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WATER BULLETIN NUMBER 36

Flow of the Rio Grande and Related Data

From Elephant Butte Dam, New Mexico to the Gulf of Mexico

1966

STORAGE IN MAJOR RESERVOIRS
SOURCES OF RIVER FLOW
DIVERSIONS
SUSPENDED SILT
CHEMICAL ANALYSES
SANITARY ASPECTS OF WATER QUALITY
METEOROLOGIC DATA
DRAINAGE BASIN AND IRRIGATED AREAS

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FOREWORD

This bulletin presents the thirty-sixth compilation of the stream discharges and related data concerning the international portion of the Rio Grande, prepared jointly by the United States and Mexican Sections of the International Boundary and Water Commission. The stream flow data and kindred subjects pertain to the Rio Grande and its important tributaries near their confluence with the main stream from Elephant Butte, New Mexico to the Gulf of Mexico. The first publication in the series was Water Bulletin No. 1 for the year 1931. The present volume contains the information for the year 1966.

International stream gaging on the Rio Grande was initiated in 1889, when the station at El Paso, Texas was established. Several stations on the Rio Grande and its tributaries downstream from El Paso were established in 1900 and operated until 1914. Between 1914 and 1923, except for a few months in 1919 and 1920, all stream-gaging work on the international reach of the river was suspended. In 1923 the work was resumed and carried on independently by the two countries until 1931 when the present joint program of stream measurements was adopted.

During 1966, the United States Section of the Commission operated the stream-gaging stations on the Rio Grande at El Paso, American Dam, Island, County Line, Fort Quitman, Above Río Conchos, Below Río Conchos, Johnson Ranch, Foster Ranch, Langtry, Below Amistad Dam, Del Rio, San Antonio Crossing, Fort Ringgold, San Benito, and Brownsville. The Mexican Section operated the stream-gaging stations on the Rio Grande below Maverick Dam near Quemado, Eagle Pass, Palafox, Laredo, Below Anzaldúas Dam, and Progreso. The station at Falcon Dam was operated jointly by the two Sections. Each Section operated the gaging stations on tributary streams, floodway, and diversions within its own country.

The total drainage area within the outer rim of the Rio Grande Basin is 335,500 square miles. However, nearly half of this area yields no runoff to the river, the estimated productive area of the watershed being 182,215 square miles. Reservoirs in the basin have a total storage capacity of approximately 9,949,300 acre-feet, in addition to the International Falcon Reservoir, which has a conservation capacity of 2,400,000 acre-feet. In the Rio Grande Basin a rounded total of 1,840,000 acres is irrigated below Elephant Butte Dam on the Rio Grande and below Girvin on the Pecos River. The residual flow from the Rio Grande that escaped to the Gulf of Mexico prior to construction of Falcon Dam averaged 2,600,000 acre-feet per year for the period 1934-1952. For the period 1954-1966, the residual flow has averaged 426,500 acre-feet per year.

Acknowledgments

Other agencies which have contributed to some part of the data published herein include: The Agricultural Research Service and the Soil Conservation Service of the U. S. Department of Agriculture; the Bureau of Reclamation and the Geological Survey of the U. S. Department of the Interior; the Weather Bureau of the U. S. Department of Commerce; the Texas Board of Health; the Texas Water Development Board; the Sanchez Ditch and Reservoir Company; the Middle Rio Grande Conservancy District; the Red Bluff Water Power Control District; the New Mexico State Engineer Office; the Rio Grande Compact Commission; the Willacy County Water Control and Improvement District No. 1; the El Paso Department of Water and Sewerage; the Maverick County Water Control and Improvement District No. 1; the Del Rio City Water Department; the Eagle Pass City Water Department; the Laredo City Water Department; the Del Mar Conservation District; Central Power and Light Company; the Special Water Master of the 93rd District Court of Texas; the Ministry of Hydraulic Resources of Mexico; the Ministry of Agriculture and Livestock of Mexico; the Meteorological Service of Mexico; Meteorological Service of the State of Chihuahua, Mexico; Industrial Electric S. A. of Mexico; the Federal Board of Public Improvement Works of Nuevo Laredo, Tamaulipas; and the Water and Drainage Board of Matamoros, Tamaulipas.

Additional contributions have been made by individuals and corporations and specific notation is made for such, as well as for those of the above-named agencies, where the data appear. The courtesy and cooperation of those who made these contributions are acknowledged with our appreciation.

Period Averages

In Water Bulletins Nos. 1 through 29, normal or average discharge volumes shown for the various gaging stations were based on a period beginning in 1924, or thereafter when records became available.

Beginning with Water Bulletin No. 30, the periods have been revised to include only the years following completion of major projects below which the flow of the Rio Grande or a major tributary was modified, or later when records became available. The revised periods are based on the completion of Caballo Dam in 1938; the completion in 1947 of irrigation projects on the Río Conchos and its tributaries; and the construction of International Falcon Dam which was completed in 1953.

For purposes of comparison with the average flows in the Rio Grande below Caballo Dam, records of average discharge in the Rio Grande below Elephant Butte Dam have also been revised to include the same period.

The period of record used to determine the average diversions from the Rio Grande to the United States below Falcon Dam published herein was restricted to 1957, the first complete year of record after United States' waters in Falcon Reservoir were placed under the jurisdiction of the 93rd District Court of Texas.

Units of Measure

Data collected by the Mexican Section are initially computed in metric units but are reported in this Bulletin in English units. The monthly volumes in thousands of cubic meters reported by the Mexican Section are converted to acre-feet by multiplying these volumes by 0.81071. The results are reported to the nearest acre-foot and, when the volume is less than one hundred acre-feet, to the nearest tenth of an acre-foot.

GENERAL HYDROLOGIC CONDITIONS FOR 1966

Along and Adjacent to the International Portion of the Rio Grande

During the year 1966, temperatures were about 98% of normal on the watershed of the Rio Grande below El Paso, Texas. Evaporation averaged 87% of normal. Precipitation was 105% of normal from El Paso to Amistad Dam, 109% of normal from Amistad Dam to Falcon Dam, 138% of normal from Falcon Dam to Rio Grande City, and 127% of normal in the Lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande was below normal from El Paso to above Río Conchos and above normal from below Río Conchos to the Gulf of Mexico. Releases from Falcon Reservoir were below normal. In the reach between El Paso and the confluence of the Río Conchos with the Rio Grande the range was from 78% of normal at El Paso Station to 12% of normal at County Line Station; in the reach between the Río Conchos confluence with the Rio Grande and the vicinity of the Big Bend the yearly flow was about 190% of normal; in the reach from the vicinity of Langtry to the Devils River confluence it was about 160% of normal; in the Amistad Dam-Del Rio area it was about 120% of normal; and from Eagle Pass to Falcon Dam it was about 110% of normal. All flows passing Rio Grande gaging stations below Falcon Dam were partly regulated by releases from Falcon Reservoir. Such releases in 1966 were 79% of the average for the thirteen years of operation, 1954 through 1966. The volume of flow wasted to the Gulf of Mexico was 876,750 acre-feet, or 206% of the average for this thirteen year period.

The total annual flow of all measured tributaries below Fort Quitman was 109% of normal. The total flow of these tributaries in the United States was 787,000 acre-feet or 83% of normal. For Mexico, the measured tributary flow excluding Río Alamo and Río San Juan was 1,449,400 acre-feet or 136% of normal. The flow of the Río Alamo and Río San Juan was 64% and 126% of their respective normals.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 667,150 acre-feet or 115% of the eighteen year average. Return flow to the Rio Grande through various drains in the Maverick County Irrigation District excluding storm inflow amounted to 217,980 acre-feet, or 100% of the eight year average. There was no return flow through Ponsente Drain in 1966.

The only flood of consequence occurred in the Presidio-Ojinaga area, the results of persistent and, at times, heavy precipitation on the Río Conchos watershed and in the Rio Grande basin between El Paso and Presidio, Texas. These rains, which began falling the latter part of August and continued throughout the first half of September as an almost daily occurrence, caused the Rio Grande to overflow its banks for several days and flood about 80% of the farm land located on the flood plain from Fort Quitman to the lower end of the Presidio Valley. The flood reached a peak of 18,600 second-feet on the Rio Grande at the Below Río Conchos Gaging Station. The flood volume which passed this station was 380% of the combined 1948-1966 period average for August and September.

For all reservoirs in the Rio Grande basin having capacity greater than 15,000 acre-feet, excepting Falcon International Reservoir, the average amount of water in storage in 1966 was 3,159,900 acre-feet or 86% of the normal 3,667,700 acre-feet. In the United States, stored water in these reservoirs averaged 64% of normal while in Mexico the average was 98% of normal. In International Falcon Reservoir, there was a net increase in storage during the year of 731,600 acre-feet. The storage varied from a high of 2,627,300 acre-feet on November 1 to a low of 1,845,800 acre-feet on January 1 and averaged 2,273,000 acre-feet during the year or 133% of the average for the thirteen years of operation, 1954 through 1966.

Diversions from the Rio Grande in the United States were, on the average, 89% of normal. Diversions into the American Canal were 83% of normal; into Maverick Canal 110% of normal; and in the United States below Falcon Dam 71% of the average for the ten years, 1957-1966. In Mexico, diversions averaged 70% of normal. Diversions into the Acequia Madre were 103% of normal while diversions through the Anzaldúas Canal for irrigation in Mexico were 68% of the thirteen year average.

In 1966, the total reported irrigated acreage from the Rio Grande and its tributaries below El Paso, Texas showed a decrease of 19% from the previous year. On the United States side, there was no appreciable change above or below Falcon Dam. On the Mexican side, there were decreases of 18% above and 42% below Falcon Dam for an over-all average decrease of 32%.

The 1966 investigation of the quality of Rio Grande water extended from El Paso to Brownsville, Texas. The annual tonnage of salts carried by the river above Falcon Dam was 81% of the 1935-1966 normal. The volume of suspended silt transported by the Rio Grande in 1966 was 144% of average for sampling stations above Falcon Dam and 146% of average for sampling stations below Falcon Dam, ranging from 244% of average at Below Anzaldúas Dam Gaging Station to 37% of average at Below Falcon Dam Station.

RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the left bank 100 feet upstream from the cableway at latitude 33°08'45", longitude 107°12'20", and river mile 1,383.2; 0.7 river mile downstream from Elephant Butte Dam, 1.5 river miles upstream from Cuchillo Negro River, and 135.1 river miles upstream from the American Dam at El Paso, Texas. The zero of the gage is 4,242.09 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 discharge measurements during the year and a continuous record of gage heights. Records were furnished by the United States Geological Survey. Records available: 1915 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Beginning December 1940, hydroelectric power generation facilities for 27,000 kva were placed in operation at Elephant Butte Dam.

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet

Daily:	Max.	8,220	May 22, 1942	Min.	0	Occasionally
Monthly:	Max.	7,600	May 1942	Min.	2.6	Nov. 1961 & Nov. 1964
Yearly:	Max.	2,510	1942	Min.	253	1964

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.5	⇑1,470	1,870	⇑1,850	1,910	1,860	⇑1,270	1,260	510	2.2	5.1	5.5
2	⇑5.1	1,600	1,850	1,850	1,880	1,860	1,250	1,240	502	2.5	5.1	5.1
3	5.1	1,600	1,870	1,850	1,910	1,860	1,240	1,250	510	2.9	4.6	5.5
4	9.0	1,600	1,870	1,840	1,910	1,860	1,230	1,260	33.0	2.8	4.6	5.5
5	11.0	1,600	1,850	1,840	1,910	1,850	1,230	1,260	18.0	2.8	4.6	5.5
6	8.8	1,600	1,870	1,850	1,920	1,850	1,380	1,260	15.0	2.6	4.6	5.5
7	8.2	1,610	1,870	1,850	1,920	1,850	1,800	1,250	10.0	3.4	⇑4.6	5.6
8	7.7	1,610	1,880	1,840	1,920	1,790	1,250	1,260	9.7	2.9	5.3	5.5
9	7.5	1,600	1,880	1,850	1,910	1,850	1,240	1,270	12.0	2.6	4.5	4.9
10	7.2	1,600	1,880	1,850	1,910	1,860	1,240	1,240	⇑10.0	2.6	3.8	4.6
11	6.5	⇑1,600	1,880	1,850	1,910	1,860	1,240	1,270	10.0	2.6	3.8	4.6
12	6.2	1,610	1,880	1,840	1,900	1,860	1,250	1,270	9.0	⇑2.6	3.6	4.6
13	6.0	1,610	1,880	1,840	⇑1,890	1,850	1,240	802	9.0	2.7	3.4	5.1
14	⇑6.0	1,610	1,880	1,840	1,890	⇑1,860	1,250	810	8.5	2.8	3.4	5.1
15	5.6	1,610	1,870	1,700	1,870	1,860	⇑1,240	⇑818	8.0	2.6	3.4	⇑5.1
16	5.1	1,610	⇑1,870	1,850	1,870	1,860	1,240	806	7.5	2.7	3.4	5.1
17	5.1	⇑1,610	1,870	1,840	1,870	1,260	1,240	808	7.0	3.0	3.4	5.1
18	5.3	1,610	1,610	1,850	1,860	1,240	1,240	848	6.5	3.4	3.4	4.9
19	5.5	1,620	1,870	1,860	1,860	1,250	1,250	830	6.0	3.0	3.2	4.2
20	9.0	1,610	1,870	1,440	1,860	1,250	1,240	830	5.5	3.0	3.0	7.1
21	14.0	1,600	1,870	⇑1,870	1,850	1,250	1,250	821	5.0	3.0	3.0	8.5
22	13.0	1,600	1,860	1,860	1,830	1,260	1,240	820	4.5	3.0	8.1	8.0
23	12.0	1,600	1,870	1,850	1,830	1,260	1,260	815	4.0	3.0	8.6	7.5
24	11.0	1,620	1,870	1,860	1,810	1,280	1,250	820	3.5	3.4	8.3	7.5
25	42.0	1,610	1,870	1,850	1,860	1,270	1,240	⇑832	⇑3.3	⇑8.0	⇑7.7	7.0
26	39.0	1,610	1,870	1,840	1,840	1,270	⇑1,260	518	3.4	15.0	7.7	7.6
27	15.0	1,580	1,860	1,840	1,800	1,270	1,250	182	2.8	12.0	7.5	⇑6.0
28	23.0	⇑1,590	1,850	1,860	1,890	1,270	1,250	497	2.2	9.5	6.6	5.5
29	15.0		1,830	1,880	1,860	1,260	1,250	508	1.8	7.5	5.5	5.5
30	14.0		1,850	⇑1,900	1,860	1,250	1,250	504	1.4	7.0	5.5	5.5
31	27.0		1,850		⇑1,870		1,250	353		6.3		5.5
Sum	360.4	44,800	57,620	54,990	58,180	47,280	39,310	28,312	1,738.6	133.4	149.3	178.2

Month	Current Year 1966: Extreme Gage Feet High	Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1966: Acre-Feet Average	Maximum	Minimum
Jan.			25	42.0	†2	5.1	11.6	715	32,108	86,500	200
Feb.			†19	1,620	1	1,470	1,600	88,861	43,414	88,861	188
Mar.			†8	1,880	18	1,610	1,860	114,289	65,721	119,000	1,520
Apr.			30	1,900	20	1,440	1,830	109,073	77,765	162,000	24,000
May			†6	1,920	27	1,800	1,880	115,400	78,888	467,000	512
June			†1	1,860	18	1,240	1,580	93,780	89,973	363,000	16,913
July			7	1,800	†4	1,230	1,270	77,971	92,713	211,000	41,352
Aug.			†9	1,270	27	182	913	56,157	76,443	134,000	9,530
Sept.			†1	510	30	1.4	58.0	3,449	37,295	129,000	163
Oct.			26	15.0	1	2.2	4.3	265	23,116	72,100	166
Nov.			23	8.6	†20	3.0	5.0	296	22,868	158,000	152
Dec.			21	8.5	19	4.2	5.8	353	23,927	87,300	179
Yearly				1,920		1.4	912	660,609	664,231	1,818,800	183,415

† And other days Ø Mean daily ⇑ Discharge measurement made on this day

RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 32° 53' 05", longitude 107° 17' 30", and river mile 1,355.0; 0.8 river mile downstream from Caballo Dam, about 3 miles northeast of Arrey, New Mexico, 5 miles south of Caballo, New Mexico, and 106.8 river miles upstream from the American Dam at El Paso, Texas. The zero of the gage is 4,140.90 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 53 discharge measurements during the year and a continuous record of gage heights. Records were furnished by the El Paso office of the United States Bureau of Reclamation. Records available: 1938 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 1,062 acre-feet of water were diverted in 1966 into Bonita Lateral, a small irrigation canal just below Caballo Dam. Prior to 1938, discharge records were kept at Percha Dam, a low diversion dam about 1.5 miles downstream from this station. Small accretions to the river take place between the station and Percha Dam.

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet

Daily:	Max.	7,650	May 20, 1942	Min.	0.1	Oct. 31 - Nov. 14, 1954; Nov. 7 - Dec. 31, 1955.
Monthly:	Max.	6,710	May 1942	Min.	0.1	Nov. & Dec. 1955
Yearly:	Max.	2,480	1942	Min.	284	1964

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.7	⇑ 0.9	1.0	2,990	755	1,360	713	1,780	1,280	1.4	1.1	1.2
2	.7	.9	1.0	2,850	728	1,360	819	1,960	1,240	1.3	1.1	1.2
3	.7	.9	1.0	⇑ 2,640	740	1,320	⇑ 819	⇑ 1,640	1,190	1.3	1.1	1.2
4	.7	.9	1.0	2,510	⇑ 783	⇑ 1,290	808	1,170	1,210	1.2	1.3	1.2
5	⇑ .7	.9	233	2,320	822	1,310	929	1,470	1,100	1.2	1.5	1.2
6	.7	.9	968 ⇑	⇑ 2,060	883	1,320	1,080	1,200	863	1.1	1.7	1.2
7	.8	⇑ .9	1,000 ⇑	1,790	975	1,420	1,160	1,400	841	⇑ 1.1	1.9	1.2
8	.8	.9	1,020	1,460	1,060	⇑ 1,540	1,220	1,320	788	1.1	2.1	1.2
9	.9	.9	1,150 ⇑	⇑ 1,320	⇑ 1,130	1,660	1,160	⇑ 1,530	⇑ 819	1.2	⇑ 2.3	1.2
10	.9	.9	1,260	1,300	1,190	1,890	1,150	1,660	807	1.2	2.5	1.2
11	⇑ 1.0	.9	1,540 ⇑	1,300	1,260	1,920	1,180	1,660	796	1.2	2.4	1.2
12	1.0	.9	1,820 ⇑	1,190	⇑ 1,270	1,780	⇑ 1,690	1,650	784	1.2	2.4	1.2
13	1.0	.9	1,960 ⇑	1,090	1,270	1,700	2,260	1,620	1,050	1.3	2.3	1.2
14	.9	⇑ .9	1,980	1,050	1,240	1,810	⇑ 2,470	1,800	1,260	1.3	2.2	1.2
15	.9	.9	2,140	1,070	1,220	⇑ 1,900	2,600	⇑ 1,850	1,180	1.3	2.2	1.2
16	.9	.9	2,300 ⇑	1,080	1,180	1,920	⇑ 2,690	⇑ 2,080	1,070	1.4	2.1	1.2
17	⇑ .9	.9	2,310 ⇑	⇑ 1,020	1,130	1,960	2,690	2,250	869	1.4	2.0	1.2
18	.9	1.0	2,440 ⇑	894	⇑ 1,170	1,940	2,560	2,170	262	1.4	2.0	1.2
19	.9	1.0	2,560 ⇑	842	1,270	1,840	2,630	1,990	8.0	1.4	1.9	1.2
20	.9	1.0	2,920	859	1,250	1,780	2,780	1,510	2.0	1.5	1.8	1.2
21	.9	⇑ 1.0	2,980 ⇑	894	1,180	1,980	2,780	1,100	⇑ 1.5	⇑ 1.5	1.8	1.2
22	.9	1.0	2,800	882	1,240	⇑ 2,080	⇑ 2,730	1,310	1.5	1.5	1.7	1.2
23	.9	1.0	2,900	832	1,270	2,060	2,680	1,140	1.5	1.4	1.7	1.2
24	.9	1.0	2,960	842	1,360	2,170	2,660	977	1.5	1.3	1.6	1.2
25	⇑ .9	1.0	3,180	801	⇑ 1,440	2,280	2,630	951	1.5	1.2	1.5	1.2
26	.9	1.0	3,410 ⇑	807	1,380	1,950	2,460	967	1.5	1.1	1.5	1.2
27	.9	1.0	3,200	788	1,320	1,460	2,340	⇑ 862	1.5	⇑ 1.1	1.4	1.2
28	.9	1.0	2,930	⇑ 726	1,280	1,080	2,320	880	1.5	1.1	1.3	1.2
29	.9		2,820 ⇑	716	1,280	⇑ 646	2,140	957	1.4	1.1	1.3	1.2
30	.9		2,900	763	1,210	177	1,900	1,180	1.4	1.1	⇑ 1.2	1.2
31	.9		3,040		1,280		1,790	1,340		1.1		1.2
Sum	26.8	26.3	60,725.0	39,686	35,566	48,903	59,838	45,374	17,433.8	39.0	52.9	37.2

Month	Current Year 1966: Extreme Gage Feet High	Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1966: Acre-Feet Average	Maximum	Minimum
Jan.			† 11	1.0	† 1	0.7	0.9	53.2	583	4,850	19.2
Feb.			† 18	1.0	† 1	.9	.9	52.2	8,551	64,300	13.0
Mar.			26	3,410	† 1	1.0	1,960	120,448	80,109	135,000	24,900
Apr.			1	2,990	29	716	1,320	78,717	87,329	212,000	25,470
May			25	1,440	2	728	1,150	70,545	79,109	412,000	75.2
June			25	2,280	30	177	1,630	96,999	109,129	354,000	36,268
July			† 20	2,780	1	713	1,930	118,689	116,105	234,000	28,200
Aug.			17	2,250	27	862	1,460	89,999	109,736	179,000	20,500
Sept.			1	1,280	† 29	1.4	581	34,580	50,965	181,000	7,730
Oct.			† 20	1.5	† 6	1.1	1.3	77.4	5,751	35,400	15.5
Nov.			10	2.5	† 1	1.1	1.8	105	3,076	14,400	7.0
Dec.			† 1	1.2	† 1	1.2	1.2	73.8	3,189	19,100	6.0
Yearly				3,410		0.7	843	610,338.6	653,632	1,795,670	206,084.6

† And other days ø Mean daily ⇑ Discharge measurement made on this day

RIO GRANDE AT EL PASO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the downstream side of the first pier from the left abutment of the Courchesne Bridge at latitude 31° 48' 10", longitude 106° 32' 25", and river mile 1,249.9; 5.6 river miles upstream from the Santa Fe Street-Juárez Avenue Bridge between El Paso, Texas and Cd. Juárez, Chihuahua and 1.7 miles upstream from the American Dam at El Paso, Texas. The zero of the gage is 3,722.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Mean daily discharges in 1966 were computed by adding the flows in the American Canal and the flows at the river station below the American Dam. Because the mean daily discharges are rounded, the monthly sum for this station may not equal the sum of the monthly sums of the other two stations. Extreme discharges are those passing the El Paso station, where measurements are made only during high flows. Records available: 1889 through 1966.

REMARKS: Reservoir, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 24,000 second-feet on June 12, 1905. Min. occasionally no flow. Since Elephant Butte Dam was closed in 1915, the largest peak flow to pass this station was 13,500 second-feet on September 3, 1925.

Average Flow in Second-Feet

Daily:	Max.	23,680	June 12, 1905	Min.	0	Occasionally
Monthly:	Max.	14,300	June 1905	Min.	0	Occasionally
Yearly:	Max.	2,780	1905	Min.	70.1	1902

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.7	13.8	12.1	1,210	292	584	1,120	1,020	352	144	83.9	79.8
2	16.2	14.4	11.9	1,130	348	554	637	987	346	139	81.4	82.3
3	15.4	12.8	10.6	1,200	387	636	515	1,080	332	135	84.5	77.8
4	14.9	13.6	10.1	1,010	262	633	662	1,870	362	134	84.6	73.4
5	15.3	14.5	10.8	978	221	630	689	1,070	516	132	80.9	72.8
6	15.4	15.4	11.2	1,090	243	637	589	779	716	131	80.0	74.5
7	15.5	15.2	11.3	979	246	672	473	1,120	740	133	80.1	74.9
8	15.9	16.7	11.5	846	263	655	399	834	511	131	80.0	73.8
9	16.0	13.8	106	714	361	668	468	1,110	436	126	81.2	73.5
10	16.1	12.7	364	607	400	734	437	743	310	118	82.6	71.0
11	16.2	12.5	384	524	489	1,000	590	794	276	120	80.4	72.2
12	15.8	12.9	422	589	463	1,210	497	817	307	118	80.0	74.8
13	15.8	11.1	577	568	492	1,090	419	757	282	110	80.0	77.4
14	16.0	11.3	797	546	513	915	758	870	272	108	79.2	80.7
15	16.0	13.4	705	420	579	833	1,040	743	268	98.9	80.7	76.7
16	15.6	14.5	760	425	631	824	1,110	756	312	100	81.4	75.6
17	15.6	16.4	975	424	616	875	1,170	886	387	98.6	80.7	75.3
18	15.8	14.0	752	556	588	862	1,140	836	408	96.9	78.6	74.9
19	16.0	14.0	718	566	513	917	1,180	999	562	92.0	77.4	76.2
20	15.8	12.6	1,140	465	460	929	1,020	1,000	450	89.4	76.7	75.1
21	16.0	11.5	1,560	373	498	897	1,020	1,820	356	92.7	78.2	76.8
22	15.8	12.6	1,640	315	511	778	1,290	1,140	262	92.7	76.4	78.1
23	16.3	12.4	1,320	333	426	818	1,090	746	216	89.3	75.9	75.3
24	16.1	11.5	1,430	368	468	767	1,160	850	216	86.1	77.1	68.3
25	16.3	13.3	1,180	402	557	735	1,200	876	188	86.0	77.6	67.9
26	14.9	14.0	1,410	415	581	952	1,870	826	177	85.6	78.7	73.3
27	16.5	12.9	1,650	366	673	1,670	1,160	594	180	87.2	77.7	75.1
28	23.3	12.2	1,520	365	661	1,230	1,110	515	169	88.1	80.5	71.3
29	16.5		1,170	394	596	932	968	420	157	83.7	79.5	68.0
30	15.2		965	324	592	1,340	1,080	370	147	84.0	77.3	72.5
31	15.0		937		579		1,060	360		88.9		68.6
Sum	496.9	376.0	22,571.5	18,502	14,509	25,977	27,421	27,588	10,213	3,319.1	2,393.2	2,307.9

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1966 Acre-Feet Average	Maximum	Minimum
Jan.	1.82	1.78	28	ø 23.3	31	13.9	16.0	986	6,738	15,100	220
Feb.	1.83	1.75	8	25.9	14	10.2	13.4	746	8,485	52,200	136
Mar.	5.09	1.73	28	1,700	4	9.5	728	44,771	32,679	62,500	1,790
Apr.	5.08	3.36	3	1,350	30	286	617	36,699	45,589	139,000	6,820
May	4.45	3.15	27	692	5	210	468	28,779	49,561	357,000	522
June	5.68	4.05	27	2,060	1	532	866	51,525	56,926	304,000	6,020
July	6.32	3.55	26	3,790	7	367	885	54,390	62,120	198,000	9,652
Aug.	6.63	3.35	4	4,560	31	334	890	54,721	60,166	158,000	4,870
Sept.	4.75	2.77	7	879	30	135	340	20,257	42,651	171,000	2,430
Oct.	2.82	2.48	1	150	29	79.3	107	6,583	15,491	57,900	151
Nov.	2.52	2.46	10	86.5	23	66.7	79.8	4,747	9,245	21,300	229
Dec.	2.49	2.31	29	86.0	29	52.7	74.4	4,578	8,943	25,600	206
Yearly	6.63	1.73		4,560		9.5	427	308,782	398,594	1,559,200	57,481

ø Mean daily

DIVERSIONS FROM THE RIO GRANDE
AMERICAN CANAL AT EL PASO, TEXAS

DESCRIPTION: Concrete control consisting of two triangular-shaped wingwalls extending toward the center of the canal about one-fourth of the canal width and downstream at a 30° angle with the canal side walls, bubbler gage, water-stage recorders (graphic and digital), and binary decimal transmitter located on the right bank of the concrete-lined canal at El Paso, Texas, latitude 31° 46' 40", longitude 106° 31' 25", and about 2,400 feet downstream from the headgates of the American Dam which are located at river mile 1,248.2. The zero of the gage is 3,712.09 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 49 discharge measurements during the year, a stable rating curve at medium and high flows, and a continuous record of gage heights. Records available: June 2, 1938 through 1966.

REMARKS: This canal diverts water from the Rio Grande at the American Dam at El Paso, Texas, 2.1 river miles upstream from the International Dam at Juárez, Chihuahua. Water from this canal discharges into the Franklin Canal from which water is frequently returned to the Rio Grande at spillways 2.2, 2.7, and 3.6 river miles downstream from the American Dam. The transmitter relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,840 second-feet on March 27, 1944. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max.	1,510	Aug. 13, 1945	Min.	0	Frequently
Monthly:	Max.	1,210	Aug. 1943	Min.	0	Frequently since 1952
Yearly:	Max.	748	1943	Min.	65.6	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	⇑ 9.8	⇑ 10.4	1,010	133	421	659	824	⇑ 248	142	⇑ 81.8	79.3
2	0	10.5	10.5	923	178	387	479	⇑ 780	248	138	79.6	81.8
3	0	8.9	9.1	984	⇑ 212	469	357	871	233	134	82.7	77.3
4	⇑ 0	9.9	8.6	802	89.0	472	496	811	* 268	⇑ 133	82.8	72.9
5	0	10.7	9.4	⇑ 768	49.2	467	522	613	" 380	131	78.9	72.3
6	0	11.8	9.8	872	69.8	472	420	* 606	⇑ * 703	130	78.2	⇑ 74.0
7	0	11.6	9.9	779	76.7	⇑ 510	300	* 940	736	132	78.3	74.4
8	0	⇑ 13.3	⇑ 10.0	634	98.0	492	327	657	509	130	⇑ 77.6	73.3
9	0	10.7	104	512	192	500	⇑ 465	⇑ 936	434	125	79.1	73.0
10	0	9.7	362	414	⇑ 232	565	434	552	309	117	80.7	70.5
11	0	9.6	381	330	325	831	588	673	274	⇑ 119	78.4	71.7
12	0	10.1	419	⇑ 377	300	1,040	495	730	305	117	77.8	74.3
13	0	8.5	574	358	337	⇑ 943	417	654	⇑ 281	109	77.8	⇑ 76.9
14	0	8.7	794	325	350	754	⇑ 755	764	270	106	77.1	80.2
15	0	⇑ 11.0	⇑ 702	213	424	654	1,040	645	266	97.1	⇑ 78.6	76.2
16	0	12.0	757	222	473	654	1,110	⇑ 654	310	98.9	79.5	75.1
17	0	14.1	972	226	⇑ 458	701	1,170	787	385	97.2	78.9	74.8
18	0	12.0	750	* 362	430	693	1,140	735	407	⇑ 95.5	76.6	74.4
19	0	12.1	716	* 372	357	748	⇑ 1,180	907	561	90.5	75.3	75.7
20	⇑ 0	10.7	807	270	300	⇑ 759	1,020	912	⇑ 449	88.0	74.6	⇑ 74.6
21	0	9.5	794	171	334	731	990	896	355	91.2	76.3	76.4
22	0	10.4	⇑ 766	⇑ 121	357	604	1,070	685	261	91.2	⇑ 74.8	77.6
23	0	⇑ 10.3	766	138	⇑ 279	641	890	645	215	87.8	74.5	74.8
24	0	9.5	900	172	323	590	939	752	215	84.6	76.6	67.8
25	0	11.3	872	216	405	553	994	⇑ 780	187	⇑ 84.5	77.1	67.4
26	0	12.1	973	⇑ 228	421	764	⇑ 996	729	176	84.0	78.2	72.8
27	3.2	11.1	986	174	514	520	919	482	⇑ 179	85.6	77.2	⇑ 74.6
28	12.8	10.5	1,020	169	506	582	908	404	168	86.5	80.0	70.8
29	8.6		1,010 ⇑	199	442	802	772	322	156	82.1	⇑ 79.0	67.5
30	8.3		794	129	441	564	887	276	146	82.3	76.8	72.0
31	8.9		753		⇑ 427		863	251		86.9		68.1
Sum	41.8	300.4	17,049.7	12,470	9,532.7	18,883	23,602	21,273	9,634	3,276.9	2,344.8	2,292.5

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1939-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	4.86		28	215	† 1	0	1.3	82.9	1,199	8,110	0
Feb.	2.75	2.39	8	22.5	14	7.6	10.7	596	5,291	19,500	0
Mar.	9.58	2.25	28	1,220	3	4.6	550	33,818	29,603	50,100	1,700
Apr.	9.34	3.79	3	1,150	30	86.4	416	24,734	35,190	70,900	4,560
May	6.95	3.16	27	533	5	39.0	308	18,908	28,932	69,000	392
June	9.58	4.49	12	1,170	30	147	629	37,454	38,462	65,700	5,990
July	10.00	4.61	26	1,360	8	174	761	46,815	45,699	70,700	8,673
Aug.	9.91		4	1,330	5	0	686	42,195	45,179	74,600	4,840
Sept.	8.59	4.21	7	877	30	134	321	19,109	29,935	63,100	2,230
Oct.	4.32	3.57	1	148	29	77.7	106	6,500	12,826	39,000	0
Nov.	3.75	3.48	† 10	84.6	23	63.1	78.2	4,651	7,581	21,000	0
Dec.	3.80	3.34	29	85.5	29	52.2	74.0	4,547	7,600	25,500	0
Yearly	10.00			1,360		0	331	239,409.9	287,497	541,610	47,397.4

† And other days " Estimated * Partly estimated
⇑ Discharge measurement made on this day

RIO GRANDE BELOW AMERICAN DAM AT EL PASO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the retaining wall of the Smelter Pump on the left bank of the river at latitude 31° 46' 35", longitude 106° 31' 20", and river mile 1,247.6; 1.5 river miles upstream from the International Dam, 3.3 river miles upstream from the Santa Fe Street-Juárez Avenue Bridge between El Paso, Texas, and Cd. Juárez, Chihuahua, and 0.6 river mile downstream from the American Dam. The zero of the gage is 3,712.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 74 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The operation of the American Dam began June 2, 1938. At this dam, part of the flow passing the El Paso Gaging Station is diverted into the American Canal and the remainder, including excess flood flows, passes this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 11,300 second-feet on September 14, 1958 with a gage height of 14.50 feet. Min. no flow on March 23, 1955 and for several days in 1956, 1959, and 1964.

Average Flow in Second-Feet

Daily:	Max.	6,040	May 20, 1942	Min.	0	Several days 1956 & 1959
Monthly:	Max.	4,880	May 1942	Min.	0.2	Nov. 1958, Dec. 1959, & Nov. 1961
Yearly:	Max.	1,510	1942	Min.	13.8	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.7	⇑ 4.0	⇑ 1.7	⇑ 199	159	163	⇑ 460	⇑ 201	⇑ 104	1.5	⇑ 2.1	0.5
2	16.2	3.9	1.4	211	170	⇑ 167	158	207	⇑ 98.1	1.2	1.8	.5
3	15.4	3.9	1.5	217	⇑ 175	167	158	206	98.9	1.2	1.8	.5
4	⇑ 14.9	3.7	1.5	210	173	161	166	1,060	93.6	⇑ 1.2	1.8	.5
5	15.3	3.8	1.4	⇑ 210	172	163	⇑ 167	455	136	1.2	2.0	.5
6	15.4	3.6	1.4	216	⇑ 173	165	169	173	⇑ 12.5	1.1	1.8	⇑ .5
7	15.5	3.6	1.4	200	169	⇑ 162	⇑ 173	182	4.1	1.1	1.8	.5
8	15.9	⇑ 3.4	⇑ 1.5	⇑ 212	165	163	71.8	⇑ 177	2.0	1.0	⇑ 2.4	.5
9	16.0	3.1	1.6	202	169	168	3.4	⇑ 175	1.7	1.0	2.1	.5
10	16.1	3.0	2.5	193	⇑ 168	⇑ 169	2.7	191	1.4	1.2	1.9	.5
11	⇑ 16.2	2.9	2.6	194	164	173	2.0	121	1.5	1.1	2.0	.5
12	15.8	2.8	2.6	⇑ 212	⇑ 163	166	2.0	⇑ 87.4	⇑ 1.6	1.0	2.2	.5
13	15.8	2.6	2.8	210	155	146	2.0	⇑ 103	1.5	1.4	2.2	.5
14	16.0	2.6	3.5	221	163	⇑ 161	2.9	106	1.9	1.6	2.1	.5
15	16.0	⇑ 2.4	⇑ 2.8	⇑ 207	155	179	1.6	⇑ 98.1	1.7	1.8	2.1	.5
16	15.6	2.5	2.5	203	158	⇑ 170	1.6	102	1.6	1.5	1.9	.5
17	15.6	2.3	3.2	198	⇑ 158	174	1.8	99.5	1.6	1.4	1.8	.5
18	⇑ 15.8	2.0	2.1	194	158	169	⇑ 1.6	⇑ 101	1.4	⇑ 1.4	2.0	.5
19	16.0	1.9	1.9	194	156	169	1.4	⇑ 91.8	1.3	1.5	2.1	.5
20	15.8	1.9	335	⇑ 195	160	170	1.4	87.7	⇑ 1.2	1.4	2.1	.5
21	16.0	2.0	⇑ 766	202	164	166	34.8	929	1.3	1.5	1.9	.5
22	15.8	2.2	⇑ 879	⇑ 194	154	⇑ 174	⇑ 220	455	1.2	1.5	⇑ 1.6	.5
23	16.3	⇑ 2.1	554	195	147	⇑ 177	201	⇑ 101	1.2	1.5	1.4	.5
24	16.1	2.0	⇑ 533	196	⇑ 145	177	218	98.2	1.2	1.5	.5	.5
25	⇑ 16.3	2.0	⇑ 311	186	152	182	⇑ 209	⇑ 96.5	1.2	1.5	.5	.5
26	14.9	1.9	⇑ 437	⇑ 187	⇑ 160	188	373	96.6	1.2	1.6	.5	.5
27	13.3	1.8	668	192	159	1,150	246	112	1.3	1.6	.5	⇑ .5
28	10.5	1.7	⇑ 504	196	155	649	⇑ 198	111	1.3	1.6	.5	.5
29	7.9		⇑ 158	⇑ 195	154	130	196	⇑ 98.0	1.3	1.6	⇑ .5	.5
30	6.9		171	195	151	⇑ 780	196	94.3	1.4	1.7	.5	.5
31	6.1		184		⇑ 152		192	109		⇑ 2.0		.5
Sum	455.1	75.6	5,539.9	6,036	4,976	7,098	3,831.0	6,325.1	580.2	43.4	48.4	15.5

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1939-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	4.23	3.70	27	26.4	31	5.3	14.7	903	5,397	12,000	220
Feb.	3.72	3.57	16	4.3	27	1.6	2.7	150	2,887	32,800	31.3
Mar.	5.75	3.54	21	1,020	† 2	1.4	179	10,988	2,673	17,500	81.9
Apr.	4.86	4.65	6	248	30	128	201	11,972	9,665	74,500	2,230
May	4.93	4.56	15	249	15	137	161	9,870	19,852	300,000	25.2
June	6.55	4.53	† 27	1,790	13	118	237	14,079	17,690	250,000	35.5
July	7.95	3.52	26	2,430	21	1.0	124	7,599	15,836	155,000	967
Aug.	8.84	4.41	4	3,660	12	56.0	204	12,546	14,664	114,000	37.5
Sept.	7.10	4.05	5	1,560	† 20	1.1	19.3	1,151	12,080	124,000	53.8
Oct.	4.17	3.95	13	2.5	13	.2	1.4	86.1	2,242	19,000	18.0
Nov.	4.30	3.98	23	4.4	26	.4	1.6	96.0	1,397	8,700	11.9
Dec.	4.02	3.97	† 1	∅ .5	† 1	∅ .5	.5	30.7	1,109	7,760	13.1
Yearly	8.84	3.52		3,660		0.2	96.0	69,470.8	105,492	1,093,553	10,001.1

† And other days ∅ Mean daily ⇑ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
ACEQUIA MADRE AT JUAREZ, CHIHUAHUA

DESCRIPTION: Bridge for making discharge measurements, gravity well, and water-stage recorder located on the right bank of the canal at Juárez, Chihuahua, latitude 31° 45' 40", longitude 106° 30' 30", about 260 feet downstream from the canal intake at the International Dam at Juárez, Chihuahua, which is located at river mile 1,246.1 and 2.1 river miles downstream from the American Dam at El Paso, Texas.

RECORDS: Based on 114 discharge measurements during the year, 61 by the Mexican Section and 53 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1938 through 1966. These records, showing the water actually diverted by Mexico, do not necessarily reflect the quantities of water made available to Mexico in the bed of the river by the United States under terms of the Convention of 1906. Such quantities of water are included in the record of "Rio Grande below American Dam at El Paso, Texas." See page 10 in this Water Bulletin.

REMARKS: In 1966 all of the 49,618 acre-feet tabulated below were distributed to land irrigated in the first unit under the canal.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 480 second-feet on July 21, 1944 with a gage height of 6.00 feet. Min. no flow during several months throughout the year.

Average Flow in Second-Feet

Daily:	Max.	339	May 10, 1942	Min.	0	Several months each year
Monthly:	Max.	283	May 1938	Min.	0	Several months each year
Yearly:	Max.	116	1942	Min.	9.2	1964

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	# 189	152	# 162	161	# 189	# 102	0	0	0
2	0	0	0	# 186	# 156	# 167	161	194	# 101	0	0	0
3	0	0	0	196	# 164	# 171	161	# 194	# 101	0	0	0
4	0	0	0	191	# 167	169	161	194	102	0	0	0
5	0	0	0	# 190	168	169	160	# 194	0	0	0	0
6	0	0	0	# 201	# 168	# 170	# 154	194	0	0	0	0
7	0	0	0	# 197	165	# 170	# 158	180	0	0	0	0
8	0	0	0	# 187	161	# 170	26.5	# 172	0	0	0	0
9	0	0	0	# 185	# 161	# 172	0	175	0	0	0	0
10	0	0	0	194	# 162	# 172	0	# 174	0	0	0	0
11	0	0	0	192	# 159	177	0	132	0	0	0	0
12	0	0	0	# 192	# 157	172	0	# 105	0	0	0	0
13	0	0	0	# 192	# 153	# 168	0	# 109	0	0	0	0
14	0	0	0	# 197	151	177	0	104	0	0	0	0
15	0	0	0	# 195	152	# 174	0	# 100	0	0	0	0
16	0	0	0	197	# 154	# 176	0	101	0	0	0	0
17	0	0	0	196	# 156	# 175	0	# 102	0	0	0	0
18	0	0	0	# 195	# 155	175	0	# 99.2	0	0	0	0
19	0	0	0	# 192	# 155	178	0	# 98.5	0	0	0	0
20	0	0	0	# 195	# 153	# 179	0	97.5	0	0	0	0
21	0	0	0	# 195	155	176	12.4	111	0	0	0	0
22	0	0	91.8	# 196	155	# 174	# 189	# 87.2	0	0	0	0
23	0	0	# 153	199	# 154	# 180	188	# 105	0	0	0	0
24	0	0	# 196	201	# 154	# 179	193	# 99.2	0	0	0	0
25	0	0	# 159	# 201	# 151	184	# 192	# 96.1	0	0	0	0
26	0	0	# 145	# 197	# 152	178	190	# 112	0	0	0	0
27	0	0	150	# 198	# 152	177	# 189	103	0	0	0	0
28	0	0	# 169	200	151	177	# 188	111	0	0	0	0
29	0		# 162	# 198	153	177	# 194	# 101	0	0	0	0
30	0		# 173	195	# 154	177	194	96.1	0	0	0	0
31	0		# 200		# 151		190	# 101		0		0
Sum	0	0	1,598.8	5,839	4,851	5,222	3,061.9	4,030.8	406	0	0	0

Month	Current Year 1966: Average Rainfall Inches ** 1938-1966	1966	Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1966: Acre-Feet Average	Maximum	Minimum
Jan.	0.40	0.31		0		0	0	0	0	0	0
Feb.	.30	.25		0		0	0	0	0	0	0
Mar.	.26	.10	31	Ø 200	† 1	0	51.6	3,173	925	5,540	0
Apr.	.18	1.21	6	213	8	167	195	11,587	6,833	12,383	2,020
May	.36	.20	6	171	21	142	156	9,622	9,740	17,380	0
June	.70	3.45	26	189	1	159	174	10,355	8,538	15,700	0
July	1.50	.42	27	230	† 9	0	98.8	6,075	8,613	15,170	845
Aug.	1.37	2.81	5	230	22	10.6	130	8,000	8,294	12,620	0
Sept.	1.05	1.29	4	106	4	43.1	13.5	806	5,078	12,380	0
Oct.	.78	.02		0		0	0	0	53.5	328	0
Nov.	.25	.03		0		0	0	0	0	0	0
Dec.	.46	.12		0		0	0	0	0	0	0
Yearly	7.61	10.21		230		0	68.5	49,618	48,074.5	83,930	6,653

† And other days Ø Mean daily # Discharge measurement made on this day
** Average for valley floor from El Paso to Island Station

RIO GRANDE – ISLAND STATION NEAR CLINT, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31° 32' 00", longitude 106° 14' 35", and river mile 1,221.1; 0.6 river mile downstream from the Riverside Canal Wasteway No. 2, about 4 miles south-southwest of Clint, Texas, and 27.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,608.99 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 50 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: August 17, 1938 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,050 second-feet on September 14, 1958 with a gage height of 15.80 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max.	6,140	May 19, 1942	Min.	0	Frequently
Monthly:	Max.	4,880	May 1942	Min.	0	Frequently
Yearly:	Max.	1,490	1942	Min.	0.3	1956

Mean Daily Discharge in Second-Feet 1966 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21.6	0	0	0	0.4	↑ 0	283	58.2	13.2	5.0	0.8	1.7
2	18.0	↑ 0	↑ 0	0	.3	0	170	13.5	11.6	5.6	↑ .8	1.5
3	19.1	0	0	113	.4	0	65.7	↑ 91.9	10.7	5.0	.8	1.2
4	24.6	0	0	↑ 204	.4	0	40.2	↑ 859	9.0	4.3	.8	1.2
5	↑ 26.0	0	0	45.6	↑ .6	0	73.2	↑ 217	166	↑ 4.0	.9	1.2
6	24.4	0	0	5.7	.6	0	↑ 53.9	341	171	3.6	.9	1.0
7	25.3	0	0	5.3	.2	0	18.0	181	↑ 177	4.0	.9	↑ 1.0
8	23.5	0	0	5.3	.1	↑ 0	13.9	117	65.4	3.6	.9	.8
9	23.0	↑ 0	↑ 0	4.4	0	0	12.6	84.3	27.8	3.3	.8	.8
10	20.4	0	0	3.6	0	0	11.4	↑ 28.4	11.9	3.1	.7	.8
11	27.4	0	0	4.4	↑ 0	0	14.2	* 20.0	12.0	2.9	.7	.8
12	↑ 29.5	0	0	1.4	0	0	8.6	* 18.0	11.6	↑ 2.6	.7	.8
13	29.7	0	0	↑ .1	0	69.4	7.9	* 16.0	10.5	2.2	.7	.8
14	29.8	0	77.9	1.0	0	8.1	7.8	* 14.0	↑ 8.2	1.9	.7	.8
15	30.0	0	0	1.4	0	↑ 0	24.8	* 29.6	17.5	1.7	.7	.8
16	27.6	↑ 0	↑ 0	1.0	0	0	8.6	* 18.0	8.8	2.1	↑ .7	.8
17	27.0	0	0	2.0	0	0	13.5	* 15.0	7.3	1.4	.7	.8
18	31.8	0	0	.7	↑ 0	0	↑ 17.0	* 15.0	7.0	.9	.7	.8
19	↑ 34.7	0	0	.7	0	0	9.6	* 14.0	9.7	↑ .9	.9	.8
20	34.0	0	40.7	↑ .2	0	0	↑ 8.3	* 12.0	5.7	1.1	.9	.8
21	34.7	0	↑ 106	.2	0	↑ 0	4.7	* 104	↑ 6.1	1.3	.9	.8
22	32.8	0	272	.2	0	0	7.0	*1,440	6.4	.9	.9	.8
23	34.7	0	↑ 48.4	0	.4	0	7.7	300	4.8	.9	↑ 1.3	.8
24	30.1	↑ 0	0	4.4	.4	0	8.5	↑ 524	5.1	.9	1.6	60.0
25	33.5	0	0	.4	↑ 0	0	7.0	347	4.9	.9	1.8	54.3
26	↑ 35.5	0	0	.3	0	138	7.0	426	5.2	↑ .9	2.0	49.4
27	34.2	0	59.1	.2	0	572	↑ 159	179	5.1	.9	1.8	56.2
28	32.9	0	238	.2	0	493	67.3	118	↑ 5.4	.9	2.0	↑ 61.9
29	4.3		27.8	.3	0	311	19.3	59.4	5.6	.8	2.0	54.3
30	.6		↑ 1.8	.4	.1	349	14.0	35.7	4.8	.8	1.8	54.3
31	0		0		.2		85.4	↑ 16.0		.8		39.3
Sum	800.7	0	871.7	406.4	4.1	1,940.5	1,249.1	*5,712.0	815.3	69.2	31.8	451.3

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1939-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	8.81		17	56.5	31	0	25.8	1,588	5,306	11,900	0
Feb.				0		0	0	0	3,485	37,000	0
Mar.	9.81		27	541	† 1	0	28.1	1,729	2,526	21,000	0
Apr.	9.59		3	406	† 1	0	13.5	806	4,218	70,500	0
May	8.15		31	3.8	† 8	0	.1	8.1	12,195	299,800	0
June	10.84		30	705	† 1	0	64.7	3,849	10,495	241,000	0
July	10.66	7.65	27	908	20	3.2	40.3	2,478	8,982	118,500	0
Aug.			22	∅ *1,440	20	∅ *12.0	*184	*11,330	8,493	99,400	0
Sept.	10.80	7.73	5	1,500	27	3.0	27.2	1,617	9,652	119,200	0
Oct.	7.78	7.56	2	6.1	†29	.8	2.2	137	4,528	42,800	0
Nov.	7.67	7.55	26	2.4	† 9	.7	1.1	63.1	1,290	7,270	0
Dec.	8.67	7.55	24	139	9	.6	14.6	895	2,343	12,900	0
Yearly				1,500		0	33.8	*24,500.2	73,513	1,079,340	238.1

† And other days * Partly estimated ∅ Mean daily
↑ Discharge measurement made on this day

RIO GRANDE - COUNTY LINE STATION NEAR ACALA, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31° 22' 50", longitude 105° 59' 10", and river mile 1,200.9; 0.8 river mile downstream from the El Paso-Hudspeth County Line, 5.5 miles northwest of Acala, Texas, about 8 miles southeast of Tornillo, Texas, and 47.3 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,547.59 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 57 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1938 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,340 second-feet on May 19, 1942 with a gage height of 8.66 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max.	6,180	May 18, 1942	Min.	0	Frequently
Monthly:	Max.	4,920	May 1942	Min.	0	Frequently
Yearly:	Max.	1,720	1942	Min.	0	1956 & 1964

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	⋔ 0	385	1.8	0	0	0	0.1
2	0	⋔ 0	⋔ 0	0	0	0	271	.2	0	0	⋔ 0	0
3	0	0	0	0	0	0	76.8	⋔ 90.9	0	0	0	0
4	0	0	0	⋔ 61.0	0	0	28.2	232	0	0	0	0
5	⋔ 0	0	0	22.7	⋔ 0	0	87.2	⋔ 295	0	⋔ 0	0	0
6	0	0	0	.2	0	0	⋔ 40.7	274	134	0	0	0
7	0	0	0	3.2	0	0	4.9	26.4	⋔ 201	0	0	⋔ 0
8	0	0	0	.2	0	⋔ 0	0	168	155	0	0	0
9	0	⋔ 0	⋔ 0	0	0	0	0	5.6	58.9	0	⋔ 0	0
10	0	0	0	0	0	0	0	⋔ 13.3	13.1	0	0	0
11	0	0	0	0	⋔ 0	0	0	⋔ 0	1.8	0	0	0
12	⋔ 0	0	0	0	0	0	0	0	6.9	⋔ 0	0	0
13	0	0	0	⋔ 0	0	0	⋔ 0	0	1.4	0	0	11.2
14	0	0	0	0	0	0	0	0	⋔ 17.4	0	0	⋔ 7.8
15	0	0	0	0	0	⋔ 0	0	0	28.6	0	0	3.7
16	0	⋔ 0	⋔ 0	0	0	0	0	0	0	0	⋔ 0	3.4
17	0	0	0	0	0	0	0	⋔ 0	0	0	0	3.9
18	0	0	0	0	⋔ 0	0	0	0	3.9	0	0	3.4
19	⋔ 0	0	0	0	0	0	0	0	41.8	⋔ 0	0	1.3
20	0	0	0	⋔ 0	0	0	⋔ 0	29.2	35.8	0	0	0
21	0	0	0	0	0	⋔ 0	0	0	⋔ 0	0	0	⋔ 0
22	0	0	40.9	0	0	0	0	⋔ 666	0	0	0	0
23	0	0	⋔13.6	0	0	0	0	226	0	0	⋔ 0	0
24	0	⋔ 0	1.6	0	0	0	0	⋔ 489	0	0	0	49.0
25	0	0	0	0	⋔ 0	0	0	237	0	0	0	7.6
26	⋔ 0	0	0	0	0	0	0	321	0	⋔ 0	0	2.8
27	0	0	0	⋔ 0	0	⋔ 308	⋔ 47.4	109	0	0	0	1.7
28	0	0	0	0	0	530	.5	120	⋔ 0	0	0	⋔ 1.2
29	0		0	0	0	⋔ 308	0	78.5	0	0	0	2.4
30	0		⋔ 0	0	0	457	0	36.5	0	0	⋔ 2.0	2.6
31	0		0		0		0	⋔ 0		0		1.9
Sum	0	0	56.1	87.3	0	1,603	941.7	3,419.4	699.6	0	2.0	104.0

Month	Current Year 1966								Period 1938-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
				High		Low					
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.				0		0	0	0	7,060	20,000	0
Feb.				0		0	0	0	5,940	47,900	0
Mar.	2.14		22	110	† 1	0	1.8	111	5,182	38,900	0
Apr.	2.15		4	114	† 1	0	2.9	173	7,902	84,200	0
May				0		0	0	0	15,091	303,000	0
June	4.13		30	644	† 1	0	53.4	3,180	13,471	239,000	0
July	3.68		1	459	† 8	0	30.4	1,868	12,923	140,000	0
Aug.	5.00		22	1,400	† 1	0	110	6,782	12,197	123,000	0
Sept.	3.62		14	473	† 1	0	23.3	1,388	15,132	140,000	0
Oct.				0		0	0	0	9,576	61,400	0
Nov.	2.02		30	5.0	† 1	0	.1	4.0	6,319	20,400	0
Dec.	2.81		24	135	† 1	0	3.4	206	7,015	29,700	0
Yearly				1,400		0	18.9	13,712.0	117,808	1,247,500	0

† And other days ⋔ Discharge measurement made on this day

RIO GRANDE AT FORT QUITMAN, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31° 05' 05", longitude 105° 36' 25", and river mile 1,167.1; 1.5 river miles downstream from Old Fort Quitman, 10 miles northwest of Esperanza, Texas, 17.5 miles southeast of McNary, Texas, and 81.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,450.57 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 58 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 10,600 second-feet October 5, 1946 with a gage height of 10.00 feet. Min. frequently no flow.

Average Flow in Second-Feet ‡

Daily:	Max.	5,890	May 19, 1942	Min.	0	Frequently
Monthly:	Max.	5,030	May 1942	Min.	0	Several months since 1951
Yearly:	Max.	1,750	1942	Min.	2.3	1965

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	✝ 0	190	0	13.1	17.2	5.1	6.7
2	0	✝ 0	✝ 0	0	0	0	156	0	1,820	24.2	✝ 4.7	6.2
3	0	0	0	0	0	0	72.0	✝ 764	417	21.5	5.0	6.1
4	0	0	0	✝ 0	0	0	11.0	74.6	203	23.9	6.5	6.5
5	✝ 0	0	0	0	✝ 0	0	0	✝ 309	170	✝ 19.5	7.6	7.8
6	0	0	0	0	0	0	✝ 0	204	162	19.1	6.0	11.3
7	0	0	0	0	0	0	0	91.8	✝ 229	25.5	4.8	✝ 13.4
8	0	0	0	0	0	✝ 0	¤ .1	66.1	259	20.9	4.9	10.1
9	0	✝ 0	✝ 0	0	0	0	0	63.3	197	21.5	✝ 4.5	6.2
10	0	0	0	0	0	90.4	.7	✝ 7.8	146	27.5	4.5	5.9
11	0	0	0	0	✝ 0	5.7	.5	58.1	123	19.6	6.7	8.6
12	✝ 0	0	0	0	0	0	.2	231	91.5	✝ 24.5	6.2	8.9
13	0	0	0	✝ 0	0	0	✝ 0	115	62.5	23.9	11.2	9.6
14	0	0	0	0	0	0	0	68.8	✝ 35.2	12.6	14.4	✝ 9.9
15	0	0	0	0	0	✝ 0	0	36.7	✝ 454	20.7	6.3	9.4
16	0	✝ 0	✝ 0	0	0	0	0	12.5	161	16.9	✝ 5.1	5.6
17	0	0	0	0	0	0	¤ .1	✝ 57.9	123	10.8	6.0	.9
18	0	0	0	0	✝ 0	0	0	292	77.3	10.2	6.3	.9
19	✝ 0	0	0	0	0	0	0	* 209	62.0	✝ 15.9	7.2	.9
20	0	0	0	✝ 0	0	216	✝ 0	* 174	98.7	13.3	7.5	.9
21	0	0	0	0	0	✝ 104	.2	143	✝ 88.6	18.7	8.3	✝ .9
22	0	0	0	0	0	0	0	✝ 584	63.2	20.0	9.7	.9
23	0	0	✝ 0	0	0	0	0	729	59.2	18.2	✝ 12.8	.9
24	0	✝ 0	0	13.3	0	0	0	✝2,570	39.0	13.0	9.7	1.0
25	0	0	0	0	✝ 0	0	0	427	25.7	9.0	8.4	1.5
26	✝ 0	0	0	0	.9	235	0	✝ 331	23.9	✝ 8.2	8.1	2.0
27	0	0	0	✝ 0	.4	✝ 43.6	✝ 0	216	19.0	8.1	6.1	2.5
28	0	0	0	0	0	89.6	0	146	✝ 19.6	9.2	8.6	✝ 3.9
29	0		0	0	0	✝ 170	0	114	23.1	7.4	7.3	4.9
30	0		✝ 0	0	0	275	0	62.5	14.3	5.6	✝ 7.0	4.9
31	0		0		0		0	✝ 24.9		5.5		.9
Sum	0	0	0	13.3	1.3	1,229.3	430.8	8,183.0	5,274.9	512.1	216.5	160.1

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.				0		0	0	0	7,280	20,900	0
Feb.				0		0	0	0	6,519	50,100	0
Mar.				0		0	0	0	5,064	38,900	0
Apr.	5.38		24	75.9	† 1	0	.4	26.4	6,352	77,000	0
May	4.87		26	11.5	† 1	0	0	2.6	15,381	309,000	0
June	7.98		20	1,740	† 1	0	41.0	2,438	13,781	240,000	0
July	5.35		1	284	† 5	0	13.9	854	14,255	140,000	3.8
Aug.	10.30		24	7,910	† 1	0	264	16,231	13,457	127,000	16.7
Sept.	9.03	4.30	2	5,100	30	11.1	176	10,468	17,700	147,000	0
Oct.	4.54	4.19	10	34.8	31	5.2	16.5	1,016	13,534	66,500	0
Nov.	4.37	4.16	14	16.9	8	4.2	7.2	429	8,140	24,500	0
Dec.	4.36		7	17.5	†17	ß .9	5.2	318	8,285	31,000	0
Yearly				7,910		0	43.9	31,778.0	129,748	1,270,400	1,662.3

‡ Period 1924-1966 † And other days ß Mean daily ¤ Estimated * Partly Estimated
✝ Discharge measurement made on this day

RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29° 37' 15", longitude 104° 28' 50", and river mile 962.5; 6.5 miles northwest of the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, 7.8 river miles upstream from the Río Conchos, and 285.7 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,576.66 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 103 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 14,000 second-feet on June 14, 1905. Highest flow recorded since 1924 was 5,160 second-feet, with a gage height of 10.57 feet, on May 26, 1942. Min. frequently no flow.

Average Flow in Second-Feet ‡

Daily:	Max.	13,700	June 13 & 14, 1905	Min.	0	Frequently
Monthly:	Max.	10,150	June 1905	Min.	0	Frequently
Yearly:	Max.	1,970	1907	Min.	1.3	1964

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	✝ 0	✝ 0	✝ 0	0	0	✝ 33.0	✝ 0	✝ 660	33.7	✝ 4.0	✝ 0.9
2	0	0	0	0	✝ 0	0	34.0	0	730	28.9	3.1	.9
3	✝ 0	0	0	0	0	✝ 0	26.5	0	686	✝ 24.7	2.8	.8
4	0	✝ 0	✝ 0	✝ 0	0	0	3.3	✝ 0	670	24.9	✝ 2.4	.8
5	0	0	0	0	0	0	✝ 6.1	0	648	32.8	2.4	✝ .8
6	0	0	0	0	✝ 0	✝ 0	13.2	0	✝ 628	✝ 60.7	2.6	.8
7	✝ 0	0	✝ 0	0	0	0	12.6	.3	637	62.5	✝ 3.1	.8
8	0	✝ 0	0	0	0	0	✝ 51.3	✝ 0	655	79.8	2.9	✝ .8
9	0	0	✝ 0	0	✝ 0	✝ 0	46.7	0	✝ 666	95.6	2.5	.6
10	✝ 0	0	0	0	0	0	16.0	0	653	✝ 114	✝ 4.2	.5
11	0	✝ 0	0	✝ 0	0	0	4.6	✝ 30.4	654	131	5.0	.6
12	0	0	0	0	✝ 0	1.1	✝ 1.2	34.7	646	146	4.0	✝ .6
13	✝ 0	0	0	0	0	✝ 3.9	15.7	34.6	✝ 623	✝ 143	2.5	.6
14	0	✝ 0	✝ 0	0	0	0	5.9	15.4	560	83.0	✝ 1.6	1.4
15	0	0	0	0	0	0	✝ .5	✝ 15.4	475	51.6	1.6	.4
16	0	0	0	0	✝ 0	✝ 0	.4	32.4	444	45.5	2.1	✝ .2
17	✝ 0	✝ 0	0	0	0	0	0	57.4	471	✝ 42.0	✝ 2.5	0
18	0	0	0	✝ 0	0	0	✝ 0	✝ 53.8	392	24.6	2.1	0
19	0	0	0	0	✝ 0	0	0	23.3	✝ 248	24.9	1.7	0
20	✝ 0	0	0	0	0	✝ 0	0	67.5	187	✝ 24.0	1.5	✝ .5
21	0	✝ 0	✝ 0	✝ 0	0	74.1	✝ 0	88.1	180	25.0	✝ 1.5	.8
22	0	0	0	0	0	291	0	✝ 96.7	✝ 176	20.9	1.5	0
23	0	0	0	0	✝ 0	✝ 112	0	99.8	162	22.8	1.4	0
24	✝ 0	✝ 0	0	0	0	17.8	0	✝ 126	134	✝ 19.7	1.4	0
25	0	0	0	✝ 0	0	✝ 30.2	✝ 0	✝ 221	104	19.0	✝ 1.4	0
26	0	0	0	0	✝ 0	35.6	0	306	✝ 90.1	16.0	1.5	0
27	✝ 0	0	0	0	0	✝ 13.1	9.9	✝ 289	70.2	✝ 13.8	1.4	✝ .4
28	0	0	✝ 0	✝ 0	0	1.0	✝ 68.9	238	53.6	11.8	✝ .8	1.0
29	0		0	0	0	2.6	✝ 55.1	205	✝ 46.5	7.3	.8	.3
30	0		0	0	0	✝ 23.0	5.7	296	38.8	4.3	.9	✝ 0
31	0		0		✝ 0		0	✝ 487		4.8		.3
Sum	0	0	0	0	0	605.4	410.6	2,817.8	12,388.2	1,438.6	67.2	14.8

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.				0		0	0	0	6,789	24,400	0
Feb.				0		0	0	0	5,727	40,800	0
Mar.				0		0	0	0	4,252	39,100	0
Apr.				0		0	0	0	3,166	41,600	0
May				0		0	0	0	11,250	240,000	0
June	12.04		22	317	† 1	0	20.2	1,201	11,808	216,000	0
July	11.70		27	267	†17	0	13.2	814	15,246	156,000	0
Aug.	13.33		31	585	† 1	0	90.9	5,589	14,528	133,000	0
Sept.	13.80	8.67	2	744	30	35.2	413	24,572	18,314	151,000	0
Oct.	9.87	7.94	13	153	30	4.0	46.4	2,853	15,777	105,000	0
Nov.	8.03	7.80	† 10	5.2	†28	∅ .8	2.2	133	6,518	34,500	0
Dec.	7.91		27	2.4	†17	0	.5	29.4	6,859	30,900	0
Yearly				744		0	48.6	35,191.4	120,234	1,176,700	954.8

‡ Period June 1900-March 1914; September 1919-March 1920; and 1924-1966 † And other days
✝ Discharge measurement made on this day ∅ Mean daily

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 29° 34' 00", longitude 104° 27' 10", 1.5 river miles from the confluence with the Rio Grande, 1.9 miles west of Ojinaga, Chihuahua, and 3.7 miles west of Presidio, Texas. This stream enters the Rio Grande at river mile 954.7, 13.8 river miles upstream from the "Rio Grande below Río Conchos" Gaging Station, and 293.5 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,568.04 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 143 discharge measurements during the year, 134 by the Mexican Section and 9 by the United States Section of this Commission, a continuous record of gage heights, and a rating curve which, above 15,000 second-feet, was defined previously by related gage heights and records of discharge at the "Río Grande below Rio Conchos" Gaging Station. Computations by shifting control methods. Records available: 1896 through 1966. Records of stage and measured discharge at this station began April 4, 1954. Prior to this date, flow records were determined from records of the Rio Grande at stations located upstream and downstream from the Río Conchos confluence.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. La Boquilla Reservoir with 2,417,500 acre-feet capacity, La Colina Reservoir with 19,500 acre-feet capacity, and La Rosetilla Reservoir with 15,400 acre-feet capacity are located 250, 242, and 186 river miles, respectively, upstream from this station. Francisco I. Madero Reservoir, with capacity of 344,600 acre-feet, is located on the Río San Pedro, a tributary which enters the Río Conchos 174 river miles upstream from this station. Power generation facilities: La Boquilla 14,647 kw., La Colina 3,620 kw., La Rosetilla 5,150 kw., Francisco I. Madero none.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 162,000 second-feet on September 11, 1904. Min. no flow several days in May, June, and July 1953 and in July 1955.

Average Flow in Second-Feet ‡

Daily:	Max.	148,900	Sept. 11, 1904	Min.	0	Several days 1953 & 1955
Monthly:	Max.	24,540	Sept. 1904	Min.	4.7	April 1955
Yearly:	Max.	3,710	1906	Min.	155	1953

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	434	307	340	155	72.4	226	↑ 3,270	314	19,000	1,270	823	533
2	388	311	340	133	↑ 102	↑ 226	↑ 2,240	197	14,800	1,180	745	↑ 509
3	↑ 371	↑ 324	↑ 340	117	135	190	1,670	763	13,700	↑ 985	↑ 664	526
4	378	306	308	↑ 105	120	204	1,470	↑ 943	13,600	1,010	678	569
5	374	364	278	87.9	↑ 219	186	↑ 961	371	14,800	↑ 1,280	↑ 706	↑ 519
6	↑ 326	323	275	71.0	226	↑ 146	636	239	14,900	1,390	738	494
7	385	↑ 304	↑ 279	↑ 63.2	179	129	533	505	14,300	↑ 1,490	↑ 745	↑ 491
8	328	315	266	64.3	164	122	↑ 632	↑ 544	13,500	↑ 5,650	908	445
9	317	319	264	66.7	↑ 157	↑ 118	975	537	14,000	2,790	↑ 745	↑ 456
10	↑ 337	↑ 329	↑ 240	66.0	140	126	780	388	16,800	↑ 1,740	657	452
11	351	299	214	62.2	123	717	↑ 1,890	↑ 417	15,200	1,600	↑ 696	477
12	378	392	200	↑ 47.3	↑ 134	851	1,130	349	15,200	↑ 1,250	696	↑ 477
13	↑ 323	329	191	47.7	149	245	↑ 519	392	15,600	1,990	657	445
14	309	↑ 299	↑ 185	↑ 37.8	126	132	396	378	17,200	↑ 2,040	↑ 607	484
15	374	290	170	38.8	107	102	↑ 315	↑ 731	12,500	1,810	675	↑ 438
16	378	316	153	66.7	↑ 96.8	106	248	↑ 2,030	13,200	1,440	↑ 667	434
17	↑ 343	↑ 360	↑ 142	140	84.0	↑ 131	186	↑ 1,500	12,100	↑ 1,300	636	445
18	328	374	144	427	84.0	↑ 213	↑ 181	982	10,800	1,640	↑ 696	459
19	325	331	121	↑ 235	↑ 87.6	103	147	↑ 1,360	↑ 9,460	↑ 1,030	664	↑ 491
20	↑ 334	301	130	164	77.0	↑ 480	149	↑ 1,910	↑ 7,310	1,020	622	512
21	360	↑ 293	↑ 135	↑ 156	74.9	2,060	↑ 175	2,240	↑ 5,860	↑ 1,080	↑ 604	↑ 519
22	331	353	137	133	119	636	161	↑ 3,430	↑ 4,560	872	667	434
23	320	309	143	130	↑ 131	↑ 3,150	127	↑ 3,880	↑ 3,530	943	↑ 646	↑ 399
24	↑ 309	↑ 332	↑ 138	109	110	↑ 1,120	125	↑ 8,120	↑ 2,850	↑ 879	569	381
25	299	302	149	↑ 112	396	↑ 530	↑ 116	15,100	2,370	1,020	629	441
26	299	324	144	106	2,020	773	126	↑ 10,700	↑ 2,180	↑ 848	618	↑ 501
27	↑ 296	427	141	87.2	403	↑ 3,920	124	10,900	2,060	735	562	512
28	340	↑ 374	↑ 159	↑ 84.4	752	↑ 4,910	↑ 294	12,200	↑ 1,620	↑ 703	↑ 579	487
29	306		158	89.0	413	↑ 2,400	212	18,000	1,460	636	664	↑ 438
30	314		158	72.7	↑ 296	↑ 2,400	336	20,100	↑ 1,980	738	↑ 639	385
31	↑ 309		↑ 148		247		512	19,100		↑ 791		367
Sum	10,564	9,207	6,190	3,274.9	7,544.7	26,652	20,636	138,620	306,440	43,150	20,202	14,520

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1948-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	5.97	5.38	1	480	25	277	341	20,959	28,538	59,250	11,500
Feb.	6.00	5.28	27	486	11	247	329	18,260	29,180	72,270	10,600
Mar.	5.68	4.79	3	353	19	118	200	12,275	23,760	51,530	5,410
Apr.	6.36	4.33	18	636	13	35.3	109	6,498	9,617	22,650	281
May	11.15	4.53	26	4,030	1	65.3	243	14,955	13,831	31,600	319
June	14.63	4.53	28	7,350	20	67.1	888	52,883	25,328	64,219	760
July	12.76	4.63	11	5,190	†25	88.3	666	40,937	53,042	201,000	2,190
Aug.	17.32	4.79	30	20,500	3	145	4,470	275,140	76,894	275,140	7,660
Sept.	17.26	7.87	1	20,100	29	1,400	10,200	608,140	122,801	686,400	12,400
Oct.	14.47	6.89	8	8,830	29	600	1,390	85,546	94,890	971,300	5,890
Nov.	7.81	6.59	8	1,080	24	530	673	40,066	34,724	107,400	9,510
Dec.	6.96	6.20	3	671	31	357	468	28,803	28,491	62,380	9,940
Yearly	17.32	4.33		20,500		35.3	1,660	1,204,462	541,096	1,892,940	111,885

† And other days ↑ Discharge measurement made on this day

‡ Period June 1900-March 1914; September 1914-March 1920; and 1924-1966

ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the left bank 300 feet upstream from the highway bridge on Farm-to-Market Road 170 at latitude 29° 31' 15", longitude 104° 17' 40", about 2,000 feet from the confluence with the Rio Grande, and about 6 miles southeast of Presidio, Texas. This stream enters the Rio Grande near the lower end of the Presidio Valley at river mile 941.3, 9.7 river miles downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, and 306.9 river miles downstream from the American Dam at El Paso, Texas. Measurements of high flows are made from the highway bridge. The zero of the gage is 2,541.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 109 discharge measurements during the year at low and medium flows, a high flow rating curve determined by slope-area calculations, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1966.

REMARKS: A small irrigation reservoir (San Esteban) 10.5 miles south of Marfa, Texas and irrigation diversions below the reservoir modify the flow of this spring-fed creek. Backwater from the Rio Grande begins to affect the station record when the flow at the station on the Rio Grande below Río Conchos reaches about 35,000 second-feet.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 56,400 second-feet, determined by slope-area calculations, on September 2, 1962, with a gage height of 13.54 feet. Min. 0.1 second-foot on July 25, 1953 and several days in August 1958.

Average Flow in Second-Feet

Daily:	Max.	6,200	Sept. 2, 1962	Min.	0.1	July 25, 1953 & several days in August 1958
Monthly:	Max.	418	Sept. 1958	Min.	0.6	Oct., Nov., Dec., 1953
Yearly:	Max.	55.9	1941	Min.	4.3	1951

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.5	⇑ 1.6	⇑ 1.5	⇑ 1.3	1.2	0.6	⇑ 0.7	⇑ 0.5	⇑ 119	1.7	⇑ 1.7	⇑ 1.5
2	1.5	1.7	1.5	1.2	⇑ 1.2	.5	.7	.5	22.1	1.6	1.8	1.5
3	⇑ 1.5	1.9	1.4	1.2	1.2	⇑ .5	.6	10.9	9.8	⇑ 1.5	1.9	1.4
4	1.5	⇑ 2.0	⇑ 1.4	⇑ 1.1	1.1	.5	.6	⇑ 43.0	22.3	2.0	⇑ 2.0	1.4
5	1.6	1.9	1.4	1.1	⇑ 1.1	.4	⇑ .6	11.1	8.0	410	2.0	⇑ 1.4
6	1.6	1.8	1.5	1.2	1.0	⇑ .4	.7	1.1	⇑ 7.8	⇑ 114	1.9	1.4
7	⇑ 1.6	1.8	⇑ 1.5	⇑ 1.2	1.0	.4	.7	1.1	3.2	97.0	⇑ 1.9	1.4
8	1.6	⇑ 1.7	1.5	1.2	1.0	.4	⇑ .8	⇑ 1.1	169	334	1.9	⇑ 1.4
9	1.6	1.7	1.4	1.2	⇑ .9	⇑ .4	.8	1.1	⇑ 236	19.0	1.8	1.4
10	⇑ 1.6	1.7	⇑ 1.4	1.2	.9	125	29.5	19.0	2.9	⇑ 4.9	⇑ 1.8	1.4
11	1.6	⇑ 1.7	1.4	⇑ 1.2	.8	6.8	.6	⇑ 224	1.9	4.1	1.8	1.4
12	1.6	1.7	1.4	1.2	⇑ .8	2.8	⇑ .6	32.0	⇑ 1.5	3.3	1.8	⇑ 1.4
13	⇑ 1.6	1.6	1.3	1.2	.8	⇑ 55.6	.6	39.8	1.6	⇑ 2.6	1.8	1.4
14	1.6	⇑ 1.6	⇑ 1.3	⇑ 1.2	.8	.7	.7	33.4	1.5	2.4	⇑ 1.8	1.4
15	1.6	1.6	1.3	1.2	.8	.7	⇑ .7	⇑ 564	1.5	2.2	1.8	1.4
16	1.7	1.6	1.4	1.2	⇑ .8	⇑ .7	.7	36.7	⇑ 513	2.0	1.7	⇑ 1.4
17	⇑ 1.7	⇑ 1.6	⇑ 1.4	1.2	.8	7.9	.8	2.0	250	⇑ 1.8	⇑ 1.7	1.4
18	1.7	1.6	1.4	⇑ 1.2	.7	39.2	⇑ .8	⇑ 2.0	66.6	1.8	1.7	1.4
19	1.7	1.5	1.4	1.2	⇑ 1.7	59.2	.7	14.0	⇑ 12.4	1.8	1.7	1.4
20	⇑ 1.7	1.4	1.3	1.2	866	⇑ 19.6	.7	5.4	4.0	⇑ 1.8	1.7	⇑ 1.4
21	1.8	⇑ 1.4*	⇑ 1.3	⇑ 1.2	* .9	* 252	⇑ .6	4.8	3.0	1.8	⇑ 1.7	1.4
22	1.9	1.4	1.3	1.2	.8	* 66.5	.6	⇑ 1,710	⇑ 3.0	1.9	1.7	1.4
23	2.0	1.4	1.4	1.2	⇑ .8	⇑ 3.0	.5	1,450	2.7	2.0	1.8	1.4
24	⇑ 2.1	⇑ 1.4	⇑ 1.4	1.1	.8	2.1	.4	⇑ 2,840	2.5	⇑ 2.0	1.8	1.5
25	2.0	1.4	1.3	⇑ 1.1	.7	⇑ 1.2	⇑ .4	⇑ 217	2.2	1.9	⇑ 1.8	1.5
26	2.0	1.4	1.2	1.1	⇑ .7	1.2	.4	⇑ 30.9	⇑ 1.9	1.8	1.8	1.5
27	⇑ 1.9	1.5	1.2	1.0	.7	⇑ 1.2	52.4	⇑ 13.8	1.9	⇑ 1.7	1.8	⇑ 1.5
28	1.8	1.5	⇑ 11.7	⇑ 1.0	.7	1.0	⇑ .9	3.0	1.9	1.7	⇑ 1.8	1.5
29	1.8		* 1.5	1.0	.6	.9	.8	⇑ 2.0	⇑ 1.9	1.7	1.7	1.5
30	1.7		* 1.4	1.1	.6	⇑ .7	.7	105	1.8	1.7	1.6	⇑ 1.5
31	1.7		1.3		⇑ .6		.6	⇑ 51.1		1.7		1.6
Sum	52.8	45.1	53.1	34.9	892.5	652.1	100.9	7,470.3	1,476.9	1,029.4	53.7	44.5

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1932-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.			24	ø 2.1	† 1	1.5	1.7	105	155	273	46.4
Feb.			4	ø 2.0	†20	1.4	1.6	89.5	227	3,120	41.5
Mar.	5.23		28	315	†26	1.2	1.7	105	153	270	46.4
Apr.			1	ø 1.3	†27	1.0	1.2	69.2	229	1,070	57.9
May	6.22		20	2,550	†29	.6	28.8	1,770	1,201	8,520	34.7
June	6.33		21	2,940	† 5	.4	21.7	1,293	1,884	6,360	50.8
July	5.60		27	1,150	†24	.4	3.3	200	3,117	18,500	46.8
Aug.	8.66		24	13,500	† 1	.5	241	14,817	3,191	16,330	56.9
Sept.	7.23		8	881	†12	1.5	49.2	2,929	3,917	24,900	128
Oct.	7.40		7	1,200	3	1.5	33.2	2,042	1,658	19,200	36.9
Nov.			† 4	ø 2.0	30	1.6	1.8	107	172	807	35.7
Dec.			31	ø 1.6	† 3	1.4	1.4	88.3	162	408	39.3
Yearly				13,500		0.4	32.6	23,615.0	16,066	40,444	3,109.2

† And other days ø Mean daily * Partly estimated
⇑ Discharge measurement made on this day

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the right bank at latitude 29° 31' 05", longitude 104° 17' 40", and river mile 941.2; immediately downstream from Alamito Creek, 9.8 river miles downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, and 307.0 river miles downstream from the American Dam at El Paso, Texas. An auxiliary gage well and water-stage recorder, 0.3 river mile downstream from the bubbler gage, are used during periods of high flow and when flows from Alamito Creek affect the gage height record. The cableway is located 200 feet upstream from the auxiliary gage. The zero of the gage at both recorders is 2,527.99 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 125 discharge measurements during the year, 115 by the United States Section and 10 by the Mexican Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1955 through 1966 at this location. Period records shown in the summary below include monthly volumes for the period 1948 through 1954 at this location, which are based on discharge records at Alamito Creek Station and at a station on the Rio Grande 11.4 river miles upstream from the Alamito Creek confluence, and estimated irrigation diversions and arroyo inflow between the two river stations. Records are also available from 1896 through June 13, 1932 for a station located about 12.1 river miles downstream from the Río Conchos and 1.3 miles upstream from Alamito Creek; and from June 14, 1932 through 1954 for a station about 2.0 river miles downstream from the Río Conchos and 11.4 river miles upstream from Alamito Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The main gage was moved to its present location on October 20, 1965.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 54,300 second-feet on October 1, 1958 with a gage height of 20.37 feet. Min. 0.2 second-foot several days in July 1955, and on June 30, 1958.

Average Flow in Second-Feet ‡

Daily:	Max.	52,200	Oct. 1, 1958	Min.	0.2	Several days July 1955; June 30, 1958
Monthly:	Max.	17,100	Oct. 1958	Min.	3.6	May 1955
Yearly:	Max.	2,590	1958	Min.	283	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	454	↑ 321	↑ 355	↑ 139	68.2	199	↑ 3,070	↑ 339	↑ 16,900	1,440	↑ 792	↑ 579
2	410	323	344	134	↑ 82.1	185	2,250	192	↑ 16,700	1,300	766	550
3	↑ 398	340	344	115	102	↑ 186	1,540	466	↑ 12,300	↑ 1,110	657	512
4	393	↑ 312	↑ 334	↑ 107	117	176	1,360	↑ 1,690	11,600	1,230	↑ 665	618
5	386	385	300	89.0	↑ 138	178	↑ 888	409	12,000	1,790	650	↑ 526
6	362	359	289	73.1	199	↑ 149	700	249	↑ 13,000	↑ 2,040	732	498
7	↑ 386	328	↑ 302	↑ 61.5	176	123	595	334	↑ 13,300	2,030	↑ 744	494
8	367	↑ 355	281	54.6	158	100	↑ 671	↑ 662	12,400	5,740	824	↑ 459
9	357	↑ 342	269	52.8	↑ 151	↑ 95.5	1,150	499	↑ 11,700	2,970	796	456
10	↑ 384	372	↑ 263	55.9	140	229	1,080	421	12,400	↑ 1,590	↑ 648	481
11	390	↑ 303	229	↑ 49.7	122	608	2,180	↑ 703	14,500	1,310	685	508
12	408	393	223	33.0	↑ 121	1,180	↑ 1,270	577	↑ 13,300	1,150	702	↑ 535
13	↑ 378	357	↑ 217	↑ 18.2	147	↑ 528	636	452	12,000	↑ 1,760	679	507
14	353	↑ 345	220	↑ 22.4	142	140	485	501	↑ 14,700	1,900	↑ 621	516
15	↑ 396	301	↑ 199	34.6	119	99.7	↑ 293	↑ 885	14,100	1,660	656	495
16	456	316	169	48.9	↑ 112	↑ 80.6	263	4,560	↑ 11,300	1,250	753	↑ 468
17	↑ 410	↑ 373	↑ 139	86.8	101	106	203	3,180	11,800	↑ 1,160	↑ 645	474
18	396	367	124	↑ 303	101	183	↑ 194	↑ 991	9,480	1,330	688	504
19	378	355	123	228	↑ 88.2	207	186	1,910	↑ 8,840	1,010	702	535
20	↑ 370	323	136	153	643	↑ 195	153	1,850	6,770	↑ 923	658	↑ 542
21	402	↑ 313	↑ 147	↑ 122	161	3,020	↑ 149	2,480	5,540	968	↑ 663	567
22	380	348	142	129	110	935	162	↑ 4,900	↑ 4,690	896	653	496
23	369	338	141	118	↑ 134	↑ 3,540	130	6,560	3,720	891	684	453
24	↑ 364	↑ 348	↑ 151	119	97.2	1,260	130	↑ 8,170	2,930	↑ 883	572	448
25	354	328	154	↑ 101	228	619	↑ 117	↑ 8,200	2,410	910	↑ 599	471
26	334	334	136	88.0	2,350 ↑	830	123	↑ 9,060	↑ 2,110	874	651	517
27	↑ 329	413	155	80.4	522	↑ 3,140	209	↑ 8,250	2,110	↑ 777	576	↑ 574
28	359	391	↑ 171	↑ 72.0	645	5,450	↑ 428	8,510	1,680	765	↑ 601	535
29	336		187	71.7	449	↑ 2,160	↑ 287	↑ 9,600	↑ 1,480	715	617	512
30	340		145	63.7	295	↑ 2,550	295	↑ 12,400	1,790	727	718	↑ 461
31	349		148		↑ 244		589	↑ 17,100		754		427
Sum	11,748	9,683	6,537	2,824.3	8,262.7	28,451.8	21,786	116,100	277,550	43,855	20,397	15,718

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period **1948-1966 Acre-Feet Average	Maximum	Minimum
Jan.	9.20	8.86	16	501	28	309	379	23,302	31,835	66,200	11,700
Feb.	9.21	8.74	27	508	11	259	346	19,206	31,148	75,700	10,700
Mar.	9.02	8.34	1	391	30	117	211	12,966	24,173	52,600	4,690
Apr.	9.12	7.63	18	470	13	13.4	94.1	5,602	9,274	22,400	309
May	11.86	8.06	26	4,190	1	60.3	267	16,389	14,911	31,800	219
June	13.00	8.16	28	6,280	16	67.8	948	56,434	28,529	68,907	2,600
July	12.37	8.19	11	4,900	25	104	703	43,213	60,786	236,000	4,680
Aug.	17.67	8.35	31	17,500	3	129	3,750	230,284	82,015	230,284	11,900
Sept.	17.48	9.90	2	18,600	30	1,380	9,250	550,520	122,754	582,000	11,900
Oct.	12.79	9.50	7	7,490	30	690	1,410	86,986	105,287	1,051,000	6,090
Nov.	9.79	9.37	8	934	24	530	680	40,457	37,731	111,100	9,550
Dec.	9.52	9.17	4	665	30	413	507	31,177	31,393	70,700	9,980
Yearly	17.67	7.63		18,600		13.4	1,540	1,116,536	579,836	1,876,260	120,283

↑ Discharge measurement made on this day

‡ Period 1955-1966

** See explanation in RECORDS above

TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29° 12' 00", longitude 103° 36' 15", 2.7 creek miles from the confluence with the Rio Grande, and about 8.5 miles south of Terlingua, Brewster County, Texas. This creek enters the Rio Grande at river mile 876.6, the lower end of Santa Helena Canyon, and 371.6 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,200.64 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 92 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1966.

REMARKS: Irrigation diversions modify the flow of this spring-fed creek at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 34,900 second-feet on May 24, 1935 with a gage height of 17.59 feet on a gage 0.3 mile downstream. Min. no flow on September 29-30, 1937.

Average Flow in Second-Feet

Daily:	Max.	17,200	June 1, 1937	Min.	0	September 29-30, 1937
Monthly:	Max.	921	June 1937	Min.	0.8	October 1934
Yearly:	Max.	146	1937	Min.	5.5	1943

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.8	↑ 1.7	↑ 1.4	↑ 1.6	1.2	1.2	↑ 1.8	↑ 2.6	118	4.1	↑ 4.1	↑ 3.8
2	1.8	1.7	1.4	1.5	↑ 1.2	1.1	1.8	1.1	↑ 13.0	4.0	4.0	3.7
3	↑ 1.8	1.8	1.4	1.4	1.2	↑ 1.0	1.8	845	11.7	↑ 4.0	4.0	3.6
4	1.8	↑ 1.8	↑ 1.4	1.3	1.2	1.0	1.8	↑ 646	32.8	14.0	4.0	3.4
5	1.8	1.8	1.4	↑ 1.2	↑ 1.2	1.0	↑ 1.8	9.6	112	2,620	3.9	3.3
6	↑ 1.8	1.8	1.4	1.2	1.2	1.0	1.7	1.7	134	2,400	3.8	↑ 3.2
7	1.8	1.7	1.5	1.2	1.2	↑ 67.5	1.7	1.7	↑ 128	311	↑ 3.8	3.2
8	1.8	↑ 1.7	↑ 1.5	↑ 1.2	1.2	5.6	↑ 11.8	↑ 1.7	79.4	2,720	3.8	3.3
9	1.8	1.6	1.5	1.2	↑ 1.2	1,740	5.8	1.6	700	404	3.8	3.3
10	1.8	↑ 1.5	1.5	1.2	1.1	↑2,860	151	1.4	74.2	↑ 95.9	3.8	3.3
11	↑ 1.8	1.5	↑ 1.5	1.2	.9	2,020	↑ 235	↑1,470	4.5	24.4	3.7	3.4
12	1.8	1.5	1.5	↑ 1.2	↑ .8	1,890	59.6	2,570	4.5	12.7	3.7	↑ 3.4
13	1.8	1.6	1.5	1.2	.8	↑ 303	16.8	268	4.5	8.0	3.7	3.3
14	↑ 1.8	1.6	1.5	1.2	.8	28.1	↑ 3.8	542	4.5	7.4	↑ 3.7	3.2
15	1.8	↑ 1.6	↑ 1.5	↑ 1.2	.8	↑ 6.6	3.3	1,750	↑1,370	6.2	3.7	3.1
16	1.8	1.6	1.5	1.2	↑ .8	3.9	2.9	↑1,290	1,040	5.6	3.7	3.1
17	1.8	1.7	1.5	1.2	1.0	↑ 2.3	2.4	164	381	↑ 3.7	3.7	3.0
18	↑ 1.8	↑ 1.7	↑ 1.5	↑ 1.2	1.0	2.1	2.0	1,450	62.6	3.6	3.6	2.9
19	1.8	1.6	1.5	1.2	1.0	1.9	↑ 1.5	175	17.2	3.5	3.6	↑ 2.8
20	1.8	1.6	1.4	1.2	↑1,490	↑ 1.7	1.6	↑ 29.3	↑ 13.6	3.5	3.6	2.8
21	↑ 1.8	↑ 1.5	1.4	↑ 1.2	128	1,580	1.6	29.2	12.1	3.4	↑ 3.6	2.8
22	1.8	1.5	↑ 1.4	1.2	16.8	↑1,520	↑ 1.7	42.7	10.6	3.3	3.6	2.8
23	1.8	1.5	1.4	1.2	↑ 3.8	55.9	1.7	↑ 291	9.0	3.2	3.6	2.9
24	1.7	↑ 1.5	1.4	1.2	1.8	↑ 11.2	1.6	1,130	7.5	3.1	3.6	2.9
25	↑ 1.7	1.5	↑ 1.4	↑ 1.2	1.8	302	1.6	3,000	6.0	↑ 3.0	3.5	2.9
26	1.7	1.5	1.4	1.2	↑ 1.8	312	↑ 1.6	↑1,010	↑ 4.5	3.2	3.5	↑ 2.9
27	1.8	1.4	1.4	1.1	1.8	2.9	1.6	87.8	4.4	3.3	3.5	2.9
28	↑ 1.8	1.4	1.4	↑ 1.1	55.5	↑ 2.9	16.8	22.1	4.4	3.5	↑ 3.5	2.9
29	1.8		↑ 1.4	1.1	11.6	2.5	↑ 1.6	62.0	4.3	3.6	3.6	3.0
30	1.8		1.4	1.2	3.4	2.2	86.6	↑ 45.7	4.2	3.8	3.7	3.0
31	1.7		11.3		↑ 1.3		39.7	7.1		4.0		3.0
Sum	55.4	44.9	54.6	36.7	1,737.4	12,730.6	666.0	16,948.3	4,372.5	8,693.0	111.4	97.1

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High ø	Low Day	Low ø	Average Second-Feet	Total Acre-Feet	Period 1932-1966: Acre-Feet Average	Maximum	Minimum
Jan.			↑ 1	ø 1.8	↑ 24	1.7	1.8	110	194	875	82.7
Feb.			↑ 3	ø 1.8	↑ 27	1.4	1.6	89.1	261	4,400	73.4
Mar.	4.01		31	20.1	↑ 1	1.4	1.8	108	235	2,410	72.4
Apr.	3.82		1	5.8	↑ 27	1.1	1.2	72.8	1,042	15,500	55.1
May	8.22		20	7,580	↑ 12	.8	56.0	3,446	4,128	26,000	81.3
June	11.91		11	29,400	↑ 3	1.0	424	25,251	6,886	54,800	59.5
July	5.21		11	1,970	19	1.5	21.5	1,321	8,557	28,700	518
Aug.	11.48		11	26,500	2	1.1	547	33,617	5,341	33,617	123
Sept.	9.93		15	17,500	30	4.2	146	8,673	7,036	42,200	123
Oct.	7.51		5	7,520	25	3.0	280	17,243	2,879	17,243	50.8
Nov.			1	ø 4.1	↑ 25	3.5	3.7	221	293	2,980	64.9
Dec.			1	ø 3.8	↑ 19	2.8	3.1	193	297	3,080	90.0
Yearly				29,400		0.8	125	90,344.9	37,149	105,807	3,958

↑ And other days ø Mean daily ↑ Discharge measurement made on this day

RIO GRANDE AT JOHNSON RANCH NEAR CASTOLON, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29° 02' 05", longitude 103° 23' 30", and river mile 855.3; two miles west-northwest of old Johnson Ranch headquarters, 5.5 river miles upstream from Smoky Creek, 13.0 river miles upstream from Chisos Crossing and the Chihuahua-Coahuila state line, 14.0 river miles downstream from Castolon, Brewster County, Texas and Santa Helena Ranch, Chihuahua, and 392.9 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,045.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 90 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 61,900 second-feet on September 27, 1958 with a gage height of 24.70 feet. A flow estimated at 97,000 second-feet with a stage of 24.6 feet occurred at this station site on October 3, 1932. Min. no flow several days in 1953, 1955, 1957, and 1958.

Average Flow in Second-Feet

Daily:	Max.	56,900	Sept. 10, 1942	Min.	0	Several days 1953, 1955, 1957 & 1958
Monthly:	Max.	23,600	Sept. 1942	Min.	0	May 1953
Yearly:	Max.	4,780	1942	Min.	167	1953

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	460	↑ 359	↑ 404	↑ 139	45.7	260	↑2,250	↑ 241	14,700	1,970	↑ 878	↑ 719
2	450	354	374	115	↑ 41.6	208	3,000	360	17,000	1,630	882	634
3	↑ 436	338	342	107	40.6	↑ 171	1,850	256	17,400	↑ 1,460	900	578
4	414	↑ 338	↑ 333	96.9	47.6	156	1,380	↑ 2,580	15,300	1,590	801	558
5	406	345	336	↑ 88.8	↑ 61.2	159	↑1,200	1,200	13,800	7,720	770	615
6	↑ 395	352	318	87.1	74.1	405	794	488	13,800	4,850	741	↑ 604
7	397	380	300	76.4	86.1	↑ 264	789	330	14,400	2,480	↑ 776	574
8	367	↑ 364	↑ 295	↑ 70.4	132	128	↑ 787	↑ 317	14,400	9,320	783	562
9	390	342	286	61.4	↑ 147	107	557	486	14,100	5,610	818	531
10	359	↑ 332	262	50.7	144	↑2,880	1,230	400	13,000	↑ 2,680	875	498
11	↑ 357	332	↑ 258	49.6	130	824	↑1,690	↑ 448	12,900	1,970	746	506
12	376	335	241	↑ 42.1	↑ 113	6,060	1,900	5,160	14,000	1,740	740	↑ 515
13	381	315	206	39.4	246	↑1,170	1,120	1,240	13,500	1,480	754	525
14	↑ 401	366	194	39.0	214	560	↑ 722	1,970	12,900	1,910	↑ 740	525
15	355	↑ 357	↑ 195	↑ 32.8	110	↑ 308	490	1,060	↑ 14,100	1,930	690	511
16	343	325	191	32.1	↑ 107	159	379	↑ 3,870	17,500	1,790	670	532
17	405	315	189	41.0	103	↑ 107	275	3,800	12,700	↑ 1,480	746	495
18	↑ 391	↑ 339	↑ 174	↑ 55.2	92.0	93.8	236	4,300	11,900	1,320	683	500
19	386	364	160	32.8	↑ 76.0	220	↑ 191	↑ 2,080	9,580	1,540	695	↑ 521
20	382	371	141	67.7	↑ 982	↑ 136	166	1,720	↑ 8,360	1,220	738	537
21	↑ 386	↑ 334	138	↑ 123	558	1,990	148	2,220	6,150	1,120	↑ 694	555
22	387	320	↑ 137	99.3	352	↑3,160	↑ 122	3,080	5,020	1,150	669	571
23	389	314	126	74.7	↑ 147	1,030	108	↑ 5,900	4,220	1,080	663	550
24	367	↑ 361	117	75.4	84.0	↑2,720	107	7,090	3,530	1,010	719	497
25	↑ 359	331	↑ 113	↑ 72.8	227	1,070	98.2	9,700	2,990	1,040	657	477
26	351	346	122	76.5	↑ 571	1,020	↑ 85.4	↑10,600	↑ 2,640	↑ 1,030	633	↑ 477
27	343	314	123	80.3	1,470 ↑	565	98.5	8,740	2,460	1,050	669	524
28	↑ 339	333	125	↑ 72.6	809	↑3,520	86.2	7,950	2,330	930	↑ 633	566
29	331		↑ 131	58.0	559	4,070	↑ 302	7,900	1,890	901	628	544
30	351		144	53.2	619	2,190	519	↑ 8,970	1,670	866	604	539
31	337		167		↑ 379		237	11,100		845		506
Sum	11,791	9,576	6,642	2,110.2	8,767.9	35,710.8	22,917.3	115,556	308,240	66,712	21,995	16,846

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1948-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	2.45	2.10	1	487	31	320	380	23,387	31,716	65,200	11,300
Feb.	2.30	2.07	14	390	13	295	342	18,994	31,596	71,400	9,460
Mar.	2.33	1.48	1	414	25	108	214	13,174	24,773	52,300	4,440
Apr.	1.67	.89	20	160	20	26.3	70.3	4,186	10,940	23,900	457
May	5.32	1.03	20	3,840	3	38.3	283	17,391	20,658	56,000	0
June	13.20	1.37	12	18,300	18	73.0	1,190	70,832	36,495	76,980	3,270
July	5.48	1.24	2	3,380	28	77.4	739	45,456	72,569	300,000	5,930
Aug.	13.15	1.60	26	13,500	1	161	3,730	229,205	90,606	229,205	12,300
Sept.	16.68	3.76	16	20,200	30	1,630	10,300	611,394	135,849	611,394	9,350
Oct.	12.80	2.78	5	13,800	31	832	2,150	132,323	117,833	1,157,000	4,940
Nov.	3.03	2.48	10	948	30	587	733	43,627	39,122	132,000	8,600
Dec.	2.76	2.27	1	758	25	472	543	33,414	32,507	70,800	9,510
Yearly	16.68	0.89		20,200		26.3	1,720	1,243,383	644,664	2,059,290	120,747

↑ Discharge measurement made on this day

RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS
(ABOVE MAIN STEM HEAD OF AMISTAD RESERVOIR)

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 29° 46' 50", longitude 101° 45' 20", and river mile 651.0; 500 feet downstream from the Terrell-Val Verde County Line, 16.9 river miles upstream from Langtry, Texas, and 597.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 1,154.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 112 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1961 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Construction of a concrete channel control weir at this site began on December 15, 1966, at which time the gage was temporarily relocated 1,500 feet downstream.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	662	528	515	368	288	569	3,070	↑ 327	↑ 10,100	2,280	1,160	↑ 825
2	670	518	520	341	288	643	2,360	329	↑ 10,700	2,100	1,090	841
3	↑ 666	↑ 514	↑ 499	336	283	↑ 545	2,220	1,350	↑ 13,000	↑ 2,200	↑ 1,070	835
4	631	515	546	↑ 342	277	475	2,780	↑ 1,620	↑ 15,600	2,400	1,080	918
5	640	532	544	338	↑ 275	418	↑ 1,920	6,010	↑ 16,900	2,930	1,080	↑ 853
6	↑ 624	522	520	321	265	↑ 379	1,770	2,220	↑ 14,300	↑ 9,930	1,070	817
7	614	522	↑ 503	↑ 317	250	368	1,510	1,720	↑ 13,200	13,000 ↑	↑ 1,010	801
8	605	↑ 528	515	317	241	362	↑ 2,720	1,060	↑ 12,700	6,740	987	↑ 823
9	591	548	528	307	↑ 231	↑ 1,100	2,900	↑ 758	↑ 16,800	5,840	966	819
10	↑ 581	↑ 583	535	297	230	3,940	3,020	597	↑ 17,900	10,200 ↑	↑ 974	784
11	583	579	↑ 532	↑ 294	249	3,780	↑ 1,740	↑ 512	↑ 14,100	5,060	981	767
12	591	557	514	283	267	6,680	1,230	708	↑ 11,900	3,100	1,040	↑ 764
13	605	542	477	272	↑ 301	↑ 5,020	2,020	3,170	12,100	↑ 2,500	1,050	739
14	↑ 602	↑ 526	↑ 445	259	311	↑ 5,570	1,950	3,820	13,100	2,280	↑ 984	732
15	583	545	439	↑ 251	309	1,850	↑ 1,290	↑ 3,400	↑ 12,900	2,050	965	↑ 725
16	576	531	438	246	↑ 658	1,210	1,200	2,880	12,600	2,200	960	749
17	576	↑ 566	↑ 420	252	758	↑ 835	856	3,010	13,800	↑ 2,260	↑ 948	728
18	563	574	395	↑ 259	482	737	↑ 675	↑ 4,470	16,500	2,120	916	734
19	540	566	392	248	↑ 366	516	591	4,960	↑ 12,300	1,840	907	↑ 748
20	↑ 561	530	381	247	317	↑ 637	540	4,270	10,500	↑ 1,680	932	733
21	604	↑ 527	↑ 370	↑ 246	671	427	↑ 496	2,390	9,270	1,790	↑ 909	736
22	578	555	367	243	786	972	451	↑ 1,860	↑ 7,530	1,650	908	↑ 738
23	575	566	353	243	↑ 855	3,160	405	2,690	6,230	1,490	934	735
24	↑ 567	561	↑ 344	851	1,030	2,830	377	3,830	5,410	↑ 1,450	912	741
25	558	↑ 540	331	10,700 ↑	576	1,510	↑ 349	6,650	4,560	1,450	↑ 891	756
26	560	523	327	1,960	↑ 464	2,440	334	↑ 7,740	↑ 3,990	1,360	884	770
27	↑ 557	522	333	372	383	↑ 1,440	326	8,980	3,470	↑ 1,340	899	↑ 724
28	553	↑ 521	↑ 409	↑ 307	1,650	1,400	↑ 318	9,500	2,990	1,300	↑ 858	704
29	538		1,870	296	1,290	837	317	↑ 8,170	↑ 2,750	1,320	825	↑ 701
30	540		446	290	1,100	↑ 3,600	397	7,670	2,590	1,270	845	722
31	↑ 531		↑ 383		↑ 743		376	8,060		↑ 1,200		761
Sum	18,225	15,141	15,191	21,403	16,194	54,250	40,508	114,731	319,790	98,330	29,035	23,823

Month	Current Year 1966								Period Sept. 1961-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	1.81	1.54	2	676	31	526	588	36,149	42,731	47,616	36,149
Feb.	1.60	1.47	17	588	27	505	541	30,032	36,956	49,064	30,032
Mar.	5.50	.99	29	4,370	26	324	490	30,131	35,487	42,893	29,975
Apr.	13.47	.72	25	17,700	23	240	713	42,453	31,727	43,337	22,352
May	4.85	.65	24	3,560	10	222	522	32,121	48,594	79,766	28,358
June	9.54	1.00	14	10,600	8	348	1,810	107,605	98,967	164,392	56,111
July	6.43	.94	8	5,550	29	314	1,310	80,348	69,220	104,292	30,268
Aug.	9.74	.94	14	10,600	1	309	3,700	227,569	99,831	227,569	37,698
Sept.	15.18	3.68	9	20,400	30	2,380	10,700	634,303	219,998	634,303	77,100
Oct.	12.98	2.32	7	16,500	31	1,180	3,170	195,038	93,376	195,038	52,702
Nov.	2.33	1.94	5	1,210	29	818	968	57,591	48,354	57,591	41,903
Dec.	2.07	1.74	4	932	29	693	768	47,253	45,628	52,989	38,349
Yearly	15.18	0.65		20,400		222	2,100	1,520,593	870,869	1,520,593	710,413

↑ Discharge measurement made on this day

RIO GRANDE AT LANGTRY, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at Langtry, Texas, latitude 29° 48' 00", longitude 101° 33' 30", and river mile 634.1; 24.1 river miles upstream from Pecos River, 66.6 river miles upstream from Amistad Dam, and 614.1 river miles downstream from American Dam at El Paso, Texas. The cableway is located 1,500 feet downstream from the gage well. The zero of the gage is 1,091.69 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 107 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through October 1914; December 1919 through March 1920; 1924 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: The highest known gage height was 56.9 feet, which occurred June 17, 1922 with a discharge of 204,000 second-feet, estimated by extension of the rating curve. The lowest recorded flow was 208 second-feet, which occurred July 12, 1953.

Average Flow in Second-Feet ‡

Daily:	Max.	70,930	Oct. 5, 1932	Min.	216	June 17 & 18, 1953
Monthly:	Max.	23,700	Sept. 1942	Min.	263	May 1953
Yearly:	Max.	5,320	1942	Min.	450	1953

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	741	612	597	434	360	700	3,720	⇑ 420	⇑ 9,640	2,290	1,180	⇑ 934
2	746	616	619	412	⇑ 363	734	2,360	360	⇑ 10,400	2,100	1,110	922
3	⇑ 738	⇑ 614	⇑ 605	404	352	⇑ 644	2,390	723	⇑ 12,300	⇑ 2,210	⇑ 1,090	917
4	705	600	601	⇑ 400	340	563	2,930	⇑ 2,180	15,000	2,260	1,130	972
5	715	610	602	398	⇑ 328	497	⇑ 2,250	4,970	⇑ 16,800	3,020	1,170	⇑ 937
6	⇑ 702	596	568	387	326	⇑ 454	1,880	2,700	⇑ 14,700	8,460	1,180	902
7	683	593	⇑ 534	⇑ 381	319	429	1,630	1,860	⇑ 13,000	⇑ 13,300	⇑ 1,140	890
8	678	⇑ 591	548	376	313	410	2,620	⇑ 1,220	⇑ 12,100	6,800	1,110	⇑ 915
9	672	606	568	366	⇑ 307	⇑ 1,020	2,960	897	17,900	5,240	1,080	919
10	⇑ 666	⇑ 632	582	355	298	3,710	2,980	707	18,600	⇑ 9,920	⇑ 1,090	881
11	657	645	⇑ 585	⇑ 346	⇑ 304	2,640	⇑ 2,260	⇑ 629	14,400	5,210	1,080	865
12	655	632	572	338	324	7,470	1,080	748	⇑ 12,800	3,410	1,110	⇑ 840
13	672	614	534	328	346	⇑ 4,650	2,100	1,640	12,100	⇑ 2,590	1,140	821
14	⇑ 650	⇑ 602	⇑ 504	316	355	⇑ 6,450	2,240	5,650	⇑ 13,000	2,290	⇑ 1,040	803
15	651	596	498	⇑ 308	355	1,920	⇑ 1,320	⇑ 3,570	12,900	2,040	1,020	⇑ 805
16	645	591	498	304	⇑ 574	⇑ 1,400	1,260	3,060	⇑ 12,400	2,120	1,030	817
17	645	⇑ 585	⇑ 492	391	873	1,010	961	3,320	13,400	⇑ 2,320	⇑ 1,030	808
18	634	603	462	⇑ 342	628	1,050	⇑ 783	⇑ 4,580	16,500	2,180	992	805
19	622	598	448	325	⇑ 461	715	713	4,500	⇑ 13,100	1,890	966	810
20	⇑ 622	574	434	316	382	⇑ 734	641	4,820	10,900	⇑ 1,770	1,000	⇑ 794
21	674	⇑ 574	⇑ 415	⇑ 308	678	595	⇑ 588	3,190	9,360	1,770	⇑ 967	799
22	651	608	416	311	832	545	539	2,320	⇑ 7,910	1,740	974	⇑ 819
23	648	630	401	314	⇑ 971	⇑ 3,380	502	2,350	6,360	1,550	1,000	819
24	⇑ 644	632	389	467	1,180	3,330	472	3,790	5,500	⇑ 1,490	988	820
25	637	⇑ 624	⇑ 380	⇑ 9,930	872	1,730	⇑ 438	⇑ 5,930	4,820	1,480	⇑ 972	820
26	629	602	378	3,350	⇑ 558	2,760	424	7,160	⇑ 4,170	1,420	956	829
27	⇑ 622	597	380	⇑ 533	482	1,670	412	8,570	3,570	⇑ 1,380	971	⇑ 786
28	619	⇑ 599	⇑ 382	406	1,290	1,470	⇑ 394	9,630	3,120	1,360	⇑ 924	781
29	612		1,740	379	1,340	1,090	384	⇑ 8,170	⇑ 2,780	1,360	900	⇑ 782
30	610		576	369	1,280	⇑ 2,990	437	7,600	2,660	1,320	936	800
31	⇑ 608		⇑ 457		⇑ 847		501	7,780		⇑ 1,240		824
Sum	20,453	16,976	16,765	23,594	18,238	56,760	44,119	115,044	322,190	97,530	31,276	26,236

Month	Current Year 1966								Period 1948-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	1.60	1.38	2	746	31	608	660	40,569	49,355	86,600	27,300
Feb.	1.43	1.35	† 11	645	21	562	606	33,672	47,877	95,300	25,000
Mar.	4.50	1.02	29	3,460	27	375	541	33,253	44,352	77,600	23,300
Apr.	13.32	.87	25	16,000	† 15	304	786	46,799	40,105	112,000	16,700
May	3.82	.83	24	3,180	11	292	588	36,175	57,859	192,000	16,200
June	9.10	1.03	12	9,460	8	401	1,890	112,583	88,788	258,000	15,800
July	5.59	.90	8	4,890	29	379	1,420	87,510	100,017	325,000	20,200
Aug.	9.60	.88	28	10,400	2	351	3,710	228,190	114,373	248,000	31,100
Sept.	16.47	3.17	9	21,300	30	2,380	10,700	639,064	172,383	639,064	19,600
Oct.	13.46	1.93	7	15,800	31	1,220	3,150	193,451	159,350	1,335,000	23,200
Nov.	1.93	1.55	† 1	1,210	28	894	1,040	62,036	58,466	184,000	22,600
Dec.	1.67	1.31	4	1,000	17	741	846	52,039	50,393	93,100	24,800
Yearly	16.47	0.83		21,300		292	2,160	1,565,341	983,318	2,363,800	326,100

‡ Period 1931-1966 † And other days ⇑ Discharge measurement made on this day

PECOS RIVER NEAR SHUMLA, TEXAS

DESCRIPTION: Light cableway for measuring from the bank, bubbler gage, and water-stage recorder located on the right bank about 450 feet downstream from the cableway at latitude 29° 49' 20", longitude 101° 24' 35", about 9 miles east of Langtry, Texas, 13.0 river miles upstream from the Pecos High Bridge, and 18.5 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 610.0, 24.1 river miles downstream from Langtry, Texas, and 638.2 river miles downstream from the American Dam at El Paso, Texas. Measurements made from the cable are limited to medium flows. The zero of the gage is 1,159.46 feet above mean sea level, U.S.C. &G.S. datum.

RECORDS: Based on 41 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: October 8, 1954 through 1966. Records are also available for Pecos River near Comstock, 13.0 river miles downstream, from March 17 through December 3, 1898, May 1900 through October 7, 1954; and for Pecos River at Mouth near Comstock, Texas from March 1961 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The flood of June 1954, which had a discharge of 948,000 second-feet at the gaging station near the railroad bridge 13 miles downstream, reached an elevation of 1,281.2 feet above mean sea level at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 51,800 second-feet on September 24, 1964 with a gage height of 25.78 feet. Min. 60.9 second-feet on August 31, 1962 with a gage height of 0.86 foot.

Average Flow in Second-Feet

Daily:	Max.	25,000	Sept. 24, 1964	Min.	62.3	September 1, 1962
Monthly:	Max.	2,990	Sept. 1964	Min.	82.0	August 1964
Yearly:	Max.	540	1957	Min.	148	1963

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	143	⇑ 148	⇑ 132	139	339	147	150	107	190	259	234	213
2	142	147	128	134	319	143	146	106	174	253	229	215
3	136	144	130	135	302	144	141	⇑ 128	166	249	226	214
4	⇑ 133	145	125	130	276	144	136	120	162	⇑ 251	223	216
5	136	147	121	⇑ 127	254	142	⇑ 132	109	226	429	224	218
6	138	147	119	125	244	145	132	106	456	1,180	229	⇑ 218
7	139	150	118	126	233	142	133	105	317	715	232	217
8	140	153	119	127	224	⇑ 136	135	111	308	502	⇑ 232	214
9	141	151	123	127	215	140	218	⇑ 114	5,340	421	231	207
10	143	152	125	123	205	142	252	110	1,890	383	237	203
11	⇑ 144	147	125	123	⇑ 195	141	⇑ 193	108	774	⇑ 357	235	202
12	141	155	128	⇑ 124	201	164	170	125	586	337	233	202
13	151	154	128	122	197	202	158	255	500	326	229	⇑ 199
14	153	147	126	128	192	⇑ 222	152	3,230	444	317	232	201
15	150	⇑ 150	⇑ 126	127	315	359	145	1,560	397	300	⇑ 236	203
16	147	147	123	122	250	552	141	582	384	292	234	207
17	144	143	122	178	⇑ 213	296	136	435	391	284	229	210
18	⇑ 141	141	122	175	202	255	134	354	574	⇑ 282	230	212
19	143	139	120	⇑ 128	194	208	⇑ 130	307	1,050	276	229	214
20	144	136	120	122	182	197	128	270	614	267	227	⇑ 214
21	146	137	117	118	175	⇑ 181	126	239	459	263	223	214
22	147	144	119	117	476	169	123	217	405	264	218	211
23	148	146	117	121	302	164	121	262	370	259	⇑ 216	208
24	149	145	114	266	⇑ 248	166	121	224	347	253	216	203
25	⇑ 152	141	111	5,060	218	194	118	203	325	⇑ 248	217	207
26	152	136	114	⇑ 2,820	193	194	⇑ 115	199	313	248	220	211
27	150	137	118	1,180	181	186	112	208	302	244	217	⇑ 209
28	148	133	124	688	173	⇑ 174	110	199	293	239	216	208
29	149		⇑ 152	445	169	164	108	187	282	238	⇑ 212	202
30	145		155	390	161	156	107	⇑ 182	271	238	212	199
31	144		139		⇑ 155		107	178		237		206
Sum	4,479	4,062	3,860	13,847	7,203	5,769	4,330	10,640	18,310	10,411	6,778	6,477

Month	Current Year 1966: Extreme Gage Feet High	Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1955-1966: Acre-Feet Average	Maximum	Minimum
Jan.	1.43	1.30	13	160	4	130	144	8,884	11,534	16,400	8,341
Feb.	1.37	1.23	12	160	28	128	145	8,057	10,271	14,600	7,202
Mar.	1.44	1.10	29	165	25	109	125	7,656	10,223	14,300	7,430
Apr.	13.28	1.07	25	15,500	22	115	462	27,466	14,944	39,900	7,718
May	2.72	1.37	22	568	31	152	232	14,287	27,868	173,000	5,346
June	3.46	1.24	15	967	8	134	192	11,443	19,897	44,600	5,820
July	2.05	1.11	9	311	†29	107	140	8,589	15,122	38,900	5,309
Aug.	6.98	1.11	14	5,070	7	103	343	21,104	12,257	26,500	5,043
Sept.	10.40	1.44	9	10,100	4	157	610	36,318	35,024	178,156	6,239
Oct.	4.48	1.73	6	1,780	30	233	336	20,650	27,044	101,000	5,607
Nov.	1.75	1.64	10	244	29	209	226	13,444	13,371	21,600	6,222
Dec.	1.73	1.58	5	227	14	196	209	12,847	11,862	16,300	7,418
Yearly	13.28	1.07		15,500		103	263	190,745	209,417	390,670	107,014

† And other days ⇑ Discharge measurement made on this day

PECOS RIVER AT MOUTH NEAR COMSTOCK, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the left bank at latitude 29° 42' 20", longitude 101° 21' 35", 0.4 river mile downstream from Highway 90 bridge, 1.0 river mile from the confluence with the Rio Grande, and about 12 miles west of Comstock, Val Verde County, Texas. This stream enters the Rio Grande at river mile 610.0, 24.1 river miles downstream from Langtry, Texas, and 638.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 1,031.58 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 33 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Discharge for days which contain storm runoff and are affected by backwater from the Rio Grande are not computed. Records available: March 1961 through 1966. Records are also available for Pecos River near Comstock, 4.5 river miles upstream, from March 17 through December 3, 1898 and May 1900 through October 7, 1954; and for Pecos River near Shumla, 17.5 river miles upstream, from October 8, 1954 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The rating curve for this station is affected by backwater from the Rio Grande when the stage at Langtry station exceeds about 2.5 feet. The flood of June 1954, which had a discharge of 948,000 second-feet at the gaging station near the railroad bridge 4.5 miles upstream, reached an elevation of 1,113.9 feet above mean sea level at this station.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	148	♠ 146	♠ 145	143	339	166		115			241	213
2	152	148	144	137	339	161		115			241	213
3	153	149	143	135	♠ 339	155		♠ 114			237	215
4	♠ 152	149	145	133	314	151					235	215
5	152	148	142	♠ 130	287	146					237	217
6	151	150	141	129	269	143					237	♠ 219
7	151	151	139	125	252	142	143				239	216
8	151	♠ 157	♠ 136	126	233	♠ 138	139	121			241	216
9	151	155	138	126	223	137		♠ 118			239	212
10	150	153	140	126	♠ 208	138		118			239	202
11	♠ 150	153	140	124	204			115			239	202
12	149	157	138	♠ 121	200			113			237	202
13	156	155	141	120	200						234	♠ 202
14	168	155	140	123	193						232	205
15	168	153	140	126	250		148				228	205
16	157	153	♠ 139	126	284	687	144				226	206
17	151	153	134	123	♠ 238	♠ 390	137				224	206
18	♠ 148	153	134	229	217	378	131				221	207
19	148	153	133	♠ 146	195	259	♠ 131				219	207
20	149	153	132	131	184	218	132				219	♠ 208
21	149	153	132	127	179	♠ 200	132				216	209
22	152	160	♠ 129	121	350	189	130				214	207
23	152	165	128	120	405		127				♠ 212	209
24	153	♠ 168	124	186	282		127				213	211
25	♠ 153	164	121		241		125				214	212
26	152	159	119		219		♠ 122				214	215
27	149	155	117	1,180	198		120				215	♠ 216
28	146	150	120	690	188	193	120				214	214
29	145		142	446	180	181	119				♠ 213	212
30	146		♠ 165	391	178		116				211	210
31	147		157		♠ 172		116					203
Sum	4,699	4,318	4,238		7,560						6,801	6,506

Month	Current Year 1966								Period #Mar.1961-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				** Average	Maximum	Minimum
Jan.	1.97	1.81	†14	170	28	142	152	9,320	10,590	12,675	9,320
Feb.	1.94	1.82	24	170	1	146	154	8,565	9,081	11,088	7,874
Mar.		1.61	30	ß 165	26	116	137	8,406	9,320	11,419	8,152
Apr.		1.57			14	119			10,580		8,616
May	3.37	1.90	22	551	31	169	244	14,995	13,328		
June		1.75			9	137					7,402
July		1.54			†30	116			7,626		
Aug.		1.52			3	113			5,863		5,792
Sept.											
Oct.									15,649		6,244
Nov.	2.40	2.29	1	243	30	211	227	13,490	12,290	16,080	6,857
Dec.	2.33	2.23	6	219	†10	202	210	12,905	11,424	13,984	8,448
Yearly											

† And other days ß Mean daily # Some months missing
♠ Discharge measurement made on this day ** See explanation in RECORDS above

GOODENOUGH SPRING NEAR COMSTOCK, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the left bank about 100 feet from the spring source at latitude 29° 32' 10", longitude 101° 15' 10", 0.8 mile from the confluence with the Rio Grande, and about 12 miles southwest of Comstock, Val Verde County, Texas. This stream enters the Rio Grande at river mile 583.3, 15.8 river miles upstream from Amistad Dam, and 664.9 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 967.42 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 42 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. From June 23, 1946, when recorder installation became inoperable, to October 12, 1954, discharges were estimated between measurements. Prior to June 23, 1946 records were based on continuous records of gage heights. Records available: 1924 through 1966.

REMARKS: The flow of this spring is very uniform and not modified by diversions or storage. Backwater reaches the station when a discharge of approximately 35,000 second-feet occurs in the Rio Grande at the confluence. A maximum gage height of 43.35 feet was reached by backwater on June 28, 1954.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 3,580 second-feet on September 23, 1964 with a gage height of 13.10 feet. Min. 65.8 second-feet on February 27, 1957.

Average Flow in Second-Feet

Daily:	Max.	651	Oct. 10, 1958	Min.	66.8	March 1, 1957
Monthly:	Max.	421	Oct. 1932	Min.	69.4	Feb. 1957
Yearly:	Max.	266	1933	Min.	83.1	1952

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	96.6	93.3	86.7	92.2	107	⇑ 115	101	98.3	117	189	147	127
2	96.2	⇑ 93.8	⇑ 86.6	91.5	107	115	100	97.5	116	186	147	127
3	95.8	92.1	85.9	91.5	108	116	99.7	⇑ 101	115	185	145	126
4	96.3	92.5	83.1	89.4	⇑ 110	116	97.9	107	115	180	145	126
5	⇑ 96.9	92.8	83.4	89.4	111	116	97.0	108	124	189	144	126
6	96.8	92.2	83.6	⇑ 90.1	112	116	⇑ 97.2	108	128	197	145	126
7	96.7	92.5	83.9	90.1	112	117	97.3	108	125	199	145	⇑ 125
8	96.6	91.9	85.1	90.1	113	⇑ 117	97.4	112	132	190	146	125
9	96.5	⇑ 90.2	⇑ 85.4	90.1	112	116	108	111	* 411	186	⇑ 144	123
10	96.4	88.2	85.9	90.1	112	116	119	⇑ 112	* 440	182	142	120
11	96.3	88.1	85.5	90.1	112	116	119	112	* 415	181	139	120
12	⇑ 96.2	89.1	84.0	89.4	⇑ 112	111	116	115	* 385	181	140	122
13	96.6	90.0	83.6	⇑ 88.7	112	104	⇑ 114	131	359	176	140	121
14	96.0	88.0	84.1	88.7	112	102	113	165	328	170	139	⇑ 122
15	97.4	88.9	83.7	88.7	112	⇑ 101	111	158	298	166	139	122
16	94.7	⇑ 87.9	⇑ 83.2	90.1	111	101	108	150	288	163	⇑ 139	122
17	94.1	87.7	83.4	90.8	112	101	106	147	290	162	138	122
18	94.5	88.4	83.6	91.5	⇑ 112	108	105	143	291	158	139	122
19	⇑ 95.9	87.2	83.8	92.2	112	118	103	142	298	⇑ 156	138	121
20	94.5	87.0	85.0	⇑ 90.8	112	118	⇑ 103	139	272	157	140	122
21	94.1	86.8	* 87.2	90.8	112	116	101	136	264	157	140	⇑ 122
22	93.7	86.5	87.4	91.5	112	⇑ 116	104	135	246	156	140	121
23	93.2	⇑ 86.3	⇑ 84.6	94.4	112	115	102	133	237	156	⇑ 140	118
24	92.8	86.2	84.7	110	126	114	102	132	231	155	137	119
25	91.4	87.1	84.9	118	⇑ 115	110	102	131	221	153	135	122
26	⇑ 89.0	88.0	86.0	120	113	108	103	129	215	⇑ 153	134	122
27	92.5	87.9	86.2	⇑ 117	113	107	⇑ 104	128	206	153	130	122
28	93.1	85.8	87.3	112	114	107	103	126	200	153	130	⇑ 118
29	91.6		99.5	110	116	⇑ 106	102	122	198	151	⇑ 129	118
30	93.2		⇑ 99.6	109	114	106	101	121	194	150	128	119
31	94.7		97.4		115		99.0	118		152		119
Sum	2,940.3	2,496.4	2,674.3	2,878.2	3,485	3,345	3,235.5	3,875.8	7,259	5,242	4,184	3,787

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1930-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.22	1.09	1	98.6	26	89.0	94.8	5,832	7,793	19,620	4,450
Feb.	1.12	1.08	1	95.3	24	85.2	89.2	4,952	6,904	17,030	3,860
Mar.	1.47	1.03	28	117	5	81.4	86.3	5,304	7,463	17,770	4,340
Apr.	2.68	1.14	23	263	† 14	88.0	95.9	5,709	7,266	16,580	4,820
May	4.87	1.40	24	685	† 1	106	112	6,912	7,987	16,840	4,870
June	2.68	1.48	12	263	† 17	99.8	112	6,635	7,965	16,040	4,470
July	1.71	1.50	10	121	5	96.0	104	6,418	8,341	16,460	4,500
Aug.	2.32	1.54	13	196	2	96.5	125	7,688	8,038	15,840	4,840
Sept.		1.71	10	ø * 440	4	113	242	14,398	9,178	25,000	5,120
Oct.	2.60	2.05	5	227	30	149	169	10,398	9,588	25,870	4,820
Nov.	2.06	1.77	1	151	† 27	128	139	8,299	8,492	21,850	4,540
Dec.	1.80	1.62	1	129	† 28	117	122	7,512	8,220	20,470	4,500
Yearly		1.03		685		81.4	124	90,057	97,235	192,840	60,320

† And other days * Partly Estimated ø Mean daily
⇑ Discharge measurement made on this day

DOLAN SPRINGS NEAR LOMA ALTA, TEXAS

DESCRIPTION: Concrete wall with 90° V-notch weir of 14 second-foot capacity, bubbler gage, and water-stage recorder located on the left bank of Snake Creek near its mouth, latitude 29° 53' 40", longitude 100° 59' 00", and about 12 miles west of Loma Alta, Val Verde County, Texas. Snake Creek enters Dolan Creek from the left side, 0.9 creek mile from the confluence with Devils River. Dolan Creek enters Devils River from the left side, 16.8 river miles upstream from Pafford Crossing, and 42.3 river miles from the confluence with the Rio Grande. The elevation of the zero of the gage has not been determined.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: 1966.

REMARKS: The flow of these springs is very uniform during periods of dry weather and is not modified by diversions or storage. All storm flow passing this station is deducted and is not included in the tabulation below. This station was established for purposes of correlating the flow of these springs with precipitation data and the flow of other springs in the area.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.7	2.6	2.5	2.3	7.8	5.9	6.4	5.3	5.3	6.4	7.3	7.0
2	2.7	2.6	2.5	2.3	8.0	5.9	6.4	5.3	5.2	6.3	7.3	7.0
3	2.7	2.6	2.5	2.3	7.8	5.9	6.4	5.2	5.2	6.3	7.3	7.0
4	2.7	2.6	2.5	2.3	7.6	5.9	6.3	5.2	5.2	6.3	7.3	7.0
5	2.7	2.6	2.5	2.3	7.4	5.9	6.3	5.1	6.4	6.3	7.3	7.0
6	2.7	2.6	2.4	2.3	7.4	5.9	6.3	5.0	5.7	6.3	7.3	6.9
7	2.7	2.6	2.4	2.3	7.4	5.9	6.3	5.0	5.2	6.9	7.3	6.9
8	2.7	2.6	2.4	2.3	7.6	5.9	6.3	4.9	5.1	7.4	7.3	6.9
9	2.7	2.6	2.4	2.3	7.4	5.9	6.2	4.9	7.8	7.4	7.3	6.9
10	2.7	2.6	2.4	2.3	7.4	5.9	6.2	4.8	7.8	7.4	7.6	6.9
11	2.7	2.6	2.4	2.3	7.4	5.9	6.2	4.9	6.9	7.4	7.7	6.8
12	2.7	2.5	2.4	2.3	7.3	6.2	6.1	5.2	6.3	7.4	7.7	6.8
13	2.7	2.5	2.5	2.3	7.2	6.5	6.1	5.5	6.3	7.4	7.6	6.6
14	2.7	2.5	2.5	2.2	6.9	6.5	6.1	8.4	6.3	7.7	7.4	6.6
15	2.6	2.5	2.5	2.2	6.9	6.5	6.1	8.7	6.0	7.4	7.3	6.5
16	2.6	2.5	2.5	2.2	6.9	6.5	6.0	7.7	7.0	7.3	7.3	6.5
17	2.6	2.5	2.5	2.2	6.9	6.5	6.0	7.1	8.6	7.4	7.3	6.5
18	2.6	2.5	2.5	2.2	6.5	6.5	6.0	6.5	7.4	7.6	7.2	6.4
19	2.6	2.5	2.5	2.2	6.2	6.5	5.9	6.3	7.2	7.3	7.2	6.4
20	2.6	2.5	2.5	2.2	6.1	6.5	5.9	6.1	7.0	7.2	7.2	6.3
21	2.6	2.5	2.5	2.3	6.1	6.5	5.9	6.0	6.9	7.3	7.2	6.3
22	2.6	2.5	2.5	2.3	6.1	6.5	5.8	5.8	6.8	7.4	7.2	6.2
23	2.6	2.5	2.5	2.3	6.1	6.5	5.8	5.8	6.8	7.4	7.1	6.2
24	2.6	2.5	2.5	2.3	6.1	6.5	5.8	5.6	6.8	7.2	7.1	6.4
25	2.6	2.5	2.4	2.5	5.9	6.5	5.7	5.6	6.8	7.3	7.1	6.5
26	2.6	2.5	2.4	2.4	5.8	6.4	5.7	5.5	6.8	7.3	7.1	6.5
27	2.6	2.5	2.4	2.4	5.8	6.4	5.7	5.5	6.8	7.3	7.1	6.6
28	2.6	2.5	2.4	2.3	5.8	6.4	5.6	5.5	6.5	7.3	7.1	6.5
29	2.6		2.4	5.1	5.8	6.4	5.6	5.5	6.4	7.2	7.0	6.3
30	2.6		2.3	6.9	5.8	6.4	5.5	5.4	6.4	7.2	7.0	6.4
31	2.6		2.3		6.0		5.4	5.3		7.2		6.2
Sum	82.0	71.1	75.9	76.1	209.4	187.6	186.0	178.6	194.9	221.2	218.2	205.0

Month	Current Year 1966								Period		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.			† 1	ø 2.7	†15	ø 2.6	2.6	163			
Feb.			† 1	ø 2.6	†12	ø 2.5	2.5	141			
Mar.			† 1	ø 2.5	†30	ø 2.3	2.4	151			
Apr.		0.95	30	ø 6.9	†14	2.2	2.5	151			
May		1.40	2	ø 8.0	†25	5.8	6.8	415			
June	1.47	1.41	† 12	6.5	† 1	5.9	6.3	372			
July	1.46	1.36	† 1	6.4	31	5.4	6.0	369			
Aug.	4.02	1.30	15	ø 8.7	10	4.8	5.8	354			
Sept.	2.60	1.31	17	ø 8.6	3	4.9	6.5	387			
Oct.	1.57	1.44	14	7.7	6	6.2	7.1	439			
Nov.			† 11	ø 7.7	†29	ø 7.0	7.3	433			
Dec.			† 1	ø 7.0	31	ø 6.2	6.6	407			
Yearly	4.02	0.95		ø 8.7		2.2	5.2	3,782			

† And other days ø Mean daily

DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS
(ABOVE HEAD OF DEVILS BRANCH, AMISTAD RESERVOIR)

DESCRIPTION: Concrete control wall with rectangular notch opening of 440 second-foot capacity, bubbler gage, water-stage recorders (graphic and digital), and binary decimal transmitter located on the left bank at latitude 29° 40' 35", longitude 101° 00' 00", about 11.5 miles east of Comstock, Val Verde County, Texas, and 25.5 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 568.1, 0.6 river mile upstream from Amistad Dam, and 680.1 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 1,131.88 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 46 discharge measurements by wading during the year, a stable rating curve, and a continuous record of gage heights. The rating curve for discharge above the capacity of the notch is estimated. Records available: 1960 through 1966. Records are also available from May 1900 through March 1914 for a station 23.8 river miles downstream; from December 1923 through September 1932 for a station 22.8 river miles downstream; from September 2, 1932 through August 1957 for a station 21.0 river miles downstream; from August 7, 1954 through January 1958 for a station 5.4 river miles upstream; and from August 1954 through 1966 for a station at the mouth 24.7 river miles downstream. A graph of Devils River flow from 1871 through 1939 may be found in Water Bulletin No. 9.

REMARKS: At this station the flow of this spring-fed stream is very uniform during periods of dry weather and is not modified by diversions or storage. The transmitter relays gage height data upon interrogation from the Amistad Dam hydrographic office of the United States Section of this Commission and is also programmed to relay similar data to this same office at predetermined time intervals. Transmission is via radio.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	161	⇑ 141	⇑ 133	130	8,080	⇑ 164	156	129	152	160	⇑ 164	164
2	158	141	137	122	1,820	160	156	⇑ 129	148	160	164	168
3	155	141	137	111	647	160	152	129	145	156	164	164
4	⇑ 155	141	130	107	362	160	152	133	145	⇑ 160	164	164
5	158	137	130	⇑ 111	298	160	148	133	156	244	172	164
6	155	137	130	111	268	160	⇑ 145	129	152	264	172	⇑ 168
7	155	137	130	111	249	⇑ 160	148	175	⇑ 156	238	172	168
8	155	141	⇑ 130	111	238	152	168	141	164	223	⇑ 172	168
9	155	137	130	111	228	152	164	⇑ 137	228	218	168	160
10	155	137	133	107	⇑ 223	152	152	137	249	204	172	160
11	155	141	133	107	223	152	148	188	213	⇑ 204	168	160
12	151	141	130	⇑ 111	223	516	145	233	190	204	168	160
13	151	137	130	111	223	228	141	868	⇑ 200	200	168	⇑ 160
14	161	137	126	107	213	195	141	1,050	190	195	168	160
15	161	⇑ 137	126	103	213	⇑ 182	137	372	182	195	⇑ 168	160
16	155	133	126	103	213	177	137	⇑ 249	204	195	168	160
17	151	133	122	111	⇑ 213	168	137	208	208	190	168	160
18	⇑ 151	133	122	118	200	200	137	195	200	190	168	160
19	151	133	122	⇑ 114	195	182	⇑ 137	177	186	⇑ 190	164	160
20	151	133	122	111	195	172	137	168	⇑ 186	186	168	⇑ 156
21	151	141	122	107	195	⇑ 168	133	168	182	177	168	156
22	148	151	⇑ 118	103	186	168	133	160	177	182	⇑ 168	164
23	148	151	107	111	186	164	129	⇑ 160	177	177	168	164
24	148	148	114	266	⇑ 177	164	129	160	172	172	164	160
25	⇑ 148	144	114	172	182	164	133	156	160	⇑ 172	164	164
26	144	137	118	144	172	160	⇑ 133	156	164	172	164	168
27	144	133	118	⇑ 133	168	160	133	156	⇑ 164	168	164	182
28	141	130	133	126	164	⇑ 156	129	156	164	168	164	⇑ 164
29	141		144	12,200	186	156	129	156	164	168	⇑ 164	160
30	141		141	3,960	186	156	129	⇑ 152	164	168	164	160
31	141		137		168		129	152		164		160
Sum	4,695	3,883	3,945	19,550	16,494	5,368	4,377	6,812	5,342	5,864	5,012	5,046

Month	Current Year 1966								Period 1960-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				Average	Maximum	Minimum
			Day		Day						
Jan.	1.46	1.39	† 1	161	†29	137	151	9,313	12,122	16,072	9,313
Feb.	1.45	1.34	†23	158	27	118	139	7,702	10,093	13,464	7,702
Mar.	1.47	1.28	28	165	†22	96.7	127	7,825	9,534	13,700	5,995
Apr.	10.10	1.29	29	85,200	22	99.9	652	38,777	13,049	38,777	6,592
May	5.50	1.49	1	17,900	†27	164	532	32,716	12,537	32,716	4,884
June	3.03	1.41	12	2,640	8	133	179	10,647	20,944	54,328	4,575
July	1.52	1.39	8	177	23	126	141	8,682	11,847	24,000	4,122
Aug.	3.51	1.39	13	4,940	2	126	220	13,512	11,396	17,400	3,955
Sept.	1.97	1.43	10	386	† 3	141	178	10,596	48,279	273,004	6,978
Oct.	1.73	1.47	5	277	† 3	156	189	11,631	16,167	31,772	7,153
Nov.	1.52	1.47	1	177	1	156	167	9,941	12,110	20,494	6,150
Dec.	1.54	1.45	27	186	9	148	163	10,009	11,227	18,056	6,176
Yearly	10.10	1.28		85,200		96.7	237	171,351	189,305	393,573	95,287

† And other days ⇑ Discharge measurement made on this day

DEVILS RIVER AT MOUTH NEAR DEL RIO, TEXAS

DESCRIPTION: Rock and concrete control wall with a rectangular notch opening of about 600 second-foot capacity, gravity well, and water-stage recorder located on the right bank at latitude 29° 28' 15", longitude 101° 03' 25", 0.8 mile from the confluence with the Rio Grande, 3.7 river miles downstream from U. S. Highway 90 bridge, and about 12 miles northwest of Del Rio, Texas. This stream enters the Rio Grande at river mile 568.1, 0.6 river mile upstream from Amistad Dam, and 680.1 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 911.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 45 discharge measurements by wading during the year, a continuous record of gage heights, and a stable rating curve for discharges up to about 600 second-feet; above this discharge, and when affected by backwater from the Rio Grande, records are based on discharges at a station 3.7 miles upstream. Records available: August 1954 through 1966. For additional records see "Devils River at Pafford Crossing near Comstock, Texas" on preceding page.

REMARKS: The monthly flow of this spring-fed stream is not modified. Prior to December 20, 1965, the daily flow was modified by two power dams with a combined hydroelectric generating capacity of 3,100 kva, the operation of which began in 1929. These dams stopped operating December 20, 1965 incident to the construction of Amistad Dam. The rating curve for this station is affected by backwater from the Rio Grande when the stage at "Below Amistad Dam" station exceeds about 8 feet. The flood of June 1954, affected by backwater, reached an elevation of 969.00 feet at the steam electric plant approximately 2,000 feet upstream from this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 122,000 second-feet on September 21, 1964 with a gage height of 25.00 feet. Min. 51.9 second-feet on February 7, 1957 with a gage height of 0.70 foot. Extreme flow data for Devils River prior to 1955 may be found in previous water bulletins.

Average Flow in Second-Feet

Daily:	Max.	58,000	Sept. 21, 1964	Min.	82.6	Oct. 6, 1956
Monthly:	Max.	7,490	Sept. 1964	Min.	158	July 1956 & Jan. 1957
Yearly:	Max.	992	1957	Min.	201	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	313	284	259	260	12,500	344	↑ 340	315	343	341	393	↑ 341
2	311	268	258	231	3,380	↑ 337	333	320	343	359	358	352
3	↑ 280	↑ 276	↑ 271	254	962	333	333	359	338	364	↑ 381	361
4	304	271	250	221	653	335	329	↑ 342	340	365	376	359
5	304	271	231	227	549	337	331	335	404	451	382	368
6	302	275	249	227	499	343	331	350	373	469	380	370
7	303	282	246	↑ 230	469	342	↑ 333	352	384	460	375	365
8	301	283	253	232	444	338	340	530	377	444	370	↑ 353
9	301	287	266	235	437	↑ 340	339	343	627	430	369	356
10	302	↑ 269	↑ 271	229	423	337	335	323	556	418	↑ 361	329
11	296	269	266	222	416	331	329	↑ 322	504	410	358	337
12	300	301	268	232	423	1,190	329	369	425	404	357	350
13	327	275	254	219	423	510	325	484	423	↑ 399	360	350
14	↑ 315	272	246	↑ 229	413	410	↑ 322	1,180	413	402	359	352
15	305	261	245	202	416	377	323	773	393	365	352	354
16	306	281	244	221	416	↑ 364	323	450	383	370	345	↑ 354
17	293	↑ 249	↑ 245	263	413	362	321	411	407	376	↑ 342	341
18	293	264	250	264	416	449	321	↑ 387	413	382	352	352
19	303	264	246	233	↑ 379	408	319	374	386	372	364	352
20	↑ 297	261	248	240	384	383	319	367	385	↑ 367	368	349
21	309	290	244	↑ 210	379	374	↑ 317	351	376	369	368	354
22	288	310	249	220	377	427	316	345	374	381	370	↑ 351
23	281	293	257	562	375	↑ 374	315	348	375	373	↑ 374	360
24	287	↑ 274	210	2,770	454	363	317	351	376	380	368	318
25	293	271	↑ 235	1,990	389	357	316	342	369	372	365	346
26	285	277	245	487	↑ 361	356	309	345	378	380	368	352
27	↑ 281	270	251	386	357	349	308	335	380	↑ 382	363	351
28	303	266	265	↑ 353	355	346	↑ 307	335	380	374	344	344
29	261		280	16,600	390	345	309	335	377	374	347	328
30	267		261	2,440	375	341	311	335	↑ 398	375	351	↑ 334
31	275		↑ 257		358		313	335		379		337
Sum	9,186	7,714	7,820	30,689	28,585	11,802	10,013	12,443	12,000	12,087	10,920	10,820

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1955-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	2.39	1.88	28	416	29	243	296	18,220	23,756	39,200	9,700
Feb.	2.74	1.82	26	557	17	226	276	15,301	21,079	38,000	8,950
Mar.	2.25	1.58	23	370	24	167	252	15,510	20,388	34,500	10,400
Apr.	17.90	1.71	29	73,200	14	189	1,020	60,872	24,177	60,872	12,600
May	9.39	1.97	1	21,900	31	346	922	56,698	52,001	347,000	11,500
June	4.46	1.89	12	2,830	4	320	393	23,409	47,655	127,000	10,100
July	1.98	1.87	6	347	28	307	323	19,861	24,613	48,100	9,710
Aug.			14	§ 1,180	11	302	401	24,681	22,709	32,100	9,760
Sept.			9	§ 627	3	§ 338	400	23,802	69,732	445,849	9,650
Oct.		1.82	6	§ 469	1	312	390	23,975	39,938	92,500	13,569
Nov.	2.26	1.91	1	459	17	335	364	21,660	25,675	41,900	10,100
Dec.	2.26	1.86	23	419	24	287	349	21,461	24,557	40,800	9,980
Yearly				73,200		167	450	325,450	396,280	718,350	145,600

↑ Discharge measurement made on this day § Mean daily

RIO GRANDE BELOW AMISTAD DAM, NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 29° 25' 25", longitude 101° 02' 20", and river mile 565.2; 2.3 river miles downstream from Amistad Dam, 2.9 river miles downstream from Devils River, 10.5 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 683.0 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 893.79 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 105 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1954 through 1966. Records from 1959 through 1962 were published under the title "Rio Grande below Amistad Dam Site" and prior to 1959 under the title "Rio Grande below Diablo Dam Site." Records are also available from May 1900 through April 1915 for a station 1.9 miles upstream; from December 1919 through March 1920 for a station 1.6 miles downstream near McKee's Switch; from December 1923 through July 2, 1941 for a station approximately 10.3 miles downstream; and from July 2, 1941 through August 1954, and October 1960 through 1966 for a station at the international highway bridge 10.5 miles downstream.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 172,000 second-feet on September 24, 1964 with a gage height of 29.90 feet. Min. 550 second-feet on July 26, 1956 with a gage height of 1.25 feet. The flood of June 1954 reached a peak gage height of 55.72 feet and a maximum discharge of 1,158,000 second-feet at this station, determined by slope-area computations. This is the greatest rate of discharge recorded at any point on the Rio Grande and is equivalent to a discharge of 133 second-feet per square mile from the 8,718 square mile flood-producing storm area which included the watersheds of the Pecos River below Sheffield, the Devils River, and the Rio Grande beginning above Osman Canyon near Langtry, except that in Mexico it included only 543 square miles of watershed.

Average Flow in Second-Feet

Daily:	Max.	107,000	Sept. 24, 1964	Min.	604	August 3, 1956
Monthly:	Max.	24,200	Oct. 1958	Min.	749	July 1956
Yearly:	Max.	4,890	1958	Min.	1,180	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,480	1,300	1,280	✱1,200	13,400	1,760	4,240	✱1,140	✱9,080	3,630	2,200	✱1,740
2	1,490	1,290	1,260	1,100	✱5,070	1,540	3,600	1,060	✱10,800	3,320	2,140	1,770
3	✱1,500	✱1,280	1,280	1,080	2,360	✱1,520	3,100	1,080	11,500	✱3,120	✱2,130	1,780
4	1,500	1,280	✱1,230	✱1,010	1,760	1,430	3,000	✱1,950	13,500	3,240	2,120	1,810
5	1,500	1,270	1,200	1,000	✱1,570	1,320	✱3,590	2,900	✱16,300	3,950	2,130	✱1,890
6	✱1,500	1,280	1,230	991	1,470	✱1,250	2,840	5,190	✱17,200	5,020	2,140	1,870
7	1,480	✱1,290	✱1,210	✱979	1,390	1,230	2,490	2,830	15,400	✱13,700	✱2,130	1,820
8	1,440	1,290	1,210	974	1,340	1,180	✱2,290	✱2,640	✱13,900	12,600	2,070	✱1,810
9	1,400	1,310	1,250	978	✱1,310	✱1,190	3,240	1,880	26,700	7,150	2,050	1,800
10	✱1,370	✱1,280	✱1,270	972	1,280	1,620	3,500	1,600	26,400	✱8,300	✱2,050	1,730
11	1,390	1,280	1,250	✱967	1,230	4,490	✱3,600	✱1,480	20,400	9,680	2,060	1,690
12	1,400	1,360	1,240	957	✱1,230	8,030	2,620	1,420	15,000	5,620	2,050	✱1,700
13	✱1,450	1,320	1,200	948	1,250	6,980	2,110	2,010	✱13,400	4,330	2,110	1,690
14	1,490	✱1,290	✱1,170	✱939	1,260	✱6,360	✱2,740	6,050	13,500	✱3,760	✱2,110	1,690
15	1,440	1,280	1,170	895	1,280	5,840	2,620	✱7,890	✱14,000	3,430	2,020	✱1,690
16	1,420	1,290	1,160	888	✱1,390	2,940	2,100	5,440	13,400	3,210	2,000	1,690
17	✱1,370	✱1,260	✱1,170	958	1,570	✱2,620	2,020	4,250	13,100	✱3,320	✱2,000	1,680
18	1,360	1,270	1,150	✱1,200	1,880	2,290	✱1,760	✱4,730	14,700	3,340	2,000	1,660
19	1,340	1,290	1,100	1,060	✱1,570	2,210	1,560	5,050	✱16,900	3,200	1,980	✱1,660
20	✱1,310	1,290	1,090	926	1,390	✱1,660	1,420	5,960	13,400	✱2,920	1,980	1,690
21	1,320	✱1,290	✱1,060	847	1,290	1,620	✱1,350	4,740	11,500	2,800	✱2,000	1,700
22	1,350	1,310	1,050	✱834	1,540	1,500	1,260	✱3,420	✱10,400	2,830	1,950	✱1,730
23	1,330	1,320	1,030	1,420	✱1,960	✱1,860	1,220	2,940	8,680	2,730	1,940	1,710
24	✱1,340	1,300	✱956	4,800	3,290	4,020	1,170	3,860	7,400	✱2,570	1,940	1,660
25	1,350	✱1,290	976	✱4,770	2,740	3,670	✱1,150	✱4,880	6,510	2,500	✱1,890	1,700
26	1,340	1,300	975	16,100	✱1,800	2,710	1,100	7,300	✱5,680	2,510	1,860	1,710
27	1,340	1,280	985	4,560	1,470	✱3,220	1,070	8,350	5,100	✱2,410	1,820	✱1,730
28	✱1,350	✱1,270	✱1,010	2,350	1,310	2,390	✱1,040	9,740	4,600	2,360	✱1,800	1,670
29	1,300		1,210	14,300	2,360	2,230	1,030	✱9,820	✱4,130	2,320	1,780	1,590
30	1,300		2,430	4,210	2,300	✱1,880	1,000	8,660	3,940	2,290	1,740	✱1,550
31	✱1,310		1,390		✱2,150		1,020	8,320		✱2,250		1,590
Sum	43,260	36,160	37,192	74,213	67,210	82,560	66,850	138,580	376,520	134,410	60,190	53,200

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1955-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.89	1.70	† 3	1,510	29	1,280	1,400	85,806	102,337	146,000	66,100
Feb.	1.82	1.68	12	1,390	17	1,250	1,290	71,723	92,848	155,000	71,000
Mar.	2.83	1.38	30	2,960	24	937	1,200	73,770	88,175	140,000	66,800
Apr.	16.10	1.24	29	50,400	21	819	2,470	147,201	95,273	208,000	54,100
May	9.45	1.60	1	21,100	†11	1,230	2,170	133,311	167,424	812,000	60,700
June	6.65	1.53	12	11,800	10	1,110	2,750	163,758	176,527	353,000	56,800
July	4.00	1.42	1	5,190	31	996	2,160	132,597	147,526	289,000	46,080
Aug.	6.42	1.43	29	10,900	2	1,010	4,470	274,873	164,608	290,000	67,500
Sept.	14.60	3.30	9	39,600	30	3,820	12,600	746,827	361,300	1,095,435	71,900
Oct.	8.47	2.39	8	17,000	31	2,220	4,340	266,602	307,688	1,487,000	104,808
Nov.	2.41	2.08	1	2,270	30	1,730	2,010	119,387	123,599	281,000	68,200
Dec.	2.14	1.89	5	1,900	30	1,540	1,720	105,522	108,888	166,000	65,200
Yearly	16.10	1.24		50,400		819	3,210	2,321,377	1,936,193	3,537,200	858,900

† And other days ✱ Discharge measurement made on this day

ARROYO DEL BUEY NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 35.3 second-foot capacity, gravity well, and water-stage recorder located on the left bank at latitude 29° 24' 20", longitude 101° 02' 25", 0.2 creek mile from the confluence with the Rio Grande, and about 8.5 miles northwest of Cd. Acuña, Coahuila. This stream enters the Rio Grande from the Mexican side at river mile 564.0, 3.5 river miles downstream from Amistad Dam, 4.1 river miles downstream from Devils River, 9.3 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 684.2 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: November 1961 through 1966.

REMARKS: The flow of this stream is not modified by diversions or storage. Flows exceeding the capacity of the weir are not included in the tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of this stream. Backwater from the Rio Grande will affect the flow of this stream when the flow in the river is approximately 20,000 second-feet.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.2	0.2	0.2	0.2	1.9	1.6	0.8	0.2	0.4	1.1	0.4	0.2
2	.2	.2	.2	.2	1.7	1.6	1.1	.2	.4	1.0	.4	.2
3	.2	.2	.2	.2	1.7	1.6	1.0	.2	.4	1.0	.4	.2
4	.2	.2	.2	.2	1.7	1.6	.8	.2	.4	1.0	.4	.2
5	.2	.2	.2	.2	1.6	1.3	.8	.2	1.1	1.3	.4	.2
6	.2	.2	.2	.2	1.7	1.2	.7	.2	3.2	1.0	.4	.2
7	.2	.2	.2	.2	1.3	1.1	.6	.2	.6	.8	.4	.2
8	.2	.2	.2	.2	1.2	1.0	.5	.2	.4	.6	.4	.2
9	.2	.2	.2	.2	1.1	1.0	.4	.2	.4	.6	.4	.2
10	.2	.2	.2	.2	1.0	.8	.4	.2	.4	.6	.4	.2
11	.2	.2	.2	.2	1.0	.8	.4	.2		.6	.4	.2
12	.2	.2	.2	.2	1.0		.4	.2		.6	.4	.2
13	.2	.2	.2	.2	.8	5.3	.4	.4		.6	.4	.2
14	.2	.2	.2	.2	.8	3.0	.4	.4		.6	.4	.2
15	.2	.2	.2	.2	.7	2.5	.4	.4		.5	.4	.2
16	.2	.2	.2	.2	.7	2.2	.4	.4		.5	.4	.2
17	.2	.2	.2	3.1	.7	2.0	.4	.4	1.8	.5	.4	.2
18	.2	.2	.2	2.1	.7	1.9	.4	.4	12.0	.5	.4	.2
19	.2	.2	.2	1.6	.7	1.9	.4	.4	7.1	.5	.2	.2
20	.2	.2	.2	1.2	.7	1.7	.4	.2	2.1	.5	.2	.2
21	.2	.2	.2	1.0	.4	1.6	.4	.2	2.1	.5	.2	.2
22	.2	.2	.2	.8	.4	1.6	.4	.2	1.8	.4	.2	.2
23	.2	.2	.2	.9	.4	1.6	.2	.2	1.8	.4	.2	.2
24	.2	.2	.2		2.5	1.4	.2	.2	1.8	.4	.2	.2
25	.2	.2	.2			1.1	.2	.2	1.8	.4	.2	.2
26	.2	.2	.2	4.8	3.4	1.1	.2	.2	1.8	.4	.2	.2
27	.2	.2	.2	3.5	2.7	1.1	.2	.2	1.1	.4	.2	.2
28	.2	.2	.2	2.9	2.2	1.0	.2	.2	1.4	.4	.2	.2
29	.2		.4	2.7	2.3	.8	.2	.2	1.4	.4	.2	.2
30	.2		.4	2.2	1.9	.8	.2	.4	1.4	.4	.2	.2
31	.2		.4		1.8		.2	.4		.4		.2
Sum	6.2	5.6	6.8				13.7	8.0		18.9	9.6	6.2

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period #Nov. 1961-1966: Acre-Feet ** Average	Maximum	Minimum
Jan.	0.07	0.03	†19	0.2	† 1	0.2	0.2	12.6	14.4	25.5	6.8
Feb.	.07	.07	† 1	.2	† 1	.2	.2	13.7	10.9	17.3	5.4
Mar.	.10	.07	†28	.4	†11	.2	.2	13.6	12.4	17.8	9.3
Apr.	⊕ 6.56	.07			† 2	.2			37.5		6.3
May		.10	25		†21	.4			64.7		28.1
June		.16	12		†10	.8			46.8		11.1
July	.20	.07	2	1.1	†23	.2	.4	27.6	19.6	31.4	10.9
Aug.	.20	.07	13	1.1	† 1	.2	.3	17.1	13.5		6.8
Sept.		.07			† 1	.4			10.2		6.6
Oct.	.36	.10	5	2.7	†22	.4	.6	38.0	25.5		6.5
Nov.	.10	.07	† 1	.4	†19	.2	.3	19.6	24.6	73.0	6.3
Dec.	.07	.07	† 1	.2	† 1	.2	.2	15.2	16.9	34.7	6.5
Yearly		0.03				0.2			297		216.8

† And other days # Some months missing ** See explanation in REMARKS above
⊕ Backwater from the Rio Grande

ERNESTINA AND MARIS SPRINGS NEAR CD. ACUNA, COAHUILA

In order to determine what effect storage in the projected Amistad Reservoir will have on the flow of various Mexican springs in the vicinity of Amistad Dam, gaging stations were established in November 1961 at Ernestina and Maris Springs. The stations and springs are described as follows:

ERNESTINA SPRING

DESCRIPTION: A 90° V-notch weir of 1.4 second-foot capacity and staff gage located at the spring on the right high bank of Arroyo del Bosy about 100 feet from the right bank of the Rio Grande at latitude 29° 24' 20", longitude 101° 02' 15", and about 8.5 miles northwest of Cd. Acuña, Coahuila. This spring enters the Rio Grande at river mile 564.0, 9.3 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, 3.5 river miles downstream from Amistad Dam, 4.1 river miles downstream from Devils River, and 684.2 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on weekly staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. The flow of this spring is small and very uniform except during periods of very heavy rainfall at which time the capacity of the weir may be exceeded. The daily flow throughout the year ranged from 0.014 to 0.065 second-foot, or 6 to 38 gallons per minute, and the monthly average ranged from 0.024 to 0.046 second-foot, or 11 to 21 gallons per minute. The total volume for the year amounted to 22.8 acre-feet. Waters from this spring have a high sulphur content. Records available: November 7, 1961 through 1966.

MARIS SPRING

DESCRIPTION: Cipolletti weir of 11.1 second-foot capacity and staff gage located at the spring about 100 feet from the right bank of the Rio Grande at latitude 29° 24' 00", longitude 101° 01' 55", and about 8 miles northwest of Cd. Acuña, Coahuila. This spring enters the Rio Grande at river mile 563.5, 8.8 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, 4.0 river miles downstream from Amistad Dam, 4.6 river miles downstream from Devils River, and 684.7 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on weekly staff gage readings and the weir discharge table. Mean daily discharges, determined by prorating between readings, and annual and period summary are tabulated below. Flows exceeding the capacity of the weir are not included. Records available: November 14, 1961 through 1966.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.1	0.1	0.1	0.1	3.1	1.7	0.6	0.2	0.3	0.8	0.4	0.2
2	.1	.1	.1	.1	3.0	1.4	.5	.2	.3	.8	.4	.2
3	.1	.1	.1	.1	3.0	1.1	.5	.2	.4	.9	.4	.2
4	.1	.1	.1	.1	2.9	.8	.5	.2	.4	1.0	.4	.2
5	.1	.1	.1	.1	2.8	.7	.4	.2	.4	1.1	.4	.2
6	.1	.1	.1	.1	2.8	.7	.4	.2	.4	1.2	.4	.2
7	.1	.1	.1	.1	2.7	.7	.4	.2	.4	1.2	.3	.2
8	.1	.1	.1	.1	2.4	.6	.4	.2	.4	1.3	.3	.2
9	.1	.1	.1	.1	2.1	.6	.4	.2	.4	1.2	.3	.2
10	.1	.1	.1	.1	1.8	.5	.4	.2	.4	1.2	.3	.2
11	.1	.1	.1	.1	1.5	.5	.3	.2		1.1	.2	.2
12	.1	.1	.1	.1	1.2	.8	.3	.2		1.0	.2	.2
13	.1	.1	.1	.1	.9	1.0	.3	.2		.9	.2	.2
14	.1	.1	.1	.1	.6	1.3	.3	.3		.8	.2	.2
15	.1	.1	.1	.1	.6	1.6	.3	.4		.8	.2	.2
16	.1	.1	.1	.1	.6	1.9	.2	.5		.7	.2	.2
17	.1	.1	.1	.1	.6	2.1	.2	.5		.7	.2	.2
18	.1	.1	.1	.1	.6	2.4	.2	.6		.7	.2	.2
19	.1	.1	.1	.2	.6	2.3	.2	.6		.6	.2	.2
20	.1	.1	.1	.2	.6	2.2	.2	.7		.6	.2	.2
21	.1	.1	.1	.3	.6	2.0	.2	.6		.5	.2	.2
22	.1	.1	.1	.3	1.0	1.9	.2	.6		.5	.2	.2
23	.1	.1	.1	.4	1.3	1.8	.2	.5		.5	.2	.2
24	.1	.1	.1	.7	1.6	1.7	.2	.5	2.4	.5	.2	.2
25	.1	.1	.1	1.2	1.9	1.5	.2	.4	2.2	.4	.2	.2
26	.1	.1	.1	1.6	2.3	1.4	.2	.3	1.9	.4	.2	.2
27	.1	.1	.1	2.0	2.6	1.2	.2	.2	1.7	.4	.2	.2
28	.1	.1	.1	2.4	2.9	1.1	.2	.2	1.5	.4	.2	.2
29	.1		.1	2.8	2.6	.9	.2	.2	1.2	.4	.2	.2
30	.1		.1	3.2	2.3	.8	.2	.2	1.0	.4	.2	.1
31	.1		.1		2.0		.2	.2		.4		.1
Sum	3.1	2.8	3.1	17.1	55.5	39.2	9.2	10.1		23.4	7.6	6.0

Month	Current Year 1966: Extreme Gage Feet High	Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period #Dec. 1961-1966: Acre-Feet ** Average	Maximum	Minimum
Jan.			† 1	0.1	† 1	0.1	0.1	8.7	20.7	65.3	4.4
Feb.			† 1	.1	† 16	.1	.1	7.0	12.6	33.6	4.1
Mar.			† 30	.1	† 9	.1	.1	5.7	12.1	22.4	4.9
Apr.			30	3.2	† 15	.1	.6	34.5	22.0	36.5	4.2
May			1	3.1	† 14	.6	1.8	111	105		25.4
June			18	2.4	† 11	.5	1.3	77.4	38.3		10.7
July			1	.6	† 16	.2	.3	19.5	26.0	56.3	7.9
Aug.			20	.7	† 1	.2	.3	21.6	20.9	33.9	7.5
Sept.					† 1	.3			14.7		5.4
Oct.			8	1.3	† 29	.4	.8	46.1	22.0		4.6
Nov.			† 1	.4	† 11	.2	.3	16.4	73.9	328	4.2
Dec.			† 1	.2	† 30	.1	.2	14.3	31.9	122	4.4
Yearly						0.1			400.1		164.2

† And other days
** See explanation in Maris Spring RECORDS text above
ø Mean daily
Some months missing

EIGHT MILE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete wall with 90° V-notch weir of 6.9 second-foot capacity, bubbler gage, and water-stage recorder located on the left bank at latitude 29° 24' 05", longitude 101° 00' 55", 0.8 creek mile from the confluence with the Rio Grande, and about 8 miles northwest of Del Rio, Texas. This stream enters the Rio Grande from the United States side at river mile 562.9, 4.6 river miles downstream from Amistad Dam, 5.2 river miles downstream from Devils River, 8.2 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 685.3 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: March 1961 through 1966.

REMARKS: The source of flow of this stream is from surface runoff during rainy periods and the subsequent flow from underground seepage as a result of such rains. Flows of 0.05 second-foot or less are shown as zero in the discharge tabulations; however, the monthly volumes in the annual and period summary are based on the sum of mean daily discharges computed to the nearest hundredth of a second-foot when the mean daily flow is less than 0.1 second-foot. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of this stream.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	θ 0	θ 0	θ 0	θ 0	0.3	θ 0	θ 0	0	0	0	0	0
2	θ 0	θ 0	θ 0	θ 0	.4	θ 0	0	0	0	0	0	0
3	θ 0	θ 0	θ 0	.1	.2	θ 0	0	0	0	0	0	0
4	θ 0	θ 0	θ 0	.1	.2	θ 0	0	θ 0	0	0	0	0
5	θ 0	θ 0	θ 0	.1	.2	θ 0	0	θ 0	0	θ 0	0	0
6	θ 0	θ 0	θ 0	.1	.2	θ 0	0	θ 0	θ 0	.1	0	0
7	θ 0	θ 0	θ 0	θ 0	.1	θ 0	0	θ 0	.1	θ 0	0	0
8	θ 0	θ 0	θ 0	θ 0	.1	θ 0	0	θ 0	.1	θ 0	0	0
9	θ 0	θ 0	θ 0	θ 0	.1	.1	0	0	θ 0	θ 0	0	0
10	θ 0	θ 0	θ 0	θ 0	.1	.1	0	0	θ 0	θ 0	0	0
11	θ 0	θ 0	θ 0	θ 0	θ 0	.1	0	0	θ 0	θ 0	0	0
12	θ 0	θ 0	θ 0	θ 0	.2	.1	0	0	θ 0	θ 0	0	0
13	θ 0	θ 0	θ 0	θ 0	.2	.1	0	0	θ 0	θ 0	0	0
14	θ 0	θ 0	θ 0	θ 0	.2	.1	0	θ 0	θ 0	θ 0	0	0
15	θ 0	θ 0	θ 0	θ 0	.1	.1	0	.1	θ 0	θ 0	0	0
16	θ 0	θ 0	θ 0	θ 0	θ 0	θ 0	0	θ 0	θ 0	θ 0	0	0
17	θ 0	θ 0	θ 0	θ 0	θ 0	θ 0	0	θ 0	θ 0	θ 0	0	0
18	θ 0	θ 0	θ 0	.1	θ 0	θ 0	0	θ 0	θ 0	θ 0	0	0
19	θ 0	θ 0	θ 0	.2	θ 0	θ 0	0	θ 0	θ 0	θ 0	0	0
20	θ 0	θ 0	θ 0	.1	.1	θ 0	0	θ 0	θ 0	0	0	0
21	θ 0	θ 0	θ 0	θ 0	θ 0	θ 0	0	θ 0	θ 0	0	0	0
22	θ 0	θ 0	θ 0	θ 0	θ 0	θ 0	0	0	θ 0	0	0	0
23	θ 0	θ 0	θ 0	θ 0	θ 0	θ 0	0	0	0	0	0	0
24	θ 0	θ 0	θ 0	.1	θ 0	θ 0	0	0	0	0	0	0
25	θ 0	θ 0	θ 0	.6	θ 0	θ 0	0	0	0	0	0	0
26	θ 0	θ 0	θ 0	.7	θ 0	θ 0	0	0	0	0	0	0
27	θ 0	θ 0	θ 0	.4	θ 0	θ 0	0	0	0	0	0	0
28	θ 0	θ 0	θ 0	.2	θ 0	θ 0	0	0	0	0	0	0
29	θ 0		.1	.2	θ 0	θ 0	0	0	0	0	0	0
30	θ 0		.1	.2	θ 0	θ 0	0	0	0	0	0	0
31	θ 0		θ 0		θ 0		0	0		0		0
Sum	0	0	0.2	3.2	2.7	0.7	0	0.1	0.2	0.1	0	0

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period #Mar. 1961-1966: Acre-Feet ** Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	0.29	0.10	13	0.1	† 3	θ 0	θ 0	1.4	1.2	4.4	0
Feb.	.18	.10	† 4	θ 0	3	θ 0	θ 0	1.4	.4	1.4	0
Mar.	1.52	.10	28	‡	† 18	θ 0	θ 0	1.5	1.1	5.1	0
Apr.	3.24	.10	24	‡	† 8	θ 0	.1	7.2	4.5		0
May	⊕	.08	12	‡	17	θ 0	.1	6.1	2.4		0
June	2.90	.08	12	‡	30	θ 0	θ 0	2.4	1.4		0
July	.10	0	1	θ 0	† 2	0	0	0	0		0
Aug.	2.13	0	3	‡	† 1	0	θ 0	.8	3.0		0
Sept.	3.49	0	6	‡	† 1	0	θ 0	1.0	1.6		0
Oct.	1.64	0	5	‡	† 1	0	θ 0	.6	1.8		0
Nov.				0		0	0	0	1.7	6.5	0
Dec.				0		0	0	0	2.1	11.3	0
Yearly	⊕	0		‡		0	θ 0	22.4	21.2		3.4

† And other days
θ Flow ranged from 0.005 to 0.05 second-foot
‡ Extreme discharge not determined
# Some months missing
** See explanation in REMARKS above
⊕ Gage height exceeded 5.0 feet

ARROYO DE LA TREINTA Y UNA NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 35.3 second-foot capacity, gravity well, and water-stage recorder located on the left bank at latitude 29° 22' 40", longitude 101° 01' 10", 0.6 creek mile from the confluence with the Rio Grande, and about 6.5 miles northwest of Cd. Acuña, Coahuila. This stream enters the Rio Grande from the Mexican side at river mile 561.2, 6.3 river miles downstream from Amistad Dam, 6.5 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, 6.9 river miles downstream from Devils River, and 687.0 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: May 1961 through 1966.

REMARKS: The flow of this stream is very uniform during periods of dry weather and is not modified by diversions or storage. Flows exceeding the capacity of the weir are not included in the tabulation below. In 1966 the flow of this stream exceeded the capacity of the weir only during parts of one day in April and one day in June. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of this stream. It is estimated that backwater from the Rio Grande will affect the flow at this station only during times of extremely high floods.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.4	0.4	0.4	0.4	0.6	0.4	0.5	0.2	0.4	0.2	0.4	0.2
2	.4	.4	.4	.4	.6	.4	.5	.2	.4	.2	.4	.2
3	.4	.4	.4	.4	.6	.4	.5	5.9	.4	.2	.4	.2
4	.4	.4	.4	.4	.6	.4	.5	.6	.4	.2	.4	.2
5	.4	.5	.4	.4	.6	.4	.5	.4	.4	1.4	.4	.2
6	.4	.5	.4	.4	.6	.4	.5	.4	.4	.4	.4	.2
7	.4	.5	.4	.4	.6	.4	.4	.2	.4	.4	.4	.2
8	.4	.5	.4	.4	.6	.4	.4	.2	.4	.4	.4	.2
9	.4	.5	.4	.4	.6	.4	.4	.2	.4	.4	.4	.2
10	.4	.5	.4	.4	.6	.4	.4	.2	.4	.4	.4	.2
11	.4	.5	.4	.4	.6	.4	.4	.2	.4	.4	.4	.2
12	.4	.5	.4	.4	.6		.4	.2	.4	.4	.4	.2
13	.4	.5	.2	.4	.6	.8	.4	5.2	.4	.4	.4	.2
14	.4	.5	.2	.4	.6	.6	.4	2.2	.4	.4	.4	.2
15	.4	.5	.2	.4	.6	.6	.4	.6	.4	.4	.4	.2
16	.4	.5	.2	.4	.6	.5	.4	.5	.4	.4	.4	.2
17	.4	.5	.2	.8	.6	.5	.4	.5	.4	.4	.2	.2
18	.4	.5	.2	.4	.5	.6	.4	.5	.4	.4	.2	.2
19	.4	.5	.2	.2	.5	.5	.2	.5	.5	.4	.2	.2
20	.4	.5	.4	.2	.6	.5	.2	.5	.4	.4	.2	.2
21	.4	.5	.4	.2	.4	.5	.2	.5	.4	.4	.2	.2
22	.4	.5	.4	.2	.4	.5	.2	.4	.4	.4	.2	.2
23	.4	.5	.4	.4	.4	.5	.2	.4	.4	.4	.2	.2
24	.4	.5	.4		.5	.5	.2	.4	.4	.4	.2	.2
25	.4	.5	.4	6.7	.4	.6	.2	.4	.2	.4	.2	.2
26	.4	.4	.2	1.3	.4	.6	.2	.4	.2	.4	.2	.2
27	.4	.4	.2	1.1	.4	.6	.2	.4	.2	.4	.2	.2
28	.4	.4	2.9	1.1	.4	.6	.2	.4	.2	.4	.2	.2
29	.4		1.2	1.1	1.1	.6	.2	.4	.2	.4	.2	.2
30	.4		.4	.8	.4	.5	.2	.4	.2	.4	.2	.2
31	.4		.4		.4		.2	.4		.4		.2
Sum	12.4	13.3	13.9		17.0		10.4	23.9	10.9	12.6	9.2	6.2

Current Year 1966									Period #May 1961-1966		
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				** Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	0.10	0.07	† 1	0.4	† 6	0.4	0.4	25.2	24.1	36.9	15.2
Feb.	.13	.07	† 5	.5	28	.4	.5	27.8	22.7	33.8	13.9
Mar.	1.77	.07	28	29.7	† 13	.2	.4	26.8	24.1	39.9	15.2
Apr.	5.91	.07	24	⊕	† 19	.2			27.8		14.7
May	.36	.10	29	2.4	† 21	.4	.5	34.2	40.4		23.4
June		.10	12	⊕	† 9	.4			24.2		14.8
July	.13	.07	† 1	.5	† 19	.2	.3	21.6	18.4	27.8	10.5
Aug.	1.74	.07	3	29.2	† 1	.2	.8	48.4	27.2		8.2
Sept.	.13	.07	19	.5	† 25	.2	.4	22.9	24.0		13.1
Oct.	.75	.07	5	7.5	† 2	.2	.4	25.9	42.2		12.1
Nov.	.10	.07	† 1	.4	† 17	.2	.3	18.1	31.1	67.2	14.2
Dec.	.07	.07	† 1	.2	† 1	.2	.2	15.2	24.3	41.1	15.2
Yearly		0.07		⊕		0.2			330.5		250.4

† And other days # Some months missing ** See explanation in REMARKS above
⊕ Extreme discharge not determined

ROSITA SPRING NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 3.5 second-foot capacity and staff gage located at the spring about 65 feet from the right bank of the Rio Grande at latitude 29° 21' 55", longitude 101° 00' 25", and about 5.5 miles northwest of Cd. Acuña, Coahuila. This spring, located in Mexico, enters the Rio Grande at river mile 560.4, 5.7 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, 7.1 river miles downstream from Amistad Dam, 7.7 river miles downstream from Devils River, and 687.8 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on weekly staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 17, 1961 through 1966.

REMARKS: The flow of this spring is very uniform during periods of dry weather and is not modified by diversions or storage. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of this spring.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
3	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
4	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
5	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
6	.2	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
7	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
8	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
9	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
10	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
11	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
12	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
13	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
14	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
15	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
16	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
17	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
18	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
19	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
20	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
21	.2	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2
22	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
23	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
24	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
25	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
26	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
27	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
28	.2	.1	.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
29	.2		.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
30	.2		.1	.2	.2	.2	.2	.2	.2	.2	.2	.2
31	.2		.1		.2		.2	.2		.2		.2
Sum	6.2	3.9	3.5	4.9	6.2	6.0	6.2	6.2	6.0	6.2	6.0	6.2

Month	Current Year 1966								Period #Dec. 1961-1966		
	Extreme Gage Feet		ø Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				** Average	Maximum	Minimum
			Day		Day						
Jan.			† 1	0.2	† 1	0.2	0.2	10.9	12.3	15.2	10.9
Feb.			†11	.2	† 3	.1	.1	8.1	10.5	13.7	8.1
Mar.			† 3	.2	†11	.1	.1	7.8	11.5	15.2	7.8
Apr.			†29	.2	†15	.1	.2	10.1	11.6	14.7	10.1
May			† 1	.2	† 5	.2	.2	11.3	13.7		11.3
June			†17	.2	† 1	.2	.2	11.5	12.9	17.3	10.5
July			† 1	.2	† 1	.2	.2	10.9	12.9	16.2	10.9
Aug.			† 1	.2	† 1	.2	.2	10.9	11.9	13.6	10.9
Sept.			† 1	.2	† 1	.2	.2	10.5	10.9		10.5
Oct.			† 1	.2	† 1	.2	.2	10.9	12.8	18.1	10.9
Nov.			† 1	.2	† 1	.2	.2	10.5	11.1	13.5	10.5
Dec.			† 1	.2	† 1	.2	.2	10.9	13.5	19.5	10.9
Yearly				0.2		0.1	0.2	124.3	145.6		124.3

† And other days ** See explanation in REMARKS above # Some months missing ø Mean daily

CANTU SPRING ON CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in a concrete enclosure in the channel of a small tributary to Ciénegas Creek at latitude 29° 23' 15", longitude 100° 56' 00", about 2.5 miles northwest of Del Rio, Texas, and 3.5 creek miles from the confluence with the Rio Grande. The spring is isolated from surface runoff by the concrete enclosure and discharges through an opening near its top into the creek. Ciénegas Creek enters the Rio Grande at river mile 556.6, 1.9 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 691.6 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 51 discharge measurements during the year and a continuous record of gage heights. Records available: March 1961 through 1966.

REMARKS: The flow of this spring is very uniform and is not modified by diversions or storage. A weir was installed on May 24, 1961 and removed November 21, 1962. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of this spring.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.1	1.6	0.4	0	0.5	1.4	1.8	2.6	1.8	2.3	3.3	3.3
2	2.1	⇑ 1.6	⇑ .3	0	.5	⇑ 1.5	1.8	2.8	1.8	2.3	⇑ 3.3	3.3
3	2.1	1.6	.3	0	.4	1.5	1.8	⇑ 3.0	1.7	2.3	3.3	3.3
4	2.1	1.6	.2	0	⇑ .4	1.5	1.8	2.9	1.7	2.3	3.2	3.3
5	⇑ 2.1	1.6	.2	0	.5	1.5	1.8	2.8	1.7	⇑ 3.1	3.2	3.3
6	2.1	1.6	.1	0	.5	1.5	1.8	2.7	1.6	3.1	3.2	3.3
7	2.1	1.6	.1	0	.6	1.5	⇑ 1.8	2.7	1.6	3.1	3.2	⇑ 3.3
8	2.1	1.6	0	0	.6	⇑ 1.5	1.8	2.6	⇑ 1.6	3.1	3.1	3.3
9	2.1	⇑ 1.6	⇑ 0	0	.7	1.6	1.8	2.5	1.8	3.0	⇑ 3.1	3.2
10	2.1	1.6	0	0	.7	1.8	1.8	⇑ 2.4	1.9	3.0	3.1	3.2
11	2.1	1.5	0	0	⇑ .8	1.9	1.8	2.4	2.0	3.0	3.0	3.1
12	⇑ 2.1	1.5	0	0	.8	2.1	1.8	2.5	2.2	⇑ 3.0	3.0	3.1
13	2.2	1.4	0	⇑ 0	.9	2.2	⇑ 1.8	2.5	2.4	3.0	2.9	3.0
14	2.2	1.4	0	0	.9	2.4	1.8	2.5	⇑ 2.5	3.0	2.9	⇑ 3.0
15	2.2	1.3	0	0	.9	⇑ 2.5	1.7	2.5	2.5	3.0	2.8	3.0
16	2.2	⇑ 1.2	0	0	.9	2.4	1.7	2.6	2.5	3.0	⇑ 2.8	2.9
17	2.2	1.1	0	0	1.0	2.3	1.7	⇑ 2.6	2.5	3.0	2.8	2.9
18	2.2	1.1	0	0	⇑ 1.0	2.2	1.7	2.6	2.5	⇑ 3.0	2.9	2.8
19	⇑ 2.2	1.0	0	0	1.0	2.1	1.6	2.6	2.5	3.0	2.9	2.8
20	2.2	1.0	0	0	.9	2.0	⇑ 1.6	2.6	2.5	3.0	2.9	2.7
21	2.1	.9	0	0	.9	1.9	1.6	2.5	⇑ 2.5	3.1	3.0	⇑ 2.7
22	2.1	.8	0	0	.9	⇑ 1.8	1.6	2.5	2.5	3.1	⇑ 3.0	2.7
23	2.0	.8	⇑ 0	0	.9	1.8	1.6	2.5	2.4	3.1	3.0	2.7
24	2.0	⇑ .7	0	0	.8	1.8	1.6	⇑ 2.5	2.4	3.2	3.1	2.7
25	1.9	.6	0	.8	⇑ .8	1.8	1.6	2.4	2.4	3.2	3.1	2.8
26	⇑ 1.9	.6	0	.8	.9	1.8	1.6	2.3	2.4	⇑ 3.2	3.2	2.8
27	1.9	.5	0	⇑ .7	1.0	1.8	⇑ 1.6	2.2	2.3	3.2	3.2	2.8
28	1.8	.4	0	.7	1.1	1.8	1.6	2.1	⇑ 2.3	3.2	3.2	⇑ 2.8
29	1.8		0	.6	1.2	⇑ 1.8	1.6	2.0	2.4	3.2	3.3	2.8
30	1.7		⇑ 0	.6	1.2	1.8	3.0	1.9	2.5	3.3	⇑ 3.3	2.8
31	1.7		0		1.3		3.0	⇑ 1.8		3.3		2.9
Sum	63.7	33.8	1.6	4.2	25.5	55.5	55.6	77.1	65.4	92.7	92.3	92.6

Month	Current Year 1966							Period Mar.1961-1966		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				Average	Maximum	Minimum
			Day		Day						
Jan.			†13	2.2	†30	1.7	2.1	126	98.6	201	0
Feb.			† 1	1.6	28	.4	1.2	67.0	77.0	178	0
Mar.			1	.4	† 8	0	.1	3.2	82.4	184	0
Apr.			†25	.8	† 1	0	.1	8.3	81.0	195	0
May			31	1.3	† 3	.4	.8	50.6	88.8	225	0
June			15	2.5	1	1.4	1.8	110	91.6	199	0
July			†30	3.0	†19	1.6	1.8	110	84.2	167	0
Aug.			3	3.0	31	1.8	2.5	153	99.2	205	0
Sept.			†14	2.5	† 6	1.6	2.2	130	95.3	193	0
Oct.			†30	3.3	† 1	2.3	3.0	184	117	196	0
Nov.			† 1	3.3	†15	2.8	3.1	183	112	186	0
Dec.			† 1	3.3	†20	2.7	3.0	184	116	193	0
Yearly				3.3		0	1.8	1,309.1	1,143.1	2,194	0

† And other days ∅ Mean daily ⇑ Discharge measurement made on this day

BRIGGS FARM DITCH NEAR DEL RIO, TEXAS
(DIVERSIONS FROM CIENEGAS CREEK)

DESCRIPTION: Gravity well and water-stage recorder located on the right bank at latitude 29° 21' 40", longitude 100° 56' 30", 2,900 feet from the ditch intake which branches off the right bank of Ciénegas Creek immediately upstream from a small diversion dam across the creek, and about 2.5 miles west of Del Rio, Texas. The point of diversion is 1.8 creek miles from the confluence with the Rio Grande. Ciénegas Creek enters the Rio Grande at river mile 556.6, 1.9 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 691.6 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 53 discharge measurements and a continuous record of gage heights. Computations by shifting control methods. Records available: March 1965 through 1966. Discharge measurement data available since November 1962.

REMARKS: Water from Ciénegas Creek is diverted into this ditch for irrigation use. The source of this water is from springs. Storm flow entering the ditch is deducted and is not included in the tabulation below. Except at times when other small diversions from Ciénegas Creek occur, the total yield of the springs may be determined by combining the flow shown in the tabulation below with that passing the Ciénegas Creek Station shown on the following page. There were no other appreciable diversions from Ciénegas Creek in 1966. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of these springs. The recorder was installed on March 1, 1965.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.2	0.9	0.9	2.2	2.3	0	0.3	2.6	0.8	3.8	3.8	2.5
2	1.2	⋔ .9	⋔ .8	1.2	1.7	⋔ 0	.3	3.2	.7	3.6	⋔ 3.9	2.8
3	1.2	.9	.8	1.5	1.5	0	.4	⋔ 2.2	.8	3.7	4.1	3.8
4	1.2	.9	.9	1.4	⋔ 1.5	0	.6	3.2	.9	3.8	4.3	3.4
5	⋔ 1.1	.9	.9	1.5	1.2	0	2.6	3.2	.7	⋔ 3.8	4.3	3.3
6	1.1	1.1	1.1	⋔ 1.3	1.0	0	3.4	2.4	.8	4.0	4.3	3.5
7	1.1	1.3	1.1	1.3	.7	0	⋔ 2.8	1.9	1.0	1.3	4.3	⋔ 3.5
8	1.1	1.1	1.3	1.4	.3	⋔ 0	3.2	1.9	⋔ .8	1.2	4.1	3.4
9	1.0	⋔ 1.0	⋔ 1.3	1.4	.1	0	2.8	2.1	1.8	2.4	⋔ 3.9	3.2
10	1.0	1.1	1.4	1.2	.1	0	2.7	⋔ 1.2	1.5	3.9	3.9	3.4
11	1.0	1.1	2.5	.9	⋔ 0	0	2.5	1.3	3.7	4.0	3.5	3.6
12	⋔ 1.0	1.2	2.8	1.0	0	.1	2.4	1.3	3.6	⋔ 4.0	3.3	2.5
13	1.3	1.3	2.0	⋔ .9	0	.2	⋔ 2.3	1.1	3.6	4.0	3.4	1.7
14	1.4	2.9	1.1	1.0	0	.3	2.4	.7	⋔ 2.9	3.9	3.4	⋔ 2.2
15	1.2	3.1	2.8	.9	0	⋔ .2	2.3	.5	2.3	3.8	3.2	3.6
16	1.2	⋔ 2.8	⋔ 2.8	.9	.1	.1	2.4	.5	2.4	3.9	⋔ 3.8	3.8
17	1.1	1.8	2.9	.9	.2	.1	2.4	⋔ .4	2.4	3.8	4.0	2.4
18	1.2	1.8	2.9	.9	⋔ 0	.1	2.5	.4	2.5	⋔ 3.7	4.0	3.1
19	⋔ 1.2	1.8	3.0	.8	0	.2	2.4	.3	2.4	3.6	4.0	3.9
20	1.1	1.8	3.0	⋔ .6	.3	.2	⋔ 2.3	.4	2.1	3.7	3.9	4.0
21	1.1	1.9	2.8	.1	.1	.2	2.6	.4	⋔ 1.9	3.0	3.9	⋔ 3.8
22	1.1	2.5	2.8	.3	.2	⋔ .2	2.2	.5	2.0	1.9	⋔ 4.0	3.8
23	1.2	2.0	⋔ 2.7	.7	.2	.2	2.4	.4	1.9	1.7	3.9	3.8
24	1.1	⋔ 1.9	2.1	1.8	.3	.2	2.3	⋔ .5	2.7	1.2	3.8	3.6
25	1.1	1.5	2.4	3.1	⋔ .6	.2	2.3	.6	3.8	2.7	3.6	3.6
26	⋔ 1.1	1.4	2.1	3.2	.5	.2	2.3	.7	3.3	⋔ 4.4	3.7	3.5
27	1.1	1.4	2.1	⋔ 3.2	.3	.2	⋔ 2.2	.7	3.4	3.7	3.5	3.9
28	1.0	.9	2.1	3.3	.2	⋔ .2	2.0	.6	⋔ 3.5	3.4	2.9	⋔ 3.8
29	1.0		2.3	2.7	.3	.2	2.0	.7	3.5	2.9	3.9	3.8
30	1.0		⋔ 2.0	2.4	.1	.3	2.4	.7	3.6	3.1	⋔ 4.0	3.8
31	1.0		1.7		.1		1.9	⋔ .8		2.9		3.1
Sum	34.7	43.2	61.4	44.0	13.9	3.6	67.6	37.4	67.3	100.8	114.6	104.1

Month	Current Year 1966								Period Mar. 1965-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				Average	Maximum	Minimum
			Day		Day						
Jan.	0.93	0.75	13	1.5	†28	1.0	1.1	68.8			
Feb.	1.12	.67	16	3.2	† 1	.9	1.5	85.7			
Mar.	1.17	.48	11	3.8	14	.8	2.0	122	161	200	122
Apr.			28	∅ 3.3	22	0	1.5	87.3	106	125	87.3
May			1	∅ 2.3		0	.4	27.6	92.8	158	27.6
June			†14	∅ .3	† 4	0	.1	7.1	15.8	24.6	7.1
July	1.39	.45	21	4.1	1	.3	2.2	134	100	134	66.8
Aug.	1.29	.58	2	4.0	†18	.3	1.2	74.2	41.8	74.2	9.5
Sept.	1.59	.83	14	4.2	† 1	.7	2.2	133	79.6	133	26.2
Oct.	1.67	.87	5	4.2	9	.9	3.3	200	109	200	18.0
Nov.	1.63	1.11	1	4.3	28	1.9	3.8	227	254	280	227
Dec.	1.57	.77	18	4.4	†18	1.3	3.4	206	196	206	187
Yearly						0	1.9	1,372.7			

† And other days ∅ Mean daily ⋔ Discharge measurement made on this day

CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the downstream side of the left abutment of the Ciénegas Road bridge at latitude 29° 21' 35", longitude 100° 56' 20", 1.1 creek miles from the confluence with the Rio Grande, and about 2.5 miles west of Del Rio, Texas. This stream enters the Rio Grande at river mile 556.6, 1.9 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 691.6 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 54 discharge measurements and a continuous record of gage heights. Computations by shifting control methods. Records available: March 1965 through 1966. Discharge measurement data available since November 1962. Records are also available from September 1931 through June 1935 for a station 0.9 creek mile downstream.

REMARKS: Low flow of this stream is from springs, one of which is Cantu Spring whose discharge is shown on page The flow of this stream is modified by irrigation diversions through the Briggs Farm ditch 0.8 creek mile upstream and, occasionally, by other smaller diversions upstream. During 1966 there were no appreciable diversions from the creek, other than through the Briggs Farm ditch (see preceding page). All storm flow passing this station is deducted and is not included in the tabulation below. The total yield of the springs may be determined by combining the flow passing this station with the diversions through the Briggs Farm ditch. This station was established for investigational purposes in connection with Amistad Dam to determine what effect future storage in Amistad Reservoir will have on the flow of these springs. The recorder was installed on March 9, 1965.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.3	4.3	3.7	0.6	2.2	3.6	3.9	0.8	2.5	0.5	1.5	1.7
2	4.1	⇑ 4.0	⇑ 3.5	.6	2.3	⇑ 3.4	3.0	.9	2.5	.6	⇑ 1.3	3.0
3	4.0	4.1	3.7	.6	2.6	3.3	3.0	⇑ 1.2	2.3	.7	1.1	1.9
4	4.4	4.1	3.2	.5	⇑ 2.6	3.3	3.5	1.2	2.4	.7	1.1	2.5
5	⇑ 4.3	4.2	2.9	.6	2.6	3.4	2.5	2.1	2.1	⇑ 1.4	1.1	2.6
6	4.2	4.5	2.7	⇑ .6	2.7	3.7	1.5	1.4	2.3	1.5	1.0	2.6
7	4.2	4.7	2.7	.6	2.7	3.8	⇑ 1.3	1.4	3.1	2.5	1.0	⇑ 2.6
8	4.3	4.6	2.7	.5	3.2	⇑ 3.7	1.3	⇑ 1.6	⇑ 3.1	2.4	1.3	2.2
9	4.3	⇑ 4.3	⇑ 2.9	.6	3.1	3.5	1.1	2.5	3.1	2.7	⇑ 1.8	1.8
10	4.4	4.0	3.0	.5	2.9	3.4	1.1	1.7	2.1	1.6	1.9	1.5
11	4.4	4.0	2.6	.4	⇑ 3.0	3.2	.9	1.8	1.2	1.4	1.8	1.7
12	⇑ 4.7	4.1	1.7	.4	3.1	4.6	.8	2.1	1.1	⇑ 1.3	1.8	2.0
13	5.3	4.0	1.5	⇑ .5	2.9	5.5	⇑ .8	2.5	1.1	1.2	1.9	3.3
14	5.4	2.2	2.0	.5	2.3	5.6	.7	3.5	⇑ 1.0	1.2	2.1	⇑ 3.5
15	4.8	1.9	1.5	.4	2.9	⇑ 5.4	.7	3.4	1.1	1.1	2.0	2.2
16	4.2	⇑ 1.6	⇑ 1.2	.4	2.4	4.8	.7	3.5	1.6	1.2	⇑ 2.0	⇑ 2.2
17	4.1	2.4	1.1	.3	3.1	4.5	.6	⇑ 3.1	1.7	1.2	1.4	2.7
18	4.4	2.9	1.0	.7	⇑ 3.3	5.2	.5	2.9	2.0	⇑ 1.2	1.3	3.6
19	⇑ 4.3	2.9	.9	.5	3.0	5.4	.5	2.9	2.0	1.1	1.3	2.2
20	4.2	3.0	.9	⇑ .3	3.7	4.8	⇑ .5	2.8	1.8	1.1	1.3	2.1
21	4.1	3.3	.9	.4	3.6	4.5	.5	3.0	⇑ 1.8	1.2	1.4	⇑ 2.1
22	3.9	4.2	.8	.4	3.2	⇑ 4.5	.7	2.9	1.9	1.4	⇑ 1.5	2.2
23	3.8	4.4	⇑ .7	.5	3.2	4.5	.7	3.0	1.6	1.8	1.5	2.0
24	4.0	⇑ 4.4	.7	1.0	3.0	4.5	.7	⇑ 2.9	1.6	2.3	1.6	2.3
25	3.7	4.1	.6	2.0	⇑ 4.2	4.5	.7	2.9	1.1	2.7	2.0	2.5
26	⇑ 3.7	4.0	.5	2.1	5.0	4.6	.7	3.5	.9	⇑ 1.5	2.1	2.6
27	3.8	3.8	.5	⇑ 2.0	4.1	4.2	⇑ .7	3.7	.7	1.1	1.6	2.1
28	3.8	3.5	.4	1.8	4.0	3.8	.6	3.2	⇑ .7	1.2	1.7	⇑ 2.1
29	3.8		.7	1.9	4.0	⇑ 3.6	.6	3.1	.6	1.4	1.2	1.8
30	4.0		⇑ .6	2.0	3.9	3.4	.7	3.0	.5	1.7	⇑ 1.9	2.1
31	4.3		.6		3.7		.7	⇑ 3.0		2.1		2.8
Sum	131.2	103.5	52.4	24.2	98.5	126.2	36.2	77.5	51.5	45.0	46.5	72.5

Month	Current Year 1966								Period Mar.1965-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.		1.35	14	⊘ 5.4	3	3.7	4.2	260			
Feb.	1.44	1.07	7	5.8	† 15	1.6	3.7	205			
Mar.	1.32	.93	3	4.3	† 28	.4	1.7	104	162	219	104
Apr.		.82	26	⊘ 2.1	23	.3	.8	48.0	146	245	48.0
May		1.13	26	⊘ 5.0	1	1.9	3.2	195	241	287	195
June		1.24	14	⊘ 5.6	11	3.0	4.2	250	243	250	236
July	1.46	.88	1	6.1	19	.3	1.2	71.8	91.4	111	71.8
Aug.		.97	27	⊘ 3.7	1	.7	2.5	154	187	220	154
Sept.		.91	† 7	⊘ 3.1	30	.4	1.7	102	151	200	102
Oct.	1.34	.90	25	3.6	1	.4	1.5	89.3	176	262	89.3
Nov.	1.33	1.06	28	2.4	† 6	1.0	1.6	92.2	97.6	103	92.2
Dec.	1.58	.92	14	2.3	1	4.5	2.3	144	150	155	144
Yearly		0.82				0.3	2.4	1,715.3			

† And other days ⊘ Mean daily ⇑ Discharge measurement made on this day

ARROYO LAS VACAS AT CD. ACUNA, COAHUILA

DESCRIPTION: Concrete wall with a 90° V-notch weir of 353 second-foot capacity, gravity well, and water-stage recorder located on the left bank at Cd. Acuña, Coahuila, latitude 29° 19' 45", longitude 100° 57' 20", and 1.8 creek miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 554.7, on the upstream side of the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, 12.8 river miles downstream from Amistad Dam, and 693.5 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 885.82 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 35 discharge measurements during the year, a stable rating curve up to 353 second-feet, which is the capacity of the weir, and a continuous record of gage heights. Computations by shifting control methods for flows exceeding the capacity of the weir. Records available: Occasional estimates from June 1935 to March 19, 1938 and a continuous record from March 20, 1938 through 1966.

REMARKS: Low flow of this stream is from springs and is modified by irrigation diversions upstream. On June 17, 1961 a flood destroyed the station leaving the control wall under several feet of silt. The station was reconstructed in September and a V-notch weir with a capacity of 353 second-feet, constructed at this station, started operating December 14, 1961. On June 28, 1954 backwater from the Rio Grande reached an elevation of 902.49 feet at this station. Records prior to 1965 were published under the title "Arroyo Las Vacas near Cd. Acuña, Coahuila."

EXTREME FLOWS FROM RECORDS: Momentary: Max. 63,570 second-feet with a gage height of 25.26 feet on June 17, 1961. Min. no flow several occasions in 1956, 1957, 1960, and 1961.

Average Flow in Second-Feet ‡

Daily:	Max.	23,940	June 17, 1961	Min.	0	Several days Dec. 1956 & Jan. 1957
Monthly:	Max.	1,050	June 1961	Min.	0.4	Several months 1952, 1953, & 1954
Yearly:	Max.	96.7	1961	Min.	2.8	1952

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.9	3.5	4.2	3.5	8.5	1.4	2.5	1.1	2.1	2.1	1.8	1.4
2	3.9	⋔ 3.5	⋔ 4.2	3.5	8.5	1.4	2.1	1.1	2.1	2.1	1.8	1.4
3	3.9	3.9	4.2	3.5	7.8	1.4	2.1	31.1	2.1	2.1	1.8	1.4
4	3.9	3.9	3.9	3.5	⋔ 7.1	2.1	2.1	⋔ 7.8	2.1	2.1	1.8	1.4
5	⋔ 3.9	3.9	3.5	3.5	10.2	2.8	⋔ 2.1	2.5	2.1	5.7	1.8	1.4
6	3.9	3.5	3.5	⋔ 3.5	7.1	2.8	1.8	2.1	2.8	2.8	2.1	1.4
7	3.9	3.2	3.5	3.5	6.7	⋔ 2.8	1.8	1.8	2.8	2.8	2.1	1.4
8	3.9	3.2	3.5	3.5	6.0	2.8	2.1	1.8	2.1	2.1	1.8	1.4
9	3.9	⋔ 3.5	⋔ 3.5	3.5	5.3	2.8	1.8	⋔ 1.4	2.1	2.1	1.4	1.4
10	3.5	3.2	3.5	3.5	4.2	2.8	1.8	1.4	2.1	2.1	1.4	1.4
11	3.5	3.2	3.5	3.5	⋔ 3.9	2.8	1.4	1.4	2.1	2.1	1.4	1.4
12	⋔ 3.5	⋔ 3.5	4.6	3.5	3.5	138	1.4	1.4	2.1	2.1	1.4	1.4
13	3.9	3.5	5.3	⋔ 3.5	3.5	9.5	1.4	⋔ 126	2.1	2.1	1.4	1.4
14	3.5	3.5	5.3	⋔ 3.5	3.5	4.2	⋔ 1.4	17.3	2.1	2.1	1.4	1.4
15	3.5	3.5	4.6	3.5	3.9	⋔ 4.2	1.8	3.5	2.1	2.1	1.8	1.4
16	3.5	⋔ 2.8	⋔ 4.2	3.5	3.9	3.5	1.4	⋔ 2.8	2.1	2.8	1.8	1.4
17	3.5	2.8	3.9	3.5	3.5	3.5	1.4	2.5	2.1	2.1	1.4	1.4
18	3.5	2.8	3.9	3.2	⋔ 3.5	3.5	1.4	2.1	2.1	2.1	1.4	1.4
19	⋔ 3.5	2.8	3.9	2.8	12.4	3.5	1.4	2.1	2.1	2.1	1.4	1.4
20	3.5	2.8	3.9	⋔ 2.8	11.7	2.8	⋔ 1.4	1.8	2.1	2.1	1.4	1.4
21	3.5	3.5	3.5	2.8	3.9	2.8	1.4	1.4	2.1	2.1	1.4	1.4
22	3.5	3.5	3.5	3.2	2.8	⋔ 2.8	1.4	1.4	2.1	2.1	1.4	1.4
23	3.5	⋔ 3.2	⋔ 3.5	7.8	2.8	2.8	1.4	1.8	2.1	2.1	1.4	1.4
24	3.5	3.2	3.5	1,430	2.5	2.8	1.4	1.4	2.1	2.1	1.4	1.4
25	3.5	3.5	3.5	315	2.8	2.8	1.4	⋔ 6.7	2.1	2.1	1.4	1.4
26	⋔ 3.5	3.5	3.5	23.0	2.1	2.8	1.4	3.5	2.1	1.8	1.4	1.4
27	3.5	3.5	3.5	⋔ 12.0	2.1	2.8	⋔ 1.4	2.8	2.1	2.1	1.4	1.4
28	3.5	3.5	6.7	8.1	2.1	⋔ 2.8	1.1	2.8	2.1	2.1	1.4	1.8
29	3.9		3.9	7.8	3.2	2.5	1.1	2.8	2.1	2.1	1.4	1.8
30	3.9		⋔ 3.2	7.4	1.8	2.1	1.1	⋔ 2.5	2.1	1.8	1.4	1.4
31	3.9		3.2		⋔ 1.4		1.1	2.5		2.1		1.4
Sum	113.7	93.9	122.1	1,885.4	152.2	225.6	48.8	242.6	64.4	70.2	46.6	44.2

Month	Current Year 1966								Period 1938-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	0.39	0.36	† 1	4.2	†10	3.5	3.7	226	351	910	31.5
Feb.	.39	.33	21	4.2	†16	2.8	3.4	187	533	5,950	33.3
Mar.	.92	.36	28	35.0	†30	3.2	3.9	243	625	2,600	59.2
Apr.	7.71	.33	24	7,770	†19	2.8	62.8	3,735	1,457	16,610	75.4
May	1.80	.26	19	186	†30	1.4	4.9	302	1,591	9,080	90.0
June	3.02	.23	12	689	1	1.1	7.5	448	3,330	62,520	43.8
July	.33	.23	1	2.5	†28	1.1	1.6	96.5	1,049	8,230	26.8
Aug.	3.41	.23	13	922	† 1	1.1	7.8	482	666	3,850	42.2
Sept.	.43	.30	6	4.9	† 1	2.1	2.1	129	3,043	49,566	37.3
Oct.	.66	.30	5	15.2	†26	1.8	2.3	140	1,257	9,390	22.6
Nov.	.30	.26	† 6	2.1	† 9	1.4	1.6	92.4	337	1,670	21.0
Dec.	.30	.26	†28	1.8	† 1	1.4	1.4	88.4	309	780	22.0
Yearly	7.71	0.23		7,770		1.1	8.5	6,169.3	14,548	70,026.3	2,066.7

† And other days ⋔ Discharge measurement made on this day ‡ Period 1938-1966

RIO GRANDE NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity well, water-stage recorders (graphic and digital), and binary decimal transmitter located on the downstream side of the left pier of the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila at latitude 29° 19' 35", longitude 100° 55' 40", and river mile 554.6; 12.8 river miles downstream from Amistad Dam, 13.4 river miles downstream from Devils River, and 693.5 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 864.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 99 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: July 2, 1941 through 1954 and October 1960 through 1966. Records are also available from May 1900 through April 1915 for a station 12.4 miles upstream; from December 1919 through March 1920 for a station 8.9 miles upstream near McKee's Switch; from December 1923 through July 2, 1941 for a station 900 feet upstream from the international highway bridge; and from September 1954 through 1966 at a station, "Rio Grande below Amistad Dam," 10.5 miles upstream.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was 1,140,000 second-feet, which occurred June 28, 1954, with a gage height of 38.25 feet. This peak flow was deduced by subtracting 18,000 second-feet from the peak discharge which occurred below Amistad Dam Site, 10.5 miles upstream. This subtraction was for estimated flattening of the flood wave in traveling between these points. The lowest recorded flow was 519 second-feet, which occurred July 1, 1953, with a gage height of 0.28 foot. The transmitter, operated in cooperation with the United States Weather Bureau, relays gage height data upon interrogation by telephone via commercial circuits.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,470	1,290	1,260	⇑ 1,160	12,400	1,710	3,960	⇑ 1,200	9,030	3,610	2,180	⇑ 1,670
2	1,480	1,290	1,260	1,060	5,120	1,520	3,790	1,110	⇑ 10,900	3,320	2,080	1,720
3	⇑ 1,460	⇑ 1,310	⇑ 1,310	1,050	2,280	⇑ 1,500	3,080	1,130	11,300	⇑ 3,100	⇑ 2,050	1,750
4	1,500	1,270	1,220	⇑ 1,010	1,720	1,420	3,040	⇑ 1,640	13,200	3,220	2,040	1,770
5	1,480	1,250	1,170	987	⇑ 1,550	1,320	⇑ 3,570	2,550	⇑ 15,900	3,920	2,050	⇑ 1,890
6	⇑ 1,470	1,280	1,250	996	1,420	⇑ 1,280	2,800	5,230	⇑ 17,300	⇑ 4,720	2,060	1,860
7	1,450	1,280	⇑ 1,220	⇑ 944	1,350	1,240	2,500	2,830	15,600	13,000	⇑ 2,060	1,790
8	1,430	⇑ 1,270	1,190	963	1,310	1,190	⇑ 2,270	⇑ 2,690	⇑ 14,000	13,100	2,020	⇑ 1,750
9	1,410	1,300	1,230	968	⇑ 1,280	⇑ 1,190	3,240	2,000	24,900	7,410	2,020	1,750
10	⇑ 1,410	⇑ 1,300	⇑ 1,230	957	1,240	1,550	3,460	1,720	26,700	8,050	⇑ 1,970	1,720
11	1,400	1,250	1,220	⇑ 932	1,210	4,160	⇑ 3,680	⇑ 1,510	21,100	10,400 ⇑	1,970	1,700
12	1,420	1,410	1,220	938	⇑ 1,220	7,380	2,750	1,490	⇑ 15,500	6,140	1,950	⇑ 1,710
13	⇑ 1,480	1,330	1,200	929	1,230	⇑ 7,260	2,010	1,980	13,500	4,510	1,980	1,700
14	1,490	⇑ 1,280	⇑ 1,200	⇑ 950	1,220	5,590	⇑ 2,640	5,480	13,500	⇑ 3,760	⇑ 2,030	1,710
15	1,440	1,270	1,170	914	1,230	6,020	2,630	⇑ 8,030	⇑ 14,200	3,360	1,940	⇑ 1,700
16	1,410	1,300	1,150	923	⇑ 1,320	2,890	2,130	5,520	13,900	3,090	1,910	1,700
17	1,370	⇑ 1,250	⇑ 1,150	1,000	1,460	⇑ 2,640	2,040	4,120	13,500	⇑ 3,180	⇑ 1,910	1,690
18	1,340	1,270	1,150	⇑ 1,270	1,790	2,280	⇑ 1,800	⇑ 4,560	15,000	3,280	1,920	1,670
19	1,330	1,280	1,120	1,190	⇑ 1,580	2,220	1,610	5,220	17,300	3,130	1,900	⇑ 1,660
20	⇑ 1,290	1,270	1,100	992	1,370	⇑ 1,720	1,490	5,800	13,800	⇑ 2,870	1,890	1,670
21	1,300	1,290	⇑ 1,090	915	1,220	1,610	⇑ 1,370	4,950	11,500	2,780	⇑ 1,930	1,670
22	1,330	1,330	1,080	⇑ 899	1,370	1,520	1,280	⇑ 3,410	10,200	2,830	1,880	⇑ 1,680
23	1,320	1,320	1,070	939	⇑ 1,760	⇑ 1,550	1,200	3,030	8,440	2,740	1,870	1,680
24	⇑ 1,320	1,310	⇑ 965	7,220	2,780	3,780	1,150	3,840	7,160	⇑ 2,540	1,860	1,610
25	1,330	⇑ 1,310	983	⇑ 5,060	2,850	3,630	⇑ 1,130	⇑ 4,900	6,310	2,460	⇑ 1,800	1,660
26	1,320	1,290	984	⇑ 15,200	⇑ 1,860	2,500	1,090	7,430	⇑ 5,550	2,470	1,780	1,690
27	1,330	1,280	986	4,790	1,500	⇑ 3,180	1,070	8,310	5,060	⇑ 2,380	1,760	⇑ 1,720
28	⇑ 1,360	⇑ 1,260	⇑ 1,020	2,340	1,320	2,410	⇑ 1,040	9,700	4,530	2,340	⇑ 1,750	1,670
29	1,290		1,270	15,000	2,060	2,250	1,040	10,100	⇑ 4,070	2,300	1,720	1,590
30	1,260		2,300	4,270	2,120	⇑ 1,940	1,040	8,820	3,870	2,300	1,670	1,570
31	⇑ 1,260		1,540		⇑ 2,010		1,060	8,440		⇑ 2,230		1,580
Sum	42,950	36,140	37,308	76,766	64,150	80,450	66,960	138,740	376,820	134,540	57,950	52,700

Current Year 1966									Period Oct. 1960-1966		
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	2.28	2.15	13	1,530	†30	1,260	1,390	85,191	104,059	141,000	85,191
Feb.	2.25	2.14	12	1,450	17	1,230	1,290	71,684	88,076	115,000	71,684
Mar.	2.98	1.95	30	2,840	24	916	1,200	74,000	86,424	106,000	71,743
Apr.	11.95	1.87	29	37,100	22	872	2,560	152,244	95,674	152,244	67,721
May	8.57	2.09	1	19,400	22	1,150	2,070	127,242	108,605	147,711	72,644
June	6.22	2.06	12	11,400	10	1,160	2,680	159,573	223,898	439,000	103,687
July	3.92	1.94	1	5,340	28	1,020	2,160	132,815	133,052	236,000	84,055
Aug.	5.95	1.96	29	10,900	3	1,040	4,480	275,191	155,781	275,191	80,379
Sept.	11.66	3.42	9	35,600	30	3,780	12,600	747,422	430,662	1,187,164	141,000
Oct.	7.78	2.63	8	16,800	31	2,200	4,340	266,860	180,578	266,860	103,023
Nov.	2.67	2.39	1	2,270	30	1,670	1,930	114,944	110,663	130,000	76,087
Dec.	2.47	2.25	5	1,940	†24	1,550	1,700	104,530	108,373	149,000	83,347
Yearly	11.95	1.94		37,100		872	3,190	2,311,696	1,825,845	2,449,815	1,238,226

† And other days ⇑ Discharge measurement made on this day

SAN FELIPE SPRINGS AT DEL RIO, TEXAS

DESCRIPTION: Two large and at least two smaller springs rise near the northeast city limits of Del Rio, Texas in or near the channel of San Felipe Creek at latitude 29° 22' 20" and longitude 100° 52' 55". The total yield of these springs consists of waters measured in the Val Verde Canal at Del Rio, Texas and in San Felipe Creek at Moore Park, Del Rio, Texas, and diversions by the City of Del Rio. Diversions by the San Felipe Irrigation Company through the Val Verde Canal are measured at a gaging station consisting of a paved measuring section and gravity well and water-stage recorder located on the left side of the canal under the U. S. Highway 277 Bridge across San Felipe Creek at latitude 29° 21' 55" and longitude 100° 53' 10". The bridge is located about 0.6 creek mile downstream from the source of the springs and 2.9 creek miles from the confluence of the creek with the Rio Grande. The gaging station on San Felipe Creek at Moore Park consists of gravity well and water-stage recorder located on the left bank about 300 feet downstream from the U. S. Highway 277 Bridge at latitude 29° 21' 50" and longitude 100° 53' 10". This stream enters the Rio Grande at river mile 553.1, 1.6 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 695.1 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gages has not been determined.

RECORDS: Records for the Val Verde Canal and San Felipe Creek at Moore Park are based on 49 and 52 discharge measurements, respectively, by wading during the year, and continuous records of gage heights. Computations by shifting control methods. Records for the Del Rio Pumping Plant are furnished by the City of Del Rio Water Department. Records available: Total yield of the springs, February 1961 through 1966.

REMARKS: The flows tabulated below represent only the total yield of the springs. All storm runoff has been eliminated from the tabulations.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	91.6	84.7	73.9	64.4	78.9	97.2	98.7	93.1	90.4	91.2	92.5	96.5
2	91.0	83.7	72.3	65.4	80.5	94.1	95.5	90.7	87.3	94.7	91.1	94.5
3	87.8	84.0	73.9	65.9	81.1	93.6	98.0	92.2	90.2	93.2	91.0	93.7
4	86.8	83.0	73.8	69.1	82.1	93.6	98.6	97.6	86.3	92.8	91.8	95.4
5	86.9	84.6	74.0	66.4	82.4	95.6	97.9	93.0	86.2	95.6	92.4	94.8
6	86.6	84.0	75.3	66.2	86.1	95.9	99.0	89.7	89.3	92.7	93.1	95.8
7	87.7	84.4	74.0	66.1	86.7	94.6	101	88.9	88.3	91.0	95.3	95.7
8	88.9	85.5	74.7	65.5	87.2	95.6	102	93.4	90.6	89.7	96.1	95.0
9	91.0	85.4	74.9	65.4	87.3	94.6	101	90.4	93.6	87.6	95.7	94.0
10	92.3	85.7	75.0	65.8	87.8	95.2	102	93.8	94.0	89.9	95.9	94.8
11	93.2	82.6	74.3	63.7	88.9	95.7	99.7	90.7	92.6	90.7	94.6	94.7
12	93.2	83.9	75.2	63.8	89.9	112	96.2	93.6	90.4	91.1	95.5	95.1
13	94.0	83.5	76.9	61.6	90.8	107	94.7	92.5	91.5	91.0	96.2	95.1
14	94.7	82.4	70.0	61.2	90.6	104	95.2	94.1	89.2	93.2	95.1	92.8
15	93.5	81.0	68.5	62.1	93.2	108	96.4	96.1	87.2	89.8	93.1	92.1
16	89.8	80.1	70.0	59.1	92.3	104	98.4	89.9	88.8	90.1	93.7	92.6
17	88.1	78.5	71.3	56.6	91.2	104	97.4	91.6	88.7	90.7	96.2	91.5
18	87.6	77.4	71.6	59.9	88.8	106	101	91.1	89.2	90.5	95.0	92.2
19	87.3	75.4	72.5	57.7	90.7	101	99.9	86.5	89.0	90.8	94.6	92.6
20	86.3	75.9	74.8	55.3	92.6	105	95.7	90.0	88.0	90.9	95.4	92.8
21	86.6	78.8	74.7	55.7	93.6	102	93.3	88.9	89.8	90.9	93.2	92.9
22	87.1	80.2	73.0	54.7	93.4	109	93.9	92.3	89.4	90.8	94.8	92.1
23	87.6	78.5	73.7	56.3	93.8	115	95.0	91.5	86.4	91.9	96.2	93.2
24	86.9	78.8	71.5	63.5	94.7	109	92.3	90.3	91.8	91.0	95.8	93.3
25	87.0	77.5	71.5	82.9	96.5	106	94.4	93.5	88.0	93.7	96.5	94.7
26	87.0	77.2	69.8	80.7	96.7	106	97.6	93.9	87.4	94.0	96.4	94.7
27	86.7	76.9	69.8	78.3	97.5	106	99.5	95.6	89.0	96.1	95.3	94.5
28	85.7	76.7	72.8	78.5	97.3	103	99.0	93.1	89.8	94.9	96.4	95.5
29	85.2		66.6	78.2	96.3	106	99.3	93.3	91.1	96.1	94.6	95.3
30	85.8		68.4	79.0	97.0	103	97.5	91.0	91.0	95.5	95.0	95.9
31	84.4		68.3		95.7		99.0	91.8		91.9		96.0
Sum	2,748.3	2,270.3	2,247.0	1,969.0	2,801.6	3,061.7	3,029.1	2,854.1	2,684.5	2,854.0	2,838.5	2,919.8

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet (Ø) High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Feb. 1961-1966: Acre-Feet Average	Maximum	Minimum
Jan.			14	94.7	31	84.4	87.7	5,451	4,857	6,500	2,274
Feb.			10	85.7	19	75.4	81.1	4,503	4,477	5,909	2,119
Mar.			13	76.9	29	66.6	72.5	4,457	4,822	6,407	2,365
Apr.			25	82.9	22	54.7	65.6	3,906	4,521	6,239	2,291
May			27	97.5	1	78.9	90.4	5,557	4,935	6,379	2,842
June			23	115	† 3	93.6	102	6,073	4,781	6,073	2,481
July			† 8	102	24	92.3	97.7	6,008	4,836	6,292	2,214
Aug.			4	97.6	19	86.5	92.1	5,661	4,728	6,810	2,114
Sept.			10	94.0	5	86.2	89.5	5,325	4,649	6,400	2,555
Oct.			† 27	96.1	9	87.6	92.1	5,661	5,211	6,680	2,508
Nov.			25	96.5	3	91.0	94.6	5,630	4,975	6,052	2,384
Dec.			1	96.5	17	91.5	94.2	5,791	5,158	6,651	2,390
Yearly				115		54.7	88.4	64,023	57,950	74,062	36,580

† And other days Ø Mean daily

SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 29° 19' 55", longitude 100° 53' 20", immediately upstream from the Silos Farm road bridge, 1.1 creek miles from the confluence with the Rio Grande, and about 2 miles south-southeast of Del Rio, Texas. This stream enters the Rio Grande at river mile 553.1, 1.6 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 695.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 877.43 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 52 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 1966.

REMARKS: Municipal diversions at Del Rio and irrigation diversions greatly modify the flow of this spring-fed creek at this station. Backwater from the Rio Grande reaches this station when the Rio Grande near Del Rio reaches a stage of 15 feet or a flow of about 60,000 second-feet. On June 28, 1954 combined creek flow and backwater from the Rio Grande reached a stage of 24.51 feet, the highest of record, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 45,000 second-feet on June 14, 1935 with a gage height of 23.20 feet. Min. 0.4 second-foot on July 20, 1953.

Average Flow in Second-Feet

Daily:	Max.	16,200	June 14, 1935	Min.	1.5	July 21, 1953
Monthly:	Max.	805	June 1935	Min.	4.6	July 1953
Yearly:	Max.	136	1935	Min.	25.1	1953

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	90.4	* 69.3	* 56.0	43.9	83.7	* 85.8	67.5	57.8	60.2	63.2	* 70.7	72.6
2	90.2	68.9	51.5	47.2	77.3	84.1	61.7	* 53.2	58.1	68.6	72.4	74.1
3	87.5	68.5	57.7	47.3	* 77.0	72.9	63.9	62.6	57.6	66.1	75.4	77.0
4	* 89.7	70.8	62.8	48.4	77.0	72.6	62.1	72.9	56.9	67.8	79.8	77.0
5	89.4	70.5	65.5	* 45.2	83.0	73.6	61.8	61.7	61.5	101	76.0	76.9
6	89.2	72.8	68.3	42.4	81.6	74.6	* 61.3	58.8	66.1	* 87.9	75.0	* 78.4
7	88.9	73.7	69.9	44.6	82.0	* 70.2	66.5	60.8	* 78.0	82.7	78.1	83.1
8	90.6	* 73.4	* 71.5	49.3	82.0	67.7	70.3	73.8	82.7	82.0	* 81.6	84.8
9	88.3	73.3	71.6	48.5	80.6	67.7	80.4	* 70.6	86.0	79.8	83.3	83.5
10	86.6	74.6	74.5	48.8	* 80.6	66.5	89.2	70.4	176	79.1	85.0	83.7
11	* 86.3	70.5	71.9	47.9	80.8	67.7	77.0	67.4	90.9	* 79.9	83.7	85.3
12	86.7	70.4	72.1	* 45.0	82.3	477	* 59.0	68.6	82.1	82.8	85.3	85.6
13	90.7	70.3	70.8	45.1	82.5	94.7	55.7	75.2	80.9	84.1	87.0	85.7
14	84.6	64.0	54.9	45.1	82.7	* 86.2	57.4	76.5	* 72.5	79.5	72.6	* 81.4
15	86.5	* 55.4	* 44.1	44.2	82.9	78.7	55.3	73.2	64.8	70.8	* 68.7	75.9
16	81.0	53.9	44.8	42.4	76.2	69.2	58.2	* 62.1	66.5	73.6	70.5	77.8
17	81.4	54.7	44.4	43.5	* 71.1	67.8	56.1	60.0	64.2	74.9	72.3	76.7
18	* 81.8	53.2	48.5	45.4	68.8	105	56.6	59.3	75.4	* 70.8	75.5	77.2
19	82.1	55.1	49.3	* 37.7	73.0	92.5	* 53.4	52.2	69.0	75.8	74.5	76.2
20	82.5	57.2	51.2	40.6	84.4	85.0	52.0	53.9	* 69.4	76.6	75.0	* 76.6
21	81.3	63.0	51.9	45.5	73.7	* 80.8	54.4	54.4	73.4	77.5	71.1	75.7
22	81.6	67.7	* 58.7	49.8	70.0	102	54.3	64.4	76.1	74.2	* 76.1	76.3
23	79.0	66.0	66.2	67.2	70.4	93.4	62.8	* 72.2	74.6	79.4	82.5	78.5
24	78.1	* 69.7	63.9	702	* 83.4	88.4	64.1	71.0	75.9	83.4	84.8	79.1
25	* 79.7	68.3	65.3	454	81.3	92.4	60.1	78.9	71.7	* 87.4	85.2	79.7
26	80.4	69.8	62.9	* 82.4	80.6	90.4	* 61.3	85.7	70.3	81.0	85.6	80.4
27	81.2	67.1	66.7	76.1	81.5	86.4	62.8	83.0	* 67.5	82.0	86.0	81.0
28	76.3	64.6	72.5	78.7	79.7	* 84.4	61.8	81.4	62.5	81.6	84.3	* 81.6
29	76.8		* 64.7	76.9	86.2	87.3	64.7	78.7	64.0	84.2	* 84.7	82.5
30	76.1		58.5	78.0	81.4	81.3	62.3	79.1	63.0	86.8	78.7	81.9
31	75.4		51.5		80.8		63.8	* 69.0		73.6		82.8
Sum	2,600.3	1,856.7	1,884.1	2,613.1	2,458.5	2,846.3	1,937.8	2,108.8	2,217.8	2,438.1	2,361.4	2,469.0

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1932-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.64	1.43	13	96.7	28	69.5	83.9	5,158	4,120	7,450	934
Feb.	1.50	1.23	8	78.7	18	47.7	66.3	3,683	3,250	8,630	487
Mar.	2.54	1.10	28	236	15	35.3	60.8	3,737	2,990	6,510	689
Apr.	9.30	1.03	24	4,490	19	30.7	87.1	5,183	3,445	10,400	566
May	2.22	1.31	20	184	16	61.0	79.3	4,876	4,678	17,600	739
June	8.40	1.33	12	3,560	† 7	61.6	94.9	5,646	5,117	47,900	301
July	1.68	1.20	10	99.2	19	39.9	62.5	3,844	3,360	8,800	285
Aug.	1.84	1.24	8	120	2	45.4	68.0	4,183	3,136	7,150	350
Sept.	3.82	1.29	10	510	30	52.1	73.9	4,399	4,907	28,678	872
Oct.	2.30	1.28	5	194	3	51.6	78.6	4,836	4,324	8,470	1,000
Nov.	1.65	1.33	25	92.2	14	54.5	78.7	4,684	3,555	7,000	526
Dec.	1.62	1.43	9	90.0	1	63.1	79.6	4,897	3,591	7,020	496
Yearly	9.30	1.03		4,490		30.7	76.1	55,126	46,473	98,137	18,201

† And other days * Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE

MAVERICK CANAL AT MILE 13 NEAR QUEMADO, TEXAS

DESCRIPTION: Light-weight cableway for making current meter measurements from the bank, bubbler gage, and water-stage recorder located on the left bank of a gunnite-lined section of the canal at latitude 29° 03' 00", longitude 100° 39' 40", 0.5 canal mile downstream from the Tequesquite Creek Siphon, 3.5 canal miles upstream from the Las Moras Creek Siphon, about 7.5 miles north-northwest of Quemado, Maverick County, Texas, and 12.8 canal miles from the canal intake. The canal intake is at river mile 537.4, 17.3 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 710.8 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 51 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Gage heights at this station are affected by gate operation at Las Moras Siphon. Records available: June 21, 1949 through 1966.

REMARKS: Water from the Rio Grande is diverted into the main canal by Maverick County Water Control and Improvement District No. 1 for power generation and irrigation use. At a point 31.8 canal miles downstream from the headworks of this canal, a portion of the diverted water returns to the river through the Maverick Power Plant and the remainder enters the Maverick Canal Extension. In 1966 a total of 34,874 acres of land were irrigated from this canal and its extension. Of this total 8,519 acres were between this point and the power plant and 26,355 acres were irrigated from the Maverick Canal Extension. A total of 884,123 acre-feet of water returned to the Rio Grande at the power plant and through the irrigation system (see pages 48, 50, and 53). On June 27, 1966, the zero of the gage was raised 0.70 foot.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,650 second-feet on May 27, 1952. Min. no flow several days in June, July, and November 1954.

Average Flow in Second-Feet

Daily:	Max.	1,620	July 13, 1952 & Sept. 13, 1963	Min.	0	June 28 through July 11 & Nov. 2,	1954
Monthly:	Max.	1,530	July 1952	Min.	319	July	1954
Yearly:	Max.	1,420	1961	Min.	914		1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,340	1,320	1,300	1,250	1,440	1,380	1,440	1,110	1,490	1,470	1,420	1,360
2	1,350	♯1,320	♯1,300	1,140	1,440	♯ 1,360	1,490	1,160	1,510	1,480	♯ 1,410	1,370
3	1,340	1,320	1,290	1,080	1,440	1,330	1,490	♯ 1,080	1,510	1,480	1,410	1,370
4	1,330	1,300	1,280	1,070	♯ 1,390	1,330	1,470	1,260	1,500	1,500	1,410	1,360
5	♯ 1,350	1,290	1,250	1,040	1,340	1,310	1,480	1,420	1,510	♯ 1,520	1,400	1,360
6	1,340	1,300	1,270	♯ 1,030	1,330	1,290	1,450	1,430	1,540	1,500	1,400	1,360
7	1,340	1,300	1,270	1,020	1,310	1,280	♯ 1,440	1,470	1,500	1,520	1,400	1,360
8	1,320	1,290	1,260	1,020	1,300	♯ 1,260	1,420	1,490	♯ 1,510	1,520	♯ 1,400	♯ 1,350
9	1,330	♯1,290	1,260	1,030	1,290	1,230	1,430	1,430	1,510	1,510	1,390	1,340
10	1,320	1,290	♯1,280	1,020	1,280	1,230	1,470	♯ 1,370	1,500	1,530	1,380	1,340
11	♯1,320	1,280	1,270	993	1,270	1,390	1,480	1,350	1,480	1,520	1,380	1,350
12	1,320	1,300	1,260	980	♯ 1,260	1,450	1,480	1,350	1,460	♯ 1,500	1,380	1,340
13	1,330	1,310	1,250	♯ 971	1,260	1,490	♯ 1,420	1,350	1,460	1,510	1,380	1,340
14	1,340	1,290	1,230	961	1,270	1,500	1,460	1,460	♯ 1,460	1,520	1,390	♯ 1,330
15	1,340	1,280	1,200	955	1,280	♯ 1,480	1,480	1,510	1,460	1,510	1,390	1,330
16	1,330	♯1,280	1,160	911	1,300	1,460	1,430	1,460	1,450	1,510	♯ 1,380	1,320
17	1,320	1,280	♯1,160	912	1,320	1,480	1,410	1,490	1,470	1,530	1,380	1,320
18	1,330	1,260	1,160	1,090	♯ 1,360	1,430	1,390	1,530	1,480	1,540	1,380	1,330
19	♯1,320	1,270	1,140	1,190	1,350	1,430	1,340	1,520	1,480	♯ 1,530	1,380	1,330
20	1,310	1,270	1,130	♯ 1,040	1,320	1,400	♯ 1,320	1,540	1,490	1,510	1,380	♯ 1,320
21	1,300	1,280	1,110	929	1,290	1,350	1,310	1,510	♯ 1,470	1,500	1,380	1,320
22	1,310	1,300	1,090	870	1,260	♯ 1,360	1,280	1,510	1,460	1,480	1,380	1,320
23	1,310	1,300	♯1,090	881	1,330	1,360	1,250	1,530	1,460	1,480	♯ 1,380	1,300
24	1,300	♯1,300	1,060	1,210	1,380	1,420	1,220	♯ 1,530	1,430	1,480	1,380	1,310
25	1,310	1,300	991	1,470	♯ 1,430	1,480	1,190	1,540	1,420	1,430	1,370	1,330
26	♯1,300	1,300	1,010	1,480	1,420	1,480	1,160	1,550	1,420	♯ 1,450	1,370	1,340
27	1,300	1,300	1,020	♯ 1,480	1,340	1,480	♯ 1,150	1,550	1,420	1,440	1,370	♯ 1,330
28	1,310	1,290	1,060	1,440	1,300	1,480	1,120	1,540	♯ 1,440	1,420	1,370	1,340
29	1,320		1,170	1,440	1,330	♯ 1,470	1,100	1,520	1,480	1,430	1,370	1,330
30	1,310		♯1,300	1,450	1,440	1,450	1,090	1,520	1,480	1,420	♯ 1,370	1,320
31	1,310		1,380		1,410		1,070	♯ 1,490		1,430		1,330
Sum	41,000	36,210	37,001	33,353	41,480	41,840	41,730	44,570	44,250	46,170	41,580	41,450

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1950-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	4.17	3.93	† 2	1,350	†20	1,300	1,320	81,324	76,237	89,500	61,900
Feb.	4.06	3.81	2	1,330	18	1,250	1,290	71,823	68,832	82,500	52,700
Mar.	4.49	2.80	31	1,450	25	979	1,190	73,391	72,372	90,700	52,000
Apr.	4.75	2.27	†25	1,500	22	858	1,110	66,156	65,348	81,000	45,400
May	4.75	3.82	1	1,470	22	1,240	1,340	82,275	71,273	84,973	39,400
June	4.86	3.65	13	1,530	10	1,210	1,390	82,990	74,150	88,900	34,400
July	4.13	2.41	4	1,520	31	1,060	1,350	82,771	73,457	93,900	19,600
Aug.	4.27	2.70	27	1,560	† 1	1,070	1,440	88,405	77,535	91,459	53,000
Sept.	4.20		6	1,550	†25	ø 1,420	1,480	87,770	76,542	89,039	47,000
Oct.	4.20	3.66	18	1,550	†28	1,420	1,490	91,578	78,650	91,578	54,300
Nov.	3.83	3.52	1	1,440	28	1,350	1,390	82,474	75,097	85,707	55,900
Dec.	3.85	3.50	† 2	1,380	23	1,280	1,340	82,216	76,963	88,504	58,600
Yearly	** 4.27			1,560		858	1,340	973,173	886,456	1,027,400	663,500

† And other days ø Mean daily ** See explanation in REMARKS above

♯ Discharge measurement made on this day

PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, solid ledge rock and concrete control, bubbler gage, and water-stage recorder located on the right bank at latitude 29° 08' 45", longitude 100° 43' 05", 1.6 creek miles from the confluence with the Rio Grande, and about 19 miles southeast of Del Rio, Texas. This stream enters the Rio Grande at river mile 530.1, 6.1 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, and 718.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 813.68 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 53 discharge measurements during the year and a continuous record of gage heights. Records available: September 1955 through 1966 at this station, and November 22, 1928 through August 1955 at a site 3.9 miles upstream.

REMARKS: Small irrigation diversions modify the flow of this spring-fed creek at this station. When the flow in the Rio Grande at the confluence of this creek exceeds about 80,000 second-feet, backwater may reach this station. Backwater from the Rio Grande flood of June 1954 reached a gage height of 28.8 feet, or an elevation of 842.50 feet above mean sea level, at this station. On June 29, 1966 the graphical water-stage recorder was replaced by a digital recorder.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 186,000 second-feet on June 24, 1948 with a gage height of 32.0 feet. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max.	28,200	June 24, 1948	Min.	0	Frequently
Monthly:	Max.	953	June 1948	Min.	0	Frequently
Yearly:	Max.	105	1932	Min.	1.8	1945

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.6	8.7	8.0	1.1	96.4	6.2	3.8	0.4	0.8	3.0	1.3	1.4
2	10.3	↑ 9.1	↑ 7.4	1.1	27.6	↑ 5.4	3.5	.4	.7	3.1	↑ 1.3	1.4
3	10.1	8.9	7.1	1.0	21.6	5.0	3.2	↑ .2	.6	3.7	1.3	1.4
4	10.2	8.1	5.5	1.0	↑ 19.7	4.6	3.1	.3	.5	4.3	1.2	1.3
5	↑ 10.0	7.1	4.0	.9	18.2	4.5	2.7	.4	3.0	↑ 6.2	1.4	1.2
6	9.8	7.3	6.2	↑ 1.0	17.0	4.3	2.4	.4	3.7	5.3	1.4	1.2
7	9.3	7.2	6.6	1.0	15.1	4.3	↑ 2.3	.4	35.8	4.4	1.3	1.2
8	8.8	7.4	7.0	1.1	13.3	↑ 3.9	1.6	.3	↑ 9.7	4.2	↑ 1.3	↑ 1.1
9	8.6	↑ 7.4	7.4	1.2	12.3	3.8	.6	.4	12.4	3.9	1.4	1.1
10	8.4	6.5	↑ 7.8	1.2	10.3	3.6	.6	↑ .4	1,120	3.6	1.5	1.2
11	↑ 8.7	5.4	7.6	1.3	9.1	3.5	.8	.4	142	3.3	1.6	1.3
12	8.1	9.2	6.9	1.2	↑ 8.7	63.9	.9	.4	22.8	↑ 3.2	1.7	1.4
13	9.2	10.0	6.1	↑ 1.5	8.9	17.8	↑ 1.3	.5	14.5	3.3	1.8	1.5
14	10.7	8.9	5.5	1.5	9.1	9.8	1.2	.5	↑ 11.0	3.4	1.9	↑ 1.6
15	10.9	9.6	5.6	1.7	9.2	↑ 6.7	1.1	1.6	7.2	3.1	1.8	1.8
16	10.8	↑ 8.8	5.4	1.9	9.4	5.2	1.1	1.4	6.1	3.0	↑ 1.9	2.5
17	10.6	7.2	↑ 5.5	2.4	9.6	4.2	1.0	↑ 1.0	5.1	3.2	1.8	5.1
18	11.0	7.2	5.8	2.6	↑ 9.6	11.7	.8	.9	6.6	3.9	1.8	5.4
19	↑ 11.1	7.5	6.1	1.8	9.1	13.8	.6	.8	6.8	↑ 3.8	1.7	5.9
20	10.8	6.7	6.1	↑ 1.5	8.7	5.7	↑ .6	.7	5.2	1.8	1.6	↑ 6.3
21	10.8	8.0	5.0	1.5	7.9	4.1	.7	.4	↑ 8.4	1.4	1.5	6.2
22	10.8	9.5	1.3	1.5	7.4	↑ 37.7	.7	.3	9.3	1.3	1.5	6.0
23	10.2	9.0	↑ .7	1.5	7.4	14.6	.8	.2	7.7	1.3	↑ 1.2	5.9
24	10.0	↑ 8.5	.6	706	75.8	9.5	.8	↑ .3	6.5	1.3	1.2	5.0
25	9.8	8.7	.7	1,170	↑ 16.1	6.5	.9	↑ .6	5.3	1.0	1.3	5.4
26	↑ 9.8	8.8	.7	109	9.3	5.9	.9	1.7	4.3	↑ .9	1.3	5.9
27	9.2	8.5	.9	↑ 24.1	7.9	5.0	↑ 1.0	1.9	3.9	.9	1.4	↑ 5.8
28	9.0	8.1	.9	14.7	7.4	4.7	.8	2.4	↑ 3.3	1.0	1.4	5.9
29	8.3		1.5	508	8.0	↑ 4.5	.8	1.4	3.5	1.1	1.5	5.6
30	7.4		↑ 1.2	78.5	7.9	4.0	.7	1.1	3.6	1.1	↑ 1.5	5.6
31	8.1		1.2		6.8		.5	↑ .8		1.1		6.1
Sum	301.4	227.3	142.3	2,642.8	504.8	284.4	41.8	22.9	1,470.3	86.1	44.8	108.7

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1929-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.		1.00	19	ß 11.1	30	7.4	9.7	598	489	2,270	0
Feb.	1.17	.99	13	10.5	11	5.1	8.1	451	588	5,760	0
Mar.	1.03	.65	1	8.0	†22	.6	4.6	282	521	2,500	0
Apr.	6.87	.70	24	3,760	† 1	.9	88.1	5,242	1,482	27,100	0
May	4.40	.98	24	1,070	31	5.9	16.3	1,001	2,610	29,400	0
June	2.83		12	298	11	ß 3.5	9.5	564	4,648	56,700	0
July			1	ß 3.8	31	ß .5	1.3	82.9	1,821	30,000	0
Aug.	.80	.56	28	2.6	† 3	.2	.7	45.4	1,645	48,700	0
Sept.	9.58	.62	10	9,580	4	.4	49.0	2,916	2,831	48,965	0
Oct.	.96	.65	5	7.5	†26	.9	2.8	171	970	8,940	0
Nov.	.72	.69	14	1.9	9	1.1	1.5	88.9	410	2,590	0
Dec.	.96	.57	23	7.2	12	.7	3.5	216	506	2,470	0
Yearly	9.58			9,580		0.2	16.1	11,658.2	18,521	76,259.3	1,325.2

† And other days ß Mean daily ↑ Discharge measurement made on this day

RIO SAN DIEGO AT JIMENEZ, COAHUILA

DESCRIPTION: Cableway, masonry and concrete Cipolletti weir of 777 second-foot capacity, gravity well, and water-stage recorder located on the left bank on Río San Diego, and gravity well and water-stage recorder on Acequia de Dolores, an irrigation canal that runs along the left bank of the river under the cable, located at latitude 29° 04' 20", longitude 100° 43' 50", about 3.5 miles west of Jiménez, Coahuila, and 4.1 river miles from the confluence with the Rio Grande. Part of the canal flow measured here returns to the river downstream. This stream enters the Rio Grande at river mile 525.2, 6.3 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 29.4 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 723.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 831.72 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: For the river, based on the weir discharge table and a continuous record of gage heights; and for the canal, on 39 discharge measurements during the year and a continuous record of gage heights. The flows tabulated below include the flow of the canal. Records published for this station prior to 1964 do not include the discharge of the canal. The capacity of the weir was exceeded only during a few hours on April 25 and September 10. Records available: 1922 through 1966. The records from 1922 through September 1932 are considered doubtful.

REMARKS: Reservoirs and irrigation diversions upstream from these stations modify the flow of this spring-fed stream. On December 24, 1955, the zero of the gage was raised 2.62 feet to make it coincide with the crest of the weir. In November 1961, the zero of the gage was raised an additional 0.20 foot and the capacity of the weir was increased from 706 to 777 second-feet at the time the weir, which was damaged by the June 17, 1961 flood, was repaired.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 81,930 second-feet on June 17, 1961 with a gage height of 20.70 feet. Min. no flow occurred on several occasions during April, May, and June 1939, May and August 1952, and July and August 1953.

Average Flow in Second-Feet ‡

Daily:	Max.	33,730	June 17, 1961	Min.	0	Occasionally
Monthly:	Max.	2,380	Oct. 1932	Min.	8.0	July 1956
Yearly:	Max.	527	1935	Min.	24.0	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	50.5	50.5	54.0	52.3	128	54.7	42.7	20.1	35.3	67.8	56.9	58.3
2	44.8	44.8	53.0	52.3	112	54.7	42.0	20.1	34.6	55.9	56.9	58.3
3	50.5	44.8	47.0	52.3	105	54.4	42.0	19.8	35.0	55.9	56.9	58.3
4	50.5	44.8	46.3	43.8	98.2	54.0	35.7	18.7	192	55.9	57.6	58.3
5	50.5	44.8	46.3	45.2	98.2	54.0	37.4	18.4	98.2	67.8	57.6	58.3
6	50.5	44.8	46.3	45.6	98.2	54.0	37.4	18.4	54.7	67.8	57.6	58.3
7	50.5	44.8	46.3	45.2	84.8	53.3	37.1	18.4	64.6	62.9	57.6	58.3
8	50.5	55.4	46.3	45.2	84.8	43.1	36.7	26.1	60.0	56.5	57.9	58.3
9	50.5	55.8	47.7	45.2	84.4	43.1	36.7	27.5	59.7	56.5	57.9	58.3
10	50.5	55.8	47.7	45.6	71.7	42.7	36.7	28.6	431	56.9	57.9	58.3
11	50.5	55.8	48.0	45.6	72.4	42.7	35.7	33.2	85.5	56.9	58.3	58.3
12	44.8	55.8	47.7	45.6	72.4	187	35.7	32.1	73.5	80.9	58.3	58.3
13	44.8	55.8	47.7	45.6	72.7	140	35.7	46.6	73.5	68.9	58.3	58.3
14	44.8	55.8	47.7	45.6	72.7	109	35.7	59.0	73.5	68.5	58.3	58.6
15	50.5	55.8	47.3	45.6	73.1	80.5	35.3	48.4	85.5	68.5	58.6	48.7
16	50.5	55.8	46.3	45.6	73.1	79.1	35.0	48.4	85.5	68.5	58.6	48.7
17	50.5	50.5	46.6	70.3	73.1	66.0	35.0	48.0	67.8	68.5	58.6	48.7
18	50.5	50.5	46.3	198	61.4	64.6	34.3	48.0	91.8	68.5	58.6	48.7
19	50.5	44.8	45.9	102	76.3	66.4	34.3	43.1	80.2	57.2	58.6	48.7
20	50.5	44.8	45.9	70.3	102	67.1	34.3	43.1	80.2	56.9	58.6	48.7
21	50.5	47.0	45.6	58.3	70.6	61.1	33.9	42.7	67.8	56.2	58.6	48.7
22	50.5	47.3	45.6	57.9	62.5	68.9	34.3	42.0	67.8	56.9	59.0	48.7
23	50.5	51.9	45.2	57.9	61.8	54.7	34.3	36.7	67.8	56.9	59.0	48.7
24	50.5	52.3	45.2	428	101	54.0	33.5	36.7	67.8	56.9	59.0	58.6
25	50.5	53.3	45.2	1,310	80.2	54.0	25.8	36.7	67.8	56.5	59.0	58.6
26	50.5	58.3	45.2	322	67.8	54.0	25.8	46.3	67.8	56.9	59.0	58.6
27	50.5	53.3	45.6	198	67.8	54.0	25.8	47.0	67.8	56.9	59.0	58.6
28	50.5	52.6	45.6	163	61.8	43.8	17.7	47.0	67.8	56.9	59.0	50.1
29	50.5		50.5	147	53.7	43.4	17.7	47.0	67.8	56.9	59.0	44.8
30	50.5		50.1	142	53.7	43.1	16.6	46.6	67.8	56.9	59.0	44.8
31	50.5		50.5		53.0		20.1	41.7		56.9		44.8
Sum	1,542.7	1,427.7	1,464.6	4,071.0	2,448.4	1,941.4	1,020.9	1,136.4	2,540.1	1,892.0	1,749.2	1,673.7

Month	Current Year 1966: Extreme Gage Feet High	Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1933-1966: Acre-Feet Average	Maximum	Minimum
Jan.	0.23	0.20	† 1	55.8	† 2	44.8	49.8	3,060	7,091	36,430	1,860
Feb.	.33	.20	8	93.6	† 2	44.8	51.0	2,833	5,670	25,760	1,060
Mar.			1	ø 54.0	†23	ø 45.2	47.2	2,904	5,020	27,040	1,340
Apr.	2.59		25	2,020	4	ø 43.8	136	8,077	6,232	40,270	1,110
May	.72	.20	† 1	308	†29	44.8	79.0	4,858	12,466	120,200	861
June	.85	.20	12	413	†10	42.7	64.7	3,852	11,883	108,300	543
July	.36	.10	13	111	†30	16.6	32.9	2,024	8,003	37,890	490
Aug.	.36	.10	13	101	† 5	18.4	36.7	2,254	6,649	32,180	738
Sept.	3.02	.16	10	2,510	† 2	34.6	84.7	5,038	15,678	94,667	1,183
Oct.	.26	.23	† 1	67.8	† 2	55.8	61.0	3,751	14,350	71,830	1,698
Nov.	.23	.20	†22	59.0	† 1	44.8	58.3	3,469	10,031	64,060	803
Dec.	.26	.20	14	58.6	†29	44.8	54.0	3,320	6,842	45,320	1,130
Yearly	3.02	0.10		2,510		16.6	62.8	45,440	109,915	381,720	17,430

† And other days ø Mean daily ‡ Period October 1932-1966

RIO GRANDE BELOW MAVERICK DAM NEAR QUEMADO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the right bank at latitude 29° 03' 00", longitude 100° 40' 00", and river mile 523.4; 1.5 miles south-southeast of Jiménez, Coahuila, 1.8 river miles downstream from Río San Diego, about 7.5 miles north-northwest of Quemado, Maverick County, Texas, 12.8 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 31.3 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuña, Coahuila, and 724.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 765.71 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 53 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1965 through 1966. Records, excluding some high flow periods, are also available from 1956 through May 1965 for a station 8.1 river miles upstream.

REMARKS: This station was placed in operation January 1, 1965 and replaces the station "Rio Grande below Maverick Dam near Del Rio, Texas" which stopped operating June 1, 1965. Irrigation diversions 14.0 river miles upstream largely control the flow at this station. A bubbler gage replaced the gravity well on May 1, 1966.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	226	⇑ 154	107	155	8,090	664	1,280	35.3	7,100	1,880	⇑ 883	611
2	296	144	114	57.2	5,330	378	2,850	⇑ 62.2	8,930	1,570	848	600
3	283	126	107	57.2	⇑ 1,150	331	1,400	58.3	9,920	1,480	812	600
4	⇑ 260	118	114	51.6	166	314	1,730	133	⇑ 11,400	⇑ 1,550	812	600
5	272	118	89.0	46.6	20.1	212	⇑ 1,820	1,060	14,000	1,920	848	⇑ 600
6	260	126	84.0	⇑ 43.1	141	170	1,710	3,020	⇑ 15,600	2,700	879	565
7	260	134	101	43.1	424	⇑ 91.1	1,230	2,060	15,300	9,010	879	530
8	247	134	⇑ 95.3	43.1	353	52.3	1,030	1,210	13,400	13,200	⇑ 848	512
9	247	⇑ 165	101	43.1	275	44.1	1,320	964	17,000	7,030	805	512
10	215	134	108	43.1	⇑ 212	28.6	2,000	600	⇑ 28,600	4,800	805	501
11	⇑ 207	118	114	25.8	212	2,120	2,150	347	21,400	⇑ 9,360	805	441
12	198	126	107	⇑ 30.4	194	5,120	⇑ 1,930	250	15,800	5,010	805	459
13	207	134	95.3	30.4	194	8,580	858	201	⇑ 13,000	2,750	805	⇑ 459
14	270	144	84.0	30.4	212	⇑ 4,200	1,040	1,920	12,500	2,020	848	459
15	226	⇑ 126	⇑ 68.7	30.4	212	6,640	1,210	7,590	13,200	1,680	⇑ 812	459
16	221	104	68.7	100	212	2,050	826	⇑ 4,660	13,400	1,490	759	459
17	196	104	68.7	204	⇑ 318	1,410	717	2,730	12,700	1,410	742	459
18	⇑ 196	91.8	64.6	427	494	961	569	2,550	13,500	⇑ 1,580	742	466
19	187	91.8	60.4	⇑ 137	600	837	⇑ 321	3,880	15,700	1,600	742	459
20	187	91.8	60.4	66.4	459	731	184	3,470	⇑ 14,300	1,450	742	466
21	171	111	60.4	91.1	247	⇑ 388	104	4,130	⇑ 11,400	1,350	699	466
22	180	154	56.9	137	106	456	46.3	1,990	9,750	1,290	⇑ 699	477
23	187	190	⇑ 53.0	186	388	516	33.5	⇑ 1,620	8,230	1,290	699	477
24	180	⇑ 165	50.1	4,870	⇑ 1,130	1,480	17.7	1,460	6,460	1,210	699	424
25	⇑ 187	144	47.0	8,760	⇑ 2,290	2,270	24.0	2,640	5,330	⇑ 879	699	459
26	184	144	47.0	12,600 ⇑	1,100	1,390	⇑ 33.5	5,330	⇑ 4,240	1,080	699	459
27	171	144	47.0	6,890	565	1,470	18.0	6,780	3,480	1,040	699	466
28	175	⇑ 118	47.0	2,210	420	⇑ 1,260	17.7	7,880	2,850	982	699	477
29	180		⇑ 53.0	12,100	283	953	25.8	⇑ 8,970	2,420	975	⇑ 660	459
30	171		83.3	4,590	1,170	802	23.3	⇑ 7,590	2,190	953	653	424
31	148		187		936		19.8	6,920		957		424
Sum	6,595	3,654.4	2,543.8	54,099.0	27,903.1	45,919.1	26,538.6	92,110.8	343,100	85,496	23,126	15,229

Month	Current Year 1966								Period 1965-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total	Acre-Feet		
	High	Low	Day	High	Day	Low		Acre-Feet	Average	Maximum	Minimum
Jan.	2.26	1.71	2	309	31	141	213	13,081	35,533	57,984	13,081
Feb.	1.90	1.48	23	208	18	86.9	131	7,249	24,355	41,460	7,249
Mar.	2.03	1.08	31	279	25	44.5	82.1	5,047	20,571	36,094	5,047
Apr.			26	ø 12,600	11	ø 25.8	1,800	107,207	66,658	107,207	26,110
May	10.04	2.40	1	16,700	5	17.7	900	55,326	63,205	71,084	55,326
June	7.97	2.62	13	11,600	10	17.7	1,530	91,074	191,291	291,508	91,074
July	5.12	2.43	2	3,780	†24	17.7	856	52,680	35,864	52,680	19,048
Aug.	7.64	2.40	29	9,570	1	17.7	2,970	182,733	115,225	182,733	47,715
Sept.	17.29	4.36	10	38,500	30	2,110	11,400	680,385	376,823	680,385	73,261
Oct.	9.51	3.81	8	15,000	31	918	2,760	169,643	107,061	169,643	44,478
Nov.	3.81	3.54	1	883	30	636	771	45,872	34,892	45,872	23,911
Dec.	3.54	3.18	1	611	24	388	491	30,175	26,213	30,175	22,249
Yearly	17.29					17.7	1,990	1,440,472	1,097,691	1,440,472	754,902

† And other days ø Mean daily ⇑ Discharge measurement made on this day

RIO SAN RODRIGO NEAR EL MORAL, COAHUILA

DESCRIPTION: Cableway, reinforced concrete control weir of 177 second-foot capacity, gravity well, and water-stage recorder located on the right bank at latitude 28° 50' 35", longitude 100° 46' 25", 12.2 river miles from the confluence with the Rio Grande, about 9.5 miles west-southwest of El Moral, Coahuila, and 19 miles northwest of Piedras Negras, Coahuila. This stream enters the Rio Grande at river mile 512.0, 19.5 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 20.7 river miles upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 736.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 879.95 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on the weir discharge table and a high flow rating curve defined by discharge measurements made in previous years, and a continuous record of gage heights. Computations by shifting control methods for flows exceeding the capacity of the weir. Records available: 1922 through May 1966. The records from 1922 through 1931 are considered doubtful.

REMARKS: The flow of this spring-fed stream is modified by irrigation diversions above and below this station. The operation of this station was suspended as of June 1, 1966. A station located near the mouth 10.6 river miles downstream, in operation since 1962, replaced this station.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 81,200 second-feet on September 7, 1932 with a gage height of 16.08 feet on the original gage (see Water Bulletin No. 16). Min. frequently no flow, which occurs at a gage height of 0.00 feet.

Average Flow in Second-Feet ‡

Daily:	Max.	29,630	June 17, 1961	Min.	0	Frequently
Monthly:	Max.	4,270	Sept. 1932	Min.	0	Frequently
Yearly:	Max.	576	1932	Min.	3.2	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.1	21.2	14.1	54.4	205							
2	26.1	21.2	14.1	42.4	117							
3	26.1	21.2	12.0	36.0	77.7							
4	26.1	21.2	12.0	30.7	60.7							
5	26.1	21.2	12.0	26.1	53.7							
6	26.1	21.2	12.0	26.1	47.0							
7	26.1	21.2	12.0	21.2	37.4							
8	26.1	21.2	12.0	21.2	31.4							
9	26.1	18.7	14.1	16.2	31.4							
10	26.1	16.2	14.1	16.2	26.1							
11	26.1	16.2	12.0	16.2	26.1							
12	26.1	16.2	12.0	16.2	26.1							
13	26.1	16.2	12.0	16.2	21.2							
14	26.1	16.2	12.0	12.0	21.2							
15	26.1	16.2	12.0	12.0	23.7							
16	26.1	14.1	12.0	16.2	21.2							
17	26.1	14.1	12.0	16.2	21.2							
18	26.1	14.1	12.0	12.0	18.7							
19	26.1	14.1	12.0	12.0	22.6							
20	26.1	14.1	12.0	12.0	99.9							
21	26.1	16.2	12.0	10.2	31.2							
22	26.1	16.2	12.0	12.0	39.9							
23	26.1	16.2	8.1	12.0	33.9							
24	26.1	14.1	12.0	69.2	31.4							
25	26.1	16.2	12.0	80.5	26.1							
26	21.2	16.2	12.0	75.6	26.1							
27	21.2	16.2	12.0	49.1	21.2							
28	21.2	14.1	441	37.4	21.2							
29	21.2		174	37.4	21.2							
30	21.2		86.2	56.9	21.2							
31	21.2		65.7		21.2							
Sum	779.7	481.4	1,095.4	871.8	1,303.9							

Month	Current Year 1966								Period 1932-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
				High		Low					
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	0.23	0.20	† 1	26.1	†26	21.2	25.2	1,548	3,163	14,880	0
Feb.	.20	.16	† 1	21.2	†16	14.1	17.2	956	2,477	11,580	0
Mar.	2.69	.10	28	1,110	23	8.1	35.3	2,174	2,259	9,900	418
Apr.	1.28	.13	24	341	†21	10.2	29.1	1,730	2,775	21,160	104
May	1.35	.16	1	367	†27	16.2	42.1	2,585	5,043	42,330	0
June											
July											
Aug.											
Sept.											
Oct.											
Nov.											
Dec.											
Yearly											

† And other days ‡ Period 1932-May 1966

RIO SAN RODRIGO NEAR MOUTH AT EL MORAL, COAHUILA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at El Moral, Coahuila, latitude 28° 53' 45", longitude 100° 38' 05", 0.6 river mile from the confluence with the Rio Grande, and about 15.5 miles northwest of Piedras Negras, Coahuila. The stream enters the Rio Grande at river mile 512.0, 19.5 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 20.7 river miles upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 736.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 746.82 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 47 discharge measurements made at low and medium flows during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1962 through 1966.

REMARKS: This station, located 10.6 river miles downstream from the permanent station which was in operation from 1922 through May 1966, was originally installed on a provisional basis; however, it became the permanent station on June 1, 1966 when the operation of the upstream station was discontinued. The rating curve for this station is affected by backwater from the Rio Grande when its flow is approximately 10,000 second-feet. The flow of this spring-fed stream is modified by diversions above this station. A pilot channel was constructed in October 1963.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 72,000 second-feet on June 17, 1961 determined by slope-area computations. Min. frequently no flow.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	4.6	5.3	14.1	13.4	⇑ 12.0	6.0	2.1	1.1	12.7	13.4	11.3
2	0	4.2	5.3	14.1	14.1	12.0	6.0	1.8	1.1	12.7	13.4	11.3
3	0	⇑ 4.6	5.3	14.1	16.6	10.9	6.0	⇑ 1.8	1.1	12.7	⇑ 13.4	11.3
4	0	4.6	5.3	14.1	21.2	10.9	6.0	1.8	u # 11.3	12.7	13.4	11.3
5	0	4.6	5.3	⇑ 14.1	25.8	10.9	5.3	1.1	u # 15.2	⇑ 12.7	13.4	11.3
6	.4	4.6	5.3	14.1	⇑ 31.1	10.9	⇑ 5.3	1.1	u # 14.1	12.7	13.4	11.3
7	2.1	4.6	5.3	14.1	27.5	10.9	5.3	1.1	u # 13.4	12.7	13.4	⇑ 10.6
8	2.5	4.6	5.3	14.1	24.7	⇑ 10.2	5.3	1.1	u # 13.4	12.7	13.4	10.6
9	2.8	4.6	5.3	14.1	21.2	10.2	4.9	1.1	u # 12.4	13.1	⇑ 13.4	10.6
10	2.8	⇑ 4.6	⇑ 5.3	14.1	19.4	10.2	4.9	⇑ 1.1	u # 168	13.1	13.4	9.9
11	2.8	4.6	5.3	13.4	18.4	10.2	4.9	1.4	u # 20.1	13.1	13.4	9.9
12	2.8	4.6	5.3	13.4	⇑ 18.4	198	4.9	1.1	u # 17.7	13.8	13.4	9.9
13	⇑ 3.2	4.6	5.3	13.4	17.7	71.0	⇑ 4.9	1.4	u # 16.6	⇑ 14.8	13.4	9.9
14	3.2	4.6	5.3	⇑ 12.4	17.7	13.4	4.9	1.4	u # 16.6	15.2	13.4	⇑ 9.9
15	3.2	4.6	5.3	12.4	17.7	⇑ 11.3	4.6	1.4	u # 16.2	14.8	13.4	9.9
16	3.5	4.6	5.3	12.4	16.6	11.3	4.6	1.4	u # 15.9	14.8	⇑ 13.4	9.9
17	3.5	⇑ 4.9	⇑ 5.3	13.4	15.5	11.3	4.2	⇑ 1.4	u # 14.8	14.8	13.4	9.9
18	3.9	4.9	5.3	13.4	15.5	10.2	4.2	1.1	u # 14.8	14.1	13.4	9.9
19	4.2	4.9	5.3	11.7	⇑ 61.4	10.2	4.2	1.1	u # 14.5	⇑ 13.4	13.4	9.9
20	⇑ 4.2	4.9	5.3	11.7	1,020	9.9	⇑ 3.5	.7	u # 14.5	13.8	13.4	9.5
21	4.2	4.9	4.9	⇑ 10.9	173	9.5	3.5	.7	u # 14.1	13.8	13.4	9.5
22	4.2	5.3	4.9	11.7	63.9	⇑ 9.5	3.5	.7	13.4	13.8	13.4	⇑ 9.5
23	4.2	5.3	4.9	11.7	29.0	8.8	3.2	.4	13.4	13.8	⇑ 13.1	9.5
24	4.6	5.3	⇑ 4.9	12.4	179	8.8	3.2	0	12.7	13.8	12.0	9.5
25	4.6	⇑ 5.3	5.3	611	175	8.8	2.8	2.1	12.7	13.8	12.0	9.5
26	4.2	4.9	5.3	119	⇑ 48.0	7.8	2.8	1.1	12.0	⇑ 13.8	12.0	9.5
27	⇑ 4.2	4.9	5.3	51.6	23.7	7.8	⇑ 2.8	1.1	12.0	13.8	12.0	9.5
28	4.2	4.9	6.0	⇑ 14.1	21.2	7.8	2.8	1.1	11.3	13.8	12.0	9.5
29	4.2		12.4	14.1	18.4	⇑ 7.8	2.5	1.8	⇑ 11.3	13.8	12.0	⇑ 9.5
30	4.2		14.1	14.1	17.7	7.4	2.5	1.8	11.3	13.8	⇑ 12.0	9.5
31	4.6		⇑ 14.1		17.7		2.5	1.8		13.8		9.5
Sum	92.5	133.6	188.1	1,139.2	2,200.5	549.9	132.0	39.1	537.0	422.2	391.9	312.6

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period⊕ 1962-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	0.33	0	31	5.3	† 1	0	3.0	184	911	2,255	0
Feb.	.36	.30	† 22	5.3	† 2	4.2	4.8	265	521	1,183	0
Mar.	.59	.33	31	15.9	† 21	4.9	6.1	374	320		0
Apr.	3.02	.49	25	1,290	21	10.9	38.0	2,259	1,646	4,248	277
May	6.30	.56	20	4,410	† 1	13.4	71.0	4,374	2,769		1,133
June	2.33	.49	12	795	30	7.4	18.3	1,093	918	1,722	168
July	.49	.30	1	6.4	† 29	2.5	4.3	263	256	593	0
Aug.	.46	.10	25	5.7	24	0	1.3	76.2	484	2,115	0
Sept.	# 8.63	.23	10	u 1,290	† 1	1.1	u 17.9	u 1,065	266		0
Oct.	.75	.66	14	15.2	† 1	12.7	13.6	837	2,692	11,438	0
Nov.	.69	.66	† 1	13.4	† 24	12.0	13.1	778	1,425	6,147	0
Dec.	.69	.62	† 1	11.3	† 20	9.5	10.1	621	991	4,269	0
Yearly	# 8.63	0		4,410		0	16.8	12,189.2	13,199		3,850.7

† And other days ‡ Period 1961-1966 # Affected by backwater u Estimated
⇑ Discharge measurement made on this day ⊕ Some months missing

RETURN FLOW TO THE RIO GRANDE AT MAVERICK POWER PLANT NEAR EAGLE PASS, TEXAS

DESCRIPTION: A part of the water diverted from the river into the Maverick Canal is returned to the Rio Grande through the hydroelectric power plant located on the left bank of the Rio Grande at latitude 28° 49' 50", longitude 100° 33' 10", about 9 miles north-northwest of Eagle Pass, Texas, and about 32.2 canal miles downstream from the point of diversion. The return enters the Rio Grande at river mile 501.5 and 746.7 river miles downstream from the American Dam at El Paso, Texas.

RECORDS: Based on records furnished by the Maverick County Water Control and Improvement District No. 1, showing hourly discharge in cubic feet per second based on hourly manometer readings, through each turbine at the Central Power and Light Company hydroelectric power plant. The mean daily discharges computed from the manometer readings have been multiplied by a factor to make them agree with periodic current meter measurements of flows made under stable flow conditions by hydrographers of this Commission. There were 56 discharge measurements made during the year. Records available: 1949 through 1966.

REMARKS: This power plant began operating April 16, 1932 with hydroelectric power generating facilities for 12,000 kw. Because the September 1932 flood washed out the upper end of the Maverick Canal, this plant did not operate from September 2, 1932 until March 17, 1937. Since then it has operated continuously except for 44 days in 1953 when shortage of water prevented operation and from June 30 through July 19, during flood of 1954, and while the canal was being repaired.

Average Flow in Second-Feet

Daily:	Max.	1,400	Sept. 20 & 21, 1966	Min.	0	Frequently 1953 & 1954
Monthly:	Max.	1,270	Sept. 1966	Min.	14.1	June 1953
Yearly:	Max.	1,020	1950 & 1961	Min.	443	1953 & 1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,200	1,010	974	834	1,290	1,000	837	389	⋔ 1,140	1,080	894	809
2	1,190	⋔ 1,000	⋔ 947	669	1,340	⋔ 926	890	442	1,150	1,070	⋔ 884	826
3	1,160	982	888	625	1,360	900	909	⋔ 393	1,130	1,060	⋔ 797	834
4	1,090	917	863	556	1,330	904	899	457	1,110	1,070	⋔ 857	872
5	⋔ 1,110	901	822	524	⋔ 1,280	885	855	644	1,100	1,090	866	849
6	1,160	908	826	⋔ 464	1,270	846	802	745	1,160	⋔ 1,110	864	860
7	1,170	873	834	465	1,240	765	⋔ 823	869	1,240	1,130	810	⋔ 872
8	1,170	841	813	461	1,210	⋔ 722	825	884	⋔ 1,240	1,130	806	887
9	1,170	⋔ 865	745	478	1,140	641	835	879	1,290	1,100	841	887
10	1,170	870	733	499	1,240	587	881	⋔ 789	1,280	1,060	⋔ 857	865
11	1,130	846	⋔ 739	460	⋔ 1,110	694	867	798	1,280	1,030	898	857
12	1,070	891	771	393	1,090	850	840	809	1,290	⋔ 1,030	894	859
13	⋔ 1,090	931	773	387	1,050	909	⋔ 754	837	1,310	1,020	897	864
14	1,170	933	736	⋔ 431	1,030	921	754	1,020	⋔ 1,330	⋔ 994	887	⋔ 850
15	1,180	983	699	460	1,020	⋔ 883	769	1,120	1,340	1,020	838	856
16	1,170	⋔ 964	655	432	915	858	749	1,110	1,320	1,040	⋔ 830	840
17	1,170	970	654	482	959	855	760	⋔ 1,090	1,320	1,040	848	825
18	1,180	969	⋔ 655	667	⋔ 1,020	829	709	1,130	1,340	1,010	816	826
19	⋔ 1,170	963	650	866	991	863	639	1,120	1,360	⋔ 1,010	837	819
20	1,150	983	617	775	1,060	829	⋔ 595	1,120	1,400	983	853	835
21	1,100	970	611	⋔ 612	1,100	744	563	1,120	⋔ 1,400	977	857	⋔ 833
22	1,060	969	570	523	1,080	⋔ 701	566	1,090	1,380	958	833	833
23	1,030	1,040	⋔ 573	514	1,090	711	531	1,090	1,390	991	⋔ 853	858
24	1,030	⋔ 1,060	583	768	1,160	726	554	⋔ 1,070	1,320	967	859	835
25	1,050	1,050	506	1,310	⋔ 1,200	829	463	1,150	1,290	944	857	834
26	⋔ 1,070	1,050	500	1,370	1,230	900	454	1,220	1,290	⋔ 960	863	894
27	1,030	1,050	526	1,360	1,070	856	⋔ 431	1,190	1,280	932	883	884
28	1,030	1,010	608	1,300	987	863	404	1,190	⋔ 1,280	890	831	892
29	1,000		635	⋔ 1,270	970	⋔ 859	368	1,160	⋔ 1,240	880	842	⋔ 876
30	1,000		808	1,290	1,050	869	392	1,160	1,110	892	⋔ 834	880
31	994		⋔ 964		1,000		413	1,180		899		886
Sum	34,464	26,799	22,278	21,245	34,882	24,725	21,131	29,265	38,110	31,367	25,586	26,497

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1949-1966: Acre-Feet Average	Maximum	Minimum
Jan.			1	1,200	31	994	1,110	68,359	53,907	72,800	34,400
Feb.			24	1,060	8	841	957	53,156	48,082	68,500	24,900
Mar.			1	974	26	500	719	44,188	44,857	65,400	18,900
Apr.			26	1,370	13	387	708	42,139	37,982	58,600	6,080
May			3	1,360	16	915	1,130	69,188	47,869	69,188	2,280
June			1	1,000	10	587	824	49,042	44,478	68,900	841
July			3	909	29	368	682	41,913	40,551	63,000	2,880
Aug.			26	1,220	1	389	944	58,047	48,686	69,000	22,600
Sept.			† 20	1,400	5	1,100	1,270	75,591	53,263	75,591	18,500
Oct.			† 7	1,130	29	880	1,010	62,216	55,031	70,870	23,000
Nov.			11	898	3	797	853	50,750	51,999	67,400	27,300
Dec.			26	894	1	809	855	52,557	55,035	71,908	34,300
Yearly				1,400		368	922	667,146	581,740	740,000	320,701

† And other days Ø Mean daily ⋔ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL EXTENSION BELOW THE POWER PLANT
NEAR EAGLE PASS, TEXAS

DESCRIPTION: Gage well and water-stage recorder located on the downstream side of a wooden pile bridge at latitude 28° 49' 50", longitude 100° 32' 40", about 1 mile downstream from the heading of this canal extension, about 9 miles north-northwest of Eagle Pass, Texas, and about 32.8 canal miles downstream from the point of diversion from the Rio Grande, which is located at river mile 537.4. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 52 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1939 through 1966.

REMARKS: The main Maverick Canal divides into two branches at a point about 9 miles north-northwest of Eagle Pass, Texas, and about 31.8 canal miles downstream from the point at which water from the Rio Grande is diverted. One branch leads to the Maverick Power Plant and back to the Rio Grande while the other branch forms this Maverick Canal Extension, which is used to transmit irrigation water. Irrigation from this canal extension began in June 1938. In 1966, 26,355 acres of land north and south of Eagle Pass were irrigated. A total of 136,070 acre-feet of water from this canal extension returned to the river through the irrigation system which extends approximately 67 canal miles downstream.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 580 second-feet on July 25, 1964. Min. occasionally no flow.

Average Flow in Second-Feet

Daily:	Max.	559	July 14, 1964	Min.	0	Occasionally
Monthly:	Max.	525	July 1964	Min.	18.7	March 1939
Yearly:	Max.	345	1964	Min.	62.1	1939

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	98.9	216	226	290	142	207	394	459	⇑ 279	287	342	316
2	96.6	⇑ 215	⇑ 247	316	91.6	⇑ 209	398	462	276	285	⇑ 342	299
3	96.9	215	287	318	90.4	210	397	⇑ 462	275	284	394	292
4	135	244	321	320	89.2	224	397	466	273	287	384	298
5	⇑ 147	263	327	323	⇑ 88.0	265	404	465	272	⇑ 291	341	296
6	94.6	267	317	⇑ 360	87.3	261	432	464	256	263	342	299
7	95.6	288	318	356	86.8	297	⇑ 407	466	138	242	349	⇑ 289
8	97.6	306	322	354	88.0	⇑ 326	391	451	⇑ 136	243	359	279
9	103	⇑ 308	362	359	86.8	373	393	433	140	255	⇑ 363	278
10	105	307	381	358	81.6	413	400	⇑ 434	107	311	359	276
11	126	305	⇑ 379	357	⇑ 85.7	419	402	433	87.4	310	330	286
12	183	285	369	373	85.1	426	422	438	86.8	⇑ 303	309	289
13	⇑ 162	270	366	410	85.1	427	⇑ 443	434	86.8	305	308	284
14	105	251	366	⇑ 366	85.1	431	445	306	⇑ 86.1	310	306	⇑ 289
15	104	199	362	355	101	⇑ 438	441	286	84.1	309	327	290
16	101	⇑ 196	363	351	213	455	440	249	82.7	310	⇑ 349	288
17	98.5	200	365	348	201	455	440	⇑ 271	83.3	306	350	298
18	96.7	210	⇑ 362	295	⇑ 177	457	438	279	83.4	309	350	334
19	⇑ 95.0	210	355	299	178	460	449	277	82.0	⇑ 309	352	330
20	105	216	361	291	144	464	⇑ 467	278	79.4	308	352	307
21	130	240	391	⇑ 285	91.7	466	458	275	⇑ 78.7	306	352	⇑ 293
22	165	239	390	286	91.7	⇑ 478	456	275	78.0	305	350	291
23	211	207	⇑ 394	289	91.7	474	451	274	78.0	306	⇑ 335	270
24	211	⇑ 180	394	257	91.1	462	447	⇑ 272	102	305	316	275
25	205	180	388	96.8	⇑ 88.6	453	440	277	136	305	308	285
26	⇑ 190	179	386	98.7	86.2	439	437	280	137	⇑ 305	304	269
27	218	178	384	108	147	428	⇑ 433	279	138	321	309	270
28	217	198	342	118	206	402	437	283	⇑ 138	343	327	264
29	217		340	⇑ 167	206	⇑ 391	438	283	171	345	319	⇑ 263
30	217		296	168	206	394	444	288	288	342	⇑ 314	266
31	216		⇑ 282		205		453	285		342		263
Sum	4,443.4	6,572	10,743	8,672.5	3,797.7	11,604	13,294	10,884	4,338.7	9,352	10,142	8,926

Month	Current Year 1966: Average Rainfall Inches ** 1939-1966	1966	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1939-1966 Acre-Feet Average	Maximum	Minimum
Jan.	0.82	0.93	4	260	20	93.2	143	8,813	12,271	19,800	2,140
Feb.	.98	1.01	7	339	†27	177	235	13,036	11,503	18,200	2,120
Mar.	.66	1.10	24	402	2	224	347	21,309	14,614	23,310	1,150
Apr.	1.80	5.85	13	426	25	94.2	289	17,202	14,484	24,802	3,430
May	3.10	3.86	16	ø 213	10	ø 81.6	123	7,533	12,205	21,800	2,840
June	1.71	.81	†22	489	1	ø 207	387	23,017	14,910	27,142	3,750
July	1.38	T	20	469	5	382	429	26,369	17,014	32,276	4,510
Aug.	1.97	2.49	4	476	16	218	351	21,588	15,318	29,812	3,480
Sept.	2.92	4.61	30	294	22	76.8	145	8,606	12,521	22,640	4,600
Oct.	1.94	.19	29	371	6	240	302	18,550	13,347	21,800	5,130
Nov.	.63	0	4	446	26	296	338	20,117	13,052	20,117	4,170
Dec.	.70	.01	24	354	23	258	288	17,705	13,115	20,200	4,280
Yearly	18.61	20.86		489		76.8	282	203,845	164,354	250,801	44,950

⇑ Discharge measurement made on this day † And other days ø Mean daily
** On United States side from Maverick Power Plant to Cuervo Creek T Trace

RETURN FLOW TO THE RIO GRANDE FROM MAVERICK CANAL
MAVERICK DAM TO EAGLE PASS, TEXAS

DESCRIPTION: Part of the water diverted from the Rio Grande into the Maverick Canal is returned to the river through various drains and spillways of the irrigation system located between Maverick Diversion Dam and Eagle Pass, Texas. These return flows are measured at gaging stations consisting of sharp-crested Cipolletti weirs or control structures equipped with continuous water-stage recorders located at Lateral 2 Spill, Cañon Grande, Quemado Creek, Lateral 15 Spill, Hardt Spill, Houchin Spill, Elm Creek, and Seco Creek; and a Parshall flume at the Lateral 2 Sand Trap Spill which enters Las Moras Creek immediately below the canal siphon.

RECORDS: Based on the weir discharge table and a continuous record of gage heights. All storm flow occurring at these stations is deducted from the records and is not shown below. Records available: April 1959 through 1966.

REMARKS: In addition to the flows listed below, water from the Maverick Canal is returned to the Rio Grande in this reach at the Maverick Power Plant (see page 48).

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	103	112	96.4	140	112	127	173	131	107	121	143	133
2	97.3	108	110	124	109	136	160	144	115	114	141	131
3	102	117	120	141	84.1	135	158	146	120	127	135	127
4	119	118	108	131	84.5	138	144	167	131	127	126	125
5	109	130	110	141	69.3	126	146	169	128	125	135	127
6	106	123	115	159	68.4	140	143	164	127	131	157	132
7	106	123	110	161	70.2	150	166	158	128	141	153	128
8	102	138	120	146	77.9	140	165	149	112	148	156	122
9	103	129	120	143	99.9	128	160	143	100	143	149	118
10	99.1	127	122	148	92.1	133	156	146	107	149	132	111
11	97.6	137	116	141	83.8	137	141	130	95.1	148	123	116
12	111	146	128	143	94.2	136	148	104	91.8	150	139	117
13	113	142	124	130	108	129	130	108	89.6	148	156	118
14	114	130	119	121	117	144	151	126	83.5	143	166	126
15	108	127	142	119	111	144	160	125	81.4	146	141	110
16	107	126	135	150	117	140	164	118	84.1	150	152	116
17	101	124	134	124	122	151	147	116	87.7	147	150	132
18	98.8	121	129	123	134	170	151	125	90.5	145	163	116
19	104	131	139	70.8	130	171	168	134	95.7	140	153	117
20	100	128	156	75.6	143	137	162	127	88.9	142	154	135
21	102	125	142	86.9	127	160	166	113	81.9	148	140	124
22	105	133	140	93.5	128	176	139	114	76.8	157	142	119
23	106	123	132	84.9	119	179	137	111	88.5	153	133	112
24	111	116	129	96.5	130	172	122	115	102	134	129	116
25	109	111	141	104	135	171	127	133	99.8	118	137	131
26	103	108	129	94.1	121	155	131	134	102	117	150	116
27	99.5	107	130	102	127	164	145	132	111	123	142	132
28	107	101	138	98.9	118	168	144	132	115	132	131	119
29	101		124	98.8	109	157	144	133	113	137	123	120
30	108		136	103	112	159	146	131	116	157	139	119
31	112		139		134		140	115		166		120
Sum	3,264.3	3,461	3,933.4	3,594.0	3,387.4	4,473	4,634	4,093	3,069.3	4,327	4,290	3,785

Month	Current Year 1966								Period April 1959-1966		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.			4	119	2	97.3	105	6,475	7,952	13,430	5,860
Feb.			12	146	28	101	124	6,865	6,421	7,652	4,830
Mar.			20	156	1	96.4	127	7,802	7,454	8,952	6,680
Apr.			7	161	19	70.8	120	7,129	7,168	7,700	6,514
May			20	143	6	68.4	109	6,719	6,786	7,520	6,116
June			23	179	5	126	149	8,872	7,418	8,872	5,484
July			1	173	24	122	149	9,192	8,214	9,858	6,830
Aug.			5	169	12	104	132	8,118	7,890	9,439	6,262
Sept.			4	131	22	76.8	102	6,088	7,385	9,477	6,088
Oct.			31	166	2	114	140	8,583	7,260	8,583	4,144
Nov.			14	166	†11	123	143	8,509	7,200	8,509	5,630
Dec.			20	135	15	110	122	7,508	7,387	8,821	6,699
Yearly				179		68.4	127	91,860	88,535	104,997	80,730

∅ Mean daily † And other days

RIO GRANDE AT EAGLE PASS, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and resistance-type transmitter located on the left bank at latitude 29° 42' 50", longitude 100° 30' 25", and river mile 491.8; 0.5 river mile upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, 73.4 river miles downstream from Amistad Dam, and 756.4 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 682.91 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 97 discharge measurements during the year, 56 by the Mexican Section and 41 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through March 1914; August 1914 through April 1916; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September, November, and December 1923; and 1924 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The transmitter is coupled, via leased telephone circuits, to a receiver located in the office of the Eagle Pass and Piedras Negras Bridge Company from where the Wheatstone bridge circuit can be balanced to indicate the existing gage height. This system is operated in cooperation with the United States Weather Bureau.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 964,100 second-feet, determined by slope-area calculations, on June 29, 1954 with a gage height of 53.51 feet. Well-authenticated information indicates the occurrence of a flood in June 1865 with an estimated discharge of 1,236,000 second-feet and a gage height of 56.00 feet on the present gage and also that these were the only floods since 1745 with flows greater than 825,000 second-feet. Min. 24.4 second-feet on June 22, 1953 with a gage height of 0.07 foot.

Average Flow in Second-Feet ‡

Daily:	Max.	572,100	June 28, 1954	Min.	30.7	June 22, 1953
Monthly:	Max.	48,000	Sept. 1932	Min.	248	April 1953
Yearly:	Max.	9,180	1932	Min.	870	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,470	1,180	⋔1,200	1,460	7,310	1,950	1,690	⋔ 586	⋔ 8,620	3,100	2,080	⋔1,630
2	1,550	1,200	⋔1,180	996	12,200	1,690	4,060	622	9,780	3,230	2,010	1,650
3	⋔ 1,550	⋔1,180	1,130	886	4,660	⋔ 1,470	3,210	639	11,300	⋔ 3,180	⋔ 1,890	1,660
4	1,510	1,130	1,070	⋔ 812	2,640	1,370	⋔ 2,890	⋔ 653	⋔ 12,600	3,030	1,890	1,680
5	1,440	1,110	1,040	742	2,090	1,450	2,730	1,110	⋔ 14,400	3,200	1,900	⋔1,660
6	⋔ 1,530	1,130	1,040	685	1,850	⋔ 1,310	3,010	2,960	⋔ 16,500	⋔ 4,310	1,950	1,720
7	1,520	1,120	⋔1,030	⋔ 696	1,710	1,220	2,340	3,920	⋔ 17,900	7,100	⋔ 1,920	1,730
8	1,500	⋔1,100	1,020	678	1,620	1,060	⋔ 2,100	⋔ 2,390	15,200	14,500	1,940	⋔1,710
9	1,470	1,110	978	710	1,510	⋔ 971	1,930	2,310	⋔ 15,500	10,100	1,890	1,680
10	⋔ 1,430	1,110	964	724	⋔ 1,440	851	2,990	1,670	⋔ 27,400	⋔ 6,390	1,880	1,620
11	1,380	1,080	992	⋔ 682	1,360	978	⋔ 3,210	⋔ 1,430	⋔ 27,700	9,890	1,870	1,630
12	1,290	1,130	1,020	607	1,320	5,330	3,350	1,210	19,800	8,090	1,880	⋔1,580
13	⋔ 1,330	1,180	1,020	537	1,300	9,890	2,150	1,380	⋔ 15,400	⋔ 5,190	1,900	1,590
14	1,480	⋔1,210	⋔ 989	⋔ 586	1,300	⋔ 5,900	⋔ 1,620	2,490	14,200	4,170	⋔ 1,920	1,570
15	1,530	1,220	922	614	1,310	7,060	2,190	⋔ 6,920	14,800	3,640	1,900	1,540
16	1,490	1,180	879	629	⋔ 1,190	4,450	2,110	7,340	15,300	3,190	1,810	⋔1,520
17	⋔ 1,440	1,150	869	629	1,250	2,130	1,650	5,190	14,700	⋔ 2,980	⋔ 1,810	1,540
18	1,420	1,130	872	⋔ 855	1,340	2,210	⋔ 1,540	4,100	⋔ 15,200	3,130	1,790	1,540
19	1,410	1,120	872	1,190	1,680	2,050	1,190	4,480	16,900	3,090	1,770	⋔1,520
20	⋔ 1,390	1,130	862	1,050	3,460	⋔ 1,960	1,120	4,590	17,500	⋔ 2,930	1,770	1,530
21	1,330	⋔1,150	795	⋔ 830	1,730	1,510	⋔ 992	4,630	13,900	2,710	⋔ 1,780	1,530
22	1,290	1,190	⋔ 763	703	1,440	1,320	929	⋔ 3,950	⋔ 11,900	2,590	1,770	⋔1,540
23	1,250	1,260	752	667	⋔ 1,390	⋔ 1,390	840	3,060	10,600	2,680	1,760	1,550
24	⋔ 1,250	1,300	⋔ 756	2,370	1,790	1,670	826	2,560	⋔ 8,760	⋔ 2,540	1,760	1,560
25	1,250	1,280	682	⋔15,500	3,780	3,140	⋔ 742	3,920	7,350	2,350	1,770	1,530
26	1,300	1,270	667	10,300	⋔ 2,740	2,920	660	5,160	6,430	2,280	1,780	⋔1,580
27	1,230	1,270	689	⋔13,100	1,960	⋔ 2,290	632	7,630	5,650	⋔ 2,230	1,770	1,580
28	1,200	1,210	⋔ 784	4,630	1,580	2,570	⋔ 600	9,110	4,980	2,130	⋔ 1,720	1,590
29	1,200		773	6,390	1,420	2,080	569	10,300 ⋔	4,450	2,090	1,700	1,560
30	1,200		939	16,700	⋔ 1,950	⋔ 2,000	572	9,360	⋔ 3,880	2,090	1,670	1,530
31	⋔ 1,170		⋔1,870		2,060		590	8,160		⋔ 2,080		1,530
Sum	42,800	32,830	29,419	86,958	74,380	76,190	55,032	123,830	398,600	130,210	55,250	49,380

Month	Current Year 1966								Period 1948-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	3.15	2.89	† 3	1,550	31	1,130	1,380	84,909	99,007	199,100	42,690
Feb.	3.02	2.79	23	1,330	† 9	1,060	1,170	65,142	104,409	398,200	33,320
Mar.	3.54	2.20	31	2,610	26	643	949	58,390	83,887	211,100	26,970
Apr.	10.86	1.94	30	34,200	12	424	2,900	172,571	107,374	414,600	14,770
May	9.06	2.79	2	17,600	16	1,170	2,400	147,494	175,417	1,108,000	8,430
June	7.05	2.49	13	10,800	10	840	2,540	151,151	367,512	2,794,000	4,530
July	4.76	2.00	2	4,870	28	523	1,780	109,152	181,153	629,800	17,380
Aug.	6.99	2.00	29	11,000	1	512	3,990	245,747	163,200	519,100	35,730
Sept.	13.29	4.33	10	33,300	30	3,740	13,300	791,022	342,333	1,736,025	27,050
Oct.	8.73	3.38	8	15,600	29	2,070	4,200	258,292	271,577	1,768,000	31,560
Nov.	3.41	3.02	1	2,150	28	1,640	1,840	109,572	122,810	451,200	35,630
Dec.	3.15	2.89	7	1,760	24	1,410	1,590	97,931	103,451	245,100	41,000
Yearly	13.29	1.94		34,200		424	3,160	2,291,373	2,122,130	4,518,490	631,520

† And other days ⋔ Discharge measurement made on this day ‡ Period 1924-1966

RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the downstream side of the left abutment of the highway bridge over Río Escondido on the outskirts of Villa de Fuente, Coahuila, 1.2 river miles downstream from the cableway, at latitude 28° 40' 10", longitude 100° 32' 50", about 3 miles southwest of Piedras Negras, Coahuila, 3.7 river miles from the confluence with the Rio Grande, and 6.8 river miles downstream from the confluence of Río San Antonio with Río Escondido. Río Escondido enters the Rio Grande at river mile 488.2, 3.1 river miles downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 760.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 708.78 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 50 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1922 through 1966. Records from 1922 through September 1932 are considered doubtful.

REMARKS: Diversions and drainage returns modify the flow of this spring-fed stream at this station. Backwater from the Rio Grande reached an elevation of 729.92 feet during the flood of June 1954. Prior to November 1954, the gage well was located at the present cableway site. The weir was destroyed by a flood on September 24, 1964.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 24,000 second-feet on June 29, 1936 with a gage height of 19.13 feet. Min. frequently no flow.

Average Flow in Second-Feet ‡

Daily:	Max.	13,100	Sept. 24, 1964	Min.	0	Several days since 1956
Monthly:	Max.	827	Sept. 1964	Min.	0.3	September 1965
Yearly:	Max.	115	1958	Min.	2.4	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.2	8.5	⋔ 11.7	5.3	1,220	14.8	4.2	⋔ 1.1	12.4	10.6	5.3	3.9
2	4.2	8.5	8.5	3.5	⋔ 98.5	14.1	4.2	1.1	12.4	9.5	5.3	3.9
3	4.2	8.5	7.1	3.5	35.3	14.1	4.2	1.1	12.4	⋔ 8.5	5.3	3.9
4	5.7	8.5	7.1	⋔ 3.5	24.7	14.1	⋔ 3.2	1.1	12.4	8.5	5.3	3.9
5	9.2	8.5	7.1	3.5	23.0	13.1	3.2	1.1	⋔ 12.4	8.5	3.5	⋔ 3.9
6	9.2	8.8	7.1	3.5	19.4	⋔ 13.1	3.2	1.1	23.7	8.5	3.5	3.9
7	8.5	⋔ 10.6	⋔ 7.1	3.5	17.7	8.5	3.2	1.1	73.8	8.5	⋔ 3.5	3.9
8	8.5	13.8	7.1	3.5	17.0	7.1	3.2	⋔ 1.1	148	8.5	3.5	3.9
9	8.5	32.1	7.1	3.5	17.0	7.1	3.5	1.1	238	8.5	3.5	3.9
10	⋔ 8.5	8.1	7.1	3.5	⋔ 17.0	6.4	3.5	1.1	59.3	⋔ 10.6	5.3	3.9
11	8.5	9.9	7.1	⋔ 3.5	27.5	6.4	⋔ 4.2	1.1	57.2	184	5.3	3.9
12	8.5	11.3	7.1	3.5	21.2	6.4	6.0	1.1	39.2	24.7	5.3	⋔ 3.9
13	8.5	10.6	7.1	3.5	21.2	⋔ 8.5	5.3	1.4	⋔ 28.3	17.7	5.3	3.9
14	8.5	⋔ 10.6	⋔ 7.1	3.5	22.9	5.7	4.2	1,970	21.2	12.7	⋔ 5.3	5.7
15	8.5	10.6	7.1	3.5	22.9	5.7	4.2	1,580	15.9	10.6	5.3	5.7
16	8.5	9.2	7.1	3.5	⋔ 22.9	5.7	4.2	95.0	14.1	9.5	5.3	5.7
17	⋔ 9.2	8.8	7.1	3.5	22.9	5.7	4.2	53.0	14.1	⋔ 9.5	5.3	5.7
18	9.2	8.8	7.1	⋔ 3.5	19.4	5.7	⋔ 3.5	35.3	24.0	9.5	5.3	5.7
19	9.2	8.8	7.1	3.2	89.3	5.7	3.5	26.5	15.9	9.5	5.3	⋔ 5.7
20	9.2	8.8	7.1	3.2	1,020	⋔ 5.7	3.5	23.0	⋔ 14.1	10.6	5.3	5.7
21	9.2	⋔ 8.8	7.1	3.2	29.7	5.7	3.5	17.7	12.4	8.1	⋔ 5.3	5.7
22	9.2	8.8	7.1	3.2	30.4	5.7	3.2	⋔ 14.1	12.4	8.1	5.3	5.7
23	9.2	8.8	6.7	3.2	⋔ 17.7	5.7	2.8	6.4	12.4	8.1	5.3	5.7
24	⋔ 8.5	8.8	7.1	51.6	31.1	5.7	2.5	6.0	12.4	⋔ 8.1	5.3	5.7
25	8.5	8.8	7.1	63.6	56.9	5.7	⋔ 2.5	6.0	12.4	8.1	5.3	5.7
26	8.5	9.2	7.1	6.7	17.0	5.7	1.8	6.0	5.3	8.1	3.5	⋔ 5.7
27	8.5	9.2	445	4.2	14.8	⋔ 5.7	1.8	6.0	⋔ 4.9	8.1	3.5	5.7
28	8.5	9.2	1,010	3.5	14.8	5.7	1.8	6.0	5.3	7.8	⋔ 3.5	5.7
29	8.5		⋔ 117	3.5	25.1	5.7	1.8	5.3	5.3	7.8	3.5	5.7
30	8.5		31.8	58.3	⋔ 17.7	4.9	1.4	⋔ 8.5	5.7	7.8	3.5	5.7
31	⋔ 8.5		11.7		14.1		1.4	23.0		⋔ 7.8		5.7
Sum	254.1	284.9	1,805.7	272.2	3,049.1	229.8	102.9	3,902.4	937.3	476.4	141.0	153.3

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1933-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	0.52	0.26	4	13.4	† 1	4.2	8.2	503	1,994	15,990	43.8
Feb.	1.08	.33	9	70.6	† 1	7.4	10.2	565	1,395	9,990	38.9
Mar.	7.02	.26	28	3,920	23	6.7	58.2	3,572	1,227	6,910	92.4
Apr.	4.13	.23	30	1,470	†19	3.2	9.1	541	1,992	21,950	81.1
May	8.43	.43	20	5,470	†30	14.1	98.4	6,039	3,998	25,470	154
June	.43	.16	1	14.8	30	4.9	7.7	454	2,448	19,730	60.3
July	.26	.07	12	7.8	†30	1.4	3.3	204	1,730	9,740	96.5
Aug.	6.76	- .20	14	3,670	† 1	1.1	126	7,751	1,950	20,830	34.9
Sept.	3.67	- .13	9	1,170	27	4.9	31.2	1,857	4,147	49,182	17.8
Oct.	3.18	- .20	11	901	†28	7.8	15.4	944	2,499	20,530	43.8
Nov.	- .20	- .23	† 1	5.3	† 5	3.5	4.7	281	1,675	25,730	43.8
Dec.	- .20	- .23	†14	5.7	† 1	3.9	4.9	302	1,455	3,580	67.3
Yearly	8.43	-0.23		5,470		1.1	31.8	23,013	26,510	83,164	1,755.3

† And other days ‡ Period 1932-1966 ⋔ Discharge measurement made on this day

RETURN FLOW TO THE RIO GRANDE FROM MAVERICK CANAL
EAGLE PASS TO SAN ANTONIO CROSSING

DESCRIPTION: Part of the water diverted from the Rio Grande into the Maverick Canal is returned to the river through various drains and spillways of the irrigation system located between Eagle Pass, Texas and the San Antonio Crossing Gaging Station. These return flows are measured at gaging stations consisting of sharp-crested Cipolletti weirs or control structures equipped with continuous water-stage recorders located at Lateral 40 Spill, Lateral 40 D Spill, Cañon Diablo, Lateral 50 Lowline No. 1, Lateral 50 Spill, Lateral 50 Lowline No. 2, Rosita Creek, Lateral 60 K Spill, Sauz Creek, Lateral 70 Spill No. 1, Lateral 70 Spill No. 2, Indio Creek, Gravel Spill, Lateral 71 Spill, and Cuervo Creek.

RECORDS: Based on the weir discharge table, stable station control rating tables, and a continuous record of gage heights. All storm flow occurring at these stations is deducted from the records and is not shown below. Records available: April 1959 through 1966.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	85.7	188	136	188	126	164	199	232	168	131	166	205
2	87.5	171	139	180	117	168	212	210	170	211	164	199
3	87.8	142	129	187	78.5	161	244	210	167	212	160	191
4	97.3	112	130	182	60.2	160	256	187	172	171	180	205
5	112	130	153	180	57.7	151	212	182	180	147	228	215
6	116	157	188	190	63.3	166	191	185	168	164	223	203
7	115	190	202	177	79.8	182	205	219	164	185	191	194
8	91.1	175	201	181	81.8	182	215	214	152	174	173	176
9	81.5	182	191	203	75.6	170	209	220	149	166	179	172
10	78.3	192	205	217	43.9	176	215	208	157	163	187	168
11	74.7	175	202	224	31.6	197	204	209	152	184	181	192
12	87.3	214	226	195	64.2	224	188	203	121	191	197	196
13	102	238	243	155	80.6	219	184	238	102	199	187	191
14	136	218	241	187	83.2	186	196	304	107	190	179	182
15	133	205	172	231	89.6	213	213	271	100	186	172	184
16	102	177	164	220	89.6	216	241	203	91.6	203	170	177
17	89.2	136	202	216	123	234	259	188	65.3	209	174	175
18	91.5	120	202	248	152	271	221	202	45.9	193	184	190
19	91.6	126	222	237	135	291	183	182	42.5	174	218	181
20	90.3	155	248	221	175	253	188	205	61.8	163	241	194
21	83.3	163	233	202	163	245	206	202	71.9	145	205	220
22	86.0	185	228	202	120	244	212	172	60.5	154	238	177
23	112	200	216	209	99.9	249	239	171	55.5	178	228	164
24	140	190	220	206	86.2	247	240	169	55.0	184	214	177
25	174	168	220	199	100	257	229	173	56.9	174	190	219
26	174	137	218	157	89.6	315	207	162	79.6	158	181	201
27	156	125	256	93.6	80.9	290	204	180	99.6	144	188	169
28	173	119	324	72.4	108	248	191	201	105	132	184	154
29	179		287	91.6	139	220	188	196	98.9	157	182	181
30	163		275	108	160	194	190	187	106	178	199	175
31	179		251		174		222	176		179		178
Sum	3,569.1	4,690	6,524	5,559.6	3,128.2	6,493	6,563	6,261	3,325.0	5,399	5,763	5,804

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period April 1959-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.			† 29	179	11	74.7	115	7,079	10,064	11,843	7,079
Feb.			13	238	4	112	168	9,303	10,055	13,117	6,000
Mar.			28	324	3	129	210	12,940	11,756	13,498	9,300
Apr.			18	248	28	72.4	185	11,027	11,218	13,030	9,380
May			20	175	11	31.6	101	6,205	10,032	13,212	6,205
June			26	315	5	151	216	12,879	11,165	13,349	8,900
July			17	259	19	183	212	13,018	12,221	13,631	9,940
Aug.			14	304	26	162	202	12,419	11,761	14,299	8,390
Sept.			5	180	19	42.5	111	6,595	10,510	13,974	6,595
Oct.			3	212	1	131	174	10,709	10,507	12,248	8,460
Nov.			20	241	3	160	192	11,431	10,312	11,843	7,650
Dec.			21	220	28	154	187	11,512	10,324	12,157	6,464
Yearly				324		31.6	173	125,117	129,925	149,031	112,110

† And other days g Mean daily

RIO GRANDE AT SAN ANTONIO CROSSING NEAR EL INDIO, TEXAS

DESCRIPTION: Bubbler gage, concrete control weir, and water-stage recorders (graphic and digital) located on the left bank at latitude 28°20'40", longitude 100°18'35", and river mile 455.8; 0.5 river mile downstream from Cuervo Creek, which marks the lower end of the Maverick County Water Control and Improvement District No. 1, 1.9 river miles upstream from Tovar Creek, 5 miles northeast of Villa Guerrero, Coahuila, about 11.5 miles south of El Indio, Texas, 35.5 river miles downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 792.4 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 580.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 62 discharge measurements during the year and a continuous record of gage heights. Computations prior to April by shifting control methods. After April, computations are based on a stable control weir rating curve defined by meter measurements. Records available: March, April, May, October, November, and December 1952, with some days missing; January through August 20, 1953; September 23, 1953 through June 14, 1954; and May 27, 1955 through 1966 with some days missing prior to September 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The June 1954 flood reached an elevation of 624.31 feet at this station with a discharge of 912,000 second-feet, determined by slope-area computations. The lowest recorded flow was 54.4 second-feet on June 24, 1953 with an elevation of 581.96 feet at a station 1,700 feet upstream from the present site. On April 2, 1966, a concrete channel control weir was finished and placed in operation. Prior to this date, the gage was located 600 feet upstream from the present location with the zero of the gage 1.61 feet higher than the zero of the present gage.

EXTREME FLOWS FROM RECORDS‡: Momentary: Max. 250,000 second-feet on September 25, 1964, determined by slope-area computations, with a gage height of 26.03 feet. Min. 262 second-feet on several days in August 1956 with a gage height of 0.38 foot.

Average Flow in Second-Feet ‡

Daily:	Max.	185,000	Sept. 25, 1964	Min.	299	July 20 & Aug. 2-4, 1956
Monthly:	Max.	31,700	Sept. 1964	Min.	445	July 1956
Yearly:	Max.	6,130	1958	Min.	1,040	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,590	↟ 1,540	↟ 1,610	↟ 2,160	19,000	↟ 2,190	1,920	771	8,460	4,020	2,340	1,810
2	1,650	1,560	1,570	1,180	17,700	1,910	2,810	↟ 758	9,000	3,860	2,270	1,790
3	1,680	1,560	1,530	1,090	7,940	1,660	4,170	798	10,700	3,470	2,200	1,790
4	↟ 1,750	1,510	↟ 1,490	1,040	4,270	1,460	2,750	812	11,400	↟ 3,190	2,080	1,810
5	1,630	1,460	1,450	↟ 979	3,010	1,430	2,850	838	13,300	3,110	2,200	1,830
6	1,760	1,530	1,420	932	2,520	1,410	↟ 3,030	1,550	17,000	3,910	2,220	↟ 1,790
7	1,750	1,460	1,380	902	2,120	↟ 1,310	2,590	4,130	17,900	4,990	2,240	1,790
8	1,710	↟ 1,420	1,340	917	1,970	1,200	2,190	2,900	13,800	12,900	2,170	1,760
9	1,630	1,680	↟ 1,300	902	1,800	1,120	1,920	2,320	13,400	11,900	2,170	1,740
10	1,650	1,570	1,320	932	1,660	1,000	2,350	1,820	25,700	7,010	2,150	1,720
11	1,640	1,460	1,280	964	1,600	935	3,070	1,520	32,200	↟ 7,780	2,120	1,700
12	↟ 1,600	1,530	1,310	↟ 870	1,540	2,610	↟ 3,350	1,370	25,900	9,450	2,150	1,700
13	1,550	1,620	1,360	711	↟ 1,500	6,870	2,820	1,270	15,400	6,030	2,120	↟ 1,700
14	1,720	1,650	1,340	711	1,480	↟ 6,880	1,780	2,880	13,500	4,820	2,150	1,680
15	1,750	↟ 1,600	↟ 1,230	812	1,480	6,500	1,890	7,460	13,600	3,910	↟ 2,150	1,640
16	1,740	1,540	1,220	826	1,420	↟ 6,250	2,220	↟ 8,060	14,400	3,510	2,030	1,580
17	1,730	1,450	1,190	886	↟ 1,400	2,880	1,890	5,470	13,500	3,230	1,990	1,640
18	↟ 1,680	1,390	1,080	1,180	1,520	2,620	1,720	4,390	13,500	↟ 3,190	1,990	1,660
19	1,660	1,360	1,040	↟ 1,210	1,700	2,220	↟ 1,520	4,770	14,200	3,270	1,960	1,660
20	1,650	1,420	1,050	1,280	9,870	2,140	1,320	5,400	16,900	3,070	1,960	1,620
21	1,630	1,420	1,040	1,090	4,190	↟ 1,880	1,180	5,750	13,300	2,780	1,940	1,660
22	1,620	1,420	↟ 1,080	964	1,690	1,540	1,100	5,050	11,200	2,690	↟ 1,900	1,620
23	1,600	↟ 1,550	1,110	886	1,520	1,520	1,040	↟ 3,420	9,600	2,620	1,920	1,550
24	1,590	1,710	1,150	1,060	↟ 1,740	1,570	988	2,850	8,460	2,650	1,900	1,600
25	↟ 1,570	1,720	1,150	15,000	2,980	2,830	946	3,200	7,330	↟ 2,490	1,900	1,660
26	1,560	1,660	1,130	10,200	4,570	3,860	↟ 852	4,690	6,550	2,460	1,900	1,640
27	1,560	1,650	1,290	14,200	2,720	2,690	812	7,010	↟ 5,960	2,400	1,850	1,660
28	1,550	1,620	2,640	5,970	1,860	↟ 2,960	784	7,650	5,470	2,300	1,850	↟ 1,620
29	1,540		↟ 1,560	3,740	1,650	2,490	744	9,000	5,050	2,220	↟ 1,790	1,620
30	1,530		1,210	14,400	1,530	2,060	730	↟ 9,270	4,440	2,220	1,810	1,580
31	1,530		1,450		2,600		730	8,460		↟ 2,270		1,550
Sum	50,800	43,060	41,320	87,994	112,550	77,995	58,066	125,637	391,120	133,720	61,420	52,170

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1956-1966: Acre-Feet Average	Maximum	Minimum
Jan.			6	ø 1,760	†30	ø 1,530	1,640	100,762	121,897	219,000	63,200
Feb.	4.88	4.53	9	2,130	19	1,320	1,540	85,410	109,465	174,000	72,600
Mar.	6.22	4.51	28	4,890	21	987	1,330	81,958	95,235	152,000	60,600
Apr.			25	ø 15,000	†13	ø 711	2,930	174,536	128,496	433,000	42,600
May			1	ø 19,000	17	ø 1,400	3,630	223,243	219,628	1,054,000	50,500
June	7.87	6.06	15	8,280	11	923	2,600	154,703	238,708	737,000	35,300
July	7.47	5.87	2	5,230	29	654	1,870	115,174	142,950	312,000	27,400
Aug.	8.05	5.94	30	11,400	2	744	4,050	249,201	146,638	274,000	44,200
Sept.	9.98	7.28	11	34,700	30	4,170	13,000	775,787	450,212	1,888,661	81,200
Oct.	8.30	6.76	† 8	15,900	29	2,190	4,310	265,234	365,730	1,741,000	128,967
Nov.	6.81	6.52	1	2,450	29	1,760	2,050	121,827	154,892	454,000	59,000
Dec.		6.41	5	ø 1,830	23	1,530	1,680	103,479	130,952	263,000	60,800
Yearly				34,700			3,390	2,451,314	2,304,803	4,441,400	756,800

† And other days ø Mean daily ‡ Period 1956-1966 ↟ Discharge measurement made on this day

RIO GRANDE AT PALAFOX NEAR LAREDO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank on the outskirts of Palafox, Webb County, Texas and Villa Hidalgo, Coahuila at latitude 27° 47' 55", longitude 99° 52' 40", and river mile 403.0; 1.9 river miles downstream from Arroyo Agua Verde in Mexico, 13.1 river miles upstream from Santo Tomas Creek in United States, 44.7 river miles upstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 845.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 436.02 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 50 discharge measurements during the year, 48 by the Mexican Section and 2 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. High flows prior to early 1962 were computed from a rating curve developed after the cableway was installed. Records available: August 1959 through 1966.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The recorder was installed on August 5, 1959 and the cableway in early 1962.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,650	✝1,540	✝1,490	1,630	29,900	✝ 2,450	2,120	706	8,020	4,100	✝2,350	1,820
2	1,640	1,510	1,410	1,890	18,200	2,270	1,960	✝ 777	7,700	3,920	2,310	1,800
3	1,670	1,510	1,380	1,320	12,500	1,980	3,470	777	8,550	3,780	2,210	1,830
4	✝1,700	1,480	1,310	1,090	5,720	1,770	3,350	780	10,500	✝ 3,490	2,070	1,840
5	1,750	1,420	1,250	✝ 1,010	3,520	1,610	✝ 2,950	795	11,800	3,300	2,010	1,870
6	1,630	1,370	1,220	918	2,750	1,570	2,770	798	✝ 14,600	3,420	2,140	✝ 1,840
7	1,750	1,380	1,240	847	2,370	✝ 1,510	3,090	2,400	21,900	4,270	2,150	1,870
8	1,730	✝1,450	✝1,270	837	2,010	1,390	2,560	4,030	19,700	8,440	✝2,140	1,900
9	1,700	1,440	1,270	830	1,910	1,270	2,310	✝ 2,750	19,400	14,100	2,120	1,840
10	1,660	1,620	1,260	819	1,770	1,170	2,070	2,550	18,300	8,930	2,050	1,770
11	✝1,640	1,450	1,220	865	1,660	1,060	2,820	1,940	31,500	✝ 6,390	2,050	1,730
12	1,610	1,390	1,210	✝ 918	1,570	1,020	3,210	1,680	27,300	10,200	2,030	1,750
13	1,540	1,450	1,260	812	1,550	4,030	✝ 3,320	1,480	19,700	7,560	2,050	✝ 1,730
14	1,540	1,520	1,310	696	1,540	9,040	2,440	1,690	14,800	5,090	2,050	1,740
15	1,660	1,570	✝1,310	678	1,530	5,300	1,770	4,730	13,900	4,800	✝2,080	1,750
16	1,730	✝1,560	1,170	777	1,520	✝ 6,850	2,190	✝ 7,420	14,200	3,810	2,080	1,710
17	1,700	1,480	1,090	812	✝ 1,520	4,310	2,380	6,430	14,400	3,530	1,960	1,660
18	1,660	1,390	1,070	837	1,520	2,930	1,910	4,770	14,100	✝ 3,280	1,960	1,680
19	1,650	1,370	1,070	1,240	1,700	2,750	✝ 1,770	4,030	14,900	3,340	1,960	1,700
20	✝1,620	1,350	1,080	✝ 1,320	7,730	2,400	1,590	4,590	✝ 16,600	3,320	1,960	✝ 1,660
21	1,660	1,380	1,100	1,340	8,620	2,340	1,360	4,840	16,000	3,180	2,000	1,660
22	1,570	✝1,410	1,060	1,170	2,930	1,960	1,220	4,870	12,900	2,980	✝1,960	1,710
23	1,530	1,450	989	985	1,980	1,680	1,130	✝ 4,100	11,200	2,860	1,960	1,660
24	1,500	1,550	✝ 918	939	✝ 1,710	✝ 1,710	1,070	3,250	9,960	2,900	1,940	1,610
25	✝1,570	1,640	918	10,500	2,720	1,840	1,010	3,180	8,400	✝ 2,830	1,920	1,680
26	1,560	1,610	936	15,900	3,810	3,490	✝ 989	3,850	7,170	2,670	1,910	1,700
27	1,610	1,550	865	11,200	4,200	3,410	883	4,800	✝ 6,250	2,560	1,850	✝ 1,720
28	1,570	1,530	2,780	✝ 10,100	2,440	2,610	812	6,320	5,540	2,510	1,850	1,730
29	1,520		✝2,420	4,310	1,870	✝ 2,960	777	7,590	4,980	2,360	1,840	1,710
30	1,500		1,480	7,910	1,720	2,380	724	✝ 9,890	4,560	2,350	1,820	1,730
31	1,530		1,240		1,920		689	8,900		2,350		1,700
Sum	50,350	41,370	39,596	84,500	136,410	81,060	60,714	116,713	408,830	138,620	60,780	54,100

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period #Aug. 1959-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	2.23	1.94	† 5	1,750	24	1,480	1,620	99,836	120,370	167,000	74,038
Feb.	2.43	1.71	10	1,970	20	1,340	1,480	82,093	110,240	165,800	82,093
Mar.	5.12	.92	28	5,900	28	855	1,280	78,541	95,897	149,600	65,317
Apr.	10.66	.56	30	21,300	15	618	2,820	167,429	107,103	167,429	85,742
May	16.04	1.87	1	37,800	18	1,470	4,400	270,690	149,141	270,690	73,715
June	6.82	1.15	14	10,000	† 11	989	2,700	160,768	232,846	665,725	69,300
July	4.17	.46	3	4,340	31	678	1,960	120,373	153,930	321,949	53,697
Aug.	6.86	.46	30	10,300	1	678	3,760	231,556	167,558	262,677	79,011
Sept.	14.34	4.13	11	32,400	30	4,270	13,600	810,494	478,755	1,811,078	143,039
Oct.	8.66	2.76	9	15,100	31	2,300	4,470	274,858	255,303	393,942	129,969
Nov.	2.79	2.33	† 1	2,380	30	1,820	2,030	120,548	135,767	178,200	79,586
Dec.	2.43	2.13	8	1,890	24	1,610	1,750	107,267	125,735	175,100	91,717
Yearly	16.04	0.46		37,800		618	3,490	2,524,453	2,132,645	3,208,230	1,298,234

† And other days ✝ Discharge measurement made on this day
# High flows prior to 1962 are based on a rating developed after this date

RIO GRANDE AT LAREDO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the right bank at Laredo, Texas at latitude 27° 29' 50", longitude 99° 29' 40", and river mile 357.4; immediately downstream from the Laredo, Texas sewer plant, 0.9 river mile downstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 890.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 347.90 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 87 discharge measurements during the year, 80 by the Mexican Section and 7 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through 1913; May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June, November, and December 1922; and 1923 through 1966. Gage height records are available for January, February, and March 1914.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. This station was established in January 1955 to replace the station 1.5 miles upstream which was destroyed by the June-July 1954 flood.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 716,900 second-feet on June 30, 1954, determined by slope-area calculations with a gage height of 61.35 feet. Much well-authenticated information establishes the occurrence of a greater flood in June 1865 with a gage height of 62.5 feet on the same gage and discharge of approximately 950,000 second-feet and also that these were the only floods since 1745 with flows greater than 600,000 second-feet. Min. no flow several days in June and July 1953 and on July 24, 1956.

Average Flow in Second-Feet ‡

Daily:	Max.	576,000	June 30, 1954	Min.	0	Several days June, July 1953
Monthly:	Max.	49,500	Sept. 1932	Min.	5.5	June 1953
Yearly:	Max.	9,670	1932	Min.	1,080	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,570	1,360	1,360	1,060	⋔25,400	2,080	2,370	⋔ 618	⋔ 8,760	4,520	2,440	1,910
2	1,570	1,380	1,280	1,570	⋔26,100	2,190	2,310	653	8,330	4,170	2,470	⋔1,890
3	⋔1,640	1,360	1,220	1,410	⋔21,100	2,030	2,510	706	8,860	⋔ 3,960	2,370	1,890
4	1,700	1,340	1,240	⋔ 1,040	9,250	1,840	⋔ 4,170	706	10,400	3,600	2,350	1,890
5	1,750	1,320	1,180	936	5,190	1,660	2,910	724	⋔11,300	3,430	2,260	⋔1,940
6	1,750	1,270	1,160	865	3,460	⋔ 1,500	2,930	742	12,500	3,390	2,240	1,950
7	1,660	⋔1,270	⋔1,140	784	⋔ 2,930	1,470	2,910	1,600	⋔21,500	3,850	⋔2,260	1,940
8	1,770	1,310	1,160	759	2,400	1,390	2,900	⋔ 4,340	⋔23,200	5,510	2,260	1,940
9	1,680	1,340	1,190	759	⋔ 2,150	1,290	2,510	3,640	⋔22,000	14,000	2,190	1,980
10	⋔1,660	1,550	1,160	742	2,070	1,180	2,380	2,850	⋔16,800	⋔11,700	2,220	1,980
11	1,590	1,500	⋔1,110	⋔ 749	1,940	1,130	⋔ 2,140	2,690	27,700	7,060	2,150	1,940
12	1,550	1,410	1,080	759	1,770	1,020	3,370	2,200	30,400	8,790	2,150	⋔1,890
13	1,550	1,310	1,090	784	1,590	⋔ 1,820	3,530	1,820	24,300	9,430	2,150	1,870
14	1,520	⋔1,380	⋔1,110	749	1,520	7,800	3,390	1,700	⋔16,600	⋔ 5,930	⋔2,150	1,870
15	1,500	1,500	1,110	925	1,500	⋔ 7,310	2,170	⋔2,650	14,200	5,190	2,210	1,870
16	1,570	1,540	1,110	724	⋔ 1,480	6,040	1,890	7,630	14,200	4,170	2,210	1,840
17	1,660	1,500	1,020	749	1,480	6,430	2,240	⋔ 8,050	14,800	⋔ 3,810	2,210	1,840
18	1,640	1,390	996	⋔ 777	1,410	3,210	⋔ 2,190	5,580	14,500	3,530	2,190	1,890
19	⋔1,610	1,310	989	798	1,470	2,650	1,980	4,170	⋔15,000	3,460	2,120	⋔1,740
20	1,550	1,250	996	1,060	4,170	⋔ 2,330	1,870	4,170	16,200	3,570	2,080	1,730
21	1,570	⋔1,250	989	1,170	⋔13,700	2,240	1,520	5,160	17,600	3,460	⋔2,150	1,700
22	1,590	1,340	⋔1,010	1,130	5,160	2,150	⋔ 1,340	⋔5,470	14,300	⋔ 3,210	2,150	1,700
23	1,520	1,380	996	989	⋔ 2,500	1,800	1,240	5,160	11,900	3,140	2,150	1,800
24	⋔1,470	1,410	925	904	1,740	1,610	1,170	3,920	⋔10,600	⋔ 3,040	2,150	1,770
25	1,450	1,520	⋔ 848	⋔ 6,780	⋔ 1,750	1,790	⋔ 1,050	3,950	8,900	3,040	2,120	1,770
26	1,480	1,540	837	⋔16,000	3,150	2,340	978	3,640	⋔ 7,660	⋔ 2,900	2,150	⋔1,770
27	1,480	1,480	848	⋔10,700	5,050	⋔ 3,850	918	4,770	6,780	2,810	2,150	1,770
28	1,520	⋔1,410	⋔1,220	⋔14,500	3,200	3,000	837	7,200	5,970	⋔ 2,700	⋔1,940	1,770
29	1,520		3,230	⋔ 6,220	2,220	2,790	⋔ 742	⋔8,260	⋔ 5,370	2,650	1,910	1,770
30	1,480		⋔2,060	4,130	⋔ 1,790	⋔ 2,740	706	9,820	4,940	2,540	1,910	1,770
31	⋔1,410		1,170		1,620		636	⋔9,750		⋔ 2,440		1,760
Sum	48,980	38,920	36,834	80,522	160,260	80,680	63,807	124,339	425,570	145,000	65,460	57,140

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1948-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.48	1.28	8	1,830	31	1,390	1,580	97,153	112,044	219,200	54,800
Feb.	1.51	1.21	10	1,870	20	1,240	1,390	77,225	115,160	423,700	41,050
Mar.	3.22	.82	29	5,090	28	819	1,190	73,071	93,739	223,400	30,960
Apr.	9.71	.66	26	19,200	16	682	2,680	159,801	120,639	464,000	28,300
May	15.42	1.38	2	35,000	18	1,390	5,170	317,943	222,197	1,351,000	33,360
June	5.97	.75	14	10,400	13	989	2,690	160,054	326,512	1,994,000	337
July	3.12	.66	4	4,770	31	607	2,060	126,565	205,797	655,500	17,470
Aug.	6.40	.69	31	10,800	1	618	4,010	246,644	178,595	534,400	36,970
Sept.	14.47	3.15	†11	32,100	30	4,800	14,200	844,046	366,044	1,674,055	30,900
Oct.	8.50	1.90	9	15,700	31	2,350	4,680	287,620	300,681	1,822,000	31,910
Nov.	2.00	1.71	2	2,520	†29	1,200	2,180	129,899	140,339	488,900	43,110
Dec.	1.77	1.54	9	2,050	21	1,660	1,840	113,291	117,821	266,400	52,230
Yearly	15.42	0.66		35,000		607	3,640	2,633,312	2,299,568	4,571,770	786,640

† And other days ‡ Period 1924-1966 ⋔ Discharge measurement made on this day

RIO SALADO AT LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Cableway, control weir with notch opening of 2,500 second-foot capacity, gravity well, and water-stage recorder located on the right bank at latitude 26° 50' 10", longitude 99° 33' 50", 2.0 river miles downstream from the confluence of Río Sabinas with Río Salado, 6 miles southeast of the town of Las Tortillas, Tamaulipas, and 24.8 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 298.4, 24.6 river miles upstream from Falcon Dam, and 949.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 325.72 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 37 discharge measurements during the year, a stable rating curve up to 2,500 second-feet, and a continuous record of gage heights. Computations by shifting control methods for flows greater than 2,500 second-feet. Records available: September 9, 1953 through 1966. Records are also available for a station at old Cd. Guerrero, 18.6 miles downstream, from 1900 through 1913 and 1923 through September 8, 1953.

REMARKS: Reservoirs and irrigation diversions modify the flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 27,720 second-feet on October 16, 1958 with a gage height of 23.79 feet. Min. frequently no flow. Extreme flow data for the Río Salado at Cd. Guerrero prior to September 8, 1953 may be found in previous bulletins.

Average Flow in Second-Feet ‡

Daily:	Max.	25,600	Oct. 18, 1958	Min.	0	Frequently
Monthly:	Max.	8,500	Oct. 1958	Min.	0	Frequently
Yearly:	Max.	2,020	1958	Min.	56.8	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.4	14.1	12.4	0	196	♯ 388	49.4	0	17.7	28.3	7.8	0
2	14.1	10.6	10.6	0	2,160	309	53.0	0	30.4	28.3	7.1	0
3	12.4	7.1	8.8	0	4,520	247	60.0	0	31.9	28.3	5.3	0
4	10.6	5.3	5.3	0	5,650	203	61.8	0	24.7	26.5	5.3	0
5	9.9	5.3	3.5	0	4,380	168	60.0	0	21.2	25.4	5.3	0
6	9.9	3.5	1.8	0	4,340	♯ 141	53.0	0	45.2	24.7	5.3	0
7	15.9	3.5	1.8	0	4,060	127	49.4	0	23.0	28.3	5.3	0
8	14.1	1.8	1.8	0	2,590	♯ 115	♯ 42.4	742	3,430	26.5	7.1	0
9	12.4	1.8	1.8	0	1,450	98.9	35.3	494	2,750	23.0	8.8	0
10	12.4	1.8	1.8	0	1,020	♯ 88.3	31.8	91.8	♯2,220	21.9	8.8	0
11	10.6	1.8	3.5	0	706	79.5	24.7	35.3	♯1,090	21.9	8.8	0
12	10.6	1.8	3.5	0	♯ 547	70.6	♯ 23.0	44.1	♯ 530	26.5	8.8	0
13	10.6	1.8	3.5	0	♯ 424	♯ 67.0	19.4	28.3	♯ 318	172	7.1	0
14	10.6	1.8	3.5	1,420	343	74.2	17.7	523	184	314	8.8	0
15	7.1	1.8	3.5	1,080	290	♯ 53.0	14.1	247	♯ 124	132	9.5	0
16	7.1	1.8	3.5	2,700	♯ 265	44.1	12.4	106	95.3	77.7	13.1	0
17	7.1	1.8	3.5	2,230	219	♯ 35.3	10.6	56.5	♯ 77.7	67.1	17.7	0
18	7.1	1.8	1.8	388	♯ 187	67.5	8.8	35.3	♯ 329	53.0	15.9	0
19	7.1	1.8	0	♯ 194	♯ 530	35.3	5.3	28.3	137	54.7	10.5	0
20	7.1	3.5	0	106	♯ 1,400	28.3	3.5	23.0	97.1	44.1	7.8	0
21	8.8	56.1	0	70.6	♯ 1,080	♯ 40.6	1.8	17.7	79.5	31.8	6.0	0
22	7.1	220	0	53.0	♯ 1,590	35.3	0	17.7	70.6	24.7	3.5	0
23	59.7	56.5	0	53.0	♯ 1,090	26.5	0	15.9	56.5	21.2	3.5	0
24	67.1	31.8	0	35.3	459	♯ 31.8	0	14.1	49.4	21.2	1.8	0
25	32.1	23.0	0	33.5	♯ 1,490	90.8	0	10.6	44.1	21.2	0	0
26	21.2	21.2	0	30.0	♯ 2,810	226	0	12.4	35.3	17.6	0	0
27	23.0	17.7	0	26.5	♯ 3,520	♯ 247	0	27.5	35.3	17.6	0	0
28	24.7	14.1	0	24.7	♯ 1,120	115	0	♯ 102	31.8	15.9	0	0
29	23.0		0	28.3	996	♯ 79.5	0	30.0	28.3	14.1	0	0
30	18.0		0	28.3	♯ 918	61.8	0	23.0	28.3	13.0	0	0
31	17.7		0		519		0	19.4		7.8		0
Sum	511.5	514.9	75.9	8,501.2	50,869	3,394.3	637.4	2,744.9	12,035.3	1,430.3	188.9	0

Month	Current Year 1966								Period 1954-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	0.85	0.10	23	127	†15	7.1	16.5	1,013	5,610	57,070	0
Feb.	1.74	.03	†21	554	† 8	1.8	18.4	1,020	5,671	66,880	0
Mar.	.20	0	1	14.1	†19	0	2.4	151	2,497	29,690	0
Apr.	3.74	0	17	3,280	† 1	0	283	16,870	4,891	19,300	0
May	5.48	.33	4	5,930	1	28.3	1,640	100,919	25,299	100,919	302
June	1.51	.26	1	456	23	23.0	113	6,734	12,074	27,410	0
July	.59	0	4	61.8	†22	0	20.6	1,265	4,103	18,650	0
Aug.	2.36	0	8	1,180	† 1	0	88.5	5,445	8,735	31,700	0
Sept.	4.56	.20	8	4,910	† 1	15.9	401	23,866	62,030	359,000	2,860
Oct.	1.51	.07	†13	459	31	7.1	46.1	2,835	50,424	522,800	110
Nov.	.26	0	†16	21.2	†25	0	6.3	375	28,222	338,000	0
Dec.	0	0		0		0	0	0	14,475	176,100	0
Yearly	5.48	0		5,930		0	222	160,493	224,031	1,463,797	41,238.2

† And other days ‡ Period September 1953-1966 ♯ Discharge measurement made on this day

RIO GRANDE BELOW FALCON DAM, TEXAS

DESCRIPTION: The discharges reported below represent water measured as it leaves Falcon Reservoir through turbine penstocks, bypass valves, spillway gates, and leakage. Falcon Dam, astride the Rio Grande, is located at latitude 26° 33' 25", longitude 99° 10' 05", and river mile 273.8; about 7 miles southwest of Falcon, Texas, 84.5 river miles downstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 974.4 river miles downstream from the American Dam at El Paso, Texas. A gravity well and water-stage recorder located 2.5 river miles downstream and a cableway located one mile further downstream are used to measure the flow of this station at times when spillway gates are in operation.

RECORDS: Based on daily Simplex meter records of releases through the six turbines, established rating curves for the four hollow-jet bypass valves, estimates of gate leakage, measurements of flow at the cable during spillgate operations, and 38 discharge measurements during the year, 19 by the United States Section and 19 by the Mexican Section of this Commission. Records available: 1958 through 1966. Records are also available from December 17, 1952 through 1957 for a station at Chapeño, 2.5 miles downstream, where discharges included arroyo inflow below Falcon Dam, which inflow is eliminated from the records reported below.

REMARKS: Computation of flow was made jointly by the United States and Mexican Sections of this Commission from a consolidation of the basic data gathered by each section incident to the international operation of Falcon Reservoir.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 48,900 second-feet on November 9, 1958. Min. 1.5 second-feet on March 24 and 25, 1957.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,420	714	892	784	1,090	2,860	♠10,300	2,210	7,080	3,190	1,070	894
2	618	716	796	898	63.0	3,490	♠ 7,680	3,970	4,810	3,110	1,060	901
3	1,080	720	905	1,120	18.0	3,830	♠ 5,000	3,500	996	3,650	1,430	889
4	419	715	785	1,420	18.0	3,640	♠ 5,020	2,910	1,770	4,340	1,420	1,090
5	1,410	719	797	1,810	18.0	4,640	3,990	2,220	3,770	4,390	2,800	1,080
6	1,070	722	796	2,010	18.0	4,440	2,340	2,280	6,230	2,880	1,210	2,020
7	1,070	726	781	1,620	18.0	5,080	1,230	2,670	10,500	1,400	1,430	1,800
8	1,430	727	1,020	1,610	18.0	5,680	617	2,680	12,100	1,730	1,420	1,260
9	418	1,060	1,020	1,600	18.0	6,440	534	2,870	17,000 ♠	1,400	1,250	1,090
10	1,450	902	580	2,220	♠ 18.0	6,920	534	2,210	16,400 ♠	658	2,160	1,080
11	1,260	903	801	2,220	107	7,090	820	1,510	15,900 ♠	18.0	2,050	1,080
12	1,080	891	793	2,420	18.0	7,440	1,240	2,060	16,000 ♠	536	2,230	1,080
13	1,070	897	803	3,640	18.0	6,520	2,540	3,420	15,900 ♠	1,080	2,400	1,070
14	898	899	569	3,290	18.0	3,910	2,020	4,030	16,000 ♠	1,130	2,680	1,070
15	1,260	905	796	1,220	18.0	1,060	2,040	3,160	16,000 ♠	471	1,870	1,080
16	509	904	727	608	♠ 18.0	929	831	3,130	16,000 ♠	18.0	1,820	1,320
17	910	799	795	1,020	♠ 112	3,110	716	3,940	16,000 ♠	18.0	2,050	1,850
18	712	800	790	2,290	2,000	4,020	825	4,450	16,000	18.0	2,250	1,920
19	724	799	794	3,120	962	2,210	824	5,150	16,000 ♠	70.0	2,010	1,960
20	714	801	799	4,230	1,750	834	2,300	5,680	16,000 ♠	114	1,630	2,040
21	716	794	803	1,720	2,830	18.0	3,010	4,770	16,000 ♠	123	1,620	1,920
22	720	549	810	18.0	1,790	18.0	3,020	4,170	16,000 ♠	308	1,540	1,330
23	548	542	804	366	1,060	18.0	3,010	4,020	16,000 ♠	422	1,400	1,020
24	715	893	783	364	1,570	18.0	2,890	4,990	16,000 ♠	315	1,200	1,420
25	895	728	795	368	1,930	18.0	2,710	5,400	16,000	318	907	2,020
26	895	542	791	572	542	18.0	2,320	3,480	8,960 ♠	307	1,010	2,750
27	897	721	713	573	1,060	18.0	2,390	1,380	18.0	2,080	1,210	2,740
28	718	889	824	1,180	1,750	18.0	2,750	18.0	2,110	2,980	1,120	2,210
29	718		1,010	1,530	1,930	18.0	2,630	18.0	4,590	1,020	908	2,580
30	712		825	2,120	2,280	5,020	2,510	3,370	3,780	319	900	2,760
31	893		901		1,520		2,400	7,100		1,100		2,810
Sum	27,949	21,977	25,098	47,961.0	24,580.0	89,325.0	81,041	102,766.0	339,914.0	39,513.0	48,055	50,134

Month	Current Year 1966: Extreme Gage Feet High	Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period # 1954-1966: Acre-Feet Average	Maximum	Minimum
Jan.			10	1,450	9	418	902	55,437	208,093	412,727	46,100
Feb.			9	1,060	†23	542	785	43,591	185,751	367,384	16,600
Mar.			† 8	1,020	14	569	810	49,782	143,425	347,000	2,390
Apr.			20	4,230	22	18.0	1,600	95,131	218,836	417,209	19,530
May			21	2,830	† 3	18.0	793	48,754	289,711	526,000	48,754
June			12	7,440	†21	18.0	2,980	177,176	297,602	551,000	119,917
July			1	10,300	† 9	534	2,610	160,745	120,365	229,828	18,300
Aug.			31	7,100	†28	18.0	3,320	203,836	127,262	206,000	25,900
Sept.			9	17,000	27	18.0	11,300	674,219	156,700	674,219	15,300
Oct.			5	4,390	†11	18.0	1,270	78,374	233,861	1,997,000	27,100
Nov.			5	2,800	30	900	1,600	95,317	144,341	1,128,000	28,632
Dec.			31	2,810	3	889	1,620	99,441	133,570	465,000	37,100
Yearly				17,000		18.0	2,460	1,781,803	2,259,517	5,016,800	1,455,382

† And other days Ø Mean daily ♠ Discharge measurement made on this day

Values prior to 1958 are Chapeño discharges less arroyo inflow

RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Cableway, reinforced concrete weir of 177 second-foot capacity, gravity well, and water-stage recorder located on the right bank at a point called "El Paso del Cántaro", latitude 26° 27' 10", longitude 99° 09' 20", about 0.5 mile north of Cd. Mier, Tamaulipas, and 5.0 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 261.4, 12.4 river miles downstream from Falcon Dam, and 986.8 river miles downstream from the American Dam at El Paso, Texas. The weir is located about 300 feet downstream from the recorder. The zero of the gage is 188.35 feet above mean sea level, U. S. C. & G. S. datum, which coincides with the weir crest elevation.

RECORDS: Based on 14 discharge measurements made at high flows during the year, the weir discharge table at low flows, and a continuous record of gage heights. High flow computations by shifting control methods. Records available: July 1923 through 1966.

REMARKS: Small reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station. On June 11, 1952 the zero of the gage was raised 1.31 feet to make it coincide with the weir crest elevation.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 144,800 second-feet on September 11, 1948 with a gage height of 33.56 feet. Min. periods of no flow have occurred at times during all years of record except 1934 and 1935.

Average Flow in Second-Feet ‡

Daily:	Max.	87,230	Sept. 11, 1948	Min.	0	Frequently
Monthly:	Max.	5,170	Sept. 1948	Min.	0	Frequently
Yearly:	Max.	536	1953	Min.	16.4	1929

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	646	16.6	102	0	58.6	1.8	0	0
2	0	0	0	0	4,030 ⇑	10.6	87.2	0	40.6	.7	0	0
3	0	0	0	0	2,210 ⇑	7.1	71.3	0	30.4	0	0	0
4	0	0	0	0	494	4.9	56.9	0	23.3	0	0	0
5	0	0	0	0	2,450 ⇑	4.2	40.6	0	18.7	0	0	0
6	0	0	0	0	2,160 ⇑	3.5	33.9	0	17.0	0	0	0
7	0	0	0	0	1,260 ⇑	2.5	33.9	0	36.7	0	0	5.7
8	0	0	0	0	720	1.8	24.7	0	173	0	0	8.1
9	0	0	0	0	315	1.1	21.5	21.9	131	0	0	7.1
10	0	0	0	0	195	1.1	18.7	62.2	93.2	0	0	4.9
11	0	0	0	0	112	1.1	15.9	31.4	172	0	0	3.5
12	0	0	0	0	64.6	.7	10.6	⇑ 876	42.0	0	0	4.2
13	0	0	0	0	41.7	.4	8.1	251	35.3	0	0	4.2
14	0	0	0	392	27.2	154	7.1	32.1	23.3	0	0	4.9
15	0	0	0	953	20.8	505	6.0	15.9	20.1	0	0	6.0
16	0	0	0	367	16.2	32.8	4.9	9.5	15.9	6.0	0	4.9
17	0	0	0	56.2	13.1	9.9	4.2	7.1	20.5	3.5	0	4.9
18	0	0	0	19.1	10.6	13.1	2.5	4.9	13.1	1.8	0	4.2
19	0	0	0	10.2	⇑ 381	162	1.8	3.5	16.2	.7	0	4.9
20	0	0	0	6.0	84.8	533	.7	1.8	51.9	0	0	6.0
21	0	0	0	41.7	24.7	248	0	1.1	20.5	0	0	7.1
22	0	0	0	6.0	15.9	347	0	.7	14.5	0	0	4.9
23	0	0	0	3.5	12.0	165	0	0	12.0	0	0	4.2
24	0	0	0	7.4	9.9	381	0	0	9.2	1.1	0	4.9
25	0	0	0	4.9	558	544	0	0	8.1	38.8	0	6.0
26	0	0	0	3.5	256	1,640	0	327	7.1	7.4	0	7.1
27	0	0	0	1.8	44.1	491	0	4,240 ⇑	7.1	2.5	0	8.1
28	0	0	0	1.1	19.4	178	1.4	4,480 ⇑	6.0	1.1	0	8.1
29	0		0	.7	720	131	3.9	1,680 ⇑	4.2	.4	0	8.1
30	0		0	.4	424	119	.4	276	3.5	0	0	8.1
31	0		0		45.9		0	102		0		7.1
Sum	0	0	0	1,874.5	17,381.9	5,709.4	558.2	12,424.1	1,125.0	65.8	0	147.2

Month	Current Year 1966								Period 1924-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
				High		Low					
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	0	0		0		0	0	0	3,188	34,920	0
Feb.	0	0		0		0	0	0	2,432	25,550	0
Mar.	0	0		0		0	0	0	2,409	19,830	0
Apr.	2.79	0	15	1,240	† 1	0	62.5	3,720	6,628	36,210	0
May	5.31	0	2	5,510	1	0	561	34,469	13,926	137,000	0
June	3.77	0	26	2,660	†13	0	190	11,322	12,059	83,240	0
July	.95	0	1	109	†21	0	18.0	1,107	5,987	37,590	0
Aug.	6.10	0	27	6,750	† 1	0	401	24,642	16,855	205,700	0
Sept.	2.56	.07	11	1,030	30	3.5	37.5	2,229	33,486	307,900	135
Oct.	.72	0	25	69.2	† 3	0	2.1	131	18,278	193,700	0
Nov.	0	0		0		0	0	0	3,330	21,740	0
Dec.	.16	0	† 8	8.1	† 1	0	4.7	293	2,904	15,000	0
Yearly	6.10	0		6,750		0	108	77,913	121,482	387,800	11,898.7

† And other days ‡ Period 1924-1966 ⇑ Discharge measurement made on this day

CONTRIBUTIONS FROM RIO SAN JUAN
FALCON DAM TO FORT RINGGOLD

DESCRIPTION: The Lower Río San Juan Irrigation District in Mexico lies along the Rio Grande between Cd. Miguel Alemán and Río Bravo, Tamaulipas and is irrigated with water impounded by Marte R. Gómez Dam situated on the Río San Juan 12.4 river miles upstream from the confluence with the Rio Grande. The Río San Juan enters the Rio Grande at river mile 237.8 and 1,010.4 river miles downstream from the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Fort Ringgold Gaging Station through the Río San Juan Channel, Rancherías Drain, and Los Fresnos Drain; and between this station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of water reaching the Rio Grande via channels located upstream from the Fort Ringgold Gaging Station is shown below. The portion of drain water from this irrigation district reaching the Rio Grande via channels located downstream from the Fort Ringgold Gaging Station is shown on page 64 in this bulletin.

RECORDS: Water entering the Rio Grande through the Río San Juan Channel, included in the tabulation below and composed of spills and leakage from Marte R. Gómez Dam, and storm inflow and drainage below the dam, was measured at the Río San Juan Gaging Station at Camargo, Tamaulipas 3.1 river miles upstream from the confluence with the Rio Grande. (See next page for station description and separate tabulation of discharge for this station). The discharge through Rancherías Drain was determined by prorating between 44 current meter measurements made during the year. There was no drainage flow through Los Fresnos Drain in 1966. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: 1953 through 1966.

REMARKS: In 1966 there were 72,967 irrigable acres in the Lower Río San Juan Irrigation District.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.7	8.8	9.6	10.6	5.8	18.4	5,910	106	4.8	7.2	17.9	49.6
2	8.7	8.9	9.0	9.5	134	14.8	5,480	95.5	4.8	7.9	19.1	45.3
3	9.0	9.0	7.9	8.8	298	14.1	4,700	86.9	4.7	8.7	20.6	41.1
4	9.3	9.0	8.2	7.7	525	13.0	4,140	81.5	4.7	9.4	19.2	36.9
5	9.3	8.7	8.1	6.6	701	12.3	4,070	66.4	4.7	10.2	17.9	32.6
6	9.6	8.7	8.0	5.9	154	11.3	5,480	48.5	4.7	10.9	16.5	28.7
7	9.3	8.7	8.2	5.5	7.2	10.6	4,600	39.4	4.6	11.7	15.1	24.5
8	8.9	8.8	8.1	5.5	7.1	9.5	3,960	32.4	4.6	12.4	13.8	24.5
9	8.6	8.8	8.3	5.4	6.6	8.8	3,420	55.8	4.6	12.2	12.4	24.4
10	8.7	8.8	8.2	5.0	6.5	10.3	2,920	95.8	4.6	23.0	11.2	24.8
11	8.3	8.7	8.4	4.9	6.0	11.8	1,750	117.0	4.5	413	10.5	24.7
12	8.0	8.1	8.2	4.9	5.9	13.3	2,200	115.0	4.5	189	9.9	24.6
13	7.7	8.0	8.3	4.9	5.5	14.9	1,900	96.4	4.4	61.2	9.7	25.0
14	8.3	7.8	8.1	4.4	4.8	16.7	1,670	67.5	37.3	21.1	9.1	24.9
15	8.9	7.7	8.2	4.5	4.4	18.3	1,370	46.8	51.0	568	8.6	24.3
16	9.2	7.5	8.3	4.6	4.1	19.8	1,208	25.6	51.0	323	8.1	23.7
17	9.8	7.3	8.1	4.7	3.7	19.8	1,110	13.7	50.9	142	7.8	23.0
18	10.4	8.2	8.1	4.8	3.4	90.8	1,010	12.0	50.8	90.3	8.5	22.4
19	10.7	9.0	8.1	4.8	3.0	232	887	10.9	50.8	69.7	8.8	21.7
20	11.3	10.2	7.8	4.9	9.9	141	767	10.1	50.7	30.8	9.4	21.1
21	10.9	11.1	7.8	829	10.2	19.1	576	8.9	50.6	27.7	10.0	20.4
22	10.6	11.9	7.8	40.7	10.6	19.1	406	8.1	97	24.9	10.7	20.4
23	10.2	13.1	7.8	5.8	11.3	19.1	352	7.0	232	22.1	11.3	53.6
24	9.8	14.0	7.5	5.9	11.7	23.0	321	6.2	233	19.4	15.9	62.0
25	9.5	13.0	7.5	6.0	12.0	19.1	298	5.0	30.6	16.6	20.9	40.8
26	9.1	12.3	8.4	6.1	12.4	77.7	270	5.0	12.5	13.8	25.5	40.8
27	8.7	11.7	8.9	6.1	12.4	725	244	5.0	10.3	10.6	30.4	37.2
28	8.8	10.6	9.4	6.2	12.4	3,680	211	4.9	8.2	12.1	35.0	44.2
29	8.9		10.3	6.1	689	5,450	169	4.9	6.4	13.7	40.0	42.8
30	9.0		10.8	6.0	356	5,980	134	4.9	6.4	14.9	44.6	38.8
31	9.1		11.3		21.9		115	4.8		16.4		34.9
Sum	287.3	268.4	262.7	1,035.8	3,055.8	16,713.6	61,648	1,287.9	1,189.7	2,213.9	498.4	1,003.7

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1966: Acre-Feet Average	Maximum	Minimum
Jan.			20	11.3	13	7.7	9.3	569	4,629	51,360	126
Feb.			24	14.0	17	7.3	9.6	532	2,550	26,250	246
Mar.			31	11.3	†24	7.5	8.5	520	2,120	20,360	250
Apr.			21	829	14	4.4	34.5	2,054	2,312	8,480	196
May			29	689	19	3.0	98.6	6,060	3,567	13,233	555
June			30	5,980	9	8.8	557	33,142	4,444	33,142	476
July			1	5,910	31	115	1,990	122,305	10,264	122,305	312
Aug.			11	117	31	4.8	41.5	2,554	2,303	11,310	202
Sept.			24	233	7	4.6	39.7	2,360	6,992	20,623	298
Oct.			15	568	1	7.2	71.4	4,391	71,073	901,800	229
Nov.			30	44.6	17	7.8	16.6	988	18,774	230,400	154
Dec.			24	62.0	22	20.4	32.4	1,991	5,886	68,580	200
Yearly				5,980		3.0	245	177,466	134,914	1,231,907	11,025

† And other days ø Mean daily

RIO SAN JUAN AT CAMARGO, TAMAULIPAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank opposite Camargo, Tamaulipas at latitude 26° 18' 50", longitude 98° 50' 20", 3.1 river miles from the confluence with the Rio Grande, and 9.3 river miles downstream from Marte R. Gómez Dam. This stream enters the Rio Grande at river mile 237.8, 3.9 river miles upstream from the Rio Grande gaging station at Fort Ringgold, 36.0 river miles downstream from Falcon Dam, and 1,010.4 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 130.45 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 101 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Discharge prorated between measurements during times of extremely low flow. Records available: January 1954 through 1966.

REMARKS: Except for storm inflow, diversion, and drainage returns below Marte R. Gómez Dam, the flow at this station is controlled by spills from Marte R. Gómez Reservoir and leakage through the dam. Backwater from the Rio Grande frequently reaches this station. Flow passing this station, combined with drain water entering the Rio Grande through Rancherías and Los Fresnos drains, is also published under heading "Contributions from Río San Juan - Falcon Dam to Fort Ringgold" (see previous page).

EXTREME FLOWS FROM RECORDS: Momentary: Max. 49,800 second-feet on October 17, 1958 with a gage height of 33.53 feet. Min. 0.7 second-feet several days in April 1960.

Average Flow in Second-Feet

Daily:	Max.	49,400	Oct. 17, 1958	Min.	0.7	April 23, 24 & 25, 1960
Monthly:	Max.	14,660	Oct. 1958	Min.	2.1	November 1964
Yearly:	Max.	1,700	1958	Min.	14.6	1963

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.7	6.0	6.4	8.1	3.2	10.6	↑ 5,900	103	2.5	3.5	14.8	↑ 47.7
2	5.7	6.0	5.7	7.1	131	↑ 7.1	↑ 5,470	↑ 93.2	2.5	4.2	15.9	43.4
3	6.0	↑ 6.0	↑ 4.6	6.4	295	6.7	↑ 4,700	84.8	2.5	4.9	↑ 17.3	39.2
4	6.4	6.0	4.9	5.3	523	6.0	↑ 4,130	↑ 79.5	2.5	5.7	15.9	35.0
5	6.4	5.7	4.9	4.2	699	5.7	↑ 4,060	64.3	2.5	6.4	14.5	30.7
6	↑ 6.7	5.7	4.9	↑ 3.5	151	4.9	↑ 5,470	46.3	2.5	7.1	13.1	26.8
7	6.4	5.7	5.3	3.2	5.3	4.6	↑ 4,590	37.1	2.5	7.8	11.7	↑ 22.6
8	6.0	5.7	5.3	3.2	5.3	3.9	↑ 3,950	30.0	↑ 2.5	↑ 8.5	10.2	22.6
9	5.7	5.7	5.7	3.2	4.9	↑ 3.5	↑ 3,410	53.3	2.5	8.5	8.8	22.6
10	5.7	↑ 5.7	↑ 5.7	2.8	4.9	4.6	2,920	93.2	2.5	19.4	↑ 7.4	23.0
11	5.3	5.7	5.7	2.8	4.6	5.7	↑ 1,740	↑ 114	2.5	410	7.1	23.0
12	4.9	5.3	5.3	2.8	↑ 4.6	6.7	↑ 2,200	113	2.5	186	6.7	23.0
13	↑ 4.6	5.3	5.3	2.8	4.2	7.8	↑ 1,900	93.6	2.5	58.3	6.7	23.3
14	5.3	5.3	4.9	↑ 2.5	3.5	9.2	↑ 1,670	64.6	35.3	18.4	6.4	↑ 23.3
15	6.0	5.3	4.9	2.5	3.2	10.2	↑ 1,370	43.8	↑ 49.1	↑ 565	6.0	22.6
16	6.4	5.3	4.9	2.5	2.8	↑ 11.3	↑ 1,200	22.6	49.1	↑ 320	5.7	21.9
17	7.1	↑ 5.3	↑ 4.6	2.5	2.5	11.3	1,100	10.6	49.1	139	↑ 5.7	21.2
18	7.8	6.0	4.6	2.5	2.1	82.3	↑ 1,010	↑ 8.8	49.1	87.9	6.4	20.5
19	8.1	6.7	4.6	2.5	↑ 1.8	224	↑ 883	7.8	49.1	67.5	6.7	19.8
20	↑ 8.8	7.8	4.2	2.5	2.1	133	↑ 763	7.1	49.1	↑ 28.6	7.4	19.1
21	8.5	8.5	4.2	↑ 826	2.5	10.6	↑ 572	6.0	49.1	25.4	8.1	↑ 18.4
22	8.1	9.2	4.2	38.1	2.8	10.6	↑ 403	5.3	↑ 196	22.6	8.8	18.4
23	7.8	10.2	4.2	3.2	3.5	10.6	↑ 348	4.2	231	19.8	↑ 9.5	51.6
24	7.4	↑ 10.9	3.9	3.2	3.9	14.5	317	3.5	↑ 231	17.0	14.1	60.0
25	7.1	9.9	↑ 3.9	3.2	4.2	10.6	↑ 295	↑ 2.5	28.3	14.1	19.1	38.8
26	6.7	9.2	4.9	3.2	↑ 4.6	69.2	↑ 267	2.5	↑ 9.9	11.3	23.6	38.8
27	↑ 6.4	8.5	5.7	3.2	4.6	↑ 717	↑ 241	2.5	7.4	↑ 8.1	28.6	35.3
28	6.4	7.4	6.4	↑ 3.2	4.6	↑ 3,670	↑ 208	2.5	4.9	9.5	33.2	↑ 42.4
29	6.4		7.4	3.2	682	↑ 5,440	↑ 167	2.5	↑ 2.8	10.9	38.1	41.0
30	6.4		8.1	3.2	348	↑ 5,970	↑ 132	2.5	2.8	12.0	42.7	37.1
31	6.4		↑ 8.8		14.1		113	2.5		13.4		33.2
Sum	202.6	190.0	164.1	962.6	2,928.8	16,482.2	61,499	1,207.1	1,125.6	2,120.8	420.2	946.3

Month	Current Year 1966: Extreme Gage Feet High	Low	Extreme Second-Feet High: Day	High	Low: Day	Low	Average Second-Feet	Total Acre-Feet	Period 1954-1966: Acre-Feet Average	Maximum	Minimum
Jan.			20	8.8	13	4.6	6.5	400	4,549	51,270	88.4
Feb.			24	10.9	†12	5.3	6.8	376	2,465	26,170	203
Mar.			31	8.8	†24	3.9	5.3	326	2,029	20,270	212
Apr.	10.17		21	2,190	†14	2.5	32.1	1,909	2,225	8,380	177
May	10.01		29	1,980	19	1.8	94.5	5,811	3,334	12,842	245
June	12.01		30	6,000	9	3.5	549	32,689	4,211	32,689	274
July	12.01	4.66	1	6,000	31	106	1,980	122,020	10,140	122,020	182
Aug.	4.99		9	142	†25	2.5	38.9	2,393	2,225	11,190	161
Sept.			†23	∅ 231	† 1	2.5	37.5	2,229	6,892	20,554	226
Oct.	8.92		15	1,250	1	3.5	68.4	4,208	70,979	901,500	193
Nov.			30	∅ 42.7	†16	5.7	14.0	833	18,695	230,100	126
Dec.	5.25		23	95.3	†21	18.4	30.5	1,877	5,812	68,360	163
Yearly	12.01			6,000		1.8	242	175,071	133,556	1,229,922	10,534

† And other days ∅ Mean daily ↑ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - FALCON DAM TO FORT RINGGOLD

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

During 1966, 9,652 irrigable acres and several towns and rural homes were served water diverted from the Rio Grande between Falcon Dam and the river gaging station at Fort Ringgold under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 1.2% of the total irrigable acres below Falcon Dam.

The total diversion during 1966 in this river reach was 7,005 acre-feet, or 1.0% of the total water diverted from the Rio Grande below Falcon Dam. All the records of diversions in this river reach were furnished by the Special Water Master. About 46% of the water diverted was measured by means of flow meters and the rest was determined by periodic current meter measurements of pump discharges and recorded pump operating time. More than one crop per year is often grown on parts of this land.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.9	2.9	2.7	17.3	1.5	5.7	2.4	18.0	15.4	7.8	16.2	17.5
2	2.2	6.4	6.3	16.5	1.5	5.6	2.6	18.9	12.4	6.3	15.4	16.1
3	2.2	2.7	6.1	10.0	1.5	7.7	2.3	18.8	9.4	25.2	10.7	16.1
4	2.2	2.6	6.5	16.0	2.3	8.1	6.6	18.7	7.0	25.6	10.9	12.9
5	5.7	1.9	7.6	16.3	1.5	7.8	6.1	16.0	11.0	26.6	10.9	18.8
6	3.2	5.4	4.0	16.4	1.6	13.3	7.4	15.7	11.1	23.5	7.6	21.0
7	1.2	5.4	7.2	16.5	1.6	18.2	6.0	11.3	11.4	15.9	7.6	20.1
8	1.2	5.4	8.5	12.5	1.8	18.1	5.7	17.0	12.9	17.6	20.7	17.5
9	3.4	9.5	4.1	8.4	1.8	17.7	6.2	17.6	9.0	6.1	17.7	18.6
10	6.6	7.2	4.6	5.7	1.8	17.1	2.3	17.7	4.8	8.1	17.1	15.4
11	3.4	6.6	4.2	11.6	2.7	17.2	6.0	17.7	7.0	7.6	16.5	3.1
12	3.4	6.7	4.2	19.6	1.8	13.6	6.8	18.1	7.3	8.3	17.7	3.7
13	3.8	4.3	3.3	18.0	1.9	17.6	6.0	9.8	7.3	12.9	8.9	4.4
14	3.6	4.3	10.6	14.9	2.9	20.9	8.1	10.4	7.3	6.9	14.9	9.5
15	3.3	4.3	10.6	5.2	2.5	17.4	7.2	10.4	13.7	2.8	11.8	9.5
16	1.4	4.3	10.7	4.9	2.5	17.0	5.9	16.5	8.7	4.9	15.4	8.4
17	1.4	4.8	8.7	1.8	2.5	15.5	5.2	19.2	13.0	4.9	16.6	4.9
18	1.4	4.2	8.0	2.7	2.5	10.0	21.9	19.6	9.5	4.9	15.6	9.1
19	1.4	4.0	8.7	1.8	6.1	2.2	23.0	18.2	12.8	5.3	12.8	12.7
20	2.2	1.5	10.4	6.5	7.1	1.6	22.9	9.0	15.2	4.4	11.1	15.5
21	1.3	4.5	13.6	1.8	2.7	4.9	21.4	17.8	15.3	4.5	13.7	18.2
22	1.3	1.5	15.4	1.7	5.4	1.6	16.0	14.0	12.3	8.0	13.7	18.9
23	1.6	1.5	16.2	2.6	6.1	1.7	13.4	15.9	13.0	9.6	18.7	13.9
24	1.6	2.0	15.4	2.4	12.9	1.7	12.6	22.0	12.1	14.1	13.5	10.4
25	4.2	1.6	13.7	2.4	14.0	3.0	20.2	16.8	6.9	14.1	13.5	9.3
26	4.6	1.5	13.9	2.4	8.2	2.1	18.2	14.2	12.8	19.0	13.8	18.7
27	1.6	2.7	8.5	3.5	8.5	2.1	19.2	8.5	11.8	14.7	15.3	17.4
28	1.5	2.7	13.1	3.2	6.7	2.1	18.6	5.8	11.9	13.7	17.2	19.6
29	.5		16.0	5.6	2.4	6.0	18.5	10.9	12.4	9.8	17.4	19.2
30	2.9		16.9	5.8	5.2	6.4	17.3	12.5	12.3	16.6	16.4	17.6
31	2.9		18.4		5.2		7.1	14.2		21.6		16.1
Sum	80.1	112.4	298.1	254.0	126.7	283.9	343.1	471.2	327.0	371.3	429.3	434.1

Month	Current Year 1966: Average Rainfall Inches ** 1957-1966	1966	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966 Acre-Feet Average	Maximum	Minimum
Jan.	1.20	2.12	10	6.6	29	0.5	2.6	159	632	1,291	159
Feb.	1.28	1.74	9	9.5	†20	1.5	4.0	223	673	1,480	223
Mar.	.73	.38	31	18.4	1	2.7	9.6	591	953	1,845	158
Apr.	1.52	2.98	12	19.6	22	1.7	8.5	504	1,018	1,890	369
May	2.94	8.27	25	14.0	† 1	1.5	4.1	251	1,334	2,624	251
June	2.30	3.95	14	20.9	†20	1.6	9.5	563	1,381	2,610	449
July	.68	.65	19	23.0	† 3	2.3	11.1	681	876	1,620	466
Aug.	1.63	3.53	24	22.0	28	5.8	15.2	935	760	935	541
Sept.	3.37	.71	1	15.4	10	4.8	10.9	649	672	1,230	393
Oct.	2.67	1.75	5	26.6	15	2.8	12.0	736	748	1,220	131
Nov.	1.24	T	8	20.7	† 6	7.6	14.3	852	588	1,170	216
Dec.	.98	0	6	21.0	11	3.1	14.0	861	715	1,580	145
Yearly	20.54	26.08		26.6		0.5	9.7	7,005	10,350	14,754	6,859

† And other days Ø Mean daily ** United States side - average of several stations in the reach
T Trace

RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorders (graphic and digital), and impulse-type transmitter located on the left bank at Fort Ringgold, latitude 26° 22' 05", longitude 98° 48' 20", and river mile 233.9; about 1 mile downstream from Rio Grande City, Texas, 3.9 river miles downstream from Río San Juan, and 1,014.3 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 100.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 43 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 1966. Records composed of the addition of discharges of the Rio Grande at Roma, Texas, and the Río San Juan at Santa Rosalía, Tamaulipas are available for May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September 1923; and 1924 through 1931. Records are also available for the station "Rio Grande near Rio Grande City," 3.0 miles downstream, for 1932 through 1954.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Except for tributary inflows and intervening diversions below Falcon Dam, flow at this station is controlled largely by releases from Falcon Reservoir, 39.9 river miles upstream. The transmitter relays gage height data to the Anzalduas Dam office of the United States Section of this Commission and to the Anzalduas Dam control room via leased telephone circuits. The data is recorded automatically at both locations.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 198,800 second-feet on September 5, 1932 at an elevation of 157.4 feet at the station 3 miles downstream. Min. no flow occurred several days in June and July 1953.

Average Flow in Second-Feet ‡

Daily:	Max.	101,000	Oct. 17-18, 1958	Min.	14.6	April 13, 1957
Monthly:	Max.	49,600	Oct. 1958	Min.	235	March 1957
Yearly:	Max.	9,140	1958	Min.	2,260	1957 & 1964

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,330	880	920	898	2,300	1,640	# 13,900	2,700	7,150	4,130	979	945
2	1,370	700	921	793	3,590	2,810	# 15,300	2,420	# 7,080	3,490	1,090	941
3	656	705	805	902	4,710	# 3,590	# 10,900	4,110	3,130	3,440	1,100	944
4	1,010	713	890	1,080	1,840	3,800	# 9,400	3,710	1,260	4,180	1,430	958
5	487	697	786	# 1,360	3,020	3,920	9,040	# 3,120	1,970	4,710	1,420	1,150
6	1,280	703	801	1,770	4,180	4,580	8,590	2,420	4,320	4,210	2,660	1,150
7	1,090	743	819	1,960	2,210	4,640	7,520	2,460	8,750	2,920	1,240	2,040
8	1,060	740	814	1,560	1,680	# 5,270	5,660	2,790	11,100	1,580	1,450	1,860
9	1,350	704	1,010	1,600	640	6,790	4,340	2,890	# 13,900	1,890	1,420	1,330
10	499	1,020	1,050	1,620	364	7,400	3,650	3,140	# 16,200	1,560	1,240	1,230
11	1,300	919	623	2,130	# 247	7,200	3,260	2,560	16,100	1,020	2,120	1,210
12	1,240	908	799	2,160	178	7,920	3,170	2,010	15,900	481	1,980	1,180
13	1,050	913	806	2,360	174	7,690	3,390	3,050	# 15,900	398	2,230	1,170
14	1,060	898	811	3,440	138	6,100	4,470	4,110	# 16,100	# 1,080	2,380	1,160
15	909	919	570	4,040	114	3,480	3,770	3,980	16,100	1,830	2,650	1,190
16	1,210	910	794	2,020	99.6	1,460	3,600	3,270	# 16,200	952	1,940	1,150
17	552	# 904	737	891	# 92.4	# 1,020	2,300	3,410	16,200	411	1,880	1,400
18	898	820	816	1,030	# 80.2	3,330	2,030	4,110	16,500	210	2,080	1,930
19	708	815	813	2,180	1,530	4,990	1,970	4,570	# 16,400	# 152	2,260	1,970
20	716	797	840	3,150	1,420	3,030	1,780	5,770	# 16,400	122	2,050	2,020
21	762	944	848	5,520	1,680	1,880	3,090	5,880	# 16,400	# 104	1,660	2,150
22	731	859	# 825	2,010	2,730	1,080	3,780	4,480	# 16,500	128	1,660	2,010
23	712	545	766	445	1,860	552	3,670	4,090	# 16,500	176	1,580	1,440
24	549	518	792	251	# 1,110	475	3,740	# 4,250	16,500	342	1,460	1,220
25	705	907	769	373	# 1,640	628	3,250	5,620	16,400	357	1,250	1,500
26	# 895	738	803	379	2,720	1,390	3,170	5,540	# 16,100	329	990	2,150
27	922	552	814	522	757	2,070	2,760	6,790	5,110	320	1,060	2,860
28	895	686	712	565	1,080	# 3,410	2,750	6,050	657	1,840	1,280	2,700
29	693		834	1,140	2,610	# 5,240	3,150	3,730	2,430	2,830	# 1,190	2,340
30	697		1,030	1,510	3,090	# 5,760	3,000	1,010	# 5,020	1,150	# 975	2,700
31	713		# 848		2,530		2,840	# 5,450		# 427		2,860
Sum	28,049	22,157	25,466	49,659	50,414.2	113,145	153,240	119,490	348,277	46,769	48,704	50,858

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period #1954-1966 Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	28.18	26.10	2	2,460	† 5	348	905	55,635	208,390	397,255	55,635
Feb.	27.60	26.07	10	1,770	24	334	791	43,948	193,735	376,607	25,500
Mar.	27.61	26.10	10	1,780	15	348	821	50,512	146,511	378,000	14,400
Apr.	32.42	25.71	21	9,290	24	188	1,660	98,499	227,535	421,533	75,100
May	30.34	25.31	3	5,830	† 18	73.9	1,630	99,997	308,659	521,000	80,891
June	31.47	26.15	9	8,460	24	374	3,770	224,423	314,448	560,000	120,468
July	35.65	27.23	2	15,600	20	1,400	4,940	303,952	138,354	303,952	22,300
Aug.	31.93	26.37	27	8,420	31	499	3,850	237,008	135,138	237,008	25,000
Sept.	36.62	26.32	† 18	16,500	29	468	11,600	690,807	188,055	690,807	51,341
Oct.	30.76	25.44	1	6,480	21	102	1,510	92,766	327,284	3,047,000	30,000
Nov.	29.63	26.12	6	4,740	1	358	1,620	96,604	171,725	1,442,000	29,274
Dec.	29.73	26.26	31	4,930	† 1	434	1,640	100,877	138,554	540,000	36,100
Yearly	36.62	25.31		16,500		73.9	2,890	2,095,028	2,498,388	6,619,700	1,637,900

† And other days ‡ Period 1955-1966 # 1954 Values are Rio Grande City Station less arroyo inflow
# Discharge measurement made on this day

CONTRIBUTIONS FROM RIO SAN JUAN FORT RINGGOLD TO ANZALDUAS DAM

DESCRIPTION: The Lower Río San Juan Irrigation District in Mexico lies along the Rio Grande between Cd. Miguel Alemán and Río Bravo, Tamaulipas and is irrigated with water impounded by Marte R. Gómez Dam situated on the Río San Juan 12.4 river miles upstream from the confluence with the Rio Grande. The Río San Juan enters the Rio Grande at river mile 237.8 and 1,010.4 river miles downstream from the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Fort Ringgold Gaging Station through the Río San Juan Channel, Rancherías Drain, and Los Fresnos Drain; and between this station and Anzalddas Dam through Puertecitos, Los Indios, Huizache, and Morillo drains. Only the portion of drain water from this irrigation district reaching the Rio Grande via drains located downstream from the Fort Ringgold Gaging Station is shown below. The portion of water reaching the Rio Grande via channels located upstream from the Fort Ringgold Gaging Station is shown on page 60 in this bulletin.

RECORDS: Drain water reaching the Rio Grande through Puertecitos, Los Indios, Huizache, and Morillo drains was determined by prorating between frequent current meter measurements. In 1966, 44, 45, 45, and 52 meter measurements were made at Puertecitos, Los Indios, Huizache, and Morillo drains, respectively. All storm water measured at these drains was deducted and is not included in the tabulation below. In 1966, 75% of the drain water from this irrigation district reaching the Rio Grande between Fort Ringgold Gaging Station and Anzalddas Dam was contributed by Morillo Drain. Records available: 1953 through 1966.

REMARKS: In 1966, there were 72,967 irrigable acres in the Lower Río San Juan Irrigation District.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	34.7	27.2	27.9	22.7	30.5	93.5	114	45.1	58.7	68.5	58.8	42.1
2	35.2	26.9	28.2	21.8	33.1	86.1	111	44.3	57.4	69.6	57.9	42.1
3	35.7	27.4	28.0	20.8	35.6	83.9	107	43.4	56.2	70.5	57.0	42.0
4	36.2	27.8	27.6	19.9	38.1	81.7	104	42.9	54.9	71.6	56.5	42.0
5	36.7	28.2	27.3	19.0	40.5	79.5	100	42.5	53.6	72.6	56.2	42.0
6	35.8	28.7	26.9	18.0	43.1	77.3	96.4	42.1	52.4	72.4	55.7	41.9
7	34.8	29.0	26.6	18.4	45.6	75.0	92.9	41.6	51.1	72.3	55.1	41.9
8	33.8	29.5	26.2	18.8	48.1	72.9	89.3	41.2	51.6	72.1	54.7	41.5
9	32.8	29.8	25.8	19.1	50.6	75.0	85.8	40.8	51.9	72.0	54.2	41.0
10	31.9	29.5	25.6	19.5	53.1	77.2	82.2	40.3	52.2	71.8	53.3	40.6
11	30.9	29.1	25.6	19.8	55.7	79.4	78.6	41.5	52.4	71.6	52.4	40.2
12	29.9	28.6	25.6	20.2	54.9	81.5	75.1	43.0	52.8	71.4	51.5	39.8
13	30.5	28.1	25.6	20.6	53.5	83.7	71.5	44.6	53.1	71.3	50.6	39.4
14	29.6	27.6	25.6	20.9	52.1	85.9	70.0	46.1	53.4	71.1	49.7	39.0
15	28.5	27.2	25.6	20.8	51.9	88.1	68.5	47.6	52.4	73.7	48.9	39.0
16	27.5	26.7	25.6	20.6	51.6	90.2	67.0	49.2	51.4	76.2	48.0	38.9
17	26.5	26.6	25.6	20.4	51.4	92.1	65.6	50.7	50.4	78.9	47.5	38.9
18	26.7	26.6	25.3	20.3	51.2	93.9	64.1	51.8	49.4	81.4	46.7	38.8
19	26.9	26.7	25.0	20.1	48.6	95.7	62.6	53.0	48.5	84.0	45.9	38.7
20	27.2	26.7	24.8	20.0	45.9	97.6	61.0	54.1	47.5	81.7	45.1	38.7
21	28.9	26.8	24.5	20.4	43.0	99.4	59.5	55.3	46.5	78.8	44.3	38.6
22	30.7	26.9	24.2	20.7	43.4	101	57.7	56.4	48.2	75.8	43.6	38.5
23	32.4	26.9	23.9	21.1	43.8	103	56.1	57.6	50.8	72.9	42.7	38.4
24	34.2	27.0	23.9	21.5	44.2	105	54.5	58.7	53.5	69.9	42.6	38.2
25	32.3	27.1	23.8	21.9	44.6	107	52.8	59.0	56.0	67.0	42.5	38.1
26	30.4	27.4	24.0	22.2	55.3	109	51.1	59.2	58.7	64.0	42.4	38.0
27	28.5	27.5	24.1	22.6	61.7	112	49.5	59.3	61.2	63.1	42.3	37.9
28	28.2	27.8	24.3	23.0	68.0	114	48.6	59.5	63.3	62.2	42.2	37.7
29	27.9		24.4	25.5	74.4	116	47.7	59.7	66.5	61.3	42.1	36.6
30	27.7		24.5	28.0	80.7	118	46.9	58.8	67.5	60.5	42.0	35.5
31	27.4		23.7		87.1		46.0	60.0		59.6		34.5
Sum	960.4	775.3	789.7	628.6	1,581.3	2,774.6	2,237.0	1,549.3	1,623.5	2,209.8	1,472.4	1,220.5

Month	Current Year 1966								Period 1954-1966		
	Extreme Gage Feet		ø Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				Average	Maximum	Minimum
			Day		Day						
Jan.			5	36.7	17	26.5	31.0	1,905	1,827	3,490	561
Feb.			9	29.8	17	26.6	27.7	1,538	3,020	6,540	1,230
Mar.			2	28.2	31	23.7	25.5	1,566	2,550	4,960	1,006
Apr.			30	28.0	6	18.0	21.0	1,247	2,795	5,930	899
May			31	87.1	1	30.5	51.0	3,136	5,142	8,720	1,557
June			30	118	8	72.9	92.5	5,508	5,386	8,210	2,422
July			1	114	31	46.0	72.2	4,437	3,343	4,760	1,638
Aug.			31	60.0	10	40.3	50.0	3,075	2,162	3,480	889
Sept.			30	67.5	21	46.5	54.1	3,221	2,009	4,150	665
Oct.			19	84.0	31	59.6	71.3	4,383	2,122	4,383	623
Nov.			1	58.8	30	42.0	49.1	2,920	1,668	3,360	562
Dec.			1	42.1	31	34.5	39.4	2,421	1,584	3,110	592
Yearly				118		18.0	48.8	35,352	33,608	52,630	13,462

ø Mean daily

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - FORT RINGGOLD TO ANZALDUAS DAM

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

During 1966, 186,501 irrigable acres and several towns and rural homes were served water diverted from the Rio Grande between the river gaging station at Fort Ringgold and Anzalduas Dam under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 23.9% of the total irrigable acres below Falcon Dam.

The total diversion during 1966 in this river reach was 136,460 acre-feet, or 20.1% of the total water diverted from the Rio Grande below Falcon Dam. About 91% of the water diverted in this river reach was determined by this Commission through continuous records of discharge at open channel rating stations and at deflection meter stations developed by this Commission. The records for the rest of these diversions were furnished by the Special Water Master and were either measured by flow meters or were determined from periodic current meter measurements of pump discharges and recorded pump operating time. More than one crop per year is often grown on parts of this land.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.4	11.5	36.2	150	91.9	162	44.3	523	356	408	222	286
2	3.2	100	86.9	166	36.6	241	2.7	601	333	225	313	235
3	45.3	142	38.5	132	36.1	242	0	572	296	492	240	189
4	80.5	107	84.0	140	137	179	.1	570	178	529	243	142
5	59.1	15.0	78.5	256	104	166	70.9	616	213	525	187	232
6	43.4	20.8	42.0	311	54.0	356	81.4	501	432	485	168	296
7	70.0	75.7	68.0	385	36.0	310	40.0	202	453	410	222	300
8	29.9	152	120	317	1.4	401	114	464	420	275	201	272
9	6.6	132	122	209	23.2	404	39.9	481	409	75.6	273	308
10	40.0	80.9	84.5	120	46.3	374	13.3	491	263	68.6	216	218
11	103	105	66.2	438	76.8	351	79.4	473	190	148	214	120
12	93.9	73.0	85.4	486	160	274	87.0	452	413	178	208	248
13	105	9.9	5.3	515	4.3	545	140	294	489	229	130	312
14	50.6	64.1	37.6	527	1.3	295	139	174	493	218	267	344
15	13.8	86.6	107	255	0	222	86.8	459	459	24.4	238	229
16	5.8	93.4	102	109	0	210	113	483	452	7.4	303	176
17	38.8	42.3	108	68.7	2.1	218	32.9	512	356	21.0	283	115
18	99.2	52.6	73.1	230	42.9	281	182	452	224	20.8	258	93.1
19	33.1	47.3	106	332	9.7	1.7	218	427	490	20.8	161	322
20	.3	6.7	20.8	371	38.5	.8	299	279	516	20.7	65.4	352
21	.3	59.4	76.1	34.5	41.2	23.0	252	182	557	68.6	215	334
22	.2	51.7	216	2.2	13.4	83.5	218	453	511	22.0	263	302
23	0	78.7	187	2.2	83.6	.9	161	500	456	49.8	272	170
24	28.8	2.5	206	.3	96.2	4.8	129	475	347	92.0	112	103
25	67.7	1.6	158	.3	180	.9	353	391	268	84.4	208	19.6
26	0	25.6	144	.3	204	2.6	427	358	483	132	165	112
27	26.6	5.1	50.5	36.6	143	2.6	477	160	556	105	129	332
28	26.6	30.0	161	91.4	111	2.6	450	118	583	28.5	199	416
29	0		255	79.8	40.1	2.8	432	284	526	84.9	237	336
30	2.6		242	51.4	65.2	31.6	320	320	533	147	246	321
31	29.0		220		135		196	335		248		218
Sum	1,107.7	1,672.4	3,387.6	5,816.7	2,014.8	5,388.8	5,198.7	12,602	12,255	5,443.5	6,458.4	7,452.7

Month	Current Year 1966: Average Rainfall Inches ** 1957-1966	1966	ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966 Acre-Feet Average	Maximum	Minimum
Jan.	1.24	2.14	13	105	†23	0	35.7	2,197	10,775	28,747	2,197
Feb.	1.27	1.20	8	152	25	1.6	59.7	3,317	10,540	38,599	1,640
Mar.	.70	.75	29	255	13	5.3	109	6,719	16,852	41,200	637
Apr.	1.44	3.04	14	527	†24	.3	194	11,537	23,645	36,074	5,760
May	2.32	5.55	26	204	†15	0	65.0	3,996	26,682	48,400	3,996
June	2.43	8.43	13	545	20	.8	180	10,689	30,306	59,900	10,689
July	.57	.44	27	477	3	0	168	10,312	24,196	45,400	10,312
Aug.	1.13	1.45	5	616	28	118	407	24,996	21,449	30,000	15,747
Sept.	2.77	.19	28	583	4	178	408	24,308	16,888	35,000	9,360
Oct.	2.71	6.19	4	529	16	7.4	176	10,797	16,547	30,400	2,830
Nov.	1.19	.01	2	313	20	65.4	215	12,810	11,747	20,807	5,045
Dec.	1.26	T	28	416	25	19.6	240	14,782	10,002	16,400	2,564
Yearly	19.03	29.39		616		0	188	136,460	219,629	302,180	136,460

† And other days ø Mean daily ** United States side - average of several stations in the reach
T Trace

DIVERSIONS FROM THE RIO GRANDE
ANZALDUAS CANAL NEAR REYNOSA, TAMAULIPAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 26° 08' 05", longitude 98° 20' 10", 0.5 canal mile from the canal intake, and about 5 miles northwest of Reynosa, Tamaulipas. The canal intake is immediately upstream from Anzalduas Dam at river mile 171.6, 102.2 river miles downstream from Falcon Dam, and 1,076.6 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 86.32 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 71 discharge measurements during the year, 60 by the Mexican Section and 11 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1966.

REMARKS: Diversions by this canal are for irrigation and domestic use in Mexico and for conveying water for storage in Culebrón, Villa Cárdenas, and Palito Blanco reservoirs about 23 canal miles downstream from this station. During 1966, 241,920 acres were irrigated with water delivered through this canal. More than one crop per year was grown on parts of this land. Flow at this canal station is affected by backwater from the operation of canal gates 4.5 miles, 11.3 miles, and 22.5 miles below this station. During 1966 there was no water returned to the Rio Grande through Poniente Drain.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 10,950 second-feet on June 2, 1957 with a gage height of 16.01 feet. Min. no flow occurs frequently.

Average Flow in Second-Feet

Daily:	Max.	9,350	May 29, 1957	Min.	0	Frequently
Monthly:	Max.	4,640	May 1964	Min.	0	Several months
Yearly:	Max.	1,980	1959	Min.	150	1952

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	565	17.7	21.2	21.2	1,230	1,560	0	⇑ 653	876	2,350	28.3	21.2
2	441	17.7	21.2	⇑ 21.2	2,240 ⇑	1,450	0	318	⇑ 1,110	2,290	28.3	⇑ 364
3	⇑ 653	17.7	17.7	21.2	964	1,450 ⇑	0	318	1,420	1,730 ⇑	28.3	⇑ 367
4	848	17.7	17.7	21.2	17.7	1,450	0	494	1,410	1,980	28.3	364
5	⇑ 855	17.7	17.7	21.2	17.7	1,450	0	918	⇑ 1,410	2,590	28.3	353
6	855	17.7	17.7	21.2	17.7	1,610 ⇑	0	⇑ 1,130	1,410	3,000 ⇑	28.3	162
7	848	17.7	17.7	21.2	17.7	1,750	0	1,130	1,520	2,800	28.3	21.2
8	833	17.7	17.7	21.2	17.7	1,940 ⇑	0	⇑ 1,130	⇑ 2,010	2,100 ⇑	28.3	21.2
9	837	17.7	17.7	21.2	17.7	2,270	0	1,130	1,550	1,230	28.3	21.2
10	⇑ 844	17.7	17.7	21.2	17.7	2,760 ⇑	0	1,130	⇑ 1,960	908 ⇑	191	353
11	848	17.7	17.7	21.2	17.7	3,200	0	1,130	⇑ 3,600	720	484 ⇑	710
12	858	17.7	17.7	21.2	17.7	3,260	0	⇑ 1,090	⇑ 2,960	720	1,060	⇑ 477
13	⇑ 812	17.7	17.7	21.2	17.7	3,350 ⇑	0	1,090	⇑ 3,160	713	1,100	622
14	⇑ 791	⇑ 21.2	17.7	21.2	17.7	3,320	0	1,820	2,610	713	1,250 ⇑	614
15	805	21.2	17.7	1,110 ⇑	17.7	3,460	1,120	⇑ 2,300	⇑ 2,610	304	1,420	⇑ 593
16	540	21.2	17.7	1,430 ⇑	17.7	2,020	2,650	2,650	⇑ 2,750	17.6	1,410	350
17	⇑ 526	21.2	17.7	516	17.7	586 ⇑	2,610	2,650	⇑ 2,510	42.4	1,030	21.2
18	526	21.2	17.7	335 ⇑	17.7	0	⇑ 2,630	2,650	2,720	42.4	756 ⇑	21.2
19	544	21.2	17.7	332	0	0	1,160	2,820	3,250	42.4	565	21.2
20	530	21.2	17.7	357	0	17.7	⇑ 989	⇑ 3,240	⇑ 2,750	42.4	357	21.2
21	205	21.2	17.7	1,100	0	17.7	784	4,030	2,930	⇑ 42.4	388 ⇑	226
22	17.7	21.2	17.7	2,100 ⇑	0	17.7	⇑ 583	⇑ 4,200	2,980	42.4	385	562
23	17.7	21.2	17.7	1,210	184	17.7	600	3,280	⇑ 2,990	42.4	385	710
24	17.7	21.2	17.7	353	819	17.7	636	2,830	3,070	42.4	396	⇑ 689
25	17.7	21.2	17.7	353 ⇑	1,190	10.6	⇑ 653	⇑ 3,000	3,390	42.4	208	21.2
26	17.7	21.2	17.7	353	1,210 ⇑	7.1	671	3,320	4,030	42.4	21.2	21.2
27	17.7	21.2	17.7	353	1,200	0	671	5,010	5,330	42.4	21.2	21.2
28	17.7	21.2	21.2	353	1,190	0	⇑ 671	5,400	2,720	0	21.2	184
29	17.7		21.2	353	1,190	0	⇑ 671	⇑ 4,130	883	0	21.2	353
30	17.7		21.2	876	1,380	0	671	2,530	⇑ 1,070	28.2	21.2	⇑ 360
31	17.7		21.2		1,650 ⇑		671	925		28.2		371
Sum	14,741.0	548.1	569.7	11,780.8	14,712.5	36,992.2	18,441	68,446	72,989	24,688.4	11,745.7	9,017.2

Month	Current Year 1966: Average Rainfall Inches ** 1954-1966	1966	Ø Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1954-1966: Acre-Feet Average	Maximum	Minimum
Jan.	1.01	3.78	12	858	†22	17.7	476	29,237	102,419	197,745	14,206
Feb.	1.51	1.10	†14	21.2	† 1	17.7	19.6	1,086	117,396	251,519	1,086
Mar.	.64	1.65	† 1	21.2	† 3	17.7	18.4	1,128	45,461	147,900	1,128
Apr.	1.82	2.36	22	2,100	† 1	21.2	393	23,381	119,346	256,247	23,381
May	2.35	6.73	2	2,240	†19	0	475	29,169	177,959	285,477	29,169
June	2.46	5.91	15	3,460	†18	0	1,233	73,386	142,057	270,700	24,277
July	.94	.83	16	2,650	† 1	0	595	36,585	50,252	162,400	6,384
Aug.	1.55	1.57	28	5,400	† 2	318	2,210	135,761	69,295	155,400	6,709
Sept.	3.83	.94	27	5,330	1	876	2,430	144,798	78,084	165,800	9,860
Oct.	2.73	4.92	6	3,010	†28	0	796	48,983	41,733	162,400	0
Nov.	1.47	.47	15	1,420	†26	21.2	392	23,290	16,661	83,690	0
Dec.	1.29	.24	†11	710	† 1	21.2	291	17,882	44,133	166,700	1,970
Yearly	21.60	30.50		5,400		0	780	564,686	1,004,796	1,434,920	564,686

† And other days Ø Mean daily ** Average of several stations
⇑ Discharge measurement made on this day

RIO GRANDE BELOW ANZALDUAS DAM, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 26° 08' 00", longitude 98° 20' 05", and river mile 171.1; 0.5 river mile downstream from Anzalduas Dam, about 4.5 miles northwest of Reynosa, Tamaulipas, 12.2 river miles upstream from the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas, and 1,077.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 82.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 111 discharge measurements during the year, 89 by the Mexican Section and 22 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1966.

REMARKS: Except during local storms, flow at this station is controlled largely by releases from Falcon Reservoir and by diversions into Anzalduas Canal. Excessive upstream flood flows are partly diverted into the Mission Inlet of the United States floodway system before reaching this station.

EXTREME FLOWS FROM RECORDS; Momentary: Max. 63,920 second-feet on October 19, 1958 with a gage height of 28.87 feet. Min. periods of no flow have occurred on several occasions in 1953, 1954, 1956, and 1957.

Average Flow in Second-Feet

Daily:	Max.	63,570	Oct. 19, 1958	Min.	0	Occasionally
Monthly:	Max.	37,830	Oct. 1958	Min.	5.5	March 1957
Yearly:	Max.	6,410	1958	Min.	158	1957

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	209	⇑ 727	⇑ 431	540	286	⇑ 1,360	7,450	⇑ 1,760	⇑ 4,170	⇑ 1,260	1,120	604
2	219	777	1,220 ⇑	512	127	1,320	⇑ 13,300	1,860	⇑ 5,580	1,480	989	⇑ 604
3	244	565	⇑ 855	738	2,290	1,210	⇑ 13,300	2,140	⇑ 4,030	1,410	915	⇑ 540
4	163	576	971	⇑ 950	⇑ 4,410	1,390	⇑ 10,500	1,930	1,000	1,190	⇑ 1,020	717
5	98.2	685	840	985	2,570	1,920	⇑ 9,110	⇑ 1,580	⇑ 1,010	⇑ 1,010	1,030	⇑ 999
6	236	682	812	1,100	4,100	⇑ 2,330	8,650	⇑ 999	1,300	⇑ 1,070	943	1,060
7	⇑ 298	⇑ 717	798	⇑ 1,250	⇑ 4,310	2,390	⇑ 8,120	932	2,460	883	⇑ 2,340	1,120
8	256	558	759	1,170	2,630	2,440	6,710	1,060	6,110	498	1,660	1,070
9	459	512	735	1,080	1,720	2,600	5,190	1,020	⇑ 9,010	364	1,200	⇑ 809
10	⇑ 526	1,900	⇑ 964	1,240	⇑ 802	⇑ 2,990	4,380	929	⇑ 11,500	⇑ 484	936	519
11	480	2,210	1,060	⇑ 1,510	477	2,900	⇑ 3,380	901	⇑ 12,000	848	766	735
12	491	⇑ 805	742	1,770	343	3,210	3,260	⇑ 823	⇑ 12,400	323	784	590
13	⇑ 399	1,030	1,000	⇑ 1,950	⇑ 189	⇑ 3,710	⇑ 3,240	904	⇑ 12,000	182	798	498
14	198	⇑ 957	1,010	1,990	275	3,710	2,390	897	12,300	⇑ 491	805	501
15	⇑ 448	908	833	1,560	200	2,380	⇑ 1,830	⇑ 780	⇑ 12,600	752	830	⇑ 795
16	456	911	⇑ 667	⇑ 1,500	226	2,510	1,180	784	12,400	2,290	865	798
17	487	936	⇑ 643	1,520	⇑ 192	⇑ 2,280	982	840	12,400	⇑ 1,520	1,090	908
18	480	975	⇑ 763	1,620	2,400	2,170	⇑ 922	897	12,400	745	⇑ 1,170	1,300
19	480	⇑ 802	756	1,700	⇑ 2,180	2,670	1,100	⇑ 897	⇑ 12,400	487	1,170	⇑ 1,540
20	480	855	756	1,920	763	⇑ 6,890	1,310	689	⇑ 12,400	360	1,160	1,550
21	385	872	756	1,470	⇑ 879	4,560	1,470	682	12,400	⇑ 396	⇑ 1,350	1,470
22	194	1,050	756	2,290	1,400	2,490	⇑ 1,860	975	⇑ 12,400	396	1,390	1,380
23	269	978	756	657	⇑ 1,050	1,780	2,310	1,140	12,500	307	1,390	1,080
24	243	1,330	⇑ 763	420	396	⇑ 1,580	2,300	1,320	12,700	334	1,340	727
25	197	⇑ 911	756	⇑ 333	410	2,630	⇑ 2,290	⇑ 1,170	12,700	282	⇑ 1,120	611
26	194	848	756	⇑ 281	⇑ 417	2,750	2,030	⇑ 961	⇑ 12,000	⇑ 1,420	879	⇑ 1,760
27	⇑ 484	904	756	276	⇑ 724	⇑ 1,870	2,080	777	⇑ 7,700	⇑ 2,270	802	1,890
28	⇑ 886	470	756	282	501	2,540	⇑ 2,080	551	1,070	1,890	915	1,910
29	925		756	⇑ 274	798	3,530	1,880	1,090	⇑ 1,040	911	855	1,920
30	727		724	319	985	4,870	⇑ 1,750	777	1,070	1,110	⇑ 731	⇑ 1,420
31	717		⇑ 703		1,250		1,610	1,940		⇑ 1,010		1,840
Sum	12,328.2	25,451	24,853	33,207	39,300	80,980	127,964	34,005	255,050	27,883	32,363	33,265

Month	Current Year 1966								Period 1954-1966		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	0	-3.48	28	1,220	23	89.0	398	24,456	81,525	166,200	1,090
Feb.	4.20	-2.89	10	4,100	8	70.6	909	50,475	69,604	241,900	830
Mar.	.46	-2.82	13	1,430	3	70.6	802	49,291	79,133	235,500	339
Apr.	3.67	-2.46	22	3,430	21	106	1,110	65,913	81,949	155,700	3,160
May	7.78	-3.08	18	6,320	2	88.3	1,270	77,942	109,546	202,400	35,360
June	9.28	- .52	20	7,490	28	177	2,700	160,628	150,871	217,800	7,850
July	15.12	-2.56	† 2	14,100	† 14	70.6	4,130	253,970	72,973	253,970	2,000
Aug.	4.43	-2.69	31	4,100	† 27	70.6	1,100	67,419	45,033	107,000	943
Sept.	14.17	- .66	15	12,900	4	826	8,500	506,239	97,026	506,239	3,920
Oct.	3.05	-2.43	28	2,790	15	155	899	55,295	230,310	2,326,000	1,730
Nov.	2.59	-1.31	7	2,490	11	501	1,080	64,190	147,703	1,438,000	1,430
Dec.	2.23	-1.64	26	2,250	† 12	385	1,070	66,010	83,565	540,100	1,500
Yearly	15.12	-3.48		14,100		70.6	1,990	1,441,828	1,249,238	4,640,968	114,749

† And other days ⇑ Discharge measurement made on this day

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the United States Side

Part of the excess water from floods entering the Lower Rio Grande Valley is diverted from the river through the United States floodway system, with inlets located approximately 6 miles upstream (Mission Inlet) and 7 miles downstream (Hackney Lake Inlet), respectively, from Anzaldúas Dam.

Floodwater entering the system through the Mission Inlet is measured at the Mission Branch Station South of McAllen, and floodwater entering through the Hackney Lake Inlet is measured at the Hackney Branch Station South of McAllen. These waters join at a point 5 miles northeast of Hidalgo and flow eastward in the main floodway for about 19 miles to a point 3 miles southwest of Mercedes, Texas. Here the floodway divides, one channel going northeastward through the Arroyo Colorado Floodway to the Gulf of Mexico, and the other going to the Gulf via the North Floodway, traveling first northward and then eastward to the Gulf. The flow into the Arroyo Colorado Floodway is controlled by a concrete and sheet pile structure at the point of division. The Arroyo Colorado Floodway is measured at El Fuste Siphon South of Mercedes and further downstream at the U. S. 83 Highway Bridge south of Harlingen, and the North Floodway flow is measured first at U. S. 83 Highway Bridge west of Mercedes and again at U. S. 77 Highway Bridge near Sebastian.

In 1966 no flood flow was diverted through this floodway system.

On the Mexican Side

Part of the excess water from floods entering the Lower Rio Grande Valley is diverted from the river through the Mexican floodway system, with inlets located approximately 38 miles (Retamal Heading), 51 miles (San Rafael), and 107 miles (Floodway No. 2), respectively, downstream from Anzaldúas Dam. Floodway No. 3, 1.2 miles upstream from the Brownsville-Matamoros Bridge, is greatly obstructed and is considered to be inoperative.

Floodwater diverted through Retamal Heading is measured at a cableway station 0.9 mile downstream from the headgate. It flows through Retamal Canal into Culebrón and Villa Cárdenas Lakes from which it discharges through floodgates into Floodway No. 1 and flows southeastward into the Gulf of Mexico. Floodwater diverted at San Rafael is measured near the intake and flows through San Rafael Drain into Culebrón and Villa Cárdenas Lakes from which it discharges into Floodway No. 1. Floodwater entering Floodway No. 2 is measured at the Matamoros-Reynosa highway crossing and flows south and east into the Gulf of Mexico.

In 1966 no flood flows were diverted into this floodway system. There were no diversions for irrigation purposes through Retamal Canal in 1966.

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - ANZALDUAS DAM TO PROGRESO

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

During 1966, 145,395 irrigable acres and several towns and rural homes were served water diverted from the Rio Grande between Anzalduas Dam and the Progreso International Bridge under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 18.7% of the total irrigable acres below Falcon Dam.

The total diversion during 1966 in this river reach was 150,022 acre-feet, or 22.1% of the total water diverted from the Rio Grande below Falcon Dam. About 95% of the water diverted in this river reach was determined by this Commission through continuous records of discharge at open channel rating stations and at deflection meter stations developed by this Commission. The records for the rest of these diversions were furnished by the Special Water Master and were either measured by flow meters or were determined from periodic current meter measurements of pump discharges and recorded pump operating time. More than one crop per year is often grown on parts of this land.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	216	0.7	228	113	570	442	430	265	304
2	.1	0	0	199	0	274	10.3	606	418	177	372	295
3	55.2	0	23.5	86.2	0	309	0	650	337	468	321	274
4	68.4	59.0	81.3	249	61.3	307	0	659	102	474	329	67.1
5	.1	42.4	27.6	284	92.7	160	32.5	714	434	474	327	309
6	.1	2.5	0	278	73.2	474	35.7	645	439	390	245	312
7	0	7.6	63.7	354	136	518	11.4	232	471	395	347	329
8	27.3	33.2	137	271	87.8	555	189	351	419	325	325	386
9	21.5	24.6	118	260	28.2	681	36.8	328	422	56.4	302	348
10	133	28.3	99.9	77.0	122	571	52.6	349	332	22.6	314	276
11	166	42.8	124	338	17.6	595	300	360	115	166	337	115
12	156	1.2	114	390	38.3	443	343	304	365	67.9	241	230
13	154	.3	0	418	0	603	381	232	405	90.9	183	281
14	32.0	85.3	0	468	0	530	467	90.7	386	121	328	132
15	1.8	85.3	21.0	289	0	396	476	315	416	148	361	263
16	0	22.3	98.2	208	0	359	562	376	484	0	382	286
17	4.3	4.0	89.8	177	0	276	524	330	493	3.8	339	257
18	4.3	17.2	85.1	190	0	265	583	292	127	7.6	308	258
19	1.7	17.2	33.1	225	121	103	616	310	508	15.8	219	306
20	1.7	4.2	37.6	225	16.8	3.0	613	265	486	3.8	158	354
21	0	157	48.1	48.2	30.0	10.8	528	72.5	480	6.7	290	401
22	0	162	41.9	101	0	56.5	487	283	482	6.7	352	394
23	0	106	158	84.4	28.2	0	513	395	456	1.9	264	289
24	0	87.9	232	0	143	24.7	432	378	391	52.6	91.5	127
25	0	28.0	260	0	171	5.7	629	378	158	59.2	277	27.8
26	0	12.5	245	0	17.7	0	646	352	496	3.4	272	104
27	56.2	.2	85.1	0	38.6	0	648	236	499	3.4	89.4	430
28	66.5	0	289	0	98.0	0	653	104	348	4.0	341	409
29	0		268	1.1	0	0	653	265	334	4.0	347	363
30	0		219	5.7	53.3	7.4	557	358	485	9.4	335	347
31	0		242		183		357	385		63.0		309
Sum	950.2	1,031.0	3,241.9	5,442.6	1,558.4	7,755.1	11,449.3	11,185.2	11,730	4,051.1	8,661.9	8,582.9

Month	Current Year 1966: Average Rainfall Inches ** 1957-1966	1966	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966 Acre-Feet Average	Maximum	Minimum
Jan.	1.33	2.70	11	166	† 1	0	30.7	1,885	9,978	33,848	1,885
Feb.	1.39	1.24	22	162	† 1	0	36.8	2,045	8,669	28,535	1,140
Mar.	.70	.78	28	289	† 1	0	105	6,430	14,112	36,100	1,050
Apr.	1.61	3.51	14	468	†24	0	181	10,787	17,531	23,600	3,630
May	2.69	7.64	31	183	† 2	0	50.3	3,091	20,724	35,500	3,091
June	2.49	5.58	9	681	†23	0	259	15,382	28,958	42,000	14,658
July	.74	.26	†28	653	† 3	0	369	22,710	24,878	41,100	13,105
Aug.	1.16	.59	5	714	21	72.5	361	22,186	16,826	25,800	7,922
Sept.	2.91	.24	19	508	4	102	391	23,266	14,545	28,000	5,970
Oct.	2.98	6.55	† 4	474	16	0	131	8,035	16,311	29,215	2,660
Nov.	1.50	.04	16	382	27	89.4	289	17,181	10,169	22,818	4,005
Dec.	1.51	.01	27	430	25	27.8	277	17,024	9,974	17,500	1,978
Yearly	21.01	29.14		714		0	207	150,022	192,675	241,270	147,810

† And other days Ø Mean daily ** United States side - average of several stations in the reach

RIO GRANDE NEAR PROGRESO, TEXAS

DESCRIPTION: Gravity well, water-stage recorder, and digital transmitter located on the downstream side of the center pier of the Progreso International Bridge at latitude 26° 03' 45", longitude 97° 57' 00", and river mile 123.8; 0.8 river mile downstream from the Progreso pumping plant, 2 miles south of Progreso, Texas, 47.3 river miles downstream from Anzalduas Dam, and 1,124.4 river miles downstream from the American Dam at El Paso, Texas. Meter measurements are made from the bridge. An auxiliary gage well and water-stage recorder located about 300 feet upstream from the bridge are used when the low-flow channel shifts to the left bank. The zero of the gage at both recorders is 52.56 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 95 discharge measurements during the year, 68 by the Mexican Section and 27 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: December 1952 through August 24, 1953; and December 1953 through 1966.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 150 miles upstream. Excessive upstream flood flows are partly diverted through the Mission and Hackney Lake inlets of the United States floodway system and through Retamal Heading of the Mexican floodway system before reaching this station. The transmitter relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 19,900 second-feet on October 22, 1958 with a gage height of 23.69 feet. Min. no flow several days in June, July, and August 1963.

Average Flow in Second-Feet

Daily:	Max.	19,740	Oct. 24, 1958	Min.	0	Frequently 1953
Monthly:	Max.	16,730	Oct. 1958	Min.	5.1	June 1953
Yearly:	Max.	3,840	1958	Min.	666	1957

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	244	⋆ 692	⋆ 710	438	353	1,070	5,010	1,220	1,490	936	⋆ 1,040	456
2	220	752	431	371	441	1,110	⋆ 7,910	⋆ 1,130	⋆ 3,530	996	848	371
3	225	738	⋆ 1,000	349	⋆ 311	1,030	⋆ 11,300	1,210	⋆ 4,560	1,300	699	367
4	⋆ 224	⋆ 646	964	480	1,920	911	⋆ 11,500	1,420	3,170	⋆ 1,080	614	367
5	⋆ 161	519	890	⋆ 639	⋆ 3,470	1,120	⋆ 10,200	1,180	1,240	893	689	530
6	142	625	844	664	⋆ 2,860	1,600	9,290	886	⋆ 745	830	780	⋆ 629
7	175	784	858	⋆ 735	3,670	⋆ 1,730	8,790	710	918	869	809	685
8	257	⋆ 844	⋆ 706	876	⋆ 3,670	1,730	8,190	763	2,360	742	⋆ 1,590	⋆ 717
9	264	675	636	858	2,630	1,740	⋆ 6,890	⋆ 777	⋆ 5,540	554	⋆ 1,370	664
10	295	491	660	879	1,800	1,810	5,580	759	⋆ 8,370	614	985	512
11	⋆ 378	1,420	727	1,060	⋆ 1,050	2,000	4,520	⋆ 653	⋆ 10,100	⋆ 562	706	403
12	329	1,920	819	⋆ 1,150	710	2,090	⋆ 3,090	572	⋆ 11,000	⋆ 770	614	509
13	294	1,060	798	1,250	509	2,390	2,770	590	⋆ 11,100	554	586	⋆ 466
14	325	971	840	1,360	388	⋆ 2,720	2,690	731	⋆ 11,200	374	600	314
15	316	⋆ 879	⋆ 1,030	1,500	385	2,680	⋆ 1,870	805	11,300	660	⋆ 494	339
16	311	816	865	1,300	392	1,880	1,400	⋆ 547	11,300	1,180	463	463
17	448	⋆ 869	⋆ 653	1,290	⋆ 345	1,790	862	431	⋆ 11,300	2,020	477	501
18	⋆ 470	922	470	⋆ 1,360	298	1,860	696	498	⋆ 11,300	⋆ 1,610	646	579
19	473	961	618	1,370	⋆ 2,310	1,840	⋆ 537	625	⋆ 11,400	982	816	950
20	⋆ 473	869	689	1,450	1,910	3,430	593	632	⋆ 11,200	703	890	1,150
21	505	830	706	⋆ 1,700	858	⋆ 5,860	865	512	11,200	565	939	⋆ 1,150
22	487	795	⋆ 678	1,690	968	4,270	1,040	583	11,200	551	⋆ 929	⋆ 1,060
23	308	⋆ 844	646	1,850	1,350	2,570	1,350	⋆ 625	⋆ 11,200	551	964	968
24	240	943	554	971	⋆ 1,120	1,820	1,770	720	11,400	516	1,080	869
25	319	1,060	501	671	⋆ 551	1,710	1,740	⋆ 918	11,500	⋆ 424	1,150	735
26	⋆ 256	1,010	501	⋆ 494	327	2,500	⋆ 1,640	876	⋆ 11,400	⋆ 396	826	692
27	234	872	533	445	417	2,350	1,410	756	⋆ 10,500	1,010	618	⋆ 1,310
28	246	922	604	388	586	2,030	1,380	756	6,320	⋆ 2,060	678	1,350
29	713		⋆ 526	374	551	⋆ 2,370	1,390	438	⋆ 1,710	1,770	⋆ 565	1,390
30	869		456	364	692	3,570	1,230	⋆ 650	⋆ 1,030	1,110	491	1,440
31	780		470		⋆ 883		1,250	562		1,060		1,120
Sum	10,981	24,729	21,383	28,326	37,725	65,581	118,753	23,535	230,583	28,242	23,956	23,056

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	2.89	0.72	30	911	† 5	137	354	21,787	85,479	241,800	17,340
Feb.	5.31	1.87	12	2,200	10	448	883	49,060	73,471	371,900	12,620
Mar.	3.58	1.74	3	1,170	2	374	690	42,433	74,939	379,400	4,990
Apr.	5.38	1.57	23	2,230	3	314	944	56,175	78,701	144,000	32,060
May	8.92	1.41	† 7	4,060	4	265	1,220	74,865	99,450	146,100	33,164
June	10.99	3.02	21	6,220	4	890	2,190	130,081	125,832	176,300	63,350
July	18.77	2.17	4	12,000	19	494	3,830	235,822	71,767	235,822	16,970
Aug.	4.17	1.94	4	1,470	17	406	759	46,678	46,462	85,065	10,400
Sept.	18.04	2.03	†25	11,600	1	438	7,690	457,508	90,666	457,508	21,650
Oct.	5.77	1.90	17	2,150	†14	339	911	56,029	124,656	1,028,000	14,030
Nov.	5.05	2.26	8	1,740	16	452	799	47,525	89,405	735,000	18,000
Dec.	4.49	1.61	30	1,480	15	278	744	45,718	74,790	487,200	7,370
Yearly	18.77	0.72		12,000		137	1,750	1,263,681	1,035,618	2,776,990	482,410

† And other days ⋆ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - PROGRESO TO SAN BENITO

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

During 1966, 313,753 irrigable acres and several towns and rural homes were served water diverted from the Rio Grande between the Progreso International Bridge and the gage near San Benito under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 40.3% of the total irrigable acres below Falcon Dam.

The total diversion during 1966 in this river reach was 299,374 acre-feet or 44.1% of the total water diverted from the Rio Grande below Falcon Dam. About 99% of the water diverted in this river reach was determined by this Commission through continuous records of discharges at open channel rating stations and at deflection meter stations developed by this Commission. The records for the rest of these diversions were furnished by the Special Water Master and were either measured by flow meters or were determined from periodic current meter measurements of pump discharges and recorded pump operating time. More than one crop per year is often grown on parts of this land.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	122	83.2	381	373	64.5	452	492	909	795	516	209	279
2	22.3	92.1	151	221	146	617	246	943	1,220	202	238	342
3	59.1	106	41.4	104	139	763	92.9	941	1,080	662	230	206
4	70.4	227	33.8	320	295	680	131	992	891	603	472	189
5	67.0	150	29.2	360	68.8	568	380	985	971	637	463	290
6	55.6	25.4	32.0	375	69.5	915	592	758	495	263	374	496
7	24.0	80.5	71.7	380	108	1,080	552	269	462	405	400	504
8	127	111	246	425	129	1,170	502	434	390	261	464	484
9	104	90.2	227	420	378	1,270	445	644	463	5.1	329	442
10	4.2	46.4	116	386	216	1,330	153	617	597	142	400	369
11	201	37.2	98.7	597	194	1,540	296	594	713	222	497	59.9
12	281	50.6	78.7	640	113	1,400	505	601	727	359	331	295
13	310	15.0	30.8	898	286	1,880	525	232	499	277	301	389
14	270	100	103	918	9.1	1,640	507	308	426	262	580	423
15	128	152	105	831	34.0	1,590	646	603	584	76.1	568	402
16	35.8	206	244	664	69.8	1,810	693	507	621	90.6	558	475
17	319	239	192	793	69.3	1,780	502	418	578	120	598	286
18	415	108	65.8	912	76.3	1,050	620	403	440	64.3	641	338
19	422	35.3	46.2	1,030	316	192	609	378	525	22.9	549	754
20	431	40.0	34.1	1,040	208	390	525	368	665	63.8	657	706
21	364	54.0	85.1	1,040	9.0	545	699	258	640	271	879	686
22	340	59.9	313	483	38.2	338	751	354	643	325	1,080	688
23	326	98.9	359	91.7	74.4	170	993	408	546	54.0	916	676
24	67.6	54.1	284	70.2	22.2	137	1,180	534	472	49.4	760	591
25	106	27.3	187	119	34.2	106	1,370	576	556	51.4	810	78.2
26	121	30.6	113	95.6	158	71.0	1,310	454	689	138	859	370
27	133	0	44.4	52.6	340	53.8	1,060	314	834	269	543	1,120
28	142	285	108	51.0	369	75.2	1,040	99.8	766	128	384	1,230
29	42.7		110	77.6	201	111	1,020	362	876	0	487	1,170
30	62.6		355	71.1	492	0	924	511	721	.6	427	1,240
31	94.2		374		499		845	608		.6		1,070
Sum	5,267.5	2,604.7	4,659.9	13,833.8	5,226.3	23,674.0	20,205.9	16,382.8	19,885	6,540.8	16,004	16,648.1

Month	Current Year 1966: Average Rainfall Inches ** 1957-1966	1966	ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966 Acre-Feet Average	Maximum	Minimum
Jan.	1.34	3.29	20	431	10	4.2	170	10,448	33,313	81,383	9,940
Feb.	1.69	1.05	28	285	27	0	93.0	5,166	19,556	45,337	5,166
Mar.	.73	.73	1	381	5	29.2	150	9,243	23,500	54,200	3,280
Apr.	1.72	2.87	† 20	1,040	28	51.0	461	27,439	41,477	74,653	12,900
May	3.17	8.70	31	499	21	9.0	169	10,366	49,982	74,629	10,366
June	2.82	4.49	13	1,880	30	0	789	46,957	78,624	123,000	46,957
July	1.14	1.12	25	1,370	3	92.9	652	40,078	42,838	77,132	13,077
Aug.	1.77	1.26	4	992	28	99.8	528	32,495	28,009	45,900	13,538
Sept.	3.54	1.19	2	1,220	8	390	663	39,442	29,135	59,400	14,269
Oct.	3.16	4.95	3	662	29	0	211	12,974	27,749	58,164	11,625
Nov.	1.80	.15	22	1,080	1	209	533	31,744	19,283	44,359	7,867
Dec.	1.66	.09	30	1,240	11	59.9	537	33,022	23,550	37,500	6,663
Yearly	24.54	29.89		1,880		0	414	299,374	417,016	525,771	299,374

† And other days ø Mean daily ** United States side - average of several stations in the reach

RIO GRANDE NEAR SAN BENITO, TEXAS

DESCRIPTION: Cableway, concrete control weir, gravity well, water-stage recorders (graphic and digital), and impulse-type transmitter, located on the left bank at latitude 26° 02' 00", longitude 97° 43' 40", and river mile 96.5; 5.6 river miles downstream from San Benito pumping plant, about 9.5 miles southwest of San Benito, Texas, and 1,151.7 river miles downstream from the American Dam at El Paso, Texas. The control weir and cableway are located 0.2 river mile downstream from the gage. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 48 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: November 26, 1952 through August 25, 1953, and December 1953 through 1966.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 177.3 river miles upstream. Excessive upstream flood flows are partly diverted through the United States and Mexican floodway systems before reaching this station. The transmitter relays gage height data via leased telephone circuits to the Anzalduas Dam office of the United States Section of this Commission and to the McAllen, Texas office of the Special Water Master, who, under the jurisdiction of the 93rd District Court of Texas, has control of the United States portion of water in Falcon Reservoir and in the Rio Grande below Falcon Dam. The data is recorded automatically at both locations. In December 1965, a concrete control weir was constructed 0.2 river mile downstream from the gage.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 13,600 second-feet October 22-25, 1958 with a gage height of 60.07 feet. Min. no flow occurs frequently.

Average Flow in Second-Feet ‡

Daily:	Max.	13,600	Oct. 22-25, 1958	Min.	0	Frequently
Monthly:	Max.	13,100	Oct. 1958	Min.	39.5	Dec. 1956
Yearly:	Max.	2,930	1958	Min.	200	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	101	593	559	177	320	514	⇑ 3,530	396	124	529	1,070 ⇑	219
2	109	574	413	131	385	592	5,010	⇑ 257	1,280	744	⇑ 818	⇑ 195
3	131	667	551	166	368	364	⇑ 8,670	234	2,970	703	⇑ 629	129
4	139	543	⇑ 935	⇑ 224	537	236	⇑ 10,400	287	3,280	748	332	162
5	145	404	970	198	⇑ 3,090	271	⇑ 10,300	357	1,380	⇑ 430	176	172
6	⇑ 134	460	828	264	3,320	549	⇑ 9,450	209	196	427	282	273
7	131	593	804	298	3,370	624	8,700	286	218	597	347	244
8	136	647	736	357	3,920	611	8,250	379	823	467	748	280
9	152	613	507	364	3,400	520	7,520	302	3,290	650	1,190	308
10	⇑ 183	530	531	409	2,030	441	6,400	253	⇑ 5,890	580	863	297
11	⇑ 256	685	588	416	1,200	603	5,180	211	⇑ 8,290	368	484	292
12	175	⇑ 1,860	769	405	706	698	⇑ 3,770	164	9,460	374	316	355
13	128	1,470	833	443	456	719	2,560	123	⇑ 9,990	⇑ 347	374	226
14	114	⇑ 873	769	⇑ 379	324	888	2,430	276	⇑ 10,300	239	282	151
15	114	784	848	497	356	1,460	2,000	263	10,600	263	⇑ 144	85.0
16	170	654	820	693	340	605	680	202	⇑ 10,800	817	⇑ 107	⇑ 22.2
17	250	594	598	579	313	⇑ 227	617	168	10,700	1,340	⇑ 60.5	69.6
18	158	732	497	456	283	383	⇑ 296	112	10,800	1,840	45.4	205
19	128	796	521	439	⇑ 791	1,350	151	115	11,000	1,380	73.0	267
20	120	810	629	351	⇑ 2,200	1,930	116	190	10,600	813	269	323
21	131	756	628	503	1,160	3,980	114	273	10,200	564	201	489
22	165	747	544	825	793	⇑ 4,430	213	230	10,200	224	163	477
23	172	721	409	⇑ 1,630	983	3,730	245	226	10,300	337	165	369
24	139	770	375	1,230	1,160	⇑ 2,160	397	211	10,500	⇑ 493	264	317
25	149	842	344	663	765	1,410	493	216	10,900	474	422	518
26	205	1,120	430	470	351	2,020	365	410	⇑ 10,900	367	341	471
27	184	852	487	418	222	2,670	329	455	10,000	343	225	310
28	145	789	523	368	166	1,990	274	592	7,340	1,560	226	207
29	218		517	331	225	2,170	324	443	⇑ 2,900	2,050	244	250
30	628		413	310	322	2,750	325	185	902	1,560	159	263
31	⇑ 647		⇑ 209		216		321	160		⇑ 995		297
Sum	5,757	21,479	18,585	13,994	34,072	40,897	99,430	8,185	206,133	22,623	11,019.9	8,242.8

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1966 Acre-Feet Average	Maximum	Minimum
Jan.	35.55	34.34	†30	709	1	98.9	186	11,419	38,778	227,000	2,920
Feb.	38.97	34.99	12	2,030	5	362	767	42,604	46,318	363,000	3,380
Mar.	36.39	34.62	5	1,080	31	201	600	36,863	43,865	360,000	2,560
Apr.	38.15	34.45	23	1,790	3	121	466	27,757	35,251	118,000	11,500
May	44.37	34.57	8	3,980	†28	162	1,100	67,582	41,206	70,168	16,873
June	46.50	34.64	22	4,480	18	187	1,360	81,119	47,249	81,119	16,100
July	55.47	34.46	4	10,600	20	113	3,210	197,219	35,477	197,219	4,690
Aug.	35.51	34.38	28	685	†18	99.0	264	16,235	19,720	65,600	3,100
Sept.	54.50	34.40	26	11,100	1	103	6,870	408,865	61,299	408,865	7,710
Oct.	40.15	34.57	29	2,080	15	149	730	44,873	84,484	803,000	3,840
Nov.	37.73	34.15	9	1,230	18	34.4	367	21,858	64,837	662,000	5,640
Dec.	35.63	34.00	25	654	16	12.8	266	16,350	52,768	479,000	2,430
Yearly	55.47	34.00		11,100		12.8	1,340	972,744	571,252	2,124,110	145,520

† And other days ‡ Period 1954-1966 ⇑ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - SAN BENITO TO BROWNSVILLE

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

During 1966, 117,838 irrigable acres and several towns and rural homes were served water diverted from the Rio Grande between the river gages near San Benito and near Brownsville under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 15.1% of the total irrigable acres below Falcon Dam.

The total diversion during 1966 in this river reach was 84,432 acre-feet or 12.4% of the total water diverted from the Rio Grande below Falcon Dam. About 91% of the water diverted in this river reach was determined by this Commission through continuous records of discharge at open channel rating stations and at deflection meter stations developed by this Commission. The records for the rest of these diversions were furnished by the Special Water Master and were either measured by flow meters or were determined from periodic current meter measurements of pump discharges and recorded pump operating time. More than one crop per year is often grown on parts of this land.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.6	9.9	13.2	128	79.4	179	26.2	308	94.7	96.8	9.4	69.6
2	17.7	10.3	13.0	31.9	19.4	297	19.2	320	184	41.8	12.6	96.2
3	31.0	10.7	19.7	30.9	16.4	353	96.2	264	132	253	18.7	46.7
4	38.1	71.6	17.2	170	7.7	201	81.4	251	84.3	290	12.4	30.4
5	14.9	12.1	15.8	151	4.0	174	131	302	391	260	16.9	85.2
6	10.5	10.6	17.1	224	10.8	316	65.7	236	468	101	12.9	190
7	8.2	91.5	16.4	228	7.9	414	95.7	91.6	325	52.5	14.2	205
8	23.1	13.0	36.3	181	27.9	438	128	220	167	52.8	124	156
9	39.4	14.7	20.4	276	49.1	467	129	214	138	4.0	319	201
10	63.4	32.9	67.3	232	15.4	434	20.4	184	103	8.6	94.4	146
11	93.6	13.7	54.0	323	136	381	49.2	189	20.3	42.9	112	59.8
12	62.6	13.2	89.6	373	83.6	418	49.2	147	118	65.4	166	94.5
13	37.6	9.8	15.6	364	17.5	516	81.5	108	233	75.0	26.9	122
14	14.3	11.8	52.7	355	147	459	322	54.2	274	25.6	115	106
15	18.1	3.4	41.5	330	21.9	373	206	132	274	8.0	90.8	36.8
16	22.2	0	105	304	40.5	258	49.2	104	263	1.6	72.9	24.5
17	59.1	6.4	138	245	62.8	241	59.8	87.3	180	6.8	67.8	24.7
18	47.1	4.8	134	310	54.6	157	167	83.5	137	29.0	47.1	11.6
19	16.4	10.8	13.4	267	33.3	90.4	226	56.6	241	38.3	50.4	158
20	14.0	9.6	32.9	211	19.8	113	252	62.2	249	20.6	23.5	206
21	2.3	9.8	46.2	161	16.6	85.9	176	45.7	170	9.0	158	291
22	2.5	66.7	52.9	155	8.1	26.4	199	167	185	11.3	164	324
23	6.0	9.7	85.5	109	15.6	19.9	201	182	233	9.5	179	206
24	8.4	17.4	75.1	101	43.1	169	220	214	258	15.6	146	49.0
25	2.4	9.4	69.0	135	19.7	28.0	321	206	223	19.5	218	58.3
26	15.2	16.3	28.7	122	18.4	5.3	319	214	248	20.2	225	249
27	11.7	16.1	25.7	237	8.8	50.1	281	327	205	22.8	80.2	269
28	10.8	12.2	29.3	308	14.2	16.6	270	100	152	14.0	95.9	225
29	26.5		52.9	256	39.6	24.7	255	157	156	15.4	117	188
30	17.5		66.2	191	70.1	17.9	291	144	141	11.7	138	195
31	11.6		44.7		182		232	162		12.3		183
Sum	764.8	518.4	1,489.3	6,509.8	1,291.2	6,723.2	5,019.7	5,333.1	6,047.3	1,635.0	2,928.0	4,307.3

Month	Current Year 1966: Average Rainfall Inches ** 1957-1966	1966	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966 Acre-Feet Average	Maximum	Minimum
Jan.	1.49	3.87	11	93.6	21	2.3	24.7	1,517	9,945	22,100	1,290
Feb.	2.10	.91	7	91.5	16	0	18.5	1,028	6,135	12,284	1,028
Mar.	.66	.53	17	138	2	13.0	48.0	2,954	6,087	15,200	705
Apr.	1.74	1.65	12	373	3	30.9	217	12,912	10,792	21,828	2,180
May	2.71	7.21	31	182	5	4.0	41.7	2,561	14,562	27,670	2,561
June	2.98	4.34	13	516	26	5.3	224	13,335	20,039	32,279	8,280
July	1.11	1.65	14	322	2	19.2	162	9,957	11,033	23,145	3,687
Aug.	1.89	1.72	27	327	21	45.7	172	10,578	7,963	10,700	4,291
Sept.	4.28	1.46	6	468	11	20.3	202	11,995	6,975	12,600	1,990
Oct.	3.09	6.08	4	290	16	1.6	52.7	3,243	6,861	11,300	3,243
Nov.	1.68	.03	9	319	1	9.4	97.6	5,808	5,144	9,021	2,320
Dec.	1.94	.71	22	324	18	11.6	139	8,544	6,840	11,200	2,163
Yearly	25.67	30.16		516		0	117	84,432	112,376	161,503	84,432

Ø Mean daily ** United States side - average of several stations in the reach

RIO GRANDE NEAR BROWNSVILLE, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the left bank at latitude 25° 52' 35", longitude 97° 27' 15", and river mile 48.8; 1,000 feet downstream from El Jardín pumping plant, 6.8 river miles downstream from the international highway bridge (Gateway) between Brownsville, Texas and Matamoros, Tamaulipas, and 1,199.4 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 43 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 1966.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 225 river miles upstream. Excessive upstream flood flows are partly diverted into the United States and Mexican floodway systems before reaching this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 31,700 second-feet on October 8, 1945 with a gage height of 31.48 feet. Min. no flow occurs frequently.

Average Flow in Second-Feet

Daily:	Max.	30,800	Sept. 14, 1942; Oct. 8, 1945	Min.	0	Frequently
Monthly:	Max.	23,200	Oct. 1941	Min.	0	June & July 1953
Yearly:	Max.	9,010	1941	Min.	42.1	1956

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	80.2	644	⇑ 757	214	145	114	⇑2,600	101	104	1,200	1,120 ⇑	146
2	78.4	595	560	136	283	213	3,380	104	90.5	695	1,080	⇑149
3	74.1	581	408	130	370	212	4,430	⇑ 59.3	940	681	841	161
4	72.3	564	466	⇑ 92.0	475	134	⇑7,110	49.5	2,380	⇑ 557	689	163
5	102	545	832	85.7	815	100	⇑8,860	53.0	2,540	518	471	136
6	120	425	960	68.7	⇑2,230	80.0	⇑9,400	95.0	878	510	302	⇑ 89.4
7	128	415	842	63.9	2,720	113	⇑9,100	142	135	500	316	76.0
8	124	532	762	93.4	2,960	92.2	8,520	146	108	576	366	134
9	118	644	699	113	⇑3,220	71.3	7,850	214	900	632	564	119
10	⇑111	⇑ 628	471	140	3,010	64.0	7,260	170	⇑ 2,810	750	880	144
11	94.4	524	436	126	2,220	76.3	6,460	139	⇑ 4,720	642	833	203
12	150	755	498	91.0	1,250	125	⇑5,380	114	6,740	469	423	210
13	152	⇑1,500	715	69.1	797	135	4,250	96.0	8,000	⇑ 442	320	208
14	145	1,330	⇑ 780	72.6	546	148	3,120	98.0	⇑ 8,560	464	328	155
15	128	966	725	62.8	340	529	2,350	151	9,080	608	290	143
16	107	834	832	111	392	⇑ 916	2,020	187	⇑ 9,500	518	150	153
17	115	⇑ 698	724	320	333	491	1,270	138	9,940	782	⇑ 128	98.5
18	159	629	521	320	329	136	737	112	10,200	1,320	106	57.0
19	158	706	442	158	⇑ 288	331	⇑ 385	86.0	10,300	1,590	81.7	141
20	139	816	496	⇑ 165	928	1,280	151	63.5	10,400 ⇑	1,320	97.0	130
21	154	846	576	167	1,880	1,860	⇑ 92.0	104	10,100	940	165	118
22	157	723	584	311	1,230	2,980	90.0	⇑ 165	9,870	697	127	⇑162
23	154	730	504	696	871	⇑3,610	100	104	9,790	455	87.0	184
24	174	693	368	1,230	1,050	3,430	168	⇑ 73.8	9,920	470	84.0	253
25	172	761	283	981	1,170	2,580	⇑ 190	58.2	10,200	560	90.0	276
26	158	883	324	914	821	1,900	207	42.9	10,500	⇑ 525	141	365
27	178	1,080	381	365	459	2,070	155	79.8	10,600 ⇑	442	223	230
28	⇑192	907	⇑ 454	182	292	2,410	134	220	9,040	481	201	145
29	171		465	94.5	201	2,190	100	⇑ 386	⇑ 6,660	1,460	157	77.8
30	168		439	73.4	187	2,280	101	341	3,640	1,800	160	45.5
31	508		378		183		142	156		1,510		120
Sum	4,541.4	20,954	17,682	7,646.1	31,995	30,670.8	96,112.0	4,049.0	188,645.5	24,114	10,820.7	4,792.2

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1966: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	8.10	4.01	31	633	3	65.4	146	9,008	25,828	224,000	283
Feb.	12.36	6.62	13	1,560	6	376	748	41,562	39,482	362,000	1,060
Mar.	9.91	5.53	6	987	25	228	570	35,072	37,072	361,000	2,050
Apr.	11.20	3.78	24	1,320	6	40.6	255	15,166	23,422	127,000	875
May	17.20	4.21	9	3,260	1	87.2	1,030	63,462	23,193	63,462	4,140
June	18.66	4.13	23	3,700	10	60.8	1,020	60,836	25,982	60,836	2,430
July	27.58	4.89	6	9,500	22	60.0	3,100	190,638	27,788	190,638	1,120
Aug.	7.50	4.13	30	485	26	27.5	131	8,031	12,640	56,000	218
Sept.	27.85	4.03	26	10,700	8	62.8	6,290	374,178	51,237	374,178	950
Oct.	14.58	7.05	1	2,120	28	365	778	47,830	62,018	567,000	756
Nov.	11.24	4.44	1	1,270	19	55.0	361	21,463	51,542	528,000	1,290
Dec.	7.32	4.06	26	410	29	32.0	155	9,505	46,345	480,000	524
Yearly	27.85	3.78		10,700		27.5	1,210	876,751	426,549	1,658,480	30,596

⇑ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE – BROWNSVILLE TO THE GULF

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

During 1966, 6,230 acres, or 0.8% of the total irrigable acreage below Falcon Dam, were served by diversions between the gage near Brownsville and the mouth of the river under the jurisdiction of this Court.

The total diversion during 1966 in this river reach was 1,587 acre-feet, or 0.2% of the total water diverted from the Rio Grande below Falcon Dam. All the records of diversions in this river reach were furnished by the Special Water Master and were determined by periodic current meter measurements of pump discharges and recorded pump operating time. More than one crop per year is often grown on parts of this land.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	3.8	25.7	0	0	5.9	4.3	0	0	0
2	0	0	0	3.8	25.9	0	0	4.3	0	0	0	0
3	0	0	0	1.3	24.7	.9	0	4.3	.5	0	0	0
4	0	0	0	4.4	12.4	4.4	0	2.9	.7	0	0	0
5	0	0	0	2.3	0	10.2	0	2.9	.7	.7	0	0
6	0	0	0	2.3	0	10.2	0	2.9	.7	1.5	1.2	0
7	0	0	1.0	2.2	0	14.1	0	2.6	3.4	1.5	2.4	0
8	0	0	1.0	0	0	14.1	0	2.0	2.2	1.5	2.4	1.1
9	0	0	1.0	0	0	14.1	0	2.0	0	1.6	1.8	1.1
10	0	0	0	2.8	0	14.7	0	2.0	0	1.6	3.4	1.1
11	0	0	0	2.1	0	16.7	0	3.6	.5	1.6	3.4	.7
12	0	.8	0	2.1	0	13.8	0	3.6	0	4.3	5.0	.7
13	0	0	0	4.7	0	12.2	1.0	3.3	0	4.3	1.0	.7
14	0	0	0	4.1	0	14.1	1.0	3.5	0	4.3	1.0	1.7
15	0	0	2.4	2.0	0	10.4	0	2.4	0	2.6	2.3	1.0
16	0	0	2.4	2.0	0	10.4	1.9	2.4	0	2.1	2.3	0
17	0	0	2.9	3.0	0	14.8	3.1	2.4	0	2.1	2.3	0
18	0	0	2.9	4.6	0	4.4	3.1	0	0	2.1	2.7	0
19	0	0	0	4.6	0	5.8	3.1	2.0	0	.7	2.3	3.8
20	0	0	0	4.6	0	9.7	4.3	2.6	0	.7	5.2	6.5
21	0	0	1.1	1.6	0	9.7	3.2	3.3	0	.7	5.2	7.3
22	0	0	1.1	0	0	9.7	6.2	2.8	0	0	5.2	2.6
23	0	0	1.6	0	0	10.2	6.2	2.8	0	0	5.2	2.6
24	0	0	1.6	0	0	4.3	10.8	2.8	0	0	2.9	2.6
25	0	0	1.6	1.5	0	0	9.4	2.8	0	.5	6.0	0
26	0	0	0	3.8	0	0	9.4	2.8	.6	.5	3.1	2.4
27	0	0	0	3.8	0	0	9.4	2.3	0	0	0	4.7
28	0	0	3.7	6.9	0	.6	9.4	0	0	0	0	5.6
29	0		3.7	10.3	0	.6	7.1	0	0	0	0	7.3
30	0		3.7	10.4	0	0	7.9	0	0	0	0	2.3
31	0		3.8		0		5.9	0		0		0
Sum	0	0.8	35.5	95.0	88.7	230.1	102.4	77.2	13.6	34.9	66.3	55.8

Month	Current Year 1966: Average Rainfall Inches **		Ø Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period 1957-1966: Acre-Feet		
			High		Low						
	1957-1966	1966	Day		Day				Average	Maximum	Minimum
Jan.	1.72	3.99		0		0	0	0	507	1,275	0
Feb.	2.25	1.00	12	0.8	† 1	0	0	1.6	167	415	0
Mar.	.74	.82	31	3.8	† 1	0	1.1	70.4	138	305	0
Apr.	1.70	1.06	30	10.4	† 8	0	3.2	188	231	633	0
May	2.41	5.70	2	25.9	† 5	0	2.9	176	299	581	131
June	2.62	3.40	11	16.7	† 1	0	7.7	456	575	1,393	214
July	.94	1.38	24	10.8	† 1	0	3.3	203	221	778	43.6
Aug.	1.65	1.10	1	5.9	† 18	0	2.4	153	151	317	63.5
Sept.	4.36	1.36	1	4.3	† 2	0	.4	27.0	85.2	190	0
Oct.	2.85	5.87	† 12	4.3	† 1	0	1.1	69.2	83.3	218	0
Nov.	1.80	.05	25	6.0	† 1	0	2.2	132	97.1	252	0
Dec.	2.13	1.20	† 21	7.3	† 1	0	1.8	111	119	335	0
Yearly	25.17	26.93		25.9		0	2.2	1,587.2	2,673.6	5,036.3	1,332.5

† And other days Ø Mean daily ** United States side - average of several stations in the reach

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE BELOW FALCON DAM

Since June 1956 the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam has been under the jurisdiction of the 93rd District Court of Texas, the disposition of such water being made through its Special Water Master.

The official records for 1966 show that, in this area, 779,369 irrigable acres, several towns and many rural homes were served Rio Grande water under the jurisdiction of this Court.

The total diversion in 1966 was 678,925 acre-feet, most of which was made by pumping from the river. About 95% of the water diverted was determined by this Commission through continuous records of discharges at open channel rating stations and at deflection meter stations developed by this Commission. The records for the rest of the diversions were furnished by the Special Water Master and were either measured by flow meters or were determined from periodic current meter measurements of pump discharges and recorded pump operating time. Drainage from more than 90% of this area does not return to the Rio Grande but some of it is re-used in the area. More than one crop per year is often grown on parts of this land.

Diversion data pertaining to "Diversions from the Rio Grande - United States Side below Rio Grande City" for the period 1922 through 1957 may be found in previous issues of these Water Bulletins. The area irrigated below Rio Grande City is about 99% of the total acreage irrigated on the United States side below Falcon Dam.

A breakdown by river reaches of the total diversion below Falcon Dam shown in the tabulation below may be found in appropriate downstream order on preceding pages of this Water Bulletin. Because the mean daily discharges are rounded, the total acre-feet shown in the summary below may not equal the sum of the acre-feet of the individual reaches.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	148	107	433	888	264	1,030	678	2,330	1,710	1,460	722	956
2	45.5	209	257	638	229	1,430	281	2,490	2,170	652	951	984
3	193	261	129	364	218	1,680	191	2,450	1,850	1,900	820	732
4	260	467	223	899	516	1,380	219	2,490	1,260	1,920	1,070	441
5	147	221	159	1,070	271	1,090	620	2,640	2,020	1,920	1,000	935
6	113	64.7	95.1	1,210	209	2,080	782	2,160	1,850	1,260	809	1,320
7	103	261	228	1,370	290	2,300	705	808	1,730	1,280	993	1,360
8	208	315	549	1,210	248	2,600	939	1,490	1,410	933	1,140	1,320
9	175	271	492	1,170	480	2,850	657	1,690	1,440	149	1,240	1,320
10	247	196	372	824	402	2,740	242	1,660	1,300	252	1,040	1,030
11	567	205	347	1,710	427	2,900	731	1,640	1,050	588	1,180	358
12	597	146	372	1,910	397	2,560	991	1,530	1,630	683	969	872
13	610	39.3	55.0	2,210	310	3,570	1,130	879	1,630	689	651	1,110
14	370	266	204	2,290	160	2,960	1,440	641	1,590	638	1,310	1,020
15	165	332	288	1,710	58.4	2,610	1,420	1,520	1,750	262	1,270	941
16	65.2	326	562	1,290	113	2,660	1,420	1,490	1,830	107	1,330	970
17	423	296	539	1,290	137	2,550	1,130	1,370	1,620	159	1,310	688
18	567	187	369	1,650	176	1,770	1,580	1,250	938	129	1,270	710
19	475	115	207	1,860	486	395	1,700	1,190	1,780	104	994	1,560
20	449	62.0	136	1,860	290	518	1,720	986	1,930	114	920	1,640
21	368	285	270	1,290	99.5	679	1,680	579	1,860	360	1,560	1,740
22	344	342	640	743	65.1	516	1,680	1,270	1,830	373	1,880	1,730
23	334	295	807	290	208	203	1,890	1,500	1,700	125	1,650	1,360
24	106	164	814	174	317	342	1,980	1,630	1,480	224	1,130	883
25	180	67.9	689	258	419	144	2,700	1,570	1,210	229	1,530	193
26	141	86.5	545	224	406	81.0	2,730	1,390	1,930	313	1,540	856
27	229	24.1	214	334	539	109	2,490	1,050	2,110	415	857	2,170
28	247	330	604	460	599	97.1	2,440	428	1,860	188	1,040	2,310
29	69.7		706	430	283	145	2,390	1,080	1,900	114	1,210	2,080
30	85.6		903	335	686	63.3	2,120	1,350	1,890	185	1,160	2,120
31	138		903		1,000		1,640	1,500		346		1,800
Sum	5,941.5		31,961		44,052.4		46,051		18,071		37,509	
	8,170.0		13,111.1		10,303.0		42,316		50,258		34,546	

Month	Current Year 1966: Average Rainfall Inches ** 1957-1966	1966	ø Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966: Acre-Feet Average	Maximum	Minimum
Jan.	1.33	2.71	13	610	2	45.5	264	16,205	65,147	166,872	16,205
Feb.	1.55	1.19	4	467	27	24.1	212	11,785	45,738	126,230	11,785
Mar.	.71	.70	†30	903	13	55.0	423	26,006	61,674	149,000	6,280
Apr.	1.61	2.81	14	2,290	24	174	1,070	63,387	94,695	157,807	25,100
May	2.67	6.98	31	1,000	15	58.4	332	20,436	113,639	171,000	20,436
June	2.62	6.16	13	3,570	30	63.3	1,470	87,378	159,990	259,000	86,810
July	.81	.76	26	2,730	3	191	1,370	83,934	104,063	178,000	41,158
Aug.	1.47	1.60	5	2,640	28	428	1,490	91,342	75,144	113,000	48,709
Sept.	3.39	.66	2	2,170	18	938	1,680	99,687	68,255	136,000	34,200
Oct.	2.95	5.48	† 4	1,920	19	104	583	35,844	68,317	124,598	27,800
Nov.	1.46	.04	22	1,880	13	651	1,150	68,522	47,016	97,969	22,747
Dec.	1.50	.19	28	2,310	25	193	1,210	74,399	51,212	84,500	14,034
Yearly	22.07	29.28		3,570		24.1	938	678,925	954,890	1,153,049	678,925

† And other days ø Mean daily ** United States side - average of several stations in the reach

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Acre-Feet

EL PASO SEWAGE OUTFALL

This sewage enters the Rio Grande through the outfalls of the El Paso, Ascarate, and Ysleta Sewage Plants, located 6.6, 8.2, and 15 river miles, respectively, downstream from the American Dam. The outfall from the El Paso Plant consists of flows measured by a Parshall meter and estimates of amounts which bypass the meter. The Ascarate and Ysleta Plants are owned by the El Paso County Water Control and Improvement District No. 1, but all three plants are operated by the El Paso Water Utilities of the Public Service Board of the City of El Paso, Texas and all records are furnished by this agency.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1966	1,847	1,701	1,971	1,841	2,049	1,927	1,994	2,171	2,018	2,024	2,053	1,966	23,562
* Average	1,551	1,488	1,658	1,597	1,760	1,757	1,846	1,887	1,777	1,769	1,649	1,661	20,400

EAGLE PASS SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 757.5 river miles downstream from the American Dam at El Paso, Texas and about 600 feet upstream from the Eagle Pass-Piedras Negras International Railroad Bridge. The records are based on weekly current meter measurements or gage height observations made by personnel of the International Boundary and Water Commission. There are no records available prior to 1962.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1966	56.9	73.8	63.1	46.0	37.1	35.7	28.4	45.4	70.4	72.0	55.5	64.1	648.4
# Average	52.0	51.0	45.2	41.6	44.1	41.5	36.2	40.6	45.5	48.5	51.7	55.5	553.4

LAREDO SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 890.8 river miles downstream from the American Dam at El Paso, Texas and immediately upstream from the Laredo Gaging Station. The record is based on estimates by the Texas State Health Department.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1966	323	349	471	442	378	407	507	418	409	408	523	453	5,088
* Average	306	319	385	379	416	404	403	381	348	320	343	319	4,323

BROWNSVILLE SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 3.4 river miles downstream from the Gateway Bridge between Brownsville, Texas and Matamoros, Tamaulipas; 3.4 river miles upstream from the Brownsville Gaging Station; and 52.2 river miles from the Gulf of Mexico. Records are furnished by the City of Brownsville. The records were not available for years prior to 1957. No cooling water waste was returned to the Rio Grande by the City of Brownsville Water Plant.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1966	333	274	306	282	323	323	381	407	401	445	458	306	4,239
* Average	246	247	298	258	267	290	291	286	277	286	279	266	3,291

* Period averages are for past 10 years # Period 1962-1966

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

Tabulated below are monthly and yearly amounts of water pumped directly from the Rio Grande into the municipal distribution systems of several cities along the border, except the City of El Paso which pumps its water from the Franklin Canal and the City of Del Rio which pumps its water from San Felipe Springs. The basic data for the cities are furnished by the municipalities. Central Power and Light Company furnishes the data for the Laredo Power Station. All diversions in the United States listed below are in the State of Texas, while those in Mexico are in the State of Tamaulipas, except for Piedras Negras which is in the State of Coahuila. Because of changing conditions, the period records are limited here to the past 10 years.

During April through November 1966, the City of El Paso pumped water from wells near Canutillo, Texas into the Rio Grande about 17 miles upstream from the point of diversion at the water plant. This water amounted to 3,597 acre-feet and is included in the figures below. All Rio Grande water used by United States municipalities below Falcon Dam is included in the figures shown under "Diversions from the Rio Grande - United States Side . . ." (by river reaches and total below Falcon Dam) on pages 62, 65, 69, 71, 73, 75, and 76 herein. The City of Reynosa, Tamaulipas, Mexico no longer pumps water from the Rio Grande. All its water supply is from the Rode Canal of the Marte R. Gómez Reservoir. Cuidad Mier, Tamaulipas started diverting water from the Rio Grande for municipal use January 1953. There were no actual records kept of this diversion prior to May 1960. This diversion has been estimated to be 32.4 acre-feet per month during this period. The Del Mar Conservation District started diverting water from the Rio Grande in late December 1961, Piedras Negras in November 1964, and San Ygnacio in November 1965. The Laredo Power Station, Central Power and Light Company, started operations in April 1951.

Population data for all cities are estimates based on the 1960 official census, except Falcon Village where the population was estimated by the International Boundary and Water Commission, and Del Mar and San Ygnacio where the population was estimated from the number of meter connections.

In the United States

Month	EL PASO (Pop. 325,000)				DEL RIO Ø (Pop. 26,000)			
	1966	Period 1957-1966			1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	0	0	0	0	279.1	268.2	407.0	185.3
Feb.	0	0	0	0	281.9	275.5	411.6	175.8
Mar.	387	240.7	493.3	0	395.4	407.9	599.2	219.0
Apr.	1,591	941.6	1,591	0	532.2	459.4	611.1	253.4
May	1,932	984.4	1,932	0	407.1	463.9	598.4	253.9
June	1,739	1,254.2	1,739	218	581.0	596.5	834.5	385.9
July	1,978	1,345.0	1,978	533	903.1	766.2	1,027.2	464.2
Aug.	1,668	1,457.7	1,879.7	0	696.0	748.1	1,147.4	532.5
Sept.	1,343	956.9	1,709.0	0	521.1	532.7	731.7	300.8
Oct.	1,016	236.7	1,016	0	461.1	363.7	521.1	241.5
Nov.	397	65.3	397	0	413.5	284.5	413.5	193.7
Dec.	0	67.7	677.1	0	372.0	262.3	372.0	205.7
Yearly	12,051	7,550.2	12,051	2,158.0	5,843.5	5,428.9	6,969.4	3,985.5

Month	EAGLE PASS (Pop. 16,300)				DEL MAR (Pop. 1,000)			
	1966	Period 1957-1966			1966	Period 1962-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	122.2	115.2	143.9	97.0	6.8	3.5	6.8	0.3
Feb.	120.7	113.7	138.3	79.9	7.6	3.8	7.6	.6
Mar.	163.3	146.1	170.0	92.4	10.2	3.4	10.2	0
Apr.	161.0	145.6	180.9	95.9	17.5	5.4	17.5	0
May	160.6	157.3	200.4	108.4	11.2	5.1	11.2	0
June	214.8	195.3	250.0	118.4	17.7	6.6	17.7	0
July	293.1	226.6	293.1	173.1	24.0	8.5	24.0	0
Aug.	229.8	217.2	273.7	178.8	27.2	14.3	27.2	1.9
Sept.	166.6	175.3	229.9	119.2	18.9	12.0	22.8	1.7
Oct.	177.5	143.3	177.5	97.2	19.7	9.2	19.7	1.7
Nov.	187.1	122.0	187.1	83.9	32.1	11.2	32.1	1.5
Dec.	169.7	116.1	169.7	92.3	31.8	10.3	31.8	1.5
Yearly	2,166.4	1,873.7	2,169.3	1,445.4	224.7	93.3	224.7	15.0

Month	LAREDO (Pop. 66,700)				LAREDO POWER STATION			
	1966	Period 1957-1966			1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	587.8	556.1	680.8	399.1	29.6	27.6	40.2	15.4
Feb.	612.1	560.0	777.0	383.4	47.4	35.6	72.7	13.5
Mar.	906.2	739.7	906.2	511.6	22.7	38.9	79.3	10.7
Apr.	961.1	824.1	995.1	630.9	49.6	43.9	69.1	26.0
May	822.6	905.4	1,008.8	715.3	45.8	56.0	74.4	35.6
June	1,016.5	1,010.9	1,310.3	818.1	56.8	66.4	89.3	46.9
July	1,447.3	1,151.6	1,475.0	876.7	91.8	88.7	100.5	73.4
Aug.	1,228.8	1,120.9	1,324.0	917.6	97.1	97.0	126.5	74.4
Sept.	1,038.1	891.3	1,245.1	576.4	82.2	68.5	83.8	48.5
Oct.	994.7	781.3	994.7	476.7	52.7	38.1	62.3	11.6
Nov.	969.0	635.2	969.0	446.3	61.7	39.1	61.7	15.7
Dec.	823.5	580.1	823.5	470.5	51.4	37.7	59.2	20.7
Yearly	11,407.7	9,756.6	11,542.0	7,315.6	688.8	637.5	820.0	475.6

Ø Includes Laughlin Air Force Base

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

In the United States

Month	SAN YGNACIO (Pop. 900)				NEW ZAPATA (Pop. 2,335)			
	1966	Period November 1965-1966			1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	0.8				43.0	22.1	43.0	14.2
Feb.	1.1				40.2	22.6	40.2	13.2
Mar.	2.1				32.4	27.0	41.2	13.5
Apr.	2.4				27.0	31.8	46.0	11.4
May	1.5				18.3	31.4	46.4	18.3
June	1.9				27.7	35.1	49.2	19.5
July	2.7				43.6	42.1	57.6	33.0
Aug.	1.4				35.6	39.4	52.7	29.6
Sept.	1.5				30.2	31.7	50.4	20.2
Oct.	1.5				31.4	29.8	47.6	19.7
Nov.	2.5	2.0	2.5	1.5	28.3	25.0	44.3	17.4
Dec.	1.9	1.5	1.9	1.1	26.8	24.0	43.1	16.4
Yearly	21.3				384.5	362.0	483.8	246.2

Month	FALCON VILLAGE (Pop. 130)				ROMA * (Pop. 12,000)			
	1966	Period 1957-1966			** 1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	4.7	5.0	6.6	2.1	33.6	27.6	35.4	20.1
Feb.	4.4	4.9	7.2	2.7	32.6	26.8	32.6	18.2
Mar.	6.5	6.8	9.8	4.6	41.4	33.0	41.4	20.5
Apr.	6.5	7.9	10.1	5.7	44.7	35.2	44.7	21.9
May	6.5	8.3	11.5	5.8	44.7	38.1	46.9	24.4
June	7.8	8.4	10.8	5.9	46.3	39.3	48.7	25.3
July	10.8	11.1	13.4	7.0	54.0	43.5	54.2	28.9
Aug.	11.0	10.4	13.2	7.8	51.8	41.8	51.8	28.3
Sept.	8.9	8.2	11.0	5.5	47.2	37.0	49.5	24.4
Oct.	8.9	7.3	8.9	3.2	44.5	34.8	44.5	23.9
Nov.	7.9	5.4	7.9	2.5	44.0	31.8	44.0	21.3
Dec.	7.7	5.5	7.8	3.8	43.2	30.4	43.2	22.2
Yearly	91.6	89.2	100.0	60.6	528.0	419.3	528.0	281.8

Month	RIO GRANDE CITY (Pop. 6,750)				BROWNSVILLE (Pop. 55,200)			
	1966	Period 1957-1966			1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	52.8	51.7	65.7	36.0	629.2	591.1	734.8	387.3
Feb.	51.6	49.0	63.2	33.1	572.5	558.6	700.8	420.2
Mar.	59.8	60.0	74.6	39.8	641.6	679.6	870.3	494.6
Apr.	67.5	66.4	85.3	50.7	663.1	697.2	880.0	512.9
May	61.4	72.4	84.1	57.4	644.2	729.7	853.7	640.4
June	74.6	76.9	91.5	48.1	734.2	805.9	996.3	552.4
July	78.3	87.2	107.7	68.3	892.8	966.9	1,191.3	795.1
Aug.	95.1	84.7	95.1	75.1	997.4	975.9	1,177.1	65.4
Sept.	92.1	68.8	92.1	50.9	874.7	760.1	927.7	580.5
Oct.	69.1	59.7	69.1	35.8	698.7	692.7	811.6	517.5
Nov.	74.0	55.4	74.0	46.0	807.3	619.0	807.3	480.3
Dec.	80.4	55.2	80.4	42.0	752.0	618.7	849.3	480.6
Yearly	856.7	787.4	917.2	622.0	8,907.7	8,695.4	9,767.5	7,301.6

In Mexico

Month	PIEDRAS NEGRAS (Pop. 54,779)				NUEVO LAREDO (Pop. 116,518)			
	1966	Period 1965-1966			1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	163.8	188.0	212.2	163.8	780.4	700.7	939.4	537.1
Feb.	160.3	166.2	172.0	160.3	829.9	667.6	829.9	421.2
Mar.	184.6	195.0	205.4	184.6	1,023.5	828.2	1,023.5	572.7
Apr.	194.2	209.2	224.1	194.2	1,143.3	897.0	1,143.3	663.2
May	198.5	206.5	214.5	198.5	1,057.6	951.9	1,092.3	568.2
June	241.8	246.8	251.9	241.8	1,087.6	982.0	1,103.5	735.3
July	316.5	306.8	316.5	297.2	1,308.6	1,065.3	1,308.6	612.7
Aug.	278.7	263.4	278.7	248.2	1,163.9	1,066.4	1,336.4	732.6
Sept.	226.0	231.0	235.9	226.0	1,129.8	941.6	1,141.2	544.9
Oct.	231.1	219.8	231.1	208.5	1,053.5	911.2	1,107.1	592.5
Nov.	216.1	196.2	216.1	176.4	934.9	766.0	940.8	544.2
Dec.	187.9	179.5	187.9	171.1	940.3	718.4	940.3	454.6
Yearly	2,599.5	2,608.4	2,617.4	2,599.5	12,453.3	10,496.3	12,453.3	7,385.1

* Includes Los Saenz, Escobares, Texas and Cd. Miguel Alemán, Tamaulipas.
** Includes 301 acre-feet supplied to Cd. Miguel Alemán, Tamaulipas

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

In Mexico

Month	NUEVA CD. GUERRERO (Pop. 4,803)				CD. MIER (Pop. 8,181)			
	1966	Period 1957-1966			1966	Period 1957-1966		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	32.7	34.3	48.7	29.8	32.3	31.8	38.9	24.3
Feb.	27.9	31.6	44.3	27.4	24.4	32.5	41.3	24.4
Mar.	35.8	37.5	48.0	31.3	32.7	36.9	47.0	32.4
Apr.	35.6	37.8	52.5	30.7	34.7	36.8	46.2	32.4
May	35.2	40.3	53.8	33.4	34.5	39.0	50.3	32.4
June	35.5	41.1	52.9	33.3	33.8	37.7	49.7	32.4
July	36.5	42.4	54.6	36.5	36.3	39.4	50.3	32.4
Aug.	35.3	41.5	52.0	35.3	29.2	38.4	49.7	29.2
Sept.	34.3	38.5	46.4	33.6	29.0	37.6	47.2	29.0
Oct.	35.8	38.4	49.1	31.6	34.5	37.3	46.9	32.4
Nov.	34.4	37.0	46.5	31.5	32.7	35.7	41.3	32.4
Dec.	32.8	36.5	48.6	31.8	31.7	34.1	38.9	31.2
Yearly	411.8	456.9	552.8	391.9	385.8	437.2	533.3	385.8

Month	MATAMOROS (Pop. 125,000)							
	1966	Period 1957-1966						
		Average	Maximum	Minimum				
Jan.	583.4	439.4	730.6	238.2				
Feb.	502.8	405.7	618.2	286.7				
Mar.	517.5	464.7	729.7	302.9				
Apr.	570.9	467.3	690.6	280.1				
May	567.1	508.1	749.4	320.1				
June	636.4	530.1	710.7	382.6				
July	655.9	557.2	808.5	364.3				
Aug.	735.2	526.5	868.3	46.4				
Sept.	575.4	524.7	830.2	287.7				
Oct.	655.5	528.7	821.6	333.5				
Nov.	630.5	489.9	751.2	339.2				
Dec.	600.0	487.7	738.9	286.2				
Yearly	7,230.6	5,930.0	8,914.5	3,911.5				

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

Data are presented below for all storage reservoirs in the Rio Grande Basin in the United States and Mexico that exceed 15,000 acre-feet in capacity, except San Esteban Reservoir on Alamito Creek which according to the Texas Water Commission has a capacity of 18,800 acre-feet. There are no monthly storage data available for this reservoir. Also presented below are data for the International Falcon Reservoir on the Rio Grande. The monthly figures represent the water in storage on the last day of each month, in thousands of acre-feet. The capacities indicated are at spillway level. Storage figures greater than the capacity indicate that the water surface was above spillway level.

The reservoirs and the source of the data are: Rio Grande, Continental, Santa Maria, Terrace, and Mountain Home from the State of Colorado, Division of Water Resources; Sanchez from the Sanchez Ditch and Reservoir Company; Platoro, El Vado, and Abiquiu from the Rio Grande Compact Commission; Costilla and Bluewater from the United States Geological Survey; Storrie from State Engineer Office of New Mexico; Elephant Butte, Caballo Dam, Alamogordo, McMillan, and Avalon from the United States Bureau of Reclamation; Red Bluff from the Red Bluff Water Power Control District; Lake Casa Blanca from the Webb County Office; Willacy from the Willacy County Water Control and Improvement District No. 1; Boquilla, La Colina, and Rosetilla from Industrial Electric, S. A. of Mexico; Francisco I. Madero, Centenario, San Miguel, Venustiano Carranza, La Boca, Marte R. Gómez, Culebrón, Villa Cárdenas, and Palito Blanco from the Ministry of Hydraulic Resources of Mexico; Falcon Reservoir (International) from International Boundary and Water Commission.

In the United States

Month	RIO GRANDE (Capacity 51.1)		CONTINENTAL (Capacity 22.7)		SANTA MARIA (Capacity 45.1)		TERRACE (Capacity 17.2)		MOUNTAIN HOME (Capacity 18.6)	
	1966	#Average 1927-1966	1966	#Average 1928-1966	1966	#Average 1928-1966	1966	#Average 1925-1966	1966	#Average 1924-1966
Jan.	35.6	12.8	8.4	4.8	18.1	6.9	10.8	2.9	0.9	3.8
Feb.	36.3	14.0	8.8	5.1	18.1	7.4	10.5	3.2	1.3	4.2
Mar.	37.4	15.4	9.4	5.5	18.2	8.3	10.8	3.6	1.7	4.6
Apr.	39.7	15.7	10.0	6.2	18.3	9.7	10.6	4.5	1.7	5.2
May	41.5	21.4	10.6	8.0	18.2	13.9	11.1	6.9	1.6	7.1
June	23.3	22.7	8.9	8.3	10.4	15.8	8.5	8.3	1.4	7.2
July	3.2	13.3	3.1	5.8	1.6	10.5	5.8	5.3	1.2	5.1
Aug.	3.1	6.3	2.3	3.7	1.1	5.4	4.0	2.9	.9	3.2
Sept.	3.1	6.1	2.3	3.8	1.0	5.0	3.5	2.5	.8	2.8
Oct.	3.1	7.0	2.3	3.6	1.0	5.2	4.2	2.6	.9	2.8
Nov.	4.9	9.8	2.9	4.0	1.7	5.9	4.4	2.4	1.1	3.1
Dec.	6.5	11.4	3.6	4.5	2.3	6.3	4.7	2.8	1.3	3.5
Avg.	19.8	13.0	6.0	5.3	9.2	8.4	7.4	4.0	1.2	4.4
Max.	41.5	52.1	10.6	26.7	18.3	42.1	11.1	17.7	1.7	16.4
Min.	3.1	0	2.3	0	1.0	0	3.5	0	0.8	0

Month	SANCHEZ (Capacity 103.2)		PLATORO (Capacity 60.0)		COSTILLA (Capacity 15.7)		EL VADO (Capacity 196.5)		ABIQUIU (Capacity 1,225.4)	
	1966	#Average 1927-1966	1966	Average 1952-1966	1966	#Average 1922-1966	1966	Average 1935-1966	1966	Average 1965-1966
Jan.	14.9	10.8	17.3	7.0	8.2	4.2	0	34.7	0	0
Feb.	15.1	11.0	17.3	7.0	8.7	4.6	0	31.4	0	.6
Mar.	15.2	11.6	17.3	7.1	9.4	5.2	1.5	30.7	3.7	3.0
Apr.	15.6	13.3	20.5	8.0	10.4	6.3	16.9	73.9	2.3	2.3
May	13.7	17.5	20.5	11.3	10.1	8.4	28.2	125.8	2.5	6.8
June	10.8	16.6	20.5	18.9	7.8	7.8	0	113.6	24.5	28.1
July	7.9	11.9	20.5	15.2	5.6	5.1	0	90.8	24.8	27.1
Aug.	8.7	9.2	20.5	13.6	4.6	3.5	0	65.7	23.7	56.7
Sept.	7.6	9.4	20.5	13.6	3.8	3.0	0	52.7	23.3	60.7
Oct.	7.5	9.9	20.5	13.2	4.3	3.2	0	48.4	23.0	61.0
Nov.	8.1	10.1	3.0	7.3	4.7	3.5	0	38.3	1.1	30.3
Dec.	8.7	10.5	3.0	7.3	5.0	3.9	1.1	33.1	0	.6
Avg.	11.2	11.8	16.8	10.8	6.9	4.9	4.0	61.6	10.7	23.1
Max.	15.6	62.4	20.5	54.0	10.4	15.1	28.2	203.5	24.8	99.0
Min.	7.5	0	3.0	0	3.8	0	0	0	0	0

Some months missing

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

In the United States

Month	BLUEWATER (Capacity 43.5)		ELEPHANT BUTTE (Capacity 2,195.0)		CABALLO (Capacity 344.0)		STORRIE (Capacity 23.3)		ALAMOGORDO (Capacity 110.7)	
	1966	#Average 1927-1966	1966	Average 1915-1966	1966	#Average 1938-1966	1966	#Average 1939-1966	1966	#Average 1937-1966
Jan.	5.7	5.9	572.9	801.5	20.2	113.2	2.8	8.3	50.8	67.6
Feb.	6.0	6.7	529.5	801.8	97.9	138.7	2.7	8.2	54.6	71.5
Mar.	13.5	10.6	492.5	784.2	85.8	121.6	2.6	8.9	26.2	60.9
Apr.	13.6	13.7	472.4	784.2	113.7	110.3	2.5	9.4	26.6	53.9
May	11.9	11.8	440.5	890.1	150.5	107.6	1.0	10.4	27.9	60.0
June	9.7	9.5	376.4	925.9	143.3	86.5	.5	9.1	16.8	53.8
July	8.2	8.1	304.8	869.2	104.1	64.2	3.2	9.4	6.1	51.2
Aug.	7.4	7.1	261.3	808.9	77.0	36.0	6.1	10.3	58.8	55.1
Sept.	7.2	6.8	262.3	777.6	48.0	27.3	6.8	9.6	59.5	54.6
Oct.	6.9	6.4	262.2	773.2	50.7	45.3	6.5	9.0	57.5	59.1
Nov.	6.7	6.2	302.8	782.1	52.0	63.9	6.4	9.3	61.5	59.9
Dec.	6.6	6.0	344.0	795.9	53.1	83.3	6.3	8.0	66.0	64.4
Avg.	8.6	8.2	385.1	816.2	83.0	83.2	4.0	9.2	42.7	59.3
Max.	13.6	47.1	ø 573.2	ø 2,302.8	ø 156.4	ø 346.6	6.8	26.3	66.0	156.3
Min.	5.7	0	ø 258.4	ø 3.3	ø 17.9	ø 0.1	0.5	0	6.1	0.4

Month	McMILLAN and AVALON (Capacity 38.0)		RED BLUFF (Capacity 310.0)		LAKE CASA BLANCA (Capacity 19.1)		WILLACY (Capacity 25.0)		TOTAL IN U.S. RESERVOIRS (Capacity 4,864.1)	
	1966	#Average 1908-1966	1966	#Average 1936-1966	1966	Average 1962-1966	1966	#Average 1939-1966	1966	Estimated Average
Jan.	8.7	27.2	51.8	96.0	3.5	5.5	20.4	14.1	851.0	1,227.2
Feb.	9.6	27.3	51.7	98.1	3.5	5.3	15.1	13.3	886.7	1,259.4
Mar.	25.8	26.8	50.9	95.5	3.5	5.1	12.3	12.7	837.7	1,221.3
Apr.	12.0	17.7	52.7	81.0	6.5	5.8	14.0	12.8	860.0	1,233.9
May	5.9	20.3	51.3	86.3	12.9	7.0	15.4	13.6	875.3	1,434.2
June	17.5	19.5	57.2	89.7	12.7	8.1	15.5	13.9	765.7	1,463.3
July	15.0	18.3	43.8	79.1	12.3	7.7	16.0	13.4	587.2	1,310.7
Aug.	38.3	17.1	270.0	76.4	11.5	7.2	14.8	12.0	814.1	1,200.3
Sept.	36.6	18.3	272.0	77.8	11.5	7.3	19.0	13.7	788.8	1,152.6
Oct.	27.1	20.9	254.5	88.2	10.9	6.9	16.4	14.5	739.5	1,180.4
Nov.	26.8	22.4	244.5	91.2	10.8	6.6	20.2	14.4	763.6	1,170.7
Dec.	26.4	25.7	240.5	96.0	10.4	6.4	17.0	14.0	806.5	1,183.6
Avg.	20.8	21.8	136.7	87.9	9.2	6.6	16.3	13.5	799.7	1,253.1
Max.	38.3	85.5	272.0	327.5	12.9	12.9	20.4	22.0	886.7	
Min.	5.9	0	43.8	10.0	3.5	3.5	12.3	0	587.2	

Some months missing ø Daily extremes

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

In Mexico

Month	LA BOQUILLA (Capacity 2,417.5)		LA COLINA (Capacity 19.5)		ROSETILLA (Capacity 15.4)		FRANCISCO I. MADERO (Capacity 344.6)		CENTENARIO and SAN MIGUEL (Capacity 19.9)	
	1966	#Average 1914-1966	1966	Average 1940-1966	1966	Average 1940-1966	1966	#Average 1948-1966	1966	Average 1934-1966
Jan.	688.5	1,385.8	17.7	17.7	2.8	12.9	121.5	195.4	15.6	12.9
Feb.	665.5	1,355.8	18.0	18.1	6.2	13.2	121.3	193.5	15.5	12.5
Mar.	586.4	1,304.8	18.8	18.0	7.9	12.5	120.1	190.1	12.9	9.4
Apr.	529.2	1,236.2	19.0	18.5	8.6	11.8	117.4	165.9	10.9	8.0
May	464.3	1,180.8	18.6	18.4	9.6	11.3	107.6	147.1	14.3	9.1
June	467.5	1,100.4	18.8	18.3	14.6	11.9	216.9	134.4	9.6	8.0
July	544.6	1,130.6	19.0	18.5	8.5	11.3	242.2	139.5	6.2	7.5
Aug.	1,553.3	1,301.5	17.6	18.0	15.7	12.4	357.2	165.5	7.1	8.0
Sept.	2,016.6	1,461.6	17.9	17.8	12.2	12.9	342.6	198.0	12.2	10.1
Oct.	2,017.7	1,468.3	16.6	17.7	14.8	12.8	339.0	203.3	16.1	12.2
Nov.	2,006.0	1,436.0	12.9	17.4	15.3	12.2	335.6	202.6	14.8	12.2
Dec.	1,981.5	1,411.9	18.2	17.9	14.9	13.1	333.5	202.5	13.3	12.5
Avg.	1,126.8	1,314.7	17.8	18.0	10.9	12.4	229.6	178.2	12.4	10.2
Max.	2,017.7	2,544.7	19.0	20.5	15.7	19.4	357.2	366.6	16.1	20.7
Min.	464.3	16.9	12.9	11.9	2.8	0.4	107.6	1.4	6.2	0

Month	VENUSTIANO CARRANZA (Capacity 1,122.8)		LA BOCA (Capacity 33.2)		MARTE R. GOMEZ (Capacity 898.3)		CULEBRON and VILLA CARDENAS (Capacity 90.0)		PALITO BLANCO (Capacity 124.0)	
	1966	Average 1930-1966	1966	Average 1963-1966	1966	#Average 1943-1966	1966	#Average 1939-1966	1966	Average 1942-1966
Jan.	111.6	363.2	13.1	12.2	541.7	512.6	62.1	41.1	92.3	42.3
Feb.	102.0	344.6	13.9	12.2	551.4	459.9	59.9	38.6	91.6	36.6
Mar.	86.9	324.3	14.8	11.6	556.8	425.0	54.3	34.1	88.5	37.2
Apr.	84.3	314.4	15.2	10.7	582.8	408.8	53.5	36.9	79.2	33.7
May	112.0	304.3	18.6	11.1	748.3	390.9	54.5	41.0	75.3	32.6
June	83.2	291.6	18.6	10.7	859.6	358.8	37.0	42.7	58.2	34.1
July	81.4	280.4	31.4	13.6	807.7	340.1	46.4	37.9	34.9	34.2
Aug.	81.4	282.5	32.5	14.9	780.6	399.9	42.6	36.7	29.9	31.0
Sept.	104.1	336.4	32.4	16.6	798.0	505.7	26.3	45.5	16.5	41.3
Oct.	105.6	364.2	32.4	17.8	873.1	566.7	49.6	50.9	29.3	49.4
Nov.	103.2	369.6	32.4	18.3	895.4	565.4	42.5	43.1	27.3	48.5
Dec.	99.4	368.3	32.4	18.6	886.4	564.2	48.8	48.3	28.4	48.9
Avg.	96.3	328.6	24.0	14.0	740.2	458.2	48.1	41.4	54.3	39.2
Max.	ø 113.1	1,163.4	32.5	32.5	ø 896.9	ø 1,207.1	62.1	116.8	92.3	140.1
Min.	ø 80.3	* 1.0	13.1	0	541.7	‡ 17.8	26.3	0	16.5	0

Month									TOTAL IN MEXICAN RESERVOIRS (Capacity 5,085.2)	
									1966	Estimated Average
Jan.									1,666.9	2,596.1
Feb.									1,645.3	2,485.0
Mar.									1,547.4	2,367.0
Apr.									1,500.1	2,244.9
May									1,623.1	2,146.6
June									1,784.0	2,010.9
July									1,822.3	2,013.6
Aug.									2,917.9	2,270.4
Sept.									3,378.8	2,645.9
Oct.									3,494.2	2,763.3
Nov.									3,485.4	2,725.3
Dec.									3,456.8	2,706.2
Avg.									2,360.2	2,414.6
Max.									3,494.2	
Min.									1,500.1	

Some months missing ø Daily extremes
* Minimum since full reservoir in 1932 ‡ Minimum since full reservoir in 1947

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

International Falcon Reservoir

Falcon Dam is the lowermost of the major international storage dams authorized for construction on the Rio Grande by the Water Treaty of 1944 between the United States and Mexico and was the first dam constructed. It is located 84.5 river miles downstream from Laredo, Texas and Nuevo Laredo, Tamaulipas, 974.4 river miles downstream from the American Dam, and 273.8 river miles upstream from the Gulf of Mexico.

Maximum storage for period of record: 3,490,600 acre-feet on October 19, 1958.

Storage Capacities

(1956 Survey)

Elevation	Description	At Indicated Elevation: Reservoir Capacity Acre-Feet	At Indicated Elevation: Reservoir Area Acres	Between Indicated Elevations: Storage Volume Acre-Feet	Between Indicated Elevations: Type of Storage
175.0	Original River Bed at Dam Axis	0	0		
				2,816	Silt and Dead
203.33	Lowest Outlet (Mexican Penstock)	2,816	676		
				2,368,405	Silt and Conservation
296.4	Top of Conservation Storage	2,371,221	78,342		
				909,462	Ordinary Flood
306.7	Top of Spillway Gates	3,280,683	98,959		
				800,134	Super Flood
314.2	Maximum Water Surface	4,080,817	115,613		

During winter months, 400,000 acre-feet of flood control capacity may be utilized for additional conservation storage.

Storage in Thousands of Acre-Feet at 24:00 Hours — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,846.4	1,877.4	1,904.8	1,911.5	2,061.9	2,464.8	2,404.3	2,310.6	2,325.3	2,478.5	2,627.3	2,608.1
2	1,847.8	1,879.4	1,906.1	1,912.1	2,149.1	2,458.4	2,392.4	2,303.7	2,330.7	2,476.9	2,624.8	2,608.1
3	1,850.4	1,879.4	1,907.4	1,912.8	2,217.9	2,451.2	2,383.8	2,296.0	2,343.1	2,476.1	2,621.5	2,608.9
4	1,851.7	1,880.1	1,907.4	1,912.1	2,273.8	2,444.8	2,377.5	2,288.4	2,357.9	2,473.7	2,619.8	2,608.9
5	1,851.7	1,881.4	1,907.4	1,909.4	2,312.9	2,437.6	2,374.4	2,283.0	2,370.4	2,474.5	2,618.9	2,609.8
6	1,852.4	1,882.1	1,906.8	1,904.8	2,333.8	2,429.7	2,373.6	2,279.2	2,380.6	2,472.1	2,617.3	2,609.8
7	1,853.0	1,882.8	1,906.1	1,901.4	2,347.8	2,421.7	2,373.6	2,275.4	2,396.4	2,472.9	2,619.8	2,608.9
8	1,853.0	1,884.8	1,906.1	1,897.4	2,357.1	2,410.6	2,375.1	2,275.4	2,428.1	2,477.7	2,619.8	2,610.6
9	1,853.7	1,886.7	1,906.8	1,894.1	2,363.4	2,399.5	2,377.5	2,278.4	2,443.2	2,494.7	2,620.6	2,611.4
10	1,855.6	1,888.1	1,906.8	1,890.7	2,365.7	2,384.6	2,379.8	2,276.1	2,452.0	2,516.6	2,621.5	2,609.8
11	1,855.0	1,888.7	1,908.1	1,886.7	2,370.4	2,369.7	2,382.2	2,283.8	2,464.8	2,532.1	2,620.6	2,608.9
12	1,856.3	1,888.7	1,909.4	1,882.8	2,375.9	2,355.6	2,383.8	2,283.8	2,492.3	2,542.8	2,620.6	2,608.1
13	1,858.3	1,889.4	1,910.8	1,881.4	2,379.1	2,349.4	2,381.4	2,278.4	2,509.3	2,559.2	2,619.8	2,607.3
14	1,858.3	1,891.4	1,910.8	1,924.9	2,381.4	2,354.8	2,380.6	2,272.3	2,515.8	2,574.1	2,618.1	2,607.3
15	1,857.6	1,893.4	1,910.8	1,931.0	2,383.0	2,365.7	2,380.6	2,267.8	2,514.2	2,581.5	2,615.6	2,607.3
16	1,857.6	1,893.4	1,910.8	1,936.4	2,386.1	2,374.4	2,379.8	2,267.0	2,508.5	2,586.5	2,613.9	2,607.3
17	1,861.6	1,893.4	1,910.8	1,942.5	2,388.5	2,379.1	2,379.1	2,276.1	2,506.0	2,592.3	2,613.1	2,606.4
18	1,862.9	1,894.1	1,911.5	1,939.1	2,390.9	2,380.6	2,379.8	2,279.2	2,506.9	2,597.3	2,612.3	2,604.8
19	1,862.9	1,894.1	1,910.8	1,935.7	2,394.0	2,383.8	2,380.6	2,276.9	2,503.6	2,600.6	2,611.4	2,603.9
20	1,862.9	1,894.7	1,910.1	1,931.7	2,398.7	2,386.9	2,378.3	2,272.3	2,502.0	2,601.4	2,610.6	2,602.3
21	1,866.9	1,899.4	1,910.1	1,928.3	2,413.8	2,390.1	2,373.6	2,266.2	2,501.2	2,605.6	2,610.6	2,600.6
22	1,868.2	1,899.4	1,910.1	1,927.6	2,427.3	2,395.6	2,366.5	2,267.8	2,496.3	2,610.6	2,608.9	2,600.6
23	1,869.5	1,900.1	1,909.4	1,927.6	2,432.8	2,400.3	2,359.5	2,268.5	2,488.2	2,615.6	2,608.1	2,598.9
24	1,872.8	1,900.7	1,908.8	1,928.3	2,436.0	2,405.1	2,353.2	2,265.5	2,476.9	2,621.5	2,607.3	2,597.3
25	1,873.5	1,901.4	1,907.4	1,933.0	2,439.2	2,410.6	2,350.1	2,260.9	2,461.6	2,624.8	2,607.3	2,596.4
26	1,872.8	1,902.8	1,906.8	1,952.0	2,447.2	2,413.8	2,344.7	2,270.8	2,457.6	2,625.6	2,608.1	2,591.5
27	1,872.8	1,904.8	1,906.1	1,977.3	2,456.8	2,418.5	2,339.2	2,287.6	2,468.9	2,624.8	2,608.1	2,589.8
28	1,873.5	1,906.1	1,907.4	1,998.8	2,461.6	2,423.3	2,333.8	2,299.1	2,478.5	2,624.0	2,608.1	2,587.3
29	1,874.1		1,908.8	2,012.0	2,466.5	2,427.3	2,326.8	2,312.2	2,478.5	2,624.0	2,607.3	2,583.2
30	1,874.8		1,910.1	2,014.8	2,468.1	2,420.9	2,319.9	2,320.7	2,478.5	2,624.8	2,608.1	2,580.7
31	1,874.8		1,910.8		2,467.3		2,313.7	2,323.7		2,626.5		2,577.4

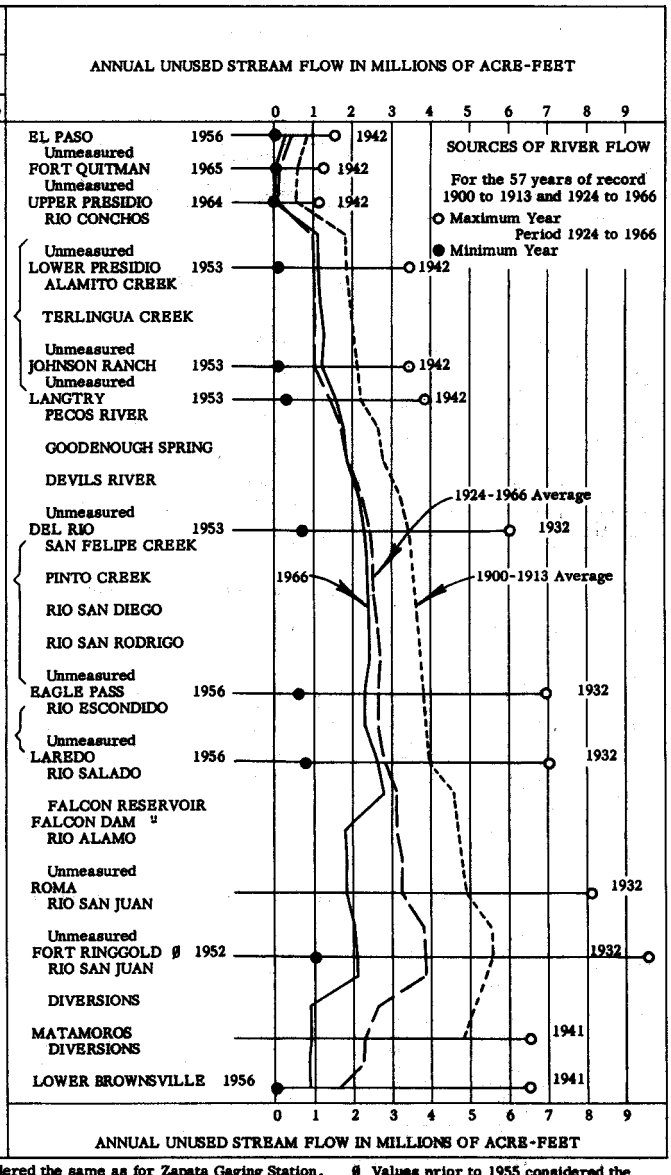
Month	1966: MOMENTARY MAXIMUM Elevation	Storage	Day	MOMENTARY MINIMUM Elevation	Storage	Day	Average Storage	Period 1954-1966: Mean Monthly Storage Average	Maximum	Minimum
Jan.	289.53	1,874.8	†30	289.09	1,845.8	1	1,861.4	1,861.0	2,916.5	218.7
Feb.	290.00	1,906.1	28	289.53	1,874.8	1	1,891.4	1,734.9	2,861.2	156.2
Mar.	290.08	1,911.5	18	289.98	1,904.8	1	1,908.6	1,675.1	2,702.4	226.7
Apr.	291.59	2,014.8	30	289.63	1,881.4	13	1,927.9	1,567.1	2,556.4	325.6
May	297.62	2,468.1	30	291.59	2,014.8	1	2,372.5	1,527.7	2,427.1	490.1
June	297.61	2,467.3	1	296.12	2,349.4	13	2,403.6	1,444.1	2,403.6	273.7
July	297.03	2,420.9	1	295.66	2,313.7	31	2,367.7	1,538.1	2,367.7	209.9
Aug.	295.79	2,323.7	31	294.97	2,260.9	25	2,282.8	1,533.6	2,370.6	208.0
Sept.	298.21	2,515.8	14	295.79	2,323.7	1	2,454.6	1,655.6	2,454.6	256.2
Oct.	299.55	2,626.5	31	297.67	2,472.1	6	2,561.6	1,955.9	3,250.2	308.3
Nov.	299.56	2,627.3	1	299.32	2,607.3	†24	2,615.0	2,018.5	2,964.4	390.9
Dec.	299.37	2,611.4	9	298.96	2,577.4	31	2,602.0	2,031.3	2,904.7	343.4
Yearly	299.56	2,627.3		289.09	1,845.8		2,273.0	1,712.3	2,523.4	544.3

† And other days

SOURCES OF RIVER FLOW

The graph and the column of figures on this page represent data on the annual yield of drainage areas tributary to various stream-gaging stations in the Rio Grande watershed. The graphic values are for the entire tributary area, while the column figures are reduced to the yield from one average square mile of the tributary area. There were no reservoirs of consequence on the area from 1900 to 1913; therefore, the figures in the first column correspond to those for that period in the graph. Because more than 10,000,000 acre-feet of reservoir capacity have been developed on the watershed since 1913, in which large volumes of unused runoff are stored in some years and released in later years as unused stream flow (thus reducing the unused stream flow in some years and adding thereto in others), it is significant to differentiate between the unused runoff and unused stream flow.

Average Annual Unused Water Acre-Feet per Square Mile			
RUNOFF		STREAM FLOW	
1900-1913	1924-1966	1924-1966	
29.7	14.8	15.5	EL PASO 1956 1942
			Unmeasured
19.6	4.2	4.9	FORT QUITMAN 1965 1942
			Unmeasured
16.4	3.6	4.3	UPPER PRESIDIO 1964 1942
42.6	29.1	29.0	RIO CONCHOS
			Unmeasured
			LOWER PRESIDIO 1953 1942
			ALAMITO CREEK
19.8	20.2	20.2	TERLINGUA CREEK
			Unmeasured
			JOHNSON RANCH 1953 1942
			Unmeasured
26.4	16.5	16.7	LANGTRY 1953 1942
12.4	9.4	9.2	PECOS RIVER
			GOODENOUGH SPRING
103.1	96.0	96.0	DEVILS RIVER
			Unmeasured
67.6	81.8	81.8	
26.9	19.3	19.4	DEL RIO 1953 1932
			SAN FELIPE CREEK
110.8	56.6	56.7	PINTO CREEK
			RIO SAN DIEGO
			RIO SAN RODRIGO
			Unmeasured
29.2	20.3	20.4	EAGLE PASS 1956 1932
			RIO ESCONDIDO
32.4	32.7	32.7	Unmeasured
29.3	20.8	20.9	LAREDO 1956 1932
23.1	12.7	12.6	RIO SALADO
			FALCON RESERVOIR
			FALCON DAM ¤
			RIO ALAMO
			Unmeasured
			ROMA 1932
** 48.4	** 44.3	** 42.8	RIO SAN JUAN
			Unmeasured
			FORT RINGGOLD ø 1952 1932
			RIO SAN JUAN
			DIVERSIONS
			MATAMOROS 1941
			DIVERSIONS
			LOWER BROWNSVILLE 1956 1941



¤ Values prior to 1953 considered the same as for Zapata Gaging Station. ø Values prior to 1955 considered the same as for Rio Grande City Gaging Station. ** Includes contributions of the Río San Juan entering the Rio Grande above and below Rio Grande City.

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

The following tables are based on determinations of gravimetric percentages of dry silt in water samples taken at each station by one of the following three methods:

A. By lowering an open small-neck bottle in one or more verticals in the stream cross section, being careful to approach but not strike bottom, thus securing an integrated sample throughout the depth. By taking from each sample an amount of water volumetrically proportional to the river flow represented by that sample, a composite, representative of the monthly river flow, is made and its gravimetric percentage of silt determined.

B. By sampling at the stream surface with a separate bottle at each of three points, spaced 1/6, 1/2, and 5/6 of the stream width. The gravimetric percentage in each sample is determined, a coefficient of 1.10 is applied to the average of the three, and the product applied to the volume of stream flow represented by that set of samples.

C. By sampling, at 2-hour intervals, the water pumped directly from the river to the Laredo, Texas Water Treatment Plant. From daily composites of these samples, a monthly composite, representative of the river flow, is made as stated in Method A and its gravimetric percentage of silt determined.

For ease of comparison, the assumption is made that one cubic foot of silt weighs 66.7 pounds, or one acre-foot of silt weights 1,452 tons.

Month	1966							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

Rio Grande at El Paso, Texas

Period: Sept. 1947-1966

Jan.	1,340,000	62.0	31	0.004627			0.04	0.22	1.4	0
Feb.	1,014,000	57.1	28	.005630			.04	.28	2.2	.01
Mar.	60,846,000	52,300	31	.08600			36.0	20.4	52.7	.89
Apr.	49,876,000	9,840	30	.01973			6.8	12.7	45.2	3.0
May	39,112,000	5,160	31	.01320			3.6	9.4	63.3	.03
June	70,025,000	22,800	30	.03252			15.7	23.6	152	2.4
July	73,919,000	44,400	31	.06001	0.3240	0.02810	30.6	38.7	124	1.1
Aug.	74,369,000	88,100	33	.1185	.3769	.03010	60.7	39.5	112	2.0
Sept.	27,530,000	8,070	30	.02933			5.6	25.9	123	1.1
Oct.	8,947,000	213	29	.002379			.15	5.7	51.0	.01
Nov.	6,451,000	92.2	20	.001430			.06	.33	1.5	.01
Dec.	6,222,000	86.4	30	.001389			.06	.33	2.1	.01
Yearly	419,651,000	231,180.7	354	0.05509			159.35	177.06	436.87	34.37

Samples and Analyses by U. S. Section, Method A

Río Conchos near Ojinaga, Chihuahua

Period: 1956-1966

Jan.	28,484,000	0	9	0	0	0	0	0	0	0
Feb.	24,816,000	0	8	0	0	0	0	.41	4.5	0
Mar.	16,682,000	0	9	0	0	0	0	0	0	0
Apr.	8,831,000	0	8	0	0	0	0	.53	5.8	0
May	20,325,000	171,000	10	.8396	2.7782	0	118	37.8	145	0
June	71,871,000	999,000	14	1.3903	2.6704	0	688	190	688	0
July	55,636,000	361,000	12	.6481	1.3921	0	249	211	873	0
Aug.	373,930,000	3,848,000	13	1.0292	2.1812	.0280	2,650	685	2,650	8.1
Sept.	826,494,000	6,449,000	9	.7803	.9266	.0347	4,440	1,648	9,330	14.4
Oct.	116,261,000	44,600	3	.0384	.195	0	30.7	1,258	12,400	0
Nov.	54,452,000	0	13	0	0	0	0	10.2	70.2	0
Dec.	39,145,000	0	11	0	0	0	0	1.9	14.0	0
Yearly	1,636,927,000	11,872,600	119	0.7253	2.7782	0	8,175.7	4,042.84	21,903.3	284.7

Samples and Analyses by Mexican Section, Method B

Rio Grande below Rio Conchos near Presidio, Texas

Period: 1955-1966

Jan.	31,669,000	1,010	8	0.003187			0.70	3.9	14.4	0.70
Feb.	26,102,000	655	8	.002510			.45	4.3	22.2	.45
Mar.	17,621,000	500	8	.002840			.34	2.1	6.7	.34
Apr.	7,613,000	373	9	.004900			.26	8.5	95.7	.12
May	22,274,000	210,000	9	.9414			145	36.8	161	.21
June	76,697,000	675,000	10	.8802			465	140	465	2.1
July	58,729,000	172,000	11	.2933	0.6341	0.005700	118	347	1,420	2.0
Aug.	312,968,000	1,376,000	19	.4397	1.3379	.1040	948	490	1,360	21.8
Sept.	748,185,000	1,262,000	13	.1687	.3538	.02610	869	747	3,610	14.9
Oct.	118,218,000	111,000	8	.09361	.3199	.02180	76.4	504	4,770	4.8
Nov.	54,983,000	2,200	9	.004000			1.5	11.5	45.2	1.3
Dec.	42,371,000	1,300	8	.003065			.90	4.0	13.7	.90
Yearly	1,517,430,000	3,812,038	120	0.2512			2,625.55	2,299.1	8,793.44	172.78

Samples and Analyses by U. S. Section, Method A

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1966							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum
Rio Grande at Johnson Ranch near Castolon, Texas — Period: Oct. 1951-1966										
Jan.	31,784,000	1,040	8	0.003267			0.72	3.5	14.4	0.72
Feb.	25,814,000	592	8	.002295			.41	19.6	253	.32
Mar.	17,904,000	328	9	.001832			.23	2.6	9.4	.19
Apr.	5,689,000	176	9	.003088			.12	67.1	692	.01
May	23,635,000	239,000	13	1.0100			165	158	426	0
June	96,264,000	1,736,000	13	1.8029			1,200	447	1,570	31.6
July	61,777,000	502,000	9	.8122	1.0371	0.009000	346	894	4,030	51.6
Aug.	311,502,000	3,474,000	10	1.1152	3.5481	.03940	2,390	1,089	3,840	2.8
Sept.	830,916,000	2,228,000	5	.2681	.3250		1,530	1,122	8,990 *	98.5
Oct.	179,834,000	301,000	4	.1672	.4365	.03720	207	1,018	13,500 U	2.4
Nov.	59,291,000	5,040	5	.008504			3.5	17.7	151	.28
Dec.	45,411,000	655	5	.001442			.45	7.7	48.3	.41
Yearly	1,689,821,000	8,487,831	98	0.5023			5,843.43	4,846.2	23,869.62	803.27
Rio Grande at Langtry, Texas — Period: April 1944-1966										
Jan.	55,135,000	1,680	8	0.003042			1.2	8.8	83.3	0.94
Feb.	45,762,000	659	8	.001439			.45	16.6	238	.31
Mar.	45,193,000	2,570	8	.005684			1.8	5.8	27.0	.29
Apr.	63,602,000	205,000	7	.3229			141	53.3	614	.14
May	49,164,000	121,000	7	.2470			83.3	244	873	.95
June	153,006,000	2,215,000	4	1.4476			1,530	580	2,450	.91
July	118,931,000	1,060,000	4	.8915	1.2157	0.04260	730	1,171	5,780	4.6
Aug.	310,122,000	4,236,000	3	1.3660	3.5145	.004400	2,920	1,085	3,900	4.7
Sept.	868,521,000	5,671,000	7	.6529	1.5049		3,910	1,643	8,300	1.0
Oct.	262,910,000	2,220,000	6	.8445	1.5814	.03590	1,530	1,008	8,760	5.1
Nov.	84,310,000	4,450	5	.005274			3.1	114	1,850	1.3
Dec.	70,724,000	938	3	.001326			.65	8.7	46.8	.18
Yearly	2,127,380,000	15,738,297	70	0.7398			10,851.50	5,938.2	17,860.74	645.10
Pecos River near Shumla, Texas — Period: Nov. 1954-1966										
Jan.	12,074,000	100	4	0.0008316			0.07	0.28	0.62	0.05
Feb.	10,950,000	65.7	2	.0006000			.05	.22	.70	.05
Mar.	10,405,000	76.7	3	.0007368			.05	.25	.61	.05
Apr.	37,328,000	29,800	4	.07980			20.5	16.1	167	.06
May	19,417,000	221	4	.001137			.15	34.3	407	.07
June	15,552,000	224	4	.001441			.15	4.0	41.7	.12
July	11,673,000	103	3	.0008833			.07	2.9	22.2	.05
Aug.	28,681,000	1,740	3	.006068			1.2	2.3	23.8	.04
Sept.	49,358,000	926	2	.001876			.64	41.6	359	.10
Oct.	28,064,000	482	4	.001718			.33	11.4	59.8	.07
Nov.	18,271,000	217	4	.001189			.15	.37	1.1	.03
Dec.	17,460,000	91.9	4	.0005263			.06	.20	.55	.05
Yearly	259,233,000	34,047.3	41	0.01313			23.42	113.92	577.44	3.12
Rio Grande near Del Rio, Texas — Period: Aug. 1955-1966										
Jan.	115,779,000	7,180	13	0.006200			4.9	10.6	44.1	0.61
Feb.	97,422,000	3,700	11	.003800			2.5	21.8	178	.50
Mar.	100,570,000	9,060	13	.009004			6.2	9.2	34.6	.73
Apr.	206,908,000	294,000	13	.1420			202	89.1	612	.83
May	172,928,000	112,000	13	.06496			77.1	240	1,600	1.2
June	216,868,000	2,497,000	12	1.1512			1,720	653	1,720	48.9
July	180,502,000	978,000	13	.5420	1.0900	0.02230	674	644	2,240	8.7
Aug.	373,999,000	4,776,000	14	1.2771	2.5936	.004500	3,290	1,021	3,290	105
Sept.	1,015,785,000	3,208,000	13	.3158			2,210	1,622	4,800	154
Oct.	362,677,000	1,356,000	13	.3738	1.0423	.01630	934	1,307	9,350	114
Nov.	156,215,000	12,400	12	.007960			8.5	77.8	410	3.7
Dec.	142,062,000	4,850	13	.003414			3.3	11.2	45.5	3.3
Yearly	3,141,715,000	13,258,190	153	0.4220			9,132.5	5,706.7	15,563.3	1,008.37

Samples and Analyses by U. S. Section, Method A

* Partly estimated U Estimated

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1966							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

Rio Grande at Laredo, Texas

#Period: 1953-1966

Jan.	132,036,000	10,200	31	0.007740			7.0	11.7	28.0	4.0
Feb.	104,953,000	5,660	28	.005393			3.9	19.4	95.7	1.7
Mar.	99,307,000	9,190	31	.009254			6.3	11.6	26.8	.78
Apr.	217,178,000	495,000	30	.2277			341	221	1,920	.47
May	432,101,000	681,000	31	.1576			469	439	3,540	2.3
June	217,522,000	536,000	30	.2463			369	1,373	12,400	.62
July	172,008,000	607,000	31	.3531	1.0848	0.01100	418	751	3,440	5.0
Aug.	335,202,000	2,767,000	30	.8255	1.5984	.01010	1,910	634	1,960	4.2
Sept.	1,147,102,000	4,273,000	30	.3725			2,940	1,421	5,010	41.3
Oct.	390,891,000	1,456,000	31	.3725	.6486	.04840	1,000	1,085	7,520	29.7
Nov.	176,539,000	23,000	30	.01300			15.8	131	1,190	6.1
Dec.	153,968,000	6,380	31	.004142			4.4	14.0	67.6	2.8
Yearly	3,578,807,000	10,869,430	364	0.3037			7,484.4	6,111.7	19,257.72	734.10

Samples by Laredo Water Plant and Analyses by U. S. Section, Method C

ø Rio Grande below Falcon Dam, Texas–U. S. Tailrace

Period: July 1955-1966

Jan.	75,342,000	198	12	0.0002634			0.14	1.7	5.4	0.14
Feb.	59,242,000	93.4	11	.0001576			.06	2.0	9.1	.06
Mar.	67,656,000	213	12	.0003155			.15	1.0	4.3	.15
Apr.	129,288,000	367	12	.0002839			.25	2.7	12.2	.25
May	66,259,000	272	6	.0004105			.19	2.8	5.3	.19
June	240,791,000	609	9	.0002529			.42	4.3	18.7	.42
July	218,461,000	1,100	11	.0005047			.76	.90	1.9	.41
Aug.	277,024,000	1,170	12	.0004215			.81	1.1	2.8	.22
Sept.	916,299,000	8,280	11	.0009043			5.7	1.5	5.7	.17
Oct.	106,514,000	303	10	.0002842			.21	4.1	37.5	.18
Nov.	129,541,000	464	13	.0003579			.32	1.1	5.5	.17
Dec.	135,145,000	341	10	.0002526			.23	2.1	14.7	.15
Yearly	2,421,562,000	13,410.4	129	0.0005538			9.24	25.30	92.15	7.24

Samples and Analyses by U. S. Section, Method A

Río Alamo at Cd. Mier, Tamaulipas

Period: 1934-1966

Jan.	0	0					0	2.0	21.8	0
Feb.	0	0					0	3.3	48.6	0
Mar.	0	0					0	7.2	91.6	0
Apr.	5,056,000	23,300	6	0.461	0.7465	0	16.0	32.0	229	0
May	46,845,000	224,000	17	.478	1.5634	0	154	51.0	281	0
June	15,387,000	44,300	12	.288	.4602	0	30.5	57.7	471	0
July	1,504,000	150	7	.010	.0165	0	.10	18.7	143	0
Aug.	33,490,000	142,000	9	.425	.4679	0	97.8	136	1,610	0
Sept.	3,029,000	757	12	.025	.0523	0	.52	199	2,920	0
Oct.	178,000	16.0	3	.009	.0143	0	.01	91.1	753	0
Nov.	0	0					0	2.4	40.7	0
Dec.	398,000	0	0	¤ 0			0	1.7	33.7	0
Yearly	105,887,000	434,523.0	66	0.4104	1.5634	0	298.93	602.1	3,156.57	97.18

Samples and Analyses by Mexican Section, Method B

Rio Grande at Fort Ringgold, Rio Grande City, Texas

Period: May 1959-1966

Jan.	75,611,000	1,560	13	0.002065			1.1	12.4	32.6	0.52
Feb.	59,728,000	509	10	.0008526			.35	7.0	13.7	.35
Mar.	68,648,000	570	12	.0008298			.39	7.0	26.7	.39
Apr.	133,865,000	14,500	11	.01081			10.0	24.9	51.0	10.0
May	135,901,000	102,000	12	.07540			70.2	71.1	259	4.0
June	305,003,000	137,000	12	.04484			94.4	34.6	94.4	4.7
July	413,087,000	132,000	12	.03199	0.08590	0.01190	90.9	22.9	90.9	2.1
Aug.	322,106,000	86,400	14	.02681	.1794	.003900	59.5	31.9	127	1.2
Sept.	938,843,000	27,300	12	.002908			18.8	82.8	255	12.3
Oct.	126,074,000	68,000	14	.05390	.8106		46.8	31.2	79.2	2.6
Nov.	131,290,000	2,720	11	.002072			1.9	2.9	5.8	1.3
Dec.	137,097,000	1,550	12	.001134			1.1	4.1	12.1	1.0
Yearly	2,847,253,000	574,109	145	0.02016			395.44	332.8	639.6	202.3

Samples and Analyses by U. S. Section, Method A

Some months missing ø Discharge based on record of total releases from Falcon Reservoir ¤ Estimated

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1966							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

‡ Rio Grande near Los Ebanos, Texas

Period: May 1956-1966

Jan.	75,611,000	4,390	8	0.005800			3.0	23.9	107	0.76
Feb.	59,728,000	1,080	8	.001800			.74	8.2	16.0	.74
Mar.	68,648,000	1,480	9	.002160			1.0	10.0	40.2	.65
Apr.	133,865,000	52,600	9	.03932			36.2	89.6	635	3.0
May	135,901,000	86,300	9	.06352			59.4	111	289	5.3
June	305,003,000	165,000	8	.05424			114	76.1	209	3.2
July	413,087,000	61,800	9	.01496	0.03890	0.007500	42.6	15.7	79.9	.74
Aug.	322,106,000	166,000	9	.05169	.2724	.005800	114	25.0	114	2.0
Sept.	938,843,000	114,000	9	.01217			78.5	100	366	6.1
Oct.	126,074,000	9,380	8	.007440			6.5	52.2	314	3.2
Nov.	131,290,000	3,360	9	.002560			2.3	9.2	75.1	.62
Dec.	137,097,000	4,110	9	.003000			2.8	5.4	16.3	1.8
Yearly	2,847,253,000	669,500	104	0.02351			461.04	526.3	1,454.85	92.9

Samples and Analyses by U. S. Section, Method A

δ Rio Grande below Anzalduas Dam, Texas

Period: May 1956-1966

Jan.	33,237,000	1,700	11	0.005100			1.2	10.5	49.0	0.79
Feb.	68,598,000	2,160	10	.003145			1.5	3.5	11.9	.42
Mar.	66,989,000	2,810	11	.004200			1.9	4.8	27.3	.25
Apr.	89,579,000	5,030	13	.005618			3.5	57.4	279	3.5
May	105,927,000	33,300	14	.03139			22.9	38.5	79.9	1.4
June	218,302,000	601,000	5	.2755			414	61.6	414	4.5
July	345,158,000	484,000	9	.1402	0.4612	0.004500	333	40.9	333	.92
Aug.	91,626,000	5,420	12	.005920			3.7	6.6	28.0	.73
Sept.	688,005,000	376,000	11	.05460			259	77.6	259	.81
Oct.	75,149,000	4,240	13	.005640			2.9	86.0	676	.71
Nov.	87,238,000	1,860	11	.002137			1.3	26.8	274	.51
Dec.	89,711,000	3,550	12	.003960			2.4	14.3	135	.41
Yearly	1,959,519,000	1,521,070	132	0.07762			1,047.3	428.5	1,417.77	117.9

Samples and Analyses by U. S. Section, Method A

Rio Grande near San Benito, Texas

Period: April 1955-1966

Jan.	15,519,000	521	7	0.003360			0.36	13.9	121	0.13
Feb.	57,901,000	8,870	5	.01532			6.1	11.4	97.8	.15
Mar.	50,099,000	3,770	5	.007520			2.6	5.9	50.6	.11
Apr.	37,723,000	8,910	6	.02363			6.1	6.7	17.9	.11
May	91,847,000	21,300	7	.02316			14.7	33.8	265	2.2
June	110,245,000	29,700	5	.02696			20.5	13.9	34.1	2.1
July	268,031,000	133,000	8	.04972	0.1505	0.02330	91.6	11.7	91.6	.11
Aug.	22,064,000	466	6	.002112			.32	6.3	48.5	.07
Sept.	555,669,000	216,000	9	.03895			149	48.5	218	.30
Oct.	60,985,000	10,700	6	.01747	.04940		7.4	30.6	250	.34
Nov.	29,706,000	927	6	.003120			.64	21.7	247	.35
Dec.	22,221,000	652	3	.002932			.45	15.3	163	.06
Yearly	1,322,010,000	434,816	73	0.03289			299.77	219.7	851.95	23.27

Samples and Analyses by U. S. Section, Method A

Rio Grande near Brownsville, Texas

Period: April 1955-1966

Jan.	12,242,000	263	9	0.002151			0.18	6.8	67.4	0.02
Feb.	56,485,000	8,850	11	.01566			6.1	14.0	80.6	.04
Mar.	47,665,000	2,470	9	.005179			1.7	7.0	70.2	.08
Apr.	20,611,000	2,990	10	.01450			2.1	4.0	27.7	.04
May	86,248,000	13,800	9	.01598			9.5	10.6	58.5	.38
June	82,679,000	21,900	11	.02648			15.1	10.8	58.4	.29
July	259,087,000	190,000	13	.07327	0.2054	0.006600	131	36.5	292	.08
Aug.	10,915,000	506	10	.004640			.35	3.7	27.3	.01
Sept.	508,527,000	196,000	14	.03855			135	37.8	237	0
Oct.	65,003,000	5,900	5	.009076	.02080	.007000	4.1	22.8	222	.03
Nov.	29,169,000	1,410	5	.004819			.97	24.7	283	.12
Dec.	12,918,000	434	8	.003360			.30	12.5	142	.02
Yearly	1,191,549,000	444,523	114	0.03731			306.40	191.2	1,072.26	1.97

Samples and Analyses by U. S. Section, Method A

‡ Discharge based on record of flow at Fort Ringgold δ Discharge based on record of flow at "Below Anzalduas Dam" plus return flow at "Poniente Drain." There was no flow through this drain in 1966.

CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1966

The following tables are based on chemical analyses of composites representative of the river flow at Rio Grande and tributary stations. The monthly composites were made by the United States Section of this Commission by taking from each independent water sample an amount of water volumetrically proportional to the river flow represented by that sample. The chemical analyses were made by the U. S. Department of Agriculture, Agricultural Research Service, U. S. Salinity Laboratory, Riverside, California. All other data were computed by the United States Section of this Commission.

To convert milligram equivalents to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: Ca, 20; Mg, 12.16; Na, 23; (CO_3 plus HCO_3) expressed as CO_3, 30; SO_4, 48; Cl, 35.5; NO_3, 62. To convert tons per acre-foot to parts per million, multiply tons per acre-foot by 735.5. Electrical conductivity, reported in the tables as $EC \times 10^6$ at 25°C, is a relative measure of the total salt concentration.

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	$EC \times 10^6$ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at El Paso, Texas

Sampling by U. S. Section

Jan.	31	2.71	2,670	2,990	0.65	7.8	75	39	5.62	1.95	22.25	5.10	13.32	11.84	0.11
Feb.	28	2.87	2,140	3,160	.47	7.9	76	39	5.44	2.31	24.79	5.35	14.51	12.83	.12
Mar.	31	.75	33,600	832	.02	7.8	44	23	3.63	1.12	3.66	3.10	3.49	1.92	.02
Apr.	30	.80	29,400	902	.15	7.8	46	22	3.87	1.10	4.20	3.25	3.94	1.99	.01
May	31	.94	27,100	1,050	.17	7.9	49	23	4.22	1.23	5.17	3.55	4.82	2.57	.01
June	30	.82	42,300	901	.16	7.8	45	21	3.91	1.10	4.08	3.45	4.06	1.97	T
July	31	.86	46,800	945	.02	7.8	45	23	4.12	1.21	4.42	3.40	4.16	2.26	.01
Aug.	33	.87	47,600	990	.24	8.0	46	23	4.12	1.23	4.62	3.65	4.27	2.31	.03
Sept.	30	1.32	26,700	1,450	.24	8.0	53	28	5.35	1.61	7.88	4.15	6.59	4.18	T
Oct.	29	2.05	13,500	2,190	.09	8.1	59	31	6.85	2.44	13.54	5.40	10.74	7.38	.01
Nov.	20	2.11	10,000	2,250	.12	7.9	61	32	6.78	2.60	14.38	5.35	11.00	7.78	.02
Dec.	30	2.12	9,710	2,280	.34	7.9	62	33	6.70	2.48	14.70	5.25	11.04	7.91	.04
Mean ⊕	9354	0.94	9291,520	1,050	0.14	7.9	48	25	4.22	1.27	5.17	3.56	4.66	2.63	0.01
Period Avg.		1.10	469,000	1,220			53	29	4.37	1.59	6.56	3.51	5.46	3.69	
Tons of Constituents, 1966									35,500	6,490	49,900	44,800	94,000	39,200	
Avg. Tons, Period 1930-1966									50,700	11,200	87,400	61,000	152,000	75,800	

Rio Grande at Fort Quitman, Texas

Sampling by U. S. Section

Jan.	No	Flow													
Feb.	No	Flow													
Mar.	No	Flow													
Apr.	1	.59	15.6	633	.18	7.8	28	6	4.13	.88	1.99	4.55	2.03	.45	.02
May ᵘ	0	.59	1.5	633			28	6	4.13	.88	1.99	4.55	2.03	.45	
June	4	.65	1,580	670	.11	7.9	17	6	5.22	.68	1.18	3.60	3.19	.46	.07
July	1	.55	470	611	.04	7.8	40	16	3.30	.36	2.46	2.90	2.20	1.00	.10
Aug.	11	.69	11,200	837	.17	8.0	45	27	3.70	.82	3.72	3.35	2.75	2.31	.07
Sept.	7	1.93	20,200	2,220	.23	8.0	59	50	6.80	2.35	12.96	3.70	7.52	11.25	.03
Oct.	4	7.12	7,230	7,510	.78	7.8	66	62	18.48	9.25	54.17	4.85	26.72	51.23	.01
Nov.	5	9.82	4,210	10,100	.71	7.7	66	67	26.00	13.24	74.84	4.75	33.71	76.88	.02
Dec.	4	8.29	2,640	8,750	.78	7.6	66	63	22.08	10.92	64.93	5.45	30.67	61.54	.02
Mean ⊕	9 36	1.50	947,547.1	1,690			56	47	5.78	1.84	9.77	3.56	5.80	8.24	
Period Avg.		2.39	334,000	2,710			61	55	7.65	3.11	16.90	3.61	8.81	15.41	
Tons of Constituents, 1966									5,010	967	9,710	4,620	12,000	12,600	
Avg. Tons, Period 1930-1966									29,200	7,210	73,800	20,600	80,600	104,000	

⊕ Weighted mean 9 Total ** Percent of total cations *** Percent of total anions ᵘ Estimated T Trace

CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1966

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁴ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Rio Grande above Rio Conchos near Presidio, Texas															
Sampling by U. S. Section															
Jan.	No	Flow													
Feb.	No	Flow													
Mar.	No	Flow													
Apr.	No	Flow													
May	No	Flow					31		# 5.01		2.21	1.80		0.88	
June	6	0.70	841	720	0.12	7.8	31	12	4.46	0.36	2.23	2.30	3.98	.85	0.05
July	7	.66	537	692			34		# 4.08		2.14	2.65		.79	
Aug.	10	.56	3,130	634			47		# 5.13		4.53	2.72		3.24	
Sept.	9	.85	20,900	986			57		# 12.62		16.97	2.75		16.17	
Oct.	8	2.61	7,450	2,950			54		# 44.44		51.63	4.60		53.30	
Nov.	9	8.48	1,130	8,260			54		# 48.26		55.62	3.95		59.02	
Dec.	4	9.12	268	8,820											
Mean ⊕	953	0.97	∑ 34,256	1,110			48		# 5.74		5.25	2.68		4.00	
Period Avg.		1.89	233,000	2,140					# 8.83		12.69	3.11		10.89	
Tons of Constituents, 1966											5,780	3,850		6,790	
Avg. Tons, Period 1935-1966											48,800	15,600		64,600	
Río Conchos near Ojinaga, Chihuahua															
Sampling by Mexican Section															
Jan.	9	1.45	30,400	1,500	0.44	7.9	53	18	5.90	1.56	8.40	3.55	9.52	2.80	0.08
Feb.	8	1.42	25,900	1,490			54		# 7.04		8.34	3.40		2.85	
Mar.	9	1.50	18,400	1,540			55		# 7.38		8.95	3.30		3.39	
Apr.	8	1.57	10,200	1,630			55		# 7.68		9.28	3.35		3.66	
May	10	1.33	19,900	1,390			50		# 7.34		7.32	3.35		2.75	
June	14	.97	51,300	1,010			36		# 6.78		3.81	3.60		1.28	
July	12	.93	38,100	954	.17	7.9	42	14	5.11	.72	4.17	3.32	5.35	1.40	.06
Aug.	17	.62	171,000	668			27		# 4.97		1.88	3.05		.59	
Sept.	18	.52	316,000	567			31		# 3.88		1.76	2.65		.59	
Oct.	14	1.25	107,000	1,280			50		# 6.67		6.58	2.70		2.31	
Nov.	13	1.40	56,100	1,440			52		# 7.14		7.70	3.35		2.68	
Dec.	11	1.48	42,600	1,520			52		# 7.70		8.36	3.55		3.14	
Mean ⊕	∑143	0.74	∑ 886,900	781			38		# 4.93		3.06	2.90		1.05	
Period Avg.		0.71	529,000	749			40		# 4.59		3.09	2.66		1.11	
Tons of Constituents, 1966											115,000	143,000		61,000	
Avg. Tons, Period 1935-1966											72,400	81,400		40,000	
Rio Grande at Johnson Ranch near Castolon, Texas															
Sampling by U. S. Section															
Jan.	8	1.48	34,600	1,520	0.45	7.8	53	18	5.82	1.71	8.62	3.35	9.97	2.90	0.06
Feb.	8	1.50	28,500	1,540			54		# 7.42		8.84	3.20		3.10	
Mar.	9	1.51	19,900	1,580			55		# 7.42		9.11	3.00		3.49	
Apr.	9	1.77	7,410	1,850			55		# 8.59		10.56	2.70		4.42	
May	13	1.33	23,100	1,390			49		# 7.64		7.28	3.65		2.87	
June	13	1.04	73,700	1,050			36		# 7.14		3.95	3.50		1.23	
July	9	1.04	47,300	1,060	.15	7.8	35	11	6.52	.82	4.05	3.55	6.73	1.28	.05
Aug.	10	.61	140,000	678			32		# 4.73		2.20	3.15		.44	
Sept.	5	.56	342,000	615			30		# 4.34		1.83	2.70		.79	
Oct.	4	1.30	172,000	1,330			46		# 7.65		6.42	3.35		2.60	
Nov.	5	1.57	68,500	1,590			51		# 8.16		8.61	3.30		3.49	
Dec.	5	1.61	53,800	1,630			51		# 8.64		8.86	3.65		3.69	
Mean ⊕	∑98	0.81	∑1,010,810	862			38		# 5.48		3.43	3.01		1.28	
Period Avg.		0.91	584,000	954			44		# 5.53		4.27	2.80		1.67	
Tons of Constituents, 1966											133,000	153,000		76,700	
Avg. Tons, Period 1948-1966											86,200	73,800		51,800	

⊕ Weighted mean ∑ Total ** Percent of total cations *** Percent of total anions
Sum of calcium and magnesium

CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1966

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Rio Grande at Langtry, Texas															
Sampling by U. S. Section															
Jan.	8	1.09	44,200	1,170	0.30	8.0	48	17	4.67	1.58	5.67	3.10	6.75	2.06	0.06
Feb.	8	1.08	36,400	1,140	.21	7.8	48	18	4.45	1.71	5.69	3.10	6.56	2.16	.03
Mar.	8	.97	32,300	1,050	.17	8.0	47	19	4.09	1.67	5.09	3.05	5.76	2.11	.02
Apr.	7	.51	23,900	591	.12	7.8	28	14	3.59	.74	1.72	3.20	1.97	.84	.04
May	7	.57	20,600	652	.12	8.0	34	14	3.44	.95	2.28	3.25	2.50	.98	.03
June	4	.72	81,100	751	.13	7.8	29	8	4.85	.72	2.33	3.55	4.02	.64	.04
July	4	.70	61,300	735	.05	8.3	32	11	4.55	.53	2.39	3.00	3.64	.84	.11
Aug.	3	.67	153,000	719	.18	8.3	31	7	4.69	.50	2.28	3.35	3.86	.54	.04
Sept.	7	.60	383,000	651	.06	8.1	31	9	4.20	.46	2.08	3.35	2.79	.59	.07
Oct.	6	1.03	199,000	1,080	.23	7.8	42	15	5.61	.96	4.71	3.30	6.31	1.77	.04
Nov.	5	1.27	78,800	1,330	.33	7.8	49	20	5.32	1.72	6.66	3.05	8.05	2.77	.05
Dec.	3	1.18	61,400	1,240	.24	7.7	47	20	5.22	1.60	6.08	3.30	6.91	2.56	.04
Mean ⊕	∅70	0.75	∅1,175,000	803	0.13	8.0	36	12	4.57	0.74	3.01	3.30	4.08	1.02	0.06
Period Avg.		0.77	776,000	835			42	18	3.64	1.04	3.42	2.84	4.09	1.51	
Tons of Constituents, 1966									195,000	19,200	147,000	211,000	417,000	77,000	
Avg. Tons, Period 1945-1966									111,000	17,400	108,000	117,000	270,000	73,400	
Pecos River near Shumla, Texas															
Sampling by U. S. Section															
Jan.	4	2.48	22,000	2,930	0.23	7.9	58	63	6.90	5.06	16.53	3.00	7.61	18.18	0.05
Feb.	2	2.67	21,500	3,140	.22	8.0	59	65	7.20	5.52	18.47	3.00	8.01	20.76	.03
Mar.	3	2.78	21,300	3,350	.18	8.0	61	66	7.20	5.84	20.29	2.50	8.77	22.11	.02
Apr.	4	.90	24,700	1,100	T	8.0	50	54	3.87	1.52	5.33	2.40	2.45	5.80	.06
May	4	2.50	35,700	2,990	.25	8.0	61	64	6.84	4.81	17.87	2.90	7.66	19.12	.02
June	4	2.04	23,300	2,380	.21	8.0	59	63	5.39	3.98	13.71	2.75	6.04	14.74	.02
July	3	2.15	18,500	2,560	.21	8.2	60	64	5.64	4.36	14.90	2.52	6.56	16.12	.02
Aug.	3	1.45	30,600	1,810	.15	8.0	59	62	4.63	2.39	9.97	2.70	3.93	10.74	.03
Sept.	2	.96	34,900	1,180	.07	8.0	51	52	3.74	1.73	5.80	2.62	2.71	5.85	.04
Oct.	4	1.60	33,000	1,940	.11	7.9	56	58	5.11	3.26	10.48	3.25	4.76	11.13	.04
Nov.	4	1.84	24,700	2,210	.22	7.8	57	60	5.54	3.80	12.42	3.10	5.70	13.12	.05
Dec.	4	2.26	29,000	2,670	.14	7.7	58	60	6.66	4.58	15.67	3.40	7.36	16.46	.05
Mean ⊕	∅41	1.67	∅319,200	2,010	0.13	8.0	57	61	5.18	3.24	11.24	2.80	4.99	12.03	0.04
Period Avg.		1.99	415,000	2,330					6.00	3.96	13.10	2.66	6.30	14.19	
Tons of Constituents, 1966									26,900	10,200	67,100	21,800	62,200	111,000	
Avg. Tons, Period 1955-1966									34,200	13,700	85,600	22,700	86,000	143,000	
Rio Grande at Laredo, Texas															
Sampling by U. S. Section															
Jan.	31	0.92	89,400	1,050	0.20	7.9	47	30	3.68	1.77	4.84	2.75	4.41	3.14	0.08
Feb.	28	.96	74,100	1,070			48		# 5.58		5.10	2.70		3.49	
Mar.	31	.95	69,400	1,100			49		# 5.58		5.30	2.60		3.83	
Apr.	30	.62	99,100	744			41		# 4.31		3.04	2.50		2.46	
May	31	.49	156,000	576			37		# 3.52		2.10	2.25		1.72	
June	30	.70	112,000	780			40		# 4.67		3.13	2.80		2.06	
July	31	.80	101,000	859	.14	7.9	40	22	4.32	.91	3.42	2.70	4.01	1.97	.12
Aug.	30	.75	185,000	827			42		# 4.85		3.49	2.75		1.67	
Sept.	30	.50	422,000	551			34		# 3.54		1.86	2.35		.84	
Oct.	31	.80	230,000	869			43		# 4.99		3.73	2.75		1.97	
Nov.	30	.97	126,000	1,090			48		# 5.66		5.24	2.65		3.10	
Dec.	31	.99	112,000	1,090			47		# 5.84		5.24	2.80		3.34	
Mean ⊕	∅364	0.67	∅1,776,000	754			41		# 4.41		3.08	2.54		1.84	
Period Avg.		0.65	1,547,000	746			40		# 4.46		2.95	2.50		2.05	
Tons of Constituents, 1966											254,000	273,000		234,000	
Avg. Tons, Period 1956-1966											219,000	242,000		235,000	

⊕ Weighted mean ∅ Total ** Percent of total cations *** Percent of total anions T Trace
Sum of calcium and magnesium

CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1966

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Río Salado at Las Tortillas, Tamaulipas															
Sampling by Mexican Section															
Jan.	1	3.01	3,050	2,930	0.90	7.8	46	30	9.89	7.74	14.79	1.80	21.15	9.93	0.12
Feb.	2	2.95	3,010	2,930			48		# 16.85		15.46	1.95		10.96	
Mar.	1	3.21	485	3,240			48		# 18.70		17.44	1.60		12.43	
Apr.	1	.42	7,090	491			33		# 3.21		1.61	2.20		.98	
May	8	.53	53,500	627			29		# 4.48		1.85	2.85		1.30	
June	6	1.27	8,550	1,360			43		# 8.09		6.01	2.60		4.32	
July	1	2.93	3,710	2,900	.81	7.4	48	32	9.01	7.70	15.36	1.55	20.21	10.48	.07
Aug.	6	2.31	12,600	2,380			47		# 13.58		12.01	2.40		8.30	
Sept.	6	.49	11,700	553			25		# 4.16		1.42	2.80		.79	
Oct.	2	3.09	8,760	2,960			47		# 16.82		14.99	2.20		9.88	
Nov.	2	3.52	1,320	3,360			46		# 20.50		17.54	1.70		12.04	
Dec.	No	Flow													
Mean ⊕	∅36	0.71	∅113,775	789			35		# 5.29		2.84	2.71		1.93	
Period Avg.		0.66	155,000	720			30		# 5.23		2.25	2.63		1.59	
Tons of Constituents, 1966											14,300	17,700		14,900	
Avg. Tons, Period 1955-1966											16,600	25,300		18,100	
‡ Rio Grande below Falcon Dam, Texas–U. S. Tailrace															
Sampling by U. S. Section															
Jan.	12	0.67	37,100	810	0.17	7.7	45	30	3.23	1.04	3.43	2.35	3.12	2.36	0.01
Feb.	11	.69	30,100	806	.19	8.0	45	30	3.21	1.12	3.50	2.30	3.20	2.41	T
Mar.	12	.69	34,300	819	.18	7.8	45	31	3.25	1.26	3.72	2.40	3.26	2.56	T
Apr.	12	.71	67,500	829	.18	7.8	44	31	3.27	1.32	3.67	2.40	3.28	2.60	.02
May	6	.69	33,600	824	.18	7.8	45	32	3.06	1.31	3.64	2.30	3.24	2.57	.01
June	9	.69	122,000	802	.20	8.0	45	32	3.06	1.16	3.52	2.30	3.15	2.54	T
July	11	.69	111,000	799	.20	7.7	45	33	3.07	1.18	3.51	2.25	3.05	2.60	.01
Aug.	12	.65	132,000	795	.07	8.0	46	33	2.92	1.21	3.56	2.25	3.11	2.60	0
Sept.	11	.65	438,000	768	.17	7.8	46	32	2.82	1.23	3.50	2.05	3.08	2.41	T
Oct.	10	.64	50,200	749	.18	7.7	46	30	2.93	.97	3.29	2.10	3.05	2.26	T
Nov.	13	.65	62,000	746	.09	7.5	45	27	3.06	.94	3.21	2.20	3.18	2.01	.02
Dec.	10	.65	64,600	755	.12	7.6	45	27	3.10	1.00	3.31	2.30	3.14	2.06	.01
Mean ⊕	∅129	0.66	∅1,182,400	783	0.16	7.8	46	31	2.98	1.18	3.49	2.19	3.12	2.43	T
Period Avg.		0.66	1,481,000	774			42	29	3.26	1.17	3.18	2.31	3.11	2.26	
Tons of Constituents, 1966									145,000	34,800	194,000	159,000	363,000	209,000	
Avg. Tons, Period 1956-1966									198,000	43,100	222,000	210,000	453,000	243,000	
Rio Grande at Fort Ringgold, Rio Grande City, Texas															
Sampling by U. S. Section															
Jan.	13	0.80	44,500	949	0.23	7.8	49	36	3.35	1.30	4.42	2.35	3.47	3.24	0.05
Feb.	10	.84	36,900	972	.27	8.0	50	35	3.41	1.34	4.71	2.45	3.71	3.39	.03
Mar.	12	.86	43,400	995	.22	7.9	50	36	3.49	1.40	4.88	2.50	3.80	3.54	.01
Apr.	11	.72	70,900	857	.20	7.8	47	33	3.33	1.20	3.96	2.40	3.32	2.83	.01
May	12	.64	64,000	787	.22	7.9	45	31	3.38	.82	3.44	2.65	2.71	2.46	.02
June	12	.69	155,000	802	.19	8.0	46	31	3.15	1.10	3.58	2.40	3.11	2.51	.01
July	12	.66	201,000	760	.07	7.7	45	30	3.07	1.02	3.31	2.25	2.94	2.31	.10
Aug.	14	.60	142,000	758	.18	7.9	44	32	3.08	1.03	3.26	2.55	2.43	2.36	.01
Sept.	12	.67	463,000	773	.16	7.9	46	32	2.98	1.13	3.50	2.15	3.07	2.41	T
Oct.	14	.73	67,700	848	.24	7.6	47	32	3.24	1.08	3.90	2.35	3.32	2.70	.01
Nov.	11	.73	70,500	832	.19	7.6	47	31	3.20	1.08	3.80	2.30	3.36	2.51	.02
Dec.	12	.69	69,600	810	.19	7.9	46	31	3.30	1.02	3.72	2.30	3.19	2.46	.01
Mean ⊕	∅145	0.68	∅1,428,500	799	0.17	7.8	46	32	3.13	1.09	3.60	2.32	3.05	2.51	0.02
Period Avg.		0.73	1,577,000	844					3.38	1.24	3.66	2.37	3.44	2.56	
Tons of Constituents, 1966									179,000	37,800	236,000	198,000	417,000	254,000	
Avg. Tons, Period 1959-1966									200,000	44,500	248,000	210,000	487,000	268,000	

⊕ Weighted mean ∅ Total ** Percent of total cations *** Percent of total anions T Trace
Sum of calcium and magnesium
‡ Tonnage figures based on total release from Falcon Reservoir

CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1966

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Morillo Drain in Mexico, 8.4 River Miles above Anzaldúas Dam															
Sampling by U. S. and Mexican Sections															
Jan.	5	15.4	23,400	16,200	7.60	7.5	74	72	26.97	19.09	131.3	3.85	46.76	127.9	0.01
Feb.	3	15.8	19,500	16,300	8.54	7.8	75	72	26.14	20.70	138.8	3.25	48.87	133.6	.01
Mar.	5	16.3	19,600	16,800	8.76	7.9	75	72	26.43	21.67	145.8	3.20	51.44	138.4	.01
Apr.	6	15.7	14,100	16,400	8.39	7.8	75	72	25.52	21.46	138.0	2.65	50.21	133.7	.01
May	5	14.2	33,500	15,900	8.08	7.7	75	71	23.73	17.94	126.4	3.00	44.98	120.2	T
June	4	7.86	35,600	8,680	4.30	7.9	73	68	14.86	9.67	66.07	2.70	26.94	62.50	.01
July	4	14.9	53,100	15,500	8.32	7.8	75	71	24.85	19.49	130.1	1.25	49.15	123.8	.01
Aug.	5	13.4	31,500	13,900	7.86	7.9	75	68	22.24	17.34	118.4	3.00	46.99	106.8	.01
Sept.	4	12.8	29,300	13,200	7.23	7.8	75	68	20.92	16.17	111.4	2.95	45.14	100.4	.01
Oct. ð	4	11.5	36,300	12,100			75	67	19.10	14.50	100.5	2.90	41.20	90.00	
Nov. ð	5	13.7	27,100	14,200			75	70	22.40	16.80	119.7	3.65	44.13	110.4	
Dec.	4	13.4	21,300	14,000	7.41	7.8	75	70	22.40	16.80	119.7	3.65	44.13	110.4	.01
Mean ⊕	∅54	12.9	∅344,300	13,600			75	70	21.75	16.46	112.8	2.84	42.86	105.5	
Period Avg.		13.1	302,000	13,800			74	70	22.33	16.96	113.9	3.19	42.47	108.2	
Tons of Constituents, 1966									15,800	7,260	94,100	3,090	74,700	136,000	
Avg. Tons, Period 1962-1966									14,000	6,450	81,900	2,990	63,800	120,000	
Rio Grande below Anzalduas Dam, Texas															
Sampling by U. S. Section															
Jan.	31	1.32	32,300	1,540	0.44	7.8	56	49	4.47	2.11	8.24	2.70	5.01	7.42	0.01
Feb.	28	1.42	71,700	1,670	.55	7.8	59	51	4.63	2.09	9.49	2.60	5.43	8.21	T
Mar.	31	1.39	68,500	1,660	.35	8.0	58	50	4.69	2.17	9.46	2.75	5.42	8.16	T
Apr.	30	.99	65,300	1,180	.31	8.0	54	44	3.75	1.66	6.25	2.50	4.11	5.11	.01
May	31	1.04	81,100	1,260	.36	7.9	59	50	3.62	1.31	7.11	2.10	3.95	6.09	T
June	30	1.07	172,000	1,260	.41	8.0	57	47	3.72	1.54	6.92	2.30	4.28	5.90	T
July	31	.86	218,000	1,010	.20	7.7	51	40	3.63	1.19	4.96	2.50	3.45	3.95	.01
Aug.	31	.89	60,000	1,090	.29	7.9	54	42	3.42	1.43	5.60	2.45	3.74	4.52	0
Sept.	30	.73	370,000	861	.17	8.1	48	35	3.06	1.25	4.05	2.20	3.25	3.00	.01
Oct.	31	1.50	82,900	1,770	.65	7.8	61	52	4.55	2.11	10.62	2.55	5.99	9.09	.01
Nov.	30	1.20	77,000	1,390	.57	7.7	57	46	4.10	1.68	7.79	2.50	4.94	6.29	.02
Dec.	31	1.15	75,900	1,350	.37	7.8	56	44	4.14	1.80	7.44	2.60	4.88	5.95	.01
Mean ⊕	∅365	0.95	∅1,374,700	1,130	0.29	7.9	54	43	3.60	1.45	5.89	2.37	3.94	4.77	0.01
Period Avg.		0.99	1,174,000	1,160					3.83	1.59	5.87	2.42	4.23	4.75	
Tons of Constituents, 1966									141,000	34,600	266,000	139,000	371,000	332,000	
Avg. Tons, Period 1959-1966									124,000	31,300	218,000	117,000	328,000	272,000	

⊕ Weighted mean ∅ Total ** Percent of total cations *** Percent of total anions T Trace
ð Samples not composited, analysis deduced

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

The following tables show electrical conductivity, expressed in mhos per centimeter cube x 10^6 at 25° C, of individual water samples taken at Rio Grande and tributary stations. The determinations were made by the United States Section of this Commission.

Electrical conductivity is a relative indication of the concentration of dissolved solids in the water samples. Though no exact relationship exists between conductivity and dissolved solids in natural waters, a study of recent data pertaining to stations on the Rio Grande watershed indicates that the relationship may be expressed within 10% by the following equations:

Tons per Acre-Foot = .0008878 (EC x 10^6 at 25° C) when conductivity (EC x 10^6 at 25° C) is below 7,520 micromhos.

Tons per Acre-Foot = .001052 (EC x 10^6 at 25° C) - 1.235 when conductivity (EC x 10^6 at 25° C) ranges between 7,520 and 22,000 micromhos.

Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C

Rio Grande at El Paso, Texas

Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C	Date	ECx10^6 @25°C
January		February		April		May		June		August		September		November	
1	2,980	15	3,100	1	770	15	1,010	28	885	9	928	21	1,420	7	2,280
2	2,950	16	3,140	2	778	16	948	29	869	10	1,040	22	1,690	8	2,270
3	2,920	17	2,960	3	771	17	989	30	801	11	1,110	23	1,930	9	2,290
4	2,940	18	3,020	4	810	18	1,000	July		12	1,050	24	2,010	10	2,250
5	2,930	19	3,350	5	818	19	1,040	1	849	13	1,050	25	2,020	13	2,270
6	2,950	20	3,230	6	773	20	1,050	2	1,020	14	1,050	26	2,080	20	2,250
7	2,960	21	3,290	7	799	21	1,060	3	1,300	15	1,000	27	2,040	21	2,240
8	2,950	22	3,210	8	828	22	1,020	4	1,230	16	1,090	28	2,050	22	2,240
9	2,920	23	3,230	9	870	23	1,110	5	1,090	17	962	29	2,090	23	2,250
10	2,910	24	3,350	10	902	24	1,100	6	1,160	18	1,030	30	2,130	25	2,230
11	2,950	25	3,270	11	941	25	1,020	7	1,240	19	919	October		26	2,240
12	2,980	26	3,260	12	935	26	1,030	8	1,360	20	901	1	2,150	27	2,250
13	3,000	27	3,260	13	917	27	961	9	1,250	21	895	2	2,150	28	2,230
14	3,090	28	3,280	14	932	28	948	10	1,210	21	792	3	2,080	29	2,230
15	3,030	March		15	979	29	980	11	1,090	22	840	4	2,080	30	2,160
16	2,960	1	3,320	16	1,020	30	951	12	1,150	23	982	5	2,140	December	
17	3,000	2	3,310	17	1,060	31	989	13	1,260	24	1,000	6	2,120	1	2,130
18	3,010	3	3,410	18	971	June		14	1,130	25	1,000	7	2,170	2	2,210
19	2,960	4	3,360	19	929	1	1,040	15	906	26	962	8	2,170	3	2,230
20	2,990	5	3,260	20	1,010	2	1,020	16	868	27	999	9	2,150	4	2,270
21	2,980	6	3,240	21	1,080	3	969	17	843	28	1,230	10	2,170	5	2,270
22	3,020	7	3,230	22	1,170	4	970	18	830	29	1,290	11	2,200	6	2,280
23	3,020	8	3,260	23	1,120	5	976	19	837	30	1,490	12	2,180	7	2,270
24	3,010	9	3,240	24	1,080	6	980	20	867	31	1,470	13	2,190	8	2,300
25	2,990	10	1,040	25	1,050	7	961	21	909	September		14	2,220	9	2,280
26	2,990	11	986	26	1,090	8	990	22	828	1	1,520	15	2,250	10	2,300
27	3,040	12	962	27	1,050	9	992	23	851	2	1,490	16	2,270	11	2,300
28	3,060	13	907	28	1,130	10	963	24	885	3	1,380	19	2,250	12	2,290
29	3,050	14	859	29	1,080	11	891	25	857	4	1,570	20	2,230	13	2,280
30	3,020	15	851	30	1,170	12	842	26	854	5	1,230	21	2,160	14	2,270
31	3,070	16	824	May		13	825	27	836	6	1,030	22	2,250	15	2,270
February		17	792	1	1,220	14	839	28	859	7	1,000	23	2,270	16	2,270
1	3,110	18	864	2	1,160	15	879	29	922	8	1,190	24	2,280	17	2,280
2	3,080	19	827	3	1,120	16	908	30	922	9	1,320	25	2,270	18	2,270
3	3,110	20	825	4	1,180	17	886	31	896	10	1,340	26	2,270	19	2,330
4	3,090	21	773	5	1,290	18	901	August		11	1,580	27	2,270	20	2,270
5	3,150	22	783	6	1,310	19	886	1	943	12	1,540	28	2,260	21	2,260
6	3,140	23	767	7	1,340	20	898	2	913	13	1,570	29	2,260	22	2,280
7	3,150	24	760	8	1,240	21	904	3	959	14	1,650	30	2,290	23	2,290
8	3,100	25	785	9	1,160	22	918	4	870	15	1,640	31	2,270	24	2,340
9	3,140	26	772	10	1,100	23	935	4	816	16	1,620	November		25	2,320
10	3,150	27	797	11	1,030	24	957	5	943	17	1,470	2	2,290	27	2,300
11	3,150	28	764	12	1,060	25	969	6	937	18	1,430	3	2,280	28	2,310
12	3,150	29	786	13	1,040	26	810	7	1,052	19	1,190	4	2,280	29	2,310
13	3,140	30	786	14	1,030	27	849	8	926	20	1,240	5	2,280	30	2,290
14	3,140	31	798									6	2,280	31	2,310

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande at Fort Quitman, Texas

April		June		August		August		September		September		October		November	
24	629	27	605	5	1,070	17	499	2	613	21	3,650	26	10,110	30	10,750
June		July		10	2,510	18	465	7	2,840	28	6,390	November		December	
10	756	21	613	11	580	22	941	8	1,770	October		2	11,180	7	8,110
20	456	August		13	659	24	523	14	1,110	5	6,710	9	11,620	14	8,660
26	1,008	3	435	17	2,400	31	4,130	14	5,650	12	6,120	16	10,530	21	9,940
										19	8,830	23	8,760	28	11,060

Sampling by U. S. Section

Rio Grande above Rio Conchos near Presidio, Texas

June		July		August		August		September		October		November		November	
13	822	5	687	15	639	31	500	13	685	6	3,360	1	7,930	25	8,510
13	822	8	828	18	651	31	515	19	1,590	10	1,170	4	8,260	28	8,780
23	743	12	698	22	693	September		22	2,280	13	1,380	7	8,260	December	
25	639	15	591	24	649	1	494	26	3,030	17	4,890	10	8,400	1	8,760
27	643	28	587	25	971	2	514	29	4,420	20	6,190	14	8,280	5	8,760
30	661	29	1,030	27	652	6	616	October		24	6,540	17	8,530	12	8,910
July		August		29	539	9	805	3	5,370	27	7,030	21	8,580	16	9,020
1	431	11	578												

Sampling by U. S. Section

Río Conchos near Ojinaga, Chihuahua

January		March		May		June		July		August		October		November	
3	1,410	3	1,460	2	1,750	23	1,230	18	1,270	24	681	12	1,220	18	1,390
6	1,450	7	1,460	5	1,730	24	867	21	1,500	26	630	14	1,250	21	1,380
10	1,500	10	1,510	9	1,670	25	759	25	1,660	September		17	1,230	23	1,430
13	1,530	14	1,570	12	1,680	27	956	28	1,580	19	499	19	1,320	25	1,410
17	1,520	17	1,600	16	1,620	28	786	August		20	600	21	1,340	28	1,420
20	1,560	21	1,710	19	1,710	28	724	1	1,500	21	599	24	1,460	30	1,460
24	1,520	24	1,700	23	1,720	29	772	4	1,140	22	676	26	1,350	December	
27	1,530	28	1,720	26	1,290	30	894	8	1,220	23	761	28	1,310	2	1,510
31	1,540	31	1,700	27	815	July		11	1,390	24	828	31	1,360	5	1,460
February		April		30	1,420	1	762	15	1,190	26	1,030	November		7	1,510
3	1,550	4	1,720	June		2	700	16	791	28	1,220	3	1,520	9	1,510
7	1,510	7	1,780	2	1,010	4	811	17	662	30	1,230	5	1,450	12	1,540
10	1,510	12	1,830	6	1,520	5	925	19	1,270	October		7	1,410	15	1,570
14	1,510	14	1,850	9	1,620	7	1,260	20	1,040	3	1,350	9	1,450	19	1,540
17	1,470	19	1,600	17	1,250	11	787	22	774	5	1,300	11	1,420	21	1,500
21	1,500	21	1,580	18	1,140	13	1,300	23	735	8	1,305	14	1,390	23	1,470
24	1,350	25	1,480	20	1,510	15	1,140	24	885	10	1,090	16	1,460	26	1,550
28	1,520	28	1,600											29	1,520

Sampling by Mexican Section

Rio Grande below Rio Conchos near Presidio, Texas

January		March		April		June		July		August		September		November	
3	1,440	1	1,530	25	1,870	13	1,340	25	1,770	26	642	16	533	4	1,540
7	1,500	4	1,500	27	1,780	16	1,530	28	1,620	27	699	19	487	7	1,440
10	1,510	7	1,520	May		20	1,650	29	1,380	27	496	22	735	10	1,500
13	1,560	10	1,570	2	1,970	23	986	August		27	675	26	1,110	14	1,510
17	1,540	14	1,660	5	1,860	27	1,160	1	1,390	29	533	29	1,420	17	1,520
20	1,570	17	1,760	9	1,770	29	781	4	1,120	30	444	October		21	1,530
24	1,560	21	1,830	12	1,840	30	827	8	1,140	31	425	3	1,530	25	1,540
27	1,550	24	1,830	16	1,780	July		14	1,570	September		6	1,220	28	1,470
February		April		19	1,910	1	751	15	1,430	1	421	10	1,330	December	
1	1,580	1	1,870	23	1,840	1	680	18	710	2	487	13	1,360	1	1,470
4	1,570	4	1,960	26	1,480	5	1,020	22	969	3	588	17	1,490	5	1,540
8	1,550	7	2,150	31	1,440	8	1,270	24	1,160	6	462	20	1,570	8	1,550
11	1,560	11	2,180	June		12	1,040	24	836	7	489	24	1,630	12	1,600
14	1,540	14	2,310	3	1,110	15	1,230	25	512	9	517	27	1,620	16	1,670
17	1,540	18	1,930	6	1,590	18	1,410	25	524	12	568	November		20	1,540
21	1,500	21	1,650	9	1,760	21	1,650	26	618	14	499	1	1,480	27	1,600
24	1,460													30	1,600

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande at Johnson Ranch near Castolon, Texas

January		February		April		May		June		July		August		October	
3	1,480	18	1,540	1	1,840	16	1,760	13	1,480	11	1,140	23	912	17	1,430
6	1,450	21	1,530	5	1,540	19	1,840	13	1,450	14	898	23	739	25	1,560
11	1,490	24	1,500	8	1,810	20	1,770	15	1,220	19	1,310	26	550	November	
14	1,540	March		12	1,840	20	699	17	974	22	1,280	30	522	1	1,640
18	1,560	1	1,420	15	1,820	23	1,790	20	1,360	26	1,450	September		7	1,620
21	1,550	4	1,500	18	1,590	26	764	22	982	29	1,610	15	559	14	1,560
25	1,570	8	1,510	21	2,040	27	1,710	22	842	August		15	560	21	1,550
28	1,550	11	1,540	25	2,130	27	1,610	24	1,030	1	1,060	20	510	28	1,550
February		15	1,590	28	1,820	31	841	28	904	4	1,060	20	508	December	
1	1,590	18	1,610	May		June		July		8	1,110	26	1,000	1	1,580
4	1,580	22	1,680	2	1,790	3	921	1	951	11	1,140	October		6	1,590
8	1,580	25	1,800	5	1,860	7	543	5	1,070	16	918	3	1,380	12	1,670
10	1,560	29	1,630	9	1,980	10	1,100	8	914	19	816	10	1,180	19	1,650
15	1,580			12	1,880	10	1,070							26	1,630

Sampling by U. S. Section

Rio Grande at Langtry, Texas

January		February		March		April		May		July		September		October	
3	1,220	8	1,140	11	1,080	15	998	23	431	18	1,030	19	526	31	1,310
6	1,200	10	1,130	14	1,080	18	936	31	535	25	801	22	602	November	
10	1,170	14	1,160	21	1,030	25	353	June		August		26	736	3	1,390
14	1,090	17	1,150	25	1,020	27	316	3	1,270	1	884	29	902	7	1,380
20	1,120	21	1,150	28	1,000	May		6	1,170	15	1,220	October		14	1,340
24	1,170	25	1,140	31	933	2	859	13	670	18	576	3	1,170	21	1,250
27	1,180	28	1,140	April		5	783	20	767	September		10	1,040	28	1,260
31	1,160	March		4	998	9	869	July		6	602	13	938	December	
February		3	1,130	7	979	11	844	7	887	12	762	24	1,290	12	1,240
3	1,160	7	1,110	11	1,030	16	869	11	443	16	581	27	1,240	20	1,230
														27	1,280

Sampling by U. S. Section

Pecos River near Shumla, Texas

January		February		April		May		June		August		October		November	
4	2,830	15	3,190	12	3,390	24	2,840	28	2,950	16	1,700	11	1,910	23	2,310
11	2,900	March		19	1,690	31	2,340	July		30	1,720	18	2,050	29	2,430
18	2,940	1	3,370	26	592	June		5	2,760	September		25	2,020	December	
25	3,010	15	3,360	May		8	2,310	19	2,470	20	1,070	November		6	2,550
February		29	3,320	3	3,800	14	2,260	26	2,440	27	1,670	1	1,990	13	2,660
1	3,100	April		10	2,780	21	2,250	August		October		8	2,130	20	2,720
		5	3,380					3	2,380	4	1,860			27	2,790

Sampling by U. S. Section

Devils River at Mouth near Del Rio, Texas

January		February		March		May		June		July		October		November	
3	362	24	392	31	385	13	281	16	372	21	348	13	377	17	350
14	393	March		April		19	327	23	368	28	346	20	378	23	375
27	383	3	393	7	386	26	352	July		August		27	380	December	
February		10	386	14	387	June		1	355	8	357	November		8	385
3	400	17	388	21	383	2	358	7	361	18	346	3	376	22	385
17	387	25	389	28	322	9	370	14	362	October		10	373	30	392
										7	370				

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande near Del Rio, Texas

January		February		April		May		July		August		October		November	
3	1,040	18	1,060	4	928	18	1,130	5	1,050	17	1,050	3	928	18	1,100
5	1,070	21	1,090	6	806	20	887	6	823	19	1,150	5	980	21	1,080
7	1,070	23	1,060	8	1,000	23	1,120	8	904	22	850	7	1,110	23	1,060
10	1,070	25	1,100	11	1,030	25	494	11	607	24	923	10	689	25	1,090
12	1,060	28	1,110	13	1,020	27	708	13	713	26	1,080	12	808	28	1,110
14	1,030	March		15	995	31	720	15	748	29	767	14	855	30	1,100
17	1,030	2	1,100	18	871	June		18	981	31	741	17	974	December	
19	1,030	4	1,030	20	1,020	2	863	20	901	September		19	1,090	2	1,090
21	973	7	1,120	22	925	6	730	22	868	2	561	21	1,150	5	1,100
24	1,050	9	1,090	25	391	8	977	25	814	5	491	24	1,100	7	1,090
26	1,050	11	1,090	27	379	10	924	27	775	7	592	26	1,090	9	1,060
28	1,080	14	1,090	29	536	13	843	29	768	9	521	28	1,080	12	1,060
31	1,090	16	1,060	May		15	661	August		12	589	31	1,110	14	1,030
February		18	1,060	2	361	17	677	1	782	14	588	November		16	1,100
2	1,040	21	1,070	4	690	20	1,280	3	743	16	507	4	1,110	19	1,110
7	1,080	23	1,060	6	1,020	22	647	5	1,010	19	657	7	1,100	21	1,110
9	1,070	25	1,070	9	1,060	24	954	8	910	21	573	9	1,130	23	1,120
11	1,070	28	1,040	11	971	27	1,100	10	834	23	582	14	1,110	27	1,130
14	1,070	30	1,040	13	950	29	928	12	1,010	26	674	16	1,110	28	1,120
16	1,090	April		16	915	July		15	827	28	748	17	1,120	30	1,140
		1	836			1	945			30	827				

Sampling by U. S. Section

Rio Grande below Maverick Dam near Del Rio, Texas

January		February		April		May		July		August		October		November	
1	1,010	15	1,060	1	996	17	887	1	998	16	710	1	869	16	1,080
2	1,020	16	1,080	2	856	18	916	2	961	17	1,080	2	877	17	1,100
3	1,020	17	1,060	3	830	19	1,150	3	955	18	1,350	3	911	18	1,090
4	1,040	18	1,070	4	917	20	884	4	1,040	19	857	4	946	19	1,090
5	1,040	19	1,070	5	930	21	987	5	854	20	593	5	955	20	1,080
6	1,030	20	1,070	6	953	22	914	6	917	21	1,110	6	929	21	1,070
7	1,040	21	1,060	7	819	23	912	7	801	22	881	7	924	22	1,110
8	1,050	22	1,040	8	896	24	1,180	8	841	23	844	8	774	23	1,060
9	1,050	23	1,020	9	987	25	1,020	9	843	24	828	9	757	24	1,070
10	1,030	24	1,050	10	992	26	799	10	863	25	844	10	760	25	1,080
11	1,030	25	1,060	11	1,020	27	680	11	667	26	962	11	699	26	1,090
12	1,040	26	1,080	12	1,000	28	702	12	863	27	961	12	936	27	1,070
13	1,020	27	1,090	13	987	29	779	13	755	28	669	13	737	28	1,070
14	1,000	28	1,070	14	994	30	791	14	623	29	853	14	798	29	1,090
15	1,020	March		15	986	31	850	15	615	30	682	15	841	30	1,070
16	1,010	1	1,080	16	953	June		16	644	31	742	16	927	December	
17	1,010	2	1,080	17	1,000	1	759	17	836	September		17	1,000	1	1,090
18	1,010	3	1,070	18	984	2	930	18	1,010	1	727	18	1,050	2	1,070
19	1,000	4	1,060	19	884	3	821	19	954	2	627	19	1,020	3	1,070
20	1,010	5	1,070	20	1,060	4	684	20	917	3	527	20	1,090	4	1,070
21	991	6	1,060	21	997	5	887	21	907	4	555	21	1,120	5	1,090
22	996	7	1,080	22	1,060	6	705	22	916	5	507	22	1,130	6	1,080
23	1,000	8	1,080	23	919	7	730	23	885	6	528	23	1,140	7	1,070
24	1,040	9	1,060	24	923	8	1,010	24	912	7	579	24	1,090	8	1,070
25	1,030	10	1,050	25	360	9	969	25	868	8	641	25	1,090	9	1,080
26	1,030	11	1,050	26	865	10	909	26	801	9	564	26	1,070	10	1,090
27	1,020	12	1,040	27	418	11	925	27	782	10	440	27	1,090	11	1,110
28	1,030	13	1,060	28	415	12	855	28	762	11	644	28	1,080	12	1,090
29	1,050	14	1,050	29	468	13	534	29	760	12	586	29	1,070	13	1,080
30	1,030	15	1,060	30	422	14	778	30	747	13	521	30	1,050	14	1,070
31	1,060	16	1,050	May		15	637	31	765	14	602	31	1,060	15	1,090
February		17	1,050	1	485	16	668	August		15	547	November		16	1,090
1	1,050	18	1,040	2	353	17	582	1	762	16	516	1	1,100	17	1,090
2	1,040	19	1,040	3	452	18	922	2	777	17	592	2	1,080	18	1,090
3	1,040	20	1,040	4	576	19	988	3	778	18	574	3	1,040	19	1,090
4	1,050	21	1,050	5	807	20	995	4	725	19	572	4	1,080	20	1,090
5	1,040	22	1,050	6	958	21	1,170	5	762	20	647	5	1,060	21	1,100
6	1,040	23	1,090	7	1,060	22	832	6	876	21	585	6	1,100	22	1,120
7	1,040	24	1,050	8	1,140	23	617	7	1,120	22	609	7	1,110	23	1,100
8	1,050	25	1,040	9	1,070	24	658	8	922	23	618	8	1,080	24	1,080
9	1,040	26	1,040	10	1,030	25	1,000	9	765	24	572	9	1,090	25	1,150
10	1,040	27	1,030	11	994	26	766	10	814	25	627	10	1,110	26	1,120
11	1,040	28	1,010	12	946	27	759	11	905	26	651	11	1,100	27	1,120
12	1,040	29	1,000	13	911	28	877	12	1,040	27	743	12	1,110	28	1,120
13	1,050	30	1,020	14	907	29	1,070	13	1,000	28	747	13	1,080	29	1,190
14	1,050	31	1,280	15	905	30	896	14	753	29	777	14	1,080	30	1,140
				16	900			15	891	30	796	15	1,120	31	1,130

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande at San Antonio Crossing near El Indio, Texas

January		February		April		June		July		August		October		November	
4	1,050	23	1,140	1	1,070	1	866	12	828	23	913	4	919	22	1,140
12	1,100	March		5	1,080	7	856	19	739	30	847	11	905	29	1,100
18	1,070	1	1,130	12	1,020	14	459	26	983	September		20	899	December	
25	1,090	4	1,120	19	1,100	16	680	August		7	642	25	1,130	6	1,110
February		9	1,140	May		21	903	2	858	13	685	29	1,080	13	1,120
1	1,140	15	1,110	13	1,120	28	895	9	654	20	559	November		19	1,130
8	1,120	22	1,130	17	1,050	July		16	780	27	725	15	1,110	28	1,200
15	1,110	29	1,070	24	1,050	6	951								

Sampling by U. S. Section

Rio Grande at Laredo, Texas

January		February		April		May		July		August		October		November	
1	1,060	15	1,050	1	857	17	1,120	1	838	16	812	1	733	16	1,080
2	1,020	16	1,090	2	1,050	18	1,100	2	685	17	620	2	734	17	1,090
3	1,030	17	1,080	3	971	19	1,080	3	745	18	740	3	757	18	1,100
4	1,000	18	1,060	4	997	20	946	4	945	19	879	4	777	19	1,090
5	1,050	19	1,100	5	1,090	21	703	5	957	20	748	5	842	20	1,080
6	1,030	20	1,100	6	1,100	22	464	6	936	21	913	6	814	21	1,080
7	1,050	21	1,110	7	1,100	23	510	7	1,000	22	1,090	7	892	22	1,080
8	1,030	22	1,090	8	1,050	24	672	8	988	23	890	8	939	23	1,090
9	1,050	23	1,090	9	1,070	25	685	9	940	24	712	9	978	24	1,090
10	1,030	24	1,110	10	1,180	26	812	10	884	25	994	10	958	25	1,090
11	1,020	25	1,110	11	1,120	27	892	11	895	26	757	11	676	26	1,100
12	1,040	26	1,100	12	1,100	28	921	12	913	27	772	12	704	27	1,080
13	1,050	27	1,110	13	1,050	29	753	13	826	28	831	13	693	28	1,070
14	1,030	28	1,090	14	1,040	30	947	14	836	29	873	14	741	29	1,070
15	1,050	March		15	1,060	31	1,150	15	816	30	742	15	885	30	1,070
16	1,080	1	1,100	16	1,010	June		16	791	31	702	16	880	December	
17	1,060	2	1,090	17	1,030	1	918	17	651	September		17	763	1	1,080
18	1,080	3	1,020	18	1,050	2	832	18	757	1	710	18	775	2	1,090
19	1,060	4	1,030	19	1,020	3	871	19	837	2	593	19	831	3	1,070
20	1,070	5	1,050	20	1,060	4	822	20	743	3	690	20	850	4	1,070
21	1,030	6	1,060	21	1,110	5	837	21	673	4	691	21	907	5	1,080
22	1,050	7	1,130	22	1,130	6	915	22	684	5	532	22	986	6	1,080
23	1,040	8	1,090	23	1,130	7	929	23	718	6	474	23	989	7	1,080
24	1,040	9	1,120	24	1,120	8	899	24	752	7	452	24	998	8	1,080
25	1,070	10	1,110	25	999	9	867	25	818	8	467	25	1,050	9	1,080
26	1,040	11	1,160	26	541	10	920	26	869	9	494	26	1,050	10	1,080
27	1,050	12	1,140	27	439	11	930	27	970	10	520	27	1,070	11	1,070
28	1,040	13	1,130	28	535	12	860	28	1,000	11	473	28	1,040	12	1,060
29	1,060	14	1,130	29	871	13	829	29	998	12	424	29	1,050	13	1,070
30	1,020	15	1,130	30	627	14	925	30	991	13	558	30	1,050	14	1,080
31	1,050	16	1,150	May		15	771	31	996	14	576	31	1,040	15	1,090
February		17	1,160	1	423	16	457	August		15	539	November		16	1,080
1	1,050	18	1,130	2	323	17	701	1	989	16	553	1	1,050	17	1,090
2	1,010	19	1,120	3	414	18	715	2	993	17	546	2	1,050	18	1,090
3	1,050	20	1,110	4	327	19	597	3	980	18	511	3	1,050	19	1,090
4	1,030	21	1,120	5	378	20	560	5	991	19	555	4	1,060	20	1,100
5	1,050	22	1,120	6	441	21	599	6	980	20	538	5	1,060	21	1,100
6	1,090	23	1,140	7	492	22	650	7	933	21	551	6	1,060	22	1,100
7	1,050	24	1,130	8	526	23	612	8	839	22	638	7	1,070	23	1,110
8	1,050	25	1,170	9	595	24	669	9	860	23	630	8	1,090	24	1,080
9	1,060	26	1,150	10	693	25	827	10	850	24	559	9	1,090	25	1,130
10	1,080	27	1,160	11	802	26	949	11	800	25	610	10	1,090	26	1,090
11	1,050	28	1,150	12	918	27	1,010	12	608	26	595	11	1,060	27	1,110
12	1,070	29	1,140	13	987	28	826	13	776	27	587	12	1,060	28	1,080
13	1,060	30	856	14	1,040	29	733	14	966	28	604	13	1,090	29	1,080
14	1,080	31	741	15	1,110	30	864	15	854	29	646	14	1,090	30	1,120
				16	1,120					30	678	15	1,090	31	1,080

Sampling by Laredo Water Plant

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Río Salado at Las Tortillas, Tamaulipas

January		March		May		May		June		August		September		October	
15	2,930	17	3,250	16	883	22	565	17	1,860	11	2,480	11	569	1	1,080
February		April		18	1,010	23	459	21	1,060	25	2,760	12	553	15	3,460
2	3,150	19	484	19	756	June		27	1,970	28	620	15	577	November	
March		May		20	1,110	6	1,040	29	2,240	September		17	634	4	3,760
3	2,900	12	653	21	928	13	1,570	July		10	561	18	341	19	2,810
								12	2,920						

Sampling by Mexican Section

Rio Grande below Falcon Dam, Texas–U. S. Tailrace

January		February		March		May		July		August		October		November	
3	793	11	804	23	827	18	824	8	796	19	788	3	746	18	732
6	784	14	800	25	832	23	815	11	792	22	791	5	746	21	737
7	782	16	799	28	828	25	814	13	791	25	790	7	748	23	752
10	790	18	800	April		27	815	15	799	26	792	10	753	25	765
12	784	21	796	1	832	30	808	18	794	30	786	13	748	28	747
14	788	23	797	4	830	June		20	790	September		14	758	30	748
17	789	25	802	6	833	1	818	22	789	2	785	21	745	December	
19	787	March		8	833	3	814	25	791	6	785	24	744	2	752
21	785	2	827	11	842	6	803	27	797	8	782	28	745	5	748
24	787	4	806	13	837	8	799	29	790	9	782	31	743	7	750
28	797	7	810	15	826	10	795	August		16	781	November		9	746
31	790	9	807	18	840	13	794	1	801	19	777	2	743	12	748
February		11	814	20	829	15	799	3	788	21	771	4	743	16	749
2	796	14	813	25	836	17	795	5	798	23	762	7	746	19	750
4	793	16	813	27	835	20	795	8	790	26	724	9	735	21	750
7	809	18	822	29	850	July		12	786	28	733	11	736	27	750
10	805	21	830	May		1	806	15	792	30	728	14	735	30	753
				2	832			17	792			16	736		

Sampling by U. S. Section

Rancherías Drain in Mexico, 69.3 River Miles above Anzaldúas Dam

January		February		March		May		July		September		October		November	
6	7,410	10	7,780	17	8,090	12	9,020	21	9,130	8	7,490	20	7,460	23	8,220
13	6,530	17	7,690	25	8,530	June		28	8,910	15	7,810	27	7,750	December	
20	6,960	24	7,420	31	7,860	2	9,860	August		22	7,860	November		1	8,120
27	7,740	March		April		9	8,810	4	8,620	29	7,450	3	7,710	7	8,210
February		3	7,930	6	8,370	16	6,940	11	7,050	October		10	6,880	14	8,090
3	7,690	10	7,690	14	8,420	July		18	7,740	8	6,870	17	7,890	21	8,010
				28	9,140	15	9,200	25	7,050	14	7,660			28	8,260

Sampling by Mexican Section

Río San Juan at Camargo, Tamaulipas

January		February		March		May		July		September		October		November	
6	3,010	10	2,840	17	2,370	12	3,100	28	680	8	* 1,660	14	1,290	23	* 1,060
13	2,960	17	2,790	25	3,150	19	2,980	August		15	* 664	20	1,120	December	
20	2,560	24	5,000	31	6,310	26	* 1,790	4	840	22	* 662	27	1,850	1	1,280
27	2,670	March		April		June		11	1,110	29	* 1,080	November		7	1,230
February		3	3,330	6	4,160	2	* 1,700	18	1,040	October		3	1,730	14	1,200
3	3,170	10	3,110	14	* 1,740	9	* 1,690	25	* 1,370	8	2,250	10	* 1,360	21	1,370
				28	2,980	16	5,120					17	* 1,350	28	1,230

* Samples collected below Marte R. Gómez Dam
Sampling by Mexican Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande at Fort Ringgold, Rio Grande City, Texas

January		February		April		May		July		August		October		November	
3	903	17	883	6	872	23	890	4	735	17	807	3	790	14	764
5	1,040	18	1,000	7	860	25	878	6	694	19	809	5	770	16	763
7	887	21	973	11	863	27	916	8	734	22	809	7	780	18	770
10	910	25	1,030	15	811	30	541	11	694	24	821	10	883	21	861
12	850	28	961	18	877	June		13	788	26	803	12	1,090	23	772
14	965	March		20	851	3	844	18	773	29	304	14	1,010	28	1,070
17	922	2	930	22	713	6	834	20	798	31	840	15	848	30	920
19	968	4	1,040	25	1,090	8	812	22	804	September		17	866	December	
21	1,020	7	946	27	1,130	13	818	25	825	2	797	19	1,210	3	959
24	962	9	1,020	29	1,060	15	835	27	822	5	851	21	1,460	5	908
26	969	14	1,060	May		17	888	29	821	7	800	24	1,400	7	784
28	990	16	1,020	2	1,140	20	843	August		9	787	26	1,190	9	792
31	957	18	983	4	655	22	942	1	838	12	798	28	887	12	861
February		21	953	6	579	24	949	3	830	14	793	31	933	14	905
3	998	25	1,040	9	583	27	553	5	826	16	799	November		15	915
4	1,020	28	968	11	1,050	29	634	8	837	19	781	2	919	19	794
7	939	30	970	13	1,420	30	610	10	832	21	788	4	785	21	786
11	920	31	922	16	1,890	July		12	828	23	780	7	879	23	769
14	985	April		18	2,200	1	757	15	802	26	740	9	773	26	784
		4	989							30	746			30	773

Sampling by U. S. Section

Puertecitos Drain in Mexico, 46.8 River Miles above Anzaldúas Dam

January		February		March		May		July		August		October		November	
6	5,820	17	5,880	31	6,070	20	6,440	13	6,500	18	6,040	14	6,130	23	6,210
13	5,830	24	5,490	April		June		20	6,490	25	6,510	20	6,170	December	
20	5,850	March		6	6,100	2	6,100	27	6,500	September		27	6,240	1	6,100
27	5,850	3	6,030	14	6,130	9	5,650	August		8	6,260	November		7	6,040
February		10	5,970	28	6,100	16	6,100	4	6,430	22	5,800	3	6,230	14	6,080
3	5,940	17	5,970	May		30	6,480	11	6,460	29	5,400	10	6,170	21	6,020
10	5,980	25	6,070	12	6,440							17	6,160	28	6,090

Sampling by Mexican Section

Los Indios Drain in Mexico, 46.8 River Miles above Anzaldúas Dam

January		February		March		May		July		August		October		November	
6	4,660	17	4,730	31	4,760	20	5,030	13	5,150	25	5,130	20	5,300	23	5,250
13	4,630	24	4,710	April		26	4,990	20	5,200	September		27	5,370	December	
20	4,730	March		6	4,830	June		27	5,210	8	5,210	November		1	5,200
27	4,810	3	4,740	14	4,810	2	5,100	August		22	5,150	3	5,290	7	5,190
February		10	4,700	28	4,830	9	5,150	4	5,190	29	3,790	10	5,300	14	5,130
3	4,720	17	4,790	May		16	5,150	11	5,190	October		17	5,250	21	5,080
10	4,750	25	4,770	12	4,990	30	5,200	18	5,180	14	5,350			28	5,150

Sampling by Mexican Section

Huizache Drain in Mexico, 41.8 River Miles above Anzaldúas Dam

January		February		March		May		July		August		October		November	
6	5,710	17	5,170	31	5,980	20	5,680	13	5,730	25	5,720	20	4,880	23	5,010
13	5,760	24	5,760	April		26	5,610	20	5,700	September		27	4,960	December	
20	5,150	March		6	5,970	June		27	5,700	8	5,670	November		1	5,000
27	5,120	3	5,890	14	5,710	2	6,120	August		22	5,660	3	4,960	7	5,000
February		10	5,820	28	5,720	9	6,130	4	5,690	29	5,580	10	5,010	14	4,980
3	5,790	17	5,890	May		16	6,050	11	5,760	October		17	5,000	21	4,970
10	5,820	25	5,950	12	5,900	30	5,810	18	5,700	14	4,830			28	5,040

Sampling by Mexican Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande near Los Ebanos, Texas

January		February		April		May		July		August		October		November	
4	989	18	1,160	5	999	20	2,170	4	739	19	834	4	957	18	851
7	937	22	975	8	900	24	962	8	679	23	863	7	791	22	858
11	969	25	1,230	12	868	27	818	15	774	26	835	11	792	25	990
14	981	March		15	862	31	759	17	706	30	370	14	1,110	29	990
18	969	1	1,230	19	949	June		19	793	September		18	1,140	December	
21	1,110	4	1,080	22	773	3	878	22	844	2	837	21	1,100	2	997
24	998	8	1,080	26	1,310	7	881	26	882	6	810	25	1,560	6	996
25	1,180	11	979	29	1,360	10	839	29	850	9	799	28	1,560	9	892
February		15	1,030	May		14	846	August		13	808	November		13	887
1	1,180	18	1,100	3	802	17	843	2	836	16	812	1	1,080	16	888
4	1,150	22	1,100	6	573	21	1,020	5	846	20	795	4	947	20	884
8	1,150	25	1,150	10	1,260	24	1,020	9	832	23	775	8	952	23	886
11	971	29	1,070	13	683	28	687	12	851	27	808	11	943	27	884
15	1,020	April		17	2,260	July		16	853	30	834	15	857	30	883
		1	998			1	693								

Sampling by U. S. Section

Rio Grande at Penitas, Texas

January		February		March		May		July		August		October		November	
3	994	14	1,030	25	1,130	2	908	13	695	31	363	7	970	16	844
7	961	16	1,060	28	1,090	4	697	15	851	September		10	971	21	826
10	970	18	1,060	April		6	681	22	841	2	826	12	1,740	23	1,070
12	1,070	21	1,060	1	1,090	9	589	25	1,070	7	837	14	1,810	25	1,070
14	1,070	25	1,210	4	1,090	11	743	27	1,150	13	853	17	1,100	28	1,070
17	1,050	28	1,060	6	925	13	742	29	878	14	868	20	955	30	1,150
19	1,030	March		8	928	16	739	August		16	833	21	960	December	
21	1,130	2	1,090	11	921	18	1,030	1	871	19	791	24	1,090	2	1,090
24	1,030	4	1,090	13	896	23	961	3	904	21	807	26	1,570	5	1,080
28	1,170	7	1,080	15	868	25	1,070	5	891	23	767	28	2,860	12	958
31	1,020	7	1,130	18	809	27	1,070	15	754	26	777	31	919	14	1,010
February		9	1,090	20	917	June		17	853	28	823	November		16	1,040
2	1,130	11	1,130	22	859	1	819	19	815	30	938	2	1,090	19	1,030
4	1,110	14	1,130	25	857	3	923	22	823	October		4	925	21	866
7	1,050	18	1,130	27	771	6	874	24	824	3	861	7	913	23	863
11	1,030	21	1,130	29	900	22	858	26	842	5	827	9	961	28	853
						24	930	29	503			14	851	30	835

Sampling by U. S. Section

Rio Grande above Anzaldúas Dam, South of Abram, Texas

January		February		March		May		July		August		October		November	
3	988	14	1,020	25	1,130	2	912	13	696	31	346	7	880	16	840
7	947	16	1,070	28	1,090	4	672	15	1,180	September		10	882	21	876
10	949	18	1,060	April		6	674	22	1,150	2	812	12	1,760	23	1,030
12	1,060	21	1,070	1	1,090	9	592	25	684	7	895	14	1,780	25	1,020
14	1,250	25	1,330	4	1,090	11	705	27	854	12	871	17	1,110	28	1,020
17	1,040	28	1,070	6	926	13	705	29	883	14	835	20	1,210	30	1,150
19	1,030	March		8	918	16	691	August		16	828	21	976	December	
21	1,140	2	1,100	11	940	18	941	1	876	19	787	24	1,040	2	1,090
24	1,040	4	1,090	13	897	23	961	3	894	21	791	26	1,300	5	1,090
28	1,210	7	1,090	15	897	25	995	5	856	23	773	28	1,990	12	962
31	1,070	7	1,130	18	807	27	1,020	15	843	26	764	31	874	14	1,030
February		9	1,110	20	889	June		17	1,130	28	823	November		16	1,050
2	1,070	11	1,180	22	855	1	1,280	19	823	30	940	2	1,040	19	1,030
4	1,060	14	1,130	25	857	3	945	22	828	October		4	922	21	873
7	1,060	18	1,130	27	890	6	872	24	836	3	842	7	904	23	869
11	1,020	21	1,130	29	899	22	868	26	825	5	838	9	954	28	842
						24	952	29	489			14	861	30	846

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Morillo Drain in Mexico, 8.4 River Miles above Anzaldúas Dam

January		February		April		May		July		August		October		November	
5	#13,990	16	#13,350	6	17,610	18	#13,240	6	13,520	24	*15,540	5	*12,550	16	*17,480
5	*18,020	16	*19,350	14	#13,040	18	*18,720	13	17,060	31	#12,450	14	#12,140	23	#12,800
17	16,880	March		14	*20,600	21	17,050	20	17,650	31	*14,930	14	*13,460	23	*16,700
20	16,880	2	#13,100	20	#13,520	25	#13,160	27	#13,750	September		19	# 8,810	30	#12,720
24	#15,660	2	*19,630	20	*19,850	25	*16,340	27	*18,570	7	#12,420	19	*12,860	30	*17,590
24	*18,260	9	#14,670	20	17,660	June		August		7	*16,570	26	#11,880	December	
27	#11,790	9	*19,280	28	#12,440	1	13,420	3	#13,480	14	#12,080	26	*15,510	7	#12,640
27	*18,260	9	17,460	28	*19,210	2	5,250	3	*18,420	14	*15,110	November		7	*17,940
February		23	17,460	May		8	#11,690	10	#13,960	21	#12,210	3	#12,410	14	#12,560
2	#12,880	30	16,180	11	# 9,960	8	*12,750	10	*17,270	21	*16,360	3	*16,190	14	*15,870
2	*19,390	April		11	*17,270	15	# 6,240	17	#10,810	29	#11,510	9	#12,720	21	#12,590
9	#13,400	6	#13,690	14	#12,470	15	* 5,130	17	*16,490	29	*12,660	9	*17,220	21	*17,000
9	*20,090	6	*19,160	14	*18,410	30	10,370	24	#10,730	October		16	#12,660	28	#12,510
										5	#11,180			28	*17,630

Samples collected from Esterito Drain which flows into Morillo Drain upstream from the flow measuring station.
* Samples collected upstream from the Esterito Drain confluence.
Sampling by Mexican Section

Rio Grande below Anzaldúas Dam, Texas

January		February		April		May		July		August		October		November	
1	2,000	15	1,580	1	1,720	16	1,140	1	1,010	16	959	1	1,130	15	1,170
2	1,910	16	1,530	2	1,680	17	1,580	2	873	17	1,080	2	986	16	1,120
3	1,760	17	1,500	3	1,680	18	2,620	3	945	18	1,130	3	1,010	17	1,190
4	1,550	18	1,540	4	1,600	19	1,480	4	888	19	1,080	4	1,090	19	1,230
5	1,390	19	1,530	5	1,680	20	2,760	5	932	20	1,060	5	1,110	20	1,270
6	1,350	20	1,540	6	1,470	21	2,820	6	979	21	965	6	1,020	21	1,130
7	1,440	21	1,490	7	1,370	22	2,010	7	964	22	970	7	1,020	22	1,170
8	1,780	22	1,550	8	1,270	23	1,430	8	916	23	1,050	8	1,080	23	1,260
9	1,510	23	1,650	9	1,180	24	1,270	9	967	24	1,070	9	1,120	24	1,340
10	1,470	24	2,200	10	1,200	25	1,210	10	1,030	25	1,060	10	1,270	25	1,320
11	1,340	25	1,470	11	1,180	26	1,350	11	1,060	26	1,280	11	1,230	26	1,390
12	1,450	26	1,440	12	1,160	27	1,750	12	1,140	27	944	12	1,330	27	1,250
13	1,410	27	1,840	13	1,120	28	1,270	13	1,120	28	946	13	1,360	28	1,260
14	1,520	28	1,820	14	1,080	29	1,660	14	1,120	29	764	14	1,340	29	1,420
15	1,460	March		15	1,040	30	1,640	15	1,050	30	640	15	1,770	30	1,430
16	1,420	1	1,810	16	961	31	1,270	16	1,050	31	911	16	2,110	December	
17	1,470	2	1,640	17	1,010	June		17	1,090	September		17	1,740	1	1,440
18	1,460	3	1,940	18	1,080	1	1,260	18	1,220	1	690	18	1,690	2	1,380
19	1,470	4	1,640	19	1,310	2	1,060	19	1,290	2	938	19	1,810	3	1,400
20	1,610	5	1,640	20	1,110	3	1,170	20	1,350	3	959	20	1,850	4	1,570
21	1,540	6	1,590	21	1,010	4	1,190	21	1,360	4	935	21	1,790	5	1,670
22	1,630	7	1,560	22	931	5	1,110	22	1,300	5	1,230	22	1,710	6	1,890
23	1,620	8	1,570	23	950	6	1,150	23	1,150	6	1,280	23	1,630	7	1,930
24	1,710	9	1,600	24	991	7	1,120	24	1,110	7	1,160	24	1,680	8	1,810
25	1,700	10	1,680	25	995	8	1,100	25	1,080	8	936	25	1,870	9	1,850
26	1,600	11	1,650	26	972	9	1,060	26	1,120	9	880	26	2,360	10	1,490
27	1,520	12	1,560	27	970	10	1,000	27	1,150	10	868	27	3,290	11	1,270
28	1,400	13	1,490	28	984	11	968	28	1,250	11	861	28	2,580	12	1,210
29	1,490	14	2,040	29	1,090	12	965	29	1,220	12	883	29	2,940	13	1,320
30	1,690	15	1,580	30	1,310	13	973	30	1,210	13	858	30	2,120	14	1,320
31	1,740	16	1,510	May		14	1,120	31	1,220	14	848	31	1,730	15	1,390
February		17	1,540	1	1,700	15	1,040	August		15	860	November		16	1,660
1	1,650	18	1,700	2	1,730	16	1,120	1	1,200	16	859	1	1,380	17	1,610
2	1,550	19	1,700	3	1,140	17	1,360	2	1,190	17	849	2	1,350	18	1,410
3	1,440	20	1,680	4	947	18	1,780	3	1,240	18	845	3	1,740	19	1,470
4	1,420	21	1,640	5	819	19	1,300	4	1,200	19	859	4	1,780	20	1,370
5	1,370	22	1,610	6	827	20	880	5	1,020	20	834	5	1,950	21	1,260
6	1,520	23	1,600	7	798	21	1,060	6	1,090	21	853	6	2,020	22	1,170
7	1,510	24	1,700	8	753	22	1,280	7	1,180	22	842	7	1,800	23	1,160
8	1,900	25	1,630	9	772	23	1,600	8	1,150	23	849	8	1,370	24	1,160
9	2,090	26	1,650	10	804	24	1,830	9	1,190	24	853	9	1,350	25	1,180
10	2,010	27	1,650	11	819	25	2,440	10	1,190	25	826	10	1,420	26	1,210
11	1,970	28	1,670	12	827	26	1,940	11	1,120	26	823	11	1,280	27	1,260
12	1,510	29	1,660	13	901	27	2,640	12	1,190	27	853	12	1,530	28	1,200
13	1,370	30	1,690	14	922	28	1,960	13	1,210	28	925	13	1,490	29	1,060
14	1,580	31	1,740	15	1,050	29	1,340	14	1,140	29	998	14	1,280	30	1,090
						30	1,100	15	1,110	30	1,580			31	1,010

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Arroyo Colorado, South of Mercedes, Texas

January		March		April		July		August		October		November		December	
4	5,560	2	5,500	1	5,840	1	2,710	5	4,350	10	4,370	4	4,840	14	5,050
February				May				September							
7	5,870			13	2,340			1	4,600						

Sampling by U. S. Section

North Floodway near Sebastian, Texas

January		April		May		June		July		September		October		November	
28	6,830	5	6,930	11	3,870	8	7,650	27	5,330	7	5,180	12	4,780	23	6,430
February		13	6,520	11	3,870	15	3,080	August		14	4,950	19	2,320	30	5,070
28	7,330	27	6,050	18	7,330	24	3,080	3	5,240	21	4,410	26	5,940	December	
March		May		25	7,860	July		10	5,420	28	4,920	November		2	7,130
2	7,530	3	3,140	June		6	7,910	17	5,420	October		10	5,800	7	5,820
15	6,830	5	745	1	7,610	13	6,890	24	5,850	5	4,960	16	6,330	21	5,370
30	7,590					20	6,490	31	5,790					28	6,690

Sampling by U. S. Section

Rio Grande at Mercedes, Texas, Pumps

January		February		April		May		July		August		October		November	
1	1,710	15	1,580	1	1,660	16	1,170	1	1,310	16	1,150	1	876	16	1,530
2	1,790	16	1,440	2	1,700	17	1,130	2	1,110	17	1,320	2	1,030	17	1,490
3	1,640	17	1,580	3	1,770	18	1,170	3	850	18	1,180	3	1,090	18	1,330
4	1,850	18	1,650	4	1,770	19	1,240	4	891	19	1,090	4	1,130	19	1,280
5	1,860	19	1,530	5	1,750	20	2,700	5	946	20	1,120	5	1,010	20	1,280
6	2,120	20	1,530	6	1,670	21	1,290	6	916	21	1,210	6	1,050	21	1,280
7	1,990	21	1,560	7	1,680	22	1,770	7	937	22	1,170	7	1,060	22	1,300
8	1,940	22	1,550	8	1,750	23	3,120	8	942	23	1,130	8	1,070	23	1,290
9	1,850	23	1,540	9	1,470	24	2,880	9	902	24	1,070	9	1,030	24	1,180
10	1,450	24	1,490	10	1,330	25	1,760	10	977	25	985	10	1,050	25	1,190
11	1,550	25	1,550	11	1,320	26	1,620	11	946	26	1,080	11	1,040	26	1,270
12	1,570	26	2,350	12	1,230	27	1,660	12	1,030	27	1,080	12	1,120	27	1,290
13	1,580	27	1,920	13	1,210	28	1,600	13	1,130	28	1,120	13	1,130	28	1,410
14	1,660	28	1,470	14	1,230	29	1,410	14	1,120	29	1,210	14	1,170	29	1,400
15	1,370	March		15	1,150	30	1,970	15	1,130	30	1,080	15	1,150	30	1,440
16	1,480	1	1,440	16	1,090	31	1,410	16	1,170	31	1,070	16	1,080	December	
17	1,500	2	1,830	17	1,090	June		17	1,160	September		17	1,010	1	1,350
18	1,500	3	1,860	18	1,020	1	1,380	18	1,190	1	788	18	2,340	2	1,350
19	1,570	4	1,810	19	995	2	1,400	19	1,140	2	1,050	19	2,000	3	1,500
20	1,570	5	1,610	20	1,100	3	1,310	20	1,150	3	727	20	1,730	4	1,540
21	1,500	6	1,950	21	1,120	4	1,210	21	1,200	4	949	21	1,710	5	1,530
22	1,390	7	1,750	22	987	5	1,200	22	1,320	5	960	22	1,620	6	1,460
23	1,450	8	1,630	23	1,100	6	1,240	23	1,390	6	1,010	23	1,680	7	1,540
24	1,630	9	1,670	24	958	7	1,170	24	1,410	7	994	24	1,710	8	1,630
25	1,600	10	1,580	25	987	8	1,110	25	1,180	8	1,250	25	1,710	9	1,890
26	1,630	11	1,550	26	1,030	9	1,110	26	1,140	9	1,000	26	1,700	10	1,970
27	1,680	12	1,630	27	1,060	10	1,040	27	1,140	10	915	27	1,690	11	1,860
28	1,670	13	1,680	28	1,130	11	1,110	28	1,180	11	874	28	1,970	12	1,840
29	1,840	14	1,640	29	1,150	12	1,070	29	1,210	12	864	29	3,290	13	1,840
30	1,840	15	1,600	30	1,190	13	1,010	30	1,250	13	870	30	2,440	14	1,580
31	1,410	16	1,510	May		14	1,000	31	1,240	14	879	31	2,610	15	1,380
February		17	2,400	1	1,180	15	990	August		15	868	November		16	1,330
1	1,530	18	1,750	2	1,090	16	995	1	1,240	16	864	1	2,410	17	1,380
2	1,750	19	1,540	3	1,100	17	1,100	2	1,210	17	862	2	2,200	18	1,370
3	1,750	20	1,590	4	1,230	18	1,080	3	1,180	18	872	3	1,750	19	1,780
4	1,690	21	1,670	5	1,010	19	1,270	4	1,190	19	859	4	1,480	20	1,630
5	1,600	22	1,780	6	938	20	1,560	5	1,230	20	849	5	1,320	21	1,490
6	1,560	23	1,750	7	930	21	958	6	1,250	21	844	6	1,680	22	1,440
7	1,480	24	1,740	8	877	22	905	7	1,150	22	837	7	1,710	23	1,340
8	1,450	25	1,690	9	908	23	1,040	8	1,040	23	846	8	1,900	24	1,290
9	1,600	26	1,690	10	806	24	1,310	9	1,210	24	855	9	1,730	25	1,240
10	1,600	27	1,680	11	855	25	1,420	10	1,140	25	830	10	1,800	26	1,240
11	1,610	28	1,700	12	914	26	1,860	11	1,200	26	830	11	1,400	27	1,230
12	2,180	29	1,640	13	999	27	2,710	12	1,240	27	824	12	1,450	28	1,220
13	2,240	30	1,650	14	1,050	28	1,880	13	1,230	28	813	13	1,440	29	1,380
14	2,120	31	1,690	15	1,020	29	2,510	14	1,170	29	844	14	1,420	30	1,320
						30	1,800	15	1,140	30	896	15	1,390	31	1,130

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1966

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande near San Benito, Texas

January		February		April		May		July		August		September		November	
3	1,730	14	2,220	11	1,420	20	1,970	4	936	8	1,270	16	881	1	2,710
6	1,680	21	1,540	14	1,220	23	1,770	5	1,010	15	1,350	19	874	14	1,390
10	2,090	28	1,940	18	1,100	31	1,430	6	893	22	1,100	26	830	15	1,470
11	1,970	March		23	1,140	June		11	975	29	1,040	October		16	1,500
17	1,440	7	1,900	25	995	6	1,200	12	1,040	September		3	988	21	1,160
24	1,440	14	1,720	May		13	1,000	18	1,160	6	967	5	1,060	28	1,360
31	1,600	21	1,600	2	1,170	20	1,390	25	1,380	10	944	10	1,070	December	
February		28	1,710	10	845	22	898	August		11	882	17	1,090	5	1,480
7	1,560	31	1,710	16	984	27	2,130	2	1,220	12	888	24	1,630	12	1,970
12	2,070	April		19	1,200	July		2	1,240	13	877	31	2,360	19	1,380
		4	1,710			1	1,350			14	879				

Sampling by U. S. Section

Rio Grande near Brownsville, Texas

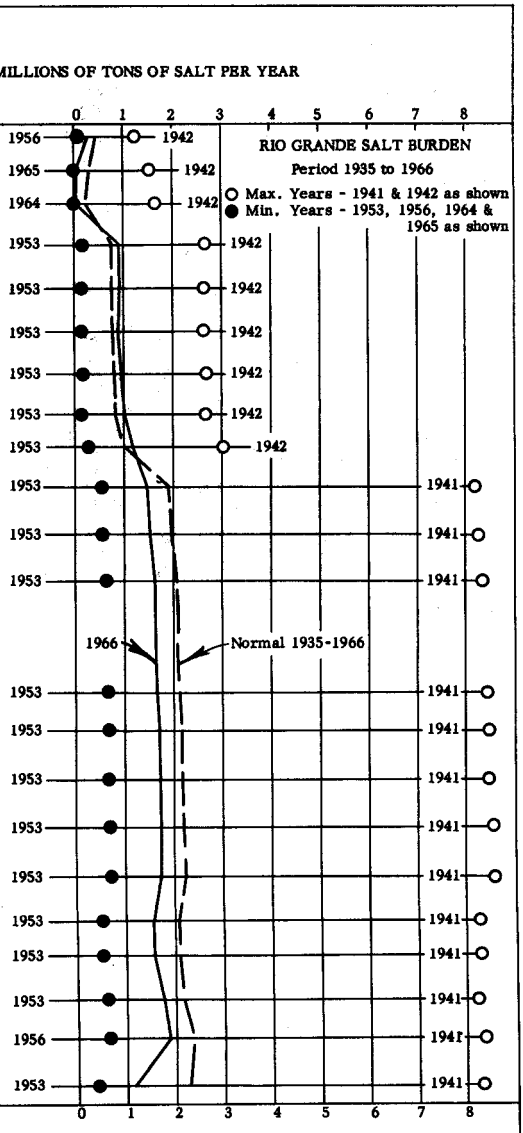
January		February		April		May		June		August		September		October	
3	1,710	17	2,500	1	1,770	19	1,087	27	1,460	3	1,350	11	937	24	1,780
7	1,840	18	1,550	4	1,780	23	3,080	July		5	1,420	12	893	November	
10	1,760	21	1,600	7	1,860	27	2,860	1	2,690	8	1,420	14	897	14	1,760
14	2,020	25	1,550	11	1,850	31	1,780	4	966	12	1,400	16	881	17	1,510
17	2,000	28	1,580	15	1,580	June		5	982	15	1,360	19	871	21	1,550
21	1,650	March		18	1,160	3	1,490	6	904	19	1,430	20	857	25	1,590
24	1,510	1	2,310	20	1,160	6	1,890	7	943	22	1,380	23	854	28	1,360
28	1,620	4	1,530	22	1,120	10	1,380	11	903	24	1,460	26	828	December	
31	1,600	7	1,710	25	1,160	13	1,240	12	966	26	1,550	27	839	2	1,420
February		11	1,690	29	1,100	16	1,000	18	1,160	29	1,100	29	823	5	1,430
4	1,440	14	1,560	May		17	1,050	19	1,210	September		October		9	1,550
7	1,770	17	1,590	2	1,090	17	1,010	21	1,330	2	1,260	3	907	12	1,560
10	1,540	21	2,270	6	1,513	20	1,020	22	1,370	6	975	7	1,120	16	1,920
11	1,490	25	1,660	9	951	23	956	25	1,340	9	993	10	1,110	19	1,990
13	1,930	28	1,690	13	876	24	999	29	1,510	10	1,230	17	1,000	23	1,810
14	2,150			16	949									30	1,400

Sampling by U. S. Section

RIO GRANDE SALT BURDEN

The term "salt", as used herein, means total dissolved solids. The 1966 concentrations which are marked by an asterisk (*) are based on the chemical analyses shown on preceding pages of this bulletin. Those without asterisks are based on chemical analyses reported in previous water bulletins or have been developed by deduction. Average concentrations shown for the period 1935 to 1966 are the weighted means of the values determined for the 32-year period indicated.

CONCENTRATION Tons per Acre-Foot		
1966	Average 1935-1966	
* 0.94	1.07	EL PASO
		Unmeasured
* 1.50	2.33	FORT QUITMAN
		Unmeasured
* .97	1.90	UPPER PRESIDIO
* .74	.71	RIO CONCHOS
.30	.33	ALAMITO CREEK
		Unmeasured
.78	.87	BELOW PRESIDIO
.64	.62	TERLINGUA CREEK
		Unmeasured
* .81	.85	JOHNSON RANCH
		Unmeasured
* .75	.75	LANGTRY
* 1.67	2.82	PECOS RIVER
.32	.47	GOODENOUGH SPRINGS
.31	.28	DEVILS RIVER
.50	.49	ARROYO LAS VACAS
		Unmeasured
.72	.92	DEL RIO
.49	.48	SAN FELIPE CREEK
.50	.48	PINTO CREEK
.39	.36	RIO SAN DIEGO
.31	.28	RIO SAN RODRIGO
		Unmeasured
.69	.85	EAGLE PASS
.47	.49	RIO ESCONDIDO
		Unmeasured
* .67	.81	LAREDO
* .71	.77	RIO SALADO
** .66	.82	FALCON RESERVOIR BELOW FALCON DAM



* Based on 1966 chemical analyses of samples collected at stations indicated ** Based on 1966 chemical analyses of samples collected at Falcon Dam - U. S. Tailrace

SANITARY ASPECTS OF WATER QUALITY

The United States and Mexican Sections of this Commission and the Texas State Department of Health cooperate in the joint sanitary water-sampling program along the Rio Grande. All analyses below have been made under the "Rules of Laboratory Procedure," as approved by the participating agencies and which conform with the procedures set out in the manual "Standard Methods for the Examination of Water and Wastewater," Eleventh Edition (1960), prepared jointly by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation. These analyses were made in the laboratories of the El Paso Water Plant, the Cameron County Health Unit, and the United States Section of the International Boundary and Water Commission. The percentages of dissolved oxygen (D. O.) shown below are the percent saturation at the elevation of the sampling stations.

Franklin Canal at El Paso, Texas, Water Plant

Date 1966	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan.* 3	44.8	17.1	330,000	141,500	July 11	49.7	16.3	460,000	172,000
Feb. 1	36.0	21.1	460,000	161,000	18	40.0	16.7	400,000	182,500
8	45.9	22.9	480,000	145,500	25	28.6	18.3	390,000	
15	39.5	22.7	460,000	172,000	Aug. 1			560,000	174,000
Mar. 1	39.5	16.5	210,000	161,000	8		20.7	400,000	149,000
8	13.3	18.4	210,000	161,000	15		17.1	390,000	165,500
15	39.3	15.8	410,000	183,000	29		15.5	410,000	117,000
22	48.7	18.8	400,000	142,000	Sept. 6		15.7	48,000	33,550
29	54.2	18.2	200,000	128,000	13	86.2	13.9	48,000	40,000
Apr. 5	51.3	19.3	260,000	188,500	20	39.7	14.6	410,000	134,000
12	42.0	19.6	33,000	71,000	27	38.9	17.2	40,000	31,500
19	50.2	19.5			Oct. 4	56.4	17.9	56,000	56,000
26	46.4	17.2	46,000	118,000	11	37.9	18.5	56,000	121,000
May 3	46.5	20.0	41,000	157,500	18	48.5	20.9	58,000	112,000
10	47.9	22.8	40,000	142,500	25	50.1	17.3	71,000	170,500
17	54.6	22.8	40,000	140,000	Nov. 1	37.4	19.1	48,000	129,000
24	46.2	24.9	46,000	139,000	8	50.9	23.6	56,000	181,000
31	55.7	26.9	41,000	127,000	15	43.3	23.5	80,000	121,000
June 6	53.5	21.5	33,000	128,500	Dec. 13	36.9	18.0	61,000	130,000
13	58.9	20.4	40,000	139,000					
20	48.0	20.7	33,000	145,000	Total	1,727.4	791.9	7,921,000	5,306,050
27	65.3	18.6	33,000	93,500	Average	46.7	19.3	193,200	132,700
July 5	55.2	21.4	33,000	102,500					

Rio Grande at Yaleta, Texas-Zaragoza, Chih. Bridge

Date 1966	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 4	3.9	10.3	4,800,000	157,000	July 11	30.6	11.9	480,000	208,500
Feb. 1	2.8	10.4	6,500,000	178,500	18	26.3	13.9	5,600,000	200,000
8	2.0	18.9	3,300,000	176,000	25	22.9	11.7	5,600,000	
15	0	11.1	4,800,000	208,500	Aug. 1			5,600,000	226,500
Mar. 1	2.1	14.5	2,400,000	179,500	8	16.7	16.6	4,800,000	213,000
8	3.4	11.9	2,400,000	178,500	15	5.6	10.3	6,400,000	231,000
15	32.1	15.7	16,000,000	198,500	29	62.6	9.2	220,000,000	177,000
22	43.6	17.6	4,800,000	137,500	Sept. 6	101	13.5	41,000,000	70,000
29	30.9	16.8	4,600,000	175,500	13	62.4	12.3	650,000	37,500
Apr. 5	31.7	16.4	9,400,000	228,000	20	26.6	13.6	13,000,000	188,500
12	23.5	19.1	46,000,000	99,500	27	32.0	15.1	4,100,000	63,500
19	29.1	13.1			Oct. 4	46.2	16.2	3,300,000	63,000
26	20.6	11.9	28,000,000	106,000	11	51.3	16.8	4,700,000	203,000
May 3	18.3	15.9	1,600,000	186,000	18	33.1	14.8	2,000,000	189,000
10	35.1	20.8	3,300,000	179,500	25	31.3	15.8	670,000	142,500
17	26.9	20.0	410,000	178,500	Nov. 1	20.8	15.4	4,100,000	267,000
24	40.5	18.9	480,000	162,500	8	42.5	13.4	3,400,000	266,000
31	51.6	22.7	480,000	160,000	15	42.2	20.1	22,000,000	230,000
June 6	36.6	17.1	340,000	155,000	Dec. 13	49.5	26.7	650,000	180,000
13	10.8	19.5	560,000	162,000					
20	16.0	16.6	480,000	167,000	Total	1,180.8	623.1	489,600,000	6,782,500
27	15.7	16.6	340,000	113,000	Average	29.5	15.6	11,941,000	169,600
July 5			560,000	140,000					

* Samples taken from the Rio Grande at the Water Plant

SANITARY ASPECTS OF WATER QUALITY

* Rio Grande at Laredo, Texas, Water Plant

Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 3	160	700	May 16	2,300	4,000	Sept. 26	3,600	15,000
10	360	250	23	6,200	16,250	Oct. 3	2,300	7,000
17	230	300	31	2,300	1,300	10	11,000	5,000
24	360	20	June 6	1,100	3,000	17	3,600	45,000
31	52	150	13	620	2,900	24	3,600	7,500
Feb. 7	60	325	20	11,000	16,250	31	3,600	2,500
14	110	325	27	6,200	10,500	Nov. 7	230	1,500
21	110	90	July 5	11,000	32,500	14	230	2,500
28	60	40	11	24,000	37,000	21	230	2,000
Mar. 7	110	100	18	6,200	21,000	28	620	2,500
14	110	40	25	110	5,000	Dec. 5	2,300	2,500
21	62	45	Aug. 1	110	4,000	12	110	2,500
28	110	175	8	6,200	11,000	19	26	1,500
Apr. 4	1,100	725	15	24,000	47,500	27	60	3,500
11	1,100	1,750	22	22,000	45,000			
18	360	7,750	29	16,000	47,500			
25	11,000	14,000	Sept. 6	3,600	22,500	Total	269,100	524,985
May 2	38,000	21,500	12	11,000	20,000	Average	5,180	10,100
9	6,200	6,500	19	24,000	22,500			

δ Rio Grande at 8.6 Miles below Laredo, Texas, R. R. Bridge

Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 3	110,000	46,000	May 9	380,000	137,500	Oct. 10	6,200	11,000
10	62,000	40,000	16	36,000	30,000	17	23,000	42,500
17	110,000	40,000	23	36,000	77,500	24	21,000	2,500
24	62,000	27,500	June 6	110,000	77,500	31	36,000	37,500
31	110,000	18,000	13	110,000	350,000	Nov. 7	62,000	15,000
Feb. 7	110,000	27,500	20	62,000	57,500	14	36,000	22,500
14	62,000	18,500	27	62,000	80,000	21	23,000	62,000
21	110,000	6,000	July 11	23,000	65,000	28	36,000	265,000
28	110,000	22,500	18	62,000	49,000	Dec. 5	62,000	20,000
Mar. 7	240,000	11,500	25	62,000	229,500	12	23,000	16,500
14	110,000	7,000	Aug. 1	94,000	77,500	19	28,000	4,500
22	23,000		15	240,000	150,000	27	23,000	12,500
28	110,000	77,500	22	9,300	62,500			
Apr. 4	62,000	27,500	29	62,000	162,500			
11	36,000	62,500	Sept. 19	11,000	19,500			
18	62,000	75,000	26	36,000	10,000	Total	3,391,500	2,907,500
25	110,000	230,000	Oct. 3	23,000	23,500	Average	78,700	64,600

* Rio Grande below Falcon Dam, Texas–U. S. Tailrace

Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 3	62	175	May 9	23	800	Sept. 12	23	400
10	6.0	100	16	23	22,500	27	6	
17	62	140	23	11	2,250	Oct. 3	11	2,750
24	11.0	10	June 6	6	1,450	17	36	3,000
31	9.3	95	13	0	2,250	24	62	250
Feb. 7	23	60	20	6		31	23	1,150
14	23	30	27	23	1,750	Nov. 7	23	100
21	23	30	July 5	2.6	750	14	6	1,250
28	11	150	11	2.6	350	21	6	200
Mar. 7	0	25	18	2.6	450	28	6	450
14	0	25	25	11		Dec. 5	0	250
21	2.6	10	Aug. 1	6	9,500	12	23	
28	0	45	8	0	450	19	23	150
Apr. 4	0	135	15	2.6	8,750			
11	0	1,500	22	6	2,000	Total	944.3	75,180
18	23	1,250	29	230	2,250	Average	20.1	1,750
25	23	1,200	Sept. 6	62	4,750			

θ Rio Grande at Mercedes, Texas, Pumps

Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1966	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 4	2,100		May 10	1,100		Sept. 27	3,600	
11	2,300		17	2,300		Oct. 4	11,000	
18	6,200		24	1,600		11	11,000	
25	9,400		June 7	3,600		18	38,000	
Feb. 1	3,600		14	11,000		25	38,000	
8	3,600		21	240,000		Nov. 1	1,600	
15	6,200		28	3,400		8	2,300	
23	3,600		July 7	11,000		22	9,400	
Mar. 1	3,600		12	11,000		29	6,200	
8	2,300		19	910		Dec. 6	3,600	
15	3,600		26	1,100		13	620	
22	620		Aug. 2	2,300		20	1,100	
29	1,100		9	2,300		27	11,000	
Apr. 5	2,300		23	6,200				
12	8,100		30	5,500				
19	2,100		Sept. 7	3,600		Total	588,450	
26	3,600		13	70,000		Average	12,000	
May 3	3,600		20	6,200				

* Samples and Analyses by U. S. Section δ Samples by Mexican Section and Analyses by U. S. Section
θ Samples and Analyses by Cameron County Health Unit

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

In Inches

Tabulated below, in approximate downstream order, are monthly records of United States rainfall stations located in Texas with averages for their periods of record. For location, elevation, period of record, type of gage in use, watershed subdivision in which the station is located, and the observer, see alphabetical listing of these stations shown on pages 137 through 140 in this bulletin. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the office of the United States Section of this Commission. Daily records for years prior to 1953 may also be found in corresponding water bulletins.

Detailed listings of the months and years for which records are available through 1956 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 22 and 26.

Month	American Dam		Island Station		County Line Station		Fort Hancock Bridge		Guayuco Arroyo	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.30	0.41	0.12	0.34	0.17	0.36	0.11	0.38	0.12	0.33
Feb.	.21	.34	.14	.27	.06	.22	.12	.25	.08	.19
Mar.	T	.34	.12	.25	.15	.27	.53	.24	.40	.16
Apr.	1.09	.22	.59	.18	.70	.24	.88	.30	.32	.19
May	.13	.23	0	.34	.06	.37	.26	.56	.20	.37
June	2.40	.62	2.16	.55	3.29	.57	3.39	.79	1.23	.53
July	.79	1.35	.18	1.03	.55	1.07	.54	1.17	.05	1.38
Aug.	1.98	1.37	2.95	1.23	2.57	1.25	4.04	1.61	5.84	1.63
Sept.	2.02	1.08	1.03	.89	1.15	1.01	1.16	.96	1.81	1.10
Oct.	.01	.61	.03	.77	.33	.94	.30	1.06	.50	1.14
Nov.	T	.21	0	.21	0	.22	0	.23	0	.17
Dec.	.07	.41	.06	.36	0	.33	0	.41	.02	.36
Yearly	9.00	7.19	7.38	6.42	9.03	6.85	11.33	7.96	10.57	7.55

Month	Fort Quitman		Neely Ranch		Moody Bennett Ranch		Adobes Ranch		Livingston Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.11	0.41	0.16	0.35	0.21	0.36	0.22	0.41	0.51	0.64
Feb.	.03	.24	.04	.17	.15	.34	.42	.21	.51	.41
Mar.	.45	.22	.30	.17	.03	.08	0	.18	0	.21
Apr.	.83	.27	.85	.13	.24	.16	.20	.14	0	.16
May	.10	.45	.50	.38	T	.61	.76	.66	.33	.42
June	2.71	.84	2.65	.76	3.47	.72	2.86	1.25	2.00	1.54
July	.69	1.49	.72	1.65	.61	1.56	1.83	1.73	3.30	1.37
Aug.	6.50	1.66	5.84	1.70	5.76	1.83	5.08	1.64	2.25	1.92
Sept.	.94	.97	2.03	1.35	1.58	1.04	1.61	1.55	2.85	1.31
Oct.	.38	.88	.43	1.05	.96	.72	1.63	.67	1.80	1.05
Nov.	0	.25	0	.19	0	.30	0	.20	0	.32
Dec.	0	.36	.20	.40	0	.27	0	.31	0	.32
Yearly	12.74	8.04	13.72	8.30	13.01	7.99	14.61	8.95	13.55	9.67

Month	Presidio (IB&WC Gage)		Quebec Ranch		Kelly Ranch		Bloys Camp		Kerr Mitchell Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.15	0.34	0.50	0.59	0	0.45	1.01	0.76	0.18	0.57
Feb.	.15	.21	.20	.26	0	.19	.58	.66	.28	.39
Mar.	.35	.13	0	.24	0	.26	.30	.47	.17	.19
Apr.	0	.18	0	.25	0	.45	.06	.45	.20	.46
May	.60	.47	0	1.07	0	1.15	.85	1.63	.48	1.06
June	1.40	1.13	4.60	1.96	5.10	1.80	3.69	2.55	1.70	1.75
July	1.70	1.05	1.50	2.14	1.10	3.12	1.39	3.20	.63	1.79
Aug.	6.20	1.19	4.45	2.14	4.40	2.21	5.95	3.76	4.96	1.85
Sept.	.60	1.03	5.10	1.84	2.10	2.41	2.52	2.55	2.20	1.47
Oct.	1.90	.55	1.50	.82	2.20	.89	1.75	1.59	3.17	1.40
Nov.	0	.24	0	.34	0	.24	0	.51	0	.27
Dec.	0	.24	0	.39	0	.33	0	.64	0	.42
Yearly	13.05	6.76	17.85	12.04	14.90	13.50	18.10	18.77	13.97	11.62

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Loma Vista Ranch		H. T. Fletcher Ranch		‡ Van Eman-Hord Ranch		Casa Piedra		H. M. Greenwood (Cienega Ranch)	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0	0.82	0.55	0.87	0.24	0.62	0	0.53	0.35	0.68
Feb.	.30	.37	.55	.32	.19	.30	0	.25	.50	.29
Mar.	0	.17	0	.34	.54	.25	.70	.14	.26	.22
Apr.	.15	.55	.90	.46	.16	.32	0	.34	.10	.54
May	1.00	.97	.90	1.18	.78	.63	0	.50	1.20	.90
June	2.10	1.88	2.05	1.50	1.84	1.33	1.00	1.54	1.00	1.68
July	.85	2.02	.75	2.84	.61	1.76	.60	1.98	4.00	2.01
Aug.	4.60	1.75	6.80	2.80	4.64	1.93	3.90	2.93	6.63	1.95
Sept.	2.20	1.45	2.60	1.85	.77	1.39	0	.57	2.50	2.41
Oct.	3.50	1.11	3.40	1.43	3.42	1.00	3.65	.73	5.35	1.33
Nov.	0	.28	0	.35	0	.39	0	.48	0	.40
Dec.	0	.47	0	.43	0	.44	0	.38	0	.63
Yearly	14.70	11.79	18.50	14.37	13.19	10.36	9.85	10.37	21.89	13.04

Month	Redford		02 Ranch		Earl Hammond Ranch		Maverick Ranger Station		Terlingua Creek Station	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.25	0.44	0.25	0.56	0.25	0.08	0.23	0.54	0.05	0.30
Feb.	.35	.22	.52	.39	.64	.57	.14	.27	.30	.12
Mar.	.05	.05	.26	.30	.30	.10		.10	T	.12
Apr.	0	.30	.05	.35	0	.35	.13	.19	T	.39
May	1.00	.51	1.96	1.10	.78	.79	.13	.92	.15	.55
June	.80	.86	1.58	1.38	1.95	1.50	4.71	1.39	3.00	.94
July	2.10	.92	0	1.70	2.17	1.46	.50	1.71	.60	.86
Aug.	2.00	1.05	2.49	2.20	5.88	2.06	6.89	1.65	1.20	.72
Sept.	1.90	1.61	1.70	1.67	.46	1.06		1.36	1.00	.83
Oct.	3.70	.92	2.85	1.52	4.68	1.34	2.94	.92	2.70	.60
Nov.	0	.30	0	.58	0	.37	0	.24	0	.14
Dec.	0	.18	0	.40	0	.46	0	.35	0	.26
Yearly	12.15	7.36	11.66	12.15	17.11	10.14		9.64	9.00	5.83

Month	Castolon			Johnson Ranch		Ray Willoughby Ranch		J. F. Woodward Ranch		
	1965	1966	Average	1966	Average	1966	Average	1966	Average	
Jan.	0.25	0.21	0.28	0.20	0.39	0.60	0.61	0.71	0.68	
Feb.	.22	.29	.18	.30	.18	.20	.56	.06	.41	
Mar.	T	0	.23	T	.14	0	.25	0	.14	
Apr.	0	.22	.38	T	.43	0	.44	.23	.42	
May	1.65	1.05	1.01	2.30	1.09	2.55	1.69	1.98	1.28	
June	.23	2.28	1.38	1.05	1.05	2.90	1.94	2.55	1.76	
July	1.65	.52	1.54	.10	1.08	1.10	2.98	1.02	1.96	
Aug.	.44	3.14	1.46	1.10	.88	3.90	2.25	6.21	2.65	
Sept.	2.46	1.81	1.40	1.70	1.19	3.40	2.49	3.14	1.69	
Oct.	0	2.28	.66	3.30	.65	3.00	1.14	2.18	1.11	
Nov.	.15	0	.07	0	.19	0	.47	0	.43	
Dec.	.56	.06	.32	0	.31	0	.42	0	.29	
Yearly	7.61	11.86	8.91	10.05	7.58	17.65	15.24	18.08	12.82	

Month	Yarborough Ranch		Kokernot Ranch Headquarters		Buttrill Ranch		Black Gap Game Refuge		Stillwell Crossing	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.65		0.21	0.64	1.50	0.68		0.52	0.52	0.61
Feb.	0		.28	.30	0	.20		.53	.48	.33
Mar.	0		.17	.10	2.00	.24		.22		.20
Apr.	.20		.80	.57	1.50	.55	0.51	.48	.14	.20
May	2.05		.99	.87	3.00	1.10		1.40	.44	1.00
June	2.83		1.37	1.00	3.75	1.14	.56	1.08	.97	1.14
July			1.19	1.51	2.00	1.63	.55	1.67	3.24	2.71
Aug.	4.02		.19	.99	3.35	.77	1.94	1.01		.83
Sept.	3.32		.69	.89	5.00	1.42	1.61	1.41	2.76	2.25
Oct.	2.55		2.51	.90	.50	.83	4.11	.87	2.80	.95
Nov.	0		0	.30	0	.24	0	.28	0	.18
Dec.	0		.10	.18	0	.26	0	.30	0	.43
Yearly			8.50	8.25	22.60	9.06		9.77		10.83

T Trace ‡ Formerly Baugh-Van Eman Ranch

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Persimmon Gap Ranger Station		Sheep Pasture		Mouth of Maravillas Creek		Heath Crossing		Dove Mountain Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.		0.50							0.60	0.68
Feb.		.43							0	.27
Mar.		.13							.28	.24
Apr.		.51	0.50		0.22	0.11			.40	.43
May		.96							1.00	1.03
June		1.24	1.04	2.30	1.50	1.58			1.86	1.36
July	0.84	1.43	.43	.83	2.59	1.31	1.41		0	1.47
Aug.	1.84	.77	.66	.81	.69	1.25	1.80		2.47	.79
Sept.	1.13	.99	1.72	2.11	1.90	1.18	3.42		1.55	1.05
Oct.	4.87	1.17	3.25	1.62	2.80	1.40	2.70		4.42	1.39
Nov.	0	.26	0	.36	0	.45	0		0	.30
Dec.	0	.31	0	.26	0	0	0		0	.39
Yearly		8.70							12.58	9.40

Month	Slaughter Ranch		Steve Stumberg Ranch		McGonagill Ranch Headquarters		McGonagill Ranch East Mill		Arvin and Harkins Header	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.90	0.70	0.50	0.61	0	0.44	0	0.44	0.80	0.56
Feb.	.75	.88	.60	.43	0	.60	0	.16	.40	.55
Mar.	.60	.30	1.50	.33	0	.40	0	.43	.70	.28
Apr.	.30	.15	2.50	.72	1.10	.44	2.01	.64	3.60	1.31
May	1.30	.90	3.70	1.48	1.45	1.12	1.13	1.03	0	1.53
June	1.30	1.10	5.70	1.52	1.90	2.01	1.98	1.83	1.70	1.65
July	0	.88	1.75	1.89	4.50	2.03	.53	1.08	0	1.47
Aug.	2.60	2.48	2.75	1.37	2.50	1.18	3.52	1.10	.40	1.26
Sept.	2.65	1.48	4.25	2.08	1.80	1.30	1.61	1.73	4.60	1.90
Oct.	3.45	1.92	5.30	1.65	3.50	.99	3.52	1.07	3.10	1.92
Nov.	0	.20	0	.38	0	.19	0	.19	0	.33
Dec.	0	.10	0	.58	0	.20	0	.27	0	.32
Yearly	13.85	11.09	28.55	13.04	16.75	11.10	14.30	9.97	15.30	13.08

Month	Arvin and Harkins Bean		Arvin and Harkins Headquarters		Arvin and Harkins Camel		Arvin and Harkins Monty Corder		E. W. Hardgrave Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.80	0.59	0.70	0.56	0.70	0.46	0.60	0.56	0.81	0.63
Feb.	.40	.54	.30	.55	.40	.50	.40	.55	.57	.74
Mar.	.60	.29	.30	.24	.50	.28	.60	.29	.08	.33
Apr.	4.10	1.29	4.60	1.22	4.50	1.27	4.20	1.28	2.86	1.11
May	0	1.23	0	1.32	0	1.21	0	1.20	1.04	1.39
June	2.00	1.64	2.90	1.34	2.50	1.38	1.80	1.41	1.86	1.89
July	0	1.68	0	1.23	0	1.18	0	1.23	.64	1.02
Aug.	1.60	1.48	1.00	1.09	1.50	.84	.10	.71	1.72	.75
Sept.	5.70	1.65	3.70	1.28	4.10	1.38	2.10	1.41	5.42	2.33
Oct.	3.20	1.77	3.40	1.79	3.10	1.48	5.00	1.56	4.00	1.80
Nov.	0	.42	0	.32	0	.30	0	.32	0	.44
Dec.	0	.33	0	.33	0	.30	0	.28	0	.35
Yearly	18.40	12.91	16.90	11.27	17.30	10.58	14.80	10.80	19.00	12.78

Month	Lewis James Ranch		Dryden		Bricker Ranch		Ross Foster Ranch		Billings Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.20		0.85	0.58	0.88	0.46	0.79	0.76		
Feb.	.87		.78	.49	.97	.59	.80	.63		
Mar.	.18		1.92	.40	.89	.37	.28	.11	0.80	
Apr.	1.96		2.02	.83	1.18	.94	.70	.96	1.22	
May	.69		1.05	1.82	.53	1.16	.76	1.71	.65	
June	1.93		2.63	1.16	3.67	1.62	.79	1.76	.40	
July	1.91		.35	.97	0	.55	0	.18	0	
Aug.	.70		1.24	1.09	.78	.56	1.27	.35	3.30	
Sept.	4.53		1.10	1.73	1.64	1.73	2.78	2.92	2.50	
Oct.	2.84		2.38	1.25	1.52	1.15	0	1.20	1.30	
Nov.	0		0	.35	0	.28	0	.07	0	
Dec.	0		0	.46	0	.35	0	.22	0	
Yearly	16.81		14.32	11.13	11.76	9.76	8.17	10.87		

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	W. A. Arledge Ranch		Hoffman Ranch		C. L. Arthur Ranch		Owens Ranch		Todd Field	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.58	0.75	0.15	0.49	0	0.82	0.42	0.29	0.60	0.38
Feb.	.69	.49	.10	.55	.15	.44	.16	.67	.26	.95
Mar.	1.16	.49	0	.23	0	.32	.61	.54	.42	.34
Apr.	1.63	1.22	.90	.37	0	.31	3.12	1.24	4.90	2.48
May	1.47	1.87	.18	1.24	1.10	1.18	2.31	2.04	1.17	1.40
June	.39	1.80	2.62	1.59	.64	1.65	0	1.78	2.55	2.41
July	0	.93	1.21	1.70	2.70	2.44	T	T	.20	.16
Aug.	3.18	1.14	3.25	2.26	3.16	2.24	3.57	1.48	3.59	2.58
Sept.	2.83	1.85	2.19	1.62	3.90	1.44		2.82	3.60	3.68
Oct.	1.40	1.55	3.00	1.22	2.90	1.11		.90	2.97	1.71
Nov.	0	.43	0	.38	0	.31	0	.88	0	.25
Dec.	0	.54	0	.41	0	.36	0	.31	0	.22
Yearly	13.33	13.06	13.60	12.06	14.55	12.62		12.95	20.26	16.56

Month	Hunt Ranch		Wills Ranch		Terrell Plant (E. P. N. G. Co.)		Oberkampf Ranch		Ward Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.			0.80	0.48	0.54	0.52	1.20	1.05	0.09	
Feb.			.45	.91	.27	.65	1.90	1.65	.48	1.00
Mar.			.90	.46	.19	.14	1.60	.88	1.73	.86
Apr.			3.60	1.80	3.98	2.16	3.40	2.00	2.08	1.50
May	3.70		0	1.69	.18	1.20	2.80	4.58	.39	2.25
June	1.75		1.62	2.03	1.65	2.90	2.80	3.65	1.58	1.44
July	.05		1.90	1.18	.68	.46	2.00	1.60	1.15	.76
Aug.	2.72		3.34	2.22	.54	.32	5.85	3.12		
Sept.	3.12		4.25	3.74	4.80	2.37	9.35	5.68		
Oct.	1.40		2.10	1.24	2.73	1.50	1.50	1.35		
Nov.	0		0	.24	0	.42	0	.35		
Dec.	0		0	.22	0	.32	0	.70		
Yearly			18.96	16.21	15.56	12.96	32.40	26.61		

Month	Cash Ranch		Prosser Ranch No. 3		Lausen Ranch		Ingram Ranch		Shumla Bend	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.50		0.90				0.80	0.95	0.75	0.54
Feb.	.70		.60				.52	.71	.64	.80
Mar.	.75	0.46	.70	0.35	0.95	0.55	.55	.46	.44	.32
Apr.	1.74	1.88	2.10	1.65	1.19	1.36	2.78	1.27	2.92	1.06
May	.61	2.08	.80	3.05	1.98	3.66	.94	1.68	.93	1.99
June	.62	1.09	1.50	1.30	1.69	1.06	1.14	1.90	1.43	1.82
July	0	.28	0	0	0	.40	0	.56	0	.28
Aug.	3.92	2.26	3.05	1.98	1.54	.97	1.40	.75	1.10	1.13
Sept.	4.32	2.84	1.90		2.36	2.14	2.44	2.58	1.64	1.74
Oct.	1.50	1.20	1.70	1.20	1.55			1.66	2.05	1.70
Nov.	0	.25	0	.10	0		0	.33	0	.40
Dec.			0	.21	0		T	.42	T	.37
Yearly			13.25					13.27	11.90	12.15

Month	Prosser Ranch No. 1		Continental Ranch		Martin King Ranch		Brotherton Ranch		P. W. Kelly Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.75		1.05		0.86	0.66	0.76	1.24	0.68	0.47
Feb.	1.00		.74		.92	.80	.99	1.04	.71	1.03
Mar.	.60	0.30	.90	0.50	.43	.21	.40	.26	.74	.67
Apr.	2.70	1.90	2.50	1.60	1.76	.91	2.27	1.06	2.13	1.17
May	1.00	2.68	1.35	2.78	.91	1.67	.65	1.29	2.69	2.52
June	1.50	1.32	1.85	1.76	1.56	1.66	1.85	2.51	3.06	2.83
July	0	0	.15	.32	.04	1.04	0	.18	0	0
Aug.	1.70	1.30	1.65	1.02	1.98	.88	2.17	1.43	1.93	1.39
Sept.	1.40	1.82	1.85	2.75	3.53	2.72	2.19	2.66	1.47	1.86
Oct.	2.00	1.55	2.10	1.50	2.70	2.31	2.86	1.92	2.75	1.71
Nov.	0	.10	0	.15	0	.40	0	.32	0	.12
Dec.	0	.15	0	.22	.04	.45	0	.14	0	.40
Yearly	12.65		14.14		14.73	13.71	14.14	14.05	16.16	14.17

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Haby Ranch		Comstock		Cow Creek Near Comstock		Goodenough Spring		Cow Creek Near Mouth	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.77	0.54	0.70	0.67	0.70		0.79	0.33	0.78	
Feb.	1.09	1.24	.83	.88	.58		.50	.57	.90	
Mar.	.46	.46	.54	.59	.30		.73	.22	.50	
Apr.	2.16	1.14	2.54	1.37	1.99	1.10	1.98	1.04		
May	.25	1.08	.55	1.98	.88	1.14	2.70	1.28		
June	3.70	3.16	1.39	2.30	1.37	1.80	1.62	2.54	1.20	1.68
July	0	0	.21	.89	.02	.02	0	.59	0	0
Aug.	2.70	1.53	2.19	1.63	1.70	1.16	1.94	.92	1.75	1.33
Sept.	2.49	2.52	4.34	2.10	2.63	2.14	2.70	3.21	2.18	1.94
Oct.	2.30	1.31	2.48	1.85	1.90	1.08	1.83	2.10	1.83	1.12
Nov.	0	.16	0	.52	0	.18	0	.33	0	.13
Dec.	0	.14	0	.74	0	.30	0	.39	0	.42
Yearly	15.92	13.28	15.77	15.52	12.07		14.79	13.52		

Month	Feely		Lock Store		W. E. Sawyer Ranch		Sub-Station 14		J. M. Bagget Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.00		0.40	0.63			0.96	1.08	0.76	0.68
Feb.	1.20		.73	1.30			1.43	1.07	1.25	1.34
Mar.	.75		.55	.68			1.42	.99	1.40	.41
Apr.	2.60	1.60	1.56	1.29			4.04	1.67	2.57	1.28
May	2.55	3.15	.78	1.97			4.97	2.97	2.85	4.00
June	3.60	2.90	.80	1.12			2.63	2.98	1.91	1.76
July	.39	.15		1.24	0.83		1.50	2.09	.01	.45
Aug.	1.80	1.40	3.45	1.32	2.49		5.34	1.79	2.81	2.13
Sept.	2.45	1.88	2.11	2.76	3.81		3.00	3.10	6.83	5.13
Oct.	2.20	1.30	1.32	1.00	1.65		1.58	2.27	2.37	1.59
Nov.	0	.15	0	.58	0		0	.89	T	.54
Dec.	0	.52	0	.32	0		0	1.18	0	.70
Yearly	18.45			14.21			26.87	22.08	22.76	20.01

Month	J. S. Pierce Ranch		L. D. Whitehead Ranch		Whitehead Brothers Ranch		Prosser Ranch No. 2		Bakers Crossing	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.			0.81				0.85		0.83	1.09
Feb.			.86				.70		1.85	1.25
Mar.			.72				.85	0.42	.65	.62
Apr.			6.65				1.90	1.40	1.27	.95
May			.60	3.60	1.18		.80	3.05	1.41	2.44
June			2.65	2.40	2.30		2.80	1.70	1.68	2.08
July	0.20		0	.56	.50		0	0	.42	1.05
Aug.	3.25		2.45	1.34	2.28		1.55	1.28	1.63	.96
Sept.	3.45		7.90	4.51	3.28		1.80		2.91	3.19
Oct.	2.70		1.60	1.33	1.90		1.90	1.40	2.16	1.40
Nov.	0		0	.03	.50		0	.05	0	.50
Dec.	0		0	.40	0		0	.15	T	.70
Yearly			24.24				13.15		14.81	16.23

Month	Allen Dunbar Ranch		Erekson Ranch		Vinegarone		Dolan Springs		H. K. Fawcett Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.90	0.90	0.80	1.09					0	0.84
Feb.	.70	1.45	.60	1.40			1.10		.90	.72
Mar.	.70	.69	.70	.63			.85		1.46	.84
Apr.	13.80	2.54	13.67	2.27			5.15		5.13	1.53
May	.90	2.77	.87	2.61	0.83		.80		.90	2.19
June	3.20	3.79	3.03	3.76	3.07		2.10		4.20	2.03
July	2.70	1.91	2.74	1.93	.03		.07		.70	.76
Aug.	3.30	1.95	2.57	1.38	3.95		4.76		4.60	1.70
Sept.	10.30	3.80	9.71	3.62	4.15		3.72		4.09	3.96
Oct.	2.30	2.66	2.00	2.38	1.88		2.10		2.20	2.17
Nov.	0	.65	0	.77	0		0		0	.60
Dec.	0	.65	0	.40	0		0		0	.39
Yearly	38.80	23.76	36.69	22.24					24.18	17.73

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Ed. Crane Ranch		Hinds "AT" Ranch		H. T. Miers Ranch Headquarters		H. T. Miers Ranch No. 2		A. A. Baker Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.82	0.91	0.89	0.66	0.62	0.86	0.88	0.68	0.65	0.40
Feb.	1.11	1.31	1.27	1.12	.81	1.46	.66	1.12	.35	.98
Mar.	.85	.66	.88	.48	.78	.68	.71	.56	.59	.54
Apr.	5.32	1.79	3.14	1.35	4.31	1.98	3.31	1.81	2.13	1.40
May	.83	2.69	.56	1.86	1.02	2.85	1.09	2.66	1.12	2.19
June	2.31	2.39	3.35	2.23	1.94	4.00	2.83	3.66	1.88	1.34
July	.11	1.36	.62	.77	1.95	1.51	.90	.79	.26	.13
Aug.	4.15	1.16	3.00	1.19	1.75	1.36	1.54	1.75	3.23	1.11
Sept.	2.25	3.04	2.40	2.57	2.12	3.08	3.16	4.16	3.06	3.24
Oct.	2.02	2.24	2.09	2.47	2.00	3.49	1.84	1.09	1.78	1.59
Nov.	0	.75	0	.52	0	.71	0	.28	0	.40
Dec.	0	.65	0	.58	T	.61	.02	.42	0	.38
Yearly	19.77	18.95	18.20	15.80	17.50	22.99	16.94	16.98	15.25	13.70

Month	Gillis Ranch		Pafford Crossing		Cliff Lowry Ranch		Lowry Ranch No. 2		Tuffy Whitehead Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.86	0.49	0.59	0.61	0.83	0.51	0.81		0.81	0.38
Feb.	1.04	1.26	1.20	.93	1.32	1.30	1.36		.87	1.02
Mar.	.56	.48	.25	.18	.63	.35	.56		.47	.30
Apr.	3.78	2.07	3.73	1.22	5.41	1.99	3.99		2.50	1.15
May	.63	2.24	.10	1.98	1.33	3.20	.92	2.50	.93	1.63
June	5.03	4.06	2.88	2.80	2.67	1.73	2.54	2.64	1.94	1.82
July	.38	.35	0	.85	.68	.31	.03	.02	.62	.34
Aug.	2.89	2.38	4.40	1.26	2.45	1.26	1.48	1.50	1.16	.68
Sept.	2.26	1.82	1.90	2.84	5.95	4.96	3.03	2.31	3.03	3.32
Oct.	2.10	1.50	1.50	2.20	1.86	1.37	1.86	1.14	1.73	1.42
Nov.	0	.22	0	.26	0	.42	0	.26	0	.34
Dec.	0	.38	0	.52	.04	.44	T	.50	.02	.37
Yearly	19.53	17.25	16.55	15.65	23.17	17.84	16.58		14.08	12.67

Month	Stewart Ranch		Devils Lake		Sellers Ranch		J. G. Brite Ranch		A. O. Baker Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.89	0.48	0.95	0.70	0.76	0.52	0.84	0.45	0.93	
Feb.	1.77	1.09	1.14	.88	.90	.83	1.42	1.36	.93	
Mar.	.17	.18	.27	.59	.47	.24	.44	.34	.35	
Apr.	5.11	1.62	4.59	1.68	2.45	1.25	4.12	1.89	6.05	
May	1.58	1.76	.89	1.92	1.30	1.67	2.10	3.03	.83	2.55
June	1.82	2.72	2.92	2.48	3.80	3.18	3.70	1.79	3.53	2.44
July	.30	1.21	0	.88	0	.66	0	.35	.02	.22
Aug.	1.06	.75		1.29	1.68	1.07	2.29	1.30	1.49	1.19
Sept.	3.08	3.44		2.18	1.36	1.81	1.36	3.53	2.55	2.12
Oct.	1.92	1.69	1.65	1.80	.10	1.57	1.82	1.11	1.68	1.10
Nov.	0	.41	0	.59	0	.29	0	.33	0	.23
Dec.	.03	.58	0	.76	0	.45	0	.37	0	.50
Yearly	17.73	15.93		15.75	12.72	13.54	17.59	15.85	18.36	

Month	Hutto Ranch No. 1		Hutto Ranch No. 2		Wardlaw Ranch		Amistad Dam		Below Amistad Dam Station	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.98	0.61	1.02	0.57	0.95	0.61	0.91	0.46	0.60	0.47
Feb.	.62	1.30	1.03	1.38	1.10	1.08	.74	1.12	.80	.75
Mar.	.45	.43	.62	.46	.37	.27	1.00	.52	.50	.31
Apr.	3.92	2.46	4.51	3.09	5.42	1.83	2.90	2.11	3.93	1.30
May	.98	1.34	1.24	2.27	2.28	2.28	3.45	3.06	2.48	2.06
June	2.69	1.62	4.21	2.13	3.04	2.34	2.35	1.42	1.96	2.10
July	0	.60	.01	.20	0	1.30	.03	.42	T	.77
Aug.	1.46	1.63	2.92	1.58	1.79	1.23	2.86	1.07	2.00	1.00
Sept.	4.90	6.07	1.89	7.19	1.89	3.18	2.84	4.57	2.64	2.51
Oct.	1.85	1.00	1.64	1.19	1.96	1.98	1.30	1.06	1.30	2.04
Nov.	0	.43	0	.19	0	.45	T	.26	0	.41
Dec.	.03	.53	.04	.47	0	.46	.03	.42	0	.36
Yearly	17.88	18.02	19.13	20.72	18.80	17.01	18.41	16.49	16.21	14.06

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Laughlin Air Force Base									
	1959	1960	1961	1962	1963	1964	1965	1966	Average	
Jan.	0.03	0.51	1.80	0.35	0.01	0.73	0.24	1.14	0.60	
Feb.	.44	2.18	.65	.29	2.23	.07	1.41	1.01	1.04	
Mar.	T	.66	.11	.32	.01	.57	.25	.51	.30	
Apr.	1.44	.45	.78	3.08	1.61	1.34	3.01	5.47	2.15	
May	3.58	.57	.30	.58	4.43	.86	1.90	2.16	1.80	
June	6.35	.35	8.54	2.27	1.30	.23	4.94	4.85	3.60	
July	1.64	2.37	5.21	.72	.35	.51	.42	T	1.40	
Aug.	.15	2.14	3.82	.12	T	3.33	1.17	2.07	1.60	
Sept.	1.56	2.47	.56	.90	1.16	13.40	2.85	3.32	3.28	
Oct.	6.11	4.11	3.09	2.08	.75	2.19	.95	1.11	2.55	
Nov.	.55	.36	.67	.68	.65	.11	1.58	T	.58	
Dec.	.82	1.88	.32	.48	.34	.20	1.51	.01	.63	
Yearly	22.67	18.05	25.85	11.87	12.84	23.54	20.23	21.65	19.53	

Month	Hodges Ranch		Maverick County Canal Headgate		Sultenfuss Ranch		Pinto Creek Station		Las Moras Creek	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.30	0.80	0.92	0.53	1.50	0.90	0.80	0.44	1.09	0.74
Feb.	1.40	1.46	1.26	1.10	1.70	2.14	1.55	.92	1.78	1.38
Mar.	1.05	.82	.52	.59			.55	.48	.37	.51
Apr.	8.55	2.36	4.62	1.84	8.15	5.05	3.35	1.73	2.16	1.68
May	2.59	2.92	3.48	2.33	1.70	2.45	2.85	2.06	2.04	2.36
June	2.95	3.96	1.94	2.35	2.40	3.45	2.75	3.42	1.82	3.49
July	T	1.25	0	1.61	0	.02	0	1.09	0	1.14
Aug.	2.55	2.37	1.01	1.30	3.39	1.72	1.45	.87	1.70	1.42
Sept.	4.22	4.29	2.68	2.88	8.70	6.90	2.95	3.05	5.39	3.80
Oct.	2.10	2.91	1.00	1.88	1.00	1.10	.55	2.08	.36	2.16
Nov.	T	.81	0	.59	0	.18	0	.59	0	1.05
Dec.	T	.72	0	.61	0	1.30	0	.63	.01	.76
Yearly	26.71	24.67	17.43	17.61			16.80	17.36	16.72	20.49

Month	Wipff Ranch		Lateral No. 2 Spill		Normandy		Lateral No. 12 Headgate		Lateral No. 15 Spill	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.00	0.53	1.05	0.58	1.24	0.57	0.90	0.48	0.94	0.48
Feb.	1.85	1.12	1.28	1.00	1.05	.88	.68	.71	.68	.77
Mar.	.25	.51	.50	.51	.89	.70	.45	.45	.50	.29
Apr.	2.00	1.84	1.70	1.96	1.41	2.00	1.80	2.02	2.55	1.84
May	.40	1.94	1.55	2.64	1.70	2.68	.95	2.68	1.95	2.73
June	1.40	2.17	.90	1.82	.79	1.66	1.50	1.54	.95	1.26
July	0	1.67	0	1.91	0	2.00	0	1.57	0	1.64
Aug.	1.70	1.36	5.00	1.85	6.99	1.89	3.50	1.16	3.25	1.15
Sept.	2.60	2.38	3.85	2.46	5.22	2.72	3.95	2.50	5.35	2.00
Oct.	0	1.50	.10	1.81	.28	1.73	.10	1.92	.05	2.26
Nov.	0	.86	0	.90	0	.78	0	.54	0	.45
Dec.	0	.69	T	.65	.03	.83	T	.70	T	.72
Yearly	11.20	16.57	15.93	18.09	19.60	18.44	13.83	16.27	16.22	15.59

Month	Maverick Power Plant		Cooper Ranch		Coal Mine		Elm Creek Station		Chittim Ranch	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.33	0.64	1.00	0.52	0.85	0.48	0.85	0.37	0.95	0.39
Feb.	.96	.81	1.00	.80	.87	.88	.73	.70	1.20	.78
Mar.	.99	.78	.70	.35	.71	.30	.50	.28	.55	.28
Apr.	3.05	2.04	3.50	2.11	5.45	2.11	5.00	1.95	3.70	2.01
May	1.96	2.72	1.50	2.32	1.91	2.68	3.20	3.06	1.95	3.08
June	1.40	2.00	.70	1.54	1.02	1.39	.45	.97	.90	.89
July	0	1.28	0	2.39	0	2.79	0	2.39	0	2.24
Aug.	3.11	1.51	4.40	1.36	4.82	1.32	4.55	1.33	3.40	1.12
Sept.	5.66	2.75	3.90	2.75	4.90	3.22	3.20	2.60	4.15	3.21
Oct.	.30	2.30	.10	2.03	.18	2.36	.15	2.53	.15	2.62
Nov.	0	.61	0	.50	0	.42	0	.45	0	.42
Dec.	.08	.69	0	.66	0	.54	T	.69	T	.69
Yearly	18.84	18.13	16.80	17.33	20.71	18.49	18.63	17.32	16.95	17.73

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Eagle Pass		Cañon Diablo		Rosita Creek Siphon		Weyrich Farm		Trees Farm	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.93	0.54	0.65	0.45	0.80	0.36	1.00	0.38	0.91	0.36
Feb.	1.33	.91	1.25	.81	1.45	.90	.95	1.10	1.62	.91
Mar.	1.05	.87	.40	.80	.15	.31	.10	.40	.66	.33
Apr.	2.95	1.87	6.00	2.44	5.50	2.11	7.25	2.86	4.06	1.81
May	4.65	5.53	4.55	6.10	3.05	2.78	2.85	4.40	4.26	2.69
June	1.12	.49	.50	.17	.70	1.02	1.10	.42	1.77	1.00
July	.01	.98	0	.24	0	2.18	0	.38	0	2.04
Aug.	3.98	2.08	3.20	1.58	1.70	.72	.30	.31	2.98	.95
Sept.	4.46	6.39	5.50	5.72	2.90	2.87	4.20	3.68	5.27	2.39
Oct.	.43	.86	.10	.52	0	2.27	.40	.62	.21	2.96
Nov.	0	.43	0	.49	0	.59	0	.64	0	.47
Dec.	.06	1.27	T	.97	0	.74	0	.74	0	.69
Yearly	20.97	22.22	22.15	20.29	16.25	16.85	18.15	15.93	21.74	16.60

Month	Rosita Creek Station		Farias Ranch		Indio Ranch		El Indio		Van Dalsem Farm	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.75	0.32	0.98	0.42	1.20	0.49	1.40	0.77	0.65	0.38
Feb.	.95	.72	1.07	1.25	1.04	.98	1.23	.94	.50	1.05
Mar.	.60	.31	.61	.32	1.22	.37	.75	.51	1.38	.47
Apr.	11.20	2.48	6.97	2.60	9.97	2.89	7.45	1.72	6.60	2.60
May	3.75	2.50	3.06	3.23	5.56	2.74	5.36	3.36	4.55	2.87
June	.55	1.03	.81	1.73	.34	1.30	.54	1.55	.45	1.44
July	0	1.09	0	2.61	0	2.25	0	1.04	0	1.49
Aug.	2.70	1.05	1.73	1.27	2.33	1.27	1.05	1.89	1.10	.76
Sept.	6.25	2.72	4.49	3.83	3.66	4.06	4.44	3.10	4.40	3.32
Oct.	T	2.49	.25	2.57	.21	2.29	.20	1.68	.15	2.23
Nov.	0	.52	0	.64	0	.83	0	.57	0	.54
Dec.	.02	.69	0	.95	.02	.76	0	.67	T	.78
Yearly	26.77	15.92	19.97	21.42	25.55	20.23	22.42	17.80	19.78	17.93

Month	Wuensche Farm		Keisling Farm		Cuervo Creek Station		Apache Ranch		Laredo Water Plant	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.85	0.61	0.85	0.41	0.83	0.63	0.60	0.82	0.70	0.80
Feb.	.65	1.12	.65	1.08	.65	.78	T	1.07	.46	.78
Mar.	3.11	.65	3.31	.73	2.95	.42	0	.10	.06	.57
Apr.	6.22	1.96	5.72	2.50	4.70	1.91	3.95	1.51	.36	1.07
May	4.72	2.80	6.09	2.82	6.60	2.44	7.00	2.40	7.11	2.41
June	.71	1.31	1.16	1.37	.40	1.26	T	1.22	2.04	1.99
July	0	1.19	0	1.41	0	1.27	.50	1.57	0	1.18
Aug.	.77	1.16	.92	.89	1.85	1.25	T	1.91	2.55	1.47
Sept.	4.54	3.23	4.58	2.61	6.55	3.21	2.20	3.31	5.61	2.85
Oct.	.20	1.87	.21	2.02	.10	2.03	.40	2.50	.03	1.52
Nov.	0	.64	0	.48	0	.69	0	.84	0	.85
Dec.	.02	.63	.04	1.08	T	.63	0	.97	T	.94
Yearly	21.79	17.17	23.53	17.40	24.63	16.52	14.65	18.22	18.92	16.43

Month	Fort McIntosh (Laredo)		Los Issuros Ranch				Corralitos Ranch		Huisache Ranch	
	1966	Average	1964	1965	1966	Average	1966	Average	1966	Average
Jan.	0.99	0.73	1.00	0	2.25	1.08	1.02	0.66	1.00	0.83
Feb.	.64	.85	.85	1.00	2.48	1.44	.80	.65	.77	.84
Mar.	.08	.71	.38	0	.40	.26	.10	.22	.30	.37
Apr.	.72	1.28	0	.30	.80	.37	2.80	1.07	5.60	1.24
May	6.85	2.61	0	2.38	6.25	2.88	6.28	1.58	10.37	2.26
June	3.88	2.08	1.40	1.00	2.87	1.76	2.45	2.25	.60	2.07
July	.10	1.41	1.50	0	.20	.57	0	.62	0	.97
Aug.	4.85	1.75	1.50	.72	2.38	1.53	1.06	1.46	1.83	1.29
Sept.	5.31	2.73	9.00	1.38	2.38	4.25	2.87	2.19	1.60	2.32
Oct.	.60	1.62	1.75	1.25	.38	1.13	.20	1.55	T	2.00
Nov.	0	1.15	0	.88	0	.29	0	.75	0	.81
Dec.	T	.89	0	4.05	0	1.35	0	.56	0	.80
Yearly	24.02	17.81	17.38	12.96	20.39	16.91	17.58	13.56	22.07	15.80

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Zapata Water Plant		El Peyote Ranch		Arroyo Tigre Chiquito		Falcon Dam		Roma (International Bridge)	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.17	0.91	2.10		1.75	0.96	2.06	0.84	2.10	0.92
Feb.	.77	.72	1.00		1.20	.88	1.70	.79	2.04	1.02
Mar.	.35	.46	.10		.35	.36	.31	.81	0	.82
Apr.	5.78	1.66	3.45		3.30	1.01	2.63	1.22	3.71	1.37
May	10.87	3.08	8.35		7.00	2.55	7.97	2.62	7.73	2.09
June	1.06	1.52	5.20		5.50	2.06	4.68	2.54	3.08	1.98
July	0	.88	2.00		.30	.78	.61	.65	0	.77
Aug.	2.76	1.40	1.35		7.41	2.05	7.86	2.24	1.45	2.04
Sept.	.81	2.81	2.10		.30	3.12	.50	3.01	0	3.57
Oct.	0	1.47	.75		.35	2.27	.51	2.43	1.75	2.37
Nov.	0	.98	0		0	1.20	0	1.14	0	.76
Dec.	0	.70	0		0	.69	0	.71	0	.58
Yearly	24.57	16.59	26.40		27.46	17.93	28.63	19.00	21.86	18.29

Month	Garciasville		Los Ebanos		La Joya		HCWCID #6, Goodwin Pump No. 4B		HCWCID #6, Goodwin Pump No. 3	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.62	0.94	2.15	1.20	1.90	1.21	2.28	0.97	2.19	1.12
Feb.	1.15	.99	1.12	.81	1.30	1.00	.83	.97	1.02	1.14
Mar.	1.12	.46	.66	.50	.25	.42	.79	.58	.75	.63
Apr.	1.80	1.00	4.50	1.80	1.40	1.03	2.11	1.18	2.72	1.34
May	6.63	2.08	4.95	2.02	3.76	2.19	6.09	2.05	5.88	2.25
June	6.09	1.89	5.70	1.95	13.40	2.64	6.33	2.05	9.87	1.97
July	1.77	.78	.72	.36	.22	.40	.66	.52	.29	.46
Aug.	.15	1.13	3.10	1.54	.46	1.35	.33	1.05	1.21	1.23
Sept.	.12	3.18	0	2.88	.02	2.45	0	2.47	.20	2.34
Oct.	3.02	2.19	3.32	2.04	4.02	2.06	5.85	2.99	8.33	3.23
Nov.	0	1.13	0	.94	0	1.11	0	1.06	0	.92
Dec.	0	.88	.04	.83	0	1.17	0	1.09	0	1.21
Yearly	23.47	16.65	26.26	16.87	26.73	17.03	25.27	16.98	32.46	17.84

Month	HCWCID #6, Goodwin Pump No. 5		HCWCID #6, Goodwin Pump No. 3A		HCWCID #6, Goodwin Pump No. 4		Penitas (Edinburg Pumping Plant)		New Mission Pumping Plant	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.52	1.09	1.36	0.92	2.22	1.46	2.10	1.27	2.41	0.61
Feb.	.87	1.03	1.10	1.14	.85	1.12	1.79	1.12	1.20	.77
Mar.	.55	.64	.67	.65	.62	.54	.61	.55	1.35	.63
Apr.	1.34	1.30	4.33	1.64	3.67	1.27	2.44	.94	5.29	1.42
May	5.39	2.82	4.88	1.97	7.23	2.56	4.27	2.20	5.78	3.56
June	7.58	2.05	8.76	2.43	7.45	2.39	14.60	2.79	11.92	3.16
July	.40	.51	0	.49	.07	.47	.12	.54	0	.58
Aug.	2.10	1.57	2.93	1.05	1.78	.80	1.00	.95	2.89	1.28
Sept.	0	2.91	.30	2.57	0	2.96	.05	2.47	0	2.60
Oct.	5.07	2.90	7.36	3.15	8.78	3.46	5.90	3.02	8.37	2.31
Nov.	0	1.05	0	1.01	0	1.00	0	1.04	0	.88
Dec.	0	1.21	0	1.18	0	1.42	0	1.38	0	1.44
Yearly	25.82	19.08	31.69	18.20	32.67	19.45	32.88	18.27	39.21	19.24

Month	O. C. Dale Farm		HCWCID #15 (Edinburg Office)		Edinburg Filtration Plant		La Feria Pumping Plant		La Feria Materials Yard	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.70	1.29	2.25	1.16	2.39	1.23	4.30	1.15	2.97	1.03
Feb.	1.15	1.17	.73	1.01	.99	1.09	1.67	1.52	.33	1.19
Mar.	1.39	.68	.58	.63	.88	.74	.87	.69	.92	.54
Apr.	4.79	1.87	2.35	1.53	2.58	1.67	2.27	2.06	1.51	1.65
May	4.35	1.98	6.29	2.02	6.66	2.16	12.38	3.42	7.95	4.23
June	9.56	2.61	5.47	2.30	6.67	2.47	6.40	2.81	5.40	2.98
July	.90	.84	.16	.72	.11	.66	1.65	1.76	.70	1.44
Aug.	1.72	1.31	.85	1.32	.19	1.03	.70	2.35	0	2.27
Sept.	.28	2.67	.22	2.66	.10	2.44	.50	5.40	1.10	3.19
Oct.	9.90	3.38	6.75	2.49	4.43	2.51	6.80	3.94	5.88	3.08
Nov.	.06	1.31	0	1.14	.04	1.26	0	1.98	0	1.81
Dec.	.03	1.27	0	1.14	0	1.26	0	1.75	0	2.91
Yearly	36.83	20.38	25.65	18.12	25.04	18.52	37.54	28.83	26.76	26.32

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN THE UNITED STATES
In Inches

Month	CCWCID #19 (Adams Gardens)		San Benito Pump		Whipple Farm		⊕ CCWCID #11 (Bayview Dist. Office)		Los Fresnos Pumping Plant	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	3.22	0.82	3.49	1.18	4.37	1.28	4.38	1.21		1.05
Feb.	.95	1.10	.91	.92	.98	1.81	1.02	1.63	0.50	1.65
Mar.	.95	.52	.24	.85	.55	.62	.50	.84	0	.45
Apr.	2.63	1.55	1.60	1.33	1.50	2.09	1.41	1.88	1.20	1.90
May	8.18	2.51	6.86	2.42	7.45	2.82	7.44	2.36	7.75	2.34
June	4.45	2.38	2.56	2.19	4.15	2.86	4.63	2.12	6.30	3.66
July	.79	.80	2.51	1.48	2.41	1.73	1.72	1.21	1.30	1.55
Aug.	.44	1.88	1.74	1.86	1.75	2.13	2.29	2.55	.60	1.64
Sept.	.91	3.15	.20	3.64	1.25	5.12	2.60	4.58	1.90	5.10
Oct.	5.73	2.63	6.07	2.27	8.10	3.26	4.63	2.21	8.90	4.04
Nov.	0	1.42	0	.97	0	1.63	0	1.44	0	1.78
Dec.	.21	1.19	0	1.39	1.25	1.74	1.09	1.65	.63	1.53
Yearly	28.46	19.95	26.18	20.50	33.76	27.09	31.71	23.68		26.69

⊕ Average of 18 gages

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Tabulated below, in approximate downstream order, are monthly records of Mexican rainfall stations with averages for their periods of record. For location, elevation, period of record, type of gage in use, watershed subdivision in which the station is located, and the observer, see alphabetical listing of these stations shown on pages 141 through 145 in this bulletin. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the office of the Mexican Section.

Detailed listings of the months and years for which records are available through 1956 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 22, and 26.

Month	Juárez, Chihuahua		Zaragoza, Chihuahua		Garita Km. 28, Chihuahua		Samalayuca, Chihuahua		San Agustín, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.55	0.40	0.39	0.40	0	0.38	0.08	0.40	0.24	0.43
Feb.	.35	.43	.39	.43	0	.32	.16	.43	.16	.29
Mar.	T	.39	.08	.55	0	.26	.16	.38	.20	.38
Apr.	1.34	.34	1.57	.20	.87	.11	.71	.14	.98	.18
May	.16	.36	.28	.16	.08	.11	.08	.14	.04	.26
June	3.70	.67	5.28	.81	3.54	.69	3.11	.84	2.24	.70
July	1.06	1.24	T	1.32	.04	1.17	1.22	1.21	.12	1.26
Aug.	3.15	1.50	1.97	.91	6.46	1.64	3.98	1.71	3.35	1.11
Sept.	1.77	1.34	.91	1.97	1.77	1.78	.83	1.92	1.26	1.34
Oct.	T	1.01	.04	.46	.08	.77	.24	.61	T	.67
Nov.	.08	.50	T	.27	T	.22	T	.28	0	.20
Dec.	.16	.54	.20	.54	T	.49	0	.46	.08	.49
Yearly	12.32	8.72	11.11	8.02	12.84	7.93	10.57	8.52	8.67	7.31

Month	Guadalupe, Chihuahua		Tinajas, Chihuahua		Praxedis G. Guerrero, Chihuahua		San Antonio, Chihuahua		Porvenir, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.20	0.35	0.16	0.27	0.16	0.34	0.24	0.35	0.12	0.36
Feb.	.16	.36	.16	.27	0	.30	.08	.24	.16	.33
Mar.	.39	.49	.39	.32	.71	.38	.16	.26	.20	.28
Apr.	.31	.08	.31	.08	.35	.08	.28	.06	.55	.12
May	.47	.19	.35	.26	.20	.22	.20	.17	.35	.53
June	4.80	.76	3.54	.68	4.41	.84	4.92	1.10	5.39	.81
July	.08	.98	.59	1.40	.55	1.31	1.06	2.00	.47	1.42
Aug.	5.20	1.35	4.33	1.63	2.36	1.13	5.75	2.22	4.41	1.69
Sept.	1.14	1.21	2.20	1.43	.35	1.00	2.20	1.46	1.65	1.11
Oct.	.24	1.12	.55	.90	.28	1.06	.59	.99	.31	1.03
Nov.	T	.27	0	.28	.04	.32	0	.46	0	.41
Dec.	.16	.29	0	.29	0	.34	0	.46	0	.36
Yearly	13.15	7.45	12.58	7.81	9.41	7.32	15.48	9.77	13.61	8.45

Month	Vado de Cedillos, Chihuahua		Los Barriles, Chihuahua		Banderas, Chihuahua					
	1966	Average	1966	Average	1963	1964	1965	1966	Average	
Jan.	0.16	0.26	0.43	0.62	0.08	T	0	0.20	0.07	
Feb.	.24	.21	.20	.30	.08	0	.31	0	.10	
Mar.	.39	.14	.24	.16	0	.47	0	.51	.24	
Apr.	.47	.13	.94	.20	.08	.04	0	.08	.05	
May	.20	.39	.94	.42	0	.39	.04	.35	.20	
June	3.46	1.05	5.47	1.16	.20	.12	.39	2.87	.90	
July	.43	1.50	2.24	1.83	.87	1.34	.04	.94	.80	
Aug.	5.39	1.90	5.75	2.58	2.64	1.73	1.38	7.36	3.28	
Sept.	1.93	1.19	4.41	2.22	1.57	1.14	1.77	2.32	1.70	
Oct.	.43	1.18	1.02	1.36	2.28	.20	0	.43	.73	
Nov.	0	.25	T	.59	.20	0	.39	0	.15	
Dec.	T	.40	0	.47	.24	.16	.31	0	.18	
Yearly	13.10	8.60	21.64	11.91	8.24	5.59	4.63	15.06	8.40	

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Luis L. León, Chihuahua		Félix U. Gómez (Los Lamentos), Chihuahua		El Cuarenta, Chihuahua			El Cuervo, Chihuahua		
	1966	Average	1966	Average	1965	1966	Average	1963	1964	1965
Jan.	0.16	0.37	0.20	0.35	0.24	0.08	0.22		0	0.20
Feb.	.04	.17	.08	.29	.51	.04	.27		0	.12
Mar.	.35	.16	T	.22	T	.12	.31	0.24	.24	T
Apr.	.59	.17	.98	.20	T	.47	.08	T	T	T
May	.16	.33	.59	.17	.63	.08	.18	1.18	.55	T
June	3.98	1.25	2.01	.78	.55	3.39	.79	1.50	2.01	.47
July	.94	1.55	.51	2.33	.08	.04	.97	1.10	.47	1.34
Aug.	6.61	2.07	2.87	2.26	.39	4.33	2.14	2.91	.87	1.26
Sept.	1.54	1.21	1.26	1.44	1.57	1.26	1.68	1.42	2.72	2.32
Oct.	.35	1.21	.91	1.47	T	1.10	.66	.91	.24	0
Nov.	0	.43	0	.22	T	.04	.31	.08	T	T
Dec.	0	.36	0	.36	1.65	.08	.42	T	T	.35
Yearly	14.72	9.28	9.41	10.09	5.62	11.03	8.03		7.10	6.06

Month	El Cuervo, Chihuahua		El Llano, Chihuahua		Pichachic, Chihuahua					
	1966	Average	1966	Average	1963	1964	1965	1966	Average	
Jan.	0	0.36	0.08	0.24		0.08	0.20	0.71	0.33	
Feb.	T	.25	.04	.12		.16	1.26	2.05	1.16	
Mar.	T	.12	.12	.06		.43	.28	.20	.30	
Apr.	.79	.20	T	T		0	.79	.63	.47	
May	.63	.59	.04	.24	T	1.81	.31	1.10	.80	
June	3.11	1.77	2.68	1.56		2.24	.67	4.76	2.56	
July	.08	.75	.39	.41	6.02	7.40	6.93		6.78	
Aug.	8.19	3.31	4.88	3.48	7.80	6.85	5.04	8.54	7.06	
Sept.	2.24	2.18	3.07	2.78	5.12	3.94	3.07		4.04	
Oct.	2.60	.94	2.01	1.00	2.17	.04	0		.74	
Nov.	0	.02	0	.02	1.54	T	.08		.54	
Dec.	T	.09	0	.40	1.34	.59	2.83		1.59	
Yearly	17.64	10.58	13.31	10.31		23.54	21.46		26.37	

Month	Carichic, Chihuahua		Siquíricbic, Chihuahua		El Vergel, Chihuahua		Balleza, Chihuahua		El Sitio, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.20	0.28	0.28	1.24	3.23	1.91	0.63	0.38	0	0.32
Feb.	.12	.19	.79	.38	1.46	.72	1.06	.31	.63	.33
Mar.	0	.07	.16	.30	.12	.61	.08	.10	0	.05
Apr.	T	T	.16	.18	.16	.38	.71	.21	.08	.22
May		.12	.47	.25	1.81	.78	.59	.22	2.60	.61
June	1.30	1.30	3.39	1.74	4.25	2.78	3.90	1.48	6.73	2.09
July	9.92	5.86	5.04	5.13	7.32	6.56	3.35	4.39	4.65	3.98
Aug.	11.34	4.65	7.95	5.65	10.79	6.97	17.99	4.81	9.17	5.04
Sept.	5.24	2.85	4.37	3.06	6.22	5.17	4.57	3.37	1.89	3.50
Oct.		.60	1.65	1.20	.94	1.72	2.60	.85	.31	.87
Nov.	.39	.28	0	.26	.20	.42	.28	.50	1.42	.42
Dec.	.16	.55	T	1.03	.31	1.86	.16	.55	0	.42
Yearly		16.75	24.26	20.42	36.81	29.88	35.92	17.17	27.48	17.85

Month	La Boquilla, Chihuahua		Ojo Caliente, Chihuahua		San Antonio, Durango		Villa Coronado, Chihuahua			
	1966	Average	1966	Average	1966	Average	1964	1965	1966	Average
Jan.	0.04	0.31	0.04	0.20	0.63	0.35		0.24	0.79	0.52
Feb.	.20	.14	.04	.12	.16	.08		.20	T	.10
Mar.	.04	.14	0	.12	.16	.05		0	0	0
Apr.	T	.17	.55	.16	.04	.24		0	.24	.12
May	1.46	.56	1.57	.57	1.61	.57		T	1.97	.98
June	3.27	1.41	3.39	1.58	1.73	1.85		.79	.39	.59
July	2.20	2.86	1.93	3.08	4.33	4.17		1.10	5.71	3.40
Aug.	5.75	2.93	5.35	2.61	7.13	3.71	4.33	2.83	5.79	4.32
Sept.	4.57	2.90	3.78	2.47	5.47	3.86	5.55	1.38	6.69	4.54
Oct.	1.10	.92	.71	1.24		1.04		T	2.72	1.36
Nov.	T	.33	1.02	.14		.19	T	1.34	0	.45
Dec.	T	.39	T	.27		.24	.24	.98	.43	.55
Yearly	18.63	13.06	18.38	12.56		16.35		8.86	24.73	16.93

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Santa Bárbara, Chihuahua				Valle Allende, Chihuahua		Escalón, Chihuahua		Jiménez, Chihuahua	
	1964	1965	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0	0.16	0.55	0.24	0.79	0.20	0.94	0.46	T	0.28
Feb.	T	1.06	.67	.58	.08	.02	.04	.16	T	.06
Mar.	.12	0	.04	.05	T	.02	T	.02	0	.05
Apr.	0	0	.16	.05	.08	.11	.47	.31	0	.14
May	1.02	0	3.70	1.57	2.56	.92	.59	.70	T	.47
June	2.05	.24	5.87	2.72	2.24	1.65	2.24	1.59	T	1.04
July	.98	3.46	2.44	2.29	3.70	3.13	1.57	1.95	T	3.00
Aug.	5.00	2.32	8.70	5.34	7.56	4.72	4.29	2.61	1.65	2.06
Sept.	4.80	7.48	4.49	5.59	3.94	3.27	2.95	3.02	5.04	2.56
Oct.	.31	0	1.57	.63	1.65	1.10	1.06	1.20	1.02	1.60
Nov.	0	.04	1.14	.39	.08	.07	0	.23	0	.15
Dec.	.39	1.81	.04	.75	.04	.36	.28	.23	T	.27
Yearly	14.67	16.57	29.37	20.20	22.72	15.57	14.43	12.48	7.71	11.68

Month	Parral, Chihuahua		Camargo, Chihuahua		Santa Rita, Chihuahua		Victoria, Chihuahua			
	1966	Average	1966	Average	1966	Average	1963	1964	1965	
Jan.	T	0.20	0	0.50	0.04	0.47		0.08	0.43	
Feb.	.08	.16	.04	.17	T	.23		0	.04	
Mar.	T	.10	0	.01		.13		.04	T	
Apr.	T	.17	.51	.16		.28		.24	T	
May	2.68	.47	1.22	.80		.63		1.26	2.72	
June	4.72	1.74	3.70	1.48		1.78	2.25	3.86	1.46	
July	3.54	3.97	.83	2.93		2.16	.43	1.89	1.26	
Aug.	9.41	4.21	3.86	2.79		1.96	2.17	1.26	2.83	
Sept.	6.18	4.17	5.75	2.77	2.72	2.14	2.88	2.76	.20	
Oct.	2.40	1.23	.59	1.14	.31	1.00	.59	T	T	
Nov.	1.26	.50	.63	.40	.16	.19	.08	T	.08	
Dec.	T	.38	T	.43	0	.52	.08	.28	.91	
Yearly	30.27	17.30	17.13	13.58		11.49		11.67	9.93	

Month	Victoria, Chihuahua		Tacubaya, Chihuahua						Rosetilla, Chihuahua	
	1966	Average	1962	1963	1964	1965	1966	Average	1966	Average
Jan.	0.12	0.21		0.08	0	0.24	0	0.08	0	0.45
Feb.	T	.01		.35	0	.63	T	.24	T	.11
Mar.	T	.01		0	0	T	0	0	0	.10
Apr.	.31	.18		.08	.12	0	1.26	.36	.98	.22
May	1.50	1.83		.67	1.42	.91	3.70	1.68	.98	.29
June	2.36	2.48		1.65	1.57	2.91	1.89	2.00	2.91	1.11
July	1.65	1.31	2.20	5.28	5.43	.08	1.73	2.94	.79	2.36
Aug.	8.19	3.61	1.14	2.44	2.13	1.26	3.94	2.18	7.95	2.55
Sept.	3.70	2.38	4.09	2.32	4.02	1.26	3.46	3.03	1.06	1.97
Oct.	.55	.28	1.65	.83	0	0	1.34	.76	1.02	.80
Nov.	0	.04	.08	0	0	.08	.20	.07	.12	.20
Dec.	0	.32	.55	.16	.87	1.10	.39	.61	T	.39
Yearly	18.38	12.66		13.86	15.56	8.47	17.91	13.95	15.81	10.55

Month	La Cieneguilla, Chihuahua						El Maguey, Chihuahua		Tres Hermanos, Chihuahua	
	1963	1964	1965	1966	Average		1966	Average	1966	Average
Jan.	0	0	T	T	T		0.08	0.34		0.28
Feb.	0	0	.24	.39	.16		.59	.17	T	.07
Mar.	T	0	T	0	T		0	.09	.04	.03
Apr.	T	0	0		0		0	.16	0	.04
May	.63	.51	T	.94	.52		3.94	.55	.94	.47
June	.39	1.30	2.05	9.49	3.31		6.61	1.97	4.96	2.26
July	4.57	3.82	2.32	1.85	3.14		2.09	3.72	T	3.72
Aug.	6.50	1.26	3.62	3.90	3.82		5.35	3.97	1.34	2.92
Sept.	4.45	2.80	2.87	2.17	3.07		4.13	3.54	1.02	1.76
Oct.	1.69	0	0	.47	.54		.24	.92	T	.83
Nov.	.08	0	T	.71	.20		.12	.17	.16	.23
Dec.	0	.79	1.10	0	.47		0	.39	0	.30
Yearly	18.31	10.48	12.20		15.23		23.15	15.99		12.91

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	San Lorenzo, Chihuahua		La Junta (Satevó), Chihuahua		Villalba, Chihuahua		Las Vírgenes, Chihuahua		Km. 135, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	T	0.26	0	0.18	0	0.36	T	0.30	0	0.07
Feb.	1.02	.19	.39	.22	.16	.12	.04	.08	T	.06
Mar.	T	0	0	0	0	.03	T	.03	0	T
Apr.	0	0	.04	.08	.39	.15	.83	.18	.04	.32
May	1.61	.27		.46	.71	.39	.39	.30	1.18	.62
June	2.76	2.07		1.30	3.86	1.00	2.01	1.04	3.54	1.56
July	5.59	3.68		3.90	2.28	3.27	.55	2.10	.31	1.44
Aug.	10.28	4.27		3.64	3.70	2.90	4.92	2.31	3.35	2.69
Sept.	2.76	3.26		2.77	2.68	2.50	2.28	1.87	1.26	2.61
Oct.	0	1.16		.94	.87	.99	.63	.77	.55	.60
Nov.	0	.49		.34	.24	.27	.47	.24	.12	.21
Dec.	T	.68		.38		.41	T	.38	0	.31
Yearly	24.02	16.33		14.21		12.39	12.12	9.60	10.35	10.49

Month	Km. 99, Chihuahua		Delicias, Chihuahua		Lázaro Cárdenas, Chihuahua		Meoqui, Chihuahua		Las Burras, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	T	0.06	T	0.37	0	0.32	0	0.20	0	0.28
Feb.	0	.16	T	.11	.12	.12	T	.09	.04	.13
Mar.	T	T	.04	.09	0	.01	.08	.02	0	.08
Apr.	.08	.11	.87	.22	.39	.33	1.65	.39	.24	.18
May	1.02	.63	1.02	.30	2.68	.64	1.26	.60	.47	.36
June	2.52	1.52	3.94	1.15	4.53	2.03	2.80	1.47	2.99	1.12
July	1.65	2.04	2.13	2.34	.63	1.99	.67	1.72	.79	2.40
Aug.	3.70	2.32	1.65	2.51	3.19	2.32	1.89	2.05	3.74	2.37
Sept.	3.27	2.45		2.00	1.30	2.43	1.02	1.34	1.57	2.02
Oct.	.63	.79	.63	.85	.55	.63	.63	.80	.51	.56
Nov.	.91	.30	.24	.26	.24	.28	T	.11	.08	.16
Dec.	.08	.55	.04	.41	.08	.26	T	.52	.12	.41
Yearly	13.86	10.93		10.61	13.71	11.36	10.00	9.31	10.55	10.07

Month	Cd. Guerrero, Chihuahua		La Junta, Chihuahua		Bachiniva, Chihuahua		Cuauhtémoc, Chihuahua		La Trasquila, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.16	0.63	0.24	1.11	0	0.48	0.04	0.29	0.04	0.17
Feb.	1.73	.40	1.57	.53	.24	.14	.24	.12	.31	.29
Mar.	.08	.19	.16	.31	0	.24	.04	.09	.08	.07
Apr.	.08	.19	.24	.21	0	.11	.31	.18	.04	.02
May	1.61	.26	.24	.20	.94	.15	4.49	.36	.71	.41
June	2.20	1.54	3.07	1.48	3.39	1.40	4.49	1.55	2.80	1.43
July	4.88	4.61	5.20	5.12	1.50	4.93	3.39	4.64	2.60	3.65
Aug.	9.06	5.28	4.41	4.76	6.61	4.75	7.99	4.18	2.87	3.08
Sept.	2.32	3.10	.75	2.37	2.68	2.52	2.95	2.73	1.18	3.61
Oct.	.87	1.19	.43	1.21	.63	1.16	.55	1.06	.71	.61
Nov.	.08	.48	T	.40	T	.30	.31	.24	0	.25
Dec.	.16	.73		.92	.12	.44	.04	.43	0	.21
Yearly	23.23	18.60		18.62	16.11	16.62	24.84	15.87	11.34	13.80

Month	Colonia Anáhuac, Chihuahua		Presa Chihuahua, Chihuahua		Chihuahua, Chihuahua		Lote No. 20, Chihuahua			
	1966	Average	1966	Average	1966	Average	1962	1963	1964	1965
Jan.	0.24	0.32	0.08	0.12	T	0.29		0.08	T	0.12
Feb.	.71	.23	.31	.07	.08	.19	0.04	0	0	
Mar.	T	.01	0	.02	T	.18	0	0	.08	
Apr.	.43	.12	.28	.11	1.02	.18	0	0	.04	
May	1.61	.54	2.28	.94	1.34	.37	0	.31	.63	
June	4.13	1.65	8.74	3.18	5.79	1.43	.04	1.81	2.52	
July	3.27	4.15	1.89	3.36	.71	3.32	4.72	2.28	1.73	1.54
Aug.	11.54	5.15	4.96	4.17	8.66	3.35	1.65	3.39		2.91
Sept.	2.56	3.64	1.18	2.98	1.38	2.81	2.68	2.05		2.20
Oct.	.87	.99	1.02	.98	.98	.84	1.81	2.64		0
Nov.	.24	.28	.04	.24	T	.43	.31	.79	0	.12
Dec.	T	.34	0	.50	T	.37	1.02	.87		.47
Yearly	25.60	17.42	20.78	16.67	19.96	13.76		14.22		

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Lote No. 20, Chihuahua		Majalca, Chihuahua						Planta Zootécnica, Chihuahua	
	1966	Average	1963	1964	1965	1966	Average		1966	Average
Jan.	0.39	0.15		0.20	0.16	0.39	0.25		0	0.31
Feb.		.01		T	.24	T	.08		.12	.09
Mar.		.03		T	0	.08	.03		T	.02
Apr.		.01		.20	.63	.55	.46		.71	.23
May		.31		.55	.16	3.23	1.31		.87	.39
June		1.46	0.71	1.61	1.81	7.76	2.97		6.10	1.62
July		2.57	3.62	6.38	5.24	1.42	4.16		.47	2.98
Aug.		2.65	10.12	2.52	5.67	1.69	5.00		6.18	3.78
Sept.		2.31	3.35	2.44	1.57	6.42	3.44		1.57	2.32
Oct.		1.48	3.03	.08	0	T	.78		.94	1.02
Nov.		.30	0	0	.04	.31	.09		.04	.30
Dec.		.79	.28	.16	.63	.04	.28		0	.45
Yearly		12.07		14.14	16.15	21.89	18.85		17.00	13.51

Month	San Antonio Sauz, Chihuahua		Los Ojos, Chihuahua		Los Pozos, Chihuahua		Villa Aldama, Chihuahua		La Campana, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0	0.22	0.16	0.54	0	0.40	0	0.31	T	0.33
Feb.	.08	.08	T	.17	.04	.20	T	.05	.12	.26
Mar.	T	.14	0	.08	0	.06	0	0	T	.08
Apr.	.83	.13	0	.23	2.05	.22	.31	.08	0	.11
May	1.57	.32	.55	.75	.83	.63	.98	.58	.43	.26
June	5.39	1.94	2.99	1.28	3.31	1.39	6.14	2.16	8.58	1.91
July	2.60	2.59	1.50	3.57	.87	2.30	.94	3.09	2.28	3.16
Aug.	6.77	3.01	2.87	2.60	3.74	2.34	4.02	2.58	5.04	3.18
Sept.	1.65	2.11	1.65	3.15	1.81	2.37	.87	3.12	1.42	3.25
Oct.	.87	.66	1.42	1.10	1.57	.94	1.18	.58	0	.98
Nov.	0	.23	0	.33	0	.46	0	.28	.04	.29
Dec.	0	.26	0	.24	0	.26	0	.42	0	.33
Yearly	19.76	11.69	11.14	14.04	14.22	11.57	14.44	13.25	17.91	14.14

Month	Las Choyas, Chihuahua		Cerros Prieros, Chihuahua						Presa El Granero, Chihuahua	
	1966	Average	1962	1963	1964	1965	1966	Average	1964	1965
Jan.	0	0.35		0.08	0	0.63	T	0.18		0.16
Feb.	.24	.32		.04	0	.31	T	.09		.35
Mar.	.04	.04		T	.04	0	T	.01		T
Apr.	.16	.19		T	.12	T	T	.03		T
May	0	.30		1.02	.63	T	.47	.53		.24
June	2.83	.97		1.02	1.73	T	3.46	1.55		1.26
July	.63	2.27		1.89	.63	.35	1.89	1.19		.43
Aug.	4.96	3.14		3.50	2.44	3.89	10.28	4.90		1.54
Sept.	.63	1.73		1.26	3.15	2.68	1.02	2.03		4.13
Oct.	.63	1.12	3.78	1.02	.24	0	1.77	1.36	0.31	0
Nov.	0	.25	.24	.71	0	T	0	.19	T	.12
Dec.	0	.28	.59	T	.04	1.02	0	.33	.83	.39
Yearly	10.12	10.96		10.54	9.02	8.38	18.89	12.39		8.62

Month	Presa El Granero, Chihuahua		El Antojo, Chihuahua						Maclovio Herrera, Chihuahua	
	1966	Average	1963	1964	1965	1966	Average		1966	Average
Jan.	T	0.08	0.04	0	0	0	0.01		0	0.33
Feb.	.04	.20	.12	0	.31	0	.11		.08	.15
Mar.	T	T	0	.04	0	0	.01		0	.16
Apr.	.55	.28	1.42	.04	0	.31	.44		T	.22
May	.31	.28	1.10	1.34	.55	.24	.81			.47
June	3.90	2.58	1.50	3.78	2.36	2.99	2.66			1.17
July	.16	.30	2.32	.55	.35	.79	1.00			2.34
Aug.	2.87	2.20	1.73	.83	2.36	5.04	2.49			2.31
Sept.	3.15	3.64	1.14	2.60	3.07	.67	1.87			2.87
Oct.	.39	.23	1.02	T	0	.51	.38			.71
Nov.	0	.04	.28	0	T	.08	.09			.19
Dec.	T	.41	T	.71	1.42	0	.53			.62
Yearly	11.37	10.24	10.67	9.89	10.42	10.63	10.40			11.54

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Parrita, Chihuahua		Maijoma, Chihuahua		Cuchillo Parado, Chihuahua		Coyame, Chihuahua		Las Varas, Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.		0.09	0	0.62	0	0.13	0.12	0.11	T	0.36
Feb.	0.08	.15	.12	.35	.08	.08	.43	.18	.67	.50
Mar.	T	.02	T	.05	T	.14	.35	.08	.12	.14
Apr.	1.81	.44	.24	.20	.08	.09	.59	.20	.43	.14
May	.63	.30	.31	.72	.55	.62	.83	.66	.28	.28
June	6.77	1.73	1.06	1.44	2.28	1.31	.94	1.18	2.32	.90
July	1.30	2.00	3.15	2.65	1.26	1.78	1.06	1.64	2.09	3.02
Aug.	5.39	2.75	5.98	3.33	3.27	2.22	1.02	1.60	6.54	3.71
Sept.	2.13	3.21	1.73	2.66	1.14	.88	.94	2.19	3.39	2.67
Oct.	1.10	1.06	1.57	1.15	1.14	.30	1.34	.76	1.50	1.40
Nov.	0	.25	0	.41	0	.25	.59	.18	0	.49
Dec.	0	.19	T	.39	0	.16	0	.20	0	.25
Yearly		12.19	14.16	13.97	9.80	7.96	8.21	8.99	17.34	13.86

Month	Gallego, Chihuahua		El Sueco, Chihuahua		El Nopal, Chihuahua		Tosisihua, Chihuahua		Ojinaga (IB&WC) Chihuahua	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0	0.25	0.08	0.48	0.28	0.28	0	0	0.12	0.48
Feb.	.24	.39	.51	.48	.08	.24	0	T	.12	.26
Mar.	.12	.11	.35	.23	.63	.14	0	T	.28	.08
Apr.	.16	.07	.47	.14	.16	.04	0	.13	T	.25
May	1.14	.21	.71	.10	1.34	.36	1.18	.43	.67	.42
June	3.82	.94	2.80	.69	5.24	1.48	1.54	.91	.91	1.24
July	2.05	2.17	.94	2.36	1.30	1.65	.51	.96	.91	1.15
Aug.	5.59	3.71	5.59	4.23	4.09	2.96	3.98	4.18	3.19	1.50
Sept.	2.83	2.24	3.23	2.43	2.20	2.17	2.20	1.87	1.18	1.15
Oct.	1.26	1.22	1.18	.97	1.42	.72	.39	.20	2.32	.91
Nov.	0	.29	0	.47	0	.35	0	.13	0	.35
Dec.	0	.24	T	.22	0	.15	0	.09	0	.30
Yearly	17.21	11.84	15.86	12.80	16.74	10.54	9.80	8.90	9.70	8.09

Month	Ojinaga (M. S. of Mexico), Chihuahua		Potrero del Llano, Chihuahua		Manuel Benavides, Chihuahua		Sierra Mojada, Coahuila		Mina La Borrada, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	T	0.34	T	0.06	0	0.08	1.50	0.57	0.75	0.25
Feb.	.31	.21	.02	.24	.12	.10	.20	.28	.35	.21
Mar.	.39	.16	0	T	.20	.04	.12	.28	.43	.20
Apr.	.12	.26	.12	.06	T	.24	.39	.28	.35	.27
May	.83	.56	.12	.30	.67	1.23	3.82	1.09	.71	1.25
June	1.34	.96	.35	1.67	.87	1.44	1.46	2.34	2.72	1.95
July	1.10	1.23	1.73	1.14	.67	1.82	.83	2.70	.04	.87
Aug.	4.65	1.44	3.19	2.32	5.39	2.07	4.88	2.73	5.87	1.80
Sept.	1.57	1.40	1.69	1.73	2.91	1.98	3.39	2.92	2.32	1.61
Oct.	2.28	.95	1.57	.56	1.65	.72		1.36	1.50	.85
Nov.	0	.38	0	.01	0	.14	0	.53	0	.24
Dec.	T	.41	0	.63	0	.30	.08	.62	0	.22
Yearly	12.59	8.30	8.79	8.72	12.48	10.16		15.70	15.04	9.72

T Trace

Month	Las Norias, Coahuila		Santa Rosa, Coahuila		I. D. 8, Coahuila		San Fernando, Coahuila		El Cedrito, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.43	0.55		1.03	0.79		0.79	0.24	0.87	0.24
Feb.	.91	.63		.87	1.41		.87	.67	1.02	.68
Mar.	.31	.31		.50	.36		.31	.13	0	0
Apr.	1.65	.82		.84	2.59		3.62	1.14	1.30	1.18
May	3.86	1.66	2.00	1.08	1.91		1.02	1.08	2.01	1.45
June	4.17	2.86		1.94	1.23		.83	.83	0	.74
July	1.46	2.26	0	1.72	.01		.59	.41	0	1.11
Aug.	6.42	2.32		.88	4.08		.94	1.48	.87	1.77
Sept.	3.54	2.65	4.00	2.25	2.77		6.77	3.41	2.91	2.47
Oct.	2.76	1.71	2.00	2.83	2.58		1.34	1.43	0	1.62
Nov.	T	.46	0	1.25	0	0.14	0	.12	0	.08
Dec.	T	.55	0	.50	0	.31	0	.37	0	.24
Yearly	25.51	16.78		15.69	17.73		17.08	11.31	8.98	11.58

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Hacienda San Miguel, Coahuila		San Gregorio, Coahuila		I. D. 12, Coahuila		Presa Amistad, Coahuila		Manantial Maris, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.79	0.22	0.39	0.16	0.82		0.94	0.27	0.79	0.28
Feb.	1.26	.49	.39	.60	1.08		1.02	.83	.63	.86
Mar.	.47	.10	.20	.06	1.44		1.06	.39	.59	.23
Apr.	2.36	1.27	1.26	1.20	2.95		5.43	2.41	3.86	1.95
May	2.20	1.76	.43	1.82	1.64		3.62	2.02	2.24	2.31
June	.94	2.97	1.18	1.61	2.05		1.97	1.31	2.52	1.46
July	.71	1.01	0	.05	.10		0.	.09	0	T
Aug.	1.22	1.14	5.79	2.28	2.88		2.68	1.13	2.09	1.11
Sept.	3.23	3.54	1.73	4.25	3.07		2.91	4.68	2.17	4.23
Oct.	1.14	2.13	1.97	1.34	1.54		1.50	1.17	1.34	1.14
Nov.	T	.29	0	.09	0	0.14	0	.16	0	.04
Dec.	0	.36	0	.12	0	.40	0	.11	0	.24
Yearly	14.32	15.28	13.34	13.58	17.57		21.13	14.57	16.23	18.85

Month	El Paisano, Coahuila		Presa Centenario, Coahuila		Cd. Acuña, Coahuila		Cd. Acuña Km. 22 SE, Coahuila		Presa Cabeceras, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.59	0.20	1.06	0.52	1.10	0.60		0.18	1.18	0.49
Feb.	.47	.82	1.97	1.22	1.50	.85	1.65	1.04	1.42	.81
Mar.	.51	.19	.12	.25	1.02	.77	T	.38	.47	.47
Apr.	2.05	1.29	5.12	2.27	5.28	1.59	4.72	2.67	5.31	2.40
May	1.18	1.79	1.22	2.14	2.83	2.61	3.11	5.02	2.72	2.93
June	2.17	2.10	2.05	2.57	2.05	2.70	1.89	2.02	2.83	1.36
July	0	.22	0	.38	T	.89	0	.13	0	.43
Aug.	3.31	1.39	4.17	2.44	3.70	1.46	2.91	1.17	1.81	1.02
Sept.	.98	4.42	2.68	7.51	1.10	3.34	1.77	5.07	2.13	8.01
Oct.	1.57	1.21	1.42	1.28	1.42	2.14	1.34	2.30	1.50	1.18
Nov.	0	.25	0	.84	0	.50	0	.88	0	.46
Dec.	0	.19	0	.58	.04	.53	0	.58	0	.46
Yearly	12.83	14.07	19.81	22.00	20.04	17.98		21.44	19.37	20.02

Month	Presa San Miguel, Coahuila		Palestina, Coahuila		Chupadero, Coahuila		Jiménez, Coahuila		El Remolino, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.02	0.51	1.14	0.97	0.87	0.32	1.10	0.69	1.22	0.43
Feb.	1.85	1.10	1.42	1.02	1.54	.99	1.50	1.00	.83	.68
Mar.	.35	.69	.39	.63	.63	.42	.55	.73	1.18	.46
Apr.	2.60	1.52	5.43	1.75	2.91	2.50	3.31	2.05	5.16	2.26
May	2.28	2.51	1.69	2.62	2.56	1.98	1.54	2.89	1.65	2.17
June	2.48	1.79	2.20	2.41	2.09	2.55	2.99	3.07	1.26	3.56
July	0	.17	0	1.74	0	.93	T	1.27	0	.86
Aug.	1.73	1.47	3.86	1.96	1.57	1.32	1.10	1.58	2.52	1.06
Sept.	1.89	5.44	2.17	3.09	2.48	3.87	4.65	2.89	6.93	4.55
Oct.	1.89	1.54	2.56	1.73	1.10	2.25	.51	2.11	.71	2.93
Nov.	0	.46	0	.67	0	.57	0	.75	0	.33
Dec.	0	.79	0	.86	0	.51	T	.71	0	.65
Yearly	16.09	17.99	20.86	19.45	15.75	18.41	17.25	19.74	21.46	19.96

Month	El Moral Km. 17, SW., Coahuila		El Moral, Coahuila		Piedras Negras, Coahuila		Piedras Negras, Km. 22 SW, Coahuila		Allende, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.14	0.25	1.10	0.70	0.98	0.65	1.18	0.49	0.98	0.58
Feb.	.94	.87	.67	.99	1.54	.93	1.38	.92	.91	1.15
Mar.	.79	.66	1.14	.92	1.61	.67	2.95	.91	.31	.35
Apr.	2.28	1.71	2.83	2.24	3.98	2.25	6.69	3.36	2.05	1.17
May	4.60	4.23	3.27	3.43	4.17	3.18	4.09	3.54	1.14	2.34
June	1.97	.85	.87	.76	1.42	1.57	1.50	.57	1.26	1.76
July	0	.11	0	.03	.04	2.26	0	.42		1.59
Aug.	3.15	1.03	4.49	2.18	3.23	2.01	3.23	1.65	9.84	2.43
Sept.	3.86	4.76	4.65	4.76	5.20	3.18	5.20	5.83	3.62	3.15
Oct.	.47	1.23	.20	.51	.47	2.75	.79	3.50	.71	1.84
Nov.	0	.41	0	.47	0	.64	0	.32	0	.44
Dec.	0	.66	0	.68	.04	.70	0	.85	0	.62
Yearly	19.20	16.77	19.22	17.67	22.68	20.79	27.01	22.36		17.42

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Villa Guerrero, Coahuila		Rancho San Diego, Coahuila		Rancho Mercedes, Coahuila		Villa Hidalgo, Coahuila		Colombia, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.57	0.47	0	0.07	0.75	0.15	1.65	0.81	0.43	0.16
Feb.	.24	.81	.31	.44	.47	.70	1.26	.95	.39	.67
Mar.	.94	.29	0	.12	.12	.42	.31	.44		.57
Apr.	3.82	1.70	4.57	1.36	6.02	2.35	5.79	1.50	3.39	1.39
May	7.52	2.86	5.98	3.10	8.90	3.07	4.29	2.63	6.46	4.58
June	0	1.68	0	1.84	.08	1.41	.79	1.44	1.18	.66
July	0	1.05	0	.57	0	.86	0	.83	0	.79
Aug.	2.36	1.10	2.52	1.52	.67	1.16	1.34	1.51	2.44	4.02
Sept.	7.13	4.70	5.04	3.59	2.64	1.96	7.60	2.73	8.46	4.56
Oct.	0	2.74	0	1.18	.47	1.09	.59	1.71	.39	.94
Nov.	0	.39	0	.41	0	.73	0	.93	T	.92
Dec.	0	.79	0	.51	0	.84	0	.78	0	.70
Yearly	23.58	18.58	18.42	14.71	20.12	14.74	23.62	16.26		19.96

Month	Rancho Los Vidrios, Tamaulipas		Nuevo Laredo (M. S. of Mexico), Tamps.		Nuevo Laredo (IB&WC), Tamps.		Escuela Preparatoria, Nuevo Laredo, Tamps.		Jarita, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.18	1.09	1.10	0.78	1.26	0.55	1.10		0.79	0.24
Feb.	.47	1.03	.83	.87	.94	.82	.87		.59	.66
Mar.	.39	.25	.04	.64	.04	.35	.08		.75	.87
Apr.	3.62	1.56	2.72	1.22	3.35	1.03	2.83		3.23	1.22
May	7.99	2.92	5.31	2.31	5.20	2.23	5.16	3.98	6.42	2.76
June	1.97	1.61	3.35	1.91	4.13	1.75	3.98	2.03	.79	1.19
July	0	1.23	.63	1.32	.20	1.00	.39	.57	0	.14
Aug.	2.56	1.56	5.55	1.41	5.51	1.67	5.31	3.52	4.17	1.84
Sept.	5.12	2.40	3.82	2.57	5.12	2.22	4.84	3.32	5.51	3.18
Oct.	.75	2.18	.12	1.38	.20	1.24	.20	.57	1.38	1.21
Nov.	T	1.01	0	.95	0	.94	0	.75	0	1.07
Dec.	0	.92	0	.94	T	.73	0	1.79	0	.79
Yearly	24.05	17.76	23.47	16.30	25.95	14.53	24.76		23.63	14.67

Month	Nuevo Laredo Km. 26 SSW, Tamps.		Nuevo Laredo Km. 50 SSW, Tamps.		San Ignacio, Tamaulipas		Rancho San Juan de la Palma, Tamps.		Santo Domingo, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.17	0.70	1.18	0.39	1.18	0.55	1.69	0.74	0.47	0.62
Feb.	.79	.72		.65	1.10	.89	.87	.95	.79	.66
Mar.	.39	.42	.20	.38	.39	.46	.08	.54	.55	.16
Apr.	3.23	1.92	3.70	1.31	5.51	1.90	8.94	1.77	2.05	.73
May	5.63	2.06	5.75	2.05	9.88	5.13	7.32	2.27	3.31	2.45
June	2.17	.89	3.94	1.53	.79	.63	.43	1.65	4.37	5.20
July	0	.43	0	.08	T	.25	T	.80	.67	2.94
Aug.	4.25	1.29	7.64	1.70	1.93	.94	2.64	1.45	6.65	3.41
Sept.	2.76	2.14	6.30	3.67	2.36	2.27	1.22	2.95	4.02	3.41
Oct.	.47	1.36	1.18	2.03	1.14	1.40	0	1.52	.51	1.86
Nov.	0	.83	0	.53	0	.50	T	1.06	0	.42
Dec.	0	.94	0	.92	0	1.10	T	.89	0	.76
Yearly	21.86	13.70		15.24	24.28	16.02	23.19	16.59	23.39	22.62

Month	La Babia, Coahuila		San Gerónimo, Coahuila		Múzquiz, Coahuila		El Treinta, Coahuila		Conchos, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.67	0.38	1.18	0.35	0.04	0.83	0.91	0.51	0	0.32
Feb.	.39	.16	.91	.50	.94	.56	.24	.22	.91	.61
Mar.	.08	.31	.20	.34	1.02	.94	.43	.41	.91	.24
Apr.	1.42	.66	4.21	1.39	1.81	1.08	1.81	1.50	6.85	1.89
May	2.48	1.71	3.56	2.77	5.55	3.94	2.09	2.21	4.61	2.55
June	1.93	2.08	2.28	3.04	2.68	2.89	3.03	2.59	2.76	1.61
July	0	1.48	.20	1.68		2.23	.31	.94	0	1.83
Aug.	1.26	1.10	5.20	3.11	3.07	2.52	2.56	1.72	3.03	1.90
Sept.	1.18	2.69	4.80	4.28	1.18	4.91	4.96	3.46	1.26	3.13
Oct.	.59	1.13	.79	2.58		2.20	.39	1.68		2.23
Nov.	0	.16	0	.23		1.16	0	.26		.61
Dec.	0	.27	.12	.38		1.02	0	.37	0	.55
Yearly	10.00	12.13	23.47	20.65		24.28	16.73	15.87		17.47

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Nueva Rosita, Coahuila		Sabinas, Coahuila		Villa Juárez, Coahuila		Cuatro Ciénegas, Coahuila		Ocampo, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.63	0.64	0.83	0.64	0.79	0.61	0.63	0.33	0.63	0.53
Feb.		.50	.39	.79	.63	.45	T	.34	.08	.11
Mar.	.16	.32	.55	.42	.39	.21	.08	.07	.24	.05
Apr.	3.15	1.27	2.28	1.24	5.04	1.22	.55	.30	2.83	.95
May	3.94	2.64	3.54	2.55	3.62	2.07	2.01	.84	1.30	1.18
June	1.81	2.11	2.36	2.09	2.17	1.07	.08	.62	.71	1.51
July	T	1.42		1.17	0	.79	2.80	.78	1.38	2.68
Aug.	4.13	1.80	4.72	2.27	.31	1.57	.63	.93	3.23	1.73
Sept.	1.54	2.69		3.43	6.06	3.18		1.45	1.89	2.49
Oct.	.43	1.67	.91	1.80	.87	1.81	0	.80	.08	1.32
Nov.	.04	.53	.08	.55	0	.50	0	.37	0	.18
Dec.		.67		.60	0	.41	.08	.43	.28	.49
Yearly		16.26		17.55	19.88	13.89		7.26	12.65	13.22

Month	San Buenaventura, Coahuila		Monclova, Coahuila		Progreso, Coahuila		Don Martín, Coahuila		Laguna de Salinillas, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.05	0.64	1.18	0.49	0.75	0.49	1.02	0.74	0.87	0.66
Feb.	.67	.49		.48	.79	.50	.71	.65	.75	.62
Mar.	1.97	.24	.91	.28	.79	.22	.24	.45	.31	.47
Apr.	5.79	.70	1.22	.58	3.46	1.25	4.33	1.22	3.11	1.01
May	6.73	1.54		1.53	4.33	2.37	5.28	2.27	7.56	2.51
June	1.10	1.49	1.06	1.23	.12	1.29	1.50	1.56	2.44	1.41
July	T	1.41	.28	1.43	0	.76	.08	.94	0	.69
Aug.	4.09	1.72	4.06	1.55	2.13	1.93	.55	1.88	1.34	2.42
Sept.	3.70	2.30	.59	2.86	1.57	2.81	5.94	2.85	3.39	2.90
Oct.		1.31	.55	1.21	.63	1.88	.63	1.67	1.18	1.73
Nov.	.20	.53	.16	.57	.20	.47	.04	.58	0	.56
Dec.		.63	.08	.55		.57	0	.69	0	.60
Yearly		13.00		12.76		14.54	20.32	15.50	20.95	15.58

Month	El Cuervo, Nuevo León		Lampazos, Nuevo León		Anáhuac, Nuevo León		La Gloria, Nuevo León		Bustamante, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.50	0.50	1.34	0.70	0.87	0.74	1.65	0.42	2.44	0.63
Feb.	.94	.57	.94	.96	.39	.61	2.24	.82	2.09	.71
Mar.	.98	1.67	.35	.23	.24	.51	.31	.19	1.18	.54
Apr.	3.50	1.34	1.18	1.28	3.62	1.14	3.43	1.39	2.91	1.30
May	8.07	4.72	11.26	2.88	9.45	2.58	11.81	3.14	5.16	1.77
June	1.30	.60	.94	2.16	1.97	1.40	2.36	1.73	3.78	2.60
July	0	0	.20	1.22	0	1.20	0	1.75	.67	.80
Aug.	2.52	1.59	1.18	1.34	1.97	1.98	3.15	1.65	3.66	2.24
Sept.	4.92	5.29	2.40	4.68	5.83	2.99	2.76	4.89	4.57	5.58
Oct.	0	.50	1.57	1.59	1.02	1.52	1.14	1.59	1.77	1.80
Nov.	0	.20	.08	.50	0	.56	0	.65	.55	.82
Dec.	0	.07	0	.56	0	.79	0	.87	0	.78
Yearly	23.73	17.05	21.44	18.10	25.36	16.02	28.85	19.09	28.78	19.57

Month	Sabinas Hidalgo, Nuevo León		Vallecillo, Nuevo León		Las Tortillas, Tamaulipas		Río Salado Ribereña, Tamaulipas		Aniego 166, Tamaulipas	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.09	0.57	1.02	0.42	1.38	0.43	1.22	0.61	1.77	0.86
Feb.	2.40	1.22	2.28	.96	1.89	1.00	.87	1.42	.59	1.44
Mar.	.75	.55	.63	.38	.71	.57	.39	.82	0	.80
Apr.	1.22	1.45	1.65	1.27	5.91	1.98	5.91	3.00	3.35	1.31
May	9.25	2.77	5.75	2.02	10.83	3.89	9.84	6.65	10.04	6.29
June	6.81	3.15	4.25	2.32	2.76	1.80	1.38	1.18	.71	.34
July	0	1.67	.12	.96	0	.70	T	.26	.20	.20
Aug.	5.12	1.95	1.42	1.14	2.01	.74	3.94	1.69	4.92	2.78
Sept.	2.32	7.47	4.25	4.41	2.36	3.51	1.14	2.61	2.36	3.82
Oct.	1.81	3.38	4.17	2.54	.79	1.17	1.61	2.05	.98	1.22
Nov.	.55	1.29	0	.67	0	.94	0	.73	0	.70
Dec.	0	.91	0	.82	0	1.13	0	1.68	0	1.09
Yearly	32.32	26.38	25.54	17.91	28.64	17.86	26.30	22.70	24.92	20.85

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	La Bandera, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Parás, Nuevo León		San Javier, Nuevo León		Cd. Mier Km. 8 SW, Tamaulipas	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.32	0.66	1.89	1.05	0.28	0.09	1.97	0.69	2.05	0.73
Feb.	1.10	.89	.87	.90	0	.26	.79	.96	.79	1.22
Mar.	.59	.81	.39	.55	1.57	.38	.91	.91	1.57	1.28
Apr.	4.92	1.59	3.23	1.35	.63	.62	4.53	1.75	4.61	1.49
May	10.35	4.87	7.95	2.33	.67	.93	11.30	5.04	9.84	4.88
June	3.27	2.84	4.72	2.34	1.73	1.38	7.80	3.47	3.74	2.32
July	.39	.39	.31	.69	4.49	.89	.47	.33	.55	.34
Aug.	6.42	2.16	7.20	1.57	.63	1.70	7.36	2.49	6.50	2.21
Sept.	2.72	3.56	.59	2.72	5.08	3.46	1.69	3.80	3.27	3.55
Oct.	.39	1.64	.24	2.45	0	2.92	.98	2.10	2.76	2.30
Nov.	0	.73	0	.85	0	.84	0	1.17	0	.69
Dec.	0	1.05	0	.65	0	.28	0	1.17	0	1.25
Yearly	32.47	21.19	27.39	17.45	15.08	13.75	37.80	23.88	35.68	22.26

Month	Cd. Mier, Tamaulipas		Miguel Alemán, Tamaulipas		Parras, Coahuila		General Cepeda, Coahuila		Reata, Coahuila	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.32	1.18	1.65	0.84	1.46	0.42	2.01	0.49	3.19	0.37
Feb.	1.02	1.31	1.77	1.36	.31	.38	.55	.48	.35	.25
Mar.	.43	.93	.39	.17	T	.18	.24	.33	.12	.13
Apr.	2.56	1.57	4.09	2.07	.31	.33	1.10	.43	1.10	.36
May	11.26	3.82	7.09	5.00	3.07	1.18	1.89	.89	5.31	.80
June	3.15	2.20	4.06	1.88	1.77	2.04	.94	2.15	.16	.82
July	.63	.37	.16	.91	.87	2.37	3.14	3.27	.87	.54
Aug.	3.82	1.74	1.73	1.21	4.33	2.04	4.17	2.86	1.89	1.65
Sept.	1.18	3.22	1.26	3.33	2.09	2.52	3.07	2.83		1.32
Oct.	.31	2.53	.79	1.38	.20	1.34	1.89	1.30	.08	.77
Nov.	0	1.11	0	1.17	0	.52	.08	.54	0	.46
Dec.	0	.85	0	1.26	.94	1.01	.79	.57	0	.35
Yearly	26.68	20.83	22.99	20.58	15.35	14.33	19.87	16.14		7.82

Month	San Antonio de las Alazanas, Coahuila		Saltillo, Coahuila		Ramos Arizpe, Coahuila		Hedionda Grande, Coahuila			
	1966	Average	1966	Average	1966	Average	1960	1963	1964	1965
Jan.	0.24	0.95	1.93	0.58	2.17	0.47	0.28	0		0.35
Feb.	.63	1.02	.51	.50	.08	.36	.39	0		.75
Mar.	.87	.39	.16	.35	.08	.26	0	0		0
Apr.	1.73	1.07	1.10	.70	1.02	.47		1.06	1.73	1.65
May	1.77	2.00	2.20	1.08	2.28	.87	.79	4.41	1.26	1.69
June	2.20	2.40	1.02	2.11	.67	1.06		1.02	1.30	1.46
July	4.09	3.17	3.39	2.63	2.13	1.37		4.25	.35	.79
Aug.	2.17	2.71	5.28	2.38	.67	1.35		1.69	0	1.65
Sept.	1.97	2.51	3.15	2.46	.94	1.74		2.72		
Oct.	1.18	2.40	1.50	1.27	.55	.77		2.05		
Nov.	.28	1.60	T	.86	0	.47		1.85		
Dec.	.47	1.23	.79	.65	.31	.55		.79		
Yearly	17.60	21.45	21.03	15.57	11.10	9.74		19.84		

Month	Hedionda Grande, Coahuila		Carbonera, Nuevo León						Icamole, Nuevo León	
	1966	Average	1960	1963	1965	1966	Average		1966	Average
Jan.	1.69	0.71	0	0	0.59	2.56	0.79		2.20	0.37
Feb.	1.34	.95	.28	.16	.87	1.77	1.19		.31	.32
Mar.	1.34	.35	0	.47	0	.91	.39		.08	.02
Apr.	.94	1.13	.24	.08	3.50	1.14	.98		.67	.28
May	1.02	2.38	.39	3.07	2.24	4.65	2.68		3.39	.74
June	3.07	1.66		.24	.91	2.09	1.43		.43	.78
July	.55	2.28		.59	2.48	6.14	2.71		.04	.50
Aug.	2.17	2.10		.24	2.60	3.62	2.73		.51	.66
Sept.	1.65	3.57		.94	2.60	3.15	3.68		.43	1.82
Oct.	1.46	2.55		.55	1.85	.98	2.05		.20	1.04
Nov.	0	1.25		.87	1.18	.71	1.16		T	.51
Dec.	.31	.68		2.52	3.15	.20	1.58		.24	.64
Yearly	15.54	19.61		9.73	21.97	27.92	21.37		8.50	7.68

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Mina, Nuevo León		La Popa, Nuevo León		Ciénega de Flores, Nuevo León		Topo Chico, Nuevo León		Higueras, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.68	0.50	2.60	0.54	3.23	1.24	1.10	0.40	1.10	0.68
Feb.	.47	.47	.67	.38	2.05	.90	.31	.61	.59	.55
Mar.	.39	.13	.16	.09	2.56	.92	.51	.52	.94	.56
Apr.	1.57	.48	.87	.68	4.25	1.47	1.26	.97	3.31	1.18
May	1.73	.62	4.61	1.23	7.09	2.50	6.46	1.15	3.78	1.88
June	1.34	1.28	0	.96	5.08	2.74	5.00	2.02	1.73	2.29
July	.39	.47	.39	.83	.63	1.80	0	1.07	.24	1.94
Aug.	T	.85	1.50	1.43	3.03	3.83	4.41	2.55	3.46	2.73
Sept.	.12	2.82	1.50	2.98	6.18	5.22	.47	3.92	2.17	4.47
Oct.	0	1.50	.31	1.02	1.97	2.75	2.76	2.42	.47	1.72
Nov.	0	.74	.55	.67	.91	1.06	0	.65		.78
Dec.	.24	.57	.20	.72	.12	1.07	0	.46		.67
Yearly	8.93	10.43	13.36	11.53	37.10	25.50	22.28	16.74		19.45

Month	Los Ramones, Nuevo León		Los Herrera (La Tablita), Nuevo León		Rinconada, Nuevo León		Santa Catarina, Nuevo León		Monterrey, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.65	0.63	1.42	0.60	0.91	0.25	1.54	0.71	1.10	0.63
Feb.	1.65	.78	.79	.74	0	.33	.87	.46	1.65	.65
Mar.	.75	.60	1.18	.62	T	.16	.55	.26	.94	.74
Apr.	4.17	1.89	1.30	1.39	T	.56	.94	.72	2.36	1.18
May	6.26	2.45	5.59	2.84	2.99	.53	3.78	.88	6.06	1.57
June	10.43	2.90	7.05	2.45	.83	.84	4.45	1.90	3.82	2.71
July	.55	1.46	.31	1.11	0	.30	.08	1.12	.04	2.27
Aug.	5.83	3.18	2.28	2.33	.91	1.05	2.95	2.54	3.27	2.96
Sept.	1.89	4.82	.63	4.02	.12	1.38	1.50	3.56	5.71	5.75
Oct.	3.82	3.12	3.27	2.62	1.22	.86	3.03	1.76	2.83	3.19
Nov.	T	.56	0	.63	0	.29	.51	.51	3.03	1.27
Dec.	T	.49	T	.49	.51	.36	.28	.60	0	.73
Yearly	37.00	22.88	23.82	19.84	7.49	6.91	20.48	15.02	30.81	23.65

Month	Apodaca, Nuevo León		A. Blanca Canoas, Coahuila						Pajonal, Nuevo León	
	1966	Average	1960	1964	1965	1966	Average		1966	Average
Jan.	2.60	1.42	0.63	0.39	0.35	3.15	0.96		3.15	0.63
Feb.	2.44	1.04	1.22	0	.71	.83	.94		1.14	.69
Mar.	1.42	.87	0	.08	0	0	.14		.16	.11
Apr.	2.48	1.27	.39	.39	.87	.43	.75		.98	.75
May	4.41	2.66	.75	3.11	2.99	3.62	2.32		5.20	2.04
June	5.98	3.07	1.06	.55	1.89	.91	2.16		2.76	2.52
July	.24	.32	.94	1.89	.51	.43	1.45		4.41	2.98
Aug.	2.13	1.44	5.47	.94	1.10	2.05	2.87		3.31	3.28
Sept.	3.58	5.24	2.40	3.70	2.56	3.46	3.82		5.08	5.08
Oct.	2.13	1.46	2.24	1.18	1.06	1.57	2.68		2.95	2.70
Nov.	.79	.80	.75	1.61	.87	0	.95		0	.81
Dec.	0	1.10	.83	.87	.68	0	.65		.35	.74
Yearly	28.20	20.69	16.68	14.71	13.54	16.45	19.69		29.49	22.28

Month	Cadereyta, Nuevo León		La Cruz, Nuevo León		Túnel San Francisco, Nuevo León					
	1966	Average	1966	Average	1960	1962	1963	1964	1965	
Jan.	1.69	0.75	3.07	0.76	0.24	0.35	0.20	0.16	0.79	
Feb.	1.73	.94	1.77	.78	1.89	.04	.39	.51	1.14	
Mar.	1.61	1.12	0	.20	2.28	.94	3.43	3.27	.91	
Apr.	3.50	2.08	.43	.54	1.10	1.30	2.09	1.97	3.58	
May	5.79	2.33	4.37	1.80	.47	1.61	3.11	5.08	2.64	
June	4.45	3.26	.59	2.24	1.50	13.23	2.20	4.17	3.94	
July	.75	2.28	.28	2.45	1.65	0	2.60	5.91	1.26	
Aug.	0	3.23	3.46	3.72	4.65	4.29	5.75	3.11	3.03	
Sept.	3.86	4.74	3.43	3.77	9.13	9.41	13.31	10.04	10.79	
Oct.	1.89	3.24	1.89	2.65	1.46	1.73	1.57	4.45	5.28	
Nov.	.75	1.13	0	.83	1.10	2.56	1.10	1.38	1.77	
Dec.	0	.75	.08	.38	.59	1.61	1.50	.75	1.14	
Yearly	26.02	25.85	19.37	20.12	26.06	37.07	37.25	40.80	36.27	

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Túnel San Francisco, Nuevo León		Las Comitas, Nuevo León		Villa de Santiago, Nuevo León		Villa Allende, Nuevo León		San Juan, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	0.98	0.48	2.44	0.33	6.46	0.90	2.68	0.89	0.08	0.47
Feb.	1.10	1.11	.39	.37	2.99	1.03	4.45	1.12	.16	.79
Mar.	2.64	1.81	T	.26	3.90	1.12	3.31	1.23	.47	.80
Apr.	4.33	2.22	.51	.84	3.86	1.67	4.57	2.42	2.91	1.98
May	6.50	3.05	3.27	1.05	7.36	2.69	7.80	3.50	4.80	2.15
June	12.76	6.44	1.50	2.47	16.77	5.32	16.14	4.60	5.51	2.31
July	4.41	2.97	.67	1.71	4.68	3.12	.47	2.64	.16	.96
Aug.	10.12	5.31	2.13	3.24	15.79	5.59	8.90	4.76	.63	3.12
Sept.	4.17	9.97	1.50	4.28	6.30	8.71	6.70	7.22	0	4.43
Oct.	6.06	6.00	1.77	2.05	1.81	5.18	6.26	5.79	.08	3.00
Nov.	2.09	1.80	.08	.52	4.53	1.46	3.98	1.57	0	.96
Dec.	2.01	1.17	.08	.41	0	.95	T	1.03	.24	.54
Yearly	57.17	42.33	14.34	17.53	74.45	37.74	65.26	36.77	15.04	21.51

Month	Laguna de Sánchez, Nuevo León		Casillas, Nuevo León		Ciénega del Toro, Nuevo León		Potrero Redondo, Nuevo León		Mimbres, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1963	1964
Jan.	3.35	0.51	1.50	0.51	1.26	1.44		0.65	0	1.97
Feb.	2.40	.61	.94	1.01	.28	1.33		1.66	.08	1.97
Mar.	.08	.43	.51	.35	.43	.62	0.47	.79	0	.71
Apr.	1.10	1.17	1.50	.95	1.42	1.67	3.27	2.28	1.06	.59
May	4.25	2.05	2.13	2.18	3.94	3.62	4.25	3.25	5.51	.47
June	4.25	3.38	10.08	3.91	2.99	2.56	16.50	7.89	.35	.94
July	1.93	2.56	5.98	2.00	1.97	2.15	1.30	4.69	2.64	.87
Aug.	4.65	4.21	2.13	1.97	.47	3.28		3.44	.94	0
Sept.	6.61	5.12	.51	2.27	6.18	5.71		9.35	.71	.39
Oct.	5.12	3.13	5.67	3.75	2.91	5.13		7.87	.04	.39
Nov.	T	.57	.39	.66	0	1.04		1.73	.67	.43
Dec.	.31	.61	.08	.69	.08	1.47		1.65	3.15	.51
Yearly	34.05	24.35	31.42	20.25	21.93	30.02		45.25	15.15	9.24

Month	Mimbres, Nuevo León				Rayones, Nuevo León		Rusio, Nuevo León		Potosí, Nuevo León	
	1965	1966	Average		1966	Average	1966	Average	1966	Average
Jan.	0.12	0.28	0.91			0.33	2.28	0.78	2.05	1.32
Feb.	.08	.75	1.39			.32	T	.90	.51	1.14
Mar.	.08	.79	.54			.29	.94	.43	1.02	.30
Apr.	2.91	1.38	1.59			1.00	2.60	1.42	1.97	1.59
May	.08	1.65	2.42		2.40	1.38	1.38	2.24	1.65	1.18
June	5.75	3.94	2.53		2.91	2.10	1.06	1.46	.71	.83
July	.79	4.06	2.19		1.97	.94	2.83	1.07	2.09	.68
Aug.	2.83	3.11	3.54		2.01	2.65	1.89	1.20	3.31	2.12
Sept.	.47	2.56	2.68		.79	2.95	2.48	1.87	0	1.38
Oct.	0	1.26	1.66		.87	1.61	.98	1.74	2.64	1.66
Nov.	.55	.39	.86		0	.36	0	.81		2.15
Dec.	1.18		1.91		0	.27		1.19		3.56
Yearly	14.84		22.22			14.20		15.11		17.91

Month	Galena, Nuevo León		Iturbide, Nuevo León		Montemorelos, Nuevo León		Cabezones, Nuevo León		Linares, Nuevo León	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.30	0.25	4.02	0.51	2.20	0.79	2.60	0.91	2.28	0.92
Feb.	.28	.31	1.38	.62	2.91	.97	2.40	.77	2.13	.90
Mar.	.67	.19	1.02	.49	1.65	1.08	.98	.88	.75	1.12
Apr.	1.65	.83	1.50	1.10	3.07	2.29	4.33	2.52	3.74	2.32
May	2.87	1.12	3.39	1.95	6.46	3.12	4.57	4.03	8.39	3.63
June	3.07	2.16	5.94	3.32	8.90	3.58	9.37	4.15	6.34	3.47
July	2.83	1.35	1.57	2.36	.71	1.90	3.03	1.98	1.93	2.52
Aug.	3.78	2.67	3.98	3.91	6.85	3.83	4.80	2.59	9.21	3.40
Sept.	2.32	2.71	4.65	5.26	2.36	5.39	3.43	7.11	2.20	6.20
Oct.	4.06	1.59	6.26	2.73	6.50	3.74	1.69	2.72	8.39	3.42
Nov.	.43	.27	.63	.55	1.14	1.66	.55	1.34	.43	1.18
Dec.	0	.58	0	.53	T	.94	0	1.06	T	.93
Yearly	23.26	14.03	34.34	23.33	42.75	29.29	37.75	30.06	45.79	30.01

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	San Rafael, Nuevo León						El Cuchillo, Nuevo León		Gral. Bravo, Nuevo León	
	1963	1964	1965	1966	Average		1966	Average	1966	Average
Jan.	0.55		0.55	1.61	1.04		0.75	0.64	1.65	0.75
Feb.	.31		.24	1.46	1.09		.63	.55	.51	.51
Mar.	0		.39	.24	.22		1.14	.54	.63	.58
Apr.	0	0	1.38	1.54	.80		.94	1.39	.71	1.49
May	0	3.62	2.01	2.20	2.34		7.56	2.20	13.94	2.94
June	.31	1.57	5.83	2.60	2.22		4.72	2.39	7.05	2.51
July	1.42	1.61	1.02	6.65	2.91		4.92	1.55	2.64	2.05
Aug.	.43	1.42	3.35	.67	1.57		1.06	2.58	.71	2.40
Sept.	.91	4.37	3.82	.71	2.72		1.97	3.67	3.23	3.82
Oct.	.59	1.02	1.34	.51	1.32		2.68	2.19	3.62	2.12
Nov.	1.02	1.61	.39	1.02	.85		.08	.51	0	.86
Dec.	2.44	1.65	2.72	.20	1.42		0	.51	0	.78
Yearly	7.98		23.04	19.41	18.50		26.45	18.72	34.69	20.81

Month	Las Enramadas, Nuevo León		Cerralvo, Nuevo León		Comales, Tamaulipas		Camargo, Tamaulipas		Valadeces, Tamaulipas	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	1.18	0.90	2.05	0.67	1.77	0.78	2.09	0.92	2.32	1.06
Feb.	1.97	.72	1.65	.63	1.22	.71	2.76	1.00	1.50	1.26
Mar.	2.20	.74	1.30	.59	.59	.66	.67	.59	1.73	.87
Apr.	2.87	1.78	5.31	2.02	4.29	1.59	3.54	1.76	2.28	2.06
May	10.55	3.11	5.16	2.85	7.32	2.19	8.90	2.22	8.70	5.70
June	6.85	3.35	10.98	2.43	4.02	1.83	4.88	1.77	6.14	3.20
July	3.15	2.00	.83	1.34	1.02	.94	1.50	.79	2.05	.79
Aug.	3.39	3.20	8.07	3.28	1.85	2.27	.63	1.12	.31	.55
Sept.	4.72	5.74	1.61	4.65	.98	3.52	.98	3.10	.59	3.94
Oct.	3.82	2.61	1.57	2.76	4.72	2.32	3.03	1.94	4.96	3.25
Nov.	.20	.70	.28	.70	0	.68	0	1.06	.08	.89
Dec.	T	.78	.55	.50	0	.77	0	.85	0	1.54
Yearly	40.90	25.63	39.36	22.42	27.78	18.26	28.98	17.13	30.66	25.11

Month	Reynosa Km. 40 SW, Nuevo León		Bajo Río San Juan, Tamaulipas No. 2-29		San Miguel de Camargo, Tamaulipas		Reynosa Km. 22 SW, Tamaulipas		Bajo Río San Juan, Tamaulipas No. 2-38	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	3.35	0.68	1.93	0.75	2.40	0.55	2.56	0.73	2.17	0.85
Feb.	2.05	.92	1.26	1.27	1.34	.89	1.65	.58	1.89	1.14
Mar.	.55	.42	1.02	.61	.75	.48	.79	.44	.98	.50
Apr.	1.54	1.36	3.03	1.43	2.76	1.72	1.97	.76	2.68	1.42
May	10.00	3.13	8.19	6.38	7.60	2.16	5.51	4.09	6.06	5.93
June	5.35	1.47	6.61	2.74	7.17	1.76	8.11	2.87	10.24	4.66
July	0	.69	.55	.29	.39	.60	.59	.59	.08	.03
Aug.	0	1.48	1.77	.67	.28	1.24	2.17	.81	5.20	2.00
Sept.	5.35	4.47	0	3.32	.47	3.27	.39	3.32	.31	3.15
Oct.	6.46	2.18	3.54	2.24	4.09	2.50	1.77	2.36	2.76	2.34
Nov.	0	.72	0	1.02	0	.94	0	.87	0	1.23
Dec.	0	1.36	0	1.60	.04	.94	0	1.69	0	1.84
Yearly	34.64	18.88	27.90	22.32	27.29	17.05	25.51	19.11	32.37	25.09

Month	Bajo Río San Juan, Tamaulipas No. 2-33		Argüelles, Tamaulipas		Presa Anzaldúas, Tamaulipas		Reynosa, Tamaulipas		Méndez, Tamaulipas	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.24	0.90	2.56	0.76	1.69	0.60	2.80	0.91	0.79	0.88
Feb.	1.14	1.05	2.36	1.23	1.02	.42	1.46	.85	.91	.83
Mar.	.67	.36	.98	.85	.47	.26	4.13	.72	.55	.87
Apr.	3.07	1.81	2.76	.95	3.62	1.60	5.24	1.17	1.38	1.78
May	5.67	5.51	2.56	3.49	5.16	2.96	5.67	2.39	9.09	2.55
June	10.43	4.42	9.65	2.86	6.57	2.15	9.29	2.06	7.01	2.64
July	0	0	.39	.52	.16	.52	.16	.93	1.26	.88
Aug.	1.89	.63	1.30	.61	1.18	1.36	.83	1.32	T	2.93
Sept.	.63	3.28	.79	2.98	.08	2.46	0	2.55	2.13	4.01
Oct.	4.25	3.28	1.57	1.08	7.01	2.33	2.13	2.12	7.32	2.39
Nov.	0	.97	0	.83	.04	.79	0	.92	.91	.59
Dec.	0	2.43	0	2.01	0	1.03	0	.91	T	.50
Yearly	29.99	24.64	24.92	18.17	27.00	16.48	31.71	16.85	31.35	20.85

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Bajo Río San Juan, Tamaulipas No. 3-55		Bajo Río San Juan, Tamaulipas No. 3-58		Bajo Río San Juan, Tamaulipas No. 3-60		Bajo Río San Juan, Tamaulipas No. 3-47		Bajo Río San Juan, Tamaulipas No. 3-63	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	3.82	1.56	3.82	1.47	3.46	1.31	4.21	1.59	3.46	1.31
Feb.	1.97	1.58	1.81	1.31	1.34	1.21	1.46	1.48	2.80	1.91
Mar.	1.42	.64	1.10	.46	.87	.36	.98	.46	.63	.28
Apr.	2.09	1.47	2.28	1.77	1.65	2.02	3.66	2.38	.71	.87
May	7.36	4.65	5.83	4.62	7.09	4.79	7.32	7.05	6.65	4.52
June	3.90	1.60	4.57	2.09	4.84	2.36	4.09	3.04	3.62	2.84
July	1.69	1.04	.71	.47	.24	.61	1.18	.70	.35	.71
Aug.	2.36	.96	1.18	.89	.43	.73	.39	.73	.91	1.01
Sept.	.39	2.39	1.34	2.27	.47	1.73	1.89	2.66	1.38	3.73
Oct.	10.47	5.15	8.82	4.90	9.57	4.56	8.66	4.41	7.76	3.68
Nov.	0	.80	0	1.17	0	1.34	.12	1.69	.71	1.42
Dec.	0	1.62	0	1.63	0	1.44	0	2.31	0	1.63
Yearly	35.47	23.46	31.46	23.05	29.96	22.46	33.96	28.50	28.98	23.91

Month	Río Bravo, Tamaulipas		Retamal, Tamaulipas		Bajo Río Bravo, Tamaulipas No. 3-15		Bajo Río Bravo, Tamaulipas No. 4-16		Bajo Río Bravo, Tamaulipas No. 3-14	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	3.62	0.78	3.11	0.74	3.27	1.20	4.53	1.55	3.23	1.29
Feb.	1.10	1.20	1.02	.95	1.54	1.18	1.97	1.37	.55	.63
Mar.	1.38	.61	.83	.61	1.02	.42	1.18	.46	.79	.32
Apr.	3.07	1.62	2.20	1.41	1.30	1.51	1.42	1.01	2.40	1.32
May	7.95	2.32	6.85	2.36	7.76	4.32	7.60	4.50	7.76	5.06
June	6.06	2.34	5.71	2.17	4.92	2.70	6.61	3.03	5.51	2.82
July	.39	1.15	T	.76	3.43	1.97	1.85	1.12	3.11	1.21
Aug.	.79	2.06	0	1.99	1.77	2.09	.63	1.21	.71	.77
Sept.	2.05	3.43	0	2.83	.08	1.63	2.13	2.61	.87	1.14
Oct.	5.59	2.61	5.43	2.43	6.30	2.94	5.75	3.16	5.16	2.11
Nov.	.51	1.21	0	1.18	.12	1.84	4.96	2.83	.16	1.34
Dec.	0	1.04	0	.99	0	1.52	.20	1.75	0	1.61
Yearly	32.51	20.37	25.15	18.42	31.51	23.32	38.83	24.60	30.25	19.62

Month	Bajo Río Bravo, Tamaulipas No. 3-17		Bajo Río Bravo, Tamaulipas No. 2-8		Bajo Río Bravo, Tamaulipas No. 2-6		Bajo Río Bravo, Tamaulipas No.2-10		Valle Hermoso, Tamaulipas	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	2.83	1.27	3.66	1.27	4.49	1.68	3.46	1.19	3.94	0.78
Feb.	1.30	1.55	1.34	1.47	1.10	1.40	10.71	4.27	.87	1.31
Mar.	1.46	.58	.91	.38	1.65	.63	.75	.38	1.61	.48
Apr.	1.14	.97	1.46	1.47	.55	1.34	1.02	.94	.71	1.52
May	8.98	5.24	7.80	4.44	6.81	3.81	3.94	3.24	5.83	2.53
June	5.16	3.23	2.91	1.82	2.05	1.86	2.09	1.67	4.02	2.85
July	1.97	.84	3.19	1.76	2.17	.85	1.65	.80	2.36	1.30
Aug.	1.97	1.35	.91	2.01	.71	1.63	.83	.64	1.14	1.45
Sept.	.31	1.86	1.06	1.82	.20	1.23	1.02	1.17	.39	4.62
Oct.	4.33	2.02	5.16	2.73	4.49	2.28	4.17	1.84	2.64	2.42
Nov.	.04	2.09	3.46	4.07	1.73	2.37	1.14	1.53	2.09	1.48
Dec.	0	1.67	0	1.69	0	1.97	0	1.59	0	.94
Yearly	29.49	22.67	31.86	24.93	25.95	21.05	30.78	19.26	25.60	21.68

Month	Control, Tamaulipas		Bajo Río Bravo, Tamaulipas No. 2-5		Bajo Río Bravo, Tamaulipas No. 2-11		Bajo Río Bravo, Tamaulipas No. 1-2		Bajo Río Bravo, Tamaulipas No. 2-7	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	4.49	1.12	4.53	1.52	3.23	1.16	3.39	1.14	3.94	1.37
Feb.	.75	.97	2.48	1.70	1.10	1.02	.87	1.35	1.14	1.30
Mar.	.94	.61	.94	.38	1.18	.47	.63	.25	.91	.42
Apr.	1.50	1.53	.83	1.20	1.57	1.11	1.34	1.00	.83	.92
May	7.56	2.81	7.72	4.40	9.25	4.74	7.52	5.16	6.57	3.88
June	5.63	2.80	3.86	1.90	6.30	3.46	6.30	3.15	4.13	2.83
July	.87	1.24	1.26	.70	1.26	1.74	.55	.66	1.10	1.00
Aug.	5.12	2.59	.75	1.63	.94	2.05	5.59	3.31	1.18	1.96
Sept.	1.38	4.53	.67	1.77	2.60	1.97	.87	1.60	1.54	2.63
Oct.	6.77	2.36	3.78	2.22	3.74	1.44	7.52	2.87	3.03	1.31
Nov.	.24	1.29	.39	1.78	.71	1.42	0	.84	.31	2.56
Dec.	0	1.01	0	1.75	.39	2.04	0	1.72	.35	2.06
Yearly	35.25	22.86	27.21	20.95	32.27	22.61	34.58	23.05	25.03	22.24

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Bajo Río Bravo, Tamaulipas No. 1-4		Bajo Río Bravo, Tamaulipas No. 1-18		Bajo Río Bravo, Tamaulipas No. 1-3		Bajo Río Bravo, Tamaulipas No. 1-13		Bajo Río Bravo, Tamaulipas No. 1-12	
	1966	Average	1966	Average	1966	Average	1966	Average	1966	Average
Jan.	4.61	1.58	4.02	1.51	3.74	1.41	3.54	1.31	3.58	1.30
Feb.	1.22	1.38	1.02	1.46	1.77	1.63	1.30	1.42	.75	1.25
Mar.	.71	.39	.31	.16	.63	.34	.87	.37	.35	.18
Apr.	.67	.97	.79	.81	1.26	.81	.98	.73	1.06	.84
May	6.65	5.09	6.06	3.74	8.23	5.15	3.46	2.31	6.06	3.65
June	4.45	2.38	5.31	2.83	3.19	1.74	3.50	2.14	3.98	2.25
July	.67	.47	1.02	1.19	.63	1.02	.98	1.23	.59	1.16
Aug.	2.17	1.83	.35	1.42	1.14	1.32	2.36	1.48	0	.39
Sept.	.20	2.24	.79	2.20	.51	1.59	.16	1.75	3.03	3.36
Oct.	3.74	1.86	6.06	2.33	3.39	1.54	2.76	1.19	7.72	3.08
Nov.	.98	1.46	.63	1.35	1.34	3.39	3.35	2.48	1.85	1.54
Dec.	.04	1.92	1.02	2.66	0	2.05	0	2.02	.31	2.02
Yearly	26.11	21.57	27.38	21.66	25.83	21.29	23.26	18.43	29.28	21.02

Month	Matamoros, Tamaulipas									
	1966	Average								
Jan.	4.72	1.69								
Feb.	1.30	2.09								
Mar.	.94	.48								
Apr.	1.42	1.47								
May	6.50	2.32								
June	4.61	2.82								
July	1.18	1.40								
Aug.	1.50	1.49								
Sept.	1.81	4.72								
Oct.	7.01	3.06								
Nov.	.08	1.50								
Dec.	1.50	2.27								
Yearly	32.57	25.31								

AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED

With Averages for the 96 Years 1871-1966, Inclusive

In Inches

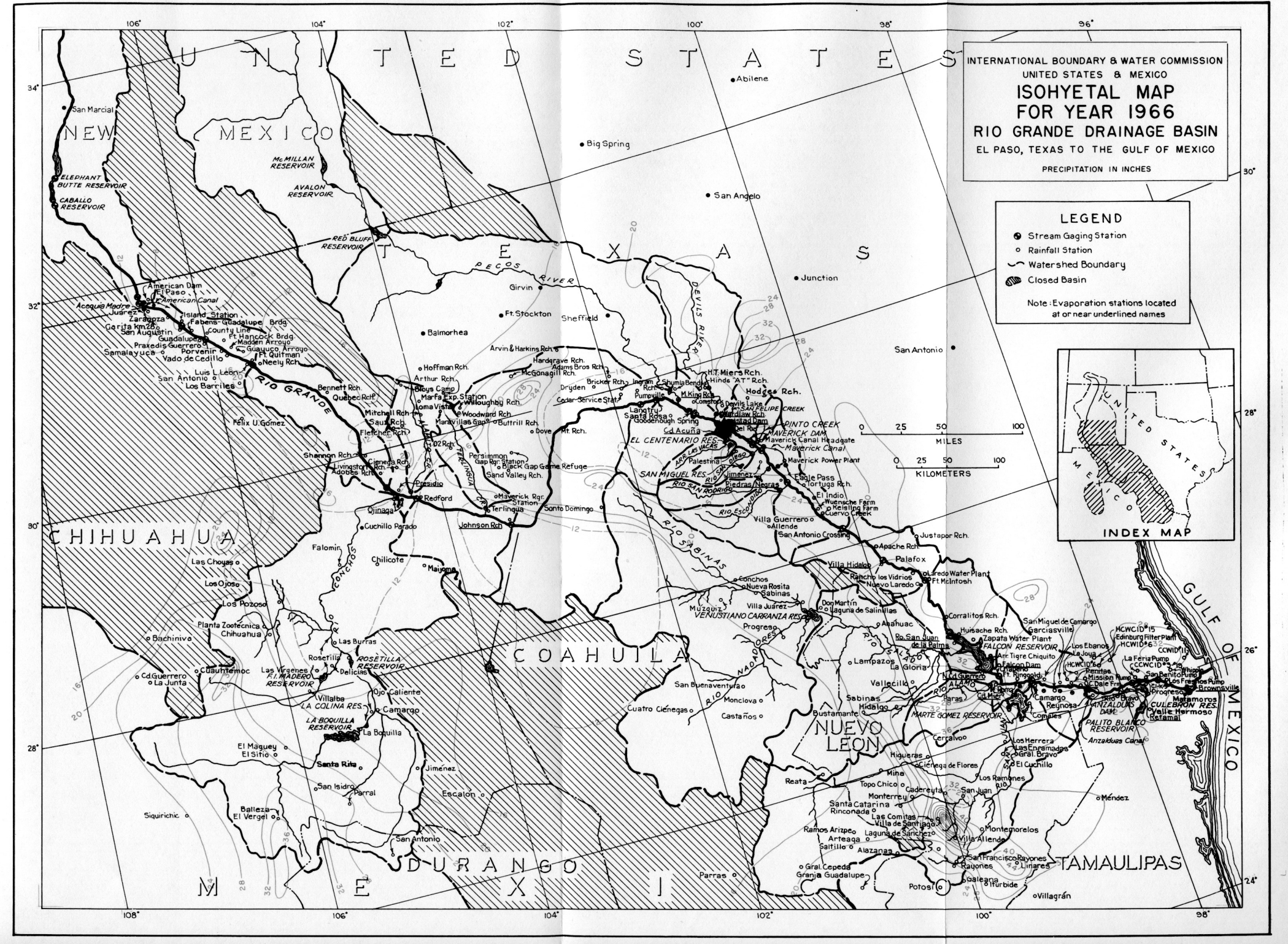
The precipitation records of all stations on or adjacent to the watershed subdivisions listed below have been used, with proper weighting for area, in calculating the average rainfalls shown here. The drainage area for each subdivision is shown in parentheses. The hundreds of individual records are delineated in the various "Indexes to Precipitation Records" shown in Water Bulletins Nos. 10, 14, 22, and 26.

Month	El Paso to Fort Quitman (2,768 Square Miles)		Fort Quitman to Above Río Conchos (2,953 Square Miles)		* Above Río Conchos to Johnson Ranch (3,886 Square Miles)		Johnson Ranch to Langtry (14,080 Square Miles)	
	1966	Period Average	1966	Period Average	1966	Period Average	1966	Period Average
Jan.	0.21	0.45	0.27	0.40	0.11	0.36	0.56	0.51
Feb.	.15	.37	.22	.26	.21	.28	.44	.37
Mar.	.26	.34	.13	.25	.09	.18	.50	.41
Apr.	.77	.28	.39	.36	.08	.40	1.05	.83
May	.23	.41	.33	.61	.65	.78	1.62	1.54
June	3.59	.81	2.89	1.20	1.20	1.08	2.40	1.76
July	.66	2.30	1.07	3.05	1.69	1.81	.66	1.91
Aug.	4.12	1.94	5.13	2.42	3.93	1.84	2.55	2.13
Sept.	1.68	1.37	1.86	1.88	1.92	1.46	2.63	2.18
Oct.	.27	.92	1.13	1.02	2.34	.85	2.61	1.22
Nov.	.01	.43	T	.39	0	.34	0	.60
Dec.	.04	.60	.04	.55	T	.42	T	.57
Total	11.99	10.22	13.46	12.39	12.22	9.80	15.02	14.03

Month	Pecos River below Sheffield (3,519 Square Miles)		# Langtry to Amistad Dam (2,014 Square Miles)		Devils River (4,305 Square Miles)		‡ Amistad Dam to Eagle Pass (1,695 Square Miles)	
	1966	Period Average	1966	Period Average	1966	Period Average	1966	Period Average
Jan.	0.59	0.73	0.78	0.53	0.69	0.70	1.04	0.76
Feb.	.50	.90	.97	.64	1.19	.71	1.26	.92
Mar.	.57	.78	.35	.78	.86	1.09	.74	1.02
Apr.	2.90	1.91	2.13	1.33	4.10	1.77	4.69	1.71
May	1.43	1.80	1.60	1.98	1.79	2.60	2.36	2.97
June	1.72	2.55	1.00	2.27	2.07	2.75	2.11	2.50
July	.51	1.86	.22	1.18	.49	1.72	.03	1.86
Aug.	2.65	1.96	1.86	1.60	3.16	2.03	2.96	1.88
Sept.	4.00	2.34	3.24	2.29	4.22	2.93	3.71	3.11
Oct.	2.94	1.82	1.25	1.43	1.82	2.17	.98	1.98
Nov.	0	.93	0	.76	.02	1.56	T	1.02
Dec.	T	.76	T	.65	T	1.03	.01	.90
Total	17.81	18.34	13.40	15.44	20.41	21.06	19.89	20.63

Month	⊕ Eagle Pass to Laredo (4,117 Square Miles)		ð Laredo to Falcon Dam (3,394 Square Miles)		† Falcon Dam to Rio Grande City (1,166 Square Miles)		United States Side below Rio Grande City (443 Square Miles)	
	1966	Period Average	1966	Period Average	1966	Period Average	1966	Period Average
Jan.	0.87	0.75	1.64	0.76	1.91	0.91	2.80	1.22
Feb.	.73	.81	1.10	.77	1.49	.81	1.12	1.07
Mar.	.53	.95	.29	.82	.40	1.00	.74	1.08
Apr.	4.93	1.61	3.37	1.42	3.21	1.20	2.76	1.36
May	5.77	3.17	7.48	3.25	7.54	2.47	6.72	2.83
June	.68	2.40	2.73	1.84	4.79	2.03	6.45	2.46
July	.04	1.42	.22	2.12	.73	1.90	.79	1.71
Aug.	2.58	2.27	3.47	1.79	4.24	2.11	1.24	2.22
Sept.	4.61	2.98	2.57	2.83	.77	3.24	.66	4.21
Oct.	.43	1.81	.91	1.56	1.26	1.96	6.10	2.51
Nov.	0	.96	0	1.60	0	.77	.05	1.40
Dec.	0	1.02	.13	.84	0	.69	.22	1.30
Total	21.17	20.15	23.91	19.60	26.34	19.09	29.65	23.37

* Excluding Río Conchos, Alamito, and Terlingua Creeks # Excluding Pecos and Devils Rivers ‡ Excluding Arroyo Las Vacas, San Felipe Creek, Pinto Creek, Río San Diego, and Río San Rodrigo ⊕ Excluding Río Escondido
ð Excluding Río Salado above Old Cd. Guerrero † Excluding Río Alamo and Río San Juan T Trace


INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO
ISOHYETAL MAP
FOR YEAR 1966
RIO GRANDE DRAINAGE BASIN
EL PASO, TEXAS TO THE GULF OF MEXICO
PRECIPITATION IN INCHES
LEGEND
Stream Gaging Station
Rainfall Station
Watershed Boundary
Closed Basin
Note: Evaporation stations located at or near underlined names
INDEX MAP
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DURANGO
MEXICO
GULF OF MEXICO
RIO GRANDE
PECOS RIVER
DEVILS RIVER
RIO SABINAS
RIO SALADO
RIO NADADORES
RIO CONCHOS
RIO SAN DIEGO
RIO SAN RODRIGO
RIO ESCONDIDO
ARROYO LAS VACAS
ARROYO TERLINGUA
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SAN MIGUEL RES.
VENUSTIANO CARRANZA RES.
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FALCON RESERVOIR
ANZALDUAS DAM
PALITO BLANCO RESERVOIR
CULEBRON RES.
MAVERICK DAM
PINTO CREEK
SAN FELIPE CREEK
ROSETILLA RESERVOIR
LA COLINA RES.
LA BOQUILLA RESERVOIR
F. MADERO RESERVOIR
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ELEPHANT BUTTE RESERVOIR
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RED BLUFF RESERVOIR
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American Canal
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County Line
Ft. Hancock Brdg.
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Guayuco Arroyo
Ft. Quitman
Neely Rch.
Guadalupe
Praxedis Guerrero
Porvenir
Samalayuca
Vado de Cedillo
Luis L. León
San Antonio
Los Barriles
Felix U. Gomez
Bennett Rch.
Quebec Rch.
Mitchell Rch.
Sauz Rch.
Fletcher Rch.
Shannon Rch.
Cienega Rch.
Livingston Rch.
Adobes Rch.
Presidio
Redford
Ojinaga
Cuchillo Parado
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El Sitio
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Woodward Rch.
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Buttrill Rch.
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Mt. Rch.
Persimmon Gap Rgr. Station
Black Gap Game Refuge
Sand Valley Rch.
Maverick Rgr. Station
Terlingua
Johnson Rch.
Santo Domingo
Girvin
Ft. Stockton
Sheffield
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Shumla Bend
H.T. Miers Rch.
Hinds "AT" Rch.
Hodges Rch.
M. King Rch.
Comstock
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Lanotru
Santa Rosa
Goodenough Spring
Cd. Acuña
Maverick Canal Headgate
Maverick Canal
Maverick Power Plant
Palestina
Jimenez
Piedras Negras
Eagle Pass
Tortuga Rch.
El Indio
Wuensche Farm
Keisling Farm
Cuervo Creek
Villa Guerrero
Allende
San Antonio Crossing
Justapor Rch.
Apache Rch.
Palafox
Villa Hidalgo
Rancho los Vidrios
Nuevo Laredo
Laredo Water Plant
Ft. McIntosh
Conchos
Nueva Rosita
Sabinas
Villa Juárez
Don Martín
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Muzquiz
Progreso
Anahuac
Corralitos Rch.
Huisache Rch.
Zapata Water Plant
Arr. Tigre Chiquito
Falcon Dam
Ft. Ringgold
Cd. Guerrero
Cd. Mier
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La Gloria
Vallecillo
Sabinas Hidalgo
Bustamante
Paras
San Buenaventura
Monclova
Cuatro Ciénegas
Castaños
Cerralvo
Higueras
Ciénega de Flores
Mina
Topo Chico
Cadereyta
Monterrey
Reata
Santa Catarina
Rinconada
Las Comitas
Villa de Santiago
Laguna de Sánchez
Ramos Arizpe
Arteaga
Saltillo
Alazanas
San Francisco
Rayones
Linares
Montemorelos
Villa Allende
Méndez
San Miguel de Camargo
Garciasville
Los Ebanos
La Joya
La Feria Pump
Mission Pump
Del Dale Pump
San Benito Pump
Los Fresnos Pump
Brownsville
Matamoros
Valle Hermoso
Reynosa
Camargo
Comales
Los Herrera
Las Enramadas
Gral. Bravo
El Cuchillo
Los Ramones
San Juan
HCWCID 15
Edinburg Filter Plant
HCWID 6
CCWID 11
HCWCID 6
Penitas
CCWCID 9
Progreso
Rio Bravo
Abilene
Big Spring
San Angelo
Junction
San Antonio
106°
104°
102°
100°
98°
96°
34°
32°
30°
28°
26°
24°
108°

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The precipitation records of stations listed below began on the date shown and extend through 1966. For detailed information regarding sources of data, specific periods of record, and other pertinent matters relative to these and additional rainfall stations on the Rio Grande watershed see "Index to Precipitation Records" in Water Bulletins Nos. 10, 14, 22, and 26. All United States precipitation stations listed below are in Texas, while those in Mexico are in the indicated state as shown.

In the United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Adobes Ranch	S	29° 46'	104° 34'	2,550	1950	Fort Quitman - Above Río Conchos	T. C. Davis
American Dam	S	31° 47'	106° 32'	3,730	1938	El Paso - Fort Quitman	I. B. & W. C.
Amistad Dam	R	29° 28'	101° 02'	1,150	July 1962	Langtry - Below Amistad Dam	I. B. & W. C.
Apache Ranch	C	27° 56'	99° 56'	500	# 1953	Eagle Pass - Laredo	Leroy Tibiletti
Arledge, W. A. Ranch	S	29° 58'	101° 38'	1,950	June 1933	Johnson Ranch - Langtry	W. A. Arledge
Arroyo Tigre Chiquito	C	26° 41'	99° 07'	314	Apr. 1954	Laredo - Falcon Dam	I. B. & W. C.
Arthur, C. L. Ranch	S	30° 23'	103° 45'	4,900	# 1946	Pecos River Above Sheffield	C. L. Arthur
Arvin & Harkins - Bean	V	30° 26'	102° 23'	3,100	Nov. 1948	Johnson Ranch - Langtry	Sid Harkins
Arvin & Harkins - Camel	V	30° 25'	102° 20'	2,890	Nov. 1948	Johnson Ranch - Langtry	Sid Harkins
Arvin & Harkins - Header	V	30° 27'	102° 26'	3,400	Nov. 1948	Johnson Ranch - Langtry	Sid Harkins
Arvin & Harkins - Hqtrs.	S	30° 27'	102° 20'	2,930	Nov. 1948	Johnson Ranch - Langtry	Sid Harkins
Arvin & Harkins - Monty Corder	V	30° 27'	102° 14'	2,850	Nov. 1948	Johnson Ranch - Langtry	Sid Harkins
Baggett, J. M. Ranch	R	30° 21'	101° 03'	2,050	July 1962	Devils River	J. M. Baggett, Jr.
Baker, A. A. Ranch	R	29° 44'	101° 09'	1,720	July 1962	Devils River	I. B. & W. C.
Baker, A. O. Ranch	R	29° 33'	100° 58'	1,150	May 1965	Devils River	I. B. & W. C.
Bakers Crossing	S	29° 58'	101° 09'	1,520	#Apr. 1955	Devils River	James Baker
Below Amistad Dam Station	C	29° 25'	101° 02'	980	Oct. 1954	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Bennett, Moody Ranch	S	30° 37'	104° 52'	3,240	July 1956	Fort Quitman - Above Río Conchos	Moody Bennett
Billings Ranch	S	30° 02'	101° 38'	1,970	Mar. 1966	Johnson Ranch - Langtry	Newman Billings
Black Gap Game Refuge	S	29° 35'	103° 21'	2,250	# 1952	Johnson Ranch - Langtry	Ben Martin
Bloys Camp	V	30° 33'	104° 07'	5,650	# 1941	Alamito Creek	George Knight
Bricker Ranch	S	29° 59'	101° 52'	1,680	May 1952	Johnson Ranch - Langtry	Lena Mae Bricker
Brite, J. G. Ranch	R	29° 33'	101° 01'	1,150	Sept. 1962	Devils River	I. B. & W. C.
Brotherton Ranch	V	29° 42'	101° 19'	1,400	1961	Langtry - Below Amistad Dam	Perry Calk
Buttrill Ranch	S	30° 00'	103° 16'	3,500	Mar. 1952	Johnson Ranch - Langtry	Tom B. Leary
Cañon Diablo	C	28° 39'	100° 27'	700	1964	Eagle Pass - Laredo	I. B. & W. C.
Casa Piedra	V	29° 44'	104° 04'	3,430	# 1960	Alamito Creek	C. L. Vasquez
Cash Ranch	S	30° 05'	101° 35'	1,910	Mar. 1965	Pecos River Below Sheffield	Roy Cash
Castolon	S	29° 08'	103° 30'	2,124	#Mar. 1953	Above Río Conchos - Johnson Ranch	National Park Service
CCWID #11(Bayview Dist. Off.) Avg. 18 Gages	S	26° 08'	97° 21'	25	1952	Lower Rio Grande Valley	CCWID #11
CCWCID #19 (Adams Gardens)	S	26° 10'	97° 47'	50	1952	Lower Rio Grande Valley	CCWCID #19
Chittim Ranch	C	28° 44'	100° 28'	810	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Coal Mine	R	28° 48'	100° 28'	770	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Comstock	S	29° 41'	101° 10'	1,530	May 1939	Langtry - Below Amistad Dam	George Humphries
Continental Ranch	S	29° 51'	101° 18'	1,560	Mar. 1965	Pecos River Below Sheffield	Julio Crowder
Cooper Ranch	C	28° 50'	100° 27'	800	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Corralitos Ranch	C	27° 07'	99° 25'	346	1953	Laredo - Falcon Dam	I. B. & W. C.
County Line Station	R	31° 23'	105° 59'	3,550	1938	El Paso - Fort Quitman	I. B. & W. C.
Cow Creek Near Comstock	R	29° 36'	101° 12'	1,210	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Cow Creek Near Mouth	C	29° 32'	101° 13'	1,080	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Crane, Ed. Ranch	S	29° 51'	101° 05'	1,630	1955	Devils River	Ed. Crane
Cuervo Creek Station	C	28° 21'	100° 19'	620	1954	Eagle Pass - Laredo	I. B. & W. C.
Dale, O. C. Farm	S	26° 15'	98° 16'	130	1952	Lower Rio Grande Valley	O. C. Dale
Devils Lake	S	29° 34'	100° 59'	1,080	May 1939	Devils River	C. P. & L. Co.
Dolan Springs	C	29° 54'	100° 59'	1,360	Feb. 1966	Devils River	I. B. & W. C.
Dove Mountain Ranch	S	29° 49'	102° 53'	2,770	#Mar. 1952	Johnson Ranch - Langtry	Sam Cavness

Some months or years missing C Cumulative R Recording S Standard V Visual

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In the United States

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Dryden	S	30° 03'	102° 07'	2,130	# 1931	Johnson Ranch - Langtry	Lewis Cash
Dunbar, Allen Ranch	V	29° 57'	100° 32'	2,200	1955	Devils River	Allen Dunbar
Eagle Pass	S	28° 42'	100° 30'	815	1964	Eagle Pass - Laredo	I. B. & W. C.
Edinburg Filtration Plant	S	26° 18'	98° 10'	100	1952	Lower Rio Grande Valley	City of Edinburg
El Indio	S	28° 31'	100° 19'	725	# 1941	Eagle Pass - Laredo	Glen Stidham
Elm Creek Station	C	28° 46'	100° 30'	720	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
El Peyote Ranch	C	27° 07'	98° 58'	650	1966	Laredo - Falcon Dam	F. J. Saldana
Erekson Ranch	S	29° 56'	100° 34'	2,330	1955	Devils River	Bob Erekson
Falcon Dam	S	26° 33'	99° 08'	323	Apr. 1950	Laredo - Falcon Dam	I. B. & W. C.
Farias Ranch	R	28° 36'	100° 20'	720	Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Fawcett, H. K. Ranch	S	29° 52'	100° 54'	1,550	# 1941	Devils River	H. K. Fawcett
Feely	C	29° 34'	101° 07'	1,250	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Fletcher, H. T. Ranch	S	30° 12'	104° 16'	5,100	# 1939	Alamito Creek	Hayes Mitchell, Jr.
Fort Hancock Bridge	S	31° 16'	105° 51'	3,500	Apr. 1940	El Paso - Fort Quitman	I. B. & W. C.
Fort McIntosh (Laredo)	V	27° 30'	99° 31'	410	# 1850	Eagle Pass - Laredo	I. B. & W. C.
Fort Quitman	R	31° 06'	105° 36'	3,430	# 1937	Fort Quitman - Above Río Conchos	I. B. & W. C.
Foster, Ross Ranch	C	29° 47'	101° 45'	1,230	May 1961	Johnson Ranch - Langtry	I. B. & W. C.
Garciasville	R	26° 20'	98° 41'	200	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Gillis Ranch	S	29° 41'	101° 03'	1,440	Apr. 1965	Devils River	Walter Gillis
Goodenough Spring	C	29° 32'	101° 15'	1,020	Aug. 1958	Langtry - Below Amistad Dam	I. B. & W. C.
Greenwood, H. M. (Cienega Ranch)	S	29° 48'	104° 13'	4,000	Mar. 1941	Alamito Creek	H. M. Greenwood
Guayuco Arroyo	R	31° 10'	105° 40'	3,600	#May 1940	El Paso - Fort Quitman	I. B. & W. C.
Haby Ranch	S	29° 43'	101° 14'	1,660	1965	Langtry - Below Amistad Dam	R. R. Williams
Hammond, Earl Ranch	S	29° 41'	103° 51'	3,700	Apr. 1963	Terlingua Creek	Earl Hammond
Hardgrave, E. W. Ranch	S	30° 18'	102° 09'	2,650	Apr. 1952	Johnson Ranch - Langtry	Jack Hardgrave
HCWCID #6 Goodwin Pump No. 3	S	26° 16'	98° 24'	175	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 3A	S	26° 14'	98° 22'	130	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 4	S	26° 16'	98° 21'	185	1958	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 4B	S	26° 18'	98° 23'	210	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 5	S	26° 22'	98° 21'	225	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #15 (Edinburg Office)	S	26° 23'	98° 09'	85	1952	Lower Rio Grande Valley	HCWCID #15
Heath Crossing	S	29° 28'	102° 50'	1,775	July 1966	Johnson Ranch - Langtry	Dow Chemical Co.
Hinds "AT" Ranch	S	29° 46'	101° 03'	1,690	Sept. 1954	Devils River	Lucious Hinds
Hodges Ranch	S	29° 35'	100° 40'	1,510	Dec. 1951	Below Amistad Dam - Eagle Pass	Floyd Hodges
Hoffman Ranch	S	30° 38'	103° 51'	4,650	June 1955	Pecos River Above Sheffield	Dr. A. J. Hoffman
Huisache Ranch	C	26° 57'	99° 21'	383	Aug. 1953	Laredo - Falcon Dam	I. B. & W. C.
Hunt Ranch	S	30° 36'	101° 17'	2,490	May 1966	Pecos River Below Sheffield	G. E. Butterfield
Hutto Ranch No. 1	R	29° 30'	100° 50'	1,240	Jan. 1964	Devils River	I. B. & W. C.
Hutto Ranch No. 2	R	29° 29'	100° 54'	1,210	Jan. 1964	Devils River	I. B. & W. C.
Ingram Ranch	C	29° 52'	101° 29'	1,580	#Sept. 1954	Pecos River Below Sheffield	Lee Billings, Jr.
Indio Ranch	S	28° 31'	100° 22'	700	1959	Eagle Pass - Laredo	Earnest Scales
Island Station	R	31° 32'	106° 14'	3,630	1939	El Paso - Fort Quitman	I. B. & W. C.
James, Lewis Ranch	S	30° 11'	102° 07'	2,275	1966	Johnson Ranch - Langtry	Lewis James
Johnson Ranch	C	29° 01'	103° 23'	2,050	#July 1933	Johnson Ranch - Langtry	I. B. & W. C.
Keisling Farm	S	28° 23'	100° 17'	740	Dec. 1958	Eagle Pass - Laredo	Robert Smith
Kelly Ranch	V	30° 32'	104° 16'	5,320	# 1941	Adjacent to Alamito Creek	Bryan A. Harris
Kelly, P. W. Ranch	S	29° 46'	101° 12'	1,750	1965	Langtry - Below Amistad Dam	Bobby Kelly
King, Martin Ranch	R	29° 44'	101° 22'	1,460	Nov. 1954	Langtry - Below Amistad Dam	I. B. & W. C.
Kokernot Ranch - Hqtrs.	S	29° 58'	103° 34'	4,120	# 1952	Johnson Ranch - Langtry	David Kokernot
La Feria Materials Yard	V	26° 10'	97° 50'	60	1960	Lower Rio Grande Valley	CCWCID #3
La Feria Pumping Plant	S	26° 03'	97° 50'	60	1952	Lower Rio Grande Valley	CCWCID #3
La Joya	R	26° 15'	98° 29'	150	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Laredo Water Plant	S	27° 33'	99° 31'	410	# 1930	Eagle Pass - Laredo	Laredo Water Plant
Las Moras Creek	S	29° 00'	100° 38'	800	1958	Below Amistad Dam - Eagle Pass	Lou McGee
Lateral No. 2 Spill	C	28° 56'	100° 38'	760	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Lateral No. 12 Headgate	C	28° 54'	100° 34'	800	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.

Some months or years missing C Cumulative R Recording S Standard V Visual

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In the United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Lateral No. 15 Spill	C	28° 51'	100° 34'	740	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Laughlin Air Force Base	S	29° 22'	100° 47'	1,080	Dec. 1958	Below Amistad Dam - Eagle Pass	U. S. A. F.
Lausen Ranch	S	29° 58'	101° 22'	1,800	Feb. 1965	Pecos River Below Sheffield	Richard Hinds
Livingston Ranch	S	29° 49'	104° 22'	4,150	# 1951	Above Río Conchos - Johnson Ranch	J. S. Livingston
Lock Store	S	30° 40'	100° 57'	2,400	Oct. 1962	Devils River	Claud Ward
Loma Vista Ranch	S	30° 13'	103° 47'	5,450	# 1941	Alamito Creek	Hayes Mitchell
Los Ebanos	C	26° 16'	98° 33'	150	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Los Fresnos Pumping Plant	S	25° 57'	97° 34'	30	1952	Lower Rio Grande Valley	CCWCID #6
Los Isauros Ranch	V	27° 24'	99° 24'	490	1964	Laredo - Falcon Dam	I. Martinez
Lowry, Cliff Ranch	R	29° 39'	100° 52'	1,490	June 1962	Devils River	I. B. & W. C.
Lowry Ranch No. 2	R	29° 37'	100° 56'	1,160	May 1965	Devils River	I. B. & W. C.
Maverick County Canal Headgate	S	29° 10'	100° 46'	870	Mar. 1948	Below Amistad Dam - Eagle Pass	MCWCID #1
Maverick Power Plant	S	28° 50'	100° 33'	800	June 1952	Below Amistad Dam - Eagle Pass	C. P. & L. Co.
Maverick Ranger Station	S	29° 19'	103° 27'	2,780	Feb. 1955	Terlingua Creek	Park Ranger
McGonagill Ranch - East Mill	V	30° 20'	102° 55'	4,050	#May 1952	Johnson Ranch - Langtry	W. E. McGonagill
McGonagill Ranch - Headquarters	S	30° 20'	102° 58'	4,150	Apr. 1952	Johnson Ranch - Langtry	W. E. McGonagill
Miers, H. T. Ranch - Headquarters	C	29° 44'	100° 51'	1,760	1957	Devils River	I. B. & W. C.
Miers, H. T. Ranch No. 2	R	29° 44'	100° 53'	1,600	Apr. 1964	Devils River	I. B. & W. C.
Mitchell, Kerr Ranch	S	30° 13'	104° 00'	4,450	# 1941	Alamito Creek	Mrs. K. Mitchell
Mouth of Maravillas Creek	S	29° 34'	102° 47'	1,810	Apr. 1965	Johnson Ranch - Langtry	Black Gap Game Refuge
Neely Ranch	S	30° 59'	105° 32'	3,350	Aug. 1941	Fort Quitman - Above Río Conchos	Mrs. Tom Neely
New Mission Pumping Pit.	S	26° 11'	98° 24'		Aug. 1961	Lower Rio Grande Valley	HCWCID #14
Normandy	S	28° 55'	100° 36'	780	Dec. 1958	Below Amistad Dam - Eagle Pass	Fannin G. Lowe
02 Ranch	S	29° 51'	103° 45'	3,780	# 1914	Terlingua Creek	Cavin Woodward
Oberkampf Ranch	S	30° 13'	101° 22'	2,120	1965	Pecos River Below Sheffield	Jeff Owens
Owens Ranch	S	30° 45'	101° 40'	2,170	July 1963	Pecos River Below Sheffield	Jeff Owens
Pafford Crossing	C	29° 41'	101° 00'	1,180	Feb. 1960	Devils River	I. B. & W. C.
Penitas (Edinburg Pumping Plant)	S	26° 14'	98° 27'	100	July 1957	Lower Rio Grande Valley	B. Leadbetter
Persimmon Gap Ranger Station	S	29° 40'	103° 10'	2,900	# 1948	Johnson Ranch - Langtry	Park Ranger
Pierce, J. S. Ranch	S	30° 22'	101° 14'	2,020	July 1966	Devils River	Joe Pierce IV
Pinto Creek Station	C	29° 09'	100° 43'	870	Dec. 1958	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Presidio (IB&WC Gage)	C	29° 34'	104° 23'	2,550	Oct. 1949	Above Río Conchos - Johnson Ranch	I. B. & W. C.
Prosser Ranch No. 1	C	29° 54'	101° 14'	1,710	Mar. 1965	Pecos Riv. Below Sheffield	I. B. & W. C.
Prosser Ranch No. 2	C	29° 59'	101° 16'	1,850	Mar. 1965	Devils River	I. B. & W. C.
Prosser Ranch No. 3	C	30° 02'	101° 16'	2,020	Mar. 1965	Pecos River Below Sheffield	I. B. & W. C.
Quebec Ranch	V	30° 31'	104° 24'	4,600	1949	Adjacent to Alamito Creek	George Jones
Redford	C	29° 29'	104° 13'	2,500	July 1954	Above Río Conchos - Johnson Ranch	I. B. & W. C.
Roma (Internat'l Bridge)	S	26° 24'	99° 01'	230	1941	Falcon Dam - Rio Grande City	Starr County Bridge Co.
Rosita Creek Siphon	C	28° 41'	100° 24'	760	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Rosita Creek Station	C	28° 36'	100° 24'	700	# 1959	Eagle Pass - Laredo	I. B. & W. C.
San Benito Pump	S	26° 03'	97° 45'	50	Oct. 1933	Lower Rio Grande Valley	I. B. & W. C.
Sawyer, W. E. Ranch	S	30° 28'	100° 47'	2,100	July 1966	Devils River	Geo. Powell
Sellers Ranch	C	29° 34'	101° 02'	1,190	#Feb. 1960	Devils River	I. B. & W. C.
Sheep Pasture	S	29° 33'	102° 55'	2,210	May 1965	Johnson Ranch - Langtry	Black Gap Game Refuge
Shumla Bend	C	29° 49'	101° 25'	1,350	Nov. 1954	Pecos River Below Sheffield	I. B. & W. C.
Slaughter Ranch	V	29° 57'	102° 41'	2,560	1965	Johnson Ranch - Langtry	Mrs. J. Garner
Stewart Ranch	R	29° 35'	100° 52'	1,330	Feb. 1960	Devils River	I. B. & W. C.
Stillwell Crossing	S	29° 24'	102° 50'	1,820	# 1960	Johnson Ranch - Langtry	Ulice Adams
Stumberg, Steve Ranch	C	30° 11'	102° 53'	4,300	# 1943	Johnson Ranch - Langtry	Mrs. S. Stumberg
Sub-Station 14	R	30° 16'	100° 35'	2,300	# 1922	Devils River	Texas A&M Experiment Station
Sultenfuss Ranch	S	29° 21'	100° 37'	1,110	1965	Pinto Creek	Udo Sultenfuss

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LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In the United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Terlingua Creek Station	C	29° 12'	103° 36'	2,260	Mar. 1952	Above Río Conchos - Johnson Ranch	I. B. & W. C.
Terrell Plant (El Paso Nat. Gas Co.)	R	30° 22'	101° 50'	2,510	July 1962	Pecos River Below Sheffield	Bob Norred
Todd Field	S	30° 51'	101° 27'	2,650	Sept. 1964	Pecos River Below Sheffield	R. B. Stephens
Trees Farm	R	28° 38'	100° 25'	720	Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Van Dalsem Farm	C	28° 27'	100° 19'	700	1959	Eagle Pass - Laredo	I. B. & W. C.
Van Eman - Hord Ranch ⊕	S	29° 52'	104° 02'	3,820	#July 1942	Alamito Creek	L. T. Van Eman
Vinegarone	C	29° 57'	100° 46'	1,780	May 1966	Devils River	I. B. & W. C.
Ward Ranch	S	30° 07'	101° 24'	1,800	Feb. 1965	Pecos River Below Sheffield	Bob Bradshaw
Wardlaw Ranch	R	29° 28'	100° 58'	1,110	Aug. 1955	Devils River	I. B. & W. C.
Weyrich Farm	C	28° 40'	100° 24'	760	Sept. 1962	Eagle Pass - Laredo	I. B. & W. C.
Whipple Farm	S	26° 04'	97° 29'	25	1952	Lower Rio Grande Valley	Harry Whipple
Whitehead Bros. Ranch	S	30° 02'	100° 52'	1,900	May 1966	Devils River	I. B. & W. C.
Whitehead, L. D. Ranch	S	30° 10'	100° 46'	2,110	May 1965	Devils River	L.D.Whitehead, Jr.
Whitehead, Tuffy Ranch	R	29° 38'	101° 07'	1,420	July 1962	Devils River	I. B. & W. C.
Willoughby, Ray Ranch	V	30° 12'	103° 33'	5,050	1952	Johnson Ranch - Langtry	Cliff St. Clair
Wills Ranch	S	30° 26'	101° 36'	2,450	Sept. 1964	Pecos River Below Sheffield	Sam Wills
Wipff Ranch	C	29° 00'	100° 35'	840	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Woodward, J. F. Ranch	S	30° 08'	103° 36'	4,750	1954	Johnson Ranch - Langtry	J. F. Woodward
Wuenache Farm	S	28° 24'	100° 19'	670	# 1952	Eagle Pass - Laredo	I. B. & W. C.
Yarborough Ranch	S	30° 06'	103° 36'	4,550	1966	Johnson Ranch - Langtry	
Zapata Water Plant	S	26° 54'	99° 16'	380	May 1953	Laredo - Falcon Dam	Zapata Water Plant

Some months or years missing C Cumulative R Recording S Standard V Visual
⊕ Formerly Baugh-Van Eman Ranch

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
A. Blanca Canoas, Nuevo León	S	25° 32'	100° 30'	†	# 1958	Río San Juan	Hydr. Resources
Allende, Coahuila	S	28° 21'	100° 51'	1,230	# 1947	Eagle Pass - Laredo	Hydr. Resources
Anáhuac, Nuevo León	S	27° 15'	100° 08'	656	#June 1933	Río Salado	Hydr. Resources
Anáhuac 166, Tamaulipas	C	26° 46'	99° 15'	308	Jan. 1964	Laredo - Falcon Dam	I. B. & W. C.
Apodaca, Nuevo León	S	25° 46'	100° 11'	1,330	Feb. 1964	Río San Juan	Hydr. Resources
Argüelles, Tamaulipas	C	26° 11'	98° 28'	†	1962	Lower Río Grande Valley	I. B. & W. C.
Bachiniva, Chihuahua	S	28° 46'	107° 15'	6,250	# 1952	Adjacent to Río Conchos	Meteor. Service of Mexico
Bajo Río Bravo, Tamaulipas							
No. 1-2	S	25° 56'	97° 46'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 1-3	S	25° 50'	97° 42'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 1-4	S	25° 51'	97° 45'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 1-12	S	25° 56'	97° 38'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 1-13	S	25° 44'	97° 40'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 1-18	S	25° 49'	97° 42'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-5	S	25° 48'	97° 49'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-6	S	25° 44'	97° 53'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-7	S	25° 39'	97° 42'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-8	S	25° 40'	97° 55'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-10	S	25° 36'	97° 52'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-11	S	25° 35'	97° 46'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-14	S	25° 56'	97° 59'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-15	S	25° 46'	98° 01'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-17	S	25° 49'	97° 58'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 4-16	S	25° 35'	98° 00'	†	1964	Lower Río Grande Valley	Hydr. Resources
Bajo Río San Juan, Tamaulipas							
No. 2-29	S	26° 10'	98° 38'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-33	S	26° 10'	98° 28'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 2-38	S	26° 06'	98° 34'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-47	S	25° 58'	98° 07'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-55	S	25° 52'	98° 12'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-58	S	25° 50'	98° 11'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-60	S	25° 46'	98° 10'	†	1964	Lower Río Grande Valley	Hydr. Resources
No. 3-63	S	25° 41'	98° 06'	†	1964	Lower Río Grande Valley	Hydr. Resources
Balleza, Chihuahua	S	26° 57'	106° 21'	5,870	# 1903	Río Conchos	Meteor. Service of Mexico
Banderas, Chihuahua	S	31° 00'	105° 39'	†	1963	Ft. Quitman - Above Río Conchos	Hydr. Resources
Bustamante, Nuevo León	S	26° 32'	100° 31'	1,450	# 1958	Río Salado	Hydr. Resources
Cabezones, Nuevo León	S	24° 59'	99° 45'	†	1962	Adjacent to Río San Juan	Hydr. Resources
Cadereyta, Nuevo León	S	25° 35'	100° 00'	1,180	#Sept. 1904	Río San Juan	Hydr. Resources
Camargo, Chihuahua	S	27° 42'	105° 10'	5,420	Oct. 1956	Río Conchos	Hydr. Resources
Camargo, Tamaulipas	S	26° 19'	98° 50'	223	# 1953	Falcon Dam - Río Grande City	Hydr. Resources
Carbonera, Nuevo León	S	24° 49'	100° 47'	†	# 1958	Río San Juan	Hydr. Resources
Carichic, Chihuahua	S	27° 55'	107° 04'		May 1961	Río Conchos	Meteor. Service of Chihuahua
Casillas, Nuevo León	S	25° 12'	100° 12'	4,060	# 1958	Río San Juan	Hydr. Resources
Cd. Acuña, Coahuila	S	29° 20'	100° 57'	900	1951	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Cd. Acuña Km. 22, SE., Coahuila	C	29° 08'	100° 50'	1,100	# 1962	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Cd. Guerrero, Chihuahua	S	28° 33'	107° 29'	6,560	#May 1903	Adjacent to Río Conchos	Meteor. Service of Mexico
Cd. Mier, Tamaulipas	S	26° 26'	99° 09'	260	Oct. 1955	Falcon Dam - Río Grande City	I. B. & W. C.
Cd. Mier Km. 8, SW., Tamaulipas	C	26° 23'	99° 14'	†	1962	Río Alamo	I. B. & W. C.
Cerralvo, Nuevo León	R	26° 05'	99° 37'	1,130	#Nov. 1938	Río San Juan	Hydr. Resources
Cerros Prietos, Chihuahua	S	29° 13'	106° 04'	4,270	Oct. 1962	Adjacent to Río Conchos	Meteor. Service of Mexico
Chihuahua, Chihuahua	S	28° 38'	106° 04'	4,690	# 1900	Río Conchos	Meteor. Service of Mexico
Chupadero, Coahuila	S	29° 05'	100° 51'	980	1961	Río San Diego	F. Jakubesch
Ciénega de Flores, Nuevo León	R	25° 57'	100° 10'	1,770	Apr. 1938	Río San Juan	Hydr. Resources
Ciénega del Toro, Nuevo León	S	25° 05'	100° 20'	7,010	# 1958	Río San Juan	Hydr. Resources
Colombia, Nuevo León	C	27° 42'	99° 46'	†	Jan. 1964	Eagle Pass - Laredo	I. B. & W. C.
Colonia Anáhuac, Chihuahua	S	28° 29'	106° 44'	6,550	1961	Río Conchos	Celulosa de Chihuahua, S. A.
Comales, Tamaulipas	R	26° 11'	98° 55'	260	#Mar. 1938	Río San Juan	Hydr. Resources
Conchos, Coahuila	S	28° 01'	101° 20'	†	#Oct. 1950	Río Salado	Hydr. Resources
Control, Tamaulipas	S	25° 58'	97° 49'	59	#June 1942	Lower Río Grande Valley	Hydr. Resources
Coyame, Chihuahua	S	29° 28'	105° 06'	†	Nov. 1961	Río Conchos	Meteor. Service of Chihuahua

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LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Cuatro Ciénegas, Coahuila	S	26° 59'	102° 04'	2,430	# 1923	Río Salado	Hydr. Resources
Cuauhtémoc, Chihuahua	S	28° 24'	106° 52'	7,250	#June 1923	Adjacent to Río Conchos	Meteor. Service of Mexico
Cuchillo Parado, Chihuahua	S	29° 27'	104° 53'	2,980	# 1951	Río Conchos	Hydr. Resources
Delicias, Chihuahua	S	28° 11'	105° 28'	3,710	#Aug. 1933	Río Conchos	Hydr. Resources
Don Martín, Coahuila	S	27° 31'	100° 37'	790	#June 1927	Río Salado	Hydr. Resources
El Anteojo, Chihuahua	S	28° 29'	104° 48'	4,130	1963	Adjacent to Río Conchos	Meteor. Service of Mexico
El Cedrito, Coahuila	S	29° 13'	101° 53'	†	Aug. 1961	Langtry - Below Amistad Dam	I. B. & W. C.
El Cuarenta, Chihuahua	S	30° 33'	105° 50'	†	1965	Adjacent to Ft. Quitman Above Río Conchos	Meteor. Service of Mexico
El Cuchillo, Nuevo León	S	25° 43'	99° 16'	590	June 1938	Río San Juan	Hydr. Resources
El Cuervo, Chihuahua	S	30° 15'	105° 08'	3,840	# 1961	Adjacent to Ft. Quitman Above Río Conchos	Hydr. Resources
El Cuervo, Nuevo León	S	27° 35'	100° 18'	†	1964	Río Salado	Mr. Reniu
El Llano, Chihuahua	S	30° 02'	105° 05'	4,000	1965	Adjacent to Ft. Quitman Above Río Conchos	I. B. & W. C.
El Maguey, Chihuahua	S	27° 37'	106° 09'	4,380	July 1955	Río Conchos	Meteor. Service of Chihuahua
El Moral, Coahuila	C	28° 54'	100° 38'	774	# 1962	Below Amistad Dam - Eagle Pass	I. B. & W. C.
El Moral Km. 17, SW., Coahuila	C	28° 50'	100° 46'	900	# 1962	Below Amistad Dam - Eagle Pass	I. B. & W. C.
El Nopal, Chihuahua	S	30° 02'	106° 05'	†	# 1961	Adjacent to Río Conchos	Meteor. Service of Chihuahua
El Paisano, Coahuila	C	29° 20'	101° 09'	1,250	1962	Below Amistad Dam - Eagle Pass	I. B. & W. C.
El Remolino, Coahuila	S	28° 45'	101° 05'	1,310	June 1958	Río San Rodrigo	I. B. & W. C.
El Sitio, Chihuahua	S	27° 31'	106° 16'	†	July 1955	Río Conchos	Meteor. Service of Chihuahua
El Sueco, Chihuahua	S	29° 54'	106° 24'	5,090	1958	Adjacent to Río Conchos	Meteor. Service of Chihuahua
El Treinta, Coahuila	S	28° 20'	101° 24'	†	1961	Río Salado	I. B. & W. C.
El Vergel, Chihuahua	S	26° 22'	106° 30'	7,350	# 1957	Río Conchos	Meteor. Service of Mexico
Escalón, Chihuahua	S	26° 45'	104° 20'	4,160	# 1957	Adjacent to Río Conchos	Hydr. Resources
Escuela Ganadería, Chihuahua	S	28° 42'	106° 04'	4,680	1961	Río Conchos	Meteor. Service of Chihuahua
Escuela Preparatoria Nuevo Laredo, Tamps.	S	27° 29'	99° 31'	427	May 1965	Eagle Pass - Laredo	I. B. & W. C.
Félix U. Gómez (Los Lamentos), Chihuahua	S	30° 34'	105° 49'	4,920	# 1955	Adjacent to Ft. Quitman Above Río Conchos	Meteor. Service of Mexico
Galeana, Nuevo León	S	24° 50'	100° 04'	5,430	# 1958	Adjacent to Río San Juan	Hydr. Resources
Gallego, Chihuahua	S	29° 50'	106° 23'	5,100	1958	Adjacent to Río Conchos	Meteor. Service of Chihuahua
Garita Km. 28, Chihuahua	S	31° 33'	106° 28'	3,990	May 1958	El Paso - Ft. Quitman	I. B. & W. C.
Gral. Bravo, Nuevo León	S	25° 48'	99° 11'	590	#Sept. 1906	Río San Juan	Hydr. Resources
Gral. Cepeda, Coahuila	S	25° 23'	101° 29'	4,920	#Aug. 1926	Río San Juan	Hydr. Resources
Guadalupe, Chihuahua	S	31° 23'	106° 06'	3,650	1958	El Paso - Ft. Quitman	I. B. & W. C.
Hacienda San Miguel, Coahuila	S	29° 13'	101° 30'	†	1961	Langtry - Below Amistad Dam	I. B. & W. C.
Hedionda Grande, Coahuila	S	25° 06'	100° 51'	†	# 1958	Adjacent to Río San Juan	Hydr. Resources
Higueras, Nuevo León	S	25° 58'	100° 01'	1,640	#Sept. 1906	Río San Juan	Meteor. Service of Mexico
Icamole, Nuevo León	S	25° 55'	100° 43'	4,900	# 1958	Río San Juan	Hydr. Resources
I. D. 8, Coahuila	R	29° 35'	101° 23'	1,430	Nov. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
I. D. 12, Coahuila	R	29° 27'	101° 14'	1,230	Nov. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Iturbide, Nuevo León	S	24° 44'	99° 54'	†	1941	Adjacent to Río San Juan	Hydr. Resources
Jarita, Nuevo León	C	27° 26'	99° 48'	680	#Mar. 1961	Laredo - Falcon Dam	I. B. & W. C.
Jimenéz, Chihuahua	S	27° 08'	104° 55'	4,490	# 1951	Río Conchos	Hydr. Resources
Jimenéz, Coahuila	S	29° 04'	100° 40'	810	# 1951	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Juárez, Chihuahua	S	31° 44'	106° 29'	3,740	# 1903	El Paso - Ft. Quitman	Hydr. Resources
Km. 99, Chihuahua	S	28° 08'	105° 35'	†	# 1962	Río Conchos	Hydr. Resources
Km. 135, Chihuahua	S	28° 13'	105° 37'	†	# 1962	Río Conchos	Hydr. Resources
La Babia, Coahuila	S	28° 33'	102° 04'	†	1961	Río Salado	I. B. & W. C.
La Bandera, Tamaulipas	C	26° 42'	99° 22'	†	1962	Laredo - Falcon Dam	I. B. & W. C.
La Boquilla, Chihuahua	S	27° 32'	105° 25'	4,330	# 1910	Río Conchos	Electric Industry of Mexico
La Campana, Chihuahua	S	29° 20'	106° 20'	4,820	1958	Adjacent to Río Conchos	Meteor. Service of Mexico

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LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
La Cieneguilla, Chihuahua	S	27° 40'	106° 21'	†	# 1963	Río Conchos	Meteor. Service of Mexico
La Cruz, Nuevo León	S	25° 28'	100° 26'	†	1958	Río San Juan	Hydr. Resources
La Gloria, Nuevo León	S	26° 53'	99° 49'	390	#May 1958	Río Salado	I. B. & W. C.
La Junta, Chihuahua	S	28° 29'	107° 20'	6,730	# 1925	Adjacent to Río Conchos	Hydr. Resources
La Junta (Satevó), Chihuahua	S	27° 55'	106° 01'	4,490	1961	Río Conchos	Meteor. Service of Mexico
La Popa, Nuevo León	S	26° 10'	100° 50'	3,230	# 1958	Río San Juan	Hydr. Resources
La Trasquila, Chihuahua	S	29° 08'	107° 08'	†	# 1962	Río Conchos	Hydr. Resources
Laguna de Salinillas, Nuevo León	S	27° 26'	100° 23'	750	# 1940	Río Salado	Hydr. Resources
Laguna de Sánchez, Nuevo León	R	25° 22'	100° 17'	6,500	Apr. 1941	Río San Juan	Hydr. Resources
Lampazos, Nuevo León	S	27° 02'	100° 30'	1,120	# 1958	Río Salado	Meteor. Service of Mexico
Las Burras, Chihuahua	S	28° 31'	105° 26'	3,590	July 1949	Río Conchos	Hydr. Resources
Las Choyas, Chihuahua	S	29° 38'	106° 02'	4,340	# 1955	Adjacent to Río Conchos	Meteor. Service of Chihuahua
Las Comitas, Nuevo León	S	25° 26'	100° 09'	1,670	# 1940	Río San Juan	Hydr. Resources
Las Enramadas, Nuevo León	S	25° 30'	99° 31'	730	#Sept. 1926	Río San Juan	Hydr. Resources
Las Norias, Coahuila	S	29° 14'	102° 22'	†	#May 1959	Johnson Ranch - Langtry	I. B. & W. C.
Las Tortillas, Tamaulipas	C	26° 50'	99° 34'	360	May 1961	Laredo - Falcon Dam	I. B. & W. C.
Las Varas, Chihuahua	S	29° 48'	106° 42'	†	1958	Adjacent to Río Conchos	Meteor. Service of Mexico
Las Vírgenes, Chihuahua	S	28° 10'	105° 38'	4,070	# 1943	Río Conchos	Hydr. Resources
Lázaro Cárdenas, Chihuahua	S	28° 23'	105° 37'	3,940	1961	Río Conchos	Meteor. Service of Mexico
Linares, Nuevo León	R	24° 52'	99° 34'	1,180	# 1900	Adjacent to Río San Juan	Hydr. Resources
Los Barriles, Chihuahua	S	30° 55'	105° 45'	4,860	July 1958	El Paso - Ft. Quitman	I. B. & W. C.
Los Herrera (La Tableta), Nuevo León	R	25° 54'	99° 24'	820	Sept. 1939	Río San Juan	Hydr. Resources
Los Ojos, Chihuahua	S	29° 10'	106° 21'	4,990	1957	Adjacent to Río Conchos	Meteor. Service of Chihuahua
Los Pozos, Chihuahua	S	28° 53'	106° 02'	3,940	# 1956	Río Conchos	Meteor. Service of Chihuahua
Los Ramones, Nuevo León	R	25° 42'	99° 38'	260	#Sept. 1939	Río San Juan	Hydr. Resources
Lote No. 20, Chihuahua	S	28° 59'	106° 20'	†	# 1962	Adjacent to Río Conchos	Meteor. Service of Mexico
Luis L. León, Chihuahua	S	31° 05'	105° 38'	3,460	Apr. 1958	El Paso - Ft. Quitman	I. B. & W. C.
Maclovio Herrera (Falomir), Chihuahua	S	29° 04'	105° 09'	3,380	# 1924	Río Conchos	Meteor. Service of Mexico
Maijoma, Chihuahua	S	28° 55'	104° 21'	4,270	Aug. 1955	Río Conchos	Meteor. Service of Chihuahua
Majalca, Chihuahua	S	28° 53'	106° 21'	6,860	June 1963	Río Conchos	Meteor. Service of Mexico
Manantial Maris, Coahuila	C	29° 24'	101° 02'	910	1962	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Manuel Benavides, Chihuahua	S	29° 06'	103° 54'	†	Oct. 1961	Above Río Conchos - Johnson Ranch	Meteor. Service of Mexico
Matamoros, Tamaulipas	S	25° 52'	97° 30'	33	# 1958	Lower Rio Grande Valley	Hydr. Resources
Méndez, Tamaulipas	S	25° 07'	98° 35'	430	#Sept. 1939	Adjacent to Lower Rio Grande Valley	Hydr. Resources
Meoqui, Chihuahua	S	28° 16'	105° 29'	3,790	1961	Río Conchos	Meteor. Service of Mexico
Miguel Alemán, Tamaulipas	S	26° 24'	99° 02'	180	1964	Falcon Dam - Rio Grande City	Hydr. Resources
Mimbres, Nuevo León	S	24° 58'	100° 16'	†	# 1958	Río Salado	Hydr. Resources
Mina, Nuevo León	S	26° 00'	100° 32'	†	# 1958	Río San Juan	Hydr. Resources
Mina La Borrada, Coahuila	S	29° 21'	102° 36'	†	Aug. 1961	Johnson Ranch - Langtry	I. B. & W. C.
Monclova, Coahuila	S	26° 54'	101° 25'	1,920	# 1897	Río Salado	Hydr. Resources
Montemorelos, Nuevo León	S	25° 12'	99° 50'	1,420	#Aug. 1904	Río San Juan	Hydr. Resources
Monterrey, Nuevo León	S	25° 40'	100° 18'	1,740	# 1896	Río San Juan	Hydr. Resources
Músquiz, Coahuila	S	27° 53'	101° 31'	1,650	# 1923	Río Salado	Hydr. Resources
Nonoava, Chihuahua	S	27° 29'	106° 44'	†	Nov. 1963	Río Conchos	Meteor. Service of Chihuahua
Nueva Cd. Guerrero, Tamaulipas	S	26° 34'	99° 14'	350	#May 1954	Laredo - Falcon Dam	I. B. & W. C.
Nueva Rosita, Coahuila	S	27° 56'	101° 13'	1,410	#Aug. 1925	Río Salado	Meteor. Service of Mexico
Nuevo Laredo, Tamaulipas	V	27° 30'	99° 30'	430	1950	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamaulipas	S	27° 30'	99° 30'	430	# 1909	Laredo - Falcon Dam	Meteor. Service of Mexico
Nuevo Laredo Km. 26, SSW., Tamaulipas	C	27° 17'	99° 37'	†	Apr. 1961	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo Km. 50, SSW., Nuevo León	C	27° 04'	99° 43'	†	Apr. 1961	Laredo - Falcon Dam	I. B. & W. C.

Some months or years missing R Recording S Standard † Not available C Cumulative V Visual

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Ocampo, Coahuila	S	27° 19'	102° 24'	3,770	# 1960	Adjacent to Río Salado	Hydr. Resources
Ojinaga, Chihuahua	S	29° 34'	104° 24'	2,590	#Apr. 1954	Río Conchos	I. B. & W. C.
Ojinaga, Chihuahua	S	29° 34'	104° 25'	2,620	#Nov. 1906	Río Conchos	Meteor. Service of Mexico
Ojo Caliente, Chihuahua	S	27° 41'	105° 12'	4,010	1942	Río Conchos	Hydr. Resources
Pajonal, Nuevo León	S	25° 29'	100° 23'	†	1958	Río San Juan	Hydr. Resources
Palestina, Coahuila	S	29° 09'	100° 59'	1,080	# 1931	Río San Diego	Hydr. Resources
Parás, Nuevo León	S	26° 30'	99° 31'	540	# 1958	Río Alamo	Hydr. Resources
Parral, Chihuahua	S	26° 56'	105° 39'	5,450	# 1903	Río Conchos	Meteor. Service of Mexico
Parras, Coahuila	S	25° 27'	102° 10'	5,510	1958	Adjacent to Río San Juan	Hydr. Resources
Parrita, Chihuahua	S	29° 25'	106° 29'	†	#Sept. 1958	Adjacent to Río Conchos	Hydr. Resources
Pichachic, Chihuahua	S	28° 07'	107° 28'	†	# 1963	Adjacent to Río Conchos	Hydr. Resources
Piedras Negras, Coahuila	S	28° 43'	100° 31'	820	# 1951	Below Amistad Dam - Eagle Pass	Meteor. Service of Mexico
Piedras Negras Km. 22, SW., Coahuila	C	28° 33'	100° 38'	†	# 1962	Eagle Pass - Laredo	I. B. & W. C.
Planta Zootécnica, Chihuahua	S	28° 41'	106° 04'	4,770	# 1957	Río Conchos	Meteor. Service of Mexico
Porvenir, Chihuahua	S	31° 14'	105° 52'	3,530	1958	El Paso - Ft. Quitman	I. B. & W. C.
Potosí, Nuevo León	S	24° 51'	100° 19'	6,260	# 1962	Adjacent to Río San Juan	Hydr. Resources
Potrero, del Llano, Chihuahua	S	29° 13'	104° 26'	3,540	June 1964	Above Río Conchos - Johnson Ranch	I. B. & W. C.
Potrero Redondo, Nuevo León	S	25° 16'	100° 10'	†	# 1958	Río San Juan	Hydr. Resources
Praxedis G. Guerrero, Chihuahua	S	31° 22'	106° 00'	3,560	1958	El Paso - Ft. Quitman	I. B. & W. C.
Presa Amistad, Coahuila	R	29° 26'	101° 04'	1,040	1962	Langtry - Below Amistad Dam	I. B. & W. C.
Presa Anzaldúas, Tamaulipas	V	26° 08'	98° 20'	105	Apr. 1960	Lower Rio Grande Valley	I. B. & W. C.
Presa Cabeceras, Coahuila	S	29° 02'	101° 05'	†	1964	Below Amistad Dam - Eagle Pass	Hydr. Resources
Presa Centenario, Coahuila	S	29° 13'	100° 57'	†	1964	Arroyo Las Vacas	Hydr. Resources
Presa Chihuahua, Chihuahua	S	28° 34'	106° 10'	5,230	Oct. 1961	Río Conchos	Hydr. Resources
Presa El Granero, Chihuahua	S	28° 57'	105° 17'	†	Oct. 1964	Río Conchos	Hydr. Recources
Presa San Miguel, Coahuila	S	29° 02'	100° 57'	1,000	1964	Río San Diego	Hydr. Resources
Progreso, Coahuila	S	27° 25'	101° 00'	1,210	#Feb. 1943	Río Salado	Hydr. Resources
Ramos Arizpe, Coahuila	S	25° 32'	100° 57'	4,590	#Apr. 1907	Río San Juan	Meteor. Service of Mexico
Rancho Los Vidrios, Tamaulipas	C	27° 35'	99° 37'	450	Sept. 1956	Eagle Pass - Laredo	I. B. & W. C.
Rancho Mercedes, Coahuila	S	28° 02'	100° 01'	540	May 1959	Eagle Pass - Laredo	I. B. & W. C.
Rancho San Diego, Coahuila	S	27° 59'	100° 35'	†	May 1959	Eagle Pass - Laredo	I. B. & W. C.
Rancho San Juan de la Palma, Tamaulipas	S	26° 54'	99° 20'	350	Apr. 1955	Laredo - Falcon Dam	I. B. & W. C.
Rayones, Nuevo León	S	25° 01'	100° 05'	1,970	#Oct. 1926	Río San Juan	Hydr. Resources
Reata, Coahuila	S	26° 07'	101° 04'	3,070	#July 1944	Río San Juan	Hydr. Resources
Retamal, Tamaulipas	S	26° 02'	98° 03'	82	Oct. 1949	Lower Rio Grande Valley	I. B. & W. C.
Reynosa, Tamaulipas	R	26° 06'	98° 17'	130	# 1941	Lower Rio Grande Valley	Hydr. Resources
Reynosa Km. 22, SW., Tamaulipas	C	26° 00'	98° 30'	†	# 1962	Lower Rio Grande Valley	I. B. & W. C.
Reynosa Km. 40, SW., Nuevo León	S	25° 56'	98° 39'	492	#Feb. 1959	Lower Rio Grande Valley	I. B. & W. C.
Rinconada, Nuevo León	S	25° 41'	100° 42'	4,790	#Apr. 1944	Río San Juan	Hydr. Resources
Río Bravo, Tamaulipas	S	25° 59'	98° 06'	85	#Sept. 1950	Lower Rio Grande Valley	Hydr. Resources
Río Salado Riberena, Tamaulipas	S	26° 48'	99° 24'	330	July 1964	Laredo - Falcon Dam	I. B. & W. C.
Rosetilla, Chihuahua	S	28° 15'	105° 18'	3,780	1940	Río Conchos	Electric Industry of Mexico
Rusio, Nuevo León	S	24° 42'	100° 26'	6,570	#June 1956	Adjacent to Río San Juan	Hydr. Resources
Sabinas, Coahuila	S	27° 51'	101° 07'	1,120	#May 1922	Río Salado	Hydr. Resources
Sabinas Hidalgo, Nuevo León	S	26° 30'	100° 10'	1,030	May 1958	Río Salado	I. B. & W. C.
Saltillo, Coahuila	S	25° 26'	101° 00'	5,280	# 1886	Río San Juan	Hydr. Resources
Samalayuca, Chihuahua	S	31° 21'	106° 28'	4,180	1958	El Paso - Ft. Quitman	Meteor. Service of Mexico
San Agustín, Chihuahua	S	31° 31'	106° 15'	3,650	1958	El Paso - Ft. Quitman	I. B. & W. C.
San Antonio de las Alazanas, Coahuila	S	25° 16'	100° 35'	†	1958	Río San Juan	Hydr. Resources
San Antonio, Chihuahua	S	31° 01'	106° 00'	4,490	July 1958	El Paso - Ft. Quitman	I. B. & W. C.

Some months or years missing R Recording S Standard V Visual † Not available C Cumulative

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
San Antonio Sauz, Chihuahua	S	29° 03'	106° 15'	5,020	Mar. 1960	Adjacent to Río Conchos	Private Observer
San Antonio, Durango	S	26° 25'	105° 21'	5,430	1943	Río Conchos	Hydr. Resources
San Buenaventura, Coahuila	S	27° 04'	101° 33'	2,300	#Dec. 1926	Río Salado	Meteor. Service of Mexico
San Fernando, Coahuila	S	29° 25'	101° 43'	†	Aug. 1961	Langtry - Below Amistad Dam	I. B. & W. C.
San Gerónimo, Coahuila	C	28° 29'	101° 49'	†	1951	Río Salado	Ind. Co-operator
San Gregorio, Coahuila	C	29° 22'	101° 20'	†	1962	Langtry - Below Amistad Dam	I. B. & W. C.
San Ignacio, Tamaulipas	C	27° 04'	99° 28'	†	1964	Laredo - Falcon Dam	I. B. & W. C.
San Javier, Nuevo León	C	26° 16'	99° 25'	†	1962	Río Alamo	I. B. & W. C.
San Juan, Nuevo León	S	25° 33'	99° 50'	880	#Nov. 1943	Río San Juan	Hydr. Resources
San Lorenzo, Chihuahua	S	28° 09'	106° 29'	3,770	1961	Río Conchos	Hydr. Resources
San Miguel de Camargo, Tamaulipas	S	26° 14'	98° 36'	130	# 1953	Lower Rio Grande Valley	Hydr. Resources
San Rafael, Nuevo León	S	25° 02'	100° 33'	†	# 1958	Adjacent to Río San Juan	Hydr. Resources
Santa Bárbara, Chihuahua	S	26° 48'	105° 49'	6,460	1964	Río Conchos	Hydr. Resources
Santa Catarina, Nuevo León	R	25° 40'	100° 29'	2,230	Oct. 1937	Río San Juan	Hydr. Resources
Santa Rita, Chihuahua	S	27° 49'	104° 31'	3,950	1956	Adjacent to Río Conchos	Meteor. Service of Chihuahua
Santa Rosa, Coahuila	V	29° 38'	101° 28'	†	# 1958	Langtry - Below Amistad Dam	Ind. Co-operator
Santo Domingo, Coahuila	S	28° 57'	102° 24'	†	July 1960	Río Salado	I. B. & W. C.
Sierra Mojada, Coahuila	S	27° 17'	103° 42'	4,120	# 1897	Adjacent to Johnson Ranch - Langtry	Hydr. Resources
Siquírichic, Chihuahua	S	27° 16'	107° 13'	7,610	July 1956	Adjacent to Río Conchos	Meteor. Service of Mexico
Tacubaya, Chihuahua	S	28° 08'	104° 23'	5,150	July 1962	Adjacent to Río Conchos	Meteor. Service of Mexico
Tinajas, Chihuahua	S	31° 08'	106° 05'	4,320	1958	El Paso - Ft. Quitman	I. B. & W. C.
Topo Chico, Nuevo León	R	25° 44'	100° 20'	1,640	#Aug. 1939	Río San Juan	Hydr. Resources
Tosisihua, Chihuahua	S	29° 45'	105° 25'	†	# 1963	Adjacent to Río Conchos	Hydr. Resources
Tres Hermanos, Chihuahua	S	27° 46'	106° 08'	4,300	1961	Río Conchos	Meteor. Service of Chihuahua
Túnel San Francisco, Nuevo León	S	25° 25'	100° 10'	4,300	# 1958	Río San Juan	Hydr. Resources
Vado de Cedillos, Chihuahua	S	31° 13'	105° 48'	3,500	Apr. 1958	El Paso - Ft. Quitman	I. B. & W. C.
Valadeces, Tamaulipas	S	26° 14'	98° 40'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Vallecillo, Nuevo León	S	26° 40'	99° 59'	900	#June 1958	Río Salado	Hydr. Resources
Valle Allende, Chihuahua	S	26° 56'	105° 23'	†	Mar. 1962	Río Conchos	Meteor. Service of Chihuahua
Valle Hermoso, Tamaulipas	S	25° 41'	97° 48'	52	#June 1949	Lower Rio Grande Valley	Hydr. Resources
Victoria, Chihuahua	S	27° 58'	104° 33'	4,810	June 1963	Adjacent to Río Conchos	Meteor. Service of Mexico
Villa Aldama, Chihuahua	S	28° 50'	105° 55'	4,140	1961	Río Conchos	Meteor. Service of Mexico
Villa Allende, Nuevo León	S	25° 17'	100° 01'	2,210	#Nov. 1938	Río San Juan	Hydr. Resources
Villa Coronado, Chihuahua	S	26° 44'	105° 08'	4,790	Aug. 1964	Río Conchos	Hydr. Resources
Villa de Santiago, Nuevo León	S	25° 25'	100° 09'	1,460	# 1923	Río San Juan	Hydr. Resources
Villa Guerrero, Coahuila	S	28° 19'	100° 23'	690	#June 1958	Eagle Pass - Laredo	I. B. & W. C.
Villa Hidalgo, Coahuila	S	27° 47'	99° 52'	660	1951	Eagle Pass - Laredo	I. B. & W. C.
Villa Juárez, Coahuila	S	27° 37'	100° 44'	1,000	# 1943	Río Salado	Hydr. Resources
Villalba, Chihuahua	S	28° 10'	105° 46'	3,940	Oct. 1940	Río Conchos	Hydr. Resources
Zaragoza, Chihuahua	S	31° 39'	106° 21'	3,750	Feb. 1958	El Paso - Ft. Quitman	Hydr. Resources

Some months or years missing R Recording S Standard V Visual † Not available C Cumulative

EVAPORATION IN THE RIO GRANDE BASIN IN THE UNITED STATES

In Inches

Tabulated below are records of evaporation observed at eight stations in Texas operated by the United States Section of this Commission from Presidio to Brownsville. At all stations, the exposure to wind was uniform and relatively unimpeded. The sites were kept cleared of all high brush and trees within 150 feet, and all brush, tall weeds, and other obstructions within 100 feet of the fenced enclosures. Within the enclosures, all vegetation has been eradicated or kept trimmed to within 3 inches of the ground surface. For specific location of these stations refer to data opposite same station name shown in "Location of Rainfall Stations on the Rio Grande Watershed," pages 137 through 140 in this bulletin.

Records were obtained by means of:

1. U. S. Weather Bureau Standard Pan. A circular pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, is set on a wooden platform with the rim of the pan 16 inches above the ground. The water level is maintained between 2 and 3 inches below the rim of the pan and is measured with a micrometer gage. This type of pan was in operation at Amistad Dam and Falcon Dam.

2. A circular pan, 2 feet in diameter and 36 inches deep, made of 22-gage galvanized iron, is set in the ground with the rim of the pan 3 inches above the ground surface and the top covered with a circular screen of No. 4 (1/4" mesh) galvanized hardware cloth. The water level is maintained between 2.5 and 3.5 inches below the rim of the pan. This type of pan was in operation at Falcon Dam. This same type of pan, equipped with an automatic feed tank that maintains the water at a level 3 inches below the rim of the pan, was in operation at Martin King Ranch, Wardlaw Ranch, and Eagle Pass.

3. An evaporometer developed by the United States Section of this Commission and calibrated against a 2-foot pan described above, was in operation at Presidio, Johnson Ranch, and Brownsville, 7 miles east.

Month	Presidio		Johnson Ranch		Martin King Ranch		Wardlaw Ranch	
	1966	Average 1950-1966	1966	Average 1950-1966	1966	#Average 1956-1966	1966	#Average 1955-1966
Jan.	3.97	3.67	4.24	3.71	2.83	3.21	2.18	3.10
Feb.	4.10	5.18	4.58	5.24	2.95	3.71	1.89	3.69
Mar.	7.92	8.55	8.40	8.63	5.83	6.37	5.08	6.17
Apr.	9.83	10.30	10.79	10.75	6.71	7.61	6.26	6.90
May	12.50	12.46	10.51	12.45	5.76	8.61	4.09	7.80
June	17.11	13.46	15.37	13.01	8.73	10.72	7.20	10.05
July	17.16	12.84	13.18	13.38	12.81	11.81	12.27	12.05
Aug.	10.93	12.08	10.98	12.06	9.01	11.09	8.63	10.78
Sept.	9.04	10.21	5.88	9.96	5.96	8.23	5.26	8.19
Oct.	5.81	7.84	5.29	7.69		6.00	5.90	5.74
Nov.	4.62	4.99	4.41	4.98		4.02	5.27	3.96
Dec.	3,68	3.34	4.24	3.43	3.59	3.18	3.81	2.94
Total	106.67	104.92	97.87	105.29		84.56	67.84	81.37

Month	Amistad Dam		Eagle Pass		Falcon Dam				Brownsville	
					2-Foot Pan		4-Foot Pan			
	1966	Average March 1963-1966	1966	#Average 1964-1966	1966	Average April 1950-1966	1966	Average April 1956-1966	1966	#Average 1958-1966
Jan.	3.02	4.54	2.28	3.24	2.68	3.57	2.63	4.11	2.03	2.22
Feb.	4.18	4.52	2.43	3.20	2.79	4.59	3.59	5.53	2.63	2.84
Mar.	8.35	9.20	4.24	5.30	4.84	6.67	6.74	8.56	4.63	3.99
Apr.	10.56	10.84	5.73	6.77	6.06	8.04	9.86	10.65	4.28	5.16
May	8.39	10.46	3.28	5.35	5.21	9.86	8.98	12.86	2.40	5.37
June	11.91	13.34	8.42	10.01	7.13	11.21	10.52	13.85	4.79	5.93
July	16.59	17.71	12.88	12.78	10.78	13.51	14.21	16.76	4.79	6.81
Aug.	12.16	15.31	8.87	10.75	11.38	12.23	14.05	15.72	7.41	6.53
Sept.	8.49	10.68	4.65	6.13	7.76	8.64	10.34	10.93	6.56	5.12
Oct.	7.64	8.08	7.10	6.45	6.60	6.86	7.76	8.12	3.86	3.98
Nov.	6.32	5.46	4.32	3.65	5.97	4.92	7.40	5.75	5.01	3.67
Dec.	4.80	3.66	3.62	4.00	5.03	3.80	5.68	4.04	4.40	2.77
Total	102.41	113.80	67.82	77.63	76.23	93.90	101.76	116.88	52.79	54.39

Some months missing

EVAPORATION IN THE RIO GRANDE BASIN IN MEXICO

In Inches

Tabulated below are records of evaporation observed at ten stations, nine stations operated and maintained by the Mexican Section of this Commission and the station at Piedras Negras, Coahuila, operated and maintained by the Meteorological Service of Mexico. Nine stations are along the Rio Grande from Cd. Acuña, Coahuila to Retamal, Tamaulipas and one is located on the Río Conchos near Ojinaga, Chihuahua. At all stations, except Ojinaga, the sites were kept cleared of all high brush and trees within 150 feet, and of all brush and tall weeds within 100 feet of the fenced enclosures. There are several large trees at the Ojinaga station. The corrugated iron gage well, 42 inches in diameter, and one A-frame of the cableway of the Río Conchos stream gaging station are in the north end of the enclosure. Inside the enclosures, all vegetation had been eradicated or was kept trimmed to within 3 inches of the ground surface. Except for a water barrel and a thermometer shelter in the northeast and northwest corners of the enclosures, the exposure to wind was uniform and relatively unimpeded. For specific location of these stations refer to data opposite same station name shown in "Location of Rainfall Stations on the Rio Grande Watershed," pages 141 through 145 in this bulletin.

The type of pan used at all these stations was a U. S. Weather Bureau Standard Pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, set on a wooden platform with the rim of the pan 16 inches above the ground. The water level was maintained between 2 and 3 inches below the rim of the pan and was measured with a micrometer gage.

Data for other evaporation stations in the Rio Grande Basin in Mexico, which were operated by various Mexican agencies, are available in Water Bulletin Number 36 published by the Mexican Section of this Commission.

Month	Ojinaga, Chihuahua		Cd. Acuña, Coahuila		Jiménez, Coahuila		Piedras Negras, Coahuila		Hidalgo, Coahuila	
	1966	#Average April 1954-1966	1966	#Average 1951-1966	1966	#Average 1951-1966	1966	#Average 1951-1966	1966	Average Feb. 1951-1966
Jan.	4.45	3.48	2.60	3.57	2.01	3.37	2.01	3.31	2.95	4.15
Feb.	5.39	4.97	4.06	4.85	3.27	4.35	3.15	4.42	3.46	5.48
Mar.	10.39	8.36	6.77	8.08	5.43	6.84	5.47	7.22	6.46	8.43
Apr.	12.40	10.74	8.03	9.20	5.87	7.76	6.22	8.49	9.72	10.84
May	14.53	13.24	6.93	10.13	5.08	8.86	5.59	9.39	7.40	12.61
June	15.04	13.46	10.47	12.04	7.60	10.63	8.23	11.58	11.93	14.51
July	16.50	13.36	13.78	13.74	11.06	12.30	13.11	13.56	13.54	16.49
Aug.	10.59	11.25	10.47	12.52	8.62	11.08		12.35	11.97	14.98
Sept.	9.49	9.08	7.76	9.24	5.94	7.89		8.72	9.21	10.60
Oct.	7.05	7.02	6.77	6.35	4.33	5.35		6.16	6.89	7.73
Nov.	5.35	4.34	5.20	4.00	4.09	3.34		3.57	6.38	4.99
Dec.	3.94	3.12	3.94	3.19	3.19	2.87		2.95	5.31	3.94
Total	115.12	102.42	86.78	96.91	66.49	84.64		91.72	95.22	114.75

Month	Nuevo Laredo, Tamaulipas		Rancho San Juan de la Palma, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas		Retamal, Tamaulipas	
	1966	Average Aug. 1964-1966	1966	#Average April 1955-1966	1966	#Average June 1954-1966	1966	#Average Oct. 1955-1966	1966	#Average 1951-1966
Jan.	2.91	4.25	2.09	3.75	2.36	3.67	2.56	3.68	3.07	4.17
Feb.	4.13	4.44	3.11	5.14	3.03	4.47	2.95	4.91	2.64	4.86
Mar.	7.44	7.24	6.50	7.56	6.06	7.23	6.61	7.60	4.72	6.57
Apr.	10.31	10.49		9.99	8.03	9.23	8.54	9.46	7.13	8.24
May	8.74	9.70		12.18	7.52	11.05	7.32	11.34	5.71	8.80
June	12.32	13.30	10.91	12.79	8.82	11.79	9.25	12.65	7.48	9.20
July	14.40	15.35	11.97	14.85	11.77	14.17	13.39	15.46	8.03	10.12
Aug.	12.80	13.98	12.60	14.43	12.48	13.18	13.11	14.24	10.67	10.28
Sept.	10.31	10.72	8.86	10.53	8.94	9.76	10.20	10.74	7.99	7.52
Oct.	7.87	7.49	7.44	7.74	7.01	7.19	7.01	8.03	5.35	6.16
Nov.	6.61	5.48	6.22	5.14	5.79	5.06	5.87	5.08	4.53	4.36
Dec.	4.88	4.03	5.04	3.82	4.80	3.54	5.31	3.75	4.02	3.73
Total	102.72	106.47		107.92	86.61	100.34	92.12	106.94	71.34	84.01

Some months missing

TEMPERATURE, HUMIDITY, AND WIND

The maximum and minimum temperatures shown for the stations in Mexico are from daily maximum and minimum thermometer observations. The mean monthly temperatures are averages of these daily maximum and minimum temperatures.

The mean monthly temperatures and relative humidities shown for stations in the United States were integrated from continuous records of hygrothermographs, housed in louvered shelters, with the sensing elements of the instruments 16 inches above the ground and 9 feet southwest of either a 2 or 4-foot diameter evaporation pan. The maximum and minimum temperatures shown below are the extreme temperatures for the month as recorded on the charts except for Falcon Dam and Amistad Dam where the readings are based on daily maximum and minimum thermometer observations.

Monthly mean wind velocities are based on the total miles of wind movement indicated by a standard 3-cup anemometer installed and operated according to specifications for a Class A Weather Bureau evaporation station.

Temperature — Degrees Fahrenheit
In the United States

Month	Amistad Dam, Texas				Eagle Pass, Texas				Falcon Dam, Texas			
	Mean 1966	Average March 1963-1966	1966 Max.	1966 Min.	Mean 1966	Average # 1964-1966	1966 Max.	1966 Min.	Mean 1966	Average July 1950-1966	1966 Max.	1966 Min.
Jan.	46.4	49.9	72	23	48.6	51.7	70	28	52.9	56.6	81	27
Feb.	50.5	50.2	75	28	51.5	52.2	76	30	56.7	60.8	83	33
Mar.	61.8	61.5	87	32	62.9	61.8	86	32	67.3	67.5	94	37
Apr.	70.3	73.0	96	47	72.0	74.3	96	48	76.9	75.6	95	51
May	74.5	75.9	104	55	74.0	76.5	91	58	78.7	80.4	97	57
June	79.4	82.2	96	63	80.1	83.5	100	66	83.4	84.7	99	62
July	87.0	86.8	102	70	87.9	88.9	104	70	88.0	87.0	103	69
Aug.	82.3	85.2	104	66	83.8	86.8	103	67	87.4	86.7	104	69
Sept.	78.6	80.1	97	65	78.3	80.1	96	62	84.4	82.1	106	64
Oct.	68.8	70.0	93	45	69.2	69.0	98	45	74.0	74.2	106	47
Nov.	63.8	63.3	84	37	63.8	63.7	88	34	69.5	64.7	92	34
Dec.	51.7	51.0	83	24	51.6	54.6	85	22	58.6	57.8	88	26
Yearly	67.9	69.1	104	23	68.6	70.3	104	22	73.2	73.2	106	26

Temperature — Degrees Fahrenheit
In Mexico

Month	Ojinaga, Chihuahua				Cd. Acuña, Coahuila				Chupadero, Coahuila			
	Mean 1966	Average # April 1954-1966	1966 Max.	1966 Min.	Mean 1966	Average # April 1951-1966	1966 Max.	1966 Min.	Mean 1966	Average # 1961-1966	1966 Max.	1966 Min.
Jan.	46.4	48.4	79	25	46.4	49.3	75	23	48.2	48.8	68	27
Feb.	50.0	53.2	81	27	50.0	55.2	77	25	51.8	54.8	77	30
Mar.	64.4	60.3	93	27	60.8	62.9	90	27	62.6	63.5	86	36
Apr.	71.6	70.2	95	45	71.6	72.4	100	43	71.6	73.7	93	50
May	80.6	78.7	104	57	75.2	79.1	108	54	77.0	77.9	100	57
June	86.0	84.8	108	68	82.4	85.5	100	64	82.4	83.0	95	68
July	89.6	85.6	108	68	87.8	88.2	106	68	87.8	86.9	102	72
Aug.	84.2	83.9	106	66	84.2	88.4	108	64	84.2	85.7	102	68
Sept.	80.6	79.7	99	63	80.6	82.6	100	61	80.6	82.4	100	64
Oct.	69.8	69.7	95	45	69.8	72.3	100	39	68.0	71.6	90	46
Nov.	62.6	57.9	86	34	62.6	59.6	86	28	62.6	62.6	84	36
Dec.	50.0	49.8	82	23	48.2	51.3	84	16	50.0	52.2	79	23
Yearly	69.6	68.5	108	23	68.3	70.6	108	16	68.9	70.3	102	23

Month	Jiménez, Coahuila				El Remolino, Coahuila				Piedras Negras, Coahuila			
	Mean 1966	Average # March 1951-1966	1966 Max.	1966 Min.	Mean 1966	Average June 1958-1966	1966 Max.	1966 Min.	Mean 1966	Average # April 1951-1966	1966 Max.	1966 Min.
Jan.	48.2	51.8	75	27	51.8	54.3	82	23	46.4	50.4	72	23
Feb.	51.8	56.8	79	28	59.0	59.0	90	25	51.8	55.4	77	27
Mar.	62.6	63.0	84	28	69.8	66.1	102	37	62.6	61.6	86	30
Apr.	71.6	72.0	95	43	75.2	74.3	106	43	73.4	71.1	99	46
May	75.2	77.7	97	59	80.6	78.3	111	50	75.2	77.4	104	57
June	78.8	84.0	91	66	86.0	84.0	109	63	80.6	84.1	99	64
July	86.0	86.1	102	68	89.6	86.5	111	64	87.8	86.8	104	70
Aug.	84.2	86.2	102	70	86.0	85.7	113	54	84.2	86.5	104	66
Sept.	78.8	81.0	99	63	82.4	82.4	108	55	78.8	80.5	100	64
Oct.	69.8	72.0	93	39	75.2	72.8	102	52	69.8	70.0	93	43
Nov.	64.4	61.0	86	30	68.0	64.9	99	41	64.4	58.8	82	32
Dec.	53.6	53.6	88	16	57.2	56.9	95	28	51.8	51.5	84	18
Yearly	68.8	70.4	102	16	73.4	72.1	113	23	68.9	69.5	104	18

Some months missing

TEMPERATURE, HUMIDITY, AND WIND

Temperature — Degrees Fahrenheit
In Mexico

Month	Villa Guerrero, Coahuila				Rancho Mercedes, Coahuila				Villa Hidalgo, Coahuila			
	Mean 1966	Average # July 1958-1966	1966 Max.	1966 Min.	Mean 1966	Average # June 1959-1966	1966 Max.	1966 Min.	Mean 1966	Average #August 1951-1966	1966 Max.	1966 Min.
Jan.	50.0	48.1	86	21	55.4	56.1	99	21	48.2	54.3	77	23
Feb.	51.8	53.0	84	21	57.2	58.3	86	28	51.8	58.1	82	23
Mar.	60.8	61.6	91	27	64.4	65.5	90	32	64.4	65.4	97	30
Apr.		70.9			68.0	73.8	91	48	75.2	75.8	102	46
May		77.4			77.0	77.5	100	46	77.0	80.6	102	55
June		82.5			80.6	83.4	102	54	82.4	86.2	106	63
July	89.6	85.3	109	64	86.0	86.2	102	63	87.8	87.8	106	68
Aug.	87.8	85.4	113	66	86.0	86.4	102	64	87.8	87.8	108	68
Sept.	86.0	80.3	109	63	77.0	82.7	99	55	82.4	83.0	108	63
Oct.	66.2	69.0	91	36	68.0	76.3	95	41		74.7		
Nov.	57.2	60.1	95	28	66.2	66.3	93	32		61.8		
Dec.		51.7			51.8	58.9	81	23		56.7		
Yearly		68.8			69.8	72.6	102	21		72.7		

Month	Nuevo Laredo, Tamps., C.I.L.A.				Nuevo Laredo, Tamps., M.S. of M.				Rancho San Juan de la Palma, Tamps.			
	Mean 1966	Average August 1964-1966	1966 Max.	1966 Min.	Mean 1966	Average 1945-1966	1966 Max.	1966 Min.	Mean 1966	Average # April 1955-1966	1966 Max.	1966 Min.
Jan.	51.8	57.2	79	27	50.0	56.2	73	25	50.0	56.1	77	27
Feb.	55.4	56.3	82	30	53.6	60.6	79	30	53.6	60.8	84	30
Mar.	66.2	64.4	93	37	66.2	67.5	90	37	68.0	66.3	100	36
Apr.	77.0	78.8	102	54	75.2	75.2	99	54	78.8	75.9	102	52
May	78.8	80.6	102	59	77.0	80.8	99	59	77.0	81.5	95	59
June	84.2	86.0	102	68	84.2	84.6	100	64	82.4	86.1	99	66
July	87.8	88.7	106	72	87.8	88.0	102	72	87.8	89.1	104	68
Aug.	87.8	89.0	108	68	86.0	87.9	104	70	87.8	88.9	106	70
Sept.	84.2	85.4	106	68	82.4	82.7	100	64	84.2	84.3	102	66
Oct.	75.2	74.0	100	48	73.4	73.6	97	46	71.6	76.3	95	48
Nov.	69.8	70.4	99	37	68.0	65.0	91	34	69.8	67.2	90	39
Dec.	57.2	59.0	108	25	57.2	57.1	84	23	57.2	58.7	88	27
Yearly	73.0	74.2	108	25	71.8	73.3	104	23	72.4	74.3	106	27

Month	El Treinta, Coahuila				Sabinas Hidalgo, Nuevo León				Nueva Cd. Guerrero, Tamps.			
	Mean 1966	Average 1961-1966	1966 Max.	1966 Min.	Mean 1966	Average October 1961-1966	1966 Max.	1966 Min.	Mean 1966	Average 1958-1966	1966 Max.	1966 Min.
Jan.	46.4	50.4	75	21	51.8	56.1	86	23	51.8	53.0	77	27
Feb.	51.8	55.7	81	25	53.6	60.4	84	30	53.6	57.7	82	32
Mar.	62.6	65.9	90	32	66.2	65.8	95	34	66.2	65.2	91	43
Apr.	71.6	73.7	100	45	75.2	77.7	100	46	77.0	75.3	97	55
May	75.2	78.5	106	48	77.0	80.6	104	55	77.0	80.8	99	61
June	78.8	82.1	100	59	80.6	84.6	102	61	82.4	85.0	99	64
July	86.0	85.4	108	66	86.0	87.1	106	68	86.0	87.0	109	70
Aug.	82.4	84.8	106	63	84.2	87.1	108	61	86.0	86.8	104	70
Sept.	78.8	80.3	99	61	82.4	83.1	106	59	84.2	82.7	102	64
Oct.	69.8	70.7	95	48	71.6	74.9	99	43	73.4	73.9	99	50
Nov.	62.6	62.0	88	32	66.2	66.8	97	36	69.8	65.2	91	34
Dec.	51.8	51.8	93	23	59.0	59.9	88	27	59.0	55.8	86	30
Yearly	68.2	70.1	108	21	71.2	73.7	108	23	72.2	72.4	104	27

Month	Cd. Mier, Tamaulipas				Reynosa Km. 40, SW., Nuevo León				Retamal, Tamaulipas			
	Mean 1966	Average #October 1955-1966	1966 Max.	1966 Min.	Mean 1966	Average March 1959-1966	1966 Max.	1966 Min.	Mean 1966	Average # 1951-1966	1966 Max.	1966 Min.
Jan.	50.0	55.3	77	27	50.0	57.4	77	25	53.6	61.0	91	27
Feb.	51.8	59.6	82	30	55.4	61.7	79	28	55.4	63.3	90	34
Mar.	64.4	66.7	95	34	68.4	68.0	95	45	68.0	69.9	97	36
Apr.	73.4	76.1	100	45	75.2	76.0	100	48	77.0	77.3	97	50
May	75.2	80.9	97	54	75.2	80.5	102	50	77.0	80.8	93	61
June	80.6	85.0	97	61	78.8	83.4	102	54	80.6	84.7	99	63
July	84.2	87.0	99	68	80.6	84.9	104	57	86.0	86.4	100	70
Aug.	86.0	86.9	100	68	84.2	85.1	106	55	86.0	87.4	100	70
Sept.	84.2	82.8	102	63	80.6	81.8	102	59	86.0	83.6	106	63
Oct.	75.2	74.9	97	41	69.8	74.4	97	45	75.2	76.8	97	41
Nov.	64.4	65.2	91	27	66.2	67.9	90	34	71.6	68.7	99	32
Dec.	57.2	57.7	88	18	59.0	58.7	91	27	62.6	61.7	93	27
Yearly	70.6	73.2	102	18	70.2	73.3	106	25	73.2	75.1	106	27

Some months missing

TEMPERATURE, HUMIDITY, AND WIND

Mean Wind Speed – Miles Per Hour
In the United States

Month	Martin King Ranch, Texas		Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1966	Average 1957-1966	1966	Average March 1963-1966	1966	#Average December 1963-1966	1966	Average July 1950-1966
Jan.	3.8	4.3	3.7	3.8	2.7	2.9	3.5	3.9
Feb.	4.4	5.0	4.3	4.7	3.2	3.9	4.1	4.7
Mar.	6.3	6.6	5.1	5.4	3.6	4.0	4.5	5.2
Apr.	5.1	6.5	4.1	4.7	3.3	3.6	5.0	5.9
May	4.7	7.3	3.4	5.2	2.6	4.0	4.4	6.2
June	7.3	7.6	4.9	5.6	3.7	4.4	4.1	6.3
July	7.0	7.2	4.8	5.4	4.0	4.3	5.5	6.8
Aug.	5.8	6.4	3.9	4.8	3.2	3.8	5.3	5.7
Sept.	3.5	5.4	2.7	4.0	1.9	3.3	3.2	4.4
Oct.	3.3	4.7	3.2	3.5	2.2	2.4	3.7	3.8
Nov.	4.6	4.2	2.8	3.2	2.4	2.4	4.3	4.1
Dec.	3.1	3.7	3.2	3.3	2.2	2.3	4.0	3.7
Yearly	4.9	5.7	3.8	4.5	2.9	3.4	4.3	5.1

Mean Relative Humidity-Percent
In the United States

Month	Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1966	Average March 1963-1966	1966	Average # 1964-1966	1966	Average July 1950-1966
Jan.	72.1	51.7	81.3	67.3	87.4	65.3
Feb.	63.9	57.4	74.4	68.0	73.3	63.8
Mar.	58.5	48.9		61.2	65.5	61.0
Apr.	63.3	53.3	68.0	63.2	66.3	61.8
May	76.1	64.0	87.7	85.6	74.4	65.2
June	69.0	57.4	76.1	67.8	69.1	64.3
July	55.8	50.4	65.9	62.0	61.0	59.4
Aug.	67.5	53.8	73.5	66.7	58.7	60.8
Sept.	73.9	60.0	81.4	75.2	64.5	64.8
Oct.	61.2	57.1	66.1	68.9	71.1	66.3
Nov.	60.7	55.8	66.0	71.4	69.6	66.6
Dec.	49.7	57.9	51.8	67.5	55.8	64.2
Yearly	64.3	55.6		68.7	68.1	63.6

Some months missing

DRAINAGE BASIN AND IRRIGATED AREAS

Along the Rio Grande and Tributaries – 1966

The total area within the outer rim of the Rio Grande Basin is about 335,500 square miles but it contains large areas, especially along its southwestern boundary, that contribute no surface runoff to the Rio Grande. Such non-contributing areas constitute about 45% of the total area, leaving 182,215 square miles of productive watershed which is the only one included in the list below.

The irrigated areas shown below are listed in accordance with the location of their diversion points and are all within the Rio Grande Basin, except in the Lower Rio Grande Valley where large portions of irrigated lands in both countries lie outside the basin boundary line.

Only areas irrigated in 1966 are shown except that, in the United States below Falcon Dam, the figures shown represent acreages which were subject to irrigation in 1966 but for which data on the portion actually irrigated is not known. On the Mexican side part of the data may have been gathered previous to 1966.

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Above Elephant Butte Dam	25,923	0	25,923		0	
Elephant Butte Dam to Caballo Dam	1,295	0	1,295	0	0	0
Above Caballo Dam	27,218	0	27,218	0	0	0
Caballo Dam to El Paso Station	2,049	0	2,049	88,437	0	88,437
Above El Paso Gaging Station	29,267	0	29,267	88,437	0	88,437
El Paso Station to American Dam	4	0	4	13,330	0	13,330
Above American Dam	29,271	0	29,271	101,767	0	101,767
American Dam to Island Station	187	493	680	32,634	16,062	48,696
Above Island Gaging Station	29,458	493	29,951	134,401	16,062	150,463
Island Station to County Line Station	485	174	659	0	0	0
American Dam to County Line Station - Total	672	667	1,339	32,634	16,062	48,696
Above County Line Gaging Station	29,943	667	30,610	134,401	16,062	150,463
County Line Station to Fort Quitman Station	663	762	1,425	8,301	0	8,301
Above Fort Quitman Gaging Station	30,606	1,429	32,035	142,702	16,062	158,764
Fort Quitman Station to Above Presidio Station	1,621	1,332	2,953	929	123	1,052
Above Presidio Station above Río Conchos	32,227	2,761	34,988	143,631	16,185	159,816
Río Conchos above Boquilla Dam	0	8,202	8,202	0	5,832	5,832
Río Conchos below Boquilla Dam	0	21,065	21,065	0	278,061	278,061
Río Conchos - Total	0	29,267	29,267	0	283,893	283,893
Alamito Creek above Gaging Station	1,504	0	1,504	30	0	30
Presidio Station above Río Conchos to Presidio Station below Río Conchos - excluding above tributaries	367	77	444	3,271	509	3,780
Presidio Station above Río Conchos to Presidio Station below Río Conchos - Total	1,871	29,344	31,215	3,301	284,402	287,703
Above Presidio Station below Río Conchos	34,098	32,105	66,203	146,932	300,587	447,519
Terlingua Creek above Gaging Station	1,070	0	1,070	a) 2,405	0	2,405
Presidio Station below Río Conchos to Johnson Ranch Station - excluding Terlingua Creek	1,093	2,349	3,442	970	3,272	4,242
Presidio Station below Río Conchos to Johnson Ranch Station - Total	2,163	2,349	4,512	b) 3,375	3,272	6,647
Above Johnson Ranch Gaging Station	36,261	34,454	70,715	150,307	303,859	454,166
Johnson Ranch Station to Foster Ranch Station	6,412	6,993	13,405	c) 2,762	0	2,762
Above Foster Ranch Gaging Station	42,673	41,447	84,120	153,069	303,859	456,928
Foster Ranch Station to Langtry Station	182	493	675	0	0	0
Above Langtry Gaging Station	42,855	41,940	84,795	153,069	303,859	456,928
Pecos River above Girvin	29,562	0	29,562		0	
Pecos River, Girvin to Shumla Station	5,600	0	5,600	0	0	0
Pecos River above Station at Mouth	35,308	0	35,308	0	0	0
Goodenough Spring above Gaging Station	1	0	1	0	0	0
Devils River above Pafford Crossing Station	3,961	0	3,961	0	0	0
Devils River above Station at Old Highway Bridge	4,185	0	4,185	0	0	0
Devils River above Station near Mouth	4,305	0	4,305	0	0	0
Langtry Station to Below Amistad Dam Station - excluding above tributaries	221	1,793	2,014	0	0	0

a) Irrigated by spreader dams b) Includes 2,405 acres irrigated by spreader dams
c) Includes 2,525 acres irrigated by spreader dams

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1966

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Langtry Station to Below Amistad Dam Station - Total	39,835	1,793	41,628	0	0	0
Above the Below Amistad Dam Gaging Station	82,690	43,733	126,423	153,069	303,859	456,928
Arroyo Las Vacas above Gaging Station	0	358	358	0	234	234
Below Amistad Dam Station to Del Rio Station - excluding Arroyo Las Vacas	60	99	159	344	0	344
Below Amistad Dam Station to Del Rio Station - Total	60	457	517	344	234	578
Above Del Rio Gaging Station	82,750	44,190	126,940	153,413	304,093	457,506
San Felipe Creek above Gaging Station	46	0	46	2,325	0	2,325
Pinto Creek above Gaging Station	249	0	249	100	0	100
Río San Diego above Gaging Station	0	848	848	0	11,975	11,975
Río San Diego - Total	0	856	856	0	12,840	12,840
Del Rio Station to Below Maverick Dam Station near Quemado - excluding above tributaries	669	139	808	37,175	677	37,852
Del Rio Station to Below Maverick Dam Station near Quemado - Total	964	995	1,959	39,600	13,517	53,117
Above the Below Maverick Dam Gaging Station near Quemado	83,714	45,185	128,899	193,013	317,610	510,623
Río San Rodrigo near El Moral above Gaging Station	0	669	669	0	5,313	5,313
Río San Rodrigo near Mouth above Gaging Station	0	958	958	0	5,313	5,313
Río San Rodrigo - Total	0	958	958	0	5,313	5,313
Below Maverick Dam Station near Quemado to Maverick Power Plant - excluding Río San Rodrigo	287	153	440	525	0	525
Below Maverick Dam Station near Quemado to Maverick Power Plant - Total	287	1,111	1,398	525	5,313	5,838
Above Maverick Power Plant	84,001	46,296	130,297	193,538	322,923	516,461
Maverick Power Plant to Eagle Pass Station	244	34	278	140	596	736
Above Eagle Pass Gaging Station	84,245	46,330	130,575	193,678	323,519	517,197
Río Escondido above Gaging Station	0	1,279	1,279	0	10,509	10,509
Río Escondido - Total	0	1,284	1,284	0	10,509	10,509
Eagle Pass Station to San Antonio Crossing Station - excluding Río Escondido	237	251	488	250	623	873
Eagle Pass Station to San Antonio Crossing Station - Total	237	1,535	1,772	250	11,132	11,382
Above San Antonio Crossing Gaging Station	84,482	47,865	132,347	193,928	334,651	528,579
San Antonio Crossing Station to Palafox Station	629	1,949	2,578	580	2,498	3,078
Above Palafox Gaging Station	85,111	49,814	134,925	194,508	337,149	531,657
Palfox Station to Laredo Station	607	444	1,051	3,770	3,192	6,962
Above Laredo Gaging Station	85,718	50,258	135,976	198,278	340,341	538,619
Río Salado above Venustiano Carranza Dam	0	17,296	17,296	0	75,312	78,312
Río Salado above Las Tortillas Gaging Station	0	24,877	24,877	0	78,955	78,955
Río Salado above Cd. Guerrero Gaging Station	0	25,112	25,112	0	78,955	78,955
Laredo Station to Falcon Dam - excluding Río Salado	2,042	1,352	3,394	d) 9,490	5,535	15,025
Laredo Station to Falcon Dam - Total	2,042	26,464	28,506	9,490	84,490	93,980
Amistad Dam to Falcon Dam - excluding above tributaries	4,775	4,421	9,196	52,274	13,121	65,395
Above Falcon Dam	87,760	76,722	164,482	207,768	424,831	632,599
Río Alamo above Gaging Station	0	1,692	1,692	0	7,660	7,660
Río San Juan above Marte Gómez Dam	0	13,429	13,429	0	102,548	102,548
Río San Juan-Marte Gómez Dam to Camargo Gaging Station	0	172	172	0	72,968	72,968
Río San Juan - Total	0	13,601	13,601	0	175,516	175,516
Falcon Dam to Ft. Ringgold Station - excluding above tributaries	222	399	621	9,652	257	9,909
Falcon Dam to Ft. Ringgold Station - Total	222	15,692	15,914	9,652	183,433	193,085
Above Fort Ringgold Gaging Station	87,982	92,414	180,396	217,420	608,264	825,684
Fort Ringgold Station to Anzaldúas Dam	952	790	1,742	186,501	243,652	430,163
Above Anzaldúas Dam	88,934	93,204	182,138	403,921	851,916	1,255,837
Anzaldúas Dam to Progreso Station	13	22	35	145,395	452	145,847
Above Progreso Gaging Station	88,947	93,226	182,173	549,316	852,368	1,401,684
Progreso Station to San Benito Station	7	7	14	313,753	353	314,106
Above San Benito Gaging Station	88,954	93,233	182,187	863,069	852,721	1,715,790
San Benito Station to Brownsville Station	14	14	28	117,838	84	117,922
Falcon Dam to Brownsville Station - excluding Río Alamo and Río San Juan	1,208	1,232	2,440	773,139	244,798	1,017,937
Above Brownsville Gaging Station	88,968	93,247	182,215	980,907	852,805	1,833,712

d) Includes 45 acres irrigated from small reservoirs

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1966

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Brownsville Station to Gulf of Mexico				6,230	121	6,351
Falcon Dam to Gulf of Mexico - excluding Río Alamo and Río San Juan				779,369	244,919	1,024,288
Amistad Dam to Gulf of Mexico - excluding above tributaries				831,643	258,040	1,089,683
Above Gulf of Mexico				987,137	852,926	1,840,063

SUPPLEMENTARY DATA–INTERNATIONAL FALCON RESERVOIR

Deduced Inflows

Considering that a knowledge of the mean daily inflows reaching the International Falcon Reservoir would serve a useful purpose, such data have been deduced for 1966 showing the flows as close as they can be approximated. These data are based on the daily operation of the International Falcon Reservoir, taking into account: a) record of gage heights at the dam; b) releases as measured at both hydroelectric plants and outlet works; c) elevation-area-capacity tables based on 1956 surveys; and d) rate of evaporation measured at the dam and at Nueva Cd. Guerrero applied to an area one foot higher than the average area of two consecutive days.

Flow contributions from different sources, irrigation diversion between Laredo and Falcon, river channel losses, reservoir evaporation, accuracy of gage-height records, displacement due to wind action on the reservoir, and bank storage and return incident to changes in reservoir level, all tend to cause variations in the deduced determinations and the inflows shown below should not necessarily be in agreement with the combined flow of the Rio Grande at Laredo and the Río Salado at Las Tortillas.

In spite of the deficiencies noted above and others that may occur, the data shown below represent a reasonable approximation of the flows entering the International Falcon Reservoir.

Mean Daily Discharge in Second-Feet 1966 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,950	2,250	795	1,740	25,700	2,360	2,810	1,840	8,860	3,920	2,090	1,130
2	1,620	1,870	1,900	1,800	45,200	1,120	2,400	1,560	8,610	3,020	357	1,460
3	2,470	855	2,330	2,080	34,400	1,030	1,610	438	8,090	4,200	477	1,820
4	1,140	1,310	1,600	1,880	28,400	1,440	2,770	164	10,500	4,100	1,250	1,690
5	1,480	1,680	1,270	1,210	19,800	2,020	3,170	798	10,600	5,440	3,080	2,000
6	1,470	1,320	953	240	10,900	1,300	2,770	1,240	12,100	1,980	1,110	2,460
7	1,490	1,580	660	374	7,310	2,170	2,220	2,010	19,200	2,460	3,260	1,770
8	1,590	1,960	1,050	204	5,300	1,080	2,290	3,310	28,400	4,670	2,130	2,660
9	1,010	2,400	1,380	607	4,020	1,880	2,810	5,440	25,100	10,600	2,080	2,270
10	2,370	1,760	756	1,450	1,900	417	2,950	2,440	21,500	12,300	3,180	925
11	1,590	1,410	1,880	851	3,240	226	2,850	5,970	23,000	8,020	2,190	1,210
12	1,780	1,200	1,830	1,260	3,150	1,230	2,710	3,030	30,400	6,390	2,710	1,030
13	2,270	1,490	1,970	3,480	2,080	4,380	2,280	1,920	25,700	10,200	2,210	840
14	1,210	2,110	1,070	25,400	1,780	6,530	2,790	2,080	19,600	9,220	2,360	1,440
15	1,210	1,960	1,300	3,740	1,470	7,590	3,270	2,220	16,000	4,700	1,100	1,580
16	667	1,150	1,010	3,440	2,270	6,180	1,320	3,810	13,900	3,050	1,230	1,830
17	3,000	989	1,400	4,630	2,070	6,390	1,340	9,750	15,500	3,280	2,240	1,780
18	1,400	1,440	1,420	1,860	4,200	5,580	2,510	7,030	16,800	3,160	2,190	1,590
19	755	1,320	847	1,980	3,190	4,270	2,280	5,120	15,100	2,620	2,060	2,050
20	752	1,550	1,270	3,310	4,980	3,040	2,070	4,800	16,100	1,060	1,870	1,670
21	2,850	3,370	1,590	392	11,100	2,280	1,880	2,920	16,400	2,950	2,070	1,480
22	1,720	622	1,350	252	9,290	3,640	678	6,250	14,300	3,420	1,340	2,060
23	1,340	1,010	1,190	929	4,870	3,190	491	5,330	12,900	3,530	1,600	664
24	1,730	1,440	795	1,430	3,990	2,860	971	4,310	11,100	3,710	1,450	696
25	1,920	1,210	431	3,460	4,130	3,410	2,230	3,780	9,180	2,690	1,440	1,820
26	713	1,370	710	10,900	5,230	2,280	625	9,110	7,840	1,350	2,020	501
27	1,100	1,920	632	14,300	6,640	3,130	597	10,300	6,460	2,200	2,160	2,500
28	1,370	2,010	1,890	12,700	5,230	3,070	1,310	6,530	7,950	3,310	1,590	1,590
29	1,270		1,880	8,720	5,160	2,780	158	7,420	5,540	1,510	1,380	766
30	1,190		1,920	4,450	3,780	2,690	229	8,620	4,940	1,190	1,610	1,550
31	1,250		1,770		1,940		91.8	9,640		2,650		1,300
Sum	47,677	44,556	40,849	119,069	272,720	89,563	58,480.8	139,180	441,670	132,900	55,834	48,132

Month	Current Year 1966: Extreme Gage Feet High	Extreme Gage Feet Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1966: Acre-Feet Average	Maximum	Minimum
Jan.			17	3,000	16	667	1,540	94,569	139,965	283,000	52,390
Feb.			21	3,370	22	622	1,590	88,369	130,520	261,200	72,210
Mar.			3	2,330	25	431	1,320	80,979	109,192	177,800	64,448
Apr.			14	25,400	8	204	3,970	236,236	158,855	439,100	92,710
May			2	45,200	15	1,470	8,800	540,904	350,982	1,356,000	60,543
June			15	7,590	11	226	2,990	177,670	286,007	666,700	77,660
July			15	3,270	31	91.8	1,890	115,985	165,955	333,300	54,820
Aug.			27	10,300	4	164	4,490	276,072	180,023	310,500	91,794
Sept.			12	30,400	30	4,940	14,700	875,987	545,884	1,570,361	174,581
Oct.			10	12,300	20	1,060	4,290	263,644	500,691	2,516,000	136,035
Nov.			7	3,260	2	357	1,860	110,728	211,230	885,100	76,861
Dec.			8	2,660	26	501	1,550	95,464	153,779	442,200	86,453
Yearly				45,200		91.8	4,080	2,956,607	2,933,083	6,683,310	1,595,238

Ø Mean daily

CORRECTIONS TO PREVIOUS WATER BULLETINS

Water Bulletin and Page Numbers	Station	Reference	Published As	Correction
34 - 8	Rio Grande at El Paso, Texas	Period Summary, Jan. Max. Acre-Feet	15,000	15,100
34 - 13	Rio Grande - County Line Station near Acala, Texas	EXTREME FLOWS FROM RECORDS line 1	May 19, 1942	May 18, 1942
35 - 31	Eight Mile Creek near Del Rio, Texas	Annual Summary, October Extreme High Second-Feet	23	7.3
35 - 40	San Felipe Creek near Del Rio, Texas	DESCRIPTION, lines 1 and 2	right bank... 100 feet upstream	left bank... immediately upstream
35 - 45	Rio Grande below Maverick Dam near Quemado, Texas	DESCRIPTION, line 5 - river miles	726.8	724.8
35 - 52	Río Escondido at Villa de Fuente, Coahuila	EXTREME FLOWS FROM RECORDS Average Monthly Min. Second-Feet	0.6 Aug. and Sept. 1957	0.3 Sept. 1965
34 - 50	Return Flow to the Rio Grande From Maverick Canal - Eagle Pass to San Antonio Crossing	Mean Daily Discharge on April 30 Second-Feet	117	177
34 - 52 35 - 55	Rio Grande at Palafox near Laredo, Texas	DESCRIPTION, line 2, longitude of gage	99° 50' 40"	99° 52' 40"
33 - 58 34 - 59 35 - 61	Río San Juan at Camargo, Tamaulipas	EXTREME FLOWS FROM RECORDS Average Yearly Min. Second-Feet	20.0 in 1961	14.6 in 1963
34 - 59 35 - 61	Río San Juan at Camargo, Tamaulipas	EXTREME FLOWS FROM RECORDS Average Monthly Min. Second-Feet	2.7 Aug. 1961	2.1 Nov. 1964
31 - 61 32 - 62 33 - 63	Diversions from Rio Grande Anzaldúas Canal near Reynosa, Tamaulipas	EXTREME FLOWS FROM RECORDS Average Monthly Max. Second-Feet	4,550 June 1960	4,630 May 1961
34 - 64 35 - 66	Diversions from Rio Grande Anzaldúas Canal near Reynosa, Tamaulipas	EXTREME FLOWS FROM RECORDS Average Monthly Max. Second-Feet	4,550 June 1960	4,640 May 1964
35 - 66	Diversions from Rio Grande Anzaldúas Canal near Reynosa, Tamaulipas	Annual Summary, Extreme High and Low Second-Feet	Instantaneous	Mean daily
34 - 77	Municipal Water Uses	For Nuevo Laredo, Period Average for December Annual Average - Acre-Feet	6,356.2 15,258.0	635.6 9,537.4
32 - 76 33 - 77 34 - 78 35 - 82	Stored Water in Large Reservoirs of the Rio Grande Basin	Period Maximum for Bluewater Thousands of Acre-Feet	41.7	47.1
32 - 110	Rainfall on the Rio Grande Watershed	For Corralitos Ranch, Aug. 1962 1962 Yearly Rainfall - Inches	3.50 15.30	0.35 12.15
35 - 116	Rainfall on the Rio Grande Watershed	For Corralitos Ranch, Dec. 1965 1965 Yearly Rainfall - Inches	2.87 13.23	2.67 13.03
34 - 138 35 - 140	Location of Rainfall Stations on the Rio Grande Watershed - In Mexico	Coordinates for La Junta, Chihuahua	Lat. 28° 45' Long. 107° 58'	Lat. 28° 29' Long. 107° 20'

RETURN FLOW TO THE RIO GRANDE AT MAVERICK POWER PLANT NEAR EAGLE PASS, TEXAS

In Water Bulletin Number 30, page 33, the mean daily discharges for the month of December 1960 should be as follows:

Dec. 1	1,020	Dec. 12	1,020	Dec. 23	1,070
2	1,050	13	995	24	1,060
3	1,030	14	1,020	25	1,050
4	1,010	15	1,030	26	1,050
5	1,010	16	1,030	27	1,050
6	1,010	17	1,020	28	1,070
7	1,040	18	1,020	29	1,070
8	1,060	19	1,010	30	1,080
9	1,070	20	1,030	31	1,070
10	1,040	21	1,030		
11	1,030	22	1,050	Sum	32,195

Flow of the Rio Grande and Related Data

1966

UNITED STATES OF AMERICA
DEPARTMENT OF STATE

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

WATER BULLETIN NUMBER 36