5,040	*4,220	*3,150	15,200	6,100	3,170
3	1,960	1,890	1,780	2,080	1,380	26,600	4,500	*3,650	*3,100	13,000	4,610	3,170
4	2,010	1,880	1,770	1,660	3,300	19,100	4,050	*3,450	*3,500	11,500	4,610	3,130
5	1,920	1,880	1,710	1,450	7,400	24,000	4,270	*3,200	16,800	10,300	5,920	3,110
6	1,970	1,830	1,640	1,300	5,020	12,600	4,530	*3,100	38,400	9,430	5,610	3,130
7	1,990	1,840	1,630	5,190	2,600	19,400	4,160	*3,100	71,900	9,730	5,100	3,150
8	2,060	1,810	1,610	*6,600	*2,090	39,100	5,440	*3,300	109,000	9,440	5,030	3,200
9	1,990	1,740	1,580	*3,870	*2,200	26,900	5,000	*3,700	112,000	8,200	4,800	3,240
10	1,920	1,800	1,630	*2,560	*2,450	14,800	4,500	*4,400	72,600	7,380	4,610	4,700
11	1,890	1,900	1,630	*2,030	*3,330	15,000	4,770	*4,900	85,800	*6,850	*4,390	4,660
12	1,810	2,090	1,550	*1,720	*3,530	16,700	3,990	*5,100	42,500	*6,540	*4,270	6,340
13	1,880	3,170	1,560	*1,540	*2,220	26,600	3,490	*4,530	21,700	*6,270	*4,170	5,130
14	1,930	2,760	1,580	*1,530	1,780	22,900	5,000	*7,490	17,900	*6,100	*4,050	4,760
15	1,930	2,250	1,530	*1,560	1,540	31,400	5,230	8,400	12,500	5,890	*3,920	4,220
16	1,920	2,000	1,470	*1,360	1,430	84,400	5,360	*4,500	9,600	5,430	3,980	3,880
17	1,970	2,100	1,560	*1,280	4,220	128,000	4,330	*3,850	*8,800	5,160	*4,550	3,660
18	1,880	2,030	1,560	*1,280	5,490	99,000	3,600	*3,600	*8,300	6,060	*4,220	3,580
19	1,960	1,930	1,480	1,220	35,700	27,900	3,290	*3,450	*8,000	8,510	*3,970	3,520
20	2,000	1,860	1,410	1,200	43,100	14,400	4,760	*3,350	*7,800	*6,820	*3,790	3,510
21	1,990	1,840	1,480	1,140	19,500	11,100	4,460	*3,150	*7,570	7,280	*3,730	3,550
22	2,180	1,860	1,430	1,240	19,900	9,010	3,800	*3,050	8,120	*6,210	*3,670	3,550
23	1,960	1,790	1,400	2,190	17,600	7,840	3,790	*3,000	8,250	6,090	*3,600	3,510
24	1,930	1,830	1,380	2,060	32,800	7,430	3,270	*3,200	11,500	*6,920	*3,530	3,520
25	1,930	1,800	5,570	1,980	11,200	6,990	21,600	*3,200	12,600	*5,770	*3,470	3,540
26	1,900	1,680	3,600	2,470	6,740	6,460	23,400	*3,500	8,630	*5,210	*3,410	3,600
27	1,890	1,670	2,220	11,000	5,740	5,940	17,200	*3,900	6,960	*5,120	3,380	3,700
28	1,840	1,710	2,360	5,150	7,480	5,520	9,440	*3,900	12,600	*5,300	3,330	3,720
29	1,820		4,830	3,250	5,890	7,120	8,600	*3,900	11,800	5,570	3,300	&3,700
30	1,800		2,180	2,230	4,920	7,190	8,250	*3,700	10,900	5,560	3,270	&3,700
31	1,820		5,040		23,700		6,660	*3,300		5,040		*3,700

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	2.15	1.73	1	2,350	12	1,770	1,940	119,000	
February	3.23	1.55	13	3,670	28	1,640	1,950	108,000	
March	6.49	1.25	31	8,900	24	1,330	2,050	126,000	
April	9.12	1.01	27	20,600	21	1,120	2,760	164,000	
May	14.70	1.28	20	47,000	4	1,320	9,280	570,000	
June	14.94		1	48,400					
June	27.81	4.35	17	141,000	28	5,240	26,700	1,586,000	
July	12.15	2.86	25	33,900	24	3,040	6,500	400,000	
August	7.41	1.63	14	14,400	23	*2,950	*4,030	*248,000	
September	26.22	1.70	9	125,000	3	*3,080	*25,200	*1,499,000	
October	7.69	*2.67	1	16,200	27	*4,890	7,660	471,000	
November	3.86	1.50	2	6,950	30	3,220	*4,240	*252,000	
December	4.38	1.41	10	7,900	5	3,100	3,750	231,000	
The Year	27.81	1.01		141,000		1,120	7,980	5,774,000	36.1

*Partly estimated.
&Estimated.

RIO SAN JUAN STATION AT SANTA ROSALIA, TAMAULIPAS

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located about 27 1/2 miles above the confluence with the Rio Grande and 15 miles south of Ciudad Camargo, Tamaulipas, Mexico, at a ranch called Santa Rosalia, 3 miles west of Ochoa Railway Station. Zero of gage is 205.15 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 170 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: May 1, 1900, to 1913; 1923 to 1935.

REMARKS: Daily gage readings began May 1, 1900, and meter measurements October 3, 1900, at La Quemada Ranch (now Ochoa settlement). The station was moved 2 1/2 miles upstream to its present location July 14, 1902. For more detailed history of gages, see previous Water Bulletins.

When the river at this station rises above a gage height of 36.1 feet, water overflows the left river bank above the station and returns to the river below the station. At a gage height of 42.6 feet, water submerges the right river bank at the station but follows the main river. The river flow is modified at this station by irrigation diversions, and other uses along the San Juan River basin. The drainage area above this station is 13,000 square miles, entirely in Mexico.

PREVIOUS EXTREME FLOWS: On September 29, 1932, there was recorded an extreme gage height of 41.01 feet with an estimated discharge of 187,000 second feet. On August 30, 1909, there occurred a flood which reached a height estimated at 49.21 feet on the present scale, according to records of the residents of the region. In Water Bulletin No. 1, the mean daily flow for this flood was given as 30,000 second feet which was copied from the records. New slope-area computations supported by measurements during recent floods, show the 1909 flood peak to have been 353,000 second feet, without considering the water which overflowed the river channel to a width of nearly 2 miles. The river runs dry at times. In previous Water Bulletins may be seen numerous records of extreme flows.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	378	187	251	501	70.6	5,440	1,260	332	65.3	3,120	1,050	1,030
2	353	180	251	300	65.3	3,410	791	291	65.3	2,720	1,720	1,010
3	342	173	244	244	60.7	6,430	660	261	70.6	2,410	2,660	975
4	332	202	244	211	989	5,560	607	244	70.6	2,190	2,360	975
5	353	378	234	218	1,390	2,720	572	219	75.6	2,010	1,790	1,010
6	353	353	226	218	413	1,030	1,330	210	3,640	1,870	1,570	1,030
7	353	311	211	211	195	1,020	713	201	7,880	1,770	1,470	996
8	342	280	202	195	132	1,750	491	194	8,830	1,640	1,540	975
9	332	251	187	180	94.3	1,270	427	187	4,030	1,570	1,480	961
10	332	244	180	159	170.0	3,390	388	173	2,100	1,470	1,420	922
11	311	234	180	141	187.0	5,930	342	159	6,180	1,370	1,370	943
12	311	226	166	115	94.3	3,640	300	150	3,740	1,270	1,270	996
13	300	234	150	108	70.6	7,350	291	132	1,800	1,210	1,190	1,180
14	291	234	150	108	55.8	4,520	2,290	1,240	1,230	1,120	1,130	1,060
15	280	251	141	108	51.9	4,590	2,690	1,660	1,080	1,050	1,130	975
16	271	353	141	108	35.3	5,970	1,920	427	1,180	975	1,180	922
17	261	342	141	100	30.4	2,370	1,160	201	1,380	943	1,650	893
18	261	300	123	108	25.8	1,840	572	141	1,250	961	1,590	876
19	251	291	108	94.3	21.9	1,520	399	124	1,230	1,900	1,510	893
20	244	280	94.3	232	21.9	1,510	311	124	1,620	4,480	1,440	922
21	261	280	87.2	202	505	1,380	399	124	1,620	3,350	1,420	943
22	211	271	81.2	427	1,800	1,150	427	141	5,260	2,130	1,360	943
23	202	280	81.2	271	660	1,030	300	115	23,840	1,700	1,270	922
24	202	270	81.2	166	5,050	922	252	100	17,700	1,650	1,210	908
25	202	261	81.2	115	8,090	791	1,300	100	9,290	1,670	1,190	893
26	202	244	75.6	108	4,560	727	2,540	100	7,490	1,310	1,210	1,070
27	202	244	70.6	141	1,390	689	1,450	93.6	7,270	1,210	1,180	10,500
28	202	244	70.6	123	961	890	1,520	81.2	4,770	1,190	1,150	7,170
29	202		65.3	94.3	727	2,890	1,520	81.2	3,530	1,130	1,120	4,660
30	195		65.3	81.2	593	1,300	646	75.6	3,570	1,060	1,100	3,450
31	187		181.0		749		445	70.6		1,030		2,960

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January	3.48	2.79	1	388	31	187	275	16,900	
February	3.51	2.72	5	399	3	173	264	14,700	
March	4.04	2.23	31	586	31	65.3	147	9,060	
April	4.04	2.26	1	586	30	70.6	179	10,700	
May	15.29	1.90	25	10,300	20	18.7	943	58,000	
June	14.67	4.17	16	9,250	28	636	2,770	165,000	
July	10.10	3.02	14	3,740	24	233	915	56,200	
August	10.17	2.23	14	3,810	31	65.3	250	15,400	
September	19.88	2.23	23	29,000	1	65.3	4,380	262,000	
October	12.57	4.72	20	6,390	18	876	1,720	106,000	
November	8.92	4.93	3	2,990	1	996	1,420	84,800	
December	17.06	4.72	27	15,800	18	876	1,740	107,000	
The Year	19.88	1.90		29,000		18.7	1,250	905,760	69.7

LOS OLMOS CREEK STATION NEAR RIO GRANDE CITY, TEXAS

DESCRIPTION: Automatic water-stage recorder attached to pile of lower side of highway bridge about one mile north of Rio Grande City and 3 3/4 miles above confluence with the Rio Grande. Zero of gage is at mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 5 meter measurements and the previous rating curve. 1935 records fair.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: The drainage area above this station is 535 square miles, all in the United States.

PREVIOUS EXTREME FLOWS: The greatest recorded flow was on October 1, 1932, when the extreme flow was 3,340 second feet with a gage height of 166.57 feet. The creek is dry except during storms.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	57.9	0	0.0	0	0	*10.8	1	*1.0	0
2	0	0	0	35.2	*1	0.0	0	0	0	1	76.0	0
3	0	0	0	0	*1	3.3	0	0	0	*1	110.0	0
4	0	0	0	0	*1	36.4	0	0	0	*1	16.5	0
5	0	0	0	0	0	7.0	0	0	.1	*1	6.2	0
6	0	0	0	0	0	35.2	0	0	31.4	*1	3.0	0
7	0	0	0	8.8	0	1.0	0	0	51	*.5	*2.0	0
8	0	0	0	0	0	0.0	0	0	42	*.5	*2.0	0
9	0	0	0	0	0	41.8	0	0	6	0	*1.8	0
10	0	0	0	0	54.7	*49.5	0	0	0	0	*1.5	0
11	0	0	0	0	34.4	138.0	0	0	23.5	0	*1.2	52.6
12	0	0	0	0	11	516.0	0	0	0	0	*1.0	*1,740
13	0	0	0	0	*1	603.0	55.7	0	0	0	*.8	*917
14	0	0	0	0	*1	103.0	370.0	0	0	0	*.5	*23
15	0	0	0	0	0	30.8	470.0	0	0	0	*.1	*4
16	0	0	0	0	0	20.0	64.2	0	0	0	*.1	*4
17	0	0	0	0	0	5.0	25.0	0	0	0	*.1	*3.5
18	0	0	0	0	0	2.0	0	0	19.1	16.4	0	*3.5
19	0	0	0	0	0	*2.0	0	0	38.5	92.2	0	*3.5
20	0	0	0	0	0	*1.0	0	0	0	27.5	0	*3
21	0	0	0	0	0	*1.0	0	0	0	5.4	0	*3
22	0	0	0	0	45.7	0	0	0	6.6	3.0	0	*3
23	0	0	0	0	141	0	0	0	45.4	*2.5	0	*3
24	0	0	0	0	*582	0	0	0	195	*2	0	*3
25	0	0	0	0	*130	0	0	0	275	*2	0	*3
26	0	0	0	46.3	*31.5	0	0	0	185	*2	0	*3
27	0	0	0	149.0	*2	0	0	41.2	40.7	*1	0	*3
28	0	0	0	21.7	*1	0	0	0	9	*1	0	*3
29	0		0	*2.0	0	0	0	0	3	*1	0	*3
30	0		0	*1.0	0	0	0	0	2	*1	0	*3
31	0		0		0		0	0		*1		*3

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January							0	0	
February							0	0	
March							0	0	
April	159.45		27	265		0	10.7	638	
May	161.05		24	1,000		0	33.5	2,060	
June	160.99		13	900		0	53.2	3,170	
July	160.55		15	600		0	31.8	1,950	
August	156.56		27	66		0	1.3	81.7	
September	159.75		25	325		0	*32.8	*1,950	
October	158.22		19	135		0	5.3	327	
November	159.03		3	205		0	7.5	444	
December	162.99		12	4,700		0	89.9	5,530	
The Year	162.99			4,700		0	22.3	16,150.7	30.2

*Partly estimated.

RIO GRANDE AT RIO GRANDE CITY STATION

DESCRIPTION: Automatic water-stage recorder and cable with stand up cable car and winch, located about 4 miles by river below Rio Grande City, Starr County, Texas, and 7.3 miles below the confluence of the Rio San Juan with the Rio Grande. Zero of gage is at mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 47 meter measurements during the year. Computations by shifting channel methods. 1935 records fair.

RECORDS AVAILABLE: January 1, 1932, to December 31, 1935.

REMARKS: When the water at this station rises above a gage height of about 151 feet, water overflows the left river bank beyond the station cable, but such water is measured.

When floods in the Rio San Juan exceed a gage height of about 38 feet or a flow of about 160,000 second feet at the Santa Rosalia station, water begins to overflow the right bank of that river at several places from El Asucar (20 miles below Santa Rosalia station) downstream. This overflow. water cuts across country and reaches the Rio Grande about 9 river miles below Rio Grande City gaging station and is therefore not measured there. The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla and Don Martin reservoirs in Mexico. With all closed basins eliminated, the drainage area above this station is 174,208 square miles; 94,323 being in the United States and 79,885 in Mexico.

PREVIOUS EXTREME FLOWS: The highest reported gage height was in 1909, when the extreme gage height was 159.2 feet, present gage datum, as reported by residents and confirmed by extreme gage height at Rio Grande City Weather Bureau gage and other points in the vicinity, as found in Joint Report of International Boundary Commission 1910-11.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,740	2,090	1,980	7,870	2,080	40,000	8,840	7,210	3,350	19,600	6,060	4,290
2	2,500	2,090	2,000	6,010	1,680	*39,100	7,410	5,600	3,330	*18,500	7,250	4,180
3	2,390	2,100	2,040	3,220	1,540	*24,700	6,050	4,500	3,080	16,900	8,410	4,180
4	2,390	2,110	2,070	2,210	2,080	*22,800	5,070	3,930	3,100	*15,000	7,790	4,120
5	2,380	2,140	2,040	1,880	8,340	*26,100	4,810	3,590	9,950	*13,000	7,970	4,090
6	2,360	2,260	1,960	1,700	7,280	17,500	5,450	3,330	33,500	*12,000	8,060	4,110
7	2,380	2,210	1,930	2,750	4,030	17,100	5,760	*3,360	61,500	*11,500	7,200	4,090
8	2,400	2,180	1,890	8,240	2,390	35,300	5,690	*3,340	87,500	*12,000	7,020	4,120
9	2,400	2,090	1,870	5,240	2,420	32,600	6,440	*3,700	105,000	*10,000	6,850	4,170
10	2,330	2,040	1,840	3,260	2,850	17,900	5,200	*4,300	86,800	*9,200	6,560	4,230
11	2,260	2,150	1,850	2,430	2,950	21,100	5,620	*5,000	84,300	*8,500	6,150	*7,470
12	2,220	2,280	1,850	2,020	4,190	21,100	5,080	5,240	*66,100	*8,000	5,940	*8,990
13	2,210	2,770	1,800	1,770	3,000	27,300	4,330	5,290	*34,000	*7,600	5,740	*7,380
14	2,260	3,580	1,800	1,700	1,970	28,700	6,080	*5,110	*23,000	*7,400	5,540	*6,390
15	2,270	2,870	1,780	1,750	1,620	25,300	11,700	*12,000	*17,000	*7,200	5,300	*5,470
16	2,240	2,390	1,710	1,630	1,450	*64,600	9,350	*6,420	*14,000	*7,000	5,210	*4,860
17	2,260	2,380	1,710	1,540	2,020	*95,400	8,160	*4,220	*13,000	6,750	5,850	*4,480
18	2,230	2,420	1,770	1,450	6,280	*112,000	5,580	*3,960	*12,000	6,950	6,090	*4,300
19	2,150	2,290	1,720	1,400	26,900	*50,700	4,400	*3,660	*11,000	10,600	5,830	*4,280
20	2,230	2,180	1,640	1,380	42,800	26,600	4,890	*3,350	*11,000	10,300	5,570	*4,300
21	2,220	2,120	1,620	1,410	23,400	21,700	6,170	*3,210	*11,000	12,100	5,280	*4,380
22	2,320	2,120	1,610	1,420	19,000	17,700	5,130	3,020	*15,000	10,500	5,160	*4,400
23	2,340	2,100	1,570	1,910	20,900	14,300	4,850	*3,000	*27,000	8,390	5,010	*4,380
24	2,190	2,070	1,520	2,540	32,800	12,600	4,970	*3,000	34,000	9,600	4,820	*4,350
25	2,210	2,080	3,360	2,050	25,100	11,300	14,000	*3,170	27,400	8,840	4,710	*4,370
26	2,160	2,050	4,580	2,230	12,500	10,200	22,200	*3,600	20,400	7,380	4,640	*4,540
27	2,160	1,970	2,950	11,100	6,980	9,130	19,300	*4,000	17,700	6,750	4,620	*8,250
28	2,120	1,980	2,050	6,380	8,290	8,020	*13,000	*4,190	18,900	7,080	4,530	*10,100
29	2,090		4,140	4,450	6,910	12,100	*11,800	*4,240	18,200	6,830	4,430	*8,060
30	2,050		3,490	2,790	5,010	13,000	*10,900	3,970	16,900	7,140	4,390	*7,400
31	2,040		2,690		15,400		*8,700	3,540		6,640		*6,990

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	127.85	127.20	1	2,810	31	2,020	2,270	140,000	
February	128.51	127.06	14	3,750	27	1,950	2,250	125,000	
March	130.09	126.57	31	6,190	25	1,490	2,160	133,000	
April	133.00	126.64	27	17,600	21	1,360	3,190	190,000	
May	140.00	126.61	20	45.500	17	1,340	9,810	603,000	
June	139.45		9	39,200					
June	151.75	131.51	18	122,000	28	7,690	29,200	1,737,000	
July	136.68	129.58	25	26,400	20	4,090	7,970	490,000	
August	133.32	128.16	15	13,800	24	2,940	*4,390	*270,000	
September	150.60	128.10	9	109,000	4	2,980	*29,600	*1,759,000	
October	135.20	130.23	1	*21,000	31	6,290	*9,980	*613,000	
November	131.30	129.13	3	8,600	30	4,350	5,930	353,000	
December	132.70	128.85	27	12,800	5	4,080	5,380	331,000	
The Year	151.75	126.57		122,000		1,340	9,320	6,744,000	38.7

*Partly estimated.

NORTH FLOODWAY STATION SOUTH OF McALLEN, TEXAS

DESCRIPTION: See Water Bulletin No. 2 for description of station.
RECORDS: Based upon previous rating curve and 4 current meter measurements made in June and September. 1935 records considered fair.
RECORDS AVAILABLE: For all flood flows since the completion of the floodways in 1926.
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.
PREVIOUS EXTREME FLOWS: The greatest previous flow was on September 7, 1932, when the extreme gage height was 21.37 feet, and the extreme flow was 38,710 second feet.

Mean Daily Discharge in Second Feet and Period Summary, 1935

Day	Mean Daily Second Feet	Day	Mean Daily Second Feet
June 19	*766	Sept. 10	3,060
June 20	*2,940	Sept. 11	6,180
June 21	*557	Sept. 12	6,710
June 22	*38	Sept. 13	5,630
		Sept. 14	1,690
Sept. 9	2	Sept. 15	259

Month	Extreme Gage Height—Feet		Extreme Second Feet			Acre Feet
	High	Low	Dates	High	Low	Total
June	14.92	0	20	3,670	0	8,530
September	16.23	0	12	6,860	0	46,700
Period	16.23	0		6,860	0	55,230

SOUTH FLOODWAY STATION SOUTH OF McALLEN, TEXAS

DESCRIPTION: See Water Bulletin No. 2 for description of station.
RECORDS: Based upon previous rating curve and 5 current meter measurements made in June and September. 1935 records considered good.
RECORDS AVAILABLE: For all flood flows since the completion of the floodways in 1926.
REMARKS: This floodway diverts only excess flood water from the Rio Grande at an inlet about 3 miles upstream from the Hidalgo gaging station.
PREVIOUS EXTREME FLOWS: The greatest previous flow was on September 8, 1932, when the extreme gage height was 22.16 feet and the extreme flow was 29,120 second feet.

Mean Daily Discharge in Second Feet and Period Summary, 1935

Day	Mean Daily Second Feet	Day	Mean Daily Second Feet
June 19	1,490	Sept. 11	6,590
June 20	1,510	Sept. 12	7,750
June 21	95	Sept. 13	5,450
June 22	17	Sept. 14	699
		Sept. 15	101
Sept. 10	2,260	Sept. 16	12

Month	Extreme Gage Height—Feet		Extreme Second Feet			Acre Feet
	High	Low	Dates	High	Low	Total
June	16.98	0	20	2,920	0	6,170
September	18.96	0	12	7,990	0	45,300
Period	18.96	0		7,990	0	51,470

RIO GRANDE AT HIDALGO STATION

DESCRIPTION: Staff gage at international bridge at Hidalgo, Hidalgo County, Texas. Zero of gage is 79.28 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 49 meter measurements during the year from bridge.

RECORDS AVAILABLE: July, 1928, to December, 1931; also September and October, 1932, and September, 1933; peak flows in 1934, January to July and September, 1935. 1935 records considered fair.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla and Don Martin reservoirs in Mexico. With all closed basins eliminated, the drainage area above this station is 175,110 square miles; 94,663 being in the United States and 80,447 in Mexico. Since 1931 this station has been operated only during flood periods. Water begins to flow into the Hackney Lake and Mission inlets of the American floodways above Hidalgo when the river at this station reaches a stage of about 22 feet, but the river may begin to overflow its banks at Granjeno and Jardin de Flores when the stages at Hidalgo are as much as 4 feet lower. In 1935 this gage height of 22 feet corresponded to a flow of about 60,000 second feet. The bottom of the river at this station is subject to considerable erosion during floods.

PREVIOUS EXTREME FLOWS: See previous Water Bulletins and Special Flood Report-1932 by the American Section of this Commission.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*2,890	2,060	1,800	3,460	3,470	23,700	*8,740	*	3,490			
2	*2,760	2,090	1,910	6,470	2,700	40,500	6,980		3,540			
3	*2,600	2,190	1,960	5,750	2,300	33,200	6,150		3,280			
4	2,520	2,120	1,910	4,450	1,600	32,200	5,520		3,150			
5	2,460	1,710	1,720	3,110	2,080	26,600	4,940		3,300			
6	2,460	1,820	1,740	2,260	6,040	23,600	4,520		16,700			
7	*2,380	1,890	1,680	1,810	5,110	15,600	5,020		39,800			
8	*2,340	1,930	1,650	2,970	4,080	27,600	5,450		53,600			
9	*2,330	1,950	1,720	5,390	3,250	38,900	*5,130		60,000			
10	*2,380	1,960	1,850	4,440	2,570	27,700	*5,570		62,300			
11	2,340	1,920	1,770	3,560	2,810	18,600	*4,900		67,100			
12	2,320	2,050	1,600	*2,750	2,990	22,000	*4,970		68,900			
13	*2,270	2,260	1,560	*2,200	3,660	22,700	*4,790		63,700			
14	2,260	2,480	1,570	*1,860	3,510	29,900	*4,400		41,600			
15	2,160	3,020	1,580	*1,670	2,640	24,300	*5,050		26,700			
16	*2,290	2,910	1,620	1,470	1,950	34,900	*9,380		17,100			
17	2,250	2,440	1,660	1,400	1,710	50,200	*9,790		15,100			
18	2,180	2,160	1,440	1,170	3,340	55,100	*8,130		14,300			
19	2,140	2,180	1,390	1,100	8,700	58,500	*5,790		13,400			
20	2,150	2,010	1,370	1,330	30,000	50,900	*4,850		12,300			
21	2,130	1,950	1,210	1,290	33,200	26,500	*5,120		11,800			
22	*1,960	1,860	1,080	1,400	21,000	17,600	*5,640		12,100			
23	*2,120	1,850	1,070	1,480	22,000	12,800	*5,240		20,200			
24	*2,150	1,930	1,080	1,780	23,100	9,820	*4,950		32,300			
25	1,970	1,790	989	2,560	33,900	8,380	*5,060		30,400			
26	1,940	1,830	2,150	2,470	20,700	7,340	*22,200		24,200			
27	*2,010	1,910	3,780	3,090	11,000	6,680	*23,800		18,600			
28	*1,920	1,830	3,330	6,790	7,990	6,400	*14,700		17,200			
29	1,930		2,580	4,690	8,340	6,120	*9,790		18,500			
30	1,960		3,160	4,000	7,470	8,930	*9,430		17,100			
31	1,980		3,850		6,370		*9,000					

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	*3.06	1.70	1	*3,090	31	1,900	2,240	138,000	
February	3.37	1.30	15	3,130	5	1,670	2,080	115,000	
March	3.94	.40	31	4,040	25	937	1,860	115,000	
April	7.60	.63	28	7,850	19	995	2,940	175,000	
May	16.35		21	34,900					
May	15.82	*1.40	25	35,500	4	1,490	9,340	574,000	
June	18.04		2	43,000					
June	17.41	7.72	9	40,500	29	5,980	25,600	1,522,000	
June	22.86		19	60,500					
July	*13.60	5.64	26	*27,200	15	*4,230	*7,580	*466,000	
September	23.40		12	69,000					
September	16.20	3.15	24	33,600	5	3,030	26,400	1,570,000	
The Period	23.40	.40		69,000		937	9,740	4,675,000	

*No record for August.
*Partly estimated.

RIO GRANDE AT MERCEDES BRIDGE STATION

DESCRIPTION: Staff gage located at Mercedes pumping plant, about 500 feet upstream from Mercedes-Rio Rico bridge. The meter measurements made from the bridge. Zero of gage is 50.53 feet above mean sea level, United States Coast and Geodetic Survey datum. A staff gage of the United States Weather Bureau located at the bridge has its datum 3.47 feet below mean sea level.

RECORDS: Based upon daily gage readings and six current meter measurements during the year, as well as the previous rating curve. 1935 records considered fair.

RECORDS AVAILABLE: Records of discharge are available for September and October, 1932, and from April 28 to October 3, 1935. Unpublished records of daily river stage are available for each year from 1910 to 1935, except for 1913.

PREVIOUS EXTREME FLOWS: The highest previous recorded stage was in September and October, 1932, when a stage of 75.80 feet was reached, with a corresponding discharge of 37,320 second feet.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1					2,650	12,700	11,100	7,160	2,620	15,600		
2					1,930	29,900	9,840	6,180	2,430	16,700		
3					1,390	33,400	8,060	5,500	2,170	17,800		
4					1,060	32,500	6,980	4,530	1,940			
5					946	30,800	6,040	3,990	1,790			
6					2,780	26,500	5,050	3,310	6,030			
7					5,120	19,900	4,920	2,830	24,500			
8					3,700	17,900	5,300	2,690	34,300			
9					2,450	31,500	5,210	2,500	37,200			
10					1,930	32,400	5,180	2,350	39,000			
11					1,830	23,400	5,400	2,480	39,800			
12					1,990	22,400	4,780	3,160	39,000			
13					2,210	23,300	4,680	3,450	39,600			
14					2,800	28,900	4,640	3,800	38,600			
15					2,540	29,600	4,550	4,280	32,900			
16					1,670	27,800	6,800	7,350	24,400			
17					1,200	36,300	8,490	6,870	18,700			
18					974	38,500	7,610	5,050	15,900			
19					1,230	39,000	6,300	3,940	14,100			
20					14,200	39,200	4,680	2,840	12,700			
21					28,500	34,800	4,030	2,430	11,900			
22					25,700	23,000	4,240	2,150	11,900			
23					19,500	17,400	4,590	1,930	14,400			
24					20,800	14,400	4,140	1,810	26,000			
25					28,000	12,300	3,870	1,810	29,400			
26					24,500	11,500	7,600	1,810	26,700			
27					14,400	10,200	19,400	1,800	20,200			
28				5,300	9,340	9,190	17,500	1,790	16,900			
29				5,490	7,840	8,420	10,900	2,160	16,800			
30				3,760	8,370	10,200	8,980	2,420	16,600			
31					7,150		8,580	2,580				

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
April 29 to 31								28,900	
May	73.70		21	30,500					
May	73.40	60.50	25	29,600	14	2,950	8,020	493,000	
June	74.90		3	34,300					
June	75.00	64.50	10	34,600	30	8,150	24,200	1,443,000	
June	76.50		20	39,700					
July	70.60	61.30	27	21,600	25	3,780	7,080	435,000	
August	64.50	59.10	16	8,150	28	1,730	3,450	212,000	
September	76.60		11	40,000					
September	73.40	59.15	25	29,600	5	1,770	20,600	1,227,000	
October 1 to 3								99,400	
The Period	76.60			40,000			12,500	3,938,300	

RANCHO VIEJO FLOODWAY STATION NEAR BROWNSVILLE, TEXAS

DESCRIPTION: Staff gage at the Military Highway bridge over the Rancho Viejo Floodway, about nine miles northwest of Brownsville, Texas. Meter measurements made from bridge. The highway bridge is located about 1.2 mile from the river. Zero of gage is mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on several gage readings per day and thirteen meter measurements during the year and previous rating curve. 1935 records considered fair.

RECORDS AVAILABLE: For 1935.

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 feet, or 5 meters, at the Matamoros gaging station, water will begin to flow at this gaging station if the control gates are open.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
2						2,150						
3						2,050						
4						2,040						
5						2,580						
6						2,670						
7						1,610			245			
8									1,960			
9						2,200			2,070			
10						2,680			2,010			
11						2,420			2,000			
12						2,090			2,240			
13						1,990			2,480			
14						2,490			2,570			
15						2,490			2,510			
16						2,490			1,140			
17						2,490						
18						2,560						
19						2,680						
20						2,450						
21					1,380	2,560						
22					2,190	708						
23					994							
24					1,100				877			
25					1,930				2,280			
26					1,700				1,070			
27					549							
28												
29												
30												
31												

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
May 21-27	44.3		25	2,490			1,410	19,500	
June 2- 7 9-22	44.9		6	3,420			2,270	90,000	
September 7-16	44.5		14	2,660					
24-26	44.4		25	2,510			1,800	46,500	
The Period	44.9			3,420			1,970	156,000	

RIO GRANDE AT MATAMOROS STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car and winch, located opposite Matamoros, Tamaulipas, Mexico, 53.3 miles upstream from the Gulf of Mexico. The water-stage recorder is attached to the central pier of the railroad bridge over the Rio Grande between Matamoros and Brownsville, Texas. The cable and car are located 0.3 mile upstream from the bridge. Zero of present gage is 15.26 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 151 meter measurements during the year. Computations by shifting channel methods. 1935 records good.

RECORDS AVAILABLE: 1901 to 1913; 1923 to December, 1935.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla and Don Martin reservoirs in Mexico. Immediately above this station, particularly in Cameron and Hidalgo Counties, Texas, pumping plants divert annually large amounts of water. 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 flood channels and floodways in both countries. The gage datum was lowered five feet on October 3, 1930. With all closed basins eliminated, the drainage area above this station is 175,138 square miles; 94,677 being in the United States and 80,461 in Mexico.

PREVIOUS EXTREME FLOWS: The greatest previous flow recorded here was on July 20, 1906, when a mean daily flow of 38,300 second feet occurred with a gage height of 13.39 feet. The highest gage reading was on September 12, 1925, when a reading of 21.63 present gage datum was reached. In 1930 the river at this station was dry for a few days in March and April. Numerous records of extreme flows may be seen in previous Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,070	1,080	893	2,090	3,850	8,720	8,720	8,900	3,220	15,300	6,710	4,270
2	2,360	1,280	819	2,240	3,110	19,800	9,300	7,590	3,430	16,000	6,780	4,310
3	2,590	1,570	819	2,950	2,330	24,200	8,260	6,710	3,080	17,400	6,640	4,030
4	2,480	1,720	1,050	3,920	1,980	25,300	7,200	6,000	2,730	17,000	6,920	3,780
5	2,260	1,430	961	3,160	1,530	26,300	6,570	5,120	2,510	15,400	7,520	3,780
6	2,100	1,140	749	2,220	1,420	24,000	5,580	4,480	2,510	14,000	7,800	3,960
7	2,100	840	537	1,610	4,170	20,600	5,120	3,740	20,000	12,600	7,730	4,170
8	1,870	685	505	1,440	5,090	17,900	5,010	3,360	26,100	11,900	7,700	4,240
9	1,740	745	586	1,130	4,200	25,300	5,190	3,190	25,400	11,800	7,310	4,240
10	1,740	1,010	749	2,880	3,190	30,700	4,910	2,960	24,100	11,300	7,050	4,030
11	1,620	1,360	1,070	3,640	2,620	28,400	5,160	2,840	24,900	10,700	6,730	4,100
12	1,670	1,470	901	3,030	2,480	19,900	5,370	3,080	24,900	9,960	6,360	4,450
13	1,830	1,650	614	2,130	2,560	19,800	4,980	3,570	25,000	9,460	6,000	5,690
14	1,850	1,860	378	1,710	2,840	20,900	4,870	4,100	25,500	8,970	5,620	6,300
15	1,670	2,100	205	1,560	3,310	25,100	4,770	4,480	22,700	8,120	5,330	7,030
16	1,580	2,220	163	982	3,020	25,300	4,940	5,720	20,800	7,560	5,190	6,820
17	1,520	2,300	171	530	2,220	24,000	7,200	8,190	17,300	7,200	5,300	6,180
18	1,430	2,380	470	286	1,730	25,500	7,910	7,200	14,500	6,820	5,330	5,510
19	1,390	2,080	604	174	1,410	25,100	7,490	5,690	13,100	6,850	5,370	4,910
20	1,410	1,560	298	168	4,840	23,800	6,570	4,480	12,200	7,310	5,620	4,560
21	1,740	1,420	144	392	18,500	22,400	5,260	3,450	11,300	9,080	5,540	4,380
22	1,740	1,360	99	908	21,800	20,800	4,520	2,940	11,100	9,890	5,330	4,170
23	1,690	1,210	83	1,070	18,600	17,000	4,630	2,650	11,400	10,300	5,190	4,100
24	1,430	1,210	58	1,170	17,800	13,800	4,870	2,390	18,500	9,640	5,260	4,030
25	1,290	1,460	55	1,200	19,800	10,800	4,590	2,320	25,400	8,300	5,250	4,200
26	1,290	1,250	93	1,320	22,900	10,600	4,910	2,410	22,300	8,260	4,660	4,450
27	1,390	1,320	50	1,790	18,600	9,320	16,300	2,250	20,000	8,400	4,270	4,480
28	1,600	1,010	76	2,380	11,400	8,760	19,800	2,250	17,400	7,800	4,200	4,700
29	1,520		961	7,840	8,400	7,980	15,000	2,250	16,000	6,990	4,310	7,910
30	1,310		1,160	5,690	8,580	7,590	10,900	2,590	16,000	6,820	4,240	7,660
31	*1,060		1,190		8,260		9,890	2,930		6,750		6,890

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	7.28	*4.90	3	2,620	31	*980	1,720	106,000	
February	7.22	4.17	18	2,670	8	643	1,470	81.600	
March	5.45	1.48	31	1,500	28	30.1	533	32,700	
April	11.12	2.30	30	8,690	19	139	2,050	122,000	
May	20.96	5.45	26	23,100	19	1,350	7,510	462,000	
June	22.21		10	31,400					
June	22.28	12.14	18	25,500	1	7,240	19,500	1,162,000	
July	19.06	9.71	28	20,300	26	4,170	7,290	448,000	
August	13.48	7.25	1	9,360	28	2,160	4,190	258,000	
September	20.50		8	26,800					
September	21.03	7.38	14	25,700	6	2,440	16,000	951,000	
October	18.14	11.97	3	17,700	31	6,710	10,300	632,000	
November	12.63	9.48	6	8,230	28	4,170	5,910	352,000	
December	12.99	8.83	29	8,550	4	3,670	4,950	305,000	
The Year	22.28	1.48		31,400		30.1	6,790	4,912,300	28.0

*Partly estimated.

RIO GRANDE AT LOWER BROWNSVILLE STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located about 1,000 feet below the El Jardin pumping plant and about 8.5 river miles below Brownsville, Texas. Zero of gage is United States Coast and Geodetic Survey mean sea level datum.

RECORDS: Based upon 40 current meter measurements made during the year. Computations by shifting channel methods. Last eight months estimated from Matamoros Station. 1935 records good for first four months, fair for last eight months.

RECORDS AVAILABLE: For the years 1934 and 1935.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and El Vado, Elephant Butte and Carlsbad reservoirs in the United States, also by irrigation diversions and Boquilla and Don Martin reservoirs in Mexico. Immediately above this station, particularly in Cameron and Hidalgo Counties, Texas, pumping plants divert annually large amounts of water. 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 flood channels and floodways in both countries. With all closed basins eliminated, the drainage area above this station is 175,138 square miles; 94,677 being in the United States and 80,461 in Mexico.

PREVIOUS EXTREME FLOWS: From records at El Jardin pumping plant, where the river gage datum is 1.11 feet above this gaging station datum, the maximum gage height at this station in recent years was 31.2 feet. This stage was reached during the floods of 1922, 1931 and 1932. The river was dry at this station a few days in 1930.

Mean Daily Discharge in Second Feet and Annual Summary, 1935

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,120	976	896	1,800	4,020	§ 8,660	*8,390	*8,840	3,160	§15,400	§ 6,680	§ 4,240
2	2,290	1,200	806	2,140	*3,150	§19,800	*9,470	*7,640	3,420	§15,900	§ 6,750	§ 4,280
3	2,570	1,470	765	2,460	*2,580	§24,200	*8,610	*6,760	3,110	§17,300	§ 6,650	§ 4,000
4	2,500	1,630	936	3,440	*2,020	§25,300	*7,500	*6,030	2,760	§17,000	§ 6,700	§ 3,750
5	2,310	1,490	925	3,240	*1,500	§26,200	*6,580	*5,250	2,530	§15,400	§ 7,490	§ 3,740
6	2,140	1,120	703	2,440	*1,400	§23,900	5,610	*4,500	2,490	§14,000	§ 7,720	§ 3,880
7	2,140	795	548	1,630	*3,790	§20,500	*5,230	*3,780	§20,000	§12,600	§ 7,670	§ 4,110
8	1,960	655	416	1,410	*4,930	§17,800	*5,070	*3,440	§26,100	§11,900	§ 7,650	§ 4,190
9	1,720	663	549	1,150	4,250	§25,300	*5,230	*3,180	§25,400	§11,700	§ 7,280	§ 4,210
10	1,710	861	631	2,100	*3,360	§30,700	*4,990	*2,990	§24,100	§11,400	§ 7,000	§ 4,000
11	1,620	1,200	899	3,470	*2,690	§28,400	*5,090	*2,880	§24,800	§10,700	§ 6,720	§ 4,070
12	1,630	1,380	872	3,110	*2,460	§19,900	*5,290	3,140	§24,800	§ 9,850	§ 6,330	§ 4,420
13	1,820	1,520	632	2,280	*2,550	§19,800	*5,060	*3,520	§25,000	§ 9,430	§ 6,000	§ 5,610
14	1,900	1,750	426	1,780	*2,780	§20,900	*4,970	*3,990	§23,500	§ 8,940	§ 5,450	§ 6,450
15	1,730	1,960	296	1,530	*3,120	23,100	*4,990	*4,430	§22,700	§ 8,060	§ 5,300	§ 6,980
16	1,560	2,100	256	1,080	*3,010	23,300	*4,980	*5,070	§20,800	§ 7,440	§ 5,160	§ 6,790
17	1,490	2,360	236	578	*2,330	24,000	*6,530	*7,570	§17,200	§ 7,130	§ 5,270	§ 6,150
18	1,400	2,550	344	338	*1,760	23,500	*7,690	*7,380	*14,400	§ 6,760	§ 5,300	§ 5,480
19	1,380	2,160	339	161	*1,430	825,100	*7,450	*6,000	13,000	§ 6,820	§ 5,340	§ 4,880
20	1,390	1,660	370	197	§ 4,800	§23,700	*6,690	*4,780	12,100	§ 7,280	§ 5,550	§ 4,490
21	1,700	1,430	*157	292	§ 18,400	§22,400	*5,490	*3,450	11,200	§ 9,050	§ 5,480	§ 4,320
22	1,740	1,340	*35.8	795	§ 21,700	§20,800	*4,760	*2,990	11,000	§ 9,840	§ 5,260	§ 4,100
23	1,750	1,130	*10.7	1,010	§ 18,500	§17,000	4,650	*2,650	11,300	§10,400	§ 5,160	§ 4,070
24	1,510	1,100	*1.0	1,090	§ 17,700	*13,400	*4,880	*2,420	18,500	§ 9,600	§ 5,230	§ 4,000
25	1,320	1,280	0	1,120	§ 19,700	11,100	*4,640	*2,310	23,300	§ 8,270	§ 5,200	§ 4,170
26	1,320	1,210	0	1,220	§ 22,800	10,700	*4,560	*2,390	22,200	§ 8,230	§ 4,500	§ 4,420
27	1,390	1,250	0	1,660	§ 18,500	9,490	*13,100	*2,260	20,000	§ 8,370	§ 4,300	§ 4,430
28	1,610	1,090	0	2,190	§ 11,300	8,770	*19,100	*2,190	17,300	§ 7,770	§ 4,140	§ 4,630
29	1,570		603	6,730	§ 8,300	8,060	*14,900	*2,170	15,900	§ 6,930	§ 4,240	§ 7,850
30	1,340		1,050	6,310	§ 8,490	7,630	*11,600	*2,480	15,900	§ 6,740	§ 4,180	§ 7,590
31	1,020		1,050		§ 8,170		*9,820	*2,890		§ 6,700		§ 6,830

Month	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	17.15	14.35	3	2,620	31	940	1,730	106,000	
February	17.12	13.60	18	2,590	9	633	1,400	78,000	
March	14.60		31	1,120	25-28	0	483	29,700	
April	21.03	11.64	29	7,430	19	95	1,960	117,000	
May	31.23	*15.33	26	§ 23,000	6	1,360	*7,470	*459,000	
June			10	§ 31,000	1	*6,890	*19,500	*1,161,000	
July	29.24	20.08	28	19,600	26	4,270	*7,190	*442,000	
August	24.06	17.25	1	9,220	29	2,150	*4,170	*257,000	
September		17.58	8	§ 26,500	6	2,260	*15,900	*948,000	
October			3	§ 17,500	31	§ 6,660	§ 10,200	§ 629,000	
November			6	§ 8,150	28	§ 4,110	§ 5,860	§ 349,000	
December			29	§ 8,520	4	§ 3,600	§ 4,910	§ 302,000	
The Year				§ 31,000		0	*6,740	*4,877,700	*27.9

*Partly estimated.
§Estimated.

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES - 1935

The chemical analyses reported here were made by the United States Department of Agriculture at Riverside, California, from water samples taken by the United States Section of the International Boundary Commission.

For the entire year at San Marcial each water sample was analyzed. The monthly figures in the table represent the mean for each month weighted according to the river flow at the time of sampling. For the entire year at El Paso, Fort Quitman, Rio Grande City and Lower Brownsville a composite sample was made up for each month at each station. These composite samples were composed by using from each sample an amount proportional to the river flow at the time the sample was taken. This method reduced the analytical work and also improved the basis of estimating the salt burden passing each station by weighting according to river flow.

To convert "Milligram Equivalents" to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: HCO_3, 61; Cl, 35.5; SO_4, 48; Ca, 20; Mg, 12.15; Na, 23; NO_3, 62.

Conductance, reported in the tables as ($K \times 10^5$ at 25° C), is a relative measure of the total salt concentration in the water samples. (See Circular No. 232 U. S. Dept. Agr., July, 1932). It is a definite statement of an important physical property of the solution and is quite as valid and is probably more precise and more significant than is the statement of concentration in terms of total dissolved solids as parts per million.

Month	No. of Samples	Tons of Salts: Per Acre Foot	Tons of Salts: Per Month	Mean $K \times 10^5$ @25°C	Total Salts p.p.m.	Boron p.p.m.	pH	% Na ‡	% Cl **	Mean Milligram Equivalents: Ca	Mg	Na	HCO_3	SO_4	Cl	NO_3
Water Samples from Rio Grande at San Marcial, New Mexico																
Jan.	5	1.09	48,800	119	800	0.22	7.6	48	25	4.68	1.76	5.83	3.55	5.68	3.15	.04
Feb.	4	1.04	40,700	113	766	0.16	7.5	48	23	4.56	1.63	5.63	3.44	5.60	2.76	.04
Mar.	5	1.21	28,400	130	894	0.22	7.4	48	22	5.30	1.81	6.54	3.93	6.73	3.05	.04
Apr.	4	.99	21,200	101	727	0.20	7.7	48	22	3.98	1.42	5.01	3.33	4.84	2.37	.03
May	8	.66	121,000	71.8	488	0.12	7.5	40	16	3.36	1.05	2.99	3.04	3.27	1.22	.04
June	9	.43	158,000	46.4	316	0.09	7.4	32	13	2.41	.90	1.48	2.54	1.70	.63	.02
July	6	.53	19,000	56.1	389	0.12	7.5	45	15	2.62	.70	2.70	2.49	2.60	.91	.03
Aug.	7	2.06	222,000	192	1,510	0.19	7.7	34	8	10.81	3.73	7.43	4.37	15.76	1.84	.01
Sept.	6	1.33	86,900	135	990	0.26	7.6	40	13	6.71	2.28	5.91	3.79	9.52	1.78	.02
Oct.	4	.86	32,000	90.9	632	0.22	7.8	42	18	4.06	1.44	4.05	3.29	4.61	1.72	.03
Nov.	3	.87	44,700	94.2	643	0.16	7.8	44	21	3.98	1.39	4.34	3.04	4.51	2.14	.05
Dec.	5	.97	51,900	101	712	0.16	7.7	48	23	4.04	1.34	5.04	3.27	4.74	2.47	.01
Total & Mean		** .85	874,600	104	** 625	0.18	7.6	43	18	4.71	1.62	4.75	3.34	5.80	2.00	.03
Water Samples from Rio Grande at El Paso, Texas																
Jan.	4	2.02	17,200	224	1,483	0.30	7.8	59	40	6.55	2.89	13.81	4.82	9.04	9.24	0.01
Feb.	4	1.92	16,900	203	1,414	0.30	7.9	57	39	6.37	2.96	12.17	4.52	8.57	8.00	0.30
Mar.	4	1.60	29,500	170	1,179	-	7.8	58	34	5.64	2.03	10.14	4.18	7.79	6.08	0.02
Apr.	5	1.24	55,600	138	911	0.24	7.8	52	28	4.94	1.90	7.22	3.54	6.89	3.96	0.04
May	4	1.26	59,800	134	925	0.25	8.1	51	29	4.96	1.92	7.01	3.69	6.23	3.97	tr.
June	4	1.25	70,900	134	920	0.26	7.6	52	27	4.89	1.98	7.00	3.69	6.68	3.78	0.01
July	5	1.19	83,000	131	874	0.20	8.2	52	28	4.73	1.79	6.71	3.57	6.31	3.73	0.02
Aug.	5	.90	86,400	99.4	663	-	7.8	48	25	3.98	1.38	4.77	2.92	4.82	2.53	0.04
Sept.	4	1.17	77,300	127	864	0.20	7.9	50	29	4.94	1.53	6.41	3.46	5.76	3.82	0.02
Oct.	3	1.58	32,000	177	1,165	-	8.2	57	36	5.31	2.44	10.33	3.74	7.85	6.63	0.01
Nov.	5	1.81	20,800	202	1,333	0.22	8.0	56	37	6.34	2.33	12.21	4.73	8.36	7.82	0.01
Dec.	4	1.71	20,000	191	1,258	0.25	7.9	56	38	6.10	2.53	11.16	4.73	7.45	7.42	0.00
Total & Mean	51	** 1.24	569,400	161	** 911	0.25	7.9	54	32	5.40	2.14	9.08	3.97	7.15	5.58	0.06
Water Samples from Rio Grande at Fort Quitman, Texas																
Jan.	4	3.50	18,800	399	2,581	0.38	7.9	63	60	10.65	4.35	25.05	4.03	12.18	24.45	0.01
Feb.	4	3.50	12,300	394	2,585	0.41	7.8	63	60	10.43	4.56	25.17	4.08	12.24	24.24	0.07
Mar.	5	4.50	4,900	488	3,304	0.43	8.0	61	72	13.67	6.22	30.79	4.52	13.62	32.59	0.05
Apr.	4	4.97	5,960	544	3,653	0.45	8.0	64	66	14.03	6.48	35.40	4.08	14.91	37.47	0.04
May	5	5.23	4,600	582	3,847	0.55	8.0	63	67	14.97	7.38	37.18	4.62	15.33	39.91	tr.
June	4	2.49	9,050	303	1,835	0.33	7.5	63	60	8.22	2.96	18.43	2.65	9.33	17.88	0.02
July	4	2.79	12,000	327	2,047	0.32	7.7	62	67	8.57	3.91	19.80	3.02	9.87	19.60	0.09
Aug.	5	1.24	30,100	144	912	-	8.1	57	47	4.59	1.60	7.82	2.82	4.79	6.69	0.05
Sept.	4	1.78	102,000	204	1,315	-	7.7	58	50	6.40	2.33	11.64	3.42	6.91	10.28	0.05
Oct.	4	1.75	36,200	207	1,288	0.27	7.7	66	56	5.24	1.75	13.42	1.99	6.95	11.40	tr.
Nov.	5	3.51	36,900	402	2,583	0.35	8.2	62	61	11.14	4.25	25.36	4.03	11.97	24.90	tr.
Dec.	5	2.83	35,900	323	2,081	0.32	7.9	60	56	9.15	3.84	19.59	4.33	10.14	18.17	0.04
Total & Mean	53	** 2.12	308,710	360	** 1,562	0.38	7.9	62	60	9.76	4.14	22.47	3.63	10.69	22.30	0.04

**Weighted Mean.

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES —continued

Month	No. of Samples	Tons of Salts Per Acre Foot	Tons of Salts Per Month	Mean Kx10⁵ @25°C	Total Salts p.p.m.	Boron p.p.m.	pH	% Na ‡	% Cl **	Mean Milligram Equivalents Ca	Mg	Na	HCO_3	SO_4	Cl	NO_3
Water Samples from Rio Grande at Rio Grande City, Texas																
Jan.	5	1.21	170,000	134	893	0.21	7.9	45	38	4.49	2.90	6.45	*2.67	5.73	4.97	0.16
Feb.	4	1.25	156,000	138	921	.20	8.0	48	39	4.54	2.69	6.80	*2.62	5.79	5.35	.05
Mar.	4	1.39	185,000	155	1,026	.25	8.1	49	39	4.88	3.24	7.44	*2.57	7.11	6.17	.04
Apr.	4	1.04	198,000	122	768	.23	8.0	50	41	4.12	1.88	5.79	*2.52	4.56	4.83	.06
May	5	.66	398.000	77.2	486	.18	7.9	41	31	3.43	1.20	2.85	*2.33	3.02	2.39	.05
June	4	.60	1,034,000	67.6	438	.12	7.7	33	26	3.70	1.02	2.30	2.82	2.36	1.67	.18
July	4	.86	422,000	95.3	634	-	7.6	39	33	4.43	1.54	3.85	3.22	3.39	3.06	.18
Aug.	4	.78	210,000	86.2	572	.19	7.7	41	32	3.95	1.09	3.38	2.77	3.12	2.68	.03
Sept.	4	.52	920,000	63.7	385	.09	7.6	26	22	3.68	1.26	1.72	2.89	2.17	1.40	.05
Oct.	3	.61	375,000	70.3	450	-	7.8	41	33	2.73	1.37	2.88	*1.84	2.86	2.29	.04
Nov.	4	.95	335,000	107	698	.14	7.8	39	32	4.62	1.85	4.19	*3.04	4.44	3.39	.09
Dec.	5	.99	328,000	111	729	.17	8.2	43	37	4.40	1.90	4.80	*2.94	4.16	4.08	.04
Total & Mean	50	** .70	4,731,000	102	** 516	.18	7.9	41	34	4.08	1.83	4.37	2.69	4.06	3.52	.08
Water Samples from Rio Grande at Lower Brownsville Station, Texas																
Jan.	5	1.14	121,000	129	841	0.21	7.9	45	36	4.40	2.66	5.63	*2.82	5.40	4.68	0.04
Feb.	3	1.22	95,500	139	901	.19	7.8	47	38	4.75	2.69	6.36	2.77	5.89	5.21	.06
Mar.	6	1.34	39,800	152	986	.22	7.8	48	39	5.01	2.99	7.01	2.92	6.32	5.93	.09
Apr.	6	1.19	139,000	130	873	.20	7.8	43	39	4.90	2.73	5.81	2.82	5.33	5.16	.13
May	5	.35	251,000	60.2	402	.14	7.9	43	31	2.83	.68	2.47	*2.67	1.61	1.77	.11
June	1	.46	533,000	53.2	338	-	7.7	28	19	3.16	.80	1.53	2.92	1.52	.91	.14
July	6	.83	365,000	92.4	607	.16	7.7	40	32	4.26	1.36	3.69	2.77	3.53	3.01	tr.
Aug.	5	.67	173,000	77.1	496	.20	7.9	41	30	3.55	1.01	3.07	*2.92	2.47	2.25	.03
Sept.	4	.63	595,000	73.1	462	.23	7.4	30	26	3.94	1.51	2.37	3.49	2.23	1.98	.05
Oct.	5	.68	426,000	76.7	498	.09	7.7	45	30	3.29	1.02	3.52	2.34	3.29	2.33	.04
Nov.	4	.90	313,000	102	659	.14	7.7	40	32	4.38	1.85	4.17	3.24	3.72	3.29	.05
Dec.	4	1.09	329,000	118	802	.19	7.6	45	35	4.80	1.88	5.29	2.99	4.84	4.21	.07
Total & Mean	54	** .69	3,380,300	100	** 510	.18	7.7	41	32	4.11	1.76	4.24	2.89	3.85	3.39	.07

Date	Second Feet Flow	Mean Kx10⁵ @25°C	Total Salts p.p.m.	Boron p.p.m.	pH	Percent Na	Percent Cl	Mean Milligram Equivalents Ca	Mg	Na	CO_3 HCO_3	SO_4	Cl	NO_3
Water Samples from Rio Grande at Upper Presidio Station														
Feb. 28	13	459	3,090	0.54	7.4	59	62	13.65	5.89	28.07	3.20	15.23	29.45	0.01
Mar. 28	2	575	4,027	.63	7.2	53	64	20.42	7.90	31.36	2.16	19.67	38.37	0
June 12	496	89	641	.07	7.2	24	9	6.68	.75	2.02	1.92	6.92	.89	tr.
June 29	74	52.5	344	.22	7.3	49	26	2.14	.69	2.45	2.80	1.27	1.43	.01
Aug. 28	109	269	1,720	.26	7.9	56	52	8.62	3.27	14.87	2.87	10.08	14.05	.06
Sept. 14	1,820	181	1,301	.21	7.2	57	43	5.85	2.13	10.09	3.56	6.95	7.84	.02
Sept. 27	590	167	1,069	.16	7.6	54	52	5.85	1.56	8.60	2.28	5.51	8.41	.06
Oct. 27	248	269	1,714	.27	7.8	58	60	8.42	2.85	15.64	2.77	7.93	16.35	.05
Nov. 27	90	176	1,126	.22	7.6	52	40	6.11	2.34	9.02	3.17	7.38	7.07	0
Dec. 28	254	353	2,307	.26	7.6	63	59	9.38	3.84	22.20	3.49	11.03	21.27	0

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES—continued

Date	Second Feet Flow	Mean Kx10⁵ @25°C	Total Salts p.p.m.	Boron p.p.m.	pH	Percent Na	Percent Cl	Mean Milligram Equivalents Ca	Mg	Na	AB	HCO_3	SO_4	Cl	NO_3
Water Samples from Rio Conchos															
Feb. 28	550	82.8	584	0.21	7.8	40	14	3.87	1.22	3.46	3.36	2.61	4.64	1.19	0.01
Mar. 28	110	98.4	664	.24	7.7	48	22	4.00	1.20	4.49	4.75	2.65	5.15	2.14	.01
Apr. 28	110	118	787	.22	7.8	56	30	3.98	1.27	6.22	6.79	2.56	5.92	3.56	tr.
May 30	170	127	866	.31	7.6	55	31	4.39	1.49	6.92	7.13	2.56	6.45	4.00	tr.
June 29	400	105	716	.19	7.6	44	14	4.77	1.44	4.59	4.81	2.75	6.69	1.58	0
July 30	800	88.8	622	.22	8.0	51	14	3.64	.93	4.46	4.76	*2.58	5.45	1.29	.01
Aug. 29	310	65.9	443	.13	8.1	41	17	3.31	.68	2.58	2.80	*2.72	2.92	1.10	.05
Sept. 27	10,400	31.7	232	.05	7.7	31	8	1.88	.32	.91	.98	1.88	1.04	.19	.07
Oct. 31	1,990	59.6	409	.14	7.8	33	7	3.48	.83	1.87	2.10	*2.72	3.21	.48	tr.
Nov. 27	580	95.4	656	.24	7.5	39	16	4.52	1.58	3.98	4.27	3.12	5.62	1.63	tr.
Dec. 29	290	95.9	685	.28	8.2	42	17	4.38	1.24	4.12	4.30	*2.84	5.42	1.66	0
Water Samples from Rio Grande at Lower Presidio Station															
Sept. 5	10,600	58.6	377	0.11	8.0	36	12	3.20	0.67	2.28	2.20	2.52	2.84	0.67	0.04
Water Samples from Alamito Creek Station															
Feb. 28	2	60.6	446	0.17	7.6	67	11	1.78	0.50	4.55	4.40	4.92	1.02	0.60	0.14
Mar. 28	2	61.6	441	.16	7.7	67	12	1.84	.32	4.58	4.42	4.92	.90	.65	.11
Apr. 28	2	62.8	484	.26	7.6	69	10	1.77	.39	4.64	4.78	5.36	.91	.62	.05
May 30	2	63.0	446	.18	8.1	69	10	1.78	.45	4.74	4.88	*5.40	.98	.67	.06
June 11	594	25.9	155	.11	7.5	39	6	1.15	.54	.99	1.10	2.31	.30	.18	0
June 29	2	52.6	402	.16	8.4	71	10	1.30	.38	3.90	4.20	*4.47	.81	.57	.05
July 30	2	59.6	424	.25	8.4	80	9	1.04	.20	4.95	5.11	*4.85	.92	.57	.01
Aug. 28	1	55.6	391	.18	8.5	81	10	.96	.19	4.85	4.86	*4.56	.85	.57	.05
Sept. 27	421	35.7	278	.11	8.0	73	8	.89	.22	2.85	2.98	*3.27	.48	.29	.05
Oct. 27	3.8	56.2	409	.17	7.8	67	9	1.85	.24	4.17	4.18	*4.80	.82	.53	.02
Nov. 27	3.8	61.3	441	.22	8.3	73	9	1.51	.33	4.89	4.84	*5.05	1.05	.53	.05
Water Samples from Terlingua Creek Station															
Mar. 1	1.95	157	1,199	0.17	7.6	53	4	6.22	1.72	8.98	9.05	2.56	13.67	0.65	0.11
Mar. 31	.90	171	1,316	.28	7.7	57	4	6.23	1.82	10.59	10.74	2.41	15.67	.53	.18
May 1	.89	177	1,355	.22	7.8	56	5	6.74	1.92	10.65	11.00	*3.15	15.59	.71	.21
May 23	8.40	94.1	696	.14	7.2	49	3	4.45	.71	5.05	5.02	2.90	6.95	.31	.04
June 2	2.02	157	1,225	.19	7.8	49	5	7.43	1.85	8.61	8.77	3.78	13.29	.62	.36
June 11	4,000	61.2	421	.19	7.3	58	2	2.51	.26	3.71	3.83	4.08	2.36	.14	.02
June 30	5.32	146	1,156	.12	7.7	44	4	7.92	1.23	6.91	7.17	3.24	12.42	.48	.18
July 31	2.43	157	1,216	.18	7.7	51	4	6.97	1.65	8.49	8.84	3.07	13.64	.57	.18
Sept. 1	46.0	63.0	430	.39	8.0	62	7	2.07	.31	4.03	3.94	*2.52	3.37	.38	.05
Sept. 30	10.9	132	998	.14	8.1	49	4	5.98	1.29	7.19	7.06	*3.37	10.35	.43	.18
Oct. 31	2.86	157	1,224	.22	7.7	52	6	6.32	2.09	8.94	8.94	2.13	14.15	.57	.50
Dec. 1	2.57	155	1,192	.19	7.7	52	4	6.78	1.48	8.79	9.05	2.82	13.73	.62	.14
Dec. 31	1.72	171	1,324	.11	8.4	50	4	7.59	1.80	9.52	9.79	*3.49	14.84	.67	.18
Water Samples from Pecos River Station															
Feb. 15	216	510	3,405	0.33	7.7	62	62	11.26	9.10	32.69	32.54	2.66	17.27	32.95	0.02
Mar. 15	168	535	3,404	.33	7.6	57	63	10.89	13.02	32.36	31.36	2.16	18.02	35.09	.01
Apr. 11	213	1,107	7,842	.67	7.7	64	65	21.86	21.78	77.02	77.84	3.39	39.39	78.67	.05
May 13	145	364	2,428	.24	7.6	60	62	7.56	7.14	21.80	22.27	2.70	11.49	22.76	.02
May 28	26,800	186	1,139	.11	7.3	54	54	5.66	2.92	9.81	10.06	6.24	2.39	10.01	tr.
July 15	244	270	1,777	.19	7.3	55	59	7.49	4.84	14.39	14.87	2.62	8.51	16.01	.06
Aug. 16	248	213	1,355	.18	7.8	56	55	5.27	3.99	11.67	11.69	*2.72	6.65	11.52	.06
Sept. 17	820	416	2,940	.22	7.6	54	53	13.26	7.24	23.46	23.68	3.02	17.80	23.18	.18
Oct. 17	368	268	1,718	.19	7.8	56	56	6.69	5.44	15.07	15.20	3.12	8.92	15.25	.04
Nov. 14	322	245	1,414	.17	7.7	53	54	6.78	4.81	13.24	13.68	3.51	8.14	13.48	.14
Dec. 18	376	409	2,798	.26	7.7	57	65	10.26	7.85	24.09	24.26	3.34	14.27	24.71	.05

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES —continued

Date	Second Feet Flow	Mean Kx10⁵ @25°C	Total Salts p.p.m.	Boron p.p.m.	pH	Percent Na	Percent Cl	Mean Milligram Equivalents Ca	Mg	Na	AB	HCO_3	SO_4	Cl	NO_3
Water Samples from Devils River Station															
Mar. 5	301	36.8	225	0.05	7.3	12	13	2.62	1.06	0.49	0.34	3.34	0.14	0.40	0.14
Apr. 12	136	35.0	266	.05	7.6	16	13	2.08	.80	.51	.53	2.80	.15	.40	.06
May 30	4,960	18.2	162	.03	7.6	13	10	1.56	.38	.29	.11	1.82	.03	.09	.11
June 6	16,100	19.5	142	.05	7.4	14	18	1.76	.25	.20	.33	1.92	tr.	.13	.29
July 24	498	35.4	256	.03	7.7	20	13	2.50	.81	.53	.81	3.42	.15	.48	.07
Aug. 26	475	34.7	219	.05	8.2	17	15	2.28	1.03	.57	.67	*3.22	.20	.38	.18
Sept. 9	17,900	20.3	148	.03	7.6	8	12	1.93	.22	.22	.19	1.98	.08	.14	.14
Oct. 2	896	34.7	223	.05	7.4	10	11	2.53	.83	.32	.37	3.22	.11	.29	.11
Dec. 3	560	39.0	235	.08	7.8	10	12	2.90	.94	.44	.42	*3.66	.09	.33	.18
Water Samples from Rio San Diego Station															
Mar. 13	39.0	66.9	444	0.14	7.4	25	19	4.58	1.08	1.83	1.72	3.54	2.41	1.39	0.04
Apr. 18	46.5	60.6	434	.11	8.0	20	20	3.70	1.62	1.11	1.30	*3.64	1.65	1.29	.04
June 19	706	46.4	313	.04	7.5	14	13	3.76	.48	.67	.70	3.59	.59	.62	.14
Oct. 28	434	40.8	230	.09	7.7	6	12	3.35	.68	.26	.33	3.22	.61	.48	.05
Water Samples from Rio San Rodrigo Station															
Feb. 26	18	30.1	204	0.05	7.6	14	8	2.42	0.77	0.52	0.65	2.51	1.02	0.30	0.01
Apr. 17	6.8	45.7	350	.05	7.5	21	11	3.39	.63	.84	1.06	3.88	.66	.53	.01
May 17	2,150	19.7	109	.07	7.4	10	6	1.69	.34	.23	.17	1.92	.15	.09	.04
July 2	180	30.5	190	.02	7.6	10	7	2.60	.36	.26	.34	2.95	.12	.19	.04
Oct. 29	197	31.8	161	.05	7.8	8	7	2.74	.70	.31	.32	3.12	.38	.24	.02
Dec. 3	125	33.3	219	.11	7.6	7	7	2.78	.45	.25	.31	3.19	.09	.19	.07
Water Samples from Rio Salado Station															
Mar. 7	140	346	2,719	1.20	7.3	44	31	14.31	7.63	17.52	17.54	2.16	24.98	12.13	0.21
Apr. 3	357	246	1,854	.86	7.5	42	29	10.62	5.30	11.30	11.41	2.90	16.39	7.90	.14
May 15	225	146	1,091	.50	7.4	42	28	6.29	2.77	6.27	6.49	1.87	9.33	4.31	.04
June 6	699	74.0	502	.22	7.5	42	27	3.39	.97	2.84	3.12	1.82	3.65	2.00	.01
July 24	212	46.1	313	.11	7.5	45	24	2.25	.37	1.79	2.16	1.73	1.91	1.10	.04
Aug. 26	169	312	2,271	1.16	7.6	42	32	11.99	7.10	15.42	15.49	1.68	21.94	10.85	.11
Sept.28	225	121	831	.34	7.5	42	30	5.06	2.14	5.01	5.26	1.78	6.90	3.73	.05
Oct. 25	275	368	2,905	1.44	8.2	44	31	15.66	8.30	18.69	18.95	*2.72	26.79	12.86	.54
Nov. 22	225	310	2,315	1.09	8.2	43	31	13.24	6.86	15.07	15.65	*2.67	21.83	10.71	.54
Water Samples from Rio San Juan Station															
Mar. 8	205	255	1,881	0.66	7.6	49	35	8.00	6.34	13.77	13.63	2.75	15.44	9.64	0.14
Apr. 10	162	151	977	.36	7.7	45	29	5.04	3.79	7.23	7.36	2.60	8.97	4.58	.04
May 14	51.6	154	1,124	.30	7.3	52	37	5.07	2.39	7.96	8.18	2.51	7.31	5.82	.04
June 5	2,190	66.9	443	.16	7.7	52	46	2.48	.73	3.43	3.42	1.57	2.01	3.02	.03
July 23	300	107	745	.22	7.8	38	25	5.13	1.80	4.10	4.23	1.73	6.61	2.68	.14
Aug. 22	141	63.6	402	.18	8.0	50	33	2.27	1.06	3.03	3.35	1.73	2.70	2.15	0
Sept.26	6,530	45.6	295	.09	7.6	20	14	3.05	.91	.95	.97	2.77	1.49	.53	.14
Oct. 23	1,670	57.4	395	.14	7.7	33	25	2.84	1.08	1.97	1.93	2.23	2.18	1.39	.05
Nov. 29	1,110	94.6	675	.19	7.8	33	23	4.20	2.48	3.36	3.50	2.82	5.02	2.25	.09

CHEMICAL AND BACTERIOLOGICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AT NUEVO LAREDO, TAMAULIPAS

The chemical and bacteriological analyses of water shown here were made by the Federal Board of Public Improvements at Nuevo Laredo, Tamaulipas, Mexico, from samples of water taken from the Rio Grande by means of the pumps of the city water service, under the supervision of such Board.

	Chemical Analysis — Parts per Million					Bacteriological Analysis	
Month 1935	Turbidity	Total Alkalinity	Phenolphthalein Alkalinity	Hardness	Magnesia	Total Bacteria per Sq. Cm in Agar-Agar at 37.5° C.	Bacilus Coli Per 100 c. c.
Average							
January	47	141	5.0	293	40	442	55
February	61	136	4.6	297	44	698	134
March	510	131	4.7	274	42	2,443	244
April	590	117	5.9	247	31	6,328	7,607
May	1,397	109	6.0	170	23	25,623	3,371
June	3,146	114	5.0	188	16	35,134	6,070
July	1,466	141	9.0	268	32	5,483	763
August	2,359	140	7.0	253	24	3,020	584
September	3,328	132	6.0	235	26	10,151	1,480
October	2,070	138	7.3	243	22	4,389	1,261
November	536	124	5.0	236	27	535	535
December	67	113	3.0	239	37	295	197
Total	15,577	1,536	68.5	2,943	364	94,541	22,301
Average	1,298	128	5.7	245	30	7,878	1,858
Minimum	47	109	3.0	170	16	295	55
Maximum	3,328	141	9.0	297	44	35,134	7,607
Minimum							
January	29	110	3.0	205	12	115	10
February	35	135	3.0	226	24	50	5
March	37	80	3.0	170	10	60	5
April	36	48	0.0	95	2	200	10
May	59	70	5.0	80	4	400	100
June	811	70	3.0	90	4	850	100
July	388	80	0.0	120	0	440	50
August	555	110	3.0	200	4	180	50
September	608	75	3.0	85	4	400	100
October	352	85	3.0	140	8	490	100
November	58	50	0.0	115	16	35	10
December	20	75	0.0	170	24	60	5
Maximum							
January	84	160	8.0	345	52	4,960	200
February	373	148	8.0	340	92	3,650	1,000
March	2,791	145	8.0	330	88	26,880	1,000
April	3,592	145	10.0	525	97	56,400	10,000
May	5,569	150	8.0	265	55	103,400	10,000
June	6,340	155	10.0	350	52	145,000	100,000
July	3,780	180	13.0	768	80	36,750	1,000
August	8,842	160	10.0	345	40	16,500	1,000
September	11,636	180	10.0	390	48	32,000	10,000
October	7,317	165	10.0	310	48	20,100	10,000
November	1,580	160	8.0	385	40	2,020	1,000
December	590	165	8.0	395	108	3,600	1,000

SILT SAMPLING OF WATER FROM RIO GRANDE AND TRIBUTARIES, 1935

Gravimetric Percentages of Dried Silt in the Rio Grande at San Marcial, New Mexico, as Determined from Water Samples During 1935

The gravimetric percentages of dry silt reported here were determined by the United States Department of Agriculture at Riverside, California, from water samples taken by the United States Section of the International Boundary Commission in small necked bottles by lowering the open bottle into the water at one or more verticals in the stream cross section, being careful to approach but not to strike bottom.

It is impossible to foretell the density with which this silt would settle into the bottom of a reservoir; but merely for visualization and comparison, the assumption is indulged here that 1,452 tons of silt would occupy one acre foot in a reservoir bottom, which is equivalent to saying that one cubic foot of silt thus situated would weigh 66.7 pounds.

Date	% Silt	Date	% Silt	Date	% Silt	Date	% Silt	Date	% Silt
Jan. 2	0.778	April 6	0.119	June 4	0.804	Aug. 5	5.313	Oct. 9	0.130
Jan. 8	1.157	April 12	0.014	June 7	0.769	Aug. 6	7.083	Oct. 15	0.381
Jan. 14	0.952	April 18	0.254	June 10	1.145	Aug. 12	1.115	Oct. 21	0.276
Jan. 23	0.772	April 27	0.919	June 13	0.540	Aug. 18	2.032	Oct. 27	0.418
Jan. 29	0.658			June 16	0.754	Aug. 22	12.563		
Feb. 7	0.684			June 19	0.474	Aug. 28	1.811	Nov. 11	0.626
Feb. 14	0.704	May 3	0.569	June 22	0.386	Aug. 31	9.574	Nov. 17	0.227
Feb. 20	0.532	May 9	0.296	June 25	0.561			Nov. 26	0.971
Feb. 26	1.129	May 15	0.900	June 28	0.483				
		May 20	1.785	July 1	0.644	Sept. 6	1.369		
March 4	0.594	May 22	1.658	July 4	0.440	Sept. 12	2.116	Dec. 2	0.695
March 13	0.253	May 24	1.308	July 7	0.171	Sept. 18	0.354	Dec. 8	0.625
March 19	1.957	May 26	1.288	July 13	0.170	Sept. 24	1.195	Dec. 17	0.462
March 25	0.425	May 29	1.328	July 19	0.084	Sept. 27	4.663	Dec. 23	0.330
March 31	0.126			July 28	0.114	Sept. 30	5.832	Dec. 29	0.500

Tons of Suspended Silt Passing San Marcial in the Rio Grande – 1935

Months	Tons of Water	SUSPENDED SILT		
		Tons	Average Percent By Weight	Acre Feet at 1,452 Tons Per Acre Foot
January	61,150,000	543,600	0.8890	374.4
February	53,250,000	391,500	0.7352	269.6
March	31,870,000	225,300	0.7069	155.2
April	29,280,000	214,900	0.7339	148.0
May	247,880,000	3,138,900	1.2663	2,162
June	501,220,000	3,531,200	0.7045	2,432
July	49,030,000	172,900	0.3526	119.1
August	147,100,000	9,049,800	6.1521	6,233
September	87,990,000	4,051,600	4.6046	2,790
October	50,670,000	414,100	0.8172	285.2
November	69,730,000	433,000	0.6210	298.2
December	73,000,000	380,700	0.5215	262.2
The Year	1,402,170,000	22,547,500	1.6080	15,529.9

Gravimetric Percentages of Dried Silt in the Rio Grande at Eagle Pass, Texas, as Determined from Water Samples During 1935

The gravimetric percentage of dry silt reported here were determined by the United States Department of Agriculture at Austin, Texas, from samples of Rio Grande water taken approximately every second day by the Mexican Section of the International Boundary Commission. The samples were taken in small necked bottles at three points at the surface of the stream, viz: at the mid-point, and at each side, one sixth of the width from the edge of the stream. Numerous experiments have shown that the mean of three samples so taken gives 0.908 of the mean suspended silt in the stream within reasonable limits of accuracy.

The daily figures below were computed in accordance with the foregoing.

It is impossible to foretell the density with which this silt would settle into the bottom of a reservoir; but merely for visualization and comparison, the assumption is indulged here that 1,452 tons of silt would occupy one acre foot in a reservoir bottom, which is equivalent to saying that one cubic foot of silt thus situated would weigh 66.7 pounds.

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.0008	.0000	.0000	.0044	.0075	.7884	.0846	.3162	.1466	.5832	.2338	.0014
2	.0008	.0000	.0000	.0044	.0085	.9260	.1074	.2401	.1587	.2893	.3003	.0011
3	.0004	.0007	.0038	.0044	.0095	1.0637	.1302	.2074	.1708	.2786	.2943	.0008
4	.0000	.0014	.0077	.0044	.0104	.6848	.1529	.1746	.1650	.1548	.1155	.0004
5	.0000	.0025	.0071	.1000	.0114	.3058	.1489	.1714	.4961	.1559	.1174	.0000
6	.0000	.0036	.0064	.0050	.0124	.5638	.1449	.1682	.4722	.1570	.1040	.0007
7	.0000	.0066	.0058	.0047	.0118	.3891	.1152	.1650	.4482	.1142	.0905	.0014
8	.0000	.0096	.0066	.0047	.0112	.3205	.0855	.3418	.4243	.0715	.0913	.0027
9	.0000	.0063	.0074	.0047	.0105	.2519	.1050	.5093	.4004	.0715	.0921	.0040
10	.0000	.0030	.0070	.0047	.0099	.1833	.1246	.4128	.3781	.0754	.0486	.0054
11	.0000	.0019	.0066	.0052	.0096	.1147	.1019	.3162	.3205	.0792	.0052	.0067
12	.0000	.0008	.0066	.0058	.0096	.1880	.0792	.2197	.2630	.0770	.0044	.0080
13	.0000	.0004	.0066	.0061	.0096	.2614	.0930	.1232	.2054	.0502	.0036	.0068
14	.0000	.0000	.0066	.0064	.0096	.3347	.1067	.1336	.2105	.0234	.0034	.0055
15	.0004	.0000	.0066	.0067	.0100	.4081	.1180	.1441	.2157	.0298	.0031	.0044
16	.0008	.0000	.0066	.0070	.0738	.4814	.1028	.0993	.2208	.0363	.0029	.0033
17	.0010	.0000	.0066	.0073	.1376	.5548	.0877	.1207	.1930	.0394	.0026	.0022
18	.0011	.0000	.0066	.0076	.1274	.6281	.1094	.0319	.1653	.0425	.0024	.0011
19	.0012	.0052	.0051	.0079	.1172	.4715	.1312	.0847	.1708	.0456	.0021	.0000
20	.0014	.0104	.0036	.0082	.1070	.3150	.1313	.0580	.1128	.0487	.0019	.0000
21	.0022	.0072	.0036	.0085	.0968	.1584	.1314	.0374	.0547	.0436	.0016	.0000
22	.0030	.0041	1.0035	.0088	.0866	.1221	.1314	.1320	.0566	.0385	.0014	.0007
23	.0015	.0054	.2992	.0059	.0764	.1089	.1315	.2266	.0586	.3561	.0022	.0014
24	.0000	.0066	.1540	.0030	.0662	.0904	.1316	.2590	.0586	.3454	.0037	.0007
25	.0000	.0033	.0088	.0031	.1000	.0718	.1317	.2913	.7213	.2516	.0052	.0000
26	.0000	.0000	.0088	.0072	.1000	.0654	.1282	.3237	.7584	.1177	.0030	.0000
27	.0000	.0000	.0088	.0082	.1000	.0589	.1248	.2286	.7956	.1246	.0027	.0000
28	.0000	.0000	.0068	.0091	.2377	.0525	.1213	.1334	.8161	.1142	.0024	.0000
29	.0000		.0047	.0122	.3753	.0572	.2264	.1338	.8367	.1037	.0021	.0000
30	.0000		.0046	.0154	.5130	.0619	.3314	.1341	.8572	.1009	.0017	.0000
31	.0000		.0044		.6507		.3924	.1345		.1674		.0000

Tons of Suspended Silt Passing Eagle Pass in the Rio Grande During 1935

Months 1935	Tons of Water	SUSPENDED SILT		
		Tons	Average Percent By Weight	Acre Feet at 1,452 Tons Per Acre Foot
January	158,000,000	800	.0005	0.6
February	135,110,000	3,800	.0028	2.6
March	147,100,000	272,800	.1855	187.9
April	160,720,000	47,600	.0296	32.8
May	712,330,000	1,943,900	.2729	1,339.0
June	1,368,810,000	5,548,200	.4053	3,821.0
July	363,650,000	499,600	.1374	344.1
August	281,930,000	598,500	.2123	412.2
September	1,750,170,000	7,402,400	.4230	5,098.0
October	523,010,000	822,600	.1573	566.5
November	313,260,000	207,000	.0661	142.6
December	245,160,000	4,600	.0019	3.2
The Year	6,159,250,000	17,351,800	.2817	11,950.5

Gravimetric Percentages of Dried Silt in the Rio Grande at Roma, Texas, as Determined from Water Samples During 1935

The gravimetric percentage of dry silt reported here were determined by the United States Department of Agriculture at Austin, Texas, from samples of Rio Grande water taken approximately every second day by the Mexican Section of the International Boundary Commission. The samples were taken in small necked bottles at three points at the surface of the stream, viz: at the mid-point, and at each side, one sixth of the width from the edge of the stream. Numerous experiments have shown that the mean of three samples so taken gives 0.908 of the mean suspended silt in the stream within reasonable limits of accuracy.

The daily figures below were computed in accordance with the foregoing.

It is impossible to foretell the density with which this silt would settle into the bottom of a reservoir; but merely for visualization and comparison, the assumption is indulged here that 1,452 tons of silt would occupy one acre foot in a reservoir bottom, which is equivalent to saying that one cubic foot of silt thus situated would weigh 66.7 pounds.

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.0002	.0118	.0080	.4472	.0234	.7653	.1053	.1653	.0532	.4408	.3545	.0008
2	.0052	.0000	.0099	.3558	.0223	.6570	.0613	.0756	.0514	.5173	.2384	.0008
3	.0118	.0080	.0058	.1609	.3171	.7975	.0583	.0616	.0473	.5277	.1163	.0000
4	.0022	.0099	.0022	.0539	.4048	.5814	.0437	.0817	.0679	.6317	.0685	.0008
5	.0000	.0000	.0023	.0289	.2214	.3817	.0437	.0814	.8580	.5709	.0726	.0014
6	.0000	.0041	.0041	.0132	.2065	.4232	.0322	.0773	1.1830	.4205	.0784	.0008
7	.0000	.0014	.0316	.4150	.1642	.5910	.0231	.2340	1.4938	.3429	.1026	.0008
8	.0000	.0000	.0074	.4708	.0814	.4139	.0484	.1199	.4895	.2098	.0800	.0008
9	.0000	.0022	.0074	.3443	.0693	.4188	.0608	.0652	.3206	.1947	.1059	.0000
10	.0000	.0008	.0080	.2140	.0649	.4782	.0671	.0605	.8539	.1433	.0880	.3861
11	.0000	.0000	.0096	.0960	.1345	.6100	.0495	.1012	.3443	.1108	.0830	.1078
12	.0000	.0102	.0118	.0693	.1097	.5709	.0613	.1086	.3385	.0946	.0715	.0624
13	.0014	.0195	.0102	.0498	.0476	.3226	.1155	.1518	.3138	.0814	.0481	.1119
14	.0000	.0726	.0080	.0429	.0245	.2252	.1482	.3902	.2849	.0547	.0638	.0594
15	.0000	.0231	.0157	.0190	.0135	.2665	.1639	.2112	.3770	.0506	.0462	.0330
16	.0000	.0162	.0121	.0256	.0055	.4920	.0740	.1900	.4034	.0388	.0355	.0176
17	.0030	.0132	.0118	.0278	.2285	.4746	.1009	.4004	.3523	.0382	.0388	.0052
18	.0000	.0033	.0055	.0278	.1977	.5838	.0602	.4081	.2527	.0778	.0385	.0055
19	.0000	.0055	.0096	.0176	.8467	.5387	.0610	.1199	.2544	.2126	.0382	.0044
20	.0000	.0066	.0069	.0052	.4367	.4315	.0701	.1251	.2005	.0594	.0140	.0000
21	.0110	.0033	.0107	.0041	.3751	.3773	.0613	.0704	.2247	.0481	.0129	.0008
22	.0044	.0036	.0091	.0022	.4510	.2750	.0701	.0690	.6267	.0696	.0096	.0014
23	.0014	.0038	.0036	.0118	.8118	.3440	.0773	.0550	.1716	.0814	.0165	.0014
24	.0077	.0052	.0022	.0008	.5775	.2700	.0679	.0492	.2024	.0630	.0190	.0022
25	.0000	.0041	.0099	.0014	.3707	.2068	.8654	.0476	.4532	.0319	.0143	.0022
26	.0000	.0055	.0635	.0368	.2230	.1534	.5536	.0462	.2115	.0245	.0162	.0022
27	.0000	.0022	.0377	.6790	.2170	.1518	.2918	.0341	.1705	.0201	.0143	.0008
28	.0000	.0022	.0352	.4411	.1306	.0886	.2500	.0459	.1546	.0253	.0044	.0000
29	.0008		.3160	.1251	.0927	.1358	.2035	.0517	.1452	.0847	.0030	.0008
30	.0000		.1375	.0517	.0443	.3030	.1433	.0487	.1463	.2101	.0022	.0030
31	.0000		.3410		.4348		.1881	.0245		.4892		.0000

Tons of Suspended Silt Passing Roma in the Rio Grande During 1935

Months 1935	Tons of Water	SUSPENDED SILT		
		Tons	Average Percent By Weight	Acre Feet at 1,452 Tons Per Acre Foot
January	162,080,000	2,600	.0016	1.8
February	147,100,000	14,800	.0101	10.2
March	171,610,000	116,900	.0681	80.5
April	223,370,000	623,100	.2800	429.1
May	776,340,000	3,402,300	.4382	2,343
June	2,160,130,000	9,468,400	.4383	6,521
July	544,800,000	1,376,700	.2527	948.1
August	337,780,000	455,500	.1349	313.7
September	2,041,640,000	11,257,700	.5514	7,753
October	641,500,000	1,585,100	.2471	1,092
November	343,220,000	246,600	.0718	169.8
December	314,620,000	105,400	.0335	72.6
The Year	7,864,190,000	28,655,100	.3644	19,734.8

Gravimetric Percentages of Dried Silt in the Rio Alamo at Mier, Tamaulipas, and in the Rio San Juan at Santa Rosalia, Tamaulipas, Mexico, as Determined from Water Samples During 1935

The gravimetric percentages of dry silt reported here for two Mexican tributaries to the Rio Grande were determined by the Mexican Section of the International Boundary Commission from samples taken by that section. The samples were taken in small necked bottles at three points at the surface of the stream, viz: at the mid-point, and at each side, one sixth of the width from the edge of the stream. Numerous experiments have shown that the mean of three samples so taken gives 0.908 of the mean suspended silt in the stream within reasonable limits of accuracy. The computations below made in accordance with the foregoing.

It is impossible to foretell the density with which this silt would settle into the bottom of a reservoir; but merely for visualization and comparison, the assumption is indulged here that 1,452 tons of silt would occupy one acre foot in a reservoir bottom, which is equivalent to saying that one cubic foot of silt thus situated would weigh 66.7 pounds.

Silt in Rio Alamo – 1935

Date	% Silt	Date	% Silt	Date	% Silt	Date	% Silt	Date	% Silt
March 28	.026	June 1	.435	July 14	.765	September 5	.334	October 19	.688
May 4	.945	June 8	.800	July 15	.698	September 8	.305	October 19	.461
May 4	.649	June 11	.655	July 25	1.605	September 23	.769	November 2	.441
May 5	.285	June 12	.630	July 26	.446	September 24	.766	December 10	.740
May 21	.028	June 13	.899	July 29	.862	September 25	.578		
		June 29	.857	August 14	1.372				

Tons of Suspended Silt Passing CD. Mier, in the Rio Alamo – 1935

Months	Tons of Water	SUSPENDED SILT		
		Tons	Average Percent By Weight	Acre Feet at 1,452 Tons Per Acre Foot
January	1,680,000	0	0	0
February	1,030,000	0	0	0
March	2,300,000	177	.0077	.1
April	840,000	0	0	0
May	10,260,000	51,100	.4981	35.2
June	22,200,000	145,500	.6554	100.2
July	14,560,000	67,400	.4629	46.4
August	3,770,000	25,500	.6764	17.6
September	14,870,000	81,900	.5508	56.4
October	5,880,000	46,000	.7823	31.7
November	3,850,000	7,610	.1977	5.2
December	4,590,000	8,400	.1830	5.8
The Year	85,830,000	433,587	.5052	298.6

Silt in Rio San Juan – 1935

Date	% Silt	Date	% Silt	Date	% Silt	Date	% Silt
January 2	Trace	May 6	.025	June 3	1.412	September 9	3.512
April 3	Trace	May 24	.560	July 1	.430	September 23	1.415
April 22	.006	May 24	.997	July 17	.585	September 23	1.628
		May 25	1.319			December 27	.330

Tons of Suspended Silt Passing Santa Rosalia in Rio San Juan – 1935

Months	Tons of Water	SUSPENDED SILT		
		Tons	Average Percent By Weight	Acre Feet at 1,452 Tons Per Acre Foot
January	22,970,000	0	0	0
February	19,950,000	0	0	0
March	12,310,000	28.7	.0002	.02
April	14,530,000	312	.0021	.21
May	78,890,000	525,800	.6665	362.1
June	223,970,000	896,200	.4001	617.2
July	76,380,000	70,000	.0916	48.2
August	20,910,000	123	.0006	.08
September	355,560,000	3,119,500	.8773	2,148
October	143,690,000	156,500	.1089	107.8
November	115,240,000	68,700	.0596	47.3
December	145,430,000	76,100	.0523	52.4
The Year	1,229,830,000	4,913,263.7	.3995	3,383.31

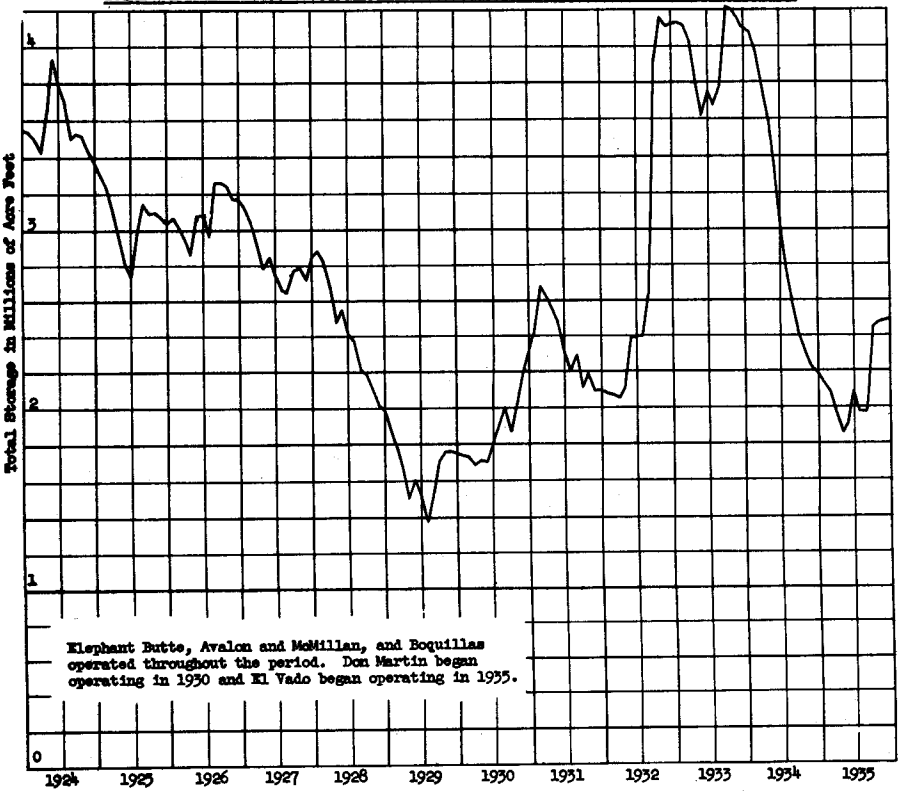
STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

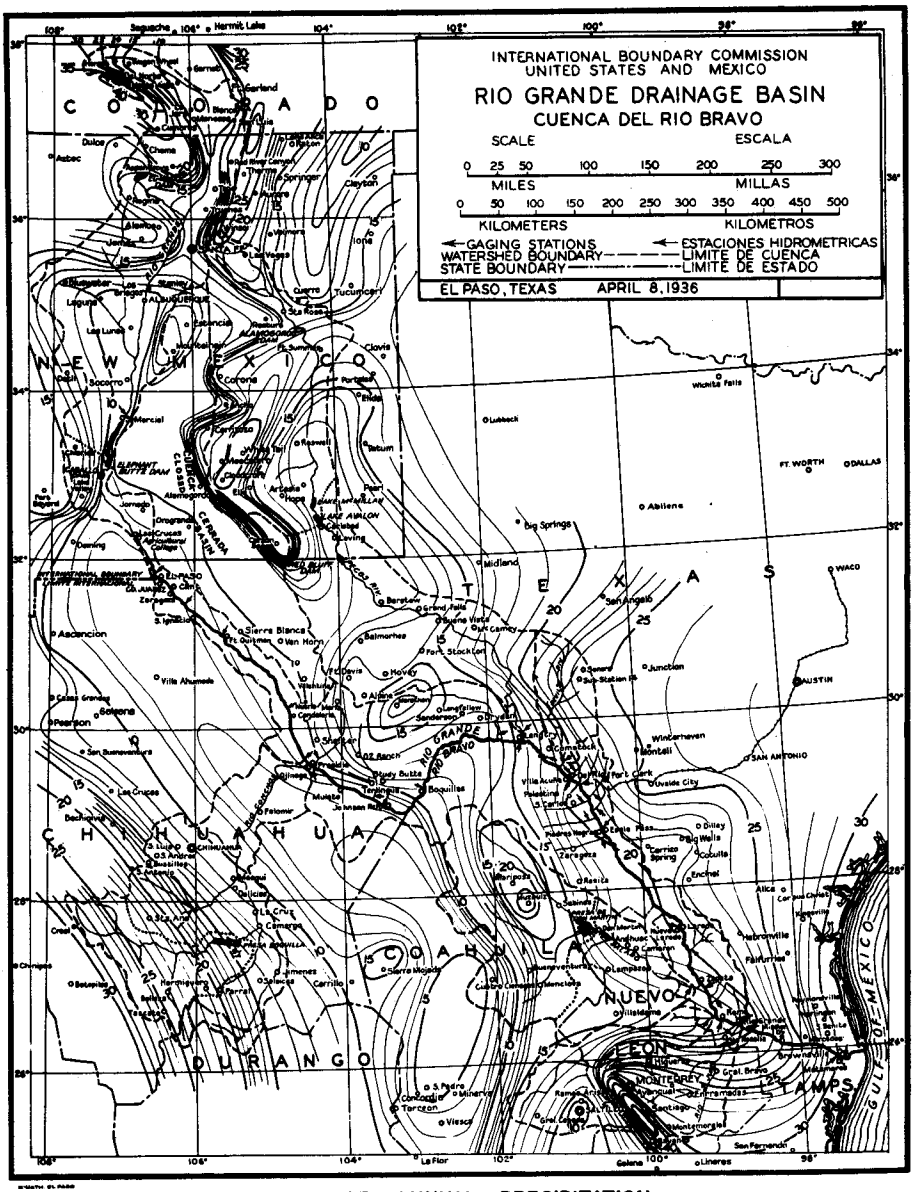
From the records of the Middle Rio Grande Conservancy District the following data are taken for El Vado reservoir on the Rio Chama. From the United States Reclamation Bureau the following data are taken for the Elephant Butte reservoir on the Rio Grande and for the McMillan and Avalon reservoirs on the Pecos River, all in New Mexico. The data for Boquilla reservoir on the Rio Conchos in Chihuahua are taken from the records of the "Compania Agricola y de Fuerza del Rio Conchos, S. A." and that for Don Martin reservoir on the Rio Salado are taken from the records of the National Irrigation Commission of Mexico.

The monthly figures represent the number of acre feet of water in storage on the last day of each month, and the normals represent the averages for the years 1924 to 1935, inclusive, except Don Martin, where storage began with 1930, and El Vado where storage began January, 1935. For previous years' records, see Water Bulletins Numbers 2, 3 and 4.

Month	El Vado		Elephant Butte		McMillan and Avalon		Boquilla		Don Martin	
	Acre Feet		Thousands of Acre Feet		Acre Feet		Thousands of Acre Feet		Thousands of Acre Feet	
	1935	Normal	1935	Normal	1935	Normal	1935	Normal	1935	Normal
Jan.	2,275		505	1,196	15,300	39,090	1,086	1,287	521	682
Feb.	6,050		528	1,204	17,700	38,130	1,058	1,262	489	674
Mar.	17,348		505	1,177	18,150	33,380	1,014	1,206	417	652
April	62,162		442	1,165	5,500	21,430	953	1,141	382	643
May	156,960		490	1,268	19,400	27,380	884	1,068	334	620
June	162,900		672	1,273	28,400	22,680	827	1,011	397	639
July	165,075		584	1,184	20,400	19,590	811	1,036	389	633
Aug.	149,652		563	1,105	21,930	20,960	893	1,179	339	621
Sept.	137,221		577	1,080	41,250	29,240	1,271	1,318	423	722
Oct.	129,871		601	1,089	36,000	35,220	1,270	1,315	442	743
Nov.	117,130		632	1,094	30,900	35,420	1,244	1,265	458	763
Dec.	119,395		672	1,112	34,800	37,120	1,222	1,244	462	764
Change	+119,395		+170	.....	+26,900	.....	+94	.....	-80	....

TOTAL WATER IN STORAGE IN ALL LARGE RESERVOIRS OF THE RIO GRANDE BASIN 1924 TO 1935



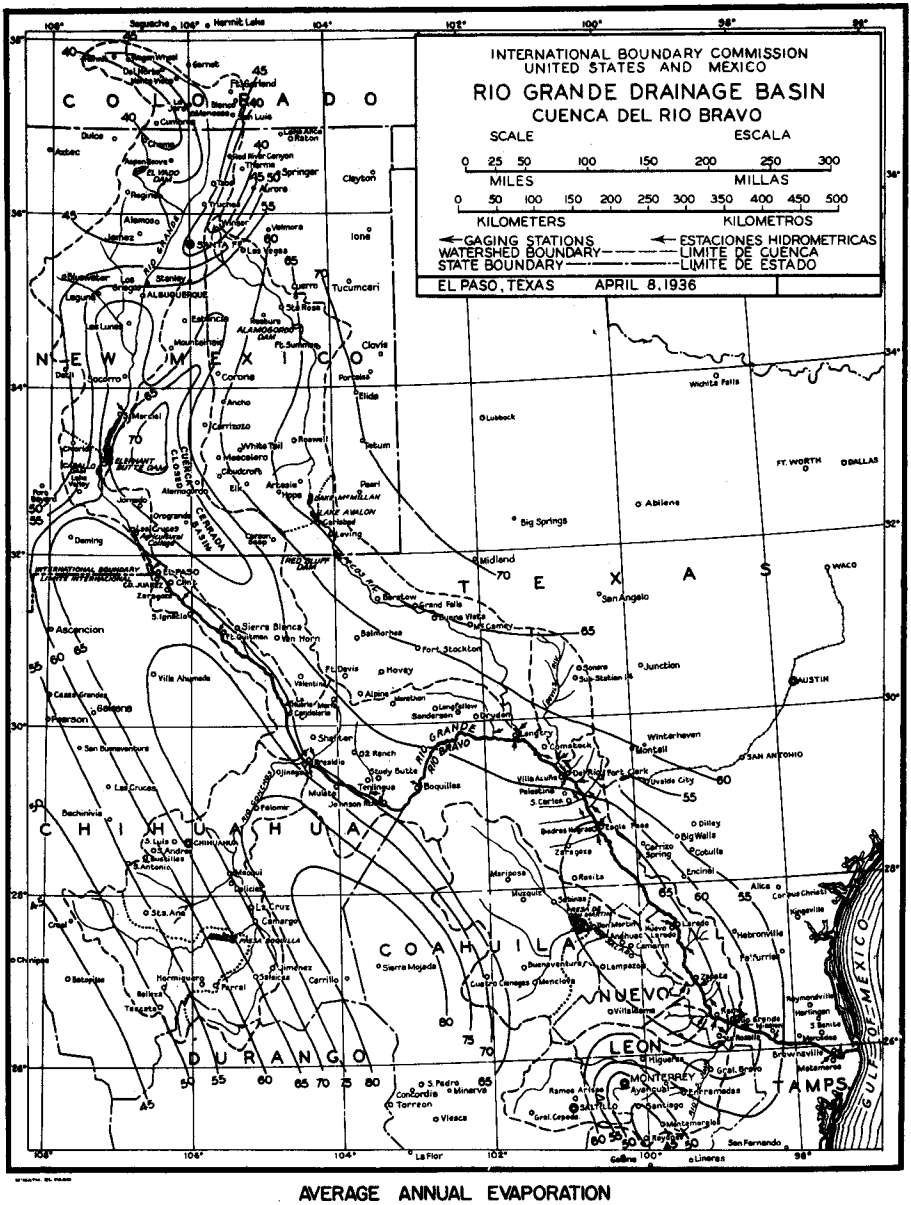


AVERAGE ANNUAL PRECIPITATION
12 YEARS 1924-1935

The isohyetal lines shown here were drawn from the records of precipitation for the years 1924 to 1935, inclusive, at all points in and adjacent to the Rio Grande basin as revealed by the published data of the United States Weather Bureau and the Meteorological Service of Mexico, supplemented by a few records gathered by the United States Department of Agriculture, the United States Army, and the United States Section of this Commission.

At most of the rainfall stations records were available from 1924 to 1935. At the others the records varied in length from five to twelve years. A total of 147 rainfall stations was used.

Geomorphic features, where known, were taken into consideration in drawing the isohyetals.

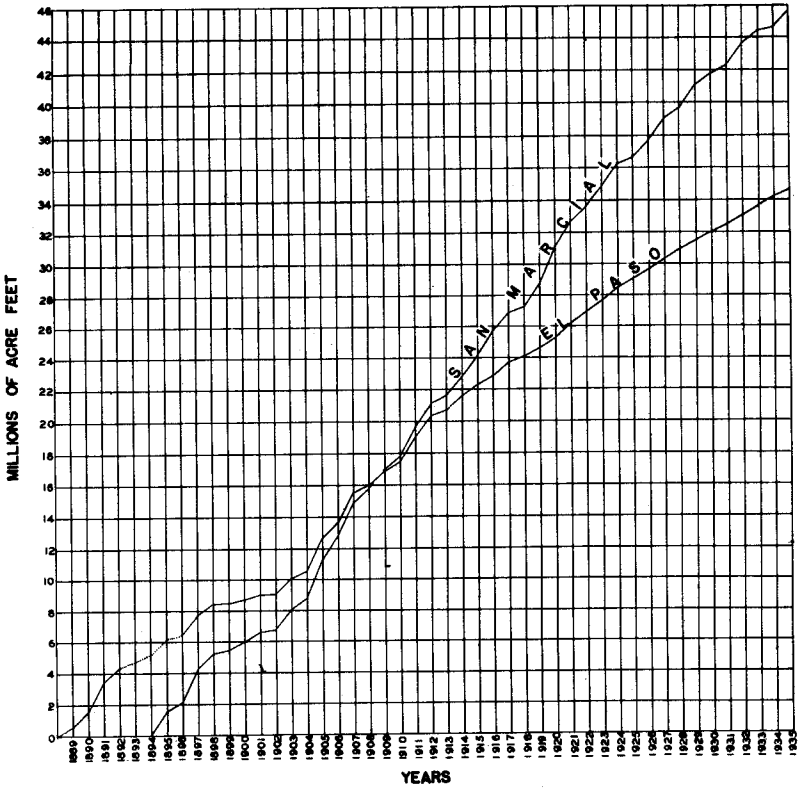


AVERAGE ANNUAL EVAPORATION
12 YEARS 1924-1935

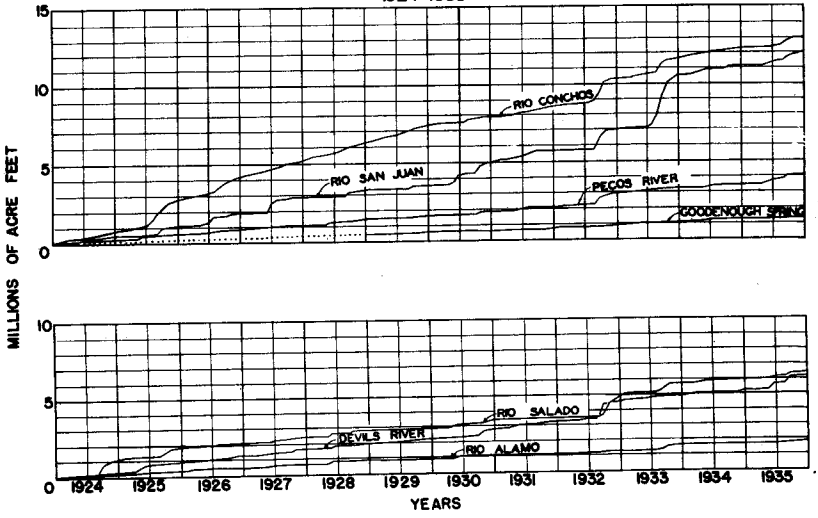
The isothymal lines shown here are intended to show reservoir water surface evaporation. They are based upon the records of pan evaporation for the years 1924 to 1935, inclusive, at all points in and adjacent to the Rio Grande basin as revealed by the published data of the United States Weather Bureau and the Meteorological Service of Mexico, supplemented by a few records from the office of the State Engineer of New Mexico, the Texas A. and M. College, and a few records computed from other meteorological data by the method outlined in "Evaporation From Free Water Surfaces", by Carl Rohwer, (U. S. Dept. of Agr. Tech. Bul. No. 271, 1931.) In accordance with the final report of the Committee of the American Society of Civil Engineers on Evaporation (Trans. A. S. C. E. 1934, p. 716), pan evaporation figures were all converted so as to show the equivalent evaporation from a reservoir water surface.

The 41 records used varied in length from 2 to 12 years. Average annual rainfall was taken into consideration in drawing the isothymal lines which are considered to be only closely approximate.

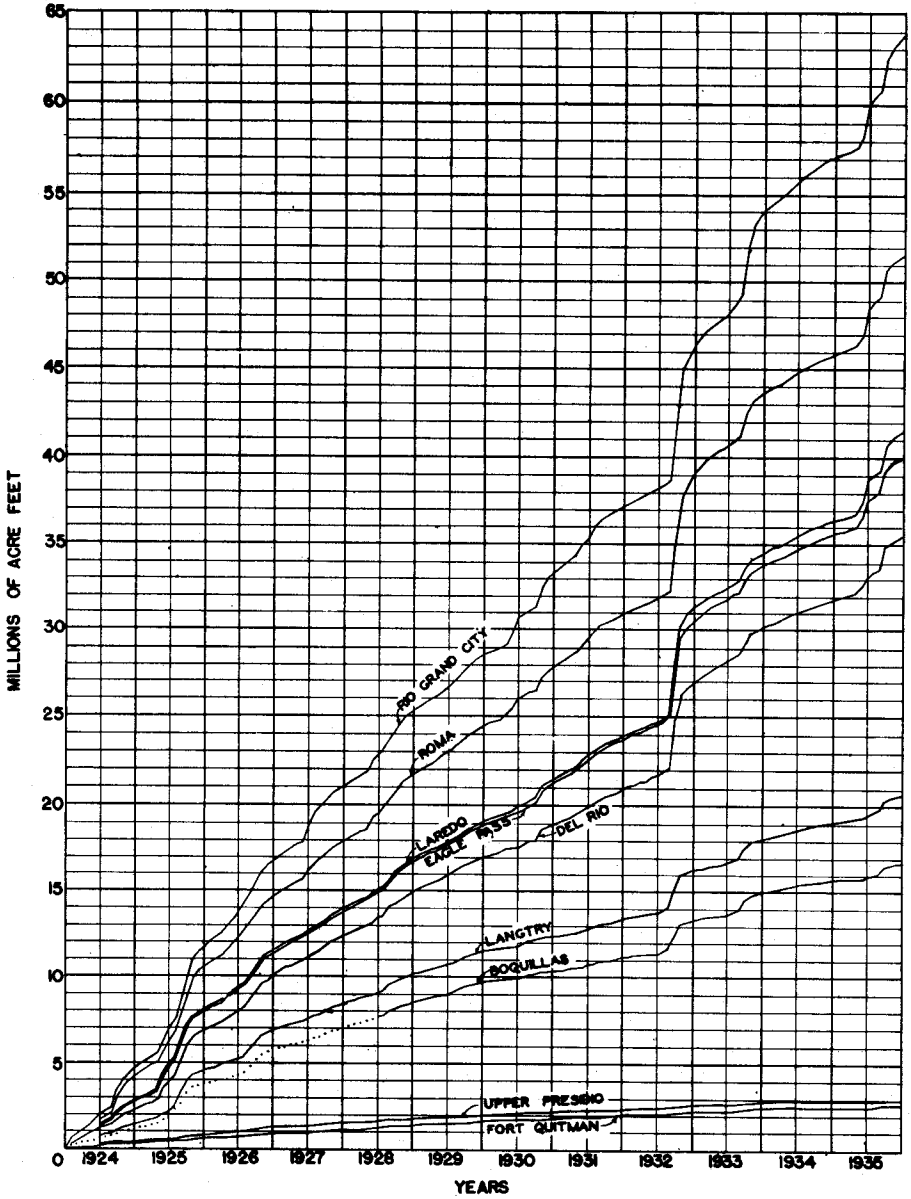
SUMMATION CURVES OF ANNUAL DISCHARGE
RIO GRANDE AT EL PASO FOR 47 YEARS
RIO GRANDE AT SAN MARCIAL FOR 41 YEARS



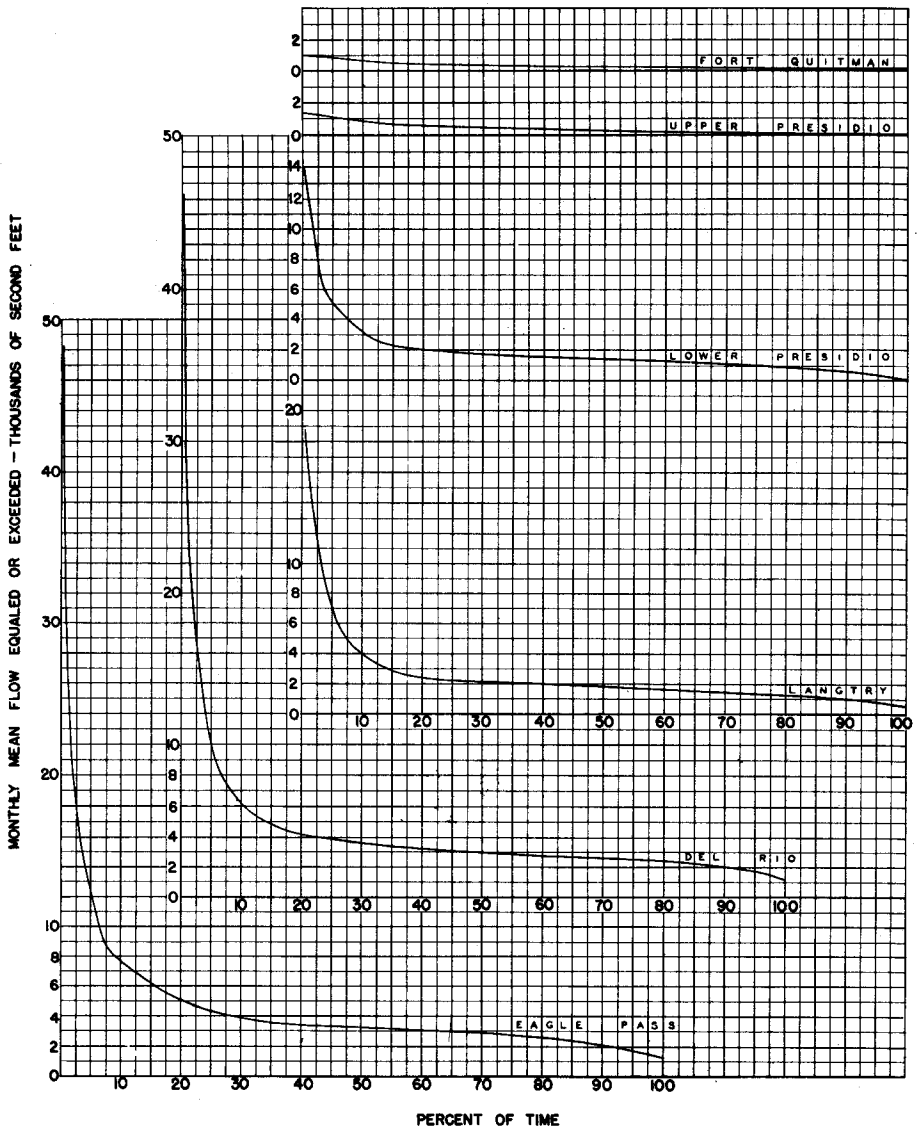
SUMMATION CURVES OF LARGER RIO GRANDE TRIBUTARIES
BELOW FORT QUITMAN, TEXAS.
1924-1935

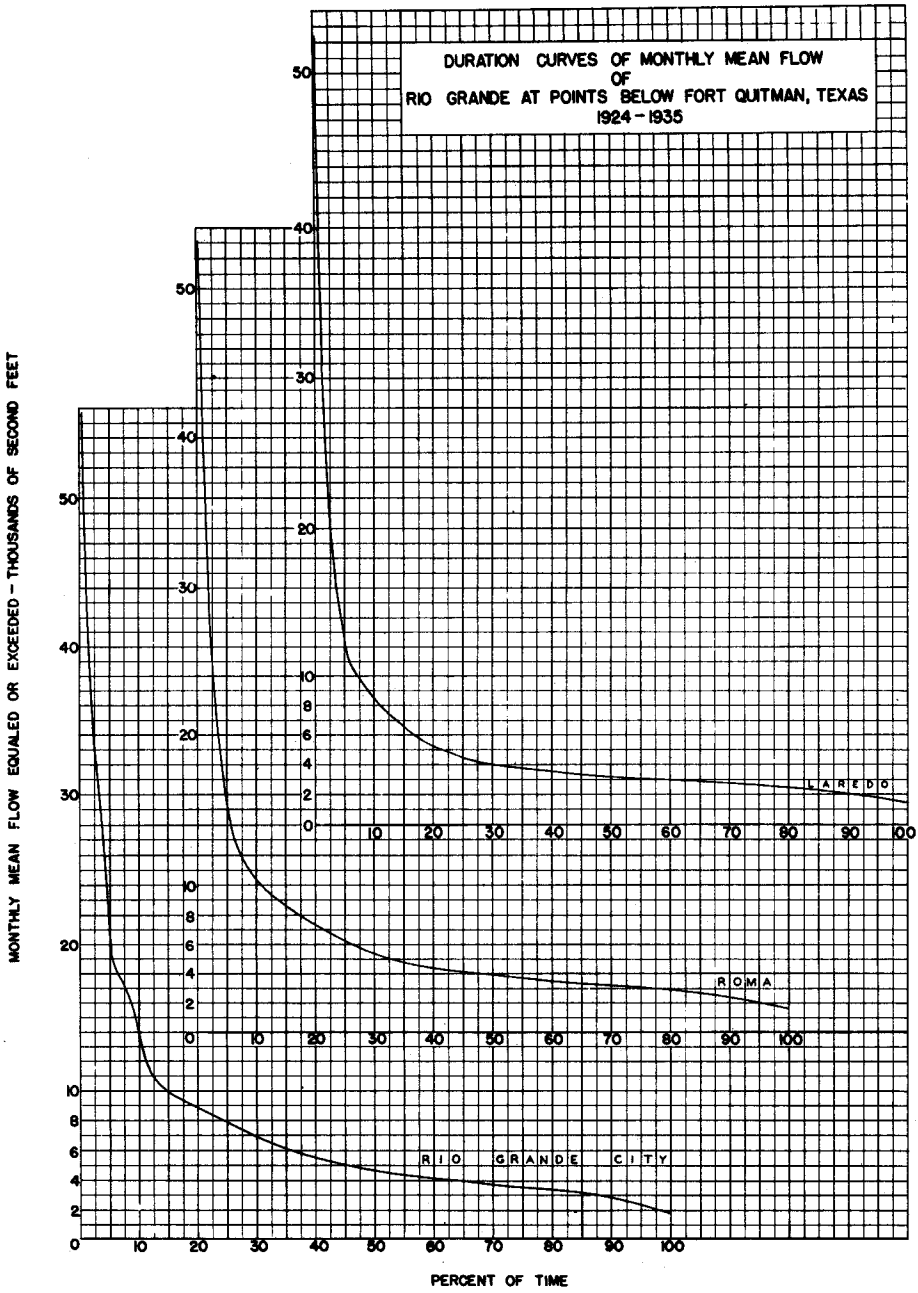


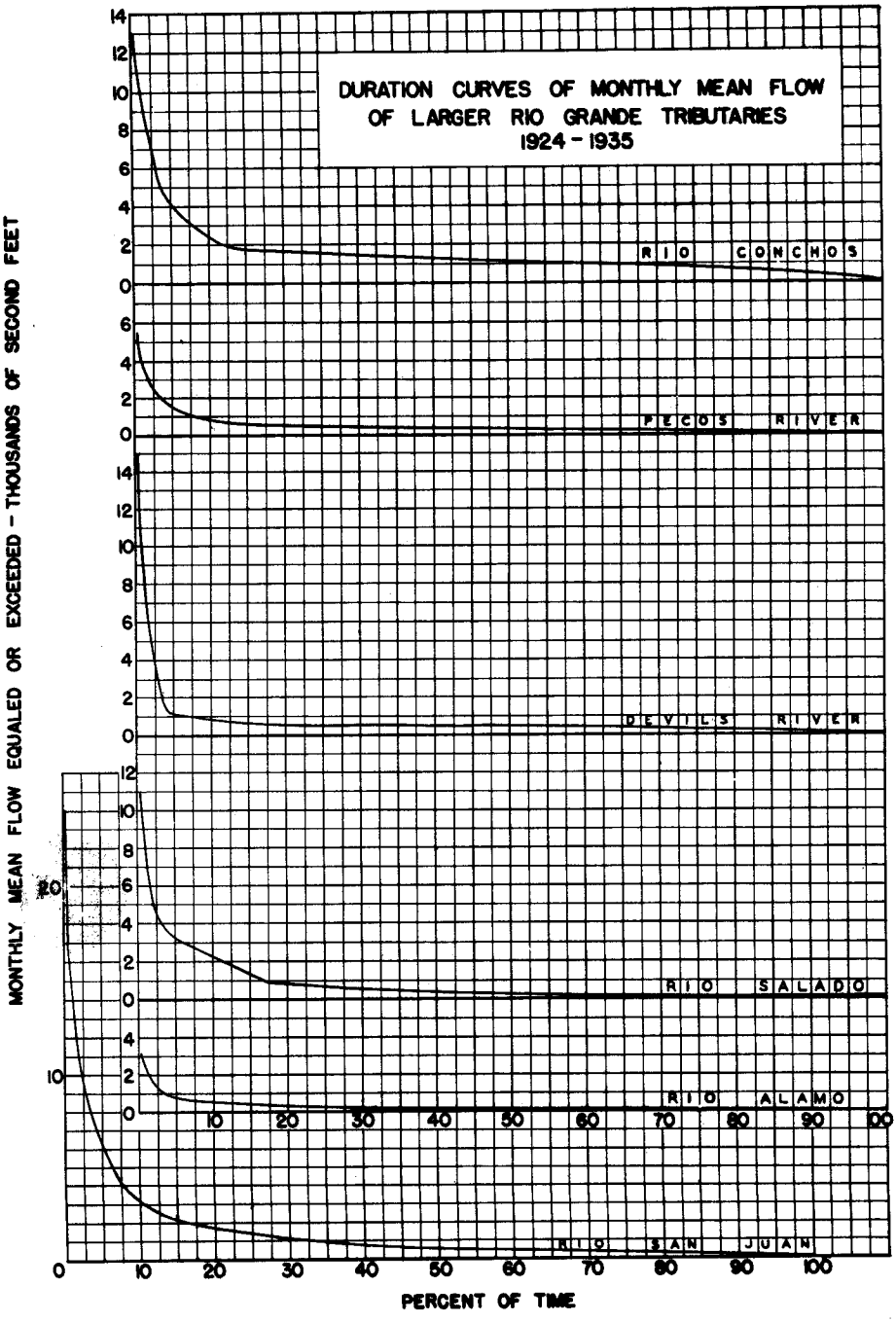
SUMMATION CURVES OF MONTHLY DISCHARGE
OF
RIO GRANDE AT POINTS BELOW FORT QUITMAN, TEXAS
1924 - 1935



DURATION CURVES OF MONTHLY MEAN FLOW
OF
RIO GRANDE AT POINTS BELOW FORT QUITMAN, TEXAS
1924 - 1935

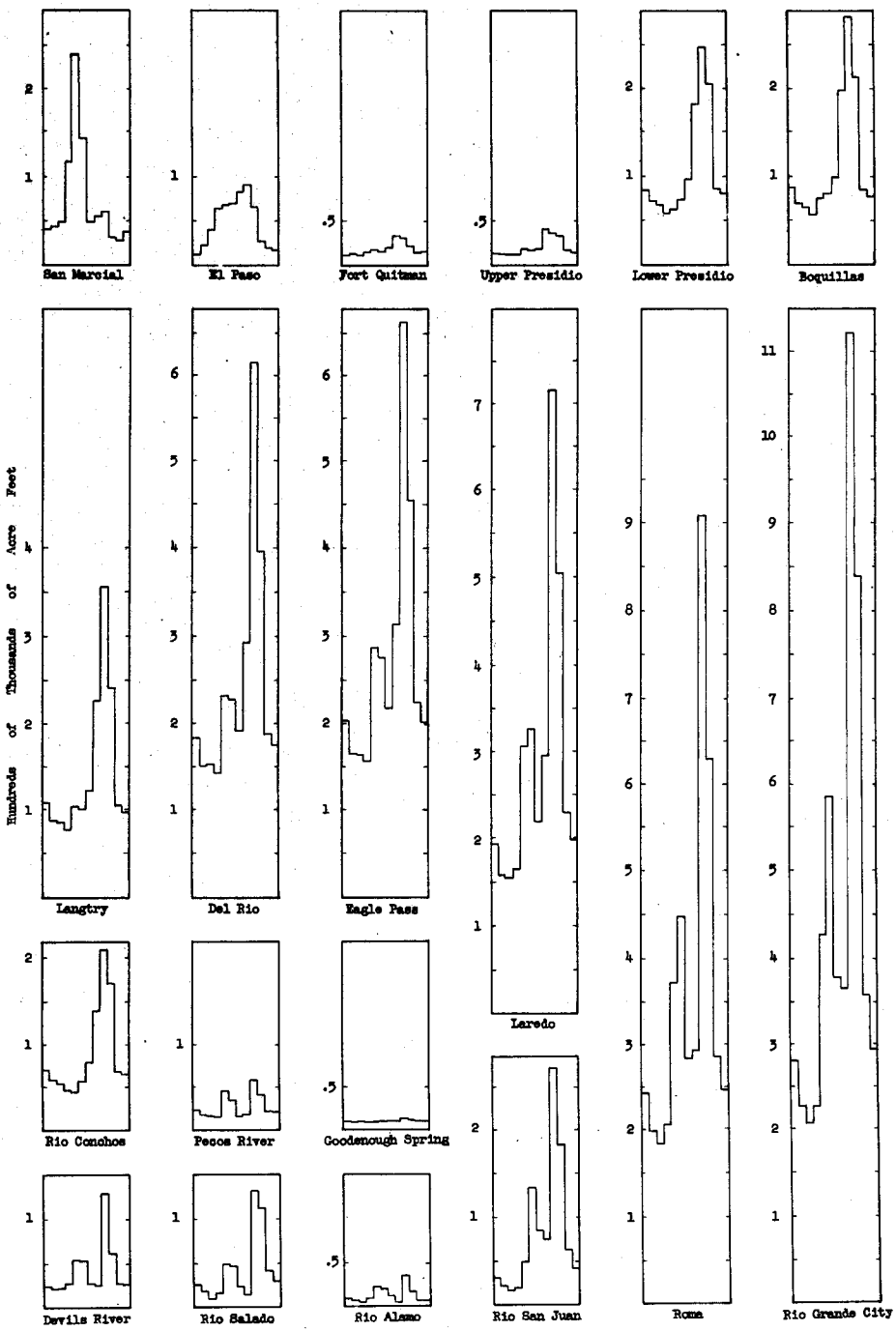


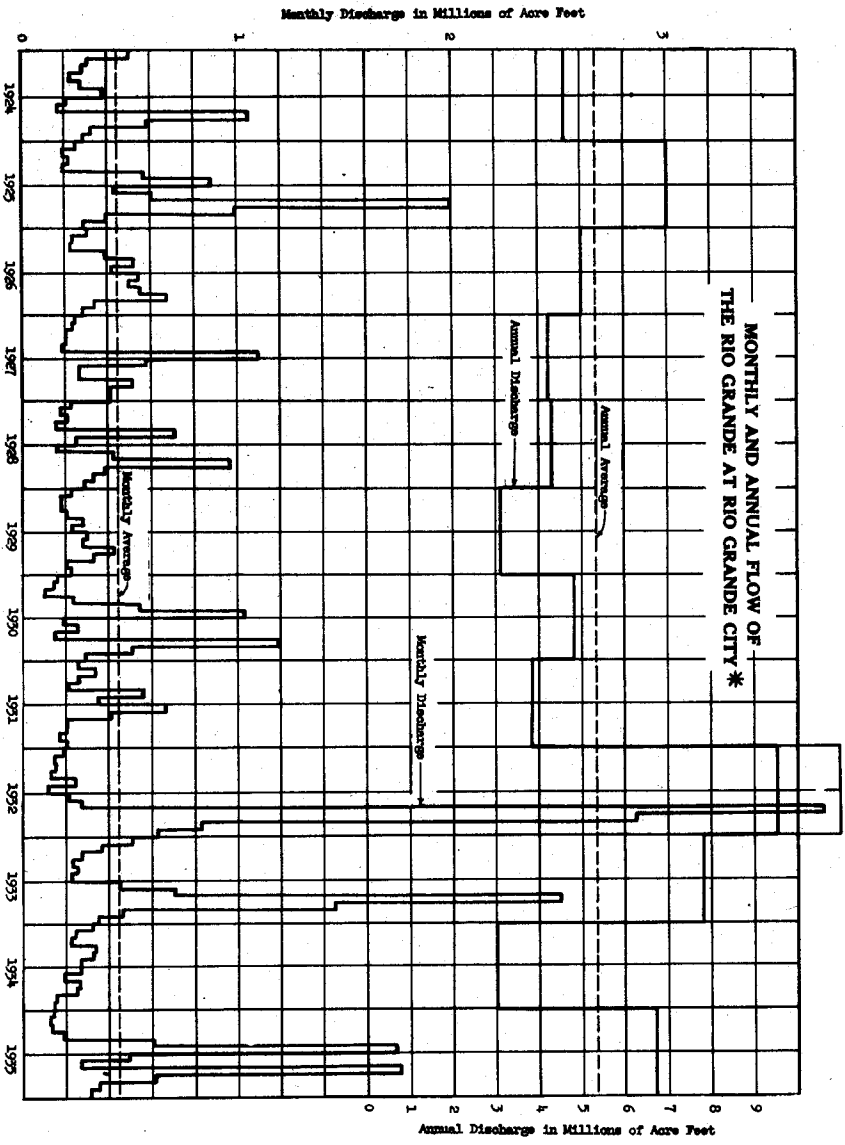

DURATION CURVES OF MONTHLY MEAN FLOW
OF
RIO GRANDE AT POINTS BELOW FORT QUITMAN, TEXAS
1924 - 1935
MONTHLY MEAN FLOW EQUALED OR EXCEEDED - THOUSANDS OF SECOND FEET
PERCENT OF TIME
LAREDO
ROMA
RIO GRANDE CITY


DURATION CURVES OF MONTHLY MEAN FLOW
OF LARGER RIO GRANDE TRIBUTARIES
1924 - 1935
RIO CONCHOS
PECOS RIVER
DEVILS RIVER
RIO SALADO
RIO ALAMO
RIO SAN JUAN
MONTHLY MEAN FLOW EQUALED OR EXCEEDED - THOUSANDS OF SECOND FEET
PERCENT OF TIME
0
10
20
30
40
50
60
70
80
90
100

AVERAGE MONTHLY RIO GRANDE AND TRIBUTARY FLOW

1924-1935





*Plus 41,000 acre feet in September, 1932, which overflowed the Rio San Juan banks and reached the Rio Grande below the Rio Grande City gaging station.

LAS MORAS CREEK STATION NEAR EAGLE PASS, TEXAS

More complete information has shown some corrections for the record of this station as shown in Water Bulletin Number 4. The corrected record is shown below.

Month 1934	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January	1.30	.65	31	13.8		0	1.73	106	
February	1.29	.92	1	13.2	26	.11	2.89	161	
March	1.57	.87	24	31.6	23	0	3.32	204	
April	1.47		28	24.9		.50	1.67	100	
May	2.34		2	348	31	*.50	10.7	655	
June	1.89		2	59.6		*.25	2.47	147	
July	1.33		13	*16.5		*.25	*.81	49.6	
August	-		-	*1.0		*.20	*.57	*34.9	
September	3.85		3	2,700		*.20	18.6	1,110	
October	2.01		17	100		*.50	*3.3	*201	
November	**1.61		19				*1.0	*59.5	
December	**1.61		18				*.5	*30.7	
The Year	3.85			2,700		0	3.95	2,858.7	17.2

*Partly estimated.
**High gage height caused by spill from Maverick County Canal. Canal spill eliminated from record.

STREAM GAGING RECORDS 1924-1934

The original records of discharge of the Rio Grande and of the tributaries at the gaging stations shown in the following tabulation and marked with this sign ♂ have all been studied together and in connection with the following records: The Rio Grande and tributary discharge at points upstream and downstream from the stations, the best available records of losses and gains between stations on the Rio Grande, the diversions of Rio Grande water between Rio Grande stations, the loss of water from the Rio Grande channel by overflow below Rio Grande City during large floods, the time of water travel between stations, U. S. Weather Bureau records of river stage and records of river stage at pumping plants on the Rio Grande below Laredo. In the light of these data adjustments have been made, where necessary, in the former discharge records for these stations and the discharge figures shown in the following pages have been produced. No gaging station was maintained on the Rio Grande at Rio Grande City prior to 1931, nor on the Rio Grande at Boquillas prior to June, 1928, nor on the Goodenough Spring prior to February, 1929, nor on the Rio Conchos, but the discharge figures shown hereunder for these points have been carefully computed and estimated from the data mentioned above and from similar data for each region. The tabulations shown below form a consistent whole, correlated with the data mentioned above.

Name of Station	Where Formerly Published	Found to be Correct as Formerly Published	Calculated or Adjusted	Records for the Years (inclusive)
Tornillo Bridge	Not published		♦No	1924 - 1927
Rio Conchos	Not published		Yes	1924 - 1934
Boquillas	Not published		Yes	1924 - 1928
Goodenough Spring	**W.S.Papers	Yes		Feb. 1929 - Dec.31,1929
Goodenough Spring	Not published		Yes	1924 - Feb.22,1929
♂ Laredo	*W. B. No. 4		Yes	1926
♂ Rio Salado	Not published		Yes	1924 - 1928
♂ Rio Alamo	Not published		Yes	1924 - 1928
♂ Roma	Not published		Yes	1924 - Feb. 1929
♂ Roma	**W.S.Papers	Yes		Mar. 1929 - Dec. 1929
♂ Rio San Juan	Not published		Yes	1924 - 1928
Rio Grande City	Not published		Yes	1924 - 1931
♂ Matamoros	W. S. Papers	Yes		Jan. 1926 - Sept. 1926
♂ Matamoros	Not published		Yes	Oct. 1926 - Dec. 1926

♦Not adjusted. Record from U. S. Bureau of Reclamation.
*Water Bulletins of this Commission. **U. S. G. S. Water Supply Papers.

RIO GRANDE AT TORNILLO BRIDGE STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at highway bridge two miles west of Tornillo, El Paso County, Texas. Zero of gage was 3,588.63 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on frequent meter measurements. Computations by shifting channel methods. 1924 records good.

REMARKS: Elephant Butte reservoir on the Rio Grande as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modified the river flow. This station was operated by the United States Bureau of Reclamation.

Mean Daily Discharge in Second Feet and Annual Summary, 1924

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	450	95	650	290	670	880	720	430	1,700	270	185	270
2	780	95	650	450	740	740	590	360	1,570	220	135	195
3	460	80	640	450	770	770	680	610	1,420	220	105	180
4	460	65	640	450	920	500	920	600	1,170	220	110	160
5	260	90	610	420	1,030	440	1,210	440	830	260	165	195
6	290	350	630	420	1,070	380	1,240	240	750	270	170	220
7	270	700	600	450	1,070	385	1,180	100	710	280	165	260
8	250	725	600	440	920	420	990	0	750	280	170	270
9	200	725	610	440	830	480	810	0	670	230	190	330
10	200	770	610	430	790	440	960	100	620	250	180	320
11	200	770	570	600	880	500	1,070	320	590	260	170	330
12	170	790	560	720	740	520	1,230	540	580	200	150	390
13	115	790	550	690	680	450	1,490	380	650	190	155	425
14	115	750	550	690	710	400	1,600	330	670	180	165	430
15	115	780	550	740	680	580	1,440	310	720	175	140	420
16	105	750	580	660	740	580	1,000	490	700	175	150	330
17	120	750	580	640	830	490	850	850	700	210	155	310
18	115	780	500	650	970	470	900	1,000	820	270	225	300
19	115	770	520	650	1,120	420	1,040	900	800	290	230	290
20	115	750	580	590	1,070	400	1,300	520	600	260	210	320
21	115	725	540	600	1,120	460	1,360	490	490	200	205	345
22	80	725	520	660	1,120	550	1,230	630	500	220	180	300
23	80	725	500	590	1,070	780	770	570	350	200	205	330
24	90	725	480	590	920	940	950	690	310	200	225	360
25	80	810	400	690	1,070	1,020	830	910	290	240	220	340
26	80	830	320	740	1,200	910	790	980	300	260	225	320
27	90	750	260	790	1,200	820	760	1,100	230	280	240	310
28	90	750	260	790	1,120	780	760	1,230	270	290	245	280
29	90	750	290	710	1,120	850	850	1,370	350	280	235	270
30	90		300	660	1,120	820	960	1,580	360	280	250	310
31	90		260		740		730	1,690		260		370

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	-	-	2	780		80	190	11,700	
February	3.04	-	26	830	4	65	626	36,000	
March	2.95	2.00	1-2	650		260	513	31,600	
April	3.10	2.10	27-28	790	1	290	590	35,100	
May	3.50	2.90	26-27	1,200	1	670	936	57,600	
June	3.20	2.25	25	1,020	6	380	606	36,000	
July	4.10	2.75	14	1,600	2	590	1,010	61,900	
August	3.96	.60	31	1,690	8-9	0	637	39,200	
September	3.97	1.95	1	1,700	27	230	682	40,600	
October	2.13	1.75	19	290	15-16	175	239	14,700	
November	2.50	1.57	30	250	3	105	185	11,000	
December	2.97	2.05	14	430	4	160	306	18,800	
The Year	4.10	.60		1,700		0	543	394,200	

RIO GRANDE AT TORNILLO BRIDGE STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at highway bridge two miles west of Tornillo, El Paso County, Texas. Zero of gage was 3,588.63 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on frequent meter measurements. Computations by shifting channel methods. 1925 records good.

REMARKS: Elephant Butte reservoir on the Rio Grande as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modified the river flow. This station was operated by the United States Bureau of Reclamation.

Mean Daily Discharge in Second Feet and Annual Summary, 1925

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	360	150	40	150	290	800	85	1,050	240	480	117	125
2	270	140	75	150	210	620	60	1,290	560	402	149	201
3	260	235	20	215	250	420	35	1,450	1,020	475	224	275
4	280	290	50	200	290	355	115	4,400	1,400	480	232	188
5	240	260	95	180	250	150	355	2,900	6,500	366	233	172
6	230	250	115	200	190	40	340	1,420	4,000	354	220	157
7	220	245	175	210	200	5	85	1,400	2,000	317	178	197
8	210	230	205	120	190	5	270	1,320	1,400	285	149	202
9	200	235	270	70	210	30	80	1,340	800	239	143	187
10	190	260	300	70	210	40	270	1,400	320	234	156	175
11	180	225	295	75	225	10	185	1,450	100	202	150	181
12	180	125	220	85	185	15	360	1,500	80	287	150	173
13	180	135	170	200	110	25	250	1,360	135	277	144	118
14	180	80	180	170	35	75	40	620	155	241	132	65
15	170	60	250	60	15	40	35	450	220	242	126	54
16	170	45	250	75	10	100	240	370	310	124	120	43
17	170	50	90	95	30	150	50	260	210	92	87	30
18	170	35	45	30	35	180	15	180	100	92	62	10
19	170	45	60	75	45	115	10	230	45	112	42	33
20	170	100	75	70	20	290	10	330	95	199	20	52
21	170	135	105	200	10	420	10	380	130	149	25	47
22	170	115	200	200	10	440	10	350	300	134	80	49
23	170	130	190	260	10	380	10	540	310	126	46	39
24	160	105	40	210	15	350	10	630	280	106	68	18
25	160	145	15	200	20	440	100	210	210	124	85	0
26	160	40	10	280	210	400	200	85	190	132	81	16
27	160	15	10	320	310	405	310	85	220	130	81	30
28	150	15	10	280	340	300	430	120	270	103	74	42
29	150		25	290	455	195	400	80	240	136	76	44
30	150		30	300	620	70	420	75	170	110	78	56
31	150		100		720		720	190		110		213

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January	2.80	1.64	1	360	30-31	150	192	11,800	
February	2.60	.70	4	290	27-28	15	139	7,730	
March	2.64	.50	10	300	26-28	10	120	7,370	
April	2.72	.90	27	320	18	30	168	10,000	
May	3.15	.50	31	720	21-23	10	185	11,300	
June	3.30	.50	1	800	7-8	5	229	13,600	
July	3.12	.50	31	720	19-24	10	180	10,900	
August	-	1.20	4	8 4,400	30	75	886	54,500	
September	-	1.12	5	8 6,500	19	45	734	43,700	
October	2.45	.85	1	480	17-18	92	221	13,600	
November	1.61	0	5	233	20	20	118	7,000	
December	1.80	-	3	275	25	0	103	6,330	
The Year	-	-		8 6,500		0	273	197,830	

8 Estimated.

RIO GRANDE AT TORNILLO BRIDGE STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at highway bridge two miles west of Tornillo, El Paso County, Texas. January 1 to February 11, 1926, zero of gage was 3,588.63 feet; February 12 to December 31, 1926, 3,578.63 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on frequent meter measurements. Computations by shifting channel methods. 1926 records good.

REMARKS: Elephant Butte reservoir on the Rio Grande as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modified the river flow. This station was operated by the United States Bureau of Reclamation.

Mean Daily Discharge in Second Feet and Annual Summary, 1926

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	143	144	29	260	606	1,340	152	65	62	990	133	125
2	249	137	75	246	510	850	96	26	40	695	213	105
3	279	166	65	87	595	655	123	35	44	560	320	96
4	276	246	54	89	571	610	310	35	126	465	313	85
5	261	259	12	24	754	655	550	28	156	390	280	96
6	259	119	5	12	700	600	510	37	137	330	234	145
7	254	35	3	265	415	755	274	53	155	345	156	212
8	242	62	2	225	351	660	205	90	190	350	100	235
9	242	70	1	121	289	475	500	94	275	390	105	260
10	220	43	1	293	267	475	435	54	463	448	46	280
11	233	36	12	424	165	376	435	26	820	405	48	345
12	195	26	16	466	60	350	812	48	1,000	380	67	342
13	196	18	85	487	2	290	1,480	66	995	356	38	300
14	191	27	184	499	6	545	1,845	240	840	305	23	262
15	179	11	245	470	0	505	2,280	1,130	645	233	12	240
16	180	12	250	437	89	292	2,015	850	465	344	20	243
17	174	15	225	435	3	96	1,345	465	268	310	13	240
18	170	11	224	279	1	79	970	300	207	272	21	235
19	169	10	142	360	1	205	780	123	256	225	8	226
20	161	13	105	405	1	365	455	75	242	267	4	215
21	158	31	78	377	0	505	186	26	213	185	3	208
22	158	33	72	213	8	515	67	135	162	218	70	220
23	157	20	33	159	53	340	21	134	110	48	122	268
24	141	49	25	53	383	117	23	148	87	46	115	200
25	158	24	93	53	525	63	250	242	60	56	90	162
26	150	8	220	130	601	72	590	172	195	46	110	105
27	143	26	256	64	617	192	452	80	830	44	132	89
28	151	20	500	127	820	385	930	68	1,450	40	310	60
29	158		536	347	930	360	1,085	60	1,597	49	275	80
30	153		489	456	1,060	290	780	65	1,380	51	225	73
31	147		354		1,200		440	63		104		95

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January	1.80	1.03	3	279	24	141	192	11,800	
February	1.65	9.62	5	259	26	8	60	3,310	
March	12.96	9.50	29	536	9-10	1	142	8,710	
April	12.30	9.68	14	499	6	12	262	15,600	
May	13.19	9.99	31	1,200	15	0	374	23,000	
June	13.30	10.82	1	1,340	25	63	434	25,800	
July	14.19	10.36	15	2,280	23	21	658	40,500	
August	12.94	10.42	15	1,130	11	26	162	9,980	
September	13.45	10.55	29	1,600	2	40	449	26,700	
October	12.79	10.56	1	990	28	40	289	17,700	
November	11.94	10.00	3	320	21	3	120	7,150	
December	12.00	10.75	11	345	28	60	189	11,600	
The Year	14.19	9.50		2,280		0	279	201,850	

RIO GRANDE AT TORNILLO BRIDGE STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at highway bridge two miles west of Tornillo, El Paso County, Texas. Zero of gage was 3,578.63 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on frequent meter measurements. Computations by shifting channel methods. 1927 records good.

REMARKS: Elephant Butte reservoir on the Rio Grande as well as many irrigation diversions in Colorado, New Mexico and Texas, completely modified the river flow. This station was operated by the United States Bureau of Reclamation.

Mean Daily Discharge in Second Feet and Annual Summary, 1927

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	124	156	276	163	279	264	120	1,850	268	326	400	211
2	195	169	195	238	470	70	140	1,250	460	240	393	200
3	162	109	155	272	489	56	153	695	345	212	426	188
4	216	275	67	232	368	208	252	600	547	164	562	179
5	263	288	134	190	316	320	232	610	630	129	482	175
6	353	323	198	263	330	365	108	862	460	102	311	306
7	338	379	442	195	357	345	26	1,133	335	103	291	432
8	275	363	420	64	510	322	22	1,190	312	122	284	449
9	268	340	450	42	600	220	5	655	410	157	260	449
10	240	309	370	41	790	250	45	483	980	255	226	459
11	232	341	490	32	387	360	205	405	988	371	220	403
12	225	353	510	80	283	545	435	520	918	304	193	462
13	215	353	490	249	223	785	378	466	791	384	187	363
14	150	363	610	172	260	845	339	374	1,150	483	188	406
15	202	301	356	443	343	760	313	604	1,820	304	171	287
16	202	303	154	620	394	720	118	1,074	1,413	266	95	265
17	203	280	93	700	294	770	100	722	1,380	270	122	230
18	203	252	70	640	341	670	110	590	1,480	263	673	201
19	203	201	50	360	185	576	102	970	1,528	254	591	162
20	208	248	81	390	96	550	55	1,522	1,377	245	468	184
21	188	255	110	272	130	665	3	1,680	942	225	451	198
22	187	214	161	223	70	452	10	1,695	855	194	285	198
23	187	143	213	190	308	400	52	1,510	755	174	290	200
24	188	148	132	253	367	196	880	1,122	578	98	248	193
25	188	100	91	380	220	273	1,170	1,145	550	35	186	186
26	190	57	80	365	250	355	1,210	654	563	33	175	189
27	188	73	81	147	275	362	1,640	464	580	62	226	203
28	188	222	134	54	285	362	1,800	425	409	65	208	203
29	175		145	15	280	290	1,870	408	376	68	200	200
30	168		125	42	312	220	1,870	256	336	70	226	193
31	154		100		287		2,030	253		157		163

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	12.02	11.19	6	353	1	124	209	12,900	
February	12.07	10.73	7	379	26	57	246	13,700	
March	12.43	10.65	14	610	19	50	225	13,900	
April	12.52	10.26	17	700	29	15	244	14,500	
May	13.26	10.55	10	790	22	70	326	20,000	
June	13.00	10.41	14	845	3	56	419	24,900	
July	13.91	9.17	31	2,030	21	3	509	31,300	
August	13.83	10.55	22	1,850	31	253	845	51,900	
September	13.43	10.29	15	1,820	1	268	785	46,700	
October	11.23	8.54	14	483	26	33	198	12,200	
November	11.62	9.19	18	673	16	95	301	17,900	
December	11.13	9.59	12	462	19	162	262	16,100	
The Year	13.91	8.54		2,030		3	381	276,000	

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: The Rio Conchos enters the Rio Grande about 4 miles above the international highway bridge at Presidio, Texas, and 1-1/2 miles above the Lower Presidio gaging station on the Rio Grande, and 8 miles below the Upper Presidio gaging station on the Rio Grande. No gaging station was maintained on the Rio Conchos, but the discharge records were calculated as mentioned below.

RECORDS: Based on discharge records of the Rio Grande at Upper Presidio and Lower Presidio stations; and irrigation diversions and arroyo inflow between these two stations. Records fair.

RECORDS AVAILABLE: 1924 to 1935.

REMARKS: The Boquilla Dam, as well as many irrigation diversions above the confluence of the Rio Conchos and the Rio Grande, greatly modify the river flow.

PREVIOUS EXTREME FLOWS: The greatest previous recorded flow occurred September 11, 1904, when the estimated peak was about 170,000 second feet.

Month 1924	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January			1	5,600	30	1,300	2,620	161,000	
February			16	2,000	12	1,200	1,260	72,500	
March			7	950	24	770	878	54,000	
April			1	1,100	30	410	659	39,200	
May			29	2,100	3	210	712	43,800	
June			1	610	30	240	560	33,300	
July			15	1,800	2	370	857	52,700	
August			30	1,700	22	330	662	40,700	
September			19	3,900	15	290	1,680	100,000	
October			5	3,600	19	1,100	1,660	102,000	
November			25	1,100	6	1,000	1,070	63,400	
December			1	1,100	31	830	953	58,600	
The Year				5,600		210	1,130	821,200	36.3

Month 1925	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January			29	980	16	690	750	46,100	
February			26	1,200	1	980	1,070	59,600	
March			2	1,200	31	870	1,040	64,200	
April			22	3,900	18	710	1,000	59,700	
May			28	2,700	23	670	1,010	62,300	
June			30	3,200	24	1,300	1,510	89,700	
July			10	7,400	21	2,200	3,560	219,000	
August			11	12,000	2	2,700	7,320	450,000	
September			7	16,000	29	2,100	7,130	424,000	
October			22	5,400	2	2,100	3,920	241,000	
November			5	2,100	23	1,600	1,710	102,000	
December			6	1,700	15	1,600	1,620	99,700	
The Year				16,000		670	2,650	1,917,300	84.8

Month 1926	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January			4	1,700	1	1,400	1,570	96,700	
February			18	1,600	25	1,300	1,490	83,000	
March				-	28	1,000	1,160	71,600	
April				-	3	300	834	49,600	
May				-		-	854	52,800	
June				-		-	874	52,000	
July				-		-	1,470	90,200	
August			27	13,000		-	3,940	242,000	
September				-		-	4,840	288,000	
October				-		-	2,960	182,000	
November				-		-	1,750	104,000	
December				-		-	1,640	101,000	
The Year				13,000		300	1,950	1,412,900	62.5

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA —continued

Month 1927	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			3	1,500	28	1,300	1,420	87,500	
February				*1,700		-	1,380	76,500	
March				*1,700		-	1,300	80,000	
April			7	2,600	20	1,100	1,340	79,700	
May			27	1,500	14	880	1,100	67,900	
June			16	2,100	30	1,100	1,250	74,100	
July			30	2,300	17	1,200	1,420	87,200	
August				*5,400		-	1,740	107,000	
September				*7,200		-	1,800	107,000	
October				*2,500		-	1,410	86,900	
November			26	1,400	1	1,100	1,210	71,900	
December			18	1,800	28	1,200	1,430	88,000	
The Year				*7,200		880	1,400	1,013,700	44.9

*Maximum discharges were not greater than these estimates.

Month 1928	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			31	1,600	25	1,200	1,450	89,400	
February			2	1,700	10	1,400	1,520	87,700	
March			1	1,400	16	1,100	1,210	74,700	
April			6	1,300	23	730	1,040	62,100	
May			26	1,600	10	700	1,050	64,300	
June			18	1,300	29	1,100	1,230	73,000	
July			24	3,300	7	1,100	1,720	106,000	
August			26	10,000	7	1,300	2,910	179,000	
September			3	2,800	12	800	1,460	86,700	
October				*2,600		-	1,550	95,500	
November				*2,400		-	1,680	100,000	
December				*2,100		-	1,590	97,800	
The Year				10,000		700	1,540	1,116,200	49.4

*Maximum discharges were not greater than these estimates.

Month 1929	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			6	1,800	18	900	1,390	85,300	
February			20	1,700	7	1,300	1,460	81,300	
March			6	1,500	31	1,200	1,310	80,800	
April			9	1,600	29	1,100	1,310	78,000	
May			24	2,400	4	1,100	1,340	82,500	
June			1	2,600	29	1,100	1,310	77,800	
July			30	3,800	1	1,100	1,420	87,600	
August			1	3,700	26	1,100	1,720	106,000	
September			10	2,800	6	1,100	2,220	132,000	
October			28	3,300	11	900	1,440	88,300	
November			17	1,700	30	1,000	1,220	72,400	
December			25	1,300	21	900	1,100	67,700	
The Year				3,800		900	1,440	1,039,700	46.0

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA —continued

Month 1930	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			1	1,700	31	750	1,070	66,100	
February			4	820	3	650	731	40,600	
March			1	820	26	250	395	24,300	
April			30	400	24	220	277	16,500	
May			27	340	23	250	283	17,400	
June			11	1,100	1	210	393	23,400	
July			28	2,100	7	300	831	51,100	
August			10	8,500	30	420	2,520	155,000	
September			1	460	28	75	175	10,400	
October			5	4,600	1	90	774	47,600	
November			7	700	29	380	489	29,100	
December			17	880	10	290	467	28,700	
The Year				8,500		75	705	510,200	22.6

Month 1931	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			1	510	24	220	330	20,300	
February			27	870	1	270	524	29,100	
March			8	1,300	29	390	758	46,600	
April			18	6,000	2	320	854	50,800	
May			1	2,400	21	540	800	49,200	
June			8	2,300	28	440	960	57,100	
July			10	6,500	2	650	1,340	82,200	
August			11	4,700	2	700	1,410	86,900	
September			24	6,800	12	800	997	59,300	
October			2	2,400	17	770	1,070	66,100	
November			23	1,300	29	640	928	55,200	
December			4	3,600	18	700	969	59,600	
The Year				6,800		220	915	662,400	29.3

Month 1932	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			3	1,200	15	640	828	50,900	
February			21	2,800	12	590	906	52,100	
March			16	1,200	31	520	727	44,700	
April			5	800	30	280	492	29,300	
May			2	470	31	210	296	18,200	
June			28	2,500	22	47	165	9,800	
July			8	5,600	1	60	452	27,800	
August			12	11,000	27	320	2,080	128,000	
September			12	82,000	3	320	8,440	502,000	
October			2	104,000	31	1,200	13,000	798,000	
November			1	1,300	25	900	1,050	62,600	
December			11	1,100	28	530	828	50,900	
The Year				104,000		47	2,440	1,774,300	78.5

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA —continued

Month 1933	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			11	980	28	640	825	50,700	
February			13	1,100	11	570	708	39,300	
March			7	1,100	29	580	711	43,700	
April			19	1,500	14	540	817	48,600	
May			31	1,500	29	350	581	35,700	
June			26	5,500	3	570	1,540	91,900	
July			20	3,600	18	430	994	61,100	
August			17	7,100	2	570	1,390	85,200	
September			17	26,700	25	2,200	8,960	533,000	
October			7	6,000	31	1,100	3,250	200,000	
November			17	1,500	4	980	1,230	73,200	
December			18	1,400	16	920	1,130	69,400	
The Year				26,700		350	1,840	1,331,800	58.9

Month 1934	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			17	1,300	19	730	1,050	64,500	
February			21	1,400	11	860	1,120	62,300	
March			1	1,300	31	650	963	59,200	
April			18	1,200	22	600	832	49,500	
May			27	2,800	8	530	784	48,200	
June			1	1,200	21	590	976	58,100	
July			25	1,800	21	590	1,000	61,600	
August			6	2,300	30	290	707	43,500	
September			10	1,500	24	470	650	38,700	
October			24	1,100	8	420	667	41,000	
November			5	1,200	23	430	765	45,500	
December			5	1,000	17	500	717	44,100	
The Year				2,800		290	851	616,200	27.3

Month 1935	Extreme Gage Height—Feet		Extreme Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			8	1,200	25	490	725	44,600	
February			20	920	4	380	585	32,500	
March			5	640	31	80	340	20,900	
April			28	120	24	50	84	5,000	
May			23	230	13	20	67	4,000	
June			12	9,200	5	30	889	52,900	
July			8	2,900	2	230	696	42,800	
August			18	5,600	2	280	982	60,400	
September			5	13,000	20	740	4,200	250,000	
October			2	6,600	26	700	1,890	116,000	
November			1	2,100	29	400	756	45,000	
December			4	620	19	360	433	26,600	
The Year				13,000		20	968	700,700	31.0

RIO GRANDE AT BOQUILLAS STATION

DESCRIPTION: See page 15 hereof for a description of this station in 1935. A station has been maintained here since June, 1928.

RECORDS: The annual and monthly discharge figures below were computed as stated on page 66.

RECORDS AVAILABLE: From 1924 to 1935, inclusive, when the estimated records below are combined with the actual records since June, 1928.

Months 1924	Average Second Feet	Acre Feet Total	Acre Feet Per Sq. Mile	Months 1925	Average Second Feet	Acre Feet Total	Acre Feet Per Sq. Mile
January	3,640	224,000		January	1,080	66,300	
February	1,710	98,200		February	996	55,300	
March	1,480	91,300		March	1,050	64,400	
April	1,170	69,500		April	1,260	75,200	
May	1,310	80,500		May	3,140	193,000	
June	1,400	83,500		June	1,560	92,300	
July	1,660	102,000		July	3,580	220,000	
August	995	61,200		August	10,400	642,000	
September	2,550	152,000		September	10,900	649,000	
October	2,470	152,000		October	4,700	289,000	
November	1,210	72,000		November	1,900	113,000	
December	1,200	73,800		December	1,530	94,100	
The Year	1,740	1,260,000	18.2	The Year	3,530	2,553,600	36.8

Months 1926	Average Second Feet	Acre Feet Total	Acre Feet Per Sq. Mile	Months 1927	Average Second Feet	Acre Feet Total	Acre Feet Per Sq. Mile
January	1,770	109,000		January	1,800	111,000	
February	1,520	84,700		February	1,730	96,300	
March	1,300	79,900		March	1,610	99,300	
April	1,280	75,900		April	1,450	86,500	
May	1,710	105,000		May	1,230	75,700	
June	1,830	109,000		June	1,650	98,300	
July	2,110	130,000		July	1,660	102,000	
August	6,070	373,000		August	2,200	135,000	
September	6,150	366,000		September	2,940	175,000	
October	5,010	308,000		October	2,030	125,000	
November	2,080	124,000		November	1,520	90,400	
December	1,820	112,000		December	1,770	109,000	
The Year	2,730	1,976,500	28.5	The Year	1,800	1,303,500	18.8

Month 1928	Mean Daily Gage Height—Feet High	Mean Daily Gage Height—Feet Low	Mean Daily Second Feet High Dates	Mean Daily Second Feet High	Mean Daily Second Feet Low Dates	Mean Daily Second Feet Low	Average Second Feet	Acre Feet Total	Acre Feet Per Sq. Mile
January							1,660	102,000	
February							1,680	96,900	
March							1,420	87,100	
April							1,090	64,800	
May							1,560	95,900	
June							1,270	75,300	
July			26	3,700	1	1,150	1,890	116,000	
August			27	14,900	8	1,790	4,050	249,000	
September			23	4,470	21	1,150	2,280	136,000	
October			3	2,410	14	1,490	1,820	112,000	
November			3	2,330	30	1,300	2,030	121,000	
December			27	2,040	4	915	1,770	109,000	
The Year							1,880	1,365,000	19.7

GOODENOUGH SPRING STATION NEAR COMSTOCK, TEXAS

DESCRIPTION: See page 19 hereof for a description of this station in 1935. A station has been maintained here since February 23, 1929. Prior to that time no station was maintained regularly but a few miscellaneous measurements were made by the U. S. Geological Survey.

RECORDS: The annual and monthly discharge figures below were computed as stated on page 66.

RECORDS AVAILABLE: From 1924 to 1935, inclusive, when the estimated records below are combined with the actual records since February, 1929.

Annual Discharge and Average Flow

Year	1924	1925	1926	1927	1928	1929
Total in Acre Feet	99,000	120,000	98,000	97,000	103,000	97,140
Average in Second Feet	136	166	135	134	142	134

RIO GRANDE AT LAREDO STATION

More complete records show that the flow at Laredo station as given in Water Bulletin No. 4, page 68, is correct except for 4 days in October. The corrected mean daily discharge in second feet for these 4 days is as follows: October 15, 11,500; October 16, 25,000; October 17, 17,400; October 26, 9,300. These modifications are embraced in the following annual summary:

Month 1926	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January	4.41	4.16	8	3,580	23-24	3,000	3,180	196,000	
February	4.21	3.74	3	3,150	27-28	2,450	2,810	156,000	
March	4.85	3.73	27	4,180		2,350	2,650	163,000	
April	18.24	3.50	22	75,000	20	2,080	6,750	401,000	
May	7.20	3.60	5	10,500	31	2,200	4,940	304,000	
June	6.02	3.64	22	8,000	1	2,280	4,410	262,000	
July	5.48	3.50	26	5,850	7	2,120	3,650	225,000	
August	9.09	4.72	28	18,400	18	3,920	7,440	457,000	
September	8.74	5.26	16	16,800	11	5,080	8,490	505,000	
October	10.83	5.25	16	25,000	14	5,350	8,420	518,000	
November	5.69	4.35	1	6,500	30	3,300	4,080	243,000	
December	5.88	4.20	19	6,050	21-24	3,100	3,810	234,000	
The Year	18.24	3.50		75,000		2,080	5,060	3,664,000	27.6

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car located at the approximate site of the present station, about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles upstream from Ciudad Guerrero, Tamaulipas.

RECORDS: Based upon 3 gage readings daily and 3 meter measurements per week. 1924 records considered fair.

RECORDS AVAILABLE: 1901 to 1912; 1923 to 1935.

REMARKS: This gaging station has a good natural control. More complete details concerning this station may be seen elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1924

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,070	929	569	311	243	135	570	18.7	0	5,010	2,360	1,100
2	1,070	929	555	302	243	499	386	15.5	0	4,540	2,360	1,290
3	1,070	913	555	300	243	816	337	11.7	0	4,080	2,200	1,730
4	1,070	903	542	284	236	757	604	11.7	0	3,760	2,200	1,150
5	1,070	876	542	275	226	649	341	10.9	0	3,730	2,020	1,240
6	1,070	841	542	266	214	487	215	8.48	0	3,730	2,020	1,240
7	1,070	820	528	257	192	420	143	6.36	0	3,640	2,020	1,160
8	1,080	785	514	257	708	364	96.1	5.30	0	3,610	2,020	1,040
9	1,080	765	500	257	427	304	83.1	4.94	0	3,550	1,880	1,040
10	1,090	737	487	257	208	271	66.7	4.59	0	3,500	1,880	1,040
11	1,080	737	473	257	187	262	60.7	3.88	0	3,500	1,860	1,030
12	1,070	737	459	266	182	242	51.6	2.83	0	3,500	1,870	1,010
13	1,070	709	459	293	177	221	42.4	2.47	0	3,500	1,810	1,010
14	1,070	709	448	293	157	192	42.4	2.47	0	3,430	1,820	1,010
15	1,070	695	448	293	715	187	36.7	2.47	8,450	3,350	1,820	1,010
16	1,070	681	444	293	694	177	35.0	.71	15,300	3,350	1,820	1,010
17	1,050	681	426	284	375	160	31.4	0	32,300	3,210	1,800	1,030
18	1,010	681	426	284	293	139	29.7	0	35,600	3,210	1,750	1,030
19	1,010	681	414	275	289	129	24.7	0	29,100	3,210	1,750	1,030
20	1,010	681	414	266	243	123	21.9	0	19,500	3,110	1,680	1,020
21	983	765	403	266	187	131	19.8	0	16,400	3,000	1,270	1,010
22	983	709	386	257	174	531	140.0	0	12,200	2,900	1,690	889
23	983	681	358	257	156	542	140.0	0	17,000	2,790	1,680	889
24	970	667	358	257	145	389	86.9	0	30,900	2,790	1,640	890
25	970	653	347	250	145	212	83.7	0	29,700	2,790	1,640	881
26	970	639	347	250	145	148	77.7	0	17,900	2,790	1,640	878
27	943	625	338	250	145	133	59.3	0	15,900	2,660	1,540	858
28	943	611	338	250	145	112	44.1	0	10,000	2,520	1,100	833
29	943	569	329	243	145	87.6	36.7	0	6,630	2,520	1,110	833
30	929		329	243	140	76.3	26.1	0	5,680	2,250	1,110	833
31	929		320		135		21.9	0		2,250		802

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January	5.77	5.38	10	1,090	31	929	1,030	63,000	
February	5.38	4.53	1	929	29	569	743	42,700	
March	4.53	3.84	1	569	31	320	439	27,000	
April	3.80	3.54	1	311	30	243	270	16,000	
May	4.49	2.95	15	715	31	135	255	15,700	
June	5.12	2.43	3	816	30	76.3	297	17,600	
July	4.69	1.51	4	604	21	19.8	128	7,850	
August	1.48	.20	1	18.7	31	0	3.65	224	
September	17.52	0	18	35,600	14	0	10,100	600,000	
October	6.69	6.04	1	5,010	31	2,250	3,280	202,000	
November	6.04	5.41	1	2,360	28	1,100	1,790	107,000	
December	5.81	4.76	3	1,730	31	802	1,026	63,100	
The Year	17.52	0		35,600		0	1,600	1,162,174	53.2

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car located at the approximate site of the present station, about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles upstream from Ciudad Guerrero, Tamaulipas.

RECORDS: Based upon 3 gage readings daily and 3 meter measurements per week. 1925 records considered fair.

RECORDS AVAILABLE: 1901 to 1912; 1925 to 1935.

REMARKS: This gaging station has a good natural control. More complete details concerning this station may be seen elsewhere in this bulletin.

Two sets of discharge records are extant for the year 1925. They differ materially at some points. The figures reproduced below are used because they correlate best with other records upstream and downstream on the Rio Grande. Daily discharge figures for this year are not available supporting the tabulation below.

Mean Daily Discharge in Second Feet and Annual Summary, 1925

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
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Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			1	931	31	593	715	44,600	
February			1	576	28	353	467	26,000	
March			24	5,860	22	236	511	31,400	
April			13	1,040	30	148	282	16,800	
May			14	1,770	30	85.6	410	25,200	
June			1	3,920	30	141	508	30,200	
July			1	134	30	22	56.3	3,460	
August			2	17,600	1	110	874	53,000	
September			30	10,400	6	93.3	2,880	171,000	
October			1	38,600	31	1,050	2,970	183,000	
November			1	1,210	30	553	837	49,800	
December			1	749	31	510	610	37,500	
The Year				38,600		22	928	671,960	30.8

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car located at the approximate site of the present station, about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles upstream from Ciudad Guerrero, Tamaulipas.

RECORDS: Based upon 3 gage readings daily and 3 meter measurements per week. 1926 records considered fair.

RECORDS AVAILABLE: 1901 to 1912; 1923 to 1933.

REMARKS: This gaging station has a good natural control. More complete details concerning this station may be seen elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1926

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	493	378	220	141	2,940	113	245	1,620	47	245	155	66
2	477	378	220	141	886	175	477	886	35	141	236	66
3	464	366	212	141	842	819	1,170	527	27	103	162	63
4	678	366	212	141	842	313	2,280	323	22	82	103	59
5	610	366	212	678	1,700	168	576	236	21	69	94	56
6	576	366	205	427	1,850	660	997	197	17	59	119	56
7	543	343	205	343	2,690	819	610	175	14	2,240	136	56
8	510	333	205	212	1,740	660	749	136	10	1,070	108	56
9	477	323	205	168	1,330	464	427	113	8.6	560	94	56
10	452	323	205	148	766	313	313	113	7.1	333	79	69
11	452	323	197	148	1,040	220	245	108	5.8	253	72	72
12	452	313	190	148	997	212	245	89	4.7	228	69	72
13	452	313	183	148	766	175	205	79	4.7	162	69	72
14	440	303	175	148	593	124	1,120	69	3.7	130	69	75
15	440	303	175	141	452	103	1,330	113	3.3	119	69	75
16	440	293	205	136	366	86	886	99	3.3	103	69	72
17	427	293	220	130	333	75	749	66	5.3	168	69	75
18	427	283	205	124	366	69	427	53	4.7	1,360	69	89
19	427	263	205	124	293	63	263	37	5.8	1,070	69	99
20	415	253	205	124	273	56	784	33	5.8	643	66	94
21	415	236	205	113	273	50	415	29	5.8	527	66	94
22	415	236	205	113	236	263	283	26	5.3	464	66	100
23	415	236	197	108	245	802	236	24	4.2	333	66	124
24	403	236	197	103	212	527	155	22	3.7	273	63	124
25	390	236	190	103	183	273	124	22	3	228	63	108
26	390	228	190	1,810	162	183	1,330	20	3	168	63	99
27	378	220	175	1,890	148	148	293	17	283	130	63	89
28	378	220	175	1,070	136	236	576	14	2,160	99	63	82
29	403		168	749	130	162	390	17	696	89	63	79
30	403		155	1,200	124	148	293	66	415	82	66	79
31	390		148		119		353	69		802		75

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	4.33	3.67	4	678	28	378	453	27,800	
February	3.67	3.15	1	378	28	220	298	16,500	
March	3.15	2.82	1	220	31	148	196	12,000	
April	5.84	2.56	27	1,890	25	103	372	22,200	
May	6.63	2.66	1	2,940	31	119	743	45,700	
June	4.59	2.07	3	819	21	50	283	16,800	
July	6.17	2.69	4	2,280	25	124	598	36,800	
August	5.61	1.44	1	1,620	28	14	174	10,700	
September	6.07	.92	28	2,160	26	3	128	7,610	
October	6.14	2.17	7	2,240	6	59	398	24,500	
November	3.22	2.20	2	236	29	63	87.3	5,190	
December	2.69	2.13	24	124	9	56	79.1	4,860	
The Year	6.63	.92		2,940		3	319	230,660	10.6

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car located at the approximate site of the present station, about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles upstream from Ciudad Guerrero, Tamaulipas.

RECORDS: Based upon 3 gage readings daily and 3 meter measurements per week. 1927 records considered fair.

RECORDS AVAILABLE: 1901 to 1912; 1923 to 1935.

REMARKS: This gaging station has a good natural control. More complete details concerning this station may be seen elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1927

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	75	59	24	7.8	9.3	5.8	1,220	576	69	17	29	2.3
2	75	56	24	7.1	6.4	4.7	1,220	543	63	713	29	1.9
3	75	53	22	6.4	5.3	3.7	1,810	493	56	89	27	1.7
4	75	53	22	5.8	4.7	3.0	1,700	464	50	37	26	1.7
5	75	53	22	5.3	3.7	2.3	4,800	440	47	35	24	1.7
6	94	53	22	4.2	3.0	1.9	3,520	403	45	66	22	1.5
7	99	53	22	3.7	2.3	22	3,000	366	39	56	20	1.5
8	99	50	22	3.7	1.9	47	2,730	333	53	378	20	1.5
9	99	50	22	3.0	1.7	31	2,500	303	47	4,110	17	1.3
10	99	47	21	3.0	1.3	21	2,320	273	47	4,520	14	1.3
11	94	45	35	2.6	1.3	14	2,160	245	353	2,200	13	1.1
12	94	42	47	2.6	.9	8.6	1,960	220	72	1,270	13	1.1
13	94	42	35	2.3	69	5.8	1,850	205	31	819	66	1.1
14	94	42	26	2.3	122	931	1,740	190	22	510	21	1.1
15	94	42	22	975	1,590	162	1,620	168	20	303	12	.9
16	86	42	20	415	643	56	1,590	155	22	197	10	.9
17	86	42	18	190	390	27	1,530	141	29	155	8.6	.9
18	86	39	17	103	323	21	1,560	130	21	119	7.8	.8
19	82	35	17	69	197	12	1,250	119	14	103	6.4	.8
20	75	33	17	47	136	7.1	1,170	148	12	94	5.8	.8
21	69	31	14	35	99	5.8	1,090	293	79	86	5.3	.7
22	53	31	13	24	75	27,500	1,020	220	162	75	4.7	.7
23	59	29	12	72	59	8,550	953	353	113	69	4.7	.7
24	59	29	10	108	42	5,090	908	303	136	63	4.2	.7
25	59	29	10	212	31	19,600	899	220	103	56	3.7	.6
26	56	29	10	103	24	25,300	842	168	66	53	3.3	.6
27	56	27	13	50	21	3,750	784	136	37	47	3.3	.6
28	56	26	12	27	15	2,410	749	108	26	42	3.0	.6
29	59		12	18	11	1,620	696	94	20	37	3.0	.6
30	63		10	13	8.6	1,440	643	82	17	35	2.6	.6
31	63		8.6		7.1		610	75		31		.6

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	2.53	2.10	9	99	22	53	77.5	4,760	
February	2.17	1.71	1	59	28	26	41.5	2,300	
March	2.03	1.25	12	47	31	8.6	19.4	1,190	
April	4.82	.85	15	975	14	2.3	84	5,000	
May	5.71	.66	15	1,590	12	.9	126	7,740	
June	12.63	.82	22	27,500	6	1.9	3,220	192,000	
July	7.61	4.20	5	4,800	31	610	1,630	100,000	
August	4.13	2.33	1	576	31	75	257	15,800	
September	3.61	1.38	11	353	20	12	624	3,710	
October	7.48	1.51	10	4,520	1	17	529	32,500	
November	2.23	.89	13	66	30	2.6	14.3	852	
December	.85	.56	1	2.3	31	.6	1.06	65.3	
The Year	12.63	.56		27,500		.6	505	365,917.3	16.8

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car located at the approximate site of the present station, about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles upstream from Ciudad Guerrero, Tamaulipas.

RECORDS: Based upon 3 gage readings daily and 3 meter measurements per week. 1928 records considered fair.

RECORDS AVAILABLE: 1901 to 1912; 1923 to 1935.

REMARKS: This gaging station has a good natural control. More complete details concerning this station may be seen elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1928

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	.42	24.0	24.0	3.32	-	190	.07	82.2	2.97	1,300	205	62.5
2	.42	24.0	24.0	2.97	-	175	.07	47.5	2.97	1,220	197	62.5
3	.42	22.3	24.0	2.61	-	212	0	30.8	660	1,140	175	56.2
4	.32	22.3	24.0	2.30	-	136	0	30.8	390	1,040	162	53.3
5	.32	24.0	25.7	1.94	-	103	0	18.2	610	975	148	53.3
6	.70	25.7	27.4	1.73	-	1,250	0	1,200	283	886	148	53.3
7	168	27.4	27.4	1.52	-	263	0	452	148	842	148	56.1
8	293	27.4	25.7	1.52	-	113	0	228	253	766	141	53.3
9	168	25.7	24.0	1.52	-	59.3	0	141	3,060	713	493	65.7
10	103	35.1	22.3	1.31	-	37.3	0	220	7,230	678	477	65.7
11	82.2	41.7	20.9	1.13	-	24.0	0	293	6,020	643	197	65.7
12	85.6	41.7	18.5	1.13	-	18.2	0	136	2,280	626	148	62.5
13	65.7	41.7	16.8	.92	-	12.2	0	75.4	1,070	576	168	62.5
14	47.5	41.7	16.8	.92	-	8.58	0	47.5	931	543	155	65.7
15	37.3	41.7	15.4	.78	-	6.36	0	56.2	403	527	190	65.7
16	33.0	41.7	14.3	.67	-	4.73	0	56.2	477	493	136	68.9
17	30.8	47.5	13.2	.57	-	3.32	0	41.7	819	464	108	68.9
18	30.8	44.6	12.2	.42	-	2.61	0	25.7	731	452	98.6	68.9
19	37.3	41.7	10.1	.32	-	1.94	0	16.8	477	415	89.0	72.0
20	35.1	44.6	9.32	.25	-	1.94	0	62.5	245	378	85.6	72.0
21	33.0	47.5	8.58	.21	-	1.73	0	65.7	1,250	343	78.8	72.0
22	35.1	41.7	7.84	.18	-	1.31	0	43.9	4,520	333	75.4	75.4
23	39.5	41.7	7.84	.11	-	1.13	0	33.0	4,590	313	72.0	75.4
24	41.7	37.3	7.84	.07	-	.92	78.8	25.7	3,000	293	65.7	75.4
25	41.7	33.0	7.84	0	-	.67	35.1	18.2	3,920	273	65.7	75.4
26	41.7	30.8	7.10	0	-	.57	403	13.2	2,360	245	62.5	72.0
27	37.3	27.4	6.36	0	-	.32	197	9.32	2,120	236	62.5	72.0
28	33.0	25.7	5.83	0	-	.25	168	7.10	1,890	228	62.5	72.0
29	29.1	25.7	5.26	0	-	.21	98.6	5.26	1,560	220	62.5	68.9
30	27.4		4.73	0	-	.18	62.5	4.20	1,410	212	62.5	68.9
31	24.0		3.67		-		148	3.32		205		68.9

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	3.41	.49	8	293	5	.32	51.7	3,180	
February	2.03	1.64	17	47.5	4	22.3	34.4	1,980	
March	1.74	.98	7	27.4	31	3.67	15.1	930	
April	.95	.13	1	3.32	30	0	.95	56.4	
May	-	-	-	-	-	-	4,110	8 253,000	
June	5.18	.39	6	1,250	30	.18	87.7	5,220	
July	3.74	0	26	403	23	0	38.4	2,360	
August	5.12	.95	6	1,200	31	3.32	113	6,920	
September	8.56	.92	10	7,230	2	2.97	1,760	105,000	
October	5.25	3.08	1	1,300	31	205	567	34,900	
November	3.97	2.20	9	493	30	62.5	145	8,610	
December	2.33	2.10	25	75.4	6	53.3	66.2	4,070	
The Year	8.56	0		7,230		0	587	426,226.4	19.5

8 Estimated

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Staff gage at the approximate site of the station in 1935 about 3 miles above the confluence of the Rio Alamo with the Rio Grande.

RECORDS: Based on 3 staff gage readings daily and 3 meter measurements per week. 1924 records considered fair.

RECORDS AVAILABLE: July 5, 1923, to 1935, inclusive.

REMARKS: The flow of the Rio Alamo was modified by irrigation diversions above this station. This station was operated by the Mexican Department of Agriculture and Development. The drainage area above this station is 1,840 square miles, all in Mexico. A more complete record of this station appears elsewhere herein and in former Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1924

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	650	505	367	182	-	-	-	0	-	0	0	-
2	634	505	338	182	-	-	-	0	-	0	0	-
3	634	505	382	170	-	-	-	0	-	0	0	-
4	620	489	412	161	-	-	-	0	-	0	0	-
5	600	473	412	153	-	-	-	0	-	0	0	-
6	600	457	412	153	-	-	-	0	-	0	0	-
7	600	441	412	161	-	-	-	0	-	0	0	-
8	600	441	382	153	-	-	-	0	-	0	0	-
9	600	441	382	153	-	-	-	0	-	0	0	-
10	600	441	338	153	-	-	-	0	-	0	0	-
11	584	427	338	153	-	-	-	0	-	0	0	-
12	584	427	338	144	-	-	-	0	-	0	0	-
13	584	412	323	144	-	-	-	0	-	0	0	-
14	569	412	323	144	-	-	-	0	-	0	0	-
15	569	412	323	136	-	-	-	0	-	0	0	-
16	569	441	308	136	-	-	-	0	-	0	0	-
17	569	441	308	136	-	-	-	0	-	0	0	-
18	553	826	308	127	-	-	-	0	-	0	0	-
19	537	650	293	127	-	-	-	0	-	0	0	-
20	537	489	293	119	-	-	-	0	-	0	0	-
21	537	338	293	119	-	-	-	0	-	0	0	-
22	537	352	281	119	-	-	-	0	-	0	0	-
23	537	352	268	119	-	-	-	0	-	0	0	-
24	537	352	268	110	-	-	-	0	-	0	0	-
25	537	352	268	110	-	-	-	0	-	0	0	-
26	537	382	268	110	-	-	-	0	-	0	0	-
27	537	382	293	110	-	-	-	0	-	0	0	-
28	521	367	293	110	-	-	-	0	-	0	0	-
29	521	367	281	102	-	-	-	0	-	0	0	-
30	505		268	93	-	-	-	0	-	0	0	-
31	505		219		-		-	0		0		-

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.74	1.44	1	650	31	505	568	34,900	
February	2.00	1.08	18	826	21	338	444	25,500	
March	1.25	.79	6	412	31	219	322	19,800	
April	.69	.36	1	182	30	93	136	8,100	
May	-	-	-	-	-	-	δ 434	δ 26,700	
June	-	-	-	-	-	-	δ 622	δ 37,000	
July	-	-	-	-	-	-	δ 234	δ 14,400	
August	0	0		0		0	0	0	
September	-	-	-	-	-	-	δ 58.8	δ 3,500	
October	0	0		0		0	0	0	
November	0	0		0		0	0	0	
December	-	-	-	-	-	-	δ 224	δ 13,800	
The Year		0				0	* 253	*183,700	99.8

δEstimated
*Partly estimated

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Staff gage at the approximate site of the station in 1935 about 3 miles above the confluence of the Rio Alamo with the Rio Grande.

RECORDS: Based on 3 staff gage readings daily and 3 meter measurements per week. 1925 records considered fair.

RECORDS AVAILABLE: July 5, 1923, to 1935, inclusive.

REMARKS: The flow of the Rio Alamo was modified by irrigation diversions above this station. This station was operated by the Mexican Department of Agriculture and Development. The drainage area above this station is 1,840 square miles, all in Mexico. A more complete record of this station appears elsewhere herein and in former Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1925

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	244	231	102	67.8	0	0	76.3	0	76.3	4,950	207	194
2	231	231	102	67.8	0	0	24.0	0	766	3,880	207	194
3	231	219	102	59.3	0	0	33.9	1,970	397	1,500	207	194
4	219	219	102	50.9	0	0	17	1,720	293	856	207	182
5	219	219	102	308	0	0	0	667	207	650	207	182
6	219	219	102	207	0	0	0	441	161	489	207	182
7	219	219	102	161	0	0	0	293	1,500	412	207	182
8	219	219	102	144	0	0	0	231	8,020	367	207	194
9	219	194	84.8	119	0	2,010	0	194	1,740	323	182	194
10	219	170	76.3	102	0	795	0	170	569	281	170	207
11	219	170	67.8	84.8	382	441	0	144	367	569	170	207
12	219	170	59.3	67.8	1,210	244	521	136	268	367	170	207
13	219	170	50.9	868	1,020	161	231	119	207	323	170	207
14	219	170	50.9	473	323	119	896	102	170	281	170	207
15	219	170	33.9	268	194	110	161	84.8	153	352	161	219
16	219	119	25.4	194	136	93.2	127.0	59.3	136	293	161	219
17	219	102	25.4	161	119	441.0	102.0	50.9	136	244	161	219
18	219	93	17.0	136	93.2	207.0	84.8	457	127	219	161	244
19	219	170	17.0	119	67.8	127.0	59.3	584	1,820	207	182	244
20	219	161	17.0	93.2	352.0	110.0	33.9	553	1,050	194	182	244
21	219	127	8.48	84.8	161.0	84.8	17	323	537	194	194	231
22	219	127	42.4	67.8	110.0	76.3	0	256	323	194	207	231
23	219	127	584	59.3	76.3	119.0	0	207	457	194	207	207
24	219	127	338	33.9	59.3	110.0	0	170	1,270	182	207	207
25	219	119	207	25.4	50.9	93.2	0	136	1,440	219	194	207
26	219	119	161	17.0	33.9	76.3	0	153	781	441	194	207
27	219	110	136	8.48	17	59.3	0	207	553	308	194	207
28	219	102	119	8.48	0	50.9	0	161	795	256	194	219
29	219		102	0	0	93.2	0	127	925	256	182	244
30	219		84.8	0	0	93.2	0	102	2,010	244	182	244
31	207		76.3		0		0	93.2		219		281

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	.85	.75	1	244	31	207	220	13,500	
February	.82	.36	1	231	18	93	164	9,110	
March	1.61	.03	23	584	21	8.48	103	6,350	
April	2.20		13	868		0	135	8,050	
May	3.05		12	1,210		0	142	8,740	
June	5.31		9	2,010		0	190	11,300	
July	2.26		14	896		0	76.9	4,730	
August	5.22		3	1,970		0	320	19,700	
September	15.88	.30	8	8,020	1	76.3	908	54,100	
October	12.53	.69	1	4,950	24	182	628	38,600	
November	.75	.62	1	207	15	161	188	11,200	
December	.95	.69	31	281	4	182	213	13,100	
The Year	15.88			8,020		0	274	198,480	108

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Staff gage at the approximate site of the station in 1935 about 3 miles above the confluence of the Rio Alamo with the Rio Grande.

RECORDS: Based on 3 staff gage readings daily and 3 meter measurements per week. 1926 records considered fair.

RECORDS AVAILABLE: July 5, 1923, to 1935, inclusive.

REMARKS: The flow of the Rio Alamo was modified by irrigation diversions above this station. This station was operated by the Mexican Department of Agriculture and Development. The drainage area above this station is 1,840 square miles, all in Mexico. A more complete record of this station appears elsewhere herein and in former Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1926

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	268	231	170	170	244	127						
2	281	231	170	170	207	1,290						
3	352	219	170	170	207	617						
4	352	219	170	338	1,710	412						
5	308	207	170	569	1,220	367						
6	281	207	170	338	667	667						
7	244	207	170	244	473	382						
8	231	207	170	505	412	256						
9	231	207	182	397	323	194						
10	231	194	182	244	281	161						
11	219	194	194	194	244	397						
12	219	194	194	170	367	219						
13	219	194	182	161	838	170						
14	219	194	170	161	367	170						
15	219	182	170	161	244	144						
16	219	182	231	161	194	119						
17	219	182	256	161	182	110						
18	219	182	219	170	182	93.2						
19	219	182	231	170	553	93.2						
20	219	182	244	170	308	76.3						
21	219	182	231	170	231	219						
22	219	182	219	161	231	1,320						
23	219	182	219	161	194	1,210						
24	231	182	207	161	161	600						
25	231	170	194	1,320	136	367						
26	231	170	182	700	127	338						
27	244	170	182	427	127	308						
28	293	170	170	308	119	252						
29	256		170	281	110	521						
30	244		170	256	110	382						
31	244		170		127							

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.12	.79	3	352	23	219	245	15,100	
February	.82	.66	1	231	28	170	193	10,700	
March	.89	.66	17	256	31	170	191	11,800	
April	3.31	.62	25	1,320	24	161	292	17,400	
May	4.43	.49	4	1,710	30	110	351	21,600	
June	3.31	.30	22	1,320	20	76.3	386	23,000	
July							δ 520	δ 32,000	
August							δ 112	δ 6,900	
September							δ 2.27	δ 135	
October							δ 228	δ 14,000	
November							δ 244	δ 14,500	
December							δ 244	δ 15,000	
The Year							*252	*182,135	99.0

δEstimated.
*Partly estimated.

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Staff gage at the approximate site of the station in 1935 about 3 miles above the confluence of the Rio Alamo with the Rio Grande.

RECORDS: Based on 3 staff gage readings daily and 3 meter measurements per week. 1927 records considered fair.

RECORDS AVAILABLE: July 5, 1923, to 1935, inclusive.

REMARKS: The flow of the Rio Alamo was modified by irrigation diversions above this station. This station was operated by the Mexican Department of Agriculture and Development. The drainage area above this station is 1,840 square miles, all in Mexico. A more complete record of this station appears elsewhere herein and in former Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1927

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	308	219	76.3	0	93.2	0	489	84.8	0	59.3	59.3	17.0
2	308	219	67.8	0	76.3	0	412	76.3	0	1,710	59.3	8.48
3	308	207	67.8	0	59.3	0	473	76.3	0	505	50.9	8.48
4	268	207	67.8	0	50.9	0	457	59.3	0	268	50.9	0
5	231	194	76.3	0	42.4	0	382	50.8	0	182	50.9	0
6	207	182	76.3	0	33.9	0	308	50.8	0	144	42.4	0
7	207	182	76.3	0	25.4	0	268	42.4	0	119	42.4	0
8	207	182	59.3	996	17.0	0	256	33.9	0	1,910	42.4	0
9	207	182	59.3	382	8.48	0	231	25.4	0	1,490	42.4	0
10	219	182	50.9	207	0	0	219	17.0	0	505	33.9	0
11	219	161	42.4	153	0	0	207	8.48	0	323	33.9	0
12	219	153	42.4	119	0	0	207	0	0	219	33.9	0
13	219	136	25.4	127	700	0	161	0	0	153	33.9	0
14	207	119	25.4	102	1,320	996	161	0	0	161	25.4	0
15	207	110	17.0	76.3	412	397	153	0	0	1,450	25.4	0
16	207	119	8.48	67.8	244	194	457	0	795	127	25.4	42.4
17	207	170	8.48	50.9	170	179	489	0	505	119	93.2	102
18	207	161	0	50.9	136	136	256	0	268	110	76.3	119
19	231	153	0	42.4	110	102	397	0	182	102	67.8	119
20	231	144	0	42.4	93.2	76.3	308	0	144	93.2	59.3	119
21	231	127	0	33.9	76.3	67.8	293	0	119	84.8	50.9	119
22	219	110	0	1,210	67.8	8,660	367	0	338	84.8	50.9	127
23	207	93.2	0	338	50.9	3,760	441	50.9	397	76.3	42.4	136
24	182	93.2	0	321	42.4	1,860	281	33.9	256	76.3	42.4	144
25	207	76.3	0	382	25.4	2,650	207	17.0	182	76.3	33.9	144
26	233	70.6	0	244	17.0	2,310	161	*17.0	144	67.8	33.9	144
27	231	70.6	0	219	8.48	1,260	153	17.0	127	67.8	25.4	153
28	231	70.6	0	161	0	838	127	8.48	110	59.3	25.4	153
29	231		0	127	0	781	110	8.48	93.2	59.3	17.0	153
30	219		0	110	0	650	102	0	76.3	59.3	17.0	153
31	231		0		0		93.2	0		59.3		153

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	1.02	.75	1	308	18	182	227	14,000	
February	.79	.30	1	219	28	70.6	146	8,120	
March	.30		1	76.3		0	27.3	1,680	
April	3.02		22	1,210		0	192	11,400	
May	3.31		14	1,320		0	125	7,700	
June	16.57		22	8,660		0	831	49,400	
July	1.41	.36	1	489	31	93.2	278	17,100	
August	3.28		1	84.8		0	21.9	1,340	
September	2.03		16	795		0	125	7,410	
October	5.02	.23	8	1,910	31	59.3	339	20,900	
November	.36	.07	17	93.2	30	17	43	2,560	
December	.59		27	153		0	68.2	4,190	
The Year	16.57			8,660		0	201	145,800	79.2

*Partly estimated.

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Staff gage at the approximate site of the station in 1935 about 3 miles above the confluence of the Rio Alamo with the Rio Grande.

RECORDS: Based on 3 staff gage readings daily and 3 meter measurements per week. 1928 records considered fair.

RECORDS AVAILABLE: July 5, 1923, to 1935, inclusive.

REMARKS: The flow of the Rio Alamo was modified by irrigation diversions above this station. This station was operated by the Mexican Department of Agriculture and Development. The drainage area above this station is 1,840 square miles, all in Mexico. A more complete record of this station appears elsewhere herein and in former Water Bulletins.

Mean Daily Discharge in Second Feet and Annual Summary, 1928

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	153	153	76.3	0	-	127	0	33.9	0	352	127	144
2	153	144	67.8	0	-	102	0	17.0	2,180	308	110	144
3	153	127	59.3	0	-	441	0	8.5	1,610	308	102	144
4	144	119	59.3	0	-	412	0	8.5	1,120	281	93.2	144
5	153	102	59.3	0	-	281	0	219.0	397	256	136	144
6	182	93.2	59.3	0	-	194	0	93.2	231	231	231	144
7	207	110	59.3	0	-	153	0	59.3	161	207	161	161
8	231	136	59.3	1,290	-	127	0	50.9	1,240	194	127	161
9	244	161	59.3	650	-	102	0	33.9	2,260	182	925	153
10	219	194	59.3	256	-	93.2	0	25.4	1,260	170	733	170
11	194	219	59.3	207	-	93.2	0	17.0	1,340	161	293	170
12	182	256	50.9	161	-	76.3	0	8.5	584	161	207	170
13	182	244	50.9	161	-	59.3	0	8.5	397	153	182	170
14	182	219	50.9	144	-	50.9	0	0	293	224	170	161
15	182	207	50.9	127	-	42.4	0	0	244	161	153	170
16	182	182	42.4	110	-	25.4	0	0	1,510	144	136	182
17	182	170	42.4	93.2	-	17.0	0	0	1,590	127	127	153
18	182	161	42.4	84.8	-	8.5	0	0	750	119	127	127
19	182	153	33.9	67.8	-	8.5	0	0	441	110	119	110
20	182	153	33.9	59.3	-	0	0	0	457	102	110	110
21	182	161	25.4	50.9	-	0	0	0	1,670	102	102	102
22	182	161	25.4	42.4	-	0	0	0	1,680	93.2	102	84.8
23	182	153	25.4	33.9	-	0	457	0	1,340	93.2	102	76.3
24	161	127	17.0	25.4	-	0	881	0	824	84.8	102	76.3
25	144	119	17.0	17.0	-	0	281	0	824	84.8	102	93.2
26	153	80.5	8.5	8.5	-	0	161	0	683	76.3	102	93.2
27	161	93.2	8.5	0	-	0	127	0	569	76.3	110	93.2
28	170	93.2	0	0	-	0	93.2	0	412	76.3	110	84.8
29	170	76.3	0	0	-	0	76.3	0	489	84.8	144	93.2
30	161		0	0	-	0	59.3	0	412	441.0	136	93.2
31	161		0		-		42.4	0		182.0		102.0

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	.85	.56	9	244	25	144	177	10,900	
February	.89	.30	12	256	29	76.3	151	8,660	
March	.30		1	76.3		0	38.8	2,390	
April	3.25		8	1,290		0	120	7,120	
May	**10.00		13	-		-	8 2,230	8 137,000	
June	1.31		3	441		0	80.5	4,790	
July	2.23		24	881		0	70.3	4,320	
August	.79		5	219		0	18.8	1,160	
September	5.97		9	2,260	1	0	899	53,500	
October	1.31	.30	30	441	28	76.3	172	10,600	
November	2.33	.36	9	925	4	93.2	183	10,900	
December	.69	.30	16	182	24	76.3	130	7,980	
The Year	**10.00					0	357	259,320	141

8 Estimated.
**Estimated not to have exceeded this.

RIO GRANDE AT ROMA STATION

DESCRIPTION: Automatic water stage recorder after July, 1924. Previously an inclined staff gage. Also a cable and sit down cable car. Location of gage, cable and recorder about 300 feet upstream from present highway bridge.

RECORDS: The original records were based upon frequent meter measurements and a gage record.

RECORDS AVAILABLE: August, 1900, to March, 1914; and November, 1922, to December, 1935.

REMARKS: A more complete description of this station will be found elsewhere herein.

Month 1924	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			7	10,200	31	5,400	7,580	466,000	
February			2	6,100	17	4,000	4,780	275,000	
March			7	4,600	25	3,300	4,000	246,000	
April			27	4,400	26	2,500	3,310	197,000	
May			31	11,000	4	2,800	4,130	254,000	
June			4	11,000	30	2,400	4,650	277,000	
July			24	5,200	15	2,000	3,010	185,000	
August			11	3,400	31	1,600	2,570	158,000	
September			25	49,000	2	1,800	17,100	1,020,000	
October			12	15,000	31	5,900	8,780	540,000	
November			2	5,800	30	3,800	5,180	308,000	
December			5	7,000	31	3,600	4,460	274,000	
The Year				49,000		1,600	5,790	4,200,000	26.2

Month 1925	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			2	4,200	31	3,000	3,850	237,000	
February			3	3,900	28	2,600	3,310	184,000	
March			25	5,000	3	2,700	3,270	201,000	
April			30	9,800	28	2,100	3,020	180,000	
May					29	*1,900	8,520	524,000	
June			1	*200,000			14,100	837,000	
July			19	12,000	2	2,900	6,900	424,000	
August					1	**3,700	9,760	600,000	
September			9	**62,000			28,600	1,702,000	
October							13,000	800,000	
November			7	8,000	30	2,900	5,900	351,000	
December			30	4,900	21	4,000	4,240	261,000	
The Year				200,000		1,900	8,700	6,301,000	39.4

*The high and the low for May and June combined.
**The high and the low for Aug., Sept. and Oct. combined.

Month 1926	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			9	5,000	23	3,800	4,130	254,000	
February			7	4,400	28	3,000	3,750	208,000	
March			28	5,200	25	2,800	3,270	201,000	
April			23	*76,000	18	*2,500	6,720	400,000	
May							6,470	398,000	
June			23	12,000	2	2,700	5,300	318,000	
July					8	**3,000	4,990	307,000	
August			28	**19,000			7,810	480,000	
September							8,740	520,000	
October			17	***26,000			9,270	570,000	
November					30	***3,400	4,710	280,000	
December			10	5,600	31	3,700	4,260	262,000	
The Year				76,000		2,500	5,800	4,198,000	26.2

*The high and the low for April and May combined.
**The high and the low for July, Aug., and Sept. combined.
***The high and the low for Oct. and Nov. combined.

RIO GRANDE AT ROMA STATION —continued

Month 1927	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			30	4,000	29	3,100	3,660	225,000	
February			14	4,900	20	3,300	4,070	226,000	
March			30	4,600	28	2,300	3,220	198,000	
April			11	5,300	29	2,200	3,260	194,000	
May			14	7,500	1	2,200	2,910	179,000	
June			26	41,000	6	1,900	8,590	511,000	
July			9	13,000	16	3,400	6,160	379,000	
August			22	3,900	27	2,700	3,450	212,000	
September					22	*2,500	4,030	240,000	
October			10	*23,600			7,330	451,000	
November			15	3,400	12	2,800	3,180	189,000	
December			30	3,500	2	2,800	3,110	191,000	
The Year				41,000		1,900	4,410	3,195,000	20.0

*The high and the low for Sept. and Oct. combined.

Month 1928	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			8	3,800	30	3,000	3,400	209,000	
February							3,130	180,000	
March			1	*3,400	30	*2,100	2,940	181,000	
April			8	3,400	23	2,100	2,520	150,000	
May			14	71,000	2	2,000	11,100	683,000	
June			5	9,000	26	2,400	3,900	232,000	
July					6	**1,700	2,440	150,000	
August							6,510	400,000	
September			24	**58,000			13,600	809,000	
October			1	8,500	26	3,700	5,840	359,000	
November			10	5,900	29	3,900	4,760	283,000	
December			21	4,800	9	3,500	4,210	259,000	
The Year				71,000		1,700	5,370	3,895,000	24.3

*The high and the low for Feb. and March combined.
**The high and the low for July, Aug. and Sept. combined.

Month 1929	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			20	3,700	24	2,400	3,370	207,000	
February			2	3,300	5	2,200	2,930	163,000	
March			23	7,210	16	2,500	3,020	186,000	
April			9	8,350	30	1,960	3,110	185,000	
May			27	27,400	11	1,730	5,300	326,000	
June			1	6,790	21	1,900	3,100	184,000	
July			5	15,500	25	1,980	3,900	240,000	
August			26	23,100	30	2,940	4,490	276,000	
September			18	26,600	5	2,150	5,680	338,000	
October			17	9,050	12	2,780	4,100	252,000	
November			4	4,270	19	2,460	2,880	171,000	
December			16	13,500	9	2,200	3,130	192,000	
The Year				27,400		1,730	3,760	2,720,000	17.0

RIO SAN JUAN STATION AT SANTA ROSALIA, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car at the site of the present station about 27 1/2 river miles above the confluence with the Rio Grande and 15 miles south of Ciudad Camargo, Tamaulipas, Mexico, at a ranch called Santa Rosalia, 3 miles west of Ochoa Railway Station. The cable was installed at this station in 1923 and the automatic water-stage recorder was installed in 1929.

RECORDS: Based upon 3 gage readings daily and daily meter measurements. 1924 records considered fair.

RECORDS AVAILABLE: May 1, 1900, to 1913; 1923 to 1935.

REMARKS: A more complete description of this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1924

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,010	694	536	335	111	2,740	139	57.6	16.6	832	271	170
2	982	688	530	323	105	27,600	3,240	56.9	16.6	738	263	195
3	975	678	524	319	102	22,400	2,080	50.1	16.6	680	267	184
4	1,000	662	522	308	320	8,420	1,790	48.0	16.6	601	359	213
5	982	654	519	308	468	2,750	1,200	47.7	16.6	535	353	182
6	926	643	513	308	230	1,330	724	47.3	16.6	505	351	176
7	896	637	507	308	167	792	491	45.9	16.6	455	342	176
8	906	635	499	304	553	578	365	45.9	16.6	1,180	336	173
9	886	626	493	357	376	499	275	45.9	16.6	1,620	324	172
10	863	613	488	661	232	394	208	45.9	16.6	1,090	315	172
11	854	607	481	590	730	345	178	42.4	22.2	869	309	158
12	839	597	478	431	299	278	162	38.8	26.5	1,010	302	158
13	819	589	478	388	185	266	152	33.2	41.7	732	296	177
14	803	587	467	368	152	226	145	32.8	61.4	636	283	192
15	781	573	459	363	539	197	141	32.5	250	581	273	192
16	789	567	455	357	4,380	174	136	27.2	246	532	261	192
17	800	562	447	347	974	159	132	27.2	362	493	251	204
18	785	556	444	323	366	135	132	26.8	308	447	242	200
19	762	551	441	292	271	119	123	26.8	239	394	240	202
20	742	541	429	273	255	112	112	26.5	201	354	240	199
21	728	545	415	244	209	113	102	26.5	185	339	238	199
22	708	535	412	193	230	135	94.6	26.5	177	325	220	160
23	665	537	404	184	203	445	88.6	26.5	875	311	214	161
24	703	548	397	184	158	622	82.6	25.8	2,060	285	201	189
25	703	548	387	179	130	352	75.6	25.8	4,040	362	183	202
26	705	541	376	167	118	216	72.7	25.8	2,890	616	172	235
27	677	548	368	141	105	187	68.2	21.2	1,860	448	159	251
28	703	544	368	130	97.5	166	65.3	21.2	1,420	341	159	238
29	690	541	360	121	88.3	150	60.7	21.2	1,100	327	159	251
30	713		351	119	139	147	58.6	21.2	964	316	159	236
31	728		343		4,260		57.9	20.8		280		236

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	4.92	4.27	1	1,010	23	665	810	49,800	
February	4.27	3.35	1	694	22	535	591	34,000	
March	3.44	2.33	1	536	31	343	448	27,600	
April	3.94	2.00	10	661	30	119	298	17,700	
May	11.58	1.84	16	4,380	29	88.3	534	32,800	
June	25.33	1.77	2	27,600	20	112	2,400	143,000	
July	6.92	1.90	2	3,240	31	57.9	411	25,300	
August	1.87	1.41	1	57.6	31	20.8	34.5	2,120	
September	13.11	1.37	25	4,040	10	16.6	583	34,700	
October	6.85	3.53	9	1,620	31	280	588	36,200	
November	3.86	2.75	4	359	30	159	258	15,400	
December	3.27	2.75	29	251	12	158	195	12,000	
The Year	25.33	1.37		27,600		16.6	593	430,620	33.1

RIO SAN JUAN STATION AT SANTA ROSALIA, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car at the site of the present station about 27 1/2 river miles above the confluence with the Rio Grande and 15 miles south of Ciudad Camargo, Tamaulipas, Mexico, at a ranch called Santa Rosalia, 3 miles west of Ochoa Railway Station. The cable was installed at this station in 1925 and the automatic water-stage recorder was installed in 1929.

RECORDS: Based upon 3 gage readings daily and daily meter measurements. 1925 records considered fair.

RECORDS AVAILABLE: May 1, 1900, to 1913; 1923 to 1935.

REMARKS: A more complete description of this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1925

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	186	113.0	117	45.9	4,620	125.0	111	7.06	1,300	19,200	610	336
2	185	113.0	116	47.0	1,310	87.6	106	5.30	3,320	11,500	644	332
3	185	93.6	115	45.6	562	87.6	107	10,400	1,430	5,530	693	332
4	180	93.6	113	44.8	340	45.9	105	4,530	776	2,420	610	320
5	177	93.6	113	43.8	309	45.9	96.1	997	770	1,610	610	311
6	177	93.2	113	43.8	185	45.9	50.9	720	12,800	1,250	587	297
7	177	82.6	110	180	147	12.4	69.9	368	8,240	1,000	546	313
8	168	82.6	110	178	116	12.4	43.1	242	41,800	793	507	295
9	163	66.7	106	120	93.6	8,450	24.7	169	24,100	706	485	313
10	166	47.3	77.7	89.7	133	5,370	20.1	133	10,600	512	465	295
11	160	47.3	77.7	72.4	1,160	4,030	20.8	100	2,640	511	457	286
12	161	42.7	77.7	63.2	512	1,650	20.5	80.2	1,300	450	457	286
13	151	41.3	56.5	89.7	413	738	55.8	69.6	3,500	2,120	452	286
14	151	41.3	77.7	61.4	188	458	24.7	60.4	1,520	964	438	286
15	151	41.3	56.5	307	159	355	20.1	51.6	660	792	397	295
16	150	41.0	48.4	858	179	651	19.1	45.9	451	629	381	288
17	150	56.2	48.4	314	136	1,820	21.9	41.0	279	786	368	291
18	153	67.5	21.2	176	108	845	25.8	37.8	184	462	357	791
19	151	67.5	21.2	118	88.6	365	57.9	182	759	402	350	912
20	145	67.5	66.4	89.7	74.2	258	59.0	1,520	2,790	377	345	754
21	145	67.5	43.8	69.2	67.1	283	49.1	637	874	400	343	657
22	145	70.3	38.8	57.6	60.7	326	42.7	305	397	1,050	346	570
23	140	72.0	4,570	48.4	57.9	237	35.3	190	296	622	460	534
24	139	71.7	757	45.6	54.0	176	29.0	140	556	494	404	500
25	140	68.9	297	44.5	54.0	147	22.6	103	10,100	442	399	478
26	139	68.9	141	43.8	51.6	227	17.3	78	3,710	1,370	391	456
27	139	47.3	87.2	43.4	49.1	199	9.89	1,220	2,080	1,210	381	483
28	130	24.7	64.3	43.1	46.6	227	37.8	736	1,270	950	364	483
29	127		50.5	43.4	40.6	200	42.4	412	3,270	945	346	525
30	119		40.6	2,480.0	37.1	127	43.8	301	14,800	677	336	705
31	116		39.2		37.1		43.8	252		632		1,000

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	2.40	1.80	1	186	31	116	154	9,450	
February	1.80	1.21	1	113	28	24.7	67.3	3,740	
March	11.48	.85	23	4,570	19	21.2	251	15,400	
April	4.66	.89	16	2,480	28	43.1	197	11,700	
May	8.01	.73	1	4,620	31	37.1	367	22,600	
June	14.07	.59	9	8,450	8	12.4	919	54,700	
July	1.77	.49	1	111	31	9.89	46.2	2,840	
August	15.52	.43	3	10,400	2	5.30	778	47,900	
September	19.68	1.77	8	41,800	18	184	5,220	311,000	
October	17.52	3.51	1	19,200	8	377	1,960	121,000	
November	4.65	3.63	3	693	30	336	451	26,800	
December	5.30	3.40	31	1,000	14	286	451	27,700	
The Year	19.68	.43		41,800		5.30	904	654,830	50.4

RIO SAN JUAN STATION AT SANTA ROSALIA, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car at the site of the present station about 27 1/2 river miles above the confluence with the Rio Grande and 15 miles south of Ciudad Camargo, Tamaulipas, Mexico, at a ranch called Santa Rosalia, 3 miles west of Ochoa Railway Station. The cable was installed at this station in 1923 and the automatic water-stage recorder was installed in 1929.

RECORDS: Based upon 3 gage readings daily and daily meter measurements. 1926 records considered fair.

RECORDS AVAILABLE: May 1, 1900, to 1913; 1923 to 1935.

REMARKS: A more complete description of this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1926

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	959	480	127	293	1,850	346	1,920	1,140	471	349	13,900	311
2	920	460	118	279	1,360	353	2,000	1,110	442	283	3,580	302
3	828	433	114	268	1,460	1,680	14,600	4,130	359	253	1,640	302
4	1,020	412	111	265	3,660	2,330	12,200	4,160	3,070	219	910	320
5	1,390	380	111	258	3,000	4,090	15,500	4,530	3,080	219	675	311
6	1,270	364	105	254	2,670	1,520	8,810	1,830	1,330	215	596	304
7	1,120	351	105	297	1,340	1,720	4,890	1,190	719	1,870	570	306
8	1,080	337	103	291	832	1,600	3,060	987	428	1,190	538	292
9	1,100	320	97.8	309	711	731	2,290	876	306	746	474	292
10	1,090	307	97.8	231	618	551	1,940	806	252	627	442	292
11	1,030	299	92.5	192	576	483	1,680	739	229	549	426	285
12	967	286	87.6	173	1,040	664	2,720	689	216	459	424	292
13	910	286	83.0	155	1,450	485	2,330	652	221	402	415	292
14	880	286	83.7	145	753	398	1,140	642	215	362	408	292
15	802	273	83.7	129	586	345	2,960	687	198	320	406	292
16	801	256	87.2	115	511	317	4,510	593	189	3,610	393	283
17	777	241	625	113	465	462	2,460	541	630	568	375	283
18	732	236	880	113	1,150	336	2,250	509	345	427	362	313
19	703	213	549	132	874	275	5,500	469	985	350	349	618
20	673	213	372	170	3,160	220	12,100	423	734	464	344	393
21	604	213	326	486	3,650	190	7,410	388	491	375	344	318
22	534	200	321	766	1,300	267	5,160	364	408	313	335	298
23	535	186	291	408	852	5,080	3,410	341	395	381	335	297
24	535	177	879	268	591	12,400	2,900	343	348	390	342	292
25	533	168	878	331	591	5,750	3,590	319	277	337	344	292
26	533	162	471	4,220	522	2,240	3,250	289	328	309	321	288
27	528	150	341	1,720	470	1,310	2,490	269	239	293	312	278
28	535	136	291	697	419	1,010	1,980	245	411	277	297	273
29	525		284	546	380	936	1,710	238	572	272	288	258
30	524		289	2,810	355	786	3,000	226	435	270	288	258
31	522		300		329		1,360	219		34,900		248

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	6.27	4.17	5	1,390	31	522	805	49,500	
February	4.10	2.72	1	480	28	136	279	15,500	
March	5.15	2.33	25	880	14	83	281	17,300	
April	10.63	2.53	26	4,220	18	113	548	32,600	
May	13.06	3.31	21	3,660	31	329	1,210	74,400	
June	16.11	2.79	24	12,400	21	190	1,630	96,900	
July	16.60	6.13	5	15,500	31	1,140	4,550	280,000	
August	11.15	3.12	5	4,530	31	219	966	59,400	
September	8.50	3.02	5	3,080	16	189	611	36,300	
October	17.72	3.15	31	34,900	6	215	1,660	102,000	
November	16.93	3.77	1	13,900	30	288	1,010	60,400	
December	4.79	3.48	19	618	31	248	306	18,800	
The Year	17.72	2.33		34,900		83	1,160	843,100	64.9

RIO SAN JUAN STATION AT SANTA ROSALIA, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car at the site of the present station about 27 1/2 river miles above the confluence with the Rio Grande and 15 miles south of Ciudad Camargo, Tamaulipas, Mexico, at a ranch called Santa Rosalia, 3 miles west of Ochoa Railway Station. The cable was installed at this station in 1923 and the automatic water-stage recorder was installed in 1929.

RECORDS: Based upon 3 gage readings daily and daily meter measurements. 1927 records considered fair.

RECORDS AVAILABLE: May 1, 1900, to 1913; 1923 to 1935.

REMARKS: A more complete description of this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1927

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	270	153	70.3	11.3	55.8	20.5	3,580	1,080	426	338	226	231
2	270	146	66.7	11.3	44.5	15.2	5,080	963	389	377	226	231
3	266	137	76.3	11.3	37.8	8.83	6,170	863	374	914	226	227
4	262	135	103.0	11.3	30.4	6.0	5,090	780	357	418	168	230
5	262	132	103.0	5.65	27.5	11.3	5,260	726	346	319	162	235
6	260	132	97.8	5.65	21.9	1,020	3,860	682	397	332	161	240
7	246	132	97.8	12.0	18.7	2,500	3,230	659	433	399	161	240
8	239	132	93.2	113.0	14.1	1,180	2,920	630	387	333	161	240
9	233	132	85.8	89.3	12.0	340	2,580	557	350	3,910	162	240
10	225	396	80.9	62.2	11.7	210	2,180	535	326	679	162	240
11	217	324	71.3	43.8	10.9	161	2,390	623	335	1,060	165	242
12	206	183	60.0	28.3	9.89	135	2,430	687	332	881	170	245
13	206	148	58.3	22.6	292.0	85.8	1,790	644	305	667	173	245
14	196	134	54.7	22.6	650.0	1,920	1,900	602	255	583	161	243
15	191	130	51.6	27.5	222.0	10,500	1,640	556	247	548	165	243
16	196	121	51.6	48.7	97.8	5,700	1,700	492	396	540	274	240
17	187	116	49.1	38.8	54.4	1,520	2,420	448	390	462	255	239
18	182	113	48.0	28.3	31.8	717	5,950	410	707	435	287	238
19	181	102	45.6	22.6	24.0	462	5,420	385	1,170	412	273	235
20	181	95.3	44.5	18.4	18.7	255	4,000	2,760	459	397	270	235
21	181	92.9	39.2	14.1	13.8	206	2,340	1,970	862	373	270	239
22	178	90.4	33.9	610.0	10.2	47,900	2,310	942	4,260	348	270	239
23	173	90.4	33.9	307.0	8.48	42,900	2,470	630	1,670	348	261	244
24	164	85.5	31.1	164.0	7.06	40,400	2,070	632	912	327	247	244
25	157	77.7	29.7	1,250.0	6.71	39,200	1,770	486	723	314	261	245
26	155	75.2	28.3	285.0	6.00	46,600	1,640	467	562	303	261	246
27	155	69.9	28.3	78.8	4.59	32,900	1,490	368	474	290	247	249
28	155	69.9	25.4	45.2	4.24	8,930	1,280	281	438	279	237	249
29	154		25.4	33.5	3.88	5,600	1,040	213	401	251	230	249
30	155		23.0	45.2	4.94	3,960	837	165	373	256	224	249
31	155		18.7		10.2		742	131		249		245

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	3.51	2.85	1	270	29	154	202	12,400	
February	3.97	2.33	10	396	28	69.9	134	7,430	
March	2.53	1.77	4	103	31	18.7	55.7	3,420	
April	5.51	1.71	25	1,250	5	5.65	116	6,880	
May	4.49	1.28	14	650	29	3.88	57	3,500	
June	28.25	1.51	26	47,900	4	6	9,850	586,000	
July	13.38	6.10	3	6,170	31	742	2,830	174,000	
August	6.69	3.22	21	2,760	14	131	689	42,400	
September	11.65	2.69	22	4,260	15	247	635	37,800	
October	9.45	2.85	9	3,910	29	249	559	34,400	
November	3.28	2.69	17	287	12	161	217	12,900	
December	3.18	2.82	27	249	3	227	241	14,800	
The Year	28.25	1.28		47,900		3.88	1,290	935,930	72

RIO SAN JUAN STATION AT SANTA ROSALIA, TAMAULIPAS

DESCRIPTION: Staff gage and cable with cable car at the site of the present station about 27 1/2 river miles above the confluence with the Rio Grande and 13 miles south of Ciudad Camargo, Tamaulipas, Mexico, at a ranch called Santa Rosalia, 3 miles west of Ochoa Railway Station. The cable was installed at this station in 1923 and the automatic water-stage recorder was installed in 1929.

RECORDS: Based upon 3 gage readings daily and daily meter measurements. 1928 records considered fair.

RECORDS AVAILABLE: May 1, 1900, to 1913; 1923 to 1935.

REMARKS: A more complete description of this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1928

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	255	131.0	150	53.3	36	561	32.8	38.1	23.3	1,820	551	428
2	249	114.0	150	52.3	36	901	31.8	35.1	23.3	1,650	479	419
3	231	99.9	150	49.8	35	237	31.8	32.8	22.6	1,480	411	411
4	231	131.0	131	48.7	42.4	75.9	30.7	31.8	66	1,290	380	403
5	243	114.0	114	47.7	72.4	203.0	29.7	31.8	1,770	1,180	364	444
6	267	99.9	114	46.6	131	131.0	28.6	37.1	878	1,090	350	533
7	533	99.9	150	45.6	403	69.9	27.5	225.0	300	1,060	342	461
8	1,130	99.9	171	44.5	523	65.3	27.5	150.0	197	971	328	436
9	561	99.9	150	46.6	237	61.1	27.5	66.4	2,490	890	328	411
10	403	150	131	45.6	99.9	56.5	28.6	55.4	2,600	833	364	403
11	328	194	114	43.4	68.9	52.3	28.6	46.6	822	640	364	396
12	293	197	99.9	42.4	67.8	50.9	27.5	42.4	364	561	461	387
13	287	203	86.9	42.4	561	50.9	27.5	40.3	267	505	913	380
14	274	249	75.6	42.4	2,250	48.7	28.6	37.1	203	452	972	372
15	267	274	75.6	41.3	2,190	60	43.4	36.0	114	427	1,080	372
16	261	267	74.5	41.3	533	650	54.4	47.7	1,350	436	947	357
17	249	270	73.1	40.3	307	357	52.3	47.7	17,120	479	822	350
18	249	231	71.0	40.3	214	150	46.6	63.2	19,980	610	650	342
19	237	225	69.9	40.3	76.6	68.9	43.4	50.9	12,480	600	590	328
20	231	219	68.9	40.3	68.9	59.7	40.3	43.4	4,570	387	551	321
21	225	214	68.9	40.3	63.2	54.4	37.1	41.3	2,940	335	523	321
22	225	214	68.9	39.2	150	48.7	36.0	48.7	3,650	314	496	321
23	214	208	67.8	38.1	2,020	45.6	58.6	46.6	8,990	300	470	314
24	208	203	67.8	37.1	1,740	43.4	844.0	42.4	3,470	287	452	321
25	203	197	65.3	37.1	542	41.3	67.8	38.1	2,560	274	436	328
26	203	171	63.2	36	328	39.2	50.9	33.9	2,780	267	419	307
27	197	131	62.2	36	237	37.1	50.9	31.8	2,490	261	411	300
28	192	114	60.7	36	171	36.0	50.9	29.7	2,170	255	452	293
29	150	150	59.7	35	86.9	33.9	48.7	27.5	2,000	249	470	287
30	150		56.5	33.9	231	32.8	45.6	26.5	1,900	355	452	274
31	150		55.4		1,060		41.3	25.4		913		267

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	5.64	2.62	8	1,130	31	150	287	17,600	
February	3.15	2.53	15	274	9	99.9	175	10,100	
March	2.66	1.84	8	171	31	55.4	94.1	5,790	
April	1.77	1.18	1	53.3	30	33.9	42.1	2,510	
May	8.04	1.21	14	2,250	3	35.0	470	28,900	
June	5.02	1.15	2	901	30	32.8	144	8,570	
July	4.86	.98	24	844	9	27.5	65.2	4,010	
August	2.89	.92	7	225	31	25.4	50	3,080	
September	17.52	.82	18	19,980	3	22.6	3,290	196,000	
October	7.19	3.02	1	1,820	29	249	682	41,900	
November	5.51	3.41	15	1,080	8	328	528	31,400	
December	4.23	3.12	6	533	31	267	364	22,400	
The Year	17.52	.82		19,980		22.6	513	372,260	28.6

RIO GRANDE AT RIO GRANDE CITY STATION

DESCRIPTION: The gaging station at this point was not constructed until January, 1932.

RECORDS: The records below were computed by the method outlined on page 66 of this bulletin. Records for the years 1924 to 1931, inclusive, considered fair.

RECORDS AVAILABLE: 1924 to 1935, when the synthetic record below is added to the actual record from 1932 to 1935, inclusive.

REMARKS: A more complete description of this station will be found elsewhere herein.

Month 1924	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January			8	11,000	31	6,200	8,470	521,000	
February			3	6,900	18	4,700	5,710	317,000	
March			8	5,200	26	3,000	4,620	284,000	
April			28	4,600	27	2,700	3,730	222,000	
May			31	15,400	5	3,400	4,540	279,000	
June			3	42,000	30	2,600	6,540	389,000	
July			2	10,000	16	2,200	3,530	217,000	
August			11	3,500	31	1,700	2,720	167,000	
September			24	51,000	3	1,900	17,810	1,060,000	
October			12	16,000	31	6,300	9,500	584,000	
November			3	6,200	30	4,000	5,580	332,000	
December			7	7,300	31	1,900	4,800	295,000	
The Year				51,000		1,700	6,450	4,667,000	26.8

Month 1925	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January			3	4,500	31	3,200	4,130	254,000	
February			4	4,100	28	2,800	3,530	196,000	
March			24	8,700	4	2,900	3,590	221,000	
April			30	12,000	29	2,200	3,260	194,000	
May					30	*2,000	9,190	565,000	
June			2	*200,000			14,900	887,000	
July			20	12,000	3	3,100	6,960	428,000	
August					1	**3,800	9,790	602,000	
September			9	**100,000			33,600	2,000,000	
October							16,300	1,000,000	
November			8	8,600	30	3,300	6,670	397,000	
December			31	6,000	22	4,600	4,730	291,000	
The Year				200,000		2,000	9,720	7,035,000	40.4

*The high and the low for May and June combined.
**The high and the low for Aug., Sept. and Oct. combined.

RIO GRANDE AT RIO GRANDE CITY STATION—continued

Month 1926	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			10	6,200	24	4,400	5,030	309,000	
February			8	4,900	28	3,200	4,230	235,000	
March			29	5,600	26	3,300	3,640	224,000	
April			23	*77,000	19	*2,700	6,640	395,000	
May							8,520	524,000	
June			24	24,000	3	3,200	7,060	420,000	
July							8,940	550,000	
August			28	**20,000	16	**5,000	8,130	500,000	
September							9,340	556,000	
October							11,100	680,000	
November			1	***44,000	30	***3,800	5,710	340,000	
December			11	6,000	31	4,000	4,590	282,000	
The Year				77,000		2,700	6,930	5,015,000	28.8

*The high and the low for April and May combined.
**The high and the low for July, Aug. and Sept. combined.
***The high and the low for Oct. and Nov. combined.

Month 1927	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			31	4,300	30	3,300	3,970	244,000	
February			15	5,100	21	3,500	4,340	241,000	
March			31	4,700	29	2,400	3,400	209,000	
April			12	5,400	30	2,300	3,500	208,000	
May			15	8,200	2	2,400	3,110	191,000	
June			27	88,000	7	3,000	18,600	1,104,000	
July			10	16,000	17	5,000	9,450	581,000	
August			23	4,900	28	3,200	4,330	266,000	
September					23	*4,200	4,470	266,000	
October			11	*28,000			8,460	520,000	
November			16	3,800	13	3,100	3,530	210,000	
December			31	3,800	2	3,100	3,380	208,000	
The Year				88,000		2,300	5,870	4,248,000	24.4

*The high and the low for Sept. and Oct. combined.

Month 1928	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			9	5,000	31	3,200	3,810	234,000	
February							3,130	180,000	
March			2	*3,600	31	*2,300	3,480	214,000	
April			9	3,500	24	2,200	2,670	159,000	
May			15	73,000	3	2,100	11,700	719,000	
June			6	9,300	27	2,500	4,200	250,000	
July					7	**1,800	2,600	160,000	
August							6,990	430,000	
September			25	**61,000			16,400	974,000	
October			2	10,000	27	4,000	6,290	387,000	
November			11	6,400	30	4,500	5,550	330,000	
December			22	5,200	10	4,000	4,700	289,000	
The Year				73,000		1,800	5,960	4,326,000	24.8

*The high and the low for Feb. and March combined.
**The high and the low for July, Aug. and Sept. combined.

RIO GRANDE AT RIO GRANDE CITY STATION—continued

Month 1929	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			21	4,000	25	2,700	3,770	232,000	
February			3	3,600	28	2,400	3,260	181,000	
March			24	7,600	17	2,700	2,930	180,000	
April			10	8,500	30	2,100	3,430	204,000	
May			28	*27,500	12	*1,800	4,720	290,000	
June							3,870	230,000	
July							4,980	306,000	
August							4,720	290,000	
September			19	**34,000	5	**2,400	7,310	435,000	
October							5,460	336,000	
November			5	4,700	20	2,800	3,410	203,000	
December			17	17,000	10	2,500	3,660	225,000	
The Year				34,000		1,800	4,300	3,112,000	17.9

*The high and the low for May, June and July combined.
**The high and the low for Aug., Sept. and Oct. combined.

Month 1930	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			4	2,900	31	2,500	2,630	162,000	
February			18	6,400	28	1,800	2,680	149,000	
March			19	2,900	27	1,400	1,760	108,000	
April			27	23,000	15	1,200	4,050	241,000	
May			31	50,000	18	1,400	8,930	549,000	
June			13	79,000	7	4,100	17,500	1,041,000	
July			10	4,800	31	2,000	3,090	190,000	
August			21	7,900	2	2,600	4,280	263,000	
September			6	5,200	26	1,200	2,470	147,000	
October			9	50,000	6	1,800	19,500	1,196,000	
November			15	13,000	30	6,000	8,650	515,000	
December			1	5,800	27	4,100	4,780	294,000	
The Year				79,000		1,200	6,710	4,855,000	27.9

Month 1931	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low			Total	Per Sq. Mile
	High	Low	Dates		Dates				
January			31	*19,000	28	*3,700	4,230	260,000	
February							6,180	343,000	
March			18	6,600	31	3,300	4,230	260,000	
April			24	6,600	14	2,800	3,460	206,000	
May			24	24,000	19	4,800	9,300	572,000	
June			29	13,000	25	3,800	5,920	352,000	
July			19	68,000	10	3,800	10,900	671,000	
August			13	11,500	10	3,600	6,640	408,000	
September			1	4,400	26	2,700	3,380	201,000	
October			3	4,400	18	3,000	3,320	204,000	
November			26	3,200	1	2,500	2,920	174,000	
December			7	5,200	30	3,000	3,530	217,000	
The Year				68,000		2,500	5,340	3,868,000	22.2

*The high and the low for Jan. and Feb. combined.

RIO GRANDE AT MATAMOROS STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at the present station site.

RECORDS: Based upon frequent meter measurements. 1926 records fair.

RECORDS AVAILABLE: 1924 to 1935, inclusive.

REMARKS: Further details concerning this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1926

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4,800	4,700	2,800	3,375	6,250	2,625	4,400	5,350	10,750	7,400	8,700	3,280
2	4,775	4,675	2,550	3,550	6,675	2,600	4,375	5,700	14,300	6,000	26,200	3,000
3	4,775	4,550	2,225	3,425	10,800	2,675	4,475	5,925	16,000	5,500	22,000	2,820
4	4,800	4,375	2,025	3,250	14,500	2,675	7,000	6,750	15,200	5,180	15,000	2,800
5	4,900	4,225	1,850	3,225	11,200	3,600	19,500	10,000	12,200	4,600	9,700	3,000
6	5,050	4,050	1,875	2,850	12,300	4,825	24,000	12,600	11,000	4,450	8,000	3,380
7	5,375	4,075	2,100	2,625	16,000	6,800	23,000	12,000	10,900	5,450	7,300	3,400
8	5,475	4,150	2,475	2,325	18,200	6,500	12,500	9,500	8,300	8,850	6,900	3,150
9	5,225	4,025	2,250	2,200	16,500	5,575	8,500	7,775	6,825	7,720	5,500	2,900
10	5,275	3,725	2,025	2,275	11,100	5,200	6,500	7,925	5,550	8,100	5,200	2,820
11	5,550	3,450	1,950	2,450	7,650	5,725	5,700	7,400	5,150	6,650	4,450	3,120
12	5,100	3,425	1,675	2,800	6,500	6,850	5,100	6,000	5,050	5,600	4,300	3,880
13	5,075	3,400	1,750	2,425	6,050	7,000	4,875	5,250	4,900	4,880	4,220	4,720
14	5,050	3,600	1,850	2,375	5,875	6,300	4,650	5,100	4,725	4,300	4,350	4,700
15	4,900	3,700	2,175	3,000	6,900	5,700	4,375	5,125	4,175	3,880	4,300	4,180
16	4,800	3,475	2,525	3,125	6,600	5,450	5,225	5,100	3,950	3,780	4,120	3,950
17	4,825	3,125	2,875	2,775	5,900	4,150	8,600	4,925	6,200	9,500	3,920	4,050
18	4,600	3,100	3,275	2,700	5,375	3,525	8,500	4,550	12,200	22,600	3,750	4,320
19	4,500	3,100	3,475	2,700	5,225	3,100	7,100	4,025	13,500	22,000	3,650	4,500
20	4,350	3,050	3,600	2,350	4,950	3,075	6,550	3,775	12,800	19,500	3,580	4,420
21	4,275	3,075	3,750	2,525	4,625	3,200	9,600	3,525	11,300	13,700	3,650	4,350
22	4,250	3,250	3,925	1,875	5,250	2,950	12,500	3,600	9,500	10,400	4,180	4,350
23	4,200	2,975	3,925	2,225	7,050	4,500	10,000	3,800	7,600	8,000	4,250	4,250
24	4,450	2,500	3,800	25,000	6,150	6,600	7,900	3,500	6,850	6,900	4,150	4,200
25	4,600	2,425	3,775	29,000	5,375	18,000	6,350	3,175	6,300	6,380	3,900	4,100
26	4,650	2,250	3,600	12,500	4,350	22,400	5,626	3,075	6,700	7,100	3,750	4,080
27	4,500	2,225	3,525	6,650	3,625	14,300	5,475	2,950	7,100	8,200	3,480	4,080
28	4,450	2,450	3,675	7,400	3,075	9,400	7,900	2,925	6,425	8,100	2,480	3,950
29	4,600		3,800	7,975	2,850	5,700	8,800	4,100	5,600	7,500	3,880	3,720
30	4,700		3,550	9,200	2,775	5,000	6,800	13,800	7,750	6,950	3,650	3,650
31	4,775		3,200		2,775		5,600	14,000		7,000		3,700

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	6.25	4.50	11	5,550	23	4,200	4,800	295,000	
February	5.08	2.08	1	4,700	27	2,220	3,470	193,000	
March	4.18	1.22	22	3,920	12	1,680	2,830	174,000	
April	13.96	1.53	25	29,000	22	1,880	5,340	318,000	
May	11.83	3.00	8	18,200	30	2,700	7,500	461,000	
June	11.46	2.83	26	22,400	2	2,600	6,200	369,000	
July	12.57	5.17	6	24,000	2	4,380	8,430	519,000	
August	9.99	3.25	31	14,000	28	2,920	6,230	383,000	
September	10.68	4.90	3	16,000	16	3,950	8,630	513,000	
October	13.39	4.40	18	22,600	16	3,780	8,260	508,000	
November	15.48	4.15	3	26,200	27	3,480	6,450	384,000	
December	5.26	3.25	13	4,720	4	2,800	3,770	232,000	
The Year	15.48	1.22		29,000		1,680	6,010	4,349,000	24.8

RIO GRANDE AT MATAMOROS STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at the present station site.

RECORDS: Based upon frequent meter measurements. 1927 records fair.

RECORDS AVAILABLE: 1924 to 1935, inclusive.

REMARKS: Further details concerning this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1927

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,710	3,000	2,290	538	2,680	384	25,900	4,230	2,110	7,380	2,790	1,890
2	3,740	2,680	2,170	1,080	2,220	277	19,300	3,960	1,850	5,100	2,460	2,060
3	3,740	2,510	2,120	1,780	1,810	165	15,300	3,600	1,850	14,300	2,220	2,280
4	3,480	2,470	2,000	1,630	1,670	147	20,700	3,460	2,260	19,800	2,570	2,500
5	3,400	2,500	2,000	1,110	1,620	147	13,000	3,440	4,520	10,800	1,910	2,560
6	3,370	2,660	2,190	729	1,580	214	12,600	3,460	4,820	13,800	2,340	2,360
7	3,250	2,820	2,370	503	1,470	421	4,710	3,560	4,920	10,600	2,670	2,230
8	3,220	2,660	2,020	467	1,490	264	16,500	3,510	4,580	6,480	2,970	2,340
9	3,140	2,460	1,660	503	1,580	874	12,700	3,080	4,400	3,890	2,560	2,280
10	3,280	2,320	1,420	480	1,110	2,630	10,600	2,820	3,970	8,600	1,890	2,480
11	2,940	2,660	1,290	770	709	2,770	8,970	2,600	3,630	22,600	1,720	2,800
12	2,800	3,080	1,370	854	459	2,750	7,860	2,370	3,380	23,600	2,030	2,990
13	2,750	4,500	1,450	729	283	2,720	7,370	2,290	2,830	12,500	1,720	2,800
14	2,610	5,770	1,710	1,080	433	2,440	7,070	2,450	2,700	7,520	2,750	2,670
15	2,510	5,490	1,390	2,070	1,140	1,940	6,770	2,600	2,540	6,300	2,590	2,530
16	2,750	4,770	1,260	2,150	2,720	3,300	6,330	2,450	2,760	5,790	2,720	2,450
17	2,840	3,890	854	2,040	4,520	18,500	6,040	2,290	2,790	5,980	3,100	2,360
18	2,610	3,370	756	2,100	4,380	19,600	5,790	2,060	3,010	5,190	3,100	2,670
19	2,360	3,140	742	1,990	3,400	16,800	5,640	1,940	3,070	4,560	2,890	2,910
20	2,390	3,220	825	1,740	2,630	12,400	6,410	1,750	3,070	3,990	2,750	2,910
21	2,290	3,220	955	1,630	2,290	8,360	8,320	1,750	3,170	3,730	2,750	2,890
22	2,140	2,910	742	1,560	2,310	7,130	8,010	2,450	3,320	3,610	2,610	2,940
23	2,220	2,630	839	2,100	2,160	11,400	6,580	2,520	3,720	3,640	2,390	2,970
24	2,700	2,470	702	2,300	1,550	25,300	5,970	3,180	3,570	3,680	2,170	2,990
25	2,840	2,320	637	2,590	1,330	26,700	5,640	3,580	5,310	3,360	2,340	3,050
26	2,980	2,270	625	3,110	496	27,500	5,230	3,270	5,980	2,920	2,390	3,070
27	3,080	2,370	702	3,320	475	27,900	4,770	2,840	5,010	2,590	2,610	2,990
28	3,080	2,440	839	3,500	405	28,400	4,340	2,790	3,810	1,910	2,610	2,860
29	3,000		625	3,500	344	28,400	4,190	2,960	3,810	2,490	2,390	2,670
30	3,020		587	3,140	378	28,400	4,140	2,670	3,750	2,740	2,060	2,700
31	3,250		538		460		4,190	2,370		3,040		2,780

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	4.10	2.07	2	3,740	22	2,140	2,950	181,000	
February	6.43	2.23	14	5,770	26	2,270	3,090	172,000	
March	2.36	-0.92	7	2,370	31	538	1,280	78,700	
April	3.58	-1.08	28	3,500	10	467	1,700	101,000	
May	4.99	-2.03	17	4,520	29	283	1,620	99,400	
June	16.31	-2.95	28	28,400	5	147	10,300	611,000	
July	15.58	4.92	1	25,900	30	4,140	9,060	557,000	
August	5.05	1.57	1	4,230	21	1,750	2,850	175,000	
September	6.23	1.84	26	5,980	3	1,850	3,550	211,000	
October	14.86	2.23	12	23,600	28	1,910	7,500	461,000	
November	3.38	1.74	17	3,100	11	1,720	2,470	147,000	
December	3.35	1.94	26	3,070	1	1,890	2,640	163,000	
The Year	16.31	-2.95		28,400		147	4,080	2,957,100	16.9

RIO GRANDE AT MATAMOROS STATION

DESCRIPTION: Automatic water-stage recorder and cable with sit down cable car, located at the present station site.

RECORDS: Based upon frequent meter measurements. 1928 records fair.

RECORDS AVAILABLE: 1924 to 1935, inclusive.

REMARKS: Further details concerning this station will be found elsewhere in this bulletin.

Mean Daily Discharge in Second Feet and Annual Summary, 1928

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,100	1,980	2,410	0	572	4,970	421	3,580	4,720	11,000	3,280	3,690
2	3,200	1,770	2,210	0	188	6,500	463	5,060	6,630	9,460	3,440	3,690
3	3,130	1,650	2,330	0	107	6,250	556	4,780	7,610	8,310	3,660	3,720
4	3,050	1,680	2,890	0	95	5,160	658	4,180	8,260	8,100	3,890	3,580
5	2,970	1,950	3,030	0	264	4,570	606	3,750	7,610	7,950	4,060	3,610
6	3,000	2,400	2,620	0	1,580	4,150	508	3,170	6,290	7,880	4,000	3,800
7	3,100	2,450	2,330	0	5,060	4,540	381	2,790	6,390	7,730	4,060	4,270
8	3,280	2,090	2,180	0	5,320	5,640	540	3,000	6,220	3,950	3,800	4,570
9	3,390	1,680	1,840	64.3	6,570	6,080	658	3,640	5,710	6,850	3,800	4,360
10	3,420	1,710	1,770	852	5,630	4,000	556	4,400	7,350	6,300	4,240	4,150
11	3,690	2,090	2,140	1,590	4,720	4,300	556	3,830	12,800	6,150	5,630	3,920
12	3,750	2,690	2,410	1,980	4,000	3,500	556	3,860	12,400	5,980	7,170	3,660
13	3,470	2,920	1,620	1,930	3,950	3,200	493	7,350	16,000	5,880	5,320	3,360
14	3,130	2,670	751	1,770	6,110	2,620	770	16,200	18,700	5,780	4,470	3,020
15	3,070	2,380	790	1,500	21,200	2,550	982	7,760	9,290	5,510	4,330	2,920
16	3,130	2,240	588	1,470	24,800	2,500	1,000	5,060	6,430	5,220	4,330	3,200
17	2,820	2,130	449	1,070	25,300	2,450	606	4,360	6,430	4,810	4,720	3,640
18	2,500	2,060	556	959	23,800	2,240	478	3,310	12,000	4,510	4,970	3,750
19	2,220	2,110	694	810	18,200	2,270	623	4,510	17,300	4,300	5,030	3,580
20	2,020	2,180	694	751	12,000	3,390	713	4,750	16,500	4,240	4,720	3,610
21	2,040	2,060	407	751	8,470	3,980	790	4,060	10,800	4,150	4,390	3,750
22	2,330	2,130	296	852	7,280	3,440	831	3,830	8,000	4,270	4,060	3,780
23	2,870	2,130	233	872	6,780	2,770	1,000	3,690	9,350	4,240	3,970	3,950
24	3,070	2,060	163	1,250	8,650	2,270	588	3,950	19,800	3,950	3,920	4,270
25	2,920	2,060	155	1,600	8,740	1,830	407	4,600	24,800	3,610	4,150	4,360
26	2,650	2,130	163	2,220	7,060	1,180	368	5,880	25,400	3,390	4,120	4,210
27	2,360	2,270	148	2,200	5,980	946	1,000	5,980	23,200	3,470	3,970	3,890
28	2,380	2,240	107	1,980	5,290	606	2,210	4,970	18,400	3,640	3,800	3,420
29	2,430	1,980	59.7	1,620	4,600	524	2,970	4,240	15,300	3,800	3,580	3,200
30	2,520		7.42	937	3,950	407	3,010	4,030	13,200	3,690	3,610	3,340
31	2,270		0		3,500		2,150	4,090		3,360		3,440

Month	Mean Daily Gage Height—Feet		Mean Daily Second Feet				Average Second Feet	Acre Feet	
			High		Low				
	High	Low	Dates		Dates			Total	Per Sq. Mile
January	4.00	1.74	12	3,750	20	2,020	2,880	177,000	
February	2.99	.98	13	2,920	3	1,650	2,130	123,000	
March	1.87	-3.28	5	3,030	31	0	1,160	71,500	
April	2.03	-5.51	26	2,220	1-8	0	970	57,700	
May	15.91	-1.97	17	25,500	4	95	7,740	476,000	
June	6.86	- .89	2	6,500	30	407	3,290	196,000	
July	1.94	- .98	31	3,010	26	368	885	54,400	
August	12.43	2.82	14	16,200	7	2,790	4,800	295,000	
September	15.88	5.09	26	25,400	1	4,720	12,100	720,000	
October	10.01	3.54	1	11,000	31	3,360	5,540	341,000	
November	7.48	3.44	12	7,170	1	3,280	4,280	255,000	
December	4.92	2.99	8	4,570	15	2,920	3,730	230,000	
The Year	15.91	-5.51		25,400		0	4,130	2,996,600	17.1

AUTHENTICATED DISCHARGE RECORDS 1924-1935

The following tabulation shows where authenticated discharge records may be found for the years 1924 to 1935, inclusive, for the following gaging stations on the Rio Grande and its tributaries below San Marcial, New Mexico:

Name of Gaging Station	Records for the years (inclusive)	Considered Correct as Published in the following:
San Marcial	1924 - 1930	W. S. P. 628, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
El Paso	1924 - 1930	W. S. P. 588, 608, 628, 648, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Tornillo Bridge	1924 - 1927	W. B. No. 5
	Oct. 1927 - 1930	W. S. P. 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Fort Quitman	1924 - 1930	W. S. P. 588, 608, 628, 648, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
La Nutria	June Dec. 1935 - 1935	W. B. No. 5
Upper Presidio	1924 - 1925	W. S. P. 588, 608, 628
	*1926	W. B. No. 4
	1927 - 1928	W. B. No. 4
	1929 - 1930	W. B. No. 3
	1931 - 1932	W. B. Nos. 1, 2
	**1933	W. B. Nos. 3, 4
	1934 - 1935	W. B. Nos. 4, 5
Rio Conchos	1924 - 1935	W. B. No. 5
Lower Presidio	*1924 - 1926	W. B. No. 4
	1927 - 1928	W. B. No. 4
	1929 - 1930	W. B. No. 3
	♦1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Alamito Creek	1932 - 1935	W.B.Nos. 2,3,4,5
Terlingua Creek	1932 - 1935	W.B.Nos. 2,3,4,5
Boquillas	June 1924 - 1928	W. B. No. 5
	June 1928 - 1930	W. S. P. 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Lozier Creek	1932 - 1935	W.B.Nos. 2,3,4,5
Langtry	*1924 - 1927	W. B. No. 4
	1928 - 1930	W. S. P. 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Pecos River	1924 - 1930	W. S. P. 588, 608, 628, 648, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Goodenough Spring	1924 - 1929	W. B. No. 5
	Feb. 1929 - 1930	W. S. P. 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Devils River	1924 - 1930	W. S. P. 588, 608, 628, 648, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Cienegas Creek	Sept. June 1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Del Rio	**1924	W. S. P. 588, W. B. No. 4
	1925 - 1930	W.S.P. 608, 628, 648, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
San Felipe Creek	Sept. 1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Sycamore Creek	May 1932 - 1935	W.B.Nos. 2,3,4,5

W.S.P. - Water Supply Papers of the U. S. Geological Survey.
W. B. - Water Bulletins of this Commission.
*Previously published but revised in above reference.
♦Station moved June, 1932.
**Partial revision in the last named Water Bulletin.

AUTHENTICATED DISCHARGE RECORDS 1924-1935—continued

Name of Gaging Station	Records for the years (inclusive)	Considered Correct as Published in the following:
Pinto Creek	Nov. 1928 - 1930	W. S. P. 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Rio San Diego	Oct. 1924 - 1932	Not Published
	Oct. 1932 - 1935	W. B. Nos. 2, 3, 4, 5
Los Moras Creek	1932 - 1935	W.B.Nos. 2,3,**4,5
Rio San Rodrigo	1924 - 1931	Not Published
	1932 - 1935	W.B.Nos. 2,3,4,5
Eagle Pass	*1924 - 1926	W. B. No. 4
	1927 - 1930	W.S.P. 648, 668, 688, 703, 718
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Rio Escondido	1924 - 1931	Not Published
	1932 - 1935	W.B.Nos. 2,3,4,5
Laredo	*1924 - 1925	W. B. No. 4
	**1926	W. B. Nos. 4, 5
	1927 - 1928	W. B. No. 4
	1929 - 1930	W. B. No. 3
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Dolores Creek	1932 - 1935	W. B. Nos. 2, 3, 4, 5
Rio Salado	1924 - 1928	W. B. No. 5
	1929 - 1930	W. B. No. 3
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Zapata	1932 - 1935	W. B. Nos. 2, 3, 4, 5
El Tigre Creek	1932 - 1935	W. B. Nos. 2, 3, 4, 5
Rio Alamo	1924 - 1928	W. B. No. 5
	1929 - 1930	W. B. No. 3
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Roma	Feb. 1924 - 1929	W. B. No. 5
	Mar. 1929 - 1930	W. S. P. 688, 703, 718
	1931	W. B. No. 1
	**1932	W. B. Nos. 2, 3
	1933 - 1935	W.B.Nos. 3,4,5
Rio San Juan	1924 - 1928	W. B. No. 5
	1929 - 1930	W. B. No. 3
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Los Olmos Creek	1932 - 1935	W.B.Nos.2,3,4,5
Rio Grande City	1924 - 1931	W. B. No. 5
	1932 - 1935	W.B.Nos. 2,3,4,5
Hidalgo	July 1928 - 1930	W. S. P. 668, 688, 703, 718
	1931	W. B. No. 1
	Sept. Oct. 1932 - 1932	W. B. No. 2
	Sept. 2-21 1933	W. B. No. 3
	Apr.7-June 5 Sep.6-Oct. 3 1934	W. B. No. 4
Mercedes Bridge	Sept. Oct. 1932 - 1932	W. B. No. 2
	Apr.29-Oct.3 1935	W. B. No. 5
Matamoros	Sep. 1924 - 1926	W. S. P. 588, 608, 628
	Oct. 1926 - 1928	W. B. No. 5
	1929 - 1930	W. B. No. 3
	1931 - 1935	W. B. Nos. 1, 2, 3, 4, 5
Lower Brownsville	1934 - 1935	W. B. Nos. 4, 5

W.S.P. - Water Supply Papers of the U. S. Geological Survey.
W. B. - Water Bulletins of this Commission.
*Previously published but revised in above reference.
•Station moved June, 1932.
**Partial revision in the last named Water Bulletin.