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WATER BULLETIN NUMBER 32

Flow of the Rio Grande and Related Data

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

1962

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-second 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 1962.

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 1962, 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, Upper Presidio, Lower Presidio, Johnson Ranch, Above Langtry (Foster Ranch), Langtry, Below Amistad Dam Site, Del Rio, San Antonio Crossing, Fort Ringgold, San Benito, and Lower Brownsville. The Mexican Section operated the stream-gaging stations on the Rio Grande at Below Maverick Dam, Eagle Pass, Palafax, Laredo, Below Anzalduas Dam, and Progreso. The station at Falcón Dam was operated jointly by the two Sections. Each Section operated the gaging stations on tributary streams, floodways, 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 8,824,000 acre-feet, in addition to the International Falcón Reservoir, which has a conservation capacity of 2,400,000 acre-feet. In the Rio Grande Basin a rounded total of 2,321,000 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 Falcón Dam averaged 2,600,000 acre-feet per year for the period 1934-1952. For the period 1954-1962, the residual flow has averaged 481,727 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 Commission; 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 Laredo City Water Department; 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; National Finance, 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 Falcón Dam which was completed in 1953.

For purposes of comparison with the average flows passing Below Caballo Dam Station, records of average discharge Below Elephant Butte Dam Station 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 Falcón Dam published herein was restricted to 1957, the first complete year of record after United States' waters in Falcón 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 cubic meters reported by the Mexican Section are converted to acre-feet by multiplying thousands of cubic meters by 0.81071 and rounding the result.

GENERAL HYDROLOGIC CONDITIONS FOR 1962

Along and Adjacent to the International Portion of the Rio Grande

During the year 1962, temperatures were 101% of normal on the watershed of the Rio Grande below El Paso, Texas. Evaporation averaged 108% of normal. Precipitation was 88% of normal from El Paso to Amistad Dam Site, 59% of normal from Amistad Dam Site to Falcón Dam, 86% of normal from Falcón Dam to Rio Grande City, and 62% 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, Texas to the Gulf of Mexico. In the reach between El Paso and the confluence of the Río Conchos with the Rio Grande the range was from 88% of normal at El Paso Station to 26% of normal at Upper Presidio Station; in the reach between the confluence of the Río Conchos and Pecos River with the Rio Grande the range was from 86% of normal at Lower Presidio Station to 82% of normal at Langtry Station; and in the reach between the Pecos River confluence and Falcón Dam the range was from 72% of normal at Below Amistad Dam Site Station to 60% of normal at Eagle Pass Station. All flows passing Rio Grande gaging stations below Falcón Dam were partly regulated by releases from Falcón Reservoir. Such releases in 1962 were 86% of the average for the nine years of operations, 1954 through 1962. The volume of flow wasted to the Gulf of Mexico was 40% of the nine year average.

The total annual flow of all measured tributaries below Fort Quitman was 54% of normal. The total flow of these tributaries in the United States was 595,200 acre-feet or 61% of normal. For Mexico, the measured tributary flow, excluding Río Alamo and Río San Juan, was 572,400 acre-feet or 52% of normal. The annual flow of Alamito Creek near Presidio, Texas was 182% of normal while the September flow was 487% of the September normal.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 629,000 acre-feet or 110% of the 14 year average. Return flow to the Rio Grande through various drains in the Maverick irrigation district excluding storm inflow amounted to 215,140 acre-feet or 106% of the four year average. There was no return flow through Poniente Drain in 1962.

There were no floods of consequence on the Rio Grande during 1962, the highest peak flow being 30,500 second-feet at the Below Amistad Dam Site Gaging Station. A peak flow of 25,400 second-feet passed the Lower Presidio Gaging Station September 2 as a result of the highest flood of record on Alamito Creek which had a peak flow of 56,400 second-feet.

For all reservoirs in the Rio Grande basin having capacity greater than 15,000 acre-feet, excepting Falcón International Reservoir, the average amount of water in storage in 1962 was 3,182,500 acre-feet or 85% of the normal 3,756,700 acre-feet. In the United States, stored water in these reservoirs averaged 57% of normal while in Mexico the water in storage was about normal. There was a decrease in storage of 894,600 acre-feet in International Falcón Reservoir. Storage varied from a high of 2,472,100 acre-feet on January 1 to a low of 1,101,300 acre-feet on September 8 and averaged 1,605,900 acre-feet during the year or 93% of the average for the nine years of operations, 1954 through 1962.

Diversions from the Rio Grande in the United States were, on the average, 111% of normal. Diversions into the American Canal were 95% of normal; into Maverick Canal 113% of normal; and in the United States below Falcón Dam 114% of the six year average. In Mexico, diversions averaged 117% of normal. Diversions into the Acequia Madre were 119% of normal while diversions through the Anzaldías Canal for irrigation in Mexico were 117% of the nine year average.

In 1962, the total reported irrigated acreage from the Rio Grande and its tributaries below El Paso, Texas showed a decrease of 4% from the previous year. Overall, there was an increase of 2% in the United States and a decrease of 7% in Mexico. On the United States side there was an increase of 6% above Falcón Dam and an increase of 1% from Falcón Dam to the Gulf. On the Mexican side, with the exception of the Juárez Valley which showed an increase of 22%, there was a decrease of 6% and 8% above Falcón Dam and from Falcón Dam to the Gulf, respectively.

The 1962 investigation of the quality of Rio Grande water extended from El Paso to Lower Brownsville. The annual tonnage of salts carried by the river above Falcón Dam was 57% of the 1935-1962 normal. The volume of suspended silt transported by the Rio Grande in 1962 was 69% of average for sampling stations above Falcón Dam; and 56% of average for sampling stations below Falcón Dam, ranging from 113% of average at Fort Ringgold Gaging Station to 6% of average at Lower Brownsville Gaging Station.

RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Water-stage recorder 3,800 feet below Elephant Butte Dam, and cable with sit-down cable car and winch 100 feet below the recorder. Elephant Butte Dam is 135.1 river miles above 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 36 current meter measurements during the year and a continuous record of gage heights. Records were furnished by the United States Geological Survey. Records available: January 1915 through December 1962.

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 |
| Yearly: | Max. 2,510 | 1942 | Min. 293 | 1955 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------|---------|---------|---------|---------|---------|---------|-------|--------|-------|-------|-------|
| 1 | 2.8 | 1,150 | 1,840 | 1,810 | # 1,820 | 2,020 | 2,030 | # 909 | 950 | 10.0 | # 8.6 | 4.3 |
| 2 | 3.5 | 1,190 | # 1,830 | 1,820 | 2,020 | 2,010 | 2,030 | 896 | 948 | 9.0 | 9.0 | 5.2 |
| 3 | 6.1 | 1,200 | 1,830 | 2,000 | 2,020 | 1,990 | # 2,050 | 904 | 959 | 9.0 | 9.0 | 4.3 |
| 4 | 6.1 | 1,200 | 1,830 | 2,000 | 2,020 | 1,990 | 2,050 | 902 | 959 | 9.0 | 8.0 | 3.9 |
| 5 | 8.8 | 1,200 | 1,830 | 1,990 | 2,010 | 1,970 | 2,040 | 908 | 903 | 9.0 | 8.0 | # 3.9 |
| 6 | 11.0 | # 1,200 | 1,850 | 1,970 | 1,840 | 1,960 | 2,030 | 912 | 14.0 | 9.0 | 8.0 | 4.0 |
| 7 | 10.0 | 1,200 | 1,820 | 1,980 | 1,840 | # 1,960 | 2,040 | 918 | 11.0 | 9.0 | 8.0 | 4.0 |
| 8 | 10.0 | 1,200 | 1,820 | 1,780 | 2,010 | 1,960 | 2,020 | 930 | 11.0 | 8.0 | 8.0 | 3.0 |
| 9 | 7.7 | 1,200 | # 1,820 | 1,780 | 2,010 | 1,960 | 2,000 | 936 | 10.0 | 8.0 | 8.0 | 3.0 |
| 10 | 7.1 | 1,200 | 1,820 | 1,990 | 2,000 | 1,960 | 1,990 | 931 | 9.4 | # 8.0 | 8.0 | 3.0 |
| 11 | # 8.8 | 1,200 | 1,820 | 1,980 | # 1,960 | 1,960 | 1,680 | 944 | 9.4 | 8.0 | 7.0 | 3.0 |
| 12 | 10.0 | 1,180 | 1,810 | # 1,990 | 1,750 | 1,970 | # 1,270 | 936 | 7.1 | 8.0 | 7.0 | 3.0 |
| 13 | 12.0 | 1,200 | 1,810 | 1,970 | 1,740 | 1,980 | # 1,250 | 927 | 9.4 | 8.0 | # 7.2 | 2.8 |
| 14 | 9.4 | 1,200 | 1,790 | 1,960 | 1,770 | 1,980 | # 1,260 | 892 | 10.0 | 8.0 | 7.0 | 3.1 |
| 15 | 8.2 | 1,200 | 1,790 | 1,750 | 1,770 | 1,990 | 920 | 924 | # 10.0 | 8.0 | 7.0 | # 2.8 |
| 16 | 8.8 | 1,200 | 1,790 | 1,760 | 1,960 | 1,990 | 1,240 | 926 | 10.0 | 9.0 | 7.0 | 2.6 |
| 17 | 9.0 | 1,220 | 1,790 | 1,980 | 1,960 | 2,000 | 1,260 | 926 | 10.0 | # 8.7 | 7.0 | 2.6 |
| 18 | # 9.0 | 1,200 | 1,790 | # 1,970 | 1,960 | 2,010 | 1,260 | 933 | 10.0 | 9.0 | 6.0 | 2.6 |
| 19 | 9.0 | 1,200 | 1,790 | 1,960 | 1,960 | # 2,010 | 1,270 | 930 | 10.0 | 8.0 | 6.0 | 3.1 |
| 20 | 9.0 | 1,210 | 1,800 | 1,990 | 1,800 | 2,000 | 1,250 | 934 | 10.0 | 8.0 | 6.0 | 3.1 |
| 21 | 9.0 | 1,220 | # 1,800 | 1,990 | 1,800 | 2,000 | 1,270 | # 948 | 10.0 | 8.0 | 6.0 | 3.1 |
| 22 | 9.0 | 1,220 | 1,790 | 1,780 | 2,000 | 2,000 | 946 | 934 | 10.0 | 8.0 | 6.0 | 3.1 |
| 23 | 9.0 | 1,210 | 1,810 | # 1,810 | 2,000 | 2,000 | 1,280 | 928 | 10.0 | 7.0 | 6.0 | 3.1 |
| 24 | 9.0 | 1,210 | 1,820 | 2,030 | 2,000 | 2,010 | 1,280 | 926 | 10.0 | 7.0 | 6.0 | 3.1 |
| 25 | 9.0 | 1,220 | 1,810 | 2,040 | 2,010 | # 2,010 | 1,300 | 930 | 10.0 | # 7.3 | 5.0 | 2.8 |
| 26 | 22.0 | 1,230 | 1,810 | 2,040 | 2,000 | 2,030 | # 1,290 | 928 | 10.0 | 7.0 | 5.0 | 3.1 |
| 27 | 11.0 | 1,200 | 1,830 | 2,030 | 1,830 | 2,030 | 1,310 | 924 | 10.0 | 7.0 | 5.0 | 3.1 |
| 28 | 11.0 | 1,210 | 1,820 | 2,040 | 1,820 | 2,020 | 1,320 | 1,230 | 10.0 | 8.0 | 5.0 | 3.1 |
| 29 | # 11.0 | 1,200 | 1,820 | 1,840 | 2,020 | 2,030 | 998 | 924 | 10.0 | 8.0 | 5.0 | 3.1 |
| 30 | 18.0 | 1,200 | 1,830 | 1,800 | 2,030 | 2,030 | 1,290 | 932 | # 10.0 | 8.0 | # 4.5 | 3.1 |
| 31 | 11.0 | | 1,840 | | # 2,040 | | 1,290 | 933 | 8.0 | | | # 2.8 |
| Sum | | 33,670 | 57,830 | 59,830 | | 28,955 | | | 254.0 | | 100.8 | |
| | | 295.3 | 56,250 | 59,960 | 46,514 | | 4,970.3 | | 203.3 | | | |

Current Year 1962

| Month | Extreme Gage Feet | | # Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Period 1938-1962 | | |
|---------------|-------------------|-----|-----------------------|-------|---------------------|-----------------|------------------|-----------|-----------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| | High | Low | Day | Day | Acre-Feet | Acre-Feet | Acre-Feet | Acre-Feet | Acre-Feet |
| Jan. | | | 26 | 22.0 | 1 | 2.8 | 9.5 | 586 | 37,180 |
| Feb. | | | 26 | 1,230 | 1 | 1,150 | 1,200 | 66,784 | 44,376 |
| Mar. | | | 6 | 1,850 | # 14 | 1,790 | 1,810 | 111,572 | 66,636 |
| Apr. | | | # 25 | 2,040 | 15 | 1,750 | 1,930 | 114,706 | 119,000 |
| May | | | 31 | 2,040 | 13 | 1,740 | 1,930 | 118,931 | 162,000 |
| June | | | # 26 | 2,030 | # 6 | 1,960 | 1,990 | 118,673 | 82,345 |
| July | | | # 3 | 2,050 | 15 | 920 | 1,500 | 92,261 | 94,267 |
| Aug. | | | 28 | 1,230 | 14 | 892 | 934 | 57,432 | 86,500 |
| Sept. | | | # 3 | 959 | 12 | 7.1 | 166 | 9,859 | 41,342 |
| Oct. | | | 1 | 10.0 | # 23 | 7.0 | 8.2 | 504 | 96,974 |
| Nov. | | | # 2 | 9.0 | 30 | 4.5 | 6.8 | 403 | 134,000 |
| Dec. | | | 2 | 5.2 | # 16 | 2.6 | 3.3 | 200 | 26,775 |
| Yearly | | | | 2,050 | | 2.6 | 956 | 691,911 | 695,511 |
| | | | | | | | | 1,818,800 | 212,333 |

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

RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located .8 river mile below Caballo Dam, and 106.8 river miles above 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 116 meter 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: January 1938 through December 1962.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 965 acre-feet of water were diverted in 1962 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 this station and Percha Dam.

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet

| | | | | |
|----------|------------|--------------|----------|--------------------------|
| Daily: | Max. 7,650 | May 20, 1942 | Min. .1 | Oct. 31 - Nov. 14, 1954; |
| | | | | Nov. 7 - Dec. 31, 1955. |
| Monthly: | Max. 6,710 | May 1942 | Min. .1 | Nov. & Dec. 1955 |
| Yearly: | Max. 2,480 | 1942 | Min. 303 | 1955 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | |
|------------|-------|-------|----------|---------|---------|---------|---------|---------|----------|-------|-------|-------|------|
| 1 | 1.1 | 1.0 | # 1.3 | 2,390 | # 752 | 1,590 | # 2,360 | .996 | 2,450 | # 2.1 | 1.5 | 1.5 | |
| 2 | # 1.1 | # 1.0 | 1.3 | # 2,220 | # 848 | # 1,640 | 2,280 | 1,000 | # 2,450 | 2.0 | 1.5 | 1.6 | |
| 3 | 1.1 | 1.0 | 1.3 | # 2,050 | 844 | 1,660 | 1,990 | 1,160 | 2,450 | 1.9 | 1.5 | # 1.6 | |
| 4 | # 1.2 | 1.1 | 1.3 | # 1,940 | 883 | 1,610 | # 1,890 | # 1,370 | 2,030 | # 1.8 | 1.5 | 1.6 | |
| 5 | 1.2 | # 1.1 | # 266 | 1,910 | # 943 | 1,530 | 1,850 | 1,380 | # 1,090 | 1.8 | # 1.5 | 1.5 | |
| 6 | 1.1 | 1.1 | 1,610 | # 1,700 | 936 | 1,500 | 1,700 | # 1,470 | # 788 | 1.8 | 1.5 | # 1.5 | |
| 7 | 1.1 | 1.2 | 1,810 | # 1,500 | # 913 | 1,490 | # 1,580 | # 2,010 | 899 | 1.7 | 1.5 | 1.5 | |
| 8 | # 1.1 | # 1.2 | 1,900 | # 1,400 | 1,010 | # 1,690 | 1,550 | # 2,530 | # 1,210 | # 1.7 | 1.5 | 1.5 | |
| 9 | 1.1 | 1.2 | 1,910 | 1,230 | # 1,130 | 1,870 | 1,450 | 2,740 | 1,030 | 1.7 | 1.5 | 1.5 | |
| 10 | 1.1 | 1.2 | 1,920 | # 1,150 | 1,860 | # 1,540 | # 2,910 | 566 | 1.6 | 1.5 | # 1.5 | | |
| 11 | 1.1 | 1.2 | 1,910 | # 1,120 | 1,190 | 1,860 | # 1,780 | # 2,900 | # 269 | # 1.6 | 1.5 | 1.5 | |
| 12 | 1.1 | 1.2 | 2,000 | # 1,070 | 1,240 | # 1,980 | 1,790 | 2,880 | # 77.0 | 1.6 | 1.6 | 1.5 | |
| 13 | 1.1 | 1.2 | 2,150 | # 943 | 1,230 | 2,090 | 1,840 | 2,890 | 61.0 | 1.6 | 1.6 | 1.5 | |
| 14 | 1.1 | 1.2 | 2,080 | # 864 | 1,210 | 2,100 | # 1,880 | # 2,740 | 38.0 | 1.7 | 1.6 | # 1.5 | |
| 15 | # 1.0 | 1.2 | 1,990 | # 843 | 1,160 | 2,270 | 1,900 | 2,590 | 2.8 | # 1.7 | # 1.6 | 1.5 | |
| 16 | 1.0 | 1.2 | 2,250 | # 822 | 1,180 | # 2,420 | 1,930 | 2,590 | | 2.8 | 1.7 | 1.5 | |
| 17 | 1.1 | 1.2 | 2,500 | # 918 | # 1,200 | 2,400 | # 2,050 | 2,440 | | 2.8 | 1.7 | 1.6 | |
| 18 | # 1.2 | 1.3 | 2,500 | # 1,050 | # 1,130 | # 3,200 | 2,090 | # 2,290 | | 2.8 | 1.7 | 1.6 | |
| 19 | 1.2 | # 1.3 | 2,500 | # 1,050 | 1,080 | # 2,260 | 1,900 | 2,270 | | 2.8 | 1.7 | 1.5 | |
| 20 | 1.2 | 1.3 | 2,610 | 1,070 | 1,080 | 2,170 | 1,870 | 2,260 | | 2.5 | 1.7 | # 1.5 | |
| 21 | 1.2 | 1.3 | 2,750 | # 1,060 | 1,090 | 2,140 | # 1,980 | # 2,100 | | 2.2 | 1.6 | 1.6 | |
| 22 | # 1.1 | 1.3 | 2,750 | 989 | # 1,140 | 2,240 | 1,980 | # 1,940 | | 2.2 | # 1.6 | 1.5 | |
| 23 | 1.1 | # 1.2 | 2,750 | # 862 | 1,190 | # 2,350 | 1,980 | 1,900 | | 2.1 | 1.6 | # 1.5 | |
| 24 | 1.1 | 1.2 | 2,760 | # 793 | 1,180 | 2,340 | 1,980 | 1,990 | | 2.0 | 1.6 | 1.4 | |
| 25 | # 1.1 | 1.2 | 2,760 | # 714 | 1,250 | 2,310 | 1,890 | # 2,080 | | 2.1 | # 1.6 | 1.4 | |
| 26 | 1.1 | # 1.3 | 2,750 | 714 | 1,350 | # 2,080 | # 1,750 | 2,070 | | 2.3 | 1.6 | # 1.4 | |
| 27 | 1.1 | 1.3 | 2,650 | # 704 | 1,360 | # 1,980 | 1,710 | 2,060 | | 2.4 | 1.6 | 1.4 | |
| 28 | 1.2 | 1.3 | 2,470 | 704 | 1,350 | # 2,120 | 1,650 | # 2,170 | | 2.3 | 1.5 | 1.4 | |
| 29 | # 1.2 | 1.3 | 2,350 | # 686 | # 1,480 | # 2,230 | 1,050 | # 2,280 | | 2.3 | # 1.5 | 1.4 | |
| 30 | 1.2 | 1.3 | 2,390 | 695 | # 1,560 | 2,270 | 344 | 2,280 | | 2.2 | 1.5 | 1.5 | |
| 31 | 1.2 | 1.3 | 2,420 | | 1,560 | # 986 | 2,360 | | | 1.5 | | 1.4 | |
| Sum | | | 33.5 | | 35,161 | | 60,370 | | 66,646 | | 52.0 | | 46.0 |
| | 34.9 | | 60,711.2 | | 35,619 | | 54,520 | | 15,446.6 | | 46.3 | | |

Current Year 1962

Period 1938-1962

| Month | Extreme Gage Feet | | @ Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | |
|---------------|-------------------|-----|-----------------------|-------|---------------------|-------|-----------|-----------|---------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | | | † 4 | 1.2 | † 15 | 1.0 | 1.1 | 69.2 | 665 |
| | | | † 18 | 1.3 | † 1 | 1.0 | 1.2 | 9,909 | 64,300 |
| Feb. | | | † 24 | 2,760 | † 1 | 1.3 | 1,960 | 120,421 | 135,000 |
| Mar. | | | 1 | 2,390 | 29 | 686 | 1,170 | 69,742 | 212,000 |
| Apr. | | | † 30 | 1,560 | 1 | 752 | 1,150 | 70,650 | 87,055 |
| May | | | 16 | 2,420 | 7 | 1,490 | 2,010 | 119,744 | 112,554 |
| June | | | 1 | 2,360 | 30 | 344 | 1,760 | 108,140 | 118,237 |
| July | | | 10 | 2,910 | 1 | 996 | 2,150 | 132,192 | 113,852 |
| Aug. | | | † 1 | 2,450 | 24 | 2.0 | 515 | 30,638 | 54,746 |
| Sept. | | | 1 | 2.1 | † 28 | 1.5 | 1.7 | 103 | 6,659 |
| Oct. | | | † 12 | 1.6 | † 1 | 1.5 | 1.5 | 91.8 | 3,555 |
| Nov. | | | † 2 | 1.6 | † 24 | 1.4 | 1.5 | 91.2 | 3,688 |
| Dec. | | | | | | | | | 19,100 |
| Yearly | | | | 2,910 | | 1.0 | 901 | 651,948.6 | 684,643 |
| | | | | | | | | 1,795,670 | 219,127 |

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

RIO GRANDE AT EL PASO, TEXAS

DESCRIPTION: Water-stage recorder located on the downstream side of the Courchesne Bridge, 5.6 miles upstream from the Santa Fe Street-Juárez Avenue Bridge between El Paso, Texas and Cd. Juárez, Chihuahua and 1.7 miles above the American Dam. Measurements are made from the Courchesne Bridge. 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 1962 were computed by taking the sum of the flows in the American Canal and the flows at the river station below American Dam. Extreme discharges are those passing the El Paso Station. The extreme momentary high flow for July 1962 was measured by current meter. Records available: 1889 through December 1962.

REMARKS: Reservoirs, 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|----------------|------|----------|--------|--------|-------|---------|-------|-------|---------|------|------|------|
| 1 | 78.9 | 83.1 | 43.1 | 820 | 414 | 851 | 1,120 | 893 | 1,006 | 292 | 159 | 157 |
| 2 | 82.7 | 76.5 | 45.2 | 880 | 422 | 869 | 1,240 | 890 | 1,358 | 263 | 158 | 136 |
| 3 | 88.9 | 75.2 | 46.0 | 782 | 437 | 917 | 1,290 | 912 | 1,359 | 252 | 158 | 232 |
| 4 | 86.7 | 73.9 | 45.6 | 736 | 381 | 945 | 1,250 | 745 | 1,430 | 247 | 147 | 199 |
| 5 | 82.3 | 71.6 | 45.4 | 688 | 455 | 978 | 1,040 | 818 | 2,055 | 244 | 150 | 155 |
| 6 | 80.0 | 70.3 | 43.6 | 699 | 511 | 938 | 1,030 | 853 | 1,611 | 243 | 159 | 138 |
| 7 | 75.5 | 71.2 | 45.9 | 756 | 514 | 892 | 1,200 | 713 | 1,247 | 242 | 150 | 137 |
| 8 | 71.2 | 75.8 | 812 | 720 | 537 | 844 | 1,020 | 703 | 1,085 | 243 | 139 | 146 |
| 9 | 73.2 | 69.1 | 1,040 | 621 | 567 | 847 | 853 | 915 | 787 | 235 | 142 | 142 |
| 10 | 66.9 | 68.9 | 924 | 641 | 554 | 930 | 829 | 1,140 | 807 | 208 | 152 | 131 |
| 11 | 56.4 | 63.9 | 896 | 588 | 565 | 934 | 729 | 1,340 | 678 | 198 | 145 | 134 |
| 12 | 71.4 | 58.8 | 918 | 568 | 587 | 873 | 725 | 1,310 | 556 | 194 | 141 | 132 |
| 13 | 69.5 | 59.0 | 987 | 638 | 621 | 840 | 827 | 1,390 | 489 | 191 | 137 | 126 |
| 14 | 67.5 | 72.9 | 1,170 | 666 | 593 | 857 | 820 | 1,400 | 447 | 189 | 136 | 125 |
| 15 | 71.9 | 73.4 | 1,100 | 599 | 612 | 835 | 763 | 1,350 | 395 | 192 | 147 | 122 |
| 16 | 101 | 72.2 | 949 | 528 | 635 | 850 | 819 | 1,230 | 368 | 189 | 147 | 117 |
| 17 | 92.9 | 71.9 | 940 | 502 | 532 | 911 | 753 | 1,200 | 369 | 178 | 145 | 117 |
| 18 | 84.7 | 67.3 | 1,230 | 486 | 529 | 898 | 688 | 1,140 | 320 | 186 | 144 | 127 |
| 19 | 86.5 | 63.8 | 1,090 | 470 | 536 | 888 | 768 | 1,080 | 296 | 175 | 142 | 130 |
| 20 | 90.7 | 64.4 | 1,080 | 562 | 540 | 825 | 846 | 1,070 | 285 | 381 | 148 | 132 |
| 21 | 90.0 | 63.2 | 999 | 607 | 578 | 768 | 724 | 1,080 | 273 | 322 | 153 | 121 |
| 22 | 86.8 | 61.2 | 1,070 | 648 | 592 | 704 | 799 | 1,070 | 264 | 255 | 145 | 128 |
| 23 | 78.0 | 59.0 | 1,050 | 594 | 592 | 726 | 935 | 999 | 262 | 224 | 144 | 125 |
| 24 | 85.5 | 57.9 | 1,160 | 586 | 595 | 801 | 1,010 | 902 | 257 | 202 | 143 | 126 |
| 25 | 86.6 | 55.5 | 922 | 513 | 533 | 873 | 1,120 | 891 | 262 | 178 | 146 | 121 |
| 26 | 88.1 | 54.9 | 887 | 491 | 550 | 884 | 1,060 | 897 | 291 | 170 | 158 | 114 |
| 27 | 87.1 | 53.7 | 941 | 420 | 594 | 885 | 1,360 | 977 | 404 | 174 | 156 | 113 |
| 28 | 86.1 | 53.8 | 901 | 426 | 687 | 917 | 945 | 937 | 888 | 162 | 157 | 104 |
| 29 | 82.6 | 748 | 440 | 691 | 981 | 1,320 | 929 | 553 | 158 | 150 | 98.0 | 97.0 |
| 30 | 86.5 | 667 | 402 | 718 | 1,020 | # 3,170 | 997 | 364 | 158 | 155 | 97.0 | 102 |
| 31 | 89.0 | 649 | 816 | | | | 1,140 | 988 | 164 | | | |
| Sum | | 1,862.4 | 18,077 | 26,281 | | 31,759 | 6,709 | | 4,084.0 | | | |
| 2,525.1 | | 23,444.8 | 17,488 | 32,193 | | 20,766 | 4,453 | | | | | |

Current Year 1962

Period 1938-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|------|-----|---------------------|-------------|---------------------|-----------------|----------------|------------------|---------------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum |
| Jan. | 2.79 | 2.52 | 16 | 124 | 11 | 56.4 | 81.5 | 5,009 | 7,373 | 15,100 |
| Feb. | 2.67 | | 1 | 85.3 | 25 | 49.8 | 66.5 | 3,694 | 9,531 | 52,200 |
| Mar. | 4.87 | 2.44 | 18 | 1,540 | 1 | 41.6 | 756 | 46,501 | 33,721 | 62,500 |
| Apr. | 4.80 | 3.55 | 1 | 944 | 30 | 359 | 603 | 35,856 | 49,015 | 139,000 |
| May | 4.76 | 3.60 | 31 | 855 | 4 | 362 | 564 | 34,687 | 55,383 | 357,000 |
| June | 5.16 | 4.36 | 30 | 1,070 | 21 | 684 | 876 | 52,126 | 60,491 | 304,000 |
| July | 7.00 | 4.10 | 30 | 6,630 | 11 | 642 | 1,040 | 63,855 | 65,290 | 198,000 |
| Aug. | 5.54 | 4.01 | 13 | 1,440 | 8 | 660 | 1,020 | 62,993 | 63,960 | 158,000 |
| Sept. | 5.75 | 3.08 | 5 | 2,950 | 24 | 253 | 692 | 41,303 | 46,433 | 171,000 |
| Oct. | 3.55 | 2.79 | 20 | 444 | 29 | 151 | 216 | 13,311 | 17,357 | 57,900 |
| Nov. | 2.83 | 2.68 | 28 | 169 | 13 | 133 | 149 | 8,850 | 10,285 | 21,300 |
| Dec. | 3.06 | 2.70 | 3 | 264 | 28 | 88.9 | 132 | 8,092 | 9,960 | 25,600 |
| Yearly | 7.00 | | | 6,630 | 41.6 | 520 | 376,116 | 428,799 | 1,559,200 | 57,481 |

ø Mean daily # Discharge measurement made on this day

376,115

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

DESCRIPTION: An open channel rating station in a concrete-lined canal with a water-stage recorder located 2,350 feet below the headgates at the American Dam near El Paso, Texas. Measurements are made at the downstream end of the first covered section of this canal, 835 feet below the recorder. The zero of the gage is 3,712.09 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 20 meter measurements during the year, a stable rating curve at medium and high flows, and a continuous record of gage heights. After May 7, 1954, computations for flows below gage height 2.80 feet (discharge approximately 30 second-feet) are based on auxiliary recorder 400 feet below headgates. Records available: June 2, 1938 through December 1962.

REMARKS: This canal diverts water from the Rio Grande at the American Dam near El Paso, Texas, 2.1 river miles above the International Dam near 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 below the American Dam.

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 | August 13, 1945 | Min. 0 | Frequently |
| Monthly: | Max. 1,210 | August 1943 | Min. 0 | Frequently since 1952 |
| Yearly: | Max. 748 | 1943 | Min. 65.3 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|----------------|-----------------|---------------|-------|-------|-------|---------------|---------------|-------|-------|----------------|-------|
| 1 | 0 | # 0 | 40.7 | 640 | 205 | 674 | 940 | 706 | 853 | 290 | 158 | 156 |
| 2 | # 0 | 0 | 42.9 | 662 | 217 | 694 | # 1,060 | 694 | 773 | # 262 | 158 | 136 |
| 3 | 0 | 0 | 43.7 | # 559 | # 230 | 736 | 1,120 | 706 | 852 | 250 | 157 | 231 |
| 4 | 0 | 0 | 43.2 | 617 | 182 | 758 | 1,070 | 543 | # 646 | 245 | 147 | # 199 |
| 5 | 0 | 0 | 42.8 | 535 | 256 | 797 | 863 | 613 | 665 | 243 | 149 | 154 |
| 6 | 0 | # 0 | # 41.2 | 472 | 318 | 763 | 843 | # 653 | 581 | 242 | # 158 | # 138 |
| 7 | 0 | 0 | 43.7 | 537 | 318 | # 718 | 1,020 | # 524 | 447 | 240 | 150 | 136 |
| 8 | 0 | 31.2 | 804 | 510 | 336 | 672 | 843 | 518 | 585 | 242 | 138 | 146 |
| 9 | 0 | # 60.1 | 1,030 | 411 | 362 | 674 | 672 | 734 | 493 | 234 | 141 | 141 |
| 10 | 0 | 62.9 | 916 | 434 | 350 | 755 | 642 | 960 | 625 | 207 | 152 | 131 |
| 11 | 0 | 59.8 | 889 | 374 | 361 | 760 | 539 | 1,160 | 555 | 197 | 144 | # 133 |
| 12 | 0 | 55.2 | # 912 | 348 | 386 | 699 | 535 | 1,130 | 524 | 193 | 140 | 132 |
| 13 | 0 | 55.8 | 982 | 419 | 417 | 667 | 640 | 1,200 | 486 | 190 | 137 | 125 |
| 14 | 0 | 69.4 | 1,100 | 448 | 389 | 692 | 625 | 1,200 | 445 | 188 | 135 | 125 |
| 15 | 0 | 70.7 | 1,090 | # 392 | 402 | 674 | 563 | 1,150 | 392 | 190 | 147 | 121 |
| 16 | # 0 | 70.0 | 941 | 319 | 426 | 692 | 619 | 1,030 | 366 | 188 | 146 | 117 |
| 17 | 0 | 70.0 | 934 | 294 | 324 | 753 | 555 | 1,000 | 367 | 177 | 144 | 117 |
| 18 | 0 | 65.4 | 1,100 | 272 | 320 | 743 | 501 | 949 | 318 | 185 | 144 | # 126 |
| 19 | 0 | 61.7 | 1,080 | # 253 | 324 | 724 | 581 | 892 | 294 | 174 | 141 | 130 |
| 20 | 0 | 62.3 | 1,080 | 337 | 330 | 658 | 662 | 882 | 283 | 380 | 147 | 131 |
| 21 | 0 | 61.0 | 996 | 379 | 373 | 602 | 541 | 897 | 271 | 321 | 153 | 121 |
| 22 | 0 | 59.2 | 1,070 | 424 | 389 | 537 | 613 | 889 | 262 | 255 | 144 | 128 |
| 23 | 0 | 56.9 | 1,050 | 384 | 386 | 565 | 746 | 814 | 260 | 223 | 143 | 124 |
| 24 | 0 | 55.8 | 1,070 | 389 | 392 | 640 | 824 | 713 | 254 | 201 | 143 | 125 |
| 25 | # 0 | 53.3 | 918 | 326 | 330 | 715 | 938 | 694 | 260 | 177 | 145 | 121 |
| 26 | 0 | 52.7 | 884 | 302 | 342 | 718 | 874 | 706 | 289 | 169 | 157 | # 113 |
| 27 | 0 | 51.4 | # 938 | 226 | 390 | 720 | 614 | 787 | 402 | 173 | 156 | 113 |
| 28 | 0 | 51.4 | 899 | 226 | 486 | 755 | 702 | 748 | 885 | 162 | 156 | 77.0 |
| 29 | 0 | — | — | 747 | 240 | 488 | 814 | 920 | 743 | 552 | 157 | 150 |
| 30 | # 0 | 665 | 203 | 499 | 856 | 749 | 817 | 362 | 157 | 154 | 0 | 0 |
| 31 | 0 | 647 | 600 | 952 | — | — | 952 | 817 | 164 | — | — | 0 |
| Sum | 1,236.2 | 11,932 | 21,225 | | | | 25,869 | 6,676 | | | 3,747.0 | |
| | 0 | 23,040.2 | 11,128 | | | | 23,366 | 14,347 | | | 4,434 | |

Current Year 1962

| Month | Extreme Gage | | | Extreme Second-Feet | | | Total | Acre-Feet | | | |
|---------------|--------------|------|-----|---------------------|------|----------|------------|----------------|----------------|----------------|-----------------|
| | Extreme Gage | | Day | High | | Low | | Second-Feet | Acre-Feet | Average | |
| | High | Low | | Day | Day | | | | | | |
| Jan. | | | | 0 | 0 | 0 | 0 | 0 | 1,385 | 8,110 | |
| Feb. | 6.67 | | 8 | 492 | # 1 | 0 | 44.2 | 2,452 | 5,997 | 19,500 | |
| Mar. | 9.79 | 3.08 | 18 | 1,260 | 1 | 39.4 | 743 | 45,700 | 30,816 | 50,100 | |
| Apr. | 8.44 | 4.43 | 4 | 889 | 30 | 160 | 398 | 23,667 | 38,396 | 70,900 | |
| May | 7.50 | 4.46 | 31 | 660 | 4 | 163 | 359 | 22,072 | 32,424 | 69,000 | |
| June | 8.45 | 6.78 | 30 | 892 | 22 | 512 | 708 | 42,100 | 40,485 | 517 | |
| July | 9.66 | 5.60 | 29 | 1,250 | 27 | 316 | 754 | 46,346 | 47,484 | 65,700 | |
| Aug. | 9.65 | 6.59 | 13 | 1,250 | 8 | 477 | 834 | 51,311 | 47,670 | 70,900 | |
| Sept. | 9.78 | 5.04 | 2 | 1,290 | 7 | 243 | 478 | 28,457 | 32,102 | 4,840 | |
| Oct. | 6.40 | 4.35 | 20 | 443 | 29 | 150 | 215 | 13,242 | 14,338 | 2,230 | |
| Nov. | 4.50 | 4.18 | 28 | 168 | # 13 | 132 | 148 | 8,795 | 8,396 | 21,000 | |
| Dec. | 5.57 | | 3 | 264 | # 28 | 0 | 121 | 7,432 | 8,493 | 25,500 | |
| Yearly | 9.79 | | | 1,290 | | 0 | 403 | 291,574 | 307,986 | 541,610 | 47,397.4 |

And other days # Discharge measurement made on this day

RIO GRANDE BELOW AMERICAN DAM

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located 3,200 feet below the American Dam and 1.5 miles above the International Dam, west of El Paso, Texas. The American Dam is 1,248.2 river miles above the Gulf of Mexico. The zero of the gage is 3,712.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 66 meter measurements and frequent estimates by hydrographer at extreme low flows during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: June 1938 through December 1962.

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 occurred on March 23, 1955 and for several days in 1956 and 1959.

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. .2 | Nov. 1958, Dec. 1959, & Nov. 1961 |
| Yearly: | Max. 1,510 | 1942 | Min. 13.8 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|--------|-------|-------|-------|-------|-------|-------|---------|-------|------|-------|
| 1 | 78.9 | 83.1 | 2.4 | 180 | 209 | 177 | 182 | # 187 | 153 | 1.7 | .6 | .6 |
| 2 | # 82.7 | 76.5 | 2.3 | 218 | 205 | 175 | 175 | 196 | 585 | # 1.7 | .6 | .5 |
| 3 | 88.9 | 75.2 | 2.3 | 223 | 207 | 181 | # 169 | 206 | . 507 | 1.5 | .6 | .5 |
| 4 | 86.7 | 73.9 | 2.4 | 119 | 199 | 187 | 178 | 202 | # 784 | 1.6 | .6 | .5 |
| 5 | 82.3 | 71.6 | 2.6 | 153 | 199 | # 181 | 181 | 205 | 1,390 | 1.4 | .6 | .5 |
| 6 | 80.0 | # 70.3 | # 2.4 | 227 | 193 | 175 | # 185 | 200 | 1,030 | 1.4 | .6 | .5 |
| 7 | 75.5 | 71.2 | 2.2 | 219 | 196 | # 174 | 185 | # 189 | # 800 | 1.3 | .7 | .5 |
| 8 | 71.2 | 44.6 | 8.4 | 210 | # 201 | 172 | 177 | 185 | 500 | 1.2 | .7 | .5 |
| 9 | # 73.2 | 9.0 | 9.5 | 210 | 205 | 173 | 181 | # 181 | 294 | # 1.0 | .6 | .6 |
| 10 | 66.9 | 6.0 | # 8.0 | 207 | # 204 | 175 | # 187 | 178 | 182 | 1.1 | .6 | .6 |
| 11 | 56.4 | 4.1 | 7.1 | 214 | 204 | 174 | 190 | 184 | # 123 | 1.1 | .6 | .6 |
| 12 | 71.4 | 3.6 | 6.3 | # 220 | 201 | # 174 | 190 | 178 | 32.4 | 1.1 | .7 | .5 |
| 13 | 69.5 | # 3.2 | # 5.0 | 219 | 204 | 173 | 187 | 186 | 2.7 | 1.1 | .7 | .4 |
| 14 | 67.5 | 3.5 | 66.4 | 218 | 204 | # 165 | 195 | # 197 | 2.3 | 1.1 | .6 | .4 |
| 15 | 71.9 | 2.7 | 12.4 | 207 | # 210 | 161 | 200 | 198 | 2.1 | 1.2 | .6 | .4 |
| 16 | # 101 | 2.2 | 8.1 | 209 | 209 | 158 | 200 | # 197 | 2.1 | # 1.2 | .6 | .4 |
| 17 | 92.9 | 1.9 | 6.0 | # 208 | # 208 | 158 | # 198 | 201 | 2.1 | 1.4 | .6 | .4 |
| 18 | 84.7 | 1.9 | 130 | 214 | 209 | 155 | 187 | 191 | # 2.3 | 1.1 | .8 | .4 |
| 19 | 86.5 | 2.1 | 5.2 | # 217 | 212 | # 164 | 187 | 186 | 2.1 | .9 | .7 | .4 |
| 20 | 90.7 | # 2.1 | # 4.2 | 225 | 210 | # 167 | # 184 | 187 | 2.0 | .8 | .7 | .4 |
| 21 | 90.0 | 2.2 | 3.4 | 228 | 205 | # 166 | 183 | # 187 | 2.0 | .8 | .6 | .4 |
| 22 | 86.8 | 2.0 | 3.3 | 224 | # 203 | 167 | 186 | 185 | 2.1 | .7 | .6 | .4 |
| 23 | # 78.0 | 2.1 | 2.9 | 210 | 206 | 161 | 189 | # 185 | 2.1 | # .7 | .7 | .7 |
| 24 | 85.5 | 2.1 | 90.6 | # 197 | 203 | 161 | # 186 | 189 | 2.2 | .8 | .7 | .5 |
| 25 | 86.6 | 2.2 | 4.1 | 187 | # 203 | 158 | 178 | 197 | # 2.2 | 1.0 | .6 | .4 |
| 26 | 88.1 | # 2.2 | # 2.9 | # 189 | 208 | # 166 | 183 | 191 | 2.4 | .9 | .5 | .5 |
| 27 | 87.1 | # 2.3 | # 2.5 | 194 | 204 | # 165 | # 746 | 190 | 2.3 | .7 | .5 | .4 |
| 28 | 86.1 | 2.4 | 1.8 | 200 | 201 | # 162 | 243 | # 189 | 2.5 | .7 | .5 | 27.5 |
| 29 | 82.6 | | 1.4 | 200 | # 203 | 167 | 401 | 186 | 1.4 | .8 | .7 | 97.4 |
| 30 | 86.5 | | 1.8 | 199 | 219 | 169 | 2,420 | # 180 | 1.4 | .7 | .8 | 97.4 |
| 31 | 89.0 | | 2.1 | | # 216 | 191 | 171 | | | .7 | | 102 |
| Sum | 626.2 | | 6,145 | | 5,061 | | 5,884 | | 33.4 | | | 337.2 |
| | 2,525.1 | | 410.0 | | 6,360 | | 8,824 | | 6,418.7 | | | 19.0 |

Current Year 1962

Period 1939-1962

| Month | Extreme Gage Feet | | | Extreme Second-Fest | | Average Second-Fest | Total Acre-Feet | Acre-Feet | | | |
|--------|-------------------|------|-----|---------------------|------|---------------------|-----------------|-----------|---------|-----------|----------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum | |
| Jan. | 4.98 | | 16 | 124 | 11 | # 56.4 | 81.5 | 5,009 | 5,849 | 12,000 | |
| Feb. | 4.82 | 3.65 | 1 | 85.3 | 25 | 1.8 | 22.4 | 1,242 | 3,219 | 31.3 | |
| Mar. | 6.43 | 3.66 | 14 | 699 | 29 | 1.1 | 13.2 | 813 | 2,477 | 17,500 | |
| Apr. | 5.47 | 3.92 | 1 | 271 | 1 | 2.1 | 205 | 12,189 | 9,904 | 74,500 | |
| May | 5.45 | 5.14 | 30 | 286 | # 16 | 190 | 205 | 12,615 | 22,295 | 300,000 | |
| June | 5.36 | 4.94 | 3 | 249 | 16 | 145 | 169 | 10,038 | 19,251 | 250,000 | |
| July | 9.26 | 4.80 | 30 | 5,600 | 8 | 151 | 285 | 17,502 | 17,258 | 155,000 | |
| Aug. | 5.60 | 4.79 | 17 | 339 | 31 | 161 | 190 | 11,671 | 13,745 | 967 | |
| Sept. | 7.42 | 3.98 | 5 | 1,990 | # 29 | 1.3 | 214 | 12,731 | 14,000 | 37.5 | |
| Oct. | 4.04 | 3.93 | 4 | 2.1 | 31 | .6 | 1.1 | 66.2 | 2,603 | 19,000 | |
| Nov. | 3.98 | 3.92 | 18 | 1.0 | # 6 | .5 | .6 | 37.7 | 1,621 | 8,700 | |
| Dec. | 5.05 | 3.90 | 31 | 104 | # 13 | .4 | 10.9 | 669 | 1,236 | 7,760 | |
| Yearly | 9.26 | | | 5,600 | | .4 | 117 | 84,582.9 | 115,528 | 1,093,553 | 10,001.1 |

† And other days ♫ Mean daily # Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE ACEQUIA MADRE NEAR JUAREZ, CHIHUAHUA

DESCRIPTION: Water-stage recorder and bridge for meter measurements, located about 260 feet below the canal intake at the International Dam at Juárez, Chihuahua, which is 2.1 river miles below the American Dam at El Paso, Texas.

RECORDS: Based on 166 meter measurements during the year, 124 by the Mexican Section and 42 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1938 through December 1962. 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." See page 10.

REMARKS: In 1962, all of the 60,057 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 through winter months.

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. 10.8 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 0 | 0 | 0 | # 150 | # 196 | # 166 | 179 | # 183 | # 142 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | # 206 | # 200 | 160 | 181 | 183 | 142 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | # 201 | # 201 | 160 | 183 | 183 | # 142 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | # 207 | # 199 | # 171 | 183 | # 183 | 142 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | # 207 | 202 | 172 | 183 | 182 | # 142 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | # 217 | 202 | 170 | 183 | # 184 | 142 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 206 | # 200 | 168 | 183 | # 184 | 142 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 196 | # 202 | 164 | 183 | # 183 | 142 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | # 200 | # 201 | 162 | # 183 | # 173 | 142 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | # 209 | # 202 | 166 | # 183 | # 172 | 142 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | # 221 | # 203 | # 164 | # 183 | 177 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | # 219 | 202 | # 164 | # 183 | 179 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | # 221 | 203 | # 167 | # 183 | # 178 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 226 | # 201 | # 166 | 183 | # 189 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 216 | 203 | # 165 | # 183 | # 175 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | # 213 | # 203 | 166 | # 183 | # 173 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | # 216 | 202 | 170 | # 183 | # 194 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | # 220 | # 201 | # 165 | # 183 | # 195 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | # 221 | 204 | # 171 | 183 | # 181 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 220 | 203 | # 166 | # 183 | # 179 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | # 225 | # 203 | # 166 | 183 | # 182 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 225 | # 201 | # 171 | 183 | # 184 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | # 210 | # 207 | 169 | # 183 | # 182 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 | # 202 | 206 | 168 | # 183 | # 183 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | # 197 | # 206 | # 162 | # 183 | # 192 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | # 198 | 212 | 166 | 183 | # 189 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | # 198 | 210 | # 171 | # 183 | # 195 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 | 197 | # 208 | # 165 | 183 | # 198 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 199 | 206 | # 165 | 183 | # 174 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | # 198 | # 212 | 166 | # 183 | # 169 | 0 | 0 | 0 | 0 |
| 31 | 0 | 0 | 0 | # 216 | # 216 | 183 | # 179 | 0 | 0 | 0 | 0 | 0 |
| Sum | | | 0 | 6,241 | 4,992 | 5,657 | 0 | 0 | 0 | 0 | 0 | 0 |
| Period 1938-1962 | | | 0 | 6,317 | 5,667 | 1,420 | 0 | 0 | 0 | 0 | 0 | 0 |

| Month | Average Rainfall Inches ** | | Extreme Second-Feet | | Average Second- Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------------------|--------------|---------------------|------------|----------------------------|--------------------|-------------|---------------|-----------------|
| | | | High | Low | | | Average | Maximum | Minimum |
| | 1938-1962 | 1962 | Day | Day | | | | | |
| Jan. | .42 | .76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Feb. | .30 | .67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mar. | .26 | .12 | 0 | 0 | 0 | 0 | 947 | 5,540 | 0 |
| Apr. | .16 | .04 | 1 | 235 | 1 | 208 | 12,383 | 6,645 | 12,383 |
| May | .39 | 0 | 31 | 221 | 1 | 188 | 12,528 | 10,493 | 2,020 |
| June | .63 | T | 19 | 178 | 3 | 146 | 166 | 9,896 | 17,380 |
| July | 1.64 | 3.03 | 2 | 186 | 1 | 173 | 183 | 8,764 | 15,700 |
| Aug. | 1.34 | .15 | † 11 | 204 | 16 | 160 | 182 | 8,963 | 15,170 |
| Sept. | 1.04 | 3.86 | 1 | 169 | 10 | 0 | 47.3 | 2,810 | 856 |
| Oct. | .87 | 1.13 | 0 | 0 | 0 | 0 | 0 | 5,755 | 328 |
| Nov. | .28 | .29 | 0 | 0 | 0 | 0 | 0 | 61.6 | 0 |
| Dec. | .46 | .20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Yearly | 7.79 | 10.25 | | 235 | | 0 | 83.0 | 60,057 | 50,461.6 |
| | | | | | | | | 83,930 | 7,864 |

† And other days ** Average for valley floor from El Paso to Island Station T Trace

‡ Discharge measurement made on this day

RIO GRANDE AT ISLAND STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located near Clint, Texas, and San Agustín, Chihuahua. This station is on the rectified channel of the Rio Grande 27.1 river miles below 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 51 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: August 17, 1938 through December 1962.

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. .3 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | |
|----------------|--------------|-------|--------------|-------|----------------|-------|----------------|--------|----------------|--------|----------------|--------|-----|
| 1 | 63.5 | 66.3 | 4.7 | 6.8 | 4.4 | 4.7 | 10.5 | 65.1 | 6.0 | 12.0 | 6.8 | 58.2 | |
| 2 | 59.5 | 42.5 | 4.7 | 7.2 | 3.8 | 6.3 | 39.8 | † 23.6 | 548 | # 8.6 | 6.8 | 59.9 | |
| 3 | # 64.8 | 15.5 | 4.4 | 7.4 | 3.8 | 7.1 | 85.2 | 23.6 | 353 | 8.0 | 6.8 | 61.5 | |
| 4 | 65.1 | 11.6 | 3.4 | † 7.6 | 4.3 | 7.1 | 27.4 | 21.0 | 447 | 8.1 | 6.8 | 97.6 | |
| 5 | 64.4 | 9.3 | 3.2 | 42.5 | 4.3 | 7.1 | # 11.5 | 18.2 | † 1,260 | 7.4 | 7.1 | 85.9 | |
| 6 | 63.8 | # 7.0 | 3.4 | 11.6 | 4.3 | † 7.5 | 8.9 | 15.7 | 1,520 | 7.6 | # 7.1 | 64.9 | |
| 7 | 60.2 | 5.9 | # 3.4 | 11.0 | 4.3 | 7.5 | 11.8 | 13.8 | 1,040 | 7.4 | 6.5 | 61.8 | |
| 8 | 55.8 | 5.5 | 20.3 | 9.9 | 4.3 | 7.0 | 53.7 | # 10.7 | 663 | 7.5 | 6.4 | 66.6 | |
| 9 | 54.8 | 4.2 | 25.7 | 9.4 | # 4.3 | 5.9 | 12.1 | 10.4 | 513 | # 7.7 | 7.2 | 64.5 | |
| 10 | 54.8 | 4.2 | 35.2 | 8.5 | 4.3 | 4.5 | 11.7 | 11.1 | 309 | 7.3 | 6.4 | 61.4 | |
| 11 | 50.0 | 7.2 | 8.2 | # 8.0 | 6.5 | 4.7 | † 10.2 | 12.2 | * 181 | 6.9 | 5.8 | # 59.3 | |
| 12 | 49.3 | 6.4 | 7.3 | 7.5 | 8.7 | 6.8 | 10.3 | 43.5 | * 32.4 | 6.4 | 5.7 | 60.8 | |
| 13 | 58.0 | 5.4 | 6.6 | 6.2 | 6.5 | # 6.8 | 10.5 | 14.2 | 25.2 | 6.4 | 5.9 | 58.5 | |
| 14 | 62.6 | # 7.7 | # 14.5 | 5.5 | 4.4 | 6.5 | 9.6 | 13.4 | 23.3 | 6.4 | 6.5 | 59.2 | |
| 15 | 66.1 | 9.7 | 6.7 | 5.0 | 6.6 | 5.6 | # 12.0 | 21.0 | 5.9 | 7.3 | 59.9 | | |
| 16 | # 65.4 | 9.6 | 5.6 | 5.2 | # 4.2 | 5.6 | 9.5 | 11.2 | 18.2 | 5.1 | 6.5 | 62.4 | |
| 17 | 70.0 | 9.2 | 5.4 | 3.9 | 1.6 | 4.7 | 8.9 | 10.1 | 16.0 | # 5.4 | 5.9 | 63.0 | |
| 18 | 66.9 | 8.9 | 5.3 | # 4.3 | " .5 | 4.7 | # 7.4 | 10.0 | # 14.4 | 5.7 | 5.5 | # 58.7 | |
| 19 | 62.9 | 9.1 | 5.5 | 4.5 | 1.0 | 4.1 | 8.6 | 9.4 | 14.1 | 6.0 | 38.3 | 62.8 | |
| 20 | 64.2 | 8.7 | 5.0 | 4.4 | 2.8 | # 3.8 | 7.1 | 9.0 | 13.6 | 47.2 | # 93.7 | 39.5 | |
| 21 | 62.4 | # 8.9 | # 5.0 | 5.0 | 3.8 | 4.9 | 5.8 | 8.9 | 13.8 | 186 | 99.3 | 16.8 | |
| 22 | 59.8 | 9.1 | 4.2 | 4.6 | 3.2 | 6.0 | # 7.1 | 13.4 | 154 | 100 | 13.2 | | |
| 23 | 61.1 | 8.1 | 5.3 | 5.1 | # 2.8 | 3.8 | 52.7 | * 8.0 | 13.0 | # 58.5 | 100 | 10.5 | |
| 24 | # 63.4 | 8.0 | 5.3 | 5.4 | 3.2 | 4.6 | 8.5 | * 8.0 | 12.2 | 10.6 | 109 | 9.0 | |
| 25 | 95.9 | 7.5 | 5.5 | # 5.9 | 1.5 | 5.0 | # 59.5 | * 8.0 | # 11.0 | 6.5 | 114 | 7.5 | |
| 26 | 71.7 | 6.0 | 5.9 | 5.6 | 2.8 | 3.1 | 23.9 | * 8.0 | 10.0 | 6.1 | 124 | # 5.8 | |
| 27 | 65.9 | 5.2 | 5.6 | 5.8 | 3.8 | # 3.0 | # 245 | * 8.0 | 9.4 | 5.8 | # 59.8 | 5.8 | |
| 28 | 62.8 | # 4.6 | # 4.6 | 5.6 | 5.9 | * 3.0 | 162 | * 8.0 | 174 | 5.4 | 54.4 | 5.4 | |
| 29 | 60.4 | | | 5.1 | 5.2 | " 3.0 | 7.4 | 46.1 | # 8.0 | 128 | 5.4 | 58.6 | 4.8 |
| 30 | 59.9 | | | 5.5 | 4.4 | " 3.0 | 9.7 | 1,800 | # 7.4 | 15.4 | 6.1 | 62.0 | 5.0 |
| 31 | # 60.0 | | | 6.4 | " 3.0 | | 368 | 7.0 | | 6.9 | | 4.6 | |
| Sum | 311.3 | | 229.0 | | 165.7 | | 444.6 | | 634.3 | | 1,354.8 | | |
| 1,945.4 | 236.9 | | 120.6 | | 3,141.9 | | 7,418.4 | | 1,130.1 | | | | |

Current Year 1962

Period 1939-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | | |
|---------------|-------------------|-------------|------|---------------------|-------------|---------------------|-----------------|---------------|------------------|--------------|--|--|
| | High | | Low | High | | | | Average | Maximum | Minimum | | |
| | High | Low | | Day | Day | | | | | | | |
| Jan. | 9.61 | 8.38 | 25 | 131 | 31 | 21.2 | 62.8 | 3,859 | 5,786 | 11,900 | | |
| Feb. | 9.16 | 7.87 | 1 | 75.5 | # 9 | 4.0 | 11.1 | 617 | 4,032 | 37,000 | | |
| Mar. | 9.75 | 7.80 | 8 | 156 | # 4 | 3.2 | 7.6 | 470 | 2,853 | 21,000 | | |
| Apr. | 9.58 | 7.77 | 5 | 122 | 17 | 1.6 | 7.6 | 454 | 4,875 | 70,500 | | |
| May | 7.76 | 11 | 12.3 | 18 | # .5 | .3 | 239 | 14,224 | 299,800 | 0 | | |
| June | 7.87 | 30 | 11.2 | # 27 | # 3.0 | 5.5 | 329 | 12,078 | 241,000 | 0 | | |
| July | 17.17 | 7.95 | 30 | 2,680 | 22 | 3.9 | 101 | 6,232 | 10,339 | 118,500 | | |
| Aug. | 9.72 | 7.71 | 12 | 150 | 22 | 4.8 | 14.3 | 882 | 9,430 | 99,400 | | |
| Sept. | 16.35 | 7.45 | 5 | 1,960 | 1 | 4.4 | 247 | 14,714 | 11,044 | 119,200 | | |
| Oct. | 9.80 | 7.39 | 21 | 209 | 16 | 5.1 | 20.5 | 1,258 | 5,272 | 42,800 | | |
| Nov. | 9.35 | 7.77 | 26 | 160 | 12 | 4.6 | 37.7 | 2,242 | 1,492 | 7,270 | | |
| Dec. | 9.43 | 8.08 | 4 | 125 | 31 | 2.6 | 43.7 | 2,687 | 2,612 | 12,900 | | |
| Yearly | 17.17 | 7.39 | | 2,680 | # .5 | 46.9 | 33,983 | 84,037 | 1,079,340 | 238.1 | | |

^{*} Estimated * Partly estimated † And other days # Mean daily # Discharge measurement made on this day

RIO GRANDE AT COUNTY LINE STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located .8 mile downstream from the El Paso-Hudspeth County Line. This station is on the rectified channel of the Rio Grande 47.3 river miles below 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 24 meter measurements, frequent inspections of the station during the year, and a continuous record of gage heights. Records available: January 1938 through December 1962.

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 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | | |
|-----|------|------|-------|-------|-------|------|--------|---------|----------|---------|--------|--------|--------|--------|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 230 | 0 | 265 | 164 | 48.6 | | |
| 2 | 0 | 0 | 0 | 0 | † 0 | 0 | 0 | 57.2 | 106 | 244 | 158 | 57.2 | | |
| 3 | # 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14.9 | 90.0 | 260 | 174 | 60.6 | | |
| 4 | 0 | 0 | 0 | † 0 | 0 | 0 | 0 | 11.0 | 183 | 232 | 172 | 63.9 | | |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | † 12.6 | 7.3 | † 991 | 221 | 169 | † 81.7 | | |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2.0 | 4.4 | † 1,840 | 194 | 150 | 62.6 | | |
| 7 | 0 | † 0 | 0 | 0 | 0 | 0 | 0 | 2.6 | 1,270 | 177 | † 160 | 59.2 | | |
| 8 | 0 | 0 | 0 | 0 | 8.2 | 0 | 0 | 2.2 | 899 | 159 | 149 | 59.2 | | |
| 9 | 0 | 0 | 0 | 144 | 0 | 0 | 0 | 31.5 | 0 | 819 | 142 | 134 | 64.0 | |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.7 | 0 | 540 | † 121 | 85.5 | 57.0 | |
| 11 | 0 | 0 | 0 | † 0 | 0 | 0 | 0 | 0 | 0 | 489 | 111 | 87.0 | 50.1 | |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 437 | 99.2 | 128 | † 50.2 | |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 370 | 112 | 124 | 51.4 | |
| 14 | 0 | † 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 320 | 168 | † 76.9 | 51.5 | |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 244 | 164 | 57.8 | 52.8 | |
| 16 | 0 | 0 | 0 | 0 | † 0 | 0 | 0 | 0 | 0 | 0 | 208 | 119 | 58.2 | |
| 17 | # 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 176 | † 95.7 | 53.9 | 50.7 | |
| 18 | 0 | 0 | 0 | † 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 130 | 60.1 | 48.6 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83.0 | 162 | 62.8 | † 49.7 |
| 20 | 0 | 0 | 0 | 0 | 0 | 0 | † 0 | 3.1 | 0 | 0 | 37.8 | 151 | 57.4 | 79.6 |
| 21 | 0 | † 0 | † 0 | 0 | 0 | 0 | 0 | 121 | 0 | 0 | 11.1 | 193 | † 61.3 | 106 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61.9 | † 0 | 0 | 30.2 | 268 | 65.6 | 129 |
| 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48.2 | 0 | 0 | 44.1 | 202 | 63.9 | 118 |
| 24 | # 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41.0 | 0 | 0 | 37.8 | † 205 | 61.1 | 121 |
| 25 | 0 | 0 | 0 | † 0 | 0 | 0 | 0 | 33.0 | 0 | 0 | 22.2 | 234 | 62.9 | 127 |
| 26 | 0 | 0 | 0 | 0 | .2 | 0 | 0 | 6.2 | 0 | 0 | † 48.9 | 207 | 62.4 | 111 |
| 27 | 0 | 0 | 0 | 0 | 81.0 | 0 | † 0 | .8 | 0 | 0 | 144 | 236 | 66.0 | † 106 |
| 28 | 0 | † 0 | 0 | 0 | .2 | 0 | 0 | 184 | 0 | 0 | 342 | 209 | † 49.8 | 105 |
| 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27.2 | † 0 | 0 | 519 | 189 | 46.6 | 101 |
| 30 | 0 | 0 | 0 | 0 | 0 | † 0 | 0 | 771 | 0 | 0 | 336 | 188 | 48.7 | 113 |
| 31 | # 0 | 0 | 0 | 0 | 0 | 0 | † 0 | 935 | 0 | 0 | † 160 | 0 | 112 | |
| Sum | | | | 0 | 233.6 | 0 | 0 | 328.3 | 5,617.9 | 2,898.2 | | | | |
| 0 | | | | 0 | 0 | 0 | 0 | 2,284.4 | 10,770.1 | 2,869.9 | | | | |

Current Year 1962**Period 1938-1962**

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|------|---------------------|--------------|---------------------|-----------------|-------------|---------------|------------------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | | | | | 0 | 0 | 0 | 8,034 | 20,000 |
| Feb. | | | | | 0 | 0 | 0 | 6,888 | 47,900 |
| Mar. | | | | | 0 | 0 | 0 | 6,003 | 38,900 |
| Apr. | 2.97 | | 9 | 288 | † 1 | 0 | 7.8 | 463 | 9,129 |
| May | | | | | 0 | 0 | 0 | 17,505 | 303,000 |
| June | | | | | 0 | 0 | 0 | 15,500 | 239,000 |
| July | 6.92 | | 31 | 2,380 | † 1 | 0 | 73.7 | 4,531 | 14,915 |
| Aug. | 3.76 | | 1 | 381 | † 9 | 0 | 10.6 | 651 | 13,877 |
| Sept. | 5.75 | | 6 | 2,430 | † 1 | 0 | 359 | 21,362 | 17,374 |
| Oct. | 3.19 | 2.10 | 22 | 327 | 12 | 76.0 | 181 | 11,143 | 140,000 |
| Nov. | 2.85 | 2.05 | 3 | 186 | 28 | 44.6 | 95.7 | 5,692 | 61,400 |
| Dec. | 2.81 | 2.04 | 29 | 161 | 1 | 46.6 | 77.4 | 4,757 | 20,400 |
| Yearly | 6.92 | | | 2,430 | | 0 | 67.1 | 48,599 | 1,247,500 |

† And other days # Discharge measurement made on this day

RIO GRANDE AT FORT QUITMAN, TEXAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located on the rectified channel of the Rio Grande 1.5 miles below Old Fort Quitman and 81.1 river miles below 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 frequent estimates during low flow, 55 meter measurements during the year, and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1889 through December 1962.

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 1952 & 1955-1959 |
| Yearly: | Max. 1,750 | 1942 | Min. 6.7 | 1957 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|--------|--------------|--------|--------------|--------|---------|----------------|--------------|-------|----------------|--------|
| 1 | 34.2 | 12.5 | 7.5 | 6.8 | 33.4 | 22.2 | 19.8 | 386 | 189 | 362 | 171 | 139 |
| 2 | 32.3 | 11.6 | 7.8 | 5.9 | 31.6 | 20.9 | 147 | † 229 | 493 | 251 | 172 | 124 |
| 3 | 34.9 | 9.6 | 7.8 | 6.7 | 27.2 | 19.2 | 14.5 | 151 | 456 | † 239 | 167 | 137 |
| 4 | 37.6 | 10.0 | 7.2 | † 6.6 | 22.2 | 15.2 | 7.6 | 130 | 139 | 237 | 156 | 134 |
| 5 | 30.0 | 11.6 | 6.6 | 5.6 | 27.9 | 14.2 | † 6.5 | 109 | † 616 | 221 | 156 | † 150 |
| 6 | 31.8 | 11.6 | 6.6 | 3.8 | 35.6 | † 13.2 | 8.7 | 84.8 | † 1,620 | 202 | 148 | 168 |
| 7 | 29.6 | † 11.2 | † 6.9 | 6.6 | 38.7 | 12.2 | 9.7 | 63.9 | 1,390 | 191 | † 156 | 156 |
| 8 | 25.2 | 12.2 | 7.2 | 7.9 | 30.6 | 12.8 | 91.4 | † 46.0 | 1,100 | 197 | 156 | 133 |
| 9 | 32.3 | 14.0 | 7.6 | 9.6 | † 24.2 | 11.9 | 20.0 | 32.0 | 1,020 | 196 | 144 | 139 |
| 10 | 81.0 | 12.5 | 7.4 | 19.8 | 18.6 | 12.8 | 20.8 | 20.7 | 770 | † 202 | 132 | 152 |
| 11 | 71.6 | 8.9 | 6.2 | † 13.8 | 19.9 | 14.2 | † 42.9 | 17.9 | 660 | 180 | 124 | 129 |
| 12 | 49.4 | 7.0 | 6.2 | 17.0 | 14.0 | 18.0 | 32.1 | 19.6 | 529 | 181 | 137 | † 123 |
| 13 | 49.3 | 7.0 | 6.0 | 24.1 | 16.9 | † 19.3 | 29.2 | 17.4 | 440 | 180 | 150 | 123 |
| 14 | 52.8 | † 8.6 | † 6.5 | 20.0 | 30.2 | 31.9 | 23.1 | 20.7 | 318 | 209 | † 125 | 131 |
| 15 | 57.1 | 8.4 | 6.2 | 20.2 | 27.6 | 11.9 | 19.5 | † 24.0 | 276 | 220 | 114 | 127 |
| 16 | 30.3 | 11.1 | 6.0 | 28.6 | † 30.3 | 9.1 | 21.0 | 19.4 | 289 | 181 | 114 | 117 |
| 17 | † 24.2 | 10.1 | 6.3 | 22.0 | 19.7 | 12.7 | 21.3 | 16.0 | 252 | † 191 | 115 | 116 |
| 18 | 30.4 | 8.8 | 6.2 | † 21.2 | 13.5 | 15.0 | † 29.6 | 14.4 | 359 | 206 | 124 | 116 |
| 19 | 12.4 | 7.4 | 6.7 | 26.4 | 12.8 | 27.8 | † 219 | 24.0 | 231 | 387 | 136 | † 116 |
| 20 | 11.9 | 5.8 | 6.5 | 25.8 | 14.0 | † 14.9 | 403 | 15.3 | 192 | 242 | 135 | 121 |
| 21 | 13.7 | † 3.9 | 6.6 | 14.7 | 14.7 | 11.5 | 105 | 14.4 | 158 | 208 | † 130 | 150 |
| 22 | 14.1 | 5.2 | 6.5 | 13.1 | 13.5 | 6.4 | 59.8 | † 13.8 | 153 | 256 | 135 | 144 |
| 23 | 12.5 | 5.4 | 6.4 | 12.0 | † 14.6 | 8.2 | 68.4 | 15.7 | 187 | 193 | 142 | 157 |
| 24 | † 11.8 | 5.6 | 5.6 | 12.2 | 10.6 | 7.0 | 88.5 | 38.5 | 218 | † 176 | 134 | 119 |
| 25 | 11.7 | 4.6 | 5.6 | † 13.4 | 10.4 | 6.1 | † 109 | 24.5 | 240 | 193 | 128 | 95.8 |
| 26 | 13.0 | 7.0 | 5.5 | 14.0 | 11.0 | 6.0 | 70.4 | 39.7 | † 193 | 196 | 129 | 99.3 |
| 27 | 13.0 | 7.2 | 5.6 | 15.9 | 13.4 | † 5.4 | 103 | 38.6 | 233 | 282 | 129 | † 91.2 |
| 28 | 10.4 | † 7.0 | † 6.2 | 17.7 | 13.6 | 5.0 | 122 | 38.6 | 333 | 231 | † 123 | 91.5 |
| 29 | 8.6 | — | 5.9 | 24.5 | 13.8 | 4.4 | 322 | † 30.7 | 831 | 203 | 106 | 98.3 |
| 30 | 12.9 | — | 6.3 | 39.5 | † 16.4 | 22.5 | 130 | 10.8 | 643 | 186 | 119 | 93.6 |
| 31 | † 12.5 | — | 7.2 | — | 14.0 | — | † 919 | 10.5 | — | † 176 | — | 95.5 |
| Sum | 245.8 | | 475.4 | | 411.9 | | | 1,716.9 | 6,775 | | 3,886.2 | |
| | 892.5 | | 202.8 | | 634.9 | | 3,283.8 | 14,528 | 4,107 | | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total | Period 1938-1962 | | |
|---------------|-------------------|-------------|-----|---------------------|-----|---------------------|------------|------------------|----------------|------------------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum |
| Jan. | 5.18 | 3.94 | 15 | 146 | 29 | 8.3 | 28.8 | 1,770 | 8,262 | 20,900 |
| Feb. | 4.18 | 3.69 | 2 | 17.7 | 21 | 3.3 | 8.8 | 488 | 7,500 | 50,100 |
| Mar. | 3.96 | 3.75 | 20 | 8.8 | 23 | 3.4 | 6.5 | 402 | 5,843 | 38,900 |
| Apr. | 4.53 | 3.73 | 30 | 43.6 | 6 | 2.6 | 15.8 | 943 | 7,280 | 77,000 |
| May | 4.54 | 4.00 | 7 | 40.8 | 25 | 7.1 | 20.5 | 1,259 | 17,742 | 309,000 |
| June | 5.85 | 3.86 | 30 | 249 | 22 | 3.6 | 13.7 | 817 | 15,837 | 240,000 |
| July | 8.85 | 3.86 | 20 | 2,490 | 3 | 3.5 | 106 | 6,513 | 16,460 | 140,000 |
| Aug. | 6.58 | 4.18 | 1 | 588 | 30 | 7.7 | 55.4 | 3,405 | 14,832 | 127,000 |
| Sept. | 10.13 | 4.25 | 2 | 3,440 | 1 | 9.8 | 484 | 28,816 | 20,017 | 147,000 |
| Oct. | 6.81 | 5.47 | 19 | 628 | 24 | 151 | 219 | 13,438 | 15,548 | 66,500 |
| Nov. | 5.87 | 5.38 | 2 | † 172 | 29 | 101 | 137 | 8,146 | 9,283 | 24,500 |
| Dec. | 5.72 | 5.35 | 6 | 176 | 27 | 89.6 | 125 | 7,708 | 9,507 | 31,000 |
| Yearly | 10.13 | 3.69 | | 3,440 | | 2.6 | 102 | 73,705 | 148,111 | 1,270,400 |
| | | | | | | | | | | 4,843 |

† Period 1924-1962 ¢ Mean daily † Discharge measurement made on this day

RIO GRANDE AT UPPER PRESIDIO STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located 7.8 river miles above the confluence of the Río Conchos, about 10 miles northwest of Presidio, Texas and Ojinaga, Chihuahua, and 285.7 river miles below 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 51 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1889 through December 1962.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. During 1962, a small earth and brush dam one-half mile downstream caused backwater frequently which affected the gage heights at the 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, 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. 3.5 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|------|------|-------|-------|-----|---------|---------|---------|---------|---------|---------|--------|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6.6 | † 158 | 5.4 | † 113 | † 142 | 66.4 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 159 | 4.3 | 142 | 102 | 77.2 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 168 | 31.3 | 193 | 82.7 | 59.4 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 168 | † 40.3 | † 205 | 83.6 | 90.8 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 269 | 77.9 | 265 | † 78.8 | 100 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | † 218 | † 274 | 218 | 72.9 | † 73.3 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 185 | 363 | 153 | 78.8 | 67.7 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 174 | 256 | † 151 | † 102 | 71.1 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | † 49.0 | 249 | 125 | 109 | 72.2 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .3 | † 273 | 108 | 91.9 | † 83.1 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 292 | † 100 | 83.5 | 78.4 |
| 12 | 0 | 0 | 0 | 0 | 0 | 1.2 | 0 | 0 | 294 | 92.7 | 80.8 | 69.9 |
| 13 | 0 | 0 | 0 | 0 | 0 | .6 | 0 | 0 | 297 | 94.8 | 69.7 | † 63.9 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | † 298 | 94.0 | 64.3 | 67.1 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 297 | † 88.2 | 59.2 | 74.6 |
| 16 | 0 | 0 | 0 | 0 | 0 | 0 | † 80.3 | .2 | 297 | .78.9 | 53.7 | 69.1 |
| 17 | 0 | 0 | 0 | 0 | 0 | 0 | † 261 | 22.8 | † 308 | 73.2 | 59.4 | † 68.4 |
| 18 | 0 | 0 | 0 | 0 | 0 | 6.4 | † 165 | 0 | 316 | † 108 | 63.1 | 69.4 |
| 19 | 0 | 0 | 0 | 0 | 0 | 14.5 | † 52.6 | 0 | 323 | 261 | 49.3 | † 70.4 |
| 20 | 0 | 0 | 0 | 0 | 0 | 3.6 | 62.4 | 0 | † 316 | 159 | 35.7 | 74.0 |
| 21 | 0 | 0 | 0 | 0 | 0 | 0 | † .3 | 26.4 | 0 | 199 | 163 | 40.5 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21.6 | 0 | 180 | † 159 | 38.7 |
| 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32.6 | 0 | 137 | 193 | 47.1 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | † 66.4 | 0 | † 88.1 | 162 | 53.9 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 49.0 | 66.2 | 73.6 | 118 | 51.9 | 64.7 |
| 26 | 0 | 0 | 0 | 0 | 0 | 0 | † 23.3 | 59.1 | 86.5 | 135 | 49.9 | † 81.2 |
| 27 | 0 | 0 | 0 | 0 | 0 | 0 | † 63.8 | 2.8 | † 246 | 120 | 61.9 | 78.8 |
| 28 | 0 | 0 | 0 | 0 | 0 | 7.4 | 100 | 2.8 | † 121 | 97.4 | 64.3 | 81.2 |
| 29 | 0 | 0 | 0 | 0 | 0 | .7 | 139 | 2.6 | 130 | † 120 | 63.1 | 69.0 |
| 30 | 0 | 0 | 0 | 0 | 0 | .1 | † 160 | .1 | 103 | 115 | 63.3 | 53.8 |
| 31 | 0 | 0 | 0 | 0 | 0 | 0 | 168 | .1 | 130 | † 49.3 | | |
| Sum | | | | 0 | 0 | 34.8 | 1,705.0 | 1,705.0 | 4,335.2 | 4,335.2 | 2,261.1 | |
| 0 | | | | 0 | 0 | 1,478.0 | 5,976.4 | 5,976.4 | 2,097.0 | 2,097.0 | | |

Current Year 1962

Period 1938-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | |
|--------|-------------------|------|-----|---------------------|------|---------------------|-----------------|-----------|---------|-----------|---------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum | |
| Jan. | | | | 0 | 0 | 0 | 0 | 7,805 | 24,400 | 0 | |
| Feb. | | | | 0 | 0 | 0 | 0 | 6,639 | 40,800 | 0 | |
| Mar. | | | | 0 | 0 | 0 | 0 | 4,933 | 39,100 | 0 | |
| Apr. | | | | 0 | 0 | 0 | 0 | 3,673 | 41,600 | 0 | |
| May | | | | 0 | 0 | 0 | 0 | 13,031 | 240,000 | 0 | |
| June | 8.19 | | 18 | 113 | † 1 | 0 | 1.2 | 69.0 | 13,645 | 216,000 | 0 |
| July | 11.23 | | 16 | 362 | † 1 | 0 | 47.7 | 2,932 | 17,650 | 156,000 | 13.1 |
| Aug. | 10.96 | | 5 | 328 | † 11 | 0 | 55.0 | 3,382 | 16,374 | 133,000 | 29.4 |
| Sept. | 11.70 | | 7 | 395 | 1 | 0 | 199 | 11,854 | 19,809 | 151,000 | 0 |
| Oct. | 10.66 | 7.97 | 19 | 303 | 17 | 70.3 | 140 | 8,599 | 18,177 | 105,000 | 0 |
| Nov. | 9.09 | 7.45 | 1 | 155 | 20 | 28.7 | 69.9 | 4,159 | 7,530 | 34,500 | 0 |
| Dec. | 8.89 | 7.66 | 22 | 137 | 31 | 42.2 | 72.9 | 4,485 | 7,940 | 30,900 | 0 |
| Yearly | 11.70 | | | 395 | | 0 | 49.0 | 35,480 | 137,206 | 1,176,700 | 2,514.4 |

† And other days ‡ Period June 1900-March 1914; September 1919-March 1920; and 1924-1962

† Discharge measurement made on this day

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Water-stage recorder and cable with stand-up cable car and winch, located 1.9 miles west of Ojinaga, Chihuahua, 3.7 miles west of Presidio, Texas, and 1.5 miles upstream from the confluence with the Rio Grande. The Río Conchos enters the Rio Grande 13.8 miles above the Lower Presidio Gaging Station on the Rio Grande and 293.5 river miles below 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 of stage and measured discharge at this station began April 4, 1954.

RECORDS: Based on 320 meter measurements during the year, 305 by the Mexican Section and 15 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 height and records of discharge at Lower Presidio Station. Computations by shifting channel methods. Records available: January 1896 through December 1962.

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 Rosettilla Reservoir with 15,400 acre-feet capacity are located 250, 242, and 186 river miles respectively above 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 above this station. Power generation facilities: La Boquilla 14,647 kw., La Colina 3,620 kw., La Rosettilla 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---------------|-------|-------|---------------|----------------|-------|---------------|---------|---------------|---------|---------------|-------|--------|
| 1 | # 597 | 420 | 303 | 216 | 106 | # 205 | # 176 | 809 | 300 | # 2,010 | # 565 | 770 |
| 2 | 540 | # 569 | # 294 | # 188 | # 106 | 234 | # 258 | 586 | 2,420 | 1,420 | # 569 | 816 |
| 3 | # 498 | 477 | 269 | 174 | 95.3 | 220 | 392 | # 448 | # 1,840 | # 957 | 572 | 872 |
| 4 | # 466 | 396 | 286 | # 167 | # 115 | # 207 | # 579 | 406 | 943 | 1,020 | 579 | 562 |
| 5 | # 501 | # 371 | 333 | 152 | 114 | 228 | 353 | 466 | # 1,080 | # 1,470 | # 720 | # 459 |
| 6 | 558 | 420 | # 285 | 138 | 142 | # 206 | # 653 | # 427 | 5,900 | 1,030 | 614 | 438 |
| 7 | 487 | # 424 | # 406 | 129 | # 142 | 225 | 1,110 | 399 | # 5,470 | 953 | # 554 | # 562 |
| 8 | # 417 | 357 | 470 | 127 | 141 | # 218 | 537 | # 336 | 4,130 | # 1,030 | 544 | 586 |
| 9 | 452 | # 410 | # 565 | # 127 | # 139 | 215 | # 413 | 279 | 1,660 | 982 | # 622 | 551 |
| 10 | # 473 | 441 | 505 | 128 | 126 | 211 | 742 | 272 | # 1,180 | 706 | 650 | # 579 |
| 11 | # 438 | 431 | 420 | # 114 | # 138 | # 224 | # 597 | 232 | 1,040 | 696 | 629 | 512 |
| 12 | 463 | # 399 | # 338 | # 103 | 130 | 310 | 604 | 211 | # 1,180 | # 604 | # 470 | |
| 13 | 452 | 346 | 333 | # 133 | 120 | # 614 | # 586 | # 193 | 766 | 1,350 | 622 | # 424 |
| 14 | 463 | # 353 | # 328 | 112 | # 120 | 305 | 784 | 182 | # 908 | 1,200 | # 551 | # 448 |
| 15 | # 388 | 345 | 290 | 109 | 115 | # 252 | 509 | # 178 | 830 | # 1,320 | 477 | 583 |
| 16 | 427 | # 314 | # 271 | # 119 | # 111 | 216 | 788 | 142 | 727 | 1,180 | # 431 | 696 |
| 17 | # 441 | 374 | 302 | 115 | 131 | 227 | 1,840 | # 134 | # 678 | # 759 | 463 | # 731 |
| 18 | 364 | 341 | 305 | # 124 | # 148 | # 262 | # 1,190 | 127 | 798 | 1,090 | 646 | 579 |
| 19 | # 346 | # 344 | # 290 | 104 | 132 | 1,650 | 1,500 | 124 | # 629 | # 3,010 | 720 | # 533 |
| 20 | 357 | 315 | 316 | # 181 | 185 | # 862 | # 2,610 | # 141 | 558 | 1,130 | 512 | 480 |
| 21 | 406 | # 295 | # 285 | 323 | # 203 | # 335 | 1,840 | 133 | # 664 | 950 | # 452 | # 477 |
| 22 | # 470 | 297 | 273 | 305 | 222 | # 316 | 1,450 | # 128 | 636 | # 1,130 | 378 | 445 |
| 23 | 519 | # 291 | # 324 | # 252 | # 206 | 263 | # 1,410 | 119 | 586 | # 1,110 | # 396 | 434 |
| 24 | # 477 | 301 | 304 | 242 | 167 | 218 | 1,420 | # 155 | # 544 | 738 | 399 | # 459 |
| 25 | 388 | 333 | 251 | # 191 | # 137 | # 207 | # 1,020 | 266 | 576 | 982 | 406 | 618 |
| 26 | # 364 | # 332 | # 291 | # 175 | 156 | 189 | 1,280 | 197 | # 3,960 | 876 | # 565 | # 519 |
| 27 | 367 | 334 | 325 | # 146 | 192 | # 165 | # 2,120 | 218 | 4,310 | 823 | 516 | 427 |
| 28 | 364 | # 320 | # 331 | 130 | # 186 | 170 | 1,310 | 176 | # 3,600 | 784 | # 470 | # 406 |
| 29 | # 360 | 280 | 131 | 183 | # 150 | 1,170 | # 187 | 2,070 | # 742 | 410 | 392 | |
| 30 | 413 | # 290 | # 118 | # 172 | 162 | # 840 | 217 | 2,020 | 759 | # 706 | 396 | |
| 31 | # 431 | 249 | | 194 | | 968 | # 226 | 643 | # 445 | | | |
| Sum | | | 10,350 | 4,773 | | 9,266 | | 8,114 | | 34,030 | | 16,669 |
| 13,687 | | | 10,112 | 4,569.3 | | 31,049 | | 51,642 | | 16,342 | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Acres-Feet | Period 1948-1962 | | | | |
|---------------|-------------------|-------------|------|---------------------|-----|---------------------|------------|------------------|----------------|------------------|--|--|
| | High | | Low | High | | | | Average | Maximum | Minimum | | |
| | High | Low | | Day | Day | | | | | | | |
| Jan. | 6.33 | 5.51 | 1 | 731 | 331 | # 18 | 442 | 27,151 | 29,494 | 59,250 | | |
| Feb. | 6.10 | 5.35 | 2 | 604 | 23 | 277 | 370 | 20,527 | 30,800 | 72,270 | | |
| Mar. | 6.10 | 5.02 | 9 | 600 | 31 | 236 | 326 | 20,050 | 24,932 | 51,530 | | |
| Apr. | 5.41 | 4.33 | # 20 | 367 | 19 | 101 | 159 | 9,468 | 9,445 | 22,650 | | |
| May | 4.92 | 4.30 | 22 | 236 | 3 | 93.9 | 147 | 9,067 | 13,197 | 31,600 | | |
| June | 9.51 | 4.53 | 19 | 3,310 | 30 | 136 | 309 | 18,389 | 20,941 | 51,770 | | |
| July | 10.24 | 4.59 | 17 | 4,060 | 1 | 135 | 1,000 | 61,570 | 58,408 | 201,000 | | |
| Aug. | 7.45 | 4.33 | 1 | 1,400 | 23 | 114 | 262 | 16,097 | 69,526 | 7,660 | | |
| Sept. | 14.04 | 4.92 | 27 | 7,910 | 1 | 268 | 1,720 | 102,434 | 102,232 | 686,400 | | |
| Oct. | 12.27 | 5.84 | # 19 | 6,220 | 31 | 586 | 1,100 | 67,482 | 108,070 | 971,300 | | |
| Nov. | 6.40 | 5.35 | # 5 | 865 | 23 | 360 | 545 | 32,410 | 34,949 | 107,400 | | |
| Dec. | 6.76 | 5.38 | 3 | 1,030 | 30 | 388 | 538 | 33,062 | 28,881 | 62,380 | | |
| Yearly | 14.04 | 4.30 | | 7,910 | | 93.9 | 577 | 417,707 | 530,875 | 1,892,940 | | |
| | | | | | | | | | | 111,885 | | |

† And other days ‡ Period June 1900–March 1914; September 1919–March 1920; and 1924–1962

Discharge measurement made on this day

ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Water-stage recorder about 1,800 feet above the confluence with the Rio Grande. Measurements of high flows are made from the highway bridge 200 feet downstream from the recorder. This creek enters the Rio Grande near the lower end of Presidio Valley, 9.7 river miles below the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, and 306.9 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,541.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 113 meter 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 except for the period September 1 to October 29, when the gage well was out of operation due to flood damage. Records for this period were obtained from frequent gage height observations and current meter measurements. Computations by shifting channel methods. Records available: January 1932 through December 1962.

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 Lower Presidio Station reaches about 35,000 second-feet. A new gage well and recorder were installed October 29, 1962 to replace the former structure, which was destroyed by the flood of September 2, 1962.

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. | .1 | July 25, 1953 & several days in August 1958 |
|----------|------|-------|---------------|------|-----|---|
| Monthly: | Max. | 418 | Sept. 1958 | Min. | .6 | Oct., Nov., Dec., 1953 |
| Yearly: | Max. | 55.9 | 1941 | Min. | 4.3 | 1951 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------------|-------|-------------|-------|----------------|---------|----------------|-------|------------------|--------|-------------|-------|
| 1 | 1.4 | # 1.7 | # 1.7 | 1.4 | 1.0 | .7 | 68.2 | # 1.1 | * 2,800 | # 2.4 | 2.3 | 2.5 |
| 2 | # 1.4 | 1.7 | 1.6 | # 1.4 | 1.0 | .6 | 57.4 | 1.0 | * 6,200 | # 2.4 | # 2.4 | 2.6 |
| 3 | 1.4 | 1.6 | 1.4 | 1.4 | # 1.0 | .6 | 7.2 | 1.0 | " 100 | 2.4 | 2.6 | # 2.6 |
| 4 | # 1.4 | 1.6 | 1.6 | 1.3 | 1.0 | # .6 | 7.7 | " 1.0 | * # 25.0 | 2.4 | 2.8 | 2.5 |
| 5 | 1.4 | # 1.6 | # 1.2 | # 1.3 | 1.0 | .5 | 1.1 | .9 | " 5.0 | 2.3 | # 3.0 | 2.4 |
| 6 | 1.5 | 1.6 | 1.3 | 1.2 | .9 | .5 | # .6 | .8 | * # 350 | 2.2 | 2.8 | # 2.3 |
| 7 | 1.6 | 1.6 | 1.3 | 1.2 | # .9 | .4 | .7 | .8 | * # 40.0 | 2.1 | 2.6 | 2.3 |
| 8 | # 1.6 | # 1.6 | # 1.4 | 1.2 | .9 | .4 | .7 | .8 | " 10.0 | # 2.0 | # 2.4 | 2.3 |
| 9 | 1.6 | 1.6 | 1.3 | # 1.1 | 1.0 | .4 | # .8 | .8 | " 5.0 | 2.0 | 2.4 | 2.3 |
| 10 | 1.5 | 1.7 | 1.2 | 1.1 | # 1.0 | .5 | 83.3 | .8 | # 3.5 | 2.1 | # 2.4 | # 2.3 |
| 11 | 1.4 | 1.8 | 1.1 | 1.2 | 1.0 | # .5 | 1.6 | .8 | 3.2 | # 2.1 | 2.4 | 2.4 |
| 12 | # 1.4 | # 1.8 | # 1.2 | 1.0 | # 1.0 | # 1.0 | 1.6 | .9 | 3.0 | 2.1 | 2.4 | 2.4 |
| 13 | 1.3 | 1.8 | 1.1 | 1.3 | # .9 | # 1,500 | 1.6 | # .9 | 2.8 | 2.0 | # 2.4 | # 2.5 |
| 14 | 1.3 | 1.8 | 1.3 | 1.3 | # .9 | # 28.8 | 40.3 | .9 | # 2.5 | 2.0 | 2.4 | 2.5 |
| 15 | # 1.2 | # 1.8 | # 1.4 | 1.4 | .8 | .5 | .6 | .9 | 2.3 | # 2.0 | 2.3 | 2.5 |
| 16 | 1.2 | 1.7 | 1.4 | # 1.4 | .8 | .5 | # 180 | # .9 | 2.0 | 2.1 | 2.4 | 2.5 |
| 17 | 1.3 | 1.6 | 1.4 | 1.3 | # .7 | .5 | # 892 | 1.0 | 1.8 | 2.1 | 2.4 | # 2.5 |
| 18 | # 1.3 | 1.6 | 1.5 | 1.3 | # .7 | # .5 | # 1,050 | 1.0 | 1.7 | " 150 | 2.5 | 2.6 |
| 19 | 1.4 | # 1.5 | # 1.5 | # 1.2 | .8 | .5 | # 68.9 | 1.0 | 1.6 | " 20.0 | # 2.6 | 4.0 |
| 20 | 1.4 | 1.6 | 1.5 | 1.2 | .8 | .5 | 1.8 | # 1.1 | 1.5 | 2.2 | 2.6 | # 2.8 |
| 21 | 1.5 | 1.6 | 1.4 | 1.1 | # .8 | # .5 | .9 | 1.0 | 1.4 | # 2.1 | 2.6 | 2.6 |
| 22 | # 1.6 | 1.6 | # 1.4 | 1.0 | .8 | .5 | .9 | .9 | 1.4 | # 2.1 | 2.7 | 2.6 |
| 23 | 1.6 | # 1.7 | 1.4 | # 1.0 | .8 | .6 | # .9 | # .8 | 1.4 | # 2.7 | 2.6 | 2.5 |
| 24 | 1.7 | 1.7 | 1.4 | 1.0 | # .8 | .6 | .9 | # .8 | 1.3 | 2.0 | 2.6 | 2.5 |
| 25 | # 1.7 | 1.6 | 1.4 | 1.0 | # .8 | # .6 | 1.0 | .8 | 2.0 | 2.0 | 2.6 | 2.4 |
| 26 | 1.7 | # 1.6 | # 1.4 | # 1.0 | .7 | 3.6 | # 1.0 | .8 | * 400 | 2.0 | # 2.5 | # 2.4 |
| 27 | 1.8 | 1.6 | 1.4 | 1.0 | .6 | 1.0 | # 65.0 | # .8 | 3.5 | 2.0 | 2.5 | 2.4 |
| 28 | 1.8 | 1.7 | 1.4 | 1.0 | # .6 | # 1.0 | 256 | .9 | 2.7 | 1.9 | 2.5 | 2.4 |
| 29 | # 1.8 | 1.4 | 1.0 | # .6 | 1.0 | 3.8 | 1.1 | 2.6 | # 1.9 | 2.5 | 2.4 | 2.4 |
| 30 | 1.8 | # 1.4 | # 1.0 | .7 | 1.0 | # 1.1 | 1.2 | 2.5 | 2.0 | 2.2 | # 2.5 | # 2.4 |
| 31 | 1.7 | 1.4 | 1.4 | # .7 | # .7 | 2.0 | " 1.2 | 1.2 | 2.2 | 2.2 | # 2.4 | # 2.4 |
| Sum | 46.4 | | 35.5 | | 1,548.9 | | 28.7 | | * 231.2 | | 77.9 | |
| | 46.7 | | 42.3 | | 26.0 | | 2,799.6 | | * 9,979.7 | | 75.8 | |

Current Year 1962 Period 1932-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|-----|-----|---------------------|----------|---------------------|-----------------|------------|----------|---------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum |
| | High | Low | Day | | Day | | | | | |
| Jan. | | | | # 27 | 0 | 1.8 | 1.2 | 1.5 | 92.6 | 159 |
| Feb. | 4.16 | | | # 11 | 0 | 1.8 | 19 | 1.7 | 92.0 | 243 |
| Mar. | 4.13 | | | 1 | 0 | 1.7 | 12 | 1.4 | 83.9 | 159 |
| Apr. | 4.13 | | | # 1 | 0 | 1.4 | 22 | 1.2 | 70.4 | 248 |
| May | 4.10 | | | # 1 | 0 | 1.0 | 27 | .6 | 51.6 | 1,004 |
| June | 7.55 | | | 13 | 5,770 | # 7 | .4 | 51.6 | 3,072 | 1,963 |
| July | 6.80 | | | 16 | 4,460 | # 6 | .6 | 90.3 | 5,553 | 3,405 |
| Aug. | | | | # 30 | 0 | 1.2 | 6 | .8 | 56.9 | 2,885 |
| Sept. | 13.54 | | | 2 | # 56,400 | 24 | 1.3 | * 333 | * 19,795 | 4,064 |
| Oct. | | | | 18 | 0 | 150 | 28 | 7.5 | * 459 | 1,781 |
| Nov. | 3.60 | | | 5 | 0 | 3.0 | 1 | 2.3 | 150 | 183 |
| Dec. | 3.81 | | | 19 | 30.0 | # 6 | 2.3 | 2.5 | 155 | 170 |
| Yearly | 13.54 | | | # 56,400 | | .4 | * 40.9 | * 29,631.4 | 16,264 | 40,444 |
| | | | | | | | | | | 3,109.2 |

* Partly estimated † And other days 0 Mean daily

" Estimated # Slope-area computation

† Discharge measurement made on this day

RIO GRANDE AT LOWER PRESIDIO STATION

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located about 10.1 river miles below the international highway bridge between Presidio, Texas, and Ojinaga, Chihuahua, .4 mile below the confluence of Alamito Creek with the Rio Grande, and 307.3 river miles below the American Dam at El Paso, Texas. The zero of the gage is 2,527.99 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 110 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1955 through December 1962 at this location. Period records shown 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 above the Alamito Creek confluence, and estimated irrigation diversions and arroyo inflow between the two river stations. Records, published under this same station name, are also available from January 1896 through June 13, 1932 for a station located about 12.1 miles below the confluence of the Río Conchos and 1.3 miles above Alamito Creek; and from June 14, 1932 through December 31, 1954 for a station about 2.0 miles below the Río Conchos confluence and 11.4 miles above the confluence of Alamito Creek.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 54,300 second-feet on October 1, 1958, with a gage height of 20.37 feet. Min. .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. .2 | Several days July 1955; |
| Monthly: | Max. 17,100 | Oct. 1958 | Min. 3.6 | June 30, 1958 May 1955 |
| Yearly: | Max. 2,590 | 1958 | Min. 283 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------|---------|-------|--------|--------|-------|-------|----------|---------|---------|-------|-------|
| 1 | 588 | † 420 | † 298 | 218 | 115 | 182 | 240 | † 1,140 | 2,010 | † 2,150 | † 749 | 760 |
| 2 | † 592 | 559 | 291 | † 189 | 114 | 203 | 354 | 885 | † 9,190 | 1,780 | 713 | 847 |
| 3 | 551 | 551 | 277 | 172 | † 102 | 205 | 336 | 729 | 2,480 | 1,250 | 668 | 972 |
| 4 | † 450 | 441 | 275 | 167 | 117 | † 191 | 705 | 716 | † 1,220 | 1,320 | 685 | 735 |
| 5 | 519 | † 409 | † 339 | † 154 | 118 | 178 | 379 | 696 | 924 | 1,840 | † 788 | 610 |
| 6 | 535 | 426 | 299 | 139 | 126 | 184 | 457 | 639 | * 6,000 | 1,420 | 741 | 512 |
| 7 | 552 | 450 | 370 | 132 | † 164 | † 183 | 977 | 624 | * 6,000 | 1,170 | 680 | 638 |
| 8 | † 471 | † 401 | † 450 | 129 | 138 | 193 | 657 | 490 | * 4,300 | † 1,210 | 628 | 734 |
| 9 | 457 | 404 | 568 | † 132 | 146 | 187 | 453 | 357 | 1,900 | 1,150 | 782 | 726 |
| 10 | 529 | 467 | 517 | 127 | 125 | 200 | 596 | 248 | † 1,610 | 921 | 779 | † 714 |
| 11 | 529 | 462 | 480 | 113 | 128 | † 202 | 711 | 211 | 1,480 | 825 | 748 | 711 |
| 12 | † 569 | † 444 | † 366 | † 93.2 | 123 | 300 | 601 | 208 | 1,210 | 1,200 | 702 | 548 |
| 13 | 494 | 382 | 347 | 109 | 135 | 2,410 | 498 | 187 | 1,140 | 1,480 | † 705 | † 501 |
| 14 | 546 | 386 | 340 | 101 | † 117 | 369 | 774 | 154 | † 1,280 | 1,450 | 701 | 461 |
| 15 | † 445 | † 383 | † 313 | 98.6 | 113 | 264 | 559 | 160 | 1,260 | † 1,440 | 558 | 660 |
| 16 | 454 | 339 | 280 | † 114 | 110 | 240 | 552 | 124 | 1,070 | 1,520 | 495 | 784 |
| 17 | 492 | 360 | 303 | 129 | † 143 | 220 | 3,690 | 121 | † 995 | 933 | 542 | 826 |
| 18 | † 437 | 357 | 314 | 115 | 143 | † 307 | 3,100 | 116 | 1,170 | † 1,090 | 739 | 725 |
| 19 | 399 | † 348 | † 310 | † 111 | 143 | 1,970 | 1,640 | 121 | 1,010 | 3,400 | † 882 | 626 |
| 20 | 398 | 323 | 321 | 126 | 150 | 880 | 2,780 | 118 | † 899 | 1,450 | 687 | 597 |
| 21 | 457 | 299 | 290 | 288 | † 178 | 316 | 2,390 | 115 | 1,030 | 1,130 | 600 | 512 |
| 22 | † 456 | 302 | † 286 | 321 | 179 | 265 | 1,730 | 109 | 931 | 1,330 | 507 | 511 |
| 23 | 547 | † 306 | 309 | † 259 | 176 | 255 | 1,460 | 103 | 859 | 1,350 | 488 | 516 |
| 24 | 541 | 302 | 301 | 234 | † 146 | 210 | 1,630 | 132 | † 720 | 982 | 504 | 529 |
| 25 | † 453 | 335 | 284 | 199 | 118 | † 193 | 1,160 | 221 | 678 | 1,140 | 537 | 597 |
| 26 | 420 | † 342 | † 259 | † 175 | 131 | 174 | 1,430 | 327 | 3,990 | 1,010 | 607 | 695 |
| 27 | 424 | 328 | 287 | 154 | 170 | 154 | 2,060 | 250 | 4,860 | 966 | 589 | 514 |
| 28 | 415 | 344 | 309 | 133 | † 171 | † 145 | 1,720 | 203 | 3,690 | 869 | 560 | 482 |
| 29 | † 413 | 280 | 127 | 163 | 132 | 1,370 | 2,460 | 196 | 2,460 | 838 | 483 | 451 |
| 30 | 444 | † 259 | † 121 | 176 | 120 | † 972 | † 222 | 222 | 2,130 | 893 | 620 | 436 |
| 31 | 465 | 254 | † 176 | † 176 | 1,140 | 222 | 798 | 798 | 798 | 798 | 798 | 483 |
| Sum | 10,870 | 4,679.8 | 4,321 | 11,032 | 10,144 | | | | 40,305 | 19,413 | | |
| 15,042 | 10,176 | | | 37,121 | | | | * 68,496 | 19,467 | | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | |
|---------------|-------------------|------|------|---------------------|------|---------------------|-----------------|-----------|---------|-----------|---------|
| | High | | Low | Day | High | | | Average | Maximum | Minimum | |
| | High | Low | Day | Day | Day | | | Day | Day | Day | |
| Jan. | 5.81 | 5.38 | 1 | 709 | 20 | 387 | 485 | 29,846 | 32,863 | 66,200 | 11,700 |
| Feb. | 5.70 | 5.23 | † 2 | 603 | 21 | 289 | 388 | 21,561 | 32,978 | 75,700 | 10,700 |
| Mar. | 5.66 | 5.07 | 9 | 590 | 31 | 219 | 328 | 20,184 | 25,204 | 52,600 | 4,690 |
| Apr. | 5.37 | 4.67 | 22 | 345 | 12 | 75.7 | 156 | 9,282 | 9,107 | 22,400 | 309 |
| May | 5.13 | 4.71 | † 23 | 197 | 3 | 89.8 | 139 | 8,571 | 13,813 | 31,800 | 219 |
| June | 8.78 | 4.67 | 13 | 6,560 | 30 | 104 | 368 | 21,882 | 24,348 | 63,000 | 2,600 |
| July | 9.47 | 4.80 | 18 | 7,560 | 1 | 140 | 1,200 | 73,630 | 67,962 | 236,000 | 4,680 |
| Aug. | 6.57 | 4.61 | 1 | 1,550 | 23 | 74.0 | 327 | 20,121 | 77,741 | 212,000 | 11,900 |
| Sept. | 14.88 | 5.10 | 2 | 25,400 | 1 | 229 | * 2,280 | * 135,862 | 104,384 | 582,000 | 11,900 |
| Oct. | 9.11 | 6.15 | 19 | 5,070 | 31 | 750 | 1,300 | 79,945 | 120,549 | 1,051,000 | 6,090 |
| Nov. | 6.55 | 5.54 | 19 | 998 | 25 | 379 | 649 | 38,613 | 38,531 | 111,100 | 9,550 |
| Dec. | 6.77 | 5.76 | 3 | 1,130 | 30 | 430 | 626 | 38,506 | 31,966 | 70,700 | 9,980 |
| Yearly | 14.88 | 4.61 | | 25,400 | 74.0 | * | 688 | * 498,003 | 579,446 | 1,876,260 | 120,283 |

* Partly estimated † And other days ‡ Period 1955-1962 ** See explanation in "RECORDS" above

‡ Discharge measurement made on this day

TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located 2.7 miles above the confluence with the Rio Grande. This creek enters the Rio Grande at the lower end of Santa Helena Canyon, 371.6 river miles below 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 110 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1932 through December 1962.

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 .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. .8 | October 1934 |
| Yearly: | Max. 146 | 1937 | Min. 5.5 | 1943 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|-------|---------|---------|--------|---------|---------|--------|-----------|--------|--------|-------|
| 1 | 3.3 | # 3.5 | # 3.6 | 3.3 | # 3.0 | # 2.7 | 1.8 | # 6.1 | 144 | # 5.5 | # 2.1 | 1.9 |
| 2 | # 3.3 | 3.5 | 3.6 | # 3.3 | 3.2 | 26.4 | # 1.8 | 3.3 | * 2,910 | 3.9 | 2.1 | 1.9 |
| 3 | 3.4 | 3.5 | 3.6 | 3.2 | # 3.4 | 192 | 521 | 2.9 | # 215 | 3.2 | 2.2 | # 1.8 |
| 4 | # 3.4 | 3.5 | 3.5 | 3.1 | 3.3 | # 82.7 | 504 | 2.6 | 69.3 | 2.5 | 2.2 | 1.8 |
| 5 | 3.4 | # 3.5 | 3.5 | 3.0 | 3.2 | 20.3 | # 329 | 4.1 | # 321 | 1.9 | # 27.0 | 1.9 |
| 6 | 3.5 | 3.5 | 3.5 | # 33.9 | 3.2 | 3.9 | 138 | 14.6 | 200 | 1.9 | 2.5 | 2.0 |
| 7 | 3.6 | 3.4 | 3.4 | 3.6 | # 3.1 | # 2.0 | 32.0 | # 3.3 | # 235 | 88.1 | 2.0 | # 2.0 |
| 8 | # 3.6 | 3.4 | 3.4 | 3.6 | # 3.0 | 2.0 | 14.0 | 2.9 | 66.9 | # 19.0 | 1.9 | 2.0 |
| 9 | 3.6 | # 3.4 | 3.4 | 3.6 | 3.1 | 2.0 | 11.0 | 2.7 | 33.9 | 120 | # 1.8 | 2.0 |
| 10 | 3.6 | 3.3 | 3.4 | # 3.6 | 3.4 | 422 | # 329 | # 2.5 | 9.8 | 22.9 | 1.8 | 1.9 |
| 11 | 3.6 | 3.2 | 3.5 | 3.6 | # 3.5 | # 116 | 249 | 2.5 | 3.6 | 108 | 1.8 | # 1.9 |
| 12 | # 3.6 | 3.2 | 3.6 | 3.6 | 3.4 | # 82.0 | 20.2 | 2.5 | 1.8 | # 213 | 1.9 | 2.0 |
| 13 | 3.4 | # 3.1 | 3.6 | # 3.6 | 3.2 | # 1,870 | # 7.3 | 2.6 | 1.8 | 130 | # 1.9 | 2.0 |
| 14 | 3.2 | 4.0 | 3.5 | 3.6 | 3.1 | # 110 | 3.9 | 2.6 | # 1.8 | 10.5 | 1.9 | # 2.0 |
| 15 | 3.0 | 3.3 | 3.5 | 3.6 | # 3.0 | 14.2 | 4.6 | # 2.6 | 1.8 | 6.4 | 1.8 | 2.0 |
| 16 | # 2.8 | # 3.3 | # 3.4 | 3.6 | 3.1 | 5.3 | # 72.8 | 2.5 | 5.1 | # 2.8 | # 1.8 | 2.0 |
| 17 | 2.8 | 3.3 | 3.3 | # 3.6 | 3.3 | 4.5 | # 1,610 | # 2.4 | # 2.4 | 3.0 | 1.9 | 1.9 |
| 18 | 2.8 | 3.2 | 3.2 | 3.5 | # 22.9 | 4.5 | # 3,730 | 2.3 | 1.9 | 16.8 | 2.0 | # 1.9 |
| 19 | # 2.8 | 3.2 | 3.1 | 3.3 | 7.7 | # 506 | # 266 | 2.6 | 1.8 | # 136 | 2.0 | 2.0 |
| 20 | 2.8 | # 3.2 | # 3.0 | # 3.2 | 5.2 | 12.1 | 49.0 | 71.2 | 1.7 | 30.5 | # 2.1 | # 2.0 |
| 21 | 2.7 | 3.2 | 3.1 | 3.4 | 2.7 | 2.5 | 13.0 | # 12.9 | # 1.6 | 11.8 | 2.1 | 2.0 |
| 22 | 2.6 | 3.3 | 3.2 | 3.5 | # 2.7 | # 2.5 | 3.5 | 5.7 | 1.6 | # 5.2 | 2.0 | 2.0 |
| 23 | # 2.6 | 3.4 | # 3.3 | 3.6 | 2.5 | 2.3 | # 3.3 | 4.2 | 1.6 | 3.5 | 2.0 | 2.0 |
| 24 | 2.9 | 3.4 | 3.4 | # 3.8 | 2.4 | 2.1 | 3.3 | # 1.8 | 1.6 | 2.7 | 2.0 | 2.0 |
| 25 | 3.1 | 3.4 | 3.4 | 3.8 | # 2.2 | 1.9 | 3.1 | # 1.9 | 5.2 | 2.1 | 1.9 | 11.0 |
| 26 | # 3.4 | # 3.5 | 3.4 | 3.7 | 2.4 | # 122 | # 30.4 | 2.0 | 486 | 2.1 | # 1.9 | # 3.4 |
| 27 | 3.4 | # 3.5 | # 3.7 | 2.5 | 24.0 | 17.9 | 2.1 | 199 | 2.1 | 1.9 | 2.1 | 2.1 |
| 28 | 3.3 | 3.6 | 3.4 | 3.5 | 2.6 | 1.6 | 112 | # 2.2 | # 187 | 2.1 | 2.0 | 2.1 |
| 29 | 3.2 | 3.4 | 3.4 | 3.4 | # 2.8 | # 1.6 | 52.9 | 2.2 | 36.9 | # 2.1 | 2.0 | 2.1 |
| 30 | # 3.2 | # 3.3 | 3.2 | 2.8 | 1.7 | # 2.6 | 2.2 | 2.2 | 10.2 | 2.1 | 2.0 | 2.1 |
| 31 | 3.4 | 3.3 | 3.3 | 2.7 | 2.7 | 2.3 | # 2.2 | 2.2 | 2.1 | # 2.1 | # 2.1 | 2.1 |
| Sum | 94.8 | 135.0 | 3,642.8 | 178.2 | | | | | 963.8 | 71.7 | | |
| | 99.3 | 105.3 | 118.6 | 8,138.7 | | | | | * 5,158.8 | 84.5 | | |

Current Year 1962 Period 1932-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | |
|---------------|-------------------|-------------|---------------------|----------|---------------------|---------------|-----------------|---------------|----------------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | 2.70 | 2.70 | † 7 | 0 | 3.6 | † 22 | 2.6 | 197 | 203 |
| Feb. | 2.97 | 2.70 | 14 | 24.9 | 13 | 3.1 | 3.4 | 281 | 4,400 |
| Mar. | 2.70 | 2.70 | † 1 | 0 | 3.6 | 20 | 3.0 | 209 | 241 |
| Apr. | 3.68 | 2.70 | 6 | 335 | 5 | 3.0 | 4.5 | 268 | 1,061 |
| May | 3.55 | 2.72 | 18 | 274 | 25 | 2.2 | 3.8 | 235 | 4,231 |
| June | 7.79 | 2.77 | 19 | * 8,440 | † 28 | 1.6 | 121 | 7,225 | 6,337 |
| July | 10.55 | 2.70 | 17 | * 17,500 | † 1 | 1.8 | 263 | 16,143 | 8,853 |
| Aug. | 4.12 | 2.77 | 20 | 285 | 24 | 1.8 | 5.7 | 353 | 4,328 |
| Sept. | 8.55 | 2.87 | 2 | * 9,840 | † 21 | 1.6 | * 172 | * 10,232 | 6,864 |
| Oct. | 4.66 | 2.77 | 11 | 660 | † 5 | 1.9 | 31.1 | 1,912 | 2,645 |
| Nov. | 4.33 | 2.87 | 5 | 332 | † 9 | 1.8 | 2.8 | 168 | 305 |
| Dec. | 3.37 | 3.18 | 21.0 | | 1.8 | 2.3 | 142 | 317 | 3,080 |
| Yearly | 10.55 | 2.70 | * 17,500 | | 1.6 | * 51.5 | * 37,272 | 35,666 | 105,807 |

* Partly estimated † And other days Ø Mean daily # Discharge measurement made on this day

RIO GRANDE AT JOHNSON RANCH, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located about 2 miles above Johnson Ranch, 14 miles below Castolon, Brewster County, Texas and Santa Elena Ranch, Chihuahua, and 392.9 river miles below 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 104 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: April 1936 through December 1962.

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. An estimated 97,000 second-feet flow with a stage of 24.6 feet occurred at this station site on October 3, 1932. Min. 0 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|--------|---------|-------|---------|--------|----------|---------|---------|---------|---------|--------|-------|
| 1 | 502 | # 464 | # 316 | 224 | # 97.2 | # 106 | 83.6 | # 1,170 | 146 | # 2,130 | # 849 | 601 |
| 2 | # 536 | 462 | 315 | # 229 | 96.9 | 106 | # 180 | 1,010 | 7,400 | 2,060 | 770 | 799 |
| 3 | 632 | 471 | 302 | 213 | # 81.6 | 345 | 835 | 770 | # 7,360 | 1,680 | 758 | # 877 |
| 4 | # 563 | 584 | 294 | 196 | 77.3 | # 258 | 1,120 | 617 | 2,520 | 1,270 | 690 | 942 |
| 5 | 486 | # 488 | # 289 | 168 | 80.2 | 261 | # 1,390 | 595 | 2,030 | # 1,330 | # 795 | 757 |
| 6 | 493 | 439 | 300 | # 180 | 75.9 | 177 | 727 | 649 | 2,860 | 1,780 | 818 | 622 |
| 7 | 518 | 419 | 337 | 180 | 87.0 | # 157 | 424 | # 545 | # 7,030 | 1,450 | 839 | # 545 |
| 8 | # 581 | 454 | 295 | 127 | # 88.4 | 157 | 830 | 579 | 5,860 | # 1,340 | 732 | 544 |
| 9 | 511 | # 437 | # 370 | 115 | 107 | 148 | 618 | 444 | 3,700 | 1,700 | # 683 | 651 |
| 10 | 457 | 440 | 476 | # 107 | 110 | 188 | # 969 | # 386 | # 2,040 | 1,280 | 740 | 681 |
| 11 | 519 | 453 | 522 | 104 | # 93.1 | 453 | 613 | 277 | 1,660 | 1,060 | 768 | # 654 |
| 12 | # 503 | 463 | 502 | 97.1 | 97.9 | 226 | 740 | 217 | 1,550 | # 1,230 | 760 | 678 |
| 13 | 518 | # 466 | # 428 | 94.6 | 89.2 | # 2,700 | # 565 | 179 | 1,340 | # 1,330 | # 708 | 565 |
| 14 | 499 | 436 | 351 | 87.4 | 85.2 | 1,800 | 492 | # 175 | # 1,200 | 1,480 | 691 | # 517 |
| 15 | 519 | 393 | 329 | 74.4 | # 87.5 | 555 | 656 | 146 | 1,290 | 1,410 | 693 | 480 |
| 16 | # 494 | # 418 | # 334 | 73.5 | 86.6 | 292 | # 601 | 119 | 1,290 | # 1,380 | # 578 | 556 |
| 17 | 451 | 370 | 299 | 67.4 | 77.2 | 214 | 1,210 | # 116 | # 1,110 | 1,480 | 535 | 702 |
| 18 | 477 | 347 | 273 | 76.8 | # 142 | 213 | # 8,610 | 106 | 1,050 | 1,460 | 532 | # 781 |
| 19 | # 466 | 387 | 295 | 75.4 | 136 | # 584 | # 2,960 | 91.6 | 1,140 | # 1,790 | 609 | 741 |
| 20 | 415 | # 368 | # 297 | # 88.4 | 354 | 1,460 | 1,850 | 140 | 1,010 | 2,860 | # 780 | # 673 |
| 21 | 407 | 348 | 271 | 88.2 | 147 | 896 | 2,280 | # 185 | # 862 | 1,550 | 734 | 638 |
| 22 | 439 | 333 | 292 | 92.2 | # 116 | # 415 | 1,750 | 136 | 894 | # 1,220 | 627 | 571 |
| 23 | # 475 | 318 | 267 | 196 | 140 | 267 | # 1,440 | 105 | 822 | 1,390 | 571 | 573 |
| 24 | 545 | 316 | # 255 | # 252 | 147 | 236 | 1,390 | # 78.6 | 786 | 1,400 | 527 | 574 |
| 25 | 579 | 314 | 271 | 210 | # 142 | 228 | 1,970 | # 74.1 | # 713 | 1,130 | 517 | 571 |
| 26 | # 514 | # 308 | 285 | 186 | 128 | # 171 | # 1,360 | 78.6 | 1,220 | 1,180 | # 514 | # 573 |
| 27 | 450 | 337 | # 269 | # 176 | 101 | 242 | 1,510 | 137 | 4,990 | 1,070 | 558 | 707 |
| 28 | 430 | 332 | 236 | 142 | 88.1 | 123 | 2,030 | # 234 | # 3,920 | 1,030 | 628 | 587 |
| 29 | 425 | 247 | 117 | # 90.2 | # 104 | 1,710 | 199 | 3,520 | # 949 | # 587 | 517 | |
| 30 | # 420 | # 271 | 98.2 | 116 | 126 | # 1,470 | 1,090 | # 156 | 2,160 | 888 | 561 | 499 |
| 31 | 419 | 242 | 103 | | | | | | | 923 | | # 465 |
| Sum | 11,365 | 4,135.6 | | 13,210 | | 9,889.9 | | 44,230 | | | 19,641 | |
| | 15,243 | 9,830 | | 3,468.5 | | 43,473.6 | | 73,473 | | 20,152 | | |

Current Year 1962

Period 1948-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | | |
|--------|-------------------|------|-----|---------------------|-----|---------------------|-------|-----------|---------|-----------|---------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum | |
| Jan. | 2.76 | 2.28 | 3 | 678 | 21 | 398 | 492 | 30,234 | 32,808 | 65,200 | 11,300 |
| Feb. | 2.68 | 2.05 | 4 | 609 | 26 | 308 | 406 | 22,542 | 33,634 | 71,400 | 9,460 |
| Mar. | 2.55 | 1.80 | 11 | 551 | 31 | 215 | 317 | 19,498 | 25,820 | 52,300 | 4,440 |
| Apr. | 2.19 | 1.24 | 6 | 379 | 17 | 65.6 | 138 | 8,203 | 11,288 | 23,900 | 457 |
| May | 2.87 | 1.24 | 20 | 802 | 6 | 70.6 | 112 | 6,880 | 19,538 | 56,000 | 0 |
| June | 6.17 | 1.35 | 13 | 4,880 | 30 | 82.6 | 440 | 26,202 | 32,398 | 70,400 | 3,270 |
| July | 10.32 | 1.31 | 18 | 11,500 | 1 | 77.0 | 1,400 | 86,230 | 82,124 | 300,000 | 5,930 |
| Aug. | 3.66 | 1.16 | 1 | 1,660 | 25 | 67.3 | 319 | 19,617 | 87,575 | 222,000 | 12,300 |
| Sept. | 12.48 | 1.48 | 3 | 4,100 | 1 | 141 | 2,450 | 145,734 | 114,599 | 603,000 | 9,350 |
| Oct. | 6.38 | 2.93 | 20 | 4,580 | 30 | 839 | 1,430 | 87,730 | 132,411 | 1,157,000 | 4,940 |
| Nov. | 3.45 | 2.45 | 5 | 1,240 | 26 | 504 | 672 | 39,971 | 40,390 | 132,000 | 8,600 |
| Dec. | 3.17 | 2.39 | 4 | 989 | 31 | 450 | 634 | 38,958 | 33,324 | 70,800 | 9,510 |
| Yearly | 12.48 | 1.16 | | 14,100 | | 65.6 | 735 | 531,799 | 645,909 | 2,059,290 | 120,747 |

Discharge measurement made on this day

RIO GRANDE ABOVE LANGTRY (FOSTER RANCH), TEXAS

DESCRIPTION: Bubble-type water-stage recorder, operated with bottled nitrogen gas, and cable with stand-up cable car equipped for winch and heavy weights, located .1 mile below the Terrell-Val Verde County Line, 16.9 river miles above Langtry, Texas, and 597.2 river miles below 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 101 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: September 1, 1961 through December 31, 1962.

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

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---------------|-------|--------|-------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 769 | 695 | # 542 | 450 | # 364 | # 293 | 397 | 1,590 | 363 | # 3,500 | 1,170 | 836 |
| 2 | # 696 | # 681 | 532 | # 440 | 344 | 271 | # 828 | 1,350 | 991 | 2,290 | 1,170 | 796 |
| 3 | 669 | 685 | 555 | # 464 | 326 | 267 | 377 | # 1,210 | 505 | 2,160 | 1,170 | # 764 |
| 4 | 705 | 704 | 551 | 1,000 | # 308 | # 895 | 508 | 1,200 | # 7,300 | # 2,170 | 1,080 | 789 |
| 5 | 743 | 722 | 542 | 644 | 303 | 679 | 503 | 1,080 | # 4,460 | 1,990 | # 1,020 | 969 |
| 6 | 828 | # 719 | # 526 | # 450 | 299 | 1,410 | # 1,810 | 895 | 4,320 | 1,610 | 1,000 | # 1,060 |
| 7 | 797 | 826 | 521 | 428 | 290 | # 1,050 | 1,860 | # 810 | 3,020 | 1,990 | 955 | 1,120 |
| 8 | 759 | 764 | 522 | 422 | # 268 | 448 | 1,170 | 744 | 4,740 | # 3,210 | # 1,010 | 961 |
| 9 | 730 | 719 | 517 | 407 | 263 | 350 | 808 | 765 | 6,400 | 2,590 | 1,050 | 877 |
| 10 | 753 | 696 | 543 | # 390 | 267 | 771 | 580 | # 6,050 | 3,220 | 993 | # 797 | |
| 11 | 791 | 711 | 544 | 407 | # 266 | # 1,770 | 1,100 | 715 | 3,750 | # 2,580 | 919 | 781 |
| 12 | 770 | 718 | 532 | 371 | 266 | 1,370 | # 1,250 | 639 | 2,500 | 1,780 | 881 | 877 |
| 13 | 724 | # 682 | # 612 | # 346 | 370 | 778 | 1,100 | 590 | # 1,900 | 1,840 | # 933 | 894 |
| 14 | 733 | 685 | 703 | 337 | 296 | # 1,880 | 845 | # 537 | 1,660 | 1,890 | 963 | 895 |
| 15 | 763 | 740 | # 673 | 331 | # 279 | 4,400 | 954 | 483 | 1,530 | # 1,400 | # 951 | 919 |
| 16 | 756 | # 728 | 656 | 322 | 256 | 2,000 | 940 | 453 | 1,380 | 1,500 | 928 | 831 |
| 17 | 764 | 709 | 583 | # 312 | 246 | 1,180 | # 1,580 | # 420 | 1,360 | 2,480 | 930 | # 784 |
| 18 | # 757 | 661 | 560 | 312 | # 428 | 798 | 2,090 | 396 | 1,450 | 1,700 | 916 | 746 |
| 19 | 780 | 643 | 558 | 306 | 513 | 589 | # 5,450 | 377 | 1,350 | # 1,960 | # 821 | 799 |
| 20 | 736 | 626 | 555 | # 284 | 1,210 | 474 | # 6,500 | # 360 | 1,260 | 3,210 | 804 | # 953 |
| 21 | 743 | 602 | # 507 | 288 | # 1,510 | 413 | 2,550 | 342 | 1,230 | 2,460 | 778 | 1,010 |
| 22 | 759 | 605 | 496 | 289 | 1,830 | # 763 | 1,790 | 351 | 1,320 | # 2,580 | 878 | 951 |
| 23 | # 707 | # 622 | # 520 | 289 | 889 | 1,300 | # 2,420 | 357 | 1,180 | 1,780 | # 1,040 | 875 |
| 24 | 673 | 600 | 514 | # 281 | # 554 | 1,010 | 2,020 | # 339 | # 1,120 | 1,530 | 957 | 842 |
| 25 | 660 | 586 | 489 | 286 | 401 | 706 | # 1,690 | 387 | 1,140 | # 1,500 | 882 | 794 |
| 26 | # 712 | 566 | # 508 | 288 | 348 | # 524 | 1,610 | 368 | 1,140 | 1,560 | # 810 | 785 |
| 27 | 755 | # 545 | # 496 | # 316 | 327 | 582 | 2,320 | 369 | 2,640 | 1,460 | 764 | # 768 |
| 28 | 814 | 534 | 479 | 429 | # 338 | 437 | 1,580 | # 316 | 2,030 | 1,650 | 751 | 760 |
| 29 | 788 | 494 | 408 | 330 | # 493 | 1,820 | 297 | 5,080 | # 1,450 | # 729 | 791 | |
| 30 | # 740 | 490 | 383 | 316 | 388 | 2,130 | 278 | 3,490 | 1,310 | 758 | 886 | |
| 31 | 703 | 466 | | 292 | | | # 2,000 | # 272 | 1,240 | | # 805 | |
| Sum | | 18,774 | | 11,680 | | 28,289 | | 19,006 | | 63,590 | | 26,715 |
| 23,077 | | 16,786 | | 14,297 | | 52,580 | | 76,659 | | 28,011 | | |

Current Year 1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|------------|---------------------|---------------|---------------------|-----------------|--------------|----------------|---------------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | 1.95 | 1.70 | 6 | 836 | 25 | 646 | 744 | 45,773 | |
| Feb. | 1.95 | 1.50 | 7 | 841 | 27 | 526 | 670 | 37,238 | |
| Mar. | 1.81 | 1.37 | 14 | 725 | 31 | 449 | 541 | 33,295 | |
| Apr. | 5.18 | .96 | 4 | 5,050 | 24 | 281 | 389 | 23,167 | |
| May | 3.70 | .92 | 20 | 2,720 | 8 | 260 | 461 | 28,358 | |
| June | 5.90 | .93 | 15 | 6,380 | 3 | 263 | 943 | 56,111 | |
| July | 7.40 | 1.17 | 20 | 8,130 | 3 | 352 | 1,700 | 104,292 | |
| Aug. | 2.76 | .89 | 1 | 1,650 | 31 | 268 | 613 | 37,698 | |
| Sept. | 8.55 | .90 | 4 | 10,600 | 1 | 272 | 2,560 | 152,053 | 114,576 |
| Oct. | 7.45 | 2.32 | 17 | 8,470 | 31 | 1,190 | 2,050 | 126,131 | 152,053 |
| Nov. | 2.32 | 1.81 | 2 | 1,200 | 30 | 713 | 934 | 55,560 | 94,916 |
| Dec. | 2.32 | 1.83 | 7 | 1,140 | 4 | 728 | 862 | 52,989 | 126,131 |
| Yearly | 8.55 | .89 | | 10,600 | | 260 | 1,040 | 752,665 | 55,560 |

Discharge measurement made on this day

RIO GRANDE AT LANGTRY, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located at Langtry, Texas, 24.1 river miles above the confluence of the Pecos River and 614.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 1,091.69 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 99 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 to October 1914; December 1919 through March 1920; January 1924 through December 1962.

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. The discharge for this stage was 204,000 second-feet, which was 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---------------|-------|---------------|-------|---------------|---------|---------------|---------|---------------|---------|---------------|---------|---------------|
| 1 | 850 | # 750 | 597 | 519 | 425 | 364 | 446 | 1,600 | 355 | 3,690 | 1,220 | 876 |
| 2 | 792 | 750 | # 586 | # 502 | 402 | 353 | # 862 | 1,400 | 855 | # 2,500 | # 1,210 | 857 |
| 3 | 761 | 750 | 613 | 530 | # 377 | 341 | 469 | 1,180 | 558 | 2,220 | 1,210 | 839 |
| 4 | # 787 | 766 | 625 | 1,110 | 372 | # 782 | 552 | 1,260 | # 5,340 | 2,220 | 1,170 | # 828 |
| 5 | 823 | # 783 | 615 | # 1,430 | 362 | 930 | # 573 | 1,150 | # 5,360 | 2,120 | 1,090 | 1,000 |
| 6 | 905 | 753 | # 613 | 536 | 358 | 1,130 | 1,570 | # 993 | # 4,530 | 1,710 | # 1,070 | 1,070 |
| 7 | 864 | 860 | 604 | 514 | # 353 | # 1,450 | 2,280 | 899 | 3,140 | 1,510 | 1,050 | 1,140 |
| 8 | # 824 | # 846 | # 610 | 497 | 337 | 614 | 1,360 | 844 | 4,490 | 3,360 | 1,100 | 1,030 |
| 9 | 762 | 778 | 603 | # 482 | 326 | 458 | # 961 | 828 | 6,290 | # 2,580 | # 1,140 | 921 |
| 10 | 788 | 746 | 604 | 478 | # 326 | 427 | 648 | 802 | 6,720 | 2,860 | 1,130 | 872 |
| 11 | 813 | 746 | 627 | 512 | 319 | 2,070 | 744 | 777 | # 4,000 | 3,130 | 1,030 | # 840 |
| 12 | 830 | # 763 | # 599 | # 465 | 318 | # 1,060 | 1,440 | 735 | 2,730 | # 1,990 | 994 | 913 |
| 13 | 785 | 744 | 656 | 432 | 377 | 1,030 | # 1,150 | 666 | 2,030 | 2,000 | # 1,020 | 948 |
| 14 | 794 | 742 | 765 | 419 | # 364 | # 1,480 | 876 | 620 | # 1,790 | 1,900 | 1,030 | # 953 |
| 15 | # 810 | # 788 | # 757 | 410 | 344 | 4,360 | 929 | 569 | 1,640 | 1,600 | 1,030 | 990 |
| 16 | 797 | 791 | 754 | # 401 | 336 | 2,600 | # 995 | # 520 | 1,440 | # 1,600 | 976 | 916 |
| 17 | 817 | 784 | 688 | 395 | # 544 | 1,490 | 1,570 | 479 | 1,350 | 3,340 | 964 | 883 |
| 18 | 786 | 746 | 656 | 385 | 737 | # 950 | 1,910 | 438 | # 1,420 | 2,200 | 968 | # 844 |
| 19 | 816 | 717 | # 647 | # 385 | 601 | 720 | # 4,010 | 417 | 1,360 | 2,000 | 902 | 859 |
| 20 | 777 | # 727 | 630 | 366 | 946 | 575 | # 6,810 | 401 | 1,260 | 5,490 | # 867 | # 990 |
| 21 | 772 | 696 | 599 | 358 | # 1,400 | # 515 | 3,180 | 396 | # 1,190 | 2,260 | 822 | 1,080 |
| 22 | # 793 | 688 | # 576 | 356 | 2,100 | 529 | 2,000 | # 403 | 1,260 | 2,970 | 874 | 1,040 |
| 23 | 768 | 711 | 595 | # 359 | 1,080 | 1,460 | # 2,580 | 422 | 1,160 | # 1,950 | 1,030 | 965 |
| 24 | 744 | 688 | 600 | 343 | # 720 | 1,130 | 2,340 | 395 | 1,090 | 1,700 | 1,010 | 942 |
| 25 | # 744 | 671 | 591 | 338 | 535 | # 807 | 1,840 | 431 | # 1,100 | 1,570 | 917 | 895 |
| 26 | 781 | # 649 | # 603 | # 332 | 456 | 605 | # 1,620 | 432 | 1,130 | # 1,630 | 878 | 887 |
| 27 | 802 | 631 | 581 | 344 | 418 | 628 | 2,340 | # 428 | 2,430 | 1,530 | # 825 | 871 |
| 28 | 876 | 607 | 553 | 436 | # 412 | # 522 | 1,630 | 398 | # 1,600 | 1,710 | 804 | # 856 |
| 29 | # 855 | 688 | 561 | # 450 | 398 | 515 | 1,760 | 362 | 4,880 | 1,510 | 783 | 865 |
| 30 | 796 | 561 | # 365 | 378 | 456 | # 1,980 | # 338 | 3,550 | 1,380 | # 792 | 972 | 911 |
| 31 | 756 | 544 | | | | | 2,080 | 328 | | 1,290 | | |
| Sum | | 20,671 | | 14,546 | | 30,351 | | 20,911 | | 69,520 | | 28,853 |
| 24,868 | | 19,203 | | 16,786 | | 53,505 | | 76,048 | | 29,906 | | |

Current Year 1962

| Month | Extreme Gage Fest | | | Extreme Second-Fest | | Average Second- Fest | Total Acre-Feet | Acre-Feet | | |
|---------------|----------------------|------------|-----|---------------------|-----|----------------------------|--------------------|----------------|----------------|------------------|
| | High | | Low | High | Low | | | Average | Maximum | Minimum |
| | High | Low | Day | High | Low | Day | | Average | Maximum | Minimum |
| Jan. | 1.35 | 1.10 | 6 | 924 | 25 | 728 | 802 | 49,326 | 86,600 | 27,300 |
| Feb. | 1.32 | .93 | 7 | 895 | 28 | 600 | 738 | 41,001 | 49,947 | 25,000 |
| Mar. | 1.18 | .84 | 14 | 790 | 31 | 523 | 619 | 38,089 | 45,558 | 27,600 |
| Apr. | 4.38 | .53 | 5 | 4,450 | 26 | 326 | 485 | 28,852 | 39,910 | 16,700 |
| May | 3.90 | .50 | 17 | 3,810 | 13 | 317 | 541 | 33,295 | 57,480 | 192,000 |
| June | 5.40 | .51 | 15 | 5,860 | 3 | 335 | 1,010 | 60,201 | 80,973 | 258,000 |
| July | 7.04 | .67 | 20 | 7,880 | 2 | 412 | 1,730 | 106,127 | 109,288 | 325,000 |
| Aug. | 2.28 | .45 | 1 | 1,830 | 31 | 318 | 675 | 41,477 | 113,146 | 248,000 |
| Sept. | 9.30 | .45 | 10 | 11,000 | 1 | 316 | 2,530 | 150,841 | 141,663 | 513,000 |
| Oct. | 10.35 | 1.73 | 20 | 12,600 | 31 | 1,230 | 2,240 | 137,893 | 176,179 | 1,335,000 |
| Nov. | 1.73 | 1.21 | 1 | 1,230 | 30 | 777 | 997 | 59,319 | 60,421 | 184,000 |
| Dec. | 1.70 | 1.23 | 7 | 1,170 | 4 | 807 | 931 | 57,230 | 50,936 | 93,100 |
| Yearly | 10.35 | .45 | | 12,600 | | 316 | 1,110 | 803,651 | 975,430 | 2,363,800 |
| | | | | | | | | | | 326,100 |

† Period 1931-1962 # Discharge measurement made on this day

PECOS RIVER NEAR SHUMLA, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, on top of rock ledge about 125 feet above river bed, and light cable, (winch operated, for carrying current meter and light weights only), located 13.0 river miles upstream from the Pecos High Bridge and 18.5 river miles above the confluence with the Rio Grande. This confluence is 638.2 river miles below the American Dam at El Paso, Texas. On January 1, 1958 the zero of the gage was changed to 1,159.46 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 53 measurements made at low and medium stages during the year, and a continuous record of gage heights. Computations by shifting channel methods. Records available: October 8, 1954 through December 1962. Records are also available for Pecos River near Comstock, 13.0 river miles downstream, from March 17 to December 3, 1898, May 1900 through October 7, 1954; and for Pecos River near Mouth from March 1, 1961 through December 1962.

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.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|-------|-------|-------|---------|-------|---------|--------|----------|---------|-------|-------|
| 1 | 157 | 161 | 148 | 145 | 116 | 123 | 245 | # 116 | 62.3 | 147 | 238 | 229 |
| 2 | 160 | 161 | 149 | 144 | # 108 | 119 | 196 | 112 | 65.3 | 126 | 226 | 219 |
| 3 | # 157 | 161 | 149 | 140 | 104 | 118 | # 159 | 106 | 70.2 | # 113 | 223 | 212 |
| 4 | 155 | 158 | 151 | # 146 | 105 | 105 | 147 | 103 | 68.4 | 103 | 223 | 208 |
| 5 | 155 | 158 | 151 | 164 | 104 | 99.0 | 136 | 104 | # 66.5 | 103 | 223 | 203 |
| 6 | 153 | 160 | 148 | 156 | 101 | # 100 | 126 | 101 | 68.3 | 99.6 | 222 | 200 |
| 7 | 153 | # 162 | # 148 | 150 | 98.8 | 97.0 | 120 | 94.3 | 2,850 | 99.6 | # 225 | 196 |
| 8 | 153 | 164 | 150 | 152 | 97.9 | 91.0 | 117 | # 97.6 | 937 | 101 | 223 | # 195 |
| 9 | 155 | 162 | 154 | 140 | # 99.1 | 88.0 | 116 | 93.7 | 331 | 107 | 222 | 192 |
| 10 | # 157 | 160 | 156 | 133 | 101 | 86.0 | 114 | 90.0 | 223 | # 279 | 223 | 189 |
| 11 | 158 | 162 | 153 | # 129 | 102 | 150 | # 112 | 89.7 | 168 | 164 | 223 | 191 |
| 12 | 163 | 162 | 153 | 127 | 102 | 145 | 106 | 87.6 | # 153 | 136 | 221 | # 191 |
| 13 | 161 | 164 | 153 | 120 | 101 | # 108 | 103 | 89.1 | 142 | 119 | 230 | 187 |
| 14 | 158 | # 164 | # 153 | 118 | 102 | 100 | 102 | 92.4 | 132 | 104 | # 245 | 186 |
| 15 | 157 | 167 | 157 | 119 | 104 | 88.0 | 101 | 95.7 | 120 | 92.9 | 258 | 183 |
| 16 | 161 | 165 | 151 | 119 | # 109 | 84.0 | 99.3 | 93.7 | 113 | 113 | 268 | 181 |
| 17 | # 164 | 164 | 148 | 118 | 106 | 84.0 | 95.9 | 88.2 | 107 | 2,240 | 270 | 180 |
| 18 | 162 | 164 | 146 | # 118 | 364 | 84.0 | # 91.3 | 86.2 | 104 | # 5,840 | 270 | 179 |
| 19 | 161 | 163 | 150 | 115 | 140 | 89.0 | 85.5 | 86.0 | # 100 | 876 | 275 | # 178 |
| 20 | 159 | 163 | 150 | 110 | 100 | 118 | 82.6 | 85.8 | 97.3 | 444 | 306 | 176 |
| 21 | 161 | 164 | # 147 | 108 | 92.9 | # 127 | 81.2 | 80.3 | 90.3 | 343 | # 298 | 174 |
| 22 | 163 | 164 | 149 | 113 | 91.5 | 117 | 78.3 | # 76.6 | 87.4 | 738 | 296 | 175 |
| 23 | 164 | # 169 | 141 | 160 | # 90.2 | 109 | 75.4 | 74.7 | 82.5 | 548 | 296 | 177 |
| 24 | # 167 | 155 | 141 | 123 | 90.8 | 101 | 72.6 | 72.8 | 81.7 | # 385 | 307 | 176 |
| 25 | 165 | 148 | 144 | # 118 | 93.5 | 102 | # 72.6 | 72.7 | 83.1 | 335 | 315 | 178 |
| 26 | 168 | 150 | 140 | 114 | 98.1 | # 101 | 76.2 | 70.9 | # 101 | 300 | 320 | 182 |
| 27 | 161 | 151 | 138 | 128 | 102 | # 111 | 608 | 70.8 | 105 | 269 | 320 | 179 |
| 28 | 162 | # 152 | 138 | 120 | 109 | 152 | 125 | 69.0 | 118 | 301 | # 300 | 178 |
| 29 | 165 | | 141 | 122 | # 133 | 227 | 100 | 67.1 | 186 | 255 | 274 | 178 |
| 30 | # 165 | | 143 | 122 | 138 | 344 | 137 | 65.5 | 160 | 243 | 247 | 179 |
| 31 | 163 | | 145 | 128 | 128 | 133 | | 62.4 | # 244 | | | 177 |
| Sum | 4,498 | | 3,891 | | 3,567.0 | | 2,694.8 | | 15,368.1 | | 5,828 | |
| | 4,963 | | 4,587 | | 3,531.8 | | 4,013.9 | | 7,073.3 | | 7,787 | |

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Period 1955-1962 | | | | |
|---------------|-------------------|------|-----|---------------------|-----|---------------------|-----------------|------------------|---------|---------|---------|--|
| | High | | Low | High | | | | Average | Maximum | Minimum | | |
| | High | Low | | Day | Day | | | | | | | |
| Jan. | 1.39 | 1.34 | 26 | 170 | 7 | 151 | 160 | 9,844 | 12,342 | 16,400 | 8,890 | |
| Feb. | 1.45 | 1.26 | 15 | 186 | 25 | 146 | 161 | 8,922 | 11,125 | 14,600 | 8,922 | |
| Mar. | 1.33 | 1.20 | 11 | 159 | 24 | 131 | 148 | 9,098 | 11,147 | 14,300 | 9,098 | |
| Apr. | 1.56 | 1.12 | 23 | 204 | 20 | 107 | 130 | 7,718 | 13,442 | 39,900 | 7,718 | |
| May | 3.25 | .96 | 18 | 1,060 | 23 | 88.2 | 114 | 7,005 | 34,187 | 173,000 | 7,005 | |
| June | 2.15 | .99 | 29 | 406 | 18 | 80.7 | 119 | 7,075 | 19,451 | 44,600 | 5,820 | |
| July | 4.42 | .92 | 27 | 2,010 | 25 | 71.2 | 129 | 7,962 | 18,785 | 38,900 | 5,520 | |
| Aug. | 1.21 | .86 | 1 | 126 | 31 | 60.9 | 86.9 | 5,345 | 13,108 | 26,500 | 5,220 | |
| Sept. | 11.75 | .87 | 7 | 12,500 | 1 | 62.3 | 236 | 14,030 | 23,716 | 79,000 | 6,410 | |
| Oct. | 14.46 | 1.06 | 18 | 18,000 | 15 | 88.7 | 496 | 30,483 | 31,798 | 101,000 | 11,100 | |
| Nov. | 1.96 | 1.57 | 27 | 324 | 11 | 220 | 260 | 15,446 | 14,531 | 21,600 | 9,100 | |
| Dec. | 1.68 | 1.38 | 1 | 237 | 21 | 174 | 188 | 11,560 | 12,407 | 16,300 | 9,100 | |
| Yearly | 14.46 | .86 | | 18,000 | | 60.9 | 186 | 134,488 | 216,039 | 390,670 | 114,790 | |

Discharge measurement made on this day

PECOS RIVER NEAR MOUTH

DESCRIPTION: Bubbler-type water-stage recorder, operated with nitrogen gas and cable with stand-up cable car equipped for winch and heavy weights, located .4 mile below the U. S. Highway 90 bridge and 1.0 river mile above the confluence with the Rio Grande. This confluence is 638.2 river miles below 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 48 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Discharge for days which contain storm run-off and are affected by backwater from the Rio Grande are not computed. Records available: March 1, 1961 through December 1962. Records are also available for Pecos River near Comstock, 4.5 river miles upstream, from March 17 to December 3, 1898 and May 1900 to October 7, 1954; and for Pecos River near Shumla, 17.5 river miles upstream, from October 8, 1954 through December 1962.

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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|--------------|-------|-------|-------|---------|---------|--------|---------|--------|-------|-------|-------|-------|
| 1 | 168 | 162 | # 156 | 148 | 128 | 113 | 260 | # 130 | 82.8 | 247 | 280 | |
| 2 | 168 | 162 | 156 | 144 | # 120 | 177 | 208 | 126 | 82.4 | 237 | 270 | |
| 3 | # 169 | 165 | 157 | 144 | 114 | 120 | # 174 | 112 | 86.5 | 229 | 258 | |
| 4 | 170 | 167 | 162 | # 157 | 110 | 110 | 161 | 104 | | 229 | 247 | |
| 5 | 171 | 168 | 162 | 176 | 110 | 104 | 144 | 98.9 | | 132 | 232 | # 232 |
| 6 | 168 | 166 | 158 | 177 | 106 | # 97.8 | 133 | 94.9 | | 116 | 234 | 226 |
| 7 | 171 | # 168 | # 157 | 171 | 100 | 99.4 | 125 | 92.8 | | 107 | # 236 | 219 |
| 8 | 172 | 169 | 158 | 170 | 96.7 | 100 | 117 | # 89.1 | | 106 | 237 | 212 |
| 9 | 173 | 171 | 163 | 172 | # 92.3 | 99.6 | 110 | 88.6 | | 238 | 205 | |
| 10 | 172 | 170 | 163 | 163 | 93.4 | 101 | 106 | 86.8 | | 240 | 199 | |
| 11 | 172 | 169 | 162 | # 157 | 93.4 | 106 | # 103 | 86.4 | | | 239 | |
| 12 | 175 | 168 | 156 | # 154 | 94.5 | 188 | 102 | 83.5 | | | 239 | # 188 |
| 13 | 176 | 167 | 156 | 146 | 94.5 | # 146 | 98.1 | 85.3 | 169 | | 240 | 189 |
| 14 | 178 | 167 | # 156 | 138 | 95.6 | 126 | 97.1 | 89.4 | 150 | | 247 | 189 |
| 15 | 179 | # 166 | 160 | 136 | 93.6 | 121 | 96.2 | # 89.0 | 142 | | 261 | 192 |
| 16 | 179 | 166 | 166 | 135 | # 94.7 | 114 | 96.2 | 94.3 | 135 | | # 274 | 192 |
| 17 | 180 | 164 | 165 | 131 | 95.2 | 108 | 96.3 | 95.0 | 129 | | 283 | 193 |
| 18 | # 178 | 164 | 163 | # 130 | 274 | 101 | # 96.3 | 95.7 | 124 | | 286 | 191 |
| 19 | 178 | 162 | 165 | 128 | 161 | 106 | 95.0 | 93.9 | 118 | | 285 | 191 |
| 20 | 176 | 158 | 169 | 122 | 105 | # 110 | 93.6 | 93.3 | # 113 | | 302 | 189 |
| 21 | 174 | 156 | # 166 | 120 | 97.1 | 129 | 92.3 | 95.2 | 108 | | # 306 | # 187 |
| 22 | 173 | 162 | 163 | 121 | 96.5 | 130 | 90.9 | 94.7 | 106 | | 307 | 188 |
| 23 | 175 | # 165 | 153 | 148 | # 97.0 | 123 | 89.6 | # 91.8 | 102 | | 308 | 191 |
| 24 | # 173 | 163 | 152 | 160 | 98.0 | 115 | 88.2 | 92.6 | 99.0 | # 489 | 311 | 191 |
| 25 | 173 | 161 | 141 | # 128 | 94.0 | 108 | # 86.9 | 91.0 | 95.0 | # 420 | 313 | 187 |
| 26 | 170 | 160 | 146 | 126 | 95.0 | # 108 | 95.0 | 89.6 | # 101 | | 314 | 184 |
| 27 | 167 | 160 | 144 | 144 | 95.0 | # 105 | 322 | 89.2 | | | 345 | 184 |
| 28 | 163 | 156 | # 144 | 132 | 99.0 | 125 | 218 | 87.6 | | | 317 | 184 |
| 29 | 163 | 143 | 131 | # 103 | 151 | 117 | # 87.2 | | | 296 | # 309 | 181 |
| 30 | 160 | 147 | 135 | 126 | 290 | 119 | 87.2 | | | # 258 | 293 | 178 |
| 31 | # 160 | | 149 | 120 | | 140 | 85.0 | | | | 250 | # 176 |
| Sum | | | 4,602 | 4,344 | 3,731.8 | | 2,920.0 | | | | | 6,289 |
| 5,324 | | | 4,858 | 3,392.5 | 3,970.7 | | | | | | | 8,107 |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | | |
|---------------|-------------------|------|------|---------------------|------|---------------------|-----------------|-----------|---------|---------|--|--|
| | High | | Low | High | | | | **Average | Maximum | Minimum | | |
| | Day | Day | Day | Day | Day | | | | | | | |
| Jan. | 2.11 | 2.05 | 14 | 181 | # 30 | 160 | 172 | 10,560 | | | | |
| Feb. | 2.06 | 1.91 | 9 | 173 | 28 | 154 | 164 | 9,128 | | | | |
| Mar. | 2.01 | 1.79 | 20 | 173 | 25 | 139 | 157 | 9,636 | | | | |
| Apr. | 2.24 | 1.65 | 27 | 203 | 22 | 117 | 145 | 8,616 | | | | |
| May | 3.94 | 1.47 | 18 | 560 | 27 | 91.0 | 109 | 6,729 | | | | |
| June | 3.52 | 1.48 | 2 | 457 | 6 | 95.8 | 124 | 7,402 | | | | |
| July | 4.60 | | 27 | 739 | 25 | Ø 86.9 | 128 | 7,876 | | | | |
| Aug. | 1.89 | 1.35 | 1 | 146 | 12 | 82.3 | 94.2 | 5,792 | | | | |
| Sept. | | 1.34 | | | 2 | 81.2 | | | | | | |
| Oct. | | | | | | 81.2 | | | | | | |
| Nov. | 2.73 | 2.35 | # 26 | 316 | # 3 | 229 | 270 | 16,080 | 13,840 | 16,080 | | |
| Dec. | 2.59 | 2.06 | 1 | 287 | 31 | 176 | 203 | 12,474 | 11,787 | 11,100 | | |
| Yearly | | 1.34 | | | | | | | | | | |

* And other days # Some months missing ** See explanation in RECORDS above Ø Mean daily

Discharge measurement made on this day

GOODENOUGH SPRING NEAR COMSTOCK, TEXAS

DESCRIPTION: Water-stage recorder located 4,000 feet above the confluence with the Rio Grande and 11.75 miles south-west of Comstock, Val Verde County, Texas. The stream from this spring enters the Rio Grande 664.9 river miles below 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 44 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel 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: January 1924 through December 1962.

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. 1,210 second-feet on October 3, 1959, with a gage height of 6.62 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-------|-------|-------|-------|-------|-------|-------|---------|--------|-------|-------|-------|-------|
| 1 | 131 | 123 | † 116 | 114 | 109 | † 111 | 106 | 106 | 97.9 | 114 | † 138 | 128 |
| 2 | 130 | 123 | 116 | 113 | 110 | 118 | 106 | 106 | 98.7 | 114 | 136 | 128 |
| 3 | † 130 | 123 | 118 | 113 | 109 | 115 | 107 | † 107 | 98.1 | † 112 | 134 | 127 |
| 4 | 131 | 124 | 116 | † 114 | † 109 | 115 | 109 | 107 | 98.2 | 109 | 133 | 126 |
| 5 | 127 | 122 | 115 | 114 | 108 | 114 | 111 | 106 | 98.3 | 107 | 133 | 126 |
| 6 | 128 | 120 | 116 | 113 | 108 | 114 | † 113 | 104 | 99.1 | 105 | 131 | 127 |
| 7 | 129 | † 122 | 117 | 114 | 107 | 113 | 113 | 104 | 100 | 102 | † 130 | † 126 |
| 8 | 128 | 122 | 119 | 113 | 107 | † 111 | 115 | † 104 | 101 | 101 | 130 | 126 |
| 9 | 126 | 122 | † 118 | 112 | 106 | 117 | 115 | 104 | 99.3 | 102 | 130 | 126 |
| 10 | 127 | 120 | 118 | 112 | 106 | 110 | 115 | 103 | 130 | 100 | 129 | 127 |
| 11 | 128 | 120 | 118 | 110 | † 105 | 109 | 114 | 103 | 169 | 102 | 129 | 127 |
| 12 | 128 | 120 | 117 | 110 | 106 | 108 | 115 | 102 | 152 | 105 | 128 | 127 |
| 13 | 129 | 121 | 117 | † 110 | 106 | 108 | † 116 | 102 | 140 | 105 | 129 | 128 |
| 14 | 130 | 120 | 117 | 112 | 107 | 107 | 115 | 103 | 136 | 106 | 130 | † 129 |
| 15 | 130 | 119 | 117 | 112 | 106 | † 107 | 114 | 101 | 132 | 106 | 131 | 130 |
| 16 | † 131 | † 119 | † 117 | 112 | 106 | 107 | 113 | † 99.8 | 130 | 105 | † 132 | 128 |
| 17 | 131 | 120 | 117 | 112 | † 104 | 107 | 112 | 99.4 | 125 | 114 | 134 | 125 |
| 18 | 131 | 118 | 119 | 112 | 104 | 108 | 111 | 99.0 | 122 | 157 | 133 | 124 |
| 19 | 130 | 118 | 119 | † 112 | 103 | 108 | 111 | 98.7 | 118 | 164 | 134 | 121 |
| 20 | 129 | 120 | 117 | 113 | 104 | 110 | 110 | 97.2 | † 114 | 162 | 136 | † 120 |
| 21 | 129 | 120 | 116 | 112 | 105 | 111 | 109 | 95.9 | 113 | 153 | 136 | 120 |
| 22 | 126 | 119 | 115 | 111 | 105 | 110 | 110 | 96.5 | 111 | 147 | 135 | 120 |
| 23 | 125 | † 117 | 116 | 109 | † 104 | 109 | 108 | 97.1 | 110 | † 139 | 134 | 119 |
| 24 | 125 | 117 | 115 | 108 | † 104 | 107 | † 107 | † 96.7 | 109 | 137 | 133 | 121 |
| 25 | † 126 | 118 | 114 | 107 | 105 | 106 | 106 | 95.2 | 108 | 136 | 133 | 120 |
| 26 | 123 | 118 | 113 | † 107 | 105 | 105 | 106 | 96.7 | † 109 | 138 | 132 | 118 |
| 27 | 124 | 116 | 114 | 145 | 107 | † 105 | 105 | 97.3 | 110 | 139 | 131 | 118 |
| 28 | 122 | 115 | 115 | 111 | 108 | 108 | 105 | 97.8 | 114 | 137 | 129 | † 118 |
| 29 | 122 | 117 | 115 | 112 | 107 | 106 | 105 | † 98.3 | 114 | 136 | 128 | 116 |
| 30 | 123 | 116 | 116 | 110 | 109 | 106 | 105 | 98.3 | 114 | 138 | † 127 | 117 |
| 31 | 122 | | 115 | | 110 | | | 98.3 | | 136 | | |
| Sum | | | 3,356 | 3,379 | 3,290 | 3,290 | 3,124.2 | 3,828 | 3,829 | | | |
| 3,951 | | | 3,609 | 3,299 | 3,412 | 3,412 | 3,470.6 | 3,958 | | | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | |
|--------|-------------------|------|-----|---------------------|------|---------------------|-----------------|-----------|---------|---------|--------|
| | High | | Low | Day | Day | | | Average | Maximum | Minimum | |
| | High | Low | Day | Day | Day | Acre-Feet | Average | Maximum | Maximum | Minimum | |
| Jan. | 1.28 | 1.14 | 16 | 132 | 128 | 122 | 7,837 | 7,927 | 19,620 | 4,450 | |
| Feb. | 1.16 | 1.08 | 4 | 126 | 28 | 120 | 6,657 | 7,045 | 17,030 | 3,860 | |
| Mar. | 1.12 | 1.04 | 18 | 120 | 26 | 111 | 116 | 7,158 | 7,633 | 17,770 | 4,340 |
| Apr. | 2.64 | 1.03 | 27 | 284 | † 23 | 107 | 113 | 6,702 | 7,431 | 16,580 | 4,820 |
| May | 1.14 | 1.08 | 31 | 111 | 19 | 102 | 106 | 6,544 | 8,116 | 16,840 | 4,870 |
| June | 3.36 | 1.12 | 9 | 357 | 27 | 103 | 110 | 6,526 | 8,110 | 16,040 | 4,470 |
| July | 1.32 | 1.25 | 13 | 118 | 27 | 104 | 110 | 6,768 | 8,573 | 16,460 | 4,500 |
| Aug. | 1.32 | 1.25 | 3 | 108 | 25 | 92.7 | 101 | 6,197 | 8,197 | 15,840 | 4,840 |
| Sept. | 2.04 | 1.26 | 11 | 173 | 6 | 97.7 | 116 | 6,884 | 9,092 | 25,000 | 5,120 |
| Oct. | 2.07 | 1.36 | 18 | 165 | 9 | 99.0 | 123 | 7,593 | 9,586 | 25,870 | 4,820 |
| Nov. | 1.77 | 1.59 | † 1 | 138 | 12 | 125 | 132 | 7,851 | 8,567 | 21,850 | 4,540 |
| Dec. | 1.60 | 1.25 | 15 | 130 | 30 | 115 | 124 | 7,595 | 8,340 | 20,470 | 4,500 |
| Yearly | 3.36 | 1.03 | | 357 | | 92.7 | 116 | 84,312 | 98,617 | 192,840 | 60,320 |

† And other days † Discharge measurement made on this day

DEVILS RIVER AT PAFFORD CROSSING

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas and control wall with notch opening of 440 second-feet capacity, located 25.5 miles above the confluence with the Rio Grande. This confluence is 680.1 river miles below the 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 41 meter measurements by wading during the year, a continuous record of gage heights, and a stable rating curve. The rating curve for discharge above the capacity of the notch is estimated. Records available: January 15, 1960 through December 1962. For additional records see "Devils River Near Mouth" on the following page.

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.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|
| 1 | 178 | 164 | 147 | 133 | 124 | 122 | 188 | 137 | 124 | 143 | 235 | 187 |
| 2 | # 178 | 164 | 147 | # 130 | # 125 | 123 | # 195 | 133 | 127 | # 133 | 235 | 183 |
| 3 | 179 | 164 | 142 | 127 | # 113 | 129 | 195 | 137 | 124 | 133 | 235 | 183 |
| 4 | 179 | 161 | 142 | 126 | 114 | # 133 | 195 | 133 | # 124 | 133 | 230 | # 183 |
| 5 | 180 | # 164 | # 146 | 126 | 114 | 130 | 191 | 130 | 124 | 127 | 230 | 179 |
| 6 | 177 | 164 | 146 | 129 | 114 | 131 | 182 | # 127 | 121 | 127 | # 213 | 179 |
| 7 | 175 | 165 | 146 | 125 | 115 | 138 | 178 | 130 | 121 | 127 | 213 | 175 |
| 8 | 175 | 169 | 149 | 122 | 116 | 135 | 171 | 130 | 176 | 127 | 208 | 179 |
| 9 | 176 | 170 | 149 | 125 | 116 | 145 | # 164 | 130 | 299 | 127 | 208 | 175 |
| 10 | 173 | 166 | 149 | 124 | 112 | 164 | 164 | 130 | 179 | 127 | 208 | 172 |
| 11 | 177 | 167 | 146 | 127 | 110 | # 164 | 163 | 130 | # 253 | 127 | 204 | 172 |
| 12 | 178 | 167 | 146 | 123 | 114 | 167 | 167 | 137 | 217 | 127 | 204 | # 168 |
| 13 | 175 | 167 | 142 | 123 | 111 | 159 | 158 | # 133 | 200 | 127 | 204 | 168 |
| 14 | 180 | 168 | 141 | 123 | 111 | 151 | 155 | 133 | 187 | 127 | 200 | 172 |
| 15 | 183 | 165 | 141 | 119 | 112 | 148 | 157 | 127 | 175 | 130 | 200 | 172 |
| 16 | # 184 | 158 | 141 | # 116 | # 113 | 147 | # 154 | 124 | # 161 | # 137 | 196 | 175 |
| 17 | 183 | 158 | 141 | 117 | # 113 | 143 | 162 | 127 | # 154 | 303 | 196 | # 175 |
| 18 | 181 | 156 | 138 | 113 | 109 | # 146 | 158 | 130 | 150 | 1,220 | 196 | 172 |
| 19 | 180 | # 152 | 138 | 121 | 111 | 282 | 156 | 127 | 150 | 1,340 | 192 | 172 |
| 20 | 178 | 152 | 138 | 121 | 108 | 1,030 | # 157 | # 124 | 150 | 1,600 | # 196 | 172 |
| 21 | 177 | 152 | # 141 | 122 | # 110 | # 352 | 154 | 121 | 147 | 349 | 196 | 172 |
| 22 | 176 | 155 | 141 | 122 | 113 | 253 | 151 | 121 | 147 | 267 | 196 | 172 |
| 23 | 174 | 169 | 141 | 129 | 110 | 230 | # 148 | 121 | 143 | 309 | 196 | 172 |
| 24 | 173 | 155 | 139 | 123 | 110 | 224 | 143 | 121 | # 143 | 304 | 192 | 172 |
| 25 | 171 | 151 | 139 | 121 | 110 | # 207 | 139 | 121 | 143 | 283 | 192 | 172 |
| 26 | # 170 | 151 | 142 | 122 | 107 | 202 | 137 | 121 | 143 | 262 | 192 | 172 |
| 27 | 170 | 150 | 139 | 134 | 107 | 202 | 136 | # 121 | 143 | 249 | 192 | 172 |
| 28 | 167 | 143 | 136 | 135 | # 107 | 214 | 130 | 124 | 143 | 267 | 187 | 172 |
| 29 | 167 | 139 | 129 | 108 | 210 | 129 | 124 | 143 | 239 | 187 | 172 | |
| 30 | 167 | 139 | 127 | 114 | 209 | # 131 | 124 | 140 | # 235 | 187 | 172 | |
| 31 | 167 | 137 | 119 | 119 | 135 | 124 | | | | 235 | | |
| Sum | | 4,487 | | 3,734 | | 6,190 | | 3,952 | | 9,541 | | 5,405 |
| | | 5,448 | | 4,408 | | 3,490 | | 4,943 | | 4,751 | | 6,120 |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Period 1960-1962 | | | | |
|---------------|-------------------|-------------|-----|---------------------|------------|---------------------|-----------------|------------------|----------------|----------------|--|--|
| | High | | Low | High | | | | Average | Maximum | Minimum | | |
| | High | Low | | Day | Day | | | | | | | |
| Jan. | 1.51 | 1.47 | 5 | 184 | 31 | 163 | 10,806 | 12,735 | 15,100 | 10,806 | | |
| Feb. | 1.49 | 1.38 | 9 | 173 | 28 | 137 | 8,900 | 11,100 | 13,200 | 8,900 | | |
| Mar. | 1.42 | 1.38 | # 7 | 149 | 28 | 136 | 142 | 8,743 | 10,881 | 13,700 | | |
| Apr. | 1.47 | 1.31 | 23 | 167 | 17 | 110 | 124 | 7,406 | 9,465 | 12,200 | | |
| May | 1.34 | 1.28 | 2 | 128 | 28 | 101 | 113 | 6,922 | 9,087 | 12,000 | | |
| June | 2.66 | 1.33 | 20 | 1,530 | 1 | 119 | 206 | 12,278 | 22,326 | 44,600 | | |
| July | 1.53 | 1.37 | 1 | 196 | 29 | 129 | 159 | 9,804 | 16,035 | 24,000 | | |
| Aug. | 1.39 | 1.32 | 3 | 140 | 27 | 117 | 127 | 7,839 | 13,946 | 17,400 | | |
| Sept. | 2.13 | 1.32 | 8 | 609 | 8 | 117 | 158 | 9,424 | 11,775 | 14,400 | | |
| Oct. | 4.85 | 1.34 | 20 | 6,460 | 14 | 124 | 308 | 18,925 | 17,042 | 18,925 | | |
| Nov. | 1.63 | 1.52 | # 1 | 235 | # 28 | 187 | 204 | 12,139 | 12,646 | 13,200 | | |
| Dec. | 1.52 | 1.45 | 1 | 187 | 15 | 161 | 174 | 10,721 | 11,440 | 10,721 | | |
| Yearly | 4.85 | 1.28 | | 6,460 | 101 | 171 | 123,907 | 158,478 | 190,130 | 123,907 | | |

And other days # Discharge measurement made on this day

DEVILS RIVER NEAR MOUTH

DESCRIPTION: Water-stage recorder and rock and concrete low flow station control, located 3.7 river miles downstream from U. S. 90 highway bridge and .8 mile above the confluence with the Rio Grande. This confluence is 680.1 river miles below the 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 51 meter measurements by wading during the year, a continuous record of gage heights, and a stable rating curve for discharges up to 600 second-feet; above 600 second-feet, 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 December 1962. Records are also available from May 1900 to March 1914 for a station .9 mile upstream; from December 1923 to September 1, 1932 for a station 1.9 miles upstream; from September 2, 1932 through August 31, 1957 for a station 3.7 miles upstream; from August 7, 1954 to January 31, 1958 for a station 30.1 miles upstream; and from January 15, 1960 through December 1962 at Pafford Crossing Station 24.7 miles upstream. A graph of Devils River flow from 1871 through 1939 may be found in Water Bulletin No. 9.

REMARKS: The monthly flow of this spring-fed stream is not modified, but the daily flow is modified by two power dams with a combined hydroelectric generating capacity of 3,100 kva, the operation of which began in 1929. During the flood of June 1954 the peak flow of Devils River, affected by backwater from the Rio Grande, reached an elevation of 969.00 feet at the steam electric plant located approximately 2,000 feet upstream from this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 86,500 second-feet on September 24, 1955, with a gage height of 21.02 feet. Min. 51.9 second-feet on February 7, 1957, with a gage height of .70 foot. The greatest recorded flow on the Devils River was 397,000 second-feet, which occurred September 1, 1932, with a gage height of 36.60 feet (988.40 feet above mean sea level, U. S. C. & G. S. datum) at a gage 4.5 miles above the confluence with the Rio Grande.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--------|
| 1 | 383 | # 365 | # 286 | 316 | # 290 | 327 | 340 | # 281 | 233 | 261 | 431 | 327 |
| 2 | 399 | 360 | 303 | 280 | 303 | 305 | 346 | 291 | 297 | # 253 | 419 | 380 |
| 3 | 431 | 360 | 329 | # 280 | 220 | 244 | 326 | 270 | 268 | 251 | 425 | 381 |
| 4 | # 419 | 364 | 333 | 335 | 232 | 248 | 307 | 272 | 255 | 252 | 413 | # 331 |
| 5 | 438 | 359 | 300 | 587 | 276 | 263 | # 314 | 276 | 256 | 250 | 379 | 366 |
| 6 | 307 | 344 | 301 | 288 | 272 | # 277 | 316 | 277 | # 239 | 256 | # 443 | 352 |
| 7 | 398 | # 340 | # 326 | 303 | 274 | 262 | 309 | 271 | 254 | 244 | 403 | 351 |
| 8 | 404 | 345 | 316 | 302 | # 268 | 264 | 305 | 272 | 248 | 259 | 394 | 348 |
| 9 | 403 | 360 | 325 | 304 | 259 | 277 | 286 | # 277 | 358 | # 269 | 405 | 349 |
| 10 | 352 | 347 | 330 | # 310 | 263 | 388 | 302 | 256 | 805 | 288 | 390 | 352 |
| 11 | 322 | 340 | 333 | 318 | 278 | 288 | # 309 | 255 | # 644 | 266 | 404 | # 359 |
| 12 | 426 | 368 | 307 | 265 | 272 | 294 | 294 | 261 | 461 | 262 | 373 | 321 |
| 13 | 397 | 365 | 299 | 295 | 267 | 270 | 290 | 262 | 347 | 256 | 407 | 325 |
| 14 | 403 | # 339 | 319 | 296 | 262 | 283 | 301 | 271 | 308 | 250 | # 375 | 343 |
| 15 | 349 | 370 | # 323 | 271 | # 312 | # 264 | 290 | 274 | 307 | 244 | 382 | 358 |
| 16 | 386 | 353 | 323 | # 296 | 310 | 263 | 274 | # 260 | 275 | 237 | 386 | 374 |
| 17 | # 396 | 349 | 303 | # 284 | 265 | 252 | 363 | 267 | 296 | # 295 | 395 | 325 |
| 18 | 376 | 357 | 333 | 293 | 259 | 264 | 267 | 239 | # 305 | 2,970 | 391 | 337 |
| 19 | 389 | 344 | 338 | 277 | 270 | 270 | # 290 | 252 | 276 | 1,760 | 380 | # 358 |
| 20 | 375 | 341 | # 346 | 278 | 257 | # 618 | 283 | 253 | 264 | 6,800 | # 371 | 365 |
| 21 | 388 | # 341 | 296 | 275 | 272 | 702 | 285 | 253 | 257 | 971 | 349 | 327 |
| 22 | 424 | 340 | 354 | 282 | 276 | 532 | 276 | 255 | 259 | 686 | 393 | 352 |
| 23 | # 355 | 366 | 282 | 452 | 267 | 430 | 276 | # 249 | 256 | 635 | 397 | 364 |
| 24 | 358 | 342 | 305 | # 353 | # 266 | 296 | 277 | 243 | 251 | 599 | 395 | 297 |
| 25 | 387 | 333 | 299 | 270 | 248 | 339 | 286 | 230 | 253 | 583 | 420 | 355 |
| 26 | 392 | 348 | 296 | 300 | 258 | # 345 | # 278 | 243 | 328 | # 559 | 399 | 312 |
| 27 | 359 | 334 | 278 | 636 | 259 | 324 | 279 | 237 | # 305 | 467 | # 390 | # 346 |
| 28 | 351 | 342 | # 316 | 346 | 241 | 385 | 277 | # 247 | 247 | 269 | 481 | 408 |
| 29 | 383 | 290 | 347 | # 233 | 444 | 275 | 251 | 270 | 277 | 484 | 352 | 338 |
| 30 | 364 | 322 | 291 | 238 | 345 | 277 | 252 | 257 | 222 | 474 | 344 | 321 |
| 31 | 379 | 288 | 236 | 236 | 267 | 267 | 267 | 222 | 222 | # 440 | 440 | 338 |
| Sum | | 9,816 | | 9,730 | | 10,063 | | 8,019 | | 22,302 | | 10,692 |
| 11,893 | | 9,699 | | 8,203 | | 9,165 | | 9,401 | | 11,813 | | |

Current Year 1962

Period 1955-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|-------------|---------------------|---------------|---------------------|-----------------|------------|----------------|----------------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| | High | Low | Day | Day | Acre-Feet | Average | Maximum | Maximum | Minimum |
| Jan. | 2.83 | 2.20 | 14 | 589 | 11 | 273 | 384 | 23,590 | 24,536 |
| Feb. | 2.65 | 2.17 | 5 | 479 | 5 | 259 | 351 | 19,470 | 22,652 |
| Mar. | 2.68 | 1.95 | 22 | 498 | 31 | 190 | 313 | 19,238 | 38,000 |
| Apr. | 3.40 | 1.75 | 5 | 1,140 | 28 | 136 | 324 | 19,299 | 34,500 |
| May | 2.90 | 1.53 | 15 | 645 | 21 | 85.0 | 265 | 16,271 | 22,125 |
| June | 3.36 | 1.91 | 20 | 1,080 | 19 | 164 | 335 | 19,960 | 34,700 |
| July | 2.75 | 1.87 | 1 | 539 | †21 | 169 | 296 | 18,179 | 39,700 |
| Aug. | 2.56 | 1.82 | 14 | 432 | 31 | 138 | 259 | 18,279 | 48,100 |
| Sept. | 3.60 | 1.79 | 10 | 1,380 | 25 | 134 | 313 | 18,647 | 48,125 |
| Oct. | 9.24 | 1.75 | 20 | 19,100 | 16 | 111 | 719 | 44,236 | 118,000 |
| Nov. | 2.75 | 1.86 | 1 | 535 | 21 | 164 | 394 | 23,431 | 92,500 |
| Dec. | 2.72 | 1.90 | 11 | 526 | 29 | 176 | 345 | 21,208 | 13,600 |
| Yearly | 9.24 | 1.53 | | 19,100 | | 85.0 | 358 | 259,435 | 399,249 |
| | | | | | | | | 718,350 | 145,600 |

† And other days † Discharge measurement made on this day

RIO GRANDE BELOW AMISTAD DAM SITE

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, and cable with stand-up cable car equipped for winch and heavy weights, located 10.5 river miles above the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 2.9 river miles below the confluence of the Devils River, and 683.0 river miles below the 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 94 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: September 1, 1954 through December 1962. Records are also available from May 1900 to April 1915 for a station 1.9 miles upstream; from December 1919 to March 1920 for a station 1.6 miles downstream near McKee's Switch; from December 1923 to July 2, 1941 for a station approximately 10.3 miles downstream; and from July 2, 1941 through August 1954, and October 1, 1960 through December 1962 for a station at the international highway bridge 10.5 miles downstream.

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

EXTREME FLOWS FROM RECORDS: The flood of June 1954 reached a peak gage height of 55.72 feet and a maximum discharge of 1,158,000 second-feet, determined by slope-area computation. 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.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|
| 1 | 1,680 | 1,580 | 1,350 | 1,230 | 1,170 | # 1,040 | 1,430 | 2,570 | 852 | # 3,950 | # 2,330 | 1,720 |
| 2 | 1,710 | 1,570 | # 1,310 | 1,140 | 1,120 | 1,530 | 1,370 | 2,210 | 943 | 3,860 | 2,220 | 1,830 |
| 3 | # 1,670 | 1,560 | 1,340 | # 1,150 | 1,030 | 1,110 | # 1,700 | 1,970 | 1,340 | 2,890 | 2,160 | # 1,800 |
| 4 | 1,600 | 1,550 | 1,370 | 1,360 | # 952 | 941 | 1,230 | 1,840 | # 1,190 | # 2,870 | 2,150 | 1,750 |
| 5 | 1,640 | 1,550 | 1,350 | 3,220 | 984 | # 1,250 | 1,240 | 1,890 | # 7,930 | 2,810 | # 2,050 | 1,750 |
| 6 | 1,460 | # 1,630 | # 1,330 | 1,850 | 942 | 1,590 | # 1,260 | 1,750 | 5,090 | 2,590 | 2,070 | # 1,860 |
| 7 | 1,600 | 1,620 | 1,350 | 1,280 | 931 | # 1,880 | 2,080 | 1,590 | # 3,870 | 2,260 | 2,030 | 1,930 |
| 8 | 1,590 | 1,690 | # 1,350 | 1,230 | # 920 | 1,940 | 2,600 | 1,470 | 6,790 | # 2,590 | # 2,010 | 2,000 |
| 9 | 1,600 | # 1,680 | 1,350 | 1,250 | 922 | 1,470 | 1,920 | 1,380 | 6,940 | 3,820 | 2,050 | 1,860 |
| 10 | 1,490 | 1,600 | 1,350 | # 1,280 | 915 | # 1,970 | 1,640 | # 1,310 | 11,000 | 3,280 | 2,050 | # 1,740 |
| 11 | 1,520 | 1,500 | 1,360 | 1,250 | # 938 | 1,320 | 1,370 | 1,310 | # 6,620 | # 4,070 | 2,000 | 1,690 |
| 12 | 1,600 | 1,580 | 1,380 | 1,160 | 940 | # 2,450 | 1,490 | 1,320 | 4,620 | 3,310 | 1,880 | 1,620 |
| 13 | 1,650 | # 1,620 | # 1,320 | # 1,130 | 930 | 1,970 | 1,930 | 1,300 | 3,290 | 2,630 | # 1,880 | 1,700 |
| 14 | 1,610 | 1,580 | 1,380 | 1,080 | # 964 | # 1,790 | 1,830 | # 1,320 | # 2,730 | 2,680 | 1,900 | # 1,740 |
| 15 | 1,580 | 1,600 | 1,500 | 1,030 | 1,020 | 2,760 | 1,650 | 1,320 | 2,540 | # 2,620 | 1,960 | 1,750 |
| 16 | # 1,680 | # 1,600 | # 1,520 | 1,040 | 1,030 | 4,680 | 1,610 | 1,250 | 2,380 | 2,230 | 1,950 | 1,780 |
| 17 | 1,700 | 1,590 | 1,530 | # 1,020 | 953 | 2,910 | # 1,720 | 1,210 | 2,250 | 3,380 | 1,920 | 1,670 |
| 18 | 1,700 | 1,590 | 1,490 | 1,040 | 1,100 | 2,160 | 2,140 | 1,090 | # 2,090 | # 13,700 | 1,920 | 1,640 |
| 19 | 1,680 | 1,560 | 1,420 | 1,000 | 1,580 | # 1,720 | 2,610 | 1,070 | 2,180 | 5,430 | # 1,890 | 1,640 |
| 20 | 1,690 | 1,490 | # 1,450 | # 999 | 1,180 | 1,800 | # 6,120 | 1,030 | 2,070 | 18,000 | 1,850 | 1,650 |
| 21 | 1,680 | # 1,520 | 1,420 | 990 | 1,420 | 1,720 | 6,010 | # 1,020 | 1,910 | 6,010 | 1,830 | # 1,790 |
| 22 | 1,690 | 1,500 | 1,390 | 991 | # 1,210 | 1,450 | 3,200 | 976 | 1,880 | 4,190 | 1,810 | 1,890 |
| 23 | 1,670 | 1,490 | # 1,220 | 1,180 | 2,630 | 1,370 | 2,620 | 955 | 1,920 | 4,070 | # 1,860 | 1,880 |
| 24 | # 1,580 | 1,490 | 1,240 | # 1,080 | 1,830 | 1,940 | # 3,010 | 983 | # 1,810 | 3,470 | 2,060 | 1,750 |
| 25 | 1,570 | 1,440 | 1,230 | 962 | # 1,420 | 1,780 | 2,590 | 934 | 1,700 | # 2,960 | 2,100 | 1,750 |
| 26 | 1,550 | 1,430 | 1,230 | 939 | 1,210 | # 1,510 | 2,260 | 952 | 1,800 | 2,800 | # 2,000 | 1,670 |
| 27 | 1,560 | # 1,460 | 1,230 | 2,050 | 1,060 | 1,330 | # 2,110 | 959 | 1,780 | 2,740 | 1,920 | # 1,660 |
| 28 | 1,570 | 1,420 | # 1,270 | 1,150 | 1,010 | # 1,760 | 3,150 | # 948 | # 2,970 | 2,640 | 1,840 | 1,620 |
| 29 | 1,700 | 1,230 | 1,180 | # 1,020 | 1,420 | 2,260 | 933 | 2,940 | # 2,760 | # 1,750 | 1,600 | 1,600 |
| 30 | # 1,710 | 1,260 | # 1,220 | 991 | 1,310 | 2,420 | 909 | 5,420 | 2,590 | 1,730 | 1,610 | 1,730 |
| 31 | 1,640 | 1,220 | 970 | 865 | # 2,650 | 865 | 4,120 | 2,410 | 2,410 | 1,730 | | |
| | | | | | | | | | | | | |
| | 12,400 | 37,481 | 53,871 | | 40,634 | | | | 125,610 | | 54,070 | |

Mean daily Discharge measurement made on this day

ARROYO DEL BUEY NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Water-stage recorder and Cipolletti weir for measuring flows up to 35.3 second-feet, located .2 mile above the confluence with the Rio Grande. This stream enters the Rio Grande from the Mexican side 4.1 river miles below the confluence of the Devils River and the Rio Grande and 684.2 river miles below 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 December 1962.

REMARKS: The flow of this stream is not modified by diversion or storage. Flows exceeding the capacity of the weir are not included in the tabulation below. In 1962 the flow of this stream exceeded the capacity of the weir during a period of only two hours on April 27. This station was established for investigation purposes in connection with the projected 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|------|------|-------|-------|-----|------|------|------|-------|------|------|------|
| 1 | .2 | .2 | .2 | .2 | 1.1 | .2 | .2 | .2 | .1 | .1 | .4 | .2 |
| 2 | .2 | .2 | .2 | .2 | 1.1 | .2 | .2 | .2 | .1 | .1 | .4 | .2 |
| 3 | .2 | .2 | .2 | .2 | 1.1 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 4 | .2 | .2 | .2 | .2 | .8 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 5 | .2 | .2 | .2 | .2 | .8 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 6 | .2 | .2 | .2 | .2 | .8 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 7 | .2 | .2 | .2 | .2 | .6 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 8 | .2 | .2 | .2 | .2 | .6 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 9 | .2 | .2 | .2 | .2 | .6 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 10 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 11 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 12 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .1 | .4 | .2 |
| 13 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .1 | .2 | .4 |
| 14 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .1 | .2 | .4 |
| 15 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .1 | .2 | .4 |
| 16 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .2 | .2 | .2 |
| 17 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | .2 | .2 | .2 |
| 18 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | 6.5 | .2 | .2 |
| 19 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | 1.9 | .2 | .2 |
| 20 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | 1.9 | .2 | .2 |
| 21 | .2 | .2 | .2 | .2 | .4 | .2 | .2 | .1 | .1 | 1.6 | .2 | .2 |
| 22 | .2 | .2 | .2 | .2 | .2 | .2 | .2 | .1 | .1 | 1.3 | .2 | .2 |
| 23 | .2 | .2 | .2 | .2 | .2 | .2 | .2 | .1 | .1 | 1.1 | .2 | .2 |
| 24 | .2 | .2 | .2 | .2 | .2 | .2 | .2 | .1 | .1 | .8 | .2 | .2 |
| 25 | .2 | .2 | .2 | .2 | .2 | .2 | .2 | .1 | .1 | .8 | .2 | .2 |
| 26 | .2 | .2 | .2 | .2 | .2 | .2 | .2 | .1 | .1 | .8 | .2 | .2 |
| 27 | .2 | .2 | .2 | 11.6 | .2 | .2 | .2 | .1 | .2 | .6 | .2 | .2 |
| 28 | .2 | .2 | .2 | 1.2 | .2 | .2 | .2 | .1 | .2 | .6 | .2 | .2 |
| 29 | .2 | .2 | .2 | 1.2 | .2 | .2 | .2 | .1 | .1 | .6 | .2 | .2 |
| 30 | .2 | .2 | .2 | 1.1 | .2 | .2 | .2 | .2 | .1 | .4 | .2 | .2 |
| 31 | .2 | .2 | .2 | — | .2 | .2 | .2 | .1 | .1 | 21.2 | 7.0 | |
| Sum | 5.6 | 20.3 | 6.0 | 3.3 | 3.2 | 21.2 | 8.4 | | | | | |
| | 6.2 | 6.2 | 14.3 | 6.2 | 6.2 | | | | | | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Period Nov. 1961-1962 | | | | |
|---------------|-------------------|-----|------|---------------------|------|---------------------|-----------------|-----------------------|-----|---------|--|--|
| | High | | Low | High | | | | Day | Day | Average | | |
| | High | Low | | High | Low | | | | | | | |
| Jan. | .07 | .07 | ↑ 1 | .2 | .2 | .2 | .2 | .2 | .2 | 15.2 | | |
| Feb. | .07 | .05 | ↑ 1 | .2 | .2 | .2 | .2 | .2 | .2 | 12.1 | | |
| Mar. | .05 | .05 | ↑ 1 | .2 | .2 | .2 | .2 | .2 | .2 | 10.9 | | |
| Apr. | 2.13 | .05 | 27 | * 61.4 | .2 | .2 | .7 | .2 | .2 | 39.1 | | |
| May | .20 | .07 | ↑ 1 | 1.1 | ↑ 22 | .2 | .5 | .2 | .2 | 28.1 | | |
| June | .07 | .05 | ↑ 1 | .2 | ↑ 1 | .2 | .2 | .2 | .2 | 11.1 | | |
| July | .05 | .05 | ↑ 1 | .2 | ↑ 1 | .2 | .2 | .2 | .2 | 10.9 | | |
| Aug. | .05 | .03 | ↑ 1 | .2 | ↑ 3 | .1 | .1 | .1 | .1 | 6.8 | | |
| Sept. | .05 | .03 | ↑ 27 | .2 | ↑ 1 | .1 | .1 | .1 | .1 | 6.6 | | |
| Oct. | 1.51 | .03 | 18 | 23.2 | ↑ 1 | .1 | .7 | .1 | .1 | 42.3 | | |
| Nov. | .10 | .07 | ↑ 1 | .4 | ↑ 13 | .2 | .3 | .2 | .2 | 18.9 | | |
| Dec. | .07 | .03 | ↑ 12 | .4 | ↑ 1 | .2 | .2 | .2 | .2 | 14.8 | | |
| Yearly | 2.13 | .03 | | * 61.4 | | .1 | .3 | 216.8 | | | | |

* Partly estimated ↑ And other days

EIGHT MILE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, and a 90° V-notch weir of 6.9 second-feet capacity, located .8 mile above the confluence with the Rio Grande. This stream enters the Rio Grande from the United States side 5.2 river miles below the confluence of the Devils River and the Rio Grande and 685.3 river miles below 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 December 1962.

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 exceeding the capacity of the weir are not included in the tabulation below. This station was established for investigation purposes in connection with the projected 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|------|------|-------|-------|-----|------|------|------|-------|------|------|------|
| 1 | .1 | 0 | 0 | .1 | .2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | .1 | 0 | 0 | .1 | .1 | .4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | .1 | 0 | .1 | .1 | .1 | .3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | .1 | 0 | .1 | .5 | .2 | .1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | .1 | 0 | 0 | .2 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | .1 | 0 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | .1 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | .8 | 0 | 0 |
| 18 | .1 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | .2 | 0 | 0 |
| 19 | .1 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | .1 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | .1 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | .1 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | .1 | .3 | 0 | 0 | 0 | 0 | 0 | .2 | 0 | 0 |
| 27 | 0 | 0 | .1 | 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | .1 | .1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | .1 | .2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sum | 0 | 5.4 | .9 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 0 |
| | 2.2 | 2.6 | .7 | | | | | | | .2 | | |

Current Year 1962

Period #Mar. 1961-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|--------|-------------------|-----|---------------------|-----|---------------------|-----------------|-----------|---------|---------|
| | High | Low | Day | Day | | | **Average | Maximum | Minimum |
| Jan. | | | † 1 | .1 | † 23 | 0 | .1 | 4.4 | |
| Feb. | | | 0 | | | 0 | 0 | | |
| Mar. | | | † 3 | .1 | † 1 | 0 | .1 | 5.1 | |
| Apr. | | | 27 | 2.5 | † 18 | 0 | .2 | 10.7 | |
| May | | | † 1 | .2 | † 6 | 0 | 0 | 1.4 | |
| June | | | 2 | .4 | † 1 | 0 | 0 | 1.8 | |
| July | | | 0 | | | 0 | 0 | | |
| Aug. | | | 0 | | | 0 | 0 | | |
| Sept. | | | 26 | .2 | † 1 | 0 | 0 | .4 | |
| Oct. | | | 17 | .8 | † 1 | 0 | 0 | 2.0 | |
| Nov. | | | 0 | | | 0 | 0 | 3.2 | |
| Dec. | | | 0 | | | 0 | 0 | 5.6 | |
| Yearly | | | 2.5 | 0 | 0 | 25.8 | | | 25.8 |

† And other days 0 Mean daily # Some months missing ** See explanation in REMARKS above

ERNESTINA, MARIS, AND ROSITA 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 Site, gaging stations were established in November 1961 at Ernestina, Maris, and Rosita Springs. The springs and stations are described as follows:

ERNESTINA SPRING: This spring, situated on the right bank of Arroyo del Buey enters the Rio Grande 4.1 river miles below the confluence of the Devils River and the Rio Grande and 684.2 river miles below the American Dam at El Paso, Texas. The station, located about 100 feet from the right bank of the Rio Grande, consists of a 90° V-notch weir of 1.4 second-feet capacity and a staff gage. The mean daily discharges were determined by prorating between weekly readings. The flow of this spring is small and very uniform. The monthly average flow during the year ranged from .014 to .018 second-foot, while the daily flow ranged from 3 to 8 gallons per minute. The total volume for the year amounted to only 12.8 acre-feet. Waters from this spring have a high sulphur content.

MARIS SPRING: This spring, located on the Mexican bank about 100 feet from the Rio Grande, enters the river 4.6 river miles below the confluence of the Devils River and the Rio Grande and 684.7 river miles below the American Dam at El Paso, Texas. The station consists of a Cipolletti weir of 11.1 second-feet capacity and a staff gage. The mean daily discharges tabulated below were determined by prorating between weekly readings.

ROSITA SPRING: This spring, located on the Mexican bank about 65 feet from the Rio Grande, enters the river 7.7 river miles below the confluence of the Devils River and the Rio Grande and 687.8 river miles below the American Dam at El Paso, Texas. The station consists of a Cipolletti weir of 3.5 second-feet capacity and a staff gage. The mean daily discharges were determined by prorating between weekly readings. The flow of this spring is very uniform, the mean daily discharge being .2 second-foot for the entire year. The total volume for the year was 169.1 acre-feet.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|------|------|-------|------------|------------|------------|-------------|------------|-------------|-------------|------------|------------|
| 1 | .4 | .2 | .2 | .1 | 1.8 | .1 | .1 | .1 | .1 | .5 | .4 | .1 |
| 2 | .4 | .2 | .2 | .1 | 1.6 | .1 | 4.6 | .1 | .1 | .5 | .3 | .1 |
| 3 | .4 | .2 | .2 | .1 | 1.3 | .1 | 3.2 | .1 | .1 | .4 | .3 | .1 |
| 4 | .4 | .2 | .2 | .1 | 1.1 | .1 | 1.7 | .1 | .1 | .3 | .3 | .1 |
| 5 | .4 | .2 | .2 | .1 | .9 | .6 | 1.4 | .1 | .1 | .2 | .2 | .1 |
| 6 | .4 | .2 | .2 | .1 | .7 | .6 | 1.2 | .1 | .1 | .1 | .2 | .1 |
| 7 | .4 | .2 | .2 | .1 | .4 | .5 | .9 | .1 | .1 | .1 | .2 | .1 |
| 8 | .3 | .2 | .2 | .1 | .4 | .4 | .6 | .1 | 1.1 | .2 | .2 | .1 |
| 9 | .3 | .2 | .2 | .1 | .4 | .4 | .4 | .1 | 1.0 | .2 | .2 | .1 |
| 10 | .3 | .2 | .2 | .1 | .4 | .3 | .3 | .1 | .8 | .2 | .2 | .1 |
| 11 | .3 | .2 | .1 | .1 | .3 | .2 | .3 | .1 | .7 | .2 | .2 | .1 |
| 12 | .3 | .2 | .1 | .1 | .3 | .1 | .2 | .1 | .6 | .2 | .2 | .1 |
| 13 | .3 | .2 | .1 | .1 | .3 | .1 | .2 | .1 | .4 | .2 | .2 | .1 |
| 14 | .3 | .2 | .2 | .1 | .2 | .1 | .2 | .1 | .3 | .3 | .2 | .1 |
| 15 | .3 | .2 | .2 | .1 | .2 | .1 | .1 | .1 | .1 | .3 | .2 | .1 |
| 16 | .3 | .2 | .2 | .1 | .2 | .1 | .1 | .1 | .1 | .3 | .1 | .1 |
| 17 | .3 | .2 | .2 | .1 | .2 | .1 | .1 | .1 | .1 | .3 | .1 | .1 |
| 18 | .3 | .2 | .2 | .1 | .2 | .1 | .1 | .1 | .1 | .4 | .1 | .1 |
| 19 | .3 | .2 | .2 | .1 | .2 | .1 | .1 | .1 | .1 | .4 | .1 | .1 |
| 20 | .3 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .4 | .1 | .1 |
| 21 | .3 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .4 | .1 | .1 |
| 22 | .3 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .4 | .1 | .1 |
| 23 | .3 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .4 | .1 | .1 |
| 24 | .2 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .3 | .1 | .1 |
| 25 | .2 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .5 | .1 | .1 |
| 26 | .2 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .5 | .1 | .1 |
| 27 | .2 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .5 | .1 | .1 |
| 28 | .2 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .6 | .5 | .1 | .1 |
| 29 | .2 | .2 | .2 | .1 | .1 | .1 | .1 | .1 | .7 | .4 | .1 | .1 |
| 30 | .2 | .2 | .2 | .1 | 2.0 | .1 | .1 | .1 | .6 | .4 | .1 | .1 |
| 31 | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .4 | .4 | .1 | .1 |
| Sum | | | | 5.6 | 4.9 | 5.3 | 17.0 | 3.1 | 10.2 | 10.6 | 5.0 | 3.1 |
| | 9.2 | 5.7 | | 12.3 | | | | | | | | |

Current Year 1962

| Month | Extreme Gage | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|--------------|-----|---------------------|------------|---------------------|-----------------|-----------|--------------|---------|
| | Fee | | High | Low | | | Average | Maximum | Minimum |
| | High | Low | Day | Day | Day | Day | Day | Day | Day |
| Jan. | | | .1 | .4 | .24 | .2 | .3 | 18.0 | |
| Feb. | | | .1 | .2 | .1 | .2 | .2 | 12.7 | |
| Mar. | | | .1 | .2 | .16 | .1 | .2 | 11.8 | |
| Apr. | | | 30 | 2.0 | .1 | .1 | .2 | 11.6 | |
| May | | | 1 | 1.8 | .20 | .1 | .4 | 25.4 | |
| June | | | .5 | .6 | .1 | .1 | .2 | 12.3 | |
| July | | | 2 | 4.6 | .1 | .1 | .5 | 35.3 | |
| Aug. | | | .1 | .1 | .1 | .1 | .1 | 8.7 | |
| Sept. | | | 8 | 1.1 | .1 | .1 | .3 | 20.8 | |
| Oct. | | | .1 | .5 | .6 | .1 | .3 | 21.0 | |
| Nov. | | | 1 | .4 | .16 | .1 | .2 | 11.0 | |
| Dec. | | | .1 | .1 | .1 | .1 | .1 | 8.7 | |
| Yearly | | | | 4.6 | | .1 | .3 | 197.3 | |

§ Mean daily † And other days

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

DESCRIPTION: Water-stage recorder and Cipolletti weir for measuring flows up to 35.3 second-feet, located .6 mile above the confluence with the Rio Grande. This stream enters the Rio Grande from the Mexican side 6.9 river miles below the confluence of the Devils River and the Rio Grande and 687.0 river miles below 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 December 1962.

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 1962, the flow of this stream exceeded the capacity of the weir during a period of only two hours on April 27. This station was established for investigation purposes in connection with the projected 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|------|------|-------|-------|-----|------|------|------|-------|------|------|------|
| 1 | .4 | .4 | .4 | .4 | .6 | .2 | .4 | .2 | .2 | .4 | .5 | .4 |
| 2 | .4 | .4 | .4 | .4 | .6 | .2 | .4 | .2 | .2 | .4 | .5 | .4 |
| 3 | .4 | .4 | .4 | .4 | .6 | .2 | .4 | .2 | .2 | .4 | .5 | .4 |
| 4 | .4 | .4 | .4 | .4 | .6 | .2 | .4 | .2 | .2 | .4 | .5 | .4 |
| 5 | .4 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .4 | .4 | .4 |
| 6 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 7 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 8 | .4 | .4 | .2 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 9 | .4 | .4 | .2 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 10 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 11 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 12 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 13 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 14 | .4 | .4 | .4 | .4 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 15 | .4 | .4 | .4 | .2 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 16 | .4 | .4 | .4 | .2 | .4 | .4 | .2 | .2 | .2 | .4 | .4 | .4 |
| 17 | .4 | .4 | .4 | .2 | .4 | .4 | .2 | .2 | .2 | 6.9 | .4 | .4 |
| 18 | .4 | .4 | .4 | .2 | .4 | .4 | .2 | .2 | .2 | 8.9 | .4 | .4 |
| 19 | .4 | .4 | .4 | .2 | .4 | .4 | .2 | .2 | .2 | .7 | .4 | .4 |
| 20 | .4 | .4 | .4 | .2 | .4 | .2 | .2 | .2 | .2 | .5 | .4 | .4 |
| 21 | .4 | .4 | .4 | .2 | .4 | .2 | .2 | .2 | .2 | .5 | .4 | .4 |
| 22 | .4 | .4 | .4 | .2 | .4 | .2 | .2 | .2 | .2 | .5 | .4 | .4 |
| 23 | .4 | .4 | .4 | .2 | .4 | .2 | .2 | .2 | .2 | .5 | .4 | .4 |
| 24 | .4 | .4 | .4 | .2 | .4 | .2 | .2 | .2 | .2 | .5 | .4 | .4 |
| 25 | .4 | .4 | .4 | .2 | .2 | .2 | .2 | .2 | .2 | .5 | .4 | .4 |
| 26 | .4 | .4 | .4 | .2 | .2 | .2 | .2 | .2 | 3.5 | .5 | .4 | .4 |
| 27 | .4 | .4 | .4 | 8.5 | .2 | .2 | .2 | .2 | .6 | .5 | .4 | .4 |
| 28 | .4 | .4 | .4 | .8 | .2 | .4 | .2 | .2 | .4 | .4 | .4 | .4 |
| 29 | .4 | .4 | .4 | .6 | .2 | .4 | .2 | .2 | .4 | .5 | .4 | .4 |
| 30 | .4 | .4 | .4 | .6 | .2 | .4 | .2 | .2 | .4 | .5 | .4 | .4 |
| 31 | .4 | .4 | .4 | .2 | .2 | .2 | .2 | .2 | .2 | .4 | .4 | .4 |
| Sum | | 11.2 | | 18.5 | | 9.4 | | 6.2 | | 28.7 | | 12.4 |
| | | 12.4 | | 12.0 | | 11.8 | | 7.2 | | 10.3 | | 12.4 |

| Month | Current Year 1962 | | | | | Period # May 1961-1962 | | | |
|--------|----------------------|-----|---------------------|--------|--------------------|------------------------|---------|---------|------|
| | Extreme Gage Fest | | Extreme Second-Feet | | Total Acre-Feet | Acre-Feet | | | |
| | High | Low | Day | Day | | **Average | Maximum | Minimum | |
| Jan. | .10 | .10 | † 1 | .4 | † 1 | .4 | 26.0 | | |
| Feb. | .10 | .10 | † 1 | .4 | † 1 | .4 | 23.5 | | |
| Mar. | .10 | .07 | † 1 | .4 | † 8 | .2 | 4.4 | 23.5 | |
| Apr. | 2.30 | .07 | 27 | * 46.3 | † 15 | .2 | .6 | 38.5 | |
| May | .13 | .07 | † 1 | .6 | † 25 | .2 | .4 | 23.4 | 28.1 |
| June | .10 | .07 | † 5 | .4 | † 1 | .2 | .3 | 18.6 | 32.7 |
| July | .08 | .07 | † 1 | .4 | † 6 | .2 | .2 | 16.2 | 23.4 |
| Aug. | .07 | .07 | † 1 | .2 | † 1 | .2 | .2 | 15.2 | 21.6 |
| Sept. | 1.48 | .07 | 26 | 22.6 | † 1 | .2 | .3 | 22.9 | 24.0 |
| Oct. | 1.97 | .07 | 17 | 35.7 | † 1 | .4 | .9 | 57.1 | 25.2 |
| Nov. | .10 | .07 | † 1 | .5 | † 5 | .4 | .4 | 25.4 | 79.6 |
| Dec. | .10 | .07 | † 1 | .4 | † 1 | .4 | .4 | 22.0 | 57.1 |
| Yearly | 2.30 | .07 | | * 46.3 | | .2 | .4 | 312.3 | 24.2 |

* Partly estimated † And other days # Some months missing ** See explanation in REMARKS above

**CANTU SPRING ON CIENEGAS CREEK
NEAR DEL RIO, TEXAS**

DESCRIPTION: Water-stage recorder and rectangular sharp crested weir 2.33 feet long of 31.9 second-feet capacity, located in the channel of a short tributary to Cienegas Creek, 3.5 miles above the confluence with the Rio Grande. The spring is isolated from surface runoff by a concrete enclosure and discharges through the weir into the creek. Cienegas Creek enters the Rio Grande from the United States side 1.9 river miles above the Del Rio Gaging Station and 691.7 river miles below the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 27 meter measurements by wading during the year, a continuous record of gage heights, and the weir discharge table. Records available: March 1961 through December 1962.

REMARKS: The flow of this spring is very uniform and is not modified by diversions or storage. The weir was installed on May 24, 1961 and removed November 21, 1962. This station was established for investigation purposes in connection with the projected 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 2.8 | 2.6 | 2.2 | 2.1 | 1.7 | 1.8 | 1.4 | 1.1 | .2 | 0 | 0 | 0 |
| 2 | # 2.8 | # 2.6 | 2.2 | 2.0 | # 1.8 | 1.8 | 1.3 | 1.1 | .2 | 0 | 0 | 0 |
| 3 | 2.9 | 2.6 | 2.2 | 2.1 | 1.8 | 1.8 | 1.2 | # 1.1 | .2 | 0 | 0 | 0 |
| 4 | 2.9 | 2.6 | 2.2 | 2.2 | 1.8 | # 1.8 | 1.2 | 1.0 | .2 | 0 | 0 | 0 |
| 5 | 2.8 | 2.6 | 2.2 | # 2.2 | 1.8 | 1.7 | # 1.2 | 1.0 | .2 | 0 | 0 | 0 |
| 6 | 2.8 | 2.6 | 2.3 | 2.1 | 1.8 | 1.6 | 1.1 | .9 | .2 | 0 | 0 | 0 |
| 7 | 2.8 | 2.6 | 2.2 | 2.1 | 1.7 | 1.6 | 1.1 | .9 | .2 | 0 | 0 | 0 |
| 8 | 2.8 | 2.6 | # 2.2 | 2.1 | 1.7 | 1.6 | 1.1 | .9 | .2 | 0 | 0 | 0 |
| 9 | 2.8 | # 2.6 | 2.2 | 2.1 | 1.7 | 1.6 | 1.1 | .8 | .2 | 0 | 0 | 0 |
| 10 | 2.8 | 2.6 | 2.2 | 2.1 | # 1.7 | 1.6 | 1.1 | .8 | .2 | 0 | 0 | 0 |
| 11 | 2.8 | 2.6 | 2.0 | # 2.2 | 1.7 | 1.6 | 1.1 | .7 | .2 | 0 | 0 | 0 |
| 12 | 2.8 | 2.6 | 2.0 | # 2.0 | 1.7 | 1.6 | 1.1 | .7 | .1 | 0 | 0 | 0 |
| 13 | 2.8 | 2.6 | 2.0 | 1.9 | 1.6 | 1.5 | 1.0 | .6 | .1 | 0 | 0 | 0 |
| 14 | 2.7 | 2.6 | 2.0 | 1.9 | 1.6 | 1.5 | 1.0 | .6 | .1 | 0 | 0 | 0 |
| 15 | 2.7 | 2.5 | 2.0 | 1.9 | # 1.6 | # 1.5 | 1.0 | .6 | .1 | 0 | 0 | 0 |
| 16 | 2.7 | # 2.5 | 2.0 | 1.9 | 1.6 | 1.5 | 1.0 | # .5 | .1 | 0 | 0 | 0 |
| 17 | 2.7 | 2.6 | 2.0 | 1.9 | 1.6 | 1.4 | 1.0 | .5 | .1 | 0 | 0 | 0 |
| 18 | # 2.7 | 2.5 | 2.1 | 1.9 | 1.6 | 1.4 | # 1.0 | .6 | .1 | 0 | 0 | 0 |
| 19 | 2.6 | 2.6 | 2.1 | 1.9 | 1.6 | 1.4 | # 1.2 | .6 | .1 | 0 | 0 | 0 |
| 20 | 2.6 | 2.5 | 2.1 | # 1.8 | 1.6 | 1.4 | 1.2 | .6 | .1 | 0 | 0 | 0 |
| 21 | 2.6 | 2.5 | # 2.2 | 1.8 | 1.6 | 1.4 | 1.4 | .6 | .1 | 0 | 0 | 0 |
| 22 | 2.6 | 2.4 | 2.2 | 1.8 | 1.6 | 1.4 | 1.4 | .6 | .1 | 0 | 0 | 0 |
| 23 | 2.6 | 2.4 | 2.1 | 1.7 | # 1.6 | 1.4 | 1.3 | .7 | .1 | 0 | 0 | 0 |
| 24 | 2.6 | 2.3 | 2.1 | 1.7 | 1.6 | 1.4 | 1.2 | # .7 | 0 | 0 | 0 | 0 |
| 25 | # 2.6 | 2.4 | 2.1 | 1.7 | 1.6 | 1.4 | 1.2 | .6 | 0 | 0 | 0 | 0 |
| 26 | 2.6 | 2.4 | 2.1 | 1.7 | 1.8 | 1.4 | 1.2 | .6 | 0 | 0 | 0 | 0 |
| 27 | 2.6 | 2.3 | 2.1 | 1.8 | 1.8 | 1.4 | # 1.2 | .5 | 0 | 0 | 0 | 0 |
| 28 | 2.6 | 2.3 | 2.1 | 1.8 | 1.8 | 1.4 | 1.2 | .4 | 0 | 0 | 0 | 0 |
| 29 | 2.6 | 2.3 | 2.1 | 1.7 | 1.8 | # 1.4 | 1.2 | .4 | 0 | 0 | 0 | 0 |
| 30 | 2.6 | 2.3 | 2.1 | 1.7 | 1.8 | 1.4 | 1.2 | .3 | 0 | 0 | 0 | 0 |
| 31 | 2.6 | 2.1 | 1.7 | 1.8 | 1.8 | 1.1 | # .2 | .2 | 0 | 0 | 0 | 0 |
| Sum | | 70.6 | 57.8 | 45.7 | 36.2 | 21.2 | | 3.4 | 0 | 0 | | |
| | 83.9 | 65.7 | 52.5 | | | | | | | | | |

Period Mar. 1961-1962

| Month | Current Year 1962 | | | Average-Second-Feet | Total | Acre-Feet | | |
|---------------|-------------------|-----|-----|---------------------|-------|-----------|---------|---------|
| | Extreme Gage Feet | | Day | | | Acre-Feet | Average | Maximum |
| | High | Low | Day | | | | | |
| Jan. | | | † 3 | 2.9 | † 19 | 2.6 | 2.7 | 166 |
| Feb. | | | † 1 | 2.6 | † 24 | 2.3 | 2.5 | 140 |
| Mar. | | | 6 | 2.3 | † 11 | 2.0 | 2.1 | 130 |
| Apr. | | | † 4 | 2.2 | † 23 | 1.7 | 1.9 | 115 |
| May | | | † 2 | 1.8 | † 13 | 1.6 | 1.7 | 104 |
| June | | | † 1 | 1.8 | † 17 | 1.4 | 1.5 | 90.6 |
| July | | | † 1 | 1.4 | † 13 | 1.0 | 1.2 | 71.8 |
| Aug. | | | † 1 | 1.1 | 31 | .2 | .7 | 67 |
| Sept. | | | † 1 | .2 | † 24 | 0 | .1 | 42.1 |
| Oct. | | | 0 | | 0 | 0 | 0 | 205 |
| Nov. | | | 0 | | 0 | 0 | 0 | 196 |
| Dec. | | | 0 | | 0 | 0 | 0 | 0 |
| Yearly | | | | 2.9 | 0 | 1.2 | 866.2 | |
| | | | | | | | | 866.2 |

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

ARROYO LAS VACAS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car, and V-notch weir of 353 second-feet capacity, located 1.5 miles upstream from Cd. Acuna, Coahuila and 1.8 miles upstream from the confluence of Arroyo Las Vacas with the Rio Grande. This confluence is just above the Del Rio - Cd. Acuna International Bridge and 693.5 river miles below 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 58 meter measurements during the year, a stable rating curve up to 353 second-feet, the capacity of the weir, and a continuous record of gage heights. Computations by shifting channel methods for flows exceeding the capacity of the weir and during the period April 27 to October 18, when gravel deposited above and below the weir affected the weir rating. Records available: Occasional estimates from June 1935 to March 19, 1938 and a continuous record from March 20, 1938 through December 1962.

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 1961 and a V-notch weir of 353 second-feet capacity, 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.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 63,570 second-feet on June 17, 1961, with a gage height of 25.26 feet. 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. 1.4 | Several months 1952, 1953, & 1954 |
| Yearly: | Max. 96.7 | 1961 | Min. 2.8 | 1952 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|--------------|-------|--------------|-------------|-------|--------------|-------|--------------|--------------|-------|-------|
| 1 | 8.5 | 10.2 | 7.1 | 6.0 | 8.1 | 3.9 | 2.5 | 1.8 | 24.7 | 1.8 | 4.2 | # 3.5 |
| 2 | 8.5 | # 10.2 | 7.1 | 6.0 | # 9.2 | 23.0 | 2.5 | 1.8 | 20.1 | # 1.8 | 4.2 | 3.5 |
| 3 | # 8.5 | 10.2 | 7.1 | 6.0 | 8.1 | 3.9 | 2.1 | 1.8 | 1.1 | 1.8 | 4.2 | 3.2 |
| 4 | 8.5 | 10.2 | 6.0 | 6.0 | 9.2 | 3.9 | 2.1 | # 1.8 | 1.1 | 1.8 | 4.2 | 3.5 |
| 5 | # 7.1 | # 8.5 | 7.1 | # 6.0 | 7.1 | 3.9 | # 2.1 | 1.8 | 1.1 | 1.8 | 4.2 | 3.5 |
| 6 | 7.1 | 8.5 | 8.5 | 6.0 | 7.1 | 3.9 | 2.1 | 1.8 | 1.1 | 1.8 | 4.2 | 3.5 |
| 7 | 7.1 | # 8.5 | # 7.1 | 6.0 | # 7.1 | 3.2 | 2.1 | 1.8 | 1.1 | 2.1 | 4.2 | 3.5 |
| 8 | # 7.1 | 8.5 | 7.1 | 6.0 | 7.1 | 3.2 | 2.1 | # 1.4 | # 1.4 | 2.1 | 4.2 | # 3.5 |
| 9 | 7.1 | # 8.5 | 7.1 | 6.0 | 6.0 | 12.7 | 2.1 | 1.4 | 1.1 | # 2.1 | 4.2 | 3.5 |
| 10 | # 7.1 | 8.5 | 7.1 | 6.0 | 6.0 | 22.6 | 2.1 | 1.4 | 246 | 1.8 | # 4.2 | 3.5 |
| 11 | 8.5 | 8.5 | 7.1 | # 6.0 | # 6.0 | # 7.1 | # 2.1 | 1.4 | # 4.2 | 1.8 | 4.2 | 3.5 |
| 12 | # 8.5 | 8.5 | 7.1 | # 6.0 | 4.9 | 6.0 | 2.1 | 1.4 | 2.8 | 1.8 | 4.2 | 3.5 |
| 13 | 8.5 | 8.5 | 7.1 | 6.0 | 6.0 | 4.9 | 2.1 | 1.4 | 2.1 | 2.1 | 4.2 | 3.5 |
| 14 | 8.5 | # 8.5 | # 7.1 | 6.0 | 6.0 | 4.9 | 2.1 | # 1.4 | 2.1 | 2.1 | 4.2 | 3.5 |
| 15 | # 8.5 | 8.5 | 7.1 | 6.0 | 6.0 | 4.9 | 2.1 | 1.4 | # 1.8 | 2.1 | 4.2 | 3.5 |
| 16 | 8.5 | 8.5 | 7.1 | 6.0 | 4.9 | # 4.9 | 2.1 | 1.4 | 1.8 | 1.8 | 4.2 | 3.5 |
| 17 | # 8.5 | 8.5 | 7.1 | 6.0 | 4.9 | 4.9 | # 1.8 | 1.4 | 1.8 | 9.9 | # 3.5 | 3.5 |
| 18 | 8.5 | 8.5 | 7.1 | 6.0 | # 4.9 | 4.9 | 1.4 | # 1.4 | 1.8 | # 195 | 3.5 | # 3.5 |
| 19 | 8.5 | 8.5 | 7.1 | 6.0 | 4.9 | 4.9 | 1.8 | 1.4 | 1.8 | 4.9 | 3.5 | 3.9 |
| 20 | 8.5 | 8.5 | 7.1 | 6.0 | 4.9 | 3.9 | 2.1 | 1.4 | 1.8 | 4.6 | 3.5 | 3.9 |
| 21 | 8.5 | 8.5 | 7.1 | 6.0 | 3.9 | # 3.9 | # 2.1 | # 1.4 | 1.4 | 4.2 | 3.5 | 3.9 |
| 22 | # 8.5 | # 8.5 | # 7.1 | 6.0 | # 3.9 | 3.9 | 2.1 | 1.4 | # 1.8 | 3.9 | 3.5 | # 3.5 |
| 23 | 8.5 | 10.2 | 7.1 | 6.0 | 3.9 | 3.9 | 2.1 | 1.4 | 1.8 | 3.9 | 3.5 | 3.5 |
| 24 | # 8.5 | 13.1 | 7.1 | 6.0 | 3.2 | 3.9 | # 2.1 | 1.4 | 2.1 | # 3.9 | 3.5 | 3.5 |
| 25 | 10.2 | 11.7 | 7.1 | # 6.0 | # 3.2 | 3.9 | 1.8 | # 1.4 | 1.8 | 3.9 | 3.5 | 3.5 |
| 26 | # 11.7 | 10.2 | 6.0 | 13.1 | 3.2 | # 3.2 | 1.8 | 1.4 | 1.8 | 3.5 | 3.5 | 3.5 |
| 27 | 11.7 | 8.5 | 6.0 | # 127 | 3.2 | 4.9 | 1.8 | 1.4 | 1.8 | 3.2 | 3.5 | 3.5 |
| 28 | 11.7 | # 8.5 | 6.0 | 15.9 | 3.2 | 3.2 | 1.8 | # 1.4 | # 1.8 | 2.8 | 3.5 | 3.5 |
| 29 | # 11.7 | 7.1 | 11.3 | 3.9 | 2.5 | 2.5 | 1.8 | 1.4 | 1.8 | 2.5 | 3.5 | 3.5 |
| 30 | 10.2 | 6.0 | 9.2 | 3.2 | # 2.5 | 1.8 | 1.4 | 1.8 | 1.8 | 2.5 | 3.5 | 3.9 |
| 31 | # 8.5 | 6.0 | 6.0 | # 3.2 | 1.8 | # 1.4 | # 1.8 | # 2.5 | # 2.5 | 3.5 | 3.9 | 3.5 |
| Sum | 256.0 | 326.5 | | 171.3 | 46.2 | | 281.8 | | 116.2 | 110.2 | | |
| 271.3 | 214.9 | 166.4 | | 62.5 | | | 338.7 | | | | | |

| Current Year 1962 | | | | | | | Period 1938-1962 | | | | |
|-------------------|-------------------|------------|---------------------|--------------|---------------------|-----------|------------------|----------------|---------------|-----------------|----------------|
| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | | | |
| | High | Low | Day | Day | | | Average | Maximum | Minimum | | |
| Jan. | .59 | .49 | †26 | 11.7 | † 4 | 7.1 | 8.8 | 537 | 358 | 910 | 31.5 |
| Feb. | .62 | .49 | 24 | 13.1 | 28 | 7.1 | 9.1 | 508 | 572 | 5,950 | 33.3 |
| Mar. | .52 | .46 | † 5 | 8.5 | †26 | 6.0 | 6.9 | 425 | 683 | 2,600 | 59.3 |
| Apr. | 3.08 | .46 | 27 | 727 | † 1 | 6.0 | 10.9 | 649 | 1,480 | 16,610 | 75.4 |
| May | .66 | .36 | † 2 | 9.2 | †24 | 2.1 | 5.4 | 330 | 1,686 | 9,080 | 90.0 |
| June | 1.87 | .43 | 9 | 196 | †29 | 2.5 | 5.7 | 340 | 3,740 | 62,520 | 43.8 |
| July | .43 | .30 | † 1 | 2.5 | †17 | 1.4 | 2.0 | 124 | 1,196 | 8,230 | 26.8 |
| Aug. | .33 | .26 | † 1 | 1.8 | † 8 | 1.4 | 1.5 | 91.6 | 670 | 3,850 | 42.2 |
| Sept. | 5.68 | .26 | 10 | 2,000 | 7 | .7 | 11.3 | 672 | 1,531 | 6,850 | 37.3 |
| Oct. | 3.05 | .49 | 18 | 554 | † 1 | 1.4 | 9.1 | 559 | 1,362 | 9,390 | 22.6 |
| Nov. | .39 | .36 | † 1 | 4.2 | †17 | 3.5 | 3.9 | 233 | 346 | 1,670 | 21.0 |
| Dec. | .39 | .33 | †19 | 4.2 | 3 | 3.2 | 3.6 | 220 | 316 | 780 | 22.0 |
| Yearly | 5.68 | .26 | | 2,000 | | .7 | 6.5 | 4,688.6 | 13,940 | 70,026.3 | 2,066.7 |

† And other days # Discharge measurement made on this day † Period 1938-1962

RIO GRANDE NEAR DEL RIO

DESCRIPTION: Water-stage recorder located on the downstream side of a pier of the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 693.6 river miles below 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 105 meter measurements by boat and wading during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: July 2, 1941 through August 1954 and October 1, 1960 through December 1962. Records are also available from May 1900 to April 1915 for a station 12.4 miles upstream; from December 1919 to March 1920 for a station 8.9 miles upstream near McKee's Switch; from December 1923 to July 2, 1941 for a station 900 feet above the international highway bridge; and from September 1954 through December 1962 for a station, Rio Grande Below Amistad Dam Site, 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 of 1,140,000 second-feet 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 .28 foot.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|
| 1 | 1,650 | # 1,540 | # 1,300 | 1,230 | # 1,120 | 1,050 | 1,420 | 2,670 | 842 | 4,000 | # 2,320 | 1,750 |
| 2 | # 1,660 | 1,530 | 1,290 | # 1,190 | 1,110 | 1,490 | # 1,350 | # 2,200 | 955 | # 3,960 | 2,230 | 1,880 |
| 3 | 1,630 | 1,530 | 1,350 | 1,150 | # 1,100 | 1,240 | 1,640 | 1,970 | 1,290 | 2,920 | 2,190 | # 1,850 |
| 4 | # 1,590 | 1,560 | 1,380 | 1,180 | 968 | # 985 | 1,260 | 1,770 | # 1,260 | 2,760 | 2,170 | 1,760 |
| 5 | 1,620 | # 1,550 | 1,370 | # 3,100 | 1,040 | 1,120 | # 1,190 | 1,790 | 7,210 | # 2,720 | 2,100 | 1,720 |
| 6 | 1,550 | 1,550 | 1,310 | 2,100 | 1,020 | 1,610 | 1,230 | # 1,690 | # 5,050 | 2,580 | # 2,060 | 1,830 |
| 7 | 1,680 | 1,500 | # 1,340 | 1,330 | # 1,020 | 1,650 | 1,870 | 1,560 | 4,380 | 2,240 | 2,030 | # 1,910 |
| 8 | # 1,710 | # 1,580 | 1,350 | 1,260 | 998 | 2,060 | 2,570 | 1,500 | 6,400 | 2,390 | 1,980 | 2,000 |
| 9 | 1,680 | 1,630 | # 1,330 | # 1,230 | 981 | 1,470 | # 1,880 | # 1,440 | 6,390 | # 3,690 | 2,020 | 1,930 |
| 10 | 1,560 | 1,550 | 1,340 | 1,240 | # 953 | 2,070 | 1,630 | 1,400 | # 10,600 | 3,210 | 2,000 | # 1,820 |
| 11 | 1,560 | 1,520 | 1,330 | 2,120 | 965 | # 2,120 | 1,380 | 1,370 | 6,980 | 3,970 | 1,990 | 1,750 |
| 12 | 1,670 | # 1,540 | # 1,330 | # 1,160 | 952 | 2,480 | # 1,400 | 1,330 | 4,830 | # 3,390 | 1,890 | 1,670 |
| 13 | 1,690 | 1,580 | 1,280 | 1,130 | 939 | 1,940 | 1,960 | # 1,330 | 3,340 | 2,640 | # 1,890 | # 1,720 |
| 14 | 1,650 | 1,560 | 1,340 | 1,110 | 939 | # 1,820 | 1,790 | 1,260 | 2,740 | 2,600 | 1,870 | 1,830 |
| 15 | # 1,590 | # 1,550 | # 1,450 | 1,070 | # 1,030 | 2,210 | 1,560 | 1,250 | 2,490 | 2,490 | # 1,970 | 1,850 |
| 16 | 1,660 | 1,590 | 1,440 | # 1,070 | 1,070 | 4,720 | # 1,520 | 1,160 | # 2,310 | # 2,220 | 1,980 | 1,900 |
| 17 | 1,640 | 1,590 | 1,440 | 1,090 | # 958 | 2,880 | 1,610 | 1,110 | 2,170 | 2,950 | 1,980 | # 1,810 |
| 18 | # 1,690 | 1,610 | 1,400 | 1,080 | 977 | # 2,000 | 2,010 | 1,080 | 2,050 | 15,000 | 1,950 | 1,750 |
| 19 | 1,680 | # 1,560 | # 1,380 | # 1,060 | 1,710 | 1,640 | # 2,300 | 1,040 | 2,060 | # 6,510 | # 1,940 | 1,750 |
| 20 | 1,700 | 1,490 | 1,400 | 1,030 | 1,270 | 1,670 | 5,580 | # 1,020 | # 1,940 | 17,500 | 1,910 | # 1,740 |
| 21 | 1,720 | 1,520 | # 1,380 | 1,010 | # 1,330 | 1,730 | # 6,460 | 1,000 | 1,880 | 5,720 | 1,840 | 1,850 |
| 22 | # 1,740 | 1,490 | 1,340 | 1,010 | 2,180 | # 1,440 | 3,480 | 982 | 1,860 | 4,020 | 1,860 | 1,940 |
| 23 | 1,720 | # 1,500 | 1,320 | # 1,160 | 2,620 | 1,260 | # 2,610 | 951 | 1,930 | # 4,250 | 1,880 | 1,900 |
| 24 | 1,620 | 1,490 | 1,230 | 1,160 | # 1,800 | 1,840 | 3,040 | 969 | # 1,840 | 3,340 | 2,030 | 1,800 |
| 25 | # 1,600 | 1,470 | 1,260 | 1,020 | 1,360 | # 1,740 | 2,760 | 937 | 1,730 | 2,980 | 2,080 | 1,800 |
| 26 | 1,580 | # 1,440 | # 1,250 | # 1,000 | 1,150 | 1,490 | # 2,300 | 965 | 1,840 | # 2,780 | 1,960 | 1,730 |
| 27 | 1,560 | 1,410 | 1,240 | 2,140 | 1,090 | 1,280 | 2,120 | # 995 | # 1,840 | 2,710 | # 1,950 | # 1,710 |
| 28 | 1,540 | 1,380 | 1,250 | 1,160 | # 1,050 | 1,550 | 3,250 | 987 | 3,010 | 2,650 | 1,910 | 1,700 |
| 29 | # 1,620 | # 1,230 | 1,140 | 988 | # 1,400 | 2,220 | 980 | 2,640 | 2,710 | 1,830 | 1,700 | 1,700 |
| 30 | 1,620 | 1,260 | 1,170 | 965 | 1,230 | # 2,320 | 2,540 | 883 | 5,660 | 2,610 | # 1,790 | 1,790 |
| 31 | 1,550 | 1,230 | 1,230 | 971 | | | | | 2,400 | | | |
| Sum | | 42,810 | 37,990 | 52,275 | | 40,524 | | 99,517 | 125,910 | 55,840 | | |
| 50,730 | | 41,140 | 36,624 | 70,250 | | 99,517 | | 59,600 | | | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | |
|---------------|-------------------|-------------|-----|---------------------|---------------|---------------------|-----------------|--------------|------------------|------------------|------------------|
| | High | | Low | Day | High | Low | | Average | Maximum | Minimum | |
| | High | Low | | Day | High | Low | | | | | |
| Jan. | 2.09 | 1.87 | 22 | | 1,880 | # 27 | 1,490 | 1,640 | 100,622 | 120,811 | 141,000 |
| Feb. | 2.02 | 1.78 | 9 | | 1,700 | 28 | 1,320 | 1,530 | 84,913 | 99,956 | 115,000 |
| Mar. | 1.92 | 1.62 | 16 | | 1,530 | 31 | 1,120 | 1,330 | 81,601 | 93,800 | 106,000 |
| Apr. | 3.22 | 1.42 | 5 | | 4,530 | 26 | 899 | 1,270 | 75,353 | 72,426 | 75,353 |
| May | 2.69 | 1.32 | 23 | | 3,130 | 13 | 770 | 1,180 | 72,644 | 86,822 | 101,000 |
| June | 3.72 | 1.40 | 16 | | 5,710 | 4 | 872 | 1,740 | 103,687 | 271,344 | 439,000 |
| July | 4.75 | 1.55 | 21 | | 8,000 | 4 | 1,060 | 2,270 | 139,341 | 187,670 | 236,000 |
| Aug. | 2.59 | 1.26 | 1 | | 2,940 | 31 | 782 | 1,310 | 80,379 | 135,190 | 190,000 |
| Sept. | 7.98 | 1.25 | 10 | | 18,000 | 1 | 765 | 3,320 | 197,392 | 169,196 | 197,392 |
| Oct. | 10.14 | 2.10 | 20 | | 26,600 | 8 | 1,970 | 4,060 | 249,742 | 194,914 | 141,000 |
| Nov. | 2.30 | 1.88 | 1 | | 2,410 | 30 | 1,630 | 1,990 | 118,217 | 119,739 | 130,000 |
| Dec. | 2.20 | 1.82 | 9 | | 2,120 | 12 | 1,530 | 1,800 | 110,759 | 121,253 | 149,000 |
| Yearly | 10.14 | 1.25 | | | 26,600 | | 765 | 1,950 | 1,414,650 | 1,673,121 | 1,882,500 |
| | | | | | | | | | | | 1,414,650 |

† 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. The total yield of these springs consists of waters measured at the Del Rio City Pumping Plant, the Val Verde Canal at Del Rio, Texas, and San Felipe Creek at Moore Park, Del Rio, Texas. Diversions by the City of Del Rio are measured by flow meters. Diversions by the San Felipe Irrigation Company through the Val Verde Canal are measured at a gaging station located under the U. S. Highway 277 Bridge across San Felipe Creek and consists of a water-stage recorder and paved measuring section. The gaging station on San Felipe Creek at Moore Park consists of a water-stage recorder located about 300 feet downstream from the U. S. Highway 277 Bridge. This stream enters the Rio Grande 695.1 river miles below the American Dam at El Paso, Texas.

RECORDS: Records for the Del Rio Pumping Plant are based on flow meter readings and are furnished by the City of Del Rio Water Department. Records for the Val Verde Canal and San Felipe Creek at Moore Park are based on 48 and 52 meter measurements, respectively, by wading during the year, and continuous records of gage heights. Computations for the latter two stations are made by shifting channel methods. Records available: Total yield of the springs, February 1961 through December 1962.

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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|------|---------|-------|---------|------|---------|------|---------|-------|---------|------|---------|
| 1 | 103 | 97.8 | 95.4 | 92.7 | 85.0 | 90.8 | 77.7 | 75.8 | 68.5 | 66.7 | 65.9 | 66.8 |
| 2 | 103 | 100 | 96.5 | 91.4 | 86.7 | 87.2 | 76.9 | 77.5 | 69.1 | 68.2 | 66.1 | 65.5 |
| 3 | 102 | 97.7 | 97.3 | 94.7 | 84.4 | 86.6 | 80.5 | 78.5 | 68.7 | 72.0 | 65.9 | 65.8 |
| 4 | 99.1 | 95.9 | 96.2 | 112 | 85.2 | 88.1 | 80.0 | 76.7 | 68.0 | 68.3 | 67.1 | 64.1 |
| 5 | 97.8 | 95.7 | 100 | 95.6 | 87.5 | 84.9 | 81.0 | 76.4 | 71.2 | 65.6 | 67.5 | 65.4 |
| 6 | 98.9 | 94.5 | 99.4 | 91.9 | 85.8 | 87.8 | 82.1 | 77.5 | 71.4 | 69.8 | 66.4 | 63.4 |
| 7 | 98.1 | 96.5 | 102 | 91.0 | 83.4 | 88.2 | 82.6 | 76.9 | 77.1 | 71.0 | 66.7 | 62.9 |
| 8 | 96.8 | 98.5 | 103 | 91.0 | 84.4 | 86.0 | 79.6 | 78.5 | 72.5 | 66.8 | 65.1 | 64.6 |
| 9 | 97.6 | 101 | 100 | 92.6 | 86.3 | 86.8 | 86.3 | 76.6 | 73.1 | 66.9 | 66.3 | 63.9 |
| 10 | 98.7 | 99.1 | 99.0 | 98.8 | 87.0 | 87.9 | 86.1 | 76.7 | 76.7 | 67.2 | 65.5 | 63.6 |
| 11 | 98.8 | 102 | 101 | 90.6 | 86.9 | 89.7 | 88.7 | 75.0 | 73.1 | 67.2 | 66.9 | 64.4 |
| 12 | 98.6 | 102 | 98.7 | 93.9 | 86.0 | 88.4 | 89.8 | 77.6 | 72.9 | 66.9 | 64.7 | 65.3 |
| 13 | 99.4 | 104 | 98.1 | 91.7 | 84.5 | 94.8 | 90.1 | 80.3 | 74.6 | 65.5 | 64.6 | 65.0 |
| 14 | 99.2 | 103 | 96.0 | 91.7 | 86.6 | 92.3 | 89.4 | 77.0 | 73.7 | 65.9 | 64.9 | 65.8 |
| 15 | 100 | 98.8 | 97.4 | 90.6 | 87.2 | 89.1 | 87.2 | 76.1 | 70.2 | 66.7 | 66.9 | 65.6 |
| 16 | 98.6 | 96.9 | 96.5 | 91.3 | 91.5 | 87.4 | 88.5 | 76.1 | 74.7 | 64.5 | 67.8 | 65.4 |
| 17 | 99.5 | 94.2 | 93.9 | 91.1 | 92.0 | 84.3 | 85.1 | 77.7 | 71.9 | 70.6 | 66.9 | 65.3 |
| 18 | 100 | 93.3 | 97.3 | 90.6 | 92.2 | 84.1 | 82.9 | 78.2 | 70.2 | 69.2 | 66.4 | 64.6 |
| 19 | 101 | 92.7 | 94.4 | 91.3 | 92.6 | 80.4 | 83.7 | 79.3 | 70.9 | 65.1 | 67.1 | 66.6 |
| 20 | 101 | 95.3 | 93.3 | 90.0 | 88.1 | 82.6 | 83.7 | 78.5 | 69.6 | 67.5 | 70.4 | 64.2 |
| 21 | 102 | 96.0 | 93.6 | 90.4 | 89.1 | 82.8 | 84.4 | 78.5 | 70.8 | 65.6 | 67.7 | 61.8 |
| 22 | 101 | 95.1 | 91.8 | 89.8 | 88.0 | 83.4 | 84.9 | 79.8 | 71.3 | 67.7 | 67.6 | 63.1 |
| 23 | 99.8 | 94.8 | 90.9 | 96.3 | 87.7 | 82.3 | 83.5 | 77.6 | 68.5 | 63.1 | 67.1 | 62.4 |
| 24 | 99.9 | 95.8 | 91.0 | 89.0 | 86.5 | 81.5 | 82.2 | 77.1 | 69.1 | 65.8 | 65.0 | 63.5 |
| 25 | 101 | 94.2 | 90.0 | 90.9 | 87.5 | 83.3 | 84.9 | 73.5 | 68.6 | 65.5 | 65.7 | 62.6 |
| 26 | 101 | 96.6 | 89.1 | 91.4 | 86.3 | 82.2 | 81.4 | 70.1 | 68.1 | 64.8 | 65.1 | 62.2 |
| 27 | 100 | 94.2 | 90.1 | 99.3 | 86.7 | 80.8 | 83.8 | 79.6 | 68.4 | 67.9 | 63.3 | 63.4 |
| 28 | 101 | 95.1 | 94.1 | 85.9 | 88.7 | 80.5 | 81.4 | 75.4 | 69.2 | 66.6 | 63.9 | 63.6 |
| 29 | 102 | 92.6 | 87.5 | 91.6 | 82.4 | 82.3 | 75.6 | 71.8 | 67.3 | 64.6 | 64.5 | |
| 30 | 101 | 89.3 | 86.4 | 88.9 | 78.7 | 83.4 | 73.4 | 66.8 | 66.9 | 64.6 | 64.8 | |
| 31 | 100 | 91.5 | | | 88.1 | | 81.1 | 73.1 | | 66.9 | | 64.0 |
| Sum | | 2,720.7 | | 2,766.4 | | 2,565.3 | | 2,380.1 | | 2,079.7 | | 1,994.1 |
| | | 3,099.8 | | 2,959.4 | | 2,712.4 | | 2,595.2 | | 2,130.7 | | 1,983.7 |

Current Year 1962

Period Feb. 1961-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|------|---------------------|------|---------------------|-----------------|-----------|---------|---------|
| | High | Low | Day | Day | | | High | Average | Minimum |
| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
| Jan. | | | ↑ 1 | 103 | 2 | 96.8 | 100 | 6,148 | |
| Feb. | | | 13 | 104 | 19 | 92.7 | 97.2 | 5,397 | 5,544 |
| Mar. | | | 8 | 103 | 26 | 89.1 | 95.5 | 5,870 | 6,270 |
| Apr. | | | 4 | 112 | 28 | 85.9 | 92.2 | 5,487 | 5,664 |
| May | | | 19 | 92.6 | 7 | 83.4 | 87.5 | 5,380 | 5,980 |
| June | | | 13 | 94.8 | 30 | 78.7 | 85.5 | 5,088 | 5,419 |
| July | | | 13 | 90.1 | 2 | 76.9 | 83.7 | 5,148 | 5,709 |
| Aug. | | | 13 | 80.3 | 26 | 70.1 | 76.8 | 4,721 | 5,766 |
| Sept. | | | 7 | 77.1 | 30 | 66.8 | 71.0 | 4,226 | 5,313 |
| Oct. | | | 3 | 72.0 | 23 | 63.1 | 67.1 | 4,125 | 5,402 |
| Nov. | | | 20 | 70.4 | 27 | 63.3 | 66.1 | 3,935 | 4,988 |
| Dec. | | | 1 | 66.8 | 21 | 61.8 | 64.3 | 3,955 | 5,128 |
| Yearly | | | | 112 | | 61.8 | 82.2 | 59,480 | |

↑ And other days β Mean daily

SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, and cable with stand-up cable car equipped for winch and heavy weights, at Silos Farm road bridge 1.75 miles south of Del Rio, Texas and 2 miles above the confluence with the Rio Grande. This stream enters the Rio Grande 695.1 river miles below the American Dam at El Paso, Texas and 12.1 river miles below the gaging station on the Rio Grande below Amistad Dam Site. The zero of the gage is 877.43 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 51 meter measurements during the year, and a continuous record of gage heights. Computations by shifting channel methods. Records available: September 1, 1931 through December 1962.

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, corresponding to 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, 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. .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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|----------------|----------------|----------------|--------|--------|--------|----------------|----------------|----------------|----------------|--------|--------|
| 1 | 96.7 | 98.0 | 74.5 | 74.9 | # 70.3 | 83.6 | 54.2 | 39.8 | 36.2 | # 43.5 | 40.2 | 37.0 |
| 2 | 98.2 | 86.6 | 73.2 | 73.8 | 66.9 | 74.1 | # 54.0 | 40.2 | 39.9 | 43.2 | 38.5 | 37.8 |
| 3 | 101 | 84.3 | 73.0 | 72.3 | 69.1 | 70.7 | 55.2 | 39.1 | 39.8 | 42.9 | 40.2 | # 36.7 |
| 4 | 107 | 83.3 | 76.2 | 105 | 71.4 | # 70.8 | 55.5 | 40.2 | # 39.7 | 41.8 | 41.0 | 37.7 |
| 5 | 106 | 86.0 | 78.2 | 97.7 | 73.6 | 70.0 | 56.8 | 42.2 | 42.6 | 41.5 | # 41.0 | 41.1 |
| 6 | 106 | 85.5 | # 81.4 | 87.0 | 71.3 | 73.7 | 62.1 | # 41.9 | 47.9 | 46.1 | 44.5 | 44.3 |
| 7 | 106 | 87.4 | 85.7 | 86.7 | # 72.4 | 79.7 | 60.4 | 40.9 | 48.3 | 47.5 | 49.4 | 46.1 |
| 8 | # 104 | 91.9 | 83.8 | 83.9 | 71.3 | 71.0 | 61.6 | 41.5 | 50.6 | # 48.1 | 50.6 | 45.2 |
| 9 | 106 | 90.1 | 81.9 | # 78.5 | 69.0 | 91.0 | # 62.8 | 44.6 | 50.9 | 49.0 | 50.9 | 44.5 |
| 10 | 105 | 93.3 | 82.4 | 74.9 | 64.6 | 90.9 | 60.8 | 47.5 | # 68.0 | 49.7 | 47.4 | # 44.8 |
| 11 | 104 | 96.6 | 84.1 | 77.0 | 69.1 | # 86.1 | 59.6 | 50.1 | 62.2 | 47.7 | 48.7 | 49.1 |
| 12 | 103 | # 93.5 | # 85.9 | 75.6 | 71.4 | 80.3 | 62.7 | 52.6 | 59.3 | 46.7 | 46.2 | 50.2 |
| 13 | 103 | 91.5 | 87.3 | 74.4 | 73.6 | 78.5 | 62.6 | # 52.4 | 54.6 | 49.4 | # 45.7 | 50.3 |
| 14 | 102 | 89.5 | 91.3 | 74.2 | # 73.6 | 72.1 | 59.5 | 50.7 | 52.0 | 46.4 | 42.1 | 47.7 |
| 15 | # 101 | 86.3 | 83.8 | 72.8 | 66.4 | 62.7 | 49.0 | 40.6 | 44.5 | # 39.7 | 42.5 | 40.3 |
| 16 | 101 | 76.5 | 75.7 | # 68.1 | 62.8 | 58.9 | # 47.0 | 37.7 | 41.4 | 35.9 | 40.3 | 39.7 |
| 17 | 102 | 75.8 | 75.8 | 65.0 | 60.4 | 60.3 | 46.0 | 37.9 | # 41.6 | 65.5 | 36.7 | # 44.7 |
| 18 | 99.4 | 78.5 | 77.0 | 68.5 | 58.9 | # 59.6 | 48.7 | 38.7 | 42.4 | 75.5 | 37.9 | 46.5 |
| 19 | 98.0 | # 78.9 | 67.9 | 68.7 | 58.5 | 60.8 | 47.6 | 41.1 | 43.1 | 54.7 | # 36.7 | 45.0 |
| 20 | 98.1 | 87.3 | 80.1 | 75.7 | 64.2 | 61.9 | 48.6 | # 44.5 | 44.8 | 52.9 | 36.1 | 42.8 |
| 21 | 104 | 87.2 | 80.6 | 75.9 | # 67.2 | 62.1 | 54.9 | 47.5 | 49.6 | 54.8 | 41.2 | 44.6 |
| 22 | 104 | 87.2 | 80.0 | 78.4 | 67.7 | 59.2 | 62.0 | 47.3 | 48.7 | # 53.9 | 47.4 | 48.9 |
| 23 | 101 | 93.5 | 83.0 | # 107 | 71.5 | 61.5 | # 60.9 | 44.7 | 47.0 | 52.8 | 50.4 | 50.1 |
| 24 | 102 | 93.5 | 90.0 | 82.4 | 72.0 | 63.6 | 61.6 | 48.7 | # 48.6 | 53.5 | 46.9 | 51.1 |
| 25 | 103 | 93.4 | 78.5 | 71.3 | # 63.8 | 60.3 | 47.6 | 47.8 | 54.2 | 54.2 | 46.2 | 52.2 |
| 26 | 101 | # 88.3 | # 86.0 | 79.8 | 70.7 | 61.6 | 59.0 | 52.9 | 54.0 | 56.1 | # 48.3 | 52.4 |
| 27 | 101 | 86.8 | 79.8 | 177 | 72.2 | 68.8 | 59.7 | # 50.9 | 56.8 | 57.9 | 48.2 | 51.6 |
| 28 | 101 | 84.0 | 82.1 | 86.0 | # 72.7 | 70.9 | 60.5 | 46.2 | 54.9 | 57.7 | 49.1 | 52.7 |
| 29 | # 101 | 79.7 | 84.7 | 86.6 | 67.3 | 60.1 | 47.9 | 52.2 | # 56.4 | 49.0 | 52.0 | 52.0 |
| 30 | 102 | 85.8 | 80.8 | 75.1 | 58.6 | # 60.8 | 48.8 | 51.2 | 53.4 | 46.1 | 52.1 | 54.1 |
| 31 | 102 | 80.7 | 80.7 | 74.0 | | 53.1 | 47.6 | 48.8 | | | | |
| Sum | 2,454.7 | 2,485.2 | 2,094.1 | | | | 1,394.3 | 1,567.2 | 1,460.6 | 1,329.4 | | |
| | 3,169.4 | 2,525.4 | 2,159.8 | | | | 1,767.6 | | | | | |

Current Year 1962

Period 1932-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | | |
|---------------|-------------------|------------|-----|---------------------|-----|---------------------|-------------|---------------|---------------|---------------|---------------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum | |
| Jan. | 1.72 | 1.57 | 6 | 112 | 18 | 90.1 | 102 | 6,287 | 4,104 | 7,450 | |
| Feb. | 1.70 | 1.35 | 1 | 109 | 16 | 69.1 | 87.7 | 4,869 | 3,222 | 8,630 | |
| Mar. | 1.65 | 1.37 | 24 | 99.4 | 17 | 65.7 | 81.5 | 5,009 | 2,953 | 6,510 | |
| Apr. | 5.15 | 1.36 | 27 | 1,190 | 16 | 61.7 | 82.8 | 4,929 | 3,354 | 10,400 | |
| May | 2.37 | 1.28 | 29 | 214 | 18 | 53.0 | 69.7 | 4,284 | 4,707 | 17,600 | |
| June | 2.41 | 1.25 | 1 | 222 | 30 | 49.9 | 69.8 | 4,154 | 5,325 | 47,900 | |
| July | 1.51 | 1.08 | 5 | 77.7 | 17 | 40.3 | 57.0 | 3,506 | 3,461 | 8,800 | |
| Aug. | 1.37 | 1.01 | 28 | 62.6 | 16 | 33.4 | 45.0 | 2,766 | 3,203 | 7,150 | |
| Sept. | 2.59 | .99 | 10 | 260 | 1 | 29.9 | 48.7 | 2,897 | 4,289 | 19,100 | |
| Oct. | 2.40 | 1.00 | 17 | 218 | 16 | 30.2 | 50.6 | 3,109 | 4,312 | 8,470 | |
| Nov. | 1.36 | 1.01 | 9 | 60.8 | 3 | 29.7 | 44.3 | 2,637 | 3,462 | 7,000 | |
| Dec. | 1.34 | 1.05 | 31 | 61.9 | 3 | 33.4 | 46.2 | 2,842 | 3,480 | 7,020 | |
| Yearly | 5.15 | .99 | | 1,190 | | 29.7 | 65.3 | 47,289 | 45,872 | 98,137 | 18,201 |

Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL AT MILE 13 NEAR QUEMADO, TEXAS

DESCRIPTION: For power generation and irrigation use, water is diverted into the main Maverick Canal from the Rio Grande at a point 17.3 river miles below the international bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 710.8 river miles below the American Dam at El Paso, Texas. At a point 31.8 canal miles below 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. The discharges shown below are based on the continuous record of a bubbler-type water-stage recorder operated with bottled nitrogen gas and measurements of discharge at a point approximately 13 canal miles below the diversion point. Gage heights at this station are affected by gate operation at Las Moras Siphon, 2.4 miles downstream. These gates were operated twice in 1962.

RECORDS: Based on 53 meter measurements during the year and a continuous record of gage heights except during periods of extremely low flow. Computations by shifting channel methods. Records available: June 21, 1949 through December 1962.

REMARKS: In 1962 a total of 32,985 acres of land was irrigated from this canal and its extension. Of this total, 8,514 acres were between this point and the power plant and 24,471 acres were irrigated from the Maverick Canal Extension. A total of 844,138 acre-feet of water returned to the Rio Grande at the power plant and through the irrigation system (see pages 44, 46, and 49).

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 Min. 0 June 28 thru 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 1,410 | 1,390 | 1,360 | 1,270 | 1,230 | 1,070 | 1,260 | 1,490 | 918 | 1,420 | 1,450 | 1,470 |
| 2 | #1,410 | 1,370 | 1,340 | #1,270 | 1,200 | 1,160 | 1,310 | 1,520 | 1,000 | #1,460 | 1,450 | 1,480 |
| 3 | 1,400 | 1,380 | 1,340 | 1,230 | 1,190 | 1,340 | 1,290 | 1,490 | 1,110 | 1,440 | #1,440 | #1,490 |
| 4 | 1,390 | 1,370 | 1,340 | 1,250 | 1,100 | #1,120 | 1,320 | 1,440 | #1,360 | 1,460 | 1,440 | 1,480 |
| 5 | 1,380 | #1,370 | 1,340 | 1,340 | 1,100 | 1,030 | 1,160 | 1,440 | 1,310 | 1,480 | #1,430 | 1,450 |
| 6 | 1,390 | 1,370 | #1,320 | 1,440 | 1,100 | 1,260 | 1,200 | #1,430 | 1,530 | 1,470 | 1,420 | 1,430 |
| 7 | 1,390 | 1,370 | 1,320 | 1,370 | #1,090 | 1,330 | 1,220 | 1,410 | 1,510 | 1,490 | 1,430 | 1,450 |
| 8 | #1,400 | 1,370 | 1,330 | 1,330 | 1,080 | 1,380 | 1,450 | 1,380 | 1,510 | #1,510 | 1,450 | 1,450 |
| 9 | 1,400 | 1,400 | 1,320 | #1,310 | 1,070 | 1,370 | #1,480 | 1,360 | 1,520 | 1,500 | 1,440 | 1,450 |
| 10 | 1,390 | 1,400 | 1,320 | 1,340 | 1,040 | 1,370 | 1,420 | 1,340 | #1,510 | 1,470 | 1,430 | #1,420 |
| 11 | 1,380 | 1,390 | 1,310 | 1,320 | 1,010 | #1,320 | 1,370 | 1,340 | 1,490 | 1,480 | 1,420 | 1,420 |
| 12 | 1,400 | #1,390 | #1,300 | 1,310 | 1,030 | 1,340 | 1,300 | 1,320 | 1,510 | 1,450 | 1,410 | 1,410 |
| 13 | 1,420 | 1,390 | 1,300 | 1,270 | 1,030 | 1,420 | #1,440 | #1,320 | 1,490 | 1,460 | 1,430 | 1,410 |
| 14 | 1,430 | 1,390 | 1,300 | 1,250 | 1,020 | 1,400 | 1,460 | 1,280 | 1,460 | 1,460 | #1,420 | 1,430 |
| 15 | 1,410 | 1,410 | 1,310 | 1,240 | #1,040 | 1,340 | 1,420 | 1,250 | #1,450 | 1,450 | 1,420 | 1,440 |
| 16 | #1,400 | 1,400 | 1,320 | #1,200 | 1,130 | 1,430 | #1,370 | 1,180 | 1,450 | 1,460 | 1,420 | 1,450 |
| 17 | 1,400 | 1,410 | 1,330 | 1,190 | 1,070 | 1,470 | 1,390 | 1,110 | 1,410 | 1,450 | #1,430 | #1,450 |
| 18 | 1,390 | 1,400 | 1,340 | 1,170 | 1,020 | #1,480 | 1,420 | 1,080 | 1,400 | 1,480 | 1,430 | 1,430 |
| 19 | 1,400 | #1,400 | #1,350 | 1,130 | 1,200 | 1,420 | 1,470 | 1,000 | #1,430 | 1,470 | #1,440 | 1,430 |
| 20 | 1,390 | 1,380 | 1,330 | 1,090 | 1,340 | 1,390 | 1,500 | #1,963 | 1,420 | 1,460 | 1,430 | 1,430 |
| 21 | 1,390 | 1,380 | 1,320 | 1,080 | #1,250 | 1,420 | 1,460 | 1,000 | 1,400 | 1,440 | 1,450 | 1,440 |
| 22 | #1,390 | 1,390 | 1,320 | 1,080 | 1,340 | 1,370 | 1,460 | 1,040 | 1,390 | #1,450 | 1,450 | 1,450 |
| 23 | 1,400 | 1,390 | 1,330 | #1,130 | 1,430 | 1,330 | #1,500 | 1,030 | 1,390 | 1,470 | 1,440 | 1,450 |
| 24 | 1,390 | 1,400 | 1,310 | 1,260 | 1,420 | 1,340 | 1,500 | 984 | #1,400 | 1,430 | 1,440 | 1,430 |
| 25 | 1,390 | 1,400 | 1,330 | 1,180 | 1,350 | #1,420 | 1,490 | 1,010 | 1,370 | 1,430 | 1,470 | 1,420 |
| 26 | 1,400 | #1,390 | #1,330 | 1,100 | 1,280 | 1,390 | 1,520 | 970 | 1,360 | 1,420 | #1,440 | #1,420 |
| 27 | 1,390 | 1,390 | 1,310 | 1,330 | 1,180 | 1,340 | 1,470 | #1,989 | 1,390 | 1,440 | 1,460 | 1,410 |
| 28 | 1,400 | 1,360 | 1,300 | 1,370 | 1,090 | 1,310 | 1,470 | 992 | 1,440 | 1,460 | 1,470 | 1,430 |
| 29 | #1,400 | 1,300 | 1,260 | 1,090 | 1,410 | 1,490 | 1,010 | 1,450 | #1,430 | 1,480 | 1,430 | 1,430 |
| 30 | 1,420 | 1,290 | 1,270 | 1,040 | 1,310 | #1,480 | 998 | 1,450 | 1,430 | 1,480 | 1,430 | 1,430 |
| 31 | 1,400 | 1,290 | 1,030 | 1,480 | 966 | | | | 1,460 | | | #1,440 |

Sum 38,850 37,380 40,080 37,132 45,180 44,620

Current Year 1962 **Period** 1950-1962

Extreme Cases **Extreme Second-Exact** **Average**

Month **Extreme Gage** **Extreme Second-Feet** **Average Second-Feet** **Total** **Acre-Feet**

| Month | Precipitation | | | Runoff | | | Groundwater | | |
|-------|---------------|-----|-----|--------|-----|-------------|-------------|---------|---------|
| | High | Low | Dav | High | Low | Second-Feet | Acre-Feet | Average | Maximum |

High **Low** **Day** **Day** **Day** **Day** **Feet**

Jan. 14 9,430 15 9,380 1,400 85,985 75,083 69,500 61,900
 Feb. 4,37 4,11 9 1,410 2 1,350 1,390 77,059 67,667 82,500 52,700

Mar. 4.30 3.78 19 1,370 30 1,260 1,320 81,224 71,679 90,700 52,000

Apr. 4.63 2.91 6 1,490 †21 1,040 1,250 74,143 64,465 81,000 45,400
May 4.05 2.50 2 1,150 15 1,050 1,150 70,502 68,903 82,200 39,400

May 4.77 2.59 23 1,460 15 958 1,150 70,593 68,991 82,200 39,400
June 5.03 2.95 18 1,520 5 987 1,340 79,499 71,224 88,900 34,400

June 5.03 2.95 18 1,320 5 967 1,340 71,222 88,200 52,400

July 4.99 3.52 20 1,540 5 1,120 1,410 86,421 71,763 93,900 19,600

Aug. 4,85 2,52 2 1,540 21 892 1,200 73,651 75,042 91,200 53,000

Sept. 4.98 2.32 † 9 1,540 1 835 1,390 82,966 74,044 88,400 47,000
 Oct. 5.29 4.19 1,620 1 1,260 1,460 80,615 75,870 89,900 54,300

Oct. 5.02 4.49 18, 1,530 1 1,360 1,460 89,615 75,879 89,900 54,300
 Nov. 4.80 4.32 25 1,500 12 1,380 1,440 85,707 73,062 85,707 55,900

Nov. 4.60 4.52 23 1,300 12 1,380 1,440 88,504 75,270 88,504 58,600
 Dec. 4.63 4.25 † 2 1,500 13 1,390 1,440 88,504 75,270 88,504 58,600

Yearly 5,03 2,32 1,540 835 1,350 975,367 864,169 1,027,400 663,500

* And other days. # Mean daily. † Discharge measurement made on this day.

† And other days ♦ Mean daily # Discharge measurement made on this day

RIO GRANDE BELOW MAVERICK DAM

DESCRIPTION: Water-stage recorder located 4.7 miles below the Maverick Irrigation District Diversion Dam, 30.0 miles above the Maverick Power Plant, and 716.7 river miles below the American Dam at El Paso, Texas. The zero of the gage is at 804.79 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 124 meter measurements by wading during the year, 90 by the Mexican Section and 34 by the United States Section of this Commission. Computations by shifting channel methods. There are no facilities for measuring high flows at this station. Records available: January 1956 through December 1962, except for some high flow periods.

REMARKS: This station was placed in operation on November 26, 1955. Irrigation diversions 5.9 miles upstream largely control the flow at this station.

EXTREME FLOWS FROM RECORDS: Maximum flow not recorded. Min. 1.8 second-feet April 14 and 15, 1962.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|-------|--------|--------|--------|--------|---------|---------|--------|---------|---------|-------|
| 1 | 441 | # 410 | # 152 | 63.6 | # 47.7 | 84.8 | 155 | # 1,110 | 24.7 | | 932 | 399 |
| 2 | 470 | 385 | 109 | 74.2 | 47.7 | 65.3 | 170 | 795 | 24.7 | | 833 | 424 |
| 3 | 470 | 357 | 120 | 38.8 | 47.7 | 335 | 219 | 689 | 45.9 | 1,560 | 798 | # 438 |
| 4 | 441 | 357 | 120 | 38.8 | 42.4 | # 65.3 | 201 | 512 | # 177 | 1,350 | 766 | # 424 |
| 5 | 410 | 357 | # 170 | 939 | 35.3 | # 47.7 | 91.8 | 512 | | 1,410 | 766 | 399 |
| 6 | 410 | 385 | 134 | 1,340 | 42.4 | 221 | 91.8 | 463 | | 1,290 | 699 | 452 |
| 7 | 441 | # 357 | # 134 | 265 | # 35.3 | 182 | 141 | # 360 | | 1,080 | 667 | 547 |
| 8 | 526 | 385 | 170 | 117 | # 35.3 | 812 | 1,020 | 297 | | 837 | 636 | 600 |
| 9 | 498 | # 441 | 170 | 91.8 | 28.3 | 388 | # 629 | 237 | | 1,740 | 636 | 576 |
| 10 | 470 | 441 | 170 | 53.0 | # 28.3 | 667 | 392 | 180 | | 1,740 | 667 | # 484 |
| 11 | 441 | 385 | 152 | 31.8 | # 35.3 | 221 | 201 | 180 | | # 1,710 | 735 | # 452 |
| 12 | 441 | # 357 | # 187 | 19.4 | 35.3 | 706 | 117 | 131 | | 1,190 | 572 | 410 |
| 13 | 526 | 385 | 134 | 8.8 | 42.4 | 629 | 353 | # 113 | | 1,110 | 516 | 452 |
| 14 | 470 | # 385 | # 152 | 1.8 | # 42.4 | 629 | 392 | 98.9 | | 901 | 572 | 466 |
| 15 | 470 | 286 | 247 | 1.8 | 47.7 | 286 | 353 | 98.9 | 1,110 | | | |
| 16 | 441 | 286 | 307 | # 8.8 | # 65.3 | # 233 | | 88.3 | 1,020 | # 925 | 636 | 466 |
| 17 | 470 | 307 | 286 | 8.8 | 56.5 | 1,760 | 311 | 53.0 | 872 | 1,050 | 600 | 484 |
| 18 | # 498 | 357 | 265 | 8.8 | 42.4 | 816 | 600 | 45.9 | # 717 | 600 | 438 | |
| 19 | 470 | # 265 | # 247 | 45.9 | 226 | # 445 | 600 | 28.3 | 685 | 600 | # 410 | |
| 20 | 470 | 247 | # 170 | 74.2 | 150 | 263 | 1,620 | # 88.3 | 685 | 540 | 540 | 399 |
| 21 | 470 | # 226 | 170 | 74.2 | # 104 | 445 | | | # 74.2 | | 466 | 438 |
| 22 | 441 | 226 | 109 | 74.2 | # 558 | 335 | | | 597 | | # 491 | 505 |
| 23 | 470 | 247 | 152 | # 74.2 | 1,030 | 134 | # 1,020 | | 569 | | 491 | 547 |
| 24 | # 410 | 265 | 54.7 | 106 | 731 | 240 | 1,020 | | 540 | | 667 | 505 |
| 25 | 410 | 247 | 54.7 | # 84.8 | 307 | 445 | 1,180 | | 28.3 | # 459 | 1,590 | 918 |
| 26 | 385 | # 205 | # 54.7 | 84.8 | 104 | # 286 | 915 | | 14.1 | 484 | 1,380 | 636 |
| 27 | 385 | 205 | # 54.7 | 812 | 75.9 | 134 | 717 | | 597 | 1,350 | # 572 | 410 |
| 28 | 410 | 152 | 54.7 | 357 | # 75.9 | 95.3 | 826 | | 10.6 | 1,110 | 1,320 | 491 |
| 29 | 357 | | 74.2 | 91.8 | # 132 | 335 | 1,090 | | 10.6 | 1,020 | # 1,250 | 420 |
| 30 | 470 | | 42.4 | 84.8 | 47.7 | 95.3 | 770 | | 21.2 | 1,320 | 378 | 399 |
| 31 | 441 | | 84.8 | | 47.7 | | 770 | | 24.7 | 1,080 | | # 424 |
| Sum | | | | | | | | | | | | |
| 8,908 | | | | | | | | | | | | |
| 5,075.1 | | | | | | | | | | | | |
| 4,501.9 | | | | | | | | | | | | |
| 4,346.9 | | | | | | | | | | | | |
| 6,380.9 | | | | | | | | | | | | |
| 18,901 | | | | | | | | | | | | |
| 13,923 | | | | | | | | | | | | |

Current Year 1962

Period # 1956-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|------|-----|---------------------|------|---------------------|-----------------|------------|---------|---------|
| | High | Low | Day | Day | Low | | | Average ** | Maximum | Minimum |
| Jan. | 1.94 | 1.61 | 13 | 614 | † 27 | 332 | 449 | 27,612 | 41,716 | 74,330 |
| Feb. | 1.84 | 1.25 | 9 | 526 | 28 | 120 | 318 | 17,665 | 41,509 | 89,080 |
| Mar. | 1.67 | .85 | 16 | 381 | 25 | 7.1 | 145 | 8,928 | 29,273 | 74,210 |
| Apr. | 3.41 | .72 | 5 | 2,520 | † 11 | 1.8 | 169 | 10,062 | 15,279 | 2,480 |
| May | 2.72 | .92 | 23 | 1,550 | † 9 | 23.0 | 140 | 8,619 | 9,401 | 7,630 |
| June | 3.94 | .98 | 16 | | 5 | 35.3 | | | 14,111 | 6,170 |
| July | 5.02 | 1.05 | 21 | | 6 | 70.6 | | | 18,977 | 1,360 |
| Aug. | 2.66 | .82 | 1 | 1,260 | † 26 | 10.6 | | | 26,310 | 12,650 |
| Sept. | 7.41 | .85 | 10 | | † 1 | 14.1 | | | 31,710 | 20,250 |
| Oct. | 9.65 | 1.94 | 20 | | 17 | 593 | | | 42,386 | 14,860 |
| Nov. | 2.99 | 1.57 | 25 | 1,580 | 30 | 286 | 630 | 37,495 | 45,957 | 9,910 |
| Dec. | 2.17 | 1.51 | 8 | 731 | 13 | 353 | 453 | 27,878 | 96,660 | |
| Yearly | 9.65 | .72 | | | | 1.8 | | | | |

† And other days # Some months missing ** See explanation in RECORDS above

‡ Discharge measurement made on this day

PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, located on top of a ledge 45 feet above the creek bed; a solid rock and concrete station control; and a cable with stand-up cable car equipped for winch and heavy weights located 1.6 miles above the confluence with the Rio Grande. This creek enters the Rio Grande 718.1 river miles below 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 36 meter measurements during the year and a continuous record of gage heights. Records available: September 1955 through December 1962 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 842.5 feet above mean sea level at this station.

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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|-------|-------|-------|-------|--------|--------|------|-------|------|------|------|
| 1 | 7.2 | 6.4 | 3.5 | 4.1 | # 3.9 | 1.6 | 8.1 | 0 | 0 | 0 | 0 | .4 |
| 2 | # 7.4 | 6.4 | 3.9 | # 3.8 | 1.7 | 1.0 | # 22.9 | 0 | 0 | 0 | 0 | .4 |
| 3 | 7.3 | 6.5 | 4.3 | 3.8 | 1.1 | 1.1 | 12.9 | 0 | 0 | 0 | 0 | # .4 |
| 4 | 7.1 | 6.4 | 4.4 | 4.2 | 1.0 | # 1.6 | 4.8 | 0 | 0 | 0 | 0 | .4 |
| 5 | 7.2 | # 6.0 | # 4.2 | 5.3 | 1.0 | .8 | 3.0 | 0 | 0 | 0 | 0 | .3 |
| 6 | 6.8 | 5.4 | 4.0 | 7.4 | .8 | .7 | 2.3 | 0 | 0 | 0 | 0 | .3 |
| 7 | 7.1 | 5.4 | 3.9 | 5.1 | # .6 | .6 | 1.8 | 0 | 0 | 0 | 0 | .3 |
| 8 | # 7.1 | 5.6 | 4.8 | 4.7 | .9 | .5 | 1.3 | 0 | 0 | 0 | 0 | .3 |
| 9 | 7.0 | 6.0 | 3.1 | # 4.3 | 1.3 | 8.7 | # 1.2 | 0 | 0 | 0 | 0 | .2 |
| 10 | 7.4 | 5.8 | 5.0 | 4.1 | 1.5 | 163 | 1.2 | 0 | 0 | 0 | 0 | # .2 |
| 11 | 7.6 | 6.0 | 4.8 | 4.5 | 1.7 | # 10.6 | .9 | 0 | 0 | 0 | 0 | .2 |
| 12 | 7.7 | # 6.0 | # 4.1 | 2.1 | 1.8 | 4.4 | .8 | 0 | 0 | 0 | 0 | .2 |
| 13 | 7.6 | 5.9 | 4.0 | 2.1 | 1.9 | 2.8 | .7 | 0 | 0 | 0 | 0 | .3 |
| 14 | 7.6 | 5.5 | 4.2 | 5.6 | # 1.9 | 1.7 | .7 | 0 | 0 | 0 | 0 | .3 |
| 15 | 7.6 | 5.6 | 4.8 | 5.6 | 1.4 | 1.2 | .5 | 0 | 0 | 0 | 0 | .3 |
| 16 | # 7.3 | 5.6 | 4.9 | # 5.4 | 1.2 | .9 | # .5 | 0 | 0 | 0 | 0 | .3 |
| 17 | 7.2 | 5.3 | 4.8 | 5.0 | 1.1 | .8 | .5 | 0 | 0 | 0 | 0 | .3 |
| 18 | 7.2 | 5.0 | 5.2 | 4.8 | .9 | # .6 | .4 | 0 | 0 | .4 | 0 | .4 |
| 19 | 6.9 | # 4.8 | # 5.4 | 4.4 | .8 | .6 | .4 | 0 | 0 | .1 | 0 | .4 |
| 20 | 7.0 | 4.6 | 5.3 | 4.0 | .7 | .4 | .4 | 0 | 0 | 0 | 0 | .4 |
| 21 | 7.0 | 4.7 | 3.9 | 3.5 | # .5 | .4 | .4 | 0 | 0 | 0 | 0 | .4 |
| 22 | # 7.1 | 4.9 | 4.6 | 2.0 | .5 | .4 | .3 | 0 | 0 | 0 | 0 | .4 |
| 23 | 6.8 | 5.4 | 4.3 | # 2.7 | .5 | .3 | # .3 | 0 | 0 | 0 | 0 | .4 |
| 24 | 6.9 | 5.0 | 4.0 | 2.8 | .5 | .3 | .3 | 0 | 0 | 0 | 0 | .5 |
| 25 | 6.6 | 4.8 | 3.4 | 2.5 | .6 | # .2 | .3 | 0 | 0 | 0 | .1 | .5 |
| 26 | 7.1 | # 4.8 | # 4.3 | 2.1 | .7 | .2 | .3 | 0 | 0 | 0 | .1 | # .5 |
| 27 | 7.3 | 4.7 | 4.6 | 137 | .7 | .2 | .2 | 0 | 0 | 0 | .6 | .6 |
| 28 | 6.6 | 4.3 | 4.4 | 13.5 | # .8 | 32.8 | .2 | 0 | 0 | 0 | .6 | .6 |
| 29 | # 6.3 | 4.5 | 4.4 | 5.8 | 138 | 98.2 | .1 | 0 | 0 | 0 | .4 | .7 |
| 30 | 6.4 | 4.7 | 4.4 | 2.8 | 19.0 | # .1 | .1 | 0 | 0 | 0 | .5 | .7 |
| 31 | 6.3 | | 4.6 | | 1.2 | | .1 | 0 | 0 | 0 | # .8 | |
| Sum | | 152.8 | | 266.6 | | 355.6 | | 0 | | .5 | | 12.4 |
| | | 219.7 | | 135.9 | | 174.0 | | 67.9 | | 0 | | 2.3 |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | |
|---------------|-------------------|------|------|---------------------|------|---------------------|-----------------|----------------|---------------|-----------------|----------------|
| | High | | Low | Day | Day | | | Average | Maximum | Minimum | |
| | High | Low | Day | Day | | | | | | | |
| Jan. | 1.32 | 1.24 | # 14 | 8.2 | 29 | 5.2 | 7.1 | 436 | 498 | 2,270 | |
| Feb. | 1.29 | 1.13 | 3 | 6.9 | 28 | 3.8 | 5.5 | 303 | 614 | 5,760 | |
| Mar. | 1.37 | .97 | 8 | 9.0 | 9 | 1.6 | 4.4 | 270 | 544 | 2,500 | |
| Apr. | 3.67 | .77 | 27 | 668 | 13 | 1.2 | 8.9 | 529 | 1,424 | 27,100 | |
| May | 4.64 | .62 | 29 | 1,410 | 24 | .4 | 5.6 | 345 | 2,787 | 29,400 | |
| June | 4.73 | .59 | 10 | 1,500 | # 25 | .2 | 11.9 | 705 | 5,110 | 56,700 | |
| July | 2.27 | | 2 | 53.5 | 31 | 0 | 2.2 | 135 | 2,025 | 30,000 | |
| Aug. | | | | 0 | 0 | 0 | 0 | 0 | 1,833 | 48,700 | |
| Sept. | | | | 0 | 0 | 0 | 0 | 0 | 1,633 | 17,300 | |
| Oct. | .78 | | 18 | 1.0 | # 1 | 0 | 0 | 1.0 | 1,055 | 8,940 | |
| Nov. | .73 | | # 27 | .6 | # 1 | 0 | .1 | 4.6 | 436 | 2,590 | |
| Dec. | | | | 31 | # .8 | # 9 | .2 | .4 | 24.6 | 515 | |
| Yearly | 4.73 | | | 1,500 | | 0 | 3.8 | 2,753.2 | 18,474 | 76,259.3 | 1,325.2 |

And other days \$ Mean daily # Discharge measurement made on this day

RIO SAN DIEGO AT JIMENEZ, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and masonry and concrete Cipolletti weir control for measuring flows up to 777 second-feet, located 4.4 miles west of Jiménez, Coahuila, and 5.0 miles above the confluence with the Rio Grande. This stream enters the Rio Grande 723.0 river miles below 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: Based on 93 meter measurements during the year, the weir discharge table, and a continuous record of gage heights. Records available: 1922 through December 1962. The records from 1922 through September 1932 are considered doubtful.

REMARKS: Reservoirs above and irrigation diversions above and below this station 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 .20 foot and the capacity of the weir was increased from 700 to 777 second-feet at the time the weir, which was damaged by the June 17, 1961 flood, was repaired.

EXTREME FLOWS FROM RECORDS: 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---------|--------|--------|---------|---------|---------|---------|---------|---------|--------|---------|--------|--------|
| 1 | 93.6 | 80.2 | 67.8 | 44.8 | 123 | 67.8 | 35.0 | # 25.8 | 44.8 | 44.8 | 171 | 93.6 |
| 2 | 93.6 | # 80.2 | # 67.8 | 44.8 | # 123 | 67.8 | 44.8 | 25.8 | 44.8 | 55.8 | 171 | 93.6 |
| 3 | 93.6 | 80.2 | 67.8 | # 55.8 | 123 | 171 | 44.8 | 25.8 | 44.8 | 55.8 | 171 | 93.6 |
| 4 | 93.6 | 80.2 | 67.8 | 55.8 | 108 | 123 | 44.8 | 25.8 | # 44.8 | 55.8 | 171 | 93.6 |
| 5 | 80.2 | 80.2 | 67.8 | 55.8 | 93.6 | # 25.8 | 25.8 | 35.0 | 55.8 | 154 | 108 | |
| 6 | 80.2 | 80.2 | 67.8 | 55.8 | 80.2 | # 25.8 | 25.8 | 35.0 | 55.8 | 154 | # 108 | |
| 7 | 80.2 | 80.2 | 67.8 | 55.8 | 67.8 | 67.8 | 25.8 | 25.8 | 35.0 | 55.8 | 154 | 93.6 |
| 8 | 80.2 | # 80.2 | # 55.8 | 55.8 | 44.8 | 55.8 | 25.8 | # 25.8 | 35.0 | 55.8 | 154 | 93.6 |
| 9 | 93.6 | 80.2 | 55.8 | 55.8 | # 44.8 | 44.8 | 25.8 | 17.7 | 35.0 | 44.8 | 138 | 93.6 |
| 10 | 93.6 | 80.2 | 67.8 | 44.8 | 44.8 | 44.8 | # 25.8 | 10.2 | 161 | 44.8 | 108 | 93.6 |
| 11 | 93.6 | 80.2 | 67.8 | 55.8 | 55.8 | 154 | 25.8 | 10.2 | # 123 | 44.8 | 108 | 93.6 |
| 12 | 93.6 | 80.2 | 55.8 | 55.8 | 138 | 25.8 | 10.2 | 80.2 | 35.0 | 108 | 93.6 | |
| 13 | 93.6 | 80.2 | 55.8 | 44.8 | 55.8 | # 123 | 25.8 | 10.2 | 44.8 | 35.0 | # 108 | 93.6 |
| 14 | 93.6 | 80.2 | 67.8 | 44.8 | 55.8 | 108 | 25.8 | 10.2 | 44.8 | 35.0 | # 108 | 93.6 |
| 15 | 80.2 | # 80.2 | 67.8 | 44.8 | 55.8 | 80.2 | 25.8 | # 25.8 | 44.8 | 44.8 | 108 | 93.6 |
| 16 | 80.2 | 80.2 | 67.8 | 44.8 | 55.8 | 67.8 | 25.8 | 25.8 | 44.8 | 44.8 | 93.6 | 93.6 |
| 17 | # 80.2 | 67.8 | 67.8 | # 44.8 | 67.8 | 55.8 | # 25.8 | 25.8 | 55.8 | # 214 | 93.6 | 93.6 |
| 18 | 93.6 | 67.8 | 67.8 | 44.8 | 44.8 | 55.8 | 25.8 | 25.8 | 55.8 | # 2,650 | 93.6 | 93.6 |
| 19 | 93.6 | 67.8 | 67.8 | 44.8 | 44.8 | 44.8 | 25.8 | 25.8 | 55.8 | 329 | 93.6 | 93.6 |
| 20 | 93.6 | 67.8 | 67.8 | 44.8 | 44.8 | # 44.8 | 25.8 | # 67.8 | 265 | 138 | 80.2 | |
| 21 | 93.6 | # 55.8 | # 44.8 | 44.8 | 44.8 | 44.8 | 25.8 | 25.8 | 55.8 | 245 | 93.6 | # 80.2 |
| 22 | 93.6 | # 67.8 | 44.8 | 44.8 | 44.8 | 44.8 | 25.8 | 25.8 | 55.8 | 245 | 93.6 | 80.2 |
| 23 | 93.6 | 55.8 | 44.8 | 44.8 | # 44.8 | 35.0 | 25.8 | 25.8 | 55.8 | # 226 | 93.6 | 80.2 |
| 24 | 93.6 | 55.8 | 44.8 | # 44.8 | 44.8 | 35.0 | # 25.8 | 25.8 | 55.8 | 226 | 138 | 80.2 |
| 25 | # 93.6 | 55.8 | 44.8 | 44.8 | 44.8 | 35.0 | 25.8 | 25.8 | # 55.8 | 207 | 242 | 80.2 |
| 26 | 80.2 | 55.8 | # 44.8 | 44.8 | 55.8 | 35.0 | 25.8 | 25.8 | 55.8 | 226 | 108 | 80.2 |
| 27 | 80.2 | 67.8 | # 44.8 | # 1,300 | 123 | # 25.8 | 25.8 | 25.8 | 55.8 | 207 | 93.6 | # 80.2 |
| 28 | 80.2 | 67.8 | 286 | 93.6 | 286 | 25.8 | 17.7 | # 25.8 | 55.8 | 207 | # 93.6 | 80.2 |
| 29 | 80.2 | 44.8 | 171 | 67.8 | 67.8 | 35.0 | 17.7 | 35.0 | 55.8 | 189 | 93.6 | 80.2 |
| 30 | 80.2 | 44.8 | 138 | 67.8 | 67.8 | 35.0 | 25.8 | 44.8 | 55.8 | 189 | 93.6 | 80.2 |
| 31 | 80.2 | | 44.8 | | 67.8 | 25.8 | 44.8 | 44.8 | 189 | 189 | | |
| Sum | | | 2,036.8 | 3,158.8 | 2,040.0 | 760.9 | 6,578.4 | 2,783.0 | | | | |
| 2,727.4 | | | 1,800.8 | 2,089.8 | 849.8 | 1,690.8 | 3,697.2 | | | | | |

Current Year 1962

Period 1933-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|--------|-------------------|-----|---------------------|-------|---------------------|-----------------|-----------|---------|---------|
| | High | Low | High | Low | | | Average | Maximum | Minimum |
| Jan. | .33 | .30 | † 1 | 93.6 | † 5 | 80.2 | 88.0 | 5,408 | 7,369 |
| Feb. | .33 | .23 | † 7 | 93.6 | † 20 | 55.8 | 72.7 | 4,039 | 5,951 |
| Mar. | .26 | .20 | † 1 | 67.8 | † 21 | 44.8 | 58.1 | 3,573 | 5,265 |
| Apr. | 3.81 | .20 | 27 | 3,440 | † 1 | 44.8 | 105 | 6,259 | 6,394 |
| May | .46 | .16 | 27 | 154 | † 8 | 35.0 | 67.4 | 4,142 | 13,516 |
| June | .52 | .13 | 3 | 189 | † 23 | 25.8 | 68.0 | 4,045 | 120,200 |
| July | .20 | .10 | † 1 | 44.8 | † 28 | 17.7 | 27.4 | 1,685 | 108,300 |
| Aug. | .20 | .07 | † 30 | 44.8 | † 9 | 10.2 | 24.5 | 1,509 | 8,835 |
| Sept. | 1.12 | .16 | 10 | 611 | † 5 | 35.0 | 56.4 | 3,354 | 37,890 |
| Oct. | 5.97 | .16 | 18 | 6,430 | † 12 | 35.0 | 212 | 13,043 | 7,250 |
| Nov. | 1.77 | .30 | 25 | 1,200 | 24 | 80.2 | 123 | 7,331 | 32,180 |
| Dec. | .36 | .30 | † 5 | 108 | † 20 | 80.2 | 89.8 | 5,518 | 14,320 |
| Yearly | 5.97 | .07 | | 6,430 | | 10.2 | 82.7 | 59,906 | 381,720 |
| | | | | | | | | 113,673 | 17,430 |

† And other days ‡ Period October 1932-1962 # Discharge measurement made on this day

RIO SAN RODRIGO NEAR EL MORAL, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and reinforced concrete control weir for measuring flows up to 177 second-feet. This station is located 10.6 miles west of the town of El Moral, Coahuila, 19.3 miles northwest from Piedras Negras, Coahuila, and 11.2 river miles above the confluence with the Rio Grande. The stream enters the Rio Grande 736.2 river miles below 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 continuous record of gage heights. Computations by shifting channel methods for flows exceeding weir capacity. Records available: 1922 through December 1962. The records from 1922 to 1931 are considered doubtful.

REMARKS: The flow of this spring-fed stream is modified by irrigation diversions above and below this station. In 1962, flows passing this station exceeded the capacity of the weir during two rises in April and one in May.

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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|------|---------|-------|---------|------|-------|------|-------|-------|------|------|
| 1 | 79.5 | 64.3 | 43.8 | 37.4 | 43.8 | 43.8 | 57.2 | 0 | 0 | 0 | 0 | 16.2 |
| 2 | 79.5 | 64.3 | 43.8 | 37.4 | 37.4 | 57.2 | 43.8 | 0 | 0 | 0 | 0 | 12.0 |
| 3 | 79.5 | 64.3 | 50.1 | 37.4 | 43.8 | 43.8 | 37.4 | 0 | 0 | 0 | 0 | 12.0 |
| 4 | 79.5 | 64.3 | 50.1 | 37.4 | 37.4 | 43.8 | 37.4 | 0 | 0 | 0 | 0 | 12.0 |
| 5 | 71.7 | 57.2 | 50.1 | 37.4 | 37.4 | 43.8 | 31.4 | 0 | 0 | 0 | 0 | 16.2 |
| 6 | 71.7 | 57.2 | 50.1 | 37.4 | 31.4 | 37.4 | 31.4 | 0 | 0 | 0 | 0 | 16.2 |
| 7 | 71.7 | 57.2 | 50.1 | 37.4 | 31.4 | 37.4 | 31.4 | 0 | 0 | 0 | 0 | 12.0 |
| 8 | 71.7 | 57.2 | 50.1 | 31.4 | 31.4 | 37.4 | 26.1 | 0 | 0 | 0 | 2.1 | 12.0 |
| 9 | 71.7 | 50.1 | 50.1 | 31.4 | 31.4 | 31.4 | 26.1 | 0 | 0 | 0 | 2.1 | 16.2 |
| 10 | 79.5 | 50.1 | 50.1 | 31.4 | 31.4 | 50.1 | 21.2 | 0 | 0 | 0 | 4.9 | 16.2 |
| 11 | 79.5 | 50.1 | 50.1 | 31.4 | 31.4 | 50.1 | 21.2 | 0 | 0 | 0 | 4.9 | 16.2 |
| 12 | 79.5 | 50.1 | 50.1 | 31.4 | 31.4 | 43.8 | 21.2 | 0 | 0 | 0 | 4.9 | 16.2 |
| 13 | 79.5 | 50.1 | 50.1 | 31.4 | 31.4 | 31.4 | 21.2 | 0 | 0 | 0 | 4.9 | 16.2 |
| 14 | 71.7 | 50.1 | 50.1 | 31.4 | 31.4 | 31.4 | 16.2 | 0 | 0 | 0 | 8.1 | 21.2 |
| 15 | 71.7 | 43.8 | 50.1 | 31.4 | 31.4 | 31.4 | 16.2 | 0 | 0 | 0 | 8.1 | 21.2 |
| 16 | 71.7 | 43.8 | 50.1 | 31.4 | 31.4 | 31.4 | 16.2 | 0 | 0 | 0 | 8.1 | 21.2 |
| 17 | 71.7 | 43.8 | 50.1 | 31.4 | 31.4 | 31.4 | 16.2 | 0 | 0 | 0 | 8.1 | 21.2 |
| 18 | 71.7 | 43.8 | 50.1 | 31.4 | 31.4 | 31.4 | 16.2 | 0 | 0 | 0 | 8.1 | 21.2 |
| 19 | 64.3 | 43.8 | 50.1 | 31.4 | 31.4 | 26.1 | 16.2 | 0 | 0 | 0 | 8.1 | 21.2 |
| 20 | 64.3 | 43.8 | 43.8 | 31.4 | 31.4 | 21.2 | 12.0 | 0 | 0 | 0 | 8.1 | 16.2 |
| 21 | 64.3 | 43.8 | 43.8 | 31.4 | 31.4 | 21.2 | 12.0 | 0 | 0 | 0 | 8.1 | 16.2 |
| 22 | 64.3 | 43.8 | 43.8 | 62.2 | 31.4 | 21.2 | 12.0 | 0 | 0 | 0 | 8.1 | 16.2 |
| 23 | 64.3 | 43.8 | 43.8 | 96.1 | 31.4 | 16.2 | 12.0 | 0 | 0 | 0 | 8.1 | 16.2 |
| 24 | 64.3 | 43.8 | 37.4 | 64.3 | 26.1 | 16.2 | 12.0 | 0 | 0 | 0 | 12.0 | 16.2 |
| 25 | 64.3 | 43.8 | 37.4 | 43.8 | 111 | 16.2 | 8.1 | 0 | 0 | 0 | 12.0 | 16.2 |
| 26 | 64.3 | 43.8 | 37.4 | 50.1 | 149 | 16.2 | 8.1 | 0 | 0 | 0 | 12.0 | 16.2 |
| 27 | 57.2 | 43.8 | 43.8 | 248 | 113 | 16.2 | 8.1 | 0 | 0 | 0 | 12.0 | 16.2 |
| 28 | 57.2 | 43.8 | 43.8 | 79.5 | 79.5 | 16.2 | 4.9 | 0 | 0 | 0 | 12.0 | 16.2 |
| 29 | 57.2 | 43.8 | 43.8 | 57.2 | 64.3 | 71.7 | 4.9 | 0 | 0 | 0 | 12.0 | 12.0 |
| 30 | 57.2 | 43.8 | 43.8 | 57.2 | 64.3 | 4.9 | 0 | 0 | 0 | 0 | 12.0 | 12.0 |
| 31 | 57.2 | 43.8 | 37.4 | 50.1 | 50.1 | 4.9 | 0 | 0 | 0 | 0 | 16.2 | |
| Sum | 1,399.8 | | 1,446.4 | | 1,031.3 | | 0 | 0 | 0 | 502.8 | | |
| | 2,153.4 | | 1,439.3 | | 1,415.2 | | 608.1 | | 0 | 188.8 | | |

Current Year 1962

Period 1932-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|--------|-------------------|-----|------|---------------------|-----------|---------------------|-----------------|-----------|---------|---------|
| | High | | Low | Day | Day | | | Average | Maximum | Minimum |
| | High | Low | Day | Day | Acre-Feet | Average | Maximum | Minimum | | |
| Jan. | .49 | .39 | † 1 | 79.5 | † 26 | 57.2 | 69.5 | 4,270 | 3,329 | 14,880 |
| Feb. | .43 | .33 | † 1 | 64.3 | † 15 | 43.8 | 50.0 | 2,777 | 2,635 | 11,580 |
| Mar. | .36 | .30 | † 3 | 50.1 | † 24 | 37.4 | 46.4 | 2,856 | 2,375 | 9,900 |
| Apr. | .62 | .26 | 27 | 1,060 | † 5 | 31.4 | 48.2 | 2,870 | 2,983 | 21,160 |
| May | 2.03 | .23 | 25 | 692 | † 24 | 26.1 | 45.7 | 2,808 | 5,444 | 42,330 |
| June | .66 | .16 | 29 | 123 | † 23 | 16.2 | 34.4 | 2,047 | 7,939 | 92,320 |
| July | .43 | .07 | 1 | 64.3 | † 28 | 4.9 | 19.6 | 1,208 | 3,466 | 14,850 |
| Aug. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,989 | 23,580 |
| Sept. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21,083 | 253,960 |
| Oct. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,917 | 99,910 |
| Nov. | .13 | 0 | † 24 | 12.0 | 0 | 0 | 6.3 | 375 | 5,556 | 43,650 |
| Dec. | .20 | .13 | † 14 | 21.2 | † 1 | 12.0 | 16.2 | 999 | 4,050 | 19,460 |
| Yearly | 2.62 | 0 | | 1,060 | 0 | 27.9 | 20,210 | 73,766 | 414,310 | 2,309 |

† And other days ‡ Period 1932-1962

**RIO SAN RODRIGO NEAR MOUTH
AT EL MORAL, COAHUILA**

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located at El Moral, Coahuila, 15.5 miles northwest of Piedras Negras, Coahuila, and .6 river mile above the confluence with the Rio Grande. The stream enters the Rio Grande 736.2 river miles below the American Dam at El Paso, Texas. The zero of the gage has not been determined.

RECORDS: Based on 80 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January through December 1962.

REMARKS: This station, located 10.6 river miles downstream from the permanent station which has been in operation since 1922 (see previous page), was installed on a provisional basis. The flow of this spring-fed stream is modified by diversions above this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. A peak discharge of 72,000 second-feet, determined by slope-area computations, passed this station on June 17, 1961. Min. frequently no flow.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------|--------|--------|---------|--------|---------|--------|-------|-------|------|------|------|
| 1 | 53.0 | 27.9 | 14.5 | 14.5 | 31.8 | 36.7 | 12.7 | 6.4 | 0 | 0 | 0 | 0 |
| 2 | 53.0 | 27.9 | 14.5 | 14.5 | 27.9 | # 27.9 | 12.7 | # 6.4 | 0 | 0 | 0 | 0 |
| 3 | 53.0 | 27.9 | 14.5 | # 14.5 | 24.7 | 81.2 | 12.7 | # 6.4 | 0 | 0 | 0 | 0 |
| 4 | 47.7 | 27.9 | 14.5 | # 14.5 | 24.7 | # 31.8 | # 12.7 | 6.4 | 0 | 0 | 0 | 0 |
| 5 | 47.7 | 27.9 | 14.5 | 14.5 | # 21.2 | # 24.7 | 12.7 | 6.4 | 0 | 0 | 0 | 0 |
| 6 | 42.4 | 24.7 | # 14.5 | 14.5 | 21.2 | 21.2 | 11.3 | 6.4 | 0 | 0 | 0 | 0 |
| 7 | 42.4 | 27.9 | 14.5 | 14.5 | 21.2 | 17.7 | 11.3 | 6.4 | 0 | 0 | 0 | 0 |
| 8 | 42.4 | # 24.7 | 14.5 | 14.5 | 21.2 | 17.7 | 11.3 | 5.3 | 0 | 0 | 0 | 0 |
| 9 | 36.7 | 24.7 | # 14.5 | 14.5 | 17.7 | 14.5 | 11.3 | 5.3 | 0 | 0 | 0 | 0 |
| 10 | 36.7 | 24.7 | 14.5 | # 14.5 | 17.7 | 14.5 | # 11.3 | 5.3 | 0 | 0 | 0 | 0 |
| 11 | 36.7 | 21.2 | 14.5 | 14.5 | 17.7 | 14.5 | 11.3 | 5.3 | 0 | 0 | 0 | 0 |
| 12 | 36.7 | 21.2 | 14.5 | 14.5 | 17.7 | # 14.5 | 8.8 | 5.3 | 0 | 0 | 0 | 0 |
| 13 | 36.7 | # 21.2 | # 14.5 | -14.5 | 14.5 | 14.5 | 8.8 | 5.3 | 0 | 0 | 0 | 0 |
| 14 | 36.7 | 21.2 | 14.5 | 12.7 | 14.5 | 14.5 | 8.8 | 5.3 | 0 | 0 | 0 | 0 |
| 15 | 36.7 | 21.2 | 14.5 | 12.7 | # 14.5 | 12.7 | 8.8 | 5.3 | 0 | 0 | 0 | 0 |
| 16 | 31.8 | 21.2 | 14.5 | 12.7 | 14.5 | 12.7 | 8.8 | # 3.9 | 0 | 0 | 0 | 0 |
| 17 | 31.8 | 21.2 | 14.5 | # 12.7 | 14.5 | # 12.7 | # 3.9 | 3.9 | 0 | 0 | 0 | 0 |
| 18 | 31.8 | 21.2 | 14.5 | # 12.7 | 14.5 | # 12.7 | # 3.9 | 3.9 | 0 | 0 | 0 | 0 |
| 19 | 36.7 | 17.7 | 14.5 | 12.7 | 14.5 | 12.7 | 8.8 | 3.9 | 0 | 0 | 0 | 0 |
| 20 | 36.7 | 17.7 | # 14.5 | 12.7 | 12.7 | 11.3 | 8.8 | 2.5 | 0 | 0 | 0 | 0 |
| 21 | 36.7 | 17.7 | 14.5 | 12.7 | 12.7 | 11.3 | 8.8 | 2.5 | 0 | 0 | 0 | 0 |
| 22 | 36.7 | # 17.7 | # 14.5 | 12.7 | # 12.7 | 11.3 | 8.8 | 1.4 | 0 | 0 | 0 | 0 |
| 23 | # 31.8 | 17.7 | 14.5 | 11.3 | 12.7 | 11.3 | 8.8 | 1.4 | 0 | 0 | 0 | 0 |
| 24 | 31.8 | 14.5 | 14.5 | 11.3 | 12.7 | 11.3 | # 8.8 | 1.4 | 0 | 0 | 58.6 | 0 |
| 25 | 31.8 | 14.5 | 14.5 | 11.3 | 14.5 | 11.3 | 8.8 | 1.4 | 0 | 0 | 0 | 0 |
| 26 | 27.9 | 14.5 | 14.5 | # 11.3 | 1,290 | # 8.8 | 8.8 | 1.4 | 0 | 0 | 0 | 0 |
| 27 | 27.9 | # 14.5 | # 14.5 | 1,490 | 102 | 8.8 | 7.1 | 0 | 0 | 0 | 0 | 0 |
| 28 | 27.9 | 14.5 | 14.5 | 178 | # 81.2 | 319 | 7.1 | 0 | 0 | 0 | 0 | 0 |
| 29 | 27.9 | | | 14.5 | 81.2 | 156 | 36.7 | 7.1 | 0 | 0 | 0 | 0 |
| 30 | # 24.7 | | | 14.5 | 47.7 | 47.7 | 17.7 | 7.1 | 0 | 0 | 0 | 0 |
| 31 | 24.7 | | | 14.5 | 27.9 | 27.9 | 7.1 | 0 | 0 | 0 | 0 | 0 |
| Sum | 596.8 | | | 2,144.9 | | 868.2 | | 114.8 | 0 | 0 | 58.6 | |
| | 1,137.1 | | | 449.5 | | 2,149.0 | | 298.8 | | | | |

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | | Average Second-Feet | Total Acre-Feet | Period | | | | |
|---------------|-------------------|-----|-----|---------------------|------|------|---------------------|-----------------|---------|---------|---------|--|--|
| | High | | Low | High | | Low | | | Average | Maximum | Minimum | | |
| | High | Low | | Day | Day | | | | | | | | |
| Jan. | .69 | .49 | † 1 | 53.0 | † 28 | 24.7 | 36.7 | 2,255 | | | | | |
| Feb. | .52 | .39 | † 1 | 27.9 | † 24 | 14.5 | 21.3 | 1,183 | | | | | |
| Mar. | .39 | .39 | † 1 | 14.5 | † 1 | 14.5 | 14.5 | 890 | | | | | |
| Apr. | 5.91 | .33 | 27 | 4,060 | † 23 | 11.3 | 71.5 | 4,248 | | | | | |
| May | 5.58 | .33 | 26 | 3,670 | 25 | 11.3 | 69.3 | 4,262 | | | | | |
| June | 3.81 | .30 | 28 | 1,880 | † 26 | 8.8 | 28.9 | 1,722 | | | | | |
| July | .39 | .26 | † 1 | 14.5 | † 27 | 7.1 | 9.6 | 593 | | | | | |
| Aug. | .23 | .03 | † 1 | 6.4 | † 27 | 0 | 3.7 | 227 | | | | | |
| Sept. | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | | | | |
| Oct. | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | | | | |
| Nov. | 1.64 | 0 | 25 | 381 | † 1 | 0 | 2.0 | 116 | | | | | |
| Dec. | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | | | | |
| Yearly | 5.91 | 0 | | 4,060 | 0 | 21.4 | 15,496 | | | | | | |

† And other days ‡ Period 1961-1962 # Discharge measurement made on this day

**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 near Eagle Pass, Texas, at a point about 32.2 canal miles below the point of diversion, and about 746.7 river miles below 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 manometer readings of discharge in cubic feet per second 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 flow made under stable flow conditions by hydrographers of this Commission. There were 49 meter measurements made during the year. Records available: January 1949 through December 1962.

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, however, it has operated continuously except for 44 days in 1953 when shortage of water prevented operation and from June 30 to July 20, during the flood of 1954, and while the canal was being repaired.

Average Flow in Second-Feet

| | | | | |
|----------|------------|--------------|-----------|------------------------|
| Daily: | Max. 1,390 | May 27, 1951 | Min. 0 | Frequently 1953 & 1954 |
| Monthly: | Max. 1,230 | Feb. 1961 | Min. 14.1 | June 1953 |
| Yearly: | Max. 1,020 | 1950 & 1961 | Min. 443 | 1953 & 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------------|-------|---------------|-------|---------------|-------|---------------|-------|---------------|---------|---------------|---------|
| 1 | 975 | 972 | 798 | 820 | 909 | 624 | 787 | # 880 | 446 | # 1,060 | 1,040 | 1,020 |
| 2 | 969 | 944 | 803 | 799 | 826 | 701 | 837 | 871 | 449 | 1,060 | 1,020 | 1,050 |
| 3 | # 931 | 943 | 806 | 760 | 770 | 890 | 817 | 868 | 496 | 1,040 | 1,040 | 1,030 |
| 4 | 946 | 954 | 813 | 762 | 722 | 781 | # 874 | 837 | 742 | 1,030 | 1,030 | 1,010 |
| 5 | 923 | 945 | 808 | 877 | 662 | # 669 | 723 | 838 | # 747 | 1,040 | 1,000 | # 1,010 |
| 6 | 931 | # 934 | 790 | # 979 | 682 | 792 | 704 | 826 | 1,030 | 1,050 | # 968 | 1,010 |
| 7 | 952 | 911 | # 788 | 957 | 612 | 933 | 719 | # 801 | 1,030 | 1,060 | 960 | 1,040 |
| 8 | 961 | 901 | 764 | 942 | # 583 | 940 | 929 | 765 | 1,040 | 1,020 | 990 | 1,060 |
| 9 | 943 | 898 | 736 | 897 | 551 | 975 | 979 | 763 | 1,050 | # 996 | 976 | 1,070 |
| 10 | 979 | 911 | 743 | 847 | 537 | 962 | # 887 | 761 | 1,050 | 993 | 967 | 1,040 |
| 11 | 989 | 896 | 751 | 780 | 517 | 957 | 779 | 798 | 1,040 | 985 | 978 | # 1,030 |
| 12 | # 988 | 889 | 732 | 758 | 528 | # 875 | 686 | 778 | 1,090 | 977 | 921 | 1,020 |
| 13 | 999 | 864 | 739 | # 747 | 540 | 979 | 741 | 787 | 1,130 | 978 | 932 | 995 |
| 14 | 1,030 | # 875 | 762 | 725 | 504 | 878 | 809 | # 785 | # 1,100 | 1,010 | 939 | 1,020 |
| 15 | # 1,010 | 845 | 769 | 743 | 491 | 805 | 811 | 771 | 1,090 | 1,020 | 926 | 1,030 |
| 16 | 988 | 828 | # 792 | 714 | # 546 | 856 | 754 | 728 | 1,090 | # 1,010 | 916 | 1,030 |
| 17 | 931 | 872 | 800 | # 682 | 585 | 909 | 756 | 659 | 1,020 | 970 | 917 | # 1,020 |
| 18 | 920 | 853 | 819 | 629 | 512 | 948 | 776 | 618 | 979 | 1,040 | 930 | 1,020 |
| 19 | 951 | 871 | 847 | 599 | 555 | # 895 | 828 | 580 | 1,010 | 1,070 | 900 | 1,010 |
| 20 | 967 | 876 | 836 | 545 | 788 | # 861 | # 870 | 485 | 999 | 1,050 | # 916 | 1,030 |
| 21 | 987 | 884 | 810 | 533 | # 697 | 847 | 865 | 465 | # 996 | 1,060 | 948 | 1,030 |
| 22 | 1,000 | 880 | 798 | 561 | 711 | 809 | 879 | # 505 | 985 | 1,040 | 948 | 1,050 |
| 23 | 1,010 | # 862 | # 791 | 666 | 849 | 767 | 898 | 501 | 1,000 | # 1,030 | 965 | 1,070 |
| 24 | # 1,050 | 857 | 783 | # 752 | 831 | 759 | 879 | 500 | 994 | 981 | 973 | 1,060 |
| 25 | 1,000 | 859 | 804 | 747 | 773 | 837 | 879 | 544 | # 973 | 987 | 1,060 | 1,050 |
| 26 | 973 | 842 | 788 | 656 | 788 | # 794 | 895 | 544 | 918 | 1,010 | 1,020 | 1,050 |
| 27 | 980 | 819 | 758 | 891 | 723 | 773 | # 877 | 557 | 976 | 1,060 | 1,060 | 1,050 |
| 28 | 1,010 | # 819 | # 738 | 1,110 | 620 | 808 | # 867 | # 556 | 1,050 | 1,100 | 1,060 | # 1,070 |
| 29 | 1,000 | | | 731 | 957 | 635 | 927 | 891 | 548 | 1,100 | 1,060 | 1,070 |
| 30 | # 1,010 | | | 733 | # 939 | 593 | 871 | 844 | 531 | 1,110 | # 1,050 | 1,040 |
| 31 | 997 | | | 769 | | 564 | | 850 | 480 | | 1,050 | 1,070 |
| Sum | 24,804 | | 23,374 | | 25,422 | | 20,930 | | 31,887 | | 32,195 | |
| | 30,300 | | 24,199 | | 20,204 | | 25,690 | | 28,730 | | 29,380 | |

| Current Year 1962 | | | | | | | | | | Period 1949-1962 | | | | | |
|-------------------|-------------------|-----|-----------------------|--------------|---------------------|-----------------|------------|----------------|----------------|------------------|----------------|--|--|--|--|
| Month | Extreme Gage Feet | | @ Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | | | | | | |
| | High | Low | High | Low | | | Average | Maximum | Minimum | | | | | | |
| Jan. | | | 24 | 1,050 | 18 | 920 | 977 | 60,100 | 53,072 | 72,800 | 34,400 | | | | |
| Feb. | | | 1 | 972 | # 27 | 819 | 886 | 49,199 | 47,386 | 68,500 | 24,900 | | | | |
| Mar. | | | 19 | 847 | 29 | 731 | 781 | 47,999 | 45,364 | 65,400 | 18,900 | | | | |
| Apr. | | | 28 | 1,110 | 21 | 533 | 779 | 46,362 | 37,460 | 58,600 | 6,080 | | | | |
| May | | | 1 | 909 | 15 | 491 | 652 | 40,075 | 45,139 | 64,900 | 2,280 | | | | |
| June | | | 13 | 979 | 1 | 624 | 847 | 50,425 | 43,490 | 68,900 | 841 | | | | |
| July | | | 9 | 979 | 12 | 686 | 829 | 50,956 | 42,260 | 63,000 | 2,880 | | | | |
| Aug. | | | 1 | 880 | 21 | 465 | 675 | 41,515 | 48,815 | 69,000 | 22,600 | | | | |
| Sept. | | | 13 | 1,130 | 1 | 446 | 958 | 56,986 | 51,649 | 67,500 | 18,500 | | | | |
| Oct. | | | 28 | 1,100 | 17 | 970 | 1,030 | 63,248 | 53,204 | 69,000 | 23,000 | | | | |
| Nov. | | | # 25 | 1,060 | 19 | 900 | 979 | 58,275 | 51,470 | 67,400 | 27,300 | | | | |
| Dec. | | | 30 | 1,080 | 13 | 995 | 1,040 | 63,859 | 53,526 | 71,600 | 34,300 | | | | |
| Yearly | | | | 1,130 | | 446 | 869 | 628,999 | 572,835 | 740,000 | 320,701 | | | | |

† And other days @ 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: The main Maverick Canal divides into two branches at a point about 31.8 canal miles below 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. The other branch forms this Maverick Canal Extension which is used to transmit irrigation water. The water-stage recorder is located at a wooden pile bridge about 1 mile below the heading of this canal extension. Meter measurements are made from the bridge.

RECORDS: Based on 56 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1939 through December 1962.

REMARKS: Irrigation from this canal extension began in June 1938. In 1962, 24,471 acres of land north and south of Eagle Pass were irrigated. A total of 145,583 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. 549 second-feet on June 28, 1956. Min. occasionally no flow.

Average Flow in Second-Feet

| | | | | |
|----------|----------|---------------|------------|--------------|
| Daily: | Max. 522 | June 28, 1956 | Min. 0 | Occasionally |
| Monthly: | Max. 448 | June 1955 | Min. "18.7 | March 1939 |
| Yearly: | Max. 327 | 1962 | Min. 62.1 | 1939 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 262 | 262 | 365 | 336 | 204 | 351 | 348 | 410 | 339 | # 291 | 336 | 279 |
| 2 | 263 | 269 | 358 | 333 | 221 | 342 | # 349 | 429 | 343 | 319 | 326 | 280 |
| 3 | 272 | 273 | 358 | # 329 | 248 | 346 | 345 | 432 | 344 | 315 | 312 | 273 |
| 4 | 282 | 274 | 358 | 327 | 249 | 330 | 348 | 418 | 354 | 316 | 320 | # 276 |
| 5 | # 284 | 272 | 358 | 326 | 254 | # 316 | 343 | 421 | 355 | 310 | # 336 | 275 |
| 6 | 285 | # 272 | 357 | 314 | 256 | 323 | 345 | 421 | 343 | 303 | 331 | 268 |
| 7 | 285 | 276 | # 362 | 295 | 283 | 324 | 344 | # 412 | 326 | 303 | # 324 | 254 |
| 8 | 285 | 277 | 363 | 294 | # 310 | 325 | 357 | 424 | 326 | # 330 | 312 | 257 |
| 9 | # 284 | 289 | 362 | 297 | 314 | 328 | # 357 | 431 | 323 | 362 | 301 | 256 |
| 10 | 268 | 291 | 363 | 322 | 315 | 327 | 358 | 419 | 323 | 350 | 305 | 263 |
| 11 | 268 | 293 | 361 | 321 | 315 | 323 | 396 | 411 | 324 | 367 | 307 | 268 |
| 12 | 267 | 292 | 361 | 316 | 315 | 323 | 448 | 417 | # 315 | 380 | 321 | # 267 |
| 13 | 266 | 299 | 361 | # 311 | 314 | 340 | # 440 | 421 | 285 | 374 | 338 | 269 |
| 14 | 266 | # 300 | 361 | 307 | 320 | 375 | 424 | # 421 | 283 | 365 | # 329 | 270 |
| 15 | 261 | 328 | 360 | 312 | 331 | 389 | 448 | 401 | 285 | 350 | 317 | 268 |
| 16 | 264 | 348 | # 352 | 313 | # 326 | 396 | # 440 | 378 | 329 | # 352 | 316 | 265 |
| 17 | # 270 | 341 | 342 | 312 | 321 | 398 | # 440 | 376 | 338 | 352 | 317 | # 264 |
| 18 | 278 | 335 | 342 | 316 | 312 | 390 | 441 | 376 | 338 | 332 | 318 | 263 |
| 19 | 279 | 336 | 341 | 331 | 320 | # 387 | 441 | 373 | 339 | 286 | # 318 | 262 |
| 20 | 281 | # 334 | 340 | 327 | 349 | 385 | 442 | 368 | 339 | 294 | 312 | 242 |
| 21 | 269 | 338 | 338 | 301 | 349 | 392 | 445 | 370 | # 329 | 294 | 303 | 247 |
| 22 | 261 | 341 | 338 | 271 | # 352 | 391 | 442 | # 375 | 315 | # 299 | 304 | 250 |
| 23 | 271 | 353 | # 338 | 280 | 351 | 393 | 448 | 371 | 312 | 315 | 303 | 248 |
| 24 | 276 | 358 | 338 | # 302 | 356 | 398 | 448 | # 352 | 309 | 324 | 304 | 247 |
| 25 | # 282 | 364 | 342 | 285 | 360 | 400 | 443 | 341 | # 301 | 358 | 307 | 248 |
| 26 | 283 | 371 | 342 | 276 | 359 | # 398 | # 452 | 338 | 318 | 356 | # 308 | 250 |
| 27 | 276 | 370 | 339 | 245 | 359 | 398 | 436 | 339 | 319 | 329 | 289 | 242 |
| 28 | 271 | # 371 | 340 | 217 | 357 | 376 | 413 | 338 | 288 | 312 | 269 | # 234 |
| 29 | 267 | 340 | 340 | 212 | 344 | 356 | 421 | # 337 | 267 | 335 | 287 | 235 |
| 30 | 266 | # 341 | 208 | 354 | 351 | 412 | 337 | 267 | # 336 | 278 | 235 | |
| 31 | # 262 | 340 | | 355 | | 405 | 335 | | | 340 | | 236 |
| Sum | | | | | | | | | | | | |
| 8,827 | | | | | | | | | | | | |
| 8,454 | | | | | | | | | | | | |
| 8,936 | | | | | | | | | | | | |
| 9,773 | | | | | | | | | | | | |
| 10,871 | | | | | | | | | | | | |
| 12,619 | | | | | | | | | | | | |
| 11,992 | | | | | | | | | | | | |
| 9,576 | | | | | | | | | | | | |
| 9,348 | | | | | | | | | | | | |
| 10,249 | | | | | | | | | | | | |
| 7,991 | | | | | | | | | | | | |

Current Year 1962

| Month | Average Rainfall | | Extreme Second-Feet | | Average | Total | Acre-Feet | | | | |
|--------|------------------|------|---------------------|-----|---------|-------|-----------|---------|---------|--|--|
| | Inches ** | Day | High | Low | | | Average | Maximum | Minimum | | |
| | | | | | | | | | | | |
| Jan. | .89 | .05 | 8 | 307 | 24 | 250 | 273 | 16,769 | 11,850 | | |
| Feb. | .96 | .07 | 27 | 375 | 1 | 256 | 315 | 17,508 | 10,728 | | |
| Mar. | .65 | .19 | 1 | 371 | 19 | 288 | 350 | 21,543 | 13,344 | | |
| Apr. | 1.65 | 2.17 | 1 | 342 | 30 | 208 | 298 | 17,725 | 13,535 | | |
| May | 2.88 | .24 | 25 | 371 | 2 | 199 | 315 | 19,385 | 11,840 | | |
| June | 1.89 | 2.12 | 24 | 411 | 5 | 306 | 362 | 21,563 | 13,318 | | |
| July | 1.50 | .08 | 11 | 459 | 3 | 327 | 407 | 25,030 | 14,925 | | |
| Aug. | 2.09 | .89 | 13 | 464 | 31 | 314 | 387 | 23,786 | 13,618 | | |
| Sept. | 2.60 | 1.84 | 6 | 369 | 30 | 266 | 319 | 18,994 | 11,694 | | |
| Oct. | 2.07 | .30 | 11 | 393 | 1 | 266 | 331 | 20,329 | 12,728 | | |
| Nov. | .65 | .29 | 14 | 343 | 28 | 267 | 312 | 18,542 | 12,309 | | |
| Dec. | .67 | .44 | 4 | 293 | † 20 | 232 | 258 | 15,850 | 12,897 | | |
| Yearly | 18.50 | 8.68 | | 464 | | 199 | 327 | 237,024 | 152,786 | | |
| | | | | | | | | 237,024 | 44,950 | | |

† And other days 0 Mean daily f Discharge measurement made on this day " Estimated

** On United States side from Maverick Power Plant to Cuervo Creek

**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, Canon 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 into Las Moras Creek immediately below the canal siphon.

RECORDS: Based on the weir discharge table and a continuous record of head. All storm flow occurring at these stations is deducted from the records and is not shown below. Records available: April 1, 1959 through December 1962.

REMARKS: In addition to the flows listed below, water from the Maverick Canal is returned to the Rio Grande at the Maverick Power Plant (see page 44).

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|----------------|----------------|----------------|------|----------------|----------------|------|----------------|------|------|------|
| 1 | 124 | 132 | 122 | 113 | 84.8 | 81.8 | 119 | 106 | 84.9 | 99.1 | 103 | 124 |
| 2 | 135 | 138 | 120 | 103 | 93.1 | 81.5 | 117 | 122 | 89.2 | 106 | 106 | 116 |
| 3 | 143 | 148 | 125 | 115 | 94.1 | 79.7 | 112 | 124 | 87.2 | 105 | 92.8 | 121 |
| 4 | 138 | 143 | 122 | 124 | 97.8 | 70.0 | 113 | 124 | 87.7 | 112 | 100 | 126 |
| 5 | 125 | 144 | 119 | 129 | 101 | 66.2 | 111 | 111 | 87.7 | 109 | 101 | 127 |
| 6 | 125 | 140 | 130 | 122 | 112 | 65.8 | 98.0 | 108 | 91.9 | 104 | 114 | 120 |
| 7 | 123 | 134 | 122 | 128 | 111 | 74.5 | 104 | 122 | 93.3 | 103 | 101 | 118 |
| 8 | 126 | 143 | 125 | 124 | 112 | 80.5 | 115 | 132 | 103 | 111 | 106 | 113 |
| 9 | 128 | 138 | 134 | 123 | 106 | 78.4 | 113 | 111 | 117 | 114 | 111 | 101 |
| 10 | 117 | 128 | 135 | 124 | 110 | 80.0 | 104 | 111 | 103 | 121 | 106 | 101 |
| 11 | 114 | 131 | 127 | 143 | 102 | 89.8 | 105 | 98.6 | 103 | 128 | 104 | 111 |
| 12 | 116 | 120 | 123 | 125 | 106 | 83.2 | 107 | 94.9 | 104 | 124 | 109 | 113 |
| 13 | 122 | 117 | 128 | 124 | 108 | 93.6 | 106 | 89.9 | 105 | 116 | 112 | 119 |
| 14 | 128 | 120 | 148 | 132 | 108 | 95.0 | 116 | 107 | 101 | 108 | 105 | 118 |
| 15 | 116 | 120 | 141 | 122 | 110 | 103 | 130 | 102 | 99.9 | 100 | 106 | 124 |
| 16 | 118 | 117 | 143 | 121 | 109 | 107 | 116 | 96.5 | 119 | 102 | 130 | 129 |
| 17 | 129 | 126 | 134 | 116 | 105 | 110 | 109 | 101 | 116 | 124 | 134 | 122 |
| 18 | 144 | 136 | 143 | 124 | 107 | 102 | 107 | 93.5 | 113 | 118 | 124 | 118 |
| 19 | 140 | 131 | 144 | 131 | 112 | 105 | 107 | 87.1 | 122 | 114 | 136 | 113 |
| 20 | 133 | 133 | 123 | 131 | 115 | 93.3 | 107 | 79.1 | 120 | 113 | 135 | 120 |
| 21 | 138 | 132 | 113 | 137 | 109 | 87.8 | 111 | 93.2 | 126 | 97.0 | 125 | 107 |
| 22 | 142 | 131 | 119 | 133 | 113 | 75.1 | 114 | 94.8 | 117 | 97.0 | 124 | 108 |
| 23 | 138 | 137 | 110 | 129 | 111 | 102 | 112 | 96.9 | 104 | 105 | 128 | 108 |
| 24 | 126 | 128 | 112 | 114 | 120 | 113 | 128 | 95.2 | 101 | 107 | 125 | 100 |
| 25 | 125 | 145 | 99.3 | 119 | 123 | 101 | 136 | 95.7 | 102 | 114 | 128 | 108 |
| 26 | 140 | 141 | 110 | 119 | 116 | 109 | 118 | 93.0 | 98.5 | 114 | 122 | 108 |
| 27 | 133 | 129 | 130 | 126 | 95.9 | 111 | 120 | 91.5 | 109 | 105 | 113 | 103 |
| 28 | 126 | 128 | 126 | 94.9 | 86.7 | 121 | 128 | 99.6 | 104 | 90.0 | 116 | 96.4 |
| 29 | 122 | 136 | 89.2 | 80.1 | 93.7 | 136 | 95.3 | 108 | 97.7 | 126 | 100 | |
| 30 | 128 | 138 | 88.4 | 77.5 | 111 | 110 | 93.3 | 92.3 | 94.8 | 125 | 104 | |
| 31 | 129 | 128 | | | 78.3 | 117 | 87.7 | | 96.2 | | | 100 |
| Sum | 3,710 | 3,623.5 | 3,214.3 | 2,764.9 | | 3,156.8 | 3,348.8 | | 3,496.4 | | | |
| | 3,991 | 3,929.3 | 3,546 | | | 3,109.6 | 3,467.8 | | | | | |

Current Year 1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|-----|---------------------|-----|---------------------|-----------------|-----------|---------|---------|
| | High | Low | High | Low | | | Average | Maximum | Minimum |
| | High | Low | Day | Day | Average | | Maximum | Minimum | |
| Jan. | | | 18 | 144 | 11 | 114 | 129 | 7,916 | 6,785 |
| | | | 3 | 148 | † 13 | 117 | 132 | 7,359 | 5,933 |
| Feb. | | | 14 | 148 | 25 | 99.3 | 127 | 7,794 | 7,359 |
| Mar. | | | 11 | 143 | 30 | 88.4 | 121 | 7,187 | 7,101 |
| Apr. | | | 25 | 123 | 30 | 77.5 | 104 | 6,376 | 7,344 |
| May | | | 28 | 121 | 6 | 65.8 | 92.2 | 5,484 | 6,831 |
| June | | | † 26 | 136 | 6 | 98.0 | 114 | 7,033 | 7,580 |
| July | | | 8 | 132 | 20 | 79.1 | 102 | 6,262 | 8,300 |
| Aug. | | | 21 | 126 | 1 | 84.9 | 104 | 7,238 | 7,210 |
| Sept. | | | 11 | 128 | 28 | 90.0 | 108 | 6,642 | 8,210 |
| Oct. | | | 19 | 136 | 3 | 92.8 | 116 | 7,330 | 6,262 |
| Nov. | | | 16 | 129 | 28 | 96.4 | 113 | 6,878 | 6,642 |
| Dec. | | | | | | | 6,935 | 7,264 | 6,376 |
| Yearly | | | | 148 | | 65.8 | 113 | 82,034 | 84,043 |
| | | | | | | | | 84,140 | 80,730 |

† And other days g Mean daily

RIO GRANDE AT EAGLE PASS, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car and winch, located .5 mile above the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila and 756.4 river miles below 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 239 meter measurements during the year, 188 by the Mexican Section and 51 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 to March 1914; August 1914 to 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 January 1924 through December 1962.

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

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was **964,100 second-feet, which occurred 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. The lowest recorded flow was 24.4 second-feet, which occurred June 22, 1953, with a gage height of .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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|---------|---------|
| 1 | 1,700 | 1,590 | 1,200 | 989 | 1,310 | 1,110 | 1,130 | 2,030 | 653 | # 5,120 | 2,170 | 1,620 |
| 2 | 1,700 | 1,590 | # 1,200 | 989 | 1,190 | 1,110 | 1,170 | 2,260 | 653 | # 3,810 | 2,080 | 1,580 |
| 3 | # 1,700 | 1,700 | # 1,170 | 946 | 1,140 | 1,180 | # 1,210 | 1,690 | # 653 | # 3,480 | 2,010 | # 1,620 |
| 4 | 1,700 | 1,590 | 1,170 | # 946 | 1,100 | 1,410 | 1,250 | 1,560 | 759 | 2,670 | 1,960 | 1,670 |
| 5 | 1,640 | 1,590 | # 1,170 | 989 | 978 | 1,040 | 1,130 | 1,400 | # 953 | # 2,720 | 1,920 | # 1,580 |
| 6 | 1,640 | 1,590 | # 1,170 | 2,560 | 978 | # 1,000 | 904 | 1,440 | # 6,750 | 2,670 | # 1,840 | 1,540 |
| 7 | 1,640 | 1,590 | # 1,120 | 1,920 | 897 | 1,330 | 862 | 1,320 | # 4,870 | 2,470 | # 1,840 | 1,670 |
| 8 | # 1,700 | 1,590 | 1,120 | 1,360 | 812 | # 1,330 | 1,210 | # 1,210 | 3,670 | # 2,140 | 1,840 | 1,840 |
| 9 | 1,800 | 1,590 | # 1,120 | # 1,170 | # 780 | # 1,820 | # 2,060 | # 1,060 | 6,600 | # 2,420 | 1,780 | 1,890 |
| 10 | 1,800 | 1,700 | 1,120 | 1,070 | 752 | 2,250 | # 1,590 | 1,030 | # 6,990 | 3,410 | 1,780 | # 1,780 |
| 11 | 1,750 | 1,640 | 1,120 | # 1,030 | # 724 | 2,020 | # 1,330 | 1,030 | # 10,400 | 2,880 | # 1,840 | # 1,670 |
| 12 | 1,750 | # 1,590 | 1,120 | 989 | 724 | # 1,370 | 992 | 1,030 | # 5,650 | 3,810 | # 1,780 | 1,580 |
| 13 | 1,750 | # 1,490 | 1,070 | 946 | 724 | # 1,900 | 904 | 992 | 4,100 | 2,770 | 1,700 | 1,540 |
| 14 | 1,850 | # 1,490 | # 1,120 | 915 | 724 | 1,690 | 1,250 | 1,030 | # 2,980 | 2,280 | 1,640 | 1,580 |
| 15 | # 1,750 | 1,490 | # 1,120 | 915 | 699 | 1,560 | 1,290 | 957 | 2,490 | # 2,170 | 1,610 | 1,670 |
| 16 | 1,700 | # 1,400 | 1,240 | 915 | # 724 | # 2,240 | 1,250 | 922 | 2,240 | 2,140 | 1,700 | 1,670 |
| 17 | # 1,640 | 1,400 | # 1,310 | 848 | 780 | 3,600 | # 1,080 | 851 | # 2,100 | # 1,910 | 1,750 | # 1,670 |
| 18 | 1,700 | 1,400 | 1,310 | # 780 | 780 | # 2,340 | # 1,080 | 819 | 1,920 | # 12,360 | 1,750 | # 1,620 |
| 19 | # 1,700 | 1,400 | # 1,310 | 780 | 812 | 1,730 | 1,290 | 752 | # 1,820 | 11,900 | # 1,700 | 1,580 |
| 20 | 1,700 | # 1,360 | 1,280 | 724 | 1,190 | # 1,410 | # 1,650 | 650 | 1,850 | 9,040 | # 1,750 | 1,680 |
| 21 | 1,750 | # 1,310 | # 1,170 | 724 | # 1,060 | 1,220 | 5,860 | # 618 | 1,820 | 13,800 | 1,640 | 1,540 |
| 22 | # 1,800 | 1,310 | 1,170 | 780 | 939 | 1,330 | 4,700 | # 685 | # 7,110 | # 4,520 | 1,610 | 1,620 |
| 23 | 1,800 | 1,310 | 1,120 | 879 | # 1,600 | # 1,140 | 2,820 | 685 | 1,680 | 4,380 | 1,610 | 1,780 |
| 24 | 1,800 | 1,310 | # 1,070 | 915 | 2,020 | 1,000 | 1,810 | 650 | 1,680 | # 3,960 | 1,640 | # 1,780 |
| 25 | # 1,640 | 1,310 | 1,030 | # 989 | # 1,560 | # 1,220 | # 2,220 | 720 | 1,570 | 3,160 | 4,980 | # 1,670 |
| 26 | # 1,640 | # 1,310 | 1,030 | 879 | 2,770 | 1,330 | 2,060 | 784 | # 1,480 | 2,830 | # 2,080 | 1,620 |
| 27 | 1,590 | # 1,240 | 1,030 | # 5,760 | 1,270 | # 1,220 | 1,690 | # 685 | 1,680 | 2,670 | # 1,890 | 1,620 |
| 28 | 1,590 | # 1,240 | # 922 | 3,110 | # 978 | 1,780 | 1,690 | # 720 | 1,820 | 2,670 | 1,840 | 1,580 |
| 29 | 1,590 | # 922 | # 1,660 | # 1,230 | 1,630 | 2,520 | # 720 | 2,810 | # 2,520 | 1,750 | 1,580 | 1,580 |
| 30 | # 1,700 | # 982 | 1,360 | # 1,100 | 812 | 1,450 | # 1,810 | 685 | 3,200 | 2,610 | 1,640 | # 1,540 |
| 31 | # 1,700 | # 982 | 1,250 | 5,830 | # 11 | 643 | 1,070 | 650 | 2,420 | 2,420 | 2,420 | # 1,540 |
| Sum | | 41,120 | 38,837 | | 46,760 | | | 31,635 | | 127,550 | | 50,920 |
| | 52,910 | 34,988 | 33,157 | | 53,582 | | | 87,551 | | 57,120 | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Period 1948-1962 | | | |
|--------|-------------------|------|-----|---------------------|--------|---------------------|-----------------|------------------|-----------|-----------|--|
| | High | | Low | Day | High | | | Average | Maximum | Minimum | |
| | High | Low | | Day | High | Low | | | | | |
| Jan. | 2.33 | 2.07 | 14 | | 1,930 | 27 | 1,540 | 1,710 | 104,725 | 199,100 | |
| Feb. | 2.20 | 1.80 | 3 | | 1,750 | 28 | 1,200 | 1,470 | 81,589 | 398,200 | |
| Mar. | 1.97 | 1.57 | 19 | | 1,400 | 29 | 876 | 1,130 | 69,366 | 211,100 | |
| Apr. | 6.20 | 1.31 | 27 | | 10,300 | 20 | 675 | 1,290 | 77,022 | 414,600 | |
| May | 4.40 | 1.28 | 26 | | 5,830 | 11 | 643 | 1,070 | 65,794 | 188,565 | |
| June | 3.84 | 1.51 | 16 | | 4,480 | 5 | 932 | 1,560 | 92,810 | 1,108,000 | |
| July | 4.92 | 1.48 | 21 | | 7,060 | 7 | 823 | 1,730 | 106,336 | 209,811 | |
| Aug. | 2.59 | 1.25 | 1 | | 2,320 | 20 | 618 | 1,020 | 417,177 | 2,794,000 | |
| Sept. | 7.19 | 1.21 | 11 | | 13,800 | 2 | 565 | 2,920 | 173,712 | 2,670 | |
| Oct. | 9.48 | 2.13 | 21 | | 21,000 | 17 | 1,660 | 4,110 | 253,144 | 2,768,000 | |
| Nov. | 6.10 | 2.00 | 25 | | 10,100 | 22 | 1,500 | 1,900 | 113,263 | 31,560 | |
| Dec. | 2.33 | 1.97 | 9 | | 2,000 | 13 | 1,470 | 1,640 | 100,963 | 451,200 | |
| Yearly | 9.48 | 1.21 | | | 21,000 | | 565 | 1,800 | 1,301,492 | 4,518,490 | |
| | | | | | | | | | | 631,520 | |

† And other days. ‡ Period 1924-1962. ** Determined by slope-area calculations

‡ Discharge measurement made on this day

RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Water-stage recorder and reinforced concrete weir for measuring flows up to 45.9 second-feet, located immediately below the highway bridge over Río Escondido on the outskirts of Villa de Fuente, 3.1 miles southwest of Piedras Negras, Coahuila, and 3.7 miles above the confluence with the Rio Grande. The cable and cable car are located 1.2 miles upstream at the previous station site. This stream enters the Rio Grande 760.0 river miles below 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 52 meter measurements during the year, the weir discharge table, and a continuous record of gage heights. Computations by shifting channel methods for flows greater than 45.9 second-feet. Records available: 1922 through December 1962. Records from 1922 to 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.

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. 7,700 | May 27, 1957 | Min. 0 | Several days 1956, 1957, & 1958 |
| Monthly: | Max. 647 | Oct. 1932 | Min. 0.6 | Aug. & Sept. 1957 |
| Yearly: | Max. 115 | 1958 | Min. 2.4 | 1956 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|--------------|--------|--------|--------------|--------------|--------------|--------|--------------|-------|-------------|------|-------------|-------|
| 1 | 21.9 | 21.9 | 19.1 | 9.9 | 16.6 | 12.0 | 33.5 | # 1.4 | 4.2 | 6.0 | 2.8 | 2.1 |
| 2 | 21.9 | # 21.9 | 19.1 | 9.9 | 16.6 | 7.8 | 7.8 | 1.4 | 4.2 | 4.2 | 2.8 | 2.1 |
| 3 | # 21.9 | 21.9 | 19.1 | 9.9 | # 16.6 | # 16.6 | 6.0 | 4.2 | # 4.2 | 4.2 | 2.8 | # 2.8 |
| 4 | 21.9 | 21.9 | 16.6 | 9.9 | 19.1 | 16.6 | 4.2 | 4.2 | 2.8 | 4.2 | 1.4 | 2.8 |
| 5 | 19.1 | 19.1 | 16.6 | 9.9 | 19.1 | 7.8 | 4.2 | 2.8 | 1.4 | 4.2 | 1.4 | # 2.1 |
| 6 | 19.1 | 19.1 | 14.1 | 9.9 | 19.1 | 6.0 | 4.2 | 2.8 | 2.8 | 2.8 | 2.1 | 1.4 |
| 7 | 21.9 | # 19.1 | 9.9 | # 12.0 | 16.6 | 6.0 | 4.2 | 2.8 | 1.4 | 1.4 | 2.1 | 1.4 |
| 8 | 21.9 | 19.1 | 9.9 | 12.0 | 12.0 | # 6.0 | 4.2 | 2.8 | 1.4 | 1.4 | 2.1 | 1.4 |
| 9 | 19.1 | 19.1 | 7.8 | 9.9 | # 7.8 | 6.0 | 4.2 | # 2.8 | 1.4 | 1.4 | 2.1 | 1.4 |
| 10 | 19.1 | 19.1 | # 7.8 | 7.8 | 6.0 | 81.2 | 4.2 | 2.8 | 4.2 | .7 | 2.1 | 1.4 |
| 11 | 19.1 | 19.1 | 7.8 | 7.8 | 4.2 | 68.5 | 2.8 | 2.8 | 24.7 | 1.4 | 2.1 | 2.8 |
| 12 | 19.1 | 19.1 | 7.8 | 9.9 | 4.2 | 16.6 | 2.8 | 4.2 | 4.2 | 1.4 | 2.8 | 2.8 |
| 13 | 19.1 | 19.1 | 9.9 | 12.0 | 4.2 | 7.8 | 2.8 | 4.2 | 2.8 | 1.4 | 2.8 | 2.8 |
| 14 | 21.9 | # 21.9 | 12.0 | 14.1 | 7.8 | 6.0 | 1.4 | 1.4 | 1.4 | 2.8 | 2.1 | 2.1 |
| 15 | 21.9 | 21.9 | 14.1 | 14.1 | 6.0 | 4.2 | 1.4 | .7 | .7 | 4.2 | 2.8 | 2.8 |
| 16 | 21.9 | 19.1 | # 12.0 | 16.6 | 6.0 | 4.2 | 1.4 | .7 | .7 | 4.2 | 2.8 | 2.8 |
| 17 | 21.9 | 21.9 | 12.0 | # 16.6 | 4.2 | # 6.0 | 1.4 | .7 | .7 | 4.2 | 2.8 | 2.8 |
| 18 | 21.9 | 19.1 | 12.0 | 14.1 | 7.8 | 4.2 | 1.4 | .7 | .7 | 4.2 | 2.8 | 2.8 |
| 19 | 21.9 | 16.6 | 12.0 | 14.1 | 4.2 | # 4.2 | 1.4 | .7 | 1.4 | 4.2 | # 2.8 | 2.8 |
| 20 | 21.9 | 16.6 | 12.0 | 12.0 | 4.2 | 4.2 | 1.4 | .7 | 4.2 | 4.2 | 2.8 | 2.8 |
| 21 | 21.9 | # 16.6 | 12.0 | 12.0 | 4.2 | 4.2 | 1.4 | .7 | 4.2 | 4.2 | 3.5 | 2.8 |
| 22 | 21.9 | # 16.6 | 12.0 | 117 | 4.2 | # 4.2 | 1.4 | 4.2 | 4.2 | 2.8 | 4.2 | 2.1 |
| 23 | 21.9 | 14.1 | 12.0 | 117 | 4.2 | 4.2 | 1.4 | 1.4 | 4.2 | 2.8 | 4.2 | 2.1 |
| 24 | 21.9 | 14.1 | # 12.0 | 27.5 | 4.2 | 4.2 | 1.4 | 4.2 | 4.2 | 2.8 | 4.2 | 2.1 |
| 25 | # 21.9 | 14.1 | 12.0 | 24.7 | 427 | 4.2 | 1.4 | 4.2 | 4.2 | 2.8 | 3.5 | 2.1 |
| 26 | 21.9 | 12.0 | 12.0 | 21.9 | 74.2 | 4.2 | 1.4 | 6.0 | 4.2 | 2.8 | 2.1 | 2.1 |
| 27 | 19.1 | 12.0 | 12.0 | 63.9 | # 24.7 | 4.2 | 1.4 | # 4.2 | 4.2 | 2.8 | 2.1 | 2.8 |
| 28 | 16.6 | 12.0 | 12.0 | 36.7 | 21.9 | 41.7 | 1.4 | 4.2 | 4.2 | 2.8 | 2.1 | 4.2 |
| 29 | 16.6 | 12.0 | 12.0 | 24.7 | 19.1 | 2.8 | 1.4 | 4.2 | 4.2 | 2.8 | 2.1 | 7.8 |
| 30 | 24.7 | 12.0 | 21.9 | 16.6 | 72.0 | 1.4 | 4.2 | 4.2 | 4.2 | 2.8 | # 2.1 | 7.8 |
| 31 | 21.9 | # 9.9 | 12.0 | 12.0 | 12.0 | 1.4 | 4.2 | 4.2 | 4.2 | 2.8 | 10.9 | |
| Sum | | | 508.1 | 699.7 | 437.8 | | 83.7 | | 94.9 | | 93.0 | |
| 648.7 | | | 381.5 | 814.6 | 110.3 | | 112.9 | | 79.1 | | | |

Current Year 1962

Period 1933-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|------------|------|---------------------|------|---------------------|-----------------|--------------|---------------|----------------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum |
| | High | Low | Day | Day | Low | | | | | |
| Jan. | .49 | .33 | 30 | 30.4 | # 27 | 16.6 | 20.9 | 1,286 | 2,199 | 15,990 |
| Feb. | .43 | .26 | # 13 | 24.7 | # 26 | 12.0 | 18.1 | 1,007 | 1,523 | 9,990 |
| Mar. | .36 | .20 | # 1 | 19.1 | 9 | 7.8 | 12.3 | 756 | 1,235 | 6,910 |
| Apr. | 4.00 | .16 | 22 | 1,380 | 12 | 6.0 | 23.3 | 1,387 | 2,144 | 21,950 |
| May | 3.61 | .13 | 25 | 1,130 | # 11 | 4.2 | 26.3 | 1,617 | 4,170 | 25,470 |
| June | 2.69 | .10 | 28 | 653 | # 29 | 2.8 | 14.6 | 869 | 2,729 | 19,730 |
| July | .82 | .03 | 1 | 73.8 | # 16 | .7 | 3.6 | 220 | 1,916 | 9,740 |
| Aug. | .33 | .03 | 3 | 16.6 | # 15 | .7 | 2.7 | 167 | 1,933 | 20,830 |
| Sept. | .95 | .03 | 11 | 95.3 | # 10 | .7 | 3.8 | 225 | 2,987 | 21,590 |
| Oct. | .16 | .03 | 1 | 6.0 | # 9 | .7 | 3.1 | 190 | 2,342 | 20,530 |
| Nov. | .13 | .07 | 22 | 4.2 | 4 | 1.4 | 2.6 | 158 | 1,803 | 25,730 |
| Dec. | .30 | .07 | 30 | 14.1 | # 6 | 1.4 | 3.0 | 186 | 1,590 | 3,580 |
| Yearly | 4.00 | .03 | | 1,380 | | .7 | 11.1 | 8,068 | 26,571 | 83,164 |
| | | | | | | | | | | 1,755.3 |

† And other days ‡ Period October 1932-1962 # 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 December 1962.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|------|-------|-------|-------|------|-------|------|-------|------|-------|------|
| 1 | 171 | 173 | 193 | 197 | 136 | 177 | 266 | 236 | 155 | 205 | 204 | 184 |
| 2 | 172 | 162 | 183 | 173 | 138 | 205 | 253 | 209 | 172 | 170 | 215 | 203 |
| 3 | 168 | 157 | 197 | 193 | 137 | 209 | 202 | 186 | 172 | 174 | 212 | 200 |
| 4 | 152 | 182 | 212 | 200 | 145 | 206 | 188 | 214 | 166 | 196 | 228 | 224 |
| 5 | 153 | 168 | 180 | 188 | 164 | 200 | 178 | 249 | 162 | 206 | 213 | 206 |
| 6 | 175 | 161 | 190 | 200 | 165 | 172 | 168 | 220 | 175 | 216 | 213 | 193 |
| 7 | 201 | 163 | 179 | 218 | 148 | 156 | 148 | 178 | 188 | 215 | 204 | 196 |
| 8 | 194 | 163 | 193 | 208 | 140 | 150 | 174 | 199 | 192 | 175 | 188 | 190 |
| 9 | 194 | 163 | 187 | 171 | 136 | 142 | 170 | 168 | 213 | 164 | 190 | 188 |
| 10 | 195 | 175 | 192 | 154 | 115 | 165 | 145 | 169 | 222 | 169 | 204 | 169 |
| 11 | 208 | 187 | 195 | 137 | 129 | 151 | 145 | 191 | 226 | 175 | 220 | 170 |
| 12 | 196 | 174 | 192 | 134 | 139 | 134 | 139 | 224 | 241 | 172 | 197 | 164 |
| 13 | 191 | 155 | 187 | 135 | 178 | 128 | 154 | 236 | 275 | 189 | 183 | 174 |
| 14 | 179 | 138 | 201 | 142 | 166 | 109 | 184 | 229 | 235 | 191 | 190 | 181 |
| 15 | 173 | 140 | 195 | 137 | 162 | 112 | 190 | 220 | 188 | 181 | 203 | 153 |
| 16 | 167 | 146 | 187 | 134 | 147 | 136 | 195 | 230 | 185 | 166 | 187 | 188 |
| 17 | 158 | 176 | 200 | 150 | 150 | 154 | 201 | 239 | 199 | 169 | 198 | 169 |
| 18 | 153 | 196 | 228 | 135 | 154 | 170 | 203 | 249 | 170 | 162 | 171 | 171 |
| 19 | 165 | 171 | 200 | 134 | 164 | 193 | 188 | 242 | 147 | 164 | 183 | 173 |
| 20 | 176 | 176 | 198 | 131 | 166 | 178 | 179 | 216 | 164 | 167 | 211 | 185 |
| 21 | 193 | 168 | 175 | 144 | 148 | 166 | 213 | 208 | 165 | 166 | 208 | 182 |
| 22 | 182 | 154 | 173 | 166 | 159 | 167 | 253 | 195 | 169 | 154 | 188 | 179 |
| 23 | 205 | 169 | 172 | 203 | 161 | 170 | 266 | 201 | 180 | 147 | 161 | 176 |
| 24 | 183 | 167 | 182 | 205 | 160 | 182 | 240 | 198 | 161 | 139 | 182 | 203 |
| 25 | 165 | 183 | 204 | 213 | 166 | 177 | 224 | 214 | 168 | 155 | 200 | 213 |
| 26 | 173 | 181 | 190 | 228 | 175 | 181 | 180 | 187 | 134 | 154 | 195 | 212 |
| 27 | 182 | 170 | 187 | 224 | 190 | 192 | 192 | 201 | 177 | 181 | 203 | 215 |
| 28 | 202 | 186 | 166 | 217 | 166 | 240 | 263 | 221 | 241 | 225 | 191 | 219 |
| 29 | 187 | | 182 | 194 | 161 | 254 | 256 | 182 | 232 | 199 | 176 | 216 |
| 30 | 196 | | 175 | 121 | 162 | 263 | 240 | 148 | 246 | 191 | 173 | 213 |
| 31 | 180 | | 188 | | 166 | | 235 | 158 | | 204 | | 202 |
| Sum | 4,704 | | 5,186 | | 5,239 | | 6,417 | | 5,541 | | 5,911 | |
| | 5,589 | | 5,883 | | 4,793 | | 6,232 | | 5,720 | | 5,891 | |

Current Year 1962 Period April 1959-1962

| Month | Extreme Gage Feet | | Ø Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | | | |
|---------------|-------------------|-----|-----------------------|-----|---------------------|-------|------------|---------|---------|---------|---------|
| | High | Low | Day | Day | | | Acres-Foot | Average | Maximum | | |
| | | | | Day | | | | | | | |
| Jan. | | | 11 | 208 | 4 | 152 | 180 | 11,086 | 9,622 | 11,086 | 7,480 |
| Feb. | | | 18 | 196 | 14 | 138 | 168 | 9,330 | 8,087 | 9,330 | 6,000 |
| Mar. | | | 18 | 228 | 28 | 166 | 190 | 11,669 | 10,323 | 11,669 | 9,300 |
| Apr. | | | 26 | 228 | 30 | 121 | 173 | 10,286 | 10,492 | 11,400 | 9,380 |
| May | | | 27 | 190 | 10 | 115 | 155 | 9,507 | 9,547 | 9,840 | 9,380 |
| June | | | 30 | 263 | 14 | 109 | 175 | 10,392 | 9,698 | 10,392 | 8,900 |
| July | † | 1 | 266 | 12 | 139 | 201 | 12,361 | 11,226 | 12,361 | 9,940 | |
| Aug. | † | 5 | 249 | 30 | 148 | 207 | 12,728 | 10,157 | 12,728 | 8,390 | |
| Sept. | | | 13 | 275 | 26 | 134 | 191 | 11,346 | 9,842 | 11,346 | 8,910 |
| Oct. | | | 28 | 225 | 24 | 139 | 179 | 10,991 | 9,762 | 10,991 | 8,460 |
| Nov. | | | 4 | 228 | 23 | 161 | 196 | 11,685 | 9,314 | 11,685 | 7,650 |
| Dec. | | | 4 | 224 | 15 | 153 | 191 | 11,724 | 10,138 | 11,724 | 8,040 |
| Yearly | | | | 275 | | 109 | 184 | 133,105 | 118,208 | 133,105 | 112,110 |

† And other days Ø Mean daily

RIO GRANDE AT SAN ANTONIO CROSSING NEAR VILLA GUERRERO, COAHUILA

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, located on high ground about 1,000 feet from the river at San Antonio Crossing, .5 mile below Cuervo Creek which marks the lower end of the Maverick Irrigation District, 35.5 river miles below Eagle Pass, Texas, and Piedras Negras, Coahuila, 5 miles northeast of Villa Guerrero, Coahuila, and 792.4 river miles below the American Dam at El Paso, Texas. The zero of the gage is 581.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 33 meter measurements during the year, 25 by wading and 8 by boat, and a continuous record of gage heights. Computations for discharges up to about 15,000 second-feet are based on a relatively stable rating curve defined by meter measurements. Computations for higher discharges are based on an extension of the curve. Records available: March, April, May, October, November, and December 1952, with some days missing; January 1 through August 20, 1953; September 23, 1953 through June 14, 1954; and May 27, 1955 through December 1962 with some days missing prior to September 1955.

REMARKS: 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.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|--------|----------|---------|---------|
| 1 | 1,910 | 1,890 | 1,440 | 1,220 | 1,530 | 1,100 | 1,680 | 2,130 | 754 | 5,110 | 2,580 | 1,790 |
| 2 | 1,920 | 1,830 | 1,430 | 1,220 | 1,540 | 1,400 | 1,360 | 2,420 | 754 | 4,210 | 2,390 | 1,760 |
| 3 | 1,920 | 1,760 | 1,420 | 1,170 | 1,400 | 1,330 | 1,360 | 2,010 | 770 | 4,250 | 2,300 | 1,760 |
| 4 | # 1,890 | 1,790 | 1,370 | 1,160 | 1,370 | 1,620 | 1,310 | 1,820 | 788 | 3,370 | 2,220 | 1,820 |
| 5 | 1,860 | 1,780 | 1,370 | # 1,160 | 1,300 | 1,500 | # 1,420 | 1,710 | 1,050 | 3,020 | 2,210 | 1,780 |
| 6 | 1,800 | 1,750 | 1,360 | 1,710 | 1,240 | 1,240 | 1,160 | 1,640 | 4,870 | 3,140 | 2,190 | # 1,720 |
| 7 | 1,850 | 1,750 | 1,370 | 2,890 | 1,190 | # 1,240 | 996 | 1,550 | 5,270 | 2,960 | 2,020 | 1,760 |
| 8 | 1,830 | 1,710 | 1,320 | 1,850 | 1,030 | 1,520 | 996 | 1,470 | 5,080 | 2,640 | # 1,970 | 1,920 |
| 9 | 1,940 | 1,730 | 1,320 | 1,520 | 1,010 | 1,770 | 1,920 | # 1,330 | 6,230 | 2,270 | 1,990 | 1,980 |
| 10 | 1,950 | 1,820 | 1,330 | 1,340 | # 1,090 | 1,820 | 2,030 | 1,280 | 7,030 | 3,710 | 1,940 | 2,000 |
| 11 | 1,980 | 1,850 | 1,360 | 1,280 | 878 | 3,080 | 1,570 | 1,240 | 11,300 | 3,530 | 2,000 | 1,870 |
| 12 | 1,940 | 1,780 | 1,360 | 1,200 | 829 | 1,870 | # 1,300 | 1,280 | 7,180 | 3,530 | 2,040 | 1,790 |
| 13 | 1,910 | 1,710 | 1,330 | 1,160 | 899 | 1,700 | 1,090 | 1,310 | 5,060 | 3,780 | 1,940 | # 1,750 |
| 14 | 2,000 | 1,660 | 1,340 | 1,140 | 931 | # 2,050 | 1,130 | 1,330 | 3,820 | 2,760 | 1,890 | 1,720 |
| 15 | 2,000 | # 1,690 | 1,360 | 1,110 | 868 | 1,820 | 1,520 | 1,290 | 3,070 | 2,600 | # 1,830 | 1,760 |
| 16 | 1,920 | 1,600 | 1,370 | 1,100 | 849 | 1,550 | 1,570 | # 1,220 | 2,640 | 2,230 | 1,810 | 1,840 |
| 17 | 1,850 | 1,560 | 1,500 | 1,060 | # 1,060 | 909 | 3,790 | 1,380 | 1,000 | 2,520 | 2,360 | 1,880 |
| 18 | 1,860 | 1,620 | 1,580 | 995 | 963 | 3,450 | 1,310 | 1,020 | 2,210 | 7,160 | 1,880 | 1,860 |
| 19 | 1,890 | 1,610 | 1,600 | # 952 | 909 | 2,340 | # 1,390 | 1,010 | 2,070 | # 16,000 | 1,890 | 1,760 |
| 20 | 1,910 | 1,570 | 1,530 | 920 | 952 | 1,770 | 944 | 2,020 | 6,740 | 1,890 | # 1,760 | |
| 21 | 1,940 | # 1,530 | 1,470 | 878 | 1,400 | # 1,480 | 4,390 | 788 | 2,030 | 16,400 | # 1,920 | 1,750 |
| 22 | 1,970 | 1,520 | # 1,360 | 1,020 | 1,160 | 1,520 | 6,670 | 770 | 1,920 | 5,960 | 1,810 | 1,780 |
| 23 | 1,970 | 1,500 | 1,340 | 2,310 | 1,320 | 1,460 | 3,530 | # 823 | 1,870 | 4,170 | 1,750 | 1,890 |
| 24 | 2,020 | 1,520 | 1,280 | 1,340 | # 2,150 | 1,290 | 2,360 | 806 | 1,870 | 4,560 | 1,800 | 2,020 |
| 25 | 1,910 | 1,530 | 1,290 | 1,290 | 2,150 | 1,240 | 2,300 | 823 | 1,870 | 3,570 | 4,200 | 1,960 |
| 26 | 1,800 | 1,530 | 1,260 | # 1,290 | 2,570 | 1,520 | 2,450 | 917 | 1,700 | 3,140 | 3,150 | 1,870 |
| 27 | 1,890 | 1,490 | 1,240 | 3,930 | 2,440 | 1,540 | 2,110 | 917 | 1,840 | 2,830 | 2,210 | 1,860 |
| 28 | 1,850 | 1,460 | 1,190 | 4,720 | 1,300 | 2,340 | 1,970 | 926 | 2,090 | 2,920 | 2,050 | 1,790 |
| 29 | 1,880 | # 1,160 | 2,560 | 1,120 | 2,730 | 2,470 | 888 | 2,660 | 2,760 | # 1,940 | 1,780 | |
| 30 | 1,860 | 1,170 | 1,710 | 1,510 | 1,740 | 2,390 | # 823 | 2,830 | 2,580 | 1,840 | 1,780 | |
| 31 | 1,950 | 1,170 | 1,170 | # 1,140 | 2,030 | 823 | 2,030 | 2,780 | 1,750 | | | |

Sum 46,540 47,205 54,820 38,408 137,040 56,490

59,170 41,990 39,906 60,892 95,166 63,530

Current Year 1962 **Period 1956-1962**

| Month | Extreme Gage | | | Extreme Second-Feet | | Average | Total | Acre-Feet | | | | |
|---------------|--------------|-------------|------|---------------------|-----|------------|--------------|------------------|------------------|------------------|--|--|
| | Fest | | | Low | | | | Second-Feet | Acre-Feet | Acre-Feet | | |
| | High | Low | Day | Day | Day | | | | | | | |
| Jan. | 2.19 | 1.99 | 14 | 2,080 | 26 | 1,770 | 1,910 | 117,364 | 131,595 | 219,000 | | |
| Feb. | 2.12 | 1.73 | 1 | 1,970 | 28 | 1,420 | 1,660 | 92,312 | 118,845 | 174,000 | | |
| Mar. | 1.87 | 1.51 | # 19 | 1,610 | 30 | 1,120 | 1,350 | 83,287 | 102,856 | 152,000 | | |
| Apr. | 4.83 | 1.24 | 27 | 10,200 | 21 | 829 | 1,570 | 93,631 | 134,947 | 433,000 | | |
| May | 3.70 | 1.18 | 26 | 5,040 | 16 | 772 | 1,290 | 79,154 | 247,765 | 50,500 | | |
| June | 3.65 | 1.42 | 28 | 4,920 | 1 | 976 | 1,830 | 108,735 | 261,462 | 737,000 | | |
| July | 4.46 | 1.39 | 22 | 8,090 | 8 | 945 | 1,960 | 120,779 | 175,725 | 312,000 | | |
| Aug. | 2.60 | 1.10 | 2 | 2,570 | 21 | 688 | 1,240 | 76,182 | 146,012 | 274,000 | | |
| Sept. | 5.47 | 1.12 | 11 | 14,700 | # 1 | 704 | 3,170 | 188,762 | 280,995 | 871,000 | | |
| Oct. | 6.31 | 2.11 | 21 | 20,300 | 18 | 1,870 | 4,420 | 271,819 | 457,117 | 1,741,000 | | |
| Nov. | 4.52 | 1.92 | 25 | 8,600 | 23 | 1,670 | 2,120 | 126,012 | 175,002 | 454,000 | | |
| Dec. | 2.21 | 1.92 | # 9 | 2,100 | 20 | 1,650 | 1,820 | 112,048 | 141,264 | 263,000 | | |
| Yearly | 6.31 | 1.10 | | 20,300 | | 688 | 2,030 | 1,470,085 | 2,373,585 | 4,441,400 | | |
| | | | | | | | | | | 756,800 | | |

And other days * Discharge measurement made on this day

RIO GRANDE AT PALAFOX, TEXAS

DESCRIPTION: Water-stage recorder and cable with cable car equipped for winch and heavy weights, located on the outskirts of Palafox, Texas and Villa Hidalgo, Coahuila, 44.7 river miles upstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 845.2 river miles below 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 113 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Prior to 1962 there were no facilities for measuring high flows at this station. Records available: August 5, 1959 through December 1962.

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

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|
| 1 | 1,890 | 1,940 | 1,420 | 1,130 | 1,660 | 1,090 | 1,810 | 1,940 | 788 | 3,370 | 2,690 | 1,840 |
| 2 | # 1,940 | 1,870 | 1,390 | 1,150 | # 1,500 | 1,090 | 1,600 | 2,040 | 752 | # 4,870 | 2,490 | 1,840 |
| 3 | 1,940 | 1,810 | 1,360 | # 1,150 | 1,450 | 1,380 | # 1,380 | 2,250 | 717 | 3,740 | 2,360 | 1,810 |
| 4 | 1,940 | 1,780 | 1,330 | 1,130 | 1,310 | 1,260 | 1,360 | 1,940 | # 735 | 3,450 | 2,270 | # 1,810 |
| 5 | 1,900 | 1,780 | 1,280 | 1,150 | 1,290 | # 1,540 | 1,290 | 1,820 | 735 | 2,760 | 2,230 | 1,880 |
| 6 | 1,870 | # 1,750 | # 1,310 | 1,130 | 1,200 | 1,310 | 1,380 | 1,710 | 999 | 2,720 | 2,270 | 1,810 |
| 7 | 1,810 | 1,750 | 1,330 | 2,140 | 1,140 | 1,050 | 1,120 | # 1,650 | 6,000 | 2,720 | 2,180 | 1,710 |
| 8 | 1,870 | 1,750 | 1,330 | 2,380 | # 1,110 | 1,160 | 968 | 1,520 | 4,770 | 2,600 | 2,060 | 1,800 |
| 9 | # 1,870 | 1,690 | 1,280 | 1,720 | 989 | 1,430 | 989 | 1,440 | 4,030 | # 2,330 | 2,010 | 1,840 |
| 10 | 1,940 | 1,720 | 1,260 | # 1,420 | 922 | 2,320 | # 1,900 | 1,260 | 6,110 | 2,280 | 1,990 | 2,000 |
| 11 | 1,970 | 1,780 | 1,260 | 1,260 | 833 | 2,160 | 1,810 | 1,180 | # 8,790 | 3,400 | 1,970 | 1,970 |
| 12 | 2,010 | 1,810 | 1,280 | 1,170 | 788 | # 2,430 | 1,500 | 1,140 | 9,610 | 2,950 | 2,010 | 1,840 |
| 13 | 1,970 | # 1,720 | # 1,280 | 1,090 | 749 | 1,660 | 1,220 | 1,210 | 5,540 | 3,740 | # 2,020 | 1,780 |
| 14 | 1,970 | 1,660 | 1,260 | 1,070 | 788 | 1,740 | 1,050 | # 1,430 | 4,270 | 2,950 | 1,910 | 1,760 |
| 15 | 2,040 | 1,630 | 1,330 | 1,050 | # 833 | 1,810 | 1,140 | # 1,370 | 3,106 | 2,480 | 1,880 | 1,730 |
| 16 | # 2,010 | 1,660 | 1,330 | 1,030 | 749 | 1,690 | 1,480 | 1,430 | 2,680 | # 2,430 | 1,850 | 1,800 |
| 17 | 1,940 | 1,490 | 1,330 | # 1,020 | 749 | 1,740 | # 1,480 | 1,140 | 2,510 | 2,200 | 1,880 | 1,860 |
| 18 | 1,870 | 1,490 | 1,510 | 975 | 788 | 3,450 | 1,290 | 1,060 | 2,430 | 2,120 | 1,910 | # 1,840 |
| 19 | 1,870 | 1,550 | 1,630 | 925 | 833 | # 2,640 | 1,240 | 1,010 | 2,120 | # 14,100 | 1,880 | 1,840 |
| 20 | 1,900 | # 1,550 | # 1,600 | 904 | 809 | 2,010 | 1,380 | 1,220 | 1,970 | # 9,500 | 1,880 | 1,760 |
| 21 | 1,940 | 1,550 | 1,510 | 876 | 833 | 1,630 | 1,660 | # 1,210 | 1,970 | # 12,500 | 1,900 | 1,760 |
| 22 | 1,940 | 1,490 | 1,420 | 865 | # 1,240 | 1,330 | # 6,040 | 876 | 1,970 | # 10,200 | # 1,900 | 1,710 |
| 23 | 1,970 | 1,450 | 1,280 | 3,260 | 1,090 | 1,380 | 4,560 | 840 | 1,880 | # 4,450 | 1,790 | 1,760 |
| 24 | 2,010 | 1,420 | 1,260 | 2,290 | 1,290 | 1,310 | # 2,850 | 876 | 1,850 | 4,380 | 1,790 | 1,860 |
| 25 | 2,010 | 1,450 | 1,210 | 1,330 | 2,030 | 1,160 | # 2,200 | 929 | # 1,820 | 3,990 | 1,830 | 1,970 |
| 26 | 1,940 | 1,450 | 1,230 | 1,280 | 2,060 | # 1,140 | 2,430 | 893 | 1,790 | 3,340 | 4,660 | 1,930 |
| 27 | 1,840 | # 1,450 | # 1,190 | 1,230 | 2,630 | 1,580 | # 2,380 | 929 | 3,670 | 3,000 | # 2,430 | # 1,810 |
| 28 | 1,870 | 1,420 | 1,170 | 5,050 | 1,750 | 1,660 | 1,970 | # 2,760 | 929 | 2,760 | 2,850 | 2,120 |
| 29 | 1,870 | 1,500 | 1,150 | 3,450 | # 1,240 | 2,630 | 1,840 | 929 | 2,200 | 2,850 | 1,990 | 1,780 |
| 30 | # 1,840 | 1,110 | 2,200 | 1,430 | 1,110 | 2,420 | # 2,510 | 858 | 2,790 | # 2,720 | 1,910 | 1,780 |
| 31 | 1,840 | | 1,110 | | | | 2,120 | 805 | | 2,720 | | 1,760 |
| Sum | | 45,860 | | 46,825 | | 51,200 | | 39,834 | | 129,710 | | 56,480 |
| | 59,590 | | 40,740 | | 37,193 | | 57,947 | | 91,356 | | 64,060 | |

Current Year 1962

Period #Aug. 1959-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|--------|-------------------|------|---------------------|--------|---------------------|-----------------|-----------|---------|-----------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | 2.49 | 2.23 | 15 | 2,080 | 7 | 1,810 | 1,920 | 118,146 | 145,235 |
| Feb. | 2.36 | 1.77 | 1 | 1,940 | # 24 | 1,390 | 1,640 | 90,940 | 133,424 |
| Mar. | 2.03 | 1.35 | # 18 | 1,630 | # 30 | 1,090 | 1,310 | 80,916 | 113,697 |
| Apr. | 5.77 | .69 | 28 | 8,330 | 22 | 823 | 1,560 | 92,929 | |
| May | 3.71 | .59 | 27 | 3,810 | 16 | 650 | 1,200 | 73,715 | |
| June | 3.74 | 1.02 | 18 | 3,880 | 2 | 946 | 1,710 | 101,552 | 85,425 |
| July | 5.15 | 1.02 | 22 | 7,060 | # 8 | 946 | 1,870 | 114,909 | |
| Aug. | 2.76 | .62 | 3 | 2,430 | 31 | 770 | 1,280 | 79,011 | |
| Sept. | 7.35 | .46 | 12 | 16,600 | 3 | 678 | 3,050 | 181,271 | 169,513 |
| Oct. | 9.91 | 2.30 | 21 | 21,000 | # 18 | 1,880 | 4,180 | 257,305 | 205,248 |
| Nov. | 5.18 | 2.13 | 26 | 6,920 | # 23 | 1,730 | 2,140 | 127,076 | 151,413 |
| Dec. | 2.46 | 2.07 | 10 | 2,050 | 23 | 1,650 | 1,820 | 112,086 | 138,432 |
| Yearly | 9.91 | .46 | | | 650 | 1,980 | 1,429,856 | | |
| | | | | | | | | | 1,429,856 |

† And other days # Some months missing # Discharge measurement made on this day

RIO GRANDE AT LAREDO, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder operated with bottled nitrogen gas, and cable with stand-up cable car, located .9 mile downstream from the highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas and 890.8 river miles below 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 323 meter measurements during the year, 281 by the Mexican Section and 42 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: May 1900 through December 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 January 1923 through December 1962. 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: The greatest recorded flow was **716,900 second-feet on June 30, 1954, 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. The lowest recorded flow was zero which occurred various 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|---------|---------|
| 1 | 1,890 | 1,770 | 1,350 | 1,140 | 1,950 | # 1,170 | 1,960 | 1,900 | 664 | # 3,000 | 2,930 | 1,850 |
| 2 | # 1,890 | # 1,820 | # 1,350 | # 1,140 | # 1,470 | 992 | # 1,780 | 1,840 | 664 | 5,010 | 2,590 | 1,850 |
| 3 | 1,890 | 1,820 | 1,350 | 1,140 | 1,430 | 1,080 | # 1,380 | 2,170 | # 664 | 4,380 | 2,360 | # 1,830 |
| 4 | # 1,890 | 1,770 | 1,290 | 1,140 | # 1,350 | 1,220 | 1,270 | 2,030 | 565 | 4,200 | 2,270 | 1,780 |
| 5 | 1,850 | 1,660 | # 1,230 | 1,140 | # 1,220 | 1,130 | 1,160 | 1,840 | 565 | # 3,390 | 2,200 | 1,830 |
| 6 | # 1,850 | 1,660 | 1,230 | # 1,140 | 1,170 | # 1,420 | 1,160 | 1,660 | 565 | 2,880 | 3,670 | 1,800 |
| 7 | 1,820 | # 1,610 | # 1,180 | 1,140 | # 1,080 | 1,040 | 1,210 | 1,500 | # 3,110 | 2,970 | 2,500 | 1,730 |
| 8 | # 1,820 | 1,610 | 1,230 | 2,630 | 1,040 | # 844 | 964 | # 1,440 | 5,090 | # 2,820 | 2,050 | 1,700 |
| 9 | 1,850 | # 1,610 | # 1,230 | 2,050 | # 992 | 992 | # 844 | 1,380 | 4,700 | 2,590 | # 2,000 | 1,850 |
| 10 | 1,890 | 1,660 | 1,180 | 1,530 | 862 | 1,530 | 964 | # 1,270 | 5,510 | # 2,290 | 1,950 | # 1,920 |
| 11 | 1,890 | 1,660 | 1,180 | # 1,270 | # 816 | # 2,270 | # 1,960 | 1,160 | 7,240 | 2,990 | 1,950 | 1,970 |
| 12 | 1,890 | # 1,660 | 1,180 | 1,140 | 773 | 2,230 | 1,600 | 1,110 | # 10,900 | # 3,330 | 1,950 | 1,900 |
| 13 | 1,890 | 1,660 | 1,180 | # 1,030 | 731 | # 1,910 | # 1,320 | 1,110 | 6,750 | 3,160 | 1,950 | 1,800 |
| 14 | 1,890 | # 1,610 | 1,230 | 1,030 | # 689 | 1,310 | 1,060 | 1,270 | # 4,800 | 3,880 | # 1,920 | 1,750 |
| 15 | # 1,890 | 1,490 | # 1,230 | 1,030 | 689 | # 1,700 | 922 | # 1,320 | 3,640 | # 2,770 | 1,840 | 1,730 |
| 16 | 1,930 | # 1,490 | 1,230 | # 946 | # 689 | 1,540 | # 1,110 | # 2,720 | 2,840 | 2,460 | 1,820 | 1,700 |
| 17 | 1,890 | # 1,490 | # 1,230 | 946 | 643 | 1,420 | 1,320 | # 1,160 | # 2,460 | 2,360 | 1,790 | # 1,750 |
| 18 | 1,890 | 1,440 | 1,330 | 876 | # 643 | 2,400 | 1,320 | 1,010 | 2,360 | 2,410 | 1,820 | 1,830 |
| 19 | 1,850 | # 1,440 | # 1,490 | 844 | 689 | 3,050 | 1,160 | 964 | 2,080 | 6,990 | # 1,860 | 1,800 |
| 20 | 1,890 | 1,440 | 1,490 | # 812 | 731 | # 2,230 | 1,160 | 922 | # 1,920 | # 14,000 | 1,840 | 1,750 |
| 21 | 1,890 | # 1,440 | 1,430 | 812 | # 689 | 1,700 | 1,320 | 1,320 | # 1,810 | 7,420 | 1,820 | 1,730 |
| 22 | # 1,890 | 1,440 | 1,380 | 1,050 | 731 | # 1,370 | 3,130 | 1,010 | 1,810 | # 15,300 | 1,820 | 1,750 |
| 23 | 1,930 | # 1,390 | # 1,270 | 7,420 | # 1,040 | 1,250 | 5,930 | 749 | 1,740 | 6,110 | 1,790 | 1,750 |
| 24 | 1,930 | 1,390 | 1,200 | # 4,130 | 904 | 1,250 | 3,530 | # 706 | # 1,740 | # 4,130 | 1,770 | 1,830 |
| 25 | 1,890 | 1,390 | 1,200 | # 1,840 | # 1,260 | # 1,170 | # 2,570 | # 749 | 1,630 | 4,660 | 1,750 | 1,900 |
| 26 | # 1,890 | # 1,350 | # 1,140 | # 1,140 | 1,740 | 1,100 | 2,100 | 837 | # 1,630 | 3,810 | 3,420 | # 1,950 |
| 27 | 1,850 | 1,390 | 1,140 | # 1,080 | 1,790 | 1,170 | # 2,450 | 883 | 2,710 | 3,460 | 3,640 | 1,880 |
| 28 | 1,820 | # 1,350 | # 1,080 | 2,400 | # 2,400 | # 2,070 | 2,030 | 883 | # 4,060 | 3,110 | # 2,160 | 1,850 |
| 29 | # 1,820 | 1,080 | # 1,620 | 4,800 | 1,350 | 1,620 | 1,780 | # 791 | 2,370 | # 3,100 | 2,000 | 1,830 |
| 30 | 1,820 | # 1,400 | # 2,830 | 950 | 3,170 | # 1,900 | 749 | 2,220 | 2,970 | # 1,920 | 1,800 | |
| 31 | # 1,820 | 1,140 | | 950 | | 2,450 | # 706 | | # 2,820 | | | # 1,780 |
| Sum | 43,510 | 51,616 | 47,348 | | 39,159 | | | | 134,770 | 56,170 | | |
| | 58,090 | 38,590 | 33,461 | | 54,814 | | | | 88,807 | 65,350 | | |

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | | Average Second-Feet | Total Acre-Feet | Period 1948-1962 | | | | |
|---------------|-------------------|------|-----|---------------------|-----|-------|---------------------|-----------------|------------------|-----------|---------|--|--|
| | High | | Low | High | | Low | | | Acre-Feet | | | | |
| | High | Low | | Day | Day | Day | | | Average | Maximum | Minimum | | |
| Jan. | 1.51 | 1.31 | 16 | 1,970 | 29 | 1,750 | 1,870 | 115,281 | 114,874 | 219,200 | 54,800 | | |
| Feb. | 1.44 | 1.12 | 2 | 1,880 | 23 | 1,350 | 1,550 | 86,268 | 121,770 | 423,700 | 41,050 | | |
| Mar. | 1.25 | .98 | 19 | 1,490 | 128 | 1,030 | 1,240 | 76,553 | 97,721 | 223,400 | 30,960 | | |
| Apr. | 5.68 | .75 | 23 | 9,990 | 120 | 717 | 1,720 | 102,329 | 123,579 | 464,000 | 28,300 | | |
| May | 2.23 | .52 | 28 | 3,310 | 117 | 600 | 1,080 | 66,368 | 225,366 | 1,351,000 | 33,360 | | |
| June | 2.49 | .66 | 118 | 3,670 | 8 | 812 | 1,580 | 93,909 | 360,367 | 1,994,000 | 337 | | |
| July | 4.36 | .69 | 23 | 6,780 | 9 | 844 | 1,770 | 108,668 | 237,399 | 655,500 | 17,470 | | |
| Aug. | 3.58 | .52 | 16 | 5,440 | 24 | 636 | 1,260 | 77,610 | 184,819 | 534,400 | 36,970 | | |
| Sept. | 6.99 | .49 | 12 | 12,800 | 4 | 530 | 2,960 | 176,192 | 275,123 | 855,500 | 30,900 | | |
| Oct. | 9.48 | 1.41 | 22 | 18,800 | 19 | 1,980 | 4,350 | 267,440 | 319,107 | 1,822,000 | 31,910 | | |
| Nov. | 3.94 | 1.35 | 26 | 6,460 | 17 | 1,730 | 2,180 | 129,584 | 144,658 | 488,900 | 43,110 | | |
| Dec. | 1.57 | 1.31 | 11 | 2,050 | 7 | 1,660 | 1,810 | 111,358 | 119,363 | 266,400 | 52,230 | | |
| Yearly | 9.48 | .49 | | 18,800 | | 530 | 1,950 | 1,411,560 | 2,324,146 | 4,571,770 | 786,640 | | |

† And other days ** Determined by slope-area calculations ‡ Period 1924-1962

‡ Discharge measurement made on this day

RIO SALADO AT LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car, and control wall with notch opening of 2,500 second-feet capacity, located 6.2 miles southeast of the town of Las Tortillas, Tamaulipas, 2 miles below the confluence of the Río Sabinas with the Río Salado, and 24.8 miles above the confluence of the Río Salado with the Río Grande. This confluence is 949.8 river miles below 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 60 meter measurements during the year, a stable rating curve for flows up to 2,500 second-feet and a continuous record of gage heights. Computations by shifting channel methods for flows greater than 2,500 second-feet. Records available: From September 9, 1953 through December 1962. Records are also available for a station at 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 1954 may be found in previous bulletins.

Average Flow in Second-Feet \ddagger

| | | | | |
|----------|-------------|---------------|-----------|------------|
| 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | |
|------------|-------------|------|----------------|--------|----------------|---------|------|--------------|--------|----------------|------|-------------|---|
| 1 | 12.7 | 3.9 | 0 | 0 | 21.5 | 0 | 0 | 0 | 6.4 | † 494 | 12.7 | 3.9 | |
| 2 | 21.5 | 3.2 | 0 | 0 | 21.5 | 0 | 0 | 0 | 3.9 | 254 | 9.2 | 3.2 | |
| 3 | 6.4 | 2.5 | 0 | 0 | 21.5 | 0 | 0 | 0 | 2.5 | 166 | 6.4 | 1.4 | |
| 4 | 3.2 | 1.4 | 0 | 0 | 16.6 | 0 | 0 | 0 | .7 | 144 | 6.4 | 3.2 | |
| 5 | 3.2 | 1.4 | 0 | 0 | 6.4 | 0 | 0 | 0 | 0 | † 144 | 12.0 | 7.8 | |
| 6 | 3.9 | 0 | 0 | 0 | 6.4 | 0 | 0 | 0 | 0 | 123 | 24.7 | 6.4 | |
| 7 | 16.6 | 0 | 0 | 0 | 6.4 | 0 | 0 | 0 | 0 | 103 | 21.5 | 3.9 | |
| 8 | 12.7 | 0 | 0 | 0 | 31.4 | 0 | 0 | 0 | 68.9 | † 69.6 | 240 | 3.2 | |
| 9 | 9.2 | 0 | 0 | 61.4 | 12.7 | 0 | 0 | 0 | 85.5 | 55.1 | 106 | 2.1 | |
| 10 | 6.4 | 0 | 0 | 133 | 3.9 | † 194 | 0 | 0 | 101 | † 48.4 | 49.4 | 1.4 | |
| 11 | 6.4 | 0 | 0 | 48.4 | 2.5 | † 2,000 | 0 | 0 | 590 | 42.4 | 30.4 | .7 | |
| 12 | 12.7 | 0 | 0 | 21.5 | 1.4 | † 862 | 0 | 0 | 788 | † 36.4 | 21.5 | .7 | |
| 13 | 16.6 | 0 | 0 | 6.4 | 0 | † 222 | 0 | 0 | 611 | 31.4 | 16.6 | .7 | |
| 14 | 12.7 | 0 | 0 | 3.2 | 0 | † 55.1 | 0 | 0 | † 166 | 31.4 | 9.2 | .7 | |
| 15 | 12.7 | 0 | 0 | 1.4 | 0 | † 21.5 | 0 | 0 | † 69.6 | 31.4 | 6.0 | .7 | |
| 16 | 6.4 | 0 | 0 | .7 | 0 | 6.4 | 0 | 0 | 42.4 | 31.4 | 9.2 | .4 | |
| 17 | 6.4 | 0 | 0 | 0 | 0 | 2.5 | 0 | 0 | † 42.4 | 26.5 | 3.2 | 0 | |
| 18 | 6.4 | 0 | 0 | 0 | 0 | .7 | 0 | 0 | 136 | 21.5 | 2.5 | 0 | |
| 19 | 3.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | † 713 | 16.6 | 2.5 | 0 | |
| 20 | 1.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | † 316 | 12.7 | 1.4 | 0 | |
| 21 | .7 | 0 | 0 | 0 | 0 | 3.9 | 0 | 0 | † 103 | 12.7 | 3.2 | 0 | |
| 22 | 0 | 0 | 0 | 0 | 0 | 3.9 | 0 | 2.5 | 69.6 | 9.2 | 3.9 | 0 | |
| 23 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0 | 133 | 69.6 | 3.9 | 3.9 | 0 | |
| 24 | 0 | 0 | 0 | 706 | 0 | 0 | 0 | 0 | 69.6 | † 48.4 | 6.4 | 32.5 | 0 |
| 25 | 0 | 0 | 0 | 222 | 0 | 0 | 0 | 0 | 123 | 26.5 | 12.7 | 29.0 | 0 |
| 26 | 0 | 0 | 0 | † 155 | 0 | 0 | 0 | 0 | 166 | † 21.5 | 12.7 | 13.4 | 0 |
| 27 | 0 | 0 | 0 | † 123 | 0 | 0 | 0 | 0 | 144 | † 4,940 | 16.6 | 11.3 | 0 |
| 28 | 0 | 0 | 0 | 77.0 | 0 | 0 | 0 | 0 | 123 | † 5,440 | 12.7 | 12.7 | 0 |
| 29 | 0 | 0 | 0 | 48.4 | 0 | 0 | 0 | 0 | 36.4 | † 5,690 | 12.7 | 12.7 | 0 |
| 30 | 3.9 | 0 | 0 | † 42.4 | 0 | 0 | 0 | 0 | 12.7 | † 2,030 | 16.6 | 9.2 | 0 |
| 31 | 6.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9.2 | 0 | 16.6 | 0 | |
| Sum | 12.4 | | 1,649.8 | | 3,373.4 | | | 819.4 | | 2,015.6 | | 40.4 | |
| 191.7 | 0 | | 152.2 | 0 | 0 | | | 22,181.9 | | 722.6 | | | |

Current Year 1962

Period 1954-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | |
|---------------|-------------------|----------|---------------------|--------------|---------------------|----------|-------------|-----------------|------------------|
| | High | Low | Day | Day | | | Acre-Feet | Average | Maximum |
| Jan. | .33 | 0 | † 1 | 21.5 | † 21 | 0 | 6.2 | 379 | 7,964 |
| Feb. | .16 | 0 | 1 | 3.9 | † 6 | 0 | .4 | 24.3 | 8,076 |
| Mar. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,566 | 29,690 |
| Apr. | 2.46 | 0 | 24 | 1,350 | † 1 | 0 | 55.0 | 3,273 | 4,731 |
| May | .46 | 0 | 7 | 42.4 | † 12 | 0 | 4.9 | 302 | 19,300 |
| June | 3.54 | 0 | 11 | 2,920 | † 1 | 0 | 112 | 6,688 | 45,230 |
| July | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,140 | 302 |
| Aug. | 1.38 | 0 | 28 | 388 | † 1 | 0 | 26.4 | 4,588 | 27,410 |
| Sept. | 5.68 | 0 | † 27 | 6,140 | † 4 | 0 | 739 | 1,625 | 8,076 |
| Oct. | 1.84 | .13 | 1 | 720 | 23 | 3.2 | 65.0 | 8,156 | 8,076 |
| Nov. | 1.35 | .07 | 8 | 367 | 20 | 1.4 | 24.1 | 1,433 | 31,700 |
| Dec. | .23 | 0 | † 5 | 9.2 | † 16 | 0 | 1.3 | 79.4 | 0 |
| Yearly | 5.68 | 0 | | 6,140 | | 0 | 85.4 | 61,797.7 | 260,543 |
| | | | | | | | | | 1,463,797 |
| | | | | | | | | | 41,238.2 |

† And other days ‡ Period September 1953-1962 § Discharge measurement made on this day

RIO GRANDE BELOW FALCON DAM

DESCRIPTION: The discharges reported below represent water measured as it leaves Falcon Reservoir through turbine penstocks, by-pass valves, spillway gates, and leakage. Falcon Dam, astride the Rio Grande, is located 84.5 river miles downstream from Laredo, Texas and Nuevo Laredo, Tamaulipas; 974.4 river miles below the American Dam at El Paso, Texas; and 273.8 river miles above the Gulf of Mexico. A water-stage recorder and a cable with stand-up cable car located 2.5 and 3.5 river miles downstream, respectively, are used to measure the flow of this station at those 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 by-pass valves, estimates of gate leakage, measurements of flow at the cable during spillgate operations, and 16 current meter measurements during the year, 9 by the United States Section and 7 by the Mexican Section of this Commission. Records available: January 1, 1958 through December 1962. Records are also available from December 17, 1952 through December 1957 for a station at Chápeno, 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 the 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. no flow occurs at times.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------|---------|----------------|-----------------|----------|------------------|-------|-----------------|-------|-----------------|-------|-----------------|
| 1 | 3,610 | # 9,060 | 1,860 | 3,390 | 7,500 | 11,800 | 29.0 | 1,120 | 619 | 2,620 | 713 | 29.0 |
| 2 | 3,000 | 8,000 | 584 | 4,110 | 3,860 | 10,300 | 29.0 | 1,330 | 697 | 2,700 | 641 | 29.0 |
| 3 | 2,980 | # 7,210 | 782 | 2,590 | 1,430 | 7,800 | 517 | 648 | 824 | 2,640 | 995 | 1,520 |
| 4 | 4,100 | 6,680 | 1,450 | 1,530 | 1,650 | 5,340 | 530 | 873 | 822 | 2,310 | 1,080 | 1,520 |
| 5 | 3,620 | 7,180 | 2,850 | 1,770 | 3,040 | 9,660 | 320 | 2,220 | 1,260 | 1,940 | 1,530 | 1,650 |
| 6 | 2,850 | 7,090 | 2,900 | 2,760 | 3,230 | 8,640 | 326 | 724 | 894 | 687 | 813 | 1,130 |
| 7 | 3,550 | 8,780 | 2,900 | 3,410 | 2,800 | 8,940 | 179 | 2,030 | 1,420 | 29.0 | 639 | 1,120 |
| 8 | 4,350 | 8,680 | 2,080 | 3,130 | 1,220 | 6,420 | 595 | 1,620 | 499 | 672 | 638 | 575 |
| 9 | 4,930 | 6,980 | 1,480 | 881 | 1,660 | 7,190 | 649 | 1,920 | 29.0 | 2,080 | 958 | 278 |
| 10 | 2,480 | 8,830 | 2,380 | 1,680 | 2,910 | 7,360 | 646 | 1,230 | 209 | 2,320 | 832 | 1,390 |
| 11 | 1,030 | 8,960 | 3,060 | 3,230 | 2,630 | 7,910 | 3,040 | 2,000 | 29.0 | 1,540 | 480 | 1,100 |
| 12 | 2,770 | 7,960 | 2,090 | 2,010 | 3,140 | 6,440 | 3,090 | 1,600 | 98.0 | 969 | 728 | 1,620 |
| 13 | 4,930 | 7,930 | 1,180 | 1,630 | 2,960 | 7,240 | 840 | 1,580 | 282 | 1,330 | 622 | 637 |
| 14 | 5,730 | # 8,250 | 66.0 | 2,470 | 2,710 | 7,800 | 1,170 | 822 | 519 | 919 | 1,200 | 638 |
| 15 | 5,970 | 9,420 | 272 | 3,810 | 5,620 | 6,920 | 1,120 | 1,360 | 1,000 | 1,720 | 723 | 704 |
| 16 | 5,960 | 7,300 | 460 | 2,050 | 6,820 | 8,510 | 2,430 | 1,430 | 1,010 | 2,810 | 632 | 1,650 |
| 17 | 4,880 | 6,920 | 449 | 3,690 | 6,560 | 7,870 | 2,060 | 1,330 | 2,010 | 1,790 | 1,440 | 1,600 |
| 18 | # 5,060 | 6,890 | 404 | 4,790 | 7,150 | 7,140 | 2,020 | 710 | 2,000 | 656 | 1,040 | 2,550 |
| 19 | 5,780 | 6,060 | 430 | 4,300 | 8,160 | 7,100 | 1,430 | 29.0 | 629 | 664 | 1,050 | 2,310 |
| 20 | 5,110 | 5,480 | 432 | 3,690 | 10,600 | 5,770 | 2,290 | # 543 | 398 | 752 | 1,310 | 1,230 |
| 21 | 2,970 | 4,700 | 226 | 4,560 | 11,500 | 6,830 | 2,010 | 651 | 406 | 2,150 | 908 | 1,570 |
| 22 | 3,320 | 5,180 | 226 | 5,860 | # 10,100 | 7,900 | 1,230 | 198 | 29.0 | 1,170 | 821 | 1,600 |
| 23 | 3,220 | 3,840 | 229 | 6,910 | # 10,800 | 4,820 | 1,220 | 1,540 | 29.0 | 684 | 641 | 1,840 |
| 24 | 2,590 | 3,280 | 219 | 5,180 | # 12,200 | 4,130 | 849 | 868 | 339 | 1,330 | 29.0 | 645 |
| 25 | 4,320 | 2,850 | 219 | 4,370 | # 13,800 | 3,320 | 889 | 616 | 2,300 | 1,370 | 621 | |
| 26 | 6,070 | 3,240 | 232 | 4,580 | # 14,600 | 1,610 | 1,500 | 1,040 | 333 | 834 | 643 | 625 |
| 27 | 6,210 | 4,020 | 232 | 7,000 | 13,800 | 480 | 1,530 | 1,060 | 142 | 457 | 640 | 1,420 |
| 28 | 6,820 | 4,450 | 234 | 5,110 | 12,800 | 29.0 | 1,020 | 781 | 125 | 814 | 758 | 29.0 |
| 29 | # 6,990 | | 232 | 5,590 | # 11,200 | 29.0 | 806 | 1,160 | 29.0 | 1,340 | 641 | 29.0 |
| 30 | 7,110 | | 227 | 5,930 | # 9,910 | 29.0 | 1,230 | 1,110 | 734 | 1,590 | 644 | 29.0 |
| 31 | 9,130 | | 1,820 | | | 13,100 | 1,510 | 814 | | 997 | | 29.0 |
| Sum | | | 185,220 | 112,011 | | 185,327.0 | | 34,957.0 | | 44,814.0 | | 31,717.0 |
| | | | 141,640 | 32,205.0 | | 219,460 | | 37,104.0 | | 18,355.0 | | 25,159.0 |

Current Year 1962

| Month | Extreme Gage Feet | | Extreme Second-Foot | | Average Second-Foot | Total | Period # 1954-1962 | | |
|---------------|-------------------|-----|---------------------|---------------|---------------------|-------------|--------------------|------------------|------------------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | | | 31 | 9,130 | 11 | 1,030 | 4,570 | 280,943 | 227,194 |
| Feb. | | | 15 | 9,420 | 25 | 2,850 | 6,620 | 367,384 | 367,384 |
| Mar. | | | 11 | 3,060 | 14 | 66.0 | 1,040 | 63,879 | 160,374 |
| Apr. | | | 27 | 7,000 | 9 | 881 | 3,730 | 222,174 | 182,634 |
| May | | | 26 | 14,600 | 8 | 1,220 | 7,080 | 435,299 | 335,011 |
| June | | | 1 | 11,800 | 128 | 29.0 | 6,180 | 367,596 | 551,000 |
| July | | | 12 | 3,090 | † 1 | 29.0 | 1,200 | 73,596 | 112,974 |
| Aug. | | | 5 | 2,220 | 19 | 29.0 | 1,130 | 69,337 | 229,000 |
| Sept. | | | 17 | 2,010 | † 9 | 29.0 | 612 | 36,407 | 129,526 |
| Oct. | | | 16 | 2,810 | 7 | 29.0 | 1,450 | 88,889 | 206,000 |
| Nov. | | | 5 | 1,530 | 24 | 29.0 | 839 | 302,085 | 274,000 |
| Dec. | | | 18 | 2,550 | † 1 | 29.0 | 1,020 | 62,911 | 177,723 |
| Yearly | | | | 14,600 | | 29.0 | 2,930 | 2,118,318 | 1,482,330 |

† And other days 0 Mean daily # Values prior to 1958 are Chápeno discharges less arroyo inflow

Discharge measurement made on this day

RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and reinforced concrete weir 312 feet downstream from the recorder for measuring flows up to 177 second-feet, located 5.0 miles above the confluence of the Río Alamo with the Río Grande and .6 mile north of Cd. Mier, Tamaulipas, at a point called "El Paso del Cántaro." This stream enters the Río Grande 986.8 river miles below the American Dam at El Paso, Texas. 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 11 meter 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 channel methods. Records available: July 1, 1923 through December 1962.

REMARKS: Small reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 144,800 second-feet on September 11, 1948, with a gage height of 33.56 feet. Periods of no flow 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|------|------|---------|---------|---------|-------|------|----------|---------|--------|------|------|
| 1 | 1.8 | 1.8 | 0 | 0 | 1.1 | 10.9 | 6.0 | 0 | 1.8 | 161 | 0 | 1.1 |
| 2 | 1.8 | 2.5 | 0 | 0 | .7 | .4 | 4.9 | 0 | .7 | # 992 | 0 | 1.1 |
| 3 | 1.1 | 2.5 | 0 | 0 | 0 | 0 | 3.5 | 0 | 0 | #1,050 | 0 | 1.1 |
| 4 | 1.1 | 2.5 | 0 | 0 | 0 | 0 | 1.8 | 0 | 0 | 119 | 0 | 1.1 |
| 5 | 1.1 | 2.5 | 0 | 0 | 0 | 0 | 1.1 | 0 | 0 | 33.5 | 0 | 0 |
| 6 | 1.1 | 2.5 | 0 | 228 | 0 | 0 | 0 | 0 | 0 | 17.3 | 90.4 | 0 |
| 7 | 1.1 | 2.5 | 0 | #2,670 | 0 | 0 | 0 | 0 | 0 | 12.0 | 83.0 | 0 |
| 8 | 1.1 | 2.5 | 0 | # 692 | 0 | 0 | 0 | 0 | # 883 | 9.2 | 11.3 | 0 |
| 9 | 1.1 | 1.8 | 0 | 83.7 | 0 | 0 | 0 | 0 | 77.3 | 6.0 | 4.9 | 0 |
| 10 | 1.1 | 1.1 | 0 | 33.9 | 0 | 0 | 0 | 0 | 12.7 | 3.5 | 2.5 | 0 |
| 11 | 1.1 | 1.1 | 0 | 15.9 | 0 | # 249 | 0 | 0 | 190 | 2.5 | 1.8 | 0 |
| 12 | 1.1 | 1.1 | 0 | 10.6 | 0 | 81.6 | 0 | 0 | 102 | 1.8 | 1.1 | 0 |
| 13 | 1.1 | 1.1 | 0 | 7.1 | 0 | 24.4 | 0 | 0 | 53.0 | 1.8 | .7 | 0 |
| 14 | 1.1 | 1.1 | 6.4 | 6.0 | 0 | 12.0 | 0 | 0 | 15.5 | 1.1 | 0 | 0 |
| 15 | 1.1 | 1.1 | 4.2 | 4.2 | 0 | 7.1 | 0 | 0 | 8.1 | 1.1 | 0 | 0 |
| 16 | 1.1 | 1.1 | 2.5 | 4.2 | 0 | 4.9 | 0 | 0 | 6.0 | 0 | 0 | 0 |
| 17 | 1.1 | 1.1 | 1.8 | 2.5 | 0 | 3.5 | 0 | 0 | 192 | 0 | 0 | 0 |
| 18 | 1.1 | 1.1 | .4 | 2.5 | 0 | 1.8 | 0 | 0 | 466 | 1.8 | 0 | 0 |
| 19 | 1.1 | 1.1 | 0 | .4 | 0 | 1.4 | 0 | 0 | # 2,220 | .4 | 0 | 0 |
| 20 | 1.1 | 1.1 | 0 | 0 | # 2,530 | 0 | 0 | 0 | 420 | 0 | 0 | 0 |
| 21 | 1.1 | 1.1 | 0 | 0 | 0 | 579 | 0 | 0 | 720 | 0 | 0 | 0 |
| 22 | 1.1 | 0 | 0 | 0 | 0 | 55.4 | 0 | 0 | 102 | 0 | 0 | 0 |
| 23 | 1.1 | 0 | 0 | 24.7 | 0 | 17.0 | 0 | 0 | 30.7 | 0 | 0 | 0 |
| 24 | 1.1 | 0 | 0 | 26.8 | 0 | 8.1 | 0 | 0 | 14.8 | 0 | 0 | 0 |
| 25 | 1.1 | 0 | 0 | 12.0 | 0 | 4.9 | 0 | 0 | 9.2 | 0 | 253 | 0 |
| 26 | 1.1 | 0 | 0 | 6.0 | 0 | 63.9 | 0 | 554 | 6.0 | 0 | 22.2 | 0 |
| 27 | 1.8 | 0 | 0 | 4.2 | 0 | 343 | 0 | 243 | # 3,350 | 0 | 7.1 | 0 |
| 28 | 2.5 | 0 | 0 | 3.5 | 0 | 60.4 | 0 | 78.4 | # 1,680 | 0 | 3.5 | 0 |
| 29 | 2.5 | 0 | 0 | 2.5 | 0 | 35.7 | 0 | 33.9 | 192 | 0 | 2.5 | 0 |
| 30 | 2.5 | 0 | 0 | 1.8 | 0 | 10.6 | 0 | 9.5 | 61.1 | 0 | 1.8 | 0 |
| 31 | 2.5 | 0 | 0 | 0 | 0 | 0 | 0 | 4.2 | 0 | 0 | 0 | 0 |
| Sum | 34.3 | | 3,842.5 | 4,105.0 | | 923.0 | | 2,414.0 | 4.4 | | | |
| | 41.8 | | 15.3 | 1.8 | | 17.3 | | 11,313.9 | 485.8 | | | |

Current Year 1962

Period 1924-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|----------|---------------------|--------------|---------------------|-----------------|-------------|-----------------|-----------------|
| | High | Low | Day | Day | | | Average | Maximum | Minimum |
| Jan. | .07 | .03 | † 28 | 2.5 | † 3 | .4 | 1.3 | 80.3 | 3,506 |
| Feb. | .07 | 0 | † 2 | 2.5 | † 22 | 0 | 1.2 | 66.5 | 2,530 |
| Mar. | .26 | 0 | 14 | 15.9 | † 1 | 0 | .5 | 30.0 | 2,565 |
| Apr. | 4.86 | 0 | 7 | 4,590 | † 1 | 0 | 128 | 7,630 | 36,210 |
| May | .03 | 0 | 1 | 1.1 | † 3 | 0 | .1 | 3.2 | 13,266 |
| June | 4.99 | 0 | 20 | 4,840 | † 3 | 0 | 137 | 8,145 | 11,793 |
| July | .13 | 0 | 1 | 6.0 | † 6 | 0 | .6 | 34.0 | 6,456 |
| Aug. | 4.20 | 0 | 26 | 3,350 | † 1 | 0 | 29.8 | 1,831 | 17,934 |
| Sept. | 7.61 | 0 | 27 | 8,720 | † 2 | 0 | 377 | 22,448 | 35,191 |
| Oct. | 3.94 | 0 | 2 | 2,920 | † 16 | 0 | 77.9 | 4,779 | 307,900 |
| Nov. | 2.40 | 0 | 25 | 855 | † 1 | 0 | 16.2 | 964 | 193,700 |
| Dec. | .03 | 0 | † 1 | 1.1 | † 5 | 0 | .1 | 8.1 | 3,032 |
| Yearly | 7.61 | 0 | | 8,720 | | 0 | 63.6 | 46,019.1 | 125,799 |
| | | | | | | | | 387,800 | 11,898.7 |

† And other days \$ Period 1924-1962 # Discharge measurement made on this day

CONTRIBUTIONS FROM RIO SAN JUAN ABOVE FORT RINGGOLD STATION

DESCRIPTION: The Lower Río San Juan Irrigation District in Mexico borders the Rio Grande between Cd. Miguel Aleman 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 above the confluence with the Rio Grande. The Río San Juan enters the Rio Grande 1,010.4 river miles below the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande through the Río San Juan channel, Rancherías Drain, and Los Fresnos Drain, above Fort Ringgold Gaging Station; and through Puertecitos, Los Indios, Huizache, and Morillo Drains between this station and Anzaldías Dam. Only the portion of water reaching the Rio Grande via channels above Fort Ringgold Gaging Station is shown below. The portion of drain water from this irrigation district reaching the Rio Grande below Fort Ringgold Gaging Station is shown on page 60 of this Bulletin.

RECORDS: Water entering the Rio Grande through the Río San Juan channel, included in the tabulation below and composed of releases, spills, and leakage from Marte R. Gómez Dam, and storm inflow and drainage below the dam, was measured at Río San Juan at Camargo, Tamaulipas Gaging Station, located 3.1 river miles above 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 49 current meter measurements made during the year. There was no drainage flow through Los Fresnos Drain in 1962. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: January 1953 through December 1962.

REMARKS: In 1962 there were 162,908 irrigable acres in the Lower Río San Juan Irrigation District.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|--------------|-------|--------------|------|------|----------------|------|-----------------|------|--------------|------|
| 1 | 5.3 | 6.9 | 6.6 | 9.2 | 9.8 | 11.2 | 5.8 | 3.4 | 6.7 | 19.4 | 4.9 | 5.0 |
| 2 | 7.4 | 6.8 | 7.3 | 9.5 | 10.1 | 11.1 | 5.6 | 3.0 | 6.1 | 12.4 | 4.9 | 6.0 |
| 3 | 9.1 | 7.8 | 8.0 | 9.7 | 10.9 | 10.6 | 5.4 | 3.0 | 5.2 | 19.5 | 4.8 | 6.8 |
| 4 | 10.9 | 8.8 | 8.3 | 9.6 | 10.5 | 10.6 | 5.1 | 2.6 | 4.6 | 11.4 | 4.8 | 7.5 |
| 5 | 10.2 | 9.8 | 9.0 | 9.9 | 9.8 | 10.1 | 4.9 | 2.6 | 3.6 | 10.8 | 4.8 | 8.6 |
| 6 | 9.9 | 10.8 | 9.3 | 9.4 | 9.4 | 10.0 | 5.2 | 2.3 | 2.7 | 10.0 | 90.3 | 9.3 |
| 7 | 9.2 | 11.9 | 10.0 | 8.9 | 9.0 | 9.5 | 5.5 | 2.3 | 2.8 | 9.1 | 35.9 | 8.3 |
| 8 | 8.5 | 12.9 | 10.3 | 8.1 | 8.7 | 9.6 | 5.8 | 2.0 | 1,130 | 8.2 | 12.6 | 7.6 |
| 9 | 7.8 | 12.9 | 11.6 | 7.6 | 8.3 | 9.3 | 6.5 | 2.0 | 548 | 7.3 | 11.2 | 6.6 |
| 10 | 7.1 | 13.2 | 12.6 | 7.1 | 7.9 | 9.0 | 6.8 | 1.9 | 2,160 | 6.8 | 9.4 | 5.5 |
| 11 | 6.8 | 13.2 | 13.9 | 6.6 | 8.5 | 9.0 | 7.1 | 1.9 | 1,220 | 5.9 | 7.7 | 4.5 |
| 12 | 6.8 | 13.2 | 14.8 | 5.8 | 8.9 | 8.7 | 7.5 | 1.9 | 47.8 | 5.9 | 6.3 | 3.5 |
| 13 | 6.9 | 13.2 | 16.1 | 5.9 | 9.1 | 8.4 | 7.5 | 1.9 | 23.5 | 5.9 | 6.3 | 3.5 |
| 14 | 6.9 | 13.2 | 35.8 | 5.6 | 9.5 | 8.1 | 7.1 | 1.9 | 23.6 | 5.9 | 6.3 | 3.6 |
| 15 | 7.3 | 13.6 | 29.0 | 5.3 | 10.1 | 8.1 | 6.7 | 224 | 23.6 | 6.0 | 5.9 | 3.6 |
| 16 | 7.4 | 13.2 | 19.9 | 5.4 | 10.4 | 7.7 | 6.3 | 334 | 23.7 | 6.3 | 5.9 | 3.7 |
| 17 | 7.5 | 13.3 | 17.5 | 5.1 | 10.7 | 7.3 | 6.3 | 17.4 | 23.7 | 6.3 | 5.9 | 3.7 |
| 18 | 7.5 | 12.9 | 16.5 | 4.8 | 11.0 | 6.9 | 5.9 | 6.1 | 23.7 | 6.3 | 5.9 | 3.7 |
| 19 | 7.4 | 12.9 | 15.5 | 5.1 | 11.7 | 6.5 | 5.6 | 5.8 | 41.8 | 6.0 | 5.9 | 3.8 |
| 20 | 6.9 | 12.9 | 14.2 | 5.3 | 11.0 | 6.1 | 5.6 | 5.8 | 51.7 | 5.9 | 5.9 | 3.8 |
| 21 | 6.5 | 12.6 | 13.2 | 5.6 | 10.3 | 5.7 | 5.3 | 117 | 92.0 | 5.6 | 5.9 | 3.8 |
| 22 | 6.4 | 12.6 | 12.3 | 5.9 | 9.7 | 5.7 | 4.9 | 216 | 31.0 | 5.2 | 5.6 | 3.8 |
| 23 | 5.9 | 11.7 | 12.0 | 6.1 | 9.0 | 5.7 | 4.6 | 31.3 | 15.5 | 5.2 | 5.5 | 6.3 |
| 24 | 5.5 | 11.1 | 11.3 | 6.4 | 8.8 | 5.7 | 4.3 | 11.4 | 15.5 | 4.8 | 5.1 | 28.8 |
| 25 | 5.4 | 10.1 | 10.6 | 7.0 | 9.1 | 5.7 | 4.0 | 10.8 | 12.0 | 37.3 | 5.1 | 22.8 |
| 26 | 5.7 | 9.1 | 10.3 | 7.2 | 9.5 | 5.7 | 3.6 | 10.3 | 12.1 | 95.9 | 4.7 | 13.6 |
| 27 | 5.7 | 8.5 | 9.6 | 7.6 | 9.9 | 7.5 | 3.6 | 9.8 | 4,380 | 17.9 | 4.3 | 9.3 |
| 28 | 6.0 | 7.6 | 9.3 | 7.9 | 10.2 | 16.3 | 3.5 | 9.3 | 415 | 12.3 | 4.2 | 9.3 |
| 29 | 6.3 | | 8.6 | 8.7 | 10.6 | 9.3 | 3.5 | 8.8 | 29.9 | 10.1 | 4.2 | 8.9 |
| 30 | 6.2 | | 8.9 | 9.0 | 10.9 | 7.5 | 3.5 | 8.3 | 26.4 | 8.4 | 4.2 | 8.5 |
| 31 | 6.5 | | 8.9 | | 11.7 | | 3.4 | 7.6 | | 6.6 | | 8.5 |
| Sum | 316.7 | 215.3 | | 252.6 | | | 1,066.4 | | 384.6 | | 232.2 | |
| | 222.9 | 401.2 | | 305.0 | | | 166.4 | | 10,402.2 | | 294.4 | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|-----|-----|---------------------|-----|---------------------|-----------------|---------------|----------------|------------------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum |
| Jan. | | | 4 | 10.9 | 1 | 5.3 | 7.2 | 442 | 6,527 | 51,360 |
| Feb. | | | 15 | 13.6 | 2 | 6.8 | 11.3 | 628 | 3,455 | 26,250 |
| Mar. | | | 14 | 35.8 | 1 | 6.6 | 12.9 | 796 | 2,853 | 20,360 |
| Apr. | | | 5 | 9.9 | 18 | 4.8 | 7.2 | 427 | 2,565 | 8,480 |
| May | | | †19 | 11.7 | 10 | 7.9 | 9.8 | 605 | 2,488 | 8,510 |
| June | | | 28 | 16.3 | †21 | 5.7 | 8.4 | 501 | 2,326 | 9,110 |
| July | | | †12 | 7.5 | 31 | 3.4 | 5.4 | 330 | 1,014 | 1,930 |
| Aug. | | | 16 | 334 | †10 | 1.9 | 34.4 | 2,118 | 2,705 | 11,310 |
| Sept. | | | 27 | 4,380 | 6 | 2.7 | 347 | 20,623 | 8,427 | 20,623 |
| Oct. | | | 26 | 95.9 | 24 | 4.8 | 12.4 | 763 | 101,327 | 901,800 |
| Nov. | | | 6 | 90.3 | †28 | 4.2 | 9.8 | 585 | 26,771 | 230,400 |
| Dec. | | | 24 | 28.8 | †12 | 3.5 | 7.5 | 460 | 8,125 | 68,580 |
| Yearly | | | | 4,380 | | 1.9 | 39.1 | 28,278 | 168,583 | 1,231,907 |
| | | | | | | | | | 16,445 | |

† And other days Ø Mean daily

RIO SAN JUAN AT CAMARGO, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located opposite Camargo, Tamaulipas, 9.3 river miles below Marte R. Gómez Dam and 3.1 river miles above the confluence with the Rio Grande. This stream enters the Rio Grande 1,010.4 river miles below the American Dam at El Paso, Texas and 3.9 river miles above Fort Ringgold Station. The zero of the gage is 130.45 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 104 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Discharge prorated between measurements during times of extremely low flow. Records available: January 1954 through December 1962.

REMARKS: Except for storm inflow, diversions, and drainage returns below Marte R. Gómez Dam, the flow at this station is controlled by releases from Marte R. Gomez Reservoir. Backwater from the Rio Grande frequently reaches this station. Flow passing this station, combined with drain water entering the Rio Grande through Rancherias and Los Fresnos Drains, is also published under heading "Contributions from Rio San Juan - Above Fort Ringgold Station" (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. .7 second-foot several days in April 1960.

Average Flow in Second-Feet

| | | | | |
|----------|-------------|---------------|-----------|--------------------------|
| Daily: | Max. 49,400 | Oct. 17, 1958 | Min. .7 | April 23, 24, & 25, 1960 |
| Monthly: | Max. 14,660 | Oct. 1958 | Min. 2.7 | August 1961 |
| Yearly: | Max. 1,700 | 1958 | Min. 20.0 | 1961 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|--------------|--------------|-------|----------------|--------|-------|--------------|---------|--------------|--------|-------|
| 1 | 3.5 | 6.0 | 3.5 | 6.4 | 3.9 | 3.9 | 3.9 | 2.8 | 4.9 | 17.7 | # 4.2 | 4.6 |
| 2 | 4.9 | # 6.0 | 4.2 | 6.7 | 3.9 | 4.2 | 3.9 | 2.5 | 4.6 | 10.6 | 4.2 | 5.7 |
| 3 | 6.0 | 6.4 | 4.9 | 7.1 | # 4.2 | 4.2 | 3.9 | 2.5 | 3.9 | 17.7 | 4.2 | 6.4 |
| 4 | # 7.1 | 6.7 | 5.3 | 7.1 | 4.2 | 4.6 | 3.9 | 2.1 | 3.5 | # 9.5 | 4.2 | 7.1 |
| 5 | 6.7 | 8.1 | 6.0 | # 7.4 | 3.9 | 4.6 | # 3.9 | 2.1 | 2.8 | 9.2 | 4.2 | 8.1 |
| 6 | 6.7 | 7.4 | 6.4 | 7.1 | 3.9 | # 4.9 | 4.2 | 1.8 | # 2.1 | 8.5 | 89.7 | # 8.8 |
| 7 | 6.4 | 7.8 | 7.1 | 6.7 | 3.9 | # 4.9 | 4.6 | 1.8 | 2.1 | 7.8 | 35.3 | 7.8 |
| 8 | 6.0 | # 7.1 | 7.4 | 6.0 | 3.9 | 5.3 | 4.9 | 1.4 | # 1,130 | 7.1 | # 12.0 | 7.1 |
| 9 | 5.7 | 7.8 | 8.1 | 5.7 | 3.9 | 5.3 | 5.7 | # 1.4 | 547 | 6.4 | 10.6 | 6.0 |
| 10 | 5.3 | 7.8 | 8.5 | 5.3 | # 3.9 | 5.3 | 6.0 | 1.4 | 2,160 | 6.0 | 8.8 | 4.9 |
| 11 | # 5.3 | 7.4 | 9.2 | 4.9 | 4.2 | 5.7 | # 6.4 | 1.4 | 1,210 | # 5.3 | 7.1 | 3.9 |
| 12 | 5.3 | 7.1 | 9.5 | # 4.2 | 4.2 | 5.7 | # 6.7 | 1.4 | 47.0 | 5.3 | 5.7 | # 2.8 |
| 13 | 5.3 | 6.7 | 10.2 | 4.2 | 4.2 | 5.7 | 6.7 | 1.4 | # 22.6 | 5.3 | 5.7 | 2.8 |
| 14 | 5.3 | 6.4 | 29.3 | 3.9 | 4.2 | # 5.7 | 6.4 | 1.4 | 22.6 | 5.3 | # 5.7 | 2.8 |
| 15 | 5.7 | # 6.4 | # 21.9 | 3.5 | 4.6 | 5.7 | 6.0 | 224 | 22.6 | 5.3 | 5.3 | 2.8 |
| 16 | 5.7 | 6.0 | 13.4 | 3.5 | 4.6 | 5.3 | 5.7 | # 334 | 22.6 | 5.7 | 5.3 | 2.8 |
| 17 | 5.7 | 6.0 | 11.7 | 3.2 | 4.6 | 4.9 | 5.7 | 17.0 | 22.6 | 5.7 | 5.3 | 2.8 |
| 18 | # 5.7 | 5.7 | 11.3 | # 2.8 | 4.6 | 4.6 | 5.3 | 5.7 | 22.6 | # 5.7 | 5.3 | 2.8 |
| 19 | 5.7 | 5.7 | 10.9 | 2.8 | # 4.9 | 4.2 | # 4.9 | 4.9 | 40.6 | 5.3 | 5.3 | 2.8 |
| 20 | 5.3 | 5.7 | 10.2 | 2.8 | 4.6 | 3.9 | 4.9 | 5.3 | # 50.5 | 5.3 | # 5.3 | 2.8 |
| 21 | 4.9 | 5.3 | 9.9 | 2.8 | 4.2 | # 3.5 | 4.6 | 117 | 90.8 | 4.9 | 5.3 | 2.8 |
| 22 | 4.9 | # 5.3 | 9.5 | 2.8 | 3.9 | 3.5 | 4.2 | 216 | 29.7 | 4.6 | # 4.9 | 2.8 |
| 23 | 4.6 | 4.9 | 9.2 | 2.8 | # 3.5 | 3.5 | 3.9 | # 30.7 | 14.1 | 4.6 | 4.9 | 5.3 |
| 24 | 4.2 | 4.9 | 8.5 | 2.8 | 3.5 | 3.5 | 3.5 | 10.6 | 14.1 | 4.2 | 4.6 | 27.9 |
| 25 | # 4.2 | 4.6 | 7.8 | 3.2 | 3.5 | 3.5 | 3.2 | 9.9 | 10.6 | # 36.7 | 4.6 | 21.9 |
| 26 | 4.6 | 4.2 | 7.4 | # 3.2 | 3.5 | 3.5 | # 2.8 | 9.2 | 10.6 | 95.3 | 4.2 | 12.7 |
| 27 | 4.6 | 4.2 | 6.7 | 3.2 | 3.5 | 5.3 | 2.8 | 8.5 | # 4,380 | 17.3 | 3.9 | # 8.5 |
| 28 | 4.9 | 3.9 | 6.4 | 3.2 | 3.5 | # 14.1 | 2.8 | 7.8 | 413 | 11.7 | # 3.9 | 8.5 |
| 29 | 5.3 | # 5.7 | 3.5 | 3.5 | 7.1 | 2.8 | 7.1 | 28.3 | 9.5 | 3.9 | 8.1 | |
| 30 | 5.3 | 6.0 | 3.5 | 3.5 | 5.3 | 2.8 | # 6.4 | 24.7 | 7.8 | 3.9 | 7.8 | |
| 31 | 5.7 | 6.0 | 3.9 | # 3.9 | 2.8 | 5.7 | | 6.0 | | | | 7.8 |
| Sum | 171.5 | 132.3 | 151.4 | | 1,045.6 | | | 357.3 | | 209.7 | | |
| | 166.5 | 282.1 | 124.3 | | 139.8 | | | 10,360.5 | | 277.5 | | |

Current Year 1962

Period 1954-1962

| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total | Acre-Feet | | |
|---------------|-------------------|-----|---------------------|---------------|---------------------|------------|-------------|---------------|------------------|
| | High | Low | Day | Day | | | High | Maximum | Minimum |
| Jan. | | | 4 | 0 | 7.1 | 1 | 3.5 | 5.4 | 330 |
| | | | 8 | 0 | 8.1 | 28 | 3.9 | 6.1 | 340 |
| Mar. | 4.30 | | 14 | 41.7 | 1 | 3.5 | 9.1 | 559 | 2,753 |
| Apr. | | | 5 | 0 | 7.4 | # 18 | 2.8 | 4.4 | 263 |
| May | | | 19 | 0 | 4.9 | # 23 | 3.5 | 4.0 | 247 |
| June | 4.07 | | 28 | 0 | 17.0 | # 21 | 3.5 | 5.0 | 301 |
| July | | | # 12 | 0 | 6.7 | # 26 | 2.8 | 4.5 | 277 |
| Aug. | 7.71 | | 15 | 1,110 | # 8 | 1.4 | 33.7 | 2,072 | 2,636 |
| Sept. | 16.77 | | 27 | 10,100 | # 6 | 2.1 | 345 | 20,554 | 8,324 |
| Oct. | 5.22 | | 26 | 208 | 24 | 4.2 | 11.5 | 709 | 101,242 |
| Nov. | 5.05 | | 6 | 173 | # 27 | 3.9 | 9.2 | 550 | 901,500 |
| Dec. | 4.20 | | 24 | 36.0 | # 12 | 2.8 | 6.8 | 416 | 26,705 |
| Yearly | 16.77 | | | 10,100 | | 1.4 | 36.8 | 26,618 | 167,189 |
| | | | | | | | | | 1,229,922 |
| | | | | | | | | | 14,444 |

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

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

Since June 1956 the United States portion of the water in Falcón Reservoir and in the Rio Grande below Falcón 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 1962, 9,339 irrigable acres, several towns, and rural homes in this river reach were served Rio Grande water 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 Falcón Dam.

The total diversion during 1962 in this river reach was 12,478 acre-feet, or 1.1% of the total water diverted from the Rio Grande below Falcón Dam. All the records of diversions in this river reach were furnished by the Special Water Master. About 31% of the water diverted was measured by means of flow meters and the balance 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|------|--------------|-------|----------------|------|--------------|------|--------------|------|--------------|------|
| 1 | 16.0 | 22.0 | 22.0 | 12.0 | 77.0 | 30.0 | 5.0 | 23.0 | 11.0 | 8.0 | 25.0 | 12.0 |
| 2 | 15.0 | 20.0 | 24.0 | 18.0 | 62.0 | 23.0 | 9.0 | 20.0 | 13.0 | 8.0 | 24.0 | 10.0 |
| 3 | 9.0 | 21.0 | 13.0 | 18.0 | 54.0 | 29.0 | 10.0 | 21.0 | 15.0 | 4.0 | 19.0 | 13.0 |
| 4 | 11.0 | 14.0 | 26.0 | 18.0 | 56.0 | 45.0 | 18.0 | 22.0 | 15.0 | 9.0 | 12.0 | 13.0 |
| 5 | 11.0 | 21.0 | 26.0 | 13.0 | 51.0 | 44.0 | 17.0 | 13.0 | 17.0 | 9.0 | 14.0 | 16.0 |
| 6 | 12.0 | 22.0 | 31.0 | 11.0 | 26.0 | 43.0 | 17.0 | 9.0 | 19.0 | 9.0 | 13.0 | 16.0 |
| 7 | 7.0 | 20.0 | 32.0 | 10.0 | 30.0 | 38.0 | 20.0 | 13.0 | 18.0 | 11.0 | 13.0 | 17.0 |
| 8 | 12.0 | 21.0 | 33.0 | 14.0 | 33.0 | 34.0 | 13.0 | 13.0 | 17.0 | 11.0 | 6.0 | 8.0 |
| 9 | 13.0 | 22.0 | 31.0 | 14.0 | 40.0 | 26.0 | 15.0 | 9.0 | 6.0 | 7.0 | 8.0 | 7.0 |
| 10 | 4.0 | 18.0 | 29.0 | 14.0 | 41.0 | 23.0 | 15.0 | 4.0 | 10.0 | 8.0 | 6.0 | 10.0 |
| 11 | 5.0 | 20.0 | 23.0 | 16.0 | 42.0 | 38.0 | 16.0 | 6.0 | 10.0 | 13.0 | 10.0 | 12.0 |
| 12 | 4.0 | 30.0 | 22.0 | 14.0 | 41.0 | 39.0 | 11.0 | 15.0 | 9.0 | 14.0 | 14.0 | 8.0 |
| 13 | 7.0 | 34.0 | 21.0 | 14.0 | 39.0 | 45.0 | 11.0 | 12.0 | 8.0 | 16.0 | 14.0 | 6.0 |
| 14 | 16.0 | 34.0 | 9.0 | 14.0 | 41.0 | 49.0 | 11.0 | 10.0 | 9.0 | 13.0 | 14.0 | 9.0 |
| 15 | 18.0 | 40.0 | 1.0 | 7.0 | 46.0 | 45.0 | 8.0 | 17.0 | 6.0 | 14.0 | 11.0 | 8.0 |
| 16 | 18.0 | 30.0 | 1.0 | 14.0 | 46.0 | 42.0 | 10.0 | 19.0 | 6.0 | 14.0 | 11.0 | 14.0 |
| 17 | 17.0 | 30.0 | 0 | 18.0 | 45.0 | 28.0 | 16.0 | 21.0 | 12.0 | 14.0 | 12.0 | 13.0 |
| 18 | 16.0 | 24.0 | 4.0 | 19.0 | 50.0 | 34.0 | 12.0 | 15.0 | 17.0 | 12.0 | 12.0 | 13.0 |
| 19 | 18.0 | 28.0 | 5.0 | 17.0 | 49.0 | 36.0 | 11.0 | 13.0 | 7.0 | 13.0 | 14.0 | 11.0 |
| 20 | 15.0 | 28.0 | 5.0 | 16.0 | 33.0 | 31.0 | 9.0 | 13.0 | 6.0 | 14.0 | 13.0 | 11.0 |
| 21 | 16.0 | 30.0 | 2.0 | 16.0 | 44.0 | 29.0 | 8.0 | 12.0 | 6.0 | 7.0 | 14.0 | 10.0 |
| 22 | 16.0 | 26.0 | 1.0 | 9.0 | 46.0 | 27.0 | 12.0 | 13.0 | 7.0 | 21.0 | 13.0 | 6.0 |
| 23 | 16.0 | 22.0 | 1.0 | 17.0 | 46.0 | 29.0 | 13.0 | 14.0 | 5.0 | 22.0 | 13.0 | 4.0 |
| 24 | 8.0 | 21.0 | 1.0 | 18.0 | 45.0 | 18.0 | 11.0 | 10.0 | 8.0 | 17.0 | 11.0 | 2.0 |
| 25 | 14.0 | 20.0 | 5.0 | 21.0 | 41.0 | 21.0 | 11.0 | 12.0 | 9.0 | 13.0 | 10.0 | 2.0 |
| 26 | 7.0 | 16.0 | 12.0 | 20.0 | 38.0 | 21.0 | 11.0 | 10.0 | 14.0 | 8.0 | 12.0 | 1.0 |
| 27 | 12.0 | 20.0 | 13.0 | 24.0 | 24.0 | 18.0 | 9.0 | 11.0 | 6.0 | 9.0 | 14.0 | 1.0 |
| 28 | 14.0 | 20.0 | 12.0 | 23.0 | 27.0 | 8.0 | 7.0 | 11.0 | 4.0 | 8.0 | 13.0 | 0 |
| 29 | 14.0 | | 14.0 | 15.0 | 36.0 | 7.0 | 2.0 | 11.0 | 11.0 | 7.0 | 13.0 | 0 |
| 30 | 18.0 | | 14.0 | 20.0 | 36.0 | 7.0 | 7.0 | 9.0 | 8.0 | 7.0 | 13.0 | 2.0 |
| 31 | 22.0 | | 10.0 | | 38.0 | | 10.0 | 10.0 | | 7.0 | | 1.0 |
| Sum | 674.0 | | 474.0 | | 907.0 | | 411.0 | | 347.0 | | 256.0 | |
| | 401.0 | | 443.0 | | 1,323.0 | | 355.0 | | 309.0 | | 391.0 | |

Current Year 1962

| Month | Average Rainfall Inches ** | | Extreme Second-Feet | | Average Second- Feet | Total Acre-Feet | Period 1957-1962 | | | | |
|---------------|-------------------------------|--------------|---------------------|-------------|----------------------------|--------------------|------------------|---------------|---------------|--|--|
| | 1957-1962 | 1962 | High | | | | Average | Maximum | Minimum | | |
| | | | Day | Day | | | | | | | |
| Jan. | 1.44 | .26 | 31 | 22.0 | † 10 | 4.0 | 12.9 | 795 | 616 | | |
| Feb. | 1.30 | .04 | 15 | 40.0 | 4 | 14.0 | 24.1 | 1,337 | 759 | | |
| Mar. | .86 | 1.73 | 8 | 33.0 | 17 | 0 | 14.3 | 879 | 758 | | |
| Apr. | 1.72 | .98 | 27 | 24.0 | 15 | 7.0 | 15.8 | 940 | 1,089 | | |
| May | 1.55 | .34 | 1 | 77.0 | 27 | 24.0 | 42.7 | 2,624 | 1,649 | | |
| June | 2.41 | 2.36 | 14 | 49.0 | † 29 | 7.0 | 30.2 | 1,799 | 1,605 | | |
| July | .66 | 0 | 7 | 20.0 | 29 | 2.0 | 11.5 | 704 | 970 | | |
| Aug. | 1.80 | 1.02 | 1 | 23.0 | 10 | 4.0 | 13.3 | 815 | 797 | | |
| Sept. | 3.75 | 4.32 | 6 | 19.0 | 28 | 4.0 | 10.3 | 613 | 718 | | |
| Oct. | 2.92 | 1.82 | 23 | 22.0 | 3 | 4.0 | 11.2 | 688 | 797 | | |
| Nov. | 1.52 | .46 | 1 | 25.0 | † 8 | 6.0 | 13.0 | 776 | 595 | | |
| Dec. | .71 | 1.38 | 7 | 17.0 | † 28 | 0 | 8.3 | 508 | 857 | | |
| Yearly | 20.64 | 14.71 | | 77.0 | | 0 | 17.2 | 12,478 | 11,210 | | |
| | | | | | | | | 14,754 | 6,859 | | |

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

RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located about 1 river mile below Rio Grande City, Texas, 3.9 river miles below the confluence of the Rio San Juan with the Rio Grande, and 1,014.3 river miles below the 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 101 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1955 through December 1962. Records composed of the addition of discharges of the Rio Grande at Roma, Texas, and the Rio San Juan at Santa Rosalia, 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 January 1924 through December 1931. Records are also available for the station "Rio Grande Near Rio Grande City" 3 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 Falcón Dam, flow at this station is controlled largely by releases from Falcón Reservoir, 39.9 river miles upstream.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow was 198,800 second-feet, which occurred September 5, 1952 at an elevation of 157.4 feet at the station 3 miles downstream. Zero 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 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------|---------|---------|----------|----------|---------|---------|---------|----------|---------|---------|---------|
| 1 | 3,680 | 9,520 | # 4,280 | 2,240 | 7,040 | 14,100 | 168 | 1,560 | 780 | 866 | 1,050 | 600 |
| 2 | 3,500 | # 8,800 | # 2,090 | # 3,120 | # 6,540 | 12,200 | 127 | # 1,250 | 589 | 4,870 | 693 | 304 |
| 3 | # 3,090 | 7,760 | 781 | 3,880 | 2,800 | 8,700 | 107 | 1,340 | 651 | 3,990 | 606 | 135 |
| 4 | 3,180 | 6,710 | 882 | 2,590 | # 1,550 | 7,750 | 175 | 720 | 757 | 3,150 | 959 | 1,070 |
| 5 | 4,210 | # 7,560 | # 1,510 | # 1,660 | 1,900 | 6,290 | 468 | 841 | 790 | 2,430 | 1,210 | 1,450 |
| 6 | 3,330 | 6,820 | 2,920 | # 1,890 | 3,100 | 10,300 | # 340 | 2,130 | # 1,220 | 2,010 | 1,490 | 1,610 |
| 7 | 3,060 | # 7,990 | # 3,010 | 4,180 | 3,170 | # 8,750 | 314 | # 825 | 940 | 864 | 937 | 1,190 |
| 8 | # 3,920 | 9,020 | 3,080 | 5,050 | # 2,520 | 6,790 | 284 | 1,920 | 2,390 | 250 | 644 | 1,160 |
| 9 | 4,160 | # 8,350 | # 2,190 | # 3,490 | 1,280 | 7,780 | 410 | # 1,680 | 1,580 | 421 | # 599 | 636 |
| 10 | # 4,380 | 7,330 | 1,660 | 1,110 | # 1,670 | 7,250 | 640 | 1,930 | 2,360 | 2,020 | 961 | # 320 |
| 11 | 2,770 | 8,720 | 2,510 | # 1,860 | # 2,970 | 6,200 | 628 | 1,300 | 2,140 | 2,340 | 804 | 1,220 |
| 12 | # 1,310 | # 9,070 | 3,510 | 3,200 | 2,540 | # 8,050 | # 2,980 | 1,990 | 441 | 1,630 | 468 | 1,110 |
| 13 | 3,010 | 8,200 | 2,270 | # 2,110 | 3,210 | 6,310 | # 2,760 | 1,590 | 275 | 1,050 | 652 | 1,560 |
| 14 | 5,130 | # 7,710 | 1,620 | 1,720 | 2,680 | # 7,950 | 989 | # 1,670 | 182 | 1,370 | 588 | 686 |
| 15 | # 6,840 | 8,750 | 506 | 3,260 | 3,170 | # 7,400 | 1,210 | # 908 | 448 | 1,000 | # 1,160 | 619 |
| 16 | 5,830 | # 9,020 | 270 | 3,130 | # 6,200 | 7,960 | 1,210 | 1,680 | 862 | # 1,750 | 722 | 674 |
| 17 | # 5,690 | 6,340 | 482 | 2,360 | 6,070 | 8,280 | 2,450 | 1,440 | 1,010 | 2,740 | 597 | 1,550 |
| 18 | 5,160 | 7,440 | 524 | # 3,700 | # 7,640 | 7,390 | # 2,250 | 1,400 | 2,030 | 1,920 | 1,360 | # 1,630 |
| 19 | 5,500 | # 6,990 | 468 | 5,170 | 7,310 | 6,400 | 2,020 | 801 | # 4,180 | 743 | 1,050 | 2,400 |
| 20 | 5,620 | 5,140 | 510 | # 3,640 | 8,340 | # 9,380 | # 1,600 | 264 | 1,820 | 642 | 1,090 | 2,280 |
| 21 | 4,580 | 4,650 | # 491 | 3,990 | 10,500 | 5,860 | 2,300 | 277 | 1,070 | 709 | # 1,300 | 1,320 |
| 22 | # 3,340 | 5,130 | 355 | 4,700 | # 11,400 | 7,980 | 2,070 | # 690 | 812 | 2,100 | 937 | 1,580 |
| 23 | 3,480 | # 5,010 | 270 | 6,890 | 10,000 | 7,370 | 1,390 | 336 | 323 | # 1,320 | 828 | 1,600 |
| 24 | # 3,330 | 3,810 | 265 | 5,730 | # 10,900 | 3,680 | 1,300 | # 1,340 | 152 | 650 | 632 | 1,950 |
| 25 | 3,000 | 3,410 | 238 | # 5,160 | # 11,900 | 4,050 | # 892 | 883 | # 114 | # 1,320 | 318 | 718 |
| 26 | # 5,100 | # 3,080 | 242 | 4,300 | # 16,100 | 3,000 | 912 | 634 | # 724 | 2,370 | 1,260 | 627 |
| 27 | 6,580 | 3,390 | 255 | # 6,100 | 16,300 | # 1,900 | # 1,500 | 1,630 | # 10,400 | 992 | # 642 | 626 |
| 28 | 6,420 | 4,150 | 265 | 5,640 | 13,800 | # 1,310 | 1,590 | 1,320 | 6,050 | 593 | 577 | 1,390 |
| 29 | # 7,120 | # 265 | 5,600 | # 12,800 | 456 | 1,150 | # 837 | 1,120 | 638 | 706 | 383 | |
| 30 | 7,790 | # 250 | 5,830 | 9,590 | 230 | 862 | 1,200 | 373 | # 1,360 | # 600 | 152 | |
| 81 | # 7,680 | 242 | 11,100 | | | 1,200 | # 1,160 | # 1,560 | | | 112 | |
| Sum | 189,870 | | 113,300 | | 201,066 | | | 37,546 | 49,668 | | 32,662 | |
| | 141,790 | | 37,851 | | 216,090 | | | 36,296 | 46,583 | | 25,440 | |

Current Year 1962

Period # 1954-1962

| Month | Extreme Gage | | | Extreme Second-Feet | | Average Second- Feet | Total | Acre-Feet | | | |
|---------------|--------------|-------|-----|---------------------|-----|----------------------------|-------|-----------|-----------|-----------|-----------|
| | Foot | | Day | High | Low | | | Day | Average | Maximum | Minimum |
| Jan. | 32.08 | 26.64 | 31 | 8,540 | 12 | 634 | 4,570 | 281,240 | 230,348 | 350,000 | 70,100 |
| Feb. | 32.88 | 27.44 | 1 | 9,970 | 25 | 1,580 | 6,780 | 376,607 | 228,779 | 376,607 | 25,500 |
| Mar. | 31.11 | 25.90 | 1 | 6,930 | 25 | 200 | 1,220 | 75,077 | 164,875 | 378,000 | 14,400 |
| Apr. | 31.68 | 26.07 | 23 | 7,860 | 1 | 270 | 3,780 | 224,731 | 194,648 | 340,000 | 75,100 |
| May | 36.17 | 26.54 | 26 | 17,200 | 9 | 554 | 6,970 | 428,615 | 343,624 | 521,000 | 231,000 |
| June | 35.54 | 25.89 | 1 | 15,100 | 30 | 196 | 6,700 | 398,814 | 347,979 | 560,000 | 197,000 |
| July | 30.10 | 25.54 | 12 | 5,240 | 4 | 93.8 | 1,170 | 71,993 | 121,066 | 233,000 | 22,300 |
| Aug. | 29.10 | 25.69 | 6 | 3,600 | 21 | 130 | 1,210 | 74,472 | 135,719 | 202,000 | 25,000 |
| Sept. | 36.71 | 25.53 | 27 | 22,600 | 25 | 91.6 | 1,550 | 92,397 | 158,711 | 276,000 | 72,600 |
| Oct. | 30.74 | 25.76 | 2 | 6,340 | 9 | 152 | 1,600 | 98,516 | 426,890 | 3,047,000 | 30,000 |
| Nov. | 28.34 | 25.93 | 6 | 2,570 | 25 | 211 | 848 | 50,460 | 216,706 | 1,442,000 | 30,000 |
| Dec. | 29.50 | 25.55 | 19 | 4,220 | 4 | 96.0 | 1,050 | 64,785 | 166,320 | 540,000 | 36,100 |
| Yearly | 36.71 | 25.53 | | 22,600 | | 91.6 | 3,090 | 2,237,707 | 2,735,665 | 6,619,700 | 1,637,900 |

† Period 1955-1962 # 1954 Values are Rio Grande City Station discharges less arroyo inflow

‡ Discharge measurement made on this day

**CONTRIBUTIONS FROM RÍO SAN JUAN
BELOW FORT RINGGOLD STATION**

DESCRIPTION: The Lower Río San Juan Irrigation District lies along the Mexican side of the Río 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 above the confluence with the Río Grande. The Río San Juan enters the Río Grande 1,010.4 river miles below the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Río Grande through the Río San Juan Channel, Rancherías Drain and Los Fresnos Drain, above Fort Ringgold Gaging Station; and through Puertecitos, Los Indios, Huizache, and Morillo Drains, between this station and Anzalduas Dam. Only the portion of drain water from this irrigation district reaching the Río Grande via drains below Fort Ringgold Gaging Station is shown below. The portion of water reaching the Río Grande via channels above Fort Ringgold Gaging Station is shown on page 56 of this Bulletin.

RECORDS: Drain water reaching the Río Grande through Puertecitos, Los Indios, Huizache, and Morillo Drains was determined by prorating between frequent current meter measurements. In 1962, 28, 27, 47, and 53 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 1962, 76% of the drain water reaching the Río Grande below Fort Ringgold Gaging Station from this irrigation district was contributed by Morillo Drain. Records available: January 1953 through December 1962.

REMARKS: In 1962, there were 162,908 irrigable acres in the Lower Río San Juan Irrigation District.

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------|------|---------|-------|-------|------|---------|------|-------|------|-------|------|
| 1 | 36.1 | 58.4 | 75.3 | 60.8 | 109 | 136 | 122 | 35.7 | 25.7 | 19.2 | 12.4 | 20.1 |
| 2 | 38.5 | 63.1 | 76.8 | 63.6 | 112 | 138 | 114 | 34.7 | 25.5 | 18.6 | 12.7 | 18.5 |
| 3 | 40.8 | 69.0 | 78.4 | 66.4 | 116 | 139 | 106 | 34.7 | 25.1 | 18.0 | 13.0 | 17.0 |
| 4 | 43.2 | 74.8 | 79.9 | 69.3 | 116 | 141 | 97.5 | 34.6 | 24.8 | 17.4 | 13.4 | 15.5 |
| 5 | 41.9 | 80.7 | 81.5 | 72.0 | 115 | 142 | 89.3 | 34.6 | 24.5 | 17.0 | 13.6 | 13.9 |
| 6 | 40.6 | 86.6 | 83.0 | 68.5 | 115 | 143 | 84.7 | 34.6 | 24.2 | 16.5 | 14.0 | 13.6 |
| 7 | 39.4 | 92.4 | 84.5 | 65.0 | 114 | 145 | 80.1 | 34.6 | 24.0 | 16.1 | 14.3 | 13.7 |
| 8 | 38.2 | 98.3 | 86.0 | 61.4 | 114 | 140 | 75.5 | 34.5 | 23.7 | 15.6 | 14.6 | 13.7 |
| 9 | 36.9 | 99.9 | 86.9 | 57.9 | 114 | 135 | 71.0 | 34.5 | 23.5 | 15.1 | 14.7 | 13.8 |
| 10 | 35.6 | 102 | 87.7 | 54.3 | 113 | 129 | 66.4 | 33.9 | 23.2 | 14.7 | 14.8 | 13.8 |
| 11 | 34.4 | 103 | 88.6 | 50.8 | 114 | 124 | 61.8 | 33.1 | 23.0 | 14.2 | 14.9 | 13.8 |
| 12 | 34.0 | 105 | 89.4 | 47.3 | 114 | 119 | 57.2 | 32.4 | 22.7 | 14.0 | 14.9 | 13.9 |
| 13 | 33.8 | 107 | 90.3 | 48.0 | 114 | 114 | 56.6 | 31.7 | 22.4 | 13.8 | 15.0 | 14.2 |
| 14 | 35.5 | 108 | 91.1 | 48.8 | 115 | 109 | 56.0 | 31.0 | 22.0 | 13.6 | 15.1 | 14.4 |
| 15 | 33.2 | 110 | 92.0 | 49.5 | 119 | 106 | 55.4 | 30.2 | 21.7 | 13.4 | 15.1 | 14.7 |
| 16 | 39.2 | 109 | 90.8 | 50.3 | 122 | 103 | 54.7 | 29.6 | 21.4 | 13.2 | 15.1 | 14.9 |
| 17 | 45.3 | 109 | 89.6 | 51.1 | 126 | 106 | 54.1 | 29.0 | 21.0 | 13.0 | 15.1 | 15.1 |
| 18 | 51.3 | 108 | 88.4 | 51.8 | 130 | 109 | 53.5 | 28.4 | 20.9 | 12.8 | 15.2 | 15.4 |
| 19 | 52.8 | 107 | 87.2 | 52.9 | 134 | 112 | 52.8 | 27.8 | 20.8 | 13.0 | 15.2 | 15.6 |
| 20 | 54.4 | 107 | 86.0 | 58.3 | 136 | 116 | 51.2 | 27.2 | 20.7 | 13.2 | 15.3 | 16.2 |
| 21 | 55.9 | 106 | 84.8 | 63.7 | 138 | 119 | 49.5 | 26.6 | 20.6 | 13.4 | 15.2 | 16.7 |
| 22 | 57.5 | 105 | 83.6 | 69.2 | 137 | 121 | 47.9 | 26.0 | 20.5 | 13.6 | 15.3 | 17.2 |
| 23 | 59.1 | 101 | 80.3 | 74.7 | 136 | 124 | 46.3 | 25.4 | 20.4 | 13.8 | 16.3 | 17.6 |
| 24 | 60.6 | 96.8 | 77.0 | 80.1 | 134 | 127 | 44.6 | 25.5 | 20.3 | 14.0 | 17.4 | 18.0 |
| 25 | 62.2 | 92.5 | 73.8 | 85.5 | 134 | 129 | 43.0 | 25.5 | 20.2 | 14.2 | 18.5 | 18.5 |
| 26 | 63.9 | 88.2 | 70.5 | 90.9 | 134 | 132 | 41.4 | 25.6 | 20.1 | 13.9 | 19.5 | 19.0 |
| 27 | 63.0 | 83.9 | 67.2 | 94.5 | 134 | 131 | 40.4 | 25.6 | 20.1 | 13.6 | 20.6 | 19.4 |
| 28 | 62.1 | 79.6 | 64.0 | 98.1 | 134 | 130 | 39.5 | 25.7 | 20.0 | 13.4 | 21.6 | 19.9 |
| 29 | 61.1 | | 60.7 | 102 | 134 | 130 | 38.5 | 25.7 | 19.9 | 13.2 | 21.6 | 20.4 |
| 30 | 60.2 | | 58.0 | 105 | 134 | 130 | 37.5 | 26.0 | 19.8 | 12.9 | 21.6 | 20.9 |
| 31 | 59.3 | | 58.0 | | 135 | | 36.6 | 26.0 | | 12.6 | | 21.3 |
| Sum | 2,651.2 | | 2,011.7 | | 3,779 | | 930.4 | | 451.0 | | 510.7 | |
| | 1,470.0 | | 2,491.3 | | 3,846 | | 1,925.0 | | 662.7 | | 476.0 | |

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | | Average Second-Feet | Total Acre-Feet | Period 1954-1962 | | | |
|---------------|-------------------|------|------|---------------------|------|------|---------------------|-----------------|------------------|---------|---------|--------|
| | High | | Low | High | | Low | | | Average | Maximum | Minimum | |
| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | |
| Jan. | | | | 26 | 63.9 | 15 | 33.2 | 47.4 | 2,912 | 2,099 | 3,490 | 611 |
| Feb. | | | | 15 | 110 | 1 | 58.4 | 94.7 | 5,257 | 3,441 | 6,540 | 1,230 |
| Mar. | | | | 15 | 92.0 | †30 | 58.0 | 80.4 | 4,940 | 2,824 | 4,960 | 1,050 |
| Apr. | | | | 30 | 105 | 12 | 47.3 | 67.1 | 3,990 | 3,193 | 5,930 | 1,350 |
| May | | | | 21 | 138 | 1 | 109 | 124 | 7,628 | 5,310 | 8,720 | 1,900 |
| June | | | | 7 | 145 | 16 | 103 | 126 | 7,497 | 5,734 | 8,210 | 2,570 |
| July | | | | 1 | 122 | 31 | 36.6 | 62.1 | 3,818 | 3,572 | 4,760 | 2,190 |
| Aug. | | | | 1 | 35.7 | 23 | 25.4 | 30.0 | 1,845 | 2,316 | 3,480 | 1,010 |
| Sept. | | | | 1 | 25.7 | 30 | 19.8 | 22.1 | 1,315 | 2,189 | 4,150 | 1,190 |
| Oct. | | | | 1 | 19.2 | 31 | 12.6 | 14.5 | 895 | 2,183 | 4,200 | 895 |
| Nov. | | | | †28 | 21.6 | 1 | 12.4 | 15.9 | 944 | 1,720 | 3,360 | 845 |
| Dec. | | | | 31 | 21.3 | 6 | 13.6 | 16.5 | 1,013 | 1,571 | 3,110 | 753 |
| Yearly | | | | | 145 | | 12.4 | 58.1 | 42,054 | 36,152 | 52,630 | 20,051 |

† And other days Ø Mean daily

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

Since June 1956 the United States portion of the water in Falcón Reservoir and in the Rio Grande below Falcón 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 1962, 185,750 irrigable acres, several towns, and rural homes in this river reach were served Rio Grande water under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 23.7% of the total irrigable acres below Falcón Dam.

The total diversion during 1962 in this river reach was 254,926 acre-feet, or 22.6% of the total water diverted from the Rio Grande below Falcón Dam. About 89% 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 balance 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|----------|------|------|---------|---------|----------|-------|---------|------|-------|------|---------|---------|
| 1 | 220 | 676 | 363 | 28.0 | 549 | 1,000 | 10.0 | 399 | 131 | 232 | 259 | 123 |
| 2 | 481 | 684 | 673 | 107 | 384 | 516 | 14.0 | 325 | 38.0 | 262 | 188 | 118 |
| 3 | 529 | 533 | 544 | 204 | 359 | 382 | 15.0 | 265 | 73.0 | 291 | 185 | 246 |
| 4 | 522 | 434 | 311 | 290 | 359 | 528 | 17.0 | 169 | 323 | 315 | 134 | 246 |
| 5 | 457 | 677 | 640 | 270 | 277 | 692 | 11.0 | 108 | 362 | 270 | 360 | 247 |
| 6 | 368 | 694 | 571 | 213 | 142 | 736 | 52.0 | 372 | 303 | 172 | 369 | 204 |
| 7 | 223 | 691 | 645 | 136 | 289 | 439 | 19.0 | 448 | 218 | 176 | 306 | 151 |
| 8 | 489 | 713 | 736 | 39.0 | 445 | 355 | 12.0 | 470 | 134 | 206 | 259 | 121 |
| 9 | 397 | 707 | 725 | 225 | 495 | 267 | 124 | 522 | 111 | 302 | 217 | 147 |
| 10 | 33.0 | 598 | 553 | 308 | 481 | 257 | 190 | 341 | 245 | 311 | 122 | 312 |
| 11 | 44.0 | 443 | 406 | 294 | 474 | 592 | 153 | 209 | 358 | 425 | 92.0 | 361 |
| 12 | 44.0 | 779 | 681 | 191 | 443 | 691 | 72.0 | 159 | 353 | 441 | 240 | 213 |
| 13 | 148 | 811 | 713 | 205 | 290 | 705 | 249 | 432 | 345 | 349 | 306 | 176 |
| 14 | 233 | 833 | 172 | 155 | 779 | 715 | 253 | 470 | 276 | 260 | 333 | 130 |
| 15 | 528 | 834 | 43.0 | 154 | 793 | 647 | 204 | 412 | 160 | 459 | 272 | 109 |
| 16 | 540 | 791 | 37.0 | 429 | 740 | 524 | 266 | 227 | 102 | 463 | 241 | 34.0 |
| 17 | 687 | 650 | 26.0 | 426 | 925 | 421 | 237 | 194 | 228 | 449 | 210 | 203 |
| 18 | 699 | 469 | 8.0 | 433 | 874 | 790 | 258 | 114 | 151 | 457 | 115 | 332 |
| 19 | 691 | 907 | 7.0 | 383 | 792 | 946 | 257 | 44.0 | 235 | 374 | 306 | 347 |
| 20 | 483 | 877 | 7.0 | 366 | 528 | 822 | 286 | 179 | 141 | 272 | 410 | 388 |
| 21 | 266 | 887 | 7.0 | 288 | 903 | 761 | 178 | 283 | 89.0 | 211 | 398 | 366 |
| 22 | 615 | 905 | 8.0 | 130 | 990 | 702 | 169 | 229 | 114 | 360 | 147 | 125 |
| 23 | 361 | 838 | 13.0 | 479 | 951 | 473 | 333 | 221 | 96.0 | 416 | 350 | 14.0 |
| 24 | 287 | 650 | 49.0 | 537 | 860 | 232 | 402 | 145 | 108 | 403 | 219 | 7.0 |
| 25 | 293 | 460 | 17.0 | 535 | 809 | 487 | 363 | 121 | 160 | 343 | 153 | 3.0 |
| 26 | 636 | 742 | 78.0 | 635 | 724 | 305 | 279 | 91.0 | 202 | 250 | 233 | 79.0 |
| 27 | 518 | 789 | 108 | 602 | 559 | 73.0 | 232 | 170 | 146 | 216 | 271 | 120 |
| 28 | 407 | 388 | 374 | 396 | 910 | 36.0 | 185 | 244 | 368 | 136 | 275 | 36.0 |
| 29 | 587 | 252 | 270 | 1,040 | 158 | 133 | 224 | 576 | 278 | 261 | 5.0 | |
| 30 | 599 | 207 | 601 | 1,000 | 95.0 | 344 | 216 | 189 | 351 | 184 | 2.0 | |
| 31 | 628 | 64.0 | 903 | | 378 | | 169 | | 337 | | | 2.0 |
| Sum | | | 19,460 | 9,329.0 | 15,347.0 | | 7,972.0 | | 9,787 | | 7,415.0 | 4,967.0 |
| 13,013.0 | | | 9,038.0 | 20,067 | 5,794.0 | | 6,335.0 | | | | | |

Sum 19,460 9,329.0 15,347.0 7,972.0 9,787 4,967.0
 13,013.0 9,038.0 20,067 5,794.0 6,335.0 7,415.0

Current Year 1962 **Period** 1957-1962

| Month | Average Rainfall Inches ** | | g Extreme Second-Feet | | | | Average Second- Foot | Total | Acre-Feet | | |
|---------------|-------------------------------|--------------|-----------------------|--------------|------|------------|----------------------------|-----------------|-----------------|-----------------|-----------------|
| | 1957-1962 | 1962 | Day | High | Day | Low | | | Average | Maximum | Minimum |
| Jan. | 1.57 | .38 | 18 | 699 | 10 | 33.0 | 420 | 25, 811 | 10, 378 | 25, 811 | 2, 950 |
| Feb. | 1.44 | .01 | 19 | 907 | 28 | 388 | 695 | 38, 599 | 12, 166 | 38, 599 | 1, 640 |
| Mar. | .90 | 1.71 | 8 | 736 | † 19 | 7.0 | 292 | 17, 927 | 14, 356 | 41, 200 | 637 |
| Apr. | 1.69 | .47 | 26 | 635 | 1 | 28.0 | 311 | 18, 504 | 23, 527 | 35, 500 | 5, 760 |
| May | .90 | .52 | 29 | 1,040 | 6 | 142 | 647 | 39, 803 | 35, 450 | 48, 400 | 20, 600 |
| June | 2.22 | 3.31 | 1 | 1,000 | 28 | 36.0 | 512 | 30, 441 | 37, 174 | 59, 900 | 18, 900 |
| July | .43 | .03 | 24 | 402 | 1 | 10.0 | 187 | 11, 492 | 28, 782 | 45, 400 | 11, 492 |
| Aug. | 1.37 | .87 | 9 | 522 | 19 | 44.0 | 257 | 15, 812 | 22, 602 | 30, 000 | 15, 812 |
| Sept. | 2.82 | 2.01 | 29 | 576 | 2 | 38.0 | 211 | 12, 565 | 16, 971 | 35, 000 | 9, 360 |
| Oct. | 2.53 | .81 | 16 | 463 | 28 | 136 | 316 | 19, 413 | 17, 890 | 30, 400 | 2, 830 |
| Nov. | 1.34 | .99 | 20 | 410 | 11 | 92.0 | 247 | 14, 708 | 11, 936 | 18, 100 | 6, 620 |
| Dec. | 1.00 | 1.77 | 20 | 388 | † 30 | 2.0 | 160 | 9, 852 | 11, 505 | 16, 400 | 3, 480 |
| Yearly | 18.21 | 12.88 | | 1,040 | | 2.0 | 352 | 254, 927 | 242, 737 | 302, 180 | 159, 677 |

[†] And other days Ø Mean daily ** United States side - Average of several stations in the reach.

DIVERSIONS FROM THE RIO GRANDE
ANZALDUAS CANAL NEAR REYNOSA, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car, located .5 mile below the canal intake. The zero of the gage is 86.32 feet above mean sea level, U. S. C. & G. S. datum. This canal diverts water from the Rio Grande at a point immediately above Anzalduas Dam, 12.7 river miles above the international bridge between Hidalgo, Texas and Reynosa, Tamaulipas, 1,076.6 river miles below the American Dam at El Paso, Texas, and 171.6 river miles upstream from the Gulf of Mexico.

RECORDS: Based on 209 meter measurements during the year, 187 by the Mexican Section and 22 by the United States Section of this Commission and a continuous record of gage heights. Computations by shifting channel methods. Records available: 1952 through December 1962.

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 below this station. During 1962, 494,813 acres were irrigated with water delivered through this canal. 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 1962, 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. Zero flow occurs frequently.

Average Flow in Second-Feet

| | | | | |
|----------|------------|--------------|----------|----------------|
| Daily: | Max. 9,350 | May 29, 1957 | Min. 0 | Frequently |
| Monthly: | Max. 4,550 | June 1960 | Min. 0 | Several Months |
| Yearly: | Max. 1,980 | 1959 | Min. 150 | 1952 |

Mean Daily Discharge in Second-Feet 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|------------------|---------|--------------------|--------------------|-----------------|-----------------|-----------------|---------|---------|--------|
| 1 | 890 | 5,160 | 1,660 \ddagger | 3.5 | # 3,570 | # 6,530 | 371 | 11.3 | 162 | 42.4 | 29.3 | 31.4 |
| 2 | # 957 | # 5,160 | 1,340 \ddagger | 7.1 | # 4,130 | 6,530 \ddagger | 371 | 13.1 | 159 | 2,080 | 34.3 | 32.1 |
| 3 | # 985 | 5,260 | 1,000 | 28.3 | 4,590 | 6,530 | 353 | 15.2 \ddagger | 159 | # 3,290 | 32.1 | 30.4 |
| 4 | 975 | 5,260 | 812 | 1,260 | # 3,150 \ddagger | # 6,530 \ddagger | 353 | 17.7 | 159 | # 2,230 | 29.0 | 22.2 |
| 5 | 971 | 5,120 | # 572 | # 1,250 | 1,430 | 6,070 | 353 | 18.7 \ddagger | 177 | # 3,020 | 26.5 | 13.4 |
| 6 | # 918 | # 5,230 | 424 | # 1,120 | 682 \ddagger | 4,800 \ddagger | 360 | 13.8 \ddagger | 113 | 2,160 | 29.3 | 14.1 |
| 7 | 936 | # 5,400 | 424 | 1,090 | # 618 | 3,600 | 360 | 17.0 | 128 | 1,200 | 28.6 | 20.1 |
| 8 | # 1,140 | # 5,370 | 14.1 | 1,780 | 664 \ddagger | 3,530 | 388 | 15.2 | 83.7 \ddagger | 180 | 30.7 | 24.7 |
| 9 | # 1,590 | 5,330 | 17.6 \ddagger | 2,170 | # 643 | 3,570 \ddagger | 388 | 8.5 | 248 | 30.4 | 30.7 | 30.4 |
| 10 | 2,160 | # 5,440 | 21.2 | 1,360 | # 639 | 3,600 | 265 | 6.0 | 1,020 | 14.5 | 682 | 30.7 |
| 11 | # 2,490 | 5,690 | 21.2 \ddagger | 480 | # 653 | 3,600 | 614 | 11.7 \ddagger | 1,740 | 13.4 | 24.7 | 24.4 |
| 12 | 2,160 | 6,040 | 24.7 | 357 | # 682 | 3,440 | # 1,120 | 14.8 | # 1,200 | 24.0 | 27.5 | 18.4 |
| 13 | # 1,750 | 6,140 | 28.3 \ddagger | 364 | 667 \ddagger | 2,960 \ddagger | 600 \ddagger | 149 \ddagger | 33.9 | 29.0 | 26.1 | 20.1 |
| 14 | 1,720 | # 6,070 | 31.8 | 288 | 629 \ddagger | 2,910 | 512 | 335 | 25.4 | 30.4 | 23.0 | 26.8 |
| 15 | # 1,690 | 5,930 | 31.8 | 188 | 1,340 | # 2,890 | 523 | # 335 | 18.7 | 28.3 | 19.8 | 32.1 |
| 16 | 1,800 | # 5,930 | 31.8 \ddagger | 306 | # 1,780 | 2,870 \ddagger | 452 \ddagger | # 216 | 14.1 \ddagger | 18.4 | 20.5 | 30.7 |
| 17 | # 1,800 | 5,930 | 31.8 | 936 | # 2,330 | 2,870 | 459 | 17.3 | 7.8 | 11.3 | 406 | # 25.4 |
| 18 | 1,820 | 5,300 | 31.8 \ddagger | 1,010 | # 2,860 | # 2,830 \ddagger | 424 \ddagger | # 28.3 | 3.5 | 18.4 | 338 | 20.5 |
| 19 | # 1,840 | # 5,090 | 31.8 \ddagger | 810 | 3,400 | 2,830 \ddagger | 477 | 28.3 | 8.1 | 31.1 | 364 | 14.8 |
| 20 | 1,730 | 4,590 | 31.8 \ddagger | 2,030 | 4,450 | # 3,070 | 90.4 | 96.4 | 38.1 | 32.1 | 17.7 | 18.0 |
| 21 | 1,700 | # 3,570 | 31.8 \ddagger | 2,260 | # 4,800 | 3,420 | 2.8 \ddagger | 162 | # 456 | 27.9 | 17.0 | 21.9 |
| 22 | # 1,850 | # 2,620 | 31.8 | 2,550 | 4,840 \ddagger | 3,270 | 6.4 \ddagger | 155 | # 915 | 19.1 | 20.5 | 19.8 |
| 23 | 1,900 | # 2,040 | 31.8 \ddagger | 3,430 | # 5,190 | 3,150 | 12.7 \ddagger | 180 | 396 | 24.7 | 26.5 | 18.0 |
| 24 | # 1,800 | 1,870 | 31.8 \ddagger | 3,500 | # 5,540 | 3,150 | 10.9 \ddagger | 198 | 41.7 | 28.3 | 29.3 | 29.3 |
| 25 | # 2,150 | 1,820 | 31.8 | 3,530 | # 5,970 | 2,260 | 9.2 | 198 | 36.0 | 21.2 | 31.4 | 44.8 |
| 26 | 2,300 | # 1,790 | 31.8 | 2,640 | 7,060 | 1,900 | 6.0 | 177 | 30.4 | 18.4 | 31.4 | 218 |
| 27 | # 2,460 | 1,810 | 28.3 \ddagger | 660 | # 8,370 | # 1,020 | 3.9 \ddagger | 177 | 2,060 | 31.1 | 32.8 | 236 |
| 28 | 2,460 | 1,840 | 28.3 | 2,860 | 7,840 | 840 | 5.7 | 177 | # 7,350 | 36.7 | 31.8 | 43.4 |
| 29 | # 2,960 | | 21.2 | 3,670 | 7,700 | # 742 | 16.2 \ddagger | 177 | 2,280 | # 35.3 | 28.6 | # 46.3 |
| 30 | # 3,460 | | 14.1 \ddagger | 3,570 | # 4,550 | # 385 | 19.8 \ddagger | 212 | 45.9 | 27.5 | 29.3 | 48.4 |
| 31 | # 5,050 | | 7.1 | | 6,570 | | 14.8 \ddagger | 201 | | 25.1 | | 43.4 |
| Sum | 126,800 | | 48,507.9 | | 101,697 | | 3,382.3 | | 14,779.0 | | 1,250.0 | |
| | 58,412 | | 6,871.5 | | 110,237 | | 8,941.8 | | 19,109.3 | | 2,498.4 | |

| Month | Current Year 1962 | | | Period 1954-1962 | | | | |
|--------|-------------------------------|-------|---------------------|----------------------------|--------------------|-----------|---------|-----------|
| | Average Rainfall Inches ** | | Extreme Second-Feet | Average Second- Foot | Total Acre-Feet | Acre-Feet | | |
| | 1954-1962 | 1962 | Day | Day | Acre-Feet | Average | Maximum | Minimum |
| Jan. | .97 | .63 | 31 | 5,050 | 1 | 890 | 1,880 | 115,862 |
| Feb. | 1.62 | .12 | 13 | 6,140 | 26 | 1,790 | 4,530 | 251,519 |
| Mar. | .62 | .71 | 1 | 1,660 | 31 | 7.1 | 222 | 13,638 |
| Apr. | 2.06 | .94 | 29 | 3,670 | 1 | 3.5 | 1,620 | 96,210 |
| May | 1.13 | 1.73 | 27 | 8,370 | 7 | 618 | 3,560 | 218,653 |
| June | 2.50 | 4.02 | 1 | 6,530 | 30 | 385 | 3,390 | 201,794 |
| July | .98 | 0 | 12 | 1,120 | 21 | 2.8 | 288 | 17,745 |
| Aug. | 1.78 | .83 | 14 | 335 | 10 | 6.0 | 109 | 6,709 |
| Sept. | 4.28 | 1.57 | 28 | 7,350 | 18 | 3.5 | 637 | 37,897 |
| Oct. | 2.85 | .55 | 3 | 3,290 | 17 | 11.3 | 477 | 29,336 |
| Nov. | 1.42 | .83 | 10 | 682 | 21 | 17.0 | 83.3 | 4,954 |
| Dec. | .94 | 2.05 | 27 | 236 | 5 | 13.4 | 40.3 | 2,480 |
| Yearly | 21.15 | 13.98 | | 8,370 | | 2.8 | 1,380 | 996,797 |
| | | | | | | | | 1,093,999 |
| | | | | | | | | 1,434,920 |
| | | | | | | | | 744,800 |

* And other days θ Mean daily # Discharge measurement made on this day ** Average of several stations

RIO GRANDE BELOW ANZALDUAS DAM

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located .5 mile below Anzalduas Dam, 12.2 river miles above the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas, at 1,077.1 river miles below the American Dam at El Paso, Texas, and 171.1 river miles from the Gulf of Mexico. An auxiliary recorder 575 feet upstream is used for extremely low flows. The zero of both gages is 82.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 222 meter measurements during the year, 192 by the Mexican Section and 30 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1, 1952 through December 31, 1962.

REMARKS: Except during local storms, flow at this station is controlled largely by releases from Falcón 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|---------|
| 1 | 2,250 | 2,620 | # 1,080 | 1,060 | # 1,870 | 4,480 | 222 | 925 | 618 | # 855 | # 625 | 399 |
| 2 | # 1,850 | 2,390 | # 1,130 | # 406 | 2,040 | # 4,700 | # 516 | 1,070 | 657 | 788 | # 713 | 466 |
| 3 | 1,670 | 2,590 | 879 | 1,030 | 975 | 5,010 | 526 | # 869 | 657 | 682 | 915 | 685 |
| 4 | 2,030 | 2,090 | 925 | 1,290 | 305 | 1,880 | 551 | 897 | 738 | # 667 | 773 | # 1,080 |
| 5 | # 2,350 | 1,160 | # 2,110 | # 1,230 | 742 | 1,900 | 388 | 964 | 1,060 | # 445 | # 883 | 946 |
| 6 | 2,210 | 1,580 | 1,310 | # 1,680 | 1,960 | # 2,690 | # 295 | 1,130 | 742 | 427 | 826 | 1,020 |
| 7 | 2,170 | # 1,610 | 1,820 | 1,680 | # 1,620 | # 5,650 | # 410 | 968 | # 484 | 417 | # 826 | # 996 |
| 8 | # 1,850 | # 2,130 | # 1,870 | 1,350 | 918 | 3,640 | 417 | 1,290 | 505 | # 763 | 660 | 699 |
| 9 | 1,890 | # 1,720 | # 1,530 | # 1,640 | 1,300 | # 3,740 | # 819 | 1,710 | 600 | 1,360 | # 579 | 533 |
| 10 | 735 | 1,880 | 1,480 | 2,310 | # 1,290 | 3,710 | 491 | # 1,340 | 929 | 1,300 | 660 | 858 |
| 11 | 911 | 2,010 | 1,480 | 2,420 | # 1,060 | # 3,880 | 406 | 1,280 | 752 | 1,190 | 551 | 848 |
| 12 | 752 | # 2,140 | 1,440 | 1,300 | 1,190 | 3,710 | 410 | 1,170 | 752 | # 890 | # 586 | 1,000 |
| 13 | # 1,760 | 1,800 | 1,090 | # 1,800 | 922 | 3,960 | 717 | # 1,150 | # 1,100 | 904 | 600 | 816 |
| 14 | 2,260 | # 1,650 | 1,060 | 2,260 | # 1,620 | # 3,960 | # 2,100 | 802 | # 968 | 706 | 660 | 516 |
| 15 | # 2,240 | 1,750 | # 1,450 | 939 | 1,620 | # 3,460 | 1,700 | 1,110 | 657 | # 1,260 | # 745 | 699 |
| 16 | 2,780 | # 1,890 | # 717 | # 992 | 1,710 | 3,880 | 1,010 | 1,630 | 798 | 1,640 | # 533 | 879 |
| 17 | # 2,590 | 1,760 | 710 | 2,070 | # 2,400 | 4,380 | 682 | # 1,250 | # 1,350 | 1,590 | 512 | # 1,210 |
| 18 | 3,150 | 1,340 | 724 | 2,590 | # 2,210 | # 4,840 | 1,790 | 664 | 1,080 | 819 | 512 | 1,580 |
| 19 | # 2,650 | # 1,800 | # 459 | 1,710 | 2,090 | 4,100 | 1,540 | 643 | 1,300 | # 710 | # 523 | 1,780 |
| 20 | 2,960 | 1,650 | 431 | # 971 | 3,200 | # 3,920 | # 2,030 | 851 | # 908 | .650 | 756 | # 1,520 |
| 21 | 3,310 | 1,720 | 434 | 1,060 | # 4,060 | # 3,920 | 1,730 | 692 | # 671 | 1,150 | 830 | # 1,750 |
| 22 | # 2,300 | 1,960 | # 604 | 2,450 | 3,640 | # 3,470 | 1,390 | 713 | 629 | # 1,080 | 392 | 1,780 |
| 23 | 999 | # 1,770 | # 530 | 2,320 | 4,380 | 3,290 | # 1,860 | 876 | 735 | 699 | # 345 | 1,250 |
| 24 | 946 | 1,550 | 526 | # 1,590 | # 4,700 | 3,460 | 1,050 | 696 | # 943 | 904 | 473 | # 505 |
| 25 | 2,130 | 1,240 | 438 | 1,790 | 3,780 | 1,860 | 1,400 | 597 | 735 | 1,330 | 374 | 257 |
| 26 | 1,930 | # 1,330 | # 403 | 2,180 | 4,240 | 1,600 | # 1,050 | 629 | 706 | # 964 | # 403 | 192 |
| 27 | # 2,130 | 1,200 | # 667 | # 1,720 | 5,230 | 2,260 | # 939 | 738 | 424 | 682 | 501 | 1,100 |
| 28 | 2,910 | 1,600 | 858 | 1,510 | # 6,040 | 1,360 | 901 | 724 | 1,770 | 720 | 812 | # 982 |
| 29 | 1,380 | # 1,510 | 1,590 | 4,560 | # 664 | 547 | 777 | 1,140 | # 982 | 625 | # 505 | |
| 30 | # 2,520 | # 1,150 | # 2,060 | 3,600 | 278 | # 1,220 | # 1,080 | 660 | 865 | 1,080 | # 371 | 844 |
| 31 | # 2,150 | 1,190 | | 3,640 | | | | 565 | 918 | | | # 869 |
| Sum | 50,130 | 48,998 | 78,912 | 99,652 | 30,187 | 29,380 | 25,273 | 28,572 | 18,564 | | | |
| | 63,763 | 31,105 | | | | | | | | | | |

Current Year 1962

Period 1954-1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | |
|---------------|-------------------|-------|-----|---------------------|------|---------------------|-----------------|-----------|-----------|-----------|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum |
| Jan. | 7.35 | -2.30 | 31 | 7,060 | # 10 | 21.2 | 2,060 | 126,467 | 87,433 | 166,200 |
| Feb. | 3.58 | -1.05 | 1 | 3,010 | 18 | 544 | 1,790 | 99,422 | 80,557 | 241,900 |
| Mar. | 3.28 | -2.17 | 29 | 2,840 | 19 | 21.2 | 1,000 | 61,675 | 84,817 | 235,500 |
| Apr. | 3.48 | -2.03 | 22 | 3,150 | # 2 | 141 | 1,630 | 97,132 | 76,226 | 155,700 |
| May | 8.86 | -3.15 | 28 | 7,490 | # 3 | 35.3 | 2,550 | 156,492 | 116,545 | 202,400 |
| June | 7.12 | -1.87 | 7 | 5,930 | 29 | 106 | 3,320 | 197,652 | 146,658 | 217,800 |
| July | 2.17 | -3.08 | 14 | 2,230 | 5 | 35.3 | 974 | 59,885 | 48,902 | 125,200 |
| Aug. | 3.31 | -1.31 | 11 | 3,090 | 17 | 177 | 948 | 58,271 | 42,094 | 107,000 |
| Sept. | 4.86 | -2.36 | 28 | 4,100 | 27 | 106 | 842 | 50,111 | 65,964 | 177,700 |
| Oct. | 1.90 | -2.30 | 2 | 2,090 | 18 | 141 | 922 | 56,681 | 304,231 | 2,326,000 |
| Nov. | .07 | -2.33 | 28 | 1,090 | 23 | 203 | 619 | 36,828 | 192,160 | 1,438,000 |
| Dec. | 2.46 | -2.76 | 22 | 2,410 | # 24 | 70.6 | 921 | 56,654 | 103,271 | 540,100 |
| Yearly | 8.86 | -3.15 | | 7,490 | | 21.2 | 1,460 | 1,057,270 | 1,348,858 | 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 Anzaldúa 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 Arroyo Colorado Floodway is measured at 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 1962 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 Anzaldúa Dam. Floodway No. 3, 1.2 miles above the Brownsville-Matamoros Bridge, is greatly obstructed and is considered to be inoperative. #

Floodwater diverted through Retamal Heading is measured at a cableway station .9 mile below 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 1962 no flood flows were diverted into this floodway system. There were no diversions for irrigation purposes through Retamal Canal in 1962.

** Prior to 1958 these stations were named "North Floodway South of McAllen" and "South Floodway South of McAllen", respectively.

Floodway No. 2 was previously called Floodway No. 3 (west branch) while Floodway No. 3 was previously East Branch of Floodway No. 3.

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

Since June 1956 the United States portion of the water in Falcón Reservoir and in the Rio Grande below Falcón 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 1962, 144,426 irrigable acres, several towns, and rural homes in this river reach were served Rio Grande water under the jurisdiction of this court. The area irrigated from the Rio Grande in this river reach was 18.4% of the total irrigable acres below Falcón Dam.

The total diversion during 1962 in this river reach was 231,075 acre-feet, or 20.5% of the total water diverted from the Rio Grande below Falcón Dam. About 94% 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 balance 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|----------|------|------|---------|----------|----------|------|---------|------|---------|------|---------|---------|
| 1 | 381 | 558 | 296 | 0 | 509 | 854 | 10.0 | 327 | 112 | 274 | 354 | 46.0 |
| 2 | 346 | 495 | 288 | 20.0 | 242 | 498 | 6.0 | 297 | 70.0 | 282 | 225 | 28.0 |
| 3 | 460 | 437 | 157 | 16.0 | 86.0 | 161 | 6.0 | 350 | 249 | 279 | 33.0 | 268 |
| 4 | 532 | 232 | 74.0 | 23.0 | 85.0 | 413 | 6.0 | 292 | 289 | 288 | 16.0 | 356 |
| 5 | 599 | 551 | 494 | 337 | 132 | 799 | 0 | 132 | 288 | 86.0 | 289 | 358 |
| 6 | 447 | 553 | 494 | 514 | 74.0 | 858 | 0 | 309 | 288 | 71.0 | 248 | 82.0 |
| 7 | 230 | 561 | 483 | 302 | 322 | 593 | 64.0 | 328 | 102 | 97.0 | 102 | 73.0 |
| 8 | 309 | 549 | 518 | 151 | 353 | 548 | 103 | 360 | 100 | 483 | 181 | 24.0 |
| 9 | 419 | 574 | 518 | 384 | 378 | 464 | 130 | 410 | 88.0 | 525 | 184 | 64.0 |
| 10 | 83.0 | 486 | 342 | 489 | 402 | 130 | 117 | 349 | 287 | 558 | 69.0 | 254 |
| 11 | 10.0 | 262 | 218 | 393 | 393 | 563 | 213 | 231 | 307 | 600 | 14.0 | 299 |
| 12 | 11.0 | 634 | 536 | 427 | 340 | 717 | 109 | 24.0 | 391 | 568 | 238 | 290 |
| 13 | 123 | 577 | 491 | 431 | 151 | 818 | 123 | 271 | 387 | 352 | 280 | 76.0 |
| 14 | 36.0 | 630 | 252 | 316 | 532 | 843 | 372 | 336 | 107 | 170 | 136 | 152 |
| 15 | 260 | 613 | 105 | 133 | 605 | 831 | 518 | 411 | 79.0 | 529 | 294 | 79.0 |
| 16 | 488 | 614 | 97.0 | 427 | 625 | 904 | 709 | 328 | 72.0 | 530 | 112 | 60.0 |
| 17 | 510 | 519 | 139 | 338 | 666 | 414 | 170 | 281 | 406 | 452 | 86.0 | 286 |
| 18 | 707 | 223 | 67.0 | 450 | 642 | 960 | 68.0 | 246 | 296 | 436 | 65.0 | 351 |
| 19 | 746 | 611 | 71.0 | 499 | 592 | 894 | 641 | 40.0 | 160 | 309 | 268 | 354 |
| 20 | 396 | 609 | 161 | 420 | 317 | 808 | 683 | 261 | 159 | 128 | 255 | 339 |
| 21 | 44.0 | 594 | 70.0 | 330 | 830 | 809 | 596 | 211 | 94.0 | 115 | 242 | 280 |
| 22 | 504 | 624 | 185 | 161 | 788 | 742 | 359 | 195 | 80.0 | 325 | 68.0 | 222 |
| 23 | 386 | 611 | 242 | 424 | 775 | 646 | 307 | 204 | 66.0 | 389 | 45.0 | 109 |
| 24 | 153 | 540 | 142 | 468 | 928 | 572 | 367 | 230 | 282 | 355 | 28.0 | 67.0 |
| 25 | 250 | 223 | 67.0 | 506 | 949 | 603 | 359 | 184 | 276 | 426 | 7.0 | 0 |
| 26 | 269 | 587 | 61.0 | 490 | 845 | 180 | 392 | 62.0 | 247 | 333 | 213 | 66.0 |
| 27 | 309 | 542 | 156 | 506 | 719 | 5.0 | 377 | 175 | 217 | 106 | 226 | 5.0 |
| 28 | 192 | 377 | 241 | 455 | 836 | 2.0 | 353 | 173 | 108 | 31.0 | 227 | 0 |
| 29 | 427 | | 146 | 160 | 791 | 5.0 | 101 | 237 | 385 | 235 | 195 | 0 |
| 30 | 430 | | 48.0 | 516 | 883 | 1.0 | 336 | 297 | 126 | 243 | 53.0 | 0 |
| 31 | 560 | | 13.0 | | 928 | | 325 | 126 | | 253 | | 0 |
| Sum | | | 14,386 | 10,086.0 | 16,635.0 | | 7,677.0 | | 9,828.0 | | 4,753.0 | 4,588.0 |
| 10,617.0 | | | 7,172.0 | 16,718.0 | 7,920.0 | | 6,118.0 | | | | | |

[†] And other days [§] Mean daily ** United States side - Average of several stations in the reach

RIO GRANDE AT PROGRESO BRIDGE, TEXAS

DESCRIPTION: Water-stage recorder on the downstream side of the center pier of the bridge 2 miles south of Progreso, Texas, .8 mile below Progreso pumping plant, 1,124.4 river miles below American Dam at El Paso, Texas, and 123.8 river miles above the Gulf of Mexico. On October 4, 1956, when the low-flow channel shifted to the left bank, an auxiliary recorder was installed 300 feet above the bridge on the American bank to record such flows. The zero of the gauge of both recorders is at 52.56 feet above mean sea level, U. S. C. & G. datum.

RECORDS: Based on 126 meter measurements during the year from the bridge, 105 by the Mexican Section and 21 by the United States Section of this Commission, and a continuous record of gage heights. Computations by shifting channel methods. Records available: December 1, 1952 through August 24, 1953; and December 1, 1953 through December 31, 1962.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcón Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcón 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.

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 1953.

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 1962 — Annual and Period Summary

| Current Year 1962 | | | | | | | | Period 1954-1962 | | | |
|-------------------|-------------------|-------------|---------------------|--------------|---------------------|-----------------|--------------|------------------|------------------|------------------|----------------|
| Month | Extreme Gage Feet | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | | |
| | High | Low | Day | High | Low | | Average | Maximum | Minimum | | |
| Jan. | 6.66 | 2.59 | 22 | 3,030 | 13 | 720 | 1,720 | 105,838 | 98,920 | 241,800 | 17,340 |
| Feb. | 5.48 | 2.33 | 4 | 2,300 | 127 | 614 | 1,290 | 71,418 | 88,168 | 371,900 | 12,620 |
| Mar. | 4.40 | 1.28 | 30 | 1,580 | 24 | 283 | 755 | 46,433 | 87,840 | 379,400 | 4,990 |
| Apr. | 5.28 | 1.77 | 23 | 2,210 | 22 | 424 | 1,220 | 72,329 | 80,851 | 144,000 | 32,060 |
| May | 9.25 | 1.38 | 29 | 4,560 | 6 | 318 | 1,860 | 114,139 | 106,796 | 146,100 | 68,980 |
| June | 9.12 | 2.69 | 4 | 4,480 | 30 | 727 | 2,680 | 159,717 | 127,497 | 176,300 | 63,350 |
| July | 4.20 | 1.61 | 24 | 1,490 | 12 | 249 | 701 | 43,088 | 56,141 | 116,400 | 16,970 |
| Aug. | 4.43 | 1.57 | 17 | 1,620 | 31 | 371 | 699 | 42,966 | 50,438 | 85,070 | 10,400 |
| Sept. | 4.20 | 1.51 | 29 | 1,610 | 9 | 339 | 608 | 36,200 | 66,764 | 156,700 | 21,650 |
| Oct. | 3.67 | 1.12 | 1 | 1,310 | 9 | 224 | 624 | 38,377 | 157,077 | 1,028,000 | 14,030 |
| Nov. | 2.85 | 1.12 | 5 | 893 | 127 | 219 | 480 | 28,561 | 112,635 | 735,000 | 18,000 |
| Dec. | 4.33 | 1.18 | 23 | 1,630 | 127 | 246 | 744 | 45,742 | 94,004 | 487,200 | 7,370 |
| Yearly | 9.25 | 1.12 | | 4,560 | | 219 | 1,110 | 804,808 | 1,127,131 | 2,776,990 | 482,410 |

† And other days † Discharge measurement made on this day

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

Since June 1956 the United States portion of the water in Falcón Reservoir and in the Rio Grande below Falcón 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 1962, 326,806 irrigable acres, several towns, and rural homes in this river reach were served Rio Grande water under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 41.7% of the total irrigable acres below Falcón Dam.

The total diversion during 1962 in this river reach was 494,850 acre-feet, or 43.9% of the total water diverted from the Rio Grande below Falcón Dam. About 98% 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 balance 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|---------------|-------|-----------------|-------|---------------|-------|-----------------|------|---------------|------|-----------------|------|
| 1 | 1,140 | 1,300 | 657 | 1.0 | 766 | 2,040 | 93.0 | 475 | 193 | 517 | 377 | 325 |
| 2 | 1,040 | 1,240 | 673 | 2.0 | 429 | 1,730 | 129 | 480 | 150 | 413 | 405 | 281 |
| 3 | 1,060 | 861 | 521 | 2.0 | 318 | 1,390 | 166 | 411 | 265 | 403 | 338 | 292 |
| 4 | 1,040 | 678 | 513 | 3.0 | 454 | 1,910 | 52.0 | 417 | 501 | 439 | 378 | 346 |
| 5 | 1,160 | 887 | 634 | 80.0 | 358 | 1,850 | 116 | 367 | 238 | 347 | 530 | 324 |
| 6 | 1,290 | 808 | 613 | 223 | 277 | 1,140 | 306 | 442 | 309 | 225 | 461 | 432 |
| 7 | 1,220 | 709 | 549 | 210 | 566 | 928 | 206 | 393 | 629 | 192 | 417 | 360 |
| 8 | 1,420 | 860 | 699 | 652 | 624 | 1,790 | 156 | 467 | 390 | 266 | 309 | 274 |
| 9 | 1,200 | 948 | 918 | 1,000 | 553 | 2,110 | 197 | 482 | 285 | 195 | 391 | 125 |
| 10 | 540 | 833 | 753 | 994 | 564 | 1,940 | 201 | 472 | 364 | 134 | 312 | 250 |
| 11 | 551 | 776 | 456 | 1,040 | 483 | 2,090 | 112 | 308 | 317 | 508 | 260 | 287 |
| 12 | 756 | 898 | 645 | 1,090 | 468 | 2,060 | 58.0 | 223 | 440 | 602 | 411 | 298 |
| 13 | 797 | 971 | 526 | 960 | 367 | 2,070 | 80.0 | 421 | 468 | 362 | 274 | 302 |
| 14 | 986 | 924 | 373 | 716 | 610 | 2,080 | 65.0 | 611 | 304 | 295 | 238 | 318 |
| 15 | 1,660 | 842 | 223 | 740 | 735 | 2,140 | 367 | 569 | 548 | 394 | 205 | 391 |
| 16 | 1,750 | 807 | 252 | 955 | 845 | 2,040 | 780 | 394 | 601 | 582 | 224 | 324 |
| 17 | 1,790 | 755 | 211 | 621 | 858 | 1,940 | 630 | 559 | 545 | 562 | 241 | 448 |
| 18 | 1,760 | 550 | 124 | 665 | 1,240 | 2,220 | 480 | 548 | 522 | 639 | 135 | 658 |
| 19 | 1,770 | 866 | 198 | 1,060 | 1,360 | 2,350 | 941 | 374 | 651 | 602 | 218 | 773 |
| 20 | 1,310 | 816 | 187 | 1,000 | 1,170 | 2,290 | 855 | 382 | 691 | 417 | 337 | 919 |
| 21 | 1,260 | 793 | 248 | 767 | 1,690 | 2,250 | 363 | 275 | 568 | 308 | 243 | 871 |
| 22 | 1,420 | 762 | 254 | 429 | 2,220 | 2,150 | 508 | 372 | 421 | 470 | 137 | 834 |
| 23 | 1,030 | 804 | 337 | 934 | 2,250 | 1,960 | 516 | 344 | 363 | 479 | 292 | 676 |
| 24 | 791 | 678 | 196 | 1,050 | 2,370 | 1,550 | 498 | 397 | 440 | 477 | 265 | 89.0 |
| 25 | 937 | 408 | 121 | 922 | 2,350 | 1,240 | 541 | 388 | 334 | 314 | 178 | 0 |
| 26 | 1,130 | 739 | 243 | 818 | 2,260 | 769 | 624 | 284 | 336 | 434 | 310 | 406 |
| 27 | 1,230 | 752 | 276 | 797 | 2,200 | 446 | 641 | 373 | 323 | 522 | 289 | 306 |
| 28 | 759 | 592 | 276 | 734 | 2,310 | 338 | 489 | 281 | 548 | 386 | 173 | 316 |
| 29 | 1,250 | 237 | 697 | 697 | 2,350 | 222 | 426 | 182 | 1,150 | 534 | 175 | 666 |
| 30 | 1,290 | 84.0 | 791 | 2,300 | 154 | 409 | 65.0 | 479 | 511 | 246 | 622 | 568 |
| 31 | 1,070 | 4.0 | 2,280 | 389 | 100 | 452 | | | | | | |
| Sum | 22,857 | | 19,953.0 | | 49,187 | | 11,856.0 | | 12,981 | | 13,081.0 | |
| | 36,407 | | 12,001.0 | | 37,625 | | 11,394.0 | | 13,373 | | 8,769 | |

Current Year 1962

Period 1957-1962

| Month | Average Rainfall | | Extreme Second-Foot | | Average | Total | Acre-Foot | | |
|---------------|------------------|--------------|---------------------|--------------|---------|----------|----------------|----------------|----------------|
| | Inches ** | Day | High | Low | | | Acres-Foot | Average | Maximum |
| 1957-1962 | 1962 | Day | Day | Day | | | | | |
| Jan. | 1.55 | .44 | 17 | 1,790 | 10 | 540 | 1,170 | 72,213 | 32,626 |
| Feb. | 2.06 | .03 | 1 | 1,300 | 25 | 408 | 816 | 45,337 | 45,337 |
| Mar. | 1.02 | .94 | 9 | 918 | 31 | 4.0 | 387 | 23,804 | 54,200 |
| Apr. | 2.04 | .77 | 12 | 1,090 | 1 | 1.0 | 665 | 39,577 | 49,100 |
| May | 1.58 | .85 | 24 | 2,370 | 6 | 277 | 1,210 | 74,629 | 74,629 |
| June | 2.98 | 3.30 | 19 | 2,350 | 30 | 154 | 1,640 | 97,562 | 82,244 |
| July | 1.04 | 0 | 19 | 941 | 4 | 52.0 | 368 | 22,600 | 123,000 |
| Aug. | 2.17 | .61 | 14 | 611 | 30 | 65.0 | 382 | 23,516 | 45,900 |
| Sept. | 4.19 | 1.94 | 29 | 1,150 | 2 | 150 | 446 | 26,525 | 28,988 |
| Oct. | 3.54 | 1.38 | 18 | 639 | 10 | 134 | 419 | 25,748 | 59,400 |
| Nov. | 1.91 | 1.40 | 5 | 530 | 18 | 135 | 292 | 17,393 | 34,600 |
| Dec. | 1.44 | 2.11 | 20 | 919 | 25 | 0 | 422 | 25,946 | 37,500 |
| Yearly | 25.52 | 13.77 | | 2,370 | | 0 | 684 | 494,850 | 424,659 |
| | | | | | | | 494,850 | | 334,120 |

§ Mean daily ** United States side - Average of several stations in the reach.

RIO GRANDE NEAR SAN BENITO, TEXAS

DESCRIPTION: Water-stage recorder and cable with stand-up cable car equipped for winch and heavy weights, located 5.6 miles below San Benito Pumping Plant, 1,151.7 river miles below the American Dam at El Paso, Texas, and 96.5 river miles above the Gulf of Mexico. The zero of the gage is at mean sea level. U. S. C. & G. S. datum

RECORDS: Based on 51 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: November 26, 1952 through August 25, 1953; and December 1953 through December 1962.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcón Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcón 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.

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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|--------|---------|---------|---------|-------|-------|--------|-------|-------|-------|
| 1 | 505 | 593 | 199 | 1,060 | 449 | 289 | 744 | 379 | 278 | 520 | 422 | 233 |
| 2 | 740 | 580 | 519 | 1,180 | # 921 | 1,050 | 426 | # 253 | 256 | 351 | 274 | 153 |
| 3 | 679 | 865 | 296 | 949 | # 1,150 | 2,340 | 301 | 148 | 307 | 197 | 162 | 134 |
| 4 | 389 | 1,300 | 350 | 671 | 1,240 | # 2,680 | 512 | 226 | 196 | 206 | 172 | 134 |
| 5 | 307 | # 1,240 | # 179 | 1,170 | 441 | 891 | 562 | # 204 | # 125 | 201 | 332 | 124 |
| 6 | 466 | 503 | 98.5 | 938 | 166 | 78.7 | # 475 | 172 | 129 | 306 | 229 | 164 |
| 7 | 500 | # 152 | 98.0 | 640 | # 422 | # 94.6 | 260 | 295 | 172 | 313 | # 213 | 297 |
| 8 | 532 | 158 | 170 | 618 | 923 | 1,740 | 271 | 310 | 135 | 224 | 237 | 504 |
| 9 | 374 | 384 | 409 | 691 | 443 | 1,440 | 323 | 153 | 143 | # 139 | 331 | 731 |
| 10 | 649 | 486 | 398 | 151 | 169 | 1,220 | 273 | 310 | 132 | 150 | 210 | 503 |
| 11 | # 898 | 417 | 307 | 282 | 306 | 1,360 | 504 | 720 | 135 | # 481 | 196 | 241 |
| 12 | 440 | 486 | 548 | 783 | 372 | 1,150 | 439 | 737 | 255 | 201 | 258 | 183 |
| 13 | 147 | # 519 | 613 | 488 | 293 | 878 | 331 | 799 | # 159 | 151 | 204 | 201 |
| 14 | 168 | 381 | 387 | 212 | 329 | 756 | 335 | 478 | 107 | 150 | # 152 | 342 |
| 15 | 468 | 194 | 422 | 783 | 159 | 797 | 836 | 188 | 178 | 190 | 153 | 355 |
| 16 | 280 | 223 | 787 | 742 | # 163 | 556 | 679 | 126 | 210 | 147 | 219 | 217 |
| 17 | # 269 | 339 | 778 | 141 | 160 | 685 | 132 | # 169 | 134 | 151 | 249 | # 190 |
| 18 | 396 | 504 | 560 | 120 | 196 | 1,160 | # 124 | 668 | 124 | 443 | 323 | 323 |
| 19 | 431 | 447 | # 467 | 682 | 227 | 1,350 | 160 | 456 | # 190 | 461 | 297 | 145 |
| 20 | 486 | 276 | 443 | 625 | 126 | 852 | 144 | 212 | 246 | 184 | 193 | 357 |
| 21 | 1,080 | 288 | 330 | 145 | 491 | 746 | 377 | 303 | 314 | 128 | 140 | 447 |
| 22 | # 1,400 | 203 | 155 | 106 | 718 | 734 | 696 | # 262 | 239 | 158 | 219 | 391 |
| 23 | 1,100 | # 349 | # 159 | 440 | 233 | 789 | 583 | 146 | 224 | 476 | 379 | 627 |
| 24 | 671 | 454 | 160 | 853 | # 674 | 972 | 672 | 141 | 203 | 275 | 290 | 1,160 |
| 25 | 220 | 554 | 241 | 431 | 809 | 1,450 | 655 | 155 | 189 | 140 | 233 | 1,070 |
| 26 | # 215 | 410 | 274 | 195 | 596 | 1,140 | # 250 | 169 | # 288 | # 137 | # 232 | 550 |
| 27 | 552 | 204 | 179 | 607 | 711 | 1,100 | 237 | # 214 | 345 | 184 | 140 | |
| 28 | 553 | 133 | 127 | 636 | 1,360 | 1,910 | 156 | 140 | 177 | 330 | 126 | 116 |
| 29 | 1,340 | 194 | 472 | # 2,090 | 1,650 | 177 | 323 | 106 | 237 | 122 | 321 | |
| 30 | 798 | 565 | 521 | # 1,780 | 1,190 | # 176 | # 453 | 118 | 168 | 213 | 306 | |
| 31 | 218 | 1,300 | | 842 | | 176 | # 457 | | 243 | | | 156 |
| Sum | | | 12,642 | 17,332 | 33,048 | 3 | 9,699 | 7,803 | 10,815 | | | |

Sum 12,342 17,352 33,648.3 9,699 7,803 10,815
17,271 **11,712.5** **18,959** **11,986** **5,683** **6,964**

Current Year 1962 **Period 1954-1962**

Extreme Gage **Extreme Second-Feet** **Average** **Total** **Acro-Feet**

Month **Feet** **High** **Low** **Second-** **Total** **Acre-Feet**

| High | Low | Day | Day | Feet | Acre-Feet | Average | Maximum | Minimum |
|-------------|------------|------------|------------|-------------|------------------|----------------|----------------|----------------|
|-------------|------------|------------|------------|-------------|------------------|----------------|----------------|----------------|

Jan. 37.17 33.38 22 1,470 31 105 557 34,257 47,627 227,000 2,920
 Feb. 27.05 22.47 4 1,420 28 124 552 26,005 57,146 242,000 2,260

Feb. 37.05 33.47 4 1,430 28 124 452 25,075 57,146 363,000 3,380
 Mar. 36.86 33.35 31 1,380 7 90.1 378 23,232 54,556 360,000 2,560

Apr. 36.60 33.38 5 1,300 18 95.7 577 34,378 40,286 118,000 11,500

May 39,211 33,422 29 2,230 20 120 612 37,605 37,879 57,100 20,200
June 40,891 33,054 2,860 7 437 1,100 65,551 45,899 65,551 16,100

June 40.89 53.05 4* 2,600 / 43.71 1,100 65,551 49,928 65,551 16,100
July 35.92 33.36 15 2,000 21 108 387 23,774 21,818 39,000 4,690

Aug. 35,47 33,38 13 934 16 113 313 19,238 22,254 65,600 3,100
Sept. 34,31 33,20 12 401 20 60 180 13,270 26,254 63,000 3,100

Sept. 34.19 33.22 12 401 29 90.5 189 11,272 38,156 143,000 7,710
 Oct. 34.79 33.38 1 723 21 118 252 15,477 111,071 803,000 3,840

Nov. 34.39 33.42 1 510 29 119 232 13,813 86,950 662,000 5,640

Dec. 36.34 33.34 24 1,230 31 95.8 349 21,452 70,042 479,000 2,430

Yearly 40,89 33,05 2,860 43,7 449 325,124 633,713 2,124,110 145,520

‡ Period 1954-1962 † Discharge measurement made on this day

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

Since June 1956 the United States portion of the water in Falcón Reservoir and in the Rio Grande below Falcón 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 1962, 111,356 irrigable acres, several towns, and rural homes in this river reach were served Rio Grande water under the jurisdiction of this Court. The area irrigated from the Rio Grande in this river reach was 14.2% of the total irrigable acres below Falcón Dam.

The total diversion during 1962 in this river reach was 130,840 acre-feet, or 11.6% of the total water diverted from the Rio Grande below Falcón Dam. About 89% 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 balance 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|--------------|------|----------------|-------|-----------------|------|----------------|------|----------------|------|----------------|------|
| 1 | 253 | 316 | 103 | 14.0 | 139 | 661 | 41.0 | 123 | 44.0 | 58.0 | 144 | 41.0 |
| 2 | 470 | 360 | 85.0 | 20.0 | 8.0 | 542 | 129 | 152 | 24.0 | 153 | 187 | 38.0 |
| 3 | 448 | 369 | 89.0 | 15.0 | 5.0 | 492 | 195 | 97.0 | 19.0 | 229 | 110 | 65.0 |
| 4 | 372 | 289 | 77.0 | 7.0 | 10.0 | 672 | 55.0 | 50.0 | 26.0 | 124 | 26.0 | 81.0 |
| 5 | 278 | 209 | 157 | 3.0 | 9.0 | 700 | 55.0 | 30.0 | 26.0 | 180 | 57.0 | 87.0 |
| 6 | 209 | 289 | 142 | 9.0 | 7.0 | 499 | 53.0 | 80.0 | 34.0 | 185 | 121 | 89.0 |
| 7 | 262 | 299 | 102 | 2.0 | 34.0 | 231 | 56.0 | 142 | 24.0 | 156 | 63.0 | 147 |
| 8 | 337 | 142 | 70.0 | 3.0 | 36.0 | 337 | 58.0 | 234 | 92.0 | 146 | 88.0 | 131 |
| 9 | 344 | 145 | 104 | 70.0 | 56.0 | 654 | 60.0 | 156 | 74.0 | 138 | 126 | 100 |
| 10 | 198 | 219 | 255 | 301 | 73.0 | 707 | 131 | 52.0 | 70.0 | 115 | 191 | 125 |
| 11 | 206 | 205 | 239 | 144 | 50.0 | 689 | 157 | 48.0 | 77.0 | 139 | 77.0 | 68.0 |
| 12 | 136 | 234 | 67.0 | 290 | 55.0 | 663 | 42.0 | 51.0 | 86.0 | 166 | 105 | 38.0 |
| 13 | 151 | 235 | 220 | 384 | 109 | 709 | 35.0 | 215 | 172 | 100 | 69.0 | 69.0 |
| 14 | 129 | 230 | 224 | 197 | 88.0 | 728 | 24.0 | 387 | 122 | 71.0 | 101 | 124 |
| 15 | 234 | 232 | 287 | 221 | 162 | 726 | 13.0 | 324 | 50.0 | 61.0 | 70.0 | 201 |
| 16 | 341 | 137 | 167 | 324 | 113 | 631 | 9.0 | 148 | 49.0 | 84.0 | 58.0 | 199 |
| 17 | 180 | 153 | 164 | 321 | 117 | 473 | 7.0 | 145 | 184 | 43.0 | 98.0 | 165 |
| 18 | 223 | 175 | 161 | 224 | 119 | 551 | 1.0 | 163 | 73.0 | 64.0 | 97.0 | 156 |
| 19 | 252 | 235 | 117 | 181 | 168 | 595 | 19.0 | 364 | 55.0 | 70.0 | 224 | 280 |
| 20 | 270 | 245 | 115 | 347 | 164 | 621 | 8.0 | 123 | 103 | 103 | 188 | 201 |
| 21 | 407 | 251 | 120 | 261 | 124 | 564 | 10.0 | 66.0 | 204 | 70.0 | 110 | 249 |
| 22 | 519 | 201 | 93.0 | 160 | 398 | 523 | 77.0 | 77.0 | 219 | 59.0 | 46.0 | 333 |
| 23 | 413 | 157 | 56.0 | 91.0 | 424 | 488 | 284 | 64.0 | 134 | 89.0 | 175 | 386 |
| 24 | 407 | 149 | 64.0 | 186 | 263 | 289 | 302 | 35.0 | 123 | 122 | 220 | 357 |
| 25 | 376 | 157 | 59.0 | 276 | 399 | 204 | 384 | 24.0 | 102 | 148 | 172 | 278 |
| 26 | 182 | 141 | 227 | 216 | 455 | 83.0 | 306 | 15.0 | 93.0 | 94.0 | 108 | 161 |
| 27 | 238 | 167 | 158 | 181 | 506 | 56.0 | 139 | 11.0 | 137 | 62.0 | 101 | 88.0 |
| 28 | 354 | 142 | 69.0 | 192 | 658 | 40.0 | 86.0 | 12.0 | 107 | 51.0 | 108 | 126 |
| 29 | 411 | | 70.0 | 153 | 620 | 46.0 | 78.0 | 14.0 | 89.0 | 121 | 69.0 | 183 |
| 30 | 427 | | 164 | 151 | 497 | 35.0 | 121 | 30.0 | 56.0 | 128 | 32.0 | 133 |
| 31 | 359 | | 51.0 | 591 | 591 | 105 | 83.0 | 99.0 | | | | 118 |
| Sum | 6,083 | | 4,944.0 | | 14,209.0 | | 3,515.0 | | 3,428.0 | | 4,817.0 | |
| | 9,386 | | 4,076.0 | | 6,457.0 | | 3,040.0 | | 2,668.0 | | 3,341.0 | |

| Month | Current Year 1962 | | | | | Period 1957-1962 | | | | | | |
|---------------|-------------------------------|--------------|-----------------------|------------|-----|----------------------------|------------|----------------|----------------|----------------|---------------|---------|
| | Average Rainfall Inches ** | | Ø Extreme Second-Feet | | | Average Second- Foot | | Total | | | Acre-Feet | |
| | 1957-1962 | 1962 | High | Day | Low | Day | Acre-Feet | Average | Maximum | Minimum | Average | Maximum |
| Jan. | 1.73 | .59 | 22 | 519 | 14 | 129 | 303 | 18,617 | 8,556 | 22,100 | 1,290 | |
| Feb. | 2.66 | .17 | 3 | 369 | 16 | 137 | 217 | 12,066 | 6,306 | 12,066 | 1,710 | |
| Mar. | .94 | .90 | 15 | 287 | 31 | 51.0 | 131 | 8,085 | 5,498 | 15,200 | 705 | |
| Apr. | 2.19 | 1.40 | 13 | 384 | 7 | 2.0 | 165 | 9,806 | 7,549 | 11,200 | 2,180 | |
| May | 1.50 | 2.27 | 28 | 658 | 3 | 5.0 | 208 | 12,807 | 15,733 | 22,600 | 8,590 | |
| June | 3.26 | 3.46 | 14 | 728 | 30 | 35.0 | 474 | 28,184 | 20,194 | 29,900 | 8,280 | |
| July | 1.04 | 0 | 25 | 384 | 18 | 1.0 | 98.1 | 6,030 | 9,707 | 15,200 | 5,580 | |
| Aug. | 2.25 | 1.30 | 14 | 387 | 27 | 11.0 | 113 | 6,972 | 7,562 | 10,700 | 5,530 | |
| Sept. | 4.74 | 2.30 | 22 | 219 | 3 | 19.0 | 88.9 | 5,292 | 5,760 | 12,600 | 1,990 | |
| Oct. | 3.48 | 1.23 | 3 | 229 | 17 | 43.0 | 111 | 6,799 | 6,730 | 11,300 | 3,340 | |
| Nov. | 1.88 | .75 | 19 | 224 | 4 | 26.0 | 111 | 6,627 | 4,766 | 6,627 | 2,320 | |
| Dec. | 1.48 | 2.00 | 23 | 386 | † 2 | 38.0 | 155 | 9,555 | 7,506 | 11,200 | 3,050 | |
| Yearly | 27.15 | 16.37 | | 728 | | 1.0 | 181 | 130,840 | 105,867 | 130,840 | 88,690 | |

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

RIO GRANDE AT LOWER BROWNSVILLE, TEXAS

DESCRIPTION: Bubbler-type water-stage recorder, operated with bottled nitrogen gas, and cable with stand-up cable car equipped for winch and heavy weights, located 1,000 feet below the El Jardín Pumping Plant, 6.8 river miles below Brownsville, Texas, and Matamoros, Tamaulipas, 48.8 river miles upstream from the Gulf of Mexico, and 1,199.4 river miles below 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 54 meter measurements during the year and a continuous record of gage heights. Computations by shifting channel methods. Records available: January 1934 through December 1962.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcón Dam, flow at this station after August 23, 1953 was controlled largely by releases from Falcón 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: The greatest recorded flow was 31,700 second-feet, which occurred October 8, 1945, with a gage height of 31.48 feet. Zero 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|----------------|-----------------|--------|-----------------|---------|---------|-----------------|----------------|--------|----------------|--------|--------|
| 1 | 103 | 112 | # 113 | 1,000 | 345 | 232 | 1,120 | 87.6 | 351 | # 66.3 | 99.6 | 107 |
| 2 | # 116 | 211 | 99.5 | # 948 | 457 | 49.9 | 759 | 118 | 293 | 108 | 145 | 177 |
| 3 | 215 | 244 | 243 | 1,020 | # 807 | 484 | 365 | # 163 | 238 | # 186 | 162 | 154 |
| 4 | 227 | 517 | 265 | 864 | 1,100 | 1,410 | 296 | 136 | 253 | 103 | 156 | 119 |
| 5 | 122 | # 974 | 241 | 724 | 1,020 | # 1,420 | 442 | 181 | # 219 | 97.8 | 137 | 88.7 |
| 6 | 94.5 | 882 | 166 | 1,030 | 524 | 408 | # 537 | 183 | 165 | 70.3 | 196 | 78.8 |
| 7 | 125 | 370 | 90.2 | 877 | 271 | 88.6 | 477 | 148 | 142 | 74.8 | # 170 | # 70.0 |
| 8 | 154 | 108 | 59.3 | 646 | 333 | # 46.0 | 315 | 112 | 139 | 134 | 154 | 71.3 |
| 9 | 187 | # 80.0 | # 69.9 | 622 | 750 | 733 | # 244 | 112 | 129 | 151 | 125 | 272 |
| 10 | 137 | 79.5 | 102 | 493 | # 476 | 597 | 241 | # 108 | 107 | # 108 | 126 | # 489 |
| 11 | 340 | 155 | 97.4 | # 173 | 233 | 533 | 160 | 177 | 105 | 77.2 | 115 | 431 |
| 12 | 614 | 190 | 135 | 116 | 206 | 597 | 400 | 564 | # 101 | 169 | 107 | 268 |
| 13 | 395 | 219 | 317 | 238 | 243 | # 387 | 416 | # 592 | 105 | 156 | 111 | 170 |
| 14 | 159 | 268 | 323 | 228 | 228 | 190 | 317 | 455 | 95.5 | 109 | 119 | 141 |
| 15 | 111 | 185 | # 219 | 129 | 231 | 81.6 | 329 | 202 | 72.0 | 97.4 | 103 | 128 |
| 16 | 62.5 | 130 | 181 | 310 | # 143 | 77.8 | 726 | 151 | 84.7 | 88.7 | # 94.7 | 156 |
| 17 | 54.4 | 90.4 | 475 | 399 | 101 | 70.5 | 679 | # 75.7 | 108 | 95.4 | 101 | 121 |
| 18 | # 60.3 | 93.0 | 559 | # 115 | 95.5 | 154 | # 309 | 74.7 | 90.4 | 98.9 | 125 | 98.4 |
| 19 | 69.5 | 159 | # 466 | 67.3 | 79.1 | 507 | 194 | 119 | # 99.9 | 228 | 164 | # 78.6 |
| 20 | 95.1 | 238 | 354 | 120 | 77.0 | # 562 | # 166 | 177 | 109 | 327 | 119 | 62.7 |
| 21 | 135 | # 329 | 240 | 72.4 | 293 | 174 | 205 | 114 | 206 | 106 | 63.7 | |
| 22 | 433 | 90.0 | 286 | 125 | 79.9 | 165 | 223 | 187 | 111 | 138 | 103 | 78.9 |
| 23 | 799 | 77.8 | # 184 | 84.9 | # 122 | 151 | # 447 | 199 | 103 | 116 | 115 | 62.0 |
| 24 | 672 | 91.1 | 142 | 138 | 95.4 | 366 | 274 | 166 | 96.5 | 198 | 141 | 188 |
| 25 | 303 | 187 | 135 | # 477 | 60.9 | 752 | 258 | 144 | 90.3 | 194 | 141 | 714 |
| 26 | # 112 | 342 | # 117 | 285 | 108 | 1,350 | 289 | 135 | 83.0 | # 131 | 119 | 719 |
| 27 | 99.1 | 305 | 91.8 | 156 | 119 | 1,100 | 185 | # 157 | 114 | 101 | 115 | 570 |
| 28 | 110 | 155 | 96.0 | 258 | 65.2 | # 1,170 | 159 | 165 | 141 | 121 | # 112 | 205 |
| 29 | 149 | 110 | 419 | 522 | # 1,620 | 158 | 149 | 129 | 224 | 92.2 | 82.6 | |
| 30 | # 770 | 108 | 354 | 1,090 | 1,460 | # 106 | 185 | 108 | 185 | 185 | 93.3 | 72.2 |
| 31 | 430 | 305 | 755 | | | 93.8 | 312 | | 124 | | | 175 |
| Sum | 6,678.8 | 12,656.2 | | 17,055.4 | | | 5,944.0 | 4,283.8 | | 6,211.9 | | |
| | 7,453.4 | 6,479.1 | | 10,809.4 | | | 10,858.8 | 4,096.3 | | 3,766.8 | | |

Current Year 1962

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Period 1954-1962 | | | | |
|---------------|-------------------|-------------|-----|---------------------|-------------|---------------------|-----------------|------------------|----------------|------------------|---------------|--|
| | High | Low | Day | High | Low | | | Average | Maximum | Minimum | | |
| | | | | | | | | | | | | |
| Jan. | 10.37 | 4.57 | 30 | 1,020 | 16 | 36.3 | 240 | 14,784 | 34,223 | 224,000 | 283 | |
| Feb. | 10.38 | 4.73 | 5 | 1,060 | 10 | 65.8 | 239 | 13,247 | 49,701 | 362,000 | 1,060 | |
| Mar. | 9.77 | 4.64 | 31 | 877 | 8 | 52.2 | 209 | 12,851 | 47,787 | 361,000 | 2,050 | |
| Apr. | 10.72 | 4.85 | 6 | 1,090 | 19 | 67.3 | 422 | 25,104 | 30,375 | 127,000 | 875 | |
| May | 11.18 | 4.67 | 4 | 1,260 | 25 | 56.1 | 349 | 21,440 | 19,228 | 33,900 | 4,140 | |
| June | 12.87 | 4.50 | 29 | 1,660 | 8 | 45.0 | 569 | 33,829 | 25,153 | 49,600 | 2,430 | |
| July | 11.18 | 4.86 | 1 | 1,300 | 30 | 84.7 | 350 | 21,538 | 15,862 | 28,800 | 1,120 | |
| Aug. | 8.24 | 4.56 | 14 | 624 | 18 | 65.8 | 192 | 11,790 | 15,396 | 56,000 | .218 | |
| Sept. | 7.13 | 4.58 | 1 | 399 | 15 | 69.8 | 137 | 8,125 | 30,409 | 134,000 | 950 | |
| Oct. | 6.99 | 4.22 | 20 | 373 | 1 | * 36.5 | 138 | 8,497 | 80,931 | 567,000 | 756 | |
| Nov. | 6.13 | 4.69 | 6 | 235 | 29 | 88.9 | 126 | 7,471 | 69,701 | 528,000 | 1,290 | |
| Dec. | 9.03 | 4.38 | 25 | 817 | 30 | 48.4 | 200 | 12,321 | 62,961 | 480,000 | 524 | |
| Yearly | 12.87 | 4.22 | | 1,660 | 36.3 | | 264 | 190,997 | 481,727 | 1,658,480 | 30,596 | |

* Partly estimated # Discharge measurement made on this day

**DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - LOWER BROWNSVILLE STATION TO THE GULF**

Since June 1956 the United States portion of the water in Falcón Reservoir and in the Rio Grande below Falcón 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 1962, 6,080 acres, or .8% of the total irrigable acreage below Falcón Dam, were served by diversions within this river reach under the jurisdiction of this Court.

The total diversions during 1962 in this river reach was 3,385 acre-feet, or .3% 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------------|-------|--------------|-------|-------------|------|--------------|------|--------------|-------|-------------|------|--------------|
| 1 | 3.0 | 18.0 | 0 | 0 | 0 | 29.0 | 0 | 5.0 | 0 | 2.0 | 0 | 5.0 |
| 2 | 7.0* | 15.0 | 0 | 2.0 | 0 | 28.0 | 0 | 7.0 | 0 | 6.0 | 0 | 0 |
| 3 | 7.0 | 15.0 | 1.0 | 2.0 | 0 | 18.0 | 1.0 | 4.0 | 1.0 | 6.0 | 0 | 6.0 |
| 4 | 6.0 | 13.0 | 4.0 | 0 | 0 | 21.0 | 2.0 | 4.0 | 1.0 | 2.0 | 1.0 | 7.0 |
| 5 | 8.0 | 15.0 | 3.0 | 0 | 0 | 21.0 | 2.0 | 5.0 | 1.0 | 2.0 | 1.0 | 11.0 |
| 6 | 10.0 | 15.0 | 5.0 | 0 | 0 | 20.0 | 1.0 | 1.0 | 0 | 2.0 | 0 | 11.0 |
| 7 | 10.0 | 25.0 | 6.0 | 0 | 0 | 18.0 | 0 | 0 | 0 | 2.0 | 0 | 11.0 |
| 8 | 10.0 | 8.0 | 8.0 | 0 | 0 | 21.0 | 0 | 0 | 0 | 3.0 | 0 | 3.0 |
| 9 | 11.0 | 8.0 | 8.0 | 0 | 0 | 19.0 | 0 | 0 | 0 | 2.0 | 0 | 3.0 |
| 10 | 0 | 7.0 | 8.0 | 0 | 0 | 23.0 | 0 | 0 | 0 | 4.0 | 0 | 3.0 |
| 11 | 0 | 7.0 | 2.0 | 0 | 0 | 22.0 | 0 | 2.0 | 0 | 6.0 | 0 | 4.0 |
| 12 | 0 | 8.0 | 7.0 | 0 | 0 | 22.0 | 0 | 2.0 | 0 | 4.0 | 0 | 3.0 |
| 13 | 6.0 | 7.0 | 7.0 | 0 | 0 | 22.0 | 0 | 2.0 | 0 | 4.0 | 0 | 0 |
| 14 | 13.0 | 7.0 | 2.0 | 0 | 0 | 21.0 | 0 | 2.0 | 2.0 | 0 | 1.0 | 0 |
| 15 | 15.0 | 5.0 | 0 | 0 | 0 | 21.0 | 0 | 3.0 | 2.0 | 2.0 | 3.0 | 0 |
| 16 | 16.0 | 4.0 | 0 | 3.0 | 0 | 14.0 | 0 | 3.0 | 3.0 | 2.0 | 3.0 | 2.0 |
| 17 | 15.0 | 5.0 | 2.0 | 3.0 | 0 | 7.0 | 0 | 0 | 3.0 | 2.0 | 3.0 | 2.0 |
| 18 | 16.0 | 0 | 3.0 | 1.0 | 0 | 21.0 | 0 | 2.0 | 0 | 2.0 | 4.0 | 2.0 |
| 19 | 15.0 | 2.0 | 0 | 2.0 | 0 | 22.0 | 0 | 2.0 | 0 | 2.0 | 4.0 | 5.0 |
| 20 | 9.0 | 1.0 | 0 | 2.0 | 0 | 6.0 | 0 | 2.0 | 0 | 0 | 4.0 | 3.0 |
| 21 | 10.0 | 1.0 | 4.0 | 1.0 | 0 | 9.0 | 0 | 2.0 | 1.0 | 0 | 4.0 | 5.0 |
| 22 | 15.0 | 0 | 4.0 | 1.0 | 0 | 5.0 | 0 | 2.0 | 1.0 | 0 | 4.0 | 5.0 |
| 23 | 6.0 | 0 | 4.0 | 1.0 | 0 | 5.0 | 3.0 | 16.0 | 2.0 | 1.0 | 8.0 | 5.0 |
| 24 | 6.0 | 1.0 | 4.0 | 1.0 | 0 | 4.0 | 3.0 | 14.0 | 6.0 | 1.0 | 7.0 | 5.0 |
| 25 | 12.0 | 0 | 7.0 | 3.0 | 0 | 4.0 | 3.0 | 14.0 | 6.0 | 4.0 | 10.0 | 3.0 |
| 26 | 15.0 | 0 | 7.0 | 3.0 | 1.0 | 2.0 | 5.0 | 2.0 | 6.0 | 4.0 | 10.0 | 3.0 |
| 27 | 11.0 | 0 | 1.0 | 3.0 | 16.0 | 0 | 7.0 | 2.0 | 6.0 | 0 | 10.0 | 5.0 |
| 28 | 16.0 | 0 | 1.0 | 1.0 | 19.0 | 0 | 3.0 | 2.0 | 6.0 | 0 | 10.0 | 7.0 |
| 29 | 15.0 | 0 | 0 | 0 | 19.0 | 0 | 5.0 | 2.0 | 6.0 | 0 | 7.0 | 9.0 |
| 30 | 17.0 | 0 | 0 | 0 | 22.0 | 0 | 5.0 | 2.0 | 6.0 | 0 | 7.0 | 22.0 |
| 31 | 17.0 | 0 | 0 | 0 | 29.0 | 0 | 5.0 | 2.0 | 0 | 0 | 0 | 19.0 |
| Sum | | 187.0 | | 29.0 | | 425.0 | | 106.0 | | 65.0 | | 169.0 |
| | 317.0 | 98.0 | 106.0 | 45.0 | 59.0 | 101.0 | | | | | | |

Current Year 1962

| Month | Average Rainfall Inches ** | | Extreme Second-Feet | | Average Second- Foot | Total Acre-Feet | Period 1957-1962 | | |
|---------------|-------------------------------|--------------|---------------------|-------------|----------------------------|--------------------|------------------|----------------|----------------|
| | | | High | Low | | | Average | Maximum | Minimum |
| | 1957-1962 | 1962 | Day | Day | | | Acre-Feet | | |
| Jan. | 2.05 | .67 | † 30 | 17.0 | † 10 | 0 | 10.2 | 629 | 392 |
| Feb. | 2.79 | .16 | 7 | 25.0 | † 18 | 0 | 6.7 | 371 | 371 |
| Mar. | 1.00 | .98 | † 8 | 8.0 | † 1 | 0 | 3.2 | 194 | 220 |
| Apr. | 2.26 | 1.48 | † 16 | 3.0 | † 1 | 0 | 1.0 | 57.5 | 145 |
| May | 1.34 | 2.46 | 31 | 29.0 | † 1 | 0 | 3.4 | 210 | 312 |
| June | 2.99 | 3.86 | 1 | 29.0 | † 27 | 0 | 14.2 | 843 | 531 |
| July | .81 | 0 | 27 | 7.0 | † 1 | 0 | 1.5 | 89.3 | 135 |
| Aug. | 1.98 | .99 | 23 | 16.0 | † 7 | 0 | 3.4 | 210 | 184 |
| Sept. | 4.62 | 3.10 | † 24 | 6.0 | † 1 | 0 | 2.0 | 117 | 317 |
| Oct. | 3.18 | 1.15 | † 2 | 6.0 | † 14 | 0 | 2.1 | 129 | 76.7 |
| Nov. | 1.98 | 1.10 | † 25 | 10.0 | † 1 | 0 | 3.4 | 200 | 218 |
| Dec. | 1.69 | 2.40 | 30 | 22.0 | † 2 | 0 | 5.5 | 335 | 144 |
| Yearly | 26.69 | 18.35 | | 29.0 | | 0 | 4.7 | 3,384.8 | 3,384.8 |
| | | | | | | | | | 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 1962 show that, in this area, 783,757 irrigable acres, several towns, and many rural homes were served Rio Grande water under the jurisdiction of this Court.

The total diversion in 1962 was 1,127,455 acre-feet, most of which was made by pumping from the river. About 93% 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 balance 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | |
|---------------|-------|---------------|-------|-----------------|-------|---------------|-------|---------------|-------|---------------|-------|---------------|-----|
| 1 | 2,010 | 2,890 | 1,440 | 55.0 | 2,040 | 4,610 | 159 | 1,350 | 491 | 1,090 | 1,160 | 552 | |
| 2 | 2,360 | 2,810 | 1,740 | 169 | 1,120 | 3,340 | 287 | 1,280 | 295 | 1,120 | 1,030 | 475 | |
| 3 | 2,510 | 2,240 | 1,320 | 257 | 822 | 2,470 | 393 | 1,150 | 622 | 1,210 | 685 | 890 | |
| 4 | 2,480 | 1,660 | 1,000 | 341 | 964 | 3,590 | 150 | 954 | 1,160 | 1,180 | 567 | 1,050 | |
| 5 | 2,510 | 2,360 | 1,950 | 703 | 827 | 4,110 | 300 | 655 | 932 | 894 | 1,250 | 1,040 | |
| 6 | 2,340 | 2,380 | 1,860 | 970 | 526 | 3,300 | 429 | 1,210 | 953 | 664 | 1,210 | 834 | |
| 7 | 1,950 | 2,300 | 1,820 | 660 | 1,240 | 2,250 | 365 | 1,320 | 991 | 634 | 901 | 759 | |
| 8 | 2,580 | 2,290 | 2,060 | 859 | 1,490 | 3,080 | 342 | 1,540 | 733 | 1,120 | 843 | 561 | |
| 9 | 2,380 | 2,400 | 2,300 | 1,690 | 1,520 | 3,540 | 526 | 1,580 | 564 | 1,170 | 926 | 446 | |
| 10 | 858 | 2,160 | 1,940 | 2,110 | 1,560 | 3,080 | 654 | 1,220 | 976 | 1,130 | 700 | 954 | |
| 11 | 816 | 1,710 | 1,340 | 1,890 | 1,440 | 3,990 | 651 | 804 | 1,070 | 1,690 | 453 | 1,030 | |
| 12 | 951 | 2,580 | 1,960 | 2,010 | 1,350 | 4,190 | 292 | 474 | 1,280 | 1,800 | 1,010 | 850 | |
| 13 | 1,230 | 2,640 | 1,980 | 1,990 | 956 | 4,370 | 498 | 1,350 | 1,380 | 1,180 | 943 | 629 | |
| 14 | 1,410 | 2,660 | 1,030 | 1,400 | 2,050 | 4,440 | 725 | 1,820 | 820 | 809 | 823 | 733 | |
| 15 | 2,720 | 2,570 | 659 | 1,260 | 2,340 | 4,410 | 1,110 | 1,740 | 845 | 1,460 | 855 | 788 | |
| 16 | 3,150 | 2,380 | 554 | 2,150 | 2,370 | 4,160 | 1,770 | 1,120 | 833 | 1,680 | 649 | 633 | |
| 17 | 3,200 | 2,110 | 542 | 1,730 | 2,610 | 3,280 | 1,060 | 1,200 | 1,380 | 1,520 | 650 | 1,120 | |
| 18 | 3,420 | 1,440 | 367 | 1,790 | 2,920 | 4,580 | 819 | 1,090 | 1,060 | 1,610 | 428 | 1,510 | |
| 19 | 3,490 | 2,650 | 398 | 2,140 | 2,960 | 4,840 | 1,870 | 837 | 1,110 | 1,370 | 1,030 | 1,770 | |
| 20 | 2,480 | 2,580 | 475 | 2,150 | 2,210 | 4,580 | 1,840 | 960 | 1,100 | 934 | 1,210 | 1,860 | |
| 21 | 2,000 | 2,560 | 451 | 1,660 | 3,590 | 4,420 | 1,160 | 849 | 962 | 711 | 1,010 | 1,780 | |
| 22 | 3,090 | 2,520 | 545 | 890 | 4,440 | 4,150 | 1,120 | 888 | 842 | 1,240 | 415 | 1,520 | |
| 23 | 2,210 | 2,430 | 653 | 1,950 | 4,450 | 3,600 | 1,460 | 863 | 666 | 1,400 | 883 | 1,190 | |
| 24 | 1,650 | 2,040 | 456 | 2,260 | 4,470 | 2,660 | 1,580 | 831 | 967 | 1,380 | 750 | 527 | |
| 25 | 1,880 | 1,270 | 276 | 2,260 | 4,550 | 2,560 | 1,660 | 743 | 887 | 1,250 | 530 | 286 | |
| 26 | 2,240 | 2,220 | 628 | 2,180 | 4,320 | 1,360 | 1,620 | 464 | 898 | 1,120 | 886 | 716 | |
| 27 | 2,320 | 2,270 | 712 | 2,110 | 4,020 | 598 | 1,400 | 742 | 835 | 915 | 911 | 525 | |
| 28 | 1,740 | 1,520 | 973 | 1,800 | 4,760 | 424 | 1,120 | 723 | 1,140 | 612 | 806 | 485 | |
| 29 | 2,700 | | | 719 | 1,300 | 4,860 | 438 | 745 | 670 | 2,220 | 1,180 | 720 | 863 |
| 30 | 2,780 | | | 517 | 2,080 | 4,740 | 292 | 1,220 | 619 | 864 | 1,240 | 535 | 781 |
| 31 | 2,660 | | | 142 | | 4,770 | | 1,210 | 490 | | 1,150 | | 708 |
| Sum | | 63,640 | | 44,814.0 | | 96,712 | | 31,536 | | 36,463 | | 27,865 | |
| 70,115 | | 32,807 | | 82,285 | | 28,535 | | 28,876 | | 24,769 | | | |

Current Year 1962

| Month | Average Rainfall Inches ** | | Extreme Second-Feet | | Average Second- Foot | Total Acre-Feet | Acre-Feet | | |
|--------|-------------------------------|-------|---------------------|-------|----------------------------|--------------------|-----------|-----------|---------|
| | | | High | Low | | | Average | Maximum | Minimum |
| | 1957-1962 | 1962 | Day | Day | | | Acre-Feet | Average | |
| Jan. | 1.62 | .45 | 19 | 3,490 | 11 | 816 | 2,260 | 139,073 | 139,073 |
| Feb. | 1.82 | .06 | 1 | 2,890 | 25 | 1,270 | 2,270 | 126,230 | 15,400 |
| Mar. | .94 | 1.32 | 9 | 2,300 | 31 | 142 | 1,060 | 65,073 | 54,626 |
| Apr. | 1.93 | .81 | † 24 | 2,260 | 1 | 55.0 | 1,490 | 88,889 | 85,448 |
| May | 1.26 | 1.04 | 29 | 4,860 | 6 | 526 | 2,650 | 163,212 | 114,000 |
| June | 2.67 | 3.40 | 19 | 4,840 | 30 | 292 | 3,220 | 191,828 | 139,785 |
| July | .73 | .01 | 19 | 1,870 | 4 | 150 | 920 | 56,599 | 178,000 |
| Aug. | 1.79 | .88 | 14 | 1,820 | 26 | 464 | 1,020 | 62,552 | 56,599 |
| Sept. | 3.72 | 2.46 | 29 | 2,220 | 2 | 295 | 963 | 57,276 | 62,552 |
| Oct. | 3.07 | 1.22 | 12 | 1,800 | 28 | 612 | 1,180 | 72,324 | 136,000 |
| Nov. | 1.63 | 1.01 | 5 | 1,250 | 22 | 415 | 826 | 49,129 | 70,454 |
| Dec. | 1.22 | 1.97 | 20 | 1,860 | 25 | 286 | 899 | 55,270 | 49,129 |
| Yearly | 22.40 | 14.63 | | 4,860 | | 55.0 | 1,560 | 1,127,455 | 739,780 |

† And other days Ø Mean daily ** United States side below Falcon Dam

OUTFALLS FROM WELLS AND SEWERS INTO THE RIO GRANDE

In Acre-Feet

EL PASO SEWAGE OUTFALL

This water enters the Rio Grande through the outlet of the El Paso Sewage Plant 6.6 miles below the American Dam at El Paso, Texas and from the outlets of the Ascarate and Ysleta Plants located 8.2 and 15 river miles, respectively, below the American Dam. The outfall from the El Paso Plant consists of flows measured by a Farshall meter and estimates of amounts which by-pass 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 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1962 | 1,697 | 1,535 | 1,638 | 1,587 | 1,792 | 1,844 | 1,902 | 1,896 | 1,870 | 1,794 | 1,476 | 1,437 | 20,468 |
| * Average | 1,346 | 1,275 | 1,402 | 1,364 | 1,478 | 1,534 | 1,596 | 1,621 | 1,560 | 1,532 | 1,406 | 1,430 | 17,544 |

EAGLE PASS SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 757.5 river miles below the American Dam at El Paso, Texas and about 600 feet above 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 |
|-----------|------|------|------|------|------|------|------|------|-------|------|------|------|--------|
| 1962 | 49.2 | 42.8 | 36.9 | 38.7 | 43.6 | 45.8 | 25.2 | 15.5 | 29.8 | 32.5 | 40.5 | 41.8 | 442.3 |
| # Average | | | | | | | | | | | | | |

LAREDO SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 890.8 river miles below the American Dam at El Paso, Texas and immediately above 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 |
|-----------|------|------|------|------|-----|------|------|------|-------|------|------|------|--------|
| 1962 | 358 | 443 | 434 | 343 | 454 | 381 | 442 | 400 | 361 | 358 | 364 | 315 | 4,653 |
| * Average | 253 | 272 | 318 | 302 | 350 | 325 | 317 | 304 | 275 | 260 | 270 | 267 | 3,513 |

BROWNSVILLE SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 3.4 river miles below the Gateway Bridge between Brownsville, Texas and Matamoros, Tamaulipas; 3.4 river miles above Lower Brownsville Gaging Station; and 52.2 river miles above 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 |
|-----------|------|------|------|------|-----|------|------|------|-------|------|------|------|--------|
| 1962 | 319 | 324 | 374 | 343 | 395 | 336 | 286 | 329 | 290 | 298 | 255 | 237 | 3,786 |
| * Average | 211 | 228 | 285 | 248 | 238 | 271 | 253 | 249 | 237 | 236 | 240 | 240 | 2,936 |

* Period averages are for past 10 years # Record began January 1962 Ø Period 1957-1962

MUNICIPAL WATER USES**In Acre-Feet**

Tabulated below are yearly and monthly amounts of water pumped directly from the Rio Grande into the municipal distribution systems of several cities along the border, except the City of Del Rio which pumps its water from San Felipe Springs. The basic data are furnished by the municipalities. Because of changing conditions, the period records are limited here to the past 10 years.

During April through August 1962, 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 2,169 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 58, 61, 65, 67, 69, 71, and 72 herein. The City of Reynosa, Tamaulipas, Mexico no longer pumps water from the Rio Grande. All of its water supply is from the Rode Canal of the Marte R. Gómez Reservoir. Ciudad 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.

Population data for all United States cities are from the 1960 official census, except Falcon Village where the population was estimated by the International Boundary and Water Commission. For Mexican cities, population data were furnished by the municipalities.

In the United States

| Month | EL PASO (Pop. 276,687) | | | DEL RIO ∅ (Pop. 21,012) | | |
|--------|---------------------------|------------------|----------|----------------------------|------------------|---------|
| | 1962 | Period 1953-1962 | | 1962 | Period 1953-1962 | |
| | | Average | Maximum | | Average | Maximum |
| Jan. | 0 | 145.5 | 764.9 | 0 | 264.6 | 220.0 |
| Feb. | 0 | 82.3 | 823.4 | 0 | 345.8 | 251.8 |
| Mar. | 246.5 | 240.0 | 1,016.2 | 0 | 433.7 | 357.7 |
| Apr. | 1,265.5 | 749.2 | 1,265.5 | 0 | 424.0 | 387.1 |
| May | 1,779.3 | 859.6 | 1,779.3 | 0 | 584.6 | 447.0 |
| June | 1,616.2 | 1,065.4 | 1,616.2 | 57.0 | 581.5 | 532.6 |
| July | 1,439.5 | 1,047.2 | 1,527.5 | 4.4 | 1,007.8 | 620.0 |
| Aug. | 1,879.7 | 1,192.4 | 1,879.7 | 0 | 1,147.4 | 633.6 |
| Sept. | 866.6 | 917.0 | 1,709.0 | 0 | 731.7 | 470.3 |
| Oct. | 0 | 334.8 | 983.0 | 0 | 521.1 | 329.3 |
| Nov. | 0 | 98.3 | 842.7 | 0 | 381.9 | 252.9 |
| Dec. | 0 | 58.1 | 580.6 | 0 | 312.1 | 242.8 |
| Yearly | 9,093.3 | 6,789.8 | 11,384.6 | 1,058.4 | 6,736.2 | 4,745.1 |
| | | | | | 6,736.2 | 3,985.5 |

| Month | EAGLE PASS (Pop. 12,094) | | | LAREDO (Pop. 60,678) | | |
|--------|-----------------------------|------------------|---------|-------------------------|------------------|---------|
| | 1962 | Period 1953-1962 | | 1962 | Period 1953-1962 | |
| | | Average | Maximum | | Average | Maximum |
| Jan. | 120.7 | 94.4 | 120.7 | 68.5 | 651.8 | 485.7 |
| Feb. | 138.3 | 96.7 | 138.3 | 72.0 | 504.0 | 777.0 |
| Mar. | 157.8 | 121.6 | 157.8 | 92.4 | 835.0 | 643.5 |
| Apr. | 156.9 | 122.1 | 156.9 | 86.6 | 745.0 | 692.0 |
| May | 200.4 | 145.5 | 200.4 | 108.4 | 987.8 | 800.5 |
| June | 188.2 | 161.0 | 223.0 | 118.4 | 952.7 | 849.6 |
| July | 214.7 | 180.0 | 217.4 | 113.2 | 1,263.6 | 945.2 |
| Aug. | 213.9 | 172.8 | 225.0 | 119.1 | 1,175.7 | 937.6 |
| Sept. | 180.4 | 142.2 | 192.8 | 95.3 | 925.6 | 740.4 |
| Oct. | 173.5 | 118.9 | 173.5 | 91.6 | 872.6 | 665.2 |
| Nov. | 129.6 | 95.1 | 129.6 | 76.7 | 673.9 | 528.2 |
| Dec. | 112.5 | 95.8 | 112.8 | 77.3 | 577.2 | 511.9 |
| Yearly | 1,986.9 | 1,546.1 | 1,986.9 | 1,232.2 | 10,437.9 | 8,303.8 |
| | | | | | 10,437.9 | 6,782.6 |

| Month | NEW ZAPATA (Pop. 2,031) | | | FALCON VILLAGE (Pop. 120) | | |
|--------|----------------------------|------------------|---------|------------------------------|------------------|---------|
| | 1962 | Period 1954-1962 | | 1962 | Period 1953-1962 | |
| | | Average | Maximum | | Average | Maximum |
| Jan. | 22.5 | 15.1 | 22.5 | 5.0 | 6.6 | 4.8 |
| Feb. | 30.6 | 16.2 | 30.6 | 7.6 | 7.2 | 4.7 |
| Mar. | 34.2 | 21.5 | 34.2 | 10.2 | 7.3 | 6.9 |
| Apr. | 38.8 | 25.8 | 41.8 | 10.5 | 7.4 | 7.0 |
| May | 46.4 | 27.4 | 46.4 | 11.4 | 11.5 | 7.7 |
| June | 44.2 | 27.1 | 44.2 | 13.5 | 8.4 | 7.8 |
| July | 49.8 | 32.0 | 49.8 | 14.7 | 12.2 | 9.8 |
| Aug. | 47.4 | 30.4 | 47.4 | 15.8 | 11.3 | 8.9 |
| Sept. | 36.5 | 22.7 | 36.5 | 8.9 | 8.4 | 6.4 |
| Oct. | 37.6 | 22.3 | 37.6 | 13.0 | 8.5 | 6.3 |
| Nov. | 34.9 | 19.1 | 34.9 | 9.4 | 5.8 | 4.4 |
| Dec. | 33.7 | 18.5 | 33.7 | 9.1 | 5.4 | 4.7 |
| Yearly | 456.6 | 278.1 | 456.6 | 140.4 | 100.0 | 79.4 |
| | | | | | 100.0 | 51.9 |

∅ Includes Laughlin Air Force Base

MUNICIPAL WATER USES

In Acre-Feet

In the United States

| Month | ROMA * (Pop. 9,542) | | | RIO GRANDE CITY (Pop. 5,835) | | | | |
|--------|------------------------|------------------|---------|---------------------------------|-------|------------------|---------|---------|
| | **1962 | Period 1953-1962 | | | 1962 | Period 1953-1962 | | |
| | | Average | Maximum | Minimum | | Average | Maximum | Minimum |
| Jan. | 27.7 | 20.8 | 30.1 | 12.9 | 56.2 | 45.9 | 56.2 | 36.0 |
| Feb. | 31.6 | 21.0 | 31.8 | 13.1 | 63.2 | 45.9 | 63.2 | 33.1 |
| Mar. | 33.8 | 25.6 | 36.4 | 17.3 | 63.5 | 53.1 | 72.4 | 39.8 |
| Apr. | 35.7 | 26.8 | 37.9 | 17.3 | 68.7 | 58.7 | 78.9 | 44.3 |
| May | 42.0 | 29.9 | 42.0 | 18.7 | 81.6 | 68.7 | 84.1 | 42.8 |
| June | 39.7 | 30.6 | 45.5 | 19.8 | 74.6 | 69.7 | 91.6 | 48.1 |
| July | 45.4 | 33.6 | 47.4 | 21.4 | 83.8 | 75.8 | 101.9 | 51.9 |
| Aug. | 42.4 | 31.2 | 42.4 | 19.0 | 83.2 | 72.4 | 83.2 | 50.1 |
| Sept. | 35.2 | 27.4 | 37.3 | 17.1 | 67.2 | 54.0 | 67.8 | 28.4 |
| Oct. | 35.3 | 26.7 | 37.5 | 14.4 | 66.6 | 52.0 | 66.6 | 30.3 |
| Nov. | 31.0 | 23.1 | 31.8 | 12.7 | 54.3 | 46.1 | 54.3 | 30.6 |
| Dec. | 29.3 | 23.2 | 33.8 | 12.0 | 51.3 | 46.0 | 62.3 | 36.5 |
| Yearly | **429.1 | 319.9 | 429.1 | 202.0 | 814.2 | 688.3 | 829.9 | 488.4 |

| Month | BROWNSVILLE (Pop. 48,040) | | | |
|--------|------------------------------|------------------|---------|---------|
| | 1962 | Period 1953-1962 | | |
| | | Average | Maximum | Minimum |
| Jan. | 734.8 | 531.2 | 734.8 | 387.3 |
| Feb. | 700.8 | 504.5 | 700.8 | 393.2 |
| Mar. | 843.2 | 605.0 | 843.2 | 494.6 |
| Apr. | 760.1 | 612.0 | 776.9 | 498.6 |
| May | 853.7 | 681.4 | 853.7 | 481.8 |
| June | 914.5 | 690.0 | 956.9 | 108.7 |
| July | 1,004.2 | 757.1 | 1,037.8 | 0 |
| Aug. | 1,001.5 | 784.9 | 1,001.5 | 65.4 |
| Sept. | 788.6 | 638.4 | 875.1 | 416.0 |
| Oct. | 760.5 | 599.4 | 760.5 | 394.7 |
| Nov. | 733.1 | 532.0 | 733.1 | 396.8 |
| Dec. | 672.5 | 530.1 | 672.5 | 434.0 |
| Yearly | 9,767.5 | 7,466.0 | 9,767.5 | 4,861.3 |

In Mexico

| Month | NUEVO LAREDO (Pop. 100,200) | | | NUEVA CD. GUERRERO (Pop. 2,896) | | | | |
|--------|--------------------------------|---------|----------|------------------------------------|------------------|---------|-------|-------|
| | Period 1953-1962 | | | 1962 | Period 1954-1962 | | | |
| | Average | Maximum | Minimum | | Average | Maximum | | |
| Jan. | 791.3 | 539.9 | 791.3 | 398.6 | 35.7 | 32.3 | 48.7 | 20.2 |
| Feb. | 809.0 | 518.9 | 809.0 | 357.7 | 34.3 | 29.8 | 44.3 | 18.4 |
| Mar. | 909.6 | 644.2 | 909.6 | 432.9 | 38.3 | 33.4 | 48.0 | 21.2 |
| Apr. | 899.5 | 689.0 | 905.3 | 468.5 | 39.8 | 34.9 | 52.5 | 22.3 |
| May | 1,077.8 | 766.4 | 1,077.8 | 463.2 | 49.2 | 38.4 | 53.8 | 26.8 |
| June | 1,063.2 | 808.5 | 1,090.7 | 397.7 | 49.2 | 39.4 | 52.9 | 28.1 |
| July | 1,238.4 | 835.0 | 1,238.4 | 450.6 | 49.3 | 41.4 | 54.6 | 31.1 |
| Aug. | 1,209.8 | 837.8 | 1,209.8 | 451.5 | 49.0 | 40.7 | 52.0 | 31.5 |
| Sept. | 1,050.4 | 749.4 | 1,050.4 | 426.9 | 46.4 | 36.7 | 46.4 | 28.7 |
| Oct. | 979.6 | 716.7 | 979.6 | 432.8 | 49.1 | 37.1 | 49.1 | 29.3 |
| Nov. | 795.0 | 601.4 | 795.0 | 405.4 | 46.2 | 35.6 | 46.5 | 28.8 |
| Dec. | 708.4 | 559.4 | 708.4 | 390.4 | 48.6 | 36.0 | 48.6 | 28.9 |
| Yearly | 11,532.0 | 8,266.5 | 11,532.0 | 5,076.2 | 535.1 | 435.7 | 552.8 | 315.3 |

| Month | MATAMOROS (Pop. 10,689) | | | CD. MIER (Pop. 4,560) | | |
|--------|----------------------------|------------------|---------|--------------------------|------------------|---------|
| | 1962 | Period 1953-1962 | | 1962 | Period 1953-1962 | |
| | | Average | Maximum | | Average | Maximum |
| Jan. | 402.3 | 307.4 | 402.3 | 238.2 | 24.3 | 32.2 |
| Feb. | 385.4 | 292.5 | 385.4 | 229.7 | 38.9 | 33.9 |
| Mar. | 431.3 | 342.8 | 431.3 | 262.2 | 43.8 | 34.7 |
| Apr. | 455.9 | 345.4 | 455.9 | 280.1 | 46.2 | 34.9 |
| May | 536.8 | 379.2 | 536.8 | 294.9 | 43.8 | 36.1 |
| June | 540.9 | 382.2 | 540.9 | 136.0 | 38.9 | 36.2 |
| July | 590.6 | 388.3 | 590.6 | 135.5 | 50.3 | 37.5 |
| Aug. | 567.0 | 312.0 | 567.0 | 38.7 | 47.0 | 37.2 |
| Sept. | 548.3 | 361.8 | 548.3 | 176.8 | 47.2 | 36.6 |
| Oct. | 561.2 | 389.7 | 561.2 | 299.2 | 46.9 | 36.1 |
| Nov. | 500.6 | 354.2 | 500.6 | 234.9 | 36.5 | 34.6 |
| Dec. | 483.5 | 343.5 | 483.5 | 226.4 | 37.0 | 34.2 |
| Yearly | 6,003.8 | 4,199.0 | 6,003.8 | 2,834.4 | 500.8 | 424.2 |
| | | | | | | 533.3 |
| | | | | | | 388.8 |

* Includes Los Saenz, Escobares, Texas and Cd. Miguel Alemán, Tamaulipas. ** Includes 225 acre-feet supplied to Cd. Miguel Alemán, Tamaulipas.

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 in 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 on page 79 are data for the International Falcón Reservoir. 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 from the Rio Grande Compact Commission; Costilla from the United States Geological Survey; El Vado from the Middle Rio Grande Conservancy District; Bluewater from the United States Geological Survey; Elephant Butte and Caballo from the United States Bureau of Reclamation; Storrie from State Engineer Office of New Mexico; 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 Engineer; Willacy from the Willacy County Water Control and Improvement District No. 1; La Boquilla, La Colina, and Rosetilla from Industrial Electric, S. A. of Mexico; Francisco I. Madero, Centenario and San Miguel, Venustiano Carranza, Marte R. Gómez, Culebrón and Villa Cárdenas, and Palito Blanco from the Ministry of Hydraulic Resources of Mexico; Falcón Reservoir (International) from International Boundary and Water Commission.

In the United States

| Month | RIO GRANDE (Capacity 51.1) | | CONTINENTAL (Capacity 26.7) | | SANTA MARIA (Capacity 43.6) | | TERRACE (Capacity 17.7) | | MOUNTAIN HOME (Capacity 20.1) | |
|-------|----------------------------------|-----------------------|--------------------------------|-----------------------|--------------------------------|-----------------------|----------------------------|-----------------------|-------------------------------------|-----------------------|
| | 1962 | #Average 1927-1962 | 1962 | #Average 1928-1962 | 1962 | #Average 1928-1962 | 1962 | #Average 1925-1962 | 1962 | #Average 1924-1962 |
| Jan. | 9.3 | 12.8 | 4.2 | 4.9 | 3.0 | 7.0 | 7.1 | 2.7 | 6.8 | 4.1 |
| Feb. | 11.2 | 14.0 | 5.4 | 5.3 | 3.6 | 7.4 | 7.7 | 3.0 | 7.2 | 4.4 |
| Mar. | 12.8 | 15.4 | 6.2 | 5.7 | 4.2 | 8.4 | 8.2 | 3.5 | 7.6 | 4.8 |
| Apr. | 27.3 | 15.5 | 6.7 | 6.3 | 10.8 | 9.9 | 13.0 | 4.3 | 9.7 | 5.5 |
| May | 48.9 | 21.7 | 9.7 | 8.3 | 19.0 | 14.5 | 12.9 | 6.9 | 10.5 | 7.6 |
| June | 47.7 | 23.2 | 9.8 | 8.7 | 21.5 | 16.7 | 11.9 | 8.4 | 8.8 | 7.7 |
| July | 23.4 | 13.7 | 5.6 | 6.1 | 12.2 | 11.0 | 8.8 | 5.3 | 5.7 | 5.5 |
| Aug. | 4.7 | 6.1 | 0 | 3.9 | 3.7 | 5.3 | 4.0 | 2.8 | 3.1 | 3.5 |
| Sept. | 4.7 | 5.9 | 0 | 4.0 | 2.8 | 5.0 | 2.9 | 2.3 | 2.6 | 3.0 |
| Oct. | 4.7 | 6.9 | 0 | 3.8 | 2.8 | 5.2 | 2.6 | 2.5 | 2.4 | 3.1 |
| Nov. | 5.7 | 9.8 | 1.0 | 4.2 | 3.0 | 5.9 | 2.5 | 2.2 | 2.5 | 3.4 |
| Dec. | 7.2 | 11.4 | " 1.0 | 4.6 | 3.6 | 6.4 | 2.7 | 2.5 | 3.0 | 3.7 |
| Avg. | 17.3 | 13.0 | 4.1 | 5.5 | 7.5 | 8.6 | 7.0 | 3.9 | 5.8 | 4.7 |
| Max. | 48.9 | 52.1 | 9.8 | 26.7 | 21.5 | 42.1 | 13.0 | 17.7 | 10.5 | 16.4 |
| Min. | 4.7 | 0 | 0 | 0 | 2.8 | 0 | 2.5 | 0 | 2.4 | 0 |

| Month | SANCHEZ (Capacity 103.2) | | PLATOTORO (Capacity 60.0) | | COSTILLA (Capacity 15.7) | | EL VADO (Capacity 194.5) | | BLUEWATER (Capacity 43.5) | |
|-------|-----------------------------|-----------------------|------------------------------|----------------------|-----------------------------|-----------------------|-----------------------------|----------------------|------------------------------|-----------------------|
| | 1962 | #Average 1927-1962 | 1962 | Average 1952-1962 | 1962 | #Average 1922-1962 | 1962 | Average 1935-1962 | 1962 | #Average 1927-1962 |
| Jan. | 11.9 | 11.3 | 3.4 | 7.1 | 8.1 | 4.2 | 2.5 | 39.4 | 5.8 | 6.0 |
| Feb. | 12.2 | 11.4 | 3.4 | 7.1 | 8.6 | 4.6 | 2.5 | 35.6 | 8.2 | 7.0 |
| Mar. | 12.7 | 12.1 | 3.4 | 7.2 | 9.4 | 5.2 | 5.7 | 34.6 | 11.7 | 11.0 |
| Apr. | 16.0 | 13.8 | 7.5 | 7.8 | 10.8 | 6.3 | 70.4 | 82.1 | 16.4 | 14.1 |
| May | 15.4 | 18.5 | 13.6 | 11.1 | 12.3 | 8.6 | 130.8 | 137.0 | 14.9 | 12.2 |
| June | 10.2 | 17.7 | 16.7 | 18.8 | 10.3 | 8.0 | 132.8 | 123.2 | 12.7 | 9.8 |
| July | 6.2 | 12.4 | 16.7 | 13.8 | 7.8 | 5.2 | 132.8 | 99.2 | 10.9 | 8.4 |
| Aug. | 2.7 | 9.5 | 16.7 | 11.6 | 5.1 | 3.5 | 120.2 | 73.0 | 8.7 | 7.3 |
| Sept. | 2.8 | 9.7 | 16.7 | 11.6 | 4.2 | 3.0 | 112.8 | 58.6 | 7.4 | 6.9 |
| Oct. | 3.3 | 10.3 | 16.7 | 11.1 | 4.6 | 3.2 | 112.8 | 54.0 | 7.0 | 6.5 |
| Nov. | 4.3 | 10.4 | 4.0 | 7.6 | 5.0 | 3.5 | 64.6 | 43.1 | 6.8 | 6.4 |
| Dec. | 4.6 | 10.8 | 4.0 | 7.6 | 5.6 | 3.9 | 11.8 | 37.6 | 6.6 | 6.1 |
| Avg. | 8.5 | 12.3 | 10.2 | 10.2 | 7.6 | 4.9 | 75.0 | 68.1 | 9.8 | 8.5 |
| Max. | 16.0 | 62.4 | 16.7 | 54.0 | 12.3 | 15.1 | 132.8 | 203.5 | 16.4 | 41.7 |
| Min. | 2.7 | 0 | 3.4 | 0 | 4.2 | 0 | 2.5 | 0 | 5.8 | 0 |

* Some months missing " Estimated

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Thousands of Acre-Feet

In the United States

| Month | ELEPHANT BUTTE (Capacity 2,195.0) | | CABALLO (Capacity 344.0) | | STORRIE (Capacity 21.7) | | ALAMOGORDO (Capacity 122.1) | | McMILLAN and AVALON (Capacity 38.0) | |
|-------|--------------------------------------|--------------------|-----------------------------|--------------------|----------------------------|--------------------|--------------------------------|--------------------|--|--------------------|
| | 1962 | #Average 1915-1962 | 1962 | #Average 1938-1962 | 1962 | #Average 1939-1962 | 1962 | #Average 1937-1962 | 1962 | #Average 1908-1962 |
| Jan. | 403.2 | 841.9 | 22.1 | 127.6 | 23.3 | 8.9 | 110.9 | 70.1 | 21.2 | 28.2 |
| Feb. | 405.0 | 842.1 | 81.6 | 151.4 | 23.9 | 8.7 | 114.3 | 73.7 | 14.5 | 28.3 |
| Mar. | 339.7 | 824.8 | 65.1 | 135.1 | 22.8 | 9.5 | 87.9 | 64.8 | 32.8 | 27.1 |
| Apr. | 385.6 | 826.9 | 103.0 | 118.2 | 17.6 | 10.1 | 95.4 | 57.7 | 13.3 | 18.2 |
| May | 451.2 | 940.7 | 139.4 | 111.2 | 19.9 | 11.6 | 89.2 | 63.9 | 6.8 | 21.2 |
| June | 363.5 | 980.4 | 128.9 | 90.9 | 17.6 | 10.4 | 64.1 | 57.0 | 21.6 | 20.2 |
| July | 283.9 | 923.6 | 113.9 | 67.3 | 19.3 | 10.7 | 78.5 | 57.5 | 20.2 | 18.7 |
| Aug. | 229.4 | 862.2 | 41.1 | 36.2 | 16.8 | 11.9 | 69.7 | 59.1 | 1.3 | 16.9 |
| Sept. | 226.8 | 828.0 | 28.4 | 27.9 | 15.3 | 11.0 | 60.4 | 57.4 | 16.8 | 18.5 |
| Oct. | 237.7 | 822.6 | 31.9 | 48.5 | 14.2 | 10.5 | 61.6 | 62.7 | 14.5 | 21.5 |
| Nov. | 298.6 | 829.0 | 34.1 | 69.8 | 14.2 | 11.2 | 67.0 | 62.7 | 16.3 | 23.1 |
| Dec. | 390.3 | 840.2 | 37.6 | 92.1 | 14.2 | 9.1 | 73.4 | 67.0 | 18.6 | 26.5 |
| Avg. | 334.6 | 863.5 | 68.9 | 89.7 | 18.3 | 10.3 | 81.0 | 62.8 | 16.5 | 22.4 |
| Max. | ø 460.9 | ø 302.8 | ø 143.0 | ø 346.6 | 23.9 | 26.2 | 114.3 | 156.3 | 21.6 | 85.5 |
| Min. | ø 219.3 | ø 3.3 | ø 19.6 | ø .1 | 14.2 | 0 | 60.4 | .4 | 1.3 | 0 |

| Month | RED BLUFF (Capacity 310.0) | | LAKE CASA BLANCA (Capacity 19.5) | | WILLACY (Capacity 25.0) | | | | TOTAL IN U. S. RESERVOIRS (Capacity 3,651.0) | |
|-------|-------------------------------|--------------------|-------------------------------------|--|----------------------------|--------------------|--|--|---|-------------------|
| | 1962 | #Average 1936-1962 | 1962 | | 1962 | #Average 1939-1962 | | | 1962 | Estimated Average |
| Jan. | 60.9 | 105.7 | 6.9 | | 17.1 | 14.4 | | | 727.7 | 1,303.2 |
| Feb. | 63.3 | 108.0 | 6.5 | | 15.2 | 13.6 | | | 794.3 | 1,332.1 |
| Mar. | 60.4 | 105.1 | 6.2 | | 15.0 | 13.1 | | | 711.8 | 1,293.6 |
| Apr. | 53.4 | 88.3 | 6.0 | | 13.5 | 12.8 | | | 876.4 | 1,303.8 |
| May | 48.9 | 94.4 | 6.0 | | 19.8 | 13.7 | | | 1,069.2 | 1,509.1 |
| June | 46.4 | 97.5 | 5.7 | | 19.8 | 14.3 | | | 950.0 | 1,518.6 |
| July | 38.5 | 86.0 | 5.4 | | 13.4 | 13.7 | | | 803.2 | 1,363.5 |
| Aug. | 32.7 | 74.3 | 5.3 | | 14.9 | 12.3 | | | 580.1 | 1,204.7 |
| Sept. | 30.1 | 75.5 | 5.1 | | 16.4 | 14.3 | | | 556.2 | 1,147.7 |
| Oct. | 26.4 | 88.1 | 5.0 | | 14.9 | 14.8 | | | 563.1 | 1,180.3 |
| Nov. | 18.4 | 91.9 | 4.8 | | 14.8 | 14.5 | | | 567.6 | 1,203.5 |
| Dec. | 23.3 | 97.4 | 4.6 | | 14.5 | 14.4 | | | 626.6 | 1,245.9 |
| Avg. | 41.9 | 92.7 | 5.6 | | 15.8 | 13.8 | | | 735.5 | 1,300.5 |
| Max. | 63.3 | 327.5 | 6.9 | | 19.8 | 22.0 | | | 1,069.2 | |
| Min. | 18.4 | 10.0 | 4.6 | | 13.4 | 0 | | | 556.2 | |

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) | |
|-------|-----------------------------------|-----------------------|------------------------------|----------------------|------------------------------|----------------------|--|-----------------------|---|----------------------|
| | 1962 | #Average 1914-1962 | 1962 | Average 1940-1962 | 1962 | Average 1940-1962 | 1962 | #Average 1948-1962 | 1962 | Average 1934-1962 |
| Jan. | 1,802.3 | 1,412.2 | 13.5 | 17.7 | 12.5 | 13.3 | 172.4 | 197.6 | 16.9 | 12.8 |
| Feb. | 1,780.0 | 1,383.0 | 18.6 | 18.1 | 14.3 | 13.6 | 173.7 | 197.0 | 16.4 | 12.4 |
| Mar. | 1,705.1 | 1,333.7 | 18.0 | 17.9 | 13.4 | 12.8 | 173.3 | 191.7 | 9.3 | 9.3 |
| Apr. | 1,609.3 | 1,266.3 | 18.9 | 18.6 | 11.0 | 12.0 | 152.7 | 168.3 | 7.8 | 7.8 |
| May | 1,486.3 | 1,213.1 | 20.4 | 18.4 | 15.5 | 11.4 | 142.6 | 150.8 | 8.0 | 8.8 |
| June | 1,369.6 | 1,130.0 | 20.4 | 18.3 | 13.6 | 11.8 | 123.1 | 128.8 | 4.7 | 8.1 |
| July | 1,411.1 | 1,164.0 | 18.0 | 18.5 | 12.5 | 11.8 | 152.1 | 139.1 | 1.5 | 7.9 |
| Aug. | 1,372.2 | 1,322.6 | 20.5 | 18.1 | 11.1 | 12.1 | 105.8 | 159.3 | 1.5 | 8.3 |
| Sept. | 1,392.8 | 1,477.4 | 17.5 | 18.0 | 12.0 | 12.8 | 161.5 | 193.3 | 2.0 | 10.3 |
| Oct. | 1,450.9 | 1,485.1 | 17.7 | 18.1 | 11.2 | 12.7 | 188.9 | 198.8 | 5.4 | 12.3 |
| Nov. | 1,423.8 | 1,451.2 | 18.7 | 18.0 | 9.5 | 12.5 | 190.8 | 197.8 | 9.1 | 12.3 |
| Dec. | 1,398.9 | 1,424.9 | 16.8 | 17.8 | 15.2 | 13.5 | 192.4 | 197.3 | 10.5 | 12.3 |
| Avg. | 1,516.9 | 1,338.6 | 18.2 | 18.1 | 12.6 | 12.5 | 160.8 | 176.6 | 7.8 | 10.2 |
| Max. | 1,802.3 | 2,544.7 | 20.5 | 20.5 | 15.5 | 19.4 | 192.4 | 366.6 | 16.9 | 20.7 |
| Min. | 1,369.6 | 16.9 | 13.5 | 13.5 | 9.5 | .4 | 105.8 | 1.4 | 1.5 | 0 |

| Month | VENUSTIANO CARRANZA (Capacity 1,122.8) | | MARTE R. GOMEZ (Capacity 1,019.1) | | CULEBRON and VILLA CARDENAS (Capacity 90.0) | | PALITO BLANCO (Capacity 124.0) | | TOTAL IN MEXICAN RESERVOIRS (Capacity 5,172.8) | |
|-------|--|----------------------|---|-----------------------|---|-----------------------|--------------------------------------|----------------------|--|----------------------|
| | 1962 | Average 1930-1962 | 1962 | #Average 1943-1962 | 1962 | #Average 1939-1962 | 1962 | Average 1942-1962 | 1962 | Estimated Average |
| Jan. | 565.4 | 386.5 | 517.2 | 541.6 | 49.5 | 40.7 | 24.1 | 42.5 | 3,173.8 | 2,664.9 |
| Feb. | 510.3 | 369.2 | 410.2 | 486.3 | 39.9 | 38.0 | 24.4 | 36.2 | 2,987.8 | 2,553.8 |
| Mar. | 496.4 | 347.8 | 401.3 | 443.1 | 28.9 | 32.7 | 19.1 | 37.1 | 2,864.8 | 2,426.1 |
| Apr. | 491.7 | 337.7 | 372.1 | 430.0 | 50.3 | 34.9 | 10.3 | 33.5 | 2,724.1 | 2,309.1 |
| May | 432.7 | 326.7 | 193.2 | 390.9 | 50.9 | 38.9 | 13.2 | 29.8 | 2,362.8 | 2,188.8 |
| June | 367.3 | 315.3 | 111.9 | 348.9 | 41.9 | 44.0 | 16.1 | 30.7 | 2,068.6 | 2,035.9 |
| July | 333.1 | 303.6 | 112.4 | 331.6 | 30.7 | 38.6 | 14.2 | 33.3 | 2,085.6 | 2,048.4 |
| Aug. | 318.6 | 306.5 | 100.4 | 402.4 | 19.6 | 37.9 | 10.9 | 32.9 | 1,960.6 | 2,300.1 |
| Sept. | 302.1 | 362.3 | 251.8 | 508.8 | 28.3 | 48.3 | 9.6 | 45.2 | 2,177.6 | 2,676.4 |
| Oct. | 291.0 | 392.1 | 345.4 | 567.2 | 30.3 | 53.5 | 17.8 | 53.5 | 2,358.6 | 2,793.3 |
| Nov. | 281.4 | 398.3 | 339.7 | 564.7 | 24.4 | 45.0 | 16.5 | 51.6 | 2,313.9 | 2,751.4 |
| Dec. | 275.9 | 397.2 | 338.9 | 563.9 | 21.5 | 49.3 | 15.6 | 49.5 | 2,285.7 | 2,725.7 |
| Avg. | 388.8 | 353.6 | 291.2 | 465.0 | 34.7 | 41.8 | 16.0 | 39.6 | 2,447.0 | 2,456.2 |
| Max. | # 569.7 | 1,163.4 | # 571.6 | # 1,207.1 | 50.9 | 116.8 | 24.4 | 140.1 | 3,173.8 | |
| Min. | 275.9 | * 1.0 | # 99.7 | # 17.8 | 19.6 | 0 | 9.6 | 0 | 1,960.6 | |

Some months missing * Minimum since full reservoir in 1932 # Daily extreme \$ Minimum since full reservoir in 1947

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

International Falcón Reservoir

Falcón 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 below the American Dam, and 273.8 river miles above 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 | | Between Indicated Elevations | |
|-----------|----------------------------------|------------------------------|----------------------|------------------------------|-----------------------|
| | | Reservoir Capacity Acre-Feet | Reservoir Area Acres | Storage Volume Acre-Feet | Type of Storage |
| 175.0 | Original River Bed at Dam Axis | 0 | 0 | | |
| 203.33 | Lowest Outlet (Mexican Penstock) | 2,816 | 676 | 2,816 | Silt and Dead |
| 296.4 | Top of Conservation Storage | 2,371,221 | 78,342 | 2,368,405 | Silt and Conservation |
| 306.7 | Top of Spillway Gates | 3,280,683 | 98,959 | 909,462 | Ordinary Flood |
| 314.2 | Maximum Water Surface | 4,080,817 | 115,613 | 800,134 | Super Flood |

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

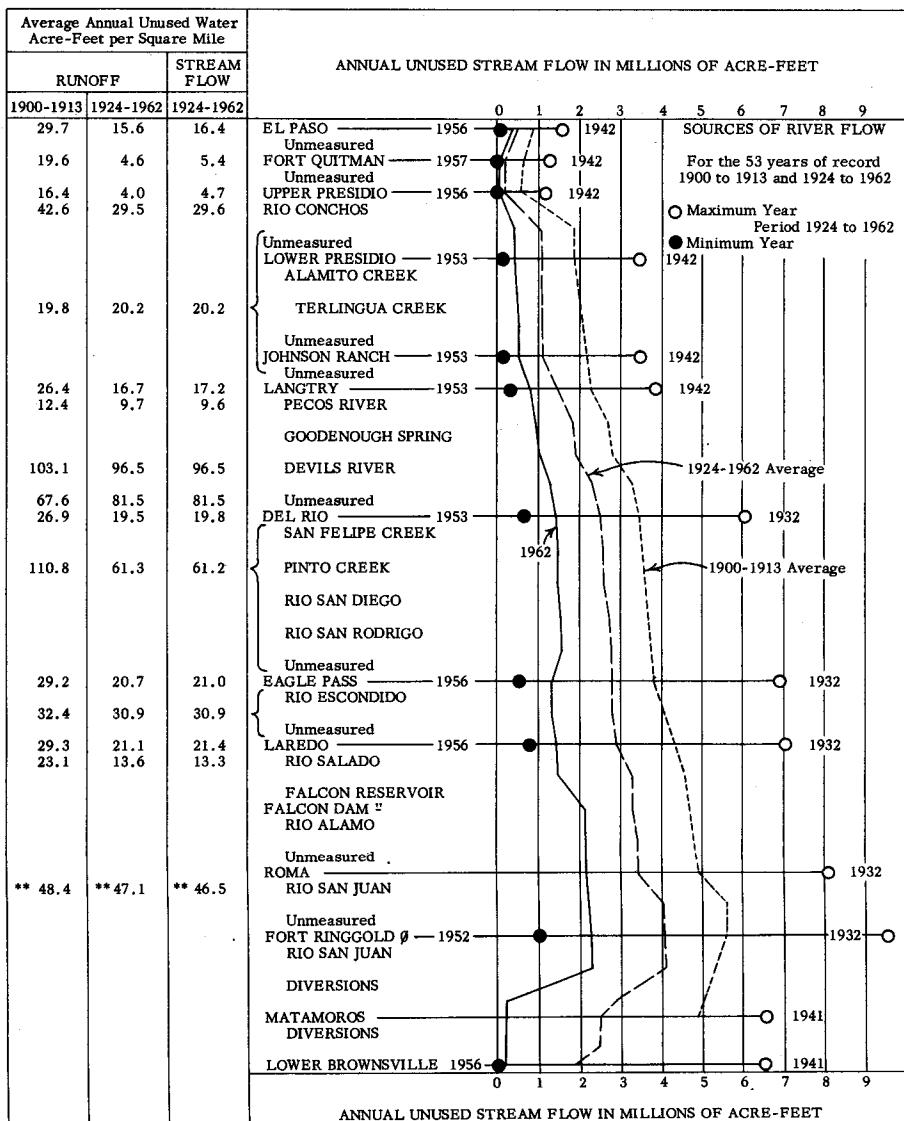
| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 2,467.3 | 2,264.7 | 1,984.9 | 1,965.7 | 1,859.6 | 1,420.5 | 1,155.8 | 1,137.7 | 1,114.5 | 1,349.8 | 1,484.8 | 1,551.4 |
| 2 | 2,464.0 | 2,251.8 | 1,983.5 | 1,958.2 | 1,852.4 | 1,408.4 | 1,157.8 | 1,138.1 | 1,126.6 | 1,350.4 | 1,488.2 | 1,555.0 |
| 3 | 2,460.8 | 2,239.7 | 1,983.5 | 1,952.7 | 1,853.0 | 1,398.0 | 1,160.6 | 1,137.7 | 1,109.8 | 1,353.5 | 1,488.8 | 1,554.4 |
| 4 | 2,456.8 | 2,231.4 | 1,982.9 | 1,954.7 | 1,851.7 | 1,388.8 | 1,160.2 | 1,137.7 | 1,108.8 | 1,355.1 | 1,489.4 | 1,556.2 |
| 5 | 2,452.0 | 2,222.4 | 1,978.7 | 1,953.4 | 1,844.5 | 1,371.1 | 1,160.6 | 1,137.7 | 1,107.4 | 1,357.2 | 1,491.1 | 1,554.4 |
| 6 | 2,446.4 | 2,208.2 | 1,971.8 | 1,951.3 | 1,840.5 | 1,354.6 | 1,160.6 | 1,137.7 | 1,105.1 | 1,361.5 | 1,504.3 | 1,553.8 |
| 7 | 2,440.8 | 2,193.3 | 1,969.1 | 1,949.3 | 1,834.6 | 1,339.3 | 1,160.6 | 1,137.2 | 1,101.8 | 1,367.4 | 1,510.6 | 1,556.2 |
| 8 | 2,434.4 | 2,180.0 | 1,968.4 | 1,947.3 | 1,833.3 | 1,325.2 | 1,160.6 | 1,135.8 | 1,107.4 | 1,369.5 | 1,511.2 | 1,556.2 |
| 9 | 2,431.3 | 2,169.7 | 1,965.7 | 1,948.6 | 1,830.1 | 1,311.2 | 1,160.2 | 1,133.4 | 1,121.1 | 1,370.6 | 1,511.2 | 1,556.2 |
| 10 | 2,428.1 | 2,154.2 | 1,962.9 | 1,950.7 | 1,824.2 | 1,302.5 | 1,159.2 | 1,131.5 | 1,131.5 | 1,369.5 | 1,512.4 | 1,557.3 |
| 11 | 2,425.7 | 2,139.6 | 1,957.5 | 1,950.7 | 1,817.7 | 1,292.7 | 1,154.4 | 1,128.6 | 1,141.5 | 1,369.5 | 1,517.0 | 1,558.5 |
| 12 | 2,420.1 | 2,125.8 | 1,954.7 | 1,947.9 | 1,809.9 | 1,281.1 | 1,149.1 | 1,126.7 | 1,158.7 | 1,372.2 | 1,518.7 | 1,558.5 |
| 13 | 2,413.8 | 2,115.6 | 1,958.8 | 1,943.2 | 1,802.8 | 1,273.9 | 1,146.7 | 1,125.3 | 1,177.1 | 1,375.9 | 1,519.3 | 1,559.1 |
| 14 | 2,408.2 | 2,103.4 | 1,961.6 | 1,937.7 | 1,796.9 | 1,262.0 | 1,145.8 | 1,124.4 | 1,186.5 | 1,379.1 | 1,519.3 | 1,559.7 |
| 15 | 2,396.4 | 2,085.4 | 1,960.9 | 1,931.7 | 1,787.3 | 1,246.1 | 1,144.8 | 1,123.4 | 1,193.2 | 1,380.7 | 1,519.3 | 1,560.9 |
| 16 | 2,388.5 | 2,073.3 | 1,959.5 | 1,926.9 | 1,773.8 | 1,230.6 | 1,141.9 | 1,122.5 | 1,196.6 | 1,380.7 | 1,522.2 | 1,561.5 |
| 17 | 2,381.4 | 2,063.3 | 1,959.5 | 1,920.9 | 1,759.7 | 1,217.3 | 1,137.2 | 1,120.0 | 1,198.5 | 1,380.7 | 1,523.9 | 1,560.3 |
| 18 | 2,374.4 | 2,052.0 | 1,960.2 | 1,914.1 | 1,744.4 | 1,204.4 | 1,135.3 | 1,121.5 | 1,204.4 | 1,382.9 | 1,523.9 | 1,559.1 |
| 19 | 2,368.1 | 2,042.1 | 1,962.3 | 1,904.8 | 1,726.7 | 1,195.6 | 1,133.4 | 1,121.5 | 1,209.4 | 1,384.0 | 1,526.8 | 1,557.9 |
| 20 | 2,361.8 | 2,036.5 | 1,965.0 | 1,896.1 | 1,705.4 | 1,190.7 | 1,130.5 | 1,122.0 | 1,213.8 | 1,410.0 | 1,522.8 | 1,557.3 |
| 21 | 2,357.9 | 2,030.8 | 1,967.0 | 1,886.1 | 1,682.9 | 1,179.0 | 1,127.7 | 1,122.5 | 1,215.8 | 1,421.0 | 1,525.1 | 1,557.9 |
| 22 | 2,357.9 | 2,023.8 | 1,968.4 | 1,880.8 | 1,662.5 | 1,166.4 | 1,124.8 | 1,122.9 | 1,218.7 | 1,439.8 | 1,525.1 | 1,557.9 |
| 23 | 2,353.2 | 2,016.8 | 1,969.1 | 1,901.4 | 1,642.9 | 1,155.8 | 1,127.2 | 1,122.0 | 1,221.7 | 1,457.7 | 1,526.8 | 1,559.1 |
| 24 | 2,351.7 | 2,009.2 | 1,969.8 | 1,907.4 | 1,617.9 | 1,149.1 | 1,133.9 | 1,120.1 | 1,223.7 | 1,463.3 | 1,530.9 | 1,560.3 |
| 25 | 2,348.6 | 2,005.7 | 1,970.5 | 1,906.1 | 1,587.7 | 1,144.3 | 1,137.7 | 1,120.1 | 1,224.2 | 1,467.2 | 1,532.7 | 1,562.7 |
| 26 | 2,337.7 | 2,002.9 | 1,970.5 | 1,899.4 | 1,559.7 | 1,124.4 | 1,136.7 | 1,120.1 | 1,226.7 | 1,469.5 | 1,533.3 | 1,564.4 |
| 27 | 2,326.8 | 1,998.8 | 1,969.8 | 1,888.1 | 1,532.1 | 1,146.2 | 1,136.7 | 1,121.5 | 1,229.6 | 1,472.3 | 1,542.0 | 1,564.4 |
| 28 | 2,315.3 | 1,989.1 | 1,969.8 | 1,876.8 | 1,509.5 | 1,147.7 | 1,136.7 | 1,121.5 | 1,312.2 | 1,478.0 | 1,543.8 | 1,568.0 |
| 29 | 2,305.2 | 1,970.5 | 1,874.1 | 1,489.4 | 1,150.1 | 1,136.7 | 1,119.6 | 1,329.9 | 1,483.7 | 1,545.6 | 1,572.2 | |
| 30 | 2,293.0 | | 1,971.8 | 1,871.5 | 1,468.4 | 1,153.0 | 1,137.2 | 1,116.8 | 1,339.8 | 1,484.3 | 1,548.5 | 1,574.6 |
| 31 | 2,277.7 | | 1,970.5 | | 1,442.0 | 1,142.0 | 1,137.2 | 1,115.9 | | 1,483.7 | | 1,577.5 |

| Month | 1962 | | | | | | Period 1954-1962 | | |
|--------|-------------------|---------|-----|-------------------|---------|-----|------------------|---------|---------|
| | MOMENTARY MAXIMUM | | | MOMENTARY MINIMUM | | | Average Storage | Storage | |
| | Elevation | Storage | Day | Elevation | Storage | Day | | Average | Maximum |
| Jan. | 297.67 | 2,472.1 | 1 | 295.19 | 2,277.7 | 31 | 2,388.6 | 1,887.9 | 2,916.5 |
| Feb. | 295.19 | 2,277.7 | 1 | 291.22 | 1,989.1 | 28 | 2,108.2 | 1,746.2 | 1,861.2 |
| Mar. | 291.22 | 1,989.1 | 1 | 290.67 | 1,951.3 | 13 | 1,968.4 | 1,667.6 | 2,702.4 |
| Apr. | 290.95 | 1,970.5 | 1 | 289.48 | 1,871.5 | 30 | 1,923.2 | 1,566.8 | 2,556.4 |
| May | 289.48 | 1,871.5 | 1 | 282.46 | 1,442.0 | 31 | 1,720.8 | 1,534.5 | 2,427.1 |
| June | 282.46 | 1,442.0 | 1 | 276.59 | 1,141.0 | 26 | 1,251.7 | 1,408.5 | 2,253.7 |
| July | 277.00 | 1,160.6 | 1 | 276.25 | 1,124.8 | 22 | 1,144.8 | 1,562.8 | 2,269.1 |
| Aug. | 276.55 | 1,139.1 | 5 | 276.06 | 1,115.9 | 31 | 1,126.6 | 1,587.6 | 2,370.6 |
| Sept. | 280.57 | 1,339.8 | 30 | 275.75 | 1,101.3 | 8 | 1,186.7 | 1,707.5 | 2,361.0 |
| Oct. | 283.21 | 1,484.3 | 30 | 280.57 | 1,339.8 | 1 | 1,404.5 | 1,951.8 | 2,350.2 |
| Nov. | 284.32 | 1,548.5 | 30 | 283.20 | 1,483.7 | 1 | 1,518.6 | 2,007.9 | 2,964.4 |
| Dec. | 284.81 | 1,577.5 | 31 | 284.32 | 1,548.5 | 1 | 1,560.1 | 2,015.7 | 2,904.7 |
| Yearly | 297.67 | 2,472.1 | | 275.75 | 1,101.3 | | 1,605.9 | 1,720.7 | 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.



ANNUAL UNUSED STREAM FLOW IN MILLIONS OF ACRE-FEET

¹ Values prior to 1953 considered the same as for Zapata Gaging Station. [#] Values prior to 1955 considered the same as for Rio Grande City Gaging Station. ** Includes contribution of the Rio 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 weighs 1,452 tons.

| Month | 1962 | | | | | | Period of Record | | | |
|---------------|--------------------|----------------|----------------|-------------------------|----------------|----------------|---------------------------------------|---------------|---------------|--------------|
| | Tons | | No. of Samples | Gravimetric Percentages | | | Acre-Feet at 1,452 Tons Per Acre Foot | Average | Maximum | |
| | Water | Silt | | Average | Maximum Sample | Minimum Sample | | | | |
| Jan. | 6,807,000 | 436 | 27 | .006406 | | | .30 | .25 | 1.4 | 0 |
| Feb. | 5,020,000 | 663 | 28 | .01321 | | | .46 | .34 | 2.2 | .01 |
| Mar. | 63,197,000 | 51,800 | 31 | .08197 | | | 35.7 | 19.6 | 50.3 | .89 |
| Apr. | 48,730,000 | 12,100 | 30 | .02482 | | | 8.3 | 14.6 | 45.2 | 3.4 |
| May | 47,142,000 | 12,600 | 31 | .02676 | | | 8.7 | 11.4 | 63.3 | .08 |
| June | 70,842,000 | 22,400 | 30 | .03162 | | | 15.4 | 26.1 | 152 | 3.7 |
| July | 86,782,000 | 108,000 | 33 | .1241 | | | 74.4 | 43.8 | 124 | 1.1 |
| Aug. | 85,531,000 | 45,700 | 31 | .05341 | | | 31.5 | 43.9 | 112 | 3.7 |
| Sept. | 55,995,000 | 48,400 | 30 | .08651 | | | 33.3 | 28.2 | 123 | 1.7 |
| Oct. | 18,091,000 | 3,570 | 31 | .01976 | | | 2.5 | 7.0 | 51.0 | .01 |
| Nov. | 12,028,000 | 635 | 30 | .005278 | | | .44 | .40 | 1.5 | .01 |
| Dec. | 10,998,000 | 1,710 | 31 | .01556 | | | 1.2 | .40 | 2.1 | .01 |
| Yearly | 511,163,000 | 308,014 | 363 | .06028 | | | 212.20 | 195.99 | 436.87 | 47.67 |

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

Río Conchos near Ojinaga, Chihuahua

Period: Sept. 1947-1962

| Jan. | 36,899,000 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---------------|--------------------|------------------|------------|--------------|---------------|----------|----------------|-----------------|-----------------|--------------|
| Feb. | 27,898,000 | 0 | 12 | 0 | 0 | 0 | 0 | .64 | 4.5 | 0 |
| Mar. | 27,250,000 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Apr. | 12,868,000 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| May | 12,323,000 | 0 | 13 | 0 | 0 | 0 | 0 | 30.1 | 145 | 0 |
| June | 24,992,000 | 134,000 | 13 | .5347 | 2,2394 | 0 | 92.3 | 82.0 | 306 | 0 |
| July | 83,677,000 | 380,000 | 13 | .4547 | .6936 | .0472 | 262 | 248 | 873 | 0 |
| Aug. | 21,876,000 | 11,800 | 14 | .0539 | .2809 | 0 | 8.1 | 496 | 1,430 | 8.1 |
| Sept. | 139,214,000 | 1,322,000 | 11 | .9498 | 1.7181 | 0 | 910 | 1,725 | 9,330 | 14.4 |
| Oct. | 91,712,000 | 264,000 | 13 | .2878 | 2.1353 | 0 | 182 | 1,964 | 12,400 | 0 |
| Nov. | 44,047,000 | 0 | 13 | 0 | 0 | 0 | 0 | 11.0 | 70.2 | 0 |
| Dec. | 44,933,000 | 0 | 13 | 0 | 0 | 0 | 0 | .93 | 6.5 | 0 |
| Yearly | 567,689,000 | 2,111,800 | 155 | .3720 | 2,2394 | 0 | 1,454.4 | 4,557.67 | 21,903.3 | 284.7 |

Samples and Analyses by Mexican Section, Method B

Rio Grande at Lower Presidio Station

Period: 1955-1962

| Jan. | 40,548,000 | 4,780 | 9 | .01178 | | | 3.3 | 5.1 | 14.4 | 1.5 |
|---------------|--------------------|------------------|------------|--------------|--|--|-----------------|----------------|-----------------|---------------|
| Feb. | 29,302,000 | 5,150 | 8 | .01756 | | | 3.5 | 5.7 | 22.2 | 1.4 |
| Mar. | 27,431,000 | 2,530 | 9 | .009206 | | | 1.7 | 2.2 | 6.7 | .61 |
| Apr. | 12,615,000 | 174 | 9 | .001376 | | | .12 | 12.3 | 95.7 | .12 |
| May | 11,648,000 | 538 | 9 | .004618 | | | .37 | 22.6 | 161 | .21 |
| June | 29,739,000 | 170,000 | 9 | .5733 | | | 117 | 74.2 | 321 | 2.1 |
| July | 100,066,000 | 571,000 | 13 | .5702 | | | 393 | 479 | 1,420 | 2.0 |
| Aug. | 27,345,000 | 31,700 | 9 | .1159 | | | 21.8 | 471 | 1,360 | 21.8 |
| Sept. | 184,643,000 | 1,602,000 | 12 | .8678 | | | 1,100 | 753 | 3,610 | 14.9 |
| Oct. | 108,649,000 | 211,000 | 7 | .1946 | | | 145 | 737 | 4,770 | 4.8 |
| Nov. | 52,477,000 | 19,100 | 9 | .03631 | | | 13.2 | 13.6 | 45.2 | 1.3 |
| Dec. | 52,331,000 | 18,500 | 8 | .03540 | | | 12.7 | 4.8 | 13.7 | 1.4 |
| Yearly | 676,794,000 | 2,636,472 | 111 | .3896 | | | 1,811.69 | 2,580.5 | 8,793.44 | 172.78 |

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

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

| Month | 1962 | | | | | | Period of Record | | |
|-------|-------|------|---------------------------|-------------------------|-------------------|-------------------|---------------------------------------|---------|---------|
| | Tons | | No. of Sam- ples | 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, Texas

Period: Oct. 1951-1962

| | | | | | | | | | | |
|--------|-------------|-----------|-----|---------|--|--|----------|---------|-----------|--------|
| Jan. | 41,090,000 | 4,720 | 9 | .01148 | | | 3.3 | 4.0 | 14.4 | .84 |
| Feb. | 30,636,000 | 2,780 | 7 | .009072 | | | 1.9 | 26.3 | 253 | .67 |
| Mar. | 26,499,000 | 1,580 | 9 | .005960 | | | 1.1 | 2.5 | 9.2 | .20 |
| Apr. | 11,148,000 | 700 | 8 | .006280 | | | .48 | 83.2 | 692 | .01 |
| May | 9,350,000 | 921 | 9 | .009854 | | | .63 | 121 | 348 | 0 |
| June | 35,610,000 | 698,000 | 11 | 1.9599 | | | 481 | 398 | 1,570 | 31.6 |
| July | 117,191,000 | 1,697,000 | 11 | 1.4481 | | | 1,170 | 1,105 | 4,030 | 93.0 |
| Aug. | 26,660,000 | 73,000 | 9 | .2737 | | | 50.3 | 1,091 | 3,840 | 2.8 |
| Sept. | 198,060,000 | 2,359,000 | 9 | 1.1910 | | | 1,620 | 1,246 | * 8,990 | 98.5 |
| Oct. | 119,230,000 | 348,000 | 8 | .2921 | | | 240 | 1,328 | " 13,500 | 2.4 |
| Nov. | 54,323,000 | 12,000 | 8 | .02203 | | | 8.3 | 22.1 | 151 | .28 |
| Dec. | 52,946,000 | 9,570 | 8 | .01807 | | | 6.6 | 9.2 | 48.3 | .41 |
| Yearly | 722,743,000 | 5,207,271 | 106 | .7205 | | | 3,583.61 | 5,436.3 | 23,869.62 | 803.27 |

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

Rio Grande at Langtry, Texas

Period: April 1944-1962

| | | | | | | | | | | |
|--------|---------------|-----------|----|---------|--|--|---------|---------|-----------|--------|
| Jan. | 67,036,000 | 4,140 | 7 | .006169 | | | 2.9 | 9.5 | 83.3 | .94 |
| Feb. | 55,722,000 | 3,030 | 7 | .005444 | | | 2.1 | 20.0 | 238 | .31 |
| Mar. | 51,765,000 | 1,880 | 7 | .003625 | | | 1.3 | 6.3 | 27.0 | .29 |
| Apr. | 39,211,000 | 1,610 | 6 | .004101 | | | 1.1 | 54.9 | 614 | .14 |
| May | 45,250,000 | 53,300 | 9 | .1179 | | | 36.7 | 251 | 873 | .95 |
| June | 81,817,000 | 593,000 | 8 | .7244 | | | 408 | 473 | 2,450 | .91 |
| July | 144,232,000 | 1,750,000 | 10 | 1.2134 | | | 1,210 | 1,320 | 5,780 | 4.6 |
| Aug. | 56,369,000 | 140,000 | 9 | .2483 | | | 96.4 | 1,062 | 3,900 | 4.7 |
| Sept. | 205,001,000 | 2,569,000 | 7 | 1.2532 | | | 1,770 | 1,505 | 8,300 | 1.0 |
| Oct. | 187,404,000 | 1,144,000 | 8 | .6102 | | | 788 | 1,112 | 8,760 | 5.1 |
| Nov. | 80,617,000 | 26,800 | 9 | .03319 | | | 1,850 | 136 | 1,850 | 1.3 |
| Dec. | 77,778,000 | 7,000 | 5 | .009000 | | | 4.8 | 8.6 | 46.8 | .18 |
| Yearly | 1,092,202,000 | 6,293,760 | 92 | .5762 | | | 6,171.3 | 5,958.3 | 17,860.74 | 645.10 |

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

Pecos River near Shumla, Texas

Period: Nov. 1954-1962

| | | | | | | | | | | |
|--------|-------------|----------|----|----------|--|--|-------|--------|--------|------|
| Jan. | 13,379,000 | 313 | 5 | .002339 | | | .22 | .38 | .62 | .20 |
| Feb. | 12,125,000 | 69.3 | 4 | .0005714 | | | .05 | .28 | .70 | .05 |
| Mar. | 12,365,000 | 205 | 3 | .001659 | | | .14 | .34 | .61 | .14 |
| Apr. | 10,489,000 | 191 | 2 | .001818 | | | .13 | 21.2 | 167 | .06 |
| May | 9,521,000 | 226 | 5 | .002378 | | | .16 | 51.1 | 407 | .16 |
| June | 9,615,000 | 175 | 4 | .001816 | | | .12 | 5.6 | 41.7 | .12 |
| July | 10,820,000 | 203 | 4 | .001876 | | | .14 | 4.3 | 22.2 | .08 |
| Aug. | 7,264,000 | 62.6 | 5 | .0008617 | | | .04 | 3.3 | 23.8 | .04 |
| Sept. | 19,067,000 | 514 | 3 | .002694 | | | .35 | 17.5 | 75.1 | .14 |
| Oct. | 41,427,000 | 36,000 | 5 | .08688 | | | 24.8 | 17.0 | 59.8 | .15 |
| Nov. | 20,991,000 | 372 | 4 | .001773 | | | .26 | .48 | 1.1 | .03 |
| Dec. | 15,710,000 | 517 | 4 | .003288 | | | .36 | .26 | .55 | .14 |
| Yearly | 182,773,000 | 38,847.9 | 48 | .02125 | | | 26.77 | 121.74 | 577.44 | 3.12 |

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

Rio Grande near Del Rio, Texas

Period: Aug. 1955-1962

| | | | | | | | | | | |
|--------|---------------|-----------|-----|---------|--|--|---------|---------|----------|----------|
| Jan. | 136,752,000 | 11,300 | 12 | .008286 | | | 7.8 | 8.7 | 16.1 | .61 |
| Feb. | 115,402,000 | 6,210 | 11 | .005385 | | | 4.3 | 32.6 | 178 | .50 |
| Mar. | 110,900,000 | 9,740 | 13 | .008785 | | | 6.7 | 11.9 | 34.6 | .73 |
| Apr. | 102,409,000 | 25,300 | 13 | .02468 | | | 17.4 | 92.3 | 612 | .83 |
| May | 98,727,000 | 44,800 | 12 | .04537 | | | 30.9 | 300 | 1,600 | 1.2 |
| June | 140,917,000 | 481,000 | 13 | .3413 | | | 331 | 405 | 1,090 | 48.9 |
| July | 189,372,000 | 1,090,000 | 12 | .5756 | | | 751 | 774 | 2,240 | 8.7 |
| Aug. | 109,240,000 | 152,000 | 14 | .1387 | | | 105 | 822 | 1,970 | 105 |
| Sept. | 268,266,000 | 2,759,000 | 11 | 1.0284 | | | 1,900 | 1,465 | 4,800 | 154 |
| Oct. | 339,413,000 | 1,134,000 | 14 | .3342 | | | 781 | 1,752 | 9,350 | 114 |
| Nov. | 160,663,000 | 34,100 | 12 | .02123 | | | 23.5 | 111 | 410 | 10.7 |
| Dec. | 150,527,000 | 6,580 | 12 | .004370 | | | 4.5 | 10.7 | 45.5 | 4.0 |
| Yearly | 1,922,588,000 | 5,754,030 | 149 | .2993 | | | 3,963.1 | 5,785.2 | 15,563.3 | 1,008.37 |

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

* Estimated * Partly estimated

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

| Month | 1962 | | | | | | Period of Record | | |
|-------|-------|------|----------------|-------------------------|----------------|----------------|---------------------------------------|---------|---------|
| | Tons | | No. of Samples | Gravimetric Percentages | | | Acre-Feet at 1,452 Tons Per Acre Foot | Average | Maximum |
| | Water | Silt | | Average | Maximum Sample | Minimum Sample | | | |

Rio Grande at Laredo, Texas

Period: 1953-1962

| | | | | | | | | | | |
|---------------|----------------------|------------------|------------|--------------|--|--|----------------|----------------|------------------|---------------|
| Jan. | 156,674,000 | 28,300 | 31 | .01806 | | | 19.5 | 13.2 | 28.0 | 4.5 |
| Feb. | 117,244,000 | 14,700 | 28 | .01250 | | | 10.1 | 15.2 | 40.8 | 1.7 |
| Mar. | 104,041,000 | 10,900 | 31 | .01046 | | | 7.5 | 12.7 | 26.8 | .78 |
| Apr. | 139,073,000 | 79,500 | 30 | .05714 | | | 54.8 | 240 | 1,920 | .47 |
| May | 90,199,000 | 13,700 | 31 | .01520 | | | 9.4 | 505 | 3,540 | 2.3 |
| June | 127,629,000 | 40,000 | 30 | .03134 | | | 27.5 | 1,784 | 12,400 | .62 |
| July | 147,688,000 | 485,000 | 31 | .3283 | | | 334 | 1,000 | 3,440 | 5.0 |
| Aug. | 105,477,000 | 112,000 | 31 | .1058 | | | 77.1 | 593 | 1,960 | 4.2 |
| Sept. | 239,457,000 | 1,641,000 | 30 | .6855 | | | 1,130 | 1,078 | 3,670 | 41.3 |
| Oct. | 363,469,000 | 1,392,000 | 31 | .3829 | | | 959 | 1,334 | 7,520 | 29.7 |
| Nov. | 176,113,000 | 126,000 | 30 | .07149 | | | 86.8 | 167 | 1,190 | 6.1 |
| Dec. | 151,344,000 | 11,700 | 31 | .007716 | | | 8.1 | 14.7 | 67.6 | 2.8 |
| Yearly | 1,918,408,000 | 3,954,800 | 365 | .2062 | | | 2,723.8 | 6,756.8 | 19,257.72 | 734.10 |

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

Rio Grande at Falcón Dam-U.S. Tailrace

Period: July 1955-1962

| | | | | | | | | | | |
|---------------|----------------------|---------------|------------|-----------------|--|--|--------------|-------------|--------------|--------------|
| Jan. | 381,816,000 | 1,510 | 13 | .0003953 | | | 1.0 | 2.4 | 5.4 | .41 |
| Feb. | 499,294,000 | 392 | 12 | .0007843 | | | .27 | 2.9 | 9.1 | .27 |
| Mar. | 86,814,000 | 656 | 9 | .0007556 | | | .45 | 1.2 | 4.3 | .16 |
| Apr. | 301,946,000 | 1,710 | 12 | .0005668 | | | 1.2 | 3.4 | 12.2 | .63 |
| May | 591,594,000 | 5,190 | 13 | .0008779 | | | 3.6 | 4.1 | 5.3 | 2.1 |
| June | 499,582,000 | 2,520 | 12 | .0005050 | | | 1.7 | 6.2 | 18.7 | 1.0 |
| July | 100,021,000 | 895 | 12 | .0008946 | | | .62 | 1.0 | 1.9 | .42 |
| Aug. | 94,233,000 | 320 | 13 | .0003393 | | | .22 | 1.3 | 2.8 | .22 |
| Sept. | 49,479,000 | 271 | 9 | .0005468 | | | .19 | 1.4 | 2.6 | .19 |
| Oct. | 120,804,000 | 1,260 | 12 | .001044 | | | .87 | 5.8 | 37.5 | .24 |
| Nov. | 67,821,000 | 278 | 8 | .0004101 | | | .19 | 1.5 | 5.5 | .19 |
| Dec. | 85,499,000 | 810 | 6 | .0009474 | | | .56 | 3.0 | 14.7 | .18 |
| Yearly | 2,878,903,000 | 15,812 | 131 | .0005492 | | | 10.87 | 34.2 | 92.15 | 16.14 |

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

Río Alamo at Cd. Mier, Tamaulipas

Period: 1934-1962

| | | | | | | | | | | |
|---------------|-------------------|------------------|-----------|-------------|---------------|----------|---------------|---------------|-----------------|--------------|
| Jan. | 109,000 | 0 | 0 | " 0 | | | 0 | 2.2 | 21.8 | 0 |
| Feb. | 90,300 | 0 | 0 | " 0 | | | 0 | 2.6 | 48.6 | 0 |
| Mar. | 40,800 | 1.2 | 3 | .003 | .0028 | 0 | T | 7.6 | 91.6 | 0 |
| Apr. | 10,369,000 | 138,000 | 9 | 1.328 | 1.6790 | 0 | 95.0 | 35.6 | 229 | 0 |
| May | 4,410 | 0 | 0 | " 0 | | | 0 | 47.1 | 281 | 0 |
| June | 11,070,000 | 48,600 | 11 | .439 | .5833 | 0 | 33.5 | 54.0 | 471 | 0 |
| July | 46,300 | .5 | 2 | .001 | .0022 | 0 | T | 20.7 | 143 | 0 |
| Aug. | 2,489,000 | 523 | 3 | .021 | .0250 | 0 | .36 | 152 | 1,610 | 0 |
| Sept. | 30,508,000 | 112,000 | 13 | .367 | .5956 | 0 | 77.1 | 214 | 2,920 | 0 |
| Oct. | 6,495,000 | 28,700 | 5 | .442 | .4900 | 0 | 19.8 | 93.3 | 753 | 0 |
| Nov. | 1,310,000 | 3,340 | 8 | .255 | .3182 | 0 | 2.3 | 2.7 | 40.7 | 0 |
| Dec. | 11,000 | 0 | 0 | " 0 | | | 0 | .78 | 16.1 | 0 |
| Yearly | 62,542,810 | 331,164.7 | 54 | .529 | 1.6790 | 0 | 228.06 | 632.58 | 3,156.57 | 97.18 |

Samples and Analyses by Mexican Section, Method B

Rio Grande at Fort Ringgold, Rio Grande City, Texas

Period: May 1959-1962

| | | | | | | | | | | |
|---------------|----------------------|----------------|------------|---------------|--|--|--------------|--------------|---------------|--------------|
| Jan. | 382,220,000 | 25,500 | 13 | .006680 | | | 17.6 | 17.5 | 32.6 | 2.4 |
| Feb. | 511,829,000 | 19,900 | 12 | .003896 | | | 13.7 | 9.5 | 13.7 | 1.2 |
| Mar. | 102,034,000 | 1,800 | 12 | .001767 | | | 1.2 | 9.5 | 26.7 | .62 |
| Apr. | 305,421,000 | 16,700 | 11 | .005462 | | | 11.5 | 31.7 | 51.0 | 11.5 |
| May | 582,509,000 | 44,800 | 14 | .007699 | | | 30.9 | 31.0 | 64.9 | 4.0 |
| June | 542,010,000 | 24,300 | 12 | .004476 | | | 16.7 | 21.6 | 38.2 | 4.7 |
| July | 97,842,000 | 5,660 | 14 | .005782 | | | 3.9 | 19.8 | 68.5 | 3.0 |
| Aug. | 101,212,000 | 3,460 | 13 | .003420 | | | 2.4 | 44.8 | 127 | 2.4 |
| Sept. | 125,573,000 | 299,000 | 12 | .2382 | | | 206 | 80.9 | 206 | 20.2 |
| Oct. | 133,889,000 | 28,400 | 15 | .02120 | | | 19.6 | 15.5 | 35.2 | 2.6 |
| Nov. | 68,578,000 | 1,840 | 13 | .002680 | | | 1.3 | 2.6 | 4.2 | 1.3 |
| Dec. | 88,046,000 | 3,990 | 12 | .004531 | | | 2.7 | 4.6 | 12.1 | 1.0 |
| Yearly | 3,041,163,000 | 475,350 | 153 | .01563 | | | 327.5 | 289.0 | 388.52 | 282.2 |

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

Some months missing Ø Discharge based on record of total releases from Falcón Reservoir T Trace

" Estimated

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

| Month | 1962 | | | | | | Period of Record | | |
|-------|-------|------|---------------------------|-------------------------|-------------------|-------------------|---------------------------------------|---------|---------|
| | Tons | | No. of Sam- ples | 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 1956-1962

| | | | | | | | | | |
|---------------|----------------------|----------------|------------|---------------|--|--|---------------|--------------|-----------------|
| Jan. | 382,220,000 | 16,400 | 9 | .004286 | | | 11.3 | 30.1 | 4.2 |
| Feb. | 511,829,000 | 13,100 | 8 | .002551 | | | 9.0 | 9.0 | 1.5 |
| Mar. | 102,034,000 | 3,100 | 11 | .003040 | | | 2.1 | 14.0 | .65 |
| Apr. | 305,421,000 | 23,300 | 8 | .007640 | | | 16.0 | 128 | 635 |
| May | 582,509,000 | 7,690 | 9 | .001320 | | | 5.3 | 124 | 289 |
| June | 542,010,000 | 124,000 | 9 | .02279 | | | 85.4 | 68.0 | 170 |
| July | 97,842,000 | 3,040 | 9 | .003111 | | | 2.1 | 16.1 | 79.9 |
| Aug. | 101,212,000 | 3,020 | 9 | .002984 | | | 2.1 | 20.7 | 41.5 |
| Sept. | 125,573,000 | 298,000 | 7 | .2376 | | | 205 | 113.7 | 366 |
| Oct. | 133,889,000 | 58,000 | 9 | .04331 | | | 39.9 | 61.2 | 314 |
| Nov. | 68,578,000 | 1,130 | 9 | .001647 | | | .78 | 13.1 | 75.1 |
| Dec. | 88,046,000 | 3,030 | 8 | .003440 | | | 2.1 | 6.8 | 16.3 |
| Yearly | 3,041,163,000 | 553,810 | 105 | .01821 | | | 381.08 | 604.7 | 1,454.85 |
| | | | | | | | | | 92.9 |

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

§ Rio Grande Below Anzaldúa Dam

Period: May 1956-1962

| | | | | | | | | | | |
|---------------|----------------------|----------------|------------|---------------|--|--|---------------|--------------|-----------------|--------------|
| Jan. | 171,877,000 | 2,600 | 15 | .001514 | | | 1.8 | 12.6 | 49.0 | 1.1 |
| Feb. | 135,122,000 | 5,510 | 10 | .004080 | | | 3.8 | 4.1 | 11.9 | .42 |
| Mar. | 83,820,000 | 946 | 14 | .001129 | | | .65 | 6.5 | 27.3 | .25 |
| Apr. | 132,009,000 | 29,600 | 13 | .02239 | | | 20.4 | 41.9 | 171 | 3.8 |
| May | 212,683,000 | 62,200 | 12 | .02925 | | | 42.8 | 41.0 | 79.9 | 1.4 |
| June | 268,623,000 | 55,800 | 15 | .02077 | | | 38.4 | 28.4 | 67.4 | 13.2 |
| July | 81,387,000 | 5,360 | 11 | .006587 | | | 3.7 | 15.0 | 41.7 | .92 |
| Aug. | 79,194,000 | 1,450 | 14 | .001833 | | | 1.0 | 9.4 | 28.0 | .73 |
| Sept. | 68,104,000 | 193,000 | 14 | .2839 | | | 133 | 72.8 | 221 | 6.5 |
| Oct. | 77,033,000 | 5,800 | 14 | .007530 | | | 4.0 | 115 | 676 | 1.5 |
| Nov. | 50,051,000 | 747 | 13 | .001492 | | | .51 | 41.2 | 274 | .51 |
| Dec. | 76,997,000 | 1,810 | 12 | .002351 | | | 1.2 | 21.7 | 135 | .62 |
| Yearly | 1,436,900,000 | 364,823 | 157 | .02539 | | | 251.26 | 409.6 | 1,417.77 | 117.9 |

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

Rio Grande near San Benito, Texas

Period: April 1955-1962

| | | | | | | | | | | |
|---------------|--------------------|---------------|-----------|---------------|--|--|--------------|--------------|---------------|--------------|
| Jan. | 46,557,000 | 6,770 | 5 | .01454 | | | 4.7 | 20.9 | 121 | .30 |
| Feb. | 34,079,000 | 3,960 | 4 | .01163 | | | 2.7 | 16.2 | 97.8 | .15 |
| Mar. | 31,573,000 | 792 | 4 | .002510 | | | .55 | 8.6 | 50.6 | .11 |
| Apr. | 46,722,000 | 2,160 | 5 | .004618 | | | 1.5 | 7.8 | 17.9 | .11 |
| May | 51,107,000 | 8,790 | 5 | .01719 | | | 6.1 | 42.6 | 265 | 5.4 |
| June | 89,087,000 | 39,900 | 4 | .04480 | | | 27.5 | 12.8 | 27.5 | 2.1 |
| July | 32,310,000 | 727 | 6 | .002249 | | | .50 | 5.8 | 31.7 | .11 |
| Aug. | 26,145,000 | 1,170 | 4 | .004480 | | | .81 | 9.1 | 48.5 | .07 |
| Sept. | 15,320,000 | 435 | 4 | .002840 | | | .30 | 52.4 | 218 | .30 |
| Oct. | 21,034,000 | 2,680 | 6 | .01275 | | | 1.8 | 38.0 | 250 | .34 |
| Nov. | 18,773,000 | 2,370 | 4 | .001260 | | | 1.6 | 32.2 | 247 | .35 |
| Dec. | 29,154,000 | 1,720 | 5 | .005896 | | | 1.2 | 22.7 | 163 | .06 |
| Yearly | 441,861,000 | 71,474 | 56 | .01618 | | | 49.26 | 269.1 | 851.95 | 23.27 |

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

Rio Grande at Lower Brownsville, Texas

Period: April 1955-1962

| | | | | | | | | | | |
|---------------|--------------------|---------------|------------|----------------|--|--|--------------|--------------|-----------------|-------------|
| Jan. | 20,092,000 | 1,230 | 9 | .006120 | | | .85 | 10.6 | 67.4 | .02 |
| Feb. | 18,004,000 | 2,430 | 8 | .01347 | | | 1.67 | 21.0 | 80.6 | .04 |
| Mar. | 17,466,000 | 449 | 9 | .002570 | | | .31 | 10.7 | 70.2 | .08 |
| Apr. | 34,117,000 | 1,790 | 10 | .005259 | | | 1.2 | 5.7 | 27.7 | .04 |
| May | 29,139,000 | 3,940 | 8 | .01351 | | | 2.7 | 11.8 | 58.5 | .38 |
| June | 45,976,000 | 6,940 | 8 | .01510 | | | 4.8 | 13.2 | 58.4 | .29 |
| July | 29,272,000 | 1,130 | 8 | .003855 | | | .78 | 38.3 | 292 | .08 |
| Aug. | 16,023,000 | 567 | 9 | .003536 | | | .39 | 5.5 | 27.3 | .01 |
| Sept. | 11,042,000 | 343 | 8 | .003108 | | | .24 | 39.4 | 237 | 0 |
| Oct. | 11,548,000 | 206 | 10 | .001781 | | | .14 | 31.2 | 222 | .03 |
| Nov. | 10,154,000 | 216 | 9 | .002129 | | | .15 | 36.8 | 283 | .12 |
| Dec. | 16,745,000 | 202 | 9 | .001205 | | | .14 | 18.6 | 142 | .02 |
| Yearly | 259,578,000 | 19,443 | 105 | .007490 | | | 13.37 | 242.8 | 1,072.26 | 1.97 |

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

† Discharge based on record of flow at Fort Ringgold § Discharge based on record of flow at "Below Anzaldúa Dam" plus return flow at "Poniente Drain". There was no flow through this drain in 1962.

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1962**

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; (CO₃ plus HCO₃) expressed as CO₃, 30; SO₄, 48; Cl, 35.5; NO₃, 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 ECx10⁶ at 25°C, is a relative measure of the total salt concentration.

| Month | No. of Sam- ples | Mean Milligram Equivalents per Liter | | | | | | | | | | | | | |
|-------|---------------------------|--------------------------------------|---------------|-----------------------------|-----------------|----|---------------|----------------|----|----|----|--|-----------------|----|-----------------|
| | | Dissolved Solids | | ECx10 ⁶ @25°C | Boron p.p.m. | pH | % Na ** | % Cl *** | Ca | Mg | Na | CO ₃ + HCO ₃ | SO ₄ | Cl | NO ₃ |
| | | Tons Per Acre- Foot | Total Tons | | | | | | | | | | | | |

Sampling by U. S. Section

Rio Grande at El Paso, Texas

| | | | | | | | | | | | | | | | |
|-----------------------|-----|------|-----------|-------|-----|-----|----|----|--------|--------|--------|--------|---------|--------|-----|
| Jan. | 27 | 1.90 | 9,520 | 2,090 | .31 | 7.8 | 61 | 34 | 6.04 | 2.32 | 12.96 | 4.30 | 9.96 | 7.35 | T |
| Feb. | 28 | 2.20 | 8,130 | 2,400 | .44 | 8.1 | 64 | 35 | 6.12 | 2.72 | 15.94 | 4.55 | 11.58 | 8.85 | .01 |
| Mar. | 31 | .93 | 43,200 | 1,070 | .17 | 8.0 | 68 | 27 | 4.20 | 1.32 | 5.15 | 3.30 | 4.61 | 2.90 | .01 |
| Apr. | 30 | 1.10 | 39,400 | 1,250 | .22 | 8.0 | 50 | 26 | 4.76 | 1.56 | 6.38 | 3.75 | 5.78 | 3.40 | T |
| May | 31 | 1.14 | 39,500 | 1,270 | .18 | 8.0 | 52 | 28 | 4.42 | 1.68 | 6.70 | 3.45 | 5.99 | 3.60 | T |
| June | 30 | .96 | 50,000 | 1,080 | .08 | 8.0 | 50 | 24 | 4.12 | 1.30 | 5.38 | 3.55 | 4.91 | 2.65 | T |
| July | 33 | .92 | 58,700 | 1,040 | .16 | 7.9 | 52 | 26 | 3.61 | 1.33 | 5.36 | 3.00 | 4.69 | 2.71 | .01 |
| Aug. | 31 | .97 | 61,000 | 1,050 | .17 | 7.8 | 51 | 25 | 4.04 | 1.17 | 5.39 | 3.46 | 4.70 | 2.72 | .01 |
| Sept. | 30 | 1.05 | 43,300 | 1,260 | .24 | 7.9 | 55 | 29 | 4.29 | 1.41 | 7.10 | 3.35 | 5.84 | 3.78 | .01 |
| Oct. | 31 | 1.83 | 24,400 | 1,900 | .35 | 7.8 | 62 | 35 | 5.35 | 2.34 | 12.40 | 3.57 | 9.57 | 6.95 | .01 |
| Nov. | 30 | 2.00 | 17,700 | 2,170 | .32 | 8.0 | 64 | 34 | 5.52 | 2.46 | 14.15 | 3.40 | 11.29 | 7.70 | .01 |
| Dec. | 31 | 2.03 | 16,400 | 2,200 | .38 | 8.0 | 59 | 33 | 6.83 | 2.38 | 13.44 | 4.46 | 11.23 | 7.66 | .01 |
| Mean Θ | 363 | 1.09 | ø 411,250 | 1,230 | .19 | 7.9 | 53 | 28 | 4.32 | 1.47 | 6.59 | 3.44 | 5.67 | 3.49 | .01 |
| Period Avg. | | 1.10 | 499,000 | 1,220 | | | 52 | 29 | 4.38 | 1.61 | 6.60 | 3.51 | 5.49 | 3.72 | |
| Tons of Constituents, | | | | | | | | | 44,300 | 9,140 | 77,500 | 52,800 | 139,000 | 63,300 | |
| Average Tons, Period | | | 1930-1962 | | | | | | 54,000 | 12,000 | 93,300 | 64,700 | 162,000 | 81,100 | |

Sampling by U. S. Section

Rio Grande at Fort Quitman, Texas

| | | | | | | | | | | | | | | | |
|-----------------------|----|-------|-----------|--------|------|-----|----|----|--------|-------|--------|--------|--------|---------|-----|
| Jan. | 4 | 6.40 | 11,300 | 6,880 | .53 | 8.1 | 64 | 62 | 18.24 | 8.12 | 47.20 | 5.15 | 23.29 | 45.55 | .01 |
| Feb. | 4 | 10.50 | 5,120 | 11,000 | 1.05 | 7.9 | 66 | 69 | 26.40 | 15.60 | 81.61 | 3.35 | 34.85 | 85.10 | .01 |
| Mar. | 4 | 12.10 | 4,860 | 12,500 | 1.01 | 7.9 | 66 | 71 | 31.25 | 17.55 | 93.02 | 4.05 | 37.63 | 101.2 | .01 |
| Apr. | 4 | 8.91 | 8,400 | 9,550 | .88 | 7.8 | 64 | 67 | 26.15 | 10.90 | 67.24 | 4.70 | 30.23 | 70.00 | T |
| May | 5 | 7.73 | 9,730 | 8,270 | .76 | 7.8 | 64 | 65 | 21.64 | 10.04 | 57.48 | 4.21 | 26.67 | 58.62 | .01 |
| June | 4 | 10.50 | 5,580 | 11,100 | .52 | 7.8 | 66 | 69 | 28.70 | 11.62 | 79.29 | 3.40 | 34.14 | 84.25 | T |
| July | 11 | 2.63 | 17,100 | 3,020 | .31 | 7.7 | 61 | 58 | 8.64 | 3.16 | 18.56 | 3.45 | 9.27 | 17.93 | .01 |
| Aug. | 5 | 5.22 | 17,800 | 5,810 | .54 | 7.7 | 62 | 64 | 16.78 | 6.35 | 37.72 | 3.53 | 18.83 | 39.10 | .01 |
| Sept. | 8 | 2.43 | 70,000 | 2,680 | .29 | 7.9 | 59 | 50 | 8.55 | 2.81 | 16.50 | 4.47 | 9.76 | 14.02 | .03 |
| Oct. | 5 | 4.02 | 54,000 | 4,180 | .42 | 7.9 | 61 | 55 | 13.07 | 4.87 | 27.53 | 5.29 | 15.53 | 25.58 | .05 |
| Nov. | 4 | 4.04 | 32,900 | 4,360 | .48 | 7.8 | 61 | 52 | 12.94 | 4.96 | 27.75 | 5.70 | 16.21 | 23.92 | .07 |
| Dec. | 4 | 3.92 | 30,200 | 4,320 | .50 | 7.8 | 61 | 53 | 12.79 | 4.44 | 27.40 | 5.34 | 16.06 | 24.32 | .02 |
| Mean Θ | 62 | 3.66 | ø 269,990 | 3,970 | .40 | 7.9 | 61 | 56 | 11.84 | 4.41 | 25.69 | 4.71 | 14.02 | 23.76 | .03 |
| Period Avg. | | 2.38 | 369,000 | 2,700 | | | 61 | 55 | 7.65 | 3.11 | 16.79 | 3.64 | 8.79 | 15.25 | |
| Tons of Constituents, | | | 1962 | | | | | | 23,800 | 5,380 | 59,200 | 14,200 | 67,500 | 84,400 | |
| Average Tons, Period | | | 1930-1962 | | | | | | 32,300 | 7,960 | 81,400 | 22,800 | 89,000 | 114,000 | |

ø Total Θ Weighted mean ** Percent of total cations *** Percent of total anions T Trace

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1962**

| Month | No. of Sam- ples | Dissolved Solids | | ECx10 ⁶ @25°C | Boron p.p.m. | pH | % Na ** | % Cl *** | Mean Milligram Equivalents per Liter | | | | | | |
|-------|---------------------------|------------------------------|---------------|-----------------------------|-----------------|----|---------------|----------------|--------------------------------------|----|----|---------------------------------------|-----------------|----|-----------------|
| | | Tons Per Acre- Foot | Total Tons | | | | | | Ca | Mg | Na | CO ₃ + HCO ₃ | SO ₄ | Cl | NO ₃ |

Sampling by U. S. Section

Rio Grande at Upper Presidio Station

| | | | | | | | | | | | | | | | |
|-----------------------|--------|------|-----------|-------|-----|-----|----|----|---------|-----|--------|--------|------|------|--------|
| Jan. | | No | Flow | | | | | | | | | | | | |
| Feb. | | No | Flow | | | | | | | | | | | | |
| Mar. | | No | Flow | | | | | | | | | | | | |
| Apr. | | No | Flow | | | | | | | | | | | | |
| May | | No | Flow | | | | | | | | | | | | |
| June | 3 | .85 | 59 | 829 | | | 27 | | # 6.10 | | 2.24 | 1.65 | | | .66 |
| July | 10 | .87 | 2,550 | 1,010 | .18 | 7.5 | 50 | 30 | 4.26 | .57 | 4.84 | 2.28 | 4.63 | 2.97 | .04 |
| Aug. | 6 | 1.04 | 3,520 | 1,170 | | 7.7 | 50 | 36 | 5.10 | .59 | 5.72 | 2.33 | 5.04 | 4.15 | .03 |
| Sept. | 11 | 1.40 | 16,600 | 1,570 | | | 57 | | # 6.86 | | 8.96 | 3.87 | | | |
| Oct. | 9 | 3.43 | 29,500 | 3,570 | | 7.8 | 63 | | # 14.36 | | 23.94 | 4.02 | | | |
| Nov. | 9 | 3.37 | 14,000 | 3,800 | | | 63 | | # 14.48 | | 24.74 | 4.51 | | | |
| Dec. | 8 | 3.48 | 15,600 | 3,880 | | | 63 | | # 14.61 | | 25.30 | 4.16 | | | 21.55 |
| Mean | Θ 0.56 | 2.31 | Θ 81,829 | 2,520 | | | 61 | | # 10.27 | | 15.84 | 3.74 | | | 12.96 |
| Period Avg. | | 1.91 | 264,000 | 2,160 | | | 59 | | # 8.87 | | 12.84 | 3.13 | | | 11.03 |
| Tons of Constituents, | | | 1962 | | | | | | | | 17,600 | 5,410 | | | 22,200 |
| Average Tons, Period | | | 1935-1962 | | | | | | | | 55,400 | 17,600 | | | 73,400 |

Sampling by Mexican Section

Rio Conchos near Ojinaga, Chihuahua

| | | | | | | | | | | | | | | | |
|-----------------------|---------|------|-----------|-------|-----|-----|----|----|--------|------|--------|--------|------|------|--------|
| Jan. | 12 | 1.21 | 32,900 | 1,280 | .35 | 8.0 | 51 | 18 | 4.72 | 1.74 | 6.69 | 3.20 | 7.52 | 2.40 | .07 |
| Feb. | 12 | 1.30 | 26,700 | 1,380 | | | 53 | | # 6.72 | | 7.61 | 2.85 | | | 2.87 |
| Mar. | 13 | 1.30 | 26,100 | 1,380 | | | 56 | | # 5.96 | | 7.68 | 2.45 | | | 3.00 |
| Apr. | 12 | 1.45 | 13,700 | 1,540 | | | 56 | | # 6.92 | | 8.64 | 2.85 | | | 3.65 |
| May | 13 | 1.49 | 13,500 | 1,620 | | | 59 | | # 6.72 | | 9.52 | 2.75 | | | 3.95 |
| June | 13 | 1.27 | 23,400 | 1,290 | | | 49 | | # 6.74 | | 6.35 | 2.80 | | | 2.25 |
| July | 13 | .96 | 59,100 | 1,020 | .27 | 7.7 | 54 | 16 | 3.94 | .76 | 5.43 | 2.50 | 6.11 | 1.66 | |
| Aug. | 14 | 1.19 | 19,200 | 1,240 | | 7.7 | 54 | 19 | 4.69 | .88 | 6.61 | 2.43 | 7.74 | 2.42 | T .05 |
| Sept. | 12 | .89 | 91,200 | 914 | | | 41 | | # 5.54 | | 3.91 | 2.20 | | | 1.07 |
| Oct. | 13 | 1.03 | 69,500 | 999 | | | 46 | | # 5.64 | | 4.77 | 2.84 | | | 1.43 |
| Nov. | 14 | 1.25 | 40,500 | 1,300 | | | 54 | | # 6.04 | | 7.20 | 3.00 | | | 2.48 |
| Dec. | 13 | 1.18 | 39,000 | 1,250 | | | 51 | | # 6.30 | | 6.46 | 3.11 | | | 2.07 |
| Mean | Θ 0.154 | 1.09 | Θ 454,800 | 1,130 | | | 50 | | # 5.78 | | 5.71 | 2.65 | | | 1.90 |
| Period Avg. | | .68 | 526,000 | 723 | | | 40 | | # 4.48 | | 2.93 | 2.63 | | | 1.07 |
| Tons of Constituents, | | | 1962 | | | | | | | | 74,600 | 45,200 | | | 38,300 |
| Average Tons, Period | | | 1935-1962 | | | | | | | | 70,800 | 82,800 | | | 39,700 |

Sampling by U. S. Section

Rio Grande at Johnson Ranch, Texas

| | | | | | | | | | | | | | | | |
|-----------------------|---------|------|-----------|-------|-----|-----|----|----|--------|------|--------|--------|------|------|--------|
| Jan. | 9 | 1.27 | 38,400 | 1,340 | .35 | 7.8 | 50 | 17 | 5.34 | 1.60 | 6.96 | 3.31 | 8.30 | 2.40 | .05 |
| Feb. | 7 | 1.33 | 30,000 | 1,380 | | | 52 | | # 6.88 | | 7.45 | 2.95 | | | 2.80 |
| Mar. | 9 | 1.38 | 26,900 | 1,440 | | | 54 | | # 6.72 | | 7.83 | 2.80 | | | 3.08 |
| Apr. | 8 | 1.52 | 12,500 | 1,630 | | | 56 | | # 7.24 | | 9.11 | 2.25 | | | 3.90 |
| May | 9 | 1.59 | 10,900 | 1,680 | | | 56 | | # 7.58 | | 9.52 | 2.35 | | | 3.95 |
| June | 11 | 1.09 | 28,600 | 1,090 | | | 44 | | # 6.28 | | 4.89 | 2.95 | | | 1.36 |
| July | 11 | .84 | 72,400 | 877 | .19 | 7.7 | 44 | 11 | 4.35 | .62 | 3.90 | 2.87 | 5.16 | 1.01 | .02 |
| Aug. | 9 | 1.12 | 22,000 | 1,190 | | 7.7 | 55 | 21 | 4.73 | .70 | 6.61 | 2.67 | 7.05 | 2.55 | .02 |
| Sept. | 11 | .89 | 130,000 | 895 | | | 41 | | # 5.49 | | 3.76 | 2.59 | | | 1.00 |
| Oct. | 8 | 1.14 | 100,000 | 1,140 | | | 51 | | # 5.97 | | 6.23 | 2.93 | | | 2.67 |
| Nov. | 8 | 1.49 | 59,600 | 1,590 | | | 54 | | # 7.56 | | 8.74 | 3.35 | | | 4.37 |
| Dec. | 8 | 1.45 | 56,500 | 1,550 | | | 53 | | # 7.46 | | 8.52 | 3.30 | | | 4.00 |
| Mean | Θ 0.108 | 1.11 | Θ 587,800 | 1,140 | | | 49 | | # 6.06 | | 5.72 | 2.88 | | | 2.14 |
| Period Avg. | | .89 | 574,000 | 938 | | | 43 | | # 5.44 | | 4.18 | 2.75 | | | 1.68 |
| Tons of Constituents, | | | 1962 | | | | | | | | 95,100 | 62,500 | | | 54,900 |
| Average Tons, Period | | | 1948-1962 | | | | | | | | 84,500 | 72,400 | | | 52,400 |

Θ Total Θ Weighted mean ** 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 - 1962**

| Month | No. of Sam- ples | Dissolved Solids | | ECx10 ⁶ @25°C | Boron g.p.m. | pH | % Na ++ | % Cl -- | Mean Milligram Equivalents per Liter | | | | | | |
|-------|---------------------------|------------------------------|---------------|-----------------------------|-----------------|----|---------------|---------------|--------------------------------------|----|----|--|-----------------|----|-----------------|
| | | Tons Per Acre- Foot | Total Tons | | | | | | Ca | Mg | Na | CO ₃ + HCO ₃ | SO ₄ | Cl | NO ₃ |

| Sampling by U. S. Section | | | | | | | | | | | | | | | |
|------------------------------|----|------|----------|-------|-----|-----|----|----|------|------|------|------|------|------|-----|
| Rio Grande at Langtry, Texas | | | | | | | | | | | | | | | |
| Jan. | 7 | .99 | 48,800 | 1,070 | .27 | 7.8 | 48 | 18 | 4.08 | 1.68 | 5.23 | 2.85 | 6.14 | 2.05 | .05 |
| Feb. | 7 | .98 | 40,200 | 1,050 | .29 | 8.0 | 47 | 19 | 3.84 | 1.76 | 5.05 | 2.50 | 6.12 | 2.10 | .06 |
| Mar. | 7 | .98 | 37,300 | 1,080 | .26 | 8.1 | 48 | 19 | 4.04 | 1.62 | 5.16 | 2.80 | 6.14 | 2.05 | .05 |
| Apr. | 6 | .83 | 23,900 | 930 | .20 | 7.9 | 45 | 19 | 3.56 | 1.60 | 4.14 | 2.70 | 4.91 | 1.80 | .02 |
| May | 9 | .85 | 28,300 | 943 | .19 | 8.0 | 44 | 20 | 3.80 | 1.58 | 4.16 | 2.75 | 5.00 | 1.95 | .01 |
| June | 8 | .70 | 42,100 | 744 | .14 | 7.8 | 42 | 15 | 3.55 | .72 | 3.05 | 2.70 | 3.68 | 1.17 | .03 |
| July | 10 | .71 | 75,400 | 796 | .19 | 7.7 | 44 | 14 | 3.70 | .65 | 3.49 | 2.65 | 4.28 | 1.10 | .04 |
| Aug. | 9 | .85 | 35,300 | 914 | .18 | 7.7 | 43 | 16 | 4.36 | .90 | 4.00 | 3.17 | 4.77 | 1.50 | .05 |
| Sept. | 7 | .82 | 124,000 | 869 | .16 | 7.8 | 38 | 15 | 5.05 | .57 | 3.50 | 3.36 | 4.52 | 1.37 | .05 |
| Oct. | 8 | .89 | 123,000 | 904 | .17 | 7.7 | 41 | 16 | 4.85 | .73 | 3.93 | 3.14 | 4.94 | 1.54 | .05 |
| Nov. | 9 | 1.20 | 71,200 | 1,290 | .31 | 7.8 | 49 | 25 | 5.08 | 1.58 | 6.51 | 3.30 | 6.75 | 3.35 | .05 |
| Dec. | 5 | 1.09 | 62,400 | 1,210 | .24 | 7.7 | 49 | 22 | 4.71 | 1.62 | 6.00 | 3.22 | 6.37 | 2.76 | .03 |
| Mean Θ | 92 | .89 | 8711,900 | 951 | .20 | 7.8 | 44 | 18 | 4.39 | 1.04 | 4.28 | 3.00 | 5.10 | 1.75 | .04 |
| Period Avg. | | | | | | | | | | | | | | | |
| Tons of Constituents, | | | | | | | | | | | | | | | |
| 1962 | | | | | | | | | | | | | | | |
| Average Tons, Period | | | | | | | | | | | | | | | |
| 1945-1962 | | | | | | | | | | | | | | | |

| Sampling by U. S. Section | | | | | | | | | | | | | | | |
|--------------------------------|----|------|----------|-------|-----|-----|----|----|-------|------|-------|-------|-------|-------|-----|
| Pecos River near Shumla, Texas | | | | | | | | | | | | | | | |
| Jan. | 5 | 3.17 | 31,200 | 3,700 | .24 | 8.3 | 59 | 64 | 8.64 | 6.48 | 21.90 | 2.95 | 10.37 | 23.75 | .04 |
| Feb. | 4 | 3.52 | 31,400 | 4,010 | .26 | 8.0 | 60 | 66 | 9.08 | 7.56 | 24.71 | 2.55 | 11.46 | 27.38 | .03 |
| Mar. | 3 | 3.62 | 32,900 | 4,150 | .26 | 7.9 | 60 | 66 | 9.44 | 7.16 | 25.15 | 2.55 | 11.86 | 27.75 | .03 |
| Apr. *+ | 2 | 3.75 | 28,900 | 4,220 | .26 | 7.9 | 60 | 66 | 9.60 | 7.28 | 25.57 | 2.59 | 12.06 | 28.22 | .03 |
| May | 5 | 3.18 | 22,300 | 3,690 | .24 | 7.9 | 61 | 67 | 7.80 | 6.52 | 22.69 | 2.07 | 10.20 | 25.00 | .01 |
| June | 4 | 2.87 | 20,300 | 3,320 | .22 | 7.8 | 61 | 66 | 7.08 | 5.52 | 19.38 | 2.25 | 8.84 | 21.72 | .01 |
| July | 4 | 2.97 | 23,600 | 3,530 | .23 | 7.5 | 62 | 67 | 7.18 | 5.74 | 21.49 | 2.15 | 9.37 | 23.58 | .01 |
| Aug. | 5 | 2.52 | 13,500 | 2,970 | .24 | 7.6 | 62 | 66 | 6.45 | 4.40 | 17.85 | 2.19 | 7.73 | 19.38 | .01 |
| Sept. | 3 | 1.46 | 20,500 | 1,750 | .13 | 8.0 | 57 | 60 | 4.99 | 2.56 | 9.90 | 2.68 | 4.29 | 10.40 | .05 |
| Oct. | 5 | 1.29 | 39,300 | 1,450 | .11 | 7.7 | 53 | 57 | 4.82 | 2.05 | 7.74 | 2.94 | 3.32 | 8.33 | .09 |
| Nov. | 4 | 4.36 | 67,300 | 4,850 | .29 | 7.7 | 62 | 66 | 11.68 | 7.50 | 30.67 | 2.95 | 14.29 | 33.00 | .04 |
| Dec. | 4 | 4.86 | 56,200 | 5,370 | .29 | 7.7 | 62 | 66 | 12.87 | 8.42 | 2.88 | 15.99 | 37.56 | | .12 |
| Mean Θ | 48 | 2.88 | 8387,400 | 3,280 | .21 | 7.8 | 60 | 65 | 7.95 | 5.34 | 19.90 | 2.68 | 9.09 | 21.65 | .05 |
| Period Avg. | | | | | | | | | | | | | | | |
| Tons of Constituents, | | | | | | | | | | | | | | | |
| 1962 | | | | | | | | | | | | | | | |
| Average Tons, Period | | | | | | | | | | | | | | | |
| 1955-1962 | | | | | | | | | | | | | | | |

| Sampling by U. S. Section | | | | | | | | | | | | | | | |
|-----------------------------|-----|------|------------|-------|-----|-----|----|----|------|------|------|------|------|------|-----|
| Rio Grande at Laredo, Texas | | | | | | | | | | | | | | | |
| Jan. | 31 | .86 | 99,100 | 1,010 | .17 | 8.0 | 46 | 33 | 3.56 | 1.88 | 4.56 | 2.70 | 4.03 | 3.30 | .07 |
| Feb. | 28 | .90 | 77,600 | 1,040 | | | 48 | # | 5.28 | | 4.80 | 2.15 | | 3.75 | |
| Mar. | 31 | .92 | 70,400 | 1,110 | | | 49 | # | 5.39 | | 5.27 | 2.27 | | 4.25 | |
| Apr. | 30 | .78 | 79,800 | 947 | | | 47 | # | 4.82 | | 4.36 | 2.30 | | 3.50 | |
| May | 31 | .77 | 51,100 | 922 | | | 46 | # | 4.84 | | 4.09 | 2.31 | | 3.50 | |
| June | 30 | .70 | 65,700 | 804 | | | 42 | # | 4.40 | | 3.18 | 2.65 | | 2.29 | |
| July | 31 | .78 | 84,800 | 891 | .19 | 7.7 | 45 | 27 | 3.68 | 1.06 | 3.88 | 2.50 | 3.85 | 2.36 | .09 |
| Aug. | 31 | .78 | 60,500 | 864 | | | 47 | # | 4.82 | | 4.01 | 2.47 | | 3.90 | |
| Sept. | 30 | .69 | 122,000 | 753 | | | 41 | # | 4.46 | | 3.10 | 2.42 | | 1.56 | |
| Oct. | 31 | .70 | 187,000 | 758 | | | 43 | # | 4.36 | | 3.34 | 2.58 | | 1.87 | |
| Nov. | 30 | .91 | 118,000 | 1,050 | | | 46 | # | 5.74 | | 4.88 | 2.80 | | 3.45 | |
| Dec. | 31 | 1.33 | 148,000 | 1,560 | | | 54 | # | 7.13 | | 8.26 | 2.65 | | 6.85 | |
| Mean Θ | 365 | .82 | 91,164,000 | 945 | | | 46 | # | 5.01 | | 4.31 | 2.51 | | 3.01 | |
| Period Avg. | | .65 | 1,609,000 | 750 | | | 39 | # | 4.54 | | 2.91 | 2.55 | | 2.07 | |
| Tons of Constituents, | | | | | | | | | | | | | | | |
| 1962 | | | | | | | | | | | | | | | |
| Average Tons, Period | | | | | | | | | | | | | | | |
| 1956-1962 | | | | | | | | | | | | | | | |

θ Total Θ Weighted Mean ** Percent of total cations *** Percent of total anions # Sum of calcium and magnesium * Partly estimated + No analysis made

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1962**

| Month | No. of Sam- ples | Dissolved Solids | | EC $\times 10^6$ @25°C | Boron p.p.m. | pH | % Na ** | % Cl *** | Mean Milligram Equivalents per Liter | | | | | |
|-------|---------------------------|------------------------------|---------------|---------------------------|-----------------|----|---------------|----------------|--------------------------------------|--|-----------------|----|-----------------|--|
| | | Tons Per Acre- Foot | Total Tons | | | | Ca | Mg | Na | CO ₃ + HCO ₃ | SO ₄ | Cl | NO ₃ | |

Sampling by Mexican Section

Rio Salado at Las Tortillas, Tamaulipas

| | | | | | | | | | | | | | | |
|-----------------------|-----|------|-----------------|-------|------|-----|----|----|------------------|--------|--------|------|-------|--------|
| Jan. | 2 | 6.42 | 2,430 | 5,620 | 2.07 | 7.8 | 46 | 28 | 20.86 # 31.68 | 16.50 | 31.20 | 2.60 | 46.18 | 19.18 |
| Feb. | 1 | 5.42 | 132 | 4,820 | | | 45 | | | 25.94 | 2.30 | 2.30 | 17.10 | .58 |
| Mar. | | No | Flow | | | | | | | | | | | |
| Apr. | 3 | 1.82 | 5,950 | 1,920 | | | 47 | | # 10.66 | | 9.44 | 2.25 | | 6.30 |
| May | 3 | 1.73 | 522 | 1,850 | | | 48 | | # 9.84 | | 9.17 | 1.95 | | 6.60 |
| June | 9 | 1.99 | 13,300 | 2,000 | | | 44 | | # 12.08 | | 9.32 | 2.60 | | 6.27 |
| July | | No | Flow | | | | | | | | | | | |
| Aug. " | 0 | .71 | 1,150 | 800 | | | 33 | | # 5.52 | | 2.73 | 2.98 | | 1.80 |
| Sept. | 15 | .62 | 27,300 | 710 | | | 33 | | # 4.90 | | 2.42 | 2.64 | | 1.60 |
| Oct. | 6 | .96 | 3,840 | 1,000 | | | 39 | | # 6.52 | | 4.12 | 2.39 | | 2.58 |
| Nov. | 2 | 4.10 | 5,880 | 3,830 | | | 46 | | # 23.74 | | 20.17 | 1.60 | | 13.80 |
| Dec. | 2 | 3.30 | 262 | 3,150 | | | 47 | | # 18.85 | | 16.51 | 2.07 | | 10.56 |
| Mean \oplus | .43 | .98 | \oplus 60,766 | 1,050 | | | 39 | | # 6.69 | | 4.30 | 2.58 | | 2.86 |
| Period Avg. | | .67 | 191,000 | 737 | | | 30 | | # 5.40 | | 2.28 | 2.66 | | 1.62 |
| Tons of Constituents, | | | | | | | | | | 8,310 | 6,500 | | | 8,520 |
| Average Tons, Period | | | | | | | | | | 20,200 | 30,700 | | | 22,100 |

Sampling by U. S. Section

Rio Grande at Falcón Dam-U.S. Tailrace

| | | | | | | | | | | | | | | |
|-----------------------|------|-----|--------------------|-----|-----|-----|----|----|---------|--------|---------|---------|---------|---------|
| Jan. | 13 | .70 | 197,000 | 831 | .16 | 7.9 | 43 | 28 | 3.28 | 1.32 | 3.46 | 2.21 | 3.60 | .01 |
| Feb. | 12 | .72 | 265,000 | 838 | .16 | 8.0 | 43 | 29 | 3.43 | 1.21 | 3.50 | 2.25 | 3.62 | 2.40 |
| Mar. | 9 | .74 | 47,300 | 858 | .16 | 8.2 | 43 | 29 | 3.06 | 1.71 | 3.62 | 2.30 | 3.75 | 2.45 |
| Apr. | 12 | .74 | 164,000 | 864 | .17 | 7.9 | 44 | 30 | 3.48 | 1.24 | 3.74 | 2.35 | 3.74 | .01 |
| May | 13 | .77 | 335,000 | 897 | .15 | 8.0 | 46 | 31 | 3.36 | 1.36 | 4.04 | 2.27 | 3.83 | 2.75 |
| June | 12 | .79 | 290,000 | 901 | .19 | 7.8 | 47 | 31 | 3.32 | 1.30 | 4.08 | 2.30 | 3.89 | 2.83 |
| July | 12 | .81 | 59,600 | 922 | .15 | 7.8 | 48 | 32 | 3.23 | 1.40 | 4.32 | 2.20 | 3.95 | 2.94 |
| Aug. | 13 | .77 | 53,400 | 929 | .18 | 7.7 | 49 | 32 | 3.21 | 1.33 | 4.42 | 2.16 | 3.99 | 2.93 |
| Sept. | 9 | .81 | 29,500 | 912 | .11 | 7.7 | 49 | 33 | 3.25 | 1.36 | 4.47 | 2.17 | 4.07 | 3.05 |
| Oct. | 13 | .79 | 70,200 | 882 | .20 | 7.7 | 48 | 31 | 3.25 | 1.36 | 4.31 | 2.13 | 4.05 | 2.80 |
| Nov. | 8 | .79 | 39,400 | 925 | .19 | 7.8 | 47 | 31 | 3.44 | 1.36 | 4.23 | 2.20 | 4.13 | 2.90 |
| Dec. | 6 | .79 | 49,700 | 933 | .16 | 7.8 | 47 | 30 | 3.64 | 1.13 | 4.24 | 2.20 | 4.14 | .01 |
| Mean \oplus | .132 | .76 | \oplus 1,600,100 | 877 | .17 | 7.9 | 45 | 30 | 3.35 | 1.31 | 3.88 | 2.26 | 3.80 | 2.64 |
| Period Avg. | | .65 | 1,605,000 | 754 | | | 40 | 29 | 3.25 | 1.16 | 2.99 | 2.31 | 3.02 | 2.14 |
| Tons of Constituents, | | | | | | | | | 193,000 | 45,900 | 257,000 | 195,000 | 526,000 | 270,000 |
| Average Tons, Period | | | | | | | | | 220,000 | 47,700 | 232,000 | 234,000 | 489,000 | 256,000 |

Sampling by U. S. Section **Rio Grande at Fort Ringgold, Rio Grande City, Texas**

| | | | | | | | | | | | | | | |
|-----------------------|------|-----|--------------------|-------|-----|-----|----|----|---------|--------|---------|---------|---------|---------|
| Jan. | 13 | .71 | 200,000 | 844 | .12 | 7.8 | 44 | 30 | 3.20 | 1.38 | 3.62 | 2.27 | 3.56 | 2.50 |
| Feb. | 12 | .75 | 282,000 | 850 | .22 | 7.8 | 43 | 29 | 3.52 | 1.24 | 3.57 | 2.35 | 3.65 | 2.50 |
| Mar. | 12 | .85 | 63,800 | 990 | .18 | 8.0 | 48 | 33 | 3.60 | 1.40 | 4.60 | 2.45 | 4.18 | |
| Apr. | 11 | .76 | 171,000 | 887 | .22 | 7.9 | 45 | 31 | 3.44 | 1.32 | 3.86 | 2.35 | 3.78 | .01 |
| May | 16 | .79 | 339,000 | 900 | .21 | 8.0 | 46 | 31 | 3.56 | 1.24 | 4.06 | 2.30 | 3.90 | 2.85 |
| June | 12 | .80 | 319,000 | 905 | .23 | 8.0 | 47 | 32 | 3.30 | 1.30 | 4.10 | 2.20 | 3.94 | 2.90 |
| July | 14 | .90 | 64,800 | 1,040 | .27 | 7.8 | 51 | 35 | 3.39 | 1.53 | 5.17 | 2.27 | 4.34 | 3.63 |
| Aug. | 13 | .86 | 64,000 | 996 | .23 | 7.7 | 51 | 34 | 3.45 | 1.30 | 4.91 | 2.32 | 4.19 | .01 |
| Sept. | 12 | .65 | 60,100 | 729 | .10 | 7.7 | 47 | 30 | 3.51 | .40 | 3.40 | 2.40 | 2.71 | 2.20 |
| Oct. | 15 | .84 | 82,800 | 896 | .20 | 7.6 | 48 | 32 | 3.48 | 1.22 | 4.37 | 2.36 | 3.94 | 2.95 |
| Nov. | 13 | .90 | 45,400 | 1,060 | .24 | 7.8 | 50 | 34 | 3.62 | 1.50 | 5.20 | 2.35 | 4.51 | 3.60 |
| Dec. | 11 | .85 | 55,100 | 1,010 | .18 | 7.6 | 47 | 33 | 3.60 | 1.39 | 4.34 | 2.33 | 4.27 | .01 |
| Mean \oplus | .154 | .78 | \oplus 1,747,000 | 894 | .20 | 7.9 | 46 | 31 | 3.44 | 1.27 | 4.01 | 2.31 | 3.82 | 2.80 |
| Period Avg. | | .73 | 1,742,000 | 851 | | | 43 | 30 | 3.45 | 1.33 | 3.59 | 2.37 | 3.55 | 2.54 |
| Tons of Constituents, | | | | | | | | | 210,000 | 47,000 | 281,000 | 211,000 | 558,000 | 302,000 |
| Average Tons, Period | | | | | | | | | 223,000 | 52,000 | 266,000 | 229,000 | 550,000 | 290,000 |

Total Weighted Mean ** Percent of total cations *** Percent of total anions " Estimated T Trace

Sum of calcium and magnesium † Tonnage figures based on total release from Falcón Reservoir

**CHEMICAL ANALYSIS OF WATER SAMPLES FROM THE RIO GRANDE
AND TRIBUTARIES - 1962**

| Month | No. of Sam- ples | Dissolved Solids | | EC $\times 10^6$ @ 25°C | Boron p.p.m. | pH | % Na ** | % Cl *** | Mean Milligram Equivalents per Liter | | | | | |
|-------|---------------------------|------------------------------|---------------|----------------------------|-----------------|----|---------------|----------------|--------------------------------------|--|-----------------|----|-----------------|--|
| | | Tons Per Acre- Foot | Total Tons | | | | Ca | Mg | Na | CO ₃ + HCO ₃ | SO ₄ | Cl | NO ₃ | |

| | | | | | | | | | | | | | | |
|---|------|------|-----------|--------|------|-----|----|----|--------|-------|---------|-------|--------|-----------|
| Sampling by U. S. and Mexican Section Morillo Drain in Mexico, 8.4 River Miles above Anzaldúa Dam | | | | | | | | | | | | | | |
| Jan. | 9 | 14.7 | 34,200 | 15,700 | 7.21 | 7.9 | 74 | 72 | 24.85 | 20.15 | 127.3 | 2.80 | 45.75 | 126.2 .01 |
| Feb. | 4 | 12.3 | 51,400 | 13,100 | 6.39 | 7.9 | 74 | 70 | 21.25 | 15.80 | 103.8 | 2.95 | 39.29 | 99.62 .01 |
| Mar. | 7 | 15.8 | 53,300 | 16,700 | 8.00 | 8.2 | 73 | 71 | 27.25 | 23.00 | 135.8 | 4.10 | 49.87 | 134.1 .01 |
| Apr. | 9 | 14.6 | 43,600 | 15,700 | 7.27 | 7.8 | 74 | 72 | 24.90 | 20.20 | 127.7 | 4.10 | 44.78 | 124.5 T |
| May | 6 | 11.3 | 66,100 | 12,100 | 5.58 | 7.8 | 73 | 70 | 19.64 | 14.57 | 96.92 | 3.85 | 35.99 | 92.75 .03 |
| June | 6 | 10.8 | 58,900 | 11,600 | 5.38 | 7.8 | 73 | 70 | 20.58 | 22.56 | 147.6 | 2.90 | 53.07 | 144.0 .01 |
| July | 8 | 17.0 | 50,400 | 17,500 | 8.74 | 7.7 | 75 | 72 | 26.68 | 18.98 | 149.5 | 3.39 | 51.15 | 146.2 .01 |
| Aug. | 9 | 16.9 | 25,100 | 17,400 | 8.41 | 7.6 | 75 | 73 | 30.77 | 18.73 | 113.3 | 3.42 | 42.13 | 111.8 .01 |
| Sept. | 6 | 13.1 | 14,100 | 13,400 | 6.36 | 7.7 | 73 | 71 | 23.36 | 26.02 | 151.0 | 3.14 | 55.29 | 148.8 T |
| Oct. | 7 | 17.5 | 13,200 | 17,100 | 8.36 | 7.9 | 73 | 72 | 28.63 | 26.60 | 153.2 | 3.70 | 55.33 | 149.8 .02 |
| Nov. | 9 | 17.7 | 14,000 | 18,000 | 6.93 | 7.9 | 73 | 72 | 28.64 | 22.57 | 148.0 | 3.41 | 51.58 | 146.0 T |
| Dec. | 6 | 17.1 | 14,800 | 17,800 | 8.32 | 7.7 | 74 | 73 | 28.51 | | | | | |
| Mean Θ | 9.86 | 13.7 | ø 439,100 | 14,400 | 6.80 | 7.8 | 74 | 71 | 23.65 | 18.32 | 117.6 | 3.54 | 42.89 | 114.8 .01 |
| Period Avg. | | | | | | | | | | | | | | |
| Tons of Constituents, | | | | | | | | | 20,700 | 9,730 | 118,000 | 4,640 | 89,900 | 178,000 |
| Average Tons, Period | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|-------|-----------|-------------|-------|-----|-----|----|----|---------|--------|---------|---------|---------|-----------|
| Sampling by U. S. Section Rio Grande below Anzaldúa Dam | | | | | | | | | | | | | | |
| Jan. | 14 | .86 | 109,000 | 1,020 | .17 | 7.8 | 49 | 37 | 3.60 | 1.50 | 4.81 | 2.25 | 4.06 | 3.70 T |
| Feb. | 12 | .92 | 91,500 | 1,060 | .29 | 8.0 | 49 | 38 | 3.73 | 1.46 | 4.97 | 2.35 | 4.04 | 3.95 T |
| Mar. | 15 | 1.73 | 107,000 | 2,080 | .68 | 8.0 | 60 | 53 | 5.34 | 2.72 | 12.07 | 2.70 | 6.80 | 10.75 .01 |
| Apr. | 16 | 1.15 | 112,000 | 1,370 | .40 | 8.0 | 54 | 44 | 4.18 | 1.98 | 7.23 | 2.27 | 5.06 | 6.20 T |
| May | 19 | .97 | 152,000 | 1,160 | .32 | 7.8 | 51 | 39 | 3.88 | 1.56 | 5.70 | 2.40 | 4.52 | 4.35 T |
| June | 13 | .98 | 194,000 | 1,130 | .21 | 7.8 | 52 | 39 | 3.58 | 1.60 | 5.71 | 2.31 | 4.46 | 4.30 T |
| July | 14 | 1.75 | 105,000 | 2,060 | .64 | 7.9 | 62 | 53 | 4.97 | 2.69 | 12.31 | 2.47 | 7.00 | 10.80 .01 |
| Aug. | 21 | 1.53 | 89,200 | 1,830 | .49 | 7.7 | 60 | 52 | 4.73 | 2.27 | 10.49 | 2.39 | 6.21 | 9.35 .01 |
| Sept. | 25 | 1.09 | 54,600 | 1,270 | .38 | 7.7 | 58 | 47 | 3.89 | 1.28 | 7.18 | 2.20 | 4.44 | 5.88 .01 |
| Oct. | 27 | 1.07 | 60,600 | 1,160 | .34 | 7.7 | 55 | 43 | 3.63 | 1.62 | 6.52 | 2.07 | 4.64 | 5.08 T |
| Nov. | 13 | 1.32 | 48,600 | 1,530 | .46 | 8.0 | 56 | 46 | 4.48 | 2.14 | 8.43 | 2.40 | 5.79 | 6.95 .01 |
| Dec. | 13 | 1.19 | 67,400 | 1,420 | .37 | 7.7 | 54 | 43 | 4.40 | 1.90 | 7.25 | 2.50 | 5.39 | 5.92 .01 |
| Mean Θ | 1.202 | 1.13 | ø 1,190,900 | 1,320 | .35 | 7.8 | 54 | 44 | 4.03 | 1.79 | 6.97 | 2.35 | 4.92 | 5.70 T |
| Period Avg. | 1.02 | 1,369,000 | 1,190 | | | | 51 | 42 | 3.97 | 1.69 | 5.95 | 2.43 | 4.38 | 4.87 |
| Tons of Constituents, | | | | | | | | | 116,000 | 31,300 | 230,000 | 101,000 | 340,000 | 291,000 |
| Average Tons, Period | | | | | | | | | 146,000 | 37,800 | 251,000 | 134,000 | 386,000 | 317,000 |

ø Total Θ Weighted mean ** Percent of total cations *** Percent of total anions T Trace

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1962

The following tables show electrical conductivity, expressed in mhos per centimeter cube $\times 10^6$ 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 $\times 10^6$ at 25°C) when conductivity (EC $\times 10^6$ at 25°C) is below 7,520 micromhos.

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

| Date | EC $\times 10^6$ @25°C |
|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|
|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|

Rio Grande at El Paso, Texas

| January | February | April | May | July | August | October | November |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 1 2,320 | 20 2,400 | 5 1,110 | 21 1,250 | 4 959 | 17 990 | 1 1,620 | 16 2,180 |
| 2 2,280 | 21 2,430 | 6 1,150 | 22 1,260 | 5 952 | 18 1,010 | 2 1,860 | 17 2,160 |
| 3 2,310 | 22 2,510 | 7 1,100 | 23 1,300 | 6 1,020 | 19 1,020 | 3 1,900 | 18 2,230 |
| 4 2,320 | 23 2,440 | 8 1,100 | 24 1,270 | 7 1,020 | 20 1,060 | 4 2,030 | 19 2,240 |
| 5 1,350 | 24 2,540 | 9 1,240 | 25 1,280 | 8 958 | 21 1,040 | 5 2,130 | 20 2,370 |
| 6 1,110 | 25 2,540 | 10 1,190 | 26 1,280 | 9 1,070 | 22 993 | 6 1,940 | 21 2,270 |
| 7 2,310 | 26 2,640 | 11 1,270 | 27 1,260 | 10 1,140 | 23 1,020 | 7 1,970 | 22 2,290 |
| 8 2,240 | 27 2,660 | 12 1,290 | 28 1,140 | 11 1,220 | 24 1,090 | 8 1,980 | 23 2,300 |
| 9 1,340 | 28 2,610 | 13 1,270 | 29 1,190 | 12 1,210 | 25 1,120 | 9 1,980 | 24 2,290 |
| 14 1,550 | March | 14 1,230 | 30 1,160 | 13 1,120 | 26 1,130 | 10 2,010 | 25 2,230 |
| 15 2,250 | 1 2,590 | 15 1,280 | 31 1,150 | 14 1,070 | 27 1,080 | 11 2,030 | 26 2,290 |
| 16 2,220 | 2 2,560 | 16 1,330 | June | 15 1,140 | 28 1,080 | 12 2,040 | 27 2,270 |
| 17 2,240 | 3 2,600 | 17 1,390 | 1 1,020 | 16 1,170 | 29 1,100 | 13 2,070 | 28 2,290 |
| 18 2,270 | 4 2,630 | 18 1,400 | 2 1,040 | 17 1,160 | 30 1,080 | 14 2,060 | 29 2,270 |
| 19 2,340 | 5 2,630 | 19 1,410 | 3 1,030 | 18 1,200 | 31 1,040 | 15 2,120 | 30 2,330 |
| 20 2,260 | 6 2,660 | 20 1,350 | 4 1,030 | 19 1,210 | September | 16 2,120 | December |
| 21 2,300 | 7 2,650 | 21 1,310 | 5 1,030 | 20 1,050 | 1 1,070 | 17 2,080 | 1 2,270 |
| 22 2,290 | 8 1,360 | 22 1,270 | 6 1,020 | 21 1,180 | 2 976 | 18 2,080 | 2 2,280 |
| 23 2,310 | 9 1,130 | 23 1,270 | 7 1,050 | 22 1,210 | 3 911 | 19 2,100 | 3 2,290 |
| 24 2,280 | 10 1,100 | 24 1,290 | 8 1,090 | 23 1,070 | 4 978 | 20 2,060 | 4 1,750 |
| 25 2,210 | 11 1,070 | 25 1,290 | 9 1,090 | 24 1,050 | 5A 999 | 21 1,370 | 5 1,940 |
| 26 2,340 | 12 1,060 | 26 1,370 | 10 1,090 | 25 986 | 5B 877 | 22 1,730 | 6 2,130 |
| 27 2,350 | 13 1,070 | 27 1,470 | 11 1,030 | 26 1,020 | 6 952 | 23 1,910 | 7 2,170 |
| 28 2,270 | 14 1,030 | 28 1,520 | 12 1,040 | 27 1,030 | 7 1,060 | 24 2,030 | 8 2,180 |
| 29 2,270 | 15 1,010 | 29 1,470 | 13 1,070 | 28 1,060 | 8 1,200 | 25 2,150 | 9 2,180 |
| 30 2,280 | 16 1,030 | 30 1,490 | 14 1,050 | 29 1,080 | 9 1,350 | 26 2,220 | 10 2,250 |
| 31 2,270 | 17 1,040 | May | 15 1,090 | 30A 790 | 10 1,300 | 27 2,220 | 11 2,220 |
| February | 18 980 | 1 1,510 | 16 1,070 | 30B 792 | 11 1,280 | 28 2,180 | 12 2,240 |
| 1 2,280 | 19 1,000 | 2 1,470 | 17 1,080 | 30C 725 | 12 1,400 | 29 2,190 | 13 2,290 |
| 2 2,320 | 20 1,010 | 3 1,490 | 18 1,030 | 31 941 | 13 1,610 | 30 2,150 | 14 2,290 |
| 3 2,360 | 21 1,010 | 4 1,460 | 19 1,030 | August | 14 1,810 | 31 2,240 | 15 2,280 |
| 4 2,370 | 22 979 | 5 1,410 | 20 1,060 | 1 1,130 | 15 1,750 | November | 16 2,300 |
| 5 2,380 | 23 977 | 6 1,320 | 21 1,080 | 2 1,270 | 16 1,900 | 1 2,140 | 17 2,230 |
| 6 2,340 | 24 974 | 7 1,340 | 22 1,170 | 3 1,140 | 17 1,860 | 2 2,160 | 18 2,290 |
| 7 2,310 | 25 990 | 8 1,320 | 23 1,180 | 4 1,210 | 18 1,990 | 3 2,160 | 19 2,200 |
| 8 2,390 | 26 1,010 | 9 1,280 | 24 1,180 | 5 1,240 | 19 2,080 | 4 2,220 | 20 2,220 |
| 9 2,370 | 27 1,000 | 10 1,240 | 25 1,100 | 6 1,170 | 20 2,050 | 5 2,190 | 21 2,290 |
| 10 2,380 | 28 1,020 | 11 1,290 | 26 1,100 | 7 1,250 | 21 2,120 | 6 2,200 | 22 2,290 |
| 11 2,380 | 29 1,100 | 12 1,220 | 27 1,100 | 8 1,330 | 22 2,120 | 7 2,180 | 23 2,290 |
| 12 2,450 | 30 1,120 | 13 1,240 | 28 1,090 | 9 1,180 | 23 2,060 | 8 2,120 | 24 2,260 |
| 13 2,440 | 31 1,100 | 14 1,280 | 29 1,050 | 10 1,030 | 24 2,050 | 9 2,190 | 25 2,260 |
| 14 2,260 | April | 15 1,270 | 30 1,050 | 11 947 | 25 2,070 | 10 2,180 | 26 2,290 |
| 15 2,250 | 1 1,110 | 16 1,210 | July | 12 948 | 26 2,020 | 11 2,140 | 17 2,310 |
| 16 2,330 | 2 1,040 | 17 1,290 | 1 977 | 13 924 | 27 2,030 | 12 2,150 | 18 2,300 |
| 17 2,330 | 3 1,030 | 18 1,310 | 2 1,010 | 14 906 | 28 1,130 | 13 2,230 | 29 2,300 |
| 18 2,340 | 4 1,110 | 19 1,250 | 3 934 | 15 920 | 29 1,050 | 14 2,220 | 30 2,300 |
| 19 2,390 | 20 1,280 | | | 16 950 | 30 1,430 | 15 2,200 | 31 2,310 |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date ECx10 ⁶ @25°C |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|

Rio Grande at Fort Quitman, Texas

| January | February | April | June | July | August | September | November |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| 3 5,880 | 28 12,050 | 18 7,200 | 6 10,050 | 18 9,100 | 8 8,650 | 6 1,310 | 7 4,320 |
| 17A 6,480 | March | 25 9,760 | 13 9,580 | 19A 544 | 15 7,010 | 12 3,170 | 14 4,380 |
| 17B 6,480 | 7 12,280 | May | 20 10,570 | 19B 1,250 | 22 12,540 | 19 4,160 | 21 4,460 |
| 24 9,720 | 14 13,080 | 2 6,880 | 27 13,900 | 25 6,140 | 29 8,090 | 26 4,800 | 28 4,340 |
| 31 8,640 | 21 12,280 | 9 7,340 | July | 29 2,650 | September | October | December |
| February | 28 12,590 | 16 7,670 | 1 4,280 | 31A 1,340 | 1 1,890 | 3 4,140 | 5 4,180 |
| 7 9,640 | April | 23 9,570 | 5 12,830 | 31B 1,330 | 2 1,270 | 10 4,300 | 12 4,300 |
| 14 11,120 | 4 12,690 | 30 10,260 | 8 1,250 | August | 5 1,750 | 17 4,940 | 19 4,620 |
| 21 11,370 | 11 9,230 | | 11 10,430 | 2 3,650 | 6 1,320 | 24 4,190 | 27 4,210 |

Rio Grande at Upper Presidio Station

| June | July | August | September | September | October | November | December |
|----------|----------|-----------|-----------|-----------|----------|----------|----------|
| 20 781 | 18 797 | 1 877 | 4 669 | 27 2,110 | 15 4,370 | 8 3,820 | 3 4,070 |
| 20 773 | 19 690 | 1 866 | 6 1,050 | 28 1,840 | 18 4,220 | 13 3,880 | 6 3,380 |
| 21 792 | 23 517 | 6 1,450 | 7 847 | October | 22 2,880 | 15 3,960 | 10 4,180 |
| July | 24 804 | 9 1,180 | 10 694 | 1 4,660 | 29 3,890 | 19 4,070 | 13 4,110 |
| 16 583 | 26 3,500 | 27 801 | 14 1,220 | 1 4,660 | November | 23 4,020 | 17 3,990 |
| 16 590 | 27 1,590 | 30 831 | 17 1,900 | 4 3,720 | 1 3,640 | 26 4,540 | 19 3,930 |
| 17 1,120 | 30 618 | September | 20 2,790 | 8 2,970 | 5 2,980 | 30 4,300 | 26 3,720 |
| | | 2 743 | 24 2,260 | 11 3,530 | | 31 4,010 | |

Rio Conchos near Ojinaga, Chihuahua

| January | February | April | May | July | August | October | November |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 3 1,310 | 16 1,370 | 2 1,400 | 21 1,570 | 2 1,280 | 17 1,510 | 1 1,060 | 16 1,320 |
| 3 1,230 | 19 1,350 | 4 1,410 | 23 1,580 | 4 1,300 | 20 1,560 | 3 914 | 19 1,290 |
| 5 1,260 | 21 1,450 | 6 1,470 | 25 1,570 | 6 1,440 | 22 1,610 | 5 978 | 21 1,330 |
| 8 1,260 | 24 1,440 | 9 1,510 | 28 1,610 | 9 904 | 24 1,600 | 8 1,030 | 23 1,230 |
| 10 1,220 | 26 1,450 | 11 1,500 | 30 1,580 | 11 1,170 | 27 910 | 10 1,200 | 26 1,340 |
| 12 1,230 | 28 1,500 | 13 1,600 | June | 13 1,210 | 29 1,590 | 12 1,220 | 28 1,360 |
| 15 1,280 | March | 16 1,600 | 1 1,560 | 16 1,030 | 31 1,410 | 15 970 | 30 1,390 |
| 17 1,280 | 2 1,510 | 20 1,630 | 1 1,490 | 18 1,190 | September | 17 1,050 | December |
| 19 1,330 | 5 1,450 | 23 1,580 | 6 1,440 | 20 951 | 3 1,020 | 19 745 | 3 1,120 |
| 22 1,370 | 7 1,450 | 25 1,580 | 8 1,430 | 23 850 | 5 817 | 22 1,170 | 5 1,140 |
| 24 1,370 | 9 1,400 | 27 1,590 | 11 1,450 | 25 918 | 7 959 | 24 1,130 | 7 1,230 |
| 26 1,340 | 12 1,180 | 30 1,410 | 13 1,500 | 27 926 | 10 771 | 26 1,150 | 10 1,380 |
| 31 1,350 | 14 1,240 | May | 15 1,090 | 30 969 | 12 1,080 | 29 1,030 | 12 1,250 |
| 31 1,340 | 16 1,330 | 2 1,450 | 18 1,280 | August | 14 1,280 | November | 14 1,330 |
| February | 19 1,410 | 4 1,550 | 20 988 | 1 999 | 17 1,270 | 1 1,240 | 17 1,340 |
| 2 1,340 | 21 1,390 | 7 1,610 | 22 1,350 | 3 1,150 | 19 1,250 | 2 1,310 | 19 1,180 |
| 5 1,280 | 23 1,370 | 9 1,570 | 25 1,500 | 6 1,170 | 21 1,340 | 5 1,330 | 21 1,180 |
| 7 1,230 | 26 1,390 | 11 1,600 | 27 1,460 | 8 1,380 | 24 1,350 | 7 1,330 | 24 1,270 |
| 9 1,270 | 28 1,370 | 14 1,590 | 29 1,510 | 10 1,420 | 26 941 | 9 1,330 | 26 1,320 |
| 12 1,300 | 30 1,340 | 16 1,610 | 18 1,600 | 13 1,300 | 28 677 | 12 1,340 | 28 1,400 |
| 14 1,410 | | | | 15 1,470 | | 14 1,320 | 31 1,310 |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date | ECx10 ⁶ @25°C |
|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|
|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|

Rio Grande at Lower Presidio Station

| January | February | April | May | July | August | September | November |
|----------|----------|----------|----------|----------|-----------|-----------|----------|
| 2 1,210 | 23 1,530 | 9 1,610 | 31 1,570 | 9 958 | 20 1,660 | 28 962 | 13 1,510 |
| 4 1,260 | 26 1,460 | 12 1,750 | June | 12 875 | 23 1,650 | 28 974 | 15 1,610 |
| 8 1,160 | March | 16 1,830 | 4 1,560 | 16 1,200 | 27 1,500 | October | 19 1,510 |
| 12 1,280 | 1 1,460 | 19 1,810 | 7 1,530 | 17 ~ 962 | 30 1,680 | 1 1,090 | 23 1,530 |
| 15 1,240 | 5 1,520 | 23 1,590 | 11 1,540 | 18 876 | September | 1 1,100 | 26 1,600 |
| 18 1,310 | 8 1,430 | 26 1,690 | 14 1,420 | 19 1,070 | 2 971 | 8 1,320 | 30 1,820 |
| 22 1,370 | 12 1,210 | 30 1,610 | 18 1,520 | 23 797 | 3 999 | 11 1,070 | December |
| 25 1,330 | 15 1,290 | May | 20 1,110 | 26 1,070 | 4 755 | 15 1,200 | 3 1,350 |
| 29 1,240 | 19 1,420 | 3 1,620 | 21 931 | 27 933 | 6 911 | 18 1,290 | 6 1,680 |
| February | 22 1,440 | 7 1,700 | 25 1,510 | 30 775 | 7 617 | 22 1,570 | 10 1,620 |
| 1 1,370 | 26 1,500 | 10 1,690 | 28 1,600 | August | 10 759 | 29 1,410 | 13 1,710 |
| 5 1,310 | 30 1,450 | 14 1,740 | July | 1 1,020 | 14 1,240 | November | 17 1,490 |
| 8 1,270 | April | 17 1,730 | 2 1,320 | 6 1,370 | 17 1,390 | 1 1,590 | 20 1,470 |
| 12 1,270 | 2 1,470 | 21 1,660 | 5 1,020 | 9 1,310 | 20 1,750 | 5 1,440 | 26 1,360 |
| 15 1,400 | 5 1,510 | 24 1,670 | 6 1,400 | 13 1,500 | 24 1,500 | 8 1,690 | 31 1,750 |
| 19 1,380 | 28 1,760 | | | 16 1,310 | 27 695 | | |

Rio Grande at Johnson Ranch, Texas

| January | February | April | May | July | August | September | November |
|----------|----------|----------|----------|----------|-----------|-----------|----------|
| 2 1,360 | 20 1,440 | 6 1,480 | 25 1,720 | 2 1,240 | 14 1,330 | 21 1,410 | 9 1,550 |
| 4 1,330 | 26 1,500 | 10 1,580 | 29 1,810 | 5 873 | 17 1,430 | 25 1,600 | 13 1,610 |
| 8 1,300 | March | 13 1,620 | June | 10 1,200 | 21 1,600 | 28 807 | 16 1,520 |
| 12 1,310 | 1 1,550 | 17 1,670 | 1 1,770 | 13 1,110 | 24 1,540 | October | 20 1,650 |
| 16 1,260 | 5 1,540 | 20 1,730 | 4 1,590 | 16 1,090 | 28 1,460 | 1 859 | 26 1,570 |
| 19 1,350 | 9 1,590 | 24 1,870 | 7 1,230 | 18 709 | 31 1,670 | 5 1,140 | 29 1,600 |
| 23 1,410 | 13 1,430 | 27 1,730 | 11 944 | 18 701 | September | 8 1,250 | December |
| 26 1,380 | 16 1,180 | May | 13 996 | 19 511 | 3 654 | 12 1,280 | 3 1,620 |
| 30 1,370 | 20 1,350 | 1 1,650 | 13 763 | 23 1,110 | 3 697 | 16 1,360 | 7 1,350 |
| February | 23 1,400 | 3 1,670 | 15 666 | 26 880 | 5 977 | 19 1,180 | 11 1,380 |
| 1 1,370 | 27 1,490 | 8 1,780 | 19 1,280 | 30 869 | 7 860 | 22 1,160 | 14 1,660 |
| 5 1,390 | 30 1,400 | 11 1,760 | 22 1,320 | August | 7 899 | 29 1,260 | 18 1,610 |
| 9 1,340 | April | 15 1,810 | 26 983 | 1 813 | 10 901 | November | 20 1,510 |
| 13 1,270 | 2 1,350 | 18 1,790 | 29 1,390 | 7 1,200 | 14 1,070 | 1 1,490 | 26 1,600 |
| 16 1,320 | 22 1,210 | | 10 1,480 | 17 1,260 | 5 1,660 | 31 1,770 | |

Rio Grande at Langtry, Texas

| January | February | April | May | July | August | September | November |
|----------|----------|----------|----------|----------|-----------|-----------|----------|
| 2 1,110 | 20 1,060 | 16 940 | 28 546 | 5 909 | 13 925 | 28 1,260 | 9 1,250 |
| 4 1,100 | 26 1,030 | 19 892 | 31 652 | 9 646 | 16 959 | October | 13 1,330 |
| 8 1,080 | March | 23 834 | June | 13 582 | 20 883 | 2 761 | 16 1,270 |
| 15 1,120 | 2 1,070 | 26 802 | 4 900 | 16 1,210 | 22 953 | 5 1,140 | 20 1,340 |
| 22 1,070 | 6 1,070 | 30 890 | 7 627 | 19 637 | 27 864 | 9 1,120 | 23 1,280 |
| 25 969 | 8 1,070 | May | 12 531 | 20 919 | 30 873 | 12 903 | 27 1,300 |
| 29 1,070 | 12 1,100 | 3 996 | 14 655 | 23 683 | September | 16 1,150 | 30 1,180 |
| February | 15 1,140 | 7 1,070 | 18 702 | 26 1,030 | 4 1,430 | 17 543 | December |
| 1 1,120 | 22 1,110 | 10 1,000 | 21 1,020 | 30 768 | 6 548 | 23 1,070 | 4 1,240 |
| 5 1,070 | 26 1,010 | 14 974 | 25 846 | August | 11 722 | 26 944 | 11 1,260 |
| 8 1,080 | April | 17 901 | 28 1,150 | 2 1,010 | 14 736 | November | 14 1,150 |
| 12 1,010 | 12 978 | 21 1,250 | July | 6 893 | 18 782 | 2 1,340 | 18 1,200 |
| 15 1,070 | 24 696 | 2 996 | 9 834 | 25 1,180 | 6 1,260 | 20 1,190 | |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date | ECx10 ⁶ @25°C |
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Pecos River near Shumla, Texas

| January | February | April | May | July | August | October | November |
|------------------|---------------|-----------|------------|--------------|----------|------------------|------------------|
| 3 3,520 | 14 4,020 | 4 4,210 | 29 3,420 | 3 3,640 | 15 2,970 | 3 2,480 | 14 3,160 |
| 10 3,650 | 23 4,050 | 18 4,230 | June 3,360 | 11 3,710 | 22 2,900 | 10 2,440 | 21 5,940 |
| 17 3,700 | 28 4,130 | May 3,970 | 18 3,460 | 29 3,310 | 28 2,810 | 18 416 | 28 7,250 |
| 24 3,740 | March 7 4,140 | 9 3,880 | 20 3,180 | August 3,060 | 31 2,760 | 24 3,500 | December 8 6,200 |
| 30 3,800 | 7 4,140 | 16 3,680 | 27 3,080 | 1 3,050 | 12 1,590 | November 7 2,070 | 12 5,480 |
| February 7 3,960 | 14 4,140 | 23 3,480 | 8 3,050 | 19 2,230 | 7 4,940 | 26 4,640 | |

Devils River near Mouth

| January | February | April | May | July | August | October | November |
|----------------|----------|---------|----------|--------|---------------|----------------|----------------|
| 4 396 | 14 394 | 10 381 | 24 373 | 5 365 | 23 343 | 2 349 | 14 360 |
| 9 369 | 21 394 | 17 382 | 29 372 | 11 354 | 28 347 | 9 367 | 20 379 |
| 17 329 | March 24 | 378 | June 371 | 19 357 | September 354 | 17 360 | 27 381 |
| 23 353 | 1 390 | May 370 | 15 373 | 26 349 | 6 354 | 26 220 | December 4 388 |
| February 7 390 | 1 370 | 20 364 | 1 357 | 11 318 | 31 353 | November 6 322 | 11 391 |
| 1 398 | 20 349 | 8 374 | 27 358 | 16 347 | 27 363 | 7 322 | 19 382 |
| 7 397 | 28 384 | 15 371 | 26 358 | | | | |

Rio Grande near Del Rio, Texas

| January | February | April | May | July | August | October | November |
|-------------------|-------------|----------|----------|------------|---------------|----------|------------------|
| 2 1,050 | 19 1,070 | 4 1,060 | 18 985 | 2 1,030 | 17 747 | 1 1,240 | 15 1,080 |
| 4 1,030 | 21 1,080 | 6 1,050 | 21 1,270 | 6 1,010 | 20 821 | 3 843 | 19 1,260 |
| 8 1,080 | 26 1,090 | 9 891 | 23 892 | 9 856 | 22 798 | 5 788 | 21 1,460 |
| 10 1,020 | 28 1,080 | 11 1,120 | 25 678 | 11 754 | 24 785 | 8 804 | 23 1,650 |
| 12 1,120 | March 1,170 | 16 1,130 | 28 698 | 13 849 | 27 854 | 10 572 | 26 1,700 |
| 15 1,010 | 2 1,130 | 18 1,100 | 1 805 | 16 709 | 29 783 | 12 1,140 | 28 1,830 |
| 17 994 | 5 1,090 | 18 1,000 | 1 868 | 31 767 | 15 759 | 30 730 | 1,920 |
| 22 1,040 | 7 1,160 | 20 1,080 | 4 586 | 20 587 | September 862 | 17 827 | December 3 1,760 |
| 24 1,120 | 9 1,130 | 23 1,070 | 6 937 | 23 723 | 4 862 | 19 463 | 5 1,720 |
| 26 1,060 | 12 1,100 | 25 1,090 | 8 836 | 25 709 | 6 794 | 22 473 | 7 1,640 |
| 29 1,100 | 14 1,150 | 27 790 | 11 573 | 27 794 | 10 871 | 24 980 | 12 1,520 |
| 31 1,080 | 16 1,150 | 30 944 | 13 776 | 30 995 | 12 804 | 26 1,070 | 10 1,520 |
| February 19 1,080 | May 15 | 863 | 619 1 | August 660 | 14 876 | 29 959 | 14 1,410 |
| 2 1,070 | 21 1,140 | 2 863 | 18 619 | 17 721 | 31 890 | 17 1,290 | |
| 5 1,070 | 23 1,080 | 4 1,030 | 20 810 | 3 697 | 20 711 | 2 1,050 | 19 1,380 |
| 7 1,110 | 26 1,120 | 7 946 | 22 681 | 6 821 | 21 753 | 5 1,080 | 21 1,310 |
| 9 1,070 | 28 1,100 | 9 975 | 25 799 | 8 749 | 24 933 | 5 967 | 26 1,360 |
| 12 1,100 | 30 1,080 | 11 996 | 27 743 | 10 742 | 26 940 | 7 989 | 28 1,320 |
| 14 1,060 | April 14 | 988 | 29 700 | 13 787 | 28 989 | 9 1,040 | 31 1,030 |
| 16 1,050 | 2 1,010 | 16 858 | 15 817 | | | 13 1,030 | 31 1,260 |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1962

| Date | ECx10 ⁶ @25°C |
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Rio Grande at Maverick Canal Headgate

| January | February | April | May | July | August | October | November |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 1 1,060 | 16 1,060 | 2 1,020 | 18 923 | 2 1,040 | 17 811 | 1 1,370 | 16 1,160 |
| 2 1,040 | 17 1,100 | 3 1,000 | 19 909 | 3 1,080 | 18 799 | 2 963 | 17 1,180 |
| 3 1,040 | 18 1,100 | 4 1,030 | 20 1,150 | 4 1,160 | 19 799 | 3 963 | 18 1,210 |
| 4 1,020 | 19 1,080 | 5 1,020 | 21 876 | 5 912 | 20 848 | 4 869 | 19 1,260 |
| 5 1,010 | 20 1,060 | 6 804 | 22 1,020 | 6 993 | 21 814 | 5 838 | 20 1,400 |
| 6 1,030 | 21 1,070 | 7 887 | 23 929 | 7 1,020 | 22 786 | 6 980 | 21 1,440 |
| 7 1,070 | 22 1,080 | 8 828 | 24 1,080 | 8 1,100 | 23 802 | 7 866 | 22 1,600 |
| 8 1,080 | 23 1,050 | 9 838 | 25 915 | 9 923 | 24 770 | 8 944 | 23 1,660 |
| 9 1,040 | 24 1,050 | 10 913 | 26 633 | 10 1,040 | 25 787 | 9 919 | 24 1,790 |
| 10 998 | 25 1,050 | 11 1,020 | 27 574 | 11 970 | 26 779 | 10 937 | 25 1,820 |
| 11 998 | 26 1,040 | 12 1,060 | 28 630 | 12 768 | 27 778 | 11 1,020 | 26 1,760 |
| 12 1,050 | 27 1,040 | 13 1,020 | 29 661 | 13 780 | 28 804 | 12 702 | 27 1,850 |
| 13 1,100 | 28 1,040 | 14 1,070 | 30 717 | 14 909 | 29 769 | 13 1,040 | 28 1,910 |
| 14 1,090 | March | 15 1,010 | 31 754 | 15 967 | 30 732 | 14 1,040 | 29 1,960 |
| 15 1,080 | 1 1,100 | 16 1,010 | June | 16 832 | 31 775 | 15 925 | 30 2,000 |
| 16 1,030 | 2 1,100 | 17 1,030 | 1 740 | 17 803 | September | 16 780 | December |
| 17 1,060 | 3 1,100 | 18 990 | 2 753 | 18 984 | 1 809 | 17 958 | 1 2,040 |
| 18 1,040 | 4 1,060 | 19 1,000 | 3 836 | 19 1,260 | 2 773 | 18 1,000 | 2 1,990 |
| 19 1,020 | 5 1,060 | 20 992 | 4 745 | 20 1,090 | 3 778 | 19 576 | 3 2,000 |
| 20 1,040 | 6 1,070 | 21 996 | 5 599 | 21 737 | 4 773 | 20 458 | 4 1,800 |
| 21 1,070 | 7 1,110 | 22 1,020 | 6 723 | 22 1,110 | 5 866 | 21 580 | 5 1,830 |
| 22 1,050 | 8 1,090 | 23 996 | 7 940 | 23 931 | 6 1,120 | 22 587 | 6 1,790 |
| 23 1,030 | 9 1,060 | 24 938 | 8 910 | 24 801 | 7 734 | 23 879 | 7 1,910 |
| 24 999 | 10 1,050 | 25 894 | 9 837 | 25 763 | 8 591 | 24 912 | 8 1,710 |
| 25 1,080 | 11 1,050 | 26 985 | 10 673 | 26 769 | 9 758 | 25 897 | 9 1,710 |
| 26 1,040 | 12 1,080 | 27 963 | 11 535 | 27 749 | 10 682 | 26 987 | 10 1,620 |
| 27 1,030 | 13 1,090 | 28 874 | 12 619 | 28 891 | 11 683 | 27 1,080 | 11 1,620 |
| 28 1,040 | 14 1,110 | 29 871 | 13 858 | 29 1,310 | 12 795 | 28 1,160 | 12 1,660 |
| 29 1,060 | 15 1,100 | 30 652 | 14 801 | 30 1,200 | 13 625 | 29 1,020 | 13 1,640 |
| 30 1,070 | 16 1,120 | May | 15 1,010 | 31 1,090 | 14 866 | 30 987 | 14 1,590 |
| 31 1,040 | 17 1,100 | 1 913 | 16 705 | August | 15 891 | 31 1,030 | 15 1,480 |
| February | 18 1,150 | 2 893 | 17 858 | 1 873 | 16 670 | November | 16 1,410 |
| 1 1,030 | 19 1,130 | 3 894 | 18 753 | 2 844 | 17 702 | 1 1,040 | 17 1,440 |
| 2 1,040 | 20 1,110 | 4 925 | 19 843 | 3 813 | 18 782 | 2 1,130 | 18 1,350 |
| 3 1,050 | 21 1,170 | 5 990 | 20 834 | 4 804 | 19 788 | 3 1,090 | 19 1,360 |
| 4 1,080 | 22 1,160 | 6 897 | 21 922 | 5 877 | 20 736 | 4 947 | 20 1,420 |
| 5 1,060 | 23 1,180 | 7 900 | 22 682 | 6 920 | 21 761 | 5 1,110 | 21 1,380 |
| 6 1,110 | 24 1,110 | 8 901 | 23 731 | 7 870 | 22 799 | 6 1,040 | 22 1,390 |
| 7 1,060 | 25 1,140 | 9 923 | 24 840 | 8 863 | 23 816 | 7 1,000 | 23 1,310 |
| 8 1,080 | 26 1,080 | 10 929 | 25 1,180 | 9 857 | 24 945 | 8 986 | 24 1,380 |
| 9 1,090 | 27 1,070 | 11 972 | 26 819 | 10 816 | 25 980 | 9 1,030 | 25 1,400 |
| 10 1,080 | 28 1,040 | 12 941 | 27 799 | 11 818 | 26 980 | 10 1,050 | 26 1,410 |
| 11 1,070 | 29 1,050 | 13 946 | 28 897 | 12 816 | 27 903 | 11 1,030 | 27 1,400 |
| 12 1,080 | 30 1,020 | 14 935 | 29 833 | 13 768 | 28 989 | 12 1,070 | 28 1,420 |
| 13 1,080 | 31 1,010 | 15 953 | 30 790 | 14 810 | 29 1,220 | 13 1,070 | 29 1,390 |
| 14 1,090 | April | 16 959 | July | 15 852 | 30 1,150 | 14 1,060 | 30 1,390 |
| 15 1,070 | 1 1,040 | 17 848 | 1 839 | 16 787 | 15 1,210 | 31 1,310 | |

Rio Grande at San Antonio Crossing near Villa Guerrero, Coahuila

| January | February | April | May | July | August | October | November |
|----------|----------|----------|--------|----------|-----------|----------|----------|
| 4 1,090 | 21 1,130 | 5 1,120 | 24 986 | 5 1,020 | 23 896 | 4 1,100 | 15 1,040 |
| 11 1,070 | March | 12 1,010 | 31 738 | 12 1,050 | 30 884 | 11 927 | 21 1,180 |
| 18 1,100 | 1 1,100 | 19 1,110 | June | 19 888 | September | 18 978 | 29 1,690 |
| 25 1,180 | 8 1,170 | 26 1,050 | 7 800 | 26 881 | 6 864 | 19 746 | December |
| February | 15 1,140 | May | 14 744 | August | 13 720 | 25 871 | 6 1,850 |
| 1 1,100 | 22 1,200 | 3 810 | 21 725 | 2 1,140 | 20 732 | 31 1,090 | 13 1,590 |
| 8 1,100 | 29 1,200 | 10 952 | 29 696 | 9 915 | 27 905 | November | 20 1,410 |
| 15 1,130 | 17 1,030 | 17 1,030 | 16 901 | 16 901 | 8 1,060 | 27 1,330 | |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

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Rio Grande at Laredo, Texas

| January | February | April | May | July | August | October | November |
|----------|-----------------|--------------|----------------|----------------|-------------------|------------------|----------|
| 1 939 | 16 1,050 | 2 1,170 | 18 995 | 2 811 | 17 590 | 1 898 | 16 992 |
| 2 979 | 17 1,060 | 3 1,170 | 19 1,000 | 3 631 | 18 804 | 2 947 | 17 1,000 |
| 3 1,020 | 18 1,050 | 4 1,170 | 20 1,020 | 4 700 | 19 725 | 3 1,060 | 18 1,010 |
| 4 958 | 19 1,060 | 5 1,150 | 21 1,030 | 5 734 | 20 857 | 4 1,090 | 19 1,030 |
| 5 987 | 20 1,070 | 6 1,160 | 22 1,040 | 6 734 | 21 849 | 5 873 | 20 1,040 |
| 6 995 | 21 1,070 | 7 1,140 | 23 1,040 | 7 785 | 22 869 | 6 1,300 | 21 1,070 |
| 7 957 | 22 1,080 | 8 1,110 | 24 1,040 | 8 818 | 23 725 | 7 1,060 | 22 1,080 |
| 8 983 | 23 1,070 | 9 1,100 | 25 1,030 | 9 855 | 24 755 | 8 957 | 23 1,100 |
| 9 1,030 | 24 1,060 | 10 1,100 | 26 1,010 | 10 870 | 25 881 | 9 897 | 24 1,110 |
| 10 1,040 | 25 1,080 | 11 1,100 | 27 993 | 11 979 | 26 910 | 10 811 | 25 1,130 |
| 11 1,020 | 26 1,100 | 12 1,030 | 28 1,070 | 12 1,080 | 27 915 | 11 837 | 26 1,200 |
| 12 1,030 | 27 1,090 | 13 1,050 | 29 1,050 | 13 1,040 | 28 968 | 12 890 | 27 1,380 |
| 13 1,040 | 28 1,100 | 14 1,020 | 30 1,010 | 14 1,050 | 29 843 | 13 909 | 28 1,510 |
| 14 1,050 | March 15, 1,010 | 31 957 | 15 1,000 | 30 885 | 14 898 | 15 892 | 29 1,110 |
| 15 1,050 | 1 1,100 | 16 986 | June 16, 1,010 | 31 911 | 15 832 | 30 777 | |
| 16 1,040 | 2 1,090 | 17 917 | 1 941 | 17 1,000 | September 16, 916 | | December |
| 17 1,020 | 3 1,080 | 18 988 | 2 824 | 18 965 | 1 908 | 17 794 | 1 1,200 |
| 18 1,030 | 4 1,080 | 19 1,000 | 3 605 | 19 945 | 2 899 | 18 915 | 2 1,460 |
| 19 1,050 | 5 1,090 | 20 1,050 | 4 670 | 20 912 | 3 885 | 19 1,060 | 3 1,620 |
| 20 1,030 | 6 1,090 | 21 1,110 | 5 721 | 21 868 | 4 887 | 20 650 | 4 1,670 |
| 21 1,060 | 7 1,090 | 22 1,150 | 6 744 | 22 926 | 5 892 | 21 631 | 5 1,730 |
| 22 1,020 | 8 1,090 | 23 550 | 7 766 | 23 937 | 6 896 | 22 492 | 6 1,790 |
| 23 1,050 | 9 1,080 | 24 804 | 8 790 | 24 832 | 7 903 | 23 415 | 7 1,820 |
| 24 1,050 | 10 1,090 | 25 877 | 9 820 | 25 819 | 8 734 | 24 445 | 8 1,870 |
| 25 1,050 | 11 1,080 | 26 664 | 10 796 | 26 643 | 9 907 | 25 527 | 9 1,860 |
| 26 1,060 | 12 1,080 | 27 781 | 11 760 | 27 852 | 10 1,050 | 26 545 | 10 1,820 |
| 27 967 | 13 1,070 | 28 1,040 | 12 661 | 28 997 | 11 664 | 27 561 | 11 1,780 |
| 28 978 | 14 1,070 | 29 1,020 | 13 818 | 29 941 | 12 809 | 28 873 | 12 1,750 |
| 29 1,030 | 15 1,080 | 30 842 | 14 831 | 30 817 | 13 724 | 29 920 | 13 1,710 |
| 30 1,030 | 16 1,110 | May 15, 856 | 31 755 | 14 630 | 30 915 | 14 1,700 | |
| 31 1,050 | 17 1,110 | 1 500 | 16 869 | August 15, 635 | 31 947 | 15 1,640 | |
| February | 18 1,100 | 2 520 | 17 739 | 1 754 | 16 657 | November 16, 947 | 16 1,570 |
| 1 986 | 19 1,100 | 3 619 | 18 727 | 2 739 | 17 747 | 1 1,040 | 17 1,550 |
| 2 1,000 | 20 1,090 | 4 704 | 19 812 | 3 843 | 18 697 | 2 1,090 | 18 1,560 |
| 3 990 | 21 1,110 | 5 775 | 20 891 | 4 1,040 | 19 701 | 3 1,090 | 19 1,570 |
| 4 994 | 22 1,120 | 6 861 | 21 784 | 5 1,170 | 20 804 | 4 1,010 | 20 1,520 |
| 5 1,000 | 23 1,100 | 7 897 | 22 694 | 6 1,090 | 21 827 | 5 987 | 21 1,520 |
| 6 1,050 | 24 1,110 | 8 877 | 23 848 | 7 954 | 22 755 | 6 920 | 22 1,430 |
| 7 1,040 | 25 1,120 | 9 819 | 24 855 | 8 871 | 23 700 | 7 722 | 23 1,380 |
| 8 1,010 | 26 1,120 | 10 880 | 25 839 | 9 811 | 24 737 | 8 974 | 24 1,370 |
| 9 1,060 | 27 1,130 | 11 926 | 26 818 | 10 838 | 25 774 | 9 1,020 | 25 1,360 |
| 10 1,010 | 28 1,150 | 12 933 | 27 770 | 11 799 | 26 747 | 10 991 | 26 1,370 |
| 11 1,050 | 29 1,150 | 13 924 | 28 802 | 12 826 | 27 743 | 11 985 | 27 1,360 |
| 12 1,060 | 30 1,170 | 14 928 | 29 720 | 13 868 | 28 572 | 12 1,030 | 28 1,400 |
| 13 1,060 | 31 1,180 | 15 961 | 30 746 | 14 894 | 29 546 | 13 1,010 | 29 1,340 |
| 14 1,070 | April 16, 999 | July 15, 885 | 16 809 | 14 742 | 14 973 | 30 1,310 | |
| 15 1,060 | 1 1,180 | 17 1,010 | 1 830 | 16 775 | 15 985 | 31 1,280 | |

Rio Salado at Las Tortillas, Tamaulipas

| January | April | June | June | September | September | September | October | November |
|----------|-------------|----------|--------------|-----------|-----------|-----------|------------------|----------|
| 3 5,440 | 30 1,410 | 10 2,070 | 15 2,240 | 19 856 | 28 643 | 1 687 | 1 3,330 | |
| 15 5,650 | May 11, 940 | 21 2,390 | 20 548 | 29 619 | 5 843 | 15 5,450 | | |
| February | 2 1,610 | 11 2,080 | September 24 | 877 29 | 621 8 | 1,080 | December 1 3,530 | |
| 2 4,770 | 7 1,830 | 11 2,580 | 1 2,460 | 26 1,100 | 30 440 | 15 1,820 | 1 3,530 | |
| April | 10 2,530 | 11 2,590 | 14 1,120 | 27 841 | 30 426 | 22 2,620 | 15 3,000 | |
| 26 2,010 | | 12 1,290 | 17 948 | 27 809 | | 29 3,000 | | |
| 27 1,440 | | 13 1,420 | 19 845 | 28 642 | | | | |

**ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
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Rio Grande at Falcon Dam—U.S. Tailrace

| January | February | April | May | June | August | September | November | |
|----------|----------|--------|--------|--------|-----------|-----------|----------|--|
| 1 815 | 12 834 | 2 850 | 14 881 | 24 898 | 3 920 | 18 935 | 5 916 | |
| 3 815 | 15 832 | 5 855 | 17 877 | 25 898 | 6 925 | 21 935 | 13 917 | |
| 5 815 | 16 846 | 6 855 | 18 881 | 27 897 | 8 924 | 24 935 | 19 921 | |
| 8 817 | 19 838 | 9 853 | 21 883 | July | | 10 929 | 26 941 | |
| 11 817 | 21 841 | 11 855 | 23 885 | 3 911 | 13 927 | October | | |
| 15 819 | 23 846 | 16 857 | 25 884 | 6 914 | 15 942 | 1 934 | 26 916 | |
| 17 821 | 26 848 | 18 857 | 28 888 | 9 916 | 17 925 | 3 939 | 28 917 | |
| 18 822 | 28 836 | 20 871 | 31 895 | 11 919 | 21 928 | 5 912 | 30 915 | |
| 22 821 | March | | 23 866 | June | | 8 896 | December | |
| 25 824 | 2 846 | 26 866 | 1 887 | 16 921 | 27 930 | 10 893 | 5 917 | |
| 26 823 | 8 868 | 27 866 | 4 880 | 18 921 | 29 927 | 15 898 | 10 917 | |
| 29 823 | 9 848 | 30 869 | 6 880 | 20 922 | 31 932 | 17 897 | 14 919 | |
| 31 825 | 12 855 | May | | 8 883 | September | | 19 896 | |
| February | | 15 844 | 2 860 | 11 885 | 25 925 | 3 933 | 22 922 | |
| 2 824 | 19 850 | 4 863 | 13 889 | 27 921 | 4 934 | 25 908 | 19 920 | |
| 5 827 | 22 849 | 7 866 | 15 887 | 30 922 | 7 934 | 25 903 | | |
| 7 826 | 26 853 | 9 873 | 18 888 | August | | 14 937 | 29 908 | |
| 8 826 | 30 851 | 11 876 | 20 902 | 1 919 | 17 936 | 31 906 | | |

Rancherías Drain in Mexico, 69.3 River Miles above Anzaldúa Dam

| January | February | April | May | July | August | October | November | |
|----------|----------|----------|----------|----------|----------|-----------|-----------|--|
| 4 8,260 | 22 6,330 | 5 7,490 | 24 4,700 | 5 7,710 | 23 9,560 | 11 9,620 | 28 10,240 | |
| 11 8,190 | March | | 12 8,640 | 31 4,510 | 12 8,080 | 18 9,900 | December | |
| 22 7,940 | 1 7,010 | 18 7,960 | June | | 19 9,200 | 25 9,900 | 6 10,320 | |
| 25 8,270 | 8 7,360 | 26 6,880 | 7 5,570 | 26 9,380 | 6 9,590 | November | | |
| February | | 15 6,550 | May | | 14 7,110 | 13 2,580 | 1 10,040 | |
| 2 7,890 | 22 7,420 | 3 6,780 | 21 7,320 | 2 9,470 | 20 948 | 8 10,040 | 20 10,210 | |
| 8 5,830 | 29 7,470 | 10 5,980 | 28 6,150 | 9 9,470 | October | | 14 10,040 | |
| 15 5,610 | | 19 4,260 | | 16 9,470 | 4 4,460 | 22 10,140 | | |

Río San Juan at Camargo, Tamaulipas

| January | February | April | May | July | August | October | November | |
|----------|----------|----------|----------|----------|----------|-----------|----------|--|
| 4 3,060 | 22 1,690 | 5 3,300 | 24 1,550 | 5 2,320 | 23 1,110 | 11 2,010 | 28 3,120 | |
| 11 2,080 | March | | 12 3,610 | 31 1,610 | 12 1,330 | 30 1,470 | December | |
| 22 1,630 | 1 1,840 | 18 1,670 | June | | 19 3,960 | September | | |
| 25 1,760 | 8 1,660 | 26 4,130 | 7 1,720 | 26 1,920 | 6 2,010 | November | | |
| February | | 15 3,050 | May | | 14 1,790 | 13 654 | 1 2,120 | |
| 2 1,720 | 22 2,550 | 3 4,190 | 21 1,780 | 2 1,980 | 20 2,380 | 8 2,350 | 20 2,080 | |
| 8 1,640 | 29 3,080 | 10 3,870 | 28 1,420 | 9 1,450 | October | | 14 1,910 | |
| 15 1,700 | | 19 1,610 | | 16 1,760 | 4 1,140 | 22 2,820 | | |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date ECx10 ⁶ @25°C |
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Rio Grande at Fort Ringgold, Rio Grande City, Texas

| January | February | April | May | July | August | October | November |
|----------|----------|--------|----------|----------|-----------|----------|----------|
| 2 823 | 19 855 | 6 886 | 26 895 | 6 1,350 | 22 1,300 | 5 936 | 20 993 |
| 3 848 | 21 865 | 9 849 | 29 897 | 9 1,370 | 24 1,030 | 8 1,050 | 21 977 |
| 5 832 | 23 864 | 11 903 | 29 896 | 12 1,010 | 27 1,070 | 11 930 | 23 1,110 |
| 8 830 | 26 897 | 13 908 | 31 906 | 12 1,010 | 29 1,010 | 12 910 | 27 1,030 |
| 10 836 | 28 874 | 18 874 | 31 895 | 13 928 | 31 974 | 15 1,020 | 28 1,040 |
| 12 940 | March | 20 878 | June | 16 1,110 | September | 17 941 | 30 1,110 |
| 15 832 | 2 898 | 24 882 | 4 902 | 18 952 | 3 1,080 | 19 1,020 | December |
| 17 830 | 5 1,110 | 25 872 | 7 900 | 20 940 | 5 1,120 | 22 961 | 4 1,060 |
| 22 852 | 7 888 | 27 874 | 7 888 | 23 1,030 | 7 1,040 | 23 921 | 5 944 |
| 24 834 | 9 896 | May | 11 915 | 25 1,130 | 10 713 | 24 1,100 | 7 950 |
| 26 830 | 12 895 | 2 868 | 14 905 | 27 993 | 12 844 | 26 973 | 11 1,010 |
| 29 832 | 14 870 | 4 987 | 15 898 | 30 1,080 | 14 1,230 | 29 1,110 | 13 955 |
| 31 834 | 16 1,550 | 7 887 | 19 906 | August | 17 1,050 | 31 927 | 14 1,060 |
| February | 19 1,400 | 10 930 | 20 901 | 2 950 | 19 894 | November | 17 1,150 |
| 2 834 | 21 1,230 | 11 906 | 22 894 | 6 997 | 21 766 | 2 1,110 | 17 988 |
| 5 829 | 23 1,400 | 15 906 | 26 921 | 9 940 | 24 851 | 5 968 | 18 929 |
| 7 836 | 28 1,480 | 16 901 | 27 955 | 10 967 | 26 1,040 | 7 966 | 19 948 |
| 8 832 | 30 1,510 | 18 891 | 28 1,070 | 13 1,010 | October | 12 1,100 | 26 1,180 |
| 12 838 | April | 22 892 | July | 15 1,010 | 17 970 | 1 659 | 14 1,170 |
| 14 857 | 2 930 | 24 892 | 2 1,330 | 17 970 | 1 659 | 14 1,170 | 31 1,500 |
| 16 859 | 4 876 | 25 896 | 4 1,630 | 20 1,110 | 3 820 | 15 998 | |

Puertecitos Drain in Mexico, 46.8 River Miles above Anzaldúa Dam

| January | February | April | May | July | August | October | November |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 4 6,470 | 22 6,180 | 5 6,350 | 24 5,050 | 5 6,100 | 23 6,560 | 11 6,850 | 22 6,580 |
| 11 6,440 | March | 12 6,430 | 31 5,100 | 12 6,290 | 30 6,520 | 18 7,300 | 28 6,540 |
| 22 6,440 | 1 5,480 | 18 6,350 | June | 19 6,290 | September | 25 7,040 | December |
| 25 6,330 | 8 6,220 | 26 5,940 | 7 4,860 | 26 6,410 | 6 6,580 | November | 6 6,770 |
| February | 15 6,460 | May | 14 4,750 | August | 13 4,010 | 1 6,950 | 13 6,590 |
| 2 6,370 | 22 6,500 | 3 6,160 | 21 5,730 | 2 6,520 | 20 6,370 | 8 6,670 | 20 6,510 |
| 8 5,400 | 29 6,420 | 10 5,740 | 28 5,830 | 9 6,390 | October | 14 6,720 | 27 6,460 |
| 15 5,430 | | 19 5,710 | 16 6,520 | 4 6,540 | | | |

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

| January | February | April | May | July | August | October | December |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 4 5,740 | 22 4,930 | 5 5,680 | 24 5,360 | 12 5,490 | 30 5,260 | 18 5,180 | 6 5,060 |
| 11 5,610 | March | 12 5,870 | 31 5,480 | 19 5,430 | September | 25 5,150 | 13 5,330 |
| 22 5,740 | 1 5,660 | 18 5,740 | June | 26 5,400 | 6 5,160 | November | 20 5,160 |
| 25 5,640 | 8 5,730 | 26 5,710 | 7 5,630 | August | 13 5,220 | 1 5,260 | 27 5,420 |
| February | 15 5,930 | May | 14 5,300 | 2 5,370 | 20 5,160 | 8 5,230 | |
| 4 5,610 | 22 5,830 | 3 5,390 | 21 5,480 | 9 5,400 | October | 14 5,050 | |
| 8 5,610 | 29 5,770 | 10 5,630 | 28 5,510 | 16 5,310 | 4 5,100 | 22 5,050 | |
| 15 5,320 | | 19 3,730 | 23 5,200 | 11 5,050 | 28 5,050 | | |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date ECx10 ⁶ @25°C |
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Huizache Drain in Mexico, 41.8 River Miles above Anzaldúa Dam

| January | February | April | May | July | August | October | December |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 4 5,590 | 22 5,700 | 5 5,940 | 24 6,200 | 5 6,100 | 23 5,280 | 18 4,670 | 6 4,190 |
| 11 5,500 | March | 12 5,970 | 31 6,270 | 12 6,060 | 30 5,150 | 25 4,480 | 13 4,110 |
| 22 5,350 | 1 5,940 | 18 5,730 | June | 19 6,100 | September | November | 20 4,180 |
| 25 5,130 | 8 5,970 | 26 5,830 | 7 6,430 | 26 5,880 | 6 4,960 | 1 4,340 | 27 4,450 |
| February | 15 5,900 | May | 14 6,270 | August | 13 4,860 | 8 4,340 | |
| 2 5,160 | 22 6,040 | 3 5,490 | 21 5,870 | 2 5,840 | 20 5,110 | 14 4,210 | |
| 8 5,400 | 29 5,970 | 10 5,320 | 28 6,010 | 9 5,550 | | 22 4,230 | |
| 15 5,370 | | 19 5,980 | | 16 5,200 | | 28 4,250 | |

Rio Grande near Los Ebanos, Texas

| January | February | April | May | July | August | October | November |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| 2 860 | 20 887 | 3 919 | 22 906 | 3 2,070 | 21 1,350 | 9 1,110 | 27 1,240 |
| 5 882 | 23 931 | 6 1,140 | 25 905 | 6 2,090 | 24 1,640 | 12 932 | 30 1,190 |
| 9 875 | 27 929 | 10 837 | 29 951 | 10 1,910 | 28 1,200 | 16 1,050 | December |
| 12 845 | March | 13 911 | June | 13 1,050 | 31 1,110 | 19 944 | 4 1,600 |
| 16 851 | 2 924 | 17 907 | 1 1,010 | 17 1,000 | September | 23 998 | 7 1,020 |
| 19 858 | 6 1,210 | 20 892 | 5 1,010 | 20 1,010 | 4 1,260 | 26 1,070 | 11 1,230 |
| 23 883 | 9 1,030 | 24 895 | 8 917 | 24 1,110 | 7 1,190 | 30 1,320 | 14 1,060 |
| 26 904 | 13 964 | 27 915 | 12 954 | 27 1,290 | 11 720 | November | 18 1,070 |
| 30 838 | 16 1,590 | May | 15 925 | 31 1,170 | 14 1,080 | 2 1,080 | 21 952 |
| February | 20 1,740 | 1 898 | 19 934 | August | 21 687 | 6 1,040 | 25 1,340 |
| 2 841 | 23 1,680 | 4 947 | 22 938 | 3 1,130 | 25 1,230 | 9 1,170 | 28 1,280 |
| 6 851 | 24 1,820 | 8 952 | 26 963 | 7 1,080 | 28 454 | 13 1,240 | |
| 9 848 | 27 2,090 | 11 1,070 | 29 1,240 | 8 1,040 | October | 16 1,250 | |
| 13 854 | 30 2,240 | 15 980 | | 14 1,060 | 2 824 | 20 1,170 | |
| 16 867 | 31 2,290 | 18 921 | | 17 2,110 | 5 831 | 23 1,080 | |

Rio Grande above Anzaldúa Dam, South of Abram, Texas

| January | February | March | May | June | July | September | November |
|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2 902 | 8 839 | 26B * 2,070 | 2 891 | 5 929 | 19 1,070 | 17A 1,430 | 9 1,050 |
| 3A 864 | 9 841 | 28 1,890 | 3 887 | 5 929 | 20 1,050 | 17B * 1,330 | 13 1,240 |
| 3B * 1,140 | 12A 847 | 29 1,810 | 4 921 | 6A 940 | 23A 1,090 | 19 1,240 | 14 1,200 |
| 4 * 871 | 12B * 906 | 30 2,000 | 7A 1,010 | 6B * 961 | 23B 1,100 | 21 914 | 15 * 1,430 |
| 5 906 | 13 848 | 31 2,140 | 7B * 1,090 | 7 910 | 25 1,170 | 24A 619 | 16 1,290 |
| 8A 969 | 14 855 | April | 8 963 | 8 936 | 27 1,250 | 24B * 724 | 19A 1,260 |
| 8B * 904 | 15 869 | 1 2,270 | 9 970 | 11A 944 | 30A 1,160 | 26 778 | 19B * 1,300 |
| 9 902 | 16 868 | 2A 2,210 | 10 968 | 11B * 928 | 30B * 1,200 | 28A 640 | 21 1,110 |
| 10 897 | 19A 874 | 2B * 1,090 | 11 1,110 | 12 930 | August | 28B 624 | 23 1,070 |
| 11 880 | 19B * 928 | 4 923 | 14A 998 | 13 930 | 1 1,250 | October | 26 1,160 |
| 12A 877 | 26A 963 | 5 915 | 14B * 1,020 | 14 937 | 3 1,180 | 1A 532 | 27 * 1,180 |
| 12B * 856 | 26B * 948 | 6 972 | 15 968 | 16 917 | 6A 1,230 | 1B * 534 | 28 1,250 |
| 15A 903 | 27 967 | 9A 868 | 16 1,020 | 18 919 | 6B * 1,230 | 3 602 | 30 1,140 |
| 15B * 889 | 28 1,010 | 9B * | 17 930 | 20 937 | 8 1,190 | 5 816 | December |
| 16 882 | March | 10 835 | 18 913 | 21 927 | 10 1,080 | 8A 959 | 3 1,240 |
| 17 862 | 1 964 | 11 719 | 21A 914 | 22 820 | 13A 1,160 | 8B * 1,000 | 4 * 1,270 |
| 18A 870 | 2 935 | 12 1,030 | 21B * 931 | 25 938 | 13B * 1,170 | 10 1,040 | 5 1,320 |
| 18B * 853 | 5A 1,080 | 13 992 | 22 909 | 26 1,030 | 17 1,230 | 12 1,010 | 7 1,130 |
| 19 886 | 5B * 1,420 | 16A 1,070 | 23A 904 | 27 962 | 20A 1,130 | 15A 960 | 10 1,360 |
| 22A 886 | 6 1,420 | 16B * 1,080 | 23B 917 | 28 973 | 20B * 1,220 | 15B * 1,020 | 11 * 1,330 |
| 22B * 884 | 7 1,200 | 17 948 | 24A 901 | 29 1,010 | 22 1,150 | 17 1,100 | 12 1,120 |
| 23 888 | 8 989 | 18 934 | 24B 904 | July | 24 1,690 | 19 950 | 14 1,110 |
| 24 912 | 9 1,000 | 19 973 | 25A 905 | 2A 1,130 | 27A 1,190 | 22A 1,100 | 17 1,070 |
| 25 897 | 12A 1,160 | 20 915 | 25B 908 | 2B * 1,240 | 27B * 1,400 | 22B * 1,100 | 18 * 1,130 |
| 26 929 | 12B * 1,260 | 23A 910 | 28A 914 | 6 1,400 | 29 1,150 | 24 1,060 | 19 1,070 |
| 29A 861 | 13 1,000 | 23B * 919 | 28B * 926 | 9A 1,980 | 31 975 | 26 1,140 | 21 982 |
| 29B * 855 | 14 972 | 24 904 | 29 914 | 9B * 2,000 | September | 29A 998 | 26 1,040 |
| 30 854 | 16 1,080 | 25 892 | 31A 1,000 | 11 1,770 | 4 1,190 | 29B * 971 | 27 * 1,060 |
| 31 855 | 19A 1,140 | 26 903 | 31B 1,000 | 12 2,030 | 5 1,280 | 31 1,220 | 28 985 |
| February | 19B * 1,190 | 27 931 | June | 13 1,520 | 7 1,300 | November | 31 1,260 |
| 2 972 | 21 1,200 | 30A 929 | 1A 919 | 16 1,170 | 10A 1,170 | 2 1,100 | |
| 5 * 847 | 23 1,910 | 30B * 946 | 1B 922 | 17 1,230 | 10B * 1,150 | 5A 1,220 | |
| 6 857 | 24 2,060 | May | 4A 904 | 18A 1,230 | 12 717 | 5B * 1,120 | |
| 7 850 | 26A 1,860 | 1 912 | 4B 913 | 18B * 1,340 | 14 515 | 7 1,070 | |

* Samples collected 300 feet above Morillo Drain confluence

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date ECx10 ⁶ @25°C |
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Morillo Drain in Mexico, 8.4 River Miles above Anzaldías Dam

| January | February | April | May | July | August | October | November |
|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|-----------|
| 3 18,160 | 19 13,490 | 5 16,850 | 21 11,220 | 5 17,120 | 16 12,990 | 8 16,130 | 15 18,310 |
| 4 17,840 | 26 13,490 | 9 17,140 | 24 11,740 | 9 16,830 | 20 16,390 | 11 18,180 | 19 18,650 |
| 8 18,160 | | March 12 17,140 | 31 11,880 | 12 16,280 | 23 17,860 | 15 18,180 | 22 17,980 |
| 12 13,210 | 1 14,460 | 16 17,140 | June | 18 18,390 | 27 16,390 | 18 18,520 | 27 18,310 |
| 15 16,670 | 5 14,460 | 19 15,320 | 6 11,520 | 23 18,050 | 29 18,180 | 22 18,520 | 28 18,310 |
| 18 12,870 | 8 15,810 | 23 15,320 | 7 11,930 | 26 19,100 | September | 25 18,520 | December |
| 22 13,740 | 12 16,060 | 26 11,620 | 11 11,010 | 30 19,470 | 4 18,360 | 29 18,180 | 4 18,050 |
| 25 14,320 | 19 16,060 | 30 12,180 | 16 13,730 | August | 6 18,040 | November | 5 18,050 |
| 29 13,740 | 26 16,870 | May | 26 12,220 | 2 19,230 | 10 18,360 | 1 18,650 | 11 18,380 |
| February | 30 17,150 | 3 10,740 | 28 6,630 | 6 19,230 | 13 5,230 | 5 17,980 | 12 18,050 |
| 5 11,900 | April | 7 12,170 | July | 9 19,610 | 17 16,560 | 8 17,980 | 18 15,090 |
| 12 12,190 | 2 17,140 | 14 12,020 | 2 15,760 | 13 17,860 | 24 8,210 | 14 18,310 | 19 18,720 |

Rio Grande below Anzaldías Dam

| January | March | April | June | August | September | October | November |
|----------|-----------|----------|-----------|-----------|-----------|-----------|----------|
| 1 1,050 | 2 1,250 | 20 1,120 | 4 1,100 | 1 1,830 | 7B 1,940 | 8B 1,020 | 14 1,430 |
| 3 1,050 | 5A 1,400 | 23 1,090 | 6 1,180 | 3 1,990 | 10A 1,660 | 10A 1,170 | 16 1,620 |
| 5 1,060 | 5B 1,630 | 25 962 | 8 1,060 | 6 1,740 | 10B 1,570 | 10B 1,600 | 19 2,100 |
| 8 1,040 | 7 2,070 | 27 1,060 | 11 11,090 | 8 2,080 | 12A 1,480 | 12A 1,310 | 21 1,580 |
| 10 1,020 | 9 1,520 | 30 995 | 13 1,090 | 10 1,520 | 12B 1,150 | 12B 1,490 | 23 1,440 |
| 12 943 | 12 670 | May | 15 1,100 | 13 1,540 | 14A 947 | 15A 1,220 | 26 1,250 |
| 15 1,050 | 14 1,510 | 2 983 | 18 1,030 | 15 1,540 | 14B 951 | 15B 1,110 | 28 1,260 |
| 17 908 | 16 1,420 | 4 1,130 | 20 1,130 | 17A 2,670 | 17A 882 | 17 1,290 | 30 1,510 |
| 19 956 | 19 1,580 | 7 1,490 | 22 1,110 | 17B 1,690 | 17B 1,600 | 19A 1,200 | December |
| 22 963 | 21 1,690 | 9 1,290 | 25 1,160 | 20 1,530 | 19A 1,910 | 19B 1,160 | 3 1,530 |
| 24 1,140 | 23 2,270 | 11 1,610 | 27 1,420 | 21 1,560 | 19B 1,300 | 22A 1,200 | 5 2,330 |
| 26 1,200 | 2A 2,660 | 14 1,420 | 29 1,560 | 22A 1,430 | 21A 1,660 | 22B 1,460 | 7 1,800 |
| 29 969 | 26B 2,820 | 16 1,660 | July | 22B 1,510 | 21B 1,350 | 24A 1,260 | 10 1,270 |
| 31 958 | 28 3,100 | 18 1,110 | 2 1,670 | 24A 2,140 | 24A 1,140 | 24B 1,580 | 12 1,190 |
| February | 30 4,570 | 21 1,090 | 4 2,000 | 24B 2,350 | 24B 1,270 | 26A 1,310 | 14 1,550 |
| 2 920 | April | 22 1,020 | 6A 3,830 | 27A 2,030 | 26A 972 | 26B 1,580 | 17 1,280 |
| 5 991 | 2A 3,330 | 23 987 | 6B 3,420 | 27B 2,040 | 26B 911 | 29A 1,550 | 19 1,440 |
| 7 1,050 | 2B 3,480 | 24 1,060 | 9 3,220 | 29A 2,090 | 28A 1,310 | 29B 1,310 | 21 1,150 |
| 9 969 | 2C 3,500 | 25 1,050 | 11 3,400 | 29B 1,710 | 28B 658 | 31A 1,310 | 24 1,170 |
| 12 975 | 4A 1,710 | 26 1,000 | 13 2,960 | 31A 3,400 | October | 31B 1,240 | 26 1,210 |
| 14 1,010 | 4B 3,480 | 27 960 | 16 1,730 | 31B 1,550 | 1A 492 | November | 28 1,140 |
| 16 1,020 | 6 1,200 | 28 1,010 | 18 1,820 | September | 1B 510 | 2 1,550 | 31 1,180 |
| 19 1,060 | 9 1,010 | 29 1,020 | 20 1,540 | 3A 1,330 | 3A 606 | 5 1,290 | |
| 21 1,110 | 11 1,330 | 30 1,020 | 23 1,520 | 3B 1,350 | 3B 946 | 7 1,450 | |
| 23 1,150 | 13 1,380 | 31 1,060 | 25 1,630 | 5A 1,470 | 5A 716 | 9 1,610 | |
| 26 1,300 | 16 1,300 | June | 27 2,850 | 5B 1,700 | 5B 618 | 12 1,560 | |
| 28 1,500 | 18 1,430 | 1 1,070 | 30 1,830 | 7A 2,350 | 8A 978 | | |

Arroyo Colorado, South of Mercedes, Texas

| January | March | April | June | August | September | November | December |
|----------|----------|-----------|------------|----------|-----------|----------|----------|
| 22 5,130 | 16 4,700 | 5 5,730 | 12 4,510 | 10 5,430 | 7 6,110 | 5 5,050 | 3 5,170 |
| February | | May 5,330 | July 5,260 | | 1 5,330 | | |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

| Date | ECx10 ⁶ @25°C |
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Rio Grande at Mercedes, Texas, Pumps

| | January | February | April | May | July | August | October | November |
|----|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 | 1,100 | 16, 1,040 | 2, 3,690 | 18, 1,500 | 2, 1,590 | 17, 1,510 | 1, 1,100 | 16, 1,520 |
| 2 | 1,070 | 17, 1,060 | 3, 2,950 | 19, 1,280 | 3, 1,510 | 18, 1,500 | 2, 549 | 17, 1,730 |
| 3 | 1,070 | 18, 1,080 | 4, 3,830 | 20, 1,130 | 4, 1,510 | 19, 1,670 | 3, 562 | 18, 1,480 |
| 4 | 1,060 | 19, 1,060 | 5, 3,230 | 21, 1,110 | 5, 1,540 | 20, 3,660 | 4, 560 | 19, 1,540 |
| 5 | 1,070 | 20, 1,040 | 6, 2,530 | 22, 1,090 | 6, 1,770 | 21, 1,510 | 5, 635 | 20, 1,650 |
| 6 | 1,100 | 21, 1,060 | 7, 1,670 | 23, 1,090 | 7, 2,150 | 22, 1,460 | 6, 889 | 21, 1,810 |
| 7 | 1,110 | 22, 1,120 | 8, 1,240 | 24, 1,030 | 8, 1,900 | 23, 1,610 | 7, 941 | 22, 1,740 |
| 8 | 1,090 | 23, 1,120 | 9, 1,530 | 25, 1,020 | 9, 2,370 | 24, 1,790 | 8, 990 | 23, 1,780 |
| 9 | 1,030 | 24, 1,140 | 10, 1,690 | 26, 1,090 | 10, 2,610 | 25, 1,720 | 9, 860 | 24, 1,540 |
| 10 | 1,080 | 25, 1,210 | 11, 1,250 | 27, 1,010 | 11, 3,350 | 26, 1,480 | 10, 886 | 25, 1,530 |
| 11 | 1,070 | 26, 1,290 | 12, 998 | 28, 1,000 | 12, 3,210 | 27, 1,630 | 11, 1,050 | 26, 1,520 |
| 12 | 1,080 | 27, 1,200 | 13, 1,290 | 29, 1,000 | 13, 2,490 | 28, 2,160 | 12, 1,060 | 27, 1,550 |
| 13 | 1,110 | 28, 1,180 | 14, 1,310 | 30, 1,020 | 14, 3,110 | 29, 2,040 | 13, 1,370 | 28, 1,460 |
| 14 | 971 | March | 15, 1,330 | 31, 1,020 | 15, 4,080 | 30, 2,180 | 14, 1,310 | 29, 1,510 |
| 15 | 1,060 | 1, 1,300 | 16, 1,360 | June | 16, 2,010 | 31, 2,100 | 15, 1,350 | 30, 1,330 |
| 16 | 1,080 | 2, 1,440 | 17, 1,220 | 1, 1,020 | 17, 1,560 | September | 16, 1,520 | December |
| 17 | 1,070 | 3, 1,410 | 18, 1,350 | 2, 1,090 | 18, 1,720 | 1, 1,990 | 17, 1,270 | 1, 1,280 |
| 18 | 956 | 4, 1,400 | 19, 1,540 | 3, 990 | 19, 1,730 | 2, 2,030 | 18, 1,170 | 2, 1,320 |
| 19 | 909 | 5, 1,300 | 20, 1,410 | 4, 1,030 | 20, 2,110 | 3, 1,800 | 19, 1,280 | 3, 1,390 |
| 20 | 901 | 6, 1,150 | 21, 1,300 | 5, 1,010 | 21, 1,650 | 4, 1,650 | 20, 1,300 | 4, 1,520 |
| 21 | 978 | 7, 1,380 | 22, 1,220 | 6, 1,050 | 22, 1,530 | 5, 1,590 | 21, 1,290 | 5, 1,600 |
| 22 | 944 | 8, 1,630 | 23, 1,210 | 7, 1,060 | 23, 1,530 | 6, 1,610 | 22, 1,320 | 6, 1,630 |
| 23 | 918 | 9, 2,370 | 24, 1,100 | 8, 1,070 | 24, 1,590 | 7, 1,450 | 23, 1,190 | 7, 1,430 |
| 24 | 947 | 10, 1,670 | 25, 1,110 | 9, 1,060 | 25, 1,550 | 8, 1,600 | 24, 1,240 | 8, 2,490 |
| 25 | 999 | 11, 1,420 | 26, 1,080 | 10, 972 | 26, 1,590 | 9, 1,720 | 25, 1,160 | 9, 2,370 |
| 26 | 1,100 | 12, 1,460 | 27, 982 | 11, 1,140 | 27, 1,540 | 10, 1,970 | 26, 1,250 | 10, 1,950 |
| 27 | 1,210 | 13, 1,430 | 28, 1,030 | 12, 1,120 | 28, 1,680 | 11, 2,210 | 27, 1,360 | 11, 1,860 |
| 28 | 1,280 | 14, 1,490 | 29, 1,080 | 13, 1,110 | 29, 1,910 | 12, 1,790 | 28, 1,340 | 12, 1,770 |
| 29 | 1,130 | 15, 1,670 | 30, 1,160 | 14, 1,190 | 30, 1,840 | 13, 1,850 | 29, 1,360 | 13, 1,480 |
| 30 | 982 | 16, 1,530 | May | 15, 1,130 | 21, 2,100 | 14, 1,760 | 30, 1,330 | 14, 1,280 |
| 31 | 969 | 17, 1,560 | 1, 1,010 | 16, 1,190 | August | 15, 1,530 | 31, 1,600 | 15, 1,210 |
| | February | 18, 1,450 | 2, 992 | 17, 1,080 | 1, 2,140 | 16, 1,210 | November | 16, 1,290 |
| 1 | 887 | 19, 1,420 | 3, 1,080 | 18, 1,100 | 2, 1,930 | 17, 1,030 | 1, 1,900 | 17, 1,670 |
| 2 | 970 | 20, 1,590 | 4, 1,110 | 19, 1,060 | 3, 1,770 | 18, 994 | 2, 1,230 | 18, 1,520 |
| 3 | 1,010 | 21, 1,590 | 5, 1,030 | 20, 1,100 | 4, 1,830 | 19, 1,060 | 3, 1,320 | 19, 1,590 |
| 4 | 954 | 22, 1,480 | 6, 1,080 | 21, 1,120 | 5, 2,000 | 20, 1,030 | 4, 1,360 | 20, 1,300 |
| 5 | 929 | 23, 1,530 | 7, 1,160 | 22, 1,200 | 6, 2,060 | 21, 1,830 | 5, 1,550 | 21, 1,480 |
| 6 | 986 | 24, 1,920 | 8, 1,340 | 23, 1,050 | 7, 1,890 | 22, 1,900 | 6, 1,490 | 22, 1,400 |
| 7 | 1,010 | 25, 1,690 | 9, 1,480 | 24, 1,230 | 8, 1,710 | 23, 1,370 | 7, 1,390 | 23, 1,250 |
| 8 | 1,050 | 26, 1,790 | 10, 1,460 | 25, 1,000 | 9, 1,780 | 24, 1,440 | 8, 1,340 | 24, 1,110 |
| 9 | 1,030 | 27, 1,700 | 11, 1,420 | 26, 1,030 | 10, 1,850 | 25, 1,310 | 9, 1,340 | 25, 1,100 |
| 10 | 1,050 | 28, 1,980 | 12, 1,360 | 27, 1,090 | 11, 1,670 | 26, 1,080 | 10, 1,460 | 26, 1,100 |
| 11 | 999 | 29, 2,270 | 13, 1,280 | 28, 1,170 | 12, 1,840 | 27, 1,090 | 11, 1,470 | 27, 1,190 |
| 12 | 942 | 30, 3,010 | 14, 1,620 | 29, 1,560 | 13, 1,570 | 28, 1,250 | 12, 1,540 | 28, 1,150 |
| 13 | 1,010 | 31, 3,330 | 15, 1,720 | 30, 1,570 | 14, 1,540 | 29, 1,050 | 13, 1,520 | 29, 1,270 |
| 14 | 1,010 | April | 16, 1,670 | July | 15, 1,510 | 30, 1,230 | 14, 1,490 | 30, 1,210 |
| 15 | 1,010 | 1, 4,260 | 17, 1,480 | 1, 1,590 | 16, 1,510 | 15, 1,420 | 31, 1,300 | |

Rio Grande near San Benito, Texas

| | January | February | April | May | July | August | October | December |
|----|---------|-----------|------------|------------|-----------|-----------|-----------|-----------|
| 2 | 1,070 | 26, 1,220 | 16, 1,350 | 28B, 1,000 | 9, 2,000 | 27, 1,540 | 8, 816 | 3, 1,310 |
| 8 | 1,070 | March | 23, 1,370 | 31, 1,020 | 16, 3,070 | September | 15, 1,500 | 10, 1,970 |
| 15 | 933 | 5, 1,400 | 30, 1,090 | June | 20, 1,750 | 3, 2,090 | 22, 1,430 | 17, 1,340 |
| 22 | 1,010 | 12, 1,430 | May | 4, 978 | 23, 1,550 | 10, 1,590 | 29, 1,340 | 24, 1,170 |
| 29 | 1,160 | 19, 1,380 | 7, 1,100 | 11, 1,020 | 30, 1,770 | 17, 1,260 | November | 31, 1,270 |
| 5 | 928 | April | 14, 1,290 | 18, 1,040 | August | 24, 1,470 | 5, 1,350 | |
| 12 | 1,010 | 2, 4,400 | 21, 1,160 | 25, 968 | 6, 1,770 | October | 12, 1,490 | |
| 19 | 1,040 | 9, 1,310 | 28A, 1,000 | July | 13, 1,560 | 1, 1,120 | 19, 1,480 | |
| | | | 2, 1,730 | 20, 1,570 | 2, 980 | 26, 1,560 | | |

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1962

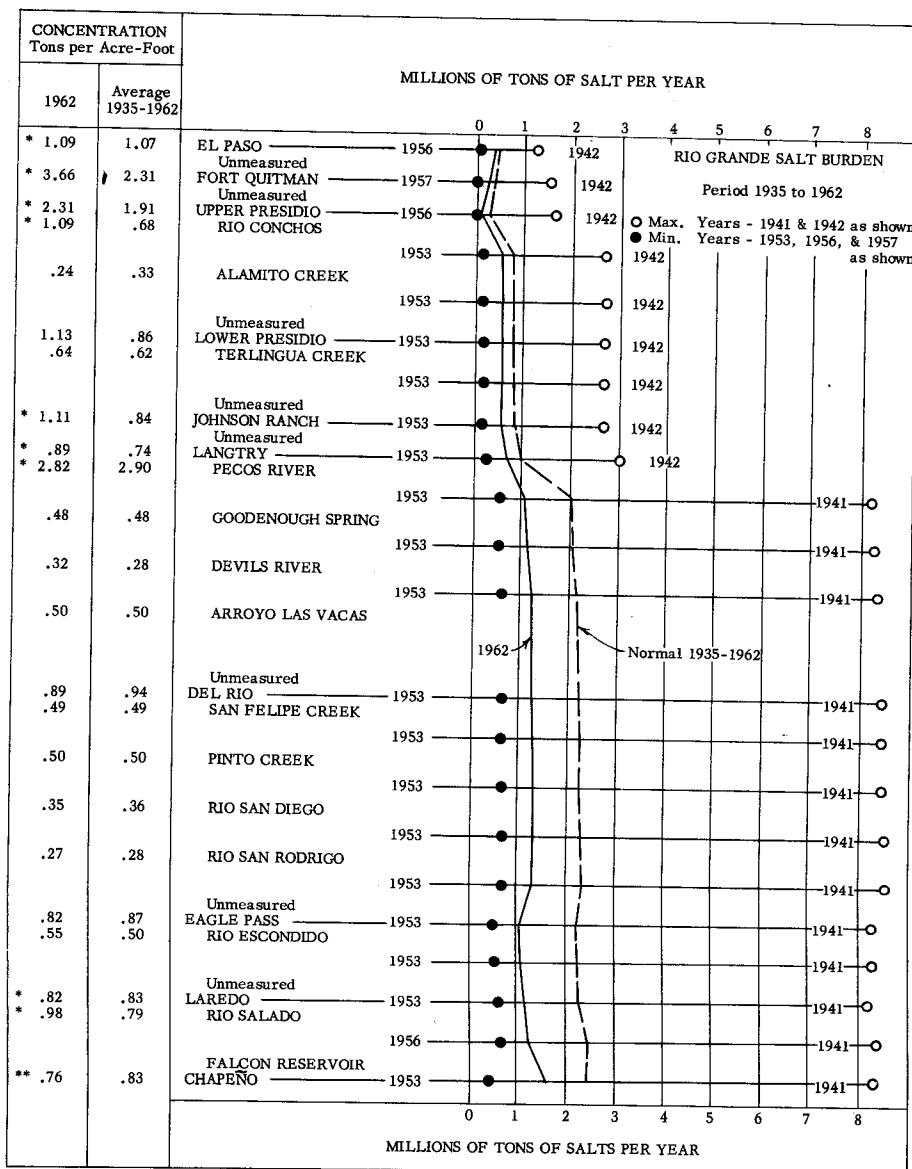
| Date | ECx10 ⁶ @25°C |
|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|
|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|

Rio Grande at Lower Brownsville, Texas

| | | | | | | | |
|----------|----------|----------|----------|----------|-----------|----------|----------|
| January | February | April | May | July | August | October | November |
| 2 1,650 | 19 1,240 | 2B 2,960 | 21 1,680 | 9 1,550 | 31 1,700 | 11 925 | 30 1,830 |
| 4 1,200 | 23 1,360 | 6 2,640 | 24 1,640 | 16 3,110 | September | 15 1,200 | December |
| 8 1,220 | 26 1,240 | 9 2,750 | 31 1,040 | 20 3,860 | 3 2,140 | 19 1,220 | 3 1,620 |
| 12 1,070 | March | 13 1,680 | June | 23 2,220 | 7 2,150 | 22 1,340 | 7 1,700 |
| 15 1,230 | 5 1,350 | 16 1,490 | 4 1,100 | 27 1,670 | 10 2,110 | 26 1,460 | 10 1,650 |
| 19 1,440 | 7 1,500 | 19 1,350 | 8 1,220 | 30 1,710 | 14 1,840 | 29 1,250 | 14 2,200 |
| 22 1,090 | 9 1,780 | 23 1,480 | 11 1,080 | August | 17 1,750 | November | 17 1,910 |
| 26 1,070 | 12 1,620 | 26 1,290 | 15 1,180 | 3 1,680 | 21 1,960 | 2 1,440 | 20 1,500 |
| 29 1,110 | 15 1,500 | 30 1,120 | 18 1,290 | 6 2,160 | 24 1,670 | 5 1,580 | 24 1,510 |
| February | 19 1,800 | May | 22 1,190 | 10 2,000 | 28 1,850 | 9 1,550 | 28 1,140 |
| 2 1,210 | 23 1,420 | 4 1,010 | 25 1,180 | 13 1,860 | October | 12 1,600 | 31 1,240 |
| 5 1,000 | 26 1,600 | 7 1,160 | 29 1,090 | 17 1,780 | 1 1,620 | 16 1,540 | |
| 9 1,240 | 30 1,730 | 11 1,360 | July | 20 1,640 | 3 868 | 19 1,620 | |
| 12 1,220 | April | 14 1,520 | 2 1,460 | 24 1,720 | 5 1,260 | 23 1,640 | |
| 16 1,130 | 2A 2,980 | 18 1,660 | 6 1,660 | 27 3,860 | 8 1,240 | 26 1,630 | |

RIO GRANDE SALT BURDEN

The term "salt", as used herein, means total dissolved solids. The 1962 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 1962 are the weighted means of the values determined for the 28-year period indicated.



* Based on 1962 chemical analyses of samples collected at stations indicated ** Based on 1962 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 International Boundary and Water Commission. The percentages of dissolved oxygen (D. O.) shown below are the percent saturation at the elevation of the sampling station.

| Date 1962 | D. O. Percent Saturation | B. O. D. Parts Per Million | Coliform Organisms per 100 c. c. | Total Bacteria per c. c. (plate count) | Date 1962 | D. O. Percent Saturation | B. O. D. Parts Per Million | Coliform Organisms per 100 c. c. | Total Bacteria per c. c. (plate count) |
|--------------|--------------------------------|----------------------------------|--|--|--------------|--------------------------------|----------------------------------|--|--|
|--------------|--------------------------------|----------------------------------|--|--|--------------|--------------------------------|----------------------------------|--|--|

Franklin Canal at El Paso, Texas, Water Plant

| | | | | | | | | | |
|---------|------|---------|-----------|---------|---------|---------|---------|------------|-----------|
| Jan.* 2 | 139 | 8.5 | 1,600,000 | 125,500 | June 26 | 132 | 6.6 | 480,000 | 116,500 |
| * 9 | 109 | 9.2 | 560,000 | 74,000 | July 3 | 156 | 7.5 | 560,000 | 123,000 |
| * 16 | 112 | 9.5 | 2,200,000 | 115,500 | 10 | 182 | 8.5 | 560,000 | 146,000 |
| * 23 | 131 | 9.0 | 480,000 | 58,000 | 17 | 196 | 9.7 | 420,000 | 70,000 |
| * 30 | 166 | 15.1 | 2,800,000 | 37,500 | 24 | 188 | 9.6 | 370,000 | 100,000 |
| Feb. 6 | 213 | 14.2 | 2,200,000 | 29,000 | Aug. 7 | 156 | 7.5 | 1,000,000 | 146,500 |
| 13 | 202 | 5.6 | 200,000 | 64,000 | 14 | 88.7 | 3.0 | 270,000 | 101,500 |
| 20 | 174 | 11.4 | 1,600,000 | 74,500 | 21 | 101 | 3. | 410,000 | 114,500 |
| 27 | 179 | 13.0 | 1,700,000 | 96,500 | 28 | 119 | 5.5 | 330,000 | 132,500 |
| Mar. 6 | 211 | 14.5 | 2,800,000 | 54,500 | Sept. 4 | 125 | | 2,800,000 | 113,000 |
| 13 | 198 | 13.6 | 560,000 | 42,000 | 11 | 132 | 5.8 | 2,800,000 | 173,500 |
| 20 | 91.7 | 1.7 | 330,000 | 68,000 | 18 | 185 | 9.3 | 14,000,000 | 192,500 |
| 27 | 92.5 | 4.9 | 2,200,000 | 73,000 | 25 | 170 | 8.7 | 330,000 | 5,650 |
| Apr. 3 | 92.5 | 4.9 | 590,000 | 83,000 | Oct. 2 | 187 | 9.3 | 2,800,000 | 145,000 |
| 10 | 98.4 | 4.6 | 560,000 | 75,000 | 9 | 180 | 10.0 | 2,200,000 | 164,500 |
| 17 | 95.6 | 1.9 | 2,200,000 | 117,000 | 16 | 194 | 10.9 | 2,200,000 | 150,050 |
| 24 | 108 | 2.9 | 330,000 | 119,500 | 23 | 203 | 11.3 | 2,800,000 | 199,500 |
| May 1 | 105 | 4.1 | 2,200,000 | 270,500 | 30 | 183 | 10.9 | 2,800,000 | 176,500 |
| 8 | 4.3 | 670,000 | | Nov. 6 | 179 | 10.9 | 480,000 | 55,000 | |
| 15 | 119 | 4.0 | 560,000 | 178,500 | 20 | 180 | 11.0 | 2,200,000 | 120,500 |
| 22 | 117 | 5.2 | 560,000 | 60,000 | 27 | 209 | 13.3 | 14,000,000 | 151,000 |
| 29 | 116 | 5.6 | 470,000 | 65,000 | Dec. 4 | 189 | 12.9 | 410,000 | 40,000 |
| June 5 | 125 | 6.4 | 560,000 | 104,000 | 11 | 152 | 9.9 | 2,200,000 | 73,000 |
| 12 | 135 | 6.6 | 2,200,000 | 197,500 | 18 | 166 | 11.1 | | |
| 19 | 128 | 6.6 | 410,000 | 65,000 | Total | 7,210,4 | 394.2 | 87,670,000 | 5,210,200 |
| | | | | Avg. | | 150 | 8.2 | 1,790,000 | 108,500 |

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

| | | | | | | | | | |
|--------|------|------|----------------|-------------|---------|-------|-------|-----------------|---------------|
| Jan. 2 | 92.5 | 7.2 | 2,200,000,000 | 10,020,000 | June 26 | 116 | 6.6 | 3,400,000,000 | 171,000 |
| 9 | 97.4 | 5.4 | 3,600,000,000 | 5,805,000 | July 3 | 136 | 6.6 | 22,000,000,000 | 1,680,000 |
| 16 | 102 | 5.2 | 24,000,000,000 | 4,630,000 | 10 | 176 | 7.1 | 5,900,000,000 | 1,955,000 |
| 23 | 116 | 7.1 | 2,800,000,000 | 5,620,000 | 17 | 156 | 7.3 | 47,000,000,000 | 1,535,000 |
| 30 | 134 | 7.8 | 3,600,000,000 | 7,310,000 | 24 | 162 | 8.0 | 56,000,000,000 | 1,265,000 |
| Feb. 6 | 148 | 5.6 | 1,300,000,000 | 15,205,000 | Aug. 7 | 145 | 3.7 | 59,000,000,000 | 1,170,000 |
| 13 | 176 | 13.0 | 500,000,000 | 5,155,000 | 21 | 86.8 | 4.0 | 2,800,000,000 | 1,575,000 |
| 20 | 172 | 15.0 | 24,000,000,000 | 7,502,000 | 28 | 86.5 | 3.7 | 24,000,000,000 | 199,500 |
| 27 | 174 | 12.6 | 2,200,000,000 | 5,751,500 | Sept. 4 | 95.9 | 4.4 | 410,000,000 | |
| Mar. 6 | 162 | 12.0 | 1,700,000,000 | 5,635,000 | 11 | 109 | 4.8 | 330,000,000 | 1,535,000 |
| 13 | 148 | 10.4 | 36,000,000,000 | 5,935,000 | 18 | 158 | 7.3 | 2,200,000,000 | 202,500 |
| 20 | 81.2 | 7.3 | 4,100,000,000 | 490,300 | 25 | 145 | 7.2 | 24,000,000,000 | 234,500 |
| 27 | 73.6 | 7.2 | 36,000,000,000 | 6,400,000 | Oct. 2 | 151 | 4.5 | 410,000,000 | 1,330,000 |
| Apr. 3 | 72.0 | 7.2 | 28,000,000,000 | 6,530,000 | 9 | 131 | 6.1 | 14,000,000,000 | 189,000 |
| 10 | 90.8 | 3.6 | 5,600,000,000 | 8,605,000 | 16 | 121 | 7.9 | 2,200,000,000 | 2,030,000 |
| 17 | 58.3 | 6.0 | 4,800,000,000 | 8,455,000 | 23 | 119 | 4.9 | 2,800,000,000 | 1,685,000 |
| 24 | 67.9 | 6.2 | 28,000,000,000 | 6,755,000 | 30 | 99.8 | 7.2 | 2,200,000,000 | 1,665,000 |
| May 1 | 82.6 | 4.1 | 28,000,000,000 | 10,470,000 | Nov. 6 | 104 | 7.5 | 410,000,000 | 1,220,000 |
| 8 | 91.1 | 4.3 | 28,000,000,000 | | 20 | 80.2 | 4.0 | 270,000,000 | 9,460,000 |
| 15 | 103 | 4.0 | 36,000,000,000 | 876,550,000 | 27 | 128 | 10.5 | 48,000,000 | 1,965,000 |
| 22 | 99.3 | 3.4 | 6,700,000,000 | 39,200,000 | Dec. 4 | 129 | 7.1 | 220,000,000 | 2,240,000 |
| 29 | 98.0 | 6.2 | 36,000,000,000 | 54,200,000 | 11 | 79.2 | 5.7 | 48,000,000 | 475,000 |
| June 5 | 114 | 3.8 | 2,800,000,000 | 5,510,000 | 18 | 109 | 7.4 | 1,400,000,000 | 1,350,000 |
| 12 | 126 | 7.9 | 4,000,000,000 | 8,320,000 | Total | 5,703 | 327.7 | 629,346,000,000 | 1,146,742,300 |
| 19 | 123 | 6.8 | 5,600,000,000 | 219,500 | Avg. | 116 | 6.7 | 12,843,800,000 | 24,399,000 |

* January samples taken from the Rio Grande at the Water Plant

SANITARY ASPECTS OF WATER QUALITY

| Date 1962 | Coliform Organisms per 100 c. c. | Total Bacteria per c. c. (plate count) | Date 1962 | Coliform Organisms per 100 c. c. | Total Bacteria per c. c. (plate count) | Date 1962 | Coliform Organisms per 100 c. c. | Total Bacteria per c. c. (plate count) |
|---|--|--|--------------|--|--|--------------|--|--|
| Rio Grande at Laredo, Texas, Water Plant | | | | | | | | |
| Jan. 2 | 3,200 | 1,010 | May 7 | 360 | 55,000 | Sept. 10 | 5,400 | 60,000 |
| 8 | 2,100 | 1,490 | 14 | 160 | 1,500 | 17 | 6,200 | 13,850 |
| 15 | 530 | 3,000 | 21 | 110 | 3,000 | 24 | 3,600 | 5,500 |
| 22 | | 820 | 28 | 2,100 | 3,500 | Oct. 1 | 11,000 | 4,750 |
| Feb. 29 | 1,600 | 590 | June 4 | 1,100 | 4,800 | 8 | 11,000 | 14,500 |
| 5 | 3,300 | 690 | 11 | 2,300 | 7,000 | 15 | 6,200 | 22,000 |
| 12 | 17,000 | | 18 | 2,100 | 6,300 | 22 | 16,000 | 34,500 |
| 19 | 7,200 | 7,000 | 25 | 2,300 | 3,800 | 29 | 6,200 | 5,800 |
| Mar. 26 | 1,100 | 1,000 | July 2 | 3,600 | 19,000 | Nov. 5 | 11,000 | 5,400 |
| 5 | 360 | 3,500 | 9 | 210 | 5,500 | 13 | 6,200 | 1,200 |
| 12 | 360 | 300 | 16 | 620 | 1,100 | 19 | 910 | 150 |
| 19 | 360 | 860 | 23 | 11,000 | 20,500 | 26 | 3,600 | |
| Apr. 26 | 230 | 660 | 30 | 6,200 | 380,000 | Dec. 3 | 230 | 600 |
| 2 | 210 | 1,225 | Aug. 6 | 1,100 | 4,000 | 10 | 360 | 365 |
| 9 | 1,100 | 1,165 | 13 | 2,300 | 2,250 | 17 | 36 | 360 |
| 16 | 340 | 995 | 20 | 230 | 1,600 | 31 | 360 | 670 |
| 23 | 62,000 | 214,000 | 27 | 490 | 500 | Total | 233,426 | 1,011,050 |
| 30 | 3,600 | 83,000 | Sept. 4 | 360 | 600 | Avg. | 4,580 | 19,800 |

Rio Grande at 8.6 Miles Below Laredo, Texas, R. R. Bridge

| | | | | | | | | |
|--------|---------|---------|---------|---------|---------|--------|-----------|-----------|
| Jan. 2 | | 18,500 | May 14 | 36,000 | 153,000 | Oct. 1 | 23,000 | 15,500 |
| 8 | 33,000 | 59,500 | 21 | 11,000 | 121,000 | 8 | 62,000 | 33,500 |
| 15 | 81,000 | 6,500 | 28 | 110,000 | 118,000 | 15 | 110,000 | 43,000 |
| 22 | 36,000 | 16,000 | June 4 | 110,000 | 81,000 | 22 | 240,000 | 47,000 |
| 29 | 130,000 | 225,000 | 11 | 62,000 | 76,000 | 29 | 23,000 | |
| Feb. 6 | 700,000 | 30,000 | 18 | 55,000 | 56,000 | Nov. 5 | 62,000 | 12,000 |
| 12 | 380,000 | 78,000 | 25 | 380,000 | 77,000 | 13 | 94,000 | 15,500 |
| 19 | | 62,000 | July 2 | 110,000 | 60,000 | 19 | 11,000 | 3,750 |
| 26 | 36,000 | 58,500 | 9 | 94,000 | 153,500 | 26 | 110,000 | 22,000 |
| Mar. 5 | 62,000 | 50,000 | 16 | 110,000 | 309,000 | Dec. 3 | 110,000 | 21,200 |
| 12 | 700,000 | 53,000 | 23 | 550,000 | 41,500 | 10 | 21,000 | 6,500 |
| 19 | 62,000 | 50,500 | 30 | 240,000 | 152,000 | 17 | 6,200 | 3,750 |
| 26 | 240,000 | 53,000 | Aug. 6 | 110,000 | 40,000 | 31 | 23,000 | 1,100 |
| Apr. 2 | 240,000 | 89,000 | 13 | 110,000 | 180,000 | Total | 7,216,200 | 3,162,300 |
| 9 | 62,000 | 34,000 | 20 | 110,000 | 43,000 | Avg. | 153,500 | 64,500 |
| 16 | 23,000 | 61,500 | Sept. 4 | 240,000 | 97,000 | | | |
| 30 | 380,000 | 60,500 | 10 | 62,000 | 53,000 | | | |
| May 7 | 62,000 | 76,000 | 17 | 36,000 | 33,000 | | | |

Rio Grande at Falcón Dam-U.S. Tailrace

| | | | | | | | | |
|--------|-----|-------|---------|--------|-------|----------|-------|--------|
| Jan. 8 | 400 | 250 | May 14 | 0 | 1,730 | Sept. 17 | 36 | 810 |
| 15 | 160 | 120 | 21 | 16 | 320 | 24 | 160 | 1,420 |
| 22 | 26 | 200 | 28 | 11 | 1,105 | Oct. 1 | 91 | 465 |
| 29 | 120 | 565 | June 5 | 11 | 2,6 | 8 | 23 | 1,320 |
| Feb. 5 | | 185 | 11 | 40,500 | | 15 | 110 | 1,920 |
| 12 | 24 | 230 | 18 | 11 | 1,320 | 22 | 160 | 485 |
| 19 | 38 | 670 | 25 | 11 | 3,345 | 29 | 62 | 700 |
| 26 | 26 | 800 | July 2 | 36 | 715 | Nov. 5 | 34 | 345 |
| Mar. 6 | 11 | 2,320 | 9 | 110 | 780 | 13 | 36 | 370 |
| 12 | | 520 | 16 | 36 | 465 | 19 | 36 | 70 |
| 19 | 6 | 330 | 23 | 2,6 | 1,805 | 26 | 16 | 190 |
| 26 | 11 | 345 | 30 | 0 | 9,150 | Dec. 3 | 110 | 610 |
| Apr. 2 | 11 | 390 | 6 | 23 | 1,240 | 10 | 54 | 150 |
| 9 | 16 | 425 | 13 | 6 | 1,495 | 17 | 110 | 150 |
| 16 | 4.6 | 1,180 | 20 | 11 | 1,420 | Total | 2,698 | 85,925 |
| 23 | 36 | 360 | 27 | 8 | 635 | Avg. | 56 | 1,750 |
| 30 | 2.6 | 400 | Sept. 4 | 110 | 655 | | | |
| May 7 | 2.6 | 475 | 10 | 360 | 475 | | | |

Rio Grande at Mercedes, Texas, Pumps

| | | | | | | | | |
|--------|--------|--|---------|--------|--|----------|---------|--|
| Jan. 2 | 1,100 | | May 7 | 6,200 | | Sept. 10 | 3,600 | |
| 8 | 1,100 | | 14 | 1,600 | | 17 | 6,200 | |
| 15 | 2,100 | | 21 | 3,600 | | 24 | 5,500 | |
| 22 | 24,000 | | 28 | 11,000 | | Oct. 1 | 9,400 | |
| 29 | 11,000 | | 5 | 16,000 | | 8 | 3,600 | |
| Feb. 5 | 6,200 | | 11 | 1,600 | | 15 | 1,100 | |
| 12 | 6,200 | | 18 | 16,000 | | 22 | 2,100 | |
| 19 | 620 | | 25 | 6,200 | | 30 | 2,300 | |
| 26 | 620 | | July 2 | 1,600 | | Nov. 5 | 6,700 | |
| Mar. 5 | | | 9 | 1,600 | | 13 | 1,600 | |
| 12 | 2,300 | | 16 | 1,100 | | 19 | 3,600 | |
| 19 | 2,300 | | 23 | 3,400 | | 27 | 3,600 | |
| 26 | 210 | | 30 | 1,100 | | Dec. 3 | 3,600 | |
| Apr. 2 | 620 | | Aug. 6 | 6,200 | | 10 | | |
| 9 | 1,100 | | 13 | 38,000 | | 17 | | |
| 16 | 2,700 | | 20 | 3,600 | | Total | 246,870 | |
| 23 | 6,200 | | 27 | 1,600 | | Avg. | 5,140 | |
| 30 | 1,600 | | Sept. 4 | 3,600 | | | | |

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States

Tabulated below, in downstream order, are monthly records of United States 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 124 through 126 of 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 | | Fabens-Guadalupe Bridge | | County Line | | Fort Hancock Bridge | |
|--------|--------------|---------|----------------|---------|-------------------------|---------|-------------|---------|---------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .84 | .44 | .54 | .39 | .44 | .41 | .25 | .41 | .43 | .44 |
| Feb. | .67 | .37 | .67 | .28 | .64 | .30 | .58 | .22 | .32 | .26 |
| Mar. | .07 | .34 | .18 | .26 | .51 | .30 | .32 | .29 | .26 | .23 |
| Apr. | .03 | .21 | .01 | .18 | .02 | .26 | .02 | .24 | .08 | .30 |
| May | 0 | .26 | 0 | .37 | 0 | .37 | 0 | .39 | 0 | .58 |
| June | T | .60 | 0 | .50 | 0 | .48 | 0 | .52 | T | .74 |
| July | 1.73 | 1.51 | 3.50 | 1.12 | 4.07 | 1.28 | 1.42 | 1.10 | 1.72 | 1.28 |
| Aug. | T | 1.40 | .43 | 1.14 | 0 | 1.18 | .03 | 1.24 | .08 | 1.51 |
| Sept. | 3.81 | 1.06 | 2.74 | .89 | 2.80 | 1.03 | 2.29 | .97 | 2.47 | .92 |
| Oct. | .45 | .67 | 1.14 | .86 | 2.01 | 1.02 | 2.08 | 1.03 | 1.39 | 1.12 |
| Nov. | .08 | .22 | .20 | .23 | .61 | .24 | .19 | .23 | .21 | .25 |
| Dec. | .33 | .42 | .24 | .37 | .13 | .42 | .23 | .35 | .31 | .42 |
| Yearly | 8.01 | 7.50 | 9.65 | 6.59 | 11.23 | 7.29 | 7.41 | 6.99 | 7.27 | 8.05 |

| Month | Madden Arroyo | | Guayuco Arroyo | | Fort Quitman | | Neely Ranch | | Moody Bennett | |
|--------|---------------|---------|----------------|---------|--------------|---------|-------------|---------|---------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .16 | .31 | .21 | .38 | .23 | .47 | .20 | .40 | .45 | 4.93 |
| Feb. | .26 | .17 | .46 | .20 | .45 | .25 | .75 | .19 | .44 | .44 |
| Mar. | 0 | .13 | .12 | .17 | .22 | .23 | .15 | .17 | .11 | .10 |
| Apr. | .31 | 0 | .20 | 0 | .28 | 0 | 0 | .11 | .14 | .23 |
| May | .48 | 0 | .37 | 0 | .44 | 0 | .39 | .39 | .88 | .88 |
| June | .47 | .08 | .51 | 1.64 | .78 | 1.30 | .67 | .28 | .34 | .34 |
| July | 1.14 | 3.28 | 1.57 | 3.35 | 1.65 | 4.65 | 1.76 | 3.14 | 1.87 | |
| Aug. | 1.53 | .07 | 1.43 | .14 | 1.45 | .90 | 1.50 | .14 | 1.09 | |
| Sept. | .81 | 3.05 | 1.15 | 2.75 | .98 | 3.73 | 1.37 | 1.82 | .83 | |
| Oct. | 1.18 | .81 | 1.25 | 1.09 | .93 | 1.35 | 1.14 | 1.03 | .86 | |
| Nov. | .16 | .06 | .19 | .24 | .28 | .56 | .22 | .53 | .39 | |
| Dec. | .37 | .28 | .38 | .29 | .36 | .45 | .38 | 0 | .31 | |
| Yearly | | 7.06 | 8.42 | 7.80 | 10.40 | 8.10 | 14.04 | 8.30 | 8.47 | 12.27 |

| Month | Bill Shannon | | Adobes Ranch | | Presidio (IB&WC Gage) | | Quebec Ranch | | Boys Camp | |
|--------|--------------|---------|--------------|---------|-----------------------|---------|--------------|---------|-----------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .35 | .85 | .36 | .52 | .10 | .41 | .80 | .64 | 1.27 | .83 |
| Feb. | 0 | .44 | .08 | .23 | .18 | .22 | .65 | .28 | .33 | .60 |
| Mar. | 0 | .33 | 0 | .17 | 0 | .14 | 0 | .30 | .34 | .49 |
| Apr. | 0 | .06 | 0 | .16 | .08 | .16 | 0 | .32 | .55 | .53 |
| May | 0 | .91 | 1.79 | .62 | T | .38 | 0 | 1.06 | 1.08 | 1.39 |
| June | 1.25 | 1.37 | 1.97 | 1.25 | 1.50 | 1.08 | 1.40 | 1.72 | 3.71 | 2.66 |
| July | 2.85 | 1.97 | .66 | 1.86 | 1.50 | 1.16 | 2.75 | 2.37 | 4.52 | 3.32 |
| Aug. | .50 | 1.70 | 0 | 1.14 | .20 | .85 | .60 | 1.64 | .64 | 3.73 |
| Sept. | 1.50 | 1.18 | 3.63 | 1.53 | 3.30 | .99 | 2.90 | 1.41 | 3.36 | 2.51 |
| Oct. | 2.50 | 1.51 | .87 | .72 | 1.30 | .55 | 1.20 | .92 | 1.75 | 1.73 |
| Nov. | 1.10 | .23 | .42 | .22 | .20 | .23 | .80 | .34 | 1.12 | .51 |
| Dec. | 1.00 | .51 | .38 | .31 | .60 | .23 | .70 | .34 | 1.02 | .64 |
| Yearly | 11.05 | 11.06 | 10.16 | 8.73 | 8.96 | 6.40 | 11.80 | 11.34 | 19.69 | 19.14 |

T Trace

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States**

| Month | Kerr Mitchell Ranch | | H. T. Fletcher Ranch | | Sauz Ranch | | McFarland Ranch Headquarters | | A. L. Baugh Ranch | |
|--------|---------------------|---------|----------------------|---------|------------|---------|------------------------------|---------|-------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .36 | .65 | 0 | .97 | 0 | .86 | .40 | 1.06 | 0 | .72 |
| Feb. | .22 | .37 | .15 | .31 | .30 | .28 | .30 | .61 | 0 | .23 |
| Mar. | 0 | .20 | .10 | .35 | .10 | .48 | 0 | .40 | 0 | .26 |
| Apr. | .52 | .51 | 0 | .49 | 0 | .27 | .10 | .53 | 0 | .28 |
| May | 0 | 1.07 | 0 | 1.16 | 0 | 1.16 | 0 | 1.12 | 0 | .62 |
| June | 1.97 | 1.75 | 1.20 | 1.42 | 1.20 | 1.43 | .81 | 1.25 | 0 | 1.27 |
| July | 3.58 | 2.00 | 3.55 | 3.14 | | 2.68 | 3.26 | 3.43 | 3.08 | 1.95 |
| Aug. | .10 | 1.64 | 1.40 | 2.70 | | 2.29 | 0 | 2.43 | 1.01 | 1.72 |
| Sept. | 2.17 | 1.46 | 4.05 | 1.72 | | 1.84 | 3.60 | 2.24 | 5.11 | 1.36 |
| Oct. | 1.53 | 1.38 | 1.95 | 1.44 | | 1.43 | 2.30 | 1.64 | .25 | .89 |
| Nov. | .53 | .24 | .65 | .33 | | .30 | .50 | .43 | .80 | .35 |
| Dec. | .84 | .43 | .85 | .42 | | .49 | .75 | .64 | T | .48 |
| Yearly | 11.82 | 11.70 | 13.90 | 14.45 | | 13.51 | 12.02 | 15.78 | 10.25 | 10.13 |

| Month | L. T. Van Eman Ranch | | H. M. Greenwood (Cienega Ranch) | | Redford | | 02 Ranch | | Maverick Ranger Station | |
|--------|----------------------|---------|---------------------------------|---------|---------|---------|----------|---------|-------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .70 | .74 | .78 | .12 | .58 | .21 | .63 | .05 | .74 |
| Feb. | 0 | .16 | .10 | .22 | .08 | .18 | .12 | .39 | .10 | .30 |
| Mar. | 0 | .23 | 0 | .23 | 0 | .06 | 0 | .33 | 0 | .07 |
| Apr. | 0 | .39 | 0 | .55 | 0 | .17 | .09 | .36 | .10 | .11 |
| May | 0 | .94 | 0 | .87 | .10 | .38 | 0 | 1.12 | .39 | .70 |
| June | 0 | 1.92 | 1.59 | 1.73 | 1.20 | .70 | 1.97 | 1.32 | 1.62 | 1.08 |
| July | 3.01 | 2.21 | 2.95 | 2.02 | 1.50 | .67 | 2.64 | 1.86 | 1.66 | 1.58 |
| Aug. | 1.00 | 1.89 | .46 | 1.72 | .50 | 1.06 | .25 | 2.37 | 1.01 | 1.09 |
| Sept. | 5.05 | 2.01 | 3.47 | 2.12 | 3.50 | 1.59 | 3.66 | 1.66 | 1.80 | .90 |
| Oct. | .30 | .90 | 1.21 | 1.28 | .60 | .81 | 1.94 | 1.65 | .64 | .85 |
| Nov. | .80 | .35 | .55 | .38 | .50 | .35 | .52 | .63 | .10 | .31 |
| Dec. | 0 | .33 | .81 | .60 | .10 | .13 | 1.10 | .41 | .57 | .34 |
| Yearly | 10.16 | 12.03 | 11.88 | 12.50 | 8.20 | 6.68 | 12.50 | 12.73 | 8.04 | 8.07 |

| Month | Terlingua Creek Station | | Johnson Ranch | | Ray Willoughby Ranch | | J. F. Woodward Ranch | | Kokernot Ranch | |
|--------|-------------------------|---------|---------------|---------|----------------------|---------|----------------------|---------|----------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .40 | .05 | .43 | 0 | .71 | 1.26 | .88 | 1.30 | .81 |
| Feb. | T | .12 | .30 | .17 | .30 | .56 | .24 | .46 | .22 | .38 |
| Mar. | 0 | .13 | 0 | .16 | 0 | .30 | .02 | .17 | 0 | .10 |
| Apr. | .14 | .42 | 0 | .48 | 0 | .40 | .28 | .58 | .76 | .54 |
| May | .50 | .50 | .95 | .95 | 1.00 | 1.33 | 1.32 | 1.30 | .19 | .68 |
| June | 1.05 | .72 | 1.20 | 1.10 | 1.10 | .78 | .90 | 1.53 | .85 | .90 |
| July | 1.30 | .88 | .55 | 1.17 | 5.65 | 3.61 | 3.14 | 1.97 | 3.55 | 1.62 |
| Aug. | .10 | .53 | .15 | .81 | .10 | 2.04 | 1.98 | 2.35 | .86 | 1.10 |
| Sept. | 2.90 | .67 | 1.05 | 1.11 | 4.10 | 2.33 | 1.86 | 1.58 | .83 | .71 |
| Oct. | .60 | .53 | .35 | .57 | 1.90 | 1.15 | 1.33 | 1.19 | .81 | .80 |
| Nov. | .20 | .17 | 0 | .21 | .85 | .38 | .48 | .30 | .33 | .38 |
| Dec. | .35 | .24 | .40 | .29 | 1.25 | .45 | .16 | .30 | .10 | .10 |
| Yearly | 7.14 | 5.31 | 5.00 | 7.45 | 16.25 | 15.04 | 12.97 | 12.61 | 9.80 | 8.12 |

| Month | Maravillas Gap Ranch | | Buttrill Ranch | | A. M. Potter Ranch | | Persimmon Gap Ranger Station | | Black Gap Game Refuge | |
|--------|----------------------|---------|----------------|---------|--------------------|---------|------------------------------|---------|-----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .08 | 1.00 | 0 | .80 | .20 | .40 | .08 | .56 | .05 | .58 |
| Feb. | .08 | .51 | 0 | .28 | 0 | .57 | .05 | .38 | .14 | .51 |
| Mar. | 0 | .13 | 0 | .14 | .0 | .07 | .13 | .13 | .20 | .26 |
| Apr. | .11 | .45 | 0 | .54 | .45 | .31 | .48 | .46 | .53 | .49 |
| May | .30 | .71 | .25 | .99 | 1.20 | 1.04 | 1.10 | .99 | 0 | 1.43 |
| June | .72 | 1.44 | 0 | 1.07 | 0 | .98 | 1.27 | 1.27 | 1.99 | 1.18 |
| July | 3.96 | 1.44 | 4.68 | 2.04 | 2.20 | 1.39 | 1.99 | 1.46 | 1.38 | 1.64 |
| Aug. | .70 | 1.08 | 0 | .50 | .95 | 1.30 | .05 | .59 | 0 | .70 |
| Sept. | 3.76 | 1.03 | 2.35 | .85 | .84 | 1.56 | 2.42 | 1.05 | 4.46 | 1.46 |
| Oct. | .70 | 1.36 | 1.05 | 1.08 | 0 | .19 | 1.82 | .91 | .39 | .76 |
| Nov. | .52 | .36 | .50 | .33 | .20 | .57 | .44 | .30 | .05 | .25 |
| Dec. | 1.30 | .49 | 2.41 | .31 | 1.40 | .53 | .76 | .29 | .88 | .30 |
| Yearly | 12.23 | 10.00 | 11.24 | 8.93 | 7.44 | 8.91 | 10.59 | 8.39 | 10.07 | 9.56 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States

| Month | Stillwell Crossing | | Steve Stumberg Ranch | | Dove Mountain Ranch | | McGonagill Ranch Headquarters | | McGonagill Ranch East Mill | |
|--------|--------------------|---------|----------------------|---------|---------------------|---------|-------------------------------|---------|----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .70 | .05 | .71 | 0 | .90 | 0 | .61 | 0 | .62 |
| Feb. | .06 | .26 | .10 | .43 | 0 | .24 | .45 | .84 | .45 | .23 |
| Mar. | .14 | .20 | .20 | .28 | .20 | .19 | .30 | .49 | .30 | .50 |
| Apr. | .26 | .22 | 0 | .62 | 0 | .33 | 0 | .33 | 0 | .50 |
| May | 1.37 | 1.37 | 1.00 | 1.46 | .25 | 1.16 | .90 | .90 | .40 | .78 |
| June | .69 | 1.34 | .80 | 1.26 | 3.00 | 1.46 | 1.14 | 2.08 | 1.90 | 2.02 |
| July | .46 | 2.72 | 2.50 | 1.95 | 1.05 | 1.76 | 1.92 | 2.06 | 1.90 | 1.41 |
| Aug. | .27 | .58 | .30 | 1.19 | 0 | .53 | 1.04 | 1.11 | .70 | .85 |
| Sept. | 4.17 | 2.56 | 3.10 | 1.90 | 1.50 | 1.01 | 1.44 | 1.40 | 1.70 | 1.78 |
| Oct. | .80 | .64 | 1.60 | 1.57 | 3.26 | 1.41 | .52 | 1.03 | 0 | 1.15 |
| Nov. | 0 | .30 | .20 | .40 | .50 | .30 | 0 | .25 | 0 | .26 |
| Dec. | .80 | .55 | .50 | .63 | .65 | .40 | .73 | .23 | .70 | .34 |
| Yearly | 9.02 | 11.44 | 10.35 | 12.40 | 10.41 | 9.69 | 8.44 | 11.33 | 8.05 | 10.44 |

| Month | Arvin and Harkins Header | | Arvin and Harkins Bean | | Arvin and Harkins Headquarters | | Arvin and Harkins Camel | | Arvin and Harkins Monty Corder | |
|--------|--------------------------|---------|------------------------|---------|--------------------------------|---------|-------------------------|---------|--------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .66 | 0 | .71 | 0 | .66 | 0 | .54 | 0 | .67 |
| Feb. | .20 | .50 | .20 | .46 | .20 | .52 | .20 | .48 | .20 | .53 |
| Mar. | .20 | .29 | .20 | .30 | .20 | .27 | .20 | .31 | .20 | .31 |
| Apr. | .70 | 1.19 | .70 | 1.16 | .60 | 1.00 | .60 | 1.11 | .70 | 1.14 |
| May | .50 | 1.74 | .50 | 1.39 | .50 | .50 | .60 | 1.32 | .30 | 1.34 |
| June | 1.70 | 1.44 | 2.40 | 1.42 | 1.10 | 1.22 | 1.40 | 1.33 | .80 | 1.41 |
| July | 3.30 | 1.54 | 4.50 | 1.79 | 2.00 | 1.49 | 1.90 | 1.34 | 1.40 | 1.37 |
| Aug. | 0 | 1.17 | 0 | 1.46 | 0 | 1.17 | 1.00 | .82 | 1.00 | .81 |
| Sept. | 0 | 1.65 | 0 | 1.33 | 0 | .98 | 0 | 1.11 | 0 | 1.09 |
| Oct. | 2.60 | 1.99 | 2.30 | 1.84 | 2.30 | 1.99 | 2.30 | 1.61 | 1.30 | 1.61 |
| Nov. | .50 | .33 | .50 | .37 | .40 | .33 | .40 | .29 | .40 | .31 |
| Dec. | 1.40 | .39 | 1.30 | .40 | 1.10 | .39 | 1.00 | .35 | 1.00 | .34 |
| Yearly | 11.10 | 12.89 | 12.60 | 12.63 | 8.40 | 11.52 | 9.60 | 10.61 | 7.30 | 10.93 |

| Month | E. W. Hardgrave Ranch | | Adams Bros. Ranch | | Dryden | | Bricker Ranch | | Cedar Service Station | |
|--------|-----------------------|---------|-------------------|---------|--------|---------|---------------|---------|-----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .77 | T | .65 | 0 | .62 | .16 | .55 | .17 | .87 |
| Feb. | .18 | .70 | .18 | .55 | .10 | .46 | .03 | .55 | .15 | .88 |
| Mar. | .37 | .42 | .18 | .30 | .16 | .37 | .27 | .34 | .30 | .32 |
| Apr. | 1.10 | .90 | .59 | .76 | .56 | .84 | 1.51 | 1.11 | .41 | .52 |
| May | .10 | 1.52 | .35 | 1.35 | .49 | 1.87 | 0 | 1.25 | .11 | 1.96 |
| June | 2.18 | 1.61 | .38 | 1.20 | .21 | 1.04 | 1.25 | 1.68 | 1.06 | 1.80 |
| July | .17 | 1.25 | .86 | 1.10 | .41 | 1.00 | 1.39 | .53 | .69 | .71 |
| Aug. | .12 | .78 | .54 | .70 | 0 | 1.12 | .23 | .59 | .16 | .91 |
| Sept. | 1.81 | 1.52 | .70 | 2.01 | 1.17 | 1.64 | 1.80 | 1.47 | 2.00 | 1.60 |
| Oct. | 2.73 | 1.93 | 2.90 | 1.66 | 2.65 | 1.32 | 3.03 | 1.34 | 3.24 | 1.65 |
| Nov. | .64 | .45 | .10 | .33 | 0 | .35 | .13 | .31 | .27 | .54 |
| Dec. | .90 | .36 | .58 | .31 | .55 | .48 | .44 | .32 | .35 | .40 |
| Yearly | 10.30 | 12.21 | 7.36 | 10.92 | 6.30 | 11.11 | 10.24 | 10.04 | 8.91 | 12.16 |

| Month | Pumpville | | Ross Foster Ranch | | Hoffman Ranch | | C. L. Arthur Ranch | | P. C. Perner Ranch | |
|--------|-----------|---------|-------------------|---------|---------------|---------|--------------------|---------|--------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .10 | .49 | .01 | | .47 | .71 | .40 | .94 | | |
| Feb. | .24 | .52 | .01 | | .22 | .70 | .60 | .45 | | |
| Mar. | .27 | .40 | .03 | | 0 | .32 | 0 | .29 | | |
| Apr. | 1.55 | 1.18 | 1.40 | | .36 | .39 | .30 | .36 | | |
| May | 1.86 | .70 | 1.14 | | 1.03 | .95 | | 1.26 | | |
| June | 1.91 | 0 | 3.18 | | 2.71 | 1.33 | | 1.72 | | |
| July | .36 | T | T | | .40 | 2.02 | | 2.64 | | |
| Aug. | .68 | .02 | .42 | | 1.20 | 2.29 | | 2.06 | | |
| Sept. | .86 | 1.53 | 2.22 | | 1.78 | 1.31 | | 1.34 | | |
| Oct. | 3.06 | 1.37 | 4.21 | | 1.43 | 1.39 | | 1.12 | | |
| Nov. | .43 | .25 | .23 | | .67 | .41 | | .35 | | |
| Dec. | .19 | .45 | .15 | | .47 | .42 | | .37 | | |
| Yearly | | 11.00 | 8.98 | | 10.74 | 12.24 | | 12.90 | | |

T Trace

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States**

| Month | Terrel Plant (E. P. N. G. Co.) | | E. A. Cain Ranch | | Ingram Ranch | | Shumla Bend | | Martin King Ranch | |
|--------|-----------------------------------|---------|---------------------|---------|-----------------|---------|----------------|---------|----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | | | | | T | 1.13 | .02 | .61 | T | .76 |
| Feb. | | | | | .17 | .74 | 0 | .74 | .39 | .72 |
| Mar. | | | | | .57 | .37 | .39 | .12 | .12 | .21 |
| Apr. | | | | | 1.75 | .86 | 1.19 | .81 | 1.88 | .83 |
| May | | | | | 1.15 | 2.31 | .10 | 1.97 | .02 | 1.59 |
| June | | | | | 1.90 | 2.27 | .86 | 1.96 | 1.86 | 1.64 |
| July | 1.15 | | 1.00 | | 0 | .94 | T | .42 | 0 | 1.36 |
| Aug. | .17 | | 0 | | 0 | .76 | .02 | 1.32 | .39 | .78 |
| Sept. | .42 | | 4.65 | | 3.50 | 1.92 | 3.93 | 1.62 | 2.06 | 1.91 |
| Oct. | 2.82 | | 4.10 | | 4.00 | 2.08 | 4.33 | 2.03 | 5.28 | 2.80 |
| Nov. | .34 | | .67 | | .70 | .34 | .55 | .48 | .37 | .51 |
| Dec. | 1.04 | | .25 | | .20 | .56 | T | .43 | .39 | .53 |
| Yearly | | | | | | 14.48 | 11.37 | 12.78 | 12.76 | 13.64 |

| Month | Comstock | | Goodenough Spring | | Lock Store | | W. T. O. Holman Ranch | | J. M. Bagget Ranch | |
|--------|----------|---------|----------------------|---------|---------------|---------|--------------------------|---------|-----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .10 | .72 | T | .27 | | | | | | |
| Feb. | .43 | .84 | .10 | .42 | | | | | | |
| Mar. | .21 | .64 | .31 | .08 | | | | | | |
| Apr. | 2.29 | 1.46 | 1.03 | .58 | | | | | | |
| May | .06 | 2.02 | T | .84 | | | | | | |
| June | 2.16 | 2.48 | 1.20 | 3.73 | | | | | | |
| July | .07 | 1.03 | 0 | 1.16 | | | | | | |
| Aug. | .03 | 1.73 | 0 | .51 | | | | | | |
| Sept. | 1.82 | 1.74 | 1.48 | 1.94 | | | | | | |
| Oct. | 5.17 | 1.98 | 1.85 | 3.15 | 1.33 | | | | | |
| Nov. | .37 | .54 | .19 | .38 | .81 | | | | | |
| Dec. | .42 | .80 | .32 | .46 | .51 | | | | | |
| Yearly | 13.13 | 15.98 | 6.48 | 13.52 | | | | | | |

| Month | Diamond A Ranch | | Lucius Hinds Ranch | | H. T. Miers Ranch | | A. A. Baker Ranch | | Pafford Crossing | |
|--------|--------------------|---------|-----------------------|---------|----------------------|---------|----------------------|---------|---------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | | | .11 | .77 | 0 | 1.08 | | | .01 | .80 |
| Feb. | | | .48 | 1.00 | .20 | 1.67 | | | .39 | .58 |
| Mar. | | | .22 | .50 | .94 | | | | .16 | .30 |
| Apr. | | | 2.28 | 1.20 | 2.10 | | | | 2.31 | .93 |
| May | 6.70 | | 0 | 1.82 | 0 | 2.93 | | | .15 | .50 |
| June | 1.40 | | 1.80 | 2.46 | .61 | 4.38 | | | 2.15 | 2.81 |
| July | 1.00 | | .67 | 1.04 | .02 | 2.07 | .12 | | .48 | 1.49 |
| Aug. | 0 | | .09 | 1.20 | .18 | 1.16 | .22 | | 0 | .85 |
| Sept. | 2.50 | | 4.44 | 2.13 | 1.83 | 2.99 | 1.86 | | 4.15 | 2.12 |
| Oct. | 4.25 | | 5.77 | 3.07 | 10.67 | 5.15 | 4.22 | | 5.32 | 3.90 |
| Nov. | 2.02 | | .77 | .61 | .11 | .90 | .34 | | T | .29 |
| Dec. | 1.50 | | .37 | .66 | .42 | .79 | .42 | | .54 | .78 |
| Yearly | | | 17.00 | 16.46 | | 26.16 | | | 15.66 | 15.35 |

| Month | Cliff Lowry Ranch | | Tuffy Whitehead Ranch | | Stewart Ranch | | Devils Lake | | Sellars Ranch | |
|--------|----------------------|---------|--------------------------|---------|------------------|---------|----------------|---------|------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | | | | | .01 | .66 | .12 | .73 | .02 | .84 |
| Feb. | | | | | .36 | .52 | .43 | .81 | .24 | .42 |
| Mar. | | | | | .18 | .10 | .16 | .64 | T | .14 |
| Apr. | | | | | 2.63 | 1.20 | 3.15 | 1.68 | 2.90 | 1.31 |
| May | | | | | .10 | .26 | .05 | 1.83 | .08 | .39 |
| June | | | | | 1.41 | 3.37 | 1.84 | 2.63 | 3.17 | 5.65 |
| July | .21 | | .10 | | .43 | 2.55 | .93 | 1.00 | | 1.44 |
| Aug. | .08 | | 0 | | .05 | .38 | .26 | 1.34 | .11 | 1.13 |
| Sept. | 2.12 | | 1.60 | | 1.73 | 1.56 | 3.60 | 1.69 | 1.98 | .75 |
| Oct. | 3.10 | | 2.58 | | 2.11 | 2.68 | 3.13 | 1.96 | 2.56 | 3.10 |
| Nov. | .32 | | .40 | | .56 | .47 | .22 | .62 | .42 | .39 |
| Dec. | .35 | | .45 | | .20 | .79 | .33 | .72 | .10 | .67 |
| Yearly | | | | | 9.77 | 14.54 | 14.22 | 15.65 | | 16.23 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States

| Month | J. G. Brite Ranch | | Wardlaw Ranch | | Amistad Dam Headquarters | | Amistad Damsite | | † Hodges Ranch | |
|--------|-------------------|---------|---------------|---------|--------------------------|---------|-----------------|---------|----------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | | | T | .76 | | | .02 | .56 | .44 | .77 |
| Feb. | | | .36 | .91 | | | .05 | .59 | 1.18 | 1.25 |
| Mar. | | | .19 | .28 | | | .01 | .25 | .67 | .86 |
| Apr. | | | 2.86 | 1.25 | | | 1.55 | .89 | 3.55 | 1.93 |
| May | | | T | 2.07 | | | 0 | 1.78 | .30 | 2.19 |
| June | | | 2.11 | 2.94 | | | .59 | 2.43 | 5.80 | 4.45 |
| July | | | .93 | 1.76 | .22 | | 0 | 1.04 | 1.40 | 1.52 |
| Aug. | | | .37 | 1.44 | .15 | | .03 | .90 | .13 | 2.41 |
| Sept. | 1.68 | | 1.39 | 1.94 | 1.20 | | T | 1.53 | 2.60 | 3.24 |
| Oct. | 2.30 | | 1.89 | 2.48 | 2.07 | | 1.52 | 2.58 | 1.85 | 3.38 |
| Nov. | .30 | | .06 | .55 | .31 | | .18 | .49 | .65 | .85 |
| Dec. | .25 | | .05 | .46 | .17 | | .11 | .34 | .95 | .68 |
| Yearly | | | 10.21 | 16.84 | | | 4.06 | 13.38 | 19.52 | 23.53 |

| Month | Maverick County Canal Headgate | | Pinto Creek | | Las Moras Creek | | Wipff Ranch | | Lateral No. 2 Spill | |
|--------|--------------------------------|---------|-------------|---------|-----------------|---------|-------------|---------|---------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .09 | .51 | .05 | .49 | .13 | .95 | .10 | .58 | .10 | .64 |
| Feb. | .09 | 1.07 | .08 | .49 | .10 | 1.28 | .05 | .80 | .05 | .74 |
| Mar. | .19 | .57 | .15 | .34 | .36 | .38 | .40 | .17 | .18 | .12 |
| Apr. | 1.64 | 1.61 | 1.80 | 1.18 | 2.30 | 1.46 | 2.35 | 1.62 | 2.78 | 2.11 |
| May | 1.26 | 2.12 | 1.20 | 1.50 | .92 | 1.81 | 1.00 | 1.61 | 1.34 | 1.36 |
| June | 1.00 | 2.48 | 1.67 | 5.12 | 2.52 | 5.25 | 3.42 | 3.54 | 2.77 | 2.97 |
| July | 1.03 | 1.89 | 0 | 1.94 | .05 | 1.72 | .05 | 3.07 | .40 | 3.62 |
| Aug. | .20 | .39 | .48 | 1.07 | 1.34 | 1.75 | 1.22 | 1.74 | 1.35 | 1.81 |
| Sept. | 1.11 | 2.16 | 1.72 | .80 | .97 | 2.23 | .90 | .58 | 1.00 | .50 |
| Oct. | 4.35 | 2.13 | 3.90 | 3.28 | .38 | 3.34 | .20 | 2.42 | .97 | 2.91 |
| Nov. | 2.77 | .62 | 1.90 | .86 | 4.42 | 1.50 | 3.15 | 1.24 | 4.25 | 1.37 |
| Dec. | .54 | .57 | .41 | .53 | .37 | .68 | .35 | .60 | .23 | .48 |
| Yearly | 14.27 | 17.12 | 13.36 | 17.60 | 13.86 | 22.35 | 13.19 | 17.97 | 15.42 | 18.63 |

| Month | Normandy | | Lateral 12 Headgate | | Lateral No. 15 Spill | | Maverick Power Plant | | Cooper Ranch | |
|--------|----------|---------|---------------------|---------|----------------------|---------|----------------------|---------|--------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .06 | .57 | .03 | .38 | .10 | .48 | .15 | .67 | .05 | .48 |
| Feb. | .03 | .57 | .05 | .38 | .03 | .62 | .06 | .67 | .04 | .60 |
| Mar. | .03 | .24 | .35 | .13 | .18 | .09 | .42 | .76 | .52 | .16 |
| Apr. | 2.49 | 2.16 | 2.70 | 2.29 | 2.95 | 1.62 | 3.15 | 1.70 | 2.40 | 1.92 |
| May | 1.82 | 1.70 | 2.00 | 2.04 | 2.75 | 1.90 | 1.33 | 2.30 | .50 | 1.63 |
| June | 2.71 | 2.68 | 2.50 | 2.34 | 1.95 | 2.23 | 1.85 | 2.46 | 4.20 | 2.50 |
| July | .28 | 3.68 | .20 | 2.79 | .10 | 2.99 | 0 | 1.63 | .30 | 3.60 |
| Aug. | 1.47 | 1.28 | 1.00 | 1.06 | 1.40 | 1.14 | .61 | 1.59 | .90 | .84 |
| Sept. | 1.87 | .92 | 1.42 | .76 | 1.65 | .96 | 1.80 | 2.21 | 1.80 | 1.25 |
| Oct. | .85 | 2.59 | .35 | 2.94 | 1.00 | 3.40 | .70 | 2.68 | .32 | 3.10 |
| Nov. | 1.36 | 1.02 | .60 | .60 | .05 | .38 | .41 | .64 | .30 | .48 |
| Dec. | .41 | .67 | .35 | .58 | .13 | .61 | .46 | .55 | .17 | .52 |
| Yearly | 13.38 | 18.08 | 11.55 | 16.29 | 12.29 | 16.42 | 10.94 | 17.86 | 11.50 | 17.08 |

| Month | Coal Mine | | Elm Creek | | Chittim Ranch | | Rosita Creek Siphon | | Tortuga Ranch | |
|--------|-----------|---------|-----------|---------|---------------|---------|---------------------|---------|---------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .49 | .05 | .30 | T | .39 | T | .40 | .10 | .52 |
| Feb. | .04 | .65 | .06 | .38 | T | .51 | .15 | .62 | .20 | .53 |
| Mar. | .49 | .14 | .31 | .10 | .03 | .03 | .05 | .04 | .20 | .32 |
| Apr. | 2.25 | 1.59 | 1.90 | 1.25 | 1.00 | 1.64 | 1.95 | 2.27 | 2.05 | 1.77 |
| May | .50 | 1.25 | .60 | 1.38 | .10 | 1.34 | .05 | 1.19 | 0 | 2.87 |
| June | 3.44 | 2.28 | 2.52 | 1.65 | 1.40 | 1.23 | 2.60 | 1.70 | 1.70 | 1.14 |
| July | .78 | 3.77 | T | 3.84 | T | 3.51 | .02 | 4.01 | 0 | 1.89 |
| Aug. | .98 | .73 | 1.03 | 1.03 | .10 | .86 | .90 | .48 | .30 | 1.94 |
| Sept. | .96 | .97 | 1.81 | .87 | 1.50 | .81 | .95 | .61 | 1.80 | 2.65 |
| Oct. | .75 | 3.56 | .30 | 3.76 | .50 | 4.02 | .05 | 3.84 | .70 | 2.33 |
| Nov. | .35 | .53 | .05 | .38 | .30 | .44 | 1.25 | .73 | .20 | .37 |
| Dec. | .28 | .40 | .18 | .50 | .23 | .50 | .48 | .54 | .40 | .43 |
| Yearly | 10.82 | 16.36 | 8.81 | 15.44 | 5.16 | 15.28 | 8.45 | 16.43 | 7.65 | 16.76 |

T Trace † Formerly Armistead Ranch

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In the United States

| Month | Trees Farm | | Rosita Creek | | Farias Ranch | | Indio Ranch | | El Indio | |
|--------|------------|---------|--------------|---------|--------------|---------|-------------|---------|----------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .40 | 0 | .36 | 0 | .44 | 0 | .55 | .05 | .81 |
| Feb. | .20 | .68 | .03 | .50 | .02 | 1.00 | .05 | .84 | 0 | .86 |
| Mar. | .08 | .02 | .09 | .04 | .24 | .12 | .08 | .04 | .05 | .48 |
| Apr. | 3.11 | 1.76 | 1.70 | 1.31 | 2.47 | 2.08 | 2.11 | 2.02 | 2.28 | 1.44 |
| May | .02 | 1.16 | T | 1.01 | .59 | 1.28 | .05 | .93 | 0 | 3.04 |
| June | 1.82 | 1.46 | 1.72 | 1.20 | 2.32 | 2.50 | 1.93 | 1.73 | 1.27 | 1.73 |
| July | 0 | 3.33 | .05 | 2.26 | 0 | 4.40 | 0 | 4.26 | 0 | 1.10 |
| Aug. | 1.24 | .82 | .55 | .81 | 1.52 | 1.04 | 1.50 | 1.84 | 1.03 | 1.96 |
| Sept. | 1.76 | .73 | 2.00 | 1.17 | 2.00 | 1.68 | 2.10 | 1.16 | 1.85 | 2.83 |
| Oct. | .27 | 4.00 | .25 | 3.78 | 0 | 4.09 | .42 | 3.13 | 0 | 1.78 |
| Nov. | .46 | .44 | .30 | .54 | .07 | .67 | T | .69 | 0 | .55 |
| Dec. | .15 | .40 | .30 | .52 | .65 | .69 | T | .54 | .57 | .69 |
| Yearly | 9.11 | 15.20 | 6.99 | 13.50 | 9.88 | 19.99 | 8.24 | 17.73 | 7.10 | 17.27 |

| Month | Van Dalsem Farm | | Wuensche Farm | | Keisling Farm | | Cuervo Creek | | Apache Ranch | |
|--------|-----------------|---------|---------------|---------|---------------|---------|--------------|---------|--------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .10 | .49 | .09 | .70 | 0 | .45 | .05 | .77 | 0 | 1.12 |
| Feb. | 0 | .97 | .01 | 1.04 | 1 | 1.02 | 0 | .75 | 0 | 1.06 |
| Mar. | .09 | .05 | .17 | .43 | T | 0 | .06 | .13 | 0 | .04 |
| Apr. | 1.78 | 2.31 | 1.76 | 1.71 | 2.60 | 2.50 | 2.42 | 1.76 | 1.30 | 1.47 |
| May | .15 | 1.33 | 0 | 2.22 | T | 1.44 | T | 1.77 | 0 | 1.92 |
| June | .93 | 2.10 | 1.40 | 1.48 | 1.65 | 1.53 | 1.35 | 1.51 | 1.20 | 1.63 |
| July | .25 | 2.51 | 0 | 1.44 | 0 | 2.51 | .03 | 1.68 | 0 | 2.00 |
| Aug. | .65 | .71 | 1.81 | 1.21 | 1.01 | .90 | .40 | 1.38 | 3.60 | 2.27 |
| Sept. | 2.02 | 1.72 | 2.37 | 2.76 | 2.84 | 1.49 | 1.68 | 2.51 | 2.80 | 3.17 |
| Oct. | .15 | 3.14 | .38 | 2.21 | 0 | 3.11 | T | 2.45 | 0 | 3.04 |
| Nov. | T | .52 | .09 | .65 | 0 | .52 | .12 | .71 | .40 | 1.00 |
| Dec. | .52 | .60 | .60 | .49 | 1.55 | 1.19 | .51 | .51 | 1.00 | .92 |
| Yearly | 6.64 | 16.45 | 8.68 | 16.34 | 9.65 | 16.66 | 6.62 | 15.93 | 10.30 | 19.64 |

| Month | Justapor Ranch | | Laredo Water Plant | | Fort McIntosh | | Corralitos Ranch | | Huizache Ranch | |
|--------|----------------|---------|--------------------|---------|---------------|---------|------------------|---------|----------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .83 | .12 | .87 | .14 | .75 | T | .77 | T | 1.06 |
| Feb. | 0 | 1.34 | 0 | .75 | 0 | .84 | 0 | .50 | 0 | .73 |
| Mar. | .50 | .22 | .22 | .55 | .29 | .71 | .70 | .24 | .40 | .40 |
| Apr. | 1.50 | .62 | 3.69 | 1.15 | 3.09 | 1.31 | 2.40 | .95 | 1.70 | 1.03 |
| May | .20 | 1.46 | .56 | 2.33 | .52 | 2.58 | 0 | 1.01 | 0 | 1.21 |
| June | 2.80 | 1.47 | 1.96 | 1.99 | 2.84 | 2.06 | 2.50 | 2.52 | 2.10 | 2.02 |
| July | 0 | .73 | 0 | 1.29 | 0 | 1.46 | 0 | .79 | 0 | 1.12 |
| Aug. | 0 | 1.31 | .71 | 1.51 | .40 | 1.73 | 3.50 | 2.10 | .30 | 1.38 |
| Sept. | 1.70 | 1.70 | 2.19 | 2.78 | 2.47 | 2.70 | 3.20 | 2.14 | 4.30 | 2.45 |
| Oct. | 0 | 1.79 | .34 | 1.59 | .64 | 1.64 | .10 | 1.82 | .10 | 2.45 |
| Nov. | .90 | 1.38 | .64 | .91 | .60 | 1.17 | 1.90 | .85 | 1.80 | .92 |
| Dec. | 0 | .58 | .45 | .97 | .52 | .88 | 1.00 | .37 | .60 | .44 |
| Yearly | 7.60 | 13.43 | 10.88 | 16.69 | 11.51 | 17.83 | 15.30 | 14.06 | 11.30 | 15.21 |

| Month | Zapata Water Plant | | Arroyo Tigre Chiquito | | Falcon Dam | | Roma | | Garciasville | |
|--------|--------------------|---------|-----------------------|---------|------------|---------|-------|---------|--------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .12 | 1.01 | .20 | 1.03 | .34 | .82 | 0 | .96 | .05 | 1.25 |
| Feb. | 0 | .65 | 0 | .98 | .08 | .72 | 0 | .97 | 0 | 1.01 |
| Mar. | .81 | .46 | 1.20 | .39 | 1.82 | .88 | 1.88 | .90 | 1.57 | .45 |
| Apr. | 1.87 | 1.22 | .77 | 1.08 | 2.05 | 1.30 | .60 | 1.39 | .30 | 1.19 |
| May | 0 | 1.84 | .35 | 1.31 | .30 | 1.83 | 0 | 1.55 | 1.13 | 1.07 |
| June | 1.89 | 1.55 | 2.30 | 1.77 | 3.49 | 2.49 | 1.78 | 2.03 | 1.40 | 1.55 |
| July | 0 | .86 | 0 | .77 | 0 | .67 | 0 | .78 | 0 | .73 |
| Aug. | 0 | 1.48 | 1.50 | 1.41 | .88 | 2.20 | 3.26 | 2.23 | 1.21 | 1.34 |
| Sept. | 8.33 | 3.29 | 3.90 | 3.52 | 3.88 | 3.02 | 4.10 | 3.70 | 1.55 | 2.51 |
| Oct. | .33 | 1.66 | 2.70 | 2.62 | 2.62 | 2.45 | .19 | 2.43 | 1.69 | 2.34 |
| Nov. | 1.07 | 1.10 | .50 | 1.45 | .24 | 1.25 | .43 | .73 | .18 | 1.42 |
| Dec. | .70 | .48 | .50 | .43 | 1.16 | .50 | 1.47 | .43 | 1.53 | .71 |
| Yearly | 15.12 | 15.60 | 13.92 | 16.76 | 16.86 | 18.13 | 13.71 | 18.10 | 10.61 | 15.57 |

T Trace

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES**
In the United States

| Month | Los Ebanos | | La Joya | | HCWCID #6 | | Penitas | | Mission Pump | |
|--------|------------|---------|---------|---------|-----------|---------|---------|---------|--------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | 1.40 | .34 | 1.58 | .51 | 1.05 | .53 | 1.60 | .54 | |
| Feb. | 0 | .91 | 0 | 1.04 | .03 | 1.01 | 0 | 1.14 | 0 | |
| Mar. | 1.47 | .57 | 1.92 | .56 | 1.85 | .65 | 1.98 | .71 | 1.20 | |
| Apr. | .39 | 1.66 | .39 | 1.38 | .43 | 1.51 | .43 | 1.09 | .66 | |
| May | .37 | .90 | .24 | .96 | .47 | 1.18 | .26 | .80 | .32 | |
| June | 2.50 | 1.77 | 2.88 | 1.72 | 4.36 | 1.75 | 2.25 | 1.45 | 1.97 | |
| July | 0 | .20 | 0 | .25 | 0 | .40 | 0 | .36 | 0 | |
| Aug. | .30 | 1.60 | 1.67 | 1.74 | 1.00 | 1.60 | 1.62 | 1.32 | .71 | 1.78 |
| Sept. | .60 | 2.75 | 1.13 | 2.48 | 2.37 | 2.63 | 1.14 | 2.40 | 1.85 | 3.36 |
| Oct. | 1.50 | 1.95 | .46 | 1.93 | .34 | 2.94 | .77 | 2.55 | .75 | .45 |
| Nov. | .20 | 1.08 | .40 | 1.22 | 1.07 | 1.00 | .91 | 1.23 | .95 | .88 |
| Dec. | 1.10 | .55 | 1.33 | .72 | 1.82 | .75 | 1.78 | .94 | 1.44 | .79 |
| Yearly | 8.43 | 15.34 | 10.76 | 15.58 | 14.25 | 16.47 | 11.67 | 15.59 | 10.39 | |

| Month | O. C. Dale Farm | | HCWCID #15 | | Edinburg Filtration Plant | | HCWID #6 | | CCWCID #3 (Avg. of 6 gages) | |
|--------|-----------------|---------|------------|---------|---------------------------|---------|----------|---------|-----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .46 | 1.44 | .52 | 1.32 | .47 | 1.37 | .58 | 1.02 | .58 | 1.05 |
| Feb. | 0 | 1.14 | 0 | 1.04 | .04 | 1.08 | T | 1.16 | .01 | 1.57 |
| Mar. | 2.21 | .70 | 1.82 | .76 | 2.08 | .77 | 1.60 | .67 | 1.36 | .82 |
| Apr. | .63 | 2.03 | .52 | 1.80 | .54 | 1.97 | .61 | 1.99 | .51 | 2.52 |
| May | .91 | 1.14 | .40 | .97 | .78 | 1.31 | 1.32 | 1.10 | .78 | 1.63 |
| June | 3.54 | 2.47 | 5.37 | 2.38 | 6.66 | 2.57 | 6.09 | 2.21 | 2.66 | 2.73 |
| July | 0 | .74 | .31 | .65 | 0 | .68 | 0 | 1.11 | 0 | 1.08 |
| Aug. | .71 | 1.46 | .35 | 1.68 | .90 | 1.22 | .57 | 1.82 | 0 | 2.90 |
| Sept. | 1.51 | 2.72 | 3.28 | 2.90 | 2.07 | 2.43 | 2.40 | 3.12 | 1.67 | 4.95 |
| Oct. | .53 | 2.94 | .11 | 2.38 | .70 | 2.48 | .64 | 2.67 | 1.00 | 3.53 |
| Nov. | .65 | 1.26 | 2.00 | 1.27 | 2.20 | 1.21 | 1.54 | 1.36 | 2.28 | 1.72 |
| Dec. | 2.08 | .94 | 1.95 | .91 | 3.78 | 1.09 | 2.38 | .93 | 2.35 | 1.22 |
| Yearly | 13.23 | 18.98 | 16.63 | 18.06 | 20.22 | 18.18 | 17.73 | 19.16 | 13.20 | 25.72 |

| Month | La Feria Pumping Plant | | CCWCID #19 | | San Benito Pump | | Whipple Farm | | CCWID #11 (Avg. of 18 gages) | |
|--------|------------------------|---------|------------|---------|-----------------|---------|--------------|---------|------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 1.45 | 1.02 | 0 | .77 | .55 | 1.21 | .73 | 1.21 | .47 | 1.22 |
| Feb. | .10 | 1.48 | 0 | 1.16 | 0 | .92 | .70 | 1.94 | .45 | 1.67 |
| Mar. | 1.55 | .83 | 1.31 | .59 | .55 | .96 | .72 | .72 | .53 | 1.09 |
| Apr. | .65 | 2.26 | .29 | 1.72 | 1.17 | 1.34 | 1.55 | 2.37 | 1.13 | 2.01 |
| May | 1.07 | 1.66 | .48 | 1.48 | .64 | 2.13 | 3.40 | 2.07 | 4.43 | 1.54 |
| June | 3.30 | 2.81 | 3.00 | 2.37 | 2.07 | 2.23 | 3.00 | 3.04 | 4.03 | 1.75 |
| July | 0 | 1.52 | 0 | .71 | 0 | 1.48 | 0 | 1.88 | 0 | 1.22 |
| Aug. | .65 | 2.80 | .60 | 2.13 | .96 | 1.98 | 3.40 | 2.41 | 2.90 | 2.91 |
| Sept. | 2.47 | 6.48 | 1.22 | 3.48 | .63 | 3.92 | 2.85 | 5.23 | 3.85 | 4.72 |
| Oct. | 1.95 | 4.00 | .52 | 2.74 | .53 | 2.24 | .51 | 3.34 | .83 | 2.16 |
| Nov. | 1.60 | 2.00 | 1.76 | 1.34 | 0 | .98 | .76 | 1.84 | .78 | 1.56 |
| Dec. | 3.60 | 1.25 | 1.70 | .99 | 1.65 | 1.31 | 3.29 | 1.18 | 2.60 | 1.19 |
| Yearly | 18.39 | 28.11 | 10.88 | 19.48 | 8.75 | 20.70 | 20.91 | 27.23 | 22.00 | 23.04 |

| Month | Los Fresnos Pump | | | | | | | | | |
|--------|------------------|---------|--|--|--|--|--|--|--|--|
| | 1962 | Average | | | | | | | | |
| Jan. | .90 | 1.28 | | | | | | | | |
| Feb. | T | 1.87 | | | | | | | | |
| Mar. | 1.10 | .59 | | | | | | | | |
| Apr. | 1.90 | 2.27 | | | | | | | | |
| May | 3.65 | 1.59 | | | | | | | | |
| June | 4.30 | 3.83 | | | | | | | | |
| July | 0 | 1.79 | | | | | | | | |
| Aug. | 1.15 | 1.98 | | | | | | | | |
| Sept. | 1.45 | 5.52 | | | | | | | | |
| Oct. | 2.55 | 4.43 | | | | | | | | |
| Nov. | .80 | 1.80 | | | | | | | | |
| Dec. | 2.35 | 1.11 | | | | | | | | |
| Yearly | 20.15 | 28.06 | | | | | | | | |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

Tabulated below, in 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 127 through 130 of 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 | | "Garita" Km. 28 Chihuahua | | Zaragoza, Chihuahua | | San Agustín, Chihuahua | | Guadalupe, Chihuahua | |
|--------|----------------------|---------|------------------------------|---------|------------------------|---------|---------------------------|---------|-------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .94 | .42 | 1.14 | .66 | .79 | .54 | .71 | .70 | .31 | .55 |
| Feb. | .75 | .43 | .79 | .29 | .63 | .43 | .71 | .45 | .55 | .42 |
| Mar. | .08 | .40 | .12 | .16 | .04 | .74 | .24 | .47 | .47 | .66 |
| Apr. | .04 | .34 | 0 | .01 | .04 | .05 | .08 | .14 | T | .08 |
| May | 0 | .39 | 0 | .19 | 0 | .23 | 0 | .32 | 0 | .15 |
| June | T | .62 | 0 | .32 | T | .33 | T | .55 | 0 | .31 |
| July | 1.42 | 1.33 | 4.02 | 1.63 | 3.86 | 1.80 | 3.94 | 1.54 | 3.62 | 1.24 |
| Aug. | T | 1.51 | 0 | 1.01 | T | .65 | .28 | .69 | .04 | .69 |
| Sept. | 4.41 | 1.37 | 3.98 | 2.05 | 4.69 | 2.74 | 3.19 | 1.50 | 2.44 | 1.19 |
| Oct. | .83 | 1.08 | 1.61 | 1.28 | 1.06 | .63 | 1.81 | 1.13 | 3.78 | 1.74 |
| Nov. | .24 | .55 | 0 | .31 | .31 | .42 | .39 | .34 | .43 | .40 |
| Dec. | .16 | .56 | .39 | .49 | .20 | .47 | .08 | .46 | .28 | .22 |
| Yearly | 8.87 | 9.00 | 12.05 | 8.40 | 11.62 | 9.03 | 11.43 | 8.29 | 11.92 | 7.65 |

| Month | Samalayuca, Chihuahua | | Praxedis G. Guerrero Chihuahua | | Tinajas, Chihuahua | | Porvenir, Chihuahua | | Vado de Cedillos, Chihuahua | |
|--------|--------------------------|---------|-----------------------------------|---------|-----------------------|---------|------------------------|---------|--------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .67 | .67 | .35 | .54 | .31 | .44 | .47 | .57 | .28 | .43 |
| Feb. | 1.02 | .57 | .55 | .30 | .55 | .38 | .43 | .26 | .24 | .11 |
| Mar. | .55 | .50 | .39 | .42 | .63 | .38 | .35 | .37 | .16 | .08 |
| Apr. | 0 | .12 | .04 | .08 | T | .07 | .08 | .09 | 0 | .12 |
| May | 0 | .22 | 0 | .15 | 0 | .26 | 0 | .34 | 0 | .29 |
| June | 0 | .72 | 0 | .49 | 0 | .34 | .16 | .20 | 1.69 | .73 |
| July | 1.65 | 1.44 | 2.99 | 1.37 | 3.66 | 1.88 | 1.22 | 1.67 | 2.24 | 1.73 |
| Aug. | .08 | 1.28 | .04 | .68 | 0 | 1.21 | 0 | 1.36 | .12 | 1.09 |
| Sept. | 2.36 | 2.16 | 2.40 | 1.15 | 3.43 | 1.26 | 2.95 | 1.04 | 2.40 | 1.16 |
| Oct. | .74 | .83 | 2.20 | 1.63 | 1.18 | .97 | 1.42 | 1.28 | 1.73 | 1.48 |
| Nov. | .16 | .44 | .31 | .50 | .16 | .40 | .28 | .61 | .20 | .37 |
| Dec. | .16 | .40 | .20 | .35 | .47 | .28 | .20 | .43 | .20 | .47 |
| Yearly | 7.39 | 9.35 | 9.47 | 7.66 | 10.39 | 7.87 | 7.56 | 8.22 | 9.26 | 8.06 |

| Month | San Antonio, Chihuahua | | Los Barriles, Chihuahua | | Luis L. León, Chihuahua | | Felix U. Gómez (Los Lamentos), Chihuahua | | El Cuarenta, Chihuahua | |
|--------|---------------------------|---------|----------------------------|---------|----------------------------|---------|---|---------|---------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .24 | .55 | 1.14 | 1.03 | .39 | .61 | .28 | .49 | .12 | .52 |
| Feb. | .28 | .27 | .55 | .38 | .39 | .21 | .43 | .35 | .39 | .39 |
| Mar. | .35 | .30 | .31 | .14 | .20 | .10 | .47 | .30 | .51 | .32 |
| Apr. | 0 | .02 | T | .11 | .04 | .19 | T | .18 | T | 0 |
| May | 0 | .10 | T | .08 | 0 | .40 | 0 | .12 | 0 | .16 |
| June | 0 | .63 | .08 | .47 | 1.18 | .94 | .47 | .77 | T | .08 |
| July | 2.21 | 2.10 | 2.80 | 1.87 | 3.43 | 2.32 | 3.08 | 2.83 | 2.76 | 1.42 |
| Aug. | .16 | 1.69 | .67 | 1.99 | .39 | 1.29 | .98 | 2.37 | .16 | .89 |
| Sept. | 2.72 | 1.60 | 3.78 | 2.15 | 2.83 | 1.22 | 3.39 | 1.21 | 3.19 | 2.06 |
| Oct. | .94 | 1.37 | 1.42 | 1.87 | 1.22 | 1.66 | .98 | 1.54 | 1.06 | .59 |
| Nov. | .12 | .75 | .24 | .94 | .24 | .73 | .16 | .29 | .08 | .57 |
| Dec. | .67 | .37 | .55 | .51 | .28 | .38 | .12 | .28 | .24 | .22 |
| Yearly | 7.69 | 9.75 | 11.54 | 11.54 | 10.59 | 10.05 | 10.36 | 10.73 | 8.51 | 7.22 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | Siquirichic, Chihuahua | | El Vergel, Chihuahua | | Balleza, Chihuahua | | El Sito, Chihuahua | | Santa Rita, Chihuahua | |
|--------|---------------------------|---------|-------------------------|---------|-----------------------|---------|-----------------------|---------|--------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | 1.78 | 1.26 | 2.32 | .31 | .40 | T | .50 | .12 | .72 |
| Feb. | T | .29 | .39 | .55 | T | .30 | 0 | .21 | .20 | .25 |
| Mar. | .20 | .22 | .71 | .71 | .47 | .10 | 0 | .04 | 0 | .10 |
| Apr. | T | .25 | .24 | .38 | T | .19 | 0 | .21 | 0 | .29 |
| May | .79 | .22 | .08 | .52 | 1.50 | .19 | 0 | .34 | .04 | .39 |
| June | .87 | 1.91 | .94 | 2.51 | 1.14 | 1.41 | .87 | 1.70 | .20 | 1.90 |
| July | 7.17 | 4.79 | 7.56 | 6.89 | 5.83 | 4.45 | 4.57 | 3.67 | 3.27 | 2.18 |
| Aug. | 2.20 | 5.14 | 1.69 | 5.99 | .39 | 4.50 | .79 | 4.90 | .28 | 2.02 |
| Sept. | 4.25 | 3.20 | 6.22 | 5.07 | 3.62 | 3.34 | 6.69 | 3.67 | 3.78 | 1.75 |
| Oct. | 3.15 | 1.46 | 3.58 | 2.06 | 1.73 | .82 | 2.32 | 1.00 | 2.13 | 1.38 |
| Nov. | 0 | .38 | .47 | .48 | .20 | .48 | .16 | .32 | .04 | .23 |
| Dec. | .31 | .77 | .35 | 1.36 | .08 | .46 | .16 | .34 | .91 | .59 |
| Yearly | 18.94 | 20.41 | 23.49 | 28.84 | 15.27 | 16.64 | 15.76 | 16.90 | 10.97 | 11.80 |

| Month | La Boquilla, Chihuahua | | Ojo Caliente, Chihuahua | | San Antonio, Durango | | Escalón, Chihuahua | | Jiménez, Chihuahua | |
|--------|---------------------------|---------|----------------------------|---------|-------------------------|---------|-----------------------|---------|-----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .33 | T | .23 | T | .38 | .04 | .58 | .31 | .36 |
| Feb. | 0 | .14 | 0 | .13 | 0 | .08 | 0 | .22 | 0 | .06 |
| Mar. | 0 | .15 | 0 | .14 | 0 | .05 | 0 | .01 | .04 | .07 |
| Apr. | T | .18 | 0 | .13 | .16 | .23 | 0 | .06 | .47 | .16 |
| May | .12 | .55 | T | .45 | 0 | .44 | .08 | .37 | .16 | .50 |
| June | .20 | 1.39 | T | 1.47 | .24 | 1.88 | .12 | 1.15 | .47 | .99 |
| July | 4.61 | 2.92 | 5.00 | 3.32 | 3.84 | 4.07 | 3.31 | 2.09 | 3.50 | 3.49 |
| Aug. | .71 | 2.94 | 1.93 | 2.56 | .98 | 3.50 | .20 | 2.25 | 1.02 | 1.81 |
| Sept. | 2.40 | 2.84 | 2.52 | 2.39 | 1.89 | 3.72 | 4.41 | 2.59 | 2.44 | 2.20 |
| Oct. | 3.39 | .96 | 2.20 | 1.42 | 1.81 | 1.14 | 2.52 | 1.59 | 10.71 | 2.12 |
| Nov. | .08 | .35 | .04 | .11 | .16 | .22 | .04 | .12 | .20 | .15 |
| Dec. | .12 | .38 | .20 | .25 | 0 | .26 | T | .20 | .08 | .26 |
| Yearly | 11.63 | 13.13 | 11.89 | 12.60 | 9.08 | 15.97 | 10.72 | 11.23 | 19.40 | 12.17 |

| Month | Parral, Chihuahua | | Camargo, Chihuahua | | Rosetilla, Chihuahua | | El Maguey, Chihuahua | | Tres Hermanos, Chihuahua | |
|--------|----------------------|---------|-----------------------|---------|-------------------------|---------|-------------------------|---------|-----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .04 | .21 | .12 | .81 | .20 | .51 | .16 | .50 | T | .69 |
| Feb. | 0 | .17 | 0 | .15 | 0 | .11 | 0 | .08 | 0 | 0 |
| Mar. | 0 | .11 | T | .01 | 0 | .12 | 0 | .07 | 0 | 0 |
| Apr. | .12 | .19 | 0 | .13 | 0 | .21 | 0 | .19 | 0 | .08 |
| May | T | .37 | T | .70 | 0 | .22 | 0 | .21 | 0 | .08 |
| June | .87 | 1.64 | .12 | .74 | 0 | 1.04 | 1.18 | 1.55 | .63 | 2.04 |
| July | 3.46 | 4.05 | 5.87 | 3.56 | 4.41 | 2.56 | 3.50 | 3.82 | 4.37 | 4.16 |
| Aug. | .63 | 4.00 | 1.26 | 2.64 | .20 | 2.36 | 1.10 | 3.96 | 1.22 | 2.60 |
| Sept. | 1.93 | 4.03 | 2.52 | 2.23 | 4.17 | 2.04 | 4.61 | 3.29 | 2.48 | 1.93 |
| Oct. | 4.25 | 1.24 | 1.81 | 1.64 | 2.44 | .86 | 1.46 | 1.09 | 2.32 | 1.54 |
| Nov. | .16 | .52 | .04 | .53 | 0 | .22 | .08 | .17 | T | .08 |
| Dec. | T | .41 | 0 | .44 | .31 | .32 | .35 | .30 | .59 | .30 |
| Yearly | 11.46 | 16.94 | 11.74 | 13.58 | 11.73 | 10.57 | 12.44 | 15.23 | 11.61 | 13.50 |

| Month | Cd. Guerrero, Chihuahua | | La Junta, Chihuahua | | Cuahtémoc, Chihuahua | | San Lorenzo, Chihuahua | | La Junta (Satevo), Chihuahua | |
|--------|----------------------------|---------|------------------------|---------|-------------------------|---------|---------------------------|---------|---------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .63 | .68 | 1.65 | 1.20 | T | .32 | T | .77 | T | .51 |
| Feb. | .04 | .38 | .04 | .49 | 0 | .06 | 0 | .06 | 0 | .30 |
| Mar. | .20 | .20 | .71 | .33 | 0 | .09 | 0 | 0 | 0 | 0 |
| Apr. | T | .20 | T | .23 | 0 | .20 | 0 | 0 | 0 | .18 |
| May | T | .24 | T | .21 | 0 | .19 | 0 | 0 | 0 | .12 |
| June | .67 | 1.60 | .55 | 1.51 | .55 | 1.47 | 0 | 2.14 | .12 | 1.30 |
| July | 7.24 | 4.52 | 5.35 | 5.04 | 4.96 | 4.76 | 5.67 | 5.06 | 4.41 | 4.41 |
| Aug. | 2.05 | 5.19 | 1.38 | 4.80 | 3.23 | 4.09 | .31 | 2.26 | 1.46 | 2.82 |
| Sept. | 5.43 | 3.09 | 4.21 | 2.31 | 4.17 | 2.58 | 5.67 | 4.90 | 3.39 | 2.88 |
| Oct. | 1.65 | 1.24 | 1.26 | 1.28 | 1.97 | 1.15 | 3.07 | 1.66 | 2.28 | 1.18 |
| Nov. | .24 | .51 | .20 | .41 | .31 | .25 | 0 | .20 | 0 | .24 |
| Dec. | 1.06 | .70 | .83 | .85 | .63 | .45 | 1.77 | .88 | .31 | .16 |
| Yearly | 19.21 | 18.55 | 16.18 | 18.66 | 15.82 | 15.67 | 16.49 | 17.93 | 11.97 | 14.10 |

T Trace

**RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico**

| Month | Villalba, Chihuahua | | Las Virgenes, Chihuahua | | Km. 135, Chihuahua | | Km. 99 Chihuahua | | Delicias, Chihuahua | |
|--------|------------------------|---------|----------------------------|---------|-----------------------|---------|---------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .08 | .43 | .08 | .35 | .12 | | .08 | | .08 | .41 |
| Feb. | 0 | .10 | T | .06 | .08 | | .04 | | T | .11 |
| Mar. | 0 | .03 | T | .03 | 0 | | 0 | | T | .09 |
| Apr. | 0 | .16 | 0 | .15 | 0 | | 0 | | T | .21 |
| May | 0 | .23 | T | .24 | 0 | | 0 | | 0 | .22 |
| June | 0 | .83 | T | .24 | 0 | | T | | T | 1.08 |
| July | 4.29 | 3.53 | 4.17 | 2.32 | 3.46 | | 4.17 | | 3.27 | 2.48 |
| Aug. | 1.69 | 2.74 | .55 | 2.12 | 1.18 | | .51 | | .87 | 2.53 |
| Sept. | 1.77 | 2.52 | 2.68 | 1.69 | 3.94 | | 1.89 | | 2.05 | 2.02 |
| Oct. | 1.77 | 1.08 | 2.40 | .84 | 1.61 | | 2.28 | | 2.52 | .90 |
| Nov. | 0 | .29 | .04 | .23 | .08 | | .04 | | .08 | .28 |
| Dec. | .24 | .35 | .24 | .34 | .24 | | .28 | | .31 | .37 |
| Yearly | 9.84 | 12.29 | 10.20 | 9.35 | 10.75 | | 9.29 | | 9.18 | 10.70 |

| Month | Lazaro Cárdenas, Chihuahua | | Mecoqui, Chihuahua | | Las Burras, Chihuahua | | Bachiniva, Chihuahua | | La Trasquila, Chihuahua | |
|--------|-------------------------------|---------|-----------------------|---------|--------------------------|---------|-------------------------|---------|----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .08 | .73 | .08 | .47 | .16 | .35 | .31 | .63 | .24 | |
| Feb. | .08 | .10 | T | .10 | .16 | .13 | .24 | .12 | .71 | |
| Mar. | 0 | 0 | T | .02 | 0 | .11 | .24 | .30 | 0 | |
| Apr. | 0 | .02 | 0 | 0 | 0 | .20 | 0 | .30 | 0 | |
| May | 0 | .14 | T | .06 | 0 | .31 | 0 | .14 | 0 | |
| June | .04 | 1.24 | .08 | 1.22 | .08 | .89 | .83 | 1.30 | .12 | |
| July | 3.86 | 3.47 | 4.09 | 2.95 | 3.62 | 2.58 | 6.57 | 5.48 | 4.17 | |
| Aug. | .87 | 1.04 | .71 | 1.81 | 1.22 | 2.19 | 1.42 | 4.60 | .55 | |
| Sept. | 4.25 | 2.74 | 1.89 | 1.28 | 3.31 | 2.01 | 5.28 | 2.02 | 8.39 | |
| Oct. | 2.20 | 1.20 | 2.76 | 1.76 | 1.38 | .64 | 2.24 | 1.28 | 1.02 | |
| Nov. | .20 | .24 | .08 | .06 | .16 | .14 | .47 | .36 | .55 | |
| Dec. | .35 | .20 | .31 | .16 | .35 | .30 | .79 | .35 | .39 | |
| Yearly | 11.93 | 11.12 | 10.00 | 9.89 | 10.44 | 9.85 | 18.39 | 16.68 | 16.14 | |

| Month | Colonia Anahuac, Chihuahua | | Presa Chihuahua, Chihuahua | | Chihuahua, Chihuahua | | Escuela Ganaderia, Chihuahua | | Planta Zootécnica, Chihuahua | |
|--------|-------------------------------|---------|-------------------------------|---------|-------------------------|---------|---------------------------------|---------|---------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .16 | .75 | .20 | | .30 | .30 | .51 | .04 | .51 | |
| Feb. | .16 | .20 | .04 | | T | .20 | T | .26 | 0 | .14 |
| Mar. | T | 0 | 0 | | T | .19 | 0 | 0 | 0 | .03 |
| Apr. | 0 | .16 | 0 | | 0 | .16 | 0 | 0 | 0 | .15 |
| May | 0 | .12 | 0 | | 0 | .36 | T | .04 | 0 | .46 |
| June | .28 | 1.46 | .31 | | .83 | 1.36 | .55 | .48 | .85 | |
| July | 7.00 | 5.31 | 6.26 | | 3.58 | 3.38 | 4.69 | 3.70 | 6.10 | 3.76 |
| Aug. | 2.13 | 2.13 | 1.57 | | .43 | 3.29 | .43 | 1.50 | .63 | 3.11 |
| Sept. | 4.17 | 3.78 | 3.23 | | 2.64 | 2.85 | 2.87 | 2.28 | 2.76 | 2.20 |
| Oct. | 2.36 | 1.32 | 1.89 | 1.08 | .83 | .84 | 1.42 | 1.04 | 1.42 | 1.14 |
| Nov. | .16 | .28 | .12 | .28 | 0 | .45 | .04 | .22 | .24 | .38 |
| Dec. | .71 | .42 | 1.38 | .69 | .79 | .38 | 1.02 | .51 | 1.18 | .52 |
| Yearly | 17.13 | 15.93 | 15.00 | | 9.18 | 13.76 | 11.10 | 11.54 | 12.41 | 13.25 |

| Month | Las Choyas, Chihuahua | | Los Ojos, Chihuahua | | Los Pozos, Chihuahua | | Villa Aldama, Chihuahua | | Maclovio Herrera, (Falomir, Chihuahua) | |
|--------|--------------------------|---------|------------------------|---------|-------------------------|---------|----------------------------|---------|---|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .49 | T | .75 | .12 | .60 | .08 | .69 | .12 | .38 |
| Feb. | .31 | .42 | T | .25 | .08 | .30 | .08 | .06 | T | .17 |
| Mar. | 0 | .03 | 0 | .10 | .04 | .07 | 0 | 0 | 0 | .18 |
| Apr. | 0 | .27 | 0 | .30 | 0 | .06 | 0 | 0 | 0 | .22 |
| May | 0 | .20 | 0 | .72 | 0 | .55 | 0 | .18 | 0 | .51 |
| June | .67 | .94 | .08 | .95 | .16 | 1.27 | .16 | 1.80 | .20 | 1.22 |
| July | 5.28 | 2.56 | 7.32 | 4.46 | 6.73 | 2.80 | 7.76 | 5.50 | 3.07 | 2.56 |
| Aug. | 1.34 | 2.92 | .16 | 2.39 | .79 | 2.28 | .55 | 1.68 | 1.26 | 2.60 |
| Sept. | 3.86 | 2.11 | 4.09 | 3.12 | 4.80 | 2.20 | 8.62 | 4.56 | 4.88 | 3.12 |
| Oct. | 3.74 | 1.54 | 2.36 | 1.24 | 1.18 | .99 | 1.10 | .59 | .55 | .75 |
| Nov. | .04 | .38 | .04 | .24 | .31 | .68 | .04 | .24 | .16 | .19 |
| Dec. | .24 | .35 | .55 | .34 | 1.02 | .36 | 1.10 | .55 | .51 | .70 |
| Yearly | 15.48 | 12.21 | 14.60 | 14.86 | 15.23 | 12.16 | 19.49 | 15.85 | 10.75 | 12.60 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | Coyame, Chihuahua | | Majomma, Chihuahua | | Ojinaga (IB&WC), Chihuahua | | Ojinaga (M.S. of Mexico), Chihuahua | | Manuel Benavides, Chihuahua | |
|--------|----------------------|---------|-----------------------|---------|-------------------------------|---------|--|---------|--------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .24 | | .16 | .93 | .28 | .69 | .35 | .37 | .04 | |
| Feb. | .39 | | .04 | .39 | .08 | .31 | .20 | .20 | .08 | |
| Mar. | 0 | | 0 | .06 | T | .08 | 0 | .16 | 0 | |
| Apr. | T | | 0 | .11 | .04 | .25 | .35 | .25 | .04 | |
| May | 0 | | T | .65 | 0 | .41 | 0 | .54 | .59 | |
| June | 1.54 | | 1.18 | 1.45 | 1.57 | 1.27 | 2.00 | .91 | .83 | |
| July | 2.76 | | 2.83 | 2.93 | 3.23 | 1.28 | 3.54 | 1.25 | 3.94 | |
| Aug. | T | | .71 | 3.38 | .79 | 1.43 | .59 | 1.30 | 1.10 | |
| Sept. | 2.99 | | 3.46 | 2.96 | 3.43 | .77 | 4.06 | 1.28 | 2.13 | |
| Oct. | 1.18 | | 1.97 | 1.13 | 1.61 | .95 | 1.73 | .96 | 1.69 | |
| Nov. | .04 | | .10 | .71 | .54 | .31 | .43 | .38 | .04 | .28 |
| Dec. | .08 | | .04 | .16 | .33 | .51 | .28 | .35 | .59 | .30 |
| Yearly | 9.22 | | 11.22 | 14.86 | 11.85 | 8.06 | 13.60 | 7.99 | 11.07 | |

| Month | Sierra Mojada, Coahuila | | Mina La Borrada, Coahuila | | Las Norias, Coahuila | | San Fernando, Coahuila | | Santa Rosa, Coahuila | |
|--------|----------------------------|---------|------------------------------|---------|-------------------------|---------|---------------------------|---------|-------------------------|-------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1961 | 1962 |
| Jan. | T | .55 | 0 | | .47 | .81 | 0 | | 2.60 | 0 |
| Feb. | 0 | .30 | .16 | | .20 | .53 | .16 | | 1.42 | 0 |
| Mar. | 0 | .32 | .16 | | .47 | .20 | .12 | | 0 | .20 |
| Apr. | 0 | .28 | .47 | | 1.14 | .73 | .35 | | 1.30 | 1.30 |
| May | .28 | .95 | 0 | | 1.02 | .90 | .20 | | 0 | 0 |
| June | .43 | 2.31 | 1.85 | | 2.09 | 2.40 | .67 | | 3.82 | 1.30 |
| July | 1.73 | 2.86 | 1.61 | | 3.19 | 2.35 | .12 | | 1.18 | 0 |
| Aug. | T | 2.75 | 0 | | .24 | .79 | .08 | 2.24 | 2.80 | 0 |
| Sept. | 3.46 | 2.84 | 2.40 | 1.56 | 2.68 | 1.43 | 2.13 | 2.38 | .31 | 3.39 |
| Oct. | 2.20 | 1.46 | .43 | .86 | 3.58 | 1.57 | 1.14 | 1.98 | 3.58 | 4.49 |
| Nov. | .20 | .55 | .28 | .30 | .67 | .47 | .20 | .10 | .59 | 5.00 |
| Dec. | .16 | .64 | .20 | .12 | .39 | .61 | .94 | .47 | 0 | 0 |
| Yearly | 8.46 | 15.81 | 7.56 | | 16.14 | 12.79 | 6.11 | | 17.60 | 15.68 |

| Month | Santa Rosa, Coahuila | | El Cedrito, Coahuila | | Hacienda San Miguel, Coahuila | | San Gregorio, Coahuila | | Sitio Presa Amistad, Coahuila | |
|--------|-------------------------|------|-------------------------|------|----------------------------------|-------|---------------------------|------|----------------------------------|------|
| | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | |
| Jan. | 1.60 | | 0 | | .39 | .20 | 0 | | 0 | .12 |
| Feb. | .88 | | 0 | | .24 | .12 | 0 | | T | |
| Mar. | .55 | | 0 | | 0 | 0 | .98 | | | 1.89 |
| Apr. | .98 | | 1.57 | | .94 | .47 | 0 | | | 0 |
| May | .72 | | 2.48 | | 1.69 | .84 | 0 | | | |
| June | 2.06 | | .39 | | .55 | 7.28 | 4.09 | | | 1.65 |
| July | 3.06 | | 2.52 | | 0 | 2.01 | 0 | | | 0 |
| Aug. | 1.05 | | .67 | 2.56 | 1.97 | 1.83 | 0 | | | .71 |
| Sept. | 1.96 | | 1.73 | 1.26 | 2.72 | 2.50 | .98 | | | 2.76 |
| Oct. | 4.30 | | 3.15 | 2.48 | 1.73 | 5.18 | 2.36 | | | |
| Nov. | 2.25 | | .47 | .24 | .39 | .68 | 0 | | | 0 |
| Dec. | .80 | | 1.42 | .71 | 1.18 | .59 | .20 | | | |
| Yearly | 20.21 | | 14.40 | | 11.80 | 21.70 | 8.61 | | 7.13 | |

| Month | Manantial Maris, Coahuila | | El Paisano, Coahuila | | Cd. Acuna, Coahuila | | Palestina, Coahuila | | Acuna K-22-SE, Coahuila | |
|--------|------------------------------|---------|-------------------------|---------|------------------------|---------|------------------------|---------|----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | | 0 | | .16 | .66 | .12 | 1.04 | 0 | |
| Feb. | .08 | | .08 | | .28 | .67 | .24 | .98 | 0 | |
| Mar. | T | | T | | .20 | .87 | .28 | .66 | 0 | |
| Apr. | 1.38 | | 1.57 | | 1.61 | 1.39 | 1.26 | 1.56 | 2.36 | |
| May | 0 | | 0 | | .75 | 2.48 | .79 | 2.62 | 1.77 | |
| June | 1.57 | | 4.45 | | 2.36 | 2.99 | 1.93 | 2.47 | | |
| July | 0 | | .20 | | .20 | .97 | T | 1.93 | 0 | |
| Aug. | 0 | | 0 | | T | 1.30 | 0 | 1.99 | 0 | |
| Sept. | 1.14 | | 2.40 | | 2.05 | 2.44 | 1.69 | 2.79 | 2.64 | |
| Oct. | 1.77 | | 2.44 | | 2.91 | 2.40 | 5.63 | 1.75 | 7.48 | |
| Nov. | 0 | | .47 | | .28 | .49 | .24 | .70 | 2.32 | |
| Dec. | 0 | | .20 | | .24 | .50 | .51 | .89 | 0 | |
| Yearly | 5.94 | | 11.81 | | 11.04 | 17.16 | 12.69 | 19.38 | | |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | Chupadero, Coahuila | | Jiménez, Coahuila | | El Remolino, Coahuila | | El Moral, Coahuila | | El Moral K-17-SW, Coahuila | |
|--------|------------------------|---------|----------------------|---------|--------------------------|---------|-----------------------|---------|-------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .04 | .80 | .08 | .77 | 0 | .50 | | | 0 | |
| Feb. | .04 | .30 | .16 | .80 | | .65 | 0 | | 0 | |
| Mar. | .08 | .08 | .28 | .73 | .31 | .11 | .51 | | 0 | |
| Apr. | 2.48 | 1.89 | 2.20 | 1.85 | .79 | 1.54 | | | | |
| May | .08 | .28 | 2.24 | 3.00 | 1.81 | 2.02 | 2.64 | | 2.48 | |
| June | .24 | 3.84 | 1.97 | 3.57 | 4.45 | 5.59 | | | 0 | |
| July | 1.22 | 2.36 | .08 | 1.53 | 0 | 1.30 | 0 | | 0 | |
| Aug. | .12 | 1.54 | 1.26 | 1.85 | 0 | 1.16 | | | .39 | |
| Sept. | 2.76 | 1.84 | | 1.82 | 2.83 | 3.08 | | | 1.77 | |
| Oct. | 5.20 | 4.22 | 2.24 | 2.52 | .55 | 4.07 | .39 | | 0 | |
| Nov. | .75 | .75 | 2.13 | .85 | .47 | .33 | .79 | | .98 | |
| Dec. | 0 | .14 | .75 | .61 | 0 | .58 | 0 | | .20 | |
| Yearly | 13.01 | 18.04 | | 19.90 | 11.21 | 20.93 | | | | |

| Month | Piedras Negras, Coahuila | | Piedras Negras K-22-SW, Coahuila | | Allende, Coahuila | | Villa Guerrero, Coahuila | | Rancho San Diego, Coahuila | |
|--------|-----------------------------|---------|-------------------------------------|---------|----------------------|---------|-----------------------------|---------|-------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .72 | | | | .65 | 0 | .46 | T | .16 |
| Feb. | .24 | .75 | 0 | | | 1.21 | 0 | .53 | T | .09 |
| Mar. | .31 | .60 | .35 | | .39 | .33 | T | .06 | T | 0 |
| Apr. | 2.32 | 2.10 | | | .55 | 1.08 | 1.77 | 1.72 | .59 | .59 |
| May | .59 | 2.73 | 2.24 | | .04 | 2.12 | 0 | .74 | T | 1.04 |
| June | 4.17 | 1.89 | | | 3.46 | 1.93 | 3.03 | 2.41 | 3.74 | 2.90 |
| July | .04 | 2.42 | 0 | | 0 | 1.66 | 0 | 1.51 | T | .70 |
| Aug. | .79 | 1.93 | 0 | | | 2.13 | .71 | 1.14 | T | 1.23 |
| Sept. | 1.73 | 2.35 | 1.97 | | 1.10 | 2.28 | 2.56 | 3.58 | 5.31 | 1.84 |
| Oct. | .12 | 2.99 | | | .08 | 1.88 | 0 | 4.13 | T | .84 |
| Nov. | .71 | .69 | 0 | | .23 | .44 | .35 | .55 | T | .82 |
| Dec. | .51 | .59 | 0 | | .71 | .57 | 0 | .63 | T | .08 |
| Yearly | 11.53 | 19.76 | | | | 16.28 | 8.42 | 17.46 | 9.64 | 10.29 |

| Month | Rancho Mercedes, Coahuila | | Villa Hidalgo, Coahuila | | Rancho Los Vidrios Tamaulipas | | Nuevo Laredo (M.S. of Mexico), Tamps. | | Nuevo Laredo (IB&WC), Tamps. | |
|--------|------------------------------|---------|----------------------------|---------|----------------------------------|---------|--|---------|---------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .10 | .28 | .90 | .20 | 1.59 | .24 | .81 | T | .59 |
| Feb. | 0 | .47 | 0 | .84 | 0 | 1.11 | 0 | .83 | 0 | .73 |
| Mar. | .20 | .07 | .39 | .44 | .63 | .18 | .55 | .66 | .55 | .32 |
| Apr. | 3.78 | 2.51 | 1.42 | 1.41 | 6.97 | 1.82 | 4.80 | 1.23 | 2.91 | .96 |
| May | .08 | 1.32 | .16 | 2.54 | .31 | 2.33 | .59 | 2.26 | .55 | 1.97 |
| June | .98 | 2.40 | 2.95 | 1.59 | .83 | 1.56 | 2.91 | 1.85 | 2.91 | 1.54 |
| July | 0 | 1.30 | 0 | .89 | T | 1.79 | 0 | 1.39 | 0 | 1.13 |
| Aug. | 2.44 | .71 | 1.26 | 1.52 | 1.73 | 1.43 | .67 | 1.31 | .47 | 1.38 |
| Sept. | 2.44 | .96 | 2.64 | 2.30 | 2.36 | 2.10 | 2.60 | 2.49 | 2.36 | 1.76 |
| Oct. | .43 | 1.50 | .20 | 2.08 | .47 | 2.60 | 1.02 | 1.41 | .63 | 1.24 |
| Nov. | 0 | .63 | .47 | .96 | .31 | 1.14 | 1.26 | .98 | .39 | .97 |
| Dec. | .71 | .72 | .91 | .69 | .43 | .88 | .59 | .91 | .59 | .58 |
| Yearly | 11.06 | 12.69 | 10.68 | 16.16 | 14.24 | 18.53 | 15.23 | 16.13 | 11.36 | 13.17 |

| Month | Jarita, Nuevo León | | Nuevo Laredo K-26-S, SW, Tamps. | | Nuevo Laredo K-50-S, SW, Tamps. | | Rancho San Juan de la Palma, Tamps. | | Santo Domingo, Coahuila | |
|--------|-----------------------|---------|------------------------------------|---------|------------------------------------|---------|--|---------|----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | 0 | .08 | | .04 | | 0 | .81 | .24 | 1.36 |
| Feb. | 0 | 0 | 0 | | 0 | | T | .88 | .63 | .40 |
| Mar. | .35 | .20 | .39 | | .43 | | .47 | .56 | 0 | .06 |
| Apr. | 3.15 | 1.60 | 4.72 | 3.14 | 1.57 | .92 | 1.34 | 1.04 | 1.02 | .57 |
| May | 0 | 0 | | | 0 | | .55 | 1.09 | 1.14 | 1.38 |
| June | 1.97 | 1.38 | 0 | | 2.56 | | 2.17 | 1.63 | 8.70 | 6.00 |
| July | 0 | 0 | 0 | .73 | 0 | | 0 | .84 | 3.74 | 3.58 |
| Aug. | .39 | .59 | .87 | .59 | T | .18 | 2.28 | 1.65 | 2.09 | 2.94 |
| Sept. | 6.61 | 4.64 | 3.46 | 2.91 | 6.22 | 4.37 | 5.55 | 3.22 | 3.19 | 2.36 |
| Oct. | 0 | .63 | T | | 0 | 1.68 | .47 | 1.74 | 6.57 | 3.54 |
| Nov. | 2.95 | 1.87 | 2.44 | 1.22 | .59 | .30 | 1.26 | 1.31 | .63 | .66 |
| Dec. | .31 | .17 | .79 | .40 | .47 | .24 | 1.10 | .69 | 1.50 | 1.06 |
| Yearly | 15.73 | 11.08 | | | 11.88 | | 15.19 | 15.46 | 29.45 | 23.91 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | La Babia, Coahuila | | Muzquiz, Coahuila | | Conchos, Coahuila | | Nueva Rosita, Coahuila | | Sabinas, Coahuila | |
|--------|-----------------------|---------|----------------------|---------|----------------------|---------|---------------------------|---------|----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .80 | 0 | .86 | 0 | .42 | .04 | .69 | .08 | .70 |
| Feb. | .12 | .12 | .59 | .55 | 0 | .63 | 0 | .50 | 0 | .85 |
| Mar. | 0 | .25 | .95 | .12 | .23 | .24 | .30 | .20 | .42 | .42 |
| Apr. | 0 | .32 | .20 | 1.12 | 4.09 | 1.34 | 2.20 | 1.20 | 1.65 | 1.20 |
| May | 0 | 1.00 | 4.72 | 3.86 | 1.57 | 2.42 | T | 2.65 | .31 | 2.59 |
| June | 1.14 | 2.06 | 1.34 | 2.92 | 1.18 | 1.60 | 2.17 | 1.99 | 2.44 | 2.17 |
| July | 1.42 | 2.68 | 2.48 | 2.25 | 2.49 | .71 | 2.32 | .94 | 1.80 | 2.31 |
| Aug. | .16 | 1.16 | | | 5.05 | 2.00 | 2.39 | 2.17 | 2.51 | 1.73 |
| Sept. | 2.60 | 2.20 | | | 2.25 | .67 | 2.47 | .59 | 1.71 | .63 |
| Oct. | 1.85 | 2.32 | | | 1.19 | T | .68 | .51 | .43 | .48 |
| Nov. | .28 | .14 | | | | .12 | .43 | .24 | .24 | .55 |
| Dec. | .47 | .24 | | | 1.02 | .43 | | | | |
| Yearly | 8.04 | 13.29 | | 24.51 | | | 17.02 | 9.22 | 16.01 | 9.09 |
| | | | | | | | | | | 17.72 |

| Month | El Treinta, Coahuila | | Villa Juárez, Coahuila | | Ocampo, Coahuila | | San Buenaventura, Coahuila | | Monclova, Coahuila | |
|--------|-------------------------|---------|---------------------------|---------|---------------------|---------|-------------------------------|---------|-----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .88 | .04 | .63 | 0 | .96 | .04 | .64 | T | .50 |
| Feb. | T | .14 | T | .45 | 0 | .04 | 0 | .51 | .04 | .49 |
| Mar. | .28 | .16 | .08 | .21 | 0 | 0 | .24 | .20 | .39 | .27 |
| Apr. | 1.38 | 1.72 | 3.23 | 1.15 | .12 | .26 | 1.54 | .59 | .59 | .53 |
| May | .39 | .32 | .24 | 1.83 | T | .68 | .16 | 1.38 | .35 | 1.49 |
| June | 2.52 | 4.14 | 1.85 | 1.08 | .55 | 2.26 | .28 | 1.46 | 1.10 | 1.14 |
| July | .35 | 1.90 | 0 | .91 | 1.34 | 5.18 | .04 | 1.51 | T | .48 |
| Aug. | 1.54 | 1.70 | .51 | 1.79 | .79 | 2.49 | .08 | 1.77 | 1.02 | 1.56 |
| Sept. | 1.42 | .71 | 2.05 | 3.00 | 2.05 | 2.99 | 2.32 | 2.21 | 2.09 | 2.84 |
| Oct. | 1.73 | 3.20 | .08 | 1.99 | 3.23 | 1.69 | .67 | 1.36 | .12 | 1.21 |
| Nov. | .12 | .16 | .16 | .58 | .28 | .28 | .16 | .53 | .20 | .59 |
| Dec. | .08 | .04 | .20 | .36 | .08 | .59 | .39 | .62 | 1.02 | .55 |
| Yearly | 9.81 | 15.07 | 8.44 | 13.98 | 8.44 | 17.42 | 5.92 | 12.78 | 6.92 | 12.65 |

| Month | Progreso, Coahuila | | Don Martín, Coahuila | | Laguna de Salinillas, Nuevo León | | Lampazos, Nuevo León | | Anáhuac, Nuevo León | |
|--------|-----------------------|---------|-------------------------|---------|-------------------------------------|---------|-------------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .54 | T | .79 | .16 | .73 | T | .92 | .08 | .80 |
| Feb. | 0 | .48 | .04 | .66 | .08 | .62 | .04 | 1.19 | T | .62 |
| Mar. | .20 | .19 | .24 | .48 | .39 | .48 | .24 | .18 | .43 | .54 |
| Apr. | 1.02 | 1.20 | 1.54 | 1.19 | 1.10 | .98 | 2.28 | 1.35 | 1.14 | 1.02 |
| May | .35 | 2.14 | .16 | 2.20 | .16 | 2.17 | .71 | 1.25 | .55 | 2.49 |
| June | 1.26 | 1.40 | 1.73 | 1.62 | 1.97 | 1.45 | 1.10 | 2.33 | 1.69 | 1.45 |
| July | .04 | .89 | 0 | 1.01 | 0 | .72 | 0 | 1.58 | 0 | 1.30 |
| Aug. | T | 2.09 | .63 | 2.03 | 1.14 | 2.68 | 1.42 | 1.57 | 1.57 | 2.02 |
| Sept. | 4.09 | 2.82 | 0 | 2.77 | 2.73 | 2.40 | 4.32 | 5.75 | 2.88 | |
| Oct. | .08 | 2.00 | T | 1.79 | 1.83 | .16 | 1.42 | .28 | 1.56 | |
| Nov. | .16 | .51 | .16 | .62 | .59 | .08 | .57 | .98 | .56 | |
| Dec. | .67 | .53 | .79 | .70 | .71 | .56 | 1.06 | .49 | .98 | .78 |
| Yearly | 7.87 | 14.79 | | 15.86 | | 15.54 | 9.49 | 17.17 | | 16.02 |

| Month | La Gloria, Nuevo León | | Vallecillo, Nuevo León | | Bustamante, Nuevo León | | Sabinas Hidalgo, Nuevo León | | Las Tortillas, Tamaulipas | |
|--------|--------------------------|---------|---------------------------|---------|---------------------------|---------|--------------------------------|---------|------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .44 | .16 | .44 | .04 | .61 | .24 | .56 | .12 | |
| Feb. | 0 | .60 | .04 | .85 | .08 | .50 | .04 | 1.52 | 0 | |
| Mar. | .24 | .11 | .47 | .24 | .59 | .19 | .31 | .30 | .20 | |
| Apr. | 1.34 | 1.01 | 1.30 | 1.40 | 1.85 | 1.25 | 2.80 | 1.83 | 1.10 | |
| May | .55 | 1.11 | .31 | .60 | .24 | .53 | .35 | 1.08 | .43 | .22 |
| June | 0 | 1.86 | 3.46 | 2.35 | 4.65 | 3.31 | 3.46 | 3.48 | 1.42 | 2.26 |
| July | 0 | 2.07 | 0 | 1.53 | 0 | .54 | 0 | 2.45 | 0 | 1.57 |
| Aug. | 2.17 | 2.08 | .67 | 1.26 | .51 | 2.33 | 1.73 | 1.88 | .04 | .84 |
| Sept. | 6.30 | 5.94 | 4.29 | 5.55 | 2.05 | 4.04 | 3.94 | 7.84 | 5.04 | 4.14 |
| Oct. | .20 | .86 | 0 | 3.11 | .79 | 2.04 | T | 3.88 | .04 | .80 |
| Nov. | .59 | .75 | .47 | .64 | .39 | .65 | 1.46 | 1.41 | .59 | 1.48 |
| Dec. | .39 | .35 | .79 | .56 | 1.06 | .80 | .94 | .63 | .75 | .57 |
| Yearly | 11.78 | 17.18 | 11.96 | 18.53 | 12.25 | 16.79 | 15.27 | 26.86 | 9.73 | |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | La Bandera, Tamaulipas | | Nuevo Cd. Guerrero, Tamaulipas | | Parás, Nuevo León | | San Javier, Nuevo León | | Cd. Mier K-8-SW., Tamaulipas | |
|--------|---------------------------|---------|-----------------------------------|---------|----------------------|---------|---------------------------|---------|---------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .20 | | .28 | 1.19 | | .05 | .08 | | .08 | |
| Feb. | 0 | | .08 | .85 | 0 | .41 | 0 | | 0 | |
| Mar. | 1.18 | | 1.18 | .50 | .08 | .10 | 1.06 | | 1.30 | |
| Apr. | 1.34 | | 1.46 | 1.51 | 0 | .83 | 2.99 | | .91 | |
| May | .63 | | .51 | 1.28 | 0 | .55 | .47 | | .67 | |
| June | 5.31 | | 2.76 | 2.19 | 1.18 | 1.46 | 4.72 | | 2.36 | |
| July | 0 | | 0 | .89 | 0 | .47 | 0 | | 0 | |
| Aug. | .24 | | .39 | 1.24 | .79 | 2.52 | .71 | | 1.57 | |
| Sept. | 4.49 | | 4.57 | 3.14 | 4.33 | 4.38 | 4.80 | | 4.65 | |
| Oct. | 2.72 | | 2.13 | 2.42 | 0 | 4.66 | .91 | | 1.77 | |
| Nov. | .39 | | .20 | .89 | 1.48 | 1.57 | | | .59 | |
| Dec. | .67 | | .94 | .39 | 0 | .03 | .94 | | .94 | |
| Yearly | 17.17 | | 14.50 | 16.49 | | 16.94 | 18.25 | | 14.84 | |

| Month | Cd. Mier, Tamaulipas | | Parras, Coahuila | | Gral. Cepeda, Coahuila | | Reata, Coahuila | | San Antonio de las Alazanas, Coahuila | |
|--------|-------------------------|---------|---------------------|---------|---------------------------|---------|--------------------|---------|--|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .20 | 1.27 | .04 | .31 | .79 | .45 | 0 | .19 | 0 | 1.42 |
| Feb. | 0 | 1.25 | .20 | .40 | .39 | .49 | | .25 | 0 | 1.31 |
| Mar. | 2.17 | 1.14 | 0 | .30 | .39 | .25 | | .16 | 0 | .47 |
| Apr. | .79 | 1.99 | .20 | .43 | .79 | .32 | 0 | .31 | .04 | .51 |
| May | .79 | 2.72 | .08 | .60 | 0 | .80 | .08 | .39 | .59 | 1.04 |
| June | 3.07 | 2.25 | .63 | 2.07 | 1.38 | 2.09 | 0 | 1.01 | .20 | 2.27 |
| July | 0 | .32 | 2.80 | 3.23 | 1.18 | 3.39 | .31 | .56 | .43 | 2.32 |
| Aug. | .16 | 2.06 | .87 | 1.44 | 2.56 | 2.96 | 2.24 | 1.92 | 1.22 | 2.96 |
| Sept. | 4.96 | 3.63 | 3.50 | 2.33 | 1.77 | 2.65 | 2.05 | 1.19 | .28 | 2.49 |
| Oct. | 3.66 | 2.72 | 1.02 | 2.34 | 0 | 1.33 | 0 | .85 | .59 | 3.22 |
| Nov. | .28 | 1.34 | .04 | .28 | | .49 | 0 | .30 | .04 | 1.16 |
| Dec. | 1.34 | .54 | 1.10 | .71 | 1.57 | .55 | 0 | .25 | .20 | 1.41 |
| Yearly | 17.42 | 21.23 | 10.48 | 14.44 | | 15.77 | | 7.38 | 3.59 | 20.58 |

| Month | Arteaga, Coahuila | | Saltillo, Coahuila | | Ramos Arizpe, Coahuila | | Icamole, Nuevo León | | La Popa, Nuevo León | |
|--------|----------------------|---------|-----------------------|---------|---------------------------|---------|------------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .38 | .39 | .57 | T | .44 | T | .17 | 0 | .37 |
| Feb. | .31 | .75 | .16 | .51 | .16 | .36 | T | .29 | | .42 |
| Mar. | T | .12 | .04 | .36 | .04 | .28 | T | .01 | 0 | .03 |
| Apr. | .47 | .56 | .31 | .71 | .31 | .48 | .75 | .27 | .63 | .69 |
| May | .91 | .95 | .87 | 1.03 | .24 | .78 | .43 | .29 | .20 | .60 |
| June | 1.54 | 1.67 | 2.13 | 2.08 | 1.02 | 1.09 | .71 | 1.11 | .63 | 1.45 |
| July | 1.42 | 2.14 | 1.38 | 2.67 | .47 | 1.37 | 0 | .67 | 0 | .91 |
| Aug. | 2.91 | 2.68 | 1.14 | 2.39 | .98 | 1.41 | .39 | 1.06 | .59 | 1.89 |
| Sept. | 1.57 | 2.91 | 1.34 | 2.43 | 1.10 | 1.73 | .98 | 2.00 | 2.60 | 3.77 |
| Oct. | .94 | 2.39 | .94 | 1.28 | .47 | .78 | .08 | 1.35 | 0 | 1.35 |
| Nov. | .43 | .54 | .16 | .87 | .55 | .45 | .20 | .41 | .31 | .40 |
| Dec. | .87 | .57 | 1.06 | .63 | .87 | .54 | 1.14 | .62 | 1.38 | .69 |
| Yearly | 11.37 | 15.66 | 9.92 | 15.53 | 6.21 | 9.71 | 4.68 | 8.25 | | 12.57 |

| Month | Mina, Nuevo León | | Ciénega de Flores, Nuevo León | | Topo Chico, Nuevo León | | Higueras, Nuevo León | | Los Ramones, Nuevo León | |
|--------|---------------------|---------|----------------------------------|---------|---------------------------|---------|-------------------------|---------|----------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | T | .24 | 1.26 | 1.23 | 0 | .41 | .08 | .70 | .24 | .62 |
| Feb. | .16 | .66 | .24 | .87 | 0 | .64 | 0 | .57 | T | .76 |
| Mar. | .16 | .06 | .43 | .79 | .51 | .54 | .24 | .54 | .31 | .61 |
| Apr. | .47 | .47 | 1.57 | 1.21 | 0 | .85 | .08 | 1.08 | 2.28 | 1.78 |
| May | .35 | .34 | 1.42 | 2.06 | .94 | .88 | .87 | 1.73 | 1.34 | 1.80 |
| June | 0 | 1.65 | 7.00 | 2.69 | 3.58 | 2.12 | 3.78 | 2.38 | 2.17 | 2.81 |
| July | 0 | .66 | 0 | 1.97 | 0 | 1.17 | 0 | 2.06 | .04 | 1.58 |
| Aug. | T | 1.20 | 2.52 | 4.18 | 1.57 | 2.71 | .63 | 2.83 | 2.87 | 3.41 |
| Sept. | .71 | 3.18 | 3.74 | 4.94 | 5.94 | 4.15 | 3.23 | 4.47 | 2.36 | 4.18 |
| Oct. | T | 2.22 | 5.87 | 2.78 | 2.64 | 2.70 | 1.81 | 1.80 | 3.07 | 2.91 |
| Nov. | .63 | .85 | 2.99 | .96 | .55 | .73 | 1.02 | .76 | .51 | .53 |
| Dec. | .20 | .28 | 2.28 | .86 | .35 | .51 | .87 | .64 | .94 | .32 |
| Yearly | 2.68 | 11.81 | 29.32 | 24.54 | 16.08 | 17.41 | 12.61 | 19.56 | 16.13 | 21.31 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | Los Herrera (La Tableta), Nuevo León | | Rinconada, Nuevo León | | Santa Catarina, Nuevo León | | Monterrey, Nuevo León | | Pajonál, Nuevo León | |
|--------|---|---------|--------------------------|---------|-------------------------------|---------|--------------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .35 | .59 | 0 | .18 | 0 | .71 | .20 | .63 | 0 | .26 |
| Feb. | .28 | .73 | 0 | .38 | .08 | .47 | 0 | .65 | 0 | .87 |
| Mar. | .43 | .64 | | .19 | .08 | .26 | .16 | .73 | 0 | .05 |
| Apr. | 2.36 | 1.44 | 0 | .57 | .12 | .63 | .12 | 1.12 | 1.10 | .71 |
| May | .63 | 2.48 | .12 | .38 | .04 | .60 | .43 | 1.47 | .20 | .71 |
| June | 3.15 | 2.50 | .12 | .94 | 4.29 | 1.90 | 5.16 | 2.76 | 5.43 | 3.22 |
| July | .16 | 1.12 | 0 | .32 | 0 | 1.20 | 0 | 2.37 | 0 | 3.13 |
| Aug. | .39 | 2.56 | .24 | 1.21 | 1.77 | 2.79 | 1.26 | 3.02 | 1.73 | 4.10 |
| Sept. | 4.57 | 4.18 | 1.18 | 1.49 | 5.24 | 3.41 | 8.50 | 5.67 | 7.28 | 5.43 |
| Oct. | .79 | 2.56 | 0 | .88 | .31 | 1.79 | 2.52 | 3.27 | 1.26 | 3.36 |
| Nov. | .28 | .59 | .20 | .28 | .16 | .44 | .75 | 1.27 | .39 | .81 |
| Dec. | 1.02 | .41 | .98 | .32 | .71 | .56 | .55 | .75 | .43 | .42 |
| Yearly | 14.41 | 19.80 | | 7.14 | 12.80 | 14.76 | 19.65 | 23.71 | 17.82 | 23.07 |

| Month | Cadereyta, Nuevo León | | La Cruz, Nuevo León | | Villa de Santiago, Nuevo León | | Las Comitas, Nuevo León | | Villa Allende, Nuevo León | |
|--------|--------------------------|---------|------------------------|---------|----------------------------------|---------|----------------------------|---------|------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .63 | .76 | 0 | .61 | .12 | .78 | 0 | .27 | .43 | .84 |
| Feb. | .43 | .96 | 0 | .91 | T | 1.02 | .08 | .39 | .16 | 1.04 |
| Mar. | .35 | 1.14 | 0 | .14 | .47 | .97 | 0 | .28 | .71 | 1.10 |
| Apr. | .71 | 2.07 | .47 | .48 | .63 | 1.59 | 1.02 | .86 | .83 | 2.29 |
| May | .91 | 2.07 | .20 | .94 | .63 | 2.53 | .24 | .93 | 1.18 | 3.15 |
| June | 5.20 | 3.22 | 5.00 | 3.16 | 14.09 | 5.13 | 5.63 | 2.64 | 7.95 | 4.42 |
| July | 0 | 2.40 | 1.50 | 3.68 | .04 | 3.16 | 0 | 1.72 | 0 | 2.76 |
| Aug. | 2.24 | 3.45 | 3.15 | 4.79 | 2.48 | 5.27 | 3.07 | 3.58 | 1.81 | 4.67 |
| Sept. | 4.21 | 4.53 | 2.00 | 3.52 | 8.98 | 8.53 | 5.03 | 4.38 | 7.99 | 6.89 |
| Oct. | 2.76 | 3.36 | .87 | 3.52 | .55 | 5.42 | 1.10 | 2.14 | 6.42 | 6.03 |
| Nov. | 1.46 | 1.14 | 0 | .92 | 2.24 | 1.37 | .08 | .43 | 4.21 | 1.52 |
| Dec. | .91 | .71 | 0 | .22 | 1.26 | .95 | .24 | .40 | 1.38 | 1.00 |
| Yearly | 19.81 | 25.81 | 13.19 | 22.89 | 31.49 | 36.72 | 16.49 | 18.02 | 33.07 | 35.71 |

| Month | San Juan, Nuevo León | | Laguna de Sánchez, Nuevo León | | Casillas, Nuevo León | | Potrero Redondo, Nuevo León | | Galeana, Nuevo León | |
|--------|-------------------------|---------|----------------------------------|---------|-------------------------|---------|--------------------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .55 | T | .39 | .49 | | .56 | 0 | .20 | |
| Feb. | 0 | .89 | 0 | .56 | 1.61 | .31 | 2.23 | 0 | .44 | |
| Mar. | 0 | .86 | T | .44 | .30 | 1.06 | .86 | 0 | .22 | |
| Apr. | .16 | 2.06 | .94 | 1.15 | .79 | .75 | 1.83 | .75 | .72 | |
| May | T | 1.51 | 2.17 | 1.98 | .04 | 1.62 | .98 | 2.74 | 1.69 | 1.18 |
| June | 2.64 | 2.17 | 5.83 | 3.40 | 3.03 | 3.95 | 6.89 | 6.21 | 2.76 | 2.51 |
| July | T | 1.14 | 0 | 2.60 | 0 | 1.09 | 0 | 4.29 | 0 | 1.09 |
| Aug. | .55 | 3.59 | 1.54 | 4.48 | .47 | 2.30 | .29 | 4.00 | .35 | 2.30 |
| Sept. | 1.73 | 4.31 | 6.93 | 4.96 | | 2.07 | | 4.04 | 3.27 | 2.66 |
| Oct. | 1.57 | 3.15 | .51 | 3.23 | | 6.43 | | 13.54 | .24 | 1.71 |
| Nov. | 2.76 | 1.07 | .47 | .51 | .71 | .48 | 2.83 | 1.61 | 0 | .05 |
| Dec. | 1.65 | .57 | .71 | .53 | .63 | | | | 0 | .32 |
| Yearly | 11.06 | 21.87 | 19.10 | 24.23 | | | | | 9.06 | 13.40 |

| Month | Rayones, Nuevo León | | Iturbide, Nuevo León | | Montemorelos, Nuevo León | | Cabezonnes, Nuevo León | | Linares, Nuevo León | |
|--------|------------------------|---------|-------------------------|---------|-----------------------------|---------|---------------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | 0 | .35 | T | .36 | .43 | .78 | .83 | | .20 | .92 |
| Feb. | 0 | .32 | T | .58 | .08 | .96 | .12 | | .31 | .89 |
| Mar. | 0 | .32 | .12 | .46 | .59 | 1.07 | .51 | | .55 | 1.11 |
| Apr. | .35 | 1.01 | .98 | 1.07 | 1.14 | 2.26 | 1.10 | | 1.34 | 2.34 |
| May | 1.39 | 1.65 | 1.85 | 1.26 | 2.80 | 1.26 | 1.77 | | 1.77 | 3.45 |
| June | 5.94 | 2.21 | 5.39 | 3.39 | 8.50 | 3.59 | 4.76 | | 5.87 | 3.53 |
| July | T | .95 | 0 | 2.47 | 0 | 2.03 | 0 | | .16 | 2.59 |
| Aug. | 1.26 | 2.87 | 3.11 | 4.12 | 2.36 | 3.90 | 2.68 | | .24 | 3.30 |
| Sept. | 6.30 | 3.12 | 5.67 | 5.09 | 4.02 | 5.25 | 8.98 | | 3.50 | 6.16 |
| Oct. | 1.76 | .67 | 2.68 | 2.64 | 3.75 | 3.66 | 1.73 | | 1.73 | 3.39 |
| Nov. | 0 | .39 | 1.10 | .50 | 4.53 | 1.70 | 2.36 | | 1.50 | 1.22 |
| Dec. | .27 | .87 | .41 | 1.10 | .90 | 1.46 | 1.22 | | .90 | .90 |
| Yearly | | 14.96 | 19.56 | 22.98 | 26.65 | 28.99 | 27.72 | | 18.39 | 29.80 |

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED
IN INCHES
In Mexico

| Month | El Cuchillo, Nuevo León | | Gral. Bravo, Nuevo León | | Las Enramadas, Nuevo León | | Cerralvo, Nuevo León | | Comales, Tamaulipas | |
|--------|----------------------------|---------|----------------------------|---------|------------------------------|---------|-------------------------|---------|------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .08 | .70 | .24 | .76 | T | .93 | T | .62 | .31 | .80 |
| Feb. | .04 | .57 | .08 | .45 | 0 | .70 | T | .65 | .04 | .67 |
| Mar. | .51 | .45 | .79 | .59 | .63 | .69 | 1.18 | .60 | 1.50 | .66 |
| Apr. | 1.22 | 1.47 | 2.09 | 1.54 | 1.89 | 1.71 | 3.98 | 1.90 | .43 | 1.58 |
| May | 1.61 | 1.92 | 1.34 | 2.42 | 1.02 | 2.58 | 2.17 | 2.65 | .31 | 1.82 |
| June | .94 | 2.41 | 2.48 | 2.47 | 6.69 | 3.42 | 3.70 | 2.15 | 1.02 | 1.73 |
| July | 0 | 1.31 | 0 | 2.09 | T | 2.00 | .47 | 1.49 | 0 | .88 |
| Aug. | .75 | 2.92 | 2.44 | 2.55 | 3.86 | 3.35 | 1.42 | 3.21 | 2.20 | 2.46 |
| Sept. | 2.72 | 3.70 | 2.76 | 3.79 | 5.71 | 5.18 | 2.99 | 4.74 | 8.11 | 3.49 |
| Oct. | .12 | 2.17 | .08 | 2.10 | 2.99 | 2.61 | .08 | 2.78 | 1.10 | 2.10 |
| Nov. | .24 | .44 | .04 | .86 | .47 | .67 | 1.18 | .68 | .94 | .64 |
| Dec. | 1.14 | .40 | 1.50 | .73 | .43 | .64 | .79 | .40 | 1.54 | .67 |
| Yearly | 9.37 | 18.46 | 13.84 | 20.35 | 23.69 | 24.48 | 17.96 | 21.87 | 17.50 | 17.50 |

| Month | Camargo, Tamaulipas | | San Miguel de Camargo, Tamaulipas | | Arguelles, Tamaulipas | | Reynosa 40 K SW, Nuevo León | | Reynosa K-22-SW, Tamaulipas | |
|--------|------------------------|---------|--------------------------------------|---------|--------------------------|---------|--------------------------------|---------|--------------------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .31 | .97 | .63 | .44 | .63 | | .31 | .42 | .39 | |
| Feb. | .08 | .78 | .04 | .86 | 0 | | 0 | .92 | 0 | |
| Mar. | 1.54 | .66 | 1.77 | .54 | 1.89 | | .94 | .35 | | |
| Apr. | .47 | 1.82 | .94 | 1.79 | .04 | | 1.26 | 1.46 | .04 | |
| May | .24 | 1.17 | .31 | 1.00 | .31 | | 1.46 | .68 | | |
| June | 2.00 | 1.65 | 2.05 | 1.36 | 1.97 | | .94 | 1.10 | 1.18 | |
| July | 0 | .56 | 0 | .43 | 0 | | 0 | .44 | 0 | |
| Aug. | .71 | 1.41 | 1.06 | 1.73 | .20 | | .55 | 2.66 | .24 | |
| Sept. | 4.09 | 2.88 | 2.48 | 2.40 | 1.10 | | 2.44 | 4.03 | 2.44 | |
| Oct. | 1.46 | 1.90 | 1.73 | 2.67 | 1.18 | | .98 | 1.34 | 1.06 | |
| Nov. | .87 | 1.23 | .31 | 1.00 | .63 | | .15 | .68 | 1.22 | |
| Dec. | 1.73 | .56 | 2.24 | .60 | 1.57 | | 1.89 | .94 | 1.65 | |
| Yearly | 13.50 | 15.59 | 13.56 | 14.82 | 9.52 | | 10.92 | 15.02 | | |

| Month | Presa Anzaldías, Tamaulipas | | Reynosa, Tamaulipas | | Río Bravo, Tamaulipas | | Retamal, Tamaulipas | | Méndez, Tamaulipas | |
|--------|--------------------------------|---------|------------------------|---------|--------------------------|---------|------------------------|---------|-----------------------|---------|
| | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average | 1962 | Average |
| Jan. | .20 | .30 | .71 | .93 | .71 | .64 | .35 | .71 | .39 | .90 |
| Feb. | 0 | .18 | .71 | .78 | 0 | 1.23 | T | .95 | .08 | .86 |
| Mar. | .75 | .38 | 0 | .63 | 1.18 | .68 | 1.10 | .70 | .94 | .95 |
| Apr. | .39 | 2.05 | .43 | 1.14 | .63 | 1.76 | .20 | 1.54 | 4.06 | 1.81 |
| May | .55 | .62 | .71 | 2.04 | 2.83 | 1.32 | 1.46 | 1.51 | 1.65 | 2.42 |
| June | 3.90 | 2.18 | 4.17 | 1.87 | 3.94 | 2.54 | 3.46 | 2.29 | 2.13 | 2.70 |
| July | 0 | .28 | 0 | 1.05 | 0 | 1.19 | 0 | .79 | 0 | .96 |
| Aug. | .79 | 2.18 | 1.57 | 1.49 | .08 | 2.56 | .31 | 2.44 | 3.19 | 3.33 |
| Sept. | 1.69 | 2.78 | 2.68 | 2.61 | 1.81 | 3.56 | 1.06 | 3.09 | 5.91 | 3.92 |
| Oct. | 1.26 | 1.85 | .39 | 2.29 | .79 | 2.38 | .63 | 2.40 | .75 | 2.22 |
| Nov. | 1.46 | 1.01 | 1.50 | .90 | .16 | .99 | .79 | 1.14 | .08 | .61 |
| Dec. | 1.06 | .92 | 2.04 | .75 | 2.72 | .74 | 2.76 | .74 | 2.09 | .46 |
| Yearly | 12.05 | 14.73 | 14.91 | 16.48 | 14.85 | 19.59 | 12.12 | 18.30 | 21.27 | 21.14 |

| Month | Control (Cl-K-9), Tamaulipas | | Valle Hermoso, Tamaulipas | | Matamoros, Tamaulipas | | | | | |
|--------|---------------------------------|---------|------------------------------|---------|--------------------------|---------|--|--|--|--|
| | 1962 | Average | 1962 | Average | 1962 | Average | | | | |
| Jan. | .87 | 1.09 | .39 | .68 | .63 | 1.94 | | | | |
| Feb. | T | .96 | .08 | 1.42 | T | 2.72 | | | | |
| Mar. | .43 | .69 | .71 | .48 | .94 | .62 | | | | |
| Apr. | 1.18 | 1.64 | .94 | 1.77 | 2.17 | 2.33 | | | | |
| May | .94 | 2.15 | 3.39 | 2.17 | 1.18 | .78 | | | | |
| June | 4.09 | 2.73 | 3.86 | 2.94 | 4.57 | 3.13 | | | | |
| July | 0 | 1.25 | 0 | 1.35 | 0 | 1.73 | | | | |
| Aug. | 1.38 | 2.64 | .83 | 1.63 | .87 | 1.57 | | | | |
| Sept. | 1.54 | 4.80 | 2.00 | 5.17 | .24 | 5.90 | | | | |
| Oct. | .16 | 2.14 | .55 | 2.57 | .87 | 3.55 | | | | |
| Nov. | 1.42 | 1.26 | .83 | 1.29 | .31 | 1.42 | | | | |
| Dec. | 1.54 | .79 | 1.73 | .69 | 1.57 | 1.34 | | | | |
| Yearly | 13.55 | 22.14 | 15.31 | 22.16 | 13.35 | 27.03 | | | | |

T Trace

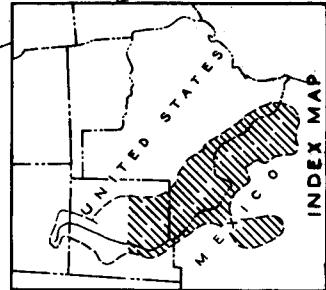
INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO
ISOHYETAL MAP
FOR YEAR 1962
RIO GRANDE DRAINAGE BASIN
EL PASO, TEXAS TO THE GULF OF MEXICO

PRECIPITATION IN INCHES

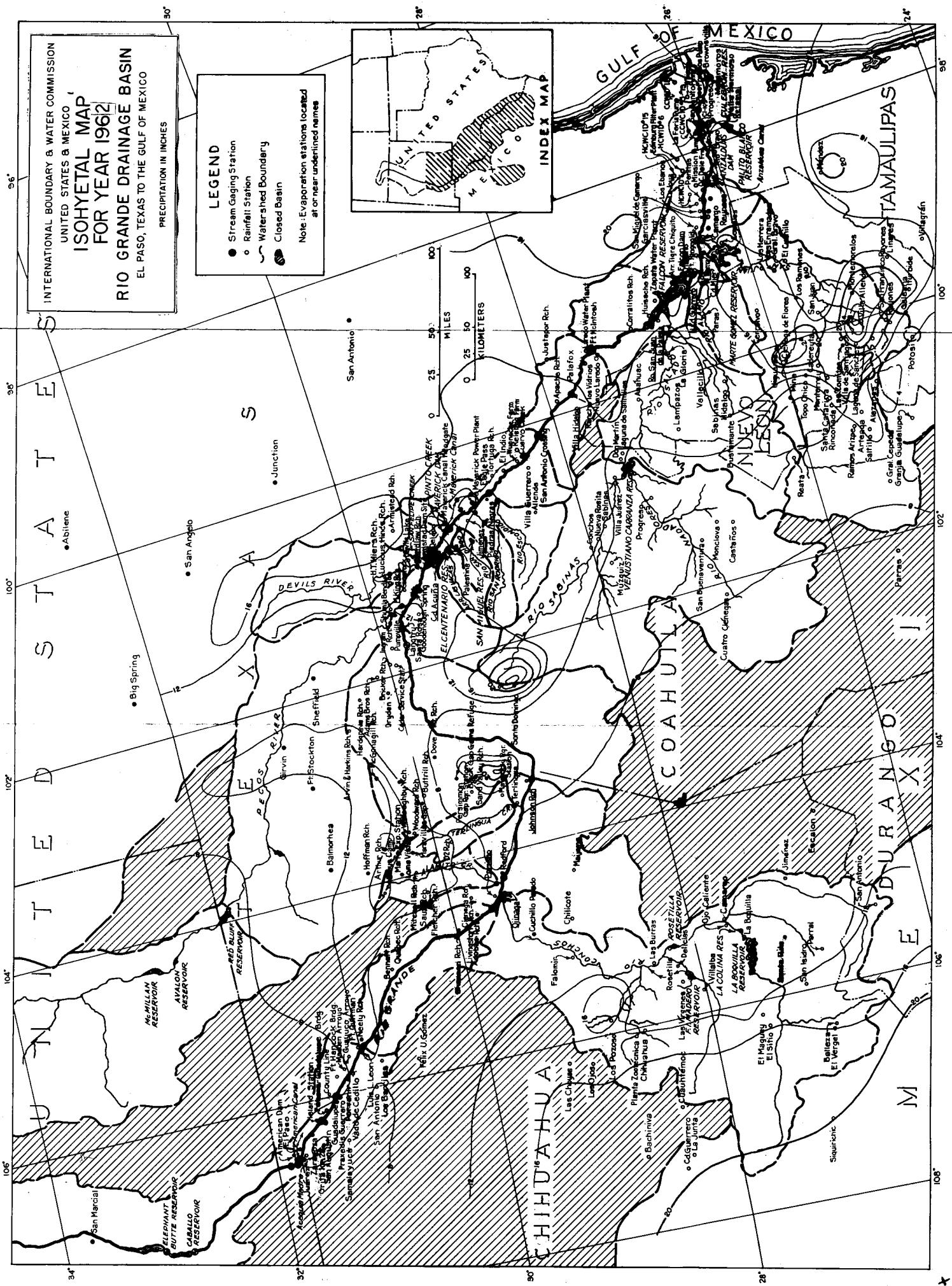
LEGEND

- Stream Gaging Station
 - Rainfall Station
 - ~ Watershed Boundary
 - Closed Basin

Note : Evaporation stations located at or near undrained areas



10





**AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED
IN INCHES**

With Averages for the 92 Years 1871-1962, Inclusive

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 Upper Presidio (2,953 Square Miles) | | * Upper Presidio to Johnson Ranch (3,886 Square Miles) | | Johnson Ranch to Langtry (14,080 Square Miles) | |
|-------|---|-------------------|--|-------------------|---|-------------------|---|-------------------|
| | 1962 | Period Average | 1962 | Period Average | 1962 | Period Average | 1962 | Period Average |
| Jan. | .55 | .46 | .36 | .41 | .14 | .38 | .10 | .52 |
| Feb. | .55 | .38 | .36 | .26 | .09 | .28 | .21 | .35 |
| Mar. | .26 | .34 | .09 | .25 | T | .19 | .14 | .42 |
| Apr. | .04 | .28 | .06 | .37 | .03 | .40 | 4.08 | .83 |
| May | T | .41 | .31 | .61 | .35 | .77 | .71 | 1.50 |
| June | .22 | .79 | .97 | 1.19 | 1.16 | 1.07 | 1.89 | 1.76 |
| July | 2.79 | 2.37 | 2.82 | 3.14 | 2.42 | 1.82 | 1.70 | 1.95 |
| Aug. | .13 | 1.93 | .47 | 2.40 | .58 | 1.83 | .41 | 2.16 |
| Sept. | 3.11 | 1.38 | 2.39 | 1.89 | 2.93 | 1.43 | 2.11 | 2.17 |
| Oct. | 1.38 | .94 | 1.27 | 1.04 | 1.35 | .84 | 2.12 | 1.23 |
| Nov. | .26 | .44 | .65 | .41 | .39 | .34 | .31 | .60 |
| Dec. | .29 | .61 | .40 | .56 | .38 | .41 | .76 | .57 |
| Total | 9.58 | 10.33 | 10.15 | 12.53 | 9.82 | 9.76 | 14.54 | 14.06 |

| Month | Pecos River Below Sheffield (3,519 Square Miles) | | # Langtry to Amistad Dam Site (2,014 Square Miles) | | Devils River (4,305 Square Miles) | | † Amistad Dam Site to Eagle Pass (1,695 Square Miles) | |
|-------|---|-------------------|---|-------------------|--------------------------------------|-------------------|--|-------------------|
| | 1962 | Period Average | 1962 | Period Average | 1962 | Period Average | 1962 | Period Average |
| Jan. | .22 | .75 | .10 | .54 | .19 | .69 | .14 | .77 |
| Feb. | .25 | .90 | .16 | .63 | .39 | .68 | .33 | .90 |
| Mar. | .32 | .80 | .09 | .81 | .37 | 1.12 | .35 | 1.04 |
| Apr. | .85 | 1.93 | 1.23 | 1.33 | 2.36 | 1.77 | 2.34 | 1.67 |
| May | 1.29 | 1.80 | 1.07 | 1.99 | .80 | 2.58 | .79 | 2.94 |
| June | 2.97 | 2.58 | .89 | 2.33 | 3.21 | 2.80 | 2.88 | 2.54 |
| July | 1.50 | 1.91 | .68 | 1.21 | .43 | 1.76 | .47 | 1.92 |
| Aug. | .79 | 1.98 | .67 | 1.62 | .60 | 2.05 | .46 | 1.90 |
| Sept. | 1.26 | 2.31 | 2.11 | 2.23 | 2.70 | 2.88 | 1.71 | 3.00 |
| Oct. | 2.21 | 1.85 | 2.60 | 1.44 | 2.98 | 2.22 | 2.23 | 2.02 |
| Nov. | .62 | .94 | .36 | .79 | .78 | 1.61 | .99 | 1.04 |
| Dec. | .89 | .78 | .87 | .67 | .46 | 1.06 | .42 | .91 |
| Total | 13.17 | 18.53 | 10.83 | 15.59 | 15.27 | 21.22 | 13.11 | 20.65 |

| Month | ⊖ Eagle Pass to Laredo (4,117 Square Miles) | | ⊖ Laredo to Falcón Dam (3,394 Square Miles) | | † Falcón Dam to Rio Grande City (1,166 Square Miles) | | United States Side Below Rio Grande City (443 Square Miles) | |
|-------|--|-------------------|--|-------------------|---|-------------------|--|-------------------|
| | 1962 | Period Average | 1962 | Period Average | 1962 | Period Average | 1962 | Period Average |
| Jan. | .06 | .77 | .07 | .77 | .23 | .91 | .48 | 1.23 |
| Feb. | .02 | .80 | T | .76 | .02 | .80 | .06 | 1.07 |
| Mar. | .23 | .96 | .60 | .84 | 1.43 | 1.02 | 1.25 | 1.11 |
| Apr. | 2.13 | 1.59 | 2.60 | 1.42 | .91 | 1.20 | .78 | 1.37 |
| May | .11 | 3.13 | .26 | 3.22 | .34 | 2.36 | 1.15 | 2.75 |
| June | 2.33 | 2.46 | 2.37 | 1.84 | 2.81 | 2.03 | 3.53 | 2.45 |
| July | T | 1.46 | 0 | 2.19 | 0 | 1.95 | .01 | 1.74 |
| Aug. | 1.15 | 2.29 | 1.13 | 1.80 | 1.85 | 2.12 | .85 | 2.27 |
| Sept. | 2.71 | 2.92 | 4.00 | 2.85 | 5.47 | 3.24 | 2.14 | 4.27 |
| Oct. | .18 | 1.84 | .64 | 1.56 | 1.37 | 1.96 | 1.09 | 2.50 |
| Nov. | .38 | .97 | 1.48 | 1.63 | .37 | .76 | 1.12 | 1.40 |
| Dec. | .52 | 1.02 | .71 | .83 | 1.51 | .66 | 2.08 | 1.27 |
| Total | 9.82 | 20.21 | 13.86 | 19.71 | 16.31 | 19.01 | 14.54 | 23.43 |

* 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

Las Vacas, San Felipe Creek, Pinto Creek, Río San Diego, and Río San Rodrigo T Trace

8 Excluding Río Salado above Old Cd. Guerrero † Excluding Río Alamo and Río San Juan

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The precipitation records of stations listed below began on the date shown and extend through 1962. 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.

In the United States

| NAME OF STATION | TYPE GAGE | LATI-TUDE | LONGI-TUDE | ELEV. (FT.) | RECORD BEGAN | WATERSHED SUBDIVISION | OBSERVER |
|---|-----------|-----------|------------|-------------|-------------------------|--------------------------------|---------------------|
| Adams Bros. Ranch | S | 30° 10' | 101° 58' | 2,150 | Apr. 1952 | Johnson Ranch - Langtry | George Adams |
| Adobes Ranch | S | 29° 46' | 104° 34' | 2,550 | Apr. 1950 | Fort Quitman - Upper Presidio | T. C. Davis |
| American Dam | S | 31° 47' | 106° 32' | 3,730 | 1938 | El Paso - Fort Quitman | I. B. & W. C. |
| Amistad Dam Site | C | 29° 25' | 101° 02' | 980 | Oct. 1954 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Amistad Dam Site-Hqtrs. | R | 29° 28' | 101° 10' | 1,150 | July 1962 | Langtry to Below Amistad | I. B. & W. C. |
| Apache Ranch | C | 27° 56' | 99° 56' | 500 | # 1953 | Eagle Pass - Laredo | L. Guardiola |
| 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 | I. B. & W. C. |
| Baker, A. A. Ranch * | R | 29° 44' | 101° 09' | 1,720 | July 1962 | Devils River | A. L. Baugh |
| Baugh, A. L. Ranch | S | 29° 52' | 104° 02' | 3,820 | # July 1942 | Alamito Creek | |
| Bennett, Moody Ranch | S | 30° 37' | 104° 52' | 3,240 | July 1956 | Fort Quitman - Upper Presidio | Moody Bennett |
| Black Gap Game Refuge | S | 29° 35' | 103° 21' | 2,250 | 1952 | Johnson Ranch - Langtry | Tom Moore |
| 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. |
| Buttrill Ranch | S | 30° 00' | 103° 16' | 3,500 | Mar. 1952 | Johnson Ranch - Langtry | Tom B. Leary |
| Cain, E. A. Ranch | R | 30° 07' | 101° 34' | 1,800 | July 1962 | Pecos River | E. A. Cain |
| CCWCID #3 (La Feria Dist. Off.) Avg. 6 gages | S | 26° 09' | 97° 49' | 50 | 1952 | Lower Rio Grande Valley | CCWCID #3 |
| CCWCID #11 (Bayview Dist. Off.) Avg. 18 gages | S | 26° 08' | 97° 21' | 25 | 1952 | Lower Rio Grande Valley | CCWCID #11 |
| CCWCID #19 (Adams Gardens) | S | 26° 10' | 97° 47' | 50 | 1952 | Lower Rio Grande Valley | CCWCID #19 |
| Cedar Service Station | S | 29° 55' | 101° 55' | 1,860 | # 1952 | Johnson Ranch - Langtry | Harve Eastman |
| Chittim Ranch * | C | 28° 44' | 100° 28' | 810 | Mar. 1959 | Del Rio - Eagle Pass | I. B. & W. C. |
| Coal Mine * | R | 28° 48' | 100° 28' | 770 | Mar. 1959 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Comstock | S | 29° 41' | 101° 11' | 1,530 | May 1939 | Langtry below Amistad Dam Site | George Humphries |
| Cooper Ranch * | C | 28° 50' | 100° 27' | 800 | Mar. 1959 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Corralitos Ranch | C | 27° 07' | 99° 27' | 346 | 1953 | Laredo - Falcon Dam | I. B. & W. C. |
| County Line | R | 31° 23' | 105° 59' | 3,550 | 1938 | El Paso - Fort Quitman | I. B. & W. C. |
| Cuervo Creek | C | 28° 21' | 100° 19' | 620 | Jan. 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. |
| Diamond A Ranch | S | 30° 05' | 101° 18' | 2,100 | May 1962 | Devils River | L. E. Albers |
| Dove Mountain Ranch | S | 29° 49' | 102° 53' | 2,770 | # 1952 | Johnson Ranch - Langtry | Sam Cavness |
| Dryden | S | 30° 03' | 102° 07' | 2,130 | # 1981 | Johnson Ranch - Langtry | Lewis Cash |
| Edinburg Filtration Plant | S | 26° 18' | 98° 10' | 100 | 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 | Eagle Pass - Laredo | I. B. & W. C. |
| Fabens-Guadalupe Bridge | S | 31° 26' | 106° 08' | 3,610 | Apr. 1940 | El Paso - Fort Quitman | I. B. & W. C. |
| Falcon Dam | S | 26° 34' | 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. |
| 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 | # 1810 | Eagle Pass - Laredo | I. B. & W. C. |
| Fort Quitman | R | 31° 06' | 105° 36' | 3,430 | # 1937 | El Paso - Fort Quitman | I. B. & W. C. |
| Foster, Ross Ranch | C | 29° 47' | 101° 46' | 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. |
| Goodenough Spring | C | 29° 32' | 101° 13' | 1,018 | Aug. 1958 | Langtry - Amistad Dam Site | I. B. & W. C. |
| Greenwood, H. M. (Cienega Ranch) * | S | 29° 48' | 104° 13' | 4,000 | Mar. 1941 | Alamito Creek | H. M. Greenwood |

* Some months or years missing C Cumulative R Recording S Standard V Visual * Not shown on map

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 |
|--|--------------|---------------|----------------|----------------|-----------------|---------------------------------|----------------------|
| Guayuco Arroyo | R | 31° 10' | 105° 40' | 3,600 | #May 1940 | El Paso - Fort Quitman | I. B. & W. C. |
| Hardgrave, E. W. Ranch | S | 30° 18' | 102° 09' | 2,650 | Apr. 1952 | Johnson Ranch - Langtry | Jack Hardgrave |
| HCWCID #6 (Goodwin Pump #4) Avg. 3 gages | S | 26° 18' | 98° 22' | 185 | 1953 | Lower Rio Grande Valley | HCWCID #6 |
| HCWCID #15 (Edinburg Office) | S | 26° 23' | 98° 09' | 85 | 1952 | Lower Rio Grande Valley | HCWCID #15 |
| HCWID #6 (Elsa Office) | S | 26° 19' | 98° 01' | 70 | 1952 | Lower Rio Grande Valley | HCWID #6 |
| Hinds, Lucious Ranch | S | 29° 46' | 101° 03' | 1,690 | Sept. 1954 | Devils River | Lucious Hinds |
| Hedges Ranch | S | 29° 35' | 100° 39' | 1,510 | Dec. 1951 | Amistad Dam Site - Eagle Pass | Floyd Hodges |
| Hoffman Ranch | S | 30° 38' | 103° 51' | 4,650 | June 1955 | Pecos River above Sheffield | Dr. A. J. Hoffman |
| Holman, W.T.O. Ranch | S | 30° 17' | 100° 36' | 2,300 | Aug. 1962 | Devils River | Chris Haines |
| Huisache Ranch | C | 26° 57' | 99° 21' | 383 | Aug. 1953 | Laredo - Falcon Dam | I. B. & W. C. |
| Ingram Ranch | S | 29° 52' | 101° 29' | 1,580 | #Sept. 1954 | Pecos River below Sheffield | Arnum Humphries |
| 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. |
| Johnson Ranch | C | 29° 01' | 103° 23' | 2,050 | #July 1933 | Johnson Ranch - Langtry | I. B. & W. C. |
| Justapor Ranch | C | 27° 53' | 99° 27' | 720 | #1952 | Adjacent to Eagle Pass - Laredo | Mrs. O. C. Ray |
| Keisling Farm | S | 28° 23' | 100° 17' | 740 | Dec. 1958 | Eagle Pass - Laredo | Robert Smith |
| King, Martin Ranch | R | 29° 44' | 101° 23' | 1,460 | Nov. 1954 | Langtry - Amistad Dam Site | I. B. & W. C. |
| Kokernot Ranch - Hqtrs. | S | 29° 58' | 103° 34' | 4,120 | # 1952 | Johnson Ranch - Langtry | David Kokernot |
| La Feria Pumping Plant | S | 26° 03' | 97° 50' | 60 | 1952 | Lower Rio Grande Valley | CCWCID #3 |
| La Joya | R | 26° 15' | 98° 25' | 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 | Amistad Dam Site - Eagle Pass | Lou McGee |
| Lateral No. 2 Spill * | C | 28° 56' | 100° 38' | 760 | Mar. 1959 | Del Rio - Eagle Pass | I. B. & W. C. |
| Lateral No. 12 Headgate * | C | 28° 54' | 100° 34' | 800 | 1959 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Lateral No. 15 Spill * | C | 28° 51' | 100° 34' | 740 | 1959 | Del Rio - Eagle Pass | I. B. & W. C. |
| Lock Store | S | 30° 40' | 100° 57' | 2,400 | Oct. 1962 | Devils River | Claud Ward |
| Los Ebanos | C | 26° 16' | 98° 33' | 150 | Apr. 1957 | Lower Rio Grande Valley | I. B. & W. C. |
| Los Fresnos Pumping Plt. | S | 25° 57' | 97° 34' | 30 | 1952 | Lower Rio Grande Valley | CCWCID #6 |
| Lowry, Cliff Ranch * | R | 29° 39' | 100° 52' | 1,490 | June 1962 | Devils River | I. B. & W. C. |
| Madden Arroyo | R | 31° 13' | 105° 46' | 3,500 | Sept. 1941 | El Paso - Fort Quitman | I. B. & W. C., Jr. |
| Maravillas Gap Ranch | S | 30° 01' | 103° 20' | 3,520 | 1956 | Johnson Ranch - Langtry | Guy Combs, Jr. |
| Maverick County Canal Headgate | S | 29° 10' | 100° 46' | 870 | Mar. 1948 | Amistad Dam Site - Eagle Pass | MCWCID #1 |
| Maverick Power Plant | S | 28° 50' | 100° 33' | 800 | June 1952 | Amistad Dam Site - Eagle Pass | C. P. & L. Co. |
| Maverick Ranger Station | S | 29° 19' | 103° 27' | 2,780 | Feb. 1955 | Upper Presidio - Johnson Ranch | Park Ranger |
| McFarland Ranch - Hqtrs. | S | 30° 06' | 104° 16' | 5,310 | # 1941 | Alamito Creek | Henry Pond |
| McGonagill Ranch - East Mill | V | 30° 20' | 102° 55' | 4,050 | #May 1952 | Johnson Ranch - Langtry | W. E. McGonagill |
| McGonagill Ranch - Hqtrs. | S | 30° 20' | 102° 58' | 4,150 | Apr. 1952 | Johnson Ranch - Langtry | W. E. McGonagill |
| Miers, H. T. Ranch | V | 29° 44' | 100° 51' | 1,760 | 1957 | Amistad Dam Site - Eagle Pass | H. T. Miers |
| Mitchell, Kerr Ranch | S | 30° 13' | 104° 00' | 4,450 | # 1941 | Alamito Creek | Mrs. Kerr Mitchell |
| Neely Ranch | S | 30° 59' | 105° 32' | 3,350 | Aug. 1941 | Fort Quitman - Upper Presidio | Mrs. Tom Neely |
| New Mission Pumping Plt. * | S | 26° 11' | 98° 24' | | Aug. 1961 | Lower Rio Grande Valley | HCWCID #14 |
| Normandy * | S | 28° 55' | 100° 36' | 780 | Dec. 1958 | Amistad Dam Site - Eagle Pass | Fannin G. Lowe |
| 02 Ranch | S | 29° 51' | 103° 45' | 3,780 | # 1914 | Terlingua Creek | Cavin Woodward |
| Pafford Crossing | C | 29° 41' | 101° 00' | 1,180 | Feb. 1960 | Devils River | Fannin G. Lowe |
| Penitas (Edinburg Pumping Plant) | S | 26° 14' | 98° 27' | 100 | July 1957 | Lower Rio Grande Valley | B. Leadbetter |
| Perner, P. C. Ranch | R | 30° 36' | 101° 36' | 2,600 | July 1962 | Pecos River below Sheffield | P. C. Perner |
| Persimmon Gap Ranger Sta. | S | 29° 40' | 103° 10' | 2,900 | # 1948 | Johnson Ranch - Langtry | Park Ranger |
| Pinto Creek * | C | 29° 09' | 100° 43' | 870 | Dec. 1958 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Potter, A. M. Ranch | S | 29° 46' | 103° 25' | 3,440 | # 1952 | Johnson Ranch - Langtry | A. M. Potter |
| Presidio (I.B.&W.C. Gage) | C | 29° 34' | 104° 23' | 2,550 | Oct. 1949 | Upper Presidio - Johnson Ranch | I. B. & W. C. |
| Pumpville | S | 29° 57' | 101° 44' | 1,800 | #Oct. 1946 | Johnson Ranch - Langtry | Rev. Gentry |
| 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 | Upper Presidio - Johnson Ranch | I. B. & W. C. |
| Roma (Internat'l Bridge) | S | 26° 24' | 99° 01' | 230 | 1941 | Falcon Dam - Rio Grande City | Starr Co. 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. |

Some months or years missing

C Cumulative

R Recording

S Standard

V Visual

* Not shown on map

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In the United States

| NAME OF STATION | TYPE GAGE | LATI-TUDE | LONGI-TUDE | ELEV. (F.T.) | RECORD BEGAN | WATERSHED SUBDIVISION | OBSERVER |
|--|-----------|-----------|------------|--------------|--------------|------------------------------|---------------------|
| San Benito Pump | S | 26° 03' | 97° 45' | 50 | Oct. 1933 | Lower Rio Grande Valley | I. B. & W. C. |
| Sauz Ranch | S | 30° 10' | 104° 12' | 4,880 | 1940 | Alamito Creek | Hayes Mitchell, Jr. |
| Sellars Ranch * | C | 29° 34' | 101° 02' | 1,190 | #Feb. 1960 | Devils River | |
| Shannon, Bill Ranch | C | 29° 58' | 104° 41' | 2,750 | July 1956 | Fox Quitman - Upper Presidio | Bill Shannon |
| Shumla Bend | C | 29° 50' | 101° 25' | 1,350 | Nov. 1954 | Pecos River below Sheffield | I. B. & W. C. |
| 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 | Apr. 1960 | Johnson Ranch - Langtry | Ulice Adams |
| Stumberg, Steve Ranch | C | 30° 11' | 102° 53' | 4,300 | # 1943 | Johnson Ranch - Langtry | I. B. & W. C. |
| Terlingua Creek Station | C | 29° 12' | 103° 36' | 2,260 | Mar. 1952 | Terlingua Creek | I. B. & W. C. |
| Terrell Plant (El Paso Nat. Gas Co.) * | R | 30° 22' | 101° 51' | 2,510 | July 1962 | Pecos River Below Sheffield | W. H. Brown |
| Tortuga Ranch | C | 28° 39' | 100° 26' | 780 | # 1950 | Eagle Pass - Laredo | I. B. & W. C. |
| Trees Farm * | R | 28° 38' | 100° 25' | 720 | Mar. 1959 | Del Rio - Eagle Pass | I. B. & W. C. |
| Van Dalsem Farm | C | 28° 27' | 100° 19' | 700 | 1959 | Eagle Pass - Laredo | L. T. Van Eman |
| Van Eman, L. T. Ranch | S | 29° 52' | 103° 59' | 3,890 | # 1947 | Alamito Creek | I. B. & W. C. |
| Wardlaw Ranch | R | 29° 28' | 100° 58' | 1,110 | Aug. 1955 | Devils River | Harry Whipple |
| Whipple Farm | S | 26° 04' | 97° 29' | 25 | 1952 | Lower Rio Grande Valley | I. B. & W. C. |
| Whitehead, Tuffy Ranch * | R | 29° 38' | 101° 07' | 1,420 | July 1962 | Devils River | Cliff St. Clair |
| Wipff Ranch * | C | 29° 00' | 100° 35' | 840 | Mar. 1959 | Del Rio - Eagle Pass | J. F. Woodward |
| Willoughby, Ray Ranch | S | 30° 12' | 103° 33' | 5,050 | 1952 | Johnson Ranch - Langtry | I. B. & W. C. |
| Woodward, J. F. Ranch | S | 30° 08' | 103° 36' | 4,750 | 1954 | Johnson Ranch - Langtry | Zapata Water Plant |
| Wuensche Farm | S | 28° 24' | 100° 19' | 670 | # 1952 | Eagle Pass - Laredo | |
| Zapata Water Plant | S | 26° 54' | 99° 16' | 380 | May 1953 | Laredo - Falcon Dam | |

Some months or years missing C Cumulative R Recording S Standard * Not shown on map

** Recording Gage installed May 14, 1962

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

| NAME OF STATION | TYPE GAGE | LATI- TUDE | LONGI- TUDE | ELEV. (FT.) | RECORD BEGAN | WATERSHED SUBDIVISION | OBSERVER |
|--|--------------|---------------|----------------|----------------|-----------------|--|------------------------------|
| Allende, Coahuila | S | 28° 21' | 100° 51' | 1,170 | # June 1947 | Eagle Pass - Laredo | Hydr. Resources |
| Anahúac, Nuevo León | S | 27° 15' | 100° 07' | 656 | # June 1933 | Río Salado | Hydr. Resources |
| Arguelles, Tamaulipas * | † | 26° 11' | 98° 28' | † | 1962 | Lower Río Grande Valley | † |
| Arteaga, Coahuila | S | 25° 26' | 100° 48' | 5,250 | # 1958 | Río San Juan | Meteor. Service of Mexico |
| Bachiniva, Chihuahua | S | 28° 48' | 107° 15' | 6,250 | # 1952 | Adjacent to Río Conchos | Meteor. Service of Chihuahua |
| Balleza, Chihuahua | S | 26° 57' | 106° 21' | 5,870 | # 1903 | Río Conchos | Meteor. Service of Mexico |
| Bustamante, Nuevo León | S | 26° 32' | 100° 31' | 1,450 | # 1958 | Río Salado | Hydr. Resources |
| Cabezones, Nuevo León | S | 24° 59' | 99° 44' | † | 1962 | Adjacent to Río San Juan | Hydr. Resources |
| Cadereyta, Nuevo León | S | 25° 36' | 99° 59' | 1,180 | # Sept. 1904 | Río San Juan | Hydr. Resources |
| Camargo, Chihuahua | S | 27° 42' | 105° 10' | 3,950 | Oct. 1956 | Río Conchos | Meteor. Service of Chihuahua |
| Camargo, Tamaulipas | S | 26° 20' | 98° 49' | 177 | # 1953 | Río San Juan | Hydr. Resources |
| Casillas, Nuevo León * | S | 25° 11' | 100° 12' | 4,060 | # 1958 | Río San Juan | Hydr. Resources |
| Cd. Acuña, Coahuila | S | 29° 20' | 100° 57' | 919 | # 1951 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Cd. Acuña K-22-SE, Coahuila * | † | 29° 12' | 100° 42' | † | 1962 | Amistad Dam Site - Eagle Pass | † |
| Cd. Guerrero, Chihuahua | S | 28° 33' | 107° 30' | 6,560 | # May 1903 | Adjacent to Río Conchos | Meteor. Service of Mexico |
| Cd. Mier, Tamaulipas | S | 26° 26' | 99° 09' | 260 | Oct. 1955 | Falcón Dam - Rio Grande City | I. B. & W. C. |
| Cd. Mier K-8-SW, Tamaulipas * | † | 26° 23' | 99° 13' | † | 1962 | Río Alamo | I. B. & W. C. |
| Cerralvo, Nuevo León | R | 26° 06' | 99° 37' | 1,120 | Nov. 1938 | Río San Juan | Hydr. Resources |
| Chihuahua, Chihuahua | S | 28° 38' | 106° 04' | 4,690 | # 1900 | Río Conchos | Meteor. Service of Mexico |
| Chupadero, Coahuila * | C | 29° 05' | 100° 51' | † | 1961 | Amistad Dam Site - Eagle Pass | F. Jakubesch |
| Ciénega de Flores, Nuevo León | R | 25° 58' | 100° 10' | 1,760 | Apr. 1938 | Río San Juan | Hydr. Resources |
| Colonia Anahuac, Chihuahua | S | 28° 28' | 106° 31' | 6,545 | # 1961 | Río Conchos | Meteor. Service of Chihuahua |
| Comales, Tamaulipas | R | 26° 11' | 98° 55' | 270 | # Mar. 1938 | Río San Juan | Hydr. Resources |
| Conchos, Coahuila | S | 28° 00' | 101° 19' | † | # Oct. 1950 | Río Salado | Hydr. Resources |
| Control (Cl-K-9), Tamaulipas | S | 25° 58' | 97° 49' | 59 | # June 1942 | Lower Rio Grande Valley | Hydr. Resources |
| Coyame, Chihuahua | S | 29° 28' | 105° 06' | † | Nov. 1961 | Río Conchos | Meteor. Service of Chihuahua |
| Cuauhtémoc, Chihuahua | S | 28° 24' | 106° 52' | 7,250 | # June 1923 | Adjacent to Río Conchos | Hydr. Resources |
| Delicias, Chihuahua | S | 28° 11' | 105° 31' | 3,710 | # Aug. 1933 | Río Conchos | Hydr. Resources |
| Don Martín, Coahuila | S | 27° 33' | 100° 37' | 790 | # June 1927 | Río Salado | Hydr. Resources |
| El Cedrito, Coahuila | S | 29° 18' | 101° 56' | † | Aug. 1961 | Langtry - Amistad Dam Site | I. B. & W. C. |
| El Cuarenta, Chihuahua | S | 30° 33' | 105° 50' | † | 1961 | Adjacent to Ft. Quitman - Upper Presidio | Meteor. Service of Chihuahua |
| El Cuchillo, Nuevo León | S | 25° 43' | 99° 16' | 590 | June 1938 | Río San Juan | Hydr. Resources |
| El Magüey, Chihuahua | S | 27° 35' | 106° 07' | 4,380 | July 1955 | Río Concho | Meteor. Service of Chihuahua |
| El Moral, Coahuila * | † | 28° 54' | 100° 37' | † | | Amistad Dam Site - Eagle Pass | † |
| El Moral K-17-SW, Coahuila * | † | 28° 50' | 100° 46' | † | # 1962 | Amistad Dam Site - Eagle Pass | † |
| El Paisano, Coahuila * | † | 29° 21' | 101° 11' | † | 1962 | Amistad Dam Site - Eagle Pass | † |
| El Remolino, Coahuila * | S | 28° 45' | 101° 05' | 1,310 | June 1958 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| El Sitio, Chihuahua | S | 27° 31' | 106° 14' | † | July 1955 | 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' | † | 1957 | Río Conchos | Meteor. Service of Chihuahua |
| Escalón, Chihuahua | S | 26° 45' | 104° 21' | † | 1957 | Adjacent to Río Conchos | Meteor. Service of Chihuahua |
| Escuela Ganadería, Chihuahua * | S | 28° 42' | 106° 04' | 4,675 | 1961 | Río Conchos | Meteor. Service of Chihuahua |
| Feliz U. Gómez (Los Lamentos), Chihuahua | S | 30° 35' | 105° 50' | 4,920 | # 1955 | Adjacent to Ft. Quitman - Upper Presidio | Meteor. Service of Mexico |
| Galeana, Nuevo León | S | 24° 50' | 100° 04' | 5,430 | # 1958 | Adjacent to Río San Juan | Meteor. Service of Mexico |
| Garita Km. 28, Chihuahua | S | 31° 34' | 106° 28' | 3,990 | May 1958 | El Paso - Ft. Quitman | I. B. & W. C. |
| Gral. Bravo, Nuevo León | S | 25° 48' | 99° 09' | 394 | # Sept. 1906 | Río San Juan | Meteor. Service of Mexico |
| Gral. Cepeda, Coahuila | S | 25° 24' | 101° 29' | 4,920 | Aug. 1926 | Río San Juan | Hydr. Resources |
| Guadalupe, Chihuahua | S | 31° 23' | 106° 06' | 3,580 | 1958 | El Paso - Ft. Quitman | I. B. & W. C. |

Some months or years missing

† Not available

R Recording

S Standard

* Not shown on map

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 |
|---------------------------------------|-----------|----------|-----------|-------------|--------------|-------------------------------------|---------------------------------|
| Hacienda San Miguel, Coahuila | S | 29° 14' | 101° 31' | * | 1961 | Langtry - Amistad Dam Site | I. B. & W. C. |
| Higueras, Nuevo León * | S | 25° 59' | 100° 01' | 1,640 | # Sept. 1906 | Río San Juan | Meteor. Service of Mexico |
| Icamole, Nuevo León * | S | 25° 56' | 100° 34' | 4,900 | # | Río San Juan | Hydr. Resources |
| Iturbide, Nuevo León | S | 24° 44' | 99° 53' | † | 1941 | Adjacent to Río San Juan | Hydr. Resources |
| Jarita, Nuevo León | C | 27° 26' | 99° 48' | † | # Mar. 1961 | Laredo - Falcón Dam | I. B. & W. C. |
| Jiménez, Chihuahua | S | 27° 08' | 104° 55' | 4,490 | 1951 | Río Conchos | Meteor. Service of Chihuahua |
| Jiménez, Coahuila | S | 29° 04' | 100° 40' | 814 | # | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Juárez, Chihuahua | S | 31° 44' | 106° 28' | 3,700 | # | El Paso - Ft. Quitman | Hydr. Resources |
| KM 99, Chihuahua | † | 28° 09' | 105° 29' | † | 1962 | Río Conchos | Hydr. Resources |
| KM 135, Chihuahua * | † | 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 | † | 26° 40' | 99° 20' | † | 1962 | Laredo to Falcón Dam | National Finance S.A. of Mexico |
| La Boquilla, Chihuahua | S | 27° 32' | 105° 25' | 4,330 | # 1910 | Río Conchos | † |
| La Cruz, Nuevo León | S | 25° 29' | 100° 21' | † | 1958 | Río San Juan | Hydr. Resources |
| La Gloria, Nuevo León | S | 26° 54' | 99° 48' | 394 | # May 1958 | Río Salado | I. B. & W. C. |
| La Junta, Chihuahua | S | 28° 26' | 107° 20' | 6,730 | # 1925 | Adjacent to Río Conchos | Hydr. Resources |
| La Junta (Satove), Chihuahua | S | 27° 53' | 106° 05' | † | 1961 | Río Conchos | Meteor. Service of Chihuahua |
| La Popa, Nuevo León | S | 26° 10' | 100° 50' | 3,230 | 1958 | Río San Juan | Hydr. Resources |
| La Trasquila, Chihuahua | † | 29° 08' | 107° 08' | † | 1962 | Río Conchos | Hydr. Resources |
| Laguna de Salinillas, Nuevo León | S | 27° 32' | 100° 34' | 755 | # 1940 | Río Salado | Hydr. Resources |
| Laguna de Sánchez, Nuevo León | R | 25° 21' | 100° 16' | 6,500 | Apr. 1941 | Río San Juan | Hydr. Resources |
| Lampazos, Nuevo León | S | 27° 00' | 100° 30' | 1,120 | # 1958 | Río Salado | Meteor. Service of Mexico |
| Las Burras, Chihuahua | S | 28° 27' | 105° 26' | 3,590 | July 1949 | Río Conchos | Hydr. Resources |
| Las Choyas, Chihuahua | S | 29° 18' | 106° 11' | † | # 1955 | Adjacent to Río Conchos | Meteor. Service of Chihuahua |
| Las Comititas, Nuevo León | S | 25° 26' | 100° 09' | 1,670 | 1940 | Río San Juan | Hydr. Resources |
| Las Enramadas, Nuevo León | S | 25° 48' | 99° 16' | 730 | # Sept. 1926 | Río San Juan | I. B. & W. C. |
| Las Norias, Coahuila | S | 29° 15' | 102° 20' | † | # May 1959 | Johnson Ranch - Langtry | I. B. & W. C. |
| Las Tortillas, Tamaulipas * | C | 26° 50' | 99° 33' | 394 | May 1961 | Río Salado | Hydr. Resources |
| Las Virgenes, Chihuahua | S | 28° 10' | 105° 38' | 4,070 | # 1943 | Río Conchos | Meteor. Service of Chihuahua |
| Lázaro Cárdenas, Chihuahua * | S | 28° 16' | 105° 32' | 3,940 | 1961 | Río Conchos | Hydr. Resources |
| Linares, Nuevo León | R | 24° 52' | 99° 34' | 1,180 | # 1900 | Adjacent to Río San Juan | I. B. & W. C. |
| Los Barriles, Chihuahua | S | 30° 55' | 105° 45' | 4,860 | July 1958 | El Paso - Ft. Quitman | Hydr. Resources |
| Los Herrera (La Tableta), Nuevo León | R | 25° 55' | 99° 24' | 820 | Sept. 1939 | Río San Juan | Hydr. Resources |
| Los Ojos, Chihuahua | S | 29° 06' | 106° 15' | 4,990 | 1957 | Adjacent to Río Conchos | Meteor. Service of Chihuahua |
| Los Pozos, Chihuahua | S | 28° 53' | 106° 02' | 3,940 | # 1956 | Río Conchos | Hydr. Resources |
| Los Ramones, Nuevo León | R | 25° 42' | 99° 38' | 262 | # Sept. 1939 | Río San Juan | Hydr. Resources |
| Luis L. León, Chihuahua | S | 31° 05' | 105° 37' | 3,460 | Apr. 1958 | El Paso - Ft. Quitman | I. B. & W. C. |
| Maclovio Herrera (Palomir), Chihuahua | S | 29° 03' | 105° 08' | 3,380 | # 1924 | Río Conchos | Meteor. Service of Mexico |
| Majoma, Chihuahua | S | 28° 54' | 104° 20' | 4,270 | Aug. 1955 | Río Conchos | Meteor. Service of Chihuahua |
| Manantial Maris, Coahuila * | † | 29° 24' | 101° 02' | † | 1962 | Amistad Dam Site - Eagle Pass | † |
| Manuel Benavides, Chihuahua | S | 29° 13' | 103° 53' | † | Oct. 1961 | Upper Presidio - Johnson Ranch | Meteor. Service of Chihuahua |
| Matamoros, Tamaulipas | S | 25° 52' | 97° 30' | 33 | # 1958 | Lower Rio Grande Valley | Hydr. Resources |
| Méndez, Tamaulipas | S | 25° 07' | 98° 35' | 427 | # Sept. 1939 | Adjacent to Lower Rio Grande Valley | Hydr. Resources |
| Meoqui, Chihuahua | S | 28° 16' | 105° 29' | 3,820 | 1961 | Río Conchos | Meteor. Service of Chihuahua |
| Mina, Nuevo León | S | 26° 00' | 100° 31' | † | 1958 | Río San Juan | Hydr. Resources |
| Mina La Borrada, Coahuila | S | 29° 23' | 102° 35' | † | Aug. 1961 | Johnson Ranch-Langtry | I. B. & W. C. |
| Monclova, Coahuila | S | 26° 54' | 101° 25' | 1,940 | # 1897 | Río Salado | Meteor. Service of Mexico |
| 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 | Meteor. Service of Mexico |
| Muzquiz, Coahuila | S | 27° 53' | 101° 31' | 1,650 | # 1923 | Río Salado | Hydr. Resources |
| Nueva Cd. Guerrero, Tamaulipas | S | 26° 34' | 99° 14' | 348 | # May 1954 | Laredo - Falcón 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 | S | 27° 30' | 99° 30' | 427 | 1950 | Laredo - Falcón Dam | I. B. & W. C. |
| Nuevo Laredo, Tamaulipas | S | 27° 30' | 99° 30' | 427 | # 1909 | Laredo - Falcón Dam | Meteor. Service of Mexico |

Some months or years missing

R Recording

S Standard

† Not available

C Cumulative

* Not shown on map

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

| NAME OF STATION | TYPE GAGE | LATI- TUDE | LONGI- TUDE | ELEV. (FT.) | RECORD BEGAN | WATERSHED SUBDIVISION | OBSERVER |
|--|--------------|---------------|----------------|----------------|-----------------|----------------------------------|------------------------------------|
| Nuevo Laredo K-26-S, SW, Tamaulipas | C | 27° 17' | 99° 36' | † | Apr. 1961 | Laredo - Falcón Dam | I. B. & W. C. |
| Nuevo Laredo Klmt. 50 S. SW, Tamaulipas | C | 27° 06' | 99° 42' | † | Apr. 1961 | Laredo - Falcón Dam | I. B. & W. C. |
| Ocampo, Coahuila | S | 27° 18' | 102° 24' | 3,770 | May 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. 1966 | Río Conchos | Meteor. Service of Mexico |
| Ojo Caliente, Chihuahua | S | 27° 41' | 105° 13' | 4,010 | 1942 | Río Conchos | Hydr. Resources |
| Pajonal, Nuevo León * | S | 25° 29' | 100° 25' | † | 1958 | Río San Juan | Hydr. Resources |
| Palestina, Coahuila * | S | 29° 08' | 100° 57' | 1,080 | # 1931 | Amistad Dam Site - Eagle Pass | Hydr. Resources |
| Parás, Nuevo León | S | 26° 30' | 99° 31' | 541 | # | Río Alamo | Hydr. Resources |
| Parral, Chihuahua | S | 26° 56' | 105° 39' | 5,740 | # | Río Conchos | Meteor. Service of Mexico |
| Parras, Coahuila | S | 25° 27' | 102° 10' | 5,510 | 1958 | Adjacent to Río San Juan | Hydr. Resources |
| Piedras Negras, Coahuila | S | 28° 43' | 100° 31' | 715 | # 1951 | Amistad Dam Site - Eagle Pass | I. B. & W. C. |
| Piedras Negras K-22-SW, Coahuila * | † | 28° 33' | 100° 38' | † | 1962 | Eagle Pass - Laredo | † |
| Planta Zootécnica, Chihuahua | S | 28° 41' | 106° 04' | 4,740 | # | Río Conchos | Meteor. Service of Chihuahua |
| Porvenir, Chihuahua | S | 31° 14' | 105° 52' | 3,530 | 1957 | El Paso - Ft. Quitman | I. B. & W. C. |
| Potero Redondo, Nuevo León * | S | 25° 16' | 100° 08' | † | # 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 Anzaldías, Tamaulipas * | S | 26° 07' | 98° 18' | † | Apr. 1960 | Lower Rio Grande Valley | I. B. & W. C. |
| Presa Chihuahua, Chihuahua | S | 28° 34' | 106° 08' | 5,233 | 1961 | Río Conchos | 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 | S | 27° 36' | 99° 37' | 446 | Sept. 1956 | Eagle Pass - Laredo | H. Vidrio |
| Rancho Mercedes, Coahuila † | S | 28° 02' | 100° 01' | 545 | May 1959 | Eagle Pass - Laredo | I. B. & W. C. |
| Rancho San Diego, Coahuila | S | 27° 59' | 100° 35' | † | #June 1958 | Eagle Pass - Laredo | I. B. & W. C. |
| Rancho San Juan de la Palma, Tamaulipas | S | 26° 53' | 99° 22' | 348 | Apr. 1955 | Laredo - Falcón 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° 02' | 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 K-22-SW, Tamaulipas * | † | 20° 00' | 98° 28' | † | 1962 | Río Grande | † |
| Reynosa 40 Km SW, N. L. " | S | 25° 56' | 98° 43' | 492 | Feb. 1959 | Lower Rio Grande Valley | I. B. & W. C. |
| Rinconada, Nuevo León | S | 25° 41' | 100° 41' | 4,790 | Apr. 1944 | Río San Juan | Hydr. Resources |
| Río Bravo, Tamaulipas | S | 26° 00' | 98° 06' | 85 | #Sept. 1950 | Lower Rio Grande Valley | Hydr. Resources |
| Rosettilla, Chihuahua | S | 28° 14' | 105° 19' | 3,780 | 1940 | Río Conchos | National Finance S.A. of Mexico |
| Sabinas, Coahuila | S | 27° 50' | 101° 08' | 1,440 | #May 1922 | Río Salado | Hydr. Resources |
| Sabinas Hidalgo, | | | | | | | |
| Nuevo León | S | 26° 30' | 100° 11' | 1,030 | May 1958 | Río Salado | I. B. & W. C. |
| Saltillo, Coahuila | S | 25° 26' | 101° 00' | 5,280 | # | 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° 15' | 100° 36' | † | 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. |
| San Antonio, Durango | S | 26° 25' | 105° 21' | 5,430 | 1943 | Río Conchos | Hydr. Resources |
| San Buenaventura, Coahuila | S | 27° 05' | 101° 33' | 2,300 | #Dec. 1926 | Río Salado | Meteor. Service of Mexico |
| San Fernando, Coahuila | S | 29° 28' | 101° 46' | † | Aug. 1961 | Langtry - Amistad Dam Site | I. B. & W. C. |
| San Gregorio, Coahuila * | † | 29° 24' | 101° 20' | † | 1962 | Langtry - Amistad Dam Site | † |
| San Javier, Nuevo León | † | 26° 15' | 99° 25' | † | 1962 | Río Alamo | † |
| San Juan, Nuevo León | S | 25° 33' | 99° 50' | 876 | #Nov. 1943 | Río San Juan | Hydr. Resources |
| San Lorenzo, Chihuahua | S | 28° 10' | 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 |
| Santa Catarina, Nuevo León | R | 25° 41' | 100° 26' | 1,970 | Oct. 1937 | Río San Juan | Hydr. Resources |
| Santa Rita, Chihuahua | S | 27° 49' | 104° 31' | 3,950 | # 1956 | Río Conchos | Meteor. Service of Chihuahua |
| Santa Rosa, Coahuila * | S | 29° 38' | 101° 28' | † | # 1958 | Langtry - Amistad Dam Site | Ind. Co-operator |

Some months or years missing R Recording S Standard " Formerly called Klmt. 140, Nuevo León

† Not available † Formerly called Rancho San Jesus, Coahuila

* Not shown on map

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

| NAME OF STATION | TYPE GAGE | LATI-TUDE | LONGI-TUDE | ELEV. (FT.) | RECORD BEGAN | WATERSHED SUBDIVISION | OBSERVER |
|-------------------------------|-----------|-----------|------------|-------------|--------------|-------------------------------------|------------------------------|
| Santo Domingo, Coahuila | S | 28° 58' | 102° 24' | † | #May 1959 | Río Salado | I. B. & W. C. |
| Sierra Mojada, Coahuila | S | 27° 17' | 103° 42' | 4,120 | July 1960 | Adjacent to Johnson Ranch - Langtry | Meteor. Service of Mexico |
| Siquirichic, Chihuahua | S | 27° 09' | 107° 12' | 7,610 | July 1956 | Adjacent to Río Conchos | Meteor. Service of Chihuahua |
| Sitio Presa Amistad, Coahuila | † | 29° 27' | 101° 04' | † | 1962 | Langtry - Amistad Dam Site | † |
| Tinajas, Chihuahua * | S | 31° 09' | 106° 05' | 4,210 | 1958 | El Paso - Ft. Quitman | I. B. & W. C. |
| Topo Chico, Nuevo León | R | 25° 49' | 100° 20' | 1,640 | #Aug. 1939 | Río San Juan | Hydr. Resources |
| Tres Hermanos, Chihuahua | S | 27° 41' | 106° 09' | 4,300 | 1961 | Río Conchos | Meteor. Service of Chihuahua |
| Vado de Cedillos, Chihuahua | S | 31° 12' | 105° 49' | 3,500 | Apr. 1958 | El Paso - Ft. Quitman | I. B. & W. C. |
| Vallecillo, Nuevo León | S | 26° 40' | 99° 58' | 900 | June 1958 | Río Salado | Hydr. Resources |
| Valle Hermoso, Tamaulipas | S | 25° 41' | 97° 48' | 52 | #June 1949 | Lower Rio Grande Valley | Hydr. Resources |
| Villa Aldama, Chihuahua | S | 28° 50' | 105° 53' | 4,140 | 1961 | Río Conchos | Meteor. Service of Chihuahua |
| Villa Allende, Nuevo León | S | 25° 17' | 100° 01' | 2,210 | #Nov. 1938 | Río San Juan | Hydr. Resources |
| Villa de Santiago, Nuevo León | S | 25° 25' | 100° 07' | 1,460 | # 1923 | Río San Juan | Hydr. Resources |
| Villa Guerrero, Coahuila | S | 28° 20' | 100° 24' | 689 | June 1958 | Eagle Pass - Laredo | I. B. & W. C. |
| Villa Hidalgo, Coahuila | S | 27° 47' | 99° 52' | 499 | 1951 | Eagle Pass - Laredo | I. B. & W. C. |
| Villa Juárez, Coahuila | S | 27° 37' | 100° 44' | 900 | # 1943 | Río Salado | Hydr. Resources |
| Villalba, Chihuahua | S | 28° 01' | 105° 46' | 3,940 | Oct. 1940 | Río Conchos | Hydr. Resources |
| Zaragoza, Chihuahua | S | 31° 40' | 106° 20' | 3,660 | Feb. 1958 | El Paso - Ft. Quitman | Hydr. Resources |

Some months or years missing R Recording S Standard † Not available * Not shown on map

**EVAPORATION IN THE RIO GRANDE BASIN
IN INCHES
In the United States**

Tabulated below are records of evaporation observed at six stations operated by the United States Section of this Commission from Presidio to Brownsville, Texas. 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 125 to 131 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 Falcón Dam, Texas.

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 Falcón Dam, Texas. 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 and Wardlaw Ranch.

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, Texas | | Johnson Ranch, Texas | | Martin King Ranch | | Wardlaw Ranch | |
|-------|--------------------|----------------------|-------------------------|----------------------|----------------------|--------------------------------|------------------|-------------------------------|
| | 1962 | Average 1950-1962 | 1962 | Average 1950-1962 | 1962 | #Average March 1956-1962 | 1962 | Average Sept. 1955-1962 |
| Jan. | 2.91 | 3.46 | 2.55 | 3.64 | 3.30 | 2.98 | 3.96 | 2.95 |
| Feb. | 5.17 | 5.12 | 5.93 | 5.37 | 5.73 | 3.74 | 6.20 | 3.79 |
| Mar. | 8.72 | 8.54 | 7.27 | 8.51 | 7.80 | 6.37 | 8.70 | 6.27 |
| Apr. | 9.64 | 10.33 | 10.18 | 10.65 | 7.04 | 7.58 | 6.67 | 6.92 |
| May | 12.46 | 12.61 | 11.93 | 12.81 | 11.61 | 9.58 | 11.32 | 8.79 |
| June | 12.33 | 13.43 | 10.86 | 13.30 | 10.57 | 11.52 | 10.81 | 10.89 |
| July | 10.82 | 12.44 | 11.31 | 13.80 | 13.59 | 11.47 | 12.82 | 11.83 |
| Aug. | 11.77 | 12.30 | 11.85 | 12.59 | | 11.29 | 12.04 | 10.89 |
| Sept. | 9.07 | 10.67 | 9.44 | 10.51 | | 8.53 | 9.59 | 8.35 |
| Oct. | 6.13 | 8.16 | 6.60 | 8.13 | | 5.86 | 6.38 | 5.69 |
| Nov. | 4.67 | 4.96 | 4.00 | 4.90 | 4.41 | 3.88 | 3.90 | 3.91 |
| Dec. | 3.18 | 3.41 | 2.21 | 3.52 | 3.49 | 3.31 | 3.40 | 2.95 |
| Total | 96.87 | 105.43 | 94.13 | 107.73 | | 86.11 | 95.79 | 83.23 |

| Month | Falcón Dam, Texas | | | | Brownsville, Texas | | | |
|-------|-------------------|-------------------------------|------------|-------------------------------|-----------------------|------------------------------|--|--|
| | 2-Foot Pan | | 4-Foot Pan | | | | | |
| | 1962 | Average April 1950-1962 | 1962 | Average April 1956-1962 | 1962 | Average July 1958-1962 | | |
| Jan. | 4.13 | 3.64 | 5.70 | 3.95 | 1.97 | 1.82 | | |
| Feb. | 5.44 | 4.79 | 8.30 | 5.73 | 3.28 | 2.34 | | |
| Mar. | 7.00 | 6.81 | 10.36 | 8.66 | 3.97 | 2.90 | | |
| Apr. | 8.24 | 8.08 | 11.69 | 10.50 | 4.67 | 4.34 | | |
| May | 12.65 | 10.45 | 15.99 | 13.84 | 6.08 | 5.00 | | |
| June | 11.08 | 11.43 | 14.84 | 14.05 | 5.98 | 5.72 | | |
| July | 15.77 | 13.65 | 18.58 | 17.10 | 7.08 | 6.99 | | |
| Aug. | 13.23 | 11.88 | 16.38 | 15.39 | 6.97 | 6.22 | | |
| Sept. | 9.33 | 8.48 | 12.01 | 10.65 | 5.68 | 4.75 | | |
| Oct. | 8.54 | 6.86 | 10.11 | 8.34 | 5.54 | 3.85 | | |
| Nov. | 5.27 | 4.89 | 6.28 | 5.50 | 3.65 | 2.83 | | |
| Dec. | 3.78 | 3.94 | 3.80 | 4.14 | 2.06 | 2.17 | | |
| Total | 104.46 | 94.90 | 134.04 | 117.85 | 56.93 | 48.93 | | |

Some months missing

EVAPORATION IN THE RIO GRANDE BASIN
IN INCHES
In Mexico

Tabulated below are records of evaporation observed at nine stations operated and maintained by the Mexican Section of this Commission. Eight 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 127 to 130 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 32 published by the Mexican Section of this Commission.

| Month | Ojinaga, Chih. | | Cd. Acuña, Coah. | | Jiménez, Coah. | | Piedras Negras, Coah. | | Hidalgo, Coah. | |
|-------|-------------------|--------------------------------|---------------------|-----------------------|-------------------|-----------------------|--------------------------|-----------------------|-------------------|------------------------------|
| | 1962 | #Average April 1951-1962 | 1962 | #Average 1951-1962 | 1962 | #Average 1951-1962 | 1962 | #Average 1951-1962 | 1962 | Average Feb. 1951-1962 |
| Jan. | 3.98 | 2.93 | 3.70 | 3.46 | 3.86 | 3.18 | 3.46 | 3.24 | 3.98 | 4.08 |
| Feb. | 6.89 | 4.55 | 6.25 | 4.95 | 6.02 | 4.50 | 4.96 | 4.56 | 7.44 | 5.68 |
| Mar. | 9.76 | 7.27 | 9.61 | 8.11 | 7.72 | 6.98 | 8.70 | 7.25 | 8.94 | 8.43 |
| Apr. | 13.11 | 9.64 | 10.94 | 9.27 | 9.37 | 8.11 | | 8.65 | 11.38 | 10.64 |
| May | 17.44 | 12.27 | 13.42 | 10.68 | 11.30 | 9.62 | | 10.11 | 14.29 | 13.17 |
| June | 16.54 | 12.51 | 12.04 | 12.18 | 10.63 | 11.22 | 11.77 | 11.91 | 14.06 | 14.44 |
| July | 14.25 | 11.91 | 15.67 | 13.35 | 13.50 | 12.47 | 15.94 | 13.65 | 17.52 | 16.58 |
| Aug. | 15.55 | 10.47 | 15.43 | 12.37 | 12.60 | 11.32 | 14.33 | 12.39 | 14.53 | 15.03 |
| Sept. | 10.35 | 8.53 | 10.12 | 9.22 | | 8.17 | 11.61 | 8.69 | 11.06 | 10.86 |
| Oct. | 7.80 | 6.28 | 7.68 | 6.21 | 6.14 | 5.57 | 8.27 | 6.32 | 9.09 | 7.86 |
| Nov. | 5.08 | 3.72 | 4.09 | 3.84 | 3.19 | 3.35 | 5.12 | 3.58 | 5.39 | 4.77 |
| Dec. | 2.99 | 2.83 | 2.80 | 3.29 | 2.36 | 2.93 | 2.48 | 2.98 | 3.46 | 3.96 |
| Total | 123.74 | 92.91 | 111.75 | 96.93 | | 87.42 | | 93.33 | 121.14 | 115.50 |

| Month | Rancho San Juan de la Palma, Tamps. | | Nueva Cd. Guerrero, Tamps. | | Cd. Mier, Tamps. | | Retamal, Tamps. | |
|-------|---|--------------------------------|----------------------------------|-------------------------------|---------------------|-------------------------------|--------------------|-----------------------|
| | 1962 | #Average April 1955-1962 | 1962 | #Average June 1954-1962 | 1962 | #Average Oct. 1955-1962 | 1962 | #Average 1951-1962 |
| Jan. | | 3.73 | 3.66 | 3.60 | 4.09 | 3.64 | 4.21 | 4.23 |
| Feb. | 6.97 | 5.40 | 5.98 | 4.52 | 7.17 | 5.17 | 6.22 | 5.13 |
| Mar. | 8.27 | 7.41 | 7.87 | 7.16 | 8.11 | 7.60 | 7.24 | 6.73 |
| Apr. | 10.24 | 9.97 | 9.37 | 9.15 | 9.53 | 9.29 | 8.23 | 8.27 |
| May | 13.54 | 12.44 | 12.64 | 11.83 | 13.90 | 12.09 | 9.96 | 9.33 |
| June | 12.52 | 13.18 | 11.46 | 11.91 | 14.25 | 13.36 | 8.94 | 9.26 |
| July | 17.32 | 15.94 | 16.10 | 14.42 | 17.36 | 16.00 | 11.10 | 10.17 |
| Aug. | 15.16 | 14.66 | 13.82 | 12.97 | 15.51 | 14.27 | 11.38 | 10.09 |
| Sept. | 12.05 | 11.05 | 9.61 | 9.75 | 11.50 | 10.86 | 8.27 | 7.42 |
| Oct. | 9.29 | 7.95 | 8.50 | 7.33 | 8.70 | 8.67 | 8.70 | 6.21 |
| Nov. | 6.34 | 5.03 | 5.16 | 4.88 | 5.08 | 4.88 | 6.34 | 4.26 |
| Dec. | 3.43 | 3.99 | 3.07 | 3.56 | 3.82 | 3.90 | 3.50 | 3.86 |
| Total | 110.75 | 107.24 | 101.08 | 119.02 | 109.73 | 94.09 | 84.96 | |

* 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.

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 | Tortuga Ranch, Texas | | | | Falcon Dam, Texas | | | |
|--------|----------------------|--------------------------------|------|------|-------------------|------------------------------|------|------|
| | Mean 1962 | Average # June 1955-1962 | 1962 | | Mean 1962 | Average July 1950-1962 | 1962 | |
| | | | Max. | Min. | | | Max. | Min. |
| Jan. | 47.3 | 50.3 | 85 | 10 | 52.9 | 57.6 | 86 | 15 |
| Feb. | 65.1 | 56.9 | 95 | 35 | 70.4 | 62.3 | 96 | 42 |
| Mar. | | 62.4 | | | 67.2 | 67.7 | 98 | 34 |
| Apr. | 74.6 | 70.5 | 103 | 42 | 75.6 | 74.9 | 107 | 48 |
| May | 82.6 | 79.3 | 105 | 58 | 82.6 | 80.8 | 106 | 64 |
| June | 85.5 | 85.7 | 104 | 64 | 85.2 | 85.1 | 107 | 65 |
| July | 91.3 | 86.8 | 107 | 75 | 90.0 | 87.0 | 110 | 74 |
| Aug. | | 86.8 | | | 87.2 | 86.6 | 109 | 68 |
| Sept. | 74.6 | 80.7 | 98 | 54 | 81.4 | 81.9 | 101 | 60 |
| Oct. | 68.8 | 71.4 | 94 | 35 | 74.4 | 74.7 | 95 | 53 |
| Nov. | | 57.7 | | | 64.2 | 63.5 | 88 | 40 |
| Dec. | | 52.9 | | | 54.4 | 58.3 | 83 | 35 |
| Yearly | | 70.1 | | | 73.8 | 73.4 | 110 | 15 |

In Mexico

| Month | Juárez, Chihuahua | | | | Manuel M. Benavides, Chihuahua | | | | Ojinaga, Chihuahua | | | |
|--------|-------------------|------------------------------|------|------|--------------------------------|---------------------------------|------|------|--------------------|--------------------------------|------|------|
| | Mean 1962 | Average July 1960-1962 | 1962 | | Mean 1962 | Average October 1961-1962 | 1962 | | Mean 1962 | Average #April 1954-1962 | 1962 | |
| | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. |
| Jan. | 41.0 | 41.9 | 70 | 0 | 48.2 | | 84 | 9 | 46.4 | 48.2 | 77 | 7 |
| Feb. | 55.4 | 51.8 | 88 | 32 | 60.8 | | 88 | 21 | 60.8 | 54.1 | 90 | 32 |
| Mar. | 53.6 | 56.3 | 82 | 30 | 57.2 | | 88 | 27 | 59.0 | 59.2 | 90 | 28 |
| Apr. | 66.2 | 65.3 | 97 | 36 | 71.6 | | 99 | 25 | 73.4 | 68.7 | 99 | 41 |
| May | 75.2 | 77.0 | 99 | 48 | | | | | 84.2 | 77.7 | 106 | 57 |
| June | 80.6 | 81.5 | 104 | 54 | | | | | 86.0 | 84.0 | 108 | 57 |
| July | 80.6 | 81.9 | 100 | 63 | | | | | 86.0 | 84.2 | 104 | 66 |
| Aug. | 84.2 | 82.8 | 104 | 61 | | | | | 87.8 | 83.1 | 108 | 66 |
| Sept. | 73.4 | 75.1 | 95 | 57 | | | | | 82.4 | 79.3 | 100 | 54 |
| Oct. | 66.2 | 64.9 | 90 | 46 | | | | | 73.4 | 69.2 | 95 | 46 |
| Nov. | 53.6 | 51.9 | 77 | 28 | | | | | 60.8 | 56.0 | 86 | 37 |
| Dec. | 48.2 | 44.7 | 66 | 27 | | | | | 50.0 | 49.3 | 82 | 28 |
| Yearly | 64.8 | 64.6 | 104 | 0 | | | | | 70.8 | 67.8 | 108 | 7 |

| Month | Cd. Acuña, Coahuila | | | | Chupadero, Coahuila | | | | Jiménez, Coahuila | | | |
|--------|---------------------|--------------------------------|------|------|---------------------|----------------------------------|------|------|-------------------|--------------------------------|------|------|
| | Mean 1962 | Average #April 1951-1962 | 1962 | | Mean 1962 | Average #January 1961-1962 | 1962 | | Mean 1962 | Average #March 1951-1962 | 1962 | |
| | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. |
| Jan. | 32.0 | 49.8 | 86 | 5 | 46.4 | 47.3 | 79 | 12 | 48.2 | 52.7 | 88 | 7 |
| Feb. | 60.8 | 56.9 | 93 | 28 | 62.6 | 59.0 | 88 | 36 | 64.4 | 58.5 | 93 | 32 |
| Mar. | 60.8 | 63.3 | 95 | 25 | 60.8 | 63.5 | 91 | 28 | 60.8 | 63.2 | 86 | 28 |
| Apr. | 71.6 | 72.1 | 108 | 39 | 71.6 | 71.6 | 95 | 45 | 71.6 | 71.5 | 97 | 41 |
| May | 80.6 | 79.6 | 100 | 50 | 78.8 | 78.8 | 97 | 54 | 78.8 | 78.0 | 95 | 55 |
| June | 84.2 | 86.2 | 104 | 63 | 82.4 | 82.4 | 99 | 68 | 86.0 | 84.6 | 97 | 66 |
| July | 89.6 | 88.3 | 108 | 72 | 89.6 | 86.0 | 102 | 75 | 84.2 | 86.0 | 102 | 70 |
| Aug. | 89.6 | 88.9 | 111 | 64 | 87.8 | 85.1 | 104 | 72 | 87.8 | 86.1 | 106 | 68 |
| Sept. | 84.2 | 83.0 | 108 | 57 | 84.2 | 82.4 | 102 | 63 | 80.8 | 72.6 | 97 | 46 |
| Oct. | 77.0 | 72.9 | 104 | 43 | 77.0 | 73.4 | 97 | 50 | 62.6 | 59.8 | 90 | 36 |
| Nov. | 60.8 | 58.7 | 88 | 32 | 62.6 | 59.9 | 82 | 37 | 51.8 | 53.8 | 82 | 21 |
| Dec. | 50.0 | 51.9 | 81 | 28 | | | | | 70.6 | | | |
| Yearly | 70.1 | 71.0 | 111 | 5 | | | | | | | | |

* Some months missing

TEMPERATURE, HUMIDITY, AND WIND

Temperature - Degrees Fahrenheit

In Mexico

| Month | El Remolino, Coahuila | | | | | Piedras Negras, Coahuila | | | | | Villa Guerrero, Coahuila | | | | | |
|--------|-----------------------|------------------------------|------|------|--------------|--------------------------------|------|------|--------------|------------------------------|--------------------------|------|--------------|------------------------------|------|--|
| | Mean 1962 | Average June 1958-1962 | 1962 | | Mean 1962 | Average #April 1958-1962 | 1962 | | Mean 1962 | Average July 1958-1962 | 1962 | | Mean 1962 | Average July 1958-1962 | | |
| | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. | | Max. | Min. | |
| Jan. | 57.2 | 51.4 | 102 | -13 | 46.4 | 50.4 | 82 | 12 | 46.4 | 47.1 | 79 | 5 | | | | |
| Feb. | 69.8 | 59.8 | 102 | 34 | 66.2 | 56.3 | 93 | 37 | 66.2 | 56.0 | 100 | 32 | | | | |
| Mar. | 71.6 | 64.2 | 102 | 36 | 62.6 | 61.0 | 90 | 30 | 57.2 | 59.6 | 86 | 23 | | | | |
| Apr. | 75.2 | 71.1 | 102 | 36 | 73.4 | 69.4 | 100 | 46 | 71.6 | 68.6 | 100 | 48 | | | | |
| May | 77.0 | 76.8 | 106 | 41 | 82.4 | 77.2 | 102 | 57 | 80.6 | 77.7 | 102 | 50 | | | | |
| June | 80.6 | 82.8 | 113 | 45 | | 84.0 | | | 82.4 | 82.5 | 102 | 63 | | | | |
| July | 86.0 | 84.7 | 113 | 52 | 89.6 | 86.3 | 106 | 73 | 86.0 | 84.5 | 104 | 68 | | | | |
| Aug. | 86.0 | 84.1 | 115 | 50 | 89.6 | 86.3 | 108 | 70 | 86.0 | 84.2 | 108 | 66 | | | | |
| Sept. | 84.2 | 81.7 | 113 | 59 | 84.2 | 80.1 | 104 | 63 | 82.4 | 79.0 | 95 | 64 | | | | |
| Oct. | 77.0 | 73.1 | 106 | 41 | 77.0 | 69.8 | 100 | 43 | 73.4 | 70.2 | 95 | 48 | | | | |
| Nov. | 66.2 | 61.8 | 97 | 36 | 62.6 | 57.0 | 88 | 41 | 62.6 | 58.7 | 90 | 34 | | | | |
| Dec. | 55.4 | 57.0 | 86 | 27 | 53.6 | 52.2 | 77 | 36 | 50.0 | 50.3 | 86 | 28 | | | | |
| Yearly | 73.8 | 70.7 | 115 | -13 | | 69.2 | | | 70.4 | 68.2 | 108 | 5 | | | | |

| Month | Rancho Mercedes, Coahuila | | | | | Villa Hidalgo, Coahuila | | | | | Nuevo Laredo, Tamaulipas | | | | | |
|--------|---------------------------|-------------------------------|------|------|--------------|---------------------------------|------|------|--------------|----------------------|--------------------------|------|--------------|----------------------|------|------|
| | Mean 1962 | Average #June 1958-1962 | 1962 | | Mean 1962 | Average #August 1958-1962 | 1962 | | Mean 1962 | Average 1945-1962 | 1962 | | Mean 1962 | Average 1945-1962 | 1962 | |
| | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. |
| Jan. | 59.2 | | | | 48.2 | 54.6 | 86 | 9 | 50.0 | 56.8 | 81 | 18 | | | | |
| Feb. | 66.2 | 60.9 | 93 | 32 | 69.8 | 59.6 | 99 | 37 | 68.0 | 61.2 | 90 | 43 | | | | |
| Mar. | 60.8 | 64.5 | 93 | 32 | 64.4 | 65.4 | 95 | 28 | 62.6 | 67.7 | 93 | 36 | | | | |
| Apr. | 75.2 | 70.2 | 104 | 48 | 75.2 | 74.4 | 104 | 43 | 75.2 | 75.2 | 99 | 48 | | | | |
| May | 78.8 | 76.8 | 102 | 52 | 82.4 | 80.7 | 104 | 57 | 82.4 | 80.7 | 102 | 61 | | | | |
| June | 84.2 | 84.8 | 102 | 63 | 86.0 | 86.3 | 102 | 64 | 86.0 | 84.3 | 102 | 68 | | | | |
| July | 89.6 | 84.8 | 106 | 72 | 89.6 | 87.7 | 108 | 72 | 89.6 | 87.9 | 104 | 75 | | | | |
| Aug. | 86.0 | 85.2 | 108 | 68 | 89.6 | 87.5 | 108 | 70 | 89.6 | 87.9 | 108 | 73 | | | | |
| Sept. | 80.6 | 82.5 | 102 | 61 | 86.0 | 83.0 | 104 | 59 | 86.0 | 82.6 | 108 | 52 | | | | |
| Oct. | 77.0 | 77.1 | 97 | 48 | 80.6 | 75.0 | 100 | 48 | 78.8 | 73.7 | 97 | 50 | | | | |
| Nov. | 60.8 | 63.5 | 86 | 32 | 64.4 | 60.2 | 91 | 36 | 64.4 | 64.4 | 86 | 43 | | | | |
| Dec. | 53.6 | 59.5 | 86 | 30 | 55.4 | 56.2 | 91 | 34 | 55.4 | 57.1 | 79 | 34 | | | | |
| Yearly | | 72.4 | | | 74.3 | 72.6 | 108 | 9 | 74.0 | 73.3 | 108 | 18 | | | | |

| Month | Rancho San Juan de la Palma, Tamps. | | | | | La Babia, Coahuila | | | | | El Treinta, Coahuila | | | | | |
|--------|-------------------------------------|--------------------------------|------|------|--------------|---------------------------------|------|------|--------------|---------------------------------|----------------------|------|--------------|---------------------------------|------|------|
| | Mean 1962 | Average #April 1958-1962 | 1962 | | Mean 1962 | Average January 1961-1962 | 1962 | | Mean 1962 | Average January 1961-1962 | 1962 | | Mean 1962 | Average January 1961-1962 | 1962 | |
| | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. |
| Jan. | 57.5 | | | | 46.4 | 46.4 | 82 | 3 | 50.0 | 50.9 | 91 | 10 | | | | |
| Feb. | 71.6 | 63.2 | 97 | 41 | 59.0 | 55.4 | 93 | 23 | 64.4 | 60.8 | 99 | 27 | | | | |
| Mar. | 66.2 | 65.5 | 100 | 34 | 59.0 | 56.3 | 90 | 21 | 62.6 | 64.4 | 93 | 27 | | | | |
| Apr. | 75.2 | 73.6 | 104 | 48 | 68.0 | 71.6 | 97 | 39 | 71.6 | 73.4 | 104 | 41 | | | | |
| May | 82.4 | 81.8 | 104 | 63 | 71.6 | 75.2 | 102 | 45 | 78.8 | 80.6 | 108 | 48 | | | | |
| June | 86.0 | 86.4 | 108 | 64 | 75.2 | 77.0 | 97 | 48 | 82.4 | 83.3 | 102 | 55 | | | | |
| July | 91.4 | 89.4 | 111 | 70 | 82.4 | 79.7 | 102 | 63 | 87.8 | 85.1 | 108 | 66 | | | | |
| Aug. | 89.6 | 89.3 | 111 | 68 | 82.4 | 78.8 | 108 | 59 | 86.0 | 85.1 | 108 | 66 | | | | |
| Sept. | 82.4 | 84.7 | 102 | 52 | 78.8 | 77.0 | 102 | 54 | 80.6 | 81.5 | 108 | 57 | | | | |
| Oct. | 80.6 | 77.7 | 97 | 52 | 73.4 | 69.8 | 99 | 41 | 75.2 | 73.4 | 99 | 52 | | | | |
| Nov. | 68.0 | 65.8 | 93 | 46 | 59.0 | 56.3 | 88 | 30 | 60.8 | 59.9 | 91 | 36 | | | | |
| Dec. | 59.0 | 59.1 | 100 | 37 | 51.8 | 52.7 | 81 | 27 | 51.8 | 53.6 | 81 | 25 | | | | |
| Yearly | | 74.5 | | | 67.2 | 66.4 | 108 | 3 | 71.0 | 71.0 | 108 | 10 | | | | |

| Month | Sabinas Hidalgo, Nuevo León | | | | | Nueva Cd. Guerrero, Tamps. | | | | | Cd. Mier, Tamps. | | | | | |
|--------|-----------------------------|---------------------------------|------|------|--------------|----------------------------|------|------|--------------|----------------------------------|------------------|------|--------------|----------------------|------|------|
| | Mean 1962 | Average October 1961-1962 | 1962 | | Mean 1962 | Average 1958-1962 | 1962 | | Mean 1962 | Average #October 1955-1962 | 1962 | | Mean 1962 | Average 1958-1962 | 1962 | |
| | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. | | | Max. | Min. |
| Jan. | 53.6 | | 91 | 16 | 50.0 | 52.5 | 82 | 14 | 51.8 | 56.4 | 82 | 7 | | | | |
| Feb. | 69.8 | 100 | 36 | 68.0 | 59.3 | 90 | 41 | 69.8 | 63.0 | 100 | 37 | | | | | |
| Mar. | 64.4 | 102 | 30 | 64.4 | 64.3 | 90 | 36 | 64.4 | 67.0 | 100 | 36 | | | | | |
| Apr. | 77.0 | 113 | 52 | 73.4 | 73.2 | 100 | 50 | 71.6 | 75.2 | 104 | 41 | | | | | |
| May | 82.4 | 109 | 59 | 80.6 | 81.4 | 100 | 64 | 80.6 | 81.9 | 102 | 61 | | | | | |
| June | 87.8 | 108 | 64 | 84.2 | 84.9 | 100 | 64 | 84.2 | 85.7 | 102 | 63 | | | | | |
| July | 87.8 | 109 | 68 | 87.8 | 87.4 | 104 | 73 | 87.8 | 87.5 | 104 | 70 | | | | | |
| Aug. | 87.8 | 109 | 68 | 87.8 | 86.8 | 104 | 72 | 87.8 | 87.1 | 106 | 70 | | | | | |
| Sept. | 82.4 | 106 | 61 | 82.4 | 82.1 | 100 | 61 | 82.4 | 82.5 | 102 | 59 | | | | | |
| Oct. | 80.6 | 77.9 | 104 | 46 | 78.8 | 75.0 | 97 | 52 | 77.0 | 76.3 | 97 | 46 | | | | |
| Nov. | 69.8 | 65.3 | 100 | 41 | 64.4 | 62.6 | 86 | 43 | 64.4 | 63.7 | 99 | 41 | | | | |
| Dec. | 60.8 | 59.0 | 91 | 37 | 55.4 | 55.5 | 81 | 37 | 59.0 | 59.3 | 95 | 36 | | | | |
| Yearly | 75.4 | | 113 | 16 | 73.1 | 72.1 | 104 | 14 | 73.4 | 73.8 | 106 | 7 | | | | |

Some months missing

TEMPERATURE, HUMIDITY, AND WIND**Temperature - Degrees Fahrenheit****In Mexico**

| Month | Reynosa 40 Km-SW, Nuevo León | | | | Retamal, Tamaulipas | | | | | | |
|--------|------------------------------|-------------------------------|------|------|---------------------|----------------|------|------|------|------|--|
| | Mean 1962 | Average March 1959-1962 | 1962 | | Mean 1962 | # 1951-1962 | 1962 | | Max. | Min. | |
| | | | Max. | Min. | | | Max. | Min. | | | |
| Jan. | 55.4 | 56.4 | 86 | 14 | 55.4 | 61.4 | 90 | 10 | | | |
| Feb. | 69.8 | 64.2 | 99 | 43 | 73.4 | 64.8 | 102 | 39 | | | |
| Mar. | 66.2 | 68.0 | 100 | 36 | 68.0 | 70.3 | 93 | 36 | | | |
| Apr. | 75.2 | 73.6 | 108 | 43 | 77.0 | 76.8 | 100 | 43 | | | |
| May | 80.6 | 81.3 | 106 | 54 | 80.6 | 81.2 | 99 | 63 | | | |
| June | 84.2 | 84.3 | 104 | 63 | 84.2 | 85.4 | 99 | 70 | | | |
| July | 86.0 | 86.0 | 106 | 64 | 86.0 | 86.5 | 99 | 72 | | | |
| Aug. | 86.0 | 85.1 | 108 | 63 | 87.8 | 87.7 | 104 | 72 | | | |
| Sept. | 84.2 | 81.7 | 104 | 59 | 86.0 | 83.2 | 104 | 57 | | | |
| Oct. | 78.8 | 77.2 | 100 | 52 | 82.4 | 77.2 | 102 | 54 | | | |
| Nov. | 68.0 | 66.1 | 93 | 45 | 69.8 | 61.7 | 97 | 41 | | | |
| Dec. | 57.2 | 58.8 | 90 | 34 | 59.0 | 62.1 | 90 | 37 | | | |
| Yearly | 74.3 | 73.6 | 108 | 14 | 75.8 | 74.9 | 104 | 10 | | | |

Mean Wind Speed - Miles Per Hour
In the United States

| Month | Martin King Ranch | | Tortuga Ranch, Texas | | Falcón Dam, Texas | | | |
|--------|-------------------|----------------------|----------------------|-------------------------------|-------------------|------------------------------|-----|--|
| | 1962 | Average 1957-1962 | 1962 | Average #June 1955-1962 | 1962 | Average July 1950-1962 | | |
| | | | | | | | | |
| Jan. | 4.3 | 4.4 | 4.0 | 2.8 | 4.4 | 4.0 | | |
| Feb. | 4.5 | 5.0 | 3.9 | 3.9 | 4.8 | 4.8 | | |
| Mar. | 6.1 | 6.7 | 5.3 | 4.2 | 5.1 | 5.2 | | |
| Apr. | 6.2 | 6.8 | 4.6 | 4.9 | 5.9 | 6.0 | | |
| May | 9.1 | 7.4 | 5.4 | 5.0 | 8.1 | 6.3 | | |
| June | 7.8 | 7.6 | 4.3 | 5.3 | 6.7 | 6.5 | | |
| July | 7.6 | 7.2 | 3.6 | 5.2 | 7.9 | 6.9 | | |
| Aug. | 6.0 | 6.3 | 2.7 | 4.0 | 5.5 | 5.7 | | |
| Sept. | 5.9 | 5.9 | 3.7 | 3.9 | 4.6 | 4.4 | | |
| Oct. | 5.0 | 5.0 | | | 3.7 | 4.7 | 3.9 | |
| Nov. | 3.9 | 4.1 | | 2.8 | 4.0 | 4.2 | | |
| Dec. | 3.4 | 3.9 | | 2.7 | 4.0 | 3.8 | | |
| Yearly | 5.8 | 5.9 | | 4.0 | 5.5 | 5.1 | | |

Some months missing

Mean Relative Humidity - Percent
In the United States

| | Tortuga Ranch, Texas | | Falcón Dam, Texas | |
|--|----------------------|-------------------------------|-------------------|------------------------------|
| | 1962 | Average #June 1955-1962 | 1962 | Average July 1950-1962 |
| | | | 74.9 | 63.4 |
| | | | 69.0 | 63.7 |
| | | | 58.6 | 61.0 |
| | 48.0 | | 59.7 | 65.8 |
| | 50.7 | | 62.1 | 65.4 |
| | 55.7 | | 60.3 | 67.9 |
| | 42.6 | | 57.9 | 56.5 |
| | 59.7 | | 59.2 | 56.6 |
| | 57.9 | | 63.4 | 63.0 |
| | | | 63.0 | 65.4 |
| | | | 67.4 | 61.2 |
| | | | 71.1 | 65.8 |
| | | | 65.9 | 70.4 |
| | | | 64.1 | 63.1 |
| | | | | 63.3 |

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1962

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 46% 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 1962 are shown, except that, in the United States below Falcón Dam, the figures shown represent acreages which were subject to irrigation in 1962 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 1962.

| 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 | | | |
| 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 | 95,059 | 0 | 95,059 |
| Above El Paso Gaging Station | 29,267 | 0 | 29,267 | 95,059 | 0 | 95,059 |
| El Paso Station to American Dam | 4 | 0 | 4 | 14,745 | 0 | 14,745 |
| Above American Dam | 29,271 | 0 | 29,271 | 109,804 | 0 | 109,804 |
| American Dam to Island Station | 187 | 493 | 680 | 36,100 | 18,227 | 54,327 |
| Above Island Gaging Station | 29,458 | 493 | 29,951 | 145,904 | 18,227 | 164,131 |
| Island Station to County Line Station | 485 | 174 | 659 | 0 | 0 | 0 |
| American Dam to County Line Station - Total | 672 | 667 | 1,339 | 36,100 | 18,227 | 54,327 |
| Above County Line Gaging Station | 29,943 | 667 | 30,610 | 145,904 | 18,227 | 164,131 |
| County Line Station to Fort Quitman Station | 663 | 762 | 1,425 | 11,729 | 0 | 11,729 |
| Above Fort Quitman Gaging Station | 30,606 | 1,429 | 32,035 | 157,633 | 18,227 | 175,860 |
| Fort Quitman Station to Upper Presidio Station | 1,621 | 1,332 | 2,953 | 946 | 222 | 1,168 |
| Above Upper Presidio Gaging Station | 32,227 | 2,761 | 34,988 | 158,579 | 18,449 | 177,028 |
| Río Conchos above Boquilla Dam | 0 | 8,202 | 8,202 | 0 | 5,831 | 5,831 |
| Río Conchos below Boquilla Dam | 0 | 21,065 | 21,065 | 0 | 331,053 | 331,053 |
| Río Conchos - Total | 0 | 29,267 | 29,267 | 0 | 336,884 | 336,884 |
| Alamito Creek above Gaging Station | 1,504 | 0 | 1,504 | 0 | 0 | 0 |
| Upper Presidio to Lower Presidio Gaging Station - excluding above tributaries | 367 | 77 | 444 | 3,653 | 388 | 4,041 |
| Upper Presidio to Lower Presidio - Total | 1,871 | 29,344 | 31,215 | 3,653 | 337,272 | 340,925 |
| Above Lower Presidio Gaging Station | 34,098 | 32,105 | 66,203 | 162,232 | 355,721 | 517,953 |
| Terlingua Creek above Gaging Station | 1,070 | 0 | 1,070 | ^a 3,600 | 0 | 3,600 |
| Lower Presidio to Johnson Ranch Station - excluding Terlingua Creek | 1,093 | 2,349 | 3,442 | 993 | 2,903 | 3,896 |
| Lower Presidio to Johnson Ranch - Total | 2,163 | 2,349 | 4,512 | 4,593 | 2,903 | 7,496 |
| Above Johnson Ranch Gaging Station | 36,261 | 34,454 | 70,715 | 166,825 | 358,624 | 525,449 |
| Johnson Ranch Station to Foster Ranch Station | 6,412 | 6,993 | 13,405 | ^b 3,983 | 0 | 3,983 |
| Above Foster Ranch Gaging Station | 42,673 | 41,447 | 84,120 | 170,808 | 358,624 | 529,432 |
| Foster Ranch Station to Langtry Station | 182 | 493 | 675 | 0 | 0 | 0 |
| Above Langtry Gaging Station | 42,855 | 41,940 | 84,795 | 170,808 | 358,624 | 529,432 |
| Pecos River above Girvin | 29,562 | 0 | 29,562 | 0 | 0 | 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 Devils River Station | 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 Site Station - excluding above tributaries | 221 | 1,793 | 2,014 | 0 | 0 | 0 |

^a Irrigated by spreader dams ^b Includes 3,547 acres irrigated by spreader dams

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries — 1962

| 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 Site Station - Total | 39,835 | 1,793 | 41,628 | 0 | 0 | 0 |
| Above the Below Amistad Dam Site Gaging Station | 82,690 | 43,733 | 126,423 | 170,808 | 358,624 | 529,432 |
| Arroyo Las Vacas above Gaging Station | 0 | 358 | 358 | 0 | 865 | 865 |
| Below Amistad Dam Site Station to Del Rio Station - excluding Arroyo Las Vacas | 60 | 99 | 159 | 250 | 0 | 250 |
| Below Amistad Dam Site Station to Del Rio Station - Total | 60 | 457 | 517 | 250 | 865 | 1,115 |
| Above Del Rio Gaging Station | 82,750 | 44,190 | 126,940 | 171,058 | 359,489 | 530,547 |
| San Felipe Creek above Gaging Station | 46 | 0 | 46 | 1,828 | 0 | 1,828 |
| Del Rio to Below Maverick Dam Gaging Station - excluding San Felipe Creek | 567 | 111 | 678 | 33,010 | 2,407 | 35,417 |
| Del Rio Station to Below Maverick Dam - Total | 613 | 111 | 724 | 34,838 | 2,407 | 37,245 |
| Above Maverick Dam Gaging Station | 83,363 | 44,301 | 127,664 | 205,896 | 361,896 | 567,792 |
| Pinto Creek above Gaging Station | 249 | 0 | 249 | 0 | 0 | 0 |
| Río San Diego above Gaging Station | 0 | 848 | 848 | 0 | 12,887 | 12,887 |
| Río San Diego - Total | 0 | 856 | 856 | 0 | 14,006 | 14,006 |
| Río San Rodrigo above Gaging Station | 0 | 669 | 669 | 0 | 5,313 | 5,313 |
| Río San Rodrigo - Total | 0 | 958 | 958 | 0 | 5,313 | 5,313 |
| Maverick Dam Station to Maverick Power Plant - excluding above tributaries | 389 | 181 | 570 | 30 | 0 | 30 |
| Maverick Dam Station to Maverick Power Plant - Total | 638 | 1,995 | 2,633 | 30 | 19,319 | 19,349 |
| Above Maverick Power Plant | 84,001 | 46,296 | 130,297 | 205,926 | 381,215 | 587,141 |
| Maverick Power Plant to Eagle Pass Station | 244 | 34 | 278 | 510 | 1,702 | 2,212 |
| Above Eagle Pass Gaging Station | 84,245 | 46,330 | 130,575 | 206,436 | 382,917 | 589,353 |
| Río Escondido above Gaging Station | 0 | 1,279 | 1,279 | 0 | 10,502 | 10,502 |
| Río Escondido - Total | 0 | 1,284 | 1,284 | 0 | 10,502 | 10,502 |
| Eagle Pass Station to San Antonio Crossing Station - excluding Río Escondido | 237 | 251 | 488 | 275 | 1,060 | 1,335 |
| Eagle Pass to San Antonio Crossing Station - Total | 237 | 1,535 | 1,772 | 275 | 11,562 | 11,837 |
| Above San Antonio Crossing Gaging Station | 84,482 | 47,865 | 132,347 | 206,711 | 394,479 | 601,190 |
| San Antonio Crossing to Palafox Station | 629 | 1,949 | 2,578 | 1,160 | 5,049 | 6,209 |
| Above Palafox Gaging Station | 85,111 | 49,814 | 134,925 | 207,871 | 399,528 | 607,399 |
| Palafox Station to Laredo Station | 607 | 444 | 1,051 | 2,952 | 6,217 | 9,169 |
| Above Laredo Gaging Station | 85,718 | 50,258 | 135,976 | 210,823 | 405,745 | 616,568 |
| Río Salado above Venustiano Carranza Dam | 0 | 17,296 | 17,296 | 0 | 62,339 | 62,339 |
| Río Salado above Las Tortillas Gaging Station | 0 | 24,877 | 24,877 | 0 | 102,056 | 102,056 |
| Río Salado above Cd. Guerrero Gaging Station | 0 | 25,112 | 25,112 | 0 | 102,056 | 102,056 |
| Laredo Station to Falcón Dam - excluding Río Salado | 2,042 | 1,352 | 3,394 | 8,716 | 9,286 | 18,002 |
| Laredo Station to Falcón Dam - Total | 2,042 | 26,464 | 28,506 | 8,716 | 111,342 | 120,058 |
| Above Falcón Dam | 87,760 | 76,722 | 164,482 | 219,539 | 517,087 | 736,626 |
| 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 | 162,909 | 162,909 |
| Río San Juan - Total | 0 | 13,601 | 13,601 | 0 | 265,457 | 265,457 |
| Falcón Dam Station to Fort Ringgold Station - excluding above tributaries | 222 | 399 | 621 | 9,339 | 5,328 | 14,667 |
| Falcón Dam Station to Fort Ringgold Station - Total | 222 | 15,692 | 15,914 | 9,339 | 278,445 | 287,784 |
| Above Fort Ringgold Gaging Station | 87,982 | 92,414 | 180,396 | 228,878 | 795,532 | 1,024,410 |
| Fort Ringgold Station to Anzaldías Dam | 952 | 790 | 1,742 | 185,750 | 506,197 | 691,947 |
| Above Anzaldías Dam | 88,934 | 93,204 | 182,138 | 414,628 | 1,301,729 | 1,716,357 |
| Anzaldías Dam to Progreso Station | 13 | 22 | 35 | 144,426 | 5,607 | 150,033 |
| Above Progreso Gaging Station | 88,947 | 93,226 | 182,173 | 559,054 | 1,307,336 | 1,866,390 |
| Progreso Station to San Benito Station | 7 | 7 | 14 | 326,806 | 6,432 | 333,238 |
| Above San Benito Gaging Station | 88,954 | 93,233 | 182,187 | 885,860 | 1,313,768 | 2,199,628 |
| San Benito Station to Lower Brownsville Station | 14 | 14 | 28 | 111,356 | 2,607 | 113,963 |
| Falcón Dam Station to Lower Brownsville Station - excluding Río Alamo and Río San Juan | 1,208 | 1,232 | 2,440 | 777,677 | 526,171 | 1,303,848 |
| Above Lower Brownsville Gaging Station | 88,968 | 93,247 | 182,215 | 997,216 | 1,316,375 | 2,313,591 |
| Lower Brownsville Station to Gulf of Mexico | | | | 6,080 | 1,480 | 7,560 |
| Falcón Dam Station to Gulf of Mexico - excluding Río Alamo and Río San Juan | | | | 783,757 | 527,651 | 1,311,408 |
| Above Gulf of Mexico | | | | 1,003,296 | 1,317,855 | 2,321,151 |

^c Includes 45 acres irrigated from small reservoirs

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 1962 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 Rio 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 1962 — Annual and Period Summary

| Day | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-----|-------|-------|----------|--------|--------|-------|--------|-------|---------|--------|-------|--------|
| 1 | 1,430 | 2,870 | 138 | 1,740 | 2,490 | 1,320 | 2,170 | 2,210 | 685 | 8,260 | 1,660 | 1,610 |
| 2 | 1,950 | 1,960 | 270 | 1,020 | 336 | 5,230 | 1,920 | 2,410 | 437 | 3,250 | 2,730 | 1,980 |
| 3 | 1,600 | 1,520 | 999 | 318 | 2,000 | 3,000 | 2,800 | 1,320 | 170 | 4,520 | 1,770 | 1,450 |
| 4 | 2,630 | 2,890 | 2,190 | 2,610 | 1,600 | 1,200 | 1,130 | 1,700 | 1,150 | 3,380 | 1,740 | 2,700 |
| 5 | 2,190 | 3,600 | 1,410 | 1,500 | 280 | 1,390 | 1,420 | 3,020 | 1,110 | 3,640 | 2,770 | 1,220 |
| 6 | 554 | 228 | 131 | 2,740 | 2,210 | 1,040 | 1,150 | 1,580 | 470 | 3,390 | 7,700 | 1,020 |
| 7 | 1,030 | 1,590 | 2,150 | 2,960 | 664 | 2,020 | 932 | 2,570 | 526 | 3,600 | 4,200 | 2,800 |
| 8 | 1,680 | 2,270 | 2,140 | 2,770 | 1,520 | 295 | 1,480 | 1,740 | 3,670 | 2,320 | 1,450 | 911 |
| 9 | 3,990 | 2,510 | 590 | 2,200 | 918 | 1,020 | 1,270 | 1,590 | 7,560 | 3,050 | 1,430 | 516 |
| 10 | 1,100 | 1,740 | 1,440 | 3,320 | 901 | 3,640 | 1,060 | 1,110 | 5,930 | 2,460 | 1,850 | 2,080 |
| 11 | 125 | 2,120 | 1,140 | 4,030 | 317 | 3,740 | 1,430 | 1,470 | 5,540 | 2,150 | 3,230 | 2,210 |
| 12 | 285 | 1,830 | 1,680 | 1,360 | 144 | 3,280 | 1,260 | 1,350 | 9,540 | 2,890 | 2,160 | 1,870 |
| 13 | 2,290 | 3,640 | 3,990 | 161 | 477 | 2,340 | 445 | 1,630 | 10,700 | 3,740 | 1,250 | 1,010 |
| 14 | 3,530 | 2,490 | 1,680 | 326 | 1,240 | 1,720 | 1,540 | 1,120 | 5,440 | 3,200 | 1,710 | 1,050 |
| 15 | 417 | 1,180 | 176 | 1,590 | 1,280 | 569 | 1,440 | 1,320 | 4,800 | 3,140 | 1,240 | 1,480 |
| 16 | 2,080 | 1,720 | 317 | 509 | 961 | 1,540 | 1,980 | 1,450 | 3,210 | 3,410 | 996 | 2,180 |
| 17 | 1,550 | 2,370 | 614 | 1,510 | 381 | 1,870 | 466 | 1,680 | 3,670 | 2,220 | 3,420 | 1,300 |
| 18 | 1,470 | 1,780 | 936 | 2,330 | 246 | 1,490 | 1,770 | 1,170 | 5,230 | 2,130 | 1,020 | 2,350 |
| 19 | 2,790 | 1,700 | 1,940 | 410 | 197 | 3,280 | 1,300 | 915 | 3,510 | 1,820 | 3,710 | 1,960 |
| 20 | 1,900 | 3,220 | 2,610 | 328 | 745 | 3,960 | 1,510 | 1,300 | 2,950 | 14,400 | 227 | 1,240 |
| 21 | 1,090 | 2,250 | 2,220 | 378 | 1,820 | 1,640 | 1,420 | 1,400 | 1,770 | 8,370 | 2,310 | 2,040 |
| 22 | 3,640 | 2,030 | 1,900 | 3,740 | 335 | 2,270 | 523 | 1,100 | 2,150 | 11,200 | 1,080 | 1,790 |
| 23 | 999 | 1,220 | 1,550 | 17,900 | 1,590 | 246 | 3,170 | 1,860 | 2,050 | 10,100 | 1,820 | 2,540 |
| 24 | 1,860 | 168 | 1,450 | 8,900 | 1,200 | 1,680 | 4,980 | 706 | 1,790 | 4,700 | 2,410 | 1,290 |
| 25 | 3,240 | 1,600 | 1,420 | 4,310 | 202 | 1,010 | 3,500 | 1,310 | 1,790 | 4,520 | 2,490 | 1,910 |
| 26 | 1,070 | 2,620 | 1,020 | 2,040 | 360 | 1,050 | 1,740 | 1,330 | 2,240 | 1,210 | 1,540 | |
| 27 | 1,480 | 2,490 | 643 | 2,130 | 823 | 2,790 | 2,500 | 2,080 | 32,000 | 2,440 | 5,300 | 1,430 |
| 28 | 1,490 | 85.1 | 982 | 396 | 2,400 | 1,420 | 1,290 | 1,310 | 11,800 | 4,100 | 1,990 | 1,930 |
| 29 | 2,390 | | 1,410 | 5,090 | 2,000 | 1,830 | 2,430 | 932 | 9,360 | 4,800 | 1,770 | 2,340 |
| 30 | 1,280 | | 1,510 | 5,470 | 142 | 2,230 | 2,140 | 431 | 6,180 | 2,480 | 2,240 | 1,250 |
| 31 | 1,860 | | 1,580 | | 742 | 2,680 | 1,170 | | 1,320 | | | 1,610 |
| Sum | | | 55,691.1 | 84,086 | 60,110 | | 46,284 | | 133,190 | | | 52,607 |
| | | | 54,990 | 42,226 | 30,521 | | 54,846 | | 147,428 | | | 68,883 |

| Month | Extreme Gage Feet | | | Extreme Second-Feet | | Average Second-Feet | Total Acre-Feet | Acre-Feet | | | | |
|--------|-------------------|-----|-----|---------------------|-----|---------------------|-----------------|-----------|-----------|-----------|--|--|
| | High | | Low | High | | | | Average | Maximum | Minimum | | |
| | High | Low | | Day | Day | | | | | | | |
| Jan. | | | 9 | 3,990 | 11 | 125 | 1,770 | 109,105 | 166,405 | 283,000 | | |
| Feb. | | | 13 | 3,640 | 28 | 85.1 | 1,990 | 110,435 | 153,831 | 261,200 | | |
| Mar. | | | 13 | 3,990 | 6 | 131 | 1,360 | 83,774 | 125,066 | 177,800 | | |
| Apr. | | | 23 | 17,900 | 13 | 161 | 2,800 | 166,855 | 177,036 | 439,100 | | |
| May | | | 1 | 2,490 | 30 | 142 | 985 | 60,543 | 370,053 | 1,356,000 | | |
| June | | | 2 | 5,230 | 23 | 246 | 2,000 | 119,269 | 323,888 | 666,700 | | |
| July | | | 24 | 4,980 | 13 | 445 | 1,770 | 108,801 | 216,614 | 333,300 | | |
| Aug. | | | 5 | 3,020 | 30 | 431 | 1,490 | 91,794 | 183,125 | 310,500 | | |
| Sept. | | | 27 | 32,000 | 3 | 170 | 4,910 | 292,524 | 434,876 | 1,214,000 | | |
| Oct. | | | 20 | 14,400 | 31 | 1,320 | 4,300 | 264,134 | 664,826 | 2,516,000 | | |
| Nov. | | | 6 | 7,700 | 20 | 227 | 2,300 | 136,682 | 273,704 | 885,100 | | |
| Dec. | | | 7 | 2,800 | 9 | 516 | 1,700 | 104,360 | 183,633 | 442,200 | | |
| Yearly | | | | 32,000 | | 85.1 | 2,280 | 1,648,276 | 3,273,057 | 6,683,310 | | |
| | | | | | | | | | | 1,648,276 | | |

g Mean daily

CORRECTIONS TO PREVIOUS WATER BULLETINS**DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL EXTENSION BELOW THE POWER PLANT
NEAR EAGLE PASS, TEXAS**

In Water Bulletin No. 31, in the second sentence under REMARKS, the total acre-feet of water returned to the Rio Grande from the canal extension should be 124,098 instead of 112,110 as shown; and the third sentence, "(See page 48)" should be deleted.

RIO GRANDE BELOW FALCON DAM

In Water Bulletin No. 31, the 1961 monthly Total Acre-Feet in the Annual and Period Summary was in error. The correct monthly Total Acre-Feet for the year 1961 is as follows:

| | |
|-------|---------|
| Jan. | 72,700 |
| Feb. | 88,400 |
| Mar. | 334,000 |
| Apr. | 249,000 |
| May | 469,000 |
| June | 212,000 |
| July | 137,000 |
| Aug. | 189,000 |
| Sept. | 197,000 |
| Oct. | 92,800 |
| Nov. | 51,400 |
| Dec. | 124,000 |

RIO GRANDE AT PROGRESO BRIDGE, TEXAS

In Water Bulletin No. 29, the mean daily discharge second-feet for March should be rounded to three significant figures. The monthly average second-feet for March should be 6,170 instead of 6,190 and the total acre-feet for March should be 379,400 instead of 380,300 as shown. The total acre-feet for the year should be 1,799,790 instead of 1,800,690 as shown. The maximum acre-feet for the period for March should be 379,400 instead of 380,300 as shown in Water Bulletins Nos. 29, 30, and 31.

RIO GRANDE AT MATAMOROS, TAMAULIPAS

In Water Bulletin Nos. 18 through 24, in the "Extreme Flows" paragraph, the greatest mean daily flow recorded at this station, on June 22, 1903, should be 36,200 second-feet instead of 36,320 as shown. In Water Bulletins Nos. 21 through 24 and 28, the words "mean daily" were inadvertently omitted in referring to this extreme flow.