INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

UNITED STATES SECTION

JOSEPH F. FRIEDKIN, *Commissioner*
P.O. Box 20003
El Paso, Texas 79998

F. J. SALDANA,
Chief of Hydrography
P. O. Box 1564
Laredo, Texas 78040

MEXICAN SECTION

DAVID HERRERA JORDAN, *Commissioner*
Apartado Postal 1612D
Cd. Juárez, Chihuahua

HORACIO VIDRIO PEREZ,
Chief of Hydrography
3456 Pino Suárez Street
Nuevo Laredo, Tamaulipas

WATER BULLETIN NUMBER 46

Flow of the Rio Grande and Related Data

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

1976

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

CONTENTS

	Page
Foreword and Acknowledgements	4
General Hydrologic Conditions for 1976	6
Isohyetal Map for Year 1976	137
Map - Rio Grande Drainage Basin	Following Page 158

Quantity of Water

Stream-Flow Records	
Rio Grande below Elephant Butte Dam	7
below Caballo Dam	8
at El Paso	9
Diversions from the Rio Grande - American Canal at El Paso	10
Rio Grande below American Dam at El Paso and Cd. Juarez	11
Diversions from the Rio Grande - Acequia Madre at Cd. Juarez	12
Rio Grande near Clint and San Agustin (formerly Island Station near Clint)	13
near Acala and Praxedes Guerrero (formerly County Line Station near Acala)	14
at Fort Quitman near Colonia Luis Leon	15
near Candelaria and San Antonio del Bravo	16
above Rio Conchos near Presidio and Ojinaga	17
Tributary - Rio Conchos near Ojinaga	18
Alamito Creek near Presidio	19
Rio Grande below Rio Conchos near Presidio and Ojinaga	20
Tributary - Terlingua Creek near Terlingua	21
Rio Grande at Johnson Ranch near Castolon and Santa Elena	22
at Foster Ranch near Langtry and Rancho Santa Rosa	23
Tributary - Pecos River near Langtry	24
Dead Mans Canyon near Comstock	25
Dolan Springs near Loma Alta	26
Devils River at Pafford Crossing near Comstock	27
Big Satan Creek near Comstock and Rough Canyon near Del Rio	28
North Fork San Pedro Creek and Middle Fork San Pedro Creek near Del Rio	29
Evans Creek near Comstock	30
Carmina Springs near Cd. Acuna	31
Lourdes, Hilda, Ernestina, and Rosita Springs near Cd. Acuna	32
Rio Grande below Amistad Dam near Cd. Acuna and Del Rio	33
Tributary - Springs M-15 and M-5 near Cd. Acuna	34
Arroyo de los Jaboncillos near Cd. Acuna	35
Arroyo del Buey and Arroyo de la Treinta y Una near Cd. Acuna	36
Maris Spring near Cd. Acuna	37
Eight Mile Creek near Del Rio	38
McKee Spring near Del Rio	39
Cantu Spring near Del Rio (formerly Cantu Spring on Cienegas Creek near Del Rio)	40
Cienegas Creek near Del Rio	41
Rio Grande at Del Rio and Cd. Acuna	42
Tributary - Arroyo de Las Vacas at Cd. Acuna	43
San Felipe Springs at Del Rio	44
San Felipe Creek near Del Rio	45
Diversions from the Rio Grande - Maverick Canal at Mile 13 near Quemado	46
Tributary - Pinto Creek near Del Rio	47
Rio San Diego near Jimenez (formerly Rio San Diego at Jimenez)	48
Rio Grande near Jimenez and Quemado (formerly Rio Grande below Maverick Dam near Quemado)	49
Tributary - Rio San Rodrigo at El Moral (formerly Rio San Rodrigo near mouth at El Moral)	50
Return Flow at Maverick Power Plant near Eagle Pass	51
Maverick Canal Extension near Eagle Pass	52
Tributary - Return Flow from the Maverick Irrigation District above Eagle Pass (formerly Return Flows - Maverick Dam to Eagle Pass)	53
Rio Grande at Piedras Negras and Eagle Pass (formerly Rio Grande at Eagle Pass)	54
Tributary - Rio Escondido at Villa de Fuente	55
Return Flow from Maverick Irrigation District below Eagle Pass (formerly Return Flows - Eagle Pass to San Antonio Crossing)	56
Rio Grande near El Indio and Villa Guerrero (formerly Rio Grande at San Antonio Crossing near El Indio)	57
at Villa Hidalgo near Laredo (formerly at Palafox near Laredo)	58
at Nuevo Laredo and Laredo (formerly at Laredo)	59
Tributary - Rio Salado near Las Tortillas (formerly Rio Salado at Las Tortillas)	60
Rio Grande below Falcon Dam near Falcon and Nueva Cd. Guerrero	61
Tributary - Rio Alamo at Cd. Mier	62
Contributions from the Lower Rio San Juan Irrigation District - Falcon Dam to Rio Grande City (formerly Contributions from Rio San Juan - Falcon Dam to Fort Ringgold)	63
Rio San Juan at Camargo	64
Diversions from the Rio Grande - Falcon Dam to Rio Grande City (formerly Falcon Dam to Fort Ringgold)	65
Rio Grande at Rio Grande City near Camargo (formerly Rio Grande at Fort Ringgold, Rio Grande City)	66
Tributary - Contributions from the Lower Rio San Juan Irrigation District - Rio Grande City to Anzalduas Dam (formerly Contributions from Rio San Juan - Fort Ringgold to Anzalduas Dam)	67
Diversions from the Rio Grande - Rio Grande City to Anzalduas Dam (formerly Fort Ringgold to Anzalduas Dam)	68
Diversions from the Rio Grande - Anzalduas Canal near Reynosa	69
Rio Grande below Anzalduas Dam near Reynosa and Mission	70
Floodways - United States and Mexico	71
Diversions from the Rio Grande - Anzalduas Dam to Progreso	75
Rio Grande at Progreso, Tamaulipas near Progreso, Texas	76

CONTENTS

Quantity of Water

Page

Diversions from the Rio Grande - Progreso to San Benito 77
Rio Grande near San Benito and Ramirez 78
Diversions from the Rio Grande - San Benito to Brownsville 79
Rio Grande near Brownsville and Matamoros 80
Diversions from the Rio Grande - Brownsville to the Gulf of Mexico 81
U.S. Side, Falcon Dam to the Gulf of Mexico 82
Tributary - Outfalls from Sewers 83
Diversions from the Rio Grande - Municipal and Industrial Water Uses - United States and Mexico . . . 84
Stored Water in Large Reservoirs of the Rio Grande Basin - United States and Mexico 87
Sources of River Flow 92

Quality of Water

Suspended Silt in the Rio Grande and Tributaries 93
Chemical Analyses of Water Samples from the Rio Grande and Tributaries 97
Electrical Conductivity of Water Samples 102
Rio Grande Salt Burden 114
Sanitary Aspects of Water Quality 115

Climatological Data and Drainage Basin and Irrigated Areas

Rainfall on the Rio Grande Watershed - United States and Mexico 116
Average Rainfall on Subdivisions of the Rio Grande Watershed 139
Location of Rainfall Stations on the Rio Grande Watershed - United States and Mexico 140
Evaporation in the Rio Grande Basin - United States and Mexico 149
Temperature, Humidity, and Wind - United States and Mexico 151
Drainage Basin Area above Each Gaging Station and Corresponding Irrigated Areas 154

Supplementary Data–International Falcon Reservoir

Deduced Inflows 157

Corrections to Previous Water Bulletins

Corrections to Previous Water Bulletins 158

FOREWORD

This bulletin presents the forty-sixth compilation of the stream discharges and related data concerning the international portion of the Rio Grande, prepared jointly by the United States and Mexican Sections of the International Boundary and Water Commission. The stream flow data and kindred subjects pertain to the Rio Grande and its important tributaries near their confluence with the main stream from Elephant Butte, New Mexico to the Gulf of Mexico. The first publication in the series was Water Bulletin No. 1 for the year 1931. The present volume contains the information for the year 1976.

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 1976 the United States Section of the Commission operated the stream-gaging stations on the Rio Grande at El Paso, American Dam, Clint, Acala, Fort Quitman, Above Rio Conchos, Below Rio Conchos, Johnson Ranch, Foster Ranch, Del Rio, El Indio, Rio Grande City, San Benito, and Brownsville. The Mexican Section operated the stream-gaging stations on the Rio Grande at Below Amistad Dam, Jimenez, Piedras Negras, Villa Hidalgo, Laredo, Below Anzalduas Dam, and Progreso. The station at Falcon Dam was operated jointly by the two Sections. Each Section operated the gaging stations on tributary streams, floodways, and diversions within its own country.

Beginning in 1976, the names of several gaging stations have been changed, pursuant to agreement between the two Sections of the Commission. Where it has been decided that some confusion may result from this change, a note, giving the former name, has been added to the descriptive heading of the gaging station.

The total drainage area within the outer rim of the Rio Grande Basin is 335,500 square miles. However, about half of this area yields no runoff to the river, the estimated productive area of the watershed being 176,333 square miles. Reservoirs in the basin have a total storage capacity of approximately 11,487,100 acre-feet, in addition to the International Amistad and Falcon Reservoirs, which have a combined conservation capacity of 6,165,000 acre-feet. In the Rio Grande Basin, a rounded total of 2,250,000 acres is irrigated below Elephant Butte Dam on the Rio Grande and below Girvin on the Pecos River. The flow of the Rio Grande to the Gulf of Mexico below Brownsville prior to construction of Falcon Dam averaged 2,600,000 acre-feet per year for the period 1934-1952. For the period 1954-1976, this flow has averaged 848,500 acre-feet per year.

The mean sea level datum, referred to as the U. S. C. & G. S. in the description of the stream-gaging stations, is the North American Vertical Datum of 1927.

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 National Weather Service of the U.S. Department of Commerce; the Texas Board of Health; the Texas Water Development Board; the Sanchez Ditch and Reservoir Company; the Middle Rio Grande Conservancy District; the Red Bluff Water Power Control District; State of Colorado, Division of Water Resources; the New Mexico State Engineer Office; the Rio Grande Compact Commission; the Willacy County Water Control and Improvement District No. 1; the Del Rio City Water Department; the Eagle Pass City Water Department; the Laredo City Water Department; the Del Mar Conservation District; Central Power and Light Company; the El Paso Department of Water and Sewerage; the Maverick County Water Control and Improvement District No. 1; 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; Federal Power Commission of Mexico; Potable Water Board of Piedras Negras, Coahuila; the Federal Board of Public Improvement Works of Nuevo Laredo, Tamaulipas; and the Water and Drainage Board of Cd. Acuna, Coahuila.

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 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, irrigation projects on the Rio Conchos and its tributaries in 1947, International Falcon Dam in 1953, and Amistad Dam and Luis L. Leon Dam in 1968.

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

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

FOREWORD

Units of Measure

Data collected by the Mexican Section are computed and published in a Spanish version of the water bulletin in metric units. The Mexican data are converted and reported in this bulletin in English units. Conversion factors conform generally to those in the National Bureau of Standards Miscellaneous Publication 286 "Units of Weight and Measure (United States Customary and Metric) - Definitions and Tables of Equivalents". However, for convenience some of the factors have been shortened and modified to facilitate conversion, reconversion to the original units when necessary, and checking of data. Conversion of the mean daily discharges, the monthly average discharge and the monthly volumes from metric to English units is direct. For this reason the monthly average discharge in cubic feet per second and monthly volumes in acre-feet shown for gaging stations operated by the Mexican Section cannot necessarily be obtained in the usual manner from the total monthly flow in second-foot days. For the same reason, evaporation and rainfall data, when totaled, may not be equivalent to the direct conversion from metric to English units. The following factors have been used for data in this bulletin:

METRIC UNITS		ENGLISH UNITS	
	LENGTHS		
1 Centimeter		0.393701	Inch
1 Meter		3.28084	Feet
1 Kilometer		0.621371	Mile
	AREAS		
1 Square Meter		10.76391	Square Feet
1 Hectare		2.471054	Acres
1 Square Kilometer		0.386102	Square Mile
	VOLUMES		
1 Cubic Meter		61023.74	Cubic Inches
1 Cubic Meter		35.31467	Cubic Feet
1 Cubic Meter		1.30795	Cubic Yards
1000 Cubic Meters		0.81071	Acre-Foot
1 Liter		0.264172	U. S. Gallon
	WEIGHTS		
1 Kilogram		2.204623	Pounds
1 Metric Ton		2204.623	Pounds
1 Metric Ton		1.102311	Short Tons (2,000 lbs.)

Beginning in 1976, as a step toward eventual publication of this bulletin in metric units only, both English and metric units are used to report the figures in the descriptive headings and for the yearly figures of the annual and period summaries of all gaging station pages. The yearly figures for the summaries are obtained by direct conversion, except for those stations operated by the Mexican Section, where the metric system of units is used.

GENERAL HYDROLOGIC CONDITIONS FOR 1976

Along and Adjacent to the International Portion of the Rio Grande

During the year 1976, temperatures were about 97% of normal on the watershed of the Rio Grande below El Paso, Texas. Evaporation averaged 89% of normal. Precipitation was 117% of normal from El Paso to Amistad Dam, 140% of normal from Amistad Dam to Falcon Dam, 143% of normal from Falcon Dam to Rio Grande City, and 147% of normal in the Lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande was below normal from El Paso to Amistad Reservoir, and above normal from Amistad Dam to the Gulf of Mexico. In the reach between El Paso and the confluence of the Rio Conchos, the flow averaged 80% of normal, ranging from 103% of normal at El Paso to 26% at Acala; in the reach between the confluence of the Rio Conchos and Amistad Reservoir, where flows were partly regulated by releases from Luis L. Leon Reservoir (El Granero) on the Rio Conchos, the flow averaged 86% of normal; and in the reach between Amistad Dam and Falcon Reservoir, where flows were partly regulated by releases from Amistad Reservoir, the flow averaged 162% of normal. Flows passing Rio Grande stations below Falcon Dam were partly regulated by releases from Falcon Reservoir. Such releases in 1976 amounted to 3,680,370 acre-feet, or 158% of the average for the twenty-three years of operation, 1954 to 1976. The volume of flow wasted to the Gulf of Mexico was 2,645,434 acre-feet, or 312% of the average for this twenty-three year period.

The total annual flow of all measured tributaries below Fort Quitman was 188% of normal. The total flow of these tributaries in the United States was 917,968 acre-feet, or 130% of normal. For Mexico, the measured tributary flow excluding Rio Alamo and Rio San Juan was 2,763,763 acre-feet, or 220% of normal. The flow of the Rio Alamo and Rio San Juan was 137% and 178% of their respective normals.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 636,063 acre-feet, or 114% of the twenty-eight year average. Return flow to the Rio Grande through various drains in the Maverick County irrigation district excluding storm inflow amounted to 152,250 acre-feet, or 79% of the eighteen-year average.

There were no floods of consequence on the Rio Grande in 1976. However, flows into Amistad and Falcon Reservoirs resulting from storm runoff filled the reservoirs to above conservation level by mid-July. This condition occurring so early in the flood season required making flood releases from both reservoirs shortly thereafter. Above Amistad Dam, the Devils River at Pafford Crossing and the Pecos River near Langtry registered peaks of 117,000 and 59,400 second-feet, respectively; while below Amistad Dam, the Rio San Rodrigo crested at 98,200 second-feet. Flood releases from Falcon Reservoir, augmented by modest flood spills from Marte Gomez Reservoir, required the use of the two countries' floodway systems in order to reduce the flow sufficiently to safely convey them in the Rio Grande channel. There was no flood damage of consequence. The highest peak flows recorded on the Rio Grande were, above Falcon Dam, 47,000 second-feet near Quemado, and below Falcon Dam, 39,300 second-feet at Rio Grande City.

For all reservoirs in the Rio Grande basin having capacity greater than 15,000 acre-feet, excepting Amistad and Falcon International Reservoirs, the average amount of water in storage in 1976 was 5,014,500 acre-feet, or 116% of the normal 4,321,000 acre-feet. In the United States, stored water in these reservoirs averaged 83% of normal, while in Mexico the average was 130% of normal.

In International Amistad Reservoir there was a net increase in storage during the year of 48,100 acre-feet. Storage ranged from a low of 3,459,000 acre-feet on June 12 to a high of 4,085,200 acre-feet on August 15 and averaged 3,629,500 acre-feet during the year, or 138% of the average for the period of operation June 1968 through 1976. In International Falcon Reservoir there was a net increase in storage during the year of 414,900 acre-feet. The storage varied from a low of 2,254,500 acre-feet on April 5 to a high of 3,024,100 acre-feet on August 1 and 2 and averaged 2,588,600 acre-feet during the year, or 132% of the average for the twenty-three years of operation, 1954 through 1976.

Diversions from the Rio Grande in the United States were, on the average, 102% of normal. Diversions into the American Canal were 125% of normal; into the Maverick Canal 104% of normal; and in the United States below Falcon Dam 94% of the average for the twenty years, 1957-1976. In Mexico, diversions averaged 81% of normal. Diversions into the Acequia Madre were 125% of average, while diversions through the Anzalduas Canal for irrigation in Mexico were 79% of the twenty-three year average.

In 1976, the total reported irrigated acreage from the Rio Grande and its tributaries below El Paso, Texas showed a decrease of 3% from the previous year. On the United States side, there was an increase of about 3% above and practically no change below Falcon Dam for a nonappreciable change overall. On the Mexican side, there was an increase of 2% above and a decrease of 11% below Falcon Dam for an overall average decrease of 6%.

The 1976 investigation of the quality of Rio Grande water extended from El Paso to Brownsville. The annual tonnage of salts carried by the river above Falcon Dam was 109% of the 1935-76 normal. The volume of suspended silt transported by the Rio Grande in 1976 was 37% of average for sampling stations above Amistad Dam, 10% of average for sampling stations in the reach Amistad Dam to Falcon Reservoir, and 158% of average for sampling stations below Falcon Dam.

RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Concrete wall control, bubbler gage, and water-stage recorder located on the left bank 100 feet (30.5 m) upstream from the cableway at latitude 33°08'45", longitude 107°12'20", and river mile 1,383.9 (2,227.2 km); 0.7 river mile (1.1 km) downstream from Elephant Butte Dam, 1.5 river miles (2.4 km) upstream from Cuchillo Negro River, and 135.1 river miles (217.4 km) upstream from the American Dam at El Paso, Texas. The zero of the gage is 4,242.09 feet (1,292.99 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 27 discharge measurements during the year and a continuous record of gage heights. Records were furnished by the United States Geological Survey. Records available: 1915 through 1976.

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 (Cubic Meters per Second)

Daily:	Max.	8,220 (233)	May 22, 1942	Min.	0	Occasionally
Monthly:	Max.	7,600 (215)	May 1942	Min.	1.2 (0.03)	Nov. 1971
Yearly:	Max.	2,510 (71.1)	1942	Min.	253 (7.16)	1964

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.0	11.0	20.0	‡ 1,730	2,090	2,150	‡ 1,710	1,200	1,230	11.0	‡ 12.0	‡ 636
2	14.0	11.0	21.0	1,720	2,110	2,170	1,700	1,210	‡ 1,230	12.0	12.0	692
3	14.0	‡ 10.0	20.0	1,720	2,110	2,160	1,710	1,210	1,210	12.0	11.0	690
4	14.0	9.5	‡ 16.0	1,710	2,100	2,170	1,710	1,210	1,210	12.0	10.0	16.0
5	211	9.0	17.0	1,730	2,070	2,150	1,720	‡ 1,210	1,200	12.0	10.0	8.3
6	‡ 14.0	9.0	17.0	1,740	2,070	2,150	1,710	1,190	1,190	‡ 12.0	10.0	666
7	13.0	9.0	17.0	1,710	2,060	2,110	1,720	1,190	1,190	13.0	9.5	676
8	15.0	9.0	1,710	1,720	2,050	‡ 2,070	1,730	1,200	1,180	14.0	9.0	650
9	17.0	9.3	2,080	1,690	2,020	2,070	1,710	1,230	1,170	14.0	10.0	650
10	16.0	10.0	2,110	1,670	2,040	2,070	1,710	1,240	1,160	14.0	12.0	650
11	14.0	8.3	2,090	1,680	2,030	2,080	1,720	1,240	1,160	15.0	‡ 213	10.0
12	13.0	6.5	2,100	1,680	‡ 2,030	2,100	1,700	‡ 1,250	1,160	15.0	1,480	10.0
13	13.0	9.1	2,100	1,690	1,990	2,100	1,710	1,250	1,010	16.0	51.0	1,350
14	13.0	10.0	2,110	‡ 1,700	1,990	2,120	1,720	1,250	1,070	‡ 17.0	18.0	1,360
15	‡ 12.0	9.5	2,100	1,690	1,990	1,820	‡ 1,680	1,270	‡ 657	17.0	16.0	1,350‡
16	12.0	53.0	2,110	1,680	2,010	1,830	1,680	1,280	26.0	17.0	‡ 15.0	1,330
17	13.0	13.0	2,100	1,670	2,020	1,820	1,680	1,240	15.0	17.0	14.0	1,340
18	12.0	12.0	2,100‡	1,660	2,020	1,810	1,650	1,220	12.0	14.0	173	30.0
19	10.0	14.0	2,100	1,650	2,040	1,820	1,670	1,220	11.0	10.0	16.0	10.0
20	68.0	‡133	2,110	1,670	2,050	1,820	1,670	1,210	10.0	10.0	13.0	1,330‡
21	9.2	20.0	2,110	1,690	2,060	1,800	1,670	1,230	10.0	11.0	12.0	1,360
22	9.9	19.0	2,100	1,730	2,050	1,800	1,200	1,220	‡ 10.0	13.0	425	1,340
23	10.0	19.0	2,120	1,690	2,040	1,800	1,200	1,220	10.0	13.0	406	1,350
24	10.0	18.0	2,120	1,680	2,040	1,780	1,210	1,210	12.0	50.0	395	1,350
25	10.0	16.0	2,110	1,560	2,080	1,790	1,200	1,210	13.0	12.0	388	17.0
26	10.0	85.0	2,110	1,820	2,120	1,790	1,200	1,230	14.0	12.0	375	9.9
27	10.0	22.0	2,110	2,030	‡ 2,120	1,780	1,200	1,230	15.0	12.0	380	1,320
28	11.0	19.0	2,120	2,040	2,140	1,770	1,210	1,230	15.0	12.0	150	1,300
29	11.0	19.0	2,120	‡ 2,050	2,160	1,770	1,210	1,220	12.0	12.0	160	1,350
30	10.0		2,120	2,070	2,150	1,770	1,210	1,230	10.0	12.0	380	1,350
31	10.0		2,120		2,150		1,210	1,240		12.0		1,350
Sum	633.1	602.2	50,308.0	52,270	63,970	58,440	47,730	37,990	17,222.0	445.0	5,185.5	25,551.2

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Maximum	Minimum
Jan.			5	211	21	9.2	20.4	1,256	24,449	86,500	200
Feb.			20	133	12	6.5	20.8	1,194	38,601	88,861	188
Mar.			†23	2,120	4	16.0	1,620	99,784	73,027	128,925	1,520
Apr.			30	2,070	25	1,560	1,740	103,676	78,999	162,000	24,000
May			29	2,160	†13	1,990	2,060	126,883	80,921	467,000	512
June			† 2	2,170	†28	1,770	1,950	115,914	90,756	363,000	16,913
July			8	1,730	†22	1,200	1,540	94,671	92,698	211,000	41,352
Aug.			16	1,280	† 6	1,190	1,230	75,352	75,485	134,000	9,530
Sept.			1	1,230	†20	10.0	574	34,159	33,784	129,000	163
Oct.			24	50.0	†19	10.0	14.4	883	17,474	72,100	166
Nov.			12	1,480	8	9.0	173	10,285	17,534	158,000	74.2
Dec.			†14	1,360	5	8.3	824	50,680	19,349	87,300	179
Yearly				2,170		6.5	985	714,737	643,077	1,818,800	183,415
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				61.5		0.18	27.9	881,628	793,235	2,243,490	226,242

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

RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 32°53'05", longitude 107°17'30", and river mile 1,355.6 (2,181.6); 0.8 river mile (1.3 km) downstream from Caballo Dam, about 3 miles (5 km) northeast of Arrey, New Mexico, 5 miles (8.0 km) south of Caballo, New Mexico, and 106.8 river miles (171.9 km) upstream from the American Dam at El Paso, Texas. The zero of the gage is 4,140.90 feet (1,262.15 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 9 discharge measurements during the year and a continuous record of gage heights. Records were furnished by the El Paso office of the United States Bureau of Reclamation. Records available: 1938 through 1976.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 865 acre-feet (1,067,000 m3) of water were diverted in 1976 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 (2.4 km) downstream from this station. Small accretions to the river take place between the station and Percha Dam.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)						
Daily:	Max.	7,650 (217)	May 20, 1942	Min.	0.1 (0.003)	Several days 1954, 1955 and 1972
Monthly:	Max.	6,710 (190)	May 1942	Min.	0.1 (0.003)	Nov. and Dec. 1955
Yearly:	Max.	2,480 (70.2)	1942	Min.	284 (8.04)	1964

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.1	488	643	1,590	1,900	1,930	1,840	1,160	1,620	3.6	2.5	3.3
2	3.1	329	643	1,630	1,880	1,970	1,910	1,300	1,530	3.6	2.6	3.3
3	3.1	250	693	1,610	1,840	1,950	1,940	1,690	1,320	3.6	2.7	3.3
4	3.2	341	749	1,520	‡ 1,590	1,860	1,890	‡ 2,000	‡ 1,370	3.6	2.8	3.3
5	3.2	400	843	1,450	1,480	1,720	1,850	2,000	1,220	3.6	2.9	3.3
6	3.2	345	950	1,400	1,460	1,630	‡ 2,000	2,170	977	3.6	3.0	3.3
7	3.2	300	918	1,340	1,150	1,510	2,060	2,280	824	3.6	3.0	3.3
8	3.2	344	886	1,340	1,150	1,230	1,940	2,080	710	3.6	3.1	3.3
9	3.2	401	1,070	1,450	1,100	‡ 1,100	1,940	2,170	251	3.6	3.2	3.3
10	3.2	402	1,260	1,560	1,110	1,100	1,830	2,140	9.3	3.6	3.3	3.3
11	3.2	401	1,310	1,630	1,370	1,170	1,740	2,250	5.5	3.6	3.3	3.3
12	3.2	403	1,360	1,650	1,620	1,240	1,620	2,350	218	3.6	3.3	3.3
13	3.2	411	1,520	1,650	1,620	1,240	1,600	2,180	522	3.5	3.3	3.3
14	3.2	443	1,580	1,760	1,920	1,230	1,500	2,100	560	3.4	3.3	3.3
15	3.2	452	1,410	1,730	2,040	1,200	1,410	2,200	755	3.3	3.3	3.3
16	150	448	1,400	1,360	1,860	1,230	1,140	2,240	726	3.1	3.3	3.3
17	425	450	1,620	1,090	1,860	1,320	865	2,090	808	3.0	3.3	3.3
18	429	477	1,740	1,070	2,040	1,470	854	2,000	831	2.9	3.3	3.3
19	525	477	1,910	987	2,020	1,800	860	1,950	941	2.8	3.3	3.3
20	619	445	2,000	‡ 1,340	1,890	1,810	857	1,600	1,030	2.7	3.3	3.3
21	827	429	1,940	1,590	‡ 1,960	1,620	595	1,380	1,020	2.6	3.3	3.3
22	979	429	1,900	1,600	1,990	1,740	635	1,280	1,010	2.5	3.3	3.3
23	839	421	1,890	1,610	1,890	2,220	830	1,330	1,080	2.3	3.3	3.3
24	737	469	1,940	1,690	1,840	1,930	663	1,620	1,110	2.2	3.3	3.3
25	706	450	2,000	1,750	2,010	2,020	266	1,990	1,090	2.1	3.3	3.3
26	706	‡ 528	1,880	1,760	2,260	2,110	589	1,930	1,090	2.0	3.3	3.3
27	712	565	1,690	1,920	2,220	2,040	923	‡ 1,940	710	2.1	3.3	3.3
28	767	616	1,700	2,070	2,100	2,000	1,260	1,920	557	2.2	3.3	3.3
29	820	642	1,690	2,180	1,960	1,970	1,200	1,830	15.0	2.3	3.3	3.3
30	731		1,660	2,120	1,870	1,900	1,120	1,710	9.0	2.3	3.3	3.3
31	584		1,590		1,870		1,030	1,690		2.4		3.3
Sum	10,603.7	12,556	44,385	47,447	54,870	49,260	40,757	58,570	23,918.8	92.9	95.1	102.3

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Maximum	Minimum
Jan.			22	979	↑ 1	3.1	342	21,032	1,144	21,032	19.2
Feb.			29	642	3	250	433	24,904	7,701	64,300	11.7
Mar.			↑20	2,000	↑ 1	643	1,430	88,036	84,863	135,000	24,900
Apr.			29	2,180	19	987	1,580	94,110	80,751	212,000	25,470
May			26	2,260	9	1,100	1,770	108,833	75,614	412,000	75.2
June			23	2,220	↑ 9	1,100	1,640	97,706	104,050	354,000	25,289
July			7	2,060	25	266	1,310	80,840	110,135	234,000	28,200
Aug.			12	2,350	1	1,160	1,890	116,172	106,834	179,000	20,500
Sept.			1	1,620	11	5.5	797	47,442	48,715	181,000	6,757
Oct.			↑ 1	3.6	26	2.0	3.0	184	4,315	35,400	15.5
Nov.			↑10	3.3	1	2.5	3.2	189	2,313	14,400	7.0
Dec.			↑ 1	3.3	↑ 1	3.3	3.3	203	2,398	19,100	6.0
Yearly				2,350		2.0	936	679,651	628,833	1,795,670	206,034.6
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				66.6		0.06	26.5	838,350	775,666	2,214,959	254,205

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

RIO GRANDE AT EL PASO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the downstream side of the first pier from the left abutment of the Courchesne Bridge at latitude 31°48'10", longitude 106°32'25", and river mile 1.250.5; (2,012.5 km); 5.6 river miles (9.0 km) upstream from the Santa Fe Street-Juarez Avenue Bridge between El Paso, Texas and Cd. Juarez, Chihuahua and 1.7 miles (2.7 km) upstream from the American Dam at El Paso, Texas. The zero of the gage is 3,722.30 feet (1,134.56 m) above mean sea level. U. S. C. & G. S. datum.

RECORDS: Mean daily discharges in 1976 were computed by adding the flows in the American Canal and the flows at the river station below the American Dam. Because the mean daily discharges are rounded, the monthly sum for this station may not equal the sum of the monthly sums of the other two stations. Extreme discharges are those passing the El Paso station, where measurements are made only during high flows. Records available: 1889 through 1976.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 24,000 second-feet (680 m^3/sec) 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 (382 m^3/sec) on September 3, 1925.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	23,680 (671)	June 12, 1905	Min.	0	Occasionally
Monthly:	Max.	14,300 (405)	June 1905	Min.	0	Occasionally
Yearly:	Max.	2,780 (78.7)	1905	Min	70.1 (1.99)	1902

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	140	571	286	823	1,070	1,040	849	732	872	335	194	151
2	140	510	288	715	1,150	1,040	807	754	737	278	192	173
3	140	450	284	764	1,120	1,020	722	764	628	309	188	196
4	140	316	259	814	1,190	1,010	863	761	593	308	177	193
5	140	251	208	896	1,190	1,020	1,050	788	638	371	172	185
6	138	240	265	837	1,020	1,060	1,020	874	832	273	172	177
7	136	212	355	798	850	1,020	879	832	1,050	254	169	168
8	122	220	420	739	907	1,010	868	987	923	249	168	164
9	132	218	559	649	832	1,030	877	1,050	770	236	172	170
10	133	191	442	647	847	823	793	969	668	249	174	172
11	133	166	400	650	797	653	879	1,240	558	250	172	168
12	131	228	491	852	720	562	990	916	373	242	167	166
13	132	190	610	863	720	511	1,060	995	349	226	167	159
14	132	184	725	875	833	773	964	1,120	333	217	167	165
15	130	188	943	857	810	804	957	1,030	307	210	195	165
16	129	226	921	1,060	932	706	987	1,040	384	203	199	161
17	125	266	705	1,120	1,090	608	968	1,190	340	216	187	161
18	132	268	543	1,010	974	547	836	1,180	325	250	183	162
19	137	197	662	885	1,330	557	689	999	322	217	182	164
20	358	190	774	756	1,250	624	729	960	364	197	180	164
21	488	158	977	635	914	940	810	960	352	174	179	156
22	535	229	1,100	637	900	914	776	905	428	183	177	151
23	541	240	983	833	977	806	703	916	420	182	173	152
24	661	246	868	835	1,110	894	460	770	433	183	171	152
25	471	235	745	839	1,030	872	555	809	464	206	172	154
26	373	190	728	961	977	799	601	773	487	197	169	154
27	349	191	866	1,020	928	958	602	865	477	186	164	147
28	361	169	983	984	1,050	999	434	824	521	207	166	144
29	336	205	929	959	901	987	393	868	553	209	177	150
30	361		979	902	902	932	634	999	405	209	156	150
31	486		928		904		749	1,070		204		147
Sum	7,862	7,145	20,226	25,215	30,225	25,519	24,504	28,940	15,906	7,230	5,281	5,041

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	3.81	2.55	24	718	8	ø 122	254	15,594	6,387	15,594	220
Feb.	3.64	2.34	1	613	21	137	246	14,172	7,393	52,200	136
Mar.	4.64	2.52	22	1,590	5	183	652	40,118	34,497	62,500	1,790
Apr.	4.70	3.65	16	1,220	22	577	840	50,013	42,268	139,000	6,820
May	5.48	3.60	4	1,590	12	652	975	59,950	45,340	357,000	522
June	4.66	3.39	1	1,170	13	ø 511	851	50,616	52,851	304,000	6,020
July	4.82	3.16	21	1,550	29	ø 393	790	48,603	58,752	198,000	9,652
Aug.	5.35	3.73	11	1,740	26	692	934	57,402	57,070	158,000	4,870
Sept.	4.73		7	1,120	19	299	530	31,549	39,302	171,000	2,430
Oct.		2.50	5	ø 371	21	164	233	14,340	14,192	57,900	151
Nov.	2.53	2.22	15	220	30	156	176	10,475	8,464	21,300	229
Dec.	2.43	2.27	↑ 2	205	28	138	163	9,999	8,066	25,600	206
Yearly	5.48	2.22		1,740		ø 122	555	402,835	374,582	1,559,200	57,481
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	1.67	0.68		49.3		3.46	15.7	496,897	462,047	1,923,273	70,903

ø Mean daily ↑ And other days

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

DESCRIPTION: Concrete control consisting of two triangular-shaped wingwalls extending toward the center of the canal about one-fourth of the canal width and downstream at a 30° angle with the canal side walls, bubbler gage, water-stage recorders (graphic and digital), and binary decimal transmitter located on the right bank of the concrete-lined canal at El Paso, Texas, latitude 31°46'40", longitude 106°31'25", and about 2,400 feet (700 m) downstream from the headgates of the American Dam which are located at river mile 1,248.8 (2,009.7 km). The zero of the gage is 3,712.09 feet (1,131.45 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 1 discharge measurement during the year, a stable rating curve at medium and high flows, and a continuous record of gage heights. Records available: June 2, 1938 through 1976.

REMARKS: This canal diverts water from the Rio Grande at the American Dam at El Paso, Texas, 2.1 river miles (3.4 km) upstream from the International Dam at Juarez, Chihuahua. Water from this canal discharges into the Franklin Canal from which water is frequently returned to the Rio Grande at spillways 2.2 (3.5), 2.7 (4.3), and 3.6 (5.8) river miles (km) downstream from the American Dam. The transmitter relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,840 second-feet (52.1 m^3/sec) on March 27, 1944. Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	1,510 (42.8)	Aug. 13, 1945	Min.	0	Frequently
Monthly:	Max.	1,210 (34.3)	Aug. 1943	Min.	0	Frequently since 1952
Yearly:	Max.	748 (21.2)	1943	Min.	65.6 (1.86)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	140	571	278	651	905	840	653	551	722	333	194	151
2	140	510	282	484	994	822	626	567	601	276	192	173
3	140	450	276	537	968	807	541	570	488	307	188	196
4	140	316	252	571	989	792	672	564	449	263	177	193
5	140	251	201	640	1,020	802	808	581	492	218	172	185
6	138	240	258	613	863	845	830	673	693	253	172	177
7	136	212	349	571	694	810	697	632	905	243	169	168
8	122	220	414	475	758	794	684	778	776	247	168	164
9	132	218	553	387	683	814	691	849	620	234	172	170
10	133	191	436	382	694	606	605	765	521	247	174	172
11	133	166	395	384	642	434	685	977	411	249	172	168
12	131	228	486	578	565	338	794	714	296	241	167	166
13	132	190	604	594	561	285	863	789	346	225	167	159
14	132	184	718	611	676	539	769	902	331	216	167	165
15	130	188	905	617	653	581	757	818	305	209	195	165
16	129	226	905	810	775	493	789	832	382	202	199	161
17	125	266	694	879	932	395	767	970	338	215	187	161
18	132	268	535	765	817	328	641	973	323	249	183	162
19	137	197	655	649	1,010	335	491	797	320	216	182	164
20	358	190	711	535	994	395	479	757	362	196	180	164
21	488	158	942	426	758	706	570	757	350	173	179	156
22	535	229	1,070	420	748	696	546	702	426	182	177	151
23	541	240	971	617	827	592	486	713	418	182	173	152
24	661	246	858	623	960	675	253	568	431	183	171	152
25	471	235	736	634	871	653	336	608	462	206	172	154
26	373	190	720	753	817	578	408	565	485	197	169	154
27	349	184	858	802	765	735	424	661	475	186	164	147
28	361	156	974	763	888	782	‡ 253	615	519	207	166	144
29	336	194	921	736	741	769	206	657	551	209	177	150
30	361		960	706	739	710	453	784	403	209	156	150
31	486		913		736		568	873		204		147
Sum	7,862	7,114	19,830	18,213	25,043	18,951	18,345	22,562	14,201	6,977	5,281	5,041

Month	Current Year 1976								Period 1939-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High Day	High	Low Day	Low			Average	Maximum	Minimum
Jan.	7.75		24	718	8	122 ∅	254	15,594	2,134	15,594	0
Feb.	7.28	4.23	1	613	21	137	245	14,110	4,830	19,500	0
Mar.	9.87	4.57	22	1,320	5	177	640	39,332	30,899	50,100	1,700
Apr.	8.74	5.99	16	971	22	374	607	36,125	31,343	70,900	4,560
May	9.00	6.70	4	1,050	12	497	808	49,672	27,793	69,000	392
June	8.62	5.37	1	938	13	285 ∅	632	37,589	36,265	65,700	5,990
July	8.53	4.34	15	913	29	149	592	36,387	43,251	70,700	8,673
Aug.	9.24	6.68	11	1,120	26	493	728	44,751	42,796	74,600	4,840
Sept.	8.74	5.14	7	971	12	255	473	28,167	28,396	63,100	2,230
Oct.	6.37	3.31	18	438	†17	61.0	225	13,839	11,882	39,000	0
Nov.	4.88	4.40	15	220	30	156	176	10,475	6,994	21,000	0
Dec.	4.77	4.24	† 2	204	28	138	163	9,999	6,961	25,500	0
Yearly	9.87	3.31		1,320		61.0	463	336,040	273,544	541,610	47,397.4
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	3.01	1.01		37.4		1.73	13.1	414,505	337,417	668,076	58,465

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

RIO GRANDE BELOW AMERICAN DAM AT EL PASO, TEXAS AND CD. JUAREZ, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the retaining wall of the Smelter Pump on the left bank of the river at latitude 31°46'35", longitude 106°31'20", and river mile 1,248.2 (2,008.8 km); 1.5 river miles (2.4 km) upstream from the International Dam, 3.3 river miles (5.3 km) upstream from the Santa Fe Street-Juarez Avenue Bridge between El Paso, Texas and Cd. Juarez, Chihuahua, and 0.6 river mile (1.0 km) downstream from the American Dam. The zero of the gage is 3,712.30 feet (1,131.51 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 49 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 1976.

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 (320 m^3/sec) on September 14, 1958 with a gage height of 14.50 feet (4.42 m). Min. occasionally no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 6,040 (171)	May 20, 1942	Min. 0	Occasionally
Monthly:	Max. 4,880 (138)	May 1942	Min. 0	Occasionally
Yearly:	Max. 1,510 (42.8)	1942	Min. 13.8 (0.39)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.2	0.1	7.5	‡ 172	161	‡ 204	‡ 196	181	‡ 150	1.7	0.1	0
2	.2	.1	‡ 6.5	‡ 231	157	213	181	‡ 187	136	1.7	.1	00
3	.2	.1	8.2	227	‡ 152	212	181	‡ 194	‡ 140	1.7	0	0
4	.2	.1	6.9	243	198	217	191	197	144	45.1	‡ 0	0
5	‡ .2	‡ .1	6.6	‡ 256	171	216	240	207	146	153	0	0
6	.2	.1	6.6	224	152	211	190	201	139	‡ 20.4	0	0
7	.2	.1	6.3	‡ 227	156	213	‡ 182	200	‡ 144	11.4	0	0
8	.2	.1	6.1	‡ 264	149	‡ 213	‡ 184	209	147	2.2	0	0
9	.2	.1	6.4	262	149	215	186	‡ 200	150	1.9	0	0
10	.2	.1	5.7	265	‡ 153	217	188	204	147	1.5	0	0
11	.2	.1	4.7	266	155	219	194	261	147	1.2	0	0
12	‡ .2	.1	5.1	274	155	224	196	‡ 202	77.0	‡ .8	0	0
13	.2	.1	5.7	‡ 269	159	226	‡ 195	206	3.2	.8	0	0
14	.2	.1	6.7	264	157	‡ 234	195	213	‡ 1.9	.8	0	‡ 0
15	.2	.1	38.3	240	157	223	200	208	1.9	.7	0	0
16	.1	.1	16.3	247	157	213	198	‡ 209	1.9	.7	0	0
17	.1	0	11.3	238	‡ 155	213	201	219	1.9	.6	0	0
18	.1	0	7.7	243	157	219	195	212	1.8	.6	0	0
19	.1	0	7.1	‡ 236	322	222	198	202	1.8	.6	0	0
20	.1	0	63.2	221	256	229	250	203	1.8	.5	0	0
21	.1	0	35.4	‡ 209	156	‡ 234	240	203	‡ 1.8	.5	0	0
22	.1	0	28.2	217	152	218	230	203	1.8	.5	0	0
23	0	0	‡ 11.9	216	150	214	217	‡ 203	1.8	.4	0	0
24	0	‡ 0	10.3	212	‡ 154	219	207	202	1.7	.4	0	0
25	0	0	8.6	205	154	219	219	201	1.7	.4	0	0
26	‡ 0	0	7.7	‡ 208	160	221	‡ 193	208	1.7	.3	0	0
27	0	6.6	8.1	216	163	223	178	204	1.7	.3	0	0
28	0	12.7	8.8	221	161	‡ 217	181	209	‡ 1.7	.3	0	0
29	0	11.2	8.2	223	160	218	187	211	1.7	.2	0	0
30	0		19.1	196	163	222	‡ 181	215	1.7	.2	0	0
31	.1		‡ 14.6		168		181	195		.1		0
Sum	3.8	32.1	393.8	6,992	5,169	6,558	6,155	6,369	1,700.5	251.5	0.2	0

Month	Current Year 1976								Period 1939-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.			† 1	∅ 0.2	†23	0	0.1	7.5	4,139	12,000	0
Feb.	4.26		27	17.7	†15	0	1.1	63.7	2,288	32,800	0
Mar.	6.20	3.98	20	533	11	4.3	12.7	781	3,351	22,801	81.9
Apr.	5.42	4.15	12	288	1	68.5	233	13,868	10,297	74,500	2,230
May	6.25	4.92	4	542	9	129	167	10,253	16,865	300,000	25.2
June	5.50	5.04	11	268	1	158	219	13,008	15,903	250,000	0
July	6.67	4.27	21	690	21	18.2	199	12,208	14,980	155,000	967
Aug.	6.66	5.46	11	617	11	134	205	12,633	13,953	114,000	37.5
Sept.	5.46		1	156	†24	1.7	56.7	3,373	10,352	124,000	53.8
Oct.	5.68		5	340	31	∅ .1	8.1	499	1,964	19,000	18.0
Nov.	3.78		† 1	.1	† 3	0	0	.4	1,251	8,700	.4
Dec.				0		0	0	0	908	7,760	0
Yearly	6.67			690		0	91.9	66,694.6	96,251	1,093,553	10,001.1
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.03			19.5		0	2.60	82,268	118,726	1,348,898	12,336

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

DIVERSIONS FROM THE RIO GRANDE

ACEQUIA MADRE AT CD. JUAREZ, CHIHUAHUA

DESCRIPTION: Bridge for making discharge measurements, gravity well, and water-stage recorder located on the right bank of the canal at Juarez, Chihuahua, latitude 31°45'40", longitude 106°30'30", about 260 feet (80 m) downstream from the canal intake at the International Dam at Juarez, Chihuahua, which is located at river mile 1,246.7 (2,006.4 km) and 2.1 river miles (3.4 km) downstream from the American Dam at El Paso, Texas.

RECORDS: Based on 50 discharge measurements during the year, 27 by the Mexican Section and 23 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1938 through 1976. These records, showing the water actually diverted by Mexico, do not necessarily reflect the quantities of water made available to Mexico in the bed of the river by the United States under terms of the Convention of 1906. Such quantities of water are included in the record of "Rio Grande below American Dam at El Paso, Texas." See page 11 in this Water Bulletin.

REMARKS: In 1976 all of the 60,172 acre-feet (74,220,000 m^3) tabulated below were distributed to land irrigated in the first unit under the canal.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 480 second-feet (13.6 m^3/sec) on July 21, 1944 with a gage height of 6.00 feet (1.83 m). Min. no flow during several months throughout the year.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 339 (9.61)	May 10, 1942	Min. 0	Several months each year
Monthly:	Max. 283 (8.00)	May 1938	Min. 0	Several months each year
Yearly:	Max. 116 (3.28)	1942	Min. 9.2 (0.26)	1964

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	‡ 107	147	184	190	182	159	0	0	0
2	0	0	0	‡ 183	147	‡ 205	172	‡ 186	‡ 145	0	0	0
3	0	0	0	201	‡ 145	206	171	190	142	0	0	0
4	0	0	0	206	145	208	188	‡ 196	144	0	0	0
5	0	0	0	‡ 206	141	209	‡ 186	199	141	0	0	0
6	0	0	0	200	143	‡ 206	168	199	143	0	0	0
7	0	0	0	‡ 200	141	203	172	198	147	0	0	0
8	0	0	0	‡ 208	135	204	‡ 190	201	‡ 153	0	0	0
9	0	0	0	‡ 209	136	‡ 204	195	‡ 203	153	0	0	0
10	0	0	0	213	‡ 142	210	196	201	152	0	0	0
11	0	0	0	215	144	213	200	‡ 183	154	0	0	0
12	0	0	0	‡ 225	149	219	‡ 196	188	69.9	0	0	0
13	0	0	0	221	‡ 152	‡ 223	196	200	0	0	0	0
14	0	0	0	‡ 217	155	229	‡ 188	207	0	0	0	0
15	0	0	0	198	153	222	194	203	0	0	0	0
16	0	0	0	202	153	‡ 206	196	‡ 203	0	0	0	0
17	0	0	0	200	‡ 149	208	196	203	0	0	0	0
18	0	0	0	203	149	216	192	201	0	0	0	0
19	0	0	0	‡ 207	141	218	162	‡ 200	0	0	0	0
20	0	0	0	209	141	221	‡ 149	201	0	0	0	0
21	0	0	0	‡ 205	144	‡ 217	107	202	0	0	0	0
22	0	0	0	208	144	209	168	200	0	0	0	0
23	0	0	0	‡ 217	147	‡ 206	172	‡ 198	0	0	0	0
24	0	0	0	207	‡ 145	212	173	194	0	0	0	0
25	0	0	0	209	145	213	189	‡ 195	0	0	0	0
26	0	0	0	‡ 206	‡ 149	214	‡ 185	197	0	0	0	0
27	0	0	0	202	149	216	177	199	0	0	0	0
28	0	0	0	‡ 202	150	‡ 216	‡ 172	197	0	0	0	0
29	0	0	0	201	150	211	173	197	0	0	0	0
30	0		0	‡ 189	153	‡ 211	170	202	0	0	0	0
31	0		0		‡ 158		176	‡ 190		0		0
Sum	0	0	0	6,076	4,542	6,339	5,559	6,115	1,702.9	0	0	0

Month	Current Year 1976: Average Rainfall Inches** 1938-1976	1976	Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Maximum	Minimum
Jan.	0.39	0.30		0		0	0	0	0	0	0
Feb.	.36	.31		0		0	0	0	0	0	0
Mar.	.26	0		0		0	0	0	1,213	6,482	0
Apr.	.17	.22	12	230	1	0	203	12,057	7,856	12,383	2,020
May	.33	1.26	31	159	† 8	133	147	9,009	9,236	17,380	0
June	.58	.50	21	231	1	150	211	12,575	8,435	15,700	0
July	1.63	1.94	1	210	21	0	179	11,027	8,501	15,170	0
Aug.	1.30	.15	31	208	† 1	129	197	12,127	8,218	12,620	0
Sept.	1.20	1.09	1	164	12	0	56.9	3,377	4,574	12,380	0
Oct.	.73	.94		0		0	0	0	39.7	328	0
Nov.	.32	.51		0		0	0	0	0	0	0
Dec.	.47	.53		0		0	0	0	0	0	0
Yearly	7.84	7.75		231		0	82.9	60,172	48,072.7	83,930	6,653
	Millimeters			Cubic Meters per Second				Thousands of Cubic Meters			
	199	197		6.55		0	2.35	74,220	59.295	103,511	8.207

‡ Discharge measurement made on this day

† And other days

** Average for valley floor in United States and Mexico from El Paso to Island Station

RIO GRANDE NEAR CLINT, TEXAS AND SAN AGUSTIN, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°32'00", longitude 106°14'35", and river mile 1,221.1 (1,965.2 km), 0.6 river mile (1.0 km) downstream from the Riverside Canal Wasteway No. 2, about 4 miles (6.4 km) south southwest of Clint, Texas, and 27.7 river miles (44.6 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,608.99 feet (1,100.02 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 17 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: August 17, 1938 through 1976. Records prior to 1976 were published under the title "Rio Grande - Island Station near Clint, Texas."

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,050 second-feet (200 m³/sec) on September 14, 1958 with a gage height of 15.80 feet (4.82 m). Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 6,140 (174)	May 19, 1942	Min. 0	Frequently
Monthly:	Max. 4,880 (138)	May 1942	Min. 0	Frequently
Yearly:	Max. 1,490 (42.2)	1942	Min. 0.3 (0.01)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	79.2	23.8	33.8	12.1	23.0	22.3	0	0	‡ 0
2	0	0	0	69.3	57.0	28.8	11.7	23.3	22.3	0	0	0
3	0	0	0	59.4	34.4	23.3	11.3	23.3	22.3	0	0	0
4	0	0	0	49.5	208	‡ 23.8	11.0	23.4	22.3	0	0	0
5	0	0	‡ 0	39.6	523	24.1	220	‡ 23.4	22.7	0	0	0
6	‡ 0	0	0	29.7	397	26.8	20.7	23.5	35.9	0	0	0
7	0	0	0	19.8	‡ 221	35.0	15.3	23.7	255	0	0	0
8	0	0	0	9.9	388	38.5	15.6	24.0	131	‡ 0	0	0
9	0	‡ 0	0	‡ 0	432	107	15.2	24.3	98.2	0	0	0
10	0	0	0	0	194	39.6	15.6	24.0	‡ 63.9	0	‡ 0	0
11	0	0	0	0	87.7	27.9	15.3	24.3	42.1	0	0	0
12	0	0	0	0	65.8	20.2	‡ 16.4	24.7	33.2	0	0	0
13	0	0	0	0	48.5	19.3	17.3	25.0	23.8	0	0	0
14	0	0	0	0	42.1	18.9	17.6	25.3	17.8	0	0	0
15	0	0	0	0	36.5	18.5	188	25.7	11.9	0	0	0
16	0	0	0	0	30.9	18.1	27.8	26.7	6.0	0	0	0
17	0	0	0	43.3	25.9	17.8	82.5	27.0	0	0	0	0
18	0	0	0	32.6	21.5	16.9	90.2	27.4	0	0	0	0
19	0	0	0	16.3	187	16.5	32.8	27.7	0	0	0	0
20	0	0	37.9	8.2	388	16.7	21.3	28.0	0	0	0	0
21	0	0	15.2	4.1	‡ 30.4	15.8	202	26.9	0	0	0	0
22	0	0	118	2.0	11.3	15.9	34.2	26.5	0	0	0	0
23	0	0	18.8	1.0	11.0	15.1	22.9	26.1	0	0	0	0
24	0	0	11.3	.5	11.4	14.7	21.5	25.0	‡ 0	0	0	0
25	0	0	‡ 3.8	.3	12.6	14.3	21.7	24.5	0	0	0	0
26	0	0	1.9	.1	13.1	13.9	21.9	24.2	0	0	0	0
27	0	0	0	0	15.0	13.6	22.2	‡ 23.0	0	0	0	0
28	0	0	329	0	16.1	13.2	22.4	24.3	0	0	0	0
29	0	0	322	0	16.6	12.8	22.7	25.1	0	0	0	25.0
30	‡ 0		275	0	17.8	12.5	22.7	26.4	0	0	0	74.7
31	0		261		30.9		23.0	27.1		0		77.0
Sum	0	0	1,393.9	464.8	3,598.3	713.3	1,294.9	776.8	830.7	0	0	176.7

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1939-1976: Acre-Feet Average	Maximum	Minimum
Jan.				0		0	0	0	4,059	11,900	0
Feb.				0		0	0	0	2,670	37,000	0
Mar.			28	∅ 329	† 1	0	45.0	2,765	2,114	21,000	0
Apr.	11.43		17	221	† 9	0	15.5	922	3,208	70,500	0
May	14.31		4	1,140	23	∅ 11.0	116	7,137	9,217	299,800	0
June	12.48	9.37	9	513	30	∅ 12.5	23.8	1,415	7,908	241,000	0
July	14.14	9.37	5	1,060	4	11.0	41.8	2,568	8,099	118,500	0
Aug.	9.56	9.38	20	28.0	† 1	23.0	25.1	1,541	7,273	99,400	0
Sept.	12.00		7	403	†17	0	27.7	1,648	8,044	119,200	0
Oct.				0		0	0	0	3,839	42,800	0
Nov.				0		0	0	0	1,093	7,270	0
Dec.			31	∅ 77.0	† 1	0	5.7	350	1,921	12,900	0
Yearly	14.31			1,140		0	25.3	18,346	59,445	1,079,340	238.1
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	4.36			32.3		0	0.72	22,630	73,325	1,331,366	294

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

RIO GRANDE NEAR ACALA, TEXAS AND PRAXEDES GUERRERO, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°22'50", longitude 105°59'10", and river mile 1,200.9 (1,932.7 km), 0.8 river mile (1.3 km) downstream from the El Paso-Hudspeth County Line, 5.5 miles (8.9 km) northwest of Acala, Texas, about 8 miles (12.9 km) southeast of Tornillo, Texas, and 47.9 river miles (77.1 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,547.59 feet (1,081.31 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 18 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1938 through 1976. Records prior to 1976 were published under the title "Rio Grande - County Line Station near Acala, Texas."

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,340 second-feet (180 m^3/sec) on May 19, 1942 with a gage height of 8.66 feet (2.64 m). Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 6,180 (175)	May 18, 1942	Min. 0	Frequently
Monthly:	Max. 4,920 (139)	May 1942	Min. 0	Frequently
Yearly:	Max. 1,720 (48.7)	1942	Min. 0	1956 & 1964

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.8	0	0	132	20.1	28.7	0	0	0	0	0	‡92.5
2	27.1	0	0	58.9	48.4	24.5	0	0	0	0	0	92.4
3	27.3	0	0	50.5	29.2	19.8	0	0	0	0	0	92.2
4	27.5	0	0	42.1	283	‡ 3.9	0	0	0	0	0	92.1
5	27.8	0	‡ 0	33.7	652	20.5	318	‡ 0	0	0	0	92.0
6	‡ 28.0	0	0	25.3	337	22.8	17.6	0	0	0	0	91.8
7	26.8	0	0	16.8	‡ 188	29.8	8.0	0	270	0	0	91.7
8	25.7	0	0	8.4	330	32.7	0	0	260	‡ 0	0	91.6
9	24.5	‡ 0	0	‡ 0	367	91.0	0	0	225	0	0	91.4
10	23.3	0	0	0	165	33.7	0	0	‡ 175	0	‡ 0	91.3
11	22.2	0	0	0	74.5	15.0	0	0	150	0	0	91.2
12	21.0	0	0	0	58.9	0	‡ 0	0	125	0	0	91.1
13	19.8	0	0	0	41.2	0	0	0	100	0	0	90.9
14	18.7	0	0	0	35.8	0	0	0	75.0	0	0	90.8
15	17.5	0	0	0	31.0	0	219	0	50.0	0	0	90.7
16	16.3	0	0	0	26.3	0	23.6	0	25.0	0	" 18.0	90.5
17	15.2	0	0	36.8	22.0	0	77.3	0	0	0	" 44.0	90.4
18	14.0	0	0	27.7	18.3	‡ 0	76.7	0	0	0	" 52.0	90.3
19	12.8	0	0	13.9	228	0	27.9	0	0	0	" 35.0	90.1
20	11.7	0	26.8	7.0	461	0	18.1	0	0	0	" 18.0	90.0
21	10.5	0	21.8	3.5	‡ 125	0	218	0	0	0	" 11.0	89.9
22	9.3	0	88.0	1.7	9.6	0	29.1	0	0	0	" 7.0	89.7
23	8.2	0	47.7	.8	9.3	0	19.5	0	0	0	0	89.6
24	7.0	0	13.5	.4	9.7	0	9.0	0	‡ 0	0	0	89.5
25	5.8	0	‡ 6.0	.3	10.7	0	5.0	0	0	0	0	89.3
26	4.7	0	2.5	.1	11.1	0	0	0	0	0	0	89.2
27	3.5	0	.6	0	12.8	0	0	‡ 0	0	0	0	89.1
28	2.3	0	233	0	13.7	0	0	0	0	0	0	89.0
29	1.2	0	324	0	14.1	0	0	0	0	0	31.0	88.8
30	‡ 0		289	0	15.1	0	0	0	0	0	62.0	88.7
31	0		265		26.3		0	0		0		88.6
Sum	486.5	0	1,317.9	459.9	3,674.1	322.4	1,066.8	0	1,455.0	0	* 278.0	2,806.4

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.			6	∅ 28.0	†30	0	15.7	965	5,308	20,000	0
Feb.				0		0	0	0	4,463	47,900	0
Mar.			29	∅ 324	† 1	0	42.5	2,614	3,959	38,900	0
Apr.			1	∅ 132	† 9	0	15.3	912	5,919	84,200	0
May			5	∅ 652	23	∅ 9.3	119	7,287	11,416	303,000	0
June			9	∅ 91.0	†12	0	10.7	639	10,093	239,000	0
July			5	∅ 318	† 1	0	34.4	2,116	10,708	140,000	0
Aug.				0		0	0	0	9,828	123,000	0
Sept.			7	∅ 270	† 1	0	48.5	2,886	12,697	140,000	0
Oct.				0		0	0	0	7,729	61,400	0
Nov.			30	∅ 62.0	† 1	0	* 9.3	* 551	4,811	20,400	0
Dec.			1	∅ 92.5	31	∅ 88.6	90.5	5,566	5,508	29,700	0
Yearly				∅ 652		0	32.4	23,536	92,439	1,247,500	0
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
				18.5		0	0.92	29,032	114,024	1,538,791	0

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

RIO GRANDE AT FORT QUITMAN, TEXAS NEAR COLONIA LUIS LEON, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°05'05", longitude 105°36'25", and river mile 1,167.1 (1,878.3 km); 1.5 river miles (2.4 km) downstream from Old Fort Quitman, 9 miles (14.5 km) southeast of Esperanza, Texas, 17.5 miles (28.2 km) southeast of McNary, Texas, and 81.7 river miles (131.5 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,450.57 feet (1,051.73 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 17 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1976.

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

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 10,600 second-feet (300 m^3/sec) October 5, 1946 with a gage height of 10.00 feet (3.05 m). Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max. 5,890 (167)	May 19, 1942	Min. 0	Frequently
Monthly:	Max. 5,030 (142)	May 1942	Min. 0	Several months since 1951
Yearly:	Max. 1,750 (49.6)	1942	Min. 2.3 (0.07)	1965

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	155	27.3	29.9	96.3	58.3	113	52.2	135	35.9	46.2	256	‡ 184
2	137	27.4	27.5	81.1	42.4	112	50.2	137	35.9	49.4	252	199
3	125	28.6	27.0	144	46.6	101	50.7	112	36.9	61.3	247	210
4	135	30.8	27.0	61.5	174	‡ 90.7	55.1	72.9	37.8	117	205	245
5	130	127	‡ 27.6	56.6	562	171	59.5	‡ 63.2	89.6	161	187	250
6	‡ 117	128	26.5	70.6	628	250	61.1	52.4	258	187	169	246
7	91.6	87.1	24.2	60.9	‡ 768	401	65.3	47.2	519	187	174	229
8	78.3	76.0	24.4	56.2	706	383	62.8	43.3	749	‡ 180	181	213
9	74.6	‡ 63.8	24.0	‡ 53.6	757	256	61.4	39.6	733	158	185	195
10	61.9	67.4	24.1	48.2	733	327	60.0	38.5	‡ 627	146	‡ 182	188
11	52.7	77.4	24.2	49.0	518	192	60.9	35.7	335	153	171	182
12	48.7	72.4	23.9	48.2	438	149	‡ 67.2	33.9	197	154	158	179
13	36.7	62.9	25.0	49.0	330	120	81.5	31.5	159	150	155	179
14	31.0	61.8	25.1	53.6	347	108	94.0	29.7	112	147	159	180
15	34.1	65.1	27.1	53.6	314	93.0	152	28.6	139	148	172	177
16	35.8	67.7	26.6	49.0	291	83.7	288	26.9	136	139	208	171
17	37.4	50.4	25.0	53.6	266	77.3	225	26.0	134	133	234	165
18	39.1	41.5	26.8	48.2	244	‡ 74.8	562	25.0	137	136	242	166
19	39.2	32.2	27.0	86.4	230	72.3	706	23.5	124	143	225	163
20	39.4	29.4	26.5	86.4	337	64.6	368	23.2	135	144	208	160
21	39.6	30.9	25.5	52.6	‡ 322	62.4	208	22.2	117	147	201	151
22	40.1	28.9	25.1	40.3	270	57.3	441	21.9	62.6	148	197	146
23	40.6	31.7	24.7	38.1	222	54.3	389	24.5	42.6	145	187	147
24	42.3	31.0	25.4	38.9	187	50.8	278	37.9	33.2	154	180	145
25	42.8	26.0	‡ 26.5	41.0	168	49.6	263	39.3	31.6	159	172	142
26	43.4	26.1	25.7	44.1	161	48.5	393	37.2	32.9	149	166	138
27	45.0	26.7	28.1	40.3	153	48.3	396	‡ 35.3	37.0	136	160	136
28	48.8	25.6	92.8	41.0	140	48.8	235	33.6	56.4	144	150	136
29	49.4	26.2	219	40.3	126	49.4	207	33.6	51.1	160	157	134
30	‡ 46.5		211	89.3	114	50.8	179	33.6	47.8	189	173	132
31	35.3		134		109		152	34.5		224		129
Sum	1,973.3	1,477.3	1,357.2	1,771.9	9,812.3	3,759.6	6,323.9	1,378.7	5,242.3	4,494.9	5,713	5,417

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	5.78	4.90	1	183	31	28.1	63.7	3,914	6,147	20,900	0
Feb.	5.86	4.83	5	159	†28	25.6	50.9	2,930	5,226	50,100	0
Mar.		4.77	29	∅ 219	12	23.9	43.8	2,692	4,079	38,900	0
Apr.	5.92	4.91	19	179	23	36.0	59.1	3,515	5,122	77,000	0
May	7.08	4.92	7	995	2	36.7	317	19,462	12,109	309,000	0
June	6.80	5.03	10	515	† 2	48.3	125	7,457	10,780	240,000	0
July	8.45	5.07	26	1,570	2	50.2	204	12,543	12,413	140,000	3.8
Aug.	6.51	4.84	2	366	23	20.9	44.5	2,735	11,696	127,000	16.7
Sept.	6.76	5.05	8	851	25	∅ 31.6	175	10,393	16,286	147,000	0
Oct.	6.00	5.35	31	246	1	46.2	145	8,916	11,998	66,500	0
Nov.	6.05	5.73	1	270	†28	150	190	11,332	7,579	24,500	0
Dec.	6.00	5.60	5	254	31	129	175	10,744	7,817	31,000	0
Yearly	8.45	4.77		1,570		20.9	133	96,638	111,252	1,270,400	1,662.3
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.58	1.45		44.5		0.59	3.77	119,203	137,229	1,567,038	2,050

** Period 1924-1976 ‡ Discharge measurement made on this day ∅ Mean daily
† And other days

RIO GRANDE NEAR CANDELARIA, TEXAS AND SAN ANTONIO DEL BRAVO, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and digital recorder located on the left bank of the Rio Grande at latitude 30°10'30", longitude 104°41'10" and river mile 1,034.1 (1,664.2 km); 3.3 river miles (5.3 km) upstream from Candelaria, Texas and 2.5 miles (4.0 km) north of San Antonio, Chihuahua; and 214.7 river miles (345.5 km) downstream from the American Dam at El Paso, Texas. The zero of the gage has not been determined.

RECORDS: Based on 38 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: November 19, 1975 through 1976.

REMARKS: Reservoirs, diversions, and drainage returns modify the flow at this station. An auxiliary well, located 300 feet (91 m) upstream, is used to record extreme low flows.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,620 second-feet (45.9 m^3/sec) on July 13, 1976 with a gage height of 8.65 feet (2.64 m). Min. frequently no flow.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	102	65.8	33.5	‡ 10.5	11.0	37.0	‡ 14.5	483	54.1	‡ 120	‡ 133	151
2	‡ 102	59.1	34.9	66.2	9.6	‡ 26.3	4.9	499	‡ 59.2	130	135	151
3	104	‡ 57.1	‡ 31.8	46.8	11.0	26.5	4.6	‡ 476	53.7	101	149	154
4	106	53.5	30.0	28.1	‡ 24.4	75.5	14.7	297	28.6	93.1	171	163
5	104	46.0	25.3	185	21.6	137	4.5	334	53.2	98.2	182	180
6	102	47.2	22.9	131	19.2	236	4.4	202	36.9	‡ 101	186	‡ 188
7	96.2	48.6	29.9	‡ 60.7	60.8	58.3	4.8	125	25.5	107	183	187
8	95.3	64.1	26.6	35.4	88.7	54.0	5.4	77.3	39.7	117	176	197
9	97.7	82.7	17.9	42.8	54.9	83.4	10.6	58.6	‡ 273	127	165	205
10	95.7	86.2	32.5	49.7	50.2	67.3	7.5	42.6	52.4	133	159	202
11	94.2	84.7	44.2	37.5	‡ 75.5	91.9	30.2	30.3	60.5	135	161	193
12	93.9	87.8	33.8	38.5	‡ 112	111	93.4	23.9	65.0	133	164	186
13	92.4	79.1	30.9	30.7	142	212	361	18.3	109	129	163	329
14	87.9	75.7	38.9	21.9	188	271	‡ 554	12.1	198	163	161	236
15	86.7	76.9	26.9	22.9	222	227	414	10.4	‡ 326	240	‡ 157	267
16	82.7	74.6	32.7	31.4	222	‡ 122	414	‡ 9.8	388	162	152	227
17	76.6	64.9	‡ 24.5	26.1	184	80.9	226	5.8	388	149	152	‡ 222
18	72.5	‡ 63.3	16.6	22.1	‡ 150	57.2	244	232	388	‡ 146	154	205
19	67.8	64.1	28.7	25.5	121	37.0	215	49.2	228	141	163	192
20	65.9	64.1	20.0	‡ 25.6	96.3	129	136	29.5	‡ 259	137	181	180
21	‡ 68.5	54.4	18.2	19.6	73.4	27.8	‡ 113	23.4	239	132	197	172
22	67.9	48.9	21.2	23.1	33.7	35.1	112	10.8	228	128	209	166
23	66.9	43.6	23.5	30.4	17.5	23.3	114	5.6	‡ 203	129	‡ 216	‡ 166
24	66.9	40.1	27.2	56.5	20.3	9.0	307	‡ 3.1	170	132	215	169
25	62.2	‡ 37.0	13.2	63.9	38.2	24.3	127	2.7	254	133	208	161
26	57.5	34.2	6.9	68.3	108	12.5	74.5	1.3	416	134	198	157
27	59.8	33.8	6.5	25.3	101	84.1	193	6.2	‡ 390	133	188	156
28	61.5	38.2	7.2	12.4	77.5	65.3	225	26.7	331	134	172	158
29	61.8	36.3	15.4	11.8	71.5	43.0	170	24.2	193	138	160	‡ 160
30	66.2		29.5	13.0	75.9	93.7	228	15.0	142	146	153	161
31	70.1		10.6		55.3		322	3.2		138		160
Sum	2,534.8	1,712.0	761.9	1,262.7	2,536.5	2,558.4	4,749.0	3,138.0	5,651.8	4,139.3	5,163	5,801

Month	Current Year 1976								Period Dec. 1975-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	3.99	3.77	† 5	106	26	57.0	81.8	5,028			
Feb.	3.93	3.63	18	90.5	27	32.3	59.0	3,396			
Mar.	3.71	2.95	30	51.2	26	6.4	24.6	1,511			
Apr.	5.36	2.82	5	354	1	5.6	42.0	2,505			
May	4.53	2.90	14	225	3	5.5	81.8	5,031			
June	5.35	3.00	6	612	†26	1.3	85.3	5,075			
July	8.65	2.61	13	1,620	1	2.3	153	9,420			
Aug.	4.90	2.79	3	517	27	.8	101	6,224			
Sept.	5.29	2.94	26	533	1	.7	188	11,210			
Oct.	5.29	3.74	14	491	4	90.2	134	8,210			
Nov.	4.38	4.02	24	223	† 1	132	172	10,241			
Dec.	5.21	4.11	13	467	1	146	187	11,506	8,546	11,506	5,585
Yearly	8.65	2.61		1,620		0.7	109	79,357			
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	2.64	0.80		45.9		0.02	3.09	97,887			

‡ Discharge measurement made on this day † And other days

RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29°37'15", longitude 104,28'50", and river mile 962.5 (1,549.0 km); 6.5 miles (10.5 km) northwest of the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, 7.8 river miles (12.6 km) upstream from the Rio Conchos, and 286.3 river miles (460.8 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,576.66 feet (785.37 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 56 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1976.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 14,000 second-feet (396 m^3/sec) on June 14, 1905. Highest flow recorded since 1924 was 5,160 second-feet (146 m^3/sec), with a gage height of 10.57 feet (3.22 m), on May 26, 1942. Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second) **

Daily:	Max.	13,700 (388)	June 13 & 14, 1905	Min.	0	Frequently
Monthly:	Max.	10,150 (287)	June 1905	Min.	0	Frequently
Yearly:	Max.	1,970 (55.8)	1907	Min.	1.3 (0.04)	1964

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	53.2	47.5	‡ 22.6	‡ 11.2	9.4	‡ 29.2	‡ 27.5	190	‡ 46.7	‡ 194	115	159
2	56.7	‡ 46.4	12.2	.4	4.9	27.3	27.0	188	69.4	216	121	155
3	56.0	47.6	13.4	2.4	‡ .7	23.0	39.1	181	52.2	236	123	148
4	58.2	48.8	19.5	1.6	.1	77.7	28.8	172	45.8	‡ 244	124	144
5	‡ 58.1	50.5	18.9	‡ 14.6	.1	52.4	25.1	163	61.0	221	123	137
6	60.0	50.2	16.5	3.4	0	43.1	‡ 18.5	172	142	192	120	‡ 134
7	63.0	49.2	15.3	9.3	2.8	‡ 27.3	12.8	187	‡ 163	137	118	122
8	65.4	46.0	‡ 15.3	6.4	4.2	24.6	11.3	208	70.0	108	‡ 116	113
9	67.8	‡ 43.4	14.1	1.1	8.1	23.6	12.5	‡ 210	63.7	90.6	112	113
10	70.0	42.8	12.0	14.0	‡ 3.2	25.4	15.0	200	69.3	86.0	116	115
11	66.7	41.2	2.6	17.4	12.6	21.4	18.5	162	85.7	91.3	129	119
12	‡ 66.8	39.3	10.7	‡ 17.9	12.0	21.2	‡ 57.9	101	82.6	‡ 78.9	134	130
13	67.6	39.7	6.4	11.4	30.3	23.1	‡ 120	59.0	‡ 81.0	79.4	138	176
14	70.1	45.6	8.9	8.2	8.0	‡ 29.4	136	44.4	84.7	88.0	140	179
15	66.8	49.6	7.0	1.9	10.2	26.4	‡ 127	29.8	92.9	120	138	‡ 175
16	66.4	50.9	‡ 6.7	2.2	21.4	29.0	134	‡ 24.3	126	126	136	174
17	65.4	‡ 47.4	2.6	2.9	‡ 31.6	29.5	213	23.6	139	129	140	173
18	62.7	46.4	6.3	2.3	53.2	31.9	227	116	174	‡ 125	153	190
19	‡ 59.9	46.4	10.8	‡ 3.0	48.9	37.0	‡ 236	99.2	176	130	153	204
20	58.6	47.0	11.8	3.3	45.1	41.0	245	31.4	‡ 200	146	150	‡ 209
21	58.2	46.7	16.5	1.7	44.1	‡ 29.7	239	24.3	206	159	146	203
22	54.5	45.6	‡ 17.3	1.3	44.3	24.1	219	44.4	212	154	‡ 141	194
23	51.9	‡ 44.4	16.6	.9	42.9	21.0	193	‡ 48.8	218	139	139	186
24	50.0	41.8	17.3	1.9	‡ 47.1	19.7	190	41.5	215	126	137	175
25	47.4	40.2	16.7	3.2	44.5	2.2	176	26.8	211	123	136	166
26	‡ 48.3	34.7	17.2	2.7	42.7	.1	‡ 159	21.4	209	‡ 115	142	154
27	47.7	35.6	15.9	8.0	37.5	14.0	108	22.3	‡ 199	114	149	‡ 146
28	49.0	29.2	16.4	8.4	36.5	‡ 29.8	82.9	22.7	190	112	152	145
29	50.1	24.5	‡ 18.4	9.4	36.7	28.2	127	32.9	177	109	‡ 156	143
30	49.0		13.0	‡ 10.5	39.7	25.3	‡ 182	‡ 31.2	170	111	160	141
31	50.1		11.1		38.2		179	34.7		112		138
Sum	1,815.6	1,268.6	410.0	182.9	761.0	837.6	3,586.9	2,912.7	4,032.0	4,212.2	4,057	4,860

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Maximum	Minimum
Jan.	11.53	11.23	13	73.9	26	46.6	58.6	3,601	5,495	24,400	0
Feb.	11.27	10.62	16	51.4	29	23.7	43.7	2,516	4,510	40,800	0
Mar.	10.63	10.07	1	23.8	11	1.7	13.2	813	3,257	39,100	0
Apr.	12.01		11	21.3	† 2	0	6.1	363	2,392	41,600	0
May	12.23		18	78.4	† 5	0	24.5	1,509	8,410	240,000	0
June	12.00		4	102	†25	0	27.9	1,661	8,987	216,000	0
July	12.65	10.52	29	282	9	10.6	116	7,115	11,947	156,000	0
Aug.	12.37	10.62	9	212	17	18.9	94.0	5,777	11,686	133,000	0
Sept.	12.56	10.82	5	240	1	34.0	134	7,997	16,409	151,000	0
Oct.	12.46	11.44	4	246	13	76.7	136	8,355	14,097	105,000	0
Nov.	12.12	11.81	30	160	9	112	135	8,047	5,857	34,500	0
Dec.	12.35	11.86	20	209	8	113	157	9,640	5,899	30,900	0
	12.65			282		0	79.1	57,394	98,946	1,176,700	951.8
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	3.86			7.99		0	2.24	70,796	122,050	1,451,459	1,174

** Period June 1900 - March 1914; September 1919 - March 1920; and 1924 - 1976

‡ Discharge measurement made on this day † And other days

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 29°34'00", longitude 104°27'10", 1.5 river miles (2.5 km) from the confluence with the Rio Grande, 1.9 miles (3 km) west of Ojinaga, Chihuahua, and 3.7 miles (6 km) west of Presidio, Texas. This stream enters the Rio Grande at river mile 954.7 (1,536.4 km), 13.8 river miles (22.2 km) upstream from the "Rio Grande below Rio Conchos" Gaging Station, and 294.1 river miles (473.3 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,568.04 feet (782.74 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 144 discharge measurements during the year, a continuous record of gage heights, and a rating curve which, above 15,000 second-feet (425 m^3/sec), was defined previously by related gage heights and records of discharge at the "Rio Grande below Rio Conchos" Gaging Station. Computations by shifting control methods. Records available: 1896 through 1976. Records of stage and measured discharge at this station began April 4, 1954. Prior to this date, flow records were determined from records of the Rio Grande at stations located upstream and downstream from the Rio Conchos confluence.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. La Boquilla Reservoir, La Colina Reservoir, La Rosetilla Reservoir, and Luis L. Leon Reservoir are located 250, (402), 242 (389), 186 (299), and 112 (180) river miles (km), respectively, upstream from this station. Francisco I. Madero Reservoir is located on the Rio San Pedro, a tributary which enters the Rio Conchos 174 river miles (280 km) upstream from this station. Power generation facilities: La Boquilla 14,647 kw., La Colina 3,620 kw., La Rosetilla 5,150 kw., Francisco I. Madero and Luis L. L. Leon, none.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 162,000 second-feet (4,590 m^3/sec) on September 11, 1904.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max. 148,900 (4,220)	Sept. 11, 1904	Min. 0	Several days 1953 & 1955
Monthly:	Max. 24,540 (695)	Sept. 1904	Min. 4.7 (0.13)	April 1955
Yearly:	Max. 3,710 (105)	1906	Min. 155 (4.39)	1953

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	406	194	177	84.4	90.8	533	1,500	3,390	‡ 3,570	‡ 1,260	‡ 263	249
2	‡ 399	‡ 195	‡ 192	‡ 83.3	118	‡ 519	‡ 1,470	‡ 3,990	2,530	1,310	261	‡ 215
3	357	194	‡ 207	93.9	‡ 234	519	1,200	2,880	‡ 1,060	1,290	‡ 255	185
4	378	‡ 188	229	95.0	381	‡ 876	1,730	‡ 2,790	816	‡ 1,270	255	241
5	‡ 388	179	‡ 167	‡ 99.9	‡ 304	996	‡ 1,680	2,730	1,150	1,220	‡ 256	232
6	388	‡ 174	160	93.9	145	798	1,650	‡ 2,670	‡ 1,490	1,250	255	‡ 235
7	‡ 385	171	162	‡ 94.3	‡ 87.9	‡ 858	‡ 1,630	2,560	918	770	254	257
8	367	184	‡ 175	213	84.8	925	1,510	2,120	‡ 678	‡ 463	‡ 254	263
9	‡ 371	‡ 185	294	‡ 343	90.1	‡ 946	‡ 1,500	‡ 2,490	572	367	258	‡ 280
10	367	180	‡ 335	133	‡ 87.9	996	1,490	2,500	‡ 445	364	245	272
11	378	‡ 174	191	87.2	116	‡ 1,190	1,470	‡ 2,450	925	‡ 352	‡ 222	569
12	‡ 374	174	‡ 103	‡ 71.0	‡ 65.0	1,440	‡ 4,200	2,420	1,260	334	237	378
13	367	‡ 166	109	65.3	154	1,460	2,710	‡ 2,370	‡ 1,330	319	243	‡1,150
14	‡ 360	160	137	‡ 94.6	158	‡ 1,560	‡ 2,800	2,440	1,350	313	249	512
15	360	155	‡ 144	126	164	1,440	3,480	2,460	‡ 1,500	‡ 738	‡ 277	335
16	‡ 360	‡ 147	172	89.3	162	‡ 1,440	‡ 4,800	‡ 2,440	1,560	374	260	‡ 300
17	360	141	‡ 165	89.7	1,070‡	1,430	4,170	2,450	1,440	330	266	289
18	360	‡ 135	136	91.1	632	‡ 1,430	3,810	‡ 2,730	1,500	‡ 311	‡ 267	283
19	‡ 357	130	‡ 128	‡ 85.1	‡ 696	1,380	‡ 2,700	2,810	1,380	293	259	‡ 283
20	371	‡ 129	119	45.9	494	1,380	2,620	‡ 2,570	‡ 1,420	290	259	266
21	‡ 374	167	113	‡ 36.7	‡ 285	‡ 1,370	‡ 2,690	2,520	1,360	290	284	298
22	378	171	‡ 106	36.7	262	1,410	2,660	2,540	‡ 1,350	‡ 284	‡ 290	284
23	‡ 367	‡ 170	106	‡ 52.6	271	‡ 1,360	‡ 2,520	‡ 2,510	1,360	283	285	‡ 249
24	367	182	‡ 102	56.9	‡ 308	1,310	2,820	2,460	‡ 1,330	283	281	269
25	323	‡ 182	100	63.6	353	‡ 1,310	2,740	‡ 2,440	1,380	275	‡ 275	265
26	‡ 273	178	‡ 118	‡ 71.3	‡ 424	1,400	‡ 2,520	2,510	1,330	‡ 268	273	262
27	246	‡ 172	97.8	77.3	477	1,200	2,680	‡ 2,500	‡ 1,390	264	269	‡ 268
28	‡ 234	165	93.6	‡ 78.4	‡ 590	‡ 1,680	‡ 2,760	2,570	1,310	273	203	272
29	221	173	‡ 94.3	72.4	526	1,580	2,890	2,710	‡ 1,290	‡ 267	‡ 75.9	306
30	‡ 222		122	‡ 80.2	533	‡ 1,460	‡ 2,740	‡ 2,600	1,290	259	156	‡ 290
31	215		‡ 79.5		‡ 537		2,790	2,790		258		276
Sum	10,673	4,915	4,634.2	2,805.0	9,900.5	36,196	77,930	81,410	40,284	16,222	7,486.9	9,833

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	6.82	6.00	2	477	31	198	344	21,176	43,597	131,293	19,879
Feb.	6.07	5.74	† 2	212	20	120	170	9,746	37,536	124,386	3,336
Mar.	6.73	5.48	9	498	31	68.9	149	9,196	52,564	201,219	4,171
Apr.	6.50	5.25	9	413	22	35.0	93.6	5,565	33,250	86,212	5,565
May	9.84	5.31	17	2,220	†12	17.7	319	19,628	34,690	123,749	10,932
June	9.21	6.79	28	1,880	2	505	1,210	71,804	44,214	91,767	6,008
July	14.24	7.61	12	7,630	3	865	2,510	154,562	71,899	154,562	23,833
Aug.	14.63	8.76	2	8,020	8	1,590	2,620	161,420	97,611	243,660	31,728
Sept.	11.45	6.33	1	4,840	† 9	378	1,340	79,908	173,680	468,680	39,372
Oct.	8.96	5.97	15	1,940	†30	258	523	32,180	91,573	226,877	23,078
Nov.	6.14	5.22	21	312	29	58.3	250	14,849	44,620	125,311	7,484
Dec.	8.89	5.61	13	1,710	3	166	317	19,502	31,362	51,114	18,408
Yearly	14.63	5.22		8,020		17.7	823	599,536	756,596	1,082,065	463,767
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	4.46	1.59		227		0.50	23.3	739,517	933,251	1,334,715	572,051

‡ Discharge measurement made on this day † And other days

** Period June 1900-March 1914; September 1914-March 1920; and 1924-1976

ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the left bank 300 feet (91.4 m) upstream from the highway bridge on Farm-to-Market Road 170 at latitude 29°31'15", longitude 104°17'40", about 2,000 feet (610 m) from the confluence with the Rio Grande, and about 6 miles (9.7 km) southeast of Presidio, Texas. This stream enters the Rio Grande near the lower end of the Presidio Valley at river mile 941.3 (1,514.9 km); 9.7 river miles (15.6 km) downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, and 307.5 river miles (494.9 km) downstream from the American Dam at El Paso, Texas. Measurements of high flows are made from the highway bridge. The zero of the gage is 2,541.61 feet (774.68 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 64 discharge measurements during the year at low and medium flows, a high flow rating curve determined by slope-area calculations, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1976.

REMARKS: A small irrigation reservoir (San Esteban) 10.5 miles (16.9 km) south of Marfa, Texas and irrigation diversions below the reservoir modify the flow of this spring-fed creek. Backwater from the Rio Grande begins to affect the station record when the flow at the station on the Rio Grande below Rio Conchos reaches about 35,000 second-feet (991 m^3/sec).

EXTREME FLOWS FROM RECORDS: Momentary: Max. 56,400 second-feet, (1,600 m^3/sec), determined by slope-area calculations, on September 2, 1962, with a gage height of 13.54 feet (4.13 m). Min. ∅0.1 second-foot (0.003 m^3/sec) on July 25, 1953 and several days in August 1958.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	12,400 (351)	Sept. 21, 1974	Min.	0.1 (0.003)	July 25, 1953 and several days in August 1958
Monthly:	Max.	998 (28.3)	Sept. 1974	Min.	0.4 (0.01)	June 1974
Yearly:	Max.	97.1 (2.75)	1974	Min.	4.3 (0.12)	1951

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.6	1.7	‡ 1.2	‡ .8	.5	‡ 0.5	‡ 0.4	59.0	‡ 85.9	‡ 1.8	‡ 1.2	‡ 1.5
2	1.5	‡ 1.8	1.2	.8	.5	.6	.4	‡ 142	43.3	.8	1.3	1.6
3	1.5	1.8	1.3	.8	‡ .4	.7	.4	1.5	.4	1.8	1.3	1.7
4	1.4	1.8	1.3	.8	.4	124	.5	1.2	.3	‡ 1.8	1.4	1.8
5	‡ 1.4	1.8	1.3	‡ .8	.5	2.3	.5	1.2	10.1	1.7	1.4	1.9
6	1.4	1.8	1.3	.8	.5	1.8	‡ .5	1.2	147	1.6	1.5	‡ 2.0
7	1.5	1.8	1.4	.7	.5	‡ 1.5	.5	1.2	‡ 160	1.5	1.5	2.0
8	1.5	1.8	‡ 1.4	.7	.5	1.4	.4	1.2	8.0	1.4	‡ 1.6	2.0
9	1.6	‡ 1.8	1.4	.7	.6	1.2	.4	‡ 1.2	3.9	1.3	1.6	2.0
10	1.6	1.8	1.3	.7	‡ .6	1.1	.4	1.2	1.4	1.2	1.6	2.0
11	1.7	1.8	1.3	.6	.6	1.0	.3	1.2	1.9	1.1	1.6	2.0
12	‡ 1.7	1.8	1.2	‡ .6	.6	.9	‡ .3	1.2	1.6	‡ 1.0	1.7	2.0
13	1.7	1.8	1.2	.6	.6	.7	‡ 203	1.2	‡ 11.8	1.1	1.7	‡17.3
14	1.7	1.7	1.2	.6	.6	‡ .6	‡ 367	1.2	1.9	1.2	1.7	19.3
15	1.7	1.7	1.1	.6	.6	.6	‡ 353	1.2	1.5	1.2	‡ 1.7	‡ 7.7
16	1.6	1.7	‡ 1.1	.7	4.2	.5	174	‡ 1.2	2.7	1.3	1.7	1.5
17	1.6	‡ 1.7	1.1	.7	‡ 4.4	.5	458	21.6	210	1.4	1.7	1.5
18	1.6	1.8	1.1	.7	‡ 1.8	.4	222	22.7	122	‡ 1.5	1.7	1.5
19	‡ 1.6	1.8	1.0	‡ .7	1.6	.4	‡ 45.1	3.8	99.0	1.5	1.7	1.5
20	1.6	1.8	1.0	.7	1.4	.3	.7	1.0	‡ 32.1	1.4	1.7	‡ 1.5
21	1.5	1.9	1.0	.7	1.2	‡ .3	134	1.0	1.7	1.4	1.7	1.5
22	1.5	2.0	‡ 1.0	.7	1.0	.3	7.6	1.0	1.5	1.4	‡ 1.7	1.5
23	1.4	‡ 2.0	1.0	.6	.8	.3	6.5	‡ 1.0	1.6	1.3	1.7	1.5
24	1.4	1.9	1.0	.6	‡ .6	.3	145	1.0	1.8	1.3	1.6	1.5
25	1.3	1.8	1.0	.6	.6	.4	5.7	1.1	1.7	1.2	1.6	1.5
26	‡ 1.3	1.7	1.0	‡ .6	.6	.4	‡ 1.1	1.2	1.7	‡ 1.2	1.6	1.5
27	1.4	1.5	1.0	.6	.6	.4	1.1	1.2	‡ 1.8	1.2	1.6	‡ 1.5
28	1.4	1.4	1.0	.6	.6	‡ .4	1.0	1.3	1.8	1.2	1.5	1.5
29	1.5	1.3	‡ 1.0	.6	.5	.4	1.0	1.3	1.8	1.2	‡ 1.5	1.5
30	1.6		.9	‡ .6	.5	.4	‡ 1.0	‡ 1.4	1.8	1.2	1.5	1.5
31	1.7		.9		.5		43.1	1.1		1.2		1.5
Sum	47.5	51.0	35.2	20.3	28.9	144.6	2,174.9	279.8	962.0	42.4	47.3	90.8

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1932-1976: Acre-Feet Average	Maximum	Minimum
Jan.	7.27	7.26	†11	∅ 1.7	†25	∅ 1.3	1.5	94.2	142	273	46.4
Feb.	7.29	7.27	†22	∅ 2.0	29	∅ 1.3	1.8	101	197	3,120	41.5
Mar.	7.28	7.24	† 7	∅ 1.4	†30	∅ .9	1.1	69.8	164	1,018	46.4
Apr.	7.24	7.21	† 1	∅ .8	†11	∅ .6	.7	40.3	218	1,140	40.3
May	7.83	7.19	16	219	† 3	∅ .4	.9	57.3	970	8,520	34.7
June	8.12	7.14	5	934	†20	∅ .3	4.8	287	1,923	12,653	24.2
July	9.70	6.75	15	2,690	†11	∅ .3	70.2	4,314	3,369	18,500	46.8
Aug.	7.99	7.02	17	793	†20	∅ 1.0	9.0	555	3,379	16,330	56.9
Sept.	8.81	6.97	17	1,660	4	∅ .3	32.1	1,908	4,966	59,380	128
Oct.	7.15	7.14	† 1	∅ 1.3	12	∅ 1.0	1.4	84.1	1,863	19,200	36.9
Nov.	7.14	7.11	†12	∅ 1.7	1	∅ 1.2	1.6	93.8	211	2,554	35.7
Dec.	7.42	7.12	13	61.2	† 1	∅ 1.5	2.9	180	151	408	39.3
	9.70	6.75		2,690		∅ 0.3	10.7	7,784.5	17,553	70,273.8	3,109.2
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.96	2.06		76.2		0.009	0.30	9,602	21,652	86,683	3,835

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

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, water-stage recorders (graphic and digital), and binary decimal transmitter located on the left bank at latitude 29°31'05", longitude 104°17'35", and river mile 940.9 (1,514.2 km); 0.4 river mile (0.6 km) downstream from Alamito Creek, 10.1 river miles (16.3 km) downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua and 307.9 river miles (495.5 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,536.00 feet (772.97 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 54 discharge measurements during the year and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: 1955 through 1976. Records are also available from 1896 through June 13, 1932 for a station located about 12.1 river miles (19.5 km) downstream from the Rio Conchos and 1.3 miles (2.1 km) upstream from Alamito Creek; and from June 14, 1932 through 1954 for a station about 2.0 river miles (3.2 km) downstream from the Rio Conchos and 11.4 river miles (18.3 km) upstream from Alamito Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The transmitter, operated in cooperation with the National Weather Service, relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 54,300 second-feet (1,540 m^3/sec) on October 1, 1958 with a gage height of 20.37 feet (6.21 m). The greatest recorded flow occurred September 11, 1904, with a peak flow estimated at 162,000 second-feet (4,590 m^3/sec) at a station 11.8 miles (19.0 km) upstream. Min. 0.2 second-foot (0.01 m^3/sec) several days in July 1955, and on June 30, 1958.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	52,200 (1,480)	Oct. 1, 1958	Min.	0.2 (0.01)	Several days July 1955; and June 30, 1958
Monthly:	Max.	17,100 (484)	Oct. 1958	Min.	3.6 (0.10)	May 1955
Yearly:	Max.	2,590 (73.3)	1958	Min.	283 (8.01)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	438	270	‡ 216	‡ 81.6	102	‡ 539	‡ 1,510	3,930	‡ 3,820	1,560	397	407
2	440	‡ 271	209	81.7	148	526	1,460	5,540	2,840	1,610	394	409
3	421	268	204	90.5	‡ 161	518	1,320	3,590	1,150	1,620	390	374
4	423	258	228	106	323	976	1,570	3,410	608	‡ 1,580	387	388
5	444	258	217	‡ 123	328	1,030	1,670	3,180	1,260	1,530	374	406
6	449	249	200	122	213	819	‡ 1,620	3,030	1,810	1,490	365	‡ 406
7	441	244	197	132	133	‡ 848	1,610	2,970	‡ 1,490	1,140	363	407
8	435	231	213	141	114	891	1,470	2,410	837	694	‡ 378	417
9	441	‡ 249	196	358	131	892	1,490	‡ 2,710	664	460	378	417
10	439	245	337	237	‡ 148	950	1,490	2,740	498	481	380	412
11	438	231	230	158	136	1,050	1,470	2,620	757	464	360	590
12	‡ 437	219	156	‡ 137	138	1,330	‡ 4,070	2,490	1,420	‡ 425	372	620
13	423	214	132	113	162	1,420	‡ 3,130	2,380	‡ 1,770	408	394	1,340
14	425	207	133	94.7	188	‡ 1,550	3,360	2,420	1,690	396	402	805
15	432	220	166	131	177	1,410	‡ 3,700	2,380	1,720	859	432	‡ 566
16	428	245	‡ 174	118	190	1,410	5,840	‡ 2,360	1,850	526	438	502
17	430	‡ 226	184	103	742	1,410	4,810	2,320	1,750	473	438	481
18	426	202	177	110	‡ 875	1,410	4,630	2,870	1,920	‡ 439	467	477
19	‡ 429	197	150	‡ 113	632	1,360	‡ 3,000	2,980	1,710	418	465	484
20	425	206	140	87.1	606	1,380	2,860	2,740	‡ 1,640	402	451	‡ 483
21	429	212	149	64.6	399	‡ 1,370	3,320	2,620	1,600	406	454	484
22	434	189	‡ 168	53.2	344	1,410	3,210	2,670	1,600	403	‡ 483	496
23	430	‡ 221	152	43.3	339	1,350	3,040	‡ 2,710	1,610	418	478	457
24	421	211	137	43.1	‡ 359	1,300	3,310	2,650	1,620	412	457	447
25	420	210	131	46.1	385	1,290	3,440	2,580	1,650	408	453	446
26	‡ 364	210	142	‡ 69.5	451	1,320	‡ 2,900	2,650	1,630	‡ 390	444	438
27	330	206	145	74.4	465	1,230	2,910	2,640	‡ 1,680	365	423	‡ 435
28	323	217	124	73.1	589	‡ 1,570	3,280	2,700	1,610	376	393	430
29	308	218	‡ 135	81.6	546	1,640	3,160	2,890	1,600	397	‡ 261	449
30	293		127	‡ 89.2	549	1,450	‡ 3,140	‡ 2,900	1,570	399	278	449
31	278		113		555		3,090	2,490		391		423
Sum	12,694	6,604	5,382	3,275.7	10,628	35,649	86,880	88,570	47,374	21,340	12,149	15,345

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	2.36	1.97	3	478	31	263	409	25,178	43,766	116,947	20,968
Feb.	2.00	1.72	1	278	22	162	228	13,099	37,535	110,937	4,745
Mar.	2.16	1.49	10	361	31	88.2	174	10,675	52,631	223,755	4,583
Apr.	2.24	1.30	9	406	†23	40.6	109	6,497	32,710	89,704	6,497
May	3.32	1.39	18	1,380	1	61.5	343	21,030	34,962	124,046	12,147
June	3.59	2.41	29	1,830	† 2	508	1,190	70,709	42,831	89,211	5,927
July	6.02	3.00	15	10,200	8	1,000	2,800	172,324	78,083	172,324	24,764
Aug.	5.63	3.75	1	8,510	8	1,800	2,860	175,676	103,812	270,367	30,365
Sept.	5.00	2.39	1	5,050	11	278	1,580	93,965	190,840	469,832	46,022
Oct.	3.48	1.98	† 2	1,660	27	268	688	42,327	109,934	335,405	24,823
Nov.	2.37	1.95	†21	483	†29	254	405	24,097	48,761	113,407	8,741
Dec.	3.67	2.14	13	1,980	1	350	495	30,436	34,463	52,176	19,890
	6.02	1.30		10,200		40.6	945	686,063	810,328	1,238,356	495,643
Yearly	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	1.83	0.40		289		1.15	26.8	846,259	999,540	1,527,512	611,376

‡ Discharge measurement made on this day † And other days

TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29°12'00", longitude 103°36'15", 2.6 creek miles (4.2 km) from the confluence with the Rio Grande, and about 8.5 miles (13.7 km) south of Terlingua, Brewster County, Texas. This creek enters the Rio Grande at river mile 876.6 (1,410.7 km), the lower end of Santa Helena Canyon, and 372.2 river miles (599.0 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,200.64 feet (670.76 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 62 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1976.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 34,900 second-feet (988 m³/sec) on May 24, 1935 with a gage height of 17.59 feet (5.36 m) on a gage 0.3 mile (0.5 km) downstream. Min. 0.1 second-foot (0.003 m³/sec) several days in June and July 1950.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	17,200 (487)	June 1, 1937	Min. 0.1 (0.003)	Several days in June and July 1950
Monthly:	Max.	1,150 (32.6)	Sept. 1974	Min. 0.8 (0.02)	October 1934
Yearly:	Max.	146 (4.13)	1937	Min. 5.5 (0.16)	1943

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.1	3.0	2.8	3.2	2.4	‡ 1.8	13.4	102	‡ 443	‡ 2.3	‡ 19.7	‡ 2.3
2	3.0	‡ 3.0	‡ 2.8	‡ 3.2	2.3	1.8	‡ 2.3	‡ 296	42.1	2.6	4.2	2.3
3	3.0	3.1	2.8	3.0	‡ 2.3	1.7	52.0	164	7.0	3.0	3.6	2.3
4	3.0	3.1	2.9	2.9	2.3	1.7	58.3	29.6	29.8	3.4	3.3	2.3
5	‡ 3.0	3.2	2.9	2.8	2.3	1.6	7.2	9.8	220	‡ 3.7	3.4	2.3
6	3.0	3.2	3.0	‡ 2.6	2.3	1.6	‡ 5.8	5.2	67.8	3.6	3.5	‡ 2.3
7	2.9	3.3	3.0	2.7	464	1.6	3.4	3.3	‡ 225	3.6	3.5	2.3
8	2.9	3.3	3.1	2.7	71.0	1.5	‡ 1.8	2.9	699	3.5	3.6	2.3
9	2.9	‡ 3.4	‡ 3.1	2.8	7.0	‡ 1.5	1.8	2.4	49.6	3.4	‡ 3.7	2.3
10	2.9	3.4	3.2	2.9	‡ 2.5	1.5	1.8	‡ 2.0	29.3	3.3	3.6	2.3
11	2.8	3.4	3.3	3.0	2.6	1.8	1.8	1.8	8.9	3.3	3.5	2.3
12	‡ 2.8	3.3	3.3	3.0	668	1.5	44.8	2.2	2.7	‡ 3.2	3.4	3.0
13	2.8	3.3	3.4	‡ 3.1	28.6	3.5	‡ 299	2.0	‡ 2.7	3.2	3.3	‡ 676
14	2.8	3.3	3.5	3.1	8.2	2.7	1,380	1.9	2.3	30.3	3.2	397
15	2.8	3.2	‡ 3.6	3.1	5.7	‡ 1.6	431	231	82.3	176	‡ 3.1	68.8
16	2.9	3.2	3.6	3.1	5.0	1.6	‡1,710	169	‡ 33.6	61.3	3.1	‡ 21.0
17	2.9	‡ 3.2	3.6	3.0	‡ 270	1.6	324	‡ 26.4	43.2	33.7	3.0	10.8
18	2.9	3.2	3.5	3.0	97.5	1.6	1,240	182	2,110	3.2	75.8	6.0
19	‡ 2.9	3.1	3.5	3.0	33.7	1.7	252	762	222	‡ 2.9	71.6	3.1
20	2.9	3.1	3.5	‡ 3.0	26.4	1.7	‡ 120	104	202	3.0	47.6	2.0
21	2.9	3.1	3.4	2.9	21.5	‡ 1.7	1,110	11.8	58.6	3.0	4.6	‡ 2.0
22	2.9	3.0	3.4	2.7	13.7	1.7	495	2.7	‡ 9.4	3.1	‡ 3.6	2.1
23	3.0	‡ 3.0	‡ 3.4	2.6	8.5	1.9	25.9	‡ 2.5	5.0	3.4	3.5	2.1
24	3.0	3.0	3.4	2.5	4.7	1.9	27.4	2.5	3.5	3.5	3.3	2.2
25	3.0	3.0	3.3	2.3	‡ 2.4	419	15.2	2.5	441	3.2	3.2	2.2
26	3.0	2.9	3.3	‡ 2.2	2.3	21.4	19.5	2.5	72.0	‡ 3.3	3.0	2.3
27	‡ 3.0	2.9	3.3	2.2	2.2	36.7	‡ 16.5	16.5	75.8	3.2	2.9	2.3
28	3.0	2.9	3.3	2.3	2.1	54.5	18.0	3.3	‡ 7.7	82.8	2.7	‡ 2.4
29	3.0	2.9	3.2	2.4	2.1	38.8	183	2.5	5.9	141	2.6	2.4
30	3.0		‡ 3.2	‡ 2.4	2.0	‡ 19.2	203	‡ 40.9	4.1	93.8	2.4	2.4
31	3.0		3.2		1.9		955	212		60.0		2.5
Sum	91.0	91.0	100.8	83.7	1,767.5	632.4	9,018.9	2,399.2	5,205.3	752.8	301.5	1,237.9

Month	Current Year 1976								Period 1932-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	2.44	2.43	1	∅ 3.1	†11	∅ 2.8	2.9	180	193	875	82.7
Feb.	2.45	2.42	† 9	∅ 3.4	†26	∅ 2.9	3.1	180	243	4,400	73.4
Mar.	2.44	2.40	†15	∅ 3.6	† 1	∅ 2.8	3.3	200	273	2,410	72.4
Apr.	2.45	2.40	† 1	∅ 3.2	†26	∅ 2.2	2.8	166	936	15,500	55.1
May	5.50	2.24	12	6,360	19	∅ 1.9	57.0	3,506	3,547	26,000	81.3
June	6.03	1.98	25	8,050	† 8	∅ 1.5	20.9	1,243	6,321	54,800	59.5
July	6.67	1.92	16	9,930	† 9	∅ 1.8	291	17,889	8,642	28,700	518
Aug.	4.80	2.22	15	4,470	11	∅ 1.8	77.4	4,759	6,261	33,617	123
Sept.	5.34		18	6,040	14	∅ 2.3	174	10,325	8,684	68,375	123
Oct.	3.81		15	2,200	1	∅ 2.3	24.3	1,493	3,248	27,900	50.8
Nov.	2.81	2.39	18	152	30	∅ 2.4	10.0	598	360	2,980	64.9
Dec.	3.81	2.37	13	1,200	†20	∅ 2.0	39.9	2,455	328	3,080	90.0
	6.67			9,930		∅ 1.5	59.2	42,994	39,036	105,807	3,958
Yearly	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	2.03			281		0.04	1.68	53,033	48,151	130,513	4,882

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

RIO GRANDE AT JOHNSON RANCH NEAR CASTOLON, TEXAS AND SANTA ELENA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and digital water-stage recorder located on the left bank at latitude 29°02'05", longitude 103°23'30", and river mile 855.3 (1,376.5 km); 2 miles (3.2 km) west-northwest of old Johnson Ranch headquarters, 5.5 river miles (8.9 km) downstream from Smoky Creek, 13.0 river miles (20.9 km) upstream from Chisos Crossing and the Chihuahua-Coahuila state line, 14.0 river miles (22.5 km) downstream from Castolon, Brewster County, Texas and Santa Helena Ranch, Chihuahua, and 393.5 river miles (633.3 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,045.30 feet (623.41 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 58 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 1976.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 61,900 second-feet (1,750 m^3/sec) on September 27, 1958 with a gage height of 24.70 feet (7.53 m). A flow estimated at 97,000 second-feet (2,750 m^3/sec) with a stage of 24.6 feet (7.50 m) occurred at this station site on October 3, 1932. Min. no flow several days in 1953, 1955, 1957, and 1958.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 56,900 (1,610)	Sept. 10, 1942	Min. 0	Several days 1953 1955, 1957 & 1958
Monthly:	Max. 23,600 (668)	Sept. 1942	Min. 0	May 1953
Yearly:	Max. 4,780 (135)	1942	Min. 167 (4.73)	1953

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	422	305	191	125	39.6	‡ 477	1,370	3,440	‡ 3,650	‡ 1,500	‡ 404	‡ 318
2	450	‡ 301	‡ 199	‡ 140	44.9	470	‡ 1,320	‡ 5,120	3,630	1,510	447	353
3	455	301	201	106	‡ 49.0	460	1,380	4,060	2,700	1,560	441	454
4	454	289	189	89.3	52.3	448	1,590	3,370	1,630	1,580	430	427
5	‡ 428	282	182	87.4	75.5	829	1,420	3,190	1,140	‡ 1,540	428	395
6	449	275	188	‡ 82.4	172	898	1,620	2,970	2,030	1,500	413	‡ 422
7	453	265	196	89.0	1,170	773	1,550	2,840	‡ 1,900	1,460	396	423
8	443	261	189	106	295	766	‡ 1,520	2,760	2,100	1,230	383	416
9	442	‡ 256	‡ 188	99.9	168	‡ 799	1,400	2,390	1,140	830	‡ 395	422
10	430	254	192	115	‡ 127	806	1,320	‡ 2,630	903	650	405	421
11	433	250	180	257	112	851	1,320	2,630	759	608	395	425
12	‡ 438	245	264	215	643	938	1,400	2,570	763	‡ 624	378	481
13	434	234	210	166	315	1,300	‡ 4,370	2,500	‡ 1,320	567	382	1,240
14	424	225	176	139	217	3,160	4,720	2,410	1,660	670	423	1,760
15	424	217	‡ 148	103	145	‡ 1,510	4,230	2,430	1,570	1,450	‡ 446	997
16	429	204	146	87.2	160	1,430	‡ 7,400	2,590	‡ 1,900	1,180	461	‡ 693
17	429	‡ 214	145	74.7	‡ 363	1,420	6,870	‡ 2,460	1,840	724	506	555
18	429	231	154	96.0	1,260	1,420	6,400	2,490	3,160	600	504	505
19	‡ 433	218	159	97.1	941	1,350	5,230	3,430	2,230	‡ 550	543	491
20	434	204	161	‡ 82.4	596	1,290	‡ 3,470	3,010	1,900	515	521	507
21	424	185	146	89.1	652	‡ 1,310	5,550	2,620	1,720	484	498	‡ 523
22	428	194	132	80.5	492	1,300	4,050	2,520	‡ 1,600	482	‡ 480	499
23	439	‡ 201	‡ 137	66.0	365	1,290	3,000	‡ 2,560	1,550	483	514	545
24	447	182	151	58.0	321	1,270	2,850	2,510	1,570	475	533	507
25	424	217	146	50.5	‡ 310	1,500	3,360	2,470	1,790	457	520	471
26	428	225	126	‡ 44.2	331	1,350	2,920	2,410	1,650	‡ 454	524	480
27	‡ 405	220	118	39.8	363	1,210	‡ 2,770	2,470	1,640	445	509	481
28	368	213	121	36.1	415	1,740	3,050	2,500	‡ 1,680	461	483	‡ 464
29	351	189	113	37.5	454	1,600	3,450	2,670	1,540	568	480	451
30	339		‡ 112	‡ 42.6	483	‡ 1,580	3,330	‡ 2,720	1,540	532	413	463
31	319		111		470		3,830	2,740		477		479
Sum	13,105	6,857	5,071	2,906.7	11,601.3	35,545	98,060	87,480	54,205	26,166	13,655	17,068

Month	Current Year 1976								Period 1968-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	2.57	2.22	4	472	31	307	423	25,993	44,680	118,276	23,830
Feb.	2.22	1.85	1	307	24	177	236	13,601	37,653	111,869	7,743
Mar.	2.16	1.54	12	282	†30	102	164	10,058	51,469	211,676	6,067
Apr.	2.35	1.10	2	368	28	31.9	96.9	5,765	32,176	98,106	5,765
May	5.72	1.16	7	3,560	1	38.0	374	23,011	36,275	116,801	14,454
June	8.89	2.51	14	8,210	4	430	1,180	70,502	45,906	96,474	5,839
July	10.90	3.52	21	11,700	5	1,060	3,160	194,499	88,648	194,499	29,430
Aug.	7.97	4.34	2	7,230	9	2,120	2,820	173,514	113,834	242,539	30,689
Sept.	7.57	2.78	1	6,280	12	663	1,810	107,514	204,477	472,093	44,713
Oct.	5.04	2.39	15	2,820	27	440	844	51,900	126,142	372,000	28,013
Nov.	2.55	2.18	19	556	30	338	455	27,084	51,893	121,232	13,267
Dec.	4.77	2.08	14	2,320	2	285	551	33,854	36,378	54,064	20,509
Yearly	10.90	1.10		11,700		31.9	1,020	737,295	869,531	1,332,082	615,314
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	3.32	0.34		331		0.90	28.9	909,453	1,072,566	1,704,798	758,990

‡ Discharge measurement made on this day † And other days

RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS AND RANCHO SANTA ROSA, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorders (graphic and digital) located on the left bank at latitude 29°46'50", longitude 101°45'20", and river mile 651.0 (1,047.7 km); 500 feet (152 m) downstream from the Terrell-Val Verde County Line, 16.9 river miles (27.2 km) upstream from Langtry, Texas, and 597.8 river miles (962.1 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 1,157.17 feet (352.71 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 21 discharge measurements during the year, 20 by the United States Section and 1 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: September 1961 through 1976.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The concrete control weir was placed in operation on February 21, 1967.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 137,000 second-feet (3,880 m^3/sec) on September 20, 1974 with a gage height of 36.64 feet (11.17 m). Min. 188 second-feet (5.32 m^3/sec) on August 19, 1965.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	81,600 (2,310)	Sept. 20, 1974	Min.	217 (6.15)	July 1, 1968
Monthly:	Max.	10,700 (303)	Sept. 1966	Min.	322 (9.12)	March 1968
Yearly:	Max.	2,480 (70.2)	1974	Min.	981 (27.8)	1963

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	680	632	‡ 486	362	994	629	1,620	4,720	2,830	1,740	‡ 854	739
2	725	‡ 623	477	356	640	681	1,660	4,000	3,080	1,680	825	722
3	732	609	469	418	‡ 324	674	1,630	3,650	3,350	1,700	786	716
4	702	596	452	1,300	288	672	1,580	5,730	3,820	1,660	757	657
5	710	589	440	‡ 419	322	672	1,560	3,960	2,920	1,690	743	629
6	722	575	434	396	347	662	1,590	3,590	2,110	1,720	733	‡ 704
7	729	575	434	407	2,760	641	1,460	3,270	‡ 2,230	1,710	733	722
8	728	567	437	360	2,760	873	1,630	3,100	2,580	1,690	733	696
9	710	562	438	358	961	989	1,590	3,050	3,510	1,660	725	704
10	717	554	436	352	1,040	915	1,560	2,960	2,440	1,590	710	‡ 710
11	722	553	455	335	687	902	1,530	2,530	1,550	1,330	708	710
12	‡ 725	543	449	333	566	956	‡ 1,410	2,790	1,230	1,100	710	710
13	720	543	441	346	473	935	1,520	2,720	1,780	947	710	742
14	710	541	436	342	421	‡ 1,050	2,750	2,600	1,090	890	710	762
15	710	535	427	415	564	1,990	4,230	2,520	1,140	908	‡ 716	905
16	717	528	479	442	625	2,670	4,810	2,470	1,490	1,020	716	1,930
17	722	‡ 514	456	401	‡ 527	1,910	6,860	2,600	1,830	1,660	750	1,400
18	710	502	426	383	463	1,510	12,200	2,650	3,050	‡ 1,340	758	1,110
19	705	500	412	‡ 355	1,330	1,430	5,930	2,990	4,960	1,160	764	966
20	710	484	400	339	1,190	1,380	6,460	3,670	‡ 3,930	952	787	‡ 885
21	710	483	386	317	1,630	1,370	5,010	3,830	2,390	870	794	832
22	710	489	‡ 385	310	1,010	1,360	4,930	3,100	2,030	834	806	796
23	715	476	387	315	804	1,330	5,750	‡ 2,720	1,890	801	806	794
24	722	463	397	320	832	1,360	4,800	2,630	1,760	782	782	792
25	715	459	395	304	762	1,480	3,590	2,620	1,960	782	775	772
26	‡ 722	453	394	299	713	1,470	3,220	2,630	1,880	784	779	774
27	733	459	383	300	597	1,410	4,010	2,640	1,990	794	794	766
28	714	449	385	297	558	1,780	3,190	2,430	1,930	808	775	747
29	706	470	393	520	544	1,370	3,080	3,180	1,800	1,220	761	745
30	686		384	785	567	1,610	3,760	2,670	1,830	840	745	743
31	662		376		605		5,450	2,970		840		748
Sum	22,101	15,326	13,149	12,177	25,904	36,681	110,370	96,990	72,380	37,502	22,745	25,628

Month	Current Year 1976								Period 1968-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
				High		Low					
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	2.15	2.06	† 2	746	31	641	713	43,837	58,752	122,084	40,143
Feb.	2.06	1.87	1	641	†28	444	528	30,399	50,437	115,301	22,435
Mar.	1.92	1.79	1	492	†23	371	424	26,081	68,535	224,767	19,789
Apr.	4.43	1.68	30	5,170	26	281	406	24,153	54,548	129,796	20,200
May	5.26	1.68	7	7,680	† 4	231	836	51,380	54,457	120,734	28,616
June	3.55	2.03	15	4,450	1	607	1,220	72,756	65,448	101,462	22,463
July	11.21	2.55	18	13,600	7	1,320	3,560	218,916	107,557	218,916	51,780
Aug.	4.48	2.99	4	6,260	11	2,320	3,130	192,377	136,735	212,846	45,474
Sept.	5.36	2.33	3	7,860	15	977	2,410	143,564	238,691	590,037	76,940
Oct.	3.00	2.18	29	2,350	†23	782	1,210	74,384	153,215	396,655	46,372
Nov.	2.24	2.11	† 1	858	11	698	758	45,114	68,517	129,741	37,160
Dec.	2.93	2.04	16	2,170	5	618	827	50,832	52,143	71,001	36,914
Yearly	11.21	1.68		18,600		281	1,340	973,793	1,109,085	1,796,884	903,650
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	3.42	0.51		527		7.96	38.0	1,201,174	1,368,056	2,216,456	1,114,652

‡ Discharge measurement made on this day † And other days

PECOS RIVER NEAR LANGTRY, TEXAS

DESCRIPTION: Concrete control weir, bubbler gage, and water-stage recorders (graphic and digital) located on the right bank at latitude 29°48'10", longitude 101°26'45", about 7.5 miles (12.1 km) east of Langtry, Texas, 9.5 river miles (15.3 km) upstream from the Pecos High Bridge, and 15.0 river miles (24.1 km) from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 610.0 (981.7 km); 24.1 river miles (38.8 km) downstream from Langtry, Texas, and 638.8 river miles (1,028.0 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 1,133.08 feet (345.36 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 discharge measurements during the year, 21 by the United States Section and 3 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on stable control weir rating curves defined by meter measurements. Records available: July 1967 through 1976. Records are also available for Pecos River near Comstock, 9.5 river miles (15.3 km) downstream, from March 17 through December 3, 1898 and May 1900 through October 7, 1954; for Pecos River near Shumla, 3.5 river miles (5.6 km) upstream, from October 8, 1954 through June 1967; and for Pecos River at Mouth near Comstock, from March 1961 through July 2, 1968.

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 (26,800 m3/sec) at the gaging station near the railroad bridge 9.5 river miles (15.3 km) downstream, exceeded a gage height of 100 feet (30.5 m) at this station. This station was placed in operation June 30, 1967.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	253	239	‡ 238	205	225	274	144	611	418	341	‡ 614	359
2	252	‡ 271	242	206	223	261	142	603	426	323	554	357
3	249	266	236	215	‡ 201	191	146	578	397	318	533	355
4	246	281	233	218	189	177	157	570	380	‡ 326	514	358
5	‡ 246	274	231	‡ 230	199	172	173	561	363	343	497	358
6	246	263	227	229	227	171	‡ 164	549	350	452	488	‡ 353
7	245	256	224	235	268	170	157	540	‡ 349	399	487	342
8	239	253	231	224	339	169	157	530	363	362	477	339
9	244	253	228	213	286	166	170	520	508	343	469	328
10	242	250	226	205	270	164	170	509	773	337	469	324
11	248	251	226	208	248	164	697	503	560	326	‡ 460	336
12	248	250	234	211	332	167	2,530	496	461	311	452	329
13	245	249	228	211	260	167	668	489	416	309	452	346
14	242	249	225	205	230	‡ 161	442	477	387	311	450	363
15	242	251	‡ 223	214	225	161	377	470	375	317	‡ 444	345
16	240	253	224	246	220	165	811	‡ 462	356	313	444	331
17	242	‡ 249	219	233	‡ 228	163	2,500	461	354	308	451	329
18	239	238	218	220	233	167	10,600	448	352	‡ 299	436	326
19	‡ 237	240	228	‡ 212	220	172	3,170	450	355	298	422	324
20	242	245	228	207	220	166	1,430	437	740	299	412	‡ 318
21	242	242	221	198	212	160	857	417	940	290	403	305
22	242	237	218	191	208	154	726	405	617	284	387	301
23	246	235	220	192	201	149	5,570	397	487	288	380	305
24	246	234	222	199	197	149	1,430	389	433	297	383	306
25	249	231	225	195	191	‡ 153	916	379	401	296	388	306
26	243	‡ 234	219	183	194	154	957	370	389	289	380	305
27	246	234	214	185	190	151	784	359	402	327	365	301
28	240	231	211	190	187	151	744	369	366	421	358	302
29	238	233	216	200	184	148	694	406	358	1,280	358	301
30	238		214	201	182	147	653	‡ 368	351	828	361	301
31	238		208		181		630	355		689		289
Sum	7,555	7,212	6,957	6,281	6,970	5,034	38,766	14,478	13,427	11,924	13,288	10,142

Month	Current Year 1976								Period July 1967-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	2.16	2.10	2	256	† 7	235	244	14,985	12,581	29,240	7,559
Feb.	2.24	2.09	† 3	286	†25	231	249	14,305	11,284	25,414	7,012
Mar.	2.12	2.01	† 1	242	†30	204	224	13,799	11,275	22,124	6,929
Apr.	2.18	1.94	16	264	†22	182	209	12,458	13,766	26,406	8,156
May	2.57	1.93	12	523	†30	178	225	13,825	13,937	28,767	7,207
June	3.17	1.32	1	1,290	30	145	169	10,084	9,175	14,676	5,458
July	22.69	1.80	18	59,400	2	139	1,250	76,891	20,148	76,891	4,289
Aug.	2.67	2.35	1	622	31	343	467	28,717	27,502	162,055	4,178
Sept.	3.35	2.33	20	1,610	† 1	329	448	26,632	96,527	804,466	7,674
Oct.	3.67	2.23	29	2,300	†22	282	385	23,651	23,848	113,911	7,123
Nov.	2.59	2.37	1	642	†27	358	443	26,356	17,515	59,734	6,589
Dec.	2.38	2.24	† 1	365	31	286	327	20,116	14,315	37,859	7,662
Yearly	22.69	1.80		59,400		139	388	281,819	271,873	1,087,822	94,683
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	6.92	0.55		1,680		3.94	11.0	347,624	335,355	1,341,828	116,791

‡ Discharge measurement made on this day † And other days

DEAD MANS CANYON NEAR COMSTOCK, TEXAS

In order to determine storm runoff formerly included with measured flows at a gaging station on the Pecos River before its relocation upstream incident to the completion of Amistad Dam, a gaging station was established during 1968 on Dead Mans Canyon.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the left bank of the canyon at latitude 29°47'05", longitude 101°19'25", 2.3 miles (3.7 km) upstream from its confluence with the Pecos River which is 9.5 miles (15.3 km) upstream from the Pecos River confluence with the Rio Grande. The zero of the gage is 1,178.00 feet (359.05 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on current meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: March 1968 through 1976.

REMARKS: This stream is normally dry, its flow being confined to periods of storm runoff from its 88 square miles (228 km^2) of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 37,800 second-feet (1,070 m^3/sec) on September 17, 1974 with a gage height of 12.78 feet (3.90 m). Maximum volumes: Monthly, 29,164 acre-feet (35,974,000 m^3) in September 1974; yearly, 30,527 acre-feet (37,655,000 m^3) in 1974.

Mean Daily Discharge in Second-Feet 1976

Month and Day								
Apr. 15	4.5	July 17	12.4					

Annual Summary

Month	Maximum Gage and Discharge			Total Acre-Feet
	Day	Feet	Second-Feet	
Apr.	15	1.37	95.0	8.9
July	17	1.36	90.6	24.6
Yearly		1.37	95.0	33.5
		Meters	Cubic Meters per Second	Thousands of Cubic Meters
		0.42	2.69	41.3

DOLAN SPRINGS NEAR LOMA ALTA, TEXAS

DESCRIPTION: Concrete wall control, bubbler gage, and water-stage recorder located on the left bank of Snake Creek near its mouth, latitude 29°53'40", longitude 100°59'00", and about 12 miles (19.3 km) west of Loma Alta, Val Verde County, Texas. Snake Creek enters Dolan Creek from the left side, 0.9 creek mile (1.4 km) from the confluence with Devils River. Dolan Creek enters Devils River from the left side, 16.8 river miles (27.0 km) upstream from Pafford Crossing, and 42.3 river miles (68.1 km) from the confluence with the Rio Grande. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 12 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1966 through 1976.

REMARKS: The flow of these springs is very uniform during periods of dry weather and is not modified by diversions or storage. All storm flow passing this station is deducted and is not included in the tabulation below. This station was established for purposes of correlating the flow of these springs with precipitation data and the flow of other springs in the area. The previous 90° V-notch weir was destroyed by a flood in 1971.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet (Cubic Meters per Second)			
Daily:	Max. 25.0 (0.71)	July 18, 1976	Min. 1.0 (0.03)	Several days in May 1971
Monthly:	Max. 20.2 (0.57)	November 1974	Min. 1.1 (0.03)	March, April & May 1971
Yearly:	Max. 15.7 (0.44)	1975	Min. 1.7 (0.05)	1968

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.9	8.4	‡ 8.8	10.4	7.1	‡ 10.2	8.9	16.3	19.4	19.4	‡ 18.4	18.9
2	8.7	‡ 8.4	9.2	10.8	7.2	10.9	9.2	16.3	19.5	19.4	16.3	18.7
3	8.7	8.9	9.2	11.2	‡ 6.9	10.5	9.3	16.3	19.5	19.4	16.4	18.7
4	8.6	8.9	9.2	10.8	6.8	10.4	9.3	16.3	19.6	‡ 19.4	16.4	19.0
5	‡ 8.6	9.0	9.2	‡ 9.1	7.0	10.2	9.4	16.3	19.7	19.4	16.1	19.1
6	8.7	8.9	9.5	7.9	6.8	10.0	9.4	16.3	19.7	19.5	16.2	‡ 19.5
7	8.8	8.9	9.4	7.8	7.1	10.3	‡ 9.5	16.6	‡ 19.8	19.5	16.2	19.5
8	8.8	8.9	9.2	7.5	7.5	10.4	9.5	16.9	19.8	19.5	16.5	19.5
9	8.9	8.9	9.2	7.5	7.7	9.0	9.6	17.1	19.8	19.5	16.6	19.1
10	8.9	8.8	9.0	7.6	7.8	6.4	9.8	17.4	19.8	19.6	16.6	19.2
11	9.0	8.6	9.0	7.6	7.9	6.5	10.1	18.0	19.7	19.6	16.6	19.2
12	9.0	8.4	9.0	7.5	9.4	6.5	14.1	‡ 18.0	19.7	19.6	16.3	19.2
13	8.9	8.4	9.0	7.6	12.2	6.6	16.6	18.1	19.7	19.7	16.4	19.2
14	8.6	8.5	9.0	7.6	12.1	6.7	15.4	18.1	19.7	19.7	16.7	19.2
15	8.8	8.5	9.0	7.6	10.9	6.7	15.7	18.2	19.7	19.7	16.7	18.9
16	8.7	8.5	9.0	7.7	10.4	6.9	17.4	18.3	19.7	19.7	16.8	18.9
17	8.7	8.3	9.0	7.7	10.3	7.0	21.3	18.3	19.7	19.4	17.2	19.0
18	8.8	8.1	9.0	7.7	10.1	7.0	25.0	18.4	19.6	19.4	17.5	19.0
19	8.8	8.2	9.0	7.8	10.2	7.1	20.6	18.5	19.6	19.1	17.6	19.0
20	8.8	8.2	9.0	7.6	10.1	7.3	16.6	18.6	19.6	19.2	17.9	18.6
21	8.9	8.2	9.0	7.6	10.0	7.3	15.4	18.6	19.6	19.2	17.9	18.6
22	8.9	8.2	9.0	7.6	9.7	7.4	15.2	18.7	19.6	19.2	17.4	18.6
23	8.9	8.2	9.0	7.7	9.6	7.5	21.0	18.8	19.6	19.2	17.7	18.6
24	8.9	8.2	9.4	7.7	9.6	7.7	21.0	18.8	19.5	19.3	17.7	18.7
25	8.8	8.2	9.7	7.3	9.7	8.0	18.3	18.9	19.5	19.3	17.8	18.7
26	8.6	8.0	9.7	7.4	9.6	8.3	17.1	19.0	19.5	18.9	17.8	18.4
27	8.6	8.0	9.6	7.4	9.7	8.9	16.9	19.0	19.5	18.6	17.8	18.4
28	8.7	8.3	10.2	7.1	9.6	8.5	16.3	19.1	19.5	18.6	18.1	18.4
29	8.7	8.8	10.2	7.1	9.7	8.6	16.3	19.2	19.5	19.0	18.2	18.4
30	8.8		10.0	7.1	9.7	8.6	16.3	19.2	19.5	19.0	18.6	18.4
31	8.5		10.4		9.8		16.3	19.3		19.1		18.5
Sum	271.8	245.8	288.1	241.0	282.2	247.4	456.8	556.9	588.6	599.1	514.4	585.1

Month	Current Year 1976: Extreme Gage Feet ** High	Low	Extreme Second-Feet High: Day	High	Low: Day	Low	Average Second-Feet	Total Acre-Feet	Period 1966-1976: Acre-Feet Average	Maximum	Minimum
Jan.	1.81	1.71	1	9.1	31	8.3	8.8	539	413	1,030	77.2
Feb.	1.75	1.64	5	9.2	27	7.9	8.5	488	328	922	66.8
Mar.	1.86	1.70	31	10.4	1	8.8	9.3	571	316	977	70.4
Apr.	1.94	1.61	† 2	12.1	†29	7.1	8.0	478	266	862	65.5
May	2.80	1.59	14	12.8	4	6.8	9.1	560	325	1,096	66.2
June	2.07	1.68	1	13.8	10	6.4	8.2	491	315	1,129	87.9
July	4.92	1.75	18	∅ 25.0	1	8.9	14.7	906	341	1,073	80.9
Aug.			31	∅ 19.3	† 1	∅ 16.3	18.0	1,105	453	1,105	93.8
Sept.			† 7	∅ 19.8	1	∅ 19.4	19.6	1,167	492	1,167	85.5
Oct.	2.34	2.30	†13	19.7	†27	18.6	19.3	1,188	577	1,188	87.9
Nov.	2.32	2.22	1	19.5	5	16.1	17.1	1,020	591	1,203	84.5
Dec.	2.29	2.25	† 6	19.5	†26	18.4	18.9	1,161	577	1,177	83.9
Yearly		1.59		∅ 25.0		6.4	13.3	9,674	4,994	11,368	1,257.2
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
		0.48		0.71		0.18	0.38	11,933	6,160	14,022	1,551

‡ Discharge measurement made on this day ** Includes storm flow ∅ Mean daily
† And other days

DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS

DESCRIPTION: Concrete control wall with rectangular notch opening of 900 second-foot (25.5 m^3/sec) capacity, cableway, bubbler gage, water-stage recorders (graphic & digital), and binary decimal transmitter located on the left bank at latitude 29°40'35", longitude 101°00'00", about 11.5 miles (18.5 km) east of Comstock, Val Verde County, Texas, and 25.5 river miles (41.0 km) from the confluence with the Rio Grande. The confluence is located at river mile 568.1 (914.3 km), 0.6 river mile (1.0 km) upstream from Amistad Dam, and 680.7 river miles (1,095.5 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 1,131.88 feet (345.00 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 16 discharge measurements during the year, 12 by the United States Section and 4 by the Mexican Section of the Commission, a stable rating curve based on meter measurements, and a continuous record of gage heights. Records available: 1960 through 1976. Records are also available from May 1900 through March 1914 for a station 23.8 river miles (38.3 km) downstream; from December 1923 through September 1932 for a station 22.8 river miles (36.7 km) downstream; from September 2, 1932 through August 1957 for a station 21.0 river miles (33.8 km) downstream; from August 7, 1954 through January 1958 for a station 5.4 river miles (8.7 km) upstream; and from August 1954 through May 31, 1968 for a station at the mouth 24.7 river miles (39.8 km) downstream.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 250,000 second-feet (7,080 m^3/sec) on September 18, 1974 with a gage height of 19.82 feet (6.04 m). Min. 48.6 second-feet (1.38 m^3/sec) on August 20, 1969.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	123,000 (3,480)	Sept. 18, 1974	Min.	53.7 (1.52)	Aug. 20, 1969
Monthly:	Max.	8,460 (240)	Sept. 1974	Min.	64.3 (1.82)	August 1964
Yearly:	Max.	977 (27.7)	1974	Min.	99.9 (2.83)	1968

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	308	290	282	263	310	288	255	820	675	579	632	522
2	296	287	284	263	300	307	253	787	‡ 5,800	571	615	514
3	296	284	279	272	281	316	254	759	2,110	571	604	514
4	299	288	279	275	276	299	289	727	1,120	567	594	514
5	302	289	275	293	294	293	286	711	892	571	585	514
6	307	275	270	271	294	289	275	690	760	564	580	515
7	296	283	275	276	921	288	269	672	670	561	576	507
8	304	292	284	272	420	286	261	647	634	561	568	509
9	304	293	284	263	369	279	316	641	619	561	566	503
10	307	289	279	260	350	‡ 279	313	636	605	561	566	510
11	307	289	275	264	339	276	343	629	603	557	560	515
12	309	289	275	266	415	279	1,270	620	597	551	550	509
13	307	289	270	266	970	274	575	619	590	551	557	521
14	307	289	270	267	436	‡ 269	492	614	589	559	551	‡ 538
15	306	289	‡ 275	347	398	270	3,680	609	584	572	‡ 551	518
16	308	289	270	481	380	278	1,770	‡ 608	581	551	552	514
17	309	‡ 282	270	310	‡ 361	275	40,800	605	582	543	554	‡ 510
18	306	270	270	287	350	274	9,500	606	599	‡ 542	542	509
19	‡ 302	273	275	‡ 279	352	284	5,560	615	595	549	535	509
20	304	276	275	322	344	269	1,460	608	‡ 602	545	536	499
21	304	271	270	284	331	263	920	597	580	540	537	495
22	304	273	270	276	323	259	2,530	593	571	537	530	495
23	299	275	271	274	316	256	13,300	587	571	543	528	499
24	306	271	285	275	310	264	2,750	584	575	554	528	496
25	300	276	284	266	309	270	1,220	580	571	545	530	493
26	291	275	271	259	308	272	956	596	578	535	535	491
27	295	274	265	264	296	269	846	583	597	569	522	491
28	298	279	265	277	293	268	775	580	637	605	516	488
29	‡ 299	279	274	380	292	265	808	610	588	752	521	483
30	294		262	301	291	258	868	624	‡ 581	779	523	486
31	281		264		291		844	594		665		480
Sum	9,355	8,178	8,497	8,653	11,520	8,316	94,038	19,751	25,656	17,811	16,644	15,661

Month	Current Year 1976								Period 1960-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	1.81	1.70	†14	314	31	260	302	18,555	12,720	24,115	4,647
Feb.	1.77	1.70	† 1	294	† 6	260	282	16,221	10,819	23,538	3,999
Mar.	1.76	1.68	†24	289	30	251	274	16,854	10,582	22,550	4,186
Apr.	2.71	1.65	16	938	15	238	288	17,163	11,412	38,777	4,520
May	3.95	1.72	7	4,820	† 3	270	372	22,850	12,036	32,716	4,517
June	1.93	1.68	19	378	30	251	277	16,495	16,386	54,328	4,259
July	13.02	1.62	17	117,000	7	225	3,030	186,522	22,226	186,522	4,034
Aug.	2.66	2.35	29	864	†24	580	637	39,176	53,535	408,908	3,955
Sept.	5.51	2.30	2	19,400	26	556	855	50,888	59,271	503,506	5,000
Oct.	2.54	2.25	30	836	†26	532	575	35,328	20,536	50,845	5,004
Nov.	2.47	2.21	1	640	28	514	555	33,013	15,344	33,013	4,532
Dec.	2.29	2.13	13	551	31	476	505	31,063	14,335	31,063	4,697
Yearly	13.02	1.62		117,000		225	667	484,128	259,202	707,092	72,494
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	3.97	0.49		3,310		6.37	18.9	597,172	319,726	872,198	89,421

‡ Discharge measurement made on this day

† And other days

BIG SATAN CREEK NEAR COMSTOCK, TEXAS

In order to determine storm runoff formerly included with measured flows at a gaging station on the Devils River before its relocation upstream incident to the completion of Amistad Dam, a gaging station was established during 1968 on Big Satan Creek.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank of the creek at latitude 29°39'50", longitude 100°57'50", 1.1 miles (1.8 km) upstream from its confluence with the Devils River, which is 21.2 river miles (34.1 km) upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 1,134.00 feet (345.64 m) above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: May 1968 through 1976.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 42 square miles (109 km^2) of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 56,100 second-feet (1,590 m^3/sec) on August 15, 1971 with a gage height of 12.31 feet (3.75 m). Maximum volumes: Monthly 12,204 acre-feet (15,054,000 m^3) in August 1971; yearly, 12,525 acre-feet (15,450,000 m^3) in 1971.

Mean Daily Discharge in Second-Feet 1976

Month and Day											
July 15	167	July 18	12.6	July 22	445	July 24	8.0
16	1.7	19	1.8	23	145	25	2.3
17	2,220						

Annual Summary

Month	Maximum Gage and Discharge			Total Acre-Feet
	Day	Feet	Second-Feet	
July	17	7.14	16,100	5,957
Yearly		7.14	16,100	5,957
		Meters	Cubic Meters per Second	Thousands of Cubic Meters
		2.18	456	7,348

ROUGH CANYON NEAR DEL RIO, TEXAS

In order to determine storm runoff formerly included with measured flows at a gaging station on the Devils River before its relocation upstream incident to the completion of Amistad Dam, a gaging station was established during 1968 on Rough Canyon.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank at latitude 29°34'40", longitude 100°56'00", 3.9 miles (6.3 km) upstream from its confluence with the Devils River which is 11.1 river miles (17.9 km) upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 1,129.00 feet (344.12 m) above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: January 1968 through 1976.
REMARKS: This stream is normally dry, its flow being confined to periods of storm runoff from its 24 square miles (62.2 km^2) of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,040 second-feet (199 m^3/sec) on August 12, 1972 with a gage height of 6.80 feet (2.07 m). Maximum volumes: Monthly, 8,230 acre-feet (10,152,000 m^3) in August 1971; yearly, 8,232.2 acre-feet (10,154,000 m^3) in 1971.

Mean Daily Discharge in Second-Feet 1976

Month and Day							
July 4	47.6	July 9	3.8	July 16	15.3	July 22	208
5	1.6	10	.4	17	827	23	144
6	21.4	15	498	18	2.5	24	.4
7	10.1						

Annual Summary

Month	Maximum Gage and Discharge			Total Acre-Feet
	Day	Feet	Second-Feet	
July	17	4.76	3,610	3,531
Yearly		4.76	3,610	3,531
		Meters	Cubic Meters per Second	Thousands of Cubic Meters
		1.45	102	4,355

NORTH FORK SAN PEDRO CREEK NEAR DEL RIO, TEXAS

In order to determine storm runoff formerly included with measured flows at a gaging station on the Devils River before its relocation upstream incident to the completion of Amistad Dam, a gaging station was established during 1968 on the north fork of San Pedro Creek.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the left bank of the creek at latitude 29°31'20", longitude 100°53'00", 3 miles (4.8 km) upstream from its confluence with the Middle Fork Branch, which is 6.3 miles (10.1 km) upstream from its confluence with Devils River, which itself is 4.5 river miles (7.2 km) above the Devils River confluence with the Rio Grande. The zero of the gage is 1,126.92 feet (343.49 m) above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: January 1968 through 1976.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 17 square miles (44 km^2) of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 5,070 second-feet (144 m^3/sec) on August 12, 1972 with a gage height of 8.44 feet (2.57 m). Maximum volumes: Monthly, 3,403 acre-feet (4,198,000 m^3) in October 1969; yearly, 4,061.7 acre-feet (5,010,000 m^3) in 1969.

Mean Daily Discharge in Second-Feet 1976

Month and Day							
July 4	1.9	July 15	270	July 18	0.8	July 23	92.1
6	1.4	16	.7	21	.1	24	.4
7	.1	17	350	22	200		

Annual Summary

Month	Maximum Gage and Discharge			Total
	Day	Feet	Second-Feet	Acre-Feet
July	15	4.09	1,540	1,820
Yearly		4.09	1,540	1,820
		Meters	Cubic Meters per Second	Thousands of Cubic Meters
		1.25	43.6	2,245

MIDDLE FORK SAN PEDRO CREEK NEAR DEL RIO, TEXAS

In order to determine storm runoff formerly included with measured flows at a gaging station on the Devils River before its relocation upstream incident to the completion of Amistad Dam, a gaging station was established during 1968 on the middle fork of San Pedro Creek.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank of the creek at latitude 29°29'30", longitude 100°52'50", 3.2 miles (5.1 km) upstream from its confluence with the North Fork Branch which is 6.3 miles (10.1 km) above the confluence with Devils River, which itself is 4.5 river miles (7.2 km) above the Devils River confluence with the Rio Grande. The zero of the gage is 1,132.02 feet (345.04 m) above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: December 1967 through 1976.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 12 square miles (31 km^2) of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 10,200 second-feet (289 m^3/sec) on July 17, 1975 with a gage height of 5.84 feet (1.78 m). Maximum volumes: Monthly 3,726 acre-feet (4,596,000 m^3) in July 1975; yearly 3,726 acre-feet (4,596,000 m^3) in 1975.

Mean Daily Discharge in Second-Feet 1976

Month and Day							
July 19	0.7	July 27	2.5	Aug. 4	1.6	Aug. 11	1.0
20	4.6	28	2.3	5	1.5	12	.9
21	4.1	29	1.6	6	1.6	13	.6
22	4.1	30	1.6	7	1.6	14	.3
23	4.8	31	1.5	8	1.5	15	.3
24	12.2	Aug. 1	1.3	9	1.3	16	.2
25	5.2	2	1.8	10	1.2	17	.1
26	3.1	3	1.7				

Annual Summary

Month	Maximum Gage and Discharge			Total
	Day	Feet	Second-Feet	Acre-Feet
July	23	1.19	17.8	95.8
Aug.	3	1.03	3.0	36.7
Yearly		1.19	17.8	132.5
		Meters	Cubic Meters per Second	Thousands of Cubic Meters
		0.36	0.50	163

EVANS CREEK NEAR COMSTOCK, TEXAS

In order to determine storm runoff formerly included with measured flows at a gaging station on the Devils River before its relocation upstream incident to the completion of Amistad Dam, a gaging station was established during 1968 on Evans Creek.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the left bank of the creek at latitude 29°32'15", longitude 101°06'10", 11.0 miles (17.7 km) upstream from its confluence with Devils River which is 3.2 miles (5.1 km) upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 1,162.54 feet (354.34 m) above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: December 1967 through 1976.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 74 square miles (192 km^2) of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 17,400 second-feet (493 m^3/sec) on June 12, 1971 with a gage height of 5.99 feet (1.83 m). Maximum volumes: Monthly, 9,281 acre-feet (11,448,000 m^3) in August 1971; yearly, 14,404 acre-feet (17,767,000 m^3 in 1971.

Mean Daily Discharge in Second-Feet 1976

Month and Day								
July 17	91.1	July 18	0.9					

Annual Summary

Month	Maximum Gage and Discharge			Total Acre-Feet
	Day	Feet	Second-Feet	
July	17	1.63	445	182
Yearly		1.63	445	182
		Meters	Cubic Meters per Second	Thousands of Cubic Meters
		0.50	12.6	224

CARMINA SPRINGS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 70.6 second-foot (2.0 m^3/sec) capacity and staff gage located on a creek that runs almost parallel to Amistad Dam, about 130 feet (40 m) from the confluence with the Rio Grande, at latitude 29°26'50", longitude 101°03'35", and about 11.0 miles (17.7 km) northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 567.3 (913.0 km), 0.2 river mile (400 m) downstream from Amistad Dam, 12.6 river miles (20.3 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 681.5 river miles (1,096.8 km) downstream from American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1976.

REMARKS: At least six separate springs have emerged on the watershed of this small creek since operation of Amistad Dam began in May 1968. Prior to this time, flow in this creek was exclusively from storm runoff. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. On September 24, 1971, a flood destroyed part of the weir.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	54.7	55.8	‡ 54.7	53.0	51.2	49.4	51.2	53.0	53.0	51.6	‡ 49.4	51.9
2	54.7	‡ 55.8	54.7	53.0	51.2	49.4	51.2	53.0	53.0	51.6	49.4	51.9
3	54.7	55.8	54.7	53.0	‡ 51.2	49.8	51.9	‡ 53.0	53.0	52.3	49.4	51.9
4	54.7	55.8	54.4	53.0	51.2	49.8	51.9	53.0	53.0	‡ 53.0	49.4	51.9
5	‡ 54.7	55.8	54.0	53.0	51.2	50.1	‡ 51.2	53.0	53.0	53.0	49.4	51.9
6	54.7	55.8	54.0	‡ 53.0	51.2	50.1	51.2	53.0	‡ 50.1	53.0	49.4	‡ 51.9
7	54.7	55.8	54.0	53.0	51.2	‡ 50.1	53.0	53.0	50.1	53.0	49.8	51.9
8	54.7	55.8	54.0	53.0	51.2	50.1	53.0	53.0	50.1	53.0	51.1	51.9
9	54.7	55.8	54.0	53.0	51.2	50.1	53.0	53.0	50.1	53.0	51.2	51.9
10	54.7	55.8	54.0	53.0	51.2	50.1	53.0	53.0	50.1	53.0	51.2	51.9
11	55.1	55.8	54.0	53.0	51.2	50.1	53.0	53.0	50.1	51.9	51.2	53.0
12	54.7	55.8	54.0	53.0	51.2	50.1	53.0	53.0	50.1	51.9	51.2	53.0
13	55.1	55.8	54.0	53.0	51.2	50.1	53.0	53.0	50.1	51.9	51.2	53.0
14	54.7	55.8	54.0	53.0	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
15	55.1	55.8	54.0	53.0	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
16	54.7	54.7	54.0	51.9	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
17	55.1	54.7	54.0	51.9	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
18	54.7	54.7	54.0	51.9	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
19	54.7	54.7	54.0	51.9	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
20	54.7	54.7	54.0	51.9	51.2	50.1	53.0	54.0	50.1	51.9	51.2	53.0
21	54.7	54.7	54.0	51.9	51.2	50.1	53.0	53.0	50.1	51.9	51.2	53.0
22	54.7	54.7	54.0	51.9	51.2	50.1	53.0	53.0	50.1	51.9	51.2	53.0
23	54.7	54.7	54.0	51.9	51.2	50.5	53.0	53.0	50.1	51.9	51.2	53.0
24	54.7	54.7	54.0	51.9	50.1	50.9	53.0	53.0	50.1	51.9	51.2	53.0
25	54.7	54.7	54.0	51.9	50.1	51.2	53.0	53.0	50.1	50.1	51.2	53.0
26	54.7	54.7	54.0	51.9	50.1	51.2	53.0	53.0	51.2	50.1	51.6	53.0
27	54.7	54.7	54.0	51.9	50.1	51.2	53.0	53.0	51.2	50.1	51.6	53.0
28	54.7	54.7	54.0	51.9	49.8	51.2	53.0	53.0	51.6	50.1	51.9	53.0
29	54.7	54.7	53.0	51.9	49.8	51.2	53.0	53.0	51.6	50.1	51.9	53.0
30	54.7		53.0	51.9	49.4	51.2	53.0	53.0	51.6	50.1	51.9	53.0
31	54.7		53.0		49.4		53.0	53.0		50.1		53.0
Sum	1,697.3	1,602.8	1,673.5	1,573.5	1,576.4	1,508.8	1,633.6	1,650.0	1,524.2	1,603.8	1,526.6	1,632.0

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1969–1976: Acre-Feet Average	Maximum	Minimum
Jan.			†11	55.1	† 1	54.7	54.7	3.369	2,299	3.707	364
Feb.			† 1	55.8	†16	54.7	55.4	3.180	2,137	3.405	373
Mar.			† 1	54.7	†29	53.0	54.0	3.321	2,257	3,621	525
Apr.			† 1	53.0	†16	51.9	52.3	3.120	2.167	3,497	629
May			† 1	51.2	†30	49.4	50.9	3.128	2.186	3,492	709
June			†25	51.2	† 1	49.4	50.1	2,995	2.101	3.383	593
July			† 7	53.0	† 1	51.2	52.6	3.239	2,155	3,412	533
Aug.			†14	54.0	† 1	53.0	53.3	3.272	2.290	3,361	540
Sept.			† 1	53.0	† 6	50.1	50.9	3.025	2,345	3.377	593
Oct.			† 4	53.0	†25	50.1	51.9	3,181	2,565	3.816	830
Nov.			†23	51.9	† 1	49.4	50.9	3.026	2,506	3,635	964
Dec.			†11	53.0	† 1	51.9	52.6	3,236	2,621	3,786	1.077
Yearly				55.8		49.4	52.6	38,092	27.629	41,290	9,080
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				1.58		1.40	1.49	46.985	34.080	50.932	11.201

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

LOURDES, HILDA, ERNESTINA, AND ROSITA SPRINGS NEAR CD. ACUNA, COAHUILA

LOURDES SPRING

DESCRIPTION: Rectangular sharp-crested weir of 28.8 second-foot (815 l/sec) capacity and staff gage located at latitude 29°26'35", longitude 101°03'30", at the base of the high bank of the Rio Grande, and about 11.1 miles (17.9 km) northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 566.9 (912.3 km), 12.2 river miles (19.6 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 681.9 river miles (1,097.4 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 926.28 feet (282.33 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1976.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted. The daily flow and monthly average throughout the year was 1.8 second-feet (0.05 m^3/sec). The volume for the year amounted to 1,284 acre-feet (1,583,000 m^3).

HILDA SPRING

DESCRIPTION: Rectangular sharp-crested weir of 53.0 second-foot (1.50 m^3/sec) capacity and staff gage located at latitude 29°26'20", longitude 101°03'35", about 328 feet (100 m) from the confluence with the Rio Grande, and about 11.0 miles (17.7 km) northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 566.7 (912.0 km), 11.8 river miles (19.0 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 682.1 river miles (1,097.7 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 908.14 feet (276.80 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1976.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted. The daily flow throughout the year ranged from 3.2 (0.09) to 3.9 second-feet (0.11 m^3/sec) and averaged 3.5 second-feet (0.10 m^3/sec). The volume for the year amounted to 2,459 acre-feet (3,035,000 m^3).

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

ERNESTINA SPRING

DESCRIPTION: A 90, V-notch weir of 1.4 second-foot (39 l/sec) capacity and staff gage located at the spring on the right bank of Arroyo del Buey about 100 feet (30 m) from the right bank of the Rio Grande at latitude 29°24'20", longitude 101°02'15", and about 8.5 miles (13.7 km) northwest of Cd. Acuna, Coahuila. This spring enters the Rio Grande at river mile 564.0 (907.7 km), 9.3 river miles (15.0 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 3.5 river miles (5.6 km) downstream from Amistad Dam, and 684.8 river miles (1,102.1 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 7, 1961 through 1976.

REMARKS: The flow of this spring is small and very uniform except during periods of very heavy rainfall, at which time the capacity of the weir may be exceeded. The daily flow and the monthly average throughout the year ranged from 0.106 (0.003) to 0.141 second-foot (0.004 m^3/sec), or 48 to 63 gallons per minute. The volume for the year amounted to 89.2 acre-feet (110,000 m^3). Waters from this spring have a high sulphur content.

ROSITA SPRING

DESCRIPTION: Cipolletti weir of 3.5 second-foot (100 l/sec) capacity and staff gage located at the spring about 65 feet (20 m) from the right bank of the Rio Grande at latitude 29°21'55", longitude 101°00'25", and about 5.5 miles (8.9 km) northwest of Cd. Acuna, Coahuila. This spring, located in Mexico, enters the Rio Grande at river mile 560.4 (901.9 km), 5.7 river miles (9.2 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 7.1 river miles (11 km) downstream from Amistad Dam, and 688.4 river miles (1,107.9 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 17, 1961 through 1976.

REMARKS: The flow of this spring is very uniform during periods of dry weather and is not modified by diversions or storage. The record was discontinued June 1, 1976. The daily flow and the monthly average throughout the period January 1 through May 31, 1976 ranged from 0.071 (0.002) to 0.141 second-foot (0.004 m^3/sec), or 32 to 63 gallons per minute. The volume for the period January 1 through May 31, 1976 amounted to 27.6 acre-feet (34,000 m^3).

RIO GRANDE BELOW AMISTAD DAM NEAR CD. ACUNA, COAHUILA AND DEL RIO, TEXAS

DESCRIPTION: Cableway, gravity well, concrete control weir, and water-stage recorders (graphic and digital), and binary decimal transmitter located on the left bank at latitude 29°25'30", longitude 101°02'20", and river mile 565.3 (909.8 km), 2.2 river miles (3.4 km) downstream from Amistad Dam, 10.6 river miles (17 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 683.5 river miles (1,100.0 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 898.94 feet (274.00 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 28 discharge measurements during the year, 12 by the Mexican Section and 16 by the United States Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: September 1954 through 1976. Records are also available from May 1900 through April 1915 for a station 1.9 miles (3 km) upstream; from December 1919 through March 1920 for a station 1.7 miles (3 km) downstream near McKee's Switch; from July 2, 1941 through August 1954 and October 1960 through 1967 for a station at the international highway bridge; and from December 1923 through July 2, 1941, and 1968 through 1976 for a station approximately 10.4 miles (16.7 km) downstream.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. On May 31, 1968, Amistad Dam started impounding water. After this day, flow at this station is controlled largely by releases from Amistad Reservoir, 2.3 river miles (3.7 km) upstream. The transmitter relays gage height data upon interrogation by telephone via private line to the Amistad office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,158,000 second-feet (32,800 m³/sec) on June 28, 1954, determined by slope-area computation, with a gage height of 55.72 feet (16.98 m) at the old station site 500 feet (152 m) downstream. This is the greatest rate of discharge recorded at any point on the Rio Grande. Max. since Amistad Dam, 62,200 second-feet (1,760 m³/sec) on Sept. 21, 1974. Min. 22.2 second-feet (0.63 m³/sec) on Feb. 14, 1969 with a gage height of 1.08 feet (0.33 m)

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,150	1,140	4,770	685	3,190	1,420	1,490	1,660	19,900	1,440	537	74.2
2	1,150	1,150	4,770	685	2,050	1,420	1,490	1,660	17,000	1,450	537	74.2
3	1,150	1,150	4,770	695	2,070	1,450	1,490	1,690	12,200	1,450	537	74.2
4	1,150	1,150	‡4,770	717	2,320	1,410	1,580	1,690	10,100	2,120	537	74.2
5	1,170	1,150	4,730	699	2,880	1,410	1,520	1,690	7,980	2,330	537	74.2
6	1,180	2,430	4,730	675	‡ 2,830	1,410	1,550	1,680	4,590	2,330	526	74.2
7	1,180	4,030	4,730	675	2,880	1,270	1,520	1,680	4,100	2,330	526	75.9
8	1,180	3,990	4,700	675	1,540	1,040	1,520	1,690	4,100	2,340	526	243
9	1,180	3,960	4,700	675	1,560	1,050	1,520	1,690	‡ 4,100	2,340	544	526
10	1,180	3,960	4,700	675	2,880	1,090	1,520	1,690	4,100	2,340	547	526
11	1,170	3,960	4,700	675	2,880	1,050	1,530	1,690	4,100	2,280	544	523
12	1,170	‡ 3,920	4,700	675	4,450	1,050	1,520	1,690	3,080	2,350	547	523
13	1,170	3,920	4,700	675	‡ 5,720	1,050	1,520	1,690	2,080	1,590	547	374
14	1,160	3,920	4,660	675	5,720	1,020	1,520	1,690	2,070	893	544	91.8
15	‡ 1,150	3,920	2,800	703	5,650	1,030	1,520	1,690	2,070	893	544	91.8
16	1,150	3,920	1,290	675	5,650	1,040	‡ 1,520	10,800	2,050	893	544	‡ 75.9
17	1,150	2,610	1,310	675	4,560	‡ 1,040	1,800	‡ 19,700	2,050	893	547	75.9
18	1,160	328	1,300	675	2,760	1,200	1,620	19,900	2,040	904	544 ‡	75.9
19	1,160	322	‡1,290	2,450	2,740	1,470	1,620	20,100	2,030	872	413	75.9
20	1,160	319	1,290	2,420	2,800	1,470	1,620	19,900	2,800	766	82.6	75.9
21	1,170	319	1,290	2,410	2,740	1,500	1,620	19,700	4,770	‡ 530	74.2	908
22	1,160	322	1,170	5,440	2,740	1,490	1,740	19,600	5,300	‡ 540	67.5	1,300
23	1,160	319	1,020	‡ 5,440	2,740	1,490	1,670	‡ 20,000	‡ 5,260	540	67.5	791
24	1,160	322	1,020	5,400	2,230	‡ 1,490	1,660	‡ 20,200	5,260	540	67.5	632
25	1,150	322	780	124	1,380	1,500	1,660	20,000	5,260	540	67.5	523
26	1,150	322	349	1,190	1,420	1,500	1,660	19,900	5,260	540	84.4	523
27	1,150	‡ 2,690	456	1,180	‡ 1,420	1,500	1,660	19,800	3,920	544	84.4	1,090
28	1,150	4,770	456	‡ 1,190	‡ 1,420	1,500	1,660	19,600	2,860	547	74.2	1,480
29	1,150	4,770	367	2,390	1,420	1,490	1,660	19,500	2,280	572	70.6	1,500
30	1,140		526	2,690	1,420	1,490	‡ 1,660	19,800	1,450	572	72.4	1,490
31	1,140		699		1,420		1,660	‡ 20,000		547		1,490
Sum	35,950	65,405	83,543	44,598	87,480	39,340	49,300	333,770	154,160	38,816	10,940.8	15,526.2

Month	Current Year 1976								Period 1968-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	1.21	1.18	† 5	1,180	31	1,110	1,160	71,236	59,121	112,570	5,318
Feb.	2.46	.56	†28	4,770	24	304	2,250	129,680	129,133	467,202	12,467
Mar.	2.46	.59	† 1	4,770	26	325	2,690	165,648	93,621	239,030	7,271
Apr.	3.51	.26	22	9,180	†25	82.3	1,490	88,447	94,223	342,129	27,570
May	3.48	.30	1	9,080	1	92.2	2,820	173,537	141,182	237,405	24,137
June	1.38	1.12	†21	1,500	14	1,020	1,310	78,087	102,821	260,436	16,418
July	1.97	1.35	17	3,030	1	1,470	1,590	97,783	84,854	143,887	23,182
Aug.	6.92	1.44	24	20,300	† 1	1,660	10,800	662,215	153,801	662,215	15,589
Sept.	6.79	1.35	1	19,900	30	1,450	5,160	305,755	250,677	1,280,079	17,606
Oct.	1.74	.79	12	2,350	22	530	1,250	77,015	168,817	812,596	3,734
Nov.	.82	.23	10	600	†22	67.5	364	21,701	100,817	502,295	4,539
Dec.	1.35	.26	29	1,500	† 1	74.2	501	30,797	54,155	216,286	4,859
Yearly	6.92	0.23		20,300		67.5	2,620	1,901,901	1,433,222	3,566,066	416,788
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.11	0.07		574		1.91	74.2	2,345,972	1,767,862	4,398,694	514,104

‡ Discharge measurement made on this day † And other days

SPRING M-15 AND SPRING M-5 NEAR CD. ACUNA, COAHUILA

SPRING M-15

DESCRIPTION: Rectangular sharp-crested weir of 8.1 second-foot (230 l/sec) capacity and staff gage located at latitude 29°25'10", longitude 101°02'45", about 1,300 feet (400 m) from the confluence with the Rio Grande, and about 9.4 miles (15.1 km) northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 565.0 (909.3 km), 10.3 river miles (16.6 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 683.8 river miles (1,100.5 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 925.13 feet (281.98 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1976.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below.

Month	Current Year 1976								Period 1969-1976		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.			† 1	1.4	† 1	1.4	1.4	86.7	77.0	131	21.1
Feb.			† 1	1.4	† 1	1.4	1.4	81.1	71.3	123	19.5
Mar.			† 1	1.4	† 1	1.4	1.4	86.7	71.3	122	21.9
Apr.			† 1	1.4	† 1	1.4	1.4	84.3	69.7	105	21.1
May			† 1	1.4	†22	1.1	1.4	79.4	73.8	109	21.9
June			† 1	1.1	† 1	1.1	1.1	63.2	56.7	96.5	21.1
July			† 1	1.4	† 1	1.4	1.4	86.7	61.6	99.7	21.1
Aug.			† 1	1.4	† 1	1.4	1.4	86.7	68.9	122	0
Sept.			† 1	1.4	† 1	1.4	1.4	84.3	68.9	105	0
Oct.			† 1	1.4	† 1	1.4	1.4	86.7	73.0	117	0
Nov.			† 1	1.4	† 1	1.4	1.4	84.3	77.0	124	21.1
Dec.			† 1	1.4	† 1	1.4	1.4	86.7	82.7	131	21.9
Yearly				1.4		1.1	1.4	996.8	851.9	1,362.2	257.2
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				0.04		0.03	0.04	1,230	1,051	1,679	317

SPRING M-5

DESCRIPTION: Rectangular sharp-crested weir of 17.7 second-foot (500 l/sec) capacity and staff gage located at latitude 29°25'05", longitude 101°02'35", at the base of the high bank of the Rio Grande, and about 9.2 miles (14.8 km) northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 564.8 (909.0 km), 10.1 river miles (16.3 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 684.0 river miles (1,100.8 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 932.38 feet (284.19 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1976.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below.

Month	Current Year 1976								Period 1969-1976		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.			† 1	2.8	† 1	2.8	2.8	173	143	173	86.7
Feb.			† 1	2.8	† 1	2.8	2.8	162	129	162	78.6
Mar.			† 1	2.8	† 1	2.8	2.8	173	137	173	64.9
Apr.			† 1	2.8	† 1	2.8	2.8	168	132	168	63.2
May			† 1	2.8	† 1	2.8	2.8	173	138	173	64.9
June			† 1	2.8	† 1	2.8	2.8	168	127	168	63.2
July			† 1	2.8	† 1	2.8	2.8	173	126	173	43.8
Aug.			† 1	2.8	† 1	2.8	2.8	173	135	173	43.8
Sept.			† 1	2.8	† 1	2.8	2.8	168	133	168	42.2
Oct.			† 1	2.8	† 1	2.8	2.8	173	139	173	43.8
Nov.			† 1	2.8	† 1	2.8	2.8	168	136	168	63.2
Dec.			† 1	2.8	† 1	2.8	2.8	173	141	173	64.9
Yearly				2.8		2.8	2.8	2,045	1,616	2,045	723.2
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				0.08		0.08	0.08	2,526	1,995	2,526	892

∅ Mean daily † And other days

ARROYO DE LOS JABONCILLOS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 70.6 second-foot (2 m^3/sec) capacity and staff gage located at latitude 29°24'25", longitude 101°02'25", about 660 feet (200 m) from the confluence with the Rio Grande, and about 8.6 miles (13.8 km) northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 564.5 (908.5 km), 9.8 river miles (15.8 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 684.3 river miles (1,101.3 km) downstream from American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1976.

REMARKS: At least 9 separate springs have emerged along this creek since operation of Amistad Dam began in May 1968. Prior to this time, flow in this creek was exclusively from storm runoff. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	70.3	70.3	‡ 69.6	68.9	68.9	64.3	65.0	70.3	70.3	68.9	‡ 68.9	69.6
2	70.3	‡ 71.3	69.6	68.9	68.9	64.3	65.3	70.3	70.3	68.9	68.9	69.2
3	70.3	71.3	69.6	68.9	‡ 68.9	64.6	66.4	‡ 70.3	69.9	68.9	68.9	68.9
4	70.3	71.3	69.6	68.9	68.9	64.6	67.5	70.3	69.6	‡ 68.9	68.9	68.9
5	‡ 70.3	71.3	69.6	68.9	68.9	65.0	‡ 69.9	70.3	69.2	68.2	68.9	68.9
6	70.3	71.3	69.6	‡ 68.9	68.9	65.0	69.9	‡ 70.3	‡ 68.9	68.2	68.9	‡ 68.9
7	70.3	71.3	69.9	69.6	69.2	‡ 65.0	69.9	70.3	68.9	68.2	68.9	68.9
8	69.6	71.3	69.9	69.6	69.2	65.0	69.9	70.3	68.9	68.2	68.9	69.2
9	69.6	71.3	69.9	69.6	69.6	65.0	69.9	70.3	68.9	68.2	68.9	69.2
10	69.6	71.3	69.9	69.6	69.6	65.0	69.9	70.3	68.9	68.2	68.9	69.2
11	69.6	71.3	69.9	69.6	69.6	65.0	69.9	70.3	68.9	68.2	68.9	69.2
12	69.6	71.3	69.9	69.6	69.6	65.0	69.9	70.3	68.9	68.2	69.6	68.9
13	69.6	71.3	69.9	68.9	69.2	65.0	69.9	70.3	68.9	68.2	69.6	68.9
14	69.6	70.3	69.9	68.9	68.9	65.0	69.9	70.3	68.9	68.2	69.6	68.9
15	69.6	70.3	69.6	68.9	68.5	64.3	70.3	70.3	68.9	68.9	69.6	68.9
16	69.6	70.3	69.2	68.9	68.2	64.3	70.3	70.3	68.9	68.9	69.6	68.9
17	69.9	70.3	68.9	68.9	68.2	64.3	70.3	70.3	68.9	68.9	69.6	68.9
18	70.3	70.3	68.9	68.9	68.2	64.3	70.3	70.3	69.2	68.9	69.9	68.9
19	70.3	70.3	68.9	68.9	68.2	64.3	70.3	70.3	69.2	68.9	70.3	68.9
20	70.3	70.3	68.9	68.9	67.8	64.3	70.3	70.3	69.6	68.9	70.3	68.2
21	70.3	69.6	68.9	68.9	67.5	64.3	70.3	70.3	69.6	68.9	70.3	68.2
22	70.3	69.6	68.9	68.9	67.5	63.9	70.3	70.3	69.6	68.9	70.3	68.5
23	70.3	69.6	68.9	68.9	67.1	63.6	70.3	70.3	69.6	68.9	70.3	68.5
24	70.3	69.6	68.9	68.9	67.1	63.9	70.3	70.3	69.2	68.9	70.3	68.5
25	70.3	69.6	68.9	68.9	67.1	64.3	70.3	70.3	68.9	68.2	70.3	68.9
26	70.3	69.6	68.9	68.9	67.1	64.6	70.3	70.3	68.9	67.1	70.3	68.9
27	70.3	69.6	68.9	68.9	66.7	63.9	70.3	70.3	68.9	68.9	70.3	68.9
28	70.3	69.6	68.9	68.9	66.4	65.0	70.6	70.3	68.9	68.9	69.6	68.9
29	70.3	69.6	68.9	68.9	65.7	65.0	70.6	70.3	68.9	68.9	69.6	68.9
30	70.3		68.9	68.9	64.3	65.0	70.6	70.3	68.9	68.9	69.6	68.9
31	70.3		68.9		64.3		70.6	70.3		68.9		68.9
Sum	2,172.6	2,044.4	2,149.1	2,071.2	2,108.2	1,937.1	2,159.5	2,179.3	2,075.5	2,126.4	2,086.9	2,135.5

Current Year 1976									Period 1969-1976		
Month	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High Day	High	Low Day	Low			Average	Maximum	Minimum
Jan.			† 1	70.3	† 8	69.6	69.9	4,308	2,983	4,720	349
Feb.			† 2	71.3	†21	69.6	70.6	4,055	2,722	4,207	381
Mar.			† 7	69.9	†17	68.9	69.2	4,262	2,943	4,574	526
Apr.			† 7	69.6	† 1	68.9	68.9	4,106	2,812	4,345	639
May			† 9	69.6	†30	64.3	68.2	4,180	2,816	4,356	721
June			† 5	65.0	23	63.6	64.6	3,841	2,641	4,071	678
July			†28	70.6	† 1	65.0	69.6	4,283	2,790	4,367	769
Aug.			† 1	70.3	† 1	70.3	70.3	4,321	2,933	4,321	782
Sept.			† 1	70.3	† 6	68.9	69.2	4,115	3,058	* 4,417	782
Oct.			† 1	68.9	26	67.1	68.5	4,216	3,418	" 5,211	1,097
Nov.			†19	70.3	† 1	68.9	69.6	4,138	3,352	4,847	1,282
Dec.			† 1	69.6	†20	68.2	68.9	4,234	3,455	4,709	1,398
				71.3		63.6	68.9	50,059	35,923	51,839	9,850
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				2.02		1.80	1.95	61.748	44.310	63,943	12,152

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

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

ARROYO DEL BUEY

DESCRIPTION: Cipolletti weir of 35.3 second-foot (1 m^3/sec) capacity, located at latitude 29°24'20", longitude 101°02'25", 0.2 creek mile (300 m) from the confluence with the Rio Grande, and about 8.5 miles (13.7 km) northwest of Cd. Acuna, Coahuila. This stream enters the Rio Grande from the Mexican side at river mile 564.0 (907.7 km), 3.5 river miles (5 km) downstream from Amistad Dam, 9.3 river miles (15.0 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 684.8 river miles (1,102.1 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 1961 through 1976.

REMARKS: The flow of this stream is not modified by diversions or storage. Prior to 1969 discharges were based on a continuous record of gage heights and the weir discharge table. Storm flow is deducted and not included in the tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir will have on the flow of this stream. At approximately 0.3 creek mile (0.5 km) upstream from the weir four springs have emerged since Amistad Reservoir storage began. Backwater from the Rio Grande will affect the flow of this stream when the flow in the river is approximately 20,000 second-feet (566 m^3/sec).

Current Year 1976									Period #Nov. 1961-1976		
Month	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High Day	High	Low Day	Low			**Average	Maximum	Minimum
Jan.			† 1	6.4	† 1	6.4	6.4	391	247	528	6.8
Feb.			† 1	6.4	† 1	6.4	6.4	366	224	477	5.4
Mar.			†21	6.7	† 1	6.4	6.4	399	241	520	9.3
Apr.			† 1	6.7	† 1	6.7	6.7	399	279	540	6.3
May			† 1	6.7	†30	6.0	6.4	399	291	544	10.9
June			†27	7.1	† 1	6.0	6.4	379	256	492	6.3
July			†27	8.3	† 1	7.1	8.1	491	242	503	6.5
Aug.			† 1	9.2	†30	7.1	8.1	506	272	517	6.7
Sept.			† 1	7.1	† 4	6.7	6.7	401	282	493	6.6
Oct.			† 1	6.7	† 1	6.7	6.7	413	306	544	6.5
Nov.			† 1	6.7	† 1	6.7	6.7	399	262	515	6.3
Dec.			† 1	6.7	† 1	6.7	6.7	413	262	538	6.5
Yearly				9.2		6.0	6.7	4,956	3,164	6,031	216.8
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				0.26		0.17	0.19	6,111	3,902	7,438	267

ARROYO DE LA TREINTA Y UNA

DESCRIPTION: Cipolletti weir of 35.3 second-foot (1 m^3/sec) capacity, located at latitude 29°22'40", longitude 101°01'10", 0.6 creek mile (900 m) from the confluence with the Rio Grande, and about 6.5 miles (10.5 km) northwest of Cd. Acuna, Coahuila. This stream enters the Rio Grande from the Mexican side at river mile 561.2 (903.2 km), 6.3 river miles (10 km) downstream from Amistad Dam, 6.5 river miles (10.5 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 687.6 river miles (1,106.6 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: May 1961 through 1976.

REMARKS: The flow of this stream is very uniform during periods of dry weather and is not modified by diversions or storage. Prior to 1969 discharges were based on a continuous record of gage heights and the weir discharge table. Storm flow is deducted and not included in tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect 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 releases.

Current Year 1976									Period #May 1961-1976		
Month	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High Day	High	Low Day	Low			**Average	Maximum	Minimum
Jan.			† 1	3.9	† 1	3.9	3.9	239	139	282	15.2
Feb.			† 1	3.9	† 1	3.9	3.9	224	127	257	13.9
Mar.			† 1	3.9	† 1	3.9	3.9	239	140	327	14.2
Apr.			† 1	3.9	† 1	3.9	3.9	231	165	302	10.5
May			† 1	3.9	† 1	3.9	3.9	239	146	251	5.9
June			† 1	3.9	† 1	3.9	3.9	231	131	254	4.2
July			† 1	3.9	† 1	3.9	3.9	239	127	250	0
Aug.			† 1	5.7	†20	4.9	5.3	323	141	323	0
Sept.			† 1	4.6	† 1	4.6	4.6	273	161	273	13.1
Oct.			† 1	4.6	†19	4.2	4.6	273	169	282	12.1
Nov.			† 1	4.2	† 1	4.2	4.2	252	150	273	14.2
Dec.			† 1	4.2	† 1	4.2	4.2	260	152	282	15.2
Yearly				5.7		3.9	4.2	3,023	1,748	3,264	250.4
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				0.16		0.11	0.12	3,730	2,157	4,025	308.6

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

MARIS SPRING NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 106 second-foot (3 m^3/sec) capacity and staff gage located at the spring about 100 feet (30 m) from the right bank of the Rio Grande at latitude 29°24'00", longitude 101°01'55", and about 8 miles (12.9 km) northwest of Cd. Acuna, Coahuila. This spring enters the Rio Grande at river mile 563.5 (906.9 km), 8.8 river miles (14.2 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 4.0 river miles (6 km) downstream from Amistad Dam, and 685.3 river miles (1,102.9 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 14, 1961 through 1976.

REMARKS: The flow of this spring is very uniform during periods of dry weather and is not modified by diversions or storage. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir will have on the flow of this spring. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. Prior to May 1969 the weir had an 11.1 second-foot (315 l/sec) capacity.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.7	6.7	6.7	12.7	12.7	11.3	11.7	19.8	19.8	15.9	‡ 14.8	13.1
2	6.7	‡ 6.7	6.7	12.7	12.7	11.3	12.0	19.8	19.8	15.9	15.2	13.1
3	6.7	6.7	6.7	12.7	‡ 12.7	11.3	12.0	‡ 19.8	19.8	15.9	15.2	13.1
4	6.7	6.7	‡ 6.7	12.7	12.7	11.3	12.4	19.8	19.8	‡ 15.9	14.8	13.1
5	‡ 6.7	6.7	6.7	12.7	12.0	11.3	12.7	19.8	19.8	15.9	14.5	13.1
6	6.7	6.7	6.7	12.7	12.0	11.3	13.1	19.8	‡ 19.8	15.9	14.1	‡ 13.1
7	6.7	6.7	6.7	12.7	12.0	‡ 11.3	13.4	19.8	19.1	15.2	13.8	13.1
8	6.7	6.7	6.7	12.7	12.0	11.3	13.4	19.8	19.1	15.2	13.8	13.1
9	6.7	6.7	6.7	12.7	12.0	11.3	13.8	19.8	19.1	15.2	13.8	13.1
10	6.7	6.7	6.7	12.7	12.0	11.3	14.1	19.8	18.7	15.2	13.8	12.7
11	6.7	6.7	6.7	12.7	11.7	11.3	14.5	19.8	18.7	15.2	13.8	12.7
12	6.7	6.7	6.7	12.7	11.7	11.3	14.8	19.8	18.7	15.2	13.8	12.7
13	6.7	6.7	6.7	12.7	11.7	11.3	14.8	19.8	18.7	15.2	13.8	12.7
14	6.7	6.7	6.7	12.7	11.3	11.3	15.2	19.8	18.7	15.2	13.8	12.7
15	6.7	6.7	6.7	12.7	11.3	11.3	15.5	19.8	18.7	15.2	13.8	12.7
16	6.7	6.7	6.7	12.7	11.3	11.3	15.9	19.8	18.7	15.2	13.8	12.7
17	6.7	6.7	6.7	12.7	11.7	11.3	16.2	19.8	18.7	15.2	13.8	12.7
18	6.7	6.7	6.7	12.7	11.7	11.3	16.2	19.8	18.7	15.2	13.8	13.1
19	6.7	6.7	6.7	12.7	11.7	11.3	16.6	19.8	18.7	15.2	13.8	13.1
20	6.7	6.7	6.7	12.7	11.7	11.3	17.0	19.8	18.0	15.2	13.8	13.1
21	6.7	6.7	6.7	12.7	11.7	11.3	17.3	19.8	18.0	15.2	13.8	13.1
22	6.7	6.7	6.7	12.7	11.7	11.3	17.7	19.8	18.0	15.2	13.8	13.1
23	6.7	6.7	6.7	12.7	11.7	11.3	18.0	19.8	18.0	15.2	13.8	13.1
24	6.7	6.7	6.7	12.7	11.7	11.3	18.0	19.8	18.0	15.2	13.8	13.1
25	6.7	6.7	6.7	12.7	11.3	11.3	18.4	19.8	17.7	14.1	13.8	12.7
26	6.7	6.7	6.7	12.7	11.3	11.3	18.7	19.8	17.7	14.1	13.8	12.7
27	6.7	6.7	6.7	12.7	11.3	11.3	19.1	19.8	16.6	14.1	13.8	12.0
28	6.7	6.7	6.7	12.7	10.9	11.3	19.4	19.8	16.6	14.8	13.8	12.0
29	6.7	6.7	6.7	12.7	10.9	11.3	19.4	19.8	16.6	14.8	13.8	12.0
30	6.7		6.7	12.7	10.9	11.3	19.8	19.8	16.2	14.8	13.8	12.0
31	6.7		6.7		10.9		20.1	19.8		14.8		12.0
Sum	207.7	194.3	207.7	381.0	362.9	339.0	491.2	613.8	554.5	470.5	419.8	396.6

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period #Dec. 1961-1976: Acre-Feet ** Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.			† 1	6.7	† 1	6.7	6.7	413	431	934	4.4
Feb.			† 1	6.7	† 1	6.7	6.7	386	379	843	4.1
Mar.			† 1	6.7	† 1	6.7	6.7	413	400	923	4.9
Apr.			† 1	12.7	† 1	12.7	12.7	756	418	878	4.2
May			† 1	12.7	†28	10.9	11.7	719	501	976	8.7
June			† 1	11.3	† 1	11.3	11.3	672	447	917	6.0
July			31	20.1	† 1	11.7	15.9	974	464	977	7.9
Aug.			† 1	19.8	† 1	19.8	19.8	1,216	506	1,216	6.2
Sept.			† 1	19.8	30	16.2	18.4	1,099	603	1,111	5.4
Oct.			† 1	15.9	†25	14.1	15.2	933	681	1,420	4.6
Nov.			† 2	15.2	† 7	13.8	14.1	832	585	1,338	4.2
Dec.			† 1	13.1	†27	12.0	12.7	786	499	1.187	4.4
Yearly				20.1		6.7	12.7	9,199	5,914	11,421	146.2
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				0.57		0.19	0.36	11,347	7,294	14,089	180.1

‡ Discharge measurement made on this day ∅ Mean daily # Some months missing
** See explanation in REMARKS above † And other days

EIGHT MILE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete wall with 90° V-notch weir of 6.9 second-foot (0.2 m^3/sec) capacity. bubbler gage, and water-stage recorder located on the left bank at latitude 29°24'05", longitude 101°00'55". 0.8 creek mile (1.3 km) from the confluence with the Rio Grande, and about 8 miles (12.9 km) northwest of Del Rio, Texas. This stream enters the Rio Grande from the United States side at river mile 562.9 (905.9 km), 4.6 river miles (7.4 km) downstream from Amistad Dam, 8.2 river miles (13.2 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 685.9 river miles (1,103.8 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: March 1961 through 1976.

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. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of this stream.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 15.9 (0.45)	July 23 & 24, 1976	Min. 0	Occasionally
Monthly:	Max. 6.3 (0.18)	July 1976	Min. 0	Occasionally
Yearly:	Max. 4.0 (0.11)	1974 & 1975	Min. 0	Several years

Mean Daily Discharge in Second-Feet 1976 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.6	3.4	3.5	3.1	3.7	2.8	2.3	6.1	4.1	3.3	3.6	3.6
2	3.6	3.5	3.5	3.1	3.4	2.8	2.3	5.8	4.0	3.4	3.6	3.5
3	3.6	3.5	3.5	3.2	3.3	2.8	2.4	5.7	3.9	3.4	3.6	3.6
4	3.6	3.4	3.4	3.2	3.6	2.7	2.8	5.6	3.9	3.4	3.6	3.6
5	3.7	3.4	3.4	3.2	3.5	2.7	4.0	5.5	3.7	3.3	3.6	3.6
6	3.7	3.3	3.4	3.1	3.3	2.6	4.0	5.4	3.8	3.3	3.6	3.6
7	3.7	3.3	3.5	3.2	3.3	2.6	4.0	5.3	3.6	3.3	3.5	3.6
8	3.7	3.3	3.6	3.1	3.3	2.6	4.0	5.2	3.6	3.3	3.5	3.6
9	3.6	3.3	3.5	3.1	3.3	2.6	4.6	5.2	3.6	3.3	3.5	3.6
10	3.6	3.3	3.5	3.2	3.2	2.6	4.4	5.1	3.6	3.3	3.4	3.6
11	3.6	3.2	3.5	3.2	3.2	2.6	4.4	4.9	3.6	3.3	3.4	3.6
12	3.6	3.2	3.4	3.2	3.2	2.6	4.5	4.9	3.6	3.3	3.3	3.6
13	3.6	3.2	3.4	3.3	3.1	2.5	5.6	4.9	3.5	3.3	3.3	3.8
14	3.6	3.2	3.4	3.3	3.0	2.4	5.3	4.8	3.4	3.3	3.1	4.1
15	3.6	3.3	3.4	3.4	3.0	2.4	5.5	4.7	3.4	3.0	3.2	4.0
16	3.5	3.3	3.3	3.6	3.0	2.4	5.8	4.7	3.4	3.0	3.1	3.9
17	3.5	3.4	3.3	3.3	3.0	2.5	6.1	4.7	3.4	3.0	3.6	3.8
18	3.6	3.5	3.3	3.3	3.1	2.5	6.5	4.7	3.6	3.0	3.5	3.7
19	3.6	3.5	3.4	3.2	3.3	2.6	6.8	4.8	3.6	3.1	3.5	3.6
20	3.4	3.5	3.4	3.1	3.3	2.6	7.0	4.8	3.6	3.2	3.4	3.5
21	3.6	3.5	3.4	3.1	3.2	2.5	7.1	4.8	3.5	3.2	3.4	3.4
22	3.6	3.5	3.4	3.0	3.0	2.4	7.4	4.6	3.5	3.2	3.5	3.6
23	3.6	3.5	3.5	3.1	3.0	2.4	15.9	4.6	3.5	3.3	3.6	3.7
24	3.6	3.5	3.5	3.0	3.0	2.4	15.9	4.5	3.4	3.3	3.6	3.8
25	3.6	3.5	3.4	3.1	3.0	2.4	13.6	4.5	3.4	3.3	3.6	3.6
26	3.5	3.5	3.3	3.1	2.9	2.6	9.8	4.3	3.4	3.3	3.6	3.6
27	3.4	3.5	3.1	3.2	2.8	2.6	7.8	4.2	3.3	3.3	3.6	3.6
28	3.5	3.5	3.0	3.2	2.8	2.6	7.1	4.2	3.4	3.6	3.6	3.7
29	3.5	3.5	3.1	3.3	2.8	2.6	7.0	4.1	3.4	4.2	3.6	3.7
30	3.6		3.1	3.7	2.8	2.6	6.4	4.1	3.4	3.9	3.6	3.7
31	3.4		3.2		2.8		6.2	4.1		3.7		3.6
Sum	110.9	93.5	104.6	96.2	97.2	77.0	196.5	150.8	107.1	103.1	104.6	113.5

Month	Current Year 1976: Extreme Gage Feet ** High	Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period #March 1961-1976: Acre-Feet Average	Maximum	Minimum
Jan.	1.17	1.11	↑ 5	3.7	31	3.3	3.6	220	70.9	294	0
Feb.	1.14	1.10	↑ 2	3.5	↑11	3.2	3.4	195	65.0	273	0
Mar.	1.15	1.08	8	3.6	28	3.0	3.4	207	66.0	271	0
Apr.	2.54	1.06	30	3.7	↑22	3.0	3.2	191	71.7	244	0
May	1.73	1.02	1	3.7	↑27	2.8	3.1	193	68.6	224	0
June	1.66	.91	↑ 1	2.8	↑14	2.4	2.6	153	58.7	214	0
July	6.24	.91	↑23	15.9	↑ 1	2.3	6.3	390	79.4	390	0
Aug.	1.83	1.22	1	6.1	↑29	4.1	4.9	296	81.8	299	0
Sept.	1.22	1.11	1	4.1	27	3.3	3.6	212	70.9	240	0
Oct.	1.70	1.08	29	4.2	↑15	3.0	3.3	204	89.5	334	0
Nov.	1.18	1.09	↑ 1	3.6	↑14	3.1	3.5	207	77.2	321	0
Dec.	1.58	1.13	14	4.1	21	3.4	3.7	225	79.8	283	0
	6.24	0.91		15.9		2.3	3.7	2,696	879.6	2,892	3.4
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	1.90	0.28		0.45		0.07	0.10	3.326	1,085	3.567	4.2

Some months missing ** Includes storm flow ∅ Mean daily ↑ And other days

MCKEE SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: Cipolletti weir of 21.5 second-foot (0.6 m^3/sec) capacity, gravity well, and water-stage recorder located on the source pool of this spring which is located on the left flood plain of the Rio Grande at latitude 29°23'35", longitude 101°01'15", about 150 feet (45.7 m) from the edge of the low-flow channel and about 8 miles (12.9 km) northwest of Del Rio, Texas. Water from this spring enters the Rio Grande at river mile 562.7 (905.6 km), 4.8 river miles (7.7 km) downstream from Amistad Dam, and 686.1 river miles (1,104.2 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 894.59 feet (272.67 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: November 1961 through 1976.

REMARKS: The flow of this spring is uniform during periods of dry weather and is not modified by diversions or storage. It is estimated that backwater from the Rio Grande will reach the emergence of this spring when the river flow is approximately 14,000 second-feet (396 m^3/sec). This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of this spring.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)					
Daily:	Max. 9.1 (0.26)	Aug. 15, 1972	Min. 0	Occasionally
Monthly:	Max. 8.1 (0.23)	Sept. 1972	Min. 0	Occasionally
Yearly:	Max. 7.5 (0.21)	1974	Min. 0	1963

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.8	6.7	6.8	6.4	6.5	6.5	6.4	7.6	8.0	7.2	7.0	7.0
2	6.8	6.7	6.8	6.4	6.5	6.5	6.2	7.5	8.0	7.2	7.0	7.0
3	6.8	6.7	6.8	6.4	6.5	6.5	6.2	7.6	8.0	7.2	7.0	7.0
4	6.8	6.7	6.8	6.4	6.5	6.5	7.2	7.5	8.0	7.2	7.0	7.0
5	6.8	6.7	6.8	6.4	6.4	6.5	7.3	7.5	8.0	7.2	7.0	7.0
6	6.8	6.7	6.8	6.4	6.4	6.5	7.3	7.3	8.0	7.2	7.0	7.0
7	6.8	6.8	6.8	6.4	6.4	6.5	7.2	7.3	8.0	7.2	7.0	7.0
8	6.8	6.8	6.8	6.4	6.4	6.5	7.2	7.3	8.0	7.2	7.0	7.0
9	6.8	6.8	6.8	6.4	6.4	6.5	7.0	7.3	7.6	7.2	7.0	7.0
10	6.8	6.8	6.8	6.4	6.4	6.5	7.0	7.3	7.6	7.2	7.0	7.0
11	6.8	7.0	6.8	6.4	6.4	6.5	7.0	7.3	7.6	7.2	7.0	7.0
12	6.8	7.0	6.8	6.4	6.4	6.5	6.8	7.3	7.6	7.0	7.0	7.0
13	6.8	7.0	6.8	6.4	6.4	6.5	6.8	7.3	7.6	7.0	7.0	7.0
14	6.8	7.0	6.8	6.4	6.4	6.5	6.7	7.3	7.6	7.0	7.0	7.0
15	6.8	7.0	6.7	6.4	6.4	6.5	6.7	7.3	7.6	7.0	7.0	7.0
16	6.8	7.0	6.7	6.5	6.4	6.5	7.2	7.6	7.6	7.0	7.0	7.0
17	6.7	6.8	6.8	6.5	6.4	6.5	8.3	8.0	7.6	7.0	7.0	7.0
18	6.7	6.7	6.8	6.5	6.4	6.5	8.2	8.0	7.6	6.8	7.0	7.0
19	6.7	6.7	6.5	6.5	6.4	6.5	8.0	8.0	7.6	6.8	7.0	7.0
20	6.7	6.8	6.5	6.5	6.4	6.5	8.0	8.0	7.6	6.8	7.0	7.0
21	6.7	6.8	6.5	6.5	6.5	6.5	8.0	8.0	7.6	6.8	7.0	7.0
22	6.7	6.8	6.5	6.7	6.5	6.5	8.0	8.0	7.6	6.8	7.0	7.0
23	6.7	6.8	6.4	6.7	6.4	6.4	8.2	8.0	7.6	6.8	7.0	7.0
24	6.7	6.8	6.4	6.7	6.5	6.4	8.2	8.0	7.6	6.8	7.0	7.0
25	6.7	6.8	6.2	6.5	6.4	6.4	8.0	8.0	7.6	6.8	7.0	7.0
26	6.7	6.7	6.2	6.5	6.4	6.4	8.0	8.0	7.5	6.8	7.0	7.0
27	6.7	6.8	6.2	6.5	6.4	6.4	8.0	8.0	7.5	6.8	7.0	7.0
28	6.5	6.8	6.4	6.5	6.5	6.4	7.8	8.0	7.3	6.8	7.0	7.0
29	6.5	6.8	6.5	6.5	6.5	6.4	7.8	8.0	7.3	6.8	7.0	7.0
30	6.5		6.5	6.5	6.4	6.4	7.8	8.0	7.2	6.8	7.0	7.0
31	6.5		6.5		6.4		7.8	8.0		7.0		7.0
Sum	208.5	197.5	205.5	194.1	199.3	194.2	230.3	238.3	230.0	216.6	210.0	217.0

Month	Current Year 1976: Extreme Gage Feet High	Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Nov. 1961-1976 Acre-Feet Average	Maximum	Minimum
Jan.	0.65	0.63	† 1	6.8	†28	6.5	6.7	414	229	466	0
Feb.	.66	.64	†11	7.0	† 1	6.7	6.8	392	210	430	0
Mar.	.65	.61	† 1	6.8	†25	6.2	6.6	408	231	457	0
Apr.	.65	.55	†22	6.7	† 1	6.4	6.5	385	237	442	0
May	.63	.52	† 1	6.5	† 5	6.4	6.4	395	201	480	.7
June	.63	.50	† 1	6.5	†23	6.4	6.5	385	226	436	0
July	.74	.61	17	8.3	† 2	6.2	7.4	457	232	474	0
Aug.			†17	8.0	† 6	7.3	7.7	473	236	473	0
Sept.	.72	.67	† 1	8.0	30	7.2	7.7	456	241	479	0
Oct.	.67	.65	† 1	7.2	†18	6.3	7.0	430	254	484	0
Nov.	.66	.66	† 1	7.0	† 1	7.0	7.0	417	240	475	0
Dec.	.66	.66	† 1	7.0	† 1	7.0	7.0	430	244	475	0
Yearly				8.3		6.2	6.9	5,042	2,841	5,399	0.7
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
				0.24		0.18	0.20	6,219	3,504	6,655	0.9

∅ Mean daily † And other days

CANTU SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located at the spring source in the channel of a small tributary to Cienegas Creek at latitude 29°23'15", longitude 100°56'00", about 2.5 miles (4.0 km) northwest of Del Rio, Texas, and 3.5 creek miles (5.6 km) from the confluence with the Rio Grande. The spring is isolated from surface runoff by the concrete enclosure but creek backwater may influence the recorded gage heights. Cienegas Creek enters the Rio Grande at river mile 556.6 (895.8 km), 1.9 river miles (3.1 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 692.2 river miles (1,114.0 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 50 discharge measurements during the year and a continuous record of gage heights. Records available: March 1961 through 1976.

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

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 10.0 (0.28)	July 27 & 28, 1976	Min. 0	Occasionally
Monthly:	Max. 8.9 (0.25)	December 1976	Min. 0	Occasionally
Yearly:	Max. 7.7 (0.22)	1972	Min. 0	1963

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.4	6.9	7.5	7.2	7.5	5.0	6.0	9.2	‡ 8.0	8.7	8.7	‡ 8.9
2	6.4	7.0	7.7	7.3	7.6	4.9	6.1	9.0	8.1	8.7	8.7	8.9
3	6.4	‡ 7.1	‡ 7.8	7.3	7.6	‡ 4.8	6.2	8.8	8.2	8.7	‡ 8.7	8.9
4	6.5	7.1	7.8	7.3	7.6	4.9	6.4	‡ 8.6	8.3	8.7	8.7	8.9
5	6.5	7.1	7.7	7.3	‡ 7.6	5.0	6.6	8.6	8.5	8.8	8.8	8.9
6	6.5	7.1	7.7	7.4	7.5	5.1	6.7	8.6	8.6	‡ 8.8	8.8	8.9
7	‡ 6.5	7.1	7.6	‡ 7.4	7.4	5.2	6.8	8.6	8.7	8.8	8.9	‡ 8.9
8	6.5	7.1	7.6	7.4	7.3	5.3	‡ 7.0	8.6	‡ 8.8	8.7	8.9	8.9
9	6.5	7.1	7.5	7.4	7.2	‡ 5.4	7.0	8.6	8.7	8.7	9.0	8.9
10	6.5	‡ 7.1	‡ 7.5	7.4	7.0	5.4	7.1	8.6	8.7	8.7	‡ 9.0	8.9
11	6.6	7.1	7.5	7.4	6.9	5.4	7.1	‡ 8.6	8.6	8.7	8.9	8.9
12	6.6	7.0	7.5	7.4	6.8	5.5	7.1	8.6	8.5	8.6	8.9	8.9
13	6.6	7.0	7.5	7.4	‡ 6.7	5.5	7.2	8.5	8.4	‡ 8.6	8.8	8.9
14	‡ 6.6	7.0	7.4	‡ 7.4	6.6	5.5	‡ 7.2	8.5	8.4	8.6	8.8	8.9
15	6.6	6.9	7.4	7.4	6.6	‡ 5.5	7.6	8.5	‡ 8.3	8.7	8.7	‡ 8.9
16	6.7	6.9	7.4	7.3	6.5	5.5	7.9	8.5	8.3	8.7	8.7	8.9
17	6.7	6.8	‡ 7.4	7.3	6.4	5.6	8.3	8.4	8.3	8.7	‡ 8.6	8.8
18	6.7	‡ 6.8	7.4	7.3	6.4	5.6	8.6	‡ 8.4	8.3	8.7	8.6	8.8
19	6.7	6.8	7.3	7.3	6.3	5.6	9.0	8.4	8.3	8.8	8.6	8.8
20	6.8	6.8	7.3	7.2	6.2	5.6	9.3	8.5	8.3	‡ 8.8	8.6	8.8
21	‡ 6.8	6.8	7.2	‡ 7.2	6.1	5.7	‡ 9.7	8.5	8.3	8.8	8.6	8.7
22	6.8	6.9	7.2	7.2	6.1	‡ 5.7	9.7	8.6	‡ 8.3	8.8	8.6	‡ 8.7
23	6.8	6.9	7.1	7.3	6.0	5.7	9.8	8.6	8.3	8.8	8.6	8.7
24	6.7	6.9	‡ 7.1	7.3	5.9	5.7	9.8	8.7	8.4	8.7	‡ 8.6	8.8
25	6.7	‡ 6.9	7.1	7.4	5.9	5.7	9.9	‡ 8.7	8.4	8.7	8.6	8.8
26	6.7	7.0	7.1	7.4	‡ 5.8	5.8	9.9	8.6	8.5	8.7	8.7	8.8
27	6.6	7.2	7.1	7.5	5.7	5.8	10.0	8.5	8.5	‡ 8.7	8.7	8.8
28	6.6	7.3	7.2	‡ 7.5	5.6	5.8	‡ 10.0	8.4	8.6	8.7	8.8	8.9
29	‡ 6.6	7.4	7.2	7.5	5.4	‡ 5.8	9.8	8.3	‡ 8.6	8.7	8.8	‡ 8.9
30	6.7		7.2	7.5	5.3	5.8	9.6	8.2	8.6	8.7	8.9	8.9
31	6.8		‡ 7.2		5.2		9.4	8.1		8.7		8.8
Sum	205.1	203.1	229.2	220.6	202.7	163.8	252.8	265.3	252.8	270.2	262.3	274.4

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	∅ Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period March 1961-1976: Acre-Feet Average	Maximum	Minimum
Jan.	2.69	2.60	†20	6.8	† 1	6.4	6.6	407	235	509	0
Feb.	2.68	2.61	29	7.4	†17	6.8	7.0	403	208	455	0
Mar.	2.84	2.68	† 3	7.8	†23	7.1	7.4	455	223	513	0
Apr.	3.00	2.84	†27	7.5	† 1	7.2	7.4	438	217	480	0
May			† 2	7.5	31	5.2	6.5	402	207	476	0
June	3.08	3.01	†26	5.8	3	4.8	5.5	325	188	476	0
July	4.41	2.86	†27	10.0	1	6.0	8.2	501	203	505	0
Aug.	3.06	3.02	1	9.2	31	8.1	8.6	526	219	526	0
Sept.	3.04	2.85	8	8.3	1	8.0	8.4	501	224	520	0
Oct.	2.89	2.84	† 5	8.8	†12	8.6	8.7	536	245	536	0
Nov.	2.87	2.85	† 9	9.0	†17	8.6	8.7	520	242	520	0
Dec.	2.88	2.85	† 1	8.9	†21	8.7	8.9	544	255	544	0
Yearly	4.41	2.60		10.0		4.8	7.7	5,558	2,666	5,619	0
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	1.34	0.79		0.28		0.14	0.22	6,856	3,289	6,931	0

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

CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity wells and water-stage recorders located, one each, on the left bank of the Cienegas Creek at latitude 29°21'00", longitude 100°56'40", 0.3 creek mile (0.5 km) from the confluence with the Rio Grande; and for the Briggs Farm ditch, on the right bank of a concrete flume at latitude 29°21'40", longitude 100°56'30", 2,900 feet (884 m) from the ditch intake which branches off the right bank of Cienegas Creek immediately upstream from a small diversion dam across the creek, and about 2.5 miles (4.0 km) west of Del Rio, Texas. The point of diversion is 1.8 creek miles (2.9 km) from the confluence with the Rio Grande. Cienegas Creek enters the Rio Grande at river mile 556.6 (895.8 km), 1.9 river miles (3.1 km) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 692.2 river miles (1,114.0 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gages has not been determined.

RECORDS: Based on 51 and 52 discharge measurements at Cienegas Creek and Briggs Farm Ditch, respectively, during the year and a continuous record of gage heights. Mean daily discharge computations determined by combining the two records for the total yield of the springs. Records available: March 1965 through 1976. Discharge measurement data available since November 1962. Records are also available from September 1931 through June 1935 for a station 0.1 creek mile (0.2 km) downstream.

REMARKS: The flow of this stream is modified by irrigation diversions through the Briggs Farm ditch. During 1976 there were no appreciable diversions from the creek, other than through the Briggs Farm ditch whose net amount of diversion is included in the tabulation below. All storm flow passing this station is deducted and is not included in the tabulation. These stations were established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of these springs.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 42.7 (1.21)	August 12, 1972		Min. 0.5 (0.01)	April 21, 1966
Monthly:	Max. 24.8 (0.70)	July	1976	Min. 0.8 (0.02)	August 1967
Yearly:	Max. 17.1 (0.48)		1973	Min. 2.2 (0.06)	1968

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.8	15.1	14.3	14.2	15.6	12.4	10.7	22.5	15.8	14.2	17.5	16.5
2	14.9	15.7	14.0	13.9	14.1	11.9	11.0	21.8	16.8	14.7	17.2	16.2
3	14.2	15.7	14.2	14.3	13.0	11.4	11.7	21.5	17.1	17.0	17.6	16.3
4	14.1	15.7	14.1	15.2	13.2	11.3	16.4	21.0	17.3	16.4	17.7	16.2
5	13.9	16.6	14.0	15.7	14.8	12.3	25.6	20.7	15.9	16.2	17.4	16.1
6	14.8	16.5	14.0	14.8	16.0	12.2	19.5	20.7	15.9	16.7	17.9	16.6
7	13.9	16.4	14.8	14.5	18.4	10.9	19.0	20.1	16.0	16.8	17.4	16.9
8	14.4	17.7	14.8	14.2	17.5	8.9	18.7	19.7	16.2	16.6	17.1	17.0
9	14.2	16.7	14.6	13.3	16.8	8.9	20.6	19.3	16.1	16.5	17.9	18.2
10	14.7	15.0	14.6	13.4	16.2	9.1	19.8	19.4	16.5	15.6	18.2	17.7
11	15.1	15.4	14.5	13.5	15.9	9.4	22.1	19.2	16.5	15.6	18.3	17.0
12	15.5	15.4	14.4	14.2	15.4	10.7	25.6	18.7	16.8	15.8	18.5	19.4
13	14.4	15.6	14.4	13.1	15.8	12.2	21.4	18.3	16.6	15.8	18.5	20.9
14	13.4	15.6	14.2	13.6	15.0	12.5	20.9	18.0	16.7	15.8	18.2	21.2
15	13.7	15.6	15.0	14.9	14.6	13.2	21.0	17.8	16.6	16.5	18.5	22.2
16	13.9	15.6	14.9	16.7	14.7	13.1	22.7	17.6	16.8	16.4	18.9	21.6
17	13.2	15.6	14.1	15.3	15.0	12.7	41.2	17.5	17.1	16.0	20.1	21.4
18	14.4	14.8	14.1	14.4	15.2	12.8	38.9	17.2	18.6	16.5	19.4	21.1
19	14.7	15.4	14.8	14.5	15.9	12.4	30.7	17.0	18.2	16.4	19.1	21.1
20	14.0	15.2	14.5	13.8	16.0	12.5	29.3	18.0	17.4	16.3	18.7	20.6
21	15.2	14.2	13.0	14.0	15.2	10.6	29.6	17.5	16.3	16.3	18.5	20.5
22	14.9	14.2	13.4	14.1	14.8	10.2	30.7	17.3	16.4	16.0	18.2	20.3
23	14.9	15.8	13.7	14.3	14.2	9.6	39.2	17.3	15.9	16.1	17.8	19.8
24	15.5	15.6	13.5	14.0	14.2	9.5	34.9	17.5	15.7	16.0	17.8	19.6
25	15.2	14.4	13.4	13.9	14.2	9.6	32.0	17.0	15.8	16.1	16.7	19.3
26	16.5	14.7	14.1	14.2	14.4	10.1	29.9	16.8	13.7	16.3	16.6	18.4
27	15.6	15.1	14.1	14.6	13.4	11.2	27.7	16.8	15.8	16.2	17.1	19.0
28	15.7	15.4	14.0	14.7	12.9	10.5	26.3	16.3	16.1	16.3	17.0	19.1
29	15.0	14.9	14.2	15.0	12.7	11.5	25.3	16.6	15.4	16.0	17.5	19.6
30	14.9		14.2	16.3	12.2	10.6	24.2	16.4	14.2	16.7	17.4	20.0
31	14.7		13.7		12.5		23.1	15.6		17.3		19.3
Sum	454.3	449.6	439.6	432.6	459.8	334.2	769.7	571.1	490.2	501.1	538.7	589.1

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period March 1965-1976: Acre-Feet Average	Maximum	Minimum
Jan.			26	16.5	17	13.2	14.7	901	660	1,083	134
Feb.			8	17.7	†21	14.2	15.5	892	626	1,136	98.0
Mar.			15	15.0	21	13.0	14.2	872	632	1,103	102
Apr.			16	16.7	13	13.1	14.4	858	586	1,060	100
May			7	18.4	30	12.2	14.8	912	588	1,019	109
June			15	13.2	† 8	8.9	11.1	663	501	1,070	86.3
July			17	41.2	1	10.7	24.8	1,527	602	1,527	85.5
Aug.			1	22.5	31	15.6	18.4	1,133	614	1,241	48.4
Sept.			18	18.6	26	13.7	16.3	972	588	1,043	84.1
Oct.			31	17.3	1	14.2	16.2	994	696	1,135	150
Nov.			17	20.1	26	16.6	18.0	1,068	672	1,068	152
Dec.			15	22.2	5	16.1	19.0	1,168	706	1,168	133
Yearly				41.2		8.9	16.5	11,960	7,471	12,352	1,530.9
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				1.17		0.25	0.47	14,753	9,215	15,236	1,888

ø Mean daily † And other days

RIO GRANDE AT DEL RIO, TEXAS AND CD. ACUNA, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir, water-stage recorders (graphic and digital), and binary decimal transmitter located on the right bank 1,200 feet (366 m) upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila at latitude 29°19'35", longitude 100°55'50", and river mile 554.9 (893.0 km); 12.6 river miles (20.3 km) downstream from Amistad Dam, and 693.9 river miles (1,116.7 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 869.20 feet (264.93 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 27 discharge measurements during the year, 17 by the United States Section and 10 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flow by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: December 1923 through July 2, 1941 and January 1968 through 1976. Records are available from May 1900 through April 1915 for a station 12.2 miles (19.6 km) upstream; for December 1919 through March 1920 for a station 8.7 miles (14.0 km) upstream near McKee's Switch; from July 2, 1941 through 1954 and October 1960 through 1967 for a station 1,200 feet (366 m) downstream at the international highway bridge; and from September 1954 through 1976 for a station, Rio Grande below Amistad Dam, 10.4 miles (16.7 km) upstream.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Except for tributary inflows and small intervening diversions below Amistad Dam, flow at this station, after May 31, 1968 is controlled largely by releases from Amistad Reservoir. The concrete control weir was placed in operation on February 8 and the cable on June 7, 1968. The transmitter, operated in cooperation with the National Weather Service, relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow of 1,140,000 second-feet (32,300 m^3/sec) occurred on June 28, 1954, with a gage height of 38.25 feet (11.66 m) at a station 1,200 feet (366 m) downstream. This peak flow was deduced by subtracting 18,000 second-feet (510 m^3/sec) from the peak discharge which occurred below Amistad Dam Site, 10.5 miles (16.9 km) upstream. This subtraction was for estimated flattening of the flood wave in traveling between these points. The lowest recorded flow was 142 second-feet (4.02 m^3/sec) which occurred August 14, 1971, with a gage height of 1.27 feet (0.39 m).

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,360	1,360	4,960	‡ 798	3,170	1,690	1,720	2,040	20,000	1,730	690	190
2	1,360	1,360	4,930	807	2,450	1,690	1,720	2,040	17,400	1,720	690	‡ 190
3	1,360	‡1,360	4,930	816	2,430	1,670	1,730	2,040	12,600	1,720	684	190
4	1,360	1,360	‡4,930	851	2,610	1,660	2,360	2,040	10,100	2,130	‡ 684	190
5	1,360	1,360	4,930	840	3,240	1,640	1,880	2,040	8,730	2,710	684	194
6	1,360	2,210	4,930	826	‡ 3,230	1,630	1,810	2,030	4,980	2,720	684	194
7	1,360	4,150	4,930	827	3,250	1,520	1,860	2,040	4,450	‡ 2,730	684	190
8	1,350	4,180	‡4,920	815	1,860	1,230	1,820	2,030	‡ 4,450	2,730	684	249
9	1,350	4,190	4,910	806	1,830	1,230	1,820	‡ 2,040	4,450	2,720	684	624
10	1,360	4,200	4,910	818	3,220	1,250	1,820	2,030	4,460	2,710	693	648
11	1,340	4,190	4,930	822	3,240	1,230	1,890	2,010	4,460	2,710	690	655
12	1,350	4,190	4,910	818	4,500	1,230	1,940	2,030	3,620	2,720	694	647
13	1,360	‡4,190	4,920	813	5,970	1,210	1,870	2,030	2,440	2,180	703	587
14	1,360	4,150	4,920	805	5,970	1,220	1,850	2,010	2,420	1,100	695	236
15	1,360	4,140	3,410	847	5,970	1,220	1,870	2,010	2,420	1,110	687	213
16	1,360	4,130	1,570	859	5,980	1,220	1,910	9,420	2,410	1,090	696	209
17	1,360	3,050	1,540	818	5,020	‡ 1,220	6,400	‡ 19,600	2,420	1,090	708	206
18	1,360	476	1,530	822	3,210	1,370	2,230	19,800	2,420	1,090	695	200
19	1,360	450	1,530	2,510	3,220	1,730	2,080	20,100	2,420	1,090	647	200
20	‡ 1,360	438	1,520	2,590	3,240	1,720	2,030	20,000	3,010	989	240	200
21	1,360	422	1,530	2,580	3,200	1,720	2,060	19,800	4,890	‡ 692	220	689
22	1,360	430	1,400	5,500	3,190	1,720	2,710	19,600	5,440	681	209	1,600
23	1,360	439	1,210	‡ 5,660	3,180	1,720	2,520	19,800	5,450	684	204	970
24	1,360	438	1,200	5,680	2,680	‡ 1,730	2,170	‡ 20,200	5,430	684	200	850
25	1,360	440	1,060	574	1,700	1,730	2,120	20,100	5,420	682	200	653
26	‡ 1,360	440	456	1,320	1,720	1,730	2,090	20,000	5,420	681	200	641
27	1,360	2,420	549	‡ 1,330	1,710	1,720	‡ 2,070	19,900	4,420	720	196	1,120
28	1,360	4,970	553	1,330	‡ 1,700	1,720	2,070	19,800	3,250	728	190	1,720
29	1,360	4,980	538	‡ 2,530	1,700	1,720	2,050	19,600	2,780	759	‡ 190	1,760
30	1,360		571	2,950	1,690	1,720	‡ 2,050	19,800	‡ 1,750	698	190	1,770
31	1,360		796		1,700		2,050	‡ 20,100		696		1,760
Sum	42,110	70,113	89,923	49,362	97,780	45,810	66,570	338,080	163,910	46,494	15,315	19,745

Month	Current Year 1976								Period #1968-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	2.05	2.03	8	1,390	† 7	1,340	1,360	83,524	64,312	119,702	14,497
Feb.	3.03	1.57	†28	4,980	†21	412	2,420	139,067	130,316	448,205	18,633
Mar.	3.03	1.58	† 1	4,980	26	426	2,900	178,360	100,908	253,329	17,298
Apr.	3.84	1.41	24	9,680	26	220	1,650	97,908	100,858	354,407	33,846
May	3.82	1.47	1	9,540	† 1	235	3,150	193,944	148,156	245,048	30,928
June	2.18	1.96	26	1,760	16	1,160	1,530	90,863	108,273	250,318	23,143
July	5.65	2.13	17	18,600	3	1,620	2,150	132,040	94,263	161,363	31,474
Aug.	5.94	2.23	†23	20,300	7	1,920	10,900	670,572	162,667	670,572	28,826
Sept.	5.87	2.17	1	20,000	30	1,730	5,460	325,111	266,292	1,327,497	38,850
Oct.	2.47	1.73	5	2,730	†22	665	1,500	92,220	179,469	815,207	11,578
Nov.	1.77	1.38	16	741	†22	190	511	30,377	109,703	527,524	13,644
Dec.	2.19	1.38	30	1,790	† 1	190	637	39,164	61,142	228,774	13,918
Yearly	5.94	1.38		20,300		190	2,860	2,073,150	1,526,359	3,743,795	508,583
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	1.81	0.42		575		5.38	81.0	2,557,231	1,882,764	4,617,971	627,337

‡ Discharge measurement made on this day
† And other days

Values for January 1968 are Rio Grande near Del Rio discharge less Arroyo Las Vacas flow

ARROYO DE LAS VACAS AT CD. ACUNA, COAHUILA

DESCRIPTION: Concrete wall with a V-shape concrete control weir of 353 second-foot (10 m^3/sec) capacity, gravity well, and water-stage recorder located on the left bank at Cd. Acuna, Coahuila, latitude 29°19'45", longitude 100°57'20" and 1.8 creek miles (3 km) from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 554.7 (893 km), on the upstream side of the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 12.8 river miles (20.6 km) downstream from Amistad Dam, and 694.1 river miles (1,117.0 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 885.82 feet (270 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 12 discharge measurements during the year, a stable rating curve up to 353 second-feet (10 m^3/sec), which is the capacity of the weir, and a continuous record of gage heights. Computations by shifting control methods for flows exceeding the capacity of the weir. During 1976, the capacity of the weir was exceeded on July 12, 13, 14, 17, and 18. Records available: Occasional estimates from June 1935 to March 19, 1938 and a continuous record from March 20, 1938 through 1976.

REMARKS: Low flow of this stream is from springs and is modified by irrigation diversions upstream. On June 17, 1961, a flood destroyed the station, leaving the control wall under several feet of silt. The station was reconstructed in September and a V-shape concrete control weir with a capacity of 353 second-feet (10 m^3/sec), 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 (275.08 m) at this station. Records prior to 1965 were published under the title "Arroyo Las Vacas near Cd. Acuna, Coahuila."

EXTREME FLOWS FROM RECORDS: Momentary: Max. 63,570 second-feet (1,800 m^3/sec) with a gage height of 25.26 feet (7.70 m) on June 17, 1961. Min. no flow several occasions in 1956, 1957, 1960, 1961, and September 1, 1967.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	23,940 (678)	June 17, 1961	Min.	0	Several days Dec. 1956, Jan. 1957, & Sept. 1, 1967
Monthly:	Max.	1,050 (29.8)	June 1961	Min.	0.4 (0.01)	Several months 1952 1953, & 1954
Yearly:	Max.	96.7 (2.74)	1961	Min.	2.8 (0.08)	1952

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.2	8.5	8.5	5.3	13.1	5.3	2.8	19.1	7.8	7.8	13.8	19.1
2	10.2	8.5	8.5	5.3	12.0	5.3	2.8	19.1	7.4	7.1	12.7	17.7
3	10.2	8.5	8.5	5.3	10.2	4.6	2.8	17.0	11.3	7.1	11.3	17.7
4	10.2	8.5	8.5	149	8.5	4.2	93.6	15.2	9.2	7.1	11.3	17.7
5	11.7	8.5	8.5	28.6	15.9	4.2	26.1	15.2	9.2	6.7	11.3	17.7
6	11.7	8.5	8.5	14.5	14.8	4.2	7.8	15.2	9.2	6.7	11.3	16.6
7	10.2	8.5	8.5	14.5	31.4	4.2	5.7	15.2	8.5	7.8	11.3	16.6
8	8.5	8.5	8.5	13.4	19.1	4.2	7.4	15.2	8.5	7.1	12.0	16.6
9	7.8	8.5	8.5	11.7	14.1	3.5	7.1	15.2	8.5	7.1	12.0	16.6
10	10.2	8.5	8.5	13.1	13.8	3.5	10.2	15.2	8.5	6.0	12.4	16.6
11	10.6	8.5	8.5	13.1	11.7	3.5	78.0	10.2	8.5	6.0	12.4	19.1
12	9.2	8.5	8.5	13.1	11.3	3.5	‡1,810	10.2	8.5	7.1	12.4	19.1
13	7.8	8.5	7.1	11.7	33.5	3.5	1,420	10.2	7.8	6.0	12.7	21.9
14	7.8	8.5	7.1	13.1	15.2	3.5	314	10.2	7.8	6.0	12.7	23.0
15	8.5	8.5	6.0	29.0	11.7	3.5	63.6	8.5	7.8	42.0	12.7	19.1
16	7.8	8.5	6.0	38.8	8.5	3.5	42.7	8.5	7.8	19.1	12.7	19.1
17	7.1	8.5	6.0	17.7	8.5	3.5	2,490	11.6	8.5	11.3	15.9	19.1
18	7.1	8.5	6.0	16.6	8.5	3.5	431	11.6	12.7	9.5	‡ 14.8	19.1
19	7.1	8.5	6.0	14.5	8.5	3.5	125	11.6	15.2	9.5	14.8	19.1
20	7.1	8.5	6.0	12.4	8.5	3.2	69.9	17.6	9.5	9.5	14.8	17.7
21	8.1	8.5	5.3	10.6	8.5	2.8	66.4	14.1	8.5	9.5	12.7	16.6
22	7.1	8.5	5.3	7.8	8.5	2.8	420	11.6	8.5	11.3	11.3	16.6
23	7.1	8.5	5.3	8.1	9.9	2.8	413	11.6	‡ 7.1	11.3	11.3	16.6
24	7.1	8.5	5.3	8.8	9.9	2.8	93.9	11.6	7.1	11.3	12.7	16.6
25	7.1	8.5	5.3	7.8	9.9	2.8	68.2	11.6	7.1	‡ 8.5	16.6	16.6
26	‡ 9.5	‡ 8.5	5.3	7.1	8.5	3.5	51.9	8.5	7.1	9.2	17.7	16.6
27	10.6	8.5	5.3	‡ 7.1	7.1	2.8	41.3	7.1	6.7	9.5	18.0	16.6
28	10.2	8.5	5.3	7.1	‡ 7.1	‡ 2.8	34.3	7.1	7.4	9.5	17.7	13.8
29	8.5	8.5	5.3	7.1	6.7	2.8	‡ 28.6	7.1	7.8	9.5	18.0	11.3
30	9.2		5.3	7.1	6.7	2.8	26.1	8.5	7.8	9.5	19.1	‡ 14.8
31	8.5		5.3		6.0		20.8	7.8		9.5		12.7
Sum	274.0	246.5	210.5	519.3	367.6	106.6	8,275.0	378.4	257.3	305.1	410.4	538.0

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	0.59	0.49	† 5	11.7	†17	7.1	8.8	543	369	910	31.5
Feb.	.52	.52	† 1	8.5	† 1	8.5	8.5	487	506	5,950	33.3
Mar.	.59	.43	†10	11.3	28	5.3	6.7	417	554	2,600	59.2
Apr.	2.69	.43	4	696	† 1	5.3	17.3	1,030	1,417	16,610	75.4
May	1.15	.46	13	63.6	31	6.0	12.0	729	1,332	9,080	90.0
June	.43	.33	† 1	5.3	†21	2.8	3.5	213	2,568	62,520	43.8
July	9.09	.30	17	10,800	4	2.1	267	16,409	1,609	16,409	26.8
Aug.	.72	.49	† 1	19.1	†27	7.1	12.4	751	1,129	13,661	42.2
Sept.	.66	.46	19	15.2	27	6.7	8.5	509	2,983	49,566	37.3
Oct.	1.71	.46	15	187	†10	6.0	9.9	605	1,642	20,444	22.6
Nov.	.72	.59	30	19.1	† 3	11.3	13.8	814	381	1,670	21.0
Dec.	.79	.59	14	25.4	28	11.3	17.3	1,066	356	1,066	22.0
Yearly	9.09	0.30		10,800		2.1	32.5	23,573	14,846	70,026.3	2,066.7
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.77	0.09		305		0.06	0.92	29,076	18,313	86,384	2,555

** Period 1938-1976 ‡ Discharge measurement made on this day † And other days

SAN FELIPE SPRINGS AT DEL RIO, TEXAS

DESCRIPTION: Two large and at least two smaller springs rise near the northeast city limits of Del Rio, Texas in or near the channel of San Felipe Creek at latitude 29°22'20" and longitude 100°53'00". The total yield of these springs consists of waters measured in the Val Verde Canal at Del Rio, Texas and in San Felipe Creek at Moore Park, Del Rio, Texas, and diversions by the city of Del Rio. Diversions by the San Felipe Irrigation Company through the Val Verde Canal are measured at a gaging station consisting of a paved measuring section and gravity well and water-stage recorder located on the left side of the canal under the U. S. Highway 277 Bridge across San Felipe Creek at latitude 29°21'55" and longitude 100°53'10". The bridge is located about 0.6 creek mile (1.0 km) downstream from the source of the springs and 2.9 creek miles (4.7 km) from the confluence of the creek with the Rio Grande. The gaging station on San Felipe Creek at Moore Park consists of gravity well and water-stage recorder located on the left bank about 300 feet (91 m) downstream from the U. S. Highway 277 Bridge at latitude 29°21'50" and longitude 100°53'10". This stream enters the Rio Grande at river mile 553.1 (890.1 km), 1.6 river miles (2.6 km) downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 695.7 river miles (1,119.6 km) downstream from the American Dam at El Paso, Texas. The zeros of the gages for the two stations are, respectively, 942.58 feet (287.30 m) and 930.77 feet (283.70 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Records for the Val Verde Canal and San Felipe Creek at Moore Park are based on 52 and 53 discharge measurements, respectively, by wading during the year, and continuous records of gage heights. Computations by shifting control methods. Records for the Del Rio Pumping Plant are furnished by the City of Del Rio Water Department. Records available: Total yield of the springs, Feb. 1961 through 1976.

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

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 171 (4.84)	July 23, 1976	Min. 29.2 (0.83)	July 29, 1964
Monthly:	Max. 153 (4.33)	December 1976	Min. 34.4 (0.97)	August 1964
Yearly:	Max. 139 (3.94)	1973	Min. 50.5 (1.43)	1963

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	135	127	125	121	119	121	123	136	154	149	153	149
2	134	123	120	120	124	124	122	138	157	150	150	150
3	131	118	119	125	119	124	127	135	158	151	150	153
4	134	118	117	126	125	126	125	142	156	150	150	151
5	135	119	115	123	128	125	126	137	153	148	148	152
6	134	118	118	125	121	126	119	140	152	148	149	151
7	133	118	121	122	120	124	120	148	148	149	150	152
8	138	116	119	121	121	124	123	149	146	147	150	153
9	136	118	118	120	122	124	124	144	150	146	151	153
10	138	118	117	120	122	122	127	144	147	151	151	156
11	138	116	120	123	123	120	129	143	149	153	148	154
12	140	117	121	122	124	120	131	144	148	147	149	154
13	139	116	120	121	125	118	127	149	149	149	153	160
14	132	116	122	118	126	120	124	148	148	149	148	157
15	134	118	123	117	128	120	128	147	149	149	153	153
16	135	120	122	121	126	122	130	145	149	149	151	156
17	133	119	124	119	125	118	146	145	147	148	150	155
18	132	127	124	120	126	119	142	145	150	149	153	157
19	131	123	124	122	123	119	143	140	152	149	152	156
20	130	126	122	120	125	120	140	142	155	149	151	151
21	130	126	119	122	123	120	137	142	146	150	151	149
22	130	124	119	120	121	121	142	142	145	152	151	149
23	130	127	121	120	126	121	171	144	145	152	151	152
24	132	124	121	119	128	123	155	141	145	152	153	151
25	129	124	118	119	126	120	150	142	148	152	150	151
26	130	124	118	116	126	116	148	144	146	151	146	152
27	132	121	120	115	124	125	146	145	148	154	151	154
28	131	122	122	118	122	119	144	144	144	158	152	153
29	132	122	119	118	123	122	144	145	149	155	148	157
30	130		118	121	123	117	141	146	148	154	149	157
31	124		120		123		139	148		153		157
Sum	4,122	3,505	3,726	3,614	3,837	3,640	4,193	4,444	4,479	4,663	4,512	4,755

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Feb. 1961-1976: Acre-Feet Average	Maximum	Minimum
Jan.			12	140	31	124	133	8,176	6,127	8,860	2,274
Feb.			† 1	127	† 8	116	121	6,952	5,434	7,771	2,119
Mar.			1	125	5	115	120	7,390	5,879	8,521	2,365
Apr.			4	126	27	115	120	7,168	5,624	8,340	2,291
May			† 5	128	† 1	119	124	7,611	5,935	8,620	2,842
June			† 4	126	26	116	121	7,220	5,741	8,346	2,481
July			23	171	6	119	135	8,317	5,945	8,670	2,214
Aug.			† 8	149	3	135	143	8,815	5,950	8,815	2,114
Sept.			3	158	28	144	149	8,884	5,886	8,884	2,555
Oct.			28	158	9	146	150	9,249	6,344	9,249	2,508
Nov.			† 1	153	26	146	150	8,949	6,132	8,949	2,384
Dec.			13	160	† 1	149	153	9,431	6,426	9,431	2,390
				171		115	135	98,162	71,423	100,796	36,580
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				4.84		3.26	3.82	121,083	88,100	124,332	45,121

ø Mean daily † And other days

SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the right bank at latitude 29°19'55", longitude 100°53'20", immediately upstream from the Silos Farm road bridge, 1.1 creek miles (1.8 km) from the confluence with the Rio Grande, and about 2 miles (3.2 km) south-southeast of Del Rio, Texas. This stream enters the Rio Grande at river mile 553.1 (890.1 km), 1.6 river miles (2.6 km) downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 695.7 river miles (1,119.6 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 877.43 feet (267.44 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 52 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 1976.

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 (4.6 m), or a flow of about 60,000 second-feet (1,700 m^3/sec). On June 28, 1954 combined creek flow and backwater from the Rio Grande reached a stage of 24.51 feet (7.47 m), the highest of record, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 45,000 second-feet (1,270 m^3/sec) on June 14, 1935 with a gage of 23.20 feet (7.07 m). Min. 0.4 second-foot (0.01 m^3/sec) on July 20, 1953.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	16,200 (459)	June 14, 1935	Min.	1.5 (0.04)	July 21, 1953
Monthly:	Max.	805 (22.8)	June 1935	Min.	4.6 (0.13)	July 1953
Yearly:	Max.	136 (3.85)	1935	Min.	25.1 (0.71)	1953

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	120	115	89.6	80.6	100	89.3	81.7	136	114	121	143	142
2	122	111	‡ 86.2	82.7	89.9	‡ 87.7	81.4	129	121	120	‡ 143	141
3	119	‡109	88.2	88.6	93.1	84.4	83.9	‡ 125	129	119	142	139
4	120	112	86.4	104	‡ 96.9	83.7	359	125	127	‡ 123	144	140
5	120	109	85.6	96.7	111	83.8	170	122	128	124	144	142
6	‡ 121	113	89.4	‡ 105	102	84.3	109	121	126	124	144	136
7	121	115	93.7	114	134	83.3	‡ 113	120	‡ 127	126	146	‡ 132
8	122	116	92.4	111	110	‡ 82.9	116	119	125	122	145	134
9	123	116	‡ 90.3	109	110	81.8	117	120	125	119	‡ 148	132
10	127	‡117	92.4	110	110	82.7	115	‡ 119	128	117	148	123
11	124	115	93.7	111	‡ 109	83.9	136	120	129	115	145	126
12	115	106	88.7	111	109	84.0	130	121	129	118	142	124
13	‡ 118	96.9	89.8	‡ 112	111	82.9	‡ 120	115	125	‡ 120	143	149
14	124	93.8	92.0	100	102	82.8	118	118	‡ 125	120	145	‡ 145
15	120	91.7	91.0	107	98.3	‡ 79.9	136	124	127	128	141	143
16	117	86.1	‡ 90.3	108	96.9	77.9	180	126	122	125	‡ 143	142
17	123	84.6	89.8	109	97.0	78.9	759	‡ 123	124	126	147	140
18	119	‡ 82.2	90.0	109	‡ 100	82.1	150	122	128	126	144	139
19	111	83.9	89.4	106	135	80.9	141	123	128	‡ 126	144	139
20	‡ 111	85.9	88.0	‡ 101	115	81.2	‡ 136	121	129	126	142	140
21	110	90.9	88.3	101	112	78.3	269	119	‡ 131	125	144	‡ 141
22	109	93.0	87.3	103	111	‡ 75.2	396	117	127	126	144	141
23	110	‡ 94.6	‡ 89.9	103	105	75.2	417	115	125	129	‡ 145	142
24	112	93.4	90.5	102	101	79.4	156	‡ 115	123	129	145	145
25	112	92.4	87.5	102	‡ 109	82.0	146	114	123	128	144	146
26	116	90.6	85.4	98.2	107	98.2	140	115	122	‡ 128	142	146
27	‡ 117	89.1	85.2	‡ 97.6	100	92.0	‡ 135	115	120	138	145	148
28	115	89.4	85.1	97.5	96.2	87.1	134	115	‡ 128	143	143	‡ 149
29	115	90.0	81.3	106	96.1	‡ 86.1	138	119	128	154	142	150
30	118		‡ 80.8	97.5	95.4	82.3	138	117	122	141	‡ 142	150
31	116		81.2		94.4		138	‡ 112		141		151
Sum	3,647	2,882.5	2,739.4	3,083.4	3,257.7	2,494.2	5,559.0	3,722	3,765	3,927	4,319	4,357

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1932-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.69	1.06	29	149	29	76.5	118	7,234	4,645	8,906	934
Feb.	1.56	.76	11	140	5	45.6	99.4	5,717	3,730	8,630	487
Mar.	1.33	1.11	11	102	31	73.8	88.4	5,434	3,506	7,837	689
Apr.	2.22	.70	15	215	14	36.8	103	6,116	3,999	10,407	566
May	2.41	1.14	19	248	16	83.1	105	6,462	4,786	17,600	739
June	2.65	1.00	26	281	23	70.2	83.1	4,947	5,096	47,900	301
July	9.85	1.01	4	2,970	2	74.5	179	11,026	4,144	22,077	285
Aug.	1.85	.77	16	176	13	53.1	120	7,382	3,650	7,584	350
Sept.	1.61	1.32	2	144	1	110	126	7,468	5,135	28,678	872
Oct.	1.91	1.30	29	185	10	109	127	7,789	4,933	14,229	1,000
Nov.	1.68	1.32	4	161	12	121	144	8,567	4,131	8,567	526
Dec.	2.01	.90	13	201	9	71.1	141	8,642	4,240	8,642	496
Yearly	9.85	0.70		2,970		36.8	120	86,784	51,995	98,137	18,201
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	3.00	0.21		84.1		1.04	3.40	107,048	64,136	121,052	22,451

‡ Discharge measurement made on this day

DIVERSIONS FROM THE RIO GRANDE

MAVERICK CANAL AT MILE 13 NEAR QUEMADO, TEXAS

DESCRIPTION: Light-weight cableway for making current meter measurements from the bank, bubbler gage, and water-stage recorders (graphic and digital), located on the left bank of a gunnite-lined section of the canal at latitude 29°03'00", longitude 100°39'40", 0.5 canal mile (0.8 km) downstream from the Tequesquite Creek Siphon, 3.5 canal miles (5.6 km) upstream from the Las Moras Creek Siphon, about 7.5 miles (12.1 km) north-northwest of Quemado, Maverick County, Texas, and 12.8 canal miles (20.6 km) from the canal intake. The canal intake is at river mile 537.4 (864.9 km), 17.3 river miles (27.8 km) downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 711.4 river miles (1,144.9 km) downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 28 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Gage heights at this station are affected by gate operation at Las Moras Siphon. Records available: June 21, 1949 through 1976.

REMARKS: At canal mile 31.8 (51.2 km) a portion of the diverted water returns to the river through the Maverick Power Plant, and the remainder enters the Maverick Canal Extension. In 1976, 10,051 acres (4,068 ha) of land were irrigated between canal mile 31.8 (51.2 km) and the power plant, and 27,049 acres (10,946 ha) were irrigated from the extension, making a total of 37,100 acres (15,014 ha). A total of 788,313 acre-feet (972,384,000 m^3) returned to the Rio Grande at the power plant and through the irrigation system (see pages 51, 53, and 56).

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,750 second-feet (49.6 m^3/sec) on August 30, 1973. Min. no flow several days in June, July, and November 1954.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 1,730 (49.0)	August 29, 1973	Min. 0	June 28 through July 11 & Nov. 2, 1954
Monthly:	Max. 1,580 (44.7)	August 1973	Min. 319 (9.03)	July 1954
Yearly:	Max. 1,420 (40.2)	1961	Min. 632 (17.9)	1972

Mean Daily Discharge in Second-Feet 1976 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,280	1,470	1,480	982	1,230	1,490	1,520	1,510	1,470	1,470	945	253
2	1,260	1,470	‡1,490	982	1,450	1,480	1,540	1,500	‡ 1,460	1,460	934	421
3	1,270	‡ 1,420	1,510	998	1,480	1,480	1,540	‡ 1,480	1,450	1,460	921	‡ 285
4	1,360	1,420	1,540	832	1,540	1,470	1,490	1,460	1,470	1,470	907	441
5	1,390	1,470	1,530	1,170	1,490	1,480	1,450	1,460	1,480	1,500	905	445
6	‡ 1,430	1,460	1,510	1,020	1,440	1,500	‡ 1,510	1,410	1,480	1,490	897	‡ 244
7	1,440	1,500	1,560	1,000	1,350	1,480	1,510	1,360	1,500	1,470	901	433
8	1,430	1,520	1,530	988	1,370	‡ 1,340	1,500	1,440	1,490	1,520	896	429
9	1,450	1,540	1,530	969	1,240	1,250	1,520	1,440	1,500	1,520	‡ 892	532
10	1,450	1,550	1,540	961	1,220	1,240	1,510	1,440	1,500	1,530	908	761
11	1,460	1,530	1,540	966	‡ 1,390	1,260	1,490	1,440	1,510	1,530	914	824
12	1,460	1,520	1,520	974	1,400	1,240	1,320	1,440	1,510	1,500	892	819
13	1,400	1,570	1,510	‡ 974	1,400	1,240	1,380	1,430	1,480	1,490	908	843
14	1,380	1,580	1,520	964	1,440	1,230	1,370	1,440	‡ 1,490	‡ 1,350	914	765
15	1,380	1,590	1,520	953	1,450	1,190	1,390	1,450	1,490	1,260	914	471
16	1,430	1,570	‡1,500	1,110	1,440	1,180	1,410	1,440	1,500	1,280	914	443
17	1,440	1,560	1,500	1,040	1,460	1,190	1,410	‡ 1,430	1,490	1,230	978	432
18	1,440	1,150	1,520	979	1,450	1,260	1,410	1,460	1,520	1,210	960	431
19	1,450	‡ 641	1,520	968	1,480	1,420	1,420	1,460	1,530	1,220	943	430
20	‡ 1,450	632	1,510	1,300	1,470	1,530	‡ 1,460	1,470	1,520	1,230	777	431
21	1,410	612	1,510	1,320	1,450	1,530	1,540	1,480	1,530	1,060	479	‡ 433
22	1,430	601	1,410	1,330	1,480	‡ 1,510	1,420	1,490	1,530	871	407	955
23	1,460	573	1,290	1,360	1,480	1,520	1,370	1,490	1,520	871	‡ 192	321
24	1,470	541	1,280	1,340	1,470	1,510	1,380	1,490	1,510	882	398	282
25	1,500	581	1,240	1,250	‡ 1,470	1,510	1,400	1,470	1,530	882	445	490
26	1,470	583	‡ 855	557	1,500	1,520	1,490	1,470	1,530	862	329	470
27	1,480	658	545	‡ 993	1,470	1,520	1,490	1,470	1,520	860	441	455
28	1,420	1,380	652	1,020	1,470	1,480	1,500	1,470	‡ 1,500	‡ 1,010	421	278
29	1,450	1,470	699	1,100	1,470	1,510	1,520	1,470	1,490	1,100	286	227
30	1,480		‡ 676	1,170	1,480	1,520	1,530	1,460	1,450	1,060	241	307
31	1,480		797		1,490		1,520	1,470		976		466
Sum	44,100	35,162	41,334	31,570	44,420	42,080	45,310	45,190	44,950	38,624	21,859	14,817

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1950-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	9.12	7.95	25	1,510	2	1,190	1,420	87,471	71,115	93,229	25,608
Feb.	9.40	4.17	13	1,610	23	447	1,210	69,743	65,025	86,817	27,287
Mar.	9.32	5.28	7	1,560	26	509	1,330	81,984	68,907	91,359	27,679
Apr.	8.75	4.65	21	1,400	26	375	1,050	62,618	66,185	88,483	40,721
May	9.39	7.33	7	1,610	1	979	1,430	88,106	72,799	91,458	39,400
June	9.18	7.96	27	1,550	†15	1,170	1,400	83,464	73,886	90,547	31,210
July	9.30	8.05	21	1,600	12	1,200	1,460	89,871	74,007	93,900	19,600
Aug.	9.11		1	1,510	7	1,360 ∅	1,460	89,633	76,917	97,111	36,708
Sept.	9.10	8.68	†19	1,540	6	1,400	1,500	89,157	75,080	89,851	32,963
Oct.	9.10	6.47	10	1,540	27	841	1,250	76,610	75,889	94,076	22,235
Nov.	7.00		17	1,000	†29	0	729	43,357	69,290	92,509	22,487
Dec.	7.95	.53	22	1,240	1	10.0	478	29,389	67,863	93,402	23,516
Yearly	9.40			1,610		0	1,230	891,403	856,963	1,027,400	458,631
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	2.87			45.6		0	34.8	1,099,546	1,057,064	1,267,298	565,721

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

PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, solid ledge rock and concrete control, bubbler gage, and digital water-stage recorder located on the right bank at latitude 29°08'45", longitude 100°43'05", 1.6 creek miles (2.6 km) from the confluence with the Rio Grande, and about 19 miles (30.6 km) southeast of Del Rio, Texas. This stream enters the Rio Grande at river mile 530.1 (853.1 km), 6.1 river miles (9.8 km) downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, and 718.7 river miles (1,156.6 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 813.68 feet (248.01 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 12 discharge measurements during the year and a continuous record of gage heights. Records available: September 1955 through 1976 at this station, and November 22, 1928 through August 1955 at a site 3.9 miles (6.3 km) 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 (2,270 m^3/sec), backwater may reach this station. Backwater from the Rio Grande flood of June 1954 reached a gage height of 28.8 feet (8.78 m), or an elevation of 842.50 feet (256.79 m) above mean level, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 186,000 second-feet (5,270 m^3/sec) on June 24, 1948 with a gage height of 32.0 feet (9.75 m). Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 28,200 (799)	June 24, 1948	Min. 0	Frequently
Monthly:	Max. 953 (27.0)	June 1948	Min. 0	Frequently
Yearly:	Max. 105 (2.97)	1932	Min. 1.8 (0.05)	1945

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.0	5.4	‡ 2.2	‡ 1.8	15.9	‡ 6.1	1.3	23.3	26.6	‡ 30.7	‡ 25.8	34.5
2	‡ 7.1	‡ 5.3	2.4	1.8	7.5	5.6	‡ 1.3	‡ 20.9	‡ 24.8	27.1	22.5	34.6
3	6.2	5.4	2.5	2.1	‡ 5.3	5.6	1.3	19.6	36.4	55.4	25.9	‡ 32.9
4	6.1	5.3	2.5	74.3	4.3	5.4	240	21.4	33.5	60.9	24.8	31.9
5	6.2	5.2	2.2	13.3	5.0	5.3	197	21.0	33.3	43.9	25.3	31.6
6	6.3	5.2	2.1	5.7	5.2	5.0	180	20.4	30.4	31.6	23.0	31.3
7	6.3	5.0	2.1	4.8	83.9	4.9	39.1	20.7	28.0	28.9	22.4	28.6
8	6.2	4.9	2.8	4.3	37.0	4.7	19.3	19.3	28.2	27.1	22.5	28.3
9	6.2	5.0	2.7	3.9	11.0	4.6	18.6	18.0	27.4	20.7	24.2	28.8
10	6.3	6.2	2.5	3.8	8.6	4.4	18.6	18.8	24.4	24.5	29.2	29.7
11	6.5	2.4	2.4	3.7	8.1	4.3	224	18.5	12.7	30.1	26.5	35.1
12	6.5	3.5	2.8	3.7	7.7	4.1	229	18.4	18.6	28.3	27.6	32.1
13	6.5	5.0	2.6	3.7	6.9	3.9	32.2	20.7	18.9	35.4	29.2	36.1
14	6.5	5.1	2.4	3.5	6.5	3.8	38.9	21.2	19.2	32.4	29.5	45.2
15	6.2	5.0	2.4	5.2	5.8	3.6	18.4	22.4	19.6	32.3	30.8	40.0
16	6.2	5.0	2.6	19.0	5.2	3.5	18.4	21.0	19.6	21.6	31.6	35.4
17	6.1	2.4	2.5	6.4	5.1	3.2	58.2	21.4	20.0	19.1	37.2	33.8
18	5.9	2.0	2.5	4.3	4.9	3.1	33.8	22.2	20.3	19.6	36.3	33.7
19	5.7	1.9	2.7	4.2	5.7	2.9	32.9	18.5	20.7	19.1	34.5	33.5
20	5.7	1.9	2.8	4.1	6.1	2.8	33.7	21.8	21.0	18.4	34.1	32.8
21	5.5	1.8	2.5	5.5	31.5	2.6	33.7	22.1	21.4	18.9	33.0	31.4
22	5.5	1.8	2.5	4.0	23.4	2.5	151	23.4	21.5	25.4	32.3	31.1
23	5.7	1.7	2.4	4.3	13.7	2.4	124	22.9	21.9	28.9	31.7	31.6
24	5.6	1.8	2.8	4.5	11.4	2.2	76.1	22.1	22.3	32.1	32.8	31.9
25	5.9	1.9	3.1	3.7	10.1	2.1	49.7	22.8	22.7	26.6	34.8	31.7
26	5.5	2.0	2.8	3.7	8.9	1.9	42.3	24.1	23.9	18.6	35.9	30.6
27	5.6	4.4	2.1	3.5	8.7	1.8	34.6	24.6	25.1	20.9	34.8	30.6
28	5.6	2.5	1.9	3.6	9.7	1.7	29.0	22.6	25.6	17.0	32.2	30.9
29	5.6	2.3	1.8	3.6	7.4	1.5	26.9	18.2	26.9	20.7	32.2	32.4
30	5.6		1.8	4.0	6.8	1.4	25.5	21.9	28.2	17.1	32.5	39.2
31	5.7		1.9		6.6		24.9	27.1		20.4		39.2
Sum	188.5	107.3	75.3	214.0	383.9	106.9	2,053.7	661.1	723.1	851.7	895.1	1,030.5

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1929-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	0.96	0.80	1	8.0	26	4.0	6.1	374	519	2,270	0
Feb.	1.10	.70	10	11.8	†21	1.6	3.7	213	572	5,760	0
Mar.	.81	.69	25	3.3	29	1.7	2.4	149	503	2,500	0
Apr.	2.46	.68	4	205	1	1.7	7.1	424	1,359	27,100	0
May	2.64	.80	7	257	1	4.0	12.4	761	2,150	29,400	0
June	.90	.71	1	6.5	30	1.4	3.6	212	3,326	56,700	0
July	4.91	.70	4	1,460	† 1	1.2	66.2	4,073	1,647	30,000	0
Aug.	1.62	.83	13	33.2	19	8.6	21.3	1,311	1,816	48,700	0
Sept.	1.77	.72	3	53.1	11	5.7	24.1	1,434	2,447	49,965	0
Oct.	1.88	1.46	4	61.0	†28	17.0	27.5	1,689	1,073	3,940	0
Nov.	1.90	1.40	3	60.6	2	14.7	29.3	1,775	497	2,590	0
Dec.	1.78	1.59	13	46.5	8	27.8	33.2	2,044	579	2,470	0
Yearly	4.91	0.68		1,460		1.2	19.9	14,459	16,993	76,259.3	1,325.3
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	1.50	0.21		41.3		0.03	0.56	17,835	20,961	94,006	1,635

‡ Discharge measurement made on this day † And other days

RIO SAN DIEGO NEAR JIMENEZ, COAHUILA

DESCRIPTION: Cableway, masonry and concrete Cipolletti weir of 777 second-foot (22 m^3/sec) capacity, gravity well, and water-stage recorder located on the left bank of Rio San Diego, and gravity well and water-stage recorder on Acequia de Dolores, an irrigation canal that runs along the left bank of the river under the cable, located at latitude 29°04'20", longitude 100°43'50", about 3.5 miles (6 km) west of Jimenez, Coahuila, and 4.1 river miles (7 km) from the confluence with the Rio Grande. Part of the canal flow measured here returns to the river downstream. This stream enters the Rio Grande at river mile 525.2 (845 km), 11.0 river miles (17.7 km) downstream from Maverick Dam, 29.4 river miles (47.3 km) downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 723.6 river miles (1,164.5 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 831.73 feet (253.51 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: For the river, based on the weir discharge table and a continuous record of gage heights; and for the canal, on a continuous record of gage heights. The flows tabulated below include the flow of the canal, and prior to 1964, records do not include this flow. In 1976 the capacity of the weir was exceeded over 25% of the time. Records available: 1922 through 1976. The records from 1922 through September 1932 are considered doubtful.

REMARKS: Reservoirs and irrigation diversions upstream from these stations modify the flow of this spring-fed stream. On December 24, 1955, the zero of the gage was raised 2.62 feet (0.80 m); in November 1961 an additional 0.20 foot (0.06 m), and the capacity of weir was increased from 706 (20 m^3/sec) to 777 second-feet (22 m^3/sec).

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 81,930 second-feet (2,320 m^3/sec) on June 17, 1961 with a gage height of 20.70 feet (6.31 m). 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 (Cubic Meters per Second)**

Daily:	Max.	36,700 (1,040)	July 18, 1975	Min.	0	Occasionally
Monthly:	Max.	2,380 (67.5)	Oct. 1932	Min.	8.0 (0.23)	July 1956
Yearly:	Max.	622 (17.6)	1976	Min.	24.0 (0.68)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	215	130	110	108	119	96.1	84.8	1,820	1,180	805	706	491
2	205	130	110	107	119	96.1	78.8	1,780	1,250	805	717	466
3	205	117	‡ 110	118	106	94.4	80.5	1,680	1,230	805	830	466
4	194	119	110	1,190	105	96.8	1,030	1,640	1,180	883	798	438
5	194	119	109	277	105	96.8	657	‡ 1,680	1,140	879	798	438
6	194	119	109	183	118	97.1	188	1,660	1,100	780	798	438
7	184	119	110	149	3,460‡	97.5	173	1,640	1,060	713	798	438
8	184	119	112	133	371	91.5	141	1,590	1,060	713	770	438
9	184	119	107	133	189	‡ 85.5	176	1,590	1,020	713	780	438
10	184	119	108	133	153	85.5	205	1,590	1,010	699	714	438
11	184	‡ 119	108	133	196	85.5	360	1,590	1,010	682	682	438
12	184	119	108	133	196	90.4	‡1,770	1,550	975	780	682	438
13	178	119	108	133	196	85.5	‡4,660	1,550	975	784	682	477
14	173	119	114	‡ 111	143	85.5	2,080	1,510	‡ 939	784	682	509
15	173	119	114	182	107	85.5	‡1,620	1,510	939	749	682	491
16	173	119	114	304	90.8	79.8	5,090	1,510	922	749	682	491
17	173	118	114	146	78.0	158	10,600	‡ 1,460	904	717	682	491
18	173	118	‡ 114	135	84.0	175	5,190	1,460	939	699	664	491
19	161	118	114	126	104	106	3,380	1,460	939	685	‡ 664	491
20	161	118	108	118	103	99.2	2,630	1,420	904	667	664	480
21	‡ 161	‡ 118	101	92.9	90.1	113	‡2,660	1,420	872	653	664	466
22	149	118	101	92.9	83.7	113	5,820	1,390	869	‡ 622	664	466
23	149	118	107	93.2	77.3	‡ 113	3,530	1,370	869	607	664	452
24	157	118	113	90.1	77.3	113	2,590	1,330	869	607	664	452
25	124	118	107	88.3	‡ 77.3	106	2,280	1,330	837	607	664	452
26	116	118	101	88.3	77.3	107	2,120	1,300	837	607	657	438
27	116	118	101	81.9	76.3	169	‡2,020	1,260	837	622	540	438
28	131	108	101	‡ 81.9	75.6	120	1,950	1,260	837	682	519	438
29	131	110	101	103	69.6	107	1,950	1,230	‡ 837	734	505	‡ 438
30	124		101	98.9	69.6	‡ 92.2	1,900	1,210	837	766	505	413
31	124		‡ 101		66.4		1,860	1,190		731		413
Sum	5,158	3,440	3,346	4,963.4	6,983.3	3,140.9	68,674.1	45,980	29,177	22,329	20,521	14,152

Month	Current Year 1976								Period 1933-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High Day	High	Low Day	Low			Average	Maximum	Minimum
Jan.	0.69	0.52	1	215	†26	116	166	10,232	7,339	36,430	1,860
Feb.	.52	.49	† 1	130	28	108	119	6,832	5,818	25,760	1,060
Mar.	.46	.43	†14	114	†30	101	108	6,634	5,116	27,040	1,340
Apr.	4.33	.39	4	5,830	15	78.8	165	9,845	6,101	40,270	1,110
May	5.91	.33	7	9,780	31	66.4	225	13,862	11,028	120,200	861
June	1.18	.26	17	689	16	79.8	105	6,234	10,283	108,300	543
July	8.04	.30	17	16,100	2	78.8	2,210	136,149	13,725	136,149	490
Aug.	2.17	1.64	1	1,820	31	1,190	1,480	91,248	11,009	91,248	738
Sept.	1.87	1.35	2	1,470	†25	837	971	57,857	17,332	94,667	1,183
Oct.	1.87	1.12	4	1,290	†23	607	720	44,296	18,141	71,830	1,698
Nov.	1.35	.98	3	830	29	491	685	40,696	12,122	64,060	803
Dec.	1.05	.89	14	544	†30	413	456	28,067	8,382	45,320	1,130
Yearly	8.04	0.26		16,100		66.4	622	451,952	126,396	451,952	17,430
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.45	0.08		456		1.88	17.6	557,477	155,908	557,477	21,508

** Period October 1932-1976 ‡ Discharge measurement made on this day † And other days

RIO GRANDE NEAR JIMENEZ, COAHUILA AND QUEMADO, TEXAS

DESCRIPTION: Cableway, bubbler gage, control weir of 1,270 second-foot (36 m^3/sec) capacity, gravity well, and water-stage recorder located on the right bank at latitude 29°03'00", longitude 100°40'00", and river mile 523.4 (842 km); 1.5 miles (2.4 km) south-southeast of Jimenez, Coahuila, 1.9 river miles (3 km) downstream from Rio San Diego, about 7.5 miles (12.1 km) north-northwest of Quemado, Maverick County, Texas, 12.8 river miles (20.6 km) downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 31.3 river miles (50.4 km) downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 725.5 river miles (1,167.6 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 769.00 feet (234.39 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 10 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods prior to completion of the weir and for flows exceeding the capacity of the weir thereafter. Computations for flows within the capacity of the weir were based on a stable control weir rating curve defined by meter measurements. Records available: 1965 through 1976. Records, excluding some high flow periods, are also available from 1956 through May 1965 for a station 8.1 river miles (14 km) upstream. Records prior to 1976 were published under the title "Rio Grande below Maverick Dam near Quemado, Texas."

REMARKS: This station was placed in operation January 1, 1965 and replaces the station "Rio Grande below Maverick Dam near Del Rio, Texas" which stopped operating June 1, 1965. Irrigation diversions 14.0 river miles (22.5 km) upstream largely control the flow at this station. A bubbler gage replaced the gravity well on May 1, 1966. The weir was placed in operation June 1, 1967 at which time a bubbler gage and gravity well were installed and the zero of the gage was set 3.28 feet (1 m) higher.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 79,800 second-feet (2,260 m^3/sec) on July 18, 1975 with a gage height of 25.20 feet (7.68 m). Min. 3.5 second-feet (0.10 m^3/sec) on March 9, 1969 with a gage height of 0.16 feet (0.05 m).

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	67,100 (1,900)	July 18, 1975	Min.	7.1 (0.20)	July 16, 17 & 18, 1969
Monthly:	Max.	21,300 (602)	Sept. 1974	Min.	28.3 (0.80)	June 1969
Yearly:	Max.	4,380 (124)	1974	Min.	286 (8.11)	1968

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	322	152	3,440	93.9	1,950	371	226	2,530	21,400	1,060	703	667
2	343	152	3,440	93.9	1,440	352	213	2,530	20,200	1,020	696	516
3	343	152	3,440	118	1,030	333	229	2,410	14,900	1,020	742	689
4	299	152	3,440	3,390	1,000	333	3,470	2,320	10,400	1,230	‡ 742	516
5	272	143	3,440	501	1,720	295	3,290	2,280	9,820	1,900	713	516
6	250	135	3,440	‡ 238	1,840	273	1,140	2,280	5,330	1,940	710	689
7	250	2,070	3,440	185	‡ 9,610	273	766	2,270	4,240	1,970	710	501
8	239	2,850	3,440	169	2,170	233	629	2,240	4,130	1,940	696	501
9	239	2,840	3,440	160	1,020	155	735	2,240	4,030	1,930	682	501
10	229	2,800	3,440	152	1,100	118	717	2,200	4,030	1,930	682	501
11	229	2,890	3,440	152	2,050	118	1,210	2,160	3,990	1,910	678	516
12	229	2,890	3,440	152	2,370	123	5,300	2,120	3,810	1,980	667	501
13	229	2,800	3,390	152	4,660	118	9,080	2,090	2,000	2,000	671	547
14	‡ 219	‡ 2,840	3,390	152	4,630	118	3,780	2,050	1,840	1,060	667	586
15	219	2,840	3,130	170	4,590	‡ 110	2,420	2,050	1,840	777	660	544
16	219	2,840	466‡	314	4,520	110	‡ 6,460	4,130	1,800	710	667	554
17	229	2,740	176	259	4,340	138	24,100	20,200	1,770	696	696	554
18	239	540	138	196	1,980	357	10,200	21,200	1,840	682	682	554
19	239	159	127	‡ 241	1,910	180	4,770	21,800	1,840	682	682	554
20	219	135	118	1,430	1,920	327	3,600	‡ 21,800	1,840	653	682	544
21	208	118	102	1,450	1,800	352	3,850	21,500	3,670	639	667	533
22	208	118	102	2,830	1,770	333	8,620	21,200	4,730	639	660	‡ 731
23	198	118	102	4,310	1,730	295	8,690	21,300	4,800	639	780	1,730
24	188	118	110	4,380	1,730	295	4,240	21,900	4,730	639	773	1,420
25	169	110	110	2,850	745	295	3,430	21,700	4,730	639	682	918
26	160	110	110	182	487	295	3,060	21,600	4,730	614	766	858
27	151	110	102	452	487	463	2,870	21,300	4,450	636	572	883
28	133	2,970	102	477	448	381	2,710	21,200	2,600	713	526	2,010
29	133	3,490	102	1,540	431	301	2,650	21,100	2,500	816	639	2,150
30	133		102	1,720	431	273	2,650	21,000	1,410	777	671	2,040
31	133		93.9		410		2,570	21,600		731		1,870
Sum	6,870	39,382	53,352.9	23,509.8	66,319	7,718	127,675	358,300	159,400	34,572	20,564	26,194

Month	Current Year 1976								Period 1968-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				Average	Maximum	Minimum
			Day		Day						
Jan.	0.79	0.43	3	360	31	130	222	13,628	22,428	59,230	5,236
Feb.	2.62	.33	29	3,530	†25	110	1,360	78,106	92,397	401,339	5,788
Mar.	2.62	.30	† 1	3,510	31	93.9	1,720	105,826	54,656	181,473	5,874
Apr.	5.84	.30	4	13,300	† 1	93.9	950	56,552	50,378	293,637	5,030
May	11.58	.75	7	31,400	31	410	2,140	131,552	90,863	200,487	6,574
June	1.05	.33	18	607	16	108	257	15,313	46,828	164,298	1,671
July	16.17	.56	17	47,000	2	213	4,130	253,327	80,638	311,781	2,322
Aug.	8.69	2.03	24	22,000	16	2,010	11,500	710,869	145,942	710,869	11,855
Sept.	8.53	1.54	† 1	21,500	30	1,090	5,300	316,185	233,695	1,264,108	13,678
Oct.	2.26	1.08	4	2,500	26	611	1,120	68,623	172,512	831,298	13,399
Nov.	1.57	.95	24	1,180	28	516	685	40,788	86,325	499,143	13,343
Dec.	2.13	.92	†29	2,190	† 7	501	844	51,974	37,369	181,109	7,486
	16.17	0.30		47,000		93.9	2,540	1,842,743	1,114,031	3,169,805	207,998
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	4.93	0.09		1,330		2.66	71.9	2,272,999	1,374,143	3,909,913	256,561

‡ Discharge measurement made on this day † And other days

RIO SAN RODRIGO AT EL MORAL, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir of 4,600 second-foot (130 m^3/sec) capacity, and water-stage recorder located on the left bank at El Moral, Coahuila, latitude 28°53' 45", longitude 100°38' 05", 0.6 river mile (1 km) from the confluence with the Rio Grande, and about 15.5 miles (25 km) northwest of Piedras Negras, Coahuila. The stream enters the Rio Grande at river mile 512.0 (824 km); 19.5 river miles (31.4 km) downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 20.7 river miles (33.3 km) upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 736.8 river miles (1,185.8 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 751.61 feet (229.09 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 50 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods after July 12, 1976. Records available: 1962 through 1976.

REMARKS: This station, located 10.6 river miles (17.1 km) downstream from the permanent station which was in operation from 1922 through May 1966, was originally installed on a provisional basis; however, it became the permanent station on June 1, 1966 when operation of the upstream station was discontinued. Records prior to 1976 were published under the title "Rio San Rodrigo near Mouth at El Moral, Coahuila." The rating curve for this station is affected by backwater from the Rio Grande when its flow is approximately 10,000 second-feet (283 m^3/sec). The flow of this spring-fed stream is modified by diversions above this station. The concrete control weir, placed in operation on November 25, 1969 was destroyed by the flood of July 12, 1976. Prior to November 25, 1969, the zero of the gage was 746.82 feet (227.63 m) above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 140,000 second-feet (3,970 m^3/sec) on July 18, 1975 with a gage height of 18.44 feet (5.62 m). Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	44,500 (1,260)	July 18, 1975	Min. 0		Frequently
Monthly:	Max.	7,380 (209)	July 1976	Min. 0		Frequently
Yearly:	Max.	837 (23.7)	1976	Min 5.3 (0.15)		1963

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	78.0	57.6	38.8	25.1	30.0	28.3	25.1	1,800	364	‡ 445	338	251
2	75.6	57.6	38.8	24.0	30.0	28.3	24.0	‡ 1,550	374	424	325	‡ 244
3	73.1	57.6	38.8	26.1	28.3	27.2	23.0	1,340	‡ 381	399	318	244
4	73.1	57.6	38.8	28.3	28.3	26.1	1,430	‡ 1,180	381	406	‡ 311	244
5	73.1	56.2	37.1	‡ 33.5	30.0	24.0	‡1,780	1,080	381	399	304	244
6	73.1	56.2	37.1	35.3	30.0	24.0	185	‡ 1,030	381	‡ 374	304	244
7	73.1	56.2	37.1	35.0	4,910	24.0	114	989	‡ 381	353	295	238
8	73.1	54.7	37.1	30.4	353	24.0	109	953	381	‡ 352	295	‡ 232
9	73.1	54.7	37.1	28.3	144	23.0	245	918	378	334	286	232
10	73.1	54.7	‡ 35.3	26.1	97.8	23.0	252	883	‡ 378	332	‡ 282	225
11	72.0	53.3	35.3	26.1	‡ 74.2	23.0	3,140	848	378	319	280	244
12	67.8	52.3	35.3	26.1	139	21.9	29,800‡	‡ 809	381	312	‡ 277	238
13	67.8	52.3	33.5	26.1	209	21.9	19,600‡	759	385	‡ 304	273	246
14	‡ 65.3	52.3	33.5	26.1	133	21.9	‡9,640	713	‡ 388	304	273	286
15	62.9	52.3	31.8	58.6	67.8	‡ 20.8	16,500	674	378	320	273	‡ 273
16	62.9	52.3	31.8	95.7	60.0	‡ 717	23,600‡	639	367	350	273	244
17	62.9	‡ 50.9	31.8	37.4	54.7	111	19,400‡	‡ 604	‡ 357	337	‡ 290	‡ 244
18	61.4	47.3	31.8	35.3	53.7	71.0	12,400‡	572	431	311	304	232
19	60.0	47.3	31.8	31.8	53.7	51.6	‡7,950	547	501	304	‡ 303	232
20	60.0	47.3	30.0	29.7	57.6	40.3	‡4,940	523	‡ 607	‡ 295	290	232
21	60.0	47.3	30.0	27.9	57.6	35.3	5,090	501	646	286	278	225
22	60.0	47.3	28.3	28.3	54.7	30.0	22,800	480	597	‡ 282	268	‡ 219
23	60.0	47.3	28.3	28.3	49.4	28.3	16,000	459	540	280	‡ 266	219
24	60.0	47.3	30.0	28.3	49.4	26.1	9,500	‡ 441	‡ 512	280	266	215
25	60.0	45.9	30.0	28.3	47.3	26.1	6,290	431	470	280	266	215
26	60.0	45.2	28.3	27.2	45.2	25.0	4,480	420	445	280	266	215
27	59.3	45.2	28.3	26.1	41.0	28.3	3,810	‡ 410	445	‡ 294	263	208
28	59.0	44.5	27.2	25.1	38.5	33.5	3,160	396	445	357	258	208
29	59.0	43.1	25.8	27.5	36.7	30.0	2,700	378	‡ 456	466	258	‡ 208
30	59.0		25.8	26.1	34.6	27.2	2,310	364	466	445	251	208
31	59.0		24.7		34.6		2,000	‡ 357		374		208
Sum	2,036.7	1,483.8	1,009.3	958.1	7,073.1	1,642.1	229,297.1	23,048	12,975	10,598	8,534	7,217

Month	Current Year 1976								Period 1962-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	1.25	1.08	1	78.0	31	57.6	65.7	4,041	2,862	9,976	0
Feb.	1.08	.92	† 1	57.6	29	43.1	51.2	2,943	1,900	6,669	0
Mar.	.92	.75	† 1	38.8	31	24.7	32.5	2,002	1,523	3,880	0
Apr.	1.94	.75	15	275	2	24.0	31.8	1,900	3,222	21,692	122
May	7.71	.79	7	12,200	1	26.1	228	14,027	3,111	14,027	17.0
June	5.41	.69	16	4,130	15	19.8	54.7	3,257	1,456	4,705	0
July	14.34	.72	12	98,200	3	23.0	7,380	454,643	47,955	454,643	0
Aug.	6.17	3.94	1	1,910	31	353	745	45,712	13,729	89,017	0
Sept.	3.71	3.22	21	667	17	357	431	25,742	16,344	48,065	0
Oct.	3.44	3.08	29	477	†23	280	342	21,019	14,261	53,088	0
Nov.	3.22	3.02	1	353	30	251	284	16,919	6,337	19,270	0
Dec.	3.08	2.89	14	286	†27	208	233	14,321	4,913	15,058	0
	14.34	0.69		98,200		19.8	837	606,526	117,613	606,526	3,850.7
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	4.37	0.21		2,780		0.56	23.7	748,140	145,074	748,140	4,750

** Period 1961-1976 ‡ Discharge measurement made on this day † And other days

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

DESCRIPTION: A part of the water diverted from the river into the Maverick Canal is returned to the Rio Grande through the hydroelectric power plant located on the left bank of the Rio Grande at latitude 28°49'50", longitude 100°33'10", about 9 miles (14.5 km) north-northwest of Eagle Pass, Texas, and about 32.2 canal miles (51.8 km) downstream from the point of diversion. The return enters the Rio Grande at river mile 501.5 (807.1 km) and 747.3 river miles (1,202.7 km) downstream from the American Dam at El Paso, Texas.

RECORDS: Based on records furnished by the Maverick County Water Control and Improvement District No. 1, showing hourly discharge in cubic feet per second based on hourly manometer readings, through each turbine at the Central Power and Light Company hydroelectric power plant. The mean daily discharges computed from the manometer readings have been multiplied by a factor to make them agree with periodic current meter measurements of flows made under stable flow conditions by hydrographers of the Commission. There were 51 discharge measurements made during the year. Records available: 1949 through 1976.

REMARKS: This power plant began operating April 16, 1932 with hydroelectric power generating facilities for 12,000 kw. Because the September 1932 flood washed out the upper end of the Maverick Canal, this plant did not operate from September 2, 1932 until March 17, 1937. Since then it has operated continuously except for 44 days in 1953 when shortage of water prevented operation and from June 30 through July 19, during flood of 1954, and while the canal was being repaired. The plant's operation is now governed by the amount of water released from Amistad Reservoir which began operations on May 31, 1968.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 1,460 (41.3)	Aug. 29, 1969 & Oct. 23, 1973	Min. 0	Occasionally
Monthly:	Max. 1,340 (37.9)	Nov. 1974	Min. 14.1 (0.40)	June 1953
Yearly:	Max. 1,020 (28.9)	1950 & 1961	Min. 232 (6.57)	1972

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	970	1,100	‡ 892	330	973	1,070	782	1,200	993	1,090	‡ 884	123
2	922	1,120‡	898	328	1,150	1,040	814	‡ 1,210	977	1,110	874	75.5
3	915	1,050	942	376	‡ 1,220	‡ 958	835	1,200	980	1,140	862	115
4	993	1,030	956	502	1,190	899	944	1,200	1,060	‡ 1,120	768	114
5	‡ 1,020	1,050	964	‡ 769	1,180	907	983	1,200	1,150	1,190	716	206
6	1,040	1,050	970	689	1,150	901	1,070	1,170	1,130	1,190	631	‡ 169
7	1,040	1,060	1,020	752	1,200	‡ 881	1,240	1,140	‡ 1,090	1,180	593	110
8	1,030	1,100	‡1,000	769	1,220	787	1,380	1,130	1,020	1,210	‡ 661	185
9	1,050	1,100‡	973	745	1,080	644	1,440	‡ 1,080	1,030	1,220	719	318
10	1,050	1,070	970	718	‡ 1,040	615	1,430	1,040	1,030	1,230	729	470
11	1,090	1,030	983	706	1,160	611	1,430	1,000	1,020	‡ 1,220	728	615
12	‡ 1,050	1,070	961	‡ 710	1,180	602	‡ 1,310	925	1,080	1,210	714	737
13	1,010	1,070	935	693	1,180	697	1,320	857	‡ 996	1,220	733	‡ 789
14	966	1,090	977	733	1,180	‡ 642	1,310	882	933	1,160	746	800
15	951	1,130	‡ 963	763	1,130	590	1,330	941	957	1,050	‡ 732	530
16	1,010	1,090	908	942	1,140	638	1,330	‡ 918	978	1,040	730	385
17	1,050	1,070‡	907	1,000	‡ 1,170	668	1,320	901	966	1,020	742	379
18	1,070	872	908	926	1,160	760	1,310	926	1,020	‡ 997	773	186
19	‡ 1,060	228	925	‡ 906	1,170	870	‡ 1,320	893	1,080	1,000	755	279
20	1,060	30.3	951	1,140	1,170	1,030	1,310	895	‡ 1,080	1,020	704	‡ 275
21	1,050	30.3	999	1,060	1,210	‡ 997	1,340	916	1,140	960	404	266
22	1,060	30.3	‡ 967	1,030	1,250	930	1,210	974	1,130	683	‡ 300	520
23	1,100	‡ 30.3	860	1,050	1,250	865	1,240	‡ 982	1,120	650	‡ 126	284
24	1,110	30.3	762	1,120	‡ 1,230	835	1,280	965	1,130	680	101	55.6
25	1,140	30.3	758	1,130	1,160	829	1,290	934	1,130	636	236	190
26	‡ 1,100	30.3	475	‡ 517	1,190	828	‡ 1,350	943	1,170	‡ 636	213	286
27	1,120	30.3	121	593	1,170	899	1,360	912	‡ 1,150	660	215	148
28	1,050	577	178	683	1,170	‡ 801	1,360	965	1,130	853	247	115
29	1,050	890	‡ 196	718	1,140	772	1,370	1,020	1,140	987	‡ 204	43.8
30	1,090		153	851	1,120	776	1,370	‡ 954	1,090	1,010	129	24.0
31	1,120		159		1,070		1,260	980		911		134
Sum	32,337	21,139.4	24,631	23,259	36,003	24,342	38,638	31,253	31,900	31,283	16,969	8,926.9

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1949-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.			25	1,140	3	915	1,040	64,140	49,595	79,220	4,952
Feb.			15	1,130	†20	30.3	729	41,929	44,777	68,500	9,373
Mar.			7	1,020	27	121	795	48,355	41,741	65,400	5,713
Apr.			20	1,140	2	328	775	46,134	38,049	63,907	4,301
May			†22	1,250	1	973	1,160	71,411	47,423	71,411	2,280
June			1	1,070	15	590	811	48,282	42,604	68,900	841
July			9	1,440	1	782	1,250	76,637	41,719	76,637	2,880
Aug.			2	1,210	13	857	1,010	61,989	47,833	69,000	18,457
Sept.			26	1,170	14	933	1,060	63,273	53,439	75,591	13,741
Oct.			10	1,230	†25	636	1,010	62,049	54,530	79,674	11,147
Nov.			1	884	24	101	566	33,658	48,100	79,478	3,203
Dec.			14	800	30	24.0	288	17,706	47,497	75,490	2,608
Yearly				1,440		24.0	876	636,063	557,307	740,000	168,354
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
				40.8		0.68	24.8	784,584	687,438	912,790	207,665

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

MAVERICK CANAL EXTENSION BELOW THE POWER PLANT NEAR EAGLE PASS, TEXAS

DESCRIPTION: Gage well and digital water-stage recorder located on the downstream side of a wooden pile bridge at latitude 28°49'50", longitude 100°32'40", about 1 mile (1.6 km) downstream from the heading of this canal extension, about 9 miles (14.5 km) north-northwest of Eagle Pass, Texas, and about 32.8 canal miles (52.8 km) downstream from the point of diversion from the Rio Grande, which is located at river mile 537.4 (864.9 km). The elevation of the zero of the gage has not been determined.

RECORDS: Based on 50 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1939 through 1976.

REMARKS: The main Maverick Canal divides into two branches at a point about 9 miles (14.5 km) north-northwest of Eagle Pass, Texas, and about 31.8 canal miles (51.2 km) downstream from the point at which water from the Rio Grande is diverted. One branch leads to the Maverick Power Plant and back to the Rio Grande, while the other branch forms this Maverick Canal Extension, which is used to transmit irrigation water. Irrigation from this canal extension began in June 1938. In 1976, 27,049 acres (10,946 ha) of land north and south of Eagle Pass were irrigated. A total of 109,887 acre-feet (135,546,000 m^3) of water from this canal extension returned to the river through the irrigation system which extends approximately 67 canal miles (108 km) downstream.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 580 second-feet (16.4 m^3/sec) on July 25, 1964. Min. occasionally no flow.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 559 (15.8)	July 14, 1964	Min. 0	Occasionally	
Monthly:	Max. 525 (14.9)	July 1964	Min. 18.7 (0.53)	March	1939
Yearly:	Max. 345 (9.77)	1964	Min. 62.1 (1.76)		1939

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	239	232	‡ 393	341	211	286	457	222	266	215	‡ 14.9	122
2	238	‡ 233	394	339	178	234	447	‡ 222	264	223	14.1	117
3	238	232	382	346	189	‡ 326	439	223	261	248	13.0	125
4	238	230	378	342	‡ 231	374	439	225	230	‡ 247	61.8	123
5	‡ 237	232	380	‡ 304	228	375	412	227	210	245	75.7	106
6	236	257	385	224	227	399	395	229	208	244	135	‡ 75.4
7	235	268	384	208	176	‡ 415	276	231	‡ 218	241	179	76.7
8	237	268	‡ 381	161	116	422	135	258	250	239	‡138	106
9	238	‡ 260	380	158	153	424	33.4	‡ 274	266	238	92.4	157
10	239	255	380	178	‡ 184	422	24.3	273	266	218	86.2	159
11	239	254	380	201	186	422	25.6	273	269	203	89.6	133
12	‡ 239	255	380	‡ 207	187	422	‡ 25.4	279	274	‡ 201	92.7	107
13	247	255	386	175	187	424	24.6	295	‡ 291	199	96.6	‡ 52.9
14	270	256	389	116	208	‡ 421	24.3	295	307	197	103	24.3
15	262	254	‡ 388	97.0	275	418	27.0	297	305	194	‡109	22.0
16	248	254	383	63.4	268	419	25.7	‡ 296	306	191	108	21.4
17	239	‡ 256	381	32.4	‡ 240	414	23.4	296	307	191	111	23.2
18	236	264	377	31.9	238	380	23.1	312	308	‡ 191	111	71.8
19	‡ 233	265	371	‡ 32.2	255	380	‡ 22.6	321	310	184	106	142
20	233	308	368	79.6	249	383	52.7	320	‡ 292	171	111	‡ 114
21	229	315	367	245	191	‡ 382	148	320	265	155	112	95.8
22	227	328	‡ 363	246	174	390	141	321	254	138	‡132	99.8
23	227	‡ 327	357	229	172	426	119	‡ 315	250	136	150	90.0
24	227	309	352	165	‡ 185	443	83.4	298	232	136	149	79.3
25	227	365	350	160	225	445	80.3	297	220	135	171	83.2
26	‡ 226	369	344	‡ 224	226	441	‡ 77.9	296	217	‡ 137	134	90.7
27	228	373	341	252	225	445	77.7	294	‡ 214	138	135	97.4
28	229	396	366	251	225	‡ 446	75.5	295	213	95.0	130	106
29	232	391	‡ 364	249	234	454	71.0	295	214	18.2	‡117	99.8
30	232		354	248	271	455	71.0	‡ 293	215	16.9	103	95.8
31	231		358		286		173	276		15.7		137
Sum	7,336	8,261	11,556	5,905.5	6,600	12,137	4,449.9	8,668	7,702	5,400.8	3,181.0	2,953.5

Month	Current Year 1976: Average Rainfall Inches** 1939-1976	1976	Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1939-1976: Acre-Feet Average	Maximum	Minimum
Jan.	0.76	0.09	†13	272	28	221	237	14,551	12,680	19,800	2,140
Feb.	.93	T	29	411	5	228	285	16,385	11,787	18,200	2,120
Mar.	.69	.22	2	398	27	336	372	22,921	15,443	23,397	1,150
Apr.	1.69	3.29	1	353	16	30.8	197	11,713	15,809	25,900	3,430
May	3.00	4.06	†15	309	9	114	213	13,091	14,014	28,191	2,840
June	2.06	.90	31	457	† 2	283	405	24,073	16,954	30,173	3,750
July	1.59	8.62	2	460	20	20.8	144	8,826	17,970	32,276	4,510
Aug.	2.19	.79	18	323	2	220	280	17,193	16,244	29,812	3,480
Sept.	3.07	1.37	19	311	7	201	257	15,277	12,302	22,640	4,600
Oct.	2.28	5.44	3	249	31	14.9	174	10,712	12,822	21,800	4,702
Nov.	.69	2.00	25	194	4	12.5	106	6,309	12,773	20,117	4,170
Dec.	.66	1.56	9	176	16	20.4	95.3	5,858	12,911	20,200	4,233
Yearly	19.61	28.34		460		12.5	230	166,909	171,709	250,801	44,950
	Millimeters		Cubic Meters per Second					Thousands of Cubic Meters			
	498	720		13.0		0.35	6.51	205,882	211,803	309,363	55,446

‡ Discharge measurement made on this day
† And other days
** On the United States side from Maverick Power Plant to Cuervo Creek

RETURN FLOW TO THE RIO GRANDE FROM THE MAVERICK IRRIGATION DISTRICT ABOVE 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, Lateral 12 Spill, Lateral 8-B 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 gage heights. All storm flow occurring at these stations is deducted from the records and is not shown below. Records available: April 1959 through 1976. Records prior to 1976 were published under the title "Return Flow to the Rio Grande from Maverick Canal - Maverick Dam to Eagle Pass, Texas."

REMARKS: In addition to the flows listed below, water from the Maverick Canal is returned to the Rio Grande in this reach at the Maverick Power Plant (see page 51).

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 929 (26.3)	Sept. 29, 1975	Min. 18.3 (0.52)	March 9, 1969
Monthly:	Max. 218 (6.17)	Jan. 1965	Min. 32.8 (0.93)	January 1973
Yearly:	Max. 145 (4.11)	1965	Min. 51.4 (1.46)	1973

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	58.2	56.8	77.8	88.7	63.2	63.7	102	69.2	98.7	98.2	77.9	33.8
2	54.2	47.9	81.1	98.9	44.9	76.9	108	61.7	106	98.2	66.6	33.5
3	54.6	52.3	94.4	105	43.5	80.7	90.1	63.1	105	76.1	56.7	38.3
4	57.7	60.3	88.4	106	37.4	72.9	86.1	58.5	97.1	81.2	55.6	44.8
5	58.5	67.5	84.9	92.1	42.0	82.5	78.2	56.2	95.3	83.5	54.1	52.3
6	56.6	57.3	75.0	75.2	41.2	90.4	84.4	57.0	90.4	83.9	59.4	48.7
7	67.4	57.4	86.2	72.5	57.5	87.1	72.0	59.5	97.2	82.5	59.4	53.6
8	73.0	61.5	90.5	58.9	70.0	92.4	78.6	63.0	85.8	76.7	59.2	46.0
9	70.2	62.5	85.2	59.6	67.4	84.3	85.3	70.7	83.5	70.0	53.1	37.1
10	62.3	68.2	85.3	49.4	61.7	104	98.1	79.8	87.0	74.9	48.9	41.1
11	65.5	72.3	80.1	58.5	56.3	106	90.6	99.4	104	81.3	58.1	42.3
12	61.0	72.3	84.4	43.5	62.7	122	87.0	104	87.4	71.2	57.3	36.9
13	58.4	70.5	72.3	43.0	72.9	95.5	86.9	116	85.7	66.5	45.4	37.2
14	52.8	69.0	80.2	34.7	69.3	95.4	85.8	125	96.0	71.8	43.0	39.7
15	62.9	74.6	82.1	40.7	63.8	82.6	90.1	113	100	66.4	45.8	48.7
16	61.3	91.6	87.1	52.0	65.1	98.5	102	128	98.6	71.1	48.4	48.9
17	64.5	74.6	81.4	48.1	59.6	86.7	113	107	106	61.5	49.6	44.0
18	62.9	69.3	97.3	39.1	60.4	78.9	120	104	106	63.7	49.0	42.1
19	71.6	71.2	111	33.4	69.8	73.5	108	109	92.7	54.8	47.8	41.3
20	71.1	88.4	101	29.6	70.6	62.8	95.2	93.8	95.0	49.2	45.8	39.0
21	61.7	84.7	80.3	28.1	67.4	60.9	90.2	97.9	79.4	51.8	41.2	36.9
22	61.8	70.8	82.0	33.4	56.5	67.8	108	97.0	83.2	69.7	39.3	176
23	57.1	71.1	86.6	45.4	52.7	86.2	123	86.7	80.9	63.6	36.5	175
24	62.4	84.9	92.3	57.3	56.0	97.6	129	93.5	73.0	54.3	35.4	38.1
25	63.3	79.9	85.2	59.5	61.8	107	116	99.5	87.9	79.2	40.3	36.8
26	57.0	78.8	84.5	54.2	58.3	106	101	100	92.4	72.1	41.0	35.2
27	54.5	85.5	68.9	64.9	62.5	93.9	88.7	105	86.9	61.9	37.2	38.7
28	58.9	82.0	78.0	68.6	57.7	87.7	78.6	105	78.6	73.6	36.4	31.2
29	66.5	90.9	80.4	75.8	66.4	101	77.1	96.0	79.6	89.8	35.9	30.9
30	56.9		90.4	55.9	79.1	84.8	70.8	102	91.4	88.1	31.1	38.9
31	46.9		80.0		73.5		69.2	107		82.1		41.0
Sum	1,891.7	2,074.1	2,634.3	1,772.0	1,871.2	2,629.7	2,913.0	2,827.5	2,750.7	2,268.9	1,455.4	1,528.0

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet Day	High	Day	Low	Average Second-Feet	Total Acre-Feet	Period April 1959-1976: Acre-Feet Average	Maximum	Minimum
Jan.			8	73.0	31	46.9	61.0	3,752	6,038	13,430	2,014
Feb.			16	91.6	2	47.9	71.5	4,114	5,161	7,652	2,242
Mar.			19	111	27	68.9	85.0	5,225	6,080	8,952	3,061
Apr.			4	106	21	28.1	59.1	3,515	6,055	7,795	3,515
May			30	79.1	4	37.4	60.4	3,711	5,862	8,777	3,697
June			12	122	21	60.9	87.7	5,216	6,417	9,219	2,912
July			24	129	31	69.2	94.0	5,778	6,737	9,858	2,811
Aug.			16	128	5	56.2	91.2	5,608	6,595	9,666	2,931
Sept.			↑ 2	106	24	73.0	91.7	5,456	5,781	9,477	2,835
Oct.			↑ 1	98.2	20	49.2	73.2	4,500	5,638	8,583	2,811
Nov.			1	77.9	30	31.1	48.5	2,887	5,592	8,696	2,717
Dec.			22	176	29	30.9	49.3	3,031	5,529	8,821	2,438
				176		28.1	72.7	52,793	71,485	104,997	37,237
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				4.98		0.80	2.06	65,120	88,177	129,514	45,932

∅ Mean daily ↑ And other days

RIO GRANDE AT PIEDRAS NEGRAS, COAHUILA AND EAGLE PASS, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and resistance-type transmitter located on the left bank at latitude 28°42'50", longitude 100°30'25", and river mile 491.8 (791 km); 0.5 river mile (0.8 km) upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, 73.4 river miles (118 km) downstream from Amistad Dam, and 757 river miles (1,218.3 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 682.91 feet (208.15 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 71 discharge measurements during the year, 57 by the Mexican Section and 14 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through March 1914; August 1914 through April 1916; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September, November, and December 1923; and 1924 through 1976. Records prior to 1976 were published under the title "Rio Grande at Eagle Pass, Texas."

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 964.100 second-feet (27,300 m^3/sec), determined by slope-area calculations, on June 29, 1954 with a gage height of 53.51 feet (16.31 m). Well-authenticated information indicates the occurrence of a flood in June 1865 with an estimated discharge of 1,236,000 second-feet (35,000 m^3/sec) and a gage height of 56.00 feet (17.07 m) on the present gage and also that these were the only floods since 1745 with flows greater than 825,000 second-feet (23,400 m^3/sec). Min. 24.4 second-feet (0.69 m^3/sec) on June 22, 1953 with a gage height of 0.07 foot (0.02 m).

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	572,100 (16,200)	June 28,	1954	Min.	30.7 (0.87)	June 22,	1953
Monthly:	Max.	48,000 (1,360)	Sept.	1932	Min.	248 (7.03)	April	1953
Yearly:	Max.	9,180 (260)		1932	Min.	870 (24.6)		1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,530	1,440	4,480	523	2,970	‡ 1,570	1,200	5,580	20,600	2,780	2,140	1,150
2	1,530	1,440	‡4,410	586	3,250	1,510	1,220	5,330	‡ 20,600	2,220	2,040	1,030
3	1,530	‡ 1,330	4,410	675	2,550	1,440	1,220	5,080	17,900	2,690	‡2,010	1,060
4	1,530	1,270	‡4,450	3,140	‡ 2,440	1,360	1,510	‡ 4,910	13,300	2,690	1,970	1,120
5	1,530	1,290	4,410	‡ 2,220	2,640	1,350	10.200	4,730	11,700	‡ 3,810	1,900	1,150
6	‡ 1,530	1,300	4,410	1,450	3,200	1,370	‡ 2,930	4,630	8,900	3,570	1,780	1,190
7	1,520	1,880	4,520	1,180	‡18,000	1,300	2,320	4,480	6,250	3,490	1,770	‡1.110
8	1,480	3,880	4,560	1,140	7,700	‡ 1,220	2,320	4,340	‡ 5.760	3.490	1,810	1,090
9	1,500	4,060	‡4,520	1,090	3,140	1,370	2,530	4,170	5,650	3.490	‡1.910	1,130
10	1,480	‡ 3,990	4,480	1,050	‡ 2,510	932	2,820	4,020	5,580	3,460	1,910	1,340
11	1,500	4,060	4,520	1,020	3,380	908	4,100	‡ 3,880	5,510	3,450	1,880	1,520
12	1,480	‡ 4,060	4,480	1,020	3,500	904	25,000	3,780	5.510	3.450	1,870	1,600
13	‡ 1,470	3,990	4,380	‡ 1,000	5.830	1,000	‡ 29,900	3,670	4,240	3,520	1,870	1,630
14	1,420	4,030	4,450	1,000	6.070	964	19,500	3,600	3.370	3,180	1.880	‡1,860
15	1,390	4,100	4,450	1,130	5,860	886	15,500	3,600	‡ 3,300	‡ 2,390	1,850	1,550
16	1,430	4,060	2,980	2,010	5,830	1,570	‡ 28.000	3,510	‡ 3,260	2,210	‡1,850	1,350
17	1,480	‡ 3,990	‡1,440	1,700	5,830	‡ 1,200	34,000	14,900	3.260	2,120	1,960	1,280
18	1,480	2,860	‡1,310	1,380	‡ 4,340	1,220	‡ 38.100	‡ 20,100	3.310	2,120	2,020	1,220
19	1,500	816	1,270	1,260	3,290	1,360	17.400	‡ 20,700	3,530	‡ 2,120	1,960	1,130
20	‡ 1,460	431	1,250	‡ 2,240	3,490	1,470	‡ 11,700	‡ 21.000	3,850	2.120	1,900	1,150
21	1,450	434	1,290	2,620	3.280	1,470	11,100	20,900	4,590	2,060	1.570	‡1,130
22	‡ 1,440	424	1,210	2,570	3,240	‡ 1,380	‡ 25.200	20,800	6,180	1,800	‡1,420	1,320
23	1,460	396	‡1,190	5,230	3,180	1,290	30,400	20,800	6.390	1,750	‡1,270	2.120
24	1,480	‡ 357	1,090	5,470	3,140	‡ 1,250	18.500	20,900	6,360	1,800	1,350	1.750
25	1,500	‡ 317	1,030	5,540	2,830	1,260	12,300	‡ 21,200	6,290	1,750	1,410	1,620
26	1,470	305	855	1.490	‡ 1.900	1,280	9,530	21,000	6.250	‡ 1,730	1.430	1.480
27	‡ 1,450	309	406	‡ 1,090	‡ 1.790	1,350	8,280	20,900	6.250	1,800	1,330	1,430
28	1,420	1,920	351	1,350	1,740	1,370	‡ 7,380	20,700	‡ 4.800	2,140	1,220	‡1,740
29	1,380	4,410	‡ 417	‡ 1,440	1,670	‡ 1,210	‡ 6,780	20,600	4,170	2,890	1,190	2,300
30	1,440		‡ 378	3,240	1,670	1,190	6,360	20,300	3,710	2,850	‡1,170	2,310
31	1,460		341		1.630		5,900	20,600		2,810		2,250
Sum	45,720	63,149	83,738	56,854	121,890	37,954	393.180	374.710	210,370	81.750	51,640	45.160

Month	Current Year 1976								Period 1968-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	3.25	3.08	† 1	1,550	29	1,360	1,480	90.723	74,349	151.417	26,191
Feb.	4.95	1.77	29	4,480	26	260	2.180	125.266	133,261	448,150	35,604
Mar.	5.02	1.77	8	4,560	31	307	2,700	166,140	97.284	236,403	20.809
Apr.	6.86	1.94	4	8,760	† 1	357	1.900	112,787	96.563	351,959	24,030
May	13.91	3.22	7	30,800	31	1,560	3.920	241,803	147.864	241,303	36.193
June	4.43	2.56	16	3,440	16	773	1,260	75.285	99,905	246,770	19,254
July	18.24	2.85	18	46,600	† 1	1,110	12,700	779,878	205,227	779,878	26.100
Aug.	11.42	4.40	25	21.300	16	3.450	12,100	743,286	209.307	743.286	56,856
Sept.	11.19	4.00	† 1	20.600	30	2,950	7,030	417,281	301,385	1.306.836	80.699
Oct.	4.99	3.25	5	4,800	27	1,720	2,640	162,162	247,597	891.747	80.699
Nov.	3.51	2.82	1	2,240	30	953	1.720	102,343	139,858	570,370	46,790
Dec.	3.58	2.62	30	2,350	† 2	953	1,460	89,602	83.142	268,589	26.197
Yearly	18.24	1.77		46,600		260	4.270	3.106,556	1,335,742	3.753,039	705,670
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	5.56	0.54		1,320		7.37	121	3,831.897	2.264.363	4,629,385	870.435

** Period 1924-1976 ‡ Discharge measurement made on this day † And other days

RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir of 1,750 second-foot (50 m^3/sec) capacity, and water-stage recorder located on the downstream side of the left abutment of the highway bridge over Rio Escondido on the outskirts of Villa de Fuente, Coahuila, 1.2 river miles (1.9 km) downstream from the cableway, at latitude 28°40' 10", longitude 100°32' 50", about 3 miles (5 km) southwest of Piedras Negras, Coahuila, 3.7 river miles (6.0 km) from the confluence with the Rio Grande, and 6.8 river miles (10.9 km) downstream from the confluence of Rio San Antonio with Rio Escondido. Rio Escondido enters the Rio Grande at river mile 488.2 (786 km), 3.1 river miles (5.0 km) downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 760.6 river miles (1,224.1 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 718.37 feet (218.96 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 14 discharge measurements during the year and a continuous record of gage heights. Records available: 1922 through 1976. Records from 1922 through September 1932 are considered doubtful.

REMARKS: Diversions and drainage returns modify the flow of this spring-fed stream at this station. Backwater from the Rio Grande reached an elevation of 729.92 feet (222.48 m) during the flood of June 1954. Prior to November 1954, the gage well was located at the present cableway site. The weir was destroyed by a flood on September 24, 1964. On November 25, 1969, the concrete control weir was finished and placed in operation.

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 24,000 second-feet (680 m^3/sec) on June 29, 1936 with a gage height of 19.13 feet (5.83 m). Min. frequently no flow.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max. 13,100 (371)	Sept. 24, 1964	Min. 0	Several days 1956-1958 & 1965
Monthly:	Max. 827 (23.4)	Sept. 1964	Min. 0.3 (0.01)	September 1965
Yearly:	Max. 219 (6.21)	1976	Min. 2.4 (0.07)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	89.0	68.2	65.8	33.2	56.9	18.7	18.7	558	420	487	399	367
2	89.0	68.2	65.8	33.2	59.3	18.7	20.1	551	417	459	396	367
3	89.0	68.2	65.8	58.6	54.7	17.7	16.6	540	417	441	396	367
4	89.0	68.2	65.8	63.9	59.3	16.6	18.7	533	417	441	398	360
5	89.0	68.2	63.6	54.7	63.6	16.6	45.2	530	402	431	367	360
6	89.0	68.2	63.6	54.7	63.6	17.3	34.6	516	388	417	360	360
7	89.0	68.2	63.6	54.7	124	16.6	26.8	512	374	410	360	‡ 350
8	83.3	68.2	63.6	54.7	80.5	16.6	33.9	512	350	403	360	350
9	83.3	63.6	‡ 59.4	50.1	72.7	16.6	51.9	501	342	388	350	350
10	83.3	‡ 63.6	54.8	50.1	70.6	16.6	60.4	512	337	388	350	343
11	83.3	68.2	54.8	50.1	‡ 68.2	16.6	79.1	‡ 512	325	374	357	346
12	83.3	68.2	50.9	50.1	68.2	20.1	147	512	319	360	360	350
13	‡ 83.3	68.2	43.1	53.0	68.2	18.7	61.1	501	312	350	360	350
14	80.5	68.2	39.9	54.7	68.2	15.5	47.0	501	300	337	360	381
15	78.0	68.2	39.9	56.5	65.7	14.8	47.7	501	295	367	360	374
16	75.2	65.7	39.9	80.9	63.6	25.4	441	487	290	342	367	374
17	72.7	63.6	39.9	56.5	63.6	71.0	98.2	487	295	337	388	360
18	72.7	63.6	39.9	54.7	63.6	53.0	72.0	501	299	335	403	360
19	72.7	63.6	39.9	50.1	63.6	26.1	117	501	470	332	388	360
20	72.7	68.2	39.9	‡ 54.7	63.6	24.7	148	501	352	325	388	360
21	72.7	68.2	39.9	54.7	63.6	25.4	237	487	‡ 611	331	388	360
22	72.7	68.2	39.9	54.7	63.6	23.0	235	473	576	337	388	360
23	72.7	68.2	39.9	208	59.3	19.8	636	473	562	343	‡ 381	360
24	72.7	65.7	39.9	109	59.3	19.8	943	459	540	350	374	360
25	72.7	65.7	39.9	60.7	59.3	20.5	685	445	540	360	374	360
26	72.7	65.7	39.9	54.7	57.2	33.9	632	445	523	367	381	353
27	70.6	65.7	36.7	54.7	54.7	29.0	600	431	523	406	381	353
28	70.6	65.7	36.7	60.4	54.7	21.9	‡ 586	431	565	‡ 420	374	350
29	70.6	65.7	36.7	59.3	54.7	‡ 21.2	579	420	523	456	374	350
30	70.6		33.2	61.4	54.7	18.7	569	420	505	427	374	350
31	68.2		33.2		54.7		562	420		403		343
Sum	2,434.1	1,937.3	1,475.8	1,846.8	1,997.5	691.1	7,849.0	15,173	12,589	11,924	11,246	11,088

Month	Current Year 1976								Period 1933-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	1.41	1.28	† 1	89.0	31	68.2	78.4	4,829	2,291	15,990	43.8
Feb.	1.28	1.25	† 1	68.2	† 9	63.6	66.7	3,840	1,690	9,990	38.9
Mar.	1.25	.98	† 1	65.8	†30	33.2	47.7	2,926	1,433	6,910	92.4
Apr.	2.92	.98	23	572	† 1	33.2	61.4	3,664	1,909	21,950	81.1
May	2.03	1.18	7	238	31	52.3	64.3	3,961	3,570	25,470	154
June	1.64	.72	16	134	15	14.8	23.0	1,371	2,226	10,730	60.3
July	4.69	.72	16	1,610	3	14.8	253	15,568	1,900	15,568	57.6
Aug.	2.89	2.56	† 1	558	†29	420	491	30,106	3,480	30,106	34.9
Sept.	3.25	2.23	20	788	†15	290	420	24,969	4,876	49,182	17.8
Oct.	2.82	2.33	27	547	20	325	385	23,656	3,927	28,327	43.8
Nov.	2.53	2.40	18	406	† 9	350	374	22,318	2,743	25,730	43.8
Dec.	2.49	2.36	14	381	† 9	343	357	22,003	2,447	22,003	67.3
Yearly	4.69	0.72		1,610		14.8	219	159,211	32,492	159,211	1,755.3
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	1.43	0.22		45.6		0.42	6.21	196,385	40,079	196,385	2,164

** Period 1932-1976 ‡ Discharge measurement made on this day † And other days

RETURN FLOW TO THE RIO GRANDE FROM THE MAVERICK IRRIGATION DISTRICT BELOW 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 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, Canon 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 1976. Records prior to 1976 were published under the title "Return Flow to the Rio Grande from Maverick Canal, Eagle Pass to San Antonio Crossing."

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 350 (9.91)	July 5, 1968	Min. 15.7 (0.44)	March 10, 1969
Monthly:	Max. 248 (7.02)	July 1967	Min. 54.6 (1.55)	December 1969
Yearly:	Max. 206 (5.83)	1963	Min. 132 (3.74)	1970

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	121	133	223	139	176	141	139	70.1	155	176	53.4	100
2	136	142	210	134	184	137	155	98.9	146	144	37.8	75.2
3	150	152	218	154	147	115	155	152	136	141	39.2	76.9
4	169	150	180	186	121	126	168	133	132	129	32.0	87.3
5	162	146	158	251	147	141	195	125	139	144	19.3	110
6	161	135	156	211	172	153	197	119	120	131	28.6	111
7	147	138	170	227	189	155	209	104	95.8	118	65.8	94.2
8	114	157	218	182	216	146	194	114	91.6	124	93.0	63.0
9	102	169	224	155	149	140	158	113	88.9	151	134	54.8
10	114	155	194	133	118	147	89.5	121	95.9	160	126	85.2
11	128	152	192	130	106	172	59.9	122	112	163	93.2	116
12	132	146	184	138	124	166	47.8	119	133	163	102	121
13	133	156	181	162	133	168	37.2	104	148	152	110	147
14	133	149	212	152	128	166	76.0	105	158	154	97.1	160
15	144	168	220	153	122	156	87.4	121	137	169	97.9	95.0
16	144	159	197	141	136	165	115	134	115	124	101	64.4
17	153	137	191	71.0	160	182	91.4	140	125	107	127	52.0
18	162	125	180	98.7	154	214	99.4	140	144	118	133	41.4
19	152	118	197	68.5	140	204	57.7	130	201	118	158	44.7
20	136	111	199	31.3	205	195	46.1	134	192	119	134	57.1
21	147	114	195	33.3	221	187	41.6	157	213	119	118	86.7
22	160	142	197	53.6	215	163	62.6	177	235	120	108	108
23	168	145	186	144	166	152	118	190	231	115	119	94.6
24	160	164	198	190	140	167	110	170	217	135	119	89.7
25	178	149	186	140	133	168	83.2	169	173	124	160	93.8
26	171	141	177	110	142	174	69.7	178	158	102	150	86.5
27	168	178	166	105	157	198	76.2	162	127	111	133	70.5
28	126	198	174	120	150	188	72.8	125	123	132	122	66.4
29	121	216	177	161	147	168	75.7	136	130	138	113	74.0
30	142		170	153	134	142	49.7	148	136	134	109	87.1
31	147		156		134		56.6	157		87.7		91.3
Sum	4,345		4,127.4		4,906		4,168.0		4,122.7		2,704.8	
	4,481		5,886		4,767		3,193.5		4,408.2		3,033.3	

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period April 1959-1976: Acre-Feet Average	Maximum	Minimum
Jan.			25	178	9	102	145	8,888	9,747	12,728	4,924
Feb.			29	210	20	111	150	8,618	8,963	13,117	4,397
Mar.			9	224	6	156	190	11,675	10,769	13,498	6,118
Apr.			5	251	20	31.3	138	8,187	11,017	14,646	8,187
May			21	221	11	106	154	9,455	10,451	14,327	6,205
June			18	214	3	115	164	9,731	11,338	14,430	7,798
July			7	209	13	37.2	103	6,334	11,374	15,219	5,223
Aug.			23	190	1	70.1	134	8,267	10,786	14,299	8,267
Sept.			22	235	9	88.9	147	8,744	8,969	13,974	4,541
Oct.			1	176	31	87.7	133	8,177	8,979	12,248	4,983
Nov.			25	160	5	19.3	101	6,016	8,965	11,843	5,067
Dec.			14	160	18	41.4	87.2	5,365	9,287	12,797	3,354
Yearly				251		19.3	137	99,457	120,645	149,031	95,204
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				7.1		0.55	3.88	122,680	148,816	183,830	117,434

ø Mean daily

RIO GRANDE NEAR EL INDIO, TEXAS AND VILLA GUERRERO, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorders (graphic and digital) located on the left bank at latitude 28°20'40", longitude 100°18'35", and river mile 455.8 (733.5 km), 0.5 river mile (0.8 km) downstream from Cuervo Creek, which marks the lower end of the Maverick County Water Control and Improvement District No. 1, 1.9 river miles (3.1 km) upstream from Tovar Creek, 5 miles (8.0 km) northeast of Villa Guerrero, Coahuila, about 11.5 miles (18.5 km) south of El Indio, Texas, 35.5 river miles (57.1 km) downstream from the ~~international highway~~ bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 793.0 river miles (1,276.2 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 580.00 feet (176.78 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 31 discharge measurements during the year, 27 by the United States Section and 4 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: Mar., Apr., May, Oct., Nov., and Dec. 1952 with some days missing; Jan. through Aug. 20, 1953; Sept. 23, 1953 through June 14, 1954; and May 27, 1955 through 1976 with several days missing prior to Sept. 1955. Records prior to 1976 were published under the title "Rio Grande at San Antonio Crossing near El Indio, Texas."

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 912,000 second-feet (25,800 m^3/sec) in June 1954, determined by slope-area computation, with an elevation of 624.31 feet (190.29 m). Min. 54.4 second-feet (1.54 m^3/sec) on June 24, 1953 with an elevation of 581.96 feet (177.38 m) at a station 1,700 feet (518 m) upstream from the present site.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max. 185,000 (5,240)	Sept. 25, 1964	Min. 299 (8.47)	July 20 & Aug. 2-4, 1956
Monthly:	Max. 31,700 (898)	Sept. 1964	Min. 445 (12.6)	July 1956
Yearly:	Max. 6,130 (174)	1958	Min. 1,040 (29.5)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,800	1,770	4,570	509	3,020	1,790	1,370	5,710	‡ 23,000	3,960	2,790	1,650
2	1,770	1,720	4,550	621	3,130	1,730	1,360	5,570	23,000	3,630	2,640	1,610
3	1,770	1,690	‡ 4,590	678	2,910	1,670	1,410	5,540	20,800	3,550	2,580	1,560
4	1,790	‡ 1,630	4,630	1,740	2,590	1,570	1,560	‡ 5,850	15,000	3,480	2,580	1,470
5	1,850	1,620	4,620	3,530	2,600	1,510	7,650	5,750	12,600	4,150	2,470	1,560
6	1,790	1,650	4,610	2,090	3,220	1,530	4,480	5,530	11,000	4,480	2,410	1,590
7	‡ 1,790	1,610	4,630	1,740	13,800	1,540	‡ 2,930	5,260	7,240	4,400	2,390	‡1,650
8	1,760	3,370	4,710	1,520	11,000	1,450	2,930	5,240	6,500	4,410	2,390	1,520
9	1,730	4,180	4,670	1,410	3,670	‡ 1,330	2,940	5,090	6,280	4,390	2,480	1,510
10	1,750	4,170	4,600	1,350	2,780	1,150	3,250	4,940	‡ 6,190	4,370	‡2,440	1,650
11	1,780	4,160	4,610	1,280	2,930	1,110	3,050	4,790	6,120	4,330	2,360	1,910
12	1,720	4,200	4,620	1,310	‡ 3,680	1,090	14,300	4,680	6,130	4,250	2,310	2,120
13	1,660	4,200	4,530	1,300	4,890	1,090	31,300	4,580	5,580	‡ 4,140	2,330	2,130
14	1,550	4,180	4,530	1,310	6,240	1,160	24,100	4,530	4,110	4,020	2,360	2,420
15	1,500	4,310	4,600	‡ 1,310	6,020	1,070	16,100	4,570	‡ 3,920	3,170	2,360	2,340
16	1,660	4,350	4,100	1,910	5,930	1,090	28,000	4,520	3,860	3,190	2,360	2,320
17	1,710	4,270	‡ 2,030	2,190	5,910	1,810	30,900	10,600	3,820	2,850	2,360	2,070
18	1,750	‡ 3,990	1,600	1,680	5,390	1,430	40,100	‡ 21,200	3,910	2,770	2,360	1,890
19	1,750	1,960	1,560	1,470	3,610	1,430	21,900	22,600	4,140	2,720	2,360	1,780
20	1,710	975	1,540	1,400	4,010	1,410	13,100	23,200	4,600	2,680	2,400	1,690
21	‡ 1,720	725	1,510	2,500	3,680	1,620	‡ 10,500	23,100	5,010	2,670	2,300	1,630
22	1,700	741	1,550	2,610	3,570	1,580	19,600	23,200	6,070	2,500	2,010	‡1,650
23	1,690	755	1,510	5,220	3,460	‡ 1,500	34,100	23,200	7,160	2,330	1,920	2,120
24	1,690	716	1,450	6,760	3,370	1,480	22,100	23,300	7,160	2,340	1,800	2,550
25	1,750	669	1,330	6,770	3,240	1,470	13,100	23,800	7,190	2,350	1,960	2,210
26	1,790	621	1,280	4,010	‡ 2,370	1,500	10,100	23,700	7,090	2,300	‡1,990	2,380
27	1,790	632	979	1,850	2,030	1,550	8,510	23,600	7,150	‡ 2,330	1,990	2,240
28	1,790	644	659	‡ 1,630	1,990	1,660	7,630	23,000	6,490	2,920	1,900	2,170
29	1,790	3,910	620	1,750	1,920	1,500	7,000	23,000	‡ 5,120	4,280	1,760	2,340
30	1,790		673	2,420	1,860	1,400	6,350	22,900	4,900	4,040	1,690	2,830
31	1,790		‡ 602		1,840		5,910	22,900		3,180		2,720
Sum	53,880	69,418	92,063	65,868	126,660	43,220	397,630	415,450	241,140	106,180	68,050	61,280

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	6.65	6.43	1	1,900	†15	1,500	1,740	106,869	86,852	155,405	47,179
Feb.	7.77	5.82	29	4,550	†26	599	2,390	137,689	142,427	444,879	51,336
Mar.	7.85	5.84	† 4	4,750	31	552	2,970	182,604	112,269	248,073	37,442
Apr.	8.67	5.79	25	10,200	1	494	2,190	130,647	109,697	361,567	37,386
May	10.46	6.63	7	27,800	31	1,800	4,090	251,226	163,096	251,226	50,723
June	6.98	6.11	17	2,530	16	935	1,440	85,726	121,580	353,792	29,808
July	13.15	6.35	18	45,900	† 1	1,310	12,800	788,688	215,718	788,688	37,228
Aug.	9.88	7.72	†25	23,800	16	4,350	13,400	824,033	232,571	824,033	66,822
Sept.	9.83	7.49	2	23,300	17	3,760	3,040	478,294	315,482	1,296,059	83,327
Oct.	7.79	6.85	5	4,580	27	2,250	3,420	210,605	262,763	863,008	92,140
Nov.	7.14	6.56	1	2,900	30	1,690	2,270	134,975	152,739	552,893	58,569
Dec.	7.14	6.41	24	2,900	4	1,420	1,980	121,547	98,917	276,020	49,819
	13.15	5.79		45,900		494	4,760	3,452,903	2,014,111	3,835,752	896,415
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	4.01	1.76		1,300		14.0	135	4,259,156	2,484,406	4,731,400	1,105,728

** Period 1956-1976 ‡ Discharge measurement made on this day † And other days

RIO GRANDE AT VILLA HIDALGO, COAHUILA NEAR LAREDO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank on the outskirts of Palafox, Webb County, Texas and Villa Hidalgo, Coahuila at latitude 27°47'55", longitude 99°52'40", and river mile 403.0 (649 km); 1.9 river miles (3.1 km) downstream from Arroyo Agua Verde in Mexico, 13.1 river miles (21.1 km) upstream from Santo Tomas Creek in United States, 44.7 river miles (72 km) upstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 845.8 river miles (1,361.2 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 436.02 feet (132.90 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 23 discharge measurements during the year, 21 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. High flows prior to early 1962 were computed from a rating curve developed after the cableway was installed. Records available: August 1959 through 1976. Records prior to 1976 were published under the title "Rio Grande at Palafox near Laredo, Texas."

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 214,000 second-feet (6,060 m^3/sec) on September 25, 1964 with a gage height of 42.06 feet (12.82 m). Min. 314 second-feet (8.90 m^3/sec) on June 30, and July 1, 1972 with a gage height of -0.66 foot (-0.20 m).

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	163,000 (4,610)	Sept. 26, 1964	Min.	314 (8.90)	July 1, 1972
Monthly:	Max.	30,400 (862)	Sept. 1964	Min.	434 (12.3)	June 1969
Yearly:	Max.	5,470 (155)	1974	Min.	1,270 (35.9)	1972

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,020	1,640	4,380	‡ 622	3,210	1,770	1,500	6,430	20,200	4,730	3,200	1,850
2	‡ 1,670	1,640	‡4,560	622	3,290	1,720	‡ 1,360	6,220	20,300	3,960	2,860	1,790
3	1,740	1,680	4,590	749	3,210	1,680	1,360	6,110	19,900	3,740	2,730	1,770
4	1,740	1,640	4,560	939	‡ 2,670	1,620	1,450	5,860	16,200	3,780	2,680	1,610
5	1,790	1,590	4,590	2,870	2,540	1,520	3,490	5,680	12,400	4,030	2,630	1,800
6	1,790	1,590	4,630	2,750	2,690	1,470	8,760	5,510	11,700	‡ 4,700	2,520	1,770
7	1,770	1,590	4,590	1,960	4,480	1,490	3,500	5,370	‡ 8,400	4,560	2,430	1,850
8	1,770	1,560	4,730	1,660	18,200	1,500	2,870	5,260	6,920	4,480	2,390	‡1,790
9	1,710	2,780	4,730	1,450	6,180	1,420	3,080	5,160	6,390	4,450	‡2,470	1,640
10	1,740	‡ 4,130	4,660	1,370	2,680	‡ 1,270	3,260	4,980	6,290	4,450	2,570	1,640
11	1,770	4,130	4,590	1,310	2,130	1,130	3,390	‡ 4,910	6,180	4,410	2,500	1,950
12	1,790	4,130	4,630	1,490	2,630	1,110	5,160	4,840	6,110	4,410	2,430	2,210
13	‡ 1,770	4,130	4,590	2,010	3,470	1,060	23,800	4,730	6,110	4,410	2,470	2,600
14	1,770	4,130	4,660	1,430	5,900	1,090	26,200	4,590	4,980	4,410	2,470	2,800
15	1,660	4,130	4,590	1,320	5,790	1,140	30,800	4,560	4,310	4,060	2,500	2,750
16	1,640	4,200	‡4,560	1,430	5,620	1,070	24,800	4,560	4,240	3,570	2,470	2,370
17	1,660	‡ 4,130	3,190	2,170	5,620	1,270	27,400	‡ 4,840	4,170	3,160	2,650	2,040
18	1,710	4,060	1,880	1,960	5,620	1,780	31,600	16,700	4,170	3,010	2,880	1,940
19	1,710	3,290	1,640	1,660	‡ 4,340	1,440	32,900	‡ 19,600	4,700	2,930	2,960	1,860
20	1,710	1,650	1,590	‡ 1,450	4,130	1,500	32,700	20,100	4,630	2,880	2,780	1,750
21	1,710	932	1,540	2,740	5,120	1,460	37,100	20,300	4,940	2,830	2,630	1,740
22	1,680	664	1,520	2,550	3,640	1,580	33,700	20,200	5,760	2,750	2,310	1,770
23	1,660	646	1,560	2,610	3,460	1,540	29,800	20,200	7,060	2,550	2,060	1,860
24	1,680	‡ 646	1,560	5,330	3,390	1,460	27,700	‡ 20,100	7,130	2,370	1,970	2,760
25	1,710	607	1,470	5,540	3,360	1,440	15,800	20,400	7,130	2,430	2,030	2,570
26	1,740	572	1,370	5,400	3,400	1,450	11,400	20,400	7,030	2,380	2,180	2,310
27	1,680	512	1,300	2,170	2,190	1,450	9,430	20,300	6,990	2,480	2,110	2,190
28	1,660	512	1,010	1,190	1,960	1,480	8,400	20,200	6,920	3,430	2,010	2,070
29	1,660	961	720	1,850	1,940	1,430	7,700	20,100	5,620	5,120	1,860	2,240
30	1,610		629	1,820	1,840	1,600	7,200	20,000	5,190	4,480	1,800	3,040
31	1,640		689		1,790		6,890	20,000		3,880		3,040
Sum	52,360	63,872	95,308	62,422	126,490	42,940	464,500	368,210	242,070	114,830	73,550	65,370

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	2.17	0.66	† 5	1,850	1	975	1,690	103,758	87,915	163,752	50,489
Feb.	3.94	0	16	4,270	†27	494	2,200	126,712	141,181	455,925	48.884
Mar.	4.23	.03	8	4,770	30	607	3,070	189,032	115,905	245.194	38.574
Apr.	5.74	0	25	7,700	† 1	590	2,080	123,826	108,306	356,909	36,522
May	12.80	2.10	8	24,300	31	1,790	4,100	250,937	170,834	251,336	60,344
June	2.69	.69	18	2,400	17	939	1,430	85,210	169,596	750,690	25,768
July	18.67	1.41	19	39,900	2	1,320	15,000	921,377	231,501	921,377	30,729
Aug.	11.32	4.07	25	20,600	15	4,480	11,900	730,503	235,218	730,503	70,515
Sept.	11.22	3.64	1	20,400	17	4,130	8,090	480,301	318,899	1,250,870	93,812
Oct.	4.30	2.53	29	5,230	26	2,330	3,710	227,788	297,063	922,217	100,018
Nov.	3.25	1.97	1	3,470	30	1,770	2,450	145,897	163,398	601,059	56,954
Dec.	3.12	1.64	24	3,260	4	1,550	2,110	129,717	107,284	317,123	51,077
	18.67	0		39,900		494	4,840	3,515,058	2,147,100	3,963,062	920,935
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	5.69	0		1,130		14.0	137	4,335,778	2,648,419	4,888,381	1,135,961

** Period August 1959-1976 ‡ Discharge measurement made on this day † And other days

RIO GRANDE AT NUEVO LAREDO, TAMAULIPAS AND LAREDO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the right bank at Laredo, Texas at latitude 27°29'45", longitude 99°29'30", and river mile 357.2 (575 km); immediately downstream from the Laredo, Texas sewage plant, 1.1 river mile (1.8 km) downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 891.6 river miles (1,434.9 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 345.28 feet (105.24 m) above mean sea level, U.S. C. & G. S. datum.

RECORDS: Based on 88 discharge measurements during the year, 86 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through 1913; May, June, and Oct. 1914; Sept. 1916; Sept. and Oct. 1917; Oct. 1918; Sept. and Oct. 1919; Aug. and Sept. 1920; June, Nov., and Dec. 1922; and 1923 through 1976. Gage height records are available for Jan., Feb., and Mar. 1914.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. This station was established in Jan. 1955 to replace the station 1.7 miles (2.7 km) upstream which was destroyed by the June-July 1954 flood. Prior to July 11, 1968 the recorder was located 0.2 river mile (0.3 km) upstream, where the cableway is still located, and the zero of the gage was 347.90 feet (106.04 m) above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 716,900 second-feet (20,300 m^3/sec) on June 30, 1954, determined by slope-area calculations, with a gage height of 61.35 feet (18.70 m). Much well-authenticated information established the occurrence of a greater flood in June 1865 with a gage height of 62.5 feet (19.05 m) on the same gage and discharge of approximately 950,000 second-feet (27,000 m^3/sec), and also that these were the only floods since 1745 with flows greater than 600,000 second-feet (17,000 m^3/sec). Min. no flow several days in June and July 1953 and on July 24, 1956.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	576,000 (16,300)	June 30, 1954	Min.	0	Several days June & July 1953
Monthly:	Max.	49,500 (1,400)	Sept. 1932	Min.	5.5 (0.16)	June 1953
Yearly:	Max.	9,670 (274)	1932	Min.	1,080 (30.7)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,010	1,780	‡ 2,310	590	2,600	‡ 2,100	1,610	7,270	22,200	5,120	‡4,030	1,960
2	1,420	‡ 1,800	4,630	551	3,740	2,040	1,560	‡ 6,990	22,600	4,170	3,270	1,950
3	1,850	1,830	4,660	537	‡ 3,410	1,980	1,520	6,890	22,600	3,810	3,030	1,910
4	1,880	1,910	4,660	784	3,260	1,930	1,620	6,710	20,100	‡ 3,710	2,940	1,820
5	1,890	1,860	4,660	‡ 1,110	2,790	1,850	2,680	6,430	14,500	4,630	2,840	1,780
6	‡ 2,000	1,830	4,700	‡ 3,670	2,740	1,780	‡ 9,570	6,250	‡ 13,000	4,730	2,710	‡1,880
7	2,000	1,830	4,800	2,550	3,990	‡ 1,740	‡ 5,330	6,070	10,800	4,630	2,640	1,880
8	2,010	1,830	4,800	2,080	‡15,100	1,750	3,640	5,860	7,450	4,590	‡2,530	1,910
9	‡ 1,980	‡ 2,920	4,800	1,750	14,400	1,720	3,450	‡ 5,720	‡ 6,670	4,520	2,490	1,850
10	1,920	4,310	4,770	1,580	‡ 5,330	1,620	3,490	5,510	6,530	4,480	2,600	1,750
11	1,910	‡4,310	4,660	1,490	3,180	1,470	3,780	5,260	6,500	‡ 4,480	2,660	1,820
12	‡ 1,980	4,270	‡4,730	‡ 1,480	‡ 2,990	1,260	‡ 3,470	5,160	6,360	4,480	2,600	2,220
13	2,000	4,270	4,870	2,550	3,810	1,230	‡ 15,700	5,010	‡ 6,250	4,340	2,600	2,610
14	1,990	4,310	4,660	2,090	5,050	‡ 1,180	‡ 30,300	4,870	5,930	4,340	2,620	‡3,120
15	1,940	4,340	‡4,630	1,570	6,710	1,170	‡ 23,600	4,730	4,450	4,380	‡2,640	3,070
16	1,810	‡4,340	4,630	1,410	6,430	1,200	‡ 20,600	‡ 4,870	4,100	3,730	2,680	3,010
17	1,800	4,380	4,310	1,710	‡ 6,390	1,170	‡ 28,700	4,910	4,030	3,530	2,860	2,470
18	1,830	4,310	2,650	2,330	6,430	1,930	‡ 32,000	12,100	4,030	‡ 3,160	2,990	2,240
19	‡ 1,900	4,100	1,980	‡ 2,020	5,930	1,800	‡ 38,800	‡ 20,800	4,240	3,050	3,070	2,200
20	1,910	2,710	1,770	1,760	5,970	1,660	‡ 23,700	21,800	‡ 4,730	2,970	3,050	‡2,060
21	1,920	1,550	1,740	1,550	‡ 5,790	‡ 1,730	‡ 13,600	22,400	4,800	2,900	2,880	1,930
22	1,860	985	‡1,670	2,260	4,310	1,740	‡ 12,000	22,400	5,160	2,860	‡2,690	1,880
23	1,860	‡ 727	1,670	2,690	3,740	1,840	‡ 21,000	‡ 22,400	6,780	2,710	2,380	1,930
24	1,860	699	1,800	4,410	‡ 3,670	1,790	‡ 34,200	22,400	7,170	2,560	2,280	2,120
25	1,860	678	1,740	6,180	3,570	1,690	24,400	22,400	7,240	‡ 2,530	2,210	2,870
26	‡ 1,910	657	1,580	‡ 5,900	3,780	1,710	‡ 15,100	22,800	7,240	2,530	2,330	2,510
27	1,920	604	1,440	4,060	3,370	1,700	‡ 12,000	22,800	‡ 7,380	2,560	2,400	‡2,420
28	1,850	540	1,360	1,990	2,340	‡ 1,740	‡ 10,100	22,600	7,310	3,470	2,380	2,310
29	1,800	551	‡ 999	1,400	2,270	1,770	9,000	22,400	6,710	5,930	2,210	2,240
30	1,780		660	2,220	2,220	1,790	‡ 8,230	‡ 22,400	5,370	5,690	‡2,040	2,620
31	1,730		572		2,150		7,840	22,200		4,730		3,120
Sum	57,380	70,231	93,911	66,272	147,460	50,080	422,590	400,410	262,230	121,320	80,650	69,460

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	3.05	1.84	† 6	2,040	† 1	935	1,850	113,887	90,617	172,529	49,774
Feb.	5.15	1.31	†17	4,380	28	530	2,420	139,285	144,011	450,602	39,225
Mar.	5.68	1.31	13	5,120	31	558	3,190	196,204	117,662	257,213	37,096
Apr.	6.89	1.25	25	7,730	3	530	2,210	131,426	109,905	360,566	35,107
May	14.37	2.99	8	28,500	31	2,100	4,770	292,460	180,141	292,460	89,917
June	3.28	1.84	18	2,360	17	1,090	1,670	99,338	168,114	695,494	29,685
July	20.34	2.26	19	42,000	3	1,480	13,600	838,520	230,124	838,520	32,270
Aug.	13.58	5.18	26	23,000	15	4,700	12,900	794,314	248,467	704,314	65,681
Sept.	13.52	4.69	3	22,800	18	3,990	8,760	520,297	329,202	1,216,757	94,988
Oct.	6.36	3.31	29	6,570	24	2,490	3,920	240,697	329,784	956,960	105,334
Nov.	5.02	2.85	1	4,560	30	2,010	2,690	159,977	166,021	586,280	58 095
Dec.	4.04	2.56	14	3,320	5	1,680	2,240	137,751	109,580	307,569	51,316
Yearly	20.34	1.25		42,000		530	5,050	3,664,156	2,223,628	3,891,074	980,740
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	6.20	0.38		1,190		15.0	143	4,549,686	2,742,817	4,799,588	1,209,729

** Period 1924-1976 ‡ Discharge measurement made on this day † And other days

RIO SALADO NEAR LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Cableway, control weir with notch opening of 2,500 second-foot (72 m^3/sec) capacity, gravity well, and water-stage recorder located on the right bank at latitude 26°50'10", longitude 99°33'50", 2.0 river miles (3 km) downstream from the confluence of Rio Sabinas with Rio Salado, 6 miles (10 km) southeast of the town of Las Tortillas, Tamaulipas, and 24.8 river miles (39.9 km) from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 298.4 (480 km), 24.6 river miles (39.6 km) upstream from Falcon Dam, and 950.4 river miles (1,529.5 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 325.72 feet (99.28 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 15 discharge measurements during the year, a stable rating curve up to 2,500 second-feet (72 m^3/sec), and a continuous record of gage heights. Computations by shifting control methods for flows greater than 2,500 second-feet (72 m^3/sec). Records available: September 9, 1953 through 1976. Records are also available for a station at old Cd. Guerrero, 21.7 miles (35 km) 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. 65,000 second-feet on (1,840 m^3/sec) on September 16, 1971 with a gage height of 40.39 feet (12.31 m). Min. frequently no flow. The maximum discharge was measured at the highway bridge 13.0 river miles (20.9 km) downstream from the station. Extreme flow data for the Rio Salado at Cd. Guerrero prior to September 8, 1953 may be found in previous bulletins.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max. 62,900	(1,780)	Sept. 16, 1971	Min. 0		Frequently
Monthly:	Max. 13,600	(384)	Sept. 1971	Min. 0		Frequently
Yearly:	Max. 3,310	(93.6)	1971	Min. 56.8	(1.61)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	179	139	97.8	84.0	1,510	50.1	33.2	9,680	2,040	2,300	1,990	2,090
2	179	139	93.2	74.9	406	‡ 75.6	35.0	‡ 4,940	‡ 1,990	2,280	1,970	2,090
3	171	139	88.6	74.9	239	194	31.8	5,900	1,830	2,280	1,970	2,070
4	156	121	‡ 79.5	84.0	164	67.8	32.5	5,760	1,590	2,300	1,970	2,070
5	171	102	79.5	102	139	50.1	759	5,370	1,590	‡ 2,300	1,940	2,070
6	164	97.8	79.5	329	‡ 130	46.6	3,280	5,160	1,570	2,300	1,940	2,070
7	‡ 164	97.8	93.2	343	121	43.1	3,780	4,130	1,570	2,280	1,940	2,040
8	148	93.2	116	‡ 194	116	44.8	2,800	3,530	1,660	2,280	1,970	2,010
9	148	102	112	283	112	38.5	2,450	3,450	1,760	2,220	1,990	‡2,010
10	156	102	97.8	255	116	30.7	3,880	‡ 3,370	1,850	2,170	‡1,940	2,010
11	164	102	97.8	164	116	32.5	3,670	3,370	2,120	2,170	1,940	2,010
12	164	‡ 93.2	97.8	135	116	47.0	3,850	3,370	2,170	2,170	1,940	2,040
13	164	102	102	141	158	46.6	2,200	3,370	2,150	1,940	1,940	2,150
14	156	112	116	498	287	50.5	3,340	3,290	‡ 2,150	1,190	1,920	2,170
15	148	97.8	125	417	121	54.4	2,450	3,290	2,170	763	1,920	2,170
16	139	102	102	285	112	53.3	1,900	3,290	2,280	717	1,940	2,170
17	125	107	102	186	112	53.0	1,820	2,960	2,280	611	2,070	2,170
18	125	107	102	156	97.8	135	1,530	2,010	2,220	586	2,150	2,150
19	130	97.8	93.2	139	93.2	156	1,270	1,920	2,480	597	2,170	2,150
20	135	84.0	97.8	130	293	110	‡1,020	1,920	2,440	583	2,170	2,150
21	135	79.5	107	125	431	116	897	1,870	2,330	579	2,170	2,120
22	135	70.3	116	107	247	160	2,850	1,920	2,410	565	2,150	2,090
23	130	74.9	130	93.2	144	162	4,200	2,010	2,310	724	2,090	2,120
24	125	74.9	179	109	125	92.5	3,780	2,250	2,300	971	2,090	2,150
25	130	79.5	130	130	107	71.0	2,790	2,280	2,270	1,030	2,010	2,150
26	135	84.0	121	93.2	84.0	61.8	3,330	2,490	2,280	1,110	2,040	2,120
27	139	79.5	107	93.2	79.5	63.6	‡4,730	2,710	2,300	1,230	2,090	2,120
28	139	79.5	97.8	93.2	65.7	61.1	6,600	2,870	2,310	1,530	2,120	2,120
29	139	84.0	102	788	50.1	48.4	8,260	2,790	2,330	1,650	2,120	2,090
30	139		97.8	2,280	48.0	40.3	9,180	2,490	2,330	1,840	2,120	2,090
31	144		97.8		50.1		9,640	2,120		1,900		2,090
Sum	4,576	2,843.7	3,258.1	7,986.6	5,990.4	2,256.3	96,388.5	105,880	63,080	47,166	60,780	65,120

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954–1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.05	0.89	1	179	†17	121	148	9,072	8,037	57,070	0
Feb.	.98	.69	1	148	22	65.7	98.2	5,645	6,626	66,880	0
Mar.	1.12	.72	24	209	4	74.9	105	6,466	4,539	29,690	0
Apr.	3.67	.69	30	3,530	3	65.7	266	15,846	6,151	21,994	0
May	3.67	.56	1	3,530	29	43.8	193	11,874	18,993	100,919	0
June	1.38	.43	18	343	11	26.8	75.2	4,475	23,115	172,970	0
July	8.14	.46	31	9,820	† 1	31.1	3,110	191,227	36,848	441,541	0
Aug.	8.20	2.85	1	9,920	†21	1,870	3,410	210,031	23,545	210,031	0
Sept.	3.41	2.62	19	2,870	6	1,540	2,100	125,087	107,261	807,616	2,850
Oct.	3.15	1.67	1	2,330	23	540	1,520	93,545	67,552	550,739	110
Nov.	3.05	2.89	19	2,200	†13	1,920	2,030	120,562	35,379	338,000	0
Dec.	3.08	2.95	14	2,220	† 8	2,010	2,100	129,136	21,686	176,100	0
	8.20	0.43		9,920		26.8	1,270	922,966	359,730	2,400,553.5	41,238.2
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	2.50	0.13		281		0.76	36.0	1,138,467	443.723	2,961,050	50.859

** Period September 1953-1976 ‡ Discharge measurement made on this day † And other days

RIO GRANDE BELOW FALCON DAM NEAR FALCON, TEXAS AND NUEVA CD. GUERRERO, TAMAULIPAS

DESCRIPTION: The discharges reported below represent water measured as it leaves Falcon Reservoir through turbine penstocks, bypass valves, spillway gates, and leakage. Falcon Dam, astride the Rio Grande, is located at latitude 26°33'25", longitude 99°10'05", and river mile 273.8; (440.6 km); about 7 miles (11.3 km) southwest of Falcon, Texas, 84.5 river miles (136.0 km) downstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 975.0 river miles (1,569.1 km) downstream from the American Dam at El Paso, Texas. A gravity well and water-stage recorder located 2.5 river miles (4.0 km) downstream and a cableway located one mile (1.6 km) farther downstream are used to measure the flow of this station at times when spillway gates are in operation.

RECORDS: Based on daily Simplex meter records of releases through the six turbines, established rating curves for the four hollow-jet bypass valves, estimates of gate leakage, and measurements of flow at the cable during spillgate operations. During 1976 there were 44 discharge measurements, 36 by the United States Section and 8 by the Mexican Section of the Commission. Records available: 1958 through 1976. Records are also available from December 17, 1952 through 1957 for a station at Chapeno, 2.5 miles (4.0 km) 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. 82,600 second-feet (2,340 m^3/sec) on September 18, 1971. Min. 1.5 second-feet (0.04 m^3/sec) on March 24 and 25, 1957 (at Chapeno gaging station).

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	76,400 (2,160)	Sept. 18, 1971	Min.	1.5 (0.04)	March 24 & 25,	1957
Monthly:	Max.	32,500 (920)	Oct. 1958	Min.	23.5 (0.67)	November	1973
Yearly:	Max.	6,930 (196)	1958	Min.	1,580 (44.7)		1970

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	606	7,020	4,000	1,010	18.0	2,490	2,930	13,000	‡8,540	10,900	18.0	3,380
2	1,020	6,680	4,160	1,540	18.0	2,460	2,970	‡ 13,000	4,920	9,810	517	‡2,760
3	1,410	6,640	3,990	2,230	18.0	2,620	2,830	13,000	2,930	9,700	529	‡2,320
4	1,410	6,950	3,580	2,250	18.0	2,720	2,850	13,200	2,900	8,870	518	1,400
5	1,410	7,300	3,430	351	18.0	3,150	2,660	‡ 13,500	2,850	9,740	552	2,530
6	561	7,020	3,790	18.0	18.0	3,030	18.0	‡ 13,500	2,850	9,740	516	‡3,980
7	1,540	6,760	3,650	410	18.0	3,040	18.0	13,400	2,990	9,780	523	‡4,040
8	2,960	6,610	3,420	307	692	3,340	18.0	13,400	2,980	9,970	518	4,060
9	3,360	6,050	3,120	306	694	2,480	18.0	14,000	4,470	10,000	520	4,110
10	2,850	5,350	3,120	311	693	2,520	18.0	‡ 14,800	6,100	10,000	502	4,110
11	2,770	4,740	3,130	316	1,360	3,700	18.0	‡ 14,900	5,950	9,480	503	4,110
12	2,640	4,820	3,130	313	2,580	3,990	18.0	14,800	5,980	6,330	518	4,090
13	2,880	5,210	3,590	313	2,820	3,900	18.0	14,800	6,050	2,300	514	4,090
14	3,430	5,210	3,580	655	3,050	3,620	18.0	14,800	7,000	18.0	522	4,730
15	3,070	5,220	3,280	1,020	3,370	3,510	18.0	14,800	8,760	18.0	515	5,590
16	3,380	4,460	2,690	1,020	3,440	3,540	18.0	25,100	8,720	18.0	517	5,350
17	3,640	3,500	3,420	1,020	3,470	3,730	518	‡ 38,200	8,750	18.0	271	5,260
18	3,710	3,420	3,240	1,230	4,100	3,280	1,540	‡ 38,400	6,800	18.0	18.0	5,250
19	4,300	3,100	3,240	1,230	5,150	3,020	5,250	38,100	3,920	18.0	18.0	5,200
20	3,800	3,530	3,800	1,230	1,870	2,980	‡9,030	38,200	18.0	18.0	18.0	5,270
21	3,600	4,190	3,780	1,230	415	2,970	‡9,420	‡ 38,600	1,970	18.0	347	228
22	4,480	4,260	3,430	1,960	797	3,550	10,500‡	39,900	5,260	18.0	1,040	1,600
23	5,240	4,120	2,690	1,960	790	3,390	10,700‡	39,800	5,680	18.0	1,750	4,130
24	5,780	3,830	1,320	2,450	792	3,700	10,400	39,600	799	18.0	2,200	5,070
25	5,770	3,750	1,730	2,430	1,160	3,720	11,000	‡ 39,400	720	18.0	3,480	5,020
26	5,680	3,810	1,570	2,950	1,860	3,490	11,000	39,200	708	18.0	6,120	4,970
27	5,960	3,430	1,980	3,380	1,500	3,400	11,000	36,300	719	18.0	5,660	4,180
28	6,260	3,440	1,800	3,980	1,520	2,900	11,000‡	‡ 29,700	2,860	18.0	6,310	3,600
29	6,790	3,440	1,810	2,380	1,810	3,350	11,400	‡ 24,900	6,940	18.0	5,090	3,600
30	7,000		1,250	18.0	1,930	2,720	12,300‡	‡ 18,700	11,900	18.0	3,800	3,590
31	6,990		1,210		2,210		13,000	‡ 12,500		18.0		3,590
Sum	143,860		39,818.0		96,310		745,500		116,944.0		121,208	
	114,297		91,930		48,199.0		152,496.0		141,034.0		43,924.0	

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period #1954-1976: Acre-Feet Average	Maximum	Minimum
Jan.			30	7,000	6	561	3,690	226,705	208,602	414,129	16,245
Feb.			5	7,300	19	3,100	4,960	285,342	170,686	367,384	16,600
Mar.			2	4,160	31	1,210	2,970	182,340	131,817	347,000	2,390
Apr.			28	3,980	† 6	18.0	1,330	78,978	241,793	503,683	19,530
May			19	5,150	† 1	18.0	1,550	95,601	297,405	526,000	21,574
June			12	3,990	2	2,460	3,210	191,028	242,035	551,000	22,887
July			31	13,000	† 6	18.0	4,920	302,471	116,855	302,471	12,839
Aug.			22	39,900	31	12,500	24,000	1,478,678	220,443	1,478,678	25,900
Sept.			30	11,900	20	18.0	4,700	279,737	198,348	1,080,371	1,428
Oct.			1	10,900	†14	18.0	3,770	231,955	261,542	1,997,000	27,100
Nov.			28	6,310	† 1	18.0	1,460	87,122	121,499	1,128,000	1,400
Dec.			15	5,590	21	228	3,910	240,413	115,535	465,000	8,761
Yearly				39,900		18.0	5,070	3,680,370	2,326,560	5,016,800	1,143,806
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
				1,130		0.51	144	4,539,736	2,869,812	6,188,223	1,410,985

** Period 1954-1976 ‡ Discharge measurement made on this day ∅ Mean daily

Values prior to 1958 are Chapeno discharge less arroyo inflow † And other days

RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Cableway, reinforced concrete weir of 177 second-foot 5 m^3/sec) capacity, gravity well, and water-stage recorder located on the right bank at a point called "El Paso del Cantaro", latitude 26°27'10", longitude 99°09'20", about 0.5 mile (1 km) north of Cd. Mier, Tamaulipas, and 5.0 river miles (8 km) from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 261.4 (421 km), 12.4 river miles (20.0 km) downstream from Falcon Dam, and 987.4 river miles (1,589.1 km) downstream from the American Dam at El Paso, Texas. The weir is located about 300 feet (91 m) downstream from the recorder. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 2 discharge measurements made at high flows during the year, the weir discharge table at low flows, and a continuous record of gage heights. High flow computations by shifting control methods. Records available: July 1923 through 1976.

REMARKS: Small reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station. On June 11, 1952, the zero of the gage was raised 1.31 feet (0.40 m) to make it coincide with the weir crest elevation. Prior to January 1, 1969, the zero of the gage was 188.35 feet (57.41 m) above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 144,800 second-feet (4,100 m^3/sec) on September 11, 1948 with a gage height of 33.56 feet (10.23 m). Min. periods of no flow have occurred at times during all years of record except 1934, 1935, 1968, 1972, 1974, and 1976.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	87,230 (2,470)	Sept. 11, 1948	Min.	0	Frequently
Monthly:	Max.	7,310 (207)	Sept. 1967	Min.	0	Frequently
Yearly:	Max.	837 (23.7)	1967	Min.	16.4 (0.47)	1929

Mean Daily Discharge in Second-Feet 1976 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	107	47.3	37.1	54.7	396	56.9	67.1	253	145	162	172	292
2	94.3	54.7	38.8	43.8	231	204	63.2	236	139	145	165	270
3	96.8	47.3	37.1	40.6	157	109	59.0	236	137	131	160	253
4	96.8	43.8	40.6	75.6	93.9	63.9	59.0	275	131	129	154	236
5	94.3	43.8	43.8	51.9	89.7	45.2	1,700	269	128	396	148	236
6	94.3	43.8	37.1	59.7	84.8	37.1	3,090	227	120	143	148	236
7	91.8	40.6	42.4	71.3	84.8	31.1	1,700	210	126	126	148	218
8	89.7	45.6	50.9	255	75.9	27.9	968	181	109	115	154	201
9	87.2	54.7	56.9	74.9	75.9	26.1	1,990	175	115	109	160	193
10	89.7	47.3	56.9	59.0	75.9	21.5	2,370	160	191	112	160	193
11	91.8	43.8	56.9	54.7	75.9	21.5	2,910	146	830	112	154	193
12	94.3	40.6	54.7	54.7	75.9	20.1	1,940	142	284	109	148	193
13	94.3	27.9	54.7	54.7	78.0	21.5	1,320	145	116	115	148	201
14	91.8	24.7	59.0	54.7	116	20.1	1,410	148	188	115	148	227
15	185	27.9	59.0	56.9	83.3	18.7	1,490	142	135	115	154	218
16	107	37.1	54.7	54.7	63.2	18.7	996	147	161	144	154	210
17	94.3	31.1	43.8	63.2	61.1	17.3	911	145	110	136	267	201
18	89.7	24.7	47.3	59.0	65.0	1,300	791	182	104	126	473	201
19	84.8	24.7	47.3	61 1	63.2	1,080	678	371	4,340	126	491	201
20	80.5	26.1	43.8	59.0	1,240‡	206	597	466	2,860	126	349	201
21	84.8	33.9	41.7	54.7	1,040‡	121	519	245	505	112	272	184
22	75.9	27.9	115	42.4	242	86.5	657	178	184	109	224	175
23	73.5	31.1	73.5	35.3	100	59.0	883	165	162	109	193	178
24	75.9	33.9	67.1	97.1	85.5	47.3	1,060	162	154	115	201	181
25	69.2	37.1	69.2	241	73.4	47.3	911	154	148	115	218	193
26	73.5	40.6	67.1	331	69.2	289	636	142	148	126	227	184
27	71.3	37.1	61.1	83.7	59.0	341	456	131	142	136	226	178
28	61.1	35.3	56.9	49.4	59.0	178	350	134	228	600	1,010	178
29	59.0	35.3	61.1	1,640	59.0	106	304	153	773	523	696	178
30	61.1		59.0	2,840	54.7	75.9	270	222	293	299	374	175
31	54.7		54.7		47.3		253	154		191		172
Sum	2,715.4	1,089.7	1,689.2	6,773.8	5,175.6	4,697.6	31,408.3	6,096	13,206	5,227	7,696	6,350

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1924-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	189.90	188.94	15	313	31	54.7	87.6	5,385	3,356	34,920	0
Feb.	188.94	188.71	† 2	54.7	†14	24.7	37.4	2,161	2,448	25,550	0
Mar.	189.63	188.81	22	175	† 1	37.1	54.4	3,350	2,519	19,830	0
Apr.	193.04	188.75	29	4,240	†24	27.9	226	13,431	6,071	35,210	0
May	191.70	188.91	20	2,100	31	47.3	167	10,273	12,271	137,000	0
June	192.29	188.62	†18	3,090	†17	15.9	156	9,314	13,152	83,240	0
July	193.24	188.93	5	4,520	† 3	59.0	1,010	62,246	8,272	62,246	0
Aug.	191.04	189.40	19	1,290	27	131	197	12,093	16,341	205,700	0
Sept.	194.06	189.27	19	5,790	18	104	441	26,205	41,302	434,387	135
Oct.	190.58	188.98	28	833	† 9	109	169	10,370	19,446	193,700	0
Nov.	191.08	189.50	28	1,330	† 5	148	256	15,263	4,533	25,165	0
Dec.	189.90	189.50	1	313	31	171	205	12,600	3,600	15,932	0
Yearly	194.06	188.62		5,790		15.9	252	182,691	133,406	605,678.4	11,398.7
	Meters			Cubic Meters per Second					Thousands of Cubic Meters		
	59.15	57.49		164		0.45	7.13	225,347	164,556	747,066	14,086

** Period 1924-1976 ‡ Discharge measurement made on this day † And other days

CONTRIBUTIONS TO THE RIO GRANDE FROM THE LOWER RIO SAN JUAN IRRIGATION DISTRICT FALCON DAM TO RIO GRANDE CITY

DESCRIPTION: The Lower Rio San Juan Irrigation District in Mexico lies along the Rio Grande between Cd. Miguel Aleman and Rio Bravo, Tamaulipas and is irrigated with water impounded by Marte R. Gomez Dam situated on the Rio San Juan 12.4 river miles (20 km) upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river mile 237.8 (383 km) and 1,011.0 river miles (1,627.0 km) downstream from the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Rio Grande City Gaging Station through the Rio San Juan channel, Rancherias Drain, and Los Fresnos Drain; and between this station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of water reaching the Rio Grande via drains located upstream from the Rio Grande City Gaging Station is shown below. Drain water reaching the Rio Grande through the Rio San Juan channel is included in the Rio San Juan tabulation. The portion of drain water from this irrigation district reaching the Rio Grande via channels located downstream from the Rio Grande City Gaging Station is shown on page 67 in this bulletin.

RECORDS: Water entering the Rio Grande through the Rio San Juan channel, composed of spills and leakage from Marte R. Gomez Dam, storm inflow and drainage below the dam, is measured at the Rio San Juan Gaging Station at Camargo, Tamaulipas 3.1 river miles (5 km) upstream from the confluence with the Rio Grande. The discharge through Rancherias Drain was determined by prorating between 41 current meter measurements made during the year. There were no drainage flows through Los Fresnos Drain in 1976. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: 1953 through 1976. Records prior to 1976 include Rio San Juan flow.

REMARKS: In 1976 there were 158,727 irrigable acres (64,235 ha) in the Lower Rio San Juan Irrigation District.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.6	14.1	9.9	4.9	14.8	15.2	5.7	6.4	7.1	5.3	5.7	9.5
2	4.6	14.8	‡ 9.9	5.3	13.8	‡ 13.4	5.7	6.4	7.1	5.3	5.7	9.2
3	4.9	‡ 15.2	9.5	5.3	12.7	14.1	5.7	6.4	7.1	5.3	5.7	9.2
4	4.9	15.2	9.5	5.3	‡ 11.7	14.8	5.7	6.4	7.1	5.3	‡ 5.7	8.8
5	4.9	15.2	9.2	5.3	11.7	15.5	5.7	6.4	7.1	5.3	5.7	8.8
6	‡ 4.9	15.2	8.8	5.7	11.7	16.2	5.7	6.4	7.1	‡ 5.3	6.0	8.5
7	4.9	15.2	8.5	‡ 5.7	11.7	17.0	5.7	6.4	7.1	5.3	6.0	8.5
8	4.6	15.2	8.5	6.0	11.7	‡ 17.7	5.7	6.4	‡ 7.1	5.3	6.0	8.1
9	4.6	15.2	‡ 8.1	6.0	11.7	16.6	6.0	6.4	10.2	5.3	6.4	8.1
10	4.2	‡ 15.2	7.8	6.4	11.7	15.5	6.0	6.4	13.1	5.3	‡ 6.4	‡ 7.8
11	4.2	15.2	7.4	6.7	11.7	14.8	6.0	6.4	16.2	5.3	6.7	7.4
12	3.9	14.8	7.1	7.1	‡ 11.7	13.8	6.0	6.4	19.1	5.3	7.1	7.4
13	‡ 3.9	14.8	6.4	7.1	12.0	12.7	6.0	6.7	22.2	5.3	7.1	7.1
14	3.9	14.8	6.0	‡ 7.4	12.7	12.0	6.0	6.7	25.1	5.3	7.4	7.1
15	3.9	14.8	5.7	8.1	13.1	10.9	6.0	6.7	‡ 28.3	‡ 5.3	7.8	‡ 6.7
16	3.9	14.5	‡ 5.3	8.5	13.4	‡ 9.9	6.0	6.7	25.1	4.9	8.1	6.7
17	4.2	‡ 14.5	5.7	9.2	13.8	9.5	6.0	6.7	22.2	4.9	8.5	6.7
18	4.2	13.8	6.0	9.5	14.5	9.5	6.0	6.7	19.1	4.6	8.5	6.7
19	4.2	12.7	6.4	10.2	‡ 14.8	9.2	6.0	6.7	16.2	‡ 4.2	8.8	6.7
20	‡ 4.2	12.0	6.7	10.6	16.2	8.8	6.0	6.7	13.1	4.6	9.2	6.7
21	5.3	11.3	7.1	‡ 11.3	17.7	8.5	6.0	6.7	10.2	4.6	9.5	6.7
22	6.4	10.6	7.4	12.4	19.1	8.5	6.0	6.7	‡ 7.1	4.9	9.9	‡ 6.7
23	7.4	9.5	7.8	13.4	20.5	‡ 8.1	6.0	6.7	6.7	4.9	9.9	6.7
24	8.5	‡ 8.8	‡ 8.1	14.5	21.9	7.8	6.0	6.7	6.7	5.3	10.2	6.7
25	9.5	8.8	7.8	15.2	23.3	7.4	6.0	6.7	6.4	5.3	‡10.6	6.7
26	10.6	9.2	7.1	16.2	‡ 24.7	7.1	6.0	6.7	6.0	‡ 5.7	10.2	7.1
27	‡ 11.7	9.2	6.7	17.3	23.0	6.7	6.4	6.7	5.7	5.7	10.2	7.1
28	12.0	9.5	6.4	‡ 18.4	21.5	6.4	6.4	6.7	5.7	5.7	9.9	7.1
29	12.7	9.5	6.0	17.3	19.8	6.0	6.4	6.7	‡ 5.3	5.7	9.9	‡ 7.1
30	13.1		5.3	16.2	18.4	‡ 5.7	6.4	6.7	5.3	5.7	9.5	7.1
31	13.8		‡ 4.9		16.6		6.4	7.1		5.7		7.4
Sum	198.6	378.8	227.0	292.5	483.6	339.3	185.6	204.5	351.8	161.9	238.3	232.1

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1954-1976: Acre-Feet Average	Maximum	Minimum
Jan.			31	13.8	†12	3.9	6.4	394	143	394	0
Feb.			† 3	15.2	†24	8.8	13.1	752	256	938	0
Mar.			† 1	9.9	31	4.9	7.4	450	206	771	25.9
Apr.			28	18.4	1	4.9	9.9	580	260	700	19.5
May			26	24.7	† 4	11.7	15.5	958	511	1,454	61.6
June			8	17.7	30	5.7	11.3	673	445	958	55.9
July			†27	6.4	† 1	5.7	6.0	367	235	525	32.4
Aug.			31	7.1	† 1	6.4	6.7	405	182	443	25.9
Sept.			15	28.3	†29	5.3	11.7	697	199	697	15.4
Oct.			†26	5.7	19	4.2	5.3	321	182	797	19.5
Nov.			15	10.6	† 1	5.7	7.8	472	136	641	6.5
Dec.			1	9.5	†15	6.7	7.4	460	169	495	29.2
Yearly				28.3		3.9	8.8	6,529	2,974	6,786	400
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				0.80		0.11	0.25	8,053	3,669	8,370	605

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

RIO SAN JUAN AT CAMARGO, TAMAULIPAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank opposite Camargo, Tamaulipas at latitude 26°18'50", longitude 98°50'20", 3.1 river miles (5 km) from the confluence with the Rio Grande, and 9.3 river miles (15 km) downstream from Marte R. Gomez Dam. This stream enters the Rio Grande at river mile 237.8 (383 km); 3.9 river miles (6.3 km) upstream from the Rio Grande gaging station at Rio Grande City, 36.0 river miles (57.9 km) downstream from Falcon Dam, and 1,011.0 river miles (1,627.0 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 86 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Discharge prorated between measurements during times of extremely low flow. Records available: January 1954 through 1976.

REMARKS: Except for storm inflow, diversion, and drainage returns below Marte R. Gomez Dam, the flow at this station is controlled by spills from Marte R. Gomez Reservoir and leakage through the dam. Backwater from the Rio Grande frequently reaches this station. Prior to July 1, 1968 the zero of the gage was 130.45 feet (39.76 m) above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 115,000 second-feet (3,270 m^3/sec) on September 25, 1967 with a gage height of 42.03 feet (12.81 m). Min. 0.7 second-foot (0.02 m^3/sec) several days in April 1960.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 115,000 (3,250)	Sept. 25, 1967	Min. 0.7 (0.02)	April 23, 24 & 25, 1960
Monthly:	Max. 31,600 (894)	Sept. 1967	Min. 2.1 (0.06)	November 1964
Yearly:	Max. 3,990 (113)	1967	Min. 14.6 (0.41)	1963

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	125	84.0	8.5	7.4	9.9	9.2	7.8	‡ 2,610	473	‡4,060	39.6	3,460
2	113	102	‡ 9.2	7.8	8.5	‡ 9.9	7.8	‡ 2,330	494	‡4,240	37.1	3,450
3	100	‡120	8.8	7.8	7.1	9.5	7.8	‡ 2,190	505	4,170	34.6	‡3,430
4	87.9	85.1	8.5	8.1	‡ 5.7	9.2	7.8	‡ 2,080	523	‡3,960	‡ 31.8	3,320
5	75.6	49.8	8.1	8.1	5.7	8.8	7.8	‡ 1,970	516	3,780	31.8	3,200
6	‡ 62.9	‡ 14.8	7.8	8.1	5.3	8.8	7.8	‡ 1,750	484	‡3,850	31.8	3,080
7	59.7	14.1	7.4	106	5.3	8.5	7.8	1,700	484	3,810	31.8	2,960
8	56.2	13.4	7.1	17.7	4.9	‡ 8.1	7.8	1,610	484	‡3,460	31.8	‡2,850
9	53.0	12.7	‡ 6.7	9.5	4.9	8.1	27.9	‡ 1,490	410	3,070	53.0	2,750
10	49.8	‡ 12.0	6.7	9.5	4.9	8.5	1,310	1,320	307	‡3,000	212	‡2,660
11	46.6	12.0	6.7	9.5	4.6	8.5	4,380‡	1,200	275	‡2,970	‡ 371	2,620
12	43.1	12.0	6.7	9.5	‡ 4.6	8.5	8,970‡	1,000	342	2,900	371	2,590
13	‡ 39.9	12.0	6.7	9.5	4.6	8.5	10,700‡	911	342	2,720	371	2,550
14	38.1	11.7	6.7	‡ 9.5	4.6	8.5	10,200‡	812	342	2,580	371	2,510
15	36.4	11.7	6.7	9.2	4.6	8.8	9,290‡	742	342	‡2,470	388	‡2,470
16	34.6	11.7	6.7	8.8	4.9	‡ 8.8	8,510‡	625	342	2,370	459	2,420
17	32.8	‡ 11.7	6.7	8.5	4.9	8.5	7,770‡	593	342	2,220	530	2,370
18	31.1	10.6	‡ 6.7	8.1	4.9	8.1	6,850‡	562	374	‡2,150	1,060	2,320
19	29.3	9.2	6.7	7.8	‡ 4.9	7.8	6,180‡	565	1,370	2,050	2,190	2,260
20	‡ 27.5	8.1	6.7	7.4	4.9	7.4	5,440‡	579	‡ 3,520	1,980	3,140	2,210
21	27.9	7.1	6.7	‡ 7.1	4.6	7.1	4,840‡	565	‡ 3,850	1,700	3,880‡	2,160
22	27.9	6.0	7.1	8.1	4.6	6.7	4,340‡	576	‡ 3,880	‡1,550	4,170‡	‡2,110
23	28.3	4.6	7.1	9.2	4.2	‡ 6.4	3,960‡	572	‡ 3,710	1,480	4,100‡	2,090
24	28.6	‡ 3.5	‡ 7.1	10.2	4.2	6.7	3,780‡	558	‡ 3,600	1,410	3,990	2,080
25	29.0	4.2	7.1	11.3	3.9	6.7	3,640‡	562	‡ 3,320	1,380	3,960‡	2,060
26	29.0	5.3	7.1	12.4	‡ 3.9	7.1	3,570‡	562	3,210	‡1,020	3,850‡	2,050
27	‡ 29.3	6.0	7.1	13.4	4.6	7.1	3,440‡	530	‡ 3,180	185	3,740	2,030
28	29.7	6.7	7.4	‡ 14.5	5.7	7.4	3,160‡	494	‡ 3,180	53.0	3,640	2,010
29	29.7	7.4	7.4	13.1	6.4	7.4	2,980‡	459	‡ 3,140	49.4	3,530‡	‡2,000
30	47.7		7.4	11.7	7.4	‡ 7.8	2,890‡	463	‡ 3,420	45.9	3,460	1,980
31	65.7		7.4		8.1		2,650‡	459		42.4		1,970
Sum	1,515.3	669.4	224.7	388.8	167.3	242.4	118,940.3	32,439	46,761	70,725.7	48,106.3	78,020

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.			1	125	20	27.5	48.7	3,006	9,357	76,938	88.4
Feb.			3	120	24	3.5	23.0	1,328	3,888	40,536	203
Mar.			2	9.2	† 9	6.7	7.4	446	2,913	24,513	212
Apr.			7	106	21	7.1	13.1	771	3,276	35,876	177
May			1	9.9	†25	3.9	5.3	332	3,817	28,709	245
June			2	9.9	23	6.4	8.1	481	22,613	334,608	274
July	140.06		13	10,900	† 1	7.8	3,850	235,888	39,584	341,429	182
Aug.			1	2,610	†29	459	1,050	64,323	29,237	273,904	161
Sept.			22	3,880	11	275	1,560	92,761	138,352	1,378,406	226
Oct.	138.42		2	4,240	31	42.4	2,280	140,276	109,698	901,500	193
Nov.			22	4,170	† 4	31.8	1,600	95,412	33,844	230,100	126
Dec.			1	3,460	31	1,970	2,520	154,765	21,243	154,765	163
Yearly	140.06			10,900		3.5	1,090	789,789	417,822	2,891,093	10,534
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	42.69			309		0.10	30.8	974,196	515,379	3,566,125	12,993

‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, FALCON DAM TO RIO GRANDE CITY

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1976, 5,525 irrigable acres (2,236 ha) and several towns and rural homes were allotted Rio Grande water in the river reach between Falcon Dam and the Fort Ringgold gaging station. Such irrigable area was 0.8% of the total irrigable acres (ha) below Falcon Dam allotted Rio Grande water.

The total diversion during 1976 in this river reach was 9,529 acre-feet (11,754,000 m^3), or 1.1% of the total water diverted from the Rio Grande below Falcon Dam. All records of diversions in this river reach, which were determined by means of flow meters, were furnished by the Rio Grande Watermaster. More than one crop per year is often grown on parts of this land.

Records prior to 1976 were published under the title "Diversions from the Rio Grande, United States Side-Falcon Dam to Fort Ringgold."

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 77.0 (2.18)	May 1, 1962	Min. 0	Occasionally
Monthly:	Max. 43.8 (1.24)	June 1960	Min. 2.2 (0.06)	March 1957
Yearly:	Max. 20.3 (0.57)	1960	Min. 6.9 (0.20)	1968

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.8	31.7	22.5	17.7	0.7	14.9	7.2	16.2	10.9	8.7	3.2	1.7
2	2.8	35.6	17.7	22.1	.7	8.6	7.2	10.6	11.0	8.2	2.6	1.7
3	12.4	23.8	24.5	23.7	2.5	10.8	3.7	11.4	13.7	7.7	2.6	.9
4	9.9	23.9	27.6	17.3	2.5	10.7	2.9	11.4	11.1	9.3	2.6	2.9
5	12.4	27.5	30.7	20.3	5.6	11.5	2.9	7.3	8.0	4.8	2.6	5.0
6	12.8	31.2	30.8	16.1	3.3	11.1	2.9	16.6	9.2	6.9	2.6	7.3
7	22.7	32.3	34.4	18.5	15.4	14.2	2.9	20.7	9.7	7.8	3.3	6.0
8	20.6	31.9	28.5	11.2	22.9	12.3	2.9	15.6	6.9	6.4	3.9	9.9
9	25.7	37.9	30.3	5.6	18.2	15.1	2.9	10.7	10.3	7.4	6.8	12.1
10	29.3	38.6	31.3	8.5	30.0	11.7	2.9	11.2	14.0	5.0	14.6	15.5
11	20.9	40.8	35.5	6.5	9.6	9.2	2.0	15.0	18.8	5.0	10.9	8.0
12	26.3	29.7	27.2	13.4	10.4	9.6	2.0	15.3	15.7	6.4	10.1	6.9
13	27.9	34.6	24.2	13.4	3.3	9.3	2.0	20.1	17.5	4.8	8.0	5.7
14	31.1	19.7	23.3	17.9	3.6	10.3	2.0	15.8	12.3	7.2	2.1	4.2
15	14.2	19.9	11.3	15.2	7.6	3.1	2.0	11.3	7.0	8.4	2.1	4.2
16	21.2	36.7	18.2	8.3	5.3	8.0	2.0	13.2	3.5	9.0	2.1	3.4
17	19.1	30.8	17.1	8.4	8.3	9.5	2.0	12.4	3.5	3.8	2.1	3.4
18	17.5	27.8	25.9	2.0	9.4	9.5	5.3	13.5	6.6	7.3	2.1	5.0
19	20.7	38.1	25.9	2.0	6.7	13.7	3.3	5.9	3.8	9.7	2.1	5.7
20	16.3	43.3	34.0	5.2	10.9	6.3	5.6	3.8	4.3	6.6	2.1	2.3
21	21.9	43.0	29.7	4.2	6.4	16.8	9.2	4.3	2.7	9.1	2.1	6.3
22	16.8	43.0	18.2	6.6	10.0	16.8	16.2	5.9	3.2	9.0	1.8	7.1
23	27.6	31.4	16.4	11.9	5.6	17.5	16.3	5.9	4.8	15.1	1.8	6.0
24	32.9	17.8	16.5	12.9	14.1	9.4	21.2	4.1	4.0	6.0	1.8	5.0
25	37.0	15.7	26.9	8.2	13.1	8.3	12.1	6.6	5.7	4.9	1.8	3.9
26	43.9	30.4	21.8	16.9	15.2	15.6	15.5	6.7	4.0	5.4	1.8	4.4
27	44.4	30.3	23.8	14.2	24.2	13.0	14.6	10.1	4.0	5.0	1.8	4.5
28	35.3	31.6	17.2	11.7	32.0	15.2	13.0	13.2	3.6	2.9	1.8	18.8
29	29.4	19.4	25.9	11.6	17.3	7.7	17.6	6.7	2.8	5.5	1.7	18.8
30	47.2		17.6	2.5	13.3	7.2	16.8	10.2	3.3	4.2	1.7	28.0
31	44.2		17.7		21.1		20.5	6.6		3.5		20.0
Sum	747.2	898.4	752.6	354.0	349.2	336.9	239.6	338.3	235.9	211.0	106.6	234.6

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	∅ Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976 Acre-Feet: Average	Maximum	Minimum
Jan.	1.00	0.31	30	47.2	† 1	2.8	24.1	1,482	645	1,482	159
Feb.	1.14	0	20	43.3	25	15.7	31.0	1,782	792	1,782	223
Mar.	.60	.84	11	35.5	15	11.3	24.3	1,493	990	1,845	158
Apr.	1.48	2.93	3	23.7	†18	2.0	11.8	702	1,008	1,890	357
May	2.34	1.48	28	32.0	† 1	.7	11.3	693	1,030	2,624	211
June	2.69	1.98	23	17.5	15	3.1	11.2	668	1,083	2,610	209
July	1.52	6.34	24	21.2	†11	2.0	7.7	475	730	1,620	278
Aug.	2.32	2.17	7	20.7	20	3.8	10.9	671	667	999	278
Sept.	5.28	3.98	11	18.8	21	2.7	7.9	468	518	1,230	178
Oct.	2.32	4.19	23	15.1	28	2.9	6.8	419	664	1,220	131
Nov.	1.25	4.28	10	14.6	†29	1.7	3.5	211	499	1,170	211
Dec.	.71	1.17	30	28.0	3	.9	7.6	465	574	1,580	145
	22.65	29.67		47.2		0.7	13.1	9,529	9,200	14,754	4,989
Yearly	Millimeters			Cubic Meters per Second				Thousands of Cubic Meters			
	575	754		1.34		0.02	0.37	11,754	11,348	18,199	6,154

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

∅ Mean daily

† And other days

RIO GRANDE AT RIO GRANDE CITY, TEXAS
NEAR CAMARGO, TAMAULIPAS

DESCRIPTION: Cableway, bubbler gage, gravity well, water-stage recorders (graphic and digital), and digital transmitter located on the left bank at Fort Ringgold, latitude 26°22'05", longitude 98°48'20", and river mile 233.9 (376.4 km); about 1 mile (1.6 km) downstream from Rio Grande City, Texas, 3.9 river miles (6.3 km) downstream from Rio San Juan, and 1,014.9 river miles (1,633.3 km) downstream from American Dam at El Paso, Texas. The zero of the gage is 100.00 feet (30.48 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 21 discharge measurements during the year, and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 1976. Records composed of the addition of discharges of the Rio Grande at Roma, Texas, and the Rio San Juan at Santa Rosalita, Tamaulipas are available for May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September 1923; and 1924 through 1931. Records prior to 1976 were published under the title "Rio Grande at Fort Ringgold, Rio Grande City, Texas." Records are also available for the station "Rio Grande near Rio Grande City", 3.0 miles (4.8 km) downstream, for 1932 through 1954.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Except for tributary inflows and intervening diversions below Falcon Dam, flow at this station is controlled largely by releases from Falcon Reservoir, 39.9 river miles (64.2 km) upstream. The transmitter relays gage height data to the Harlingen office of the United States Section of the Commission and to the Anzalduas Dam control room via radio. The data is recorded automatically at both locations.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 220,000 second-feet (6,230 m^3/sec) on September 22 and 23, 1967 with a gage height of 61.40 feet (18.71 m). Min. no flow occurred several days in June and July 1953.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max.	207,000 (5,860)	Sept. 23, 1967	Min.	14.6 (0.41)	April 13, 1957
Monthly:	Max.	49,600 (1,400)	Oct. 1958	Min.	235 (6.66)	March 1957
Yearly:	Max.	9,140 (259)	1958	Min.	1,750 (49.6)	1970

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,480	7,040	3,760	1,320	1,320	2,700	3,030	15,200	‡ 12,300	16,000	724	7,110
2	818	7,020	4,560	1,140	341	2,810	3,210	15,000	7,490	16,600	678	6,140
3	1,200	6,400	4,520	1,540	235	2,610	3,300	‡ 14,700	4,060	15,800	678	5,740
4	1,510	6,700	4,370	2,250	194	2,700	3,120	14,600	3,490	15,100	‡ 887	4,760
5	1,530	7,010	3,910	2,570	150	2,920	3,290	14,700	3,400	14,500	1,010	4,410
6	1,520	6,960	3,740	533	121	3,080	6,990	14,700	3,320	15,100	1,050	6,310
7	746	6,760	4,230	363	102	3,100	2,640	14,600	3,290	‡14,500	1,100	6,580
8	1,590	6,730	3,800	385	86.8	3,170	2,190	14,500	2,900	14,400	1,160	6,270
9	2,840	6,210	3,720	510	379	3,390	2,420	14,300	3,540	14,000	1,240	6,270
10	3,170	5,600	3,440	379	636	2,550	3,420	15,200	6,660	13,800	1,360	6,210
11	2,820	5,260	3,430	365	636	2,620	6,900	15,500	6,490	13,700	1,460	6,240
12	2,770	4,610	3,380	356	1,190	3,930	9,880	‡ 15,400	6,490	12,700	1,610	6,080
13	2,620	5,030	3,330	348	2,120	4,080	11,500	15,100	6,490	7,300	1,530	6,080
14	2,830	5,660	3,990	346	2,430	4,080	‡ 11,200	15,000	6,340	5,010	1,530	6,140
15	3,320	5,510	3,670	641	2,650	3,660	10,900	14,900	9,170	3,200	1,540	7,020
16	3,070	5,190	3,430	976	3,130	3,660	9,140	15,700	9,270	2,890	1,570	6,850
17	3,450	4,200	2,900	1,010	2,910	3,710	8,210	29,600	9,290	2,760	1,840	6,590
18	3,770	3,720	3,620	985	3,080	3,860	7,840	‡ 35,100	9,120	2,670	2,070	6,920
19	3,270	3,670	3,410	1,170	3,950	5,110	8,110	‡ 36,800	10,800	2,550	2,920	6,850
20	3,990	3,380	3,490	1,150	4,380	3,670	12,900	37,400	11,200	2,450	3,710	7,020
21	3,660	3,840	4,010	1,150	2,630	3,200	‡ 14,000	‡ 37,800	5,360	2,320	4,110	6,160
22	3,520	4,670	3,690	1,140	1,050	‡ 3,220	14,300	38,300	5,780	2,220	4,470	2,460
23	4,480	4,250	3,570	1,720	790	3,710	15,400	‡ 38,900	11,100	2,160	4,940	3,750
24	5,340	4,350	2,850	1,710	764	3,590	14,500	‡ 39,200	6,480	2,080	6,070	6,110
25	5,800	4,150	1,520	2,290	742	‡ 3,830	15,000	‡ 39,300	4,060	2,010	5,340	6,660
26	5,290	4,100	‡1,850	2,380	1,040	3,930	‡ 14,900	39,300	3,850	1,920	8,130	6,430
27	5,970	4,120	1,710	2,800	1,550	4,010	14,400	‡ 39,300	3,780	974	8,930	6,310
28	5,880	3,790	2,040	3,150	1,330	3,780	13,900	‡ 35,600	3,720	871	8,660	5,400
29	6,600	3,940	1,910	3,730	1,340	3,240	13,700	29,600	6,230	1,220	10,500	5,160
30	6,640		1,860	5,400	1,580	3,650	14,100	‡ 24,400	12,500	1,050	7,380	5,160
31	6,780		1,370		1,730		14,900	17,900		796		5,130
Sum	108,274	149,870	101,080	43,807	44,586.8	103,570	289,290	757,600	197,970	222,651	98,197	184,320

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period #1954-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	30.56	25.87	31	7,860	7	520	3,490	214,758	216,659	416,906	33,043
Feb.	30.70	26.72	6	8,100	20	1,440	5,170	297,263	182,278	376,607	25,500
Mar.	30.01	26.00	2	6,920	31	625	3,260	200,489	138,053	378,000	14,400
Apr.	29.94	25.38	30	6,760	8	226	1,460	86,890	248,146	510,426	75,100
May	29.86	24.93	20	6,580	† 8	76.7	1,440	88,437	314,105	521,000	36,702
June	30.27	26.11	19	8,100	11	796	3,450	205,428	283,242	623,778	98,620
July	34.47	26.39	23	15,700	2	1,120	9,330	573,798	168,368	573,798	22,300
Aug.	47.18	33.93	†26	39,300	9	14,300	24,400	1,502,678	256,358	1,502,678	25,000
Sept.	34.72	26.81	1	15,200	† 8	1,530	6,600	392,668	396,471	2,712,754	42,423
Oct.	35.15	25.61	2	16,900	31	745	7,180	441,622	397,605	3,047,000	30,000
Nov.	32.32	25.38	29	11,100	3	626	3,270	194,771	164,468	1,442,000	29,274
Dec.	31.06	27.38	†19	8,730	22	2,210	5,950	365,593	136,550	540,000	36,100
Yearly	47.18	24.93		39,300		76.7	6,290	4,564,395	2,902,303	6,619,700	1,269,259
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	14.38	7.60		1,110		2.17	178	5,630,181	3,579,991	8,165,400	1,565,631

** Period 1955-1976
† And other days
‡ Discharge measurement made on this day
# 1954 values are Rio Grande City less arroyo inflow

CONTRIBUTIONS TO THE RIO GRANDE FROM THE LOWER RIO SAN JUAN IRRIGATION DISTRICT RIO GRANDE CITY TO ANZALDUAS DAM

DESCRIPTION: The Lower Rio San Juan Irrigation District in Mexico lies along the Rio Grande between Cd. Miguel Aleman and Rio Bravo, Tamaulipas and is irrigated with water impounded by Marte R. Gomez Dam situated on the Rio San Juan 12.4 river miles (20 km) upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river mile 237.8 (383 km) and 1,011.0 river miles (1,627.0 km) downstream from the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Rio Grande City Gaging Station through the Rio San Juan channel, Rancherias Drain, and Los Fresnos Drain; and between this station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of drain water from this irrigation district reaching the Rio Grande via drains located downstream from Rio Grande City Gaging Station is shown below. The portion of water reaching the Rio Grande via channels located upstream from the Rio Grande City Gaging Station is shown on page 63 in this bulletin.

RECORDS: Drain water reaching the Rio Grande through Puertecitos, Los Indios, Huizache, and Morillo Drains was determined by prorating between frequent current meter measurements. In 1976, 38, 39, 37, and 2 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 1976, 34 per cent of the drain water from this irrigation district reaching the Rio Grande between the Rio Grande City Gaging Station and Anzalduas Dam was contributed by Morillo Drain. Records available: 1953 through 1976.

REMARKS: In 1976 there were 158,727 irrigable acres (64,235 ha) in the Lower Rio San Juan Irrigation District. Since July 9, 1969 some water has been diverted from Morillo Drain directly to the gulf via the Morillo Drain Diversion Canal to reduce the salinity of Rio Grande waters. In 1976, 45,146 acre-feet (55,687,000 m^3) were diverted.

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.3	43.1	34.6	22.2	160	161	24.7	68.5	65.7	115	16.6	14.1
2	17.0	44.5	34.6	23.3	159	130	24.7	68.5	65.7	100	16.6	20.1
3	16.6	45.6	33.9	24.0	157	110	24.4	68.5	65.7	93.6	16.6	17.0
4	16.6	46.3	33.2	67.8	108	87.9	24.4	68.2	65.7	106	16.6	13.4
5	16.2	46.3	32.1	78.4	47.0	75.2	24.4	67.8	65.7	110	16.6	13.4
6	15.9	46.3	31.4	26.5	45.2	64.6	24.4	67.8	65.3	113	16.2	13.1
7	15.5	46.3	30.4	27.2	45.2	57.6	24.0	67.8	65.3	115	15.9	13.1
8	15.2	45.6	29.7	26.8	46.3	50.9	24.0	67.8	23.0	97.1	16.2	13.1
9	14.8	45.6	28.6	26.5	51.6	49.4	24.0	67.5	21.2	87.6	15.9	14.1
10	14.8	45.6	27.9	26.1	54.7	47.3	24.0	67.5	22.2	82.3	15.9	14.8
11	14.5	45.6	27.9	25.1	54.0	45.9	24.0	67.5	24.0	76.6	15.9	15.9
12	14.1	45.6	27.5	24.7	56.9	44.5	23.7	67.5	25.4	74.5	15.9	17.3
13	13.8	45.9	27.2	24.4	62.5	43.4	23.7	67.5	27.2	70.6	15.5	18.0
14	15.2	45.9	27.5	24.0	62.2	42.0	23.7	67.1	28.3	39.9	15.5	18.7
15	17.3	45.6	27.5	24.0	69.2	39.9	23.7	67.1	30.0	13.8	15.5	19.8
16	18.7	45.6	27.2	24.0	65.0	38.5	23.7	67.1	28.6	14.8	15.2	19.4
17	19.8	45.9	26.8	24.0	69.9	37.1	23.3	67.1	27.5	15.2	14.8	18.7
18	21.2	45.9	26.8	24.0	76.6	35.7	23.3	66.7	26.1	15.5	21.2	18.4
19	23.0	44.5	26.1	24.0	95.0	34.3	23.3	66.7	25.8	16.6	22.2	18.0
20	24.7	43.4	26.1	24.0	133	32.5	42.7	66.7	24.4	16.6	22.2	17.7
21	26.5	42.0	26.1	24.0	103	30.7	68.9	66.7	23.3	17.0	15.2	17.0
22	28.3	41.0	25.4	27.5	97.1	29.7	68.9	66.7	21.9	17.0	14.5	16.6
23	30.0	39.6	25.1	32.1	109	28.3	68.9	66.4	22.2	17.0	14.5	16.6
24	31.8	38.5	24.7	35.7	119	27.9	68.9	66.4	21.9	17.0	19.1	16.6
25	33.5	37.1	24.4	39.6	95.0	26.8	68.9	66.4	22.2	17.3	14.5	16.6
26	35.3	36.7	23.7	43.1	95.3	26.8	68.5	66.4	94.6	17.3	14.5	16.2
27	36.7	36.4	23.3	47.7	121	26.5	68.5	66.4	52.6	17.3	14.1	16.2
28	38.8	36.0	23.0	51.2	125	26.1	68.5	66.0	36.7	60.7	21.2	16.2
29	40.6	35.0	22.6	84.0	120	25.1	68.5	66.0	75.2	44.1	52.3	16.2
30	41.3		21.9	161	109	24.7	68.5	66.0	112	17.0	46.3	16.2
31	42.4		21.5		103		68.2	66.0		16.6		16.2
Sum	727.4	1,251.4	848.7	1,136.9	2,814.7	1,500.3	1,253.3	2,080.3	1,275.4	1,632.0	563.2	508.7

Month	Current Year 1976							Period 1954-1976		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.			31	42.4	13	13.8	23.3	1,443	1,934	4,745	466
Feb.			† 4	46.3	29	35.0	43.1	2,481	3,088	7,059	509
Mar.			† 1	34.6	31	21.5	27.5	1,684	2,476	5,291	582
Apr.			30	161	1	22.2	37.8	2,256	3,010	6,111	899
May			1	160	† 6	45.2	90.8	5,587	7,126	30,179	1,557
June			1	161	30	24.7	50.1	2,977	8,667	85,952	2,027
July			†21	68.9	†17	23.3	40.3	2,485	5,013	48,782	1,037
Aug.			† 1	68.5	†28	66.0	67.1	4,127	2,793	13,292	661
Sept.			30	112	9	21.2	42.4	2,529	2,582	11,273	665
Oct.			† 1	115	15	13.8	52.6	3,237	3,096	9,831	623
Nov.			29	52.3	27	14.1	18.7	1,117	2,268	10,461	520
Dec.			2	20.1	† 6	13.1	16.2	1,009	3,105	34,043	512
				161		13.1	42.7	30,932	45,158	179,482	13,462
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				4.57		0.37	1.21	38,154	55,703	221,380	16,608

∅ Mean daily † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, RIO GRANDE CITY TO ANZALDUAS DAM

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd istrict Court of Texas administered by its Special Water Master.

During 1976, 178,407 irrigable acres (72,200 ha) and several towns and rural homes were allotted Rio Grande water in the river reach between the gaging station at Fort Ringgold and Anzalduas Dam. Such irrrigable area was 24.0% of the total irrigable acres (ha) below Falcon Dam allotted Rio Grande water.

The total diversion during 1976 in this river reach was 208,050 acre-feet (256,630,000 m^3), or 24.1% of the total water diverted from the Rio Grande below Falcon Dam. About 83% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)			
Daily:	Max. 1,220 (34.6)	June 21, 1960	Min. 0	Occasionally
Monthly:	Max. 1,010 (28.6)	June 1960	Min. 10.3 (0.29)	March 1957
Yearly:	Max. 417 (11.8)	1961	Min. 188 (5.32)	1966

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	209	156	697	509	83.7	568	744	139	176	290	35.1	62.9
2	288	430	733	470	30.2	559	689	327	169	141	124	3.7
3	218	499	736	305	83.0	549	498	340	213	98.6	82.3	82.0
4	148	512	745	248	191	496	335	361	103	360	123	4.4
5	160	552	649	183	146	258	635	245	107	144	95.2	2.5
6	197	521	385	162	194	251	577	286	188	103	73.3	72.0
7	287	248	296	119	158	620	293	143	395	66.3	29.1	36.9
8	215	219	691	158	122	611	116	103	449	134	70.9	36.6
9	240	541	670	206	29.8	636	68.8	374	462	45.8	143	97.8
10	207	534	666	58.5	163	669	0	368	412	22.0	206	55.1
11	124	483	668	3.2	295	598	0	384	249	173	94.9	17.6
12	322	509	569	166	292	312	35.0	448	192	150	94.2	16.7
13	339	505	369	176	315	270	0	400	471	162	41.8	74.2
14	382	278	343	250	315	647	35.1	196	484	183	1.3	45.2
15	347	267	622	258	163	669	4.0	211	420	241	60.1	8.3
16	376	611	659	213	156	686	39.3	582	258	166	81.3	20.2
17	195	683	619	59.5	318	707	0	569	322	157	46.1	96.1
18	175	669	633	16.7	463	634	0	558	216	252	3.6	0
19	264	720	494	255	449	350	51.1	481	184	304	32.5	0
20	301	588	377	308	376	333	121	423	234	310	0	77.6
21	325	308	255	369	320	724	82.8	271	205	299	0	35.6
22	351	318	656	353	199	771	80.4	207	212	339	35.8	4.4
23	340	706	564	394	185	772	134	435	278	220	58.5	87.0
24	162	758	507	166	330	785	64.2	337	250	148	41.8	1.0
25	139	771	467	144	454	613	28.6	371	180	300	2.8	0
26	284	688	483	419	462	387	229	374	165	261	82.5	0
27	326	528	317	475	491	324	236	283	352	139	38.8	75.5
28	456	442	245	459	498	717	245	144	259	101	2.8	44.3
29	436	332	540	270	337	788	264	131	264	82.9	63.5	102
30	377		573	38.7	303	774	266	129	237	52.5	57.6	148
31	183		534		500		170	165		0		163
Sum	8,373	14,376	16,762	7,211.6	8,421.7	17,078	6,041.3	9,785	8,106	5,445.1	1,821.8	1,470.6

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	∅ Extreme Second-Feet: Day	High	Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976: Acre-Feet Average	Maximum	Minimum
Jan.	1.25	0.35	28	456	11	124	270	16,608	11,917	28,747	2,010
Feb.	1.08	0	25	771	1	156	496	28,514	13,068	38,599	1,640
Mar.	.68	.51	4	745	28	245	541	33,247	18,428	41,200	637
Apr.	1.43	3.78	1	509	11	3.2	240	14,304	23,885	42,028	5,760
May	2.26	1.11	31	500	9	29.8	272	16,704	22,903	48,400	3,177
June	2.68	.82	29	788	6	251	569	33,874	24,914	59,900	5,011
July	1.65	6.79	1	744	†10	0	195	11,983	19,554	45,400	6,753
Aug.	1.98	2.98	16	582	8	103	316	19,408	20,165	35,877	6,866
Sept.	4.20	2.16	14	484	4	103	270	16,078	14,451	35,000	4,136
Oct.	2.70	4.74	4	360	31	0	176	10,800	14,391	30,400	2,830
Nov.	1.07	3.17	10	206	†20	0	60.7	3,613	12,600	21,932	2,930
Dec.	.89	1.16	31	163	†18	0	47.4	2,917	10,975	18,782	2,506
Yearly	21.87	27.57		788		0	287	208,050	207,256	302,180	136,460
	Millimeters			Cubic Meters per Second					Thousands of Cubic Meters		
	555	700		22.3		0	8.13	256,630	255,650	372,739	168,323

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

DIVERSIONS FROM THE RIO GRANDE
ANZALDUAS CANAL NEAR REYNOSA, TAMAULIPAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 26°08'05", longitude 98°20'10", 0.5 canal mile (0.8 km) from the canal intake, and about 5 miles (8 km) northwest of Reynosa, Tamaulipas. The canal intake is immediately upstream from Anzaludas Dam at river mile 171.6 (276 km), 102.2 river miles (164.5 km) downstream from Falcon Dam, and 1,077.2 river miles (1,733.6 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is 86.32 feet (26.31 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 39 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1976.

REMARKS: Diversions by this canal are for irrigation and domestic use in Mexico and for conveying water for storage in Culebron, Villa Cardenas, and Palito Blanco Reservoirs about 23 canal miles (37.0 km) downstream from this station. During 1976, 408,129 acres (165,165 ha) were irrigated with water delivered through this canal. More than one crop per year was grown on parts of this land. Flow at this canal station is affected by backwater from the operation of canal gates 4.5 miles (7.2 km), 11.3 miles (18.2 km) and 22.5 miles (36.2 km) below this station. During 1976, there was no water returned to the Rio Grande through Poniente Drain.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 10,950 second-feet (310 m^3/sec) on June 2, 1957 with a gage height of 16.01 feet (4.88 m). Min. no flow occurs frequently.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 9,350 (265)	May 29, 1957	Min. 0	Frequently
Monthly:	Max. 5,090 (144)	April 1972	Min. 0	Several months
Yearly:	Max. 1,980 (56.1)	1959	Min. 150 (4.26)	1952

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.4	4,840	1,770	208	1.4	703	353	159	‡ 2,900	2,360	1.4	1.4
2	1.4	‡ 4,910	1,770	194	1.4	‡ 925	353	1.4	‡ 1,530	1,620	1.4	1.4
3	1.4	4,910	1,690	251	1.4	1,080	350	1.4	1,530	2,360	1.4	1.4
4	1.4	4,800	‡1,560	399	1.4	1.080	353	1.4	1,400	2,360	1.4	1.4
5	230	4,840	1,590	639	1.4	1,050	353	1.4	1,370	2,320	1.4	1.4
6	353	‡ 4,980	1,780	735	1.4	957	544	1.4	1,620	2,320	1.4	162
7	692	5,120	1,940	353	1.4	798	639	1.4	‡ 1,210	2,260‡	1.4	353
8	1,010‡	5,120	1,940	1.4	1.4	703	512	1.4	703	2,360	1.4	350
9	1,010	5,050	1,980	1.4	1.4	703	512	98.9	353	2,130	1.4	353
10	1,190	4,800	‡1,730	1.4	1.4	699	544	417	512	1,500	98.9	205
11	1,310	4,340	1,470	1.4	258	‡ 703	544	703	544	1,340‡	226	1.4
12	1,370‡	3,850	‡1,470	1.4	512	703	540	766	639	1,400	321	1.4
13	1,410	‡ 3,280	1,410	1.4	‡ 798	607	544	‡ 957	735	1,690	159	1.4
14	1,550	3,270	1,410	1.4	1,020‡	540	544	957	798	1,150	1.4	1.4
15	1,520‡	3,150	1,370	1.4	1,270	544	258	777	‡ 957	639	1.4	1.4
16	1,410	‡ 3,090	1,320	182	1,500	448	1.4	565	1,050	1.4	1.4	1.4
17	1,380	3,050	1,320	671	1,780	381	1.4	353	1,480	1.4	1.4	1.4
18	1,340	2,360	1,380	703	2,010	353	1.4	353	1,910	1.4	1.4	1.4
19	1,380‡	1,820	1,430	‡ 703	2,200‡	353	1.4	353	1,910	1.4	162	1.4
20	1,380	‡ 1,690	1,470	703	1,470‡	321	162	353	‡ 2,200	1.4	353	1.4
21	1,530	1,430	1,560	703	607	‡ 448	194	353	2,480	131	378	1.4
22	1,590	1,530	‡1,720	703	607	544	1.4	353	‡ 2,360	448	194	1.4
23	1,700	‡ 1,560	1,850	710	544	540	1.4	353	2,350	1.4	1.4	1.4
24	2,030	1,590	1,750	1,130	540	512	1.4	353	2,360	1.4	1.4	1.4
25	2,420	1,560	1,150	1,440	544	448	1.4	353	2,360	226	1.4	1.4
26	2,740‡	1,620	639	1,470‡	544	385	1.4	353	2,350	‡ 576	1.4	1.4
27	3,000	‡ 1,720	448	1,430	‡ 544	385	1.4	353	‡ 2,370	385	1.4	59.0
28	3,640‡	1,850	258	1,430	540	381	1.4	353	2,360	1.4	1.4	194
29	3,810	1,850	194	1,020	544	385	1.4	353	2,370	1.4	353	191
30	4,170‡		194	1.4	540	353	159	353	2,360	1.4	540	89.3
31	4,480		194		639		353	1,270		1.4		1.4
Sum	49,650.6	93,980	41,757	15,789.6	19,025.0	18,032	7,827.8	11,621.7	49,071	29,590.4	2,812.9	1,987.1

Month	Current Year 1976: Average Rainfall Inches** 1954-1976	1976	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1954-1976: Acre-Feet Average	Maximum	Minimum
Jan.	1.21	0.71	31	4,480	† 1	1.4	1,600	98,502	102,576	259,799	1,520
Feb.	1.36	.04	† 7	5,120	21	1,430	3,240	186,405	106,794	251,519	1,086
Mar.	.72	.79	9	1,980	†29	194	1,350	82,863	43,848	147,900	1,128
Apr.	1.77	5.59	26	1,470	† 8	1.4	526	31,338	125,656	303,212	23,381
May	2.40	1.77	19	2,200	† 1	1.4	614	37,726	189,820	285,477	29,169
June	2.93	1.14	† 3	1,080	20	321	600	35,793	112,651	270,700	14,221
July	2.00	9.06	7	639	†16	1.4	252	15,528	43,174	162,400	5,730
Aug.	2.47	3.66	31	1,270	† 2	1.4	374	23,065	76,644	236,942	6,709
Sept.	4.94	5.16	1	2,900	9	353	1,640	97,279	70,518	165,800	8,708
Oct.	2.94	6.89	† 1	2,360	†16	1.4	953	58,673	53,176	209,590	0
Nov.	1.36	3.74	30	540	† 1	1.4	93.9	5,583	14,090	83,690	0
Dec.	1.06	1.85	† 7	353	† 1	1.4	64.3	3,942	27,547	166,700	651
	25.16	40.40		5,120		1.4	932	676,697	966,494	1,434,920	551,946
Yearly	Millimeters		Cubic Meters per Second					Thousands of Cubic Meters			
	639	1,026		145		0.04	26.4	834,696	1,192,158	1,770,162	680,817

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

RIO GRANDE BELOW ANZALDUAS DAM NEAR REYNOSA, TAMAULIPAS AND MISSION, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and selsyn-type transmitter, located on the right bank at latitude 26°08' 00", longitude 98°20' 05", and river mile 171.1; (275.4 km); 0.5 river mile (0.8 km) downstream from Anzalduas Dam, about 4.5 miles (7 km) northwest of Reynosa, Tamaulipas, 12.2 river miles (19.6 km) upstream from the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas, and 1,077.7 river miles (1,734.4 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 71 discharge measurements during the year, 69 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1976.

REMARKS: Except during local storms, flow at this station is controlled largely by releases from Falcon Reservoir and by diversions into Anzalduas Canal. Excessive upstream flood flows are partly diverted into the United States floodway system inlet at Anzalduas Dam before reaching this station. Prior to January 1, 1968 the zero of the gage was 82.61 feet (25.18 m) above mean sea level, U. S. C. & G. S. datum. The transmitter relays gage height data to the Anzalduas Dam control room.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 131,000 second-feet (3,700 m^3/sec) on September 24, 1967 with a gage height of 30.51 feet (9.30 m). Min. periods of no flow have occurred on several occasions in 1953, 1954, 1956, and 1957.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max.	121,000	(3,440)	Sept. 25, 1967	Min.	0	Occasionally
Monthly:	Max.	37,830	(1,070)	Oct. 1958	Min.	5.5 (0.16)	March 1957
Yearly:	Max.	6,410	(182)	1958	Min.	158 (4.49)	1957

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	833	2,310	‡ 1,720	‡ 968	5,720	1,040	2,210	15,200	15,700	11,100	‡ 961	8,900
2	745	2,570	1,670	780	1,300	1,230	2,010	‡ 15,100	‡ 12,100	13,800	614	8,160
3	600	2,440	1,730	494	727	1,480	1,800	14,900	7,520	12,600	607	7,130
4	1,040	‡ 2,120	1,650	809	516	1,290	1,810	‡ 14,700	‡ 4,730	‡12,000	‡ 713	6,600
5	1,230	1,690	1,600	1,200	331	1,460	‡ 2,090	‡ 14,700	‡ 3,640	11,900	795	5,650
6	1,110	1,500	1,490	1,450	‡ 410	2,120	3,300	‡ 14,800	2,730	12,300	851	‡5,370
7	961	1,150	1,560	406	314	2,320	4,910	‡ 15,000	‡ 2,020	‡12,100	890	6,780
8	‡ 830	1,790	‡ 1,530	509	314	2,320	2,470	15,000	1,710	11,800	932	7,170
9	766	‡ 1,680	1,480	‡ 335	579	‡ 2,120	2,040	‡ 14,700	2,970	11,800	932	‡6,890
10	530	1,560	1,460	565	‡ 614	1,970	3,140	‡ 14,400	3,670	12,000	946	6,960
11	1,300	1,460	1,390	523	911	2,030	3,850	14,500	5,510	‡12,000	922	7,100
12	1,720	1,440	1,330	459	1,190	2,110	‡ 6,850	‡ 14,600	6,640	11,600	1,010	7,100
13	‡1,780	1,240	1,290	360	1,250	3,080	9,570	14,400	‡ 6,140	10,600	1,280	6,920
14	2,060	1,140	1,650	403	1,140	‡ 3,050	‡10,700	14,400	5,620	6,640	1,620	‡6,920
15	2,010	1,840	‡ 1,740	212	1,060	2,990	‡10,900	14,400	6,140	4,100	‡1,530	7,240
16	1,880	2,070	1,680	219	1,330	3,110	‡10,800	14,200	8,370	3,000	1,520	8,300
17	1,870	‡ 1,960	1,660	275	‡ 1,480	3,130	9,820	15,800	‡ 8,580	2,100	1,660	8,330
18	2,210	1,850	1,560	466	1,530	3,110	9,010	22,600	8,090	‡ 1,890	2,080	8,190
19	‡2,470	1,850	1,390	480	1,670	2,890	‡ 8,720	24,500	7,910	2,370	2,340	8,300
20	2,740	1,620	1,350	‡ 509	1,810	3,340	9,680	‡ 24,600	9,640	2,220	3,020	8,160
21	2,480	1,430	1,640	509	3,160	3,100	13,300	25,100	8,230	2,010	3,850	7,950
22	2,480	1,840	1,830	509	1,960	2,780	‡14,700	25,900	4,480	1,550	4,380	6,600
23	2,400	1,830	1,640	406	763	‡ 2,800	15,300	‡ 25,700	‡ 4,940	1,890	4,980	3,780
24	2,040	‡ 1,620	1,320	305	678	2,870	15,300	‡ 26,100	7,660	2,070	‡5,580	4,660
25	2,690	1,620	‡ 1,150	600	738	2,910	15,400	26,100	4,170	‡ 1,700	6,750	6,670
26	3,120	1,680	978	964	‡ 748	2,960	‡15,600	26,500	2,600	1,340	6,670	7,420
27	2,800	1,570	901	1,260	685	2,850	15,300	‡ 27,000	‡ 2,020	1,280	9,010	‡7,270
28	2,520	1,470	1,060	‡ 1,480	572	2,750	‡15,200	27,300	1,890	1,150	9,610	6,920
29	‡2,530	1,610	1,350	1,970	516	2,680	‡15,200	27,200	2,370	1,230	9,920	6,040
30	‡2,440		1,330	5,620	586	‡ 2,610	14,900	26,800	5,720	1,380	10,000‡	5,620
31	2,100		1,230		‡ 982		15,000	22,900		1,180		5,540
Sum	56,285	49,950	45,359	25,045	35,584	74,500	280,880	609,100	173,510	194,700	95,973	214,640

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	85.70	82.09	26	3,480	2	466	1,820	111,624	94,421	220,916	1,090
Feb.	86.48	82.74	16	3,740	13	978	1,720	99,156	70,396	241,900	830
Mar.	83.99	82.32	2	1,850	†26	848	1,460	89,924	75,034	235,500	339
Apr.	89.11	80.64	30	7,200	†15	152	833	49,678	95,560	192,519	3,160
May	89.24	81.00	1	7,350	7	289	1,150	70,547	115,713	202,400	35,360
June	86.09	82.55	†20	4,130	1	1,020	2,490	147,838	157,525	368,852	7,850
July	96.46	83.60	26	16,000	3	1,750	9,080	557,022	121,122	557,022	2,000
Aug.	104.79	95.80	27	28,600	16	14,100	19,600	1,207,862	154,753	1,207,862	943
Sept.	99.87	84.09	1	18,800	7	1,130	5,790	344,154	278,943	1,862,350	3,920
Oct.	96.19	83.14	2	14,000	28	862	6,290	386,321	324,706	2,326,000	1,730
Nov.	93.24	82.28	29	10,400	5	353	3,200	190,425	149,859	1,438,000	1,430
Dec.	92.52	86.02	1	9,640	23	3,230	6,920	425,735	105,714	540,100	1,500
Yearly	104.79	80.64		28,600		152	5,090	3,680,286	1,743,746	4,640,968	114,740
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	31.94	24.58		810		4.30	144	4,539,585	2,150,886	5,724,004	141,538

‡ Discharge measurement made on this day † And other days

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 the inlet located at Anzalduas Dam near Mission, Texas.

Floodwater entering the system is measured first at the Banker Floodway Station at Anzalduas Dam near Mission and again 25.2 miles (40.6 km) downstream at the Main Floodway Station on Farm Road No. 88 bridge south of Weslaco. At a point 3 miles (4.8 km) southwest of Mercedes 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. At the point of division, a divisor dike which runs longitudinally in the Main Floodway, divides and controls the flows into the Arroyo Colorado Floodway and the North Floodway. The flow of the Arroyo Colorado is measured at El Fuste Siphon south of Mercedes and farther downstream at the bridge on U. S. Highway No. 83 south of Harlingen. The North Floodway flow is measured at the bridge on old U. S. Highway No. 83 west of Mercedes and farther downstream at the bridge on U. S. Highway No. 77 near Sebastian.

A total of 252,073 acre-feet (310,932,000 m^3) of flood flow was diverted through the floodway system in 1976.

BANKER FLOODWAY AT ANZALDUAS DAM NEAR MISSION, TEXAS

DESCRIPTION: Cableway, gravity well, concrete control weir, water-stage recorder, and selsyn-type transmitter, located on the right bank at latitude 26°03'30", longitude 98°19'20", about 0.2 river mile (0.3 km) from the point of diversion. The point of diversion is at river mile 172.2 (277.1 km), 0.6 river mile (1.0 km) upstream from Anzalduas Dam, and 1,076.6 river miles (1,732.6 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum. The crest of the weir is at elevation 106.5 feet (32.46 m) above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 25 discharge measurements and a continuous record of gage heights during the flood period. Computations based on a stable control weir rating curve defined by meter measurements.

REMARKS: The transmitter relays gage height data to the Anzalduas Dam control room.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 18	901	Aug. 24	‡10,900	Aug. 30	‡ 7,540	Period	Maximum Gage - Feet	Date	Maximum Second-Feet	Total Acre-Feet
19	‡ 5,960	25	‡10,900	31	‡ 5,550					
20	‡ 8,940	26	‡11,000	Sept. 1	‡ 2,130	Aug. 18 - Sept. 2	109.08	†Aug. 27	11,500	252,073
21	‡10,100	27	‡10,900	2	‡ 166		Meters		Cubic Meters per Second	Thousands of Cubic Meters
22	‡10,000	28	‡11,300							
23	‡10,500	29	‡10,300	Total	127,087		33.25		326	310,932

MAIN FLOODWAY SOUTH OF WESLACO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the low-flow channel on the downstream side of the bridge on Farm Road No. 88 at latitude 26°06'40", longitude 97°59'30", about 3 miles (4.8 km) south of Weslaco, Texas, 25.4 channel miles (40.9 km) from the point of diversion from the Rio Grande, and 2.5 channel miles (4.0 km) upstream from the point where this floodway branches into the Arroyo Colorado and North Floodway. The zero of the gage is at mean sea level, U. S. C. & G. S. datum (I. B. & W. C. Survey, 1967).

RECORDS: Based on 7 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides floodwaters from the Rio Grande, the floodway carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 19	232	Aug. 26	‡11,700	Sept. 2	‡ 2,510	Period	Maximum Gage - Feet	Date	Maximum Second-Feet	Total Acre-Feet
20	2,380	27	11,700	3	‡ 1,510					
21	‡ 6,920	28	11,600	4	1,030	Aug. 19 - Sept. 6	65.82	Aug. 25	12,100	257,581
22	‡ 9,240	29	11,800	5	511		Meters		Cubic Meters per Second	Thousands of Cubic Meters
23	‡10,100	30	11,200	6	251					
24	11,500	31	‡ 8,300							
25	12,000	Sept. 1	5,380	Total	129,864		20.06		343	317,726

‡ Discharge measurement made on this day † And other days

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the United States Side

NORTH FLOODWAY WEST OF MERCEDES, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the pilot channel of the floodway on the upstream side of the old U. S. Highway No. 83 bridge at latitude 26°08'30", longitude 97°55'50", on the west city limit of Mercedes, Texas, and about 2 channel miles (3.2 km) from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is 0.16 foot (0.05 m) above mean sea level, U. S. C. & G. S. datum (I. B. & W. C. Survey, 1967).

RECORDS: Based on 3 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, the North Floodway carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 20	565	Aug. 27	‡8,150	Sept. 3	734
21	3,930	28	8,150	4	168
22	6,430	29	8,230	5	12.5
23	7,130	30	7,940	6	2.0
24	‡7,940	31	‡6,400	7	.2
25	8,360	Sept. 1	4,480		
26	8,230	2	2,070	Total	88,921.7

Period	Maximum Gage - Feet	Date	Maximum Second-Feet	Total Acre-Feet
Aug. 20-Sept. 7	63.08	Aug. 25	8,410	176,374
	Meters		Cubic Meters per Second	Thousands of Cubic Meters
	19.23		238	217,557

NORTH FLOODWAY NEAR SEBASTIAN, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the pilot channel of the floodway on the downstream side of the northbound U. S. Highway No. 77 bridge at latitude 26°18'50", longitude 97°46'35", about 2 miles (3.2 km) south-southwest of Sebastian, Texas, and about 23 channel miles (37.0 km) from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is 0.37 foot (0.11 m) above mean sea level, U. S. C. & G. S. datum (I. B. & W. C. Survey, 1967).

RECORDS: Based on 4 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, the North Floodway carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 21	312	Aug. 28	9,290	Sept. 4	906
22	2,540	29	9,280	5	482
23	5,680	30	9,620	6	284
24	7,700	31	‡8,450		
25	9,340	Sept. 1	5,960		
26	‡9,910	2	‡4,010		
27	9,450	3	‡1,900	Total	95,114

Period	Maximum Gage - Feet	Date	Maximum Second-Feet	Total Acre-Feet
Aug. 21 - Sept. 6	41.63	†Aug. 25	10,100	188,656
	Meters		Cubic Meters per Second	Thousands of Cubic Meters
	12.69		286	232,707

ARROYO COLORADO FLOODWAY SOUTH OF MERCEDES, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the left bank immediately upstream from the Hidalgo and Cameron Counties Water Control and Improvement District No. 9 El Fuste Siphon at latitude 26°07'45", longitude 97°54'45", near the south city limit of Mercedes, Texas and about 2 channel miles (3.2 km) from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is 51.88 feet (15.81 m) above mean sea level, U. S. C. & G. S. datum (I. B. & W. C. Survey, 1967).

RECORDS: Based on 3 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, Arroyo Colorado carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 20	1,290	Aug. 27	2,050	Sept. 3	1,590
21	‡1,980	28	2,070	4	1,280
22	1,980	29	2,080	5	743
23	1,940	30	2,040	6	386
24	1,880	31	1,980		
25	‡1,850	Sept. 1	‡1,890		
26	1,960	2	1,720	Total	30,709

Period	Maximum Gage - Feet	Date	Maximum Second-Feet	Total Acre-Feet
Aug. 20 - Sept. 6	2.98	Aug. 29	2,160	60,910
	Meters		Cubic Meters per Second	Thousands of Cubic Meters
	0.91		61.2	75,132

‡ Discharge measurement made on this day † And other days

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the United States Side

ARROYO COLORADO FLOODWAY SOUTH OF HARLINGEN, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the low-flow channel on the downstream side of the south service road bridge for U. S. Highway No. 83, at latitude 26°10'20", longitude 97°41'55", on the south city limit of Harlingen, Texas, and about 18 channel miles (29.0 km) from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is at mean sea level, U. S. C. & G. S. datum (I. B. & W. C. Survey, 1967).

RECORDS: Based on 1 discharge measurement and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, the Arroyo Colorado carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 20	471	Aug. 27	1,810	Sept. 3	1,540
21	1,330	28	1,780	4	1,350
22	1,700	29	1,780	5	960
23	1,770	30	1,810	6	538
24	1,900	31	1,840		
25	2,020	Sept. 1	1,750		
26	‡1,870	2	1,670	Total	27,889

Period	Maximum Gage - Feet	Date	Maximum Second-Feet	Total Acre-Feet
Aug. 20 - Sept. 6	13.14	Aug. 25	2,070	55,317
	Meters		Cubic Meters per Second	Thousands of Cubic Meters
	4.01		58.6	68,234

‡ Discharge measurement made on this day

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

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 the inlet located approximately 38 miles (61.2 km) downstream from Anzalduas Dam and, when necessary, through Anzalduas Canal located at Anzalduas Dam. Floodwaters were diverted through Retamal Floodway and Anzalduas Canal in 1976.

Floodwater entering the system through the Retamal Inlet flows into Culebron and Villa Cardenas Lakes through the Retamal Floodway, while flood flows entering the canal at Anzalduas Dam reach these lakes via the Culebron and Retamal Canals from where it flows in a southeastwardly direction via Floodway No. 1 into the Gulf of Mexico.

A total of 260,167 acre-feet (320,913,000 m^3) of flood flow was diverted through Retamal Floodway in 1976. In addition, 5,675 acre-feet (7,000,000 m^3) of flood flow was diverted through Anzalduas Canal during the period August 31 through September 2, 1976.

The Retamal Floodway replaces the previously used floodway system which consisted of Retamal Canal, San Rafael Floodway and Floodway No. 2.

RETAMAL FLOODWAY AT RETAMAL DAM NEAR PROGRESO, TAMAULIPAS

DESCRIPTION: Concrete control weir of 106,000 second-foot (3,000 m^3/sec) capacity located at latitude 26°02'20", longitude 98°02'10", about 0.2 river mile (0.3 km) from the point of diversion. The point of diversion is at river mile 133.2 (214 km), 0.8 river mile (1,200 m) upstream from Retamal Dam, and 1,115.6 river miles (1,795.4 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is at 79.89 feet (24.35 m) above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 9 discharge measurements and hourly gage height readings during the flood period. Computations by shifting control methods due principally to an irrigation ditch located across the floodway downstream from the concrete weir which acted as a shifting control.
REMARKS: Retamal Floodway was used for the first time in 1976.

Mean Daily Discharge in Second-Feet 1976 - Period Summary

Aug. 18 ‡ 1,570	Aug. 24 ‡ 9,920	Aug. 30 ‡ 10,900
19 7,840	25 ‡ 9,750	31 ‡ 9,530
20 ‡ 8,620	26 9,780	Sept. 1 ‡ 3,960
21 8,830	27 ‡ 9,890	2 66.0
22 9,680	28 10,200	
23 ‡ 9,750	29 10,800	Total 131,086.0

Period	Date	Maximum Second-Feet	Total Acre-Feet
Aug. 18 - Sept. 2	Aug. 30	11,300	260,167
		Cubic Meters per Second	Thousands of Cubic Meters
		321	320,913

‡ Discharge measurement made on this day

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

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1976, 140,407 irrigable acres (56,821 ha) and several towns and rural homes were allotted Rio Grande water in the river reach between Anzalduas Dam and the Progreso International Bridge. Such irrigable area was 18.9% of the total irrigable acres (ha) below Falcon Dam allotted Rio Grande water.

The total diversion during 1976 in this river reach was 173,361 acre-feet (213,841,000 m³), or 20.1% of the total water diverted from the Rio Grande below Falcon Dam. About 93% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 1,120 (31.7)	June 16 & 17, 1965	Min. 0		Occasionally
Monthly:	Max. 749 (21.2)	June 1969	Min. 13.3 (0.38)		May 1972
Yearly:	Max. 333 (9.43)	1961	Min. 167	(4.73)	1970

Mean Daily Discharge in Second-Feet 1976 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	224	126	552	393	116	545	598	40.8	34.9	177	34.0	20.6
2	251	428	593	358	65.4	545	384	218	30.1	7.1	4.3	19.3
3	103	488	593	143	16.8	680	365	193	192	18.3	27.0	3.0
4	101	460	593	129	89.1	694	214	201	34.7	160	27.4	3.0
5	328	482	584	253	39.2	625	231	254	9.3	124	109	0
6	263	389	444	142	118	481	407	250	48.5	26.1	147	16.3
7	297	270	239	98.7	58.9	612	319	107	97.9	38.3	122	21.4
8	332	158	566	16.3	38.9	664	155	97.6	206	79.9	137	19.3
9	371	479	602	29.9	31.6	701	79.4	292	352	24.0	110	93.6
10	133	440	592	6.9	273	674	7.2	237	320	0	104	87.1
11	107	430	585	0	355	609	0	254	230	134	112	3.7
12	379	448	607	31.1	432	532	17.6	321	5.0	173	136	1.7
13	372	368	463	36.6	465	254	25.3	329	260	130	6.4	113
14	326	200	235	33.1	494	616	98.3	152	275	160	0	20.1
15	323	137	587	15.3	333	606	22.9	126	280	162	64.0	11.4
16	345	456	580	0	156	584	27.5	353	275	82.1	22.5	0
17	153	448	574	0	605	612	8.9	207	154	92.4	14.5	0
18	130	464	575	0	652	659	0	404	15.9	90.7	0	1.0
19	391	476	544	117	650	580	16.0	235	3.6	110	96.8	0
20	371	436	367	174	592	282	26.9	117	179	210	0	126
21	337	281	228	185	558	626	24.0	62.0	138	411	0	0
22	321	202	498	186	474	676	9.9	30.9	156	388	14.1	3.0
23	294	574	348	207	144	750	182	129	201	265	20.6	128
24	117	590	268	90.6	396	708	22.1	62.0	321	267	117	0
25	99.2	574	312	139	466	732	42.7	40.5	164	242	6.6	0
26	397	552	278	349	529	673	206	40.1	9.0	209	86.2	0
27	418	545	163	442	546	576	109	48.1	92.1	81.4	5.6	0
28	376	462	109	465	482	677	122	39.3	13.3	24.8	0	31.4
29	376	316	283	385	399	693	195	37.7	11.0	2.4	25.7	36.0
30	388		394	187	360	663	212	195	45.9	0	21.2	33.7
31	265		406		458		71.5	56.7		0		141
Sum	8,688.2	11,679	13,762	4,612.5	10,393.9	18,329	4,199.2	5,189.7	4,154.2	3,889.5	1,570.9	933.6

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976 Acre-Feet Average	Maximum	Minimum
Jan.	1.39	0.70	27	418	25	99.2	280	17,233	11,912	34,959	723
Feb.	1.24	0.	24	590	1	126	403	23,165	10,505	28,535	1,140
Mar.	.77	.59	12	607	28	109	444	27,297	14,954	36,100	1,050
Apr.	1.54	4.06	28	465	†11	0	154	9,149	18,468	39,277	3,630
May	2.58	1.22	18	652	3	16.8	335	20,616	21,065	40,683	817
June	2.87	.71	23	750	13	254	611	36,355	27,510	44,541	5,336
July	1.89	9.21	1	598	11	0	135	8,329	20,556	41,100	6,597
Aug.	2.13	3.52	18	404	22	30.9	167	10,294	15,030	27,542	7,452
Sept.	4.56	3.92	9	352	19	3.6	138	8,240	12,054	28,000	3,214
Oct.	3.01	5.51	21	411	†10	0	125	7,715	13,318	29,215	2,059
Nov.	1.30	3.41	6	147	†14	0	52.4	3,116	10,142	22,818	1,015
Dec.	1.08	1.65	31	141	† 5	0	30.1	1,852	9,571	17,500	1,852
Yearly	24.36	34.50		750		0	239	173,361	185,085	241,270	121,008
	Millimeters		Cubic Meters per Second					Thousands of Cubic Meters			
	619	876		21.2		0	6.77	213,841	228,302	297,607	149,263

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

† And other days

RIO GRANDE AT PROGRESO, TAMAULIPAS
NEAR PROGRESO, TEXAS

DESCRIPTION: Gravity well, water-stage recorder, and digital transmitter located on the downstream side of the center pier of the Progreso International Bridge at latitude 26°03'45", longitude 97°57'00", and river mile 123.8 (199 km); 0.8 river mile (1.3 km) downstream from the Progreso pumping plant, 2 miles (4 km) south of Progreso, Texas, 47.3 river miles (76.1 km) downstream from Anzalduas Dam, and 1,125.0 river miles (1,810.5 km) downstream from the American Dam at El Paso, Texas. Meter measurements are made from the bridge. An auxiliary gage well and water-stage recorder located about 300 feet (91 m) upstream from the bridge are used when the low-flow channel shifts to the left bank. The zero of the gage at both recorders is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 64 discharge measurements during the year, 59 by the Mexican Section and 5 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: December 1952 through August 24, 1953; and December 1953 through 1976.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 150.0 miles (241.4 km) upstream. Excessive upstream flood flows are partly diverted into the United States floodway system inlet at Anzalduas Dam and through Retamal Heading of the Mexican floodway system before reaching this station. The transmitter relays gage height data upon interrogation by telephone via commercial circuits. Prior to January 1, 1969, the zero of the gage was 52.56 feet (16.02 m) above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 60,700 second-feet (1,720 m^3/sec) on September 26, 1967 with a gage height of 24.84 feet (7.57 m). Min. no flow several days in June, July, and August 1953.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 48,400 (1,370)	Sept. 26, 1967	Min. 0	Frequently 1953
Monthly:	Max. 22,400 (634)	Oct. 1971	Min. 5.1 (0.15)	June 1953
Yearly:	Max. 4,560 (129)	1971	Min. 666 (18.9)	1957

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	812	1,940	1,340	918	5,050	‡ 396	1,970	14,700	14,700	6,670	1,250	9,710
2	766	2,110	‡1,290	749	4,560	537	1,880	15,100	14,500	11,000	1,020	‡9,080
3	713	‡ 2,050	1,180	650	2,600	773	1,790	‡ 14,900	‡ 12,700	12,400	‡ 788	8,330
4	692	1,960	1,130	494	‡ 1,270	851	1,680	14,700	8,400	12,400	685	7,560
5	869	1,740	1,060	724	773	742	1,750	14,500	6,070	‡12,000	734	6,990
6	1,000	1,500	1,050	1,070	452	968	‡ 1,980	‡ 14,400	4,630	12,500	816	6,180
7	‡ 1,020	1,390	1,110	1,460	388	1,480	3,220	14,700	3,570	12,300	1,030	‡5,900
8	851	1,210	1,290	‡ 763	339	1,560	4,030	14,800	‡ 2,550	12,100	932	6,600
9	682	1,550	‡1,070	593	337	‡ 1,530	3,020	14,800	1,990	11,900	‡ 918	6,890
10	611	1,450	1,010	516	420	1,420	2,720	‡ 14,400	3,240	12,000	848	6,820
11	597	1,300	1,000	622	‡ 364	1,360	3,370	14,100	4,060	12,100	830	6,960
12	985	‡ 1,200	936	554	396	1,450	4,410	13,900	5,830	11,800	309	7,100
13	1,290	1,160	869	‡ 593	678	1,750	‡ 7,060	13,900	6,710	‡11,200	876	7,060
14	‡ 1,380	1,090	925	445	756	2,440	9,390	13,900	‡ 6,180	9,500	1,150	6,960
15	‡ 1,640	1,140	1,280	480	710	‡ 2,270	‡ 10,400	14,100	5,900	6,990	1,420	6,990
16	1,640	1,620	1,190	441	724	2,250	10,700	‡ 13,900	6,890	4,380	‡1,410	‡7,380
17	1,570	1,650	1,110	378	968	2,360	10,300	13,600	8,370	3,340	1,450	7,950
18	1,700	1,520	‡1,080	364	‡ 858	2,340	9,500	‡ 15,300	8,480	2,510	1,640	8,090
19	1,930	‡ 1,460	1,040	480	855	2,310	8,830	‡ 15,800	8,300	‡ 2,400	2,020	8,050
20	2,000	1,420	943	431	1,050	2,380	‡ 8,650	14,900	8,370	2,650	2,370	8,230
21	‡ 1,920	1,320	1,030	‡ 434	1,550	2,960	10,300	14,700	‡ 9,220	2,390	3,190	‡8,050
22	1,910	1,330	1,300	431	2,300	‡ 2,340	12,500	14,400	7,490	1,900	3,960	7,770
23	2,020	‡ 1,540	1,330	417	1,690	2,030	‡ 13,500	14,900	5,010	1,480	‡4,450	6,390
24	2,020	1,350	‡1,390	399	1,030	2,050	14,000	14,900	5,930	1,830	5,010	5,400
25	2,060	1,170	‡1,210	337	‡ 487	2,140	14,200	‡ 14,900	6,990	1,990	5,790	5,720
26	‡ 2,390	‡ 1,150	996	388	360	2,200	14,200	14,900	4,520	1,680	6,670	6,960
27	‡ 2,390	1,230	848	‡ 533	288	2,330	‡ 14,300	14,900	3,260	1,210	7,420	7,560
28	2,260	1,170	802	745	236	2,320	14,400	15,000	‡ 2,570	1,400	9,040	‡7,030
29	2,080	1,160	992	1,050	164	‡ 2,090	14,500	15,000	2,360	‡ 1,360	9,710	7 030
30	2,090		‡1,070	2,140	137	2,030	‡ 14,500	‡ 15,000	3,010	1,240	9,990	6,500
31	2,000		999		158		14,400	14,900		1,480		6,040
Sum	45,888	41,830	33,870	19,599	31,948	53,657	257,450	453,900	191,800	200,100	88,226	223,280

Month	Current Year 1976								Period 1954-1976		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	58.27	54.86	26	2,440	11	572	1,480	91,059	92,630	241,800	17,340
Feb.	57.84	55.81	2	2,150	†14	1,000	1,440	83,109	69,835	371,900	12,620
Mar.	56.59	55.22	† 1	1,420	28	749	1,090	67,188	67,229	379,400	4,990
Apr.	60.01	54.17	30	3,670	25	330	653	38,870	84,380	157,497	32,060
May	62.63	53.84	1	5,790	30	118	1.030	63,360	102,697	154,632	33,164
June	59.02	54.13	21	3,150	1	230	1,790	106,427	128,857	279,383	50,884
July	72.24	56.89	31	14,600	4	1,670	8,300	510,700	114,940	510.700	16,970
Aug.	73.46	71.23	19	16,100	17	13,500	14,700	900,503	133,946	900,503	10,400
Sept.	72.41	57.71	1	14,800	9	1,810	6,390	380,375	218,929	837,532	21,650
Oct.	70.51	56.56	3	12,500	30	1,120	6,460	396,940	253,875	1,377,161	14,030
Nov.	67.85	55.54	30	10,000	4	657	2,940	175,036	113,974	735,000	18.000
Dec.	67.78	62.53	1	9,990	24	5,370	7.200	442,827	100,564	487,200	7,370
Yearly	73.46	53.84		16,100		118	4,480	3,256,394	1,481,856	3,291,271	482,410
	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
	22.39	16.41		457		3.35	127	4,016,718	1,827.848	4,059,738	595,062

‡ Discharge measurement made on this day † And other days

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

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the Jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1976, 314,687 irrigable acres (127,351 ha) and several towns and rural homes were allotted Rio Grande water in the river reach between the gaging stations at Progreso and near San Benito. Such irrigable area was 42.3% of the total irrigable acres (ha) below Falcon Dam allotted Rio Grande water.

The total diversion during 1976 in this river reach was 366,582 acre-feet (452,179,000 m^3), or 42.5% of the total water diverted from the Rio Grande below Falcon Dam. About 99% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, by open channel rating stations, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 2,750 (77.9)	June 15, 1965	Min. 0	Occasionally
Monthly:	Max. 2,080 (58.9)	June 1960	Min. 53.5 (1.52)	March 1957
Yearly:	Max. 726 (20.6)	1965	Min. 367 (10.4)	1968

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	597	1,070	843	646	658	216	1,490	194	200	190	30.5	291
2	633	1,240	811	396	277	388	1,360	222	379	350	115	252
3	583	1,220	807	324	275	413	1,150	432	425	370	23.2	174
4	354	1,330	820	143	308	487	930	502	188	415	121	147
5	524	1,080	842	217	236	474	1,090	529	44.4	383	25.7	85.5
6	504	766	773	357	95.1	541	1,100	465	179	420	22.6	65.0
7	436	567	701	226	63.3	819	822	345	445	430	16.4	273
8	558	323	691	253	18.2	956	184	354	407	411	33.1	346
9	617	674	672	264	53.2	1,830	14.1	506	412	421	204	357
10	513	792	650	125	186	1,200	22.1	698	297	367	279	153
11	320	763	649	55.5	275	1,200	21.7	799	353	472	270	92.0
12	622	610	627	82.8	273	1,200	14.7	1,010	346	642	182	88.0
13	745	462	571	155	286	1,120	52.2	883	364	718	35.5	130
14	724	386	518	169	575	1,400	65.9	408	248	592	27.3	105
15	912	213	896	155	637	1,620	159	324	107	205	64.1	119
16	1,120	792	959	93.2	622	1,710	191	808	155	238	40.3	148
17	1,130	997	965	162	606	1,760	224	842	207	146	62.5	197
18	1,020	1,030	847	87.0	699	1,830	152	555	192	276	11.9	224
19	1,300	1,050	720	88.0	744	1,760	199	439	175	234	25.0	198
20	1,370	1,080	685	235	685	1,720	123	604	436	382	11.3	232
21	1,490	1,070	619	299	477	1,820	177	363	577	481	14.3	409
22	1,650	672	842	268	510	1,740	277	272	338	280	23.9	471
23	1,670	885	832	212	504	1,550	201	221	161	80.0	198	262
24	1,290	930	590	48.3	210	1,520	161	214	103	48.3	291	147
25	938	877	528	38.8	84.7	1,480	172	209	127	28.3	106	147
26	1,490	894	647	295	317	1,490	386	206	75.8	178	95.1	159
27	1,680	872	585	435	295	1,480	480	206	24.1	261	99.5	179
28	1,690	842	374	734	297	1,760	491	209	94.5	79.6	180	175
29	1,530	733	602	534	64.3	1,830	306	209	188	0	286	113
30	1,310		706	456	2.2	1,680	203	205	279	35.7	312	74.6
31	1,260		694		66.3		209	202		0		63.1
Sum	30,580	24,220	22,066	7,553.6	10,399.3	38,394	12,427.7	13,435	7,526.8	9,133.9	3,206.2	5,876.2

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	ø Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976 Acre-Feet: Average	Maximum	Minimum
Jan.	1.54	0.71	28	1,690	11	320	986	60,655	39,016	97,130	4,872
Feb.	1.56	.01	4	1,330	15	213	835	48,040	22,015	49,859	4,807
Mar.	.84	.84	17	965	28	374	712	43,767	24,436	54,200	3,280
Apr.	1.58	5.66	28	734	25	38.8	252	14,982	43,564	98,523	12,900
May	2.96	2.38	19	744	30	2.2	335	20,627	50,282	84,827	9,277
June	3.26	1.69	†18	1,830	1	216	1,280	76,153	70,141	123,000	14,674
July	2.13	8.20	1	1,490	9	14.1	401	24,650	36,917	77,132	11,307
Aug.	2.79	3.83	12	1,010	1	194	433	26,648	26,910	64,223	12,736
Sept.	5.45	5.06	21	577	27	24.1	251	14,929	23,093	59,400	4,308
Oct.	3.33	7.42	13	718	†29	0	295	18,117	21,841	58,164	5,146
Nov.	1.63	4.14	30	312	20	11.3	107	6,359	18,969	44,359	4,853
Dec.	1.28	1.98	22	471	31	63.1	190	11,655	21,167	37,500	6,663
Yearly	28.35	41.92		1,830		0	505	366,582	398,351	525,771	266,680
	Millimeters			Cubic Meters per Second				Thousands of Cubic Meters			
	720	1,065		51.8		0	14.3	452,179	491,366	648,539	328,950

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

† And other days

ø Mean daily

RIO GRANDE NEAR SAN BENITO, TEXAS AND RAMIREZ, TAMAULIPAS

DESCRIPTION: Cableway, concrete control weir, bubbler gage, water-stage recorders (graphic and digital), and digital transmitter, located on the left bank at latitude 26°02'00", longitude 97°43'40", and river mile 96.5 (155.3 km); 5.6 river miles (9.0 km) downstream from San Benito pumping plant, about 9.5 miles (15.3 km) southwest of San Benito, Texas, and 1,152.3 river miles (1,854.4 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 23 discharge measurements during the year and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: November 26, 1952 through August 25, 1953, and December 1953 through 1976.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 177.3 river miles (285.3 km) upstream. Excessive upstream flood flows are partly diverted through the United States and Mexican floodway systems before reaching this station. The transmitter relays gage height data via radio to the Texas Water Rights Commission office in Weslaco. The concrete control weir was constructed in December 1965 and the gage was moved to its present location just above the weir on January 4, 1967.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 25,000 second-feet (708 m^3/sec) on September 29, 1967 with a gage height of 61.05 feet (18.61 m). Min. no flow occurs frequently.

Average Flow in Second-Feet (Cubic Meters per Second)**

Daily:	Max. 24,800 (702)	Sept. 29, 1967	Min. 0	Frequently
Monthly:	Max. 14,300 (405)	Oct. 1971	Min. 39.5 (1.12)	December 1956
Yearly:	Max. 3,780 (107)	1976	Min. 200 (5.66)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	179	683	302	304	3,000	195	397	13,400	13,600	4,300	1,530	8,940
2	156	738	428	254	3,990	195	480	13,600	13,400	8,660	1,140	8,430
3	128	684	332	252	‡ 2,210	195	518	‡ 13,600	‡ 12,800	10,900	935	7,810
4	212	610	‡ 278	295	925	‡ 322	669	13,500	9,720	11,300	‡ 754	7,120
5	290	467	210	471	582	266	644	13,300	6,540	11,100	673	6,630
6	‡ 327	‡ 598	242	455	463	252	701	13,300	4,950	‡ 11,000	812	5,920
7	545	647	219	1,060	403	466	1,370	13,400	4,300	11,100	852	5,430
8	394	662	404	‡ 710	384	621	3,200	13,500	3,830	11,000	888	5,710
9	165	665	372	356	353	377	3,070	13,600	2,810	10,800	896	6,180
10	94.3	570	291	396	328	307	2,520	13,400	2,670	10,800	632	6,290
11	118	445	275	443	240	173	2,940	13,100	3,590	10,800	581	6,510
12	181	421	258	524	169	155	3,480	12,900	4,620	10,800	585	6,730
13	335	555	242	528	205	292	5,170	12,800	5,780	10,300	759	6,820
14	443	570	301	339	318	788	7,860	12,900	5,860	9,430	943	6,750
15	597	626	318	314	182	628	‡ 9,260	13,100	5,590	7,450	‡1,330	6,670
16	‡ 452	727	292	‡ 348	144	461	9,830	13,100	‡ 5,860	5,030	1,460	6,900
17	363	590	178	277	204	‡ 457	9,910	‡ 12,800	7,200	3,580	1,450	7,460
18	445	508	‡ 137	267	‡ 295	437	9,400	13,100	7,970	2,780	1,600	7,600
19	562	382	205	336	206	432	8,720	13,700	7,930	2,190	1,830	7,810
20	541	‡ 299	265	335	307	497	8,300	‡ 13,600	7,780	2,480	2,140	7,890
21	515	269	255	202	553	665	8,870	13,400	8,360	2,250	2,670	7,710
22	258	402	404	173	1,510	725	10,800	13,500	7,910	1,850	3,350	7,400
23	248	630	420	157	1,430	369	‡ 12,100	13,700	5,810	1,580	3,840	6,690
24	447	460	538	243	789	407	12,900	13,800	4,700	1,650	4,130	5,130
25	836	311	617	319	578	535	13,100	13,900	6,160	1,980	4,550	4,780
26	914	211	458	248	329	550	13,200	‡ 13,900	5,260	1,840	5,500	5,870
27	680	244	261	132	201	552	13,200	13,900	3,760	1,570	6,060	6,730
28	576	244	294	114	179	632	13,200	13,800	2,950	1,820	7,420	7,020
29	452	234	351	163	163	357	13,300	13,800	2,520	1,800	8,460	6,870
30	594		332	906	202	333	13,400	13,800	2,440	1,480	8,960	6,390
31	666		331		205		13,300	13,800		1,600		5,940
Sum	12,713.3	14,452	9,810	10,921	21,047	12,641	225,809	417,000	186,670	185,220	76,730	210,130

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1976: Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	36.10	34.31	26	993	10	80.9	410	25,216	44,380	227,000	2,920
Feb.	35.73	34.60	16	805	26	166	498	28,665	42,495	363,000	3,380
Mar.	35.51	34.48	25	646	18	115	316	19,458	37,976	360,000	2,560
Apr.	37.74	34.32	30	1,650	29	89.0	364	21,661	37,135	118,000	11,500
May	44.53	34.48	2	4,260	16	130	679	41,746	45,424	128,576	16,873
June	35.97	34.46	22	938	12	132	421	25,073	52,894	159,560	16,100
July	56.75	35.04	30	13,400	1	384	7,280	447,886	76,657	447,886	4,690
Aug.	57.46	55.77	†19	13,900	†13	12,700	13,500	827,107	102,559	827,107	3,100
Sept.	57.34	39.72	1	13,700	30	2,280	6,220	370,255	168,635	638,757	7,710
Oct.	54.81	37.72	4	11,300	†27	1,440	5,970	367,378	201,906	880,859	3,840
Nov.	51.79	35.54	30	9,070	10	565	2,560	152,192	90,278	662,000	5,640
Dec.	51.79	45.13	1	9,070	25	4,550	6,780	416,787	77,390	479,000	2,430
Yearly	57.46	34.31		13,900		80.9	3,780	2,743,424	978,229	2,743,424	145,520
	Meters			Cubic Meters per Second					Thousands of Cubic Meters		
	17.51	10.46		394		2.29	107	3,384,014	1,206,645	3,384,014	179,499

** Period 1954-1976 ‡ Discharge measurement made on this day † And other days

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

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1976, 100,191 irrigable acres (40,546 ha) and several towns and rural homes were allotted Rio Grande water in the river reach between the gaging stations near San Benito and Brownsville. Such irrigable area was 13.4% of the total irrigable acres (ha) below Falcon Dam allotted Rio Grande water.

The total diversion during 1976 in this river reach was 104,799 acre-feet (129,270,000 m^3), or 12.1% of total water diverted from the Rio Grande below Falcon Dam. About 89% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, by open channel rating stations, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 782 (22.1)	June 14, 1963	Min. 0		Occasionally
Monthly:	Max. 542 (15.3)	June 1965	Min. 18.5 (0.52)		February 1966
Yearly:	Max. 223 (6.32)	1965	Min. 102 (2.89)		1968

Mean Daily Discharge in Second-Feet 1976 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39.0	446	318	116	33.4	100	302	64.9	69.8	305	21.6	80.0
2	83.6	373	277	126	29.7	185	305	75.7	71.0	58.8	22.8	80.0
3	48.3	428	316	40.3	30.4	173	253	138	131	81.8	7.8	30.0
4	46.2	445	339	38.9	27.8	212	146	141	153	136	23.6	30.0
5	148	406	288	35.7	29.8	246	230	192	30.0	133	36.2	30.0
6	251	395	118	29.8	27.1	153	183	225	30.0	107	30.0	30.0
7	252	381	109	27.3	29.5	195	33.8	202	31.2	73.5	30.0	11.2
8	199	343	215	91.1	29.5	227	30.7	198	32.8	62.4	30.0	30.0
9	182	301	326	104	25.0	276	31.6	210	30.9	32.8	49.1	34.0
10	83.8	159	321	31.1	81.6	247	29.6	220	54.7	32.8	25.0	30.0
11	86.8	248	311	30.2	100	234	29.0	226	34.0	71.1	29.6	30.0
12	184	357	240	64.8	110	90.8	38.1	232	29.2	83.8	25.0	30.0
13	139	327	175	24.8	85.7	100	55.4	234	32.9	108	25.0	30.0
14	330	315	149	29.8	37.5	305	40.8	200	31.0	66.2	25.0	30.0
15	452	308	258	30.0	33.8	472	45.2	204	29.7	57.7	25.0	30.0
16	477	355	228	65.8	32.2	502	47.3	229	25.0	31.9	30.0	30.0
17	368	382	229	30.4	32.5	474	59.2	228	28.6	32.0	30.0	30.0
18	276	465	239	25.6	83.3	434	57.9	196	31.0	34.4	30.0	30.0
19	274	418	200	106	61.9	439	38.5	179	29.9	36.0	30.0	30.0
20	340	410	124	131	17.1	456	30.0	187	29.1	34.3	30.0	30.0
21	404	387	119	32.3	19.2	484	30.0	176	30.5	33.3	30.0	30.0
22	404	363	223	86.4	31.7	520	54.5	174	23.1	34.8	30.0	30.0
23	353	387	267	34.2	31.0	436	107	168	31.7	43.9	30.0	30.0
24	295	422	265	34.6	31.0	414	32.6	204	62.9	41.7	30.0	30.0
25	398	476	243	33.8	31.0	482	32.7	214	31.8	33.5	30.0	30.0
26	502	336	183	73.3	31.0	502	73.9	231	28.2	34.0	30.0	30.0
27	509	273	114	106	105	424	104	226	22.5	24.1	30.0	30.0
28	481	264	36.5	50.9	80.5	332	118	201	108	0	30.0	30.0
29	428	229	139	23.9	36.0	319	124	185	118	11.6	30.0	30.0
30	419		193	16.6	35.8	290	113	147	203	18.8	80.0	30.0
31	413		109		92.5		95.7	92.1		0		30.0
Sum	8,865.7	10,399 / 6,671.5	1,670.6	1,462.5		9,724.8	2,871.5	5,799.7	1,594.5	1,854.2	905.7	1,015.2

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	Ø Extreme Second-Feet High: Day	High	Low: Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976 Acre-Feet: Average	Maximum	Minimum
Jan.	1.71	0.60	27	509	1	39.0	286	17,585	11,458	24,568	1,290
Feb.	1.79	.05	25	476	10	159	359	20,626	7,752	20,626	1,028
Mar.	.69	1.03	4	339	28	36.5	215	13,233	6,370	15,200	705
Apr.	1.64	7.12	20	131	30	16.6	55.7	3,314	11,663	27,753	2,180
May	2.83	3.39	12	110	20	17.1	47.2	2,901	14,737	27,670	2,561
June	3.35	1.95	22	520	12	90.8	324	19,289	18,205	32,279	6,690
July	1.99	8.16	2	305	11	29.0	92.6	5,696	10,655	23,145	3,687
Aug.	2.99	4.34	13	234	1	64.9	187	11,504	8,110	14,556	4,061
Sept.	5.71	4.70	30	203	27	22.5	53.2	3,163	5,711	12,600	876
Oct.	3.32	8.71	1	305	†28	0	59.8	3,678	5,571	11,300	1,591
Nov.	1.54	3.57	30	80.0	3	7.8	30.2	1,796	4,618	9,021	1,796
Dec.	1.46	1.85	† 1	80.0	7	11.2	32.7	2,014	5,949	11,200	2,014
Yearly	29.02	45.47		520		0	144	104,799	111,299	161,503	73,788
	Millimeters		Cubic Meters per Second					Thousands of Cubic Meters			
	737	1.155		14.7		0	4.08	129,270	137,287	199,214	91,018

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

† And other days

RIO GRANDE NEAR BROWNSVILLE, TEXAS AND MATAMOROS, TAMAULIPAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 25°52'35", longitude 97°27'15", and river mile 48.8; (78.5 km); 1,000 feet (305 m) downstream from El Jardin pumping plant, 6.8 river miles (10.9 km) downstream from the international highway bridge (Gateway) between Brownsville, Texas and Matamoros, Tamaulipas, and 1,200.0 river miles (1,931.2 km) downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 25 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 1976.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 225 river miles (362 km) upstream. Excessive upstream flood flows are partly diverted into the United States and Mexican floodway systems before reaching this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 31,700 second-feet (898 m^3/sec) on October 8, 1945 with a gage height of 31.48 feet (9.60 m). Min. no flow occurs frequently.

Average Flow in Second-Feet (Cubic Meters per Second)

Daily:	Max. 30,800 (872)	Sept. 14, 1942; October 8, 1945	Min. 0	Frequently
Monthly:	Max. 23,200 (657)	October 1941	Min. 0	June, July 1953
Yearly:	Max. 9,010 (255)	1941	Min. 42.1 (1.19)	1956

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	177	247	193	239	971	160	62.6	12,800	13,800	2,410	1,680	9,040
2	179	254	166	191	2,890	130	58.4	12,900	13,700	5,060	1,570	9,050
3	146	304	184	188	3,360	87.0	108	13,100	‡ 13,500	8,920	1,320	8,630
4	137	285	152	246	2,020	‡ 79.2	244	‡ 13,100	12,300	‡10,800	1,090	7,940
5	148	245	‡ 125	326	996	93.7	419	13,000	9,490	11,200	‡ 949	7,270
6	123	200	115	418	‡ 653	121	419	12,900	6,890	11,000	885	‡6,590
7	‡ 100	254	139	523	504	128	726	12,800	5,260	10,900	971	5,920
8	240	261	135	‡ 922	426	220	1,600	12,900	4,020	10,900	1,010	5,560
9	232	‡ 329	152	601	378	342	2,850	13,000	3,130	10,900	1,040	5,870
10	156	375	146	352	345	211	2,790	13,100	2,500	10,800	1,020	6,190
11	134	384	119	352	273	125	2,430	12,900	2,950	10,800	864	6,370
12	108	230	113	390	201	85.1	‡ 2,740	12,700	3,760	10,800	854	6,580
13	86.8	174	109	440	175	92.6	3,380	12,500	4,790	10,600	856	6,760
14	122	235	142	466	164	138	5,220	12,500	5,800	10,100	953	6,820
15	‡ 112	274	‡ 143	357	276	292	7,410	12,500	6,030	8,850	‡1,150	6,760
16	130	301	151	300	237	213	‡ 8,700	‡ 12,700	‡ 5,820	7,100	1,460	6,740
17	121	369	138	300	‡ 186	‡ 102	9,350	12,600	6,180	4,930	1,550	7,090
18	95.9	319	98.2	310	164	59.3	9,370	12,500	7,060	3,620	1,590	7,620
19	137	‡ 265	70.3	263	218	47.1	8,890	13,200	7,670	2,700	1,760	7,870
20	246	198	66.6	224	371	43.7	8,280	13,700	7,810	2,260	1,980	7,980
21	207	149	157	‡ 271	415	49.9	8,010	13,600	7,910	2,260	2,220	7,990
22	189	120	187	226	585	143	8,840	13,500	8,420	2,050	2,720	7,770
23	122	141	203	143	1,340	231	10,300‡	13,600	7,580	1,840	3,310	7,460
24	89.3	291	212	155	1,200	71.4	11,300	13,800	5,710	1,620	3,700	6,450
25	93.4	226	281	191	785	‡ 33.2	11,900	13,900	5,300	1,720	4,070	5,180
26	282	154	358	263	580	42.0	12,200	13,900	6,030	1,900	4,650	5,140
27	333	129	366	213	383	85.6	12,300	13,900	5,170	1,970	5,390	5,970
28	235	140	252	127	219	169	12,400	‡ 13,900	4,020	2,450	6,310	6,680
29	209	177	267	147	166	268	12,500	14,000	3,000	2,240	7,650	6,900
30	170		238	244	169	133	12,600	13,900	2,410	1,950	8,520	6,780
31	181		209		178		12,700	14,000		1,600		6,340
Sum	5,041.4	7,030	5,387.1	9,388	20,828	3,995.8	200,097.0	409,400	197,920	186,250	73,092	215,310

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1954-1976: Acre-Feet Average	Maximum	Minimum
Jan.	6.08	4.08	27	377	25	81.8	163	9,999	33,272	224,000	283
Feb.	6.18	4.06	10	431	23	109	242	13,944	36,417	362,000	1,060
Mar.	6.05	3.63	27	390	20	59.0	174	10,685	32,062	361,000	2,050
Apr.	8.30	4.39	8	1,020	29	93.1	313	18,621	25,031	127,000	875
May	15.63	4.52	3	3,560	13	140	672	41,312	29,292	127,595	4,140
June	5.68	3.34	9	383	25	32.0	133	7,926	32,843	143,517	2,430
July	28.22	3.68	31	12,800	† 1	51.1	6,450	396,887	66,616	437,546	1,120
Aug.	28.88	27.46	†28	14,000	18	12,400	13,200	812,033	92,928	812,033	218
Sept.	28.87	11.69	1	14,000	30	2,150	6,600	392,569	152,328	635,722	950
Oct.	26.48	10.45	5	11,300	31	1,550	6,010	369,421	188,163	887,207	756
Nov.	23.71	7.97	30	8,830	12	827	2,440	144,976	84,750	528,000	1,290
Dec.	24.06	18.17	1	9,140	†25	4,900	6,950	427,061	74,781	480,000	524
Yearly	28.88	3.34		14,000		32.0	3,640	2,645,434	848,483	2,645,434	30,596
	Meters			Cubic Meters per Second				Thousands of Cubic Meters			
	8.80	1.02		396		0.91	103	3,263,143	1,046,604	3,263,143	37,740

‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, BROWNSVILLE TO THE GULF OF MEXICO

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1976, 4,212 irrigable acres (1,705 ha) were allotted Rio Grande water in the river reach between the gaging station near Brownsville and the mouth of the Rio Grande. Such irrigable area was 0.6% of the total irrigable acres (ha) below Falcon Dam allotted Rio Grande water.

The total diversion during 1976 in this river reach was 543.2 acre-feet (670,000 m^3), or 0.1% of the total water diverted from the Rio Grande below Falcon Dam. All records of diversions in this river reach, which were determined by means of flow meters, were furnished by the Rio Grande Watermaster. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)				
Daily:	Max. 40.4 (1.14)	June 17, 1965	Min. 0		Frequently
Monthly:	Max. 23.4 (0.66)	June 1965	Min. 0		Occasionally
Yearly:	Max. 7.0 (0.20)	1965	Min. 0.7 (0.02)		1976

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.6	2.6	0	3.1	0	0	3.9	0	0	0	0	0
2	2.6	2.6	0	3.1	0	0	3.9	0	0	0	0	0
3	0	1.6	0	0	0	0	0	0	.8	0	0	0
4	0	1.6	3.4	0	0	0	0	0	.8	2.1	0	0
5	0	1.6	3.4	0	0	0	1.1	0	.8	2.1	0	0
6	0	3.1	0	0	0	0	1.1	2.0	0	2.1	0	0
7	0	3.1	0	0	0	0	1.1	2.0	0	2.1	0	0
8	0	3.1	0	0	0	0	0	2.0	0	2.1	0	0
9	0	3.1	3.4	0	0	0	0	2.0	0	0	0	0
10	0	4.9	3.4	0	0	0	0	0	0	0	0	0
11	0	4.9	3.4	0	0	2.7	0	0	0	0	0	0
12	0	4.5	3.4	0	0	2.7	0	0	0	0	0	0
13	0	8.5	3.4	0	0	0	0	0	0	0	0	0
14	0	4.7	3.4	0	0	0	0	0	0	0	0	0
15	3.0	.8	4.9	0	0	6.2	0	0	0	0	0	0
16	3.0	.8	7.0	0	0	6.2	0	0	0	0	0	0
17	3.0	.8	3.7	0	0	6.2	0	0	0	0	0	0
18	0	0	3.7	0	0	6.2	0	0	0	0	0	0
19	0	.7	3.7	2.0	0	6.2	0	0	0	0	0	0
20	0	.7	0	2.0	0	6.2	0	0	0	0	0	0
21	0	.7	0	2.0	3.0	6.2	0	0	0	0	0	0
22	0	.7	0	2.0	3.0	6.2	0	0	0	0	0	0
23	0	.7	0	0	3.0	4.0	0	0	0	0	0	0
24	0	3.2	0	0	0	4.0	0	0	0	0	0	0
25	0	3.2	0	0	0	4.0	0	0	0	0	0	0
26	0	.7	1.3	0	0	4.0	0	0	0	0	0	0
27	0	0	1.3	1.8	0	0	0	0	0	0	0	0
28	0	0	1.3	1.8	0	0	0	0	0	0	0	0
29	0	0	0	0	0	3.9	0	0	0	0	0	0
30	2.6		0	0	0	3.9	0	0	0	0	0	0
31	2.6		0		0		0	0		0		0
Sum	19.4	62.9	54.1	17.8	9.0	78.8	11.1	8.0	2.4	10.5	0	0

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	∅ Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976: Acre-Feet Average	Maximum	Minimum
Jan.	1.75	0.58	†15	3.0	† 3	0	0.6	38.5	435	1,275	0
Feb.	1.87	.10	13	8.5	†18	0	2.2	125	240	668	0
Mar.	.67	1.11	16	7.0	† 1	0	1.7	107	152	634	0
Apr.	1.68	7.47	† 1	3.1	† 3	0	.6	35.3	240	953	0
May	2.72	3.92	†21	3.0	† 1	0	.3	17.9	376	1,356	0
June	3.10	1.29	†15	6.2	† 1	0	2.6	156	439	1,393	9.7
July	1.88	9.39	† 1	3.9	† 3	0	.4	22.0	186	778	0
Aug.	2.83	4.37	† 6	2.0	† 1	0	.3	15.9	124	317	13.7
Sept.	5.64	3.89	† 3	.8	† 1	0	.1	4.8	56.1	190	0
Oct.	3.21	8.88	† 4	2.1	† 1	0	.3	20.8	58.4	218	0
Nov.	1.55	3.23		0		0	0	0	70.1	252	0
Dec.	1.52	2.12		0		0	0	0	83.0	335	0
	28.42	46.35		8.5		0	0.7	543.2	2,459.6	5,036.3	543.2
Yearly	Millimeters		Cubic Meters per Second					Thousands of Cubic Meters			
	722	1,177		0.24		0	0.02	670	3,034	6,212	670

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

† And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, FALCON DAM TO THE GULF OF MEXICO

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

In 1976, 743,829 irrigable acres (301,020 ha), several towns, and many rural homes were allotted Rio Grande water between Falcon Dam and the Gulf of Mexico. The total diversion from the river was 862,865 acre-feet (1,064,344,000 m^3). About 92% of the water diverted was determined through records of discharge obtained by means of flow meters, by open channel rating stations, and by deflection meters developed by the Commission. The records for the balance of the diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. Drainage from more than 90% of this area does not return to the Rio Grande, but some of it is reused within 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 in 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 in 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.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet (Cubic Meters per Second)						
Daily:	Max. 5,380 (152)	June 20 & 21, 1960		Min. 3.5 (0.10)		Oct. 31, 1976
Monthly:	Max. 4,350 (123)	June	1960	Min. 102 (2.89)		March 1957
Yearly:	Max. 1,590 (45.0)		1965	Min. 880 (24.9)		1970

Mean Daily Discharge in Second-Feet 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,070	1,830	2,430	1,680	892	1,440	3,150	455	492	971	124	456
2	1,260	2,510	2,430	1,380	403	1,690	2,750	853	660	565	269	357
3	965	2,660	2,480	836	408	1,830	2,270	1,110	976	576	143	290
4	659	2,770	2,530	576	618	1,900	1,630	1,220	491	1,080	298	187
5	1,170	2,550	2,400	709	457	1,610	2,190	1,240	200	791	269	123
6	1,230	2,110	1,750	707	438	1,440	2,270	1,240	455	665	276	191
7	1,290	1,500	1,380	490	325	2,260	1,470	820	979	618	201	348
8	1,320	1,080	2,190	530	232	2,470	489	770	1,100	696	275	442
9	1,440	2,040	2,300	610	158	2,860	197	1,390	1,270	531	513	594
10	966	1,970	2,260	230	734	2,800	61.8	1,530	1,100	427	629	341
11	659	1,970	2,250	95.4	1,030	2,650	52.7	1,680	885	855	517	151
12	1,530	1,960	2,070	358	1,120	2,150	107	2,030	588	1,060	447	143
13	1,620	1,710	1,610	406	1,160	1,750	135	1,870	1,150	1,120	117	353
14	1,790	1,200	1,270	500	1,430	2,980	242	972	1,050	1,010	55.7	204
15	2,050	946	2,380	474	1,170	3,380	233	876	844	674	215	173
16	2,340	2,250	2,450	380	972	3,500	307	1,990	716	527	176	202
17	1,870	2,540	2,410	260	1,570	3,570	294	1,860	715	431	155	326
18	1,620	2,660	2,320	131	1,910	3,570	215	1,730	462	660	47.6	260
19	2,250	2,700	1,990	570	1,910	3,150	308	1,390	396	694	186	234
20	2,400	2,560	1,590	855	1,680	2,800	306	1,330	882	943	43.4	468
21	2,580	2,090	1,250	892	1,380	3,680	323	876	953	1,230	46.4	481
22	2,740	1,600	2,240	902	1,230	3,730	438	690	732	1,050	106	516
23	2,680	2,580	2,030	859	873	3,530	640	959	676	624	309	513
24	1,900	2,720	1,650	352	981	3,440	301	821	741	511	482	183
25	1,610	2,720	1,580	364	1,050	3,320	288	841	508	609	147	181
26	2,720	2,500	1,610	1,150	1,350	3,070	910	858	282	687	296	193
27	2,980	2,250	1,200	1,470	1,460	2,820	944	773	495	510	176	289
28	3,040	2,040	783	1,720	1,390	3,500	989	606	478	208	215	300
29	2,800	1,630	1,590	1,220	854	3,640	907	569	584	102	407	300
30	2,540		1,880	701	714	3,420	811	686	768	111	472	314
31	2,170		1,760		1,140		567	522		3.5		417
Sum	57,259	61,646	60,063	21,407.4	31,039	83,950	25,795.5	34,557	21,628	20,539.5	7,613.1	9,530

Month	Current Year 1976: Average Rainfall Inches** 1957-1976	1976	ø Extreme Second-Feet: High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1976: Acre-Feet Average	Maximum	Minimum
Jan.	1.38	0.48	28	3,040	4	659	1,850	113,572	75,380	182,403	9,717
Feb.	1.35	.01	4	2,770	15	946	2,130	122,273	54,371	126,230	11,785
Mar.	.71	.72	4	2,530	28	783	1,940	119,133	65,840	149,000	6,280
Apr.	1.52	4.56	28	1,720	11	95.4	714	42,461	98,822	209,970	25,100
May	2.53	1.74	†18	1,910	9	158	1,000	61,565	110,428	190,532	16,071
June	2.97	1.22	22	3,730	† 1	1,440	2,800	166,512	142,344	259,000	31,931
July	1.80	7.59	1	3,150	11	52.7	832	51,165	88,612	178,000	31,502
Aug.	2.40	3.21	12	2,030	1	455	1,110	68,543	71,000	143,286	36,208
Sept.	4.91	3.51	9	1,270	5	200	721	42,899	55,852	136,000	12,709
Oct.	2.95	5.91	21	1,230	31	3.5	663	40,740	55,856	124,598	12,991
Nov.	1.32	3.66	10	629	20	43.4	254	15,100	46,892	97,969	12,674
Dec.	1.08	1.54	9	594	5	123	307	18,902	48,325	84,500	14,034
Yearly	24.92	34.15		3,730		3.5	1,190	862,865	913,722	1,153,049	636,835
	Millimeters			Cubic Meters per Second				Thousands of Cubic Meters			
	633	867		106		0.10	33.7	1,064,344	1,127,076	1,422,286	785,536

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

OUTFALLS FROM SEWERS INTO THE RIO GRANDE
In Acre-Feet

NUEVO LAREDO SEWAGE OUTFALLS

These sewage outfalls enter the Rio Grande 892.7 and 893.7 river miles downstream from the American Dam at El Paso, Texas and 2.2 and 3.2 miles downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas. The records are computed by the International Boundary and Water Commission based on current meter measurements, the weir discharge table, and a continuous record of gage heights.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1976	2,091	1,929	1,933	1,918	2,128	2,044	2,118	2,040	2,026	2,164	2,070	2,118	24,579
* Average	1,768	1,655	1,789	1,774	1,874	1,852	1,996	1,993	1,901	1,885	1,738	1,788	22,013

EAGLE PASS SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 758.1 river miles downstream from the American Dam at El Paso, Texas and about 600 feet upstream from the Eagle Pass-Piedras Negras International Railroad Bridge. The records are based on current meter measurements and estimates by personnel of the International Boundary and Water Commission.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1976	92.6	96.6	95.9	69.7	76.6	91.8	67.7	89.0	86.1	70.9	90.1	89.4	1,016.4
* Average	70.4	64.0	69.3	61.1	64.4	62.8	65.0	77.3	67.0	74.6	80.9	75.8	832.6

LAREDO SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 891.4 river miles downstream from the American Dam at El Paso, Texas about 800 feet upstream from the Nuevo Laredo Gaging Station. The record is furnished by the Laredo Waterworks System.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1976	554	525	574	507	595	602	646	645	620	630	593	568	7,059
* Average	500	472	551	546	611	557	560	537	470	469	534	516	6,323

NUEVO LAREDO SEWAGE OUTFALLS

These sewage outfalls enter the Rio Grande 893.5 and 894.7 river miles downstream from the American Dam at El Paso, Texas and 3.0 and 4.2 miles downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas. The records are computed by the International Boundary and Water Commission based on current meter measurements, the weir discharge table, and a continuous record of gage heights.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1976	725	580	796	808	1,040	893	722	434	794	983	1,032	1,308	10,115

BROWNSVILLE SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 3.4 river miles downstream from the Gateway Bridge between Brownsville, Texas and Matamoros, Tamaulipas; 3.4 river miles upstream from the Brownsville Gaging Station; and 52.2 river miles from the Gulf of Mexico. Records are furnished by the City of Brownsville.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1976	649	601	660	618	671	574	617	569	805	842	899	914	8,419
* Average	489	470	506	478	512	518	537	534	528	555	502	509	6,138

* Period averages are for past 10 years

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

Tabulated below are monthly and yearly amounts of water pumped from the Rio Grande directly into the municipal distribution systems of cities along the border, except for the city of Del Rio, whose total supply is derived from San Felipe Springs; and the city of El Paso, whose supply is derived mainly from deep wells. The amount shown below for the city of El Paso is Rio Grande water pumped from the Franklin Canal at the El Paso Water Plant for municipal use. Included in this amount are 1,149 acre-feet of water pumped from wells near Canutillo, Texas into the Rio Grande to be conveyed 17 miles downstream to the point of diversion at the El Paso Water Plant. Ciudad Acuna, Coahuila, whose municipal diversion from the Rio Grande started in 1971, may at times use an alternate source from Arroyo Las Vacas, which was its previous source of supply. Such use would be reflected in the tabulations below.

All Rio Grande water used by U. S. municipalities below Falcon Dam is also included in the figures shown under "Diversions from the Rio Grande - United States Side...." (by river reaches and total below Falcon Dam) on pages 65, 68, 75, 77, 79, 81, and 82 herein. Population data for all cities are estimates based on the 1970 official census except for Falcon Village (estimated by the International Boundary and Water Commission) and Del Mar and San Ignacio which are based on utilities connections.

In United States

Month	EL PASO (Pop. 386,000)				DEL RIO ∅ (Pop. 31,500)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	0	0	0	0	495.1	388.3	495.1	303.8
Feb.	0	0	0	0	603.2	406.8	603.2	306.2
Mar.	0	388.2	831	0	709.6	570.0	714.9	350.1
Apr.	683	1,325.2	2,164	844	493.3	568.1	679.0	482.5
May	2,249	2,437.0	3,360	1,365	545.6	627.5	838.6	514.1
June	3,162	2,846.9	4,084	1,596	919.9	785.2	932.9	561.2
July	3,027	2,503.5	3,728	1,304	472.3	827.3	1,093.2	643.2
Aug.	3,588	2,721.4	3,850	1,748	868.8	815.6	967.8	500.8
Sept.	1,927	1,906.9	2,709	906	668.0	573.6	697.6	431.0
Oct.	250	408.3	1,010	0	505.6	479.0	650.6	376.8
Nov.	1	106.3	369	0	409.1	389.1	458.2	306.2
Dec.	0	40.2	131	0	422.4	377.8	444.3	301.6
Yearly	14,887	14,683.9	18,309	9,368	7,112.9	6,808.3	7,271.2	6,253.6

Month	EAGLE PASS (Pop. 20,000)				DEL MAR (Pop. 2,850)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	270.1	212.3	305.1	155.8	37.4	21.6	37.4	10.9
Feb.	331.9	199.7	331.9	146.9	51.1	24.4	51.1	12.8
Mar.	333.0	237.0	333.0	173.5	49.7	28.9	52.2	7.6
Apr.	246.2	243.0	306.8	187.0	41.2	39.5	55.1	26.3
May	270.5	276.8	400.1	204.6	46.2	40.7	63.8	21.2
June	397.4	308.5	397.4	253.6	62.3	45.9	71.4	26.6
July	281.9	330.6	410.2	278.5	44.5	39.4	70.3	16.5
Aug.	388.7	330.5	412.3	259.7	47.8	46.3	69.5	33.2
Sept.	322.5	247.5	322.5	164.8	39.6	36.0	51.2	21.2
Oct.	269.7	240.4	344.0	180.8	36.7	27.2	37.4	13.5
Nov.	250.2	210.4	278.6	161.9	33.8	26.7	36.1	18.2
Dec.	253.2	209.7	279.4	163.1	30.3	23.1	37.9	12.2
Yearly	3,615.3	3,046.4	3,630.5	2,425.9	520.6	399.7	563.1	246.7

∅ Includes Laughlin Air Force Base

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

In United States

Month	LAREDO (Pop. 70,000)				LAREDO POWER STATION			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	1,135.0	929.1	1,135.0	674.0	79.4	54.8	79.4	36.7
Feb.	1,238.9	901.0	1,238.9	655.5	77.7	47.5	77.7	22.1
Mar.	1,202.0	1,105.2	1,402.4	786.4	84.2	55.9	84.2	21.1
Apr.	1,015.9	1,211.4	1,552.9	952.0	100.7	65.0	100.7	36.4
May	1,212.0	1,386.4	1,857.8	1,058.8	116.7	77.8	116.7	49.3
June	1,796.9	1,467.1	1,796.9	1,243.3	134.6	84.4	134.6	52.4
July	1,434.1	1,594.3	1,858.2	1,176.2	118.3	91.8	118.3	63.4
Aug.	1,745.6	1,552.3	1,745.6	1,248.4	142.0	95.6	142.0	73.4
Sept.	1,446.0	1,192.4	1,482.1	742.1	134.4	75.7	134.4	49.8
Oct.	1,285.4	1,159.0	1,456.7	815.5	99.7	65.0	99.7	45.0
Nov.	931.7	995.8	1,202.0	756.6	85.4	64.5	85.4	21.8
Dec.	1,064.7	954.3	1,190.0	702.8	83.1	64.0	106.7	40.3
Yearly	15,508.2	14,448.3	16,351.0	11,725.4	1,256.2	842.0	1,256.2	605.1

Month	SAN YGNACIO (Pop. 1,030)				NEW ZAPATA (Pop. 3,200)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	3.6	2.4	3.6	1.6	42.4	29.7	43.0	20.2
Feb.	4.4	2.8	4.4	1.9	53.4	31.7	53.4	18.6
Mar.	4.4	3.5	5.2	2.2	50.8	38.4	54.0	25.0
Apr.	5.1	4.3	6.2	2.9	48.1	41.0	55.6	27.8
May	4.2	3.8	5.8	2.2	47.4	42.5	55.7	31.5
June	5.8	3.8	5.8	1.4	59.2	43.2	59.2	34.1
July	3.7	3.6	4.8	.8	43.1	46.8	65.2	34.4
Aug.	6.0	4.5	6.0	3.2	66.1	48.1	67.7	31.5
Sept.	5.2	3.5	5.8	1.9	65.2	33.7	65.2	21.1
Oct.	4.2	2.9	4.6	1.8	57.0	33.2	57.0	20.0
Nov.	3.1	2.7	4.0	1.4	40.4	29.4	41.5	18.9
Dec.	3.1	2.6	3.9	1.2	36.7	29.0	42.0	20.1
Yearly	52.8	40.4	57.3	26.4	609.8	446.7	609.8	334.9

Month	FALCON VILLAGE (Pop. 361)				ROMA * (Pop. 2,670)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	9.6	7.8	9.9	5.4	47.1	31.4	47.1	14.4
Feb.	9.9	7.8	9.9	5.7	53.1	30.8	53.1	14.4
Mar.	9.9	9.6	12.9	5.9	46.3	36.4	46.3	18.2
Apr.	10.4	10.5	13.0	7.8	50.8	40.1	59.6	17.0
May	11.1	10.2	11.6	8.4	59.6	43.6	63.8	19.9
June	12.2	10.9	14.3	7.9	65.9	44.2	65.9	21.1
July	10.5	11.9	14.7	9.2	56.3	44.2	57.4	21.9
Aug.	11.9	11.3	12.9	9.7	62.2	43.0	65.6	25.7
Sept.	10.7	8.6	10.8	5.8	56.8	36.4	56.8	18.6
Oct.	10.1	8.5	10.5	6.2	53.0	33.7	53.0	19.5
Nov.	8.9	7.9	10.1	5.1	43.7	32.6	49.3	15.7
Dec.	8.6	7.8	10.3	5.4	44.6	31.5	47.1	15.4
Yearly	123.8	112.8	128.1	88.1	639.4	447.9	639.4	228.2

Month	RIO GRANDE CITY (Pop. 5,720)				BROWNSVILLE (Pop. 68,000)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	113.7	78.6	113.7	55.9	1,077.5	865.2	1,077.5	620.4
Feb.	119.5	74.5	119.5	53.7	1,132.2	856.4	1,132.2	599.1
Mar.	118.3	83.0	118.4	60.8	1,216.8	1,003.7	1,325.4	645.9
Apr.	127.0	87.5	127.0	61.4	1,151.6	1,033.6	1,413.9	676.4
May	134.2	89.3	134.2	62.9	1,210.4	1,056.8	1,454.9	675.3
June	136.9	96.8	136.9	59.2	1,434.0	1,079.2	1,434.0	752.5
July	100.0	107.7	149.5	59.2	1,298.8	1,161.1	1,422.0	360.4
Aug.	48.4	103.9	156.2	48.4	1,466.0	1,133.0	1,628.1	883.8
Sept.	138.5	96.9	138.5	62.9	1,226.2	962.2	1,240.6	665.4
Oct.	120.3	95.4	122.8	58.3	1,218.1	1,004.2	1,281.1	789.3
Nov.	104.9	86.7	117.3	59.8	1,079.2	940.9	1,149.1	705.4
Dec.	106.9	83.4	109.1	57.4	1,066.0	915.2	1,075.2	694.2
Yearly	1,368.6	1,083.7	1,368.6	768.2	14,576.8	12,011.5	14,714.6	9,043.1

* Includes Los Saenz and Escobares, Texas

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

In Mexico

Month	CD. ACUNA, COAHUILA (Pop. 42,570)				PIEDRAS NEGRAS, COAHUILA (Pop. 84,923)			
	1976	Period 1971-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	116.5	51.5	116.5	0	351.8	261.5	355.3	185.0
Feb.	128.8	83.1	128.8	38.0	330.4	229.4	330.4	164.5
Mar.	146.9	118.4	150.4	76.8	367.9	274.3	367.9	195.1
Apr.	140.7	117.9	166.8	67.9	329.6	287.7	384.7	209.8
May	147.6	116.9	156.6	77.6	369.7	319.7	402.4	242.4
June	164.5	117.1	164.5	83.7	431.8	343.0	431.8	275.2
July	158.1	133.9	205.1	80.1	376.2	356.9	458.7	301.2
Aug.	195.7	154.8	222.4	83.7	428.6	361.2	446.4	281.2
Sept.	167.7	119.4	167.7	81.9	389.0	308.4	389.0	222.1
Oct.	174.9	117.8	174.9	68.3	347.5	300.4	403.0	218.7
Nov.	153.2	88.9	153.2	55.7	295.2	260.9	395.4	189.4
Dec.	105.1	67.5	105.1	0	327.3	260.9	350.3	185.2
Yearly	1,799.7	1,287.2	1,799.7	828.8	4,345.0	3,564.3	4,426.7	2,789.3

Month	NUEVO LAREDO, TAMPS. (Pop. 184,499)				NUEVA CD. GUERRERO, TAMPS. (Pop. 3,477)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	1,516.7	1,355.8	1,879.9	870.8	25.4	28.1	48.7	19.8
Feb.	1,563.4	1,268.6	1,565.3	821.1	28.1	27.4	50.2	19.1
Mar.	1,762.3	1,480.0	1,960.3	972.3	26.0	31.3	54.3	25.4
Apr.	1,627.4	1,542.5	1,895.8	1,100.0	25.5	31.5	61.0	19.9
May	1,736.2	1,674.5	2,209.3	1,295.2	23.3	35.7	60.3	23.3
June	2,014.9	1,756.3	2,129.4	1,260.7	25.6	32.1	60.1	21.2
July	2,004.6	1,865.7	2,329.5	1,281.5	25.5	30.7	46.2	25.1
Aug.	2,289.7	1,897.9	2,289.7	1,197.0	37.4	31.2	49.5	19.3
Sept.	2,155.9	1,708.0	2,155.9	1,029.0	26.1	28.2	41.3	15.7
Oct.	2,149.8	1,693.9	2,149.8	1,060.9	23.0	29.4	46.9	20.5
Nov.	1,689.8	1,547.4	2,111.0	890.5	22.8	27.3	37.8	20.9
Dec.	1,638.1	1,486.4	1,908.7	916.3	22.5	25.9	30.8	20.5
Yearly	22,148.8	19,277.0	22,809.6	12,805.0	311.2	358.8	587.1	282.8

Month	CD. MIER, TAMPS. (Pop. 8,299)				CD. MIGUEL ALEMAN, TAMPS. (Pop. 17,117)			
	1976	Period 1967-1976			1976	Period 1967-1976		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	35.8	30.8	69.1	11.8	55.7	37.2	55.7	25.3
Feb.	26.1	23.7	33.1	10.5	55.0	37.0	55.0	25.9
Mar.	32.9	29.5	36.9	9.9	57.5	43.3	58.0	32.4
Apr.	34.3	28.8	37.6	9.1	56.1	44.7	62.8	31.0
May	39.3	31.6	42.9	9.1	60.2	46.0	63.9	36.5
June	44.3	33.9	44.3	24.8	64.5	49.2	66.7	37.4
July	37.9	33.9	39.4	28.6	63.1	53.1	65.6	40.6
Aug.	42.1	33.6	42.1	13.1	64.3	48.8	68.1	9.7
Sept.	33.7	29.4	37.4	15.2	59.9	44.0	59.9	26.0
Oct.	37.2	30.3	45.6	14.5	60.4	42.4	61.4	19.9
Nov.	40.5	33.4	72.2	13.3	62.0	43.6	62.0	29.3
Dec.	33.6	32.5	60.6	12.6	38.5	39.7	56.9	27.8
Yearly	437.7	371.4	529.3	191.3	697.2	529.0	721.9	420.6

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

Data are presented below for all storage reservoirs in the Rio Grande Basin in the United States and Mexico that exceed 15,000 acre-feet in capacity, except San Esteban Reservoir on Alamito Creek which according to the Texas Water Development Board originally had a capacity of 18,800 acre-feet. There are no monthly storage data available for this reservoir. Also presented on pages 90 and 91 are data for International Amistad and Falcon Reservoirs on the Rio Grande. The monthly figures represent the water in storage on the last day of each month, in thousands of acre-feet. The capacities indicated are at spillway level. Storage figures greater than the capacity indicate that the water surface was above spillway level.

The reservoirs and the agencies providing the data are: Rio Grande, Continental, Santa Maria, Terrace, Mountain Home, and Platoro from the State of Colorado, Division of Water Resources; Sanchez from the Sanchez Ditch and Reservoir Company; Abiquiu and Cochiti from the United States Corps of Engineers; Costilla, Bluewater, Lake Sumner, McMillan, and Avalon from the United States Geological Survey; Storrie from the State Engineer Office of New Mexico; Heron, El Vado, Elephant Butte, and Caballo from the United States Bureau of Reclamation; Red Bluff from the Red Bluff Water Power Control District; Lake Casa Blanca from the Webb County Office; Willacy from the Willacy County Water Control and Improvement District No. 1; La Boquilla, La Colina, and Rosetilla from the Federal Power Commission of Mexico; Francisco I. Madero, Chihuahua, Luis L. Leon, Centenario, San Miguel, Venustiano Carranza, Laguna de Salinillas, La Boca, Marte R. Gomez, Culebron, Villa Cardenas, and Palito Blanco from the Ministry of Hydraulic Resources of Mexico; Amistad Reservoir (International) and Falcon Reservoir (International) from the International Boundary and Water Commission.

In United States

Month	RIO GRANDE (Capacity 51.1)		CONTINENTAL (Capacity 22.7)		SANTA MARIA (Capacity 45.1)		TERRACE (Capacity 17.2)		MOUNTAIN HOME (Capacity 18.6)	
	1976	#Average 1927-1976	1976	#Average 1928-1976	1976	#Average 1928-1976	1976	#Average 1925-1976	1976	#Average 1924-1976
Jan.	15.7	13.9	4.3	4.7	9.2	6.6	8.5	3.7	2.5	3.5
Feb.	16.8	15.1	4.8	5.1	9.4	7.0	9.1	4.0	2.7	3.9
Mar.	18.0	16.4	5.4	5.5	9.7	7.9	10.1	4.4	3.0	4.2
Apr.	20.2	16.8	6.0	6.1	10.1	9.1	10.0	5.4	3.3	4.8
May	20.6	21.5	6.0	7.7	10.1	12.5	11.7	7.1	3.3	6.4
June	16.7	22.4	4.5	8.0	10.4	13.9	11.2	8.3	2.5	6.5
July	1.9	13.2	.1	5.4	7.4	9.5	6.9	5.7	1.8	4.8
Aug.	2.0	7.0	.1	3.5	7.2	5.2	4.4	3.6	1.2	3.0
Sept.	2.4	7.1	.7	3.4	7.5	5.0	4.8	3.1	1.2	2.6
Oct.	0	8.2	.7	3.4	7.5	5.2	4.9	3.2	1.4	2.6
Nov.	2.5	10.8	1.1	3.8	7.1	5.7	5.1	3.2	1.6	2.9
Dec.	2.8	12.4	1.6	4.3	7.2	6.2	5.1	3.6	2.0	3.2
Avg.	10.0	13.7	2.9	5.1	8.6	7.8	7.6	4.6	2.2	4.0
Max.	20.6	52.1	6.0	26.7	10.4	42.1	11.7	17.7	3.3	16.4
Min.	0	0	0.1	0	7.1	0	4.4	0	1.2	0

Month	SANCHEZ (Capacity 103.2)		PLATORO (Capacity 60.0)		COSTILLA (Capacity 15.7)		HERON (Capacity 401.3)		EL VADO (Capacity 196.5)	
	1976	#Average 1927-1976	1976	Average 1952-1976	1976	#Average 1922-1976	1976	Average 1971-1976	1976	Average 1935-1976
Jan.	5.4	10.8	14.2	7.8	2.2	4.3	162.7	94.7	122.9	35.2
Feb.	5.8	11.0	14.2	7.8	2.6	4.6	163.5	95.3	126.5	32.8
Mar.	5.8	11.6	14.2	8.1	3.1	5.2	162.0	96.6	130.8	33.1
Apr.	6.5	13.0	15.5	8.9	3.9	6.3	145.9	95.4	157.7	70.6
May	6.9	16.3	15.6	10.6	4.1	8.2	178.8	122.3	179.2	113.9
June	5.2	15.6	16.4	16.2	2.4	7.6	203.8	147.6	184.7	105.2
July	4.1	11.4	16.5	14.6	1.4	4.9	205.3	155.6	151.0	86.2
Aug.	2.5	9.0	16.5	13.8	.3	3.3	204.1	156.0	117.6	64.9
Sept.	1.8	9.2	16.6	14.0	.6	2.9	204.4	155.4	79.9	53.3
Oct.	2.1	9.8	16.4	13.8	1.2	3.2	203.3	157.9	73.2	49.4
Nov.	2.8	10.0	14.2	8.4	1.6	3.5	202.0	157.8	72.8	39.2
Dec.	3.4	10.4	14.2	8.4	1.9	3.9	158.6	123.5	109.6	36.6
Avg.	4.4	11.5	15.4	11.0	2.1	4.8	182.9	129.8	125.5	60.0
Max.	6.9	62.4	16.6	54.0	4.1	15.1	205.3	252.1	184.7	203.5
Min.	1.8	0	14.2	0	0.3	0	145.9	0.5	72.8	0

Some months missing

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

In United States

Month	ABIQUIU (Capacity 1,216.0)		COCHITI (Capacity 498.1)		BLUEWATER (Capacity 43.5)		ELEPHANT BUTTE (Capacity 2,109.4)		CABALLO (Capacity 344.0)	
	1976	Average 1965-1976	1976	#Average 1973-1976	1976	#Average 1927-1976	1976	Average 1915-1976	1976	#Average 1938-1976
Jan.	0	2.9	48.7	19.0	16.1	6.6	688.7	744.4	61.9	95.5
Feb.	0	2.8	47.5	18.4	16.1	7.3	722.2	747.4	40.0	119.6
Mar.	.9	3.7	47.5	19.0	15.8	10.6	644.0	724.0	46.9	104.0
Apr.	29.7	7.5	47.8	21.4	15.2	13.6	565.5	717.2	56.8	99.4
May	27.3	39.4	47.6	21.3	12.6	12.1	534.0	807.3	71.8	101.0
June	26.8	31.7	47.6	29.7	8.8	10.0	444.0	834.6	80.8	84.2
July	26.3	22.2	48.4	30.5	5.6	8.6	361.2	777.7	89.8	66.1
Aug.	25.7	22.3	47.5	30.1	4.1	7.7	312.2	722.1	43.0	38.5
Sept.	25.4	23.1	47.6	29.8	3.4	7.3	299.5	697.0	40.5	29.2
Oct.	25.4	21.9	47.3	32.9	3.2	6.9	309.8	697.1	44.1	44.0
Nov.	25.0	14.4	47.5	26.0	3.1	6.8	330.4	713.3	55.2	58.6
Dec.	25.1	8.7	47.6	28.5	3.0	6.6	315.8	733.1	102.2	74.9
Avg.	19.8	16.7	47.7	25.6	8.9	8.7	460.6	742.9	61.1	76.2
Max.	29.7	194.0	48.7	56.2	16.1	47.1	∅ 727.7	∅2,302.8	∅ 102.2	∅ 346.6
Min.	0	0	47.3	3.6	3.0	0	∅ 285.7	∅ 3.3	∅ 28.1	∅ 0.1

Month	STORRIE (Capacity 23.3)		LAKE SUMNER (Capacity 110.7)		McMILLAN & AVALON (Capacity 38.0)		RED BLUFF (Capacity 310.0)		LAKE CASA BLANCA (Capacity 22.1)	
	1976	#Average 1939-1976	1976	#Average 1937-1976	1976	#Average 1908-1976	1976	#Average 1936-1976	1976	Average 1962-1976
Jan.	0	7.5	35.5	67.0	7.9	26.3	107.8	96.8	17.9	13.2
Feb.	0	7.4	39.9	70.9	8.6	26.4	109.2	98.5	17.7	12.9
Mar.	0	8.0	4.1	59.7	24.0	26.1	107.7	95.5	17.7	12.6
Apr.	0	8.3	4.6	52.8	11.1	17.3	101.5	82.2	17.6	12.6
May	0	8.8	7.8	54.7	6.6	19.5	90.5	85.2	16.5	13.1
June	0	7.4	12.0	47.8	.8	18.9	84.5	86.0	16.0	13.8
July	0	7.6	25.1	46.7	.7	17.9	77.3	76.8	19.3	13.4
Aug.	0	8.4	3.8	49.9	4.3	17.0	64.1	72.6	18.3	13.4
Sept.	0	7.8	10.7	52.2	3.5	18.2	66.6	75.5	17.6	15.3
Oct.	0	7.5	10.9	55.6	2.4	20.1	66.3	85.5	19.3	14.7
Nov.	0	7.5	17.9	57.7	4.6	21.6	67.2	88.1	19.1	14.5
Dec.	0	7.0	24.3	62.4	6.0	24.6	68.6	92.5	19.1	14.2
Avg.	0	7.8	16.4	56.4	6.7	21.2	84.3	86.3	18.0	13.6
Max.	0	26.3	39.9	156.3	24.0	85.5	109.2	327.5	19.3	28.2
Min.	0	0	3.8	0.4	0.7	0	64.1	10.0	16.0	3.5

Month	WILLACY (Capacity 25.0)								TOTAL IN U. S. RESERVOIRS (Capacity 5,671.5)	
	1976	#Average 1939-1976							1976	Estimated ‡ Average
Jan.	15.7	15.1							1,347.8	1,279.5
Feb.	16.8	14.4							1,373.4	1,312.6
Mar.	18.8	13.7							1,289.5	1,269.9
Apr.	16.3	13.7							1,245.2	1,282.4
May	16.2	14.5							1,267.2	1,503.4
June	15.7	14.7							1,194.8	1,530.1
July	18.2	14.5							1,068.3	1,393.3
Aug.	16.8	13.4							895.7	1,264.7
Sept.	16.8	14.9							851.5	1,226.3
Oct.	17.5	15.2							856.9	1,258.1
Nov.	17.4	15.1							893.2	1,268.9
Dec.	16.8	14.8							934.9	1,279.8
Avg.	16.9	14.5							1,102.0	1,322.4
Max.	18.8	22.6							1,373.4	
Min.	15.7	0							851.5	

Some months missing ∅ Daily extremes ‡ Totals of period averages in all reservoirs

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)		CHIHUAHUA (Capacity 25.9)	
	1976	#Average 1914-1976	1976	Average 1940-1976	1976	Average 1940-1976	1976	#Average 1948-1976	1976	Average 1961-1976
Jan.	1,488.1	1,436.1	18.2	17.9	13.4	12.4	280.9	221.8	13.1	7.6
Feb.	1,398.0	1,401.5	19.4	18.3	5.2	12.5	273.3	219.5	12.6	7.4
Mar.	1,290.2	1,345.7	19.6	18.3	10.4	11.9	239.5	207.4	12.0	7.0
Apr.	1,188.1	1,271.8	19.9	18.8	10.5	11.6	187.4	175.0	11.3	6.5
May	1,092.9	1,208.8	18.5	18.5	10.5	11.5	149.6	148.1	10.9	6.1
June	1,023.2	1,128.0	19.0	18.6	12.7	11.8	126.8	129.8	10.4	5.6
July	1,361.0	1,169.5	18.3	18.6	13.1	11.7	192.8	145.9	11.3	5.9
Aug.	1,345.4	1,337.9	19.9	18.2	13.6	12.7	172.6	175.2	11.6	7.2
Sept.	1,556.2	1,503.3	17.2	18.0	14.5	13.1	299.2	217.2	13.1	9.0
Oct.	1,535.2	1,509.2	17.7	17.8	13.4	13.0	293.2	225.3	12.4	8.9
Nov.	1,538.1	1,474.2	11.8	16.1	13.9	12.2	296.1	225.6	11.7	8.8
Dec.	1,538.1	1,458.1	18.9	18.0	13.6	12.8	304.9	226.4	10.9	8.4
Avg.	1,362.9	1,353.7	18.2	18.1	12.1	12.3	234.7	193.1	11.8	7.4
Max.	1,556.2	2,544.7	19.9	20.5	14.5	19.4	304.9	366.6	13.1	26.5
Min.	1,023.2	16.9	11.8	11.6	5.2	0	126.8	1.4	10.4	0.2

Month	LUIS L. LEON (Capacity 689.1)		CENTENARIO and SAN MIGUEL (Capacity 19.9)		VENUSTIANO CARRANZA (Capacity 1,122.8)		LAGUNA DE SALINILLAS (Capacity 15.4)		LA BOCA (Capacity 33.2)	
	1976	Average 1968-1976	1976	Average 1934-1976	1976	Average 1930-1976	1976	Average 1931-1976	1976	Average 1963-1976
Jan.	433.7	365.3	10.9	13.4	1,009.7	416.6	7.0	7.1	32.5	26.8
Feb.	458.9	362.1	10.9	13.2	949.1	395.8	10.1	9.1	32.2	26.8
Mar.	472.6	339.3	5.7	9.8	907.3	374.1	11.3	7.1	31.5	26.2
Apr.	488.9	315.9	7.0	8.4	908.6	363.1	11.5	8.6	26.4	25.0
May	513.2	305.1	11.5	9.1	898.8	347.0	10.1	8.7	28.9	24.7
June	468.6	310.6	8.3	7.6	809.7	329.8	12.9	7.8	27.2	24.6
July	468.6	334.4	11.3	7.4	1,113.3	346.5	12.5	7.4	25.3	25.3
Aug.	367.2	331.3	11.7	8.0	1,116.4	353.1	10.5	7.6	27.7	26.1
Sept.	409.4	408.1	13.0	10.1	1,119.6	404.9	11.6	8.5	32.8	28.0
Oct.	440.2	420.1	16.6	12.4	1,132.4	437.7	13.1	7.9	32.8	28.4
Nov.	473.4	424.2	15.1	12.7	1,126.0	443.8	12.1	7.1	28.1	28.3
Dec.	493.3	428.8	18.1	13.2	1,105.9	442.0	11.8	6.7	28.2	28.3
Avg.	457.5	362.1	11.7	10.4	1,016.5	387.9	11.2	7.8	29.5	26.5
Max.	∅ 513.2	∅ 675.3	18.1	20.7	∅ 1,133.9	∅ 1,167.8	13.1	15.8	32.8	33.6
Min.	∅ 367.2	∅ 3.8	5.7	0	∅ 801.7	* 1.0	7.0	0	25.3	0

Month	MARTE R. GOMEZ (Capacity 898.3)		CULEBRON and VILLA CARDENAS (Capacity 90.0)		PALITO BLANCO (Capacity 124.0)				TOTAL IN MEXICAN RESERVOIRS (Capacity 5,815.6)	
	1976	#Average 1943-1976	1976	#Average 1939-1976	1976	Average 1942-1976			1976	Estimated ‡ Average
Jan.	815.4	605.7	0	34.1	19.0	36.2			4,141.9	3,201.0
Feb.	751.0	556.0	0	31.5	16.0	31.4			3,936.7	3,085.1
Mar.	729.5	525.4	0	29.7	7.2	31.3			3,736.8	2,933.2
Apr.	683.4	489.0	0	31.2	16.6	28.9			3,559.6	2,753.8
May	636.7	454.4	0	33.2	5.6	29.0			3,387.2	2,604.2
June	641.5	451.1	0	34.9	5.5	31.5			3,165.8	2,491.7
July	880.5	442.7	0	30.7	5.5	30.4			4,113.5	2,576.4
Aug.	823.5	499.5	69.7	32.8	5.4	27.7			3,995.2	2,837.3
Sept.	888.0	610.1	24.9	40.3	55.9	39.5			4,455.4	3,310.1
Oct.	871.5	656.9	24.9	41.9	46.6	43.9			4,450.0	3,423.4
Nov.	938.7	658.6	15.8	35.4	32.8	42.2			4,513.6	3,389.2
Dec.	923.8	655.7	20.3	39.2	6.6	40.6			4,495.4	3,378.2
Avg.	798.6	550.4	13.0	34.6	18.6	34.4			3,995.9	2,998.6
Max.	∅ 953.6	∅ 1,465.4	69.7	116.8	55.9	140.1			4,513.6	
Min.	∅ 625.9	** 17.8	0	0	5.4	0			3,165.8	

Some months missing * Minimum since full reservoir in 1932 ∅ Daily extremes
‡ Total of period averages in all reservoirs ** Minimum since full reservoir in 1947

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

International Amistad Reservoir

Amistad Dam is the second of the major international storage dams constructed on the Rio Grande as authorized by the Water Treaty of 1944 between the United States and Mexico. It is located at mile 567.5, 12.8 river miles upstream from Del Rio, Texas and Cd. Acuna, Coahuila, and 681.3 river miles downstream from the American Dam at El Paso, Texas.

Maximum storage for period of record: 4,859,900 acre-feet on September 22, 1974 with an elevation of 1,135.66 feet above mean sea level, U. S. C. & G. S. datum.

Storage Capacities

(1961 Survey)

Elevation	Description	At Indicated Elevation: Reservoir Capacity Acre-Feet	At Indicated Elevation: Reservoir Area Acres	Between Indicated Elevations: Storage Volume Acre-Feet	Between Indicated Elevations: Type of Storage
898.0	Original River Bed at Dam Axis	0	0		
				8,029	Silt and Dead
930.0	Lowest Outlet (United States Penstocks)	8,029	712		
				3,497,410	Silt & Conservation
1,117.0	Top of Conservation Storage *	3,505,439	64,860		
				1,744,222	Ordinary Flood
1,140.4	Top of Spillway Gates	5,249,661	84,358		
				407,116	Super Flood
1,145.1	Maximum Water Surface	5,656,777	88,984		

Storage in Thousands of Acre-Feet at 24:00 Hours 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,708.5	3,709.9	3,640.2	3,544.5	3,536.0	3,468.0	3,472.5	4,027.1	3,562.8	3,523.6	3,589.8	3,674.2
2	3,706.5	3,709.9	3,635.5	3,545.2	3,534.1	3,468.0	3,473.8	4,032.8	3,549.1	3,525.6	3,593.8	3,677.6
3	3,704.5	3,709.2	3,628.2	3,547.8	3,531.4	3,466.7	3,473.8	4,038.5	3,542.5	3,526.9	3,597.1	3,680.3
4	3,702.5	3,709.2	3,623.6	3,551.7	3,528.8	3,466.0	3,485.4	4,047.1	3,534.1	3,528.8	3,600.4	3,683.6
5	3,701.8	3,708.5	3,614.9	3,552.4	3,528.8	3,464.7	3,487.3	4,052.8	3,526.2	3,528.2	3,602.4	3,689.0
6	3,703.8	3,706.5	3,607.0	3,553.0	3,526.2	3,462.8	3,493.8	4,055.7	3,524.3	3,526.9	3,605.7	3,691.7
7	3,702.5	3,698.4	3,599.7	3,554.3	3,526.9	3,461.5	3,494.4	4,059.3	3,523.0	3,526.9	3,609.6	3,691.7
8	3,699.8	3,692.4	3,593.1	3,554.3	3,532.1	3,461.5	3,497.7	4,062.9	3,521.0	3,525.6	3,610.3	3,693.0
9	3,700.4	3,688.3	3,585.9	3,555.0	3,532.8	3,459.6	3,500.3	4,067.9	3,523.0	3,525.6	3,612.9	3,695.7
10	3,702.5	3,685.6	3,579.9	3,555.0	3,531.4	3,459.6	3,507.4	4,071.5	3,521.7	3,525.6	3,616.3	3,699.8
11	3,702.5	3,682.3	3,574.7	3,556.3	3,529.5	3,459.6	3,523.6	4,075.1	3,519.1	3,524.9	3,618.2	3,703.8
12	3,702.5	3,676.3	3,567.4	3,556.9	3,525.6	3,459.0	3,534.7	4,078.0	3,517.1	3,524.9	3,621.6	3,706.5
13	3,704.5	3,670.9	3,560.2	3,557.6	3,517.1	3,459.0	3,540.6	4,080.1	3,519.1	3,525.6	3,622.2	3,713.9
14	3,703.1	3,666.2	3,550.4	3,558.9	3,505.7	3,460.2	3,545.2	4,082.3	3,521.0	3,528.2	3,623.6	3,716.0
15	3,703.1	3,661.5	3,551.0	3,567.4	3,499.0	3,462.8	3,567.4	4,085.2	3,521.7	3,532.8	3,625.5	3,722.0
16	3,704.5	3,656.8	3,549.1	3,570.1	3,489.9	3,465.4	3,588.5	4,067.9	3,522.3	3,532.8	3,630.9	3,727.5
17	3,703.8	3,655.5	3,546.5	3,570.1	3,486.0	3,468.0	3,747.1	4,035.7	3,523.6	3,534.7	3,633.5	3,732.2
18	3,703.8	3,657.5	3,546.5	3,569.4	3,482.8	3,469.9	3,822.4	4,003.6	3,527.5	3,536.7	3,634.8	3,736.3
19	3,704.5	3,658.8	3,545.2	3,568.7	3,480.9	3,471.8	3,846.5	3,971.7	3,533.4	3,541.9	3,638.2	3,742.4
20	3,705.2	3,661.5	3,544.5	3,565.5	3,478.9	3,474.4	3,863.1	3,940.7	3,541.2	3,542.5	3,642.8	3,746.4
21	3,704.5	3,661.5	3,542.5	3,560.2	3,478.3	3,473.1	3,877.0	3,911.2	3,539.3	3,543.2	3,646.2	3,745.8
22	3,703.8	3,662.2	3,541.2	3,550.4	3,477.0	3,471.8	3,903.5	3,878.4	3,535.4	3,544.5	3,646.8	3,747.8
23	3,705.2	3,662.2	3,541.2	3,543.9	3,474.4	3,471.2	3,955.5	3,845.8	3,531.4	3,547.8	3,650.2	3,747.1
24	3,707.2	3,661.5	3,541.9	3,534.1	3,473.1	3,471.8	3,970.3	3,814.1	3,526.9	3,551.0	3,654.2	3,749.2
25	3,707.9	3,663.5	3,542.5	3,533.4	3,474.4	3,472.5	3,979.5	3,780.5	3,522.3	3,552.4	3,658.2	3,753.2
26	3,709.2	3,664.2	3,544.5	3,531.4	3,475.0	3,473.1	3,987.3	3,748.5	3,517.8	3,554.3	3,662.2	3,754.6
27	3,708.5	3,658.8	3,543.9	3,531.4	3,472.5	3,473.1	3,993.7	3,714.6	3,517.1	3,562.2	3,664.2	3,755.3
28	3,709.2	3,652.8	3,544.5	3,538.0	3,471.2	3,473.1	4,000.1	3,683.6	3,517.8	3,569.4	3,666.9	3,756.6
29	3,709.2	3,646.8	3,546.5	3,539.3	3,470.5	3,473.1	4,005.0	3,652.2	3,519.1	3,578.6	3,668.2	3,756.6
30	3,709.9		3,545.8	3,535.4	3,469.9	3,472.5	4,010.0	3,622.9	3,521.0	3,581.9	3,669.6	3,756.6
31	3,709.9		3,545.8		3,469.2		4,019.3	3,591.1		3,585.9		3,756.0

Month	1976: Momentary Maximum: Elevation	Momentary Maximum: Storage	Momentary Maximum: Day	Momentary Minimum: Elevation	Momentary Minimum: Storage	Momentary Minimum: Day	Average Storage	Period June 1968-1976: Mean Monthly Storage: Average	Maximum	Minimum
Jan.	1,120.09	3,709.9	†30	1,119.94	3,699.8	8	3,705.0	2,707.2	4,030.4	722.6
Feb.	1,120.09	3,709.9	† 1	1,119.15	3,646.8	29	3,675.8	2,694.8	4,014.7	787.7
Mar.	1,119.15	3,646.8	1	1,117.55	3,541.2	†22	3,568.5	2,663.4	4,016.4	861.7
Apr.	1,117.99	3,570.1	†16	1,117.40	3,531.4	†26	3,551.7	2,673.9	3,981.0	962.8
May	1,117.47	3,536.0	1	1,116.44	3,469.2	31	3,500.3	2,634.2	3,829.5	1,038.6
June	1,116.52	3,474.4	20	1,116.28	3,459.0	†12	3,467.1	2,317.0	3,807.8	3.0
July	1,124.55	4,019.3	31	1,116.49	3,472.5	1	3,715.0	2,355.0	3,847.3	83.0
Aug.	1,125.47	4,085.2	15	1,118.31	3,591.1	31	3,941.3	2,509.7	3,941.3	176.2
Sept.	1,118.31	3,591.1	1	1,117.18	3,527.1	†12	3,527.4	2,619.3	4,117.2	355.7
Oct.	1,118.23	3,585.9	31	1,117.24	3,521.0	1	3,540.6	2,772.8	4,471.2	661.0
Nov.	1,119.49	3,669.6	30	1,118.23	3,585.9	1	3,630.5	2,779.7	4,241.4	702.9
Dec.	1,120.78	3,756.6	†28	1,119.49	3,669.6	1	3,722.7	2,792.6	4,029.7	706.1
Yearly	1,125.47	4,085.2		1,116.28	3,459.0		3,629.5	2,626.4	3,950.8	1,047.6

* When necessary, the Commission may set temporary conservation levels

† And other days

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

International Falcon Reservoir

Falcon Dam is the lowermost of the major international storage dams authorized for construction on the Rio Grande by the Water Treaty of 1944 between the United States and Mexico and was the first dam constructed. It is located 84.5 river miles downstream from Laredo, Texas and Nuevo Laredo, Tamaulipas, 975.0 river miles downstream from the American Dam, and 273.8 river miles upstream from the Gulf of Mexico.

Maximum storage for period of record: 3,490,600 acre-feet on October 19, 1958 with an elevation of 308.11. feet above mean sea level, U. S. C. & G. S. datum.

Storage Capacities

(1971-1972 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		
				67	Silt and Dead
203.33	Lowest Outlet (Mexican Penstock)	67	89		
				2,667,521	Silt & Conservation
301.2	Top of Conservation Storage *	2,667,588	86,843		
				509,505	Ordinary Flood
306.7	Top of Spillway Gates	3,177,093	98,512		
				801,323	Super Flood
314.2	Maximum Water Surface	3,978,416	115,406		

Storage in Thousands of Acre-Feet at 24:00 Hours 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,597.9	2,439.0	2,266.8	2,262.2	2,304.7	2,448.8	2,300.0	3,024.1	2,506.3	2,773.3	2,847.3	3,010.8
2	2,597.9	2,426.9	2,263.0	2,259.1	2,311.7	2,447.1	2,296.1	3,024.1	2,537.1	2,761.7	2,854.6	3,008.9
3	2,597.1	2,415.5	2,261.4	2,256.1	2,315.6	2,443.1	2,292.3	3,023.2	2,571.6	2,751.0	2,862.8	3,010.8
4	2,596.2	2,405.9	2,269.1	2,255.3	2,318.7	2,438.2	2,289.2	3,019.4	2,607.3	2,742.2	2,869.2	3,019.4
5	2,596.2	2,396.3	2,273.0	2,254.5	2,323.4	2,432.5	2,294.6	3,012.7	2,634.7	2,741.3	2,874.7	3,021.3
6	2,597.9	2,384.3	2,273.0	2,256.1	2,328.9	2,427.7	2,317.1	3,005.2	2,656.3	2,730.7	2,881.1	3,019.4
7	2,598.8	2,371.5	2,273.7	2,259.1	2,338.3	2,422.8	2,344.6	2,997.6	2,672.8	2,723.6	2,887.5	3,016.5
8	2,593.7	2,359.6	2,274.5	2,263.0	2,348.5	2,416.4	2,373.1	2,987.2	2,683.3	2,713.0	2,894.0	3,014.6
9	2,591.1	2,351.7	2,276.8	2,265.3	2,379.5	2,411.5	2,397.9	2,974.0	2,691.1	2,702.5	2,900.4	3,012.7
10	2,588.6	2,350.1	2,277.6	2,266.8	2,387.5	2,405.9	2,428.5	2,959.0	2,695.5	2,692.0	2,906.9	3,013.7
11	2,586.0	2,349.3	2,278.3	2,267.6	2,389.9	2,397.9	2,443.9	2,944.1	2,699.0	2,682.4	2,914.3	3,014.6
12	2,583.5	2,347.8	2,279.9	2,269.1	2,392.3	2,389.9	2,462.7	2,928.2	2,701.6	2,685.0	2,922.7	3,014.6
13	2,581.8	2,344.6	2,281.4	2,270.6	2,398.7	2,381.1	2,492.2	2,911.5	2,706.0	2,689.4	2,926.4	3,016.5
14	2,577.5	2,341.5	2,282.2	2,272.2	2,401.1	2,373.1	2,566.6	2,896.8	2,705.9	2,696.4	2,930.1	3,015.6
15	2,575.0	2,338.3	2,283.7	2,273.7	2,404.3	2,366.7	2,619.3	2,882.9	2,700.7	2,706.0	2,934.7	3,015.6
16	2,569.9	2,338.3	2,286.1	2,275.3	2,407.5	2,358.8	2,657.2	2,843.6	2,694.6	2,713.9	2,946.9	3,014.6
17	2,564.0	2,339.9	2,286.1	2,276.8	2,409.9	2,352.5	2,712.1	2,785.8	2,687.6	2,720.9	2,960.9	3,014.6
18	2,557.3	2,339.9	2,285.3	2,278.3	2,410.7	2,369.9	2,764.4	2,733.3	2,691.1	2,724.5	2,970.3	3,013.7
19	2,554.8	2,340.7	2,283.0	2,279.9	2,412.3	2,367.5	2,820.0	2,701.6	2,698.1	2,729.8	2,984.4	3,012.7
20	2,550.5	2,335.9	2,280.7	2,280.7	2,419.6	2,364.4	2,860.0	2,668.5	2,715.7	2,733.3	2,997.6	3,009.9
21	2,545.5	2,332.8	2,277.6	2,279.9	2,427.7	2,358.0	2,866.4	2,632.2	2,718.3	2,736.0	3,005.2	3,011.8
22	2,539.6	2,325.0	2,273.0	2,278.3	2,434.1	2,350.9	2,874.7	2,598.8	2,715.7	2,740.4	3,008.0	3,013.7
23	2,533.0	2,317.1	2,274.5	2,278.3	2,439.0	2,345.4	2,892.1	2,567.4	2,720.1	2,745.7	3,013.7	3,014.6
24	2,525.4	2,309.3	2,274.5	2,280.7	2,440.6	2,339.9	2,943.1	2,535.5	2,736.0	2,751.9	3,020.3	3,015.6
25	2,517.9	2,301.6	2,273.0	2,283.7	2,443.1	2,332.8	2,977.8	2,503.8	2,751.0	2,755.5	3,018.4	3,014.6
26	2.508.0	2,294.6	2,273.0	2,286.8	2,448.8	2,327.3	2,990.0	2,474.1	2,770.6	2,761.7	3,016.5	3,011.8
27	2,495.4	2,287.6	2,272.2	2,288.4	2,451.2	2,322.6	2,996.6	2,452.9	2,782.2	2,782.2	3,017.5	3,010.8
28	2,485.6	2,280.7	2,271.4	2,286.8	2,450.4	2,317.9	3,003.3	2,445.5	2,797.5	2,804.7	3,017.5	3,011.8
29	2,474.1	2,273.7	2,269.9	2,291.5	2,449.6	2,310.9	3,010.8	2,448.0	2,796.6	2,816.4	3,011.8	3,012.7
30	2,462.7		2,266.8	2,297.7	2,448.8	2,303.9	3,016.5	2,456.9	2,784.0	2,827.3	3,008.9	3,013.7
31	2,451.2		2,264.5		2,448.8		3,020.3	2,475.8		2,838.2		3,013.7

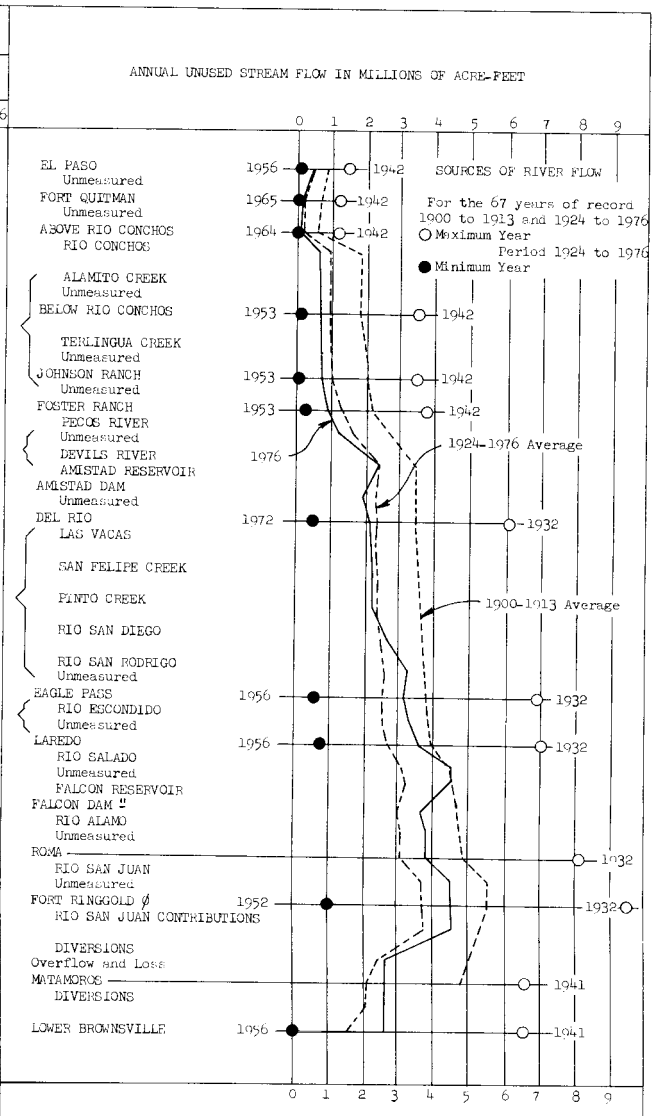
Month	1976							Period 1954-1976		
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day		Average	Maximum	Minimum
Jan.	300.40	2,598.8	† 1	298.63	2,451.2	31	2,554.7	2,131.2	3,070.8	218.7
Feb.	298.63	2,451.2	1	296.39	2,273.7	29	2,346.2	2,010.7	2,962.5	156.2
Mar.	296.55	2,286.1	†16	296.23	2,261.4	3	2,275.0	1,977.2	2,959.5	226.7
Apr.	296.70	2,297.7	30	296.14	2,254.5	5	2,273.1	1,873.8	2,954.6	325.6
May	298.63	2,451.2	27	296.70	2,297.7	1	2,396.3	1,763.2	2,869.9	490.1
June	298.60	2,448.8	† 1	296.78	2,303.9	30	2,377.5	1,670.7	2,673.3	273.7
July	305.08	3,020.3	31	296.59	2,289.2	4	2,655.6	1,792.0	2,685.9	209.9
Aug.	305.12	3,024.1	† 1	298.56	2,445.5	28	2,771.4	1,787.2	2,771.4	208.0
Sept.	302.67	2,797.5	28	298.93	2,475.8	1	2,694.3	1,894.6	2,871.1	256.2
Oct.	303.12	2,838.2	31	301.37	2,682.4	11	2,741.1	2,165.9	3,250.2	308.3
Nov.	305.08	3,020.3	24	303.12	2,838.2	1	2,946.8	2,239.5	3,124.5	390.9
Dec.	305.09	3,021.3	5	304.96	3,008.9	† 1	3,014.1	2,268.0	3,129.7	343.4
Yearly	305.12	3,024.1		296.14	2,254.5		2,588.6	1,964.6	2,764.2	544.3

* When necessary, the Commission may set temporary conservation levels † 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 about 17,000,000 acre-feet of reservoir capacity have been developed on the watershed since 1913, in which large volumes of unused runoff are stored in some years and released in later years as unused stream flow (thus reducing the unused stream flow in some years and adding thereto in others), it is significant to differentiate between the unused runoff and unused stream flow.

Average Annual Unused Water Acre-Feet per Square Mile			
RUNOFF		STREAM FLOW	
1900-1913	1924-1976	1924-1976	
29.7	14.0	14.6	EL PASO
			Unmeasured
19.6	3.8	4.4	FORT QUITMAN
			Unmeasured
16.4	3.1	3.7	ABOVE RIO CONCHOS
42.6	31.5	31.3	RIO CONCHOS
			ALAMITO CREEK
			Unmeasured
19.8	18.0	18.0	BELOW RIO CONCHOS
			TERLINGUA CREEK
			Unmeasured
			JOHNSON RANCH
			Unmeasured
25.9	16.0	16.1	FOSTER RANCH
12.4	9.0	8.9	PECOS RIVER
			Unmeasured
104.3	106.6	106.6	DEVILS RIVER
			AMISTAD RESERVOIR
26.9	18.8	18.3	AMISTAD DAM
			Unmeasured
26.9	18.9	18.4	DEL RIO
			LAS VACAS
			SAN FELIPE CREEK
110.8	57.4	57.3	PINTO CREEK
			RIO SAN DIEGO
			RIO SAN RODRIGO
			Unmeasured
29.2	20.1	19.6	EAGLE PASS
32.4	41.1	41.1	RIO ESCONDIDO
			Unmeasured
			LAREDO
29.3	20.9	20.5	RIO SALADO
23.1	16.2	15.3	Unmeasured
			FALCON RESERVOIR
			FALCON DAM ‡
			RIO ALAMO
			Unmeasured
			ROMA
**48.4	**50.3	**48.9	RIO SAN JUAN
			Unmeasured
			FORT RINGGOLD Ø
			RIO SAN JUAN CONTRIBUTIONS
			DIVERSIONS
			Overflow and Loss
			MATAMOROS
			DIVERSIONS
			LOWER BROWNSVILLE



‡ Values prior to 1953 considered the same as for Zapata Gaging Station. Ø Values prior to 1955 considered the same as for Rio Grande City Gaging Station. ** Includes contributions of the 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	1976							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum
Rio Grande at American Dam at El Paso, Texas								Period: Sept. 1947-1976		
Jan.	21,193,000	4,690	20	0.02212			3.2	0.36	3.2	0
Feb.	19,266,000	1,920	19	.009960			1.3	.30	2.2	.01
Mar.	54,523,000	18,100	18	.03312			12.5	20.8	55.9	.89
Apr.	67,971,000	14,300	16	.02104			9.8	10.6	45.2	2.2
May	81,476,000	11,700	18	.01440			8.1	8.1	63.3	.03
June	68,791,000	7,130	18	.01036			4.9	19.2	152	.86
July	66,055,000	19,000	19	.02880			13.1	32.9	124	1.1
Aug.	78,013,000	22,100	18	.02836			15.2	34.5	112	2.0
Sept.	42,877,000	7,480	18	.01744			5.2	21.1	123	1.1
Oct.	19,489,000	3,340	13	.01716			2.3	5.1	51.0	.01
Nov.	14,236,000	433	15	.003040			.30	.31	1.5	.01
Dec.	13,589,000	516	16	.003800			.36	.28	2.1	.01
Yearly	547,479,000	110,709	208	0.02022			76.26	153.55	436.87	34.37
Samples and analyses by U. S. Section, Method A										
Rio Conchos near Ojinaga, Chihuahua								Period: 1956-1976		
Jan.	28,780,000	0	13	0	0	0	0	0	0	0
Feb.	13,245,000	0	12	0	0	0	0	.17	4.5	0
Mar.	12,498,000	0	14	0	0	0	0	.25	6.6	0
Apr.	7,563,000	0	12	0	0	0	0	.62	10.2	0
May	26,676,000	18,300	12	.06850	.6367	0	12.6	27.6	145	0
June	97,587,000	0	13	0	0	0	0	124	688	0
July	210,061,000	132,000	14	.06270	.3399	0	90.9	210	1,450	0
Aug.	219,381,000	0	13	0	0	0	0	370	2,650	0
Sept.	108,601,000	0	13	0	0	0	0	898	9,330	0
Oct.	43,735,000	0	9	0	0	0	0	546	12,400	0
Nov.	20,181,000	0	10	0	0	0	0	4.3	70.2	0
Dec.	26,505,000	11,500	9	.04340	0	0	7.9	1.1	14.0	0
Yearly	814,813,000	161,800	144	0.01986	0.6367	0	111.4	2,182.04	21,903.3	32.9
Samples and ansyles by Mexican Section, Method B										
Rio Grande below Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua								Period: 1955-1976		
Jan.	34,219,000	1,380	4	0.004040			0.95	3.7	22.2	0.45
Feb.	17,802,000	563	4	.003160			.39	4.0	22.2	.14
Mar.	14,508,000	757	5	.005219			.52	7.1	70.9	.15
Apr.	8,830,000	194	7	.002200			.13	5.4	95.7	.12
May	28,649,000	15,300	5	.05328	0.2037	0.01330	10.5	37.3	215	.21
June	96,098,000	43,100	5	.04480			29.7	109	465	.29
July	234,200,000	116,000	9	.04960	.2928	.01430	79.9	263	1,420	2.0
Aug.	238,756,000	191,000	5	.08016	.5992	.007100	132	344	1,360	2.9
Sept.	127,705,000	59,800	6	.04683	.1055	.01870	41.2	532	3,610	4.1
Oct.	57,525,000	9,870	6	.01716			6.8	321	4,770	.76
Nov.	32,750,000	2,130	5	.006506			1.5	8.4	45.2	.26
Dec.	41,365,000	51,300	6	.1239	.7232	.01620	35.3	4.9	13.7	.42
Yearly	932,407,000	491,394	67	0.05270	0.7232		338.89	1,639.8	8,793.44	94.97
Samples and analyses by U. S. Section, Method A										

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1976							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

Rio Grande at Johnson Ranch near Castolon, Texas and Santa Elena, Chihuahua

Period: Oct. 1951-1976

Jan.	35,326,000	763	4	0.002160			0.53	3.8	25.5	0.40
Feb.	18,485,000	466	4	.002520			.32	13.1	253	.21
Mar.	13,670,000	487	5	.003560			.34	7.1	60.7	.14
Apr.	7,835,000	411	6	.005240			.28	42.6	692	.01
May	31,274,000	6,730	4	.02152			4.6	119	426	0
June	95,817,000	61,400	5	.06412	0.1357	0.0142	42.3	346	1,570	1.3
July	264,338,000	1,252,000	7	.4738	2.720	.01370	862	754	4,030	51.6
Aug.	235,818,000	198,000	5	.08404	.3951	.01510	136	853	3,840	2.8
Sept.	146,119,000	543,000	6	.3715	.9815	.01350	374	863	8,990 *	52.8
Oct.	70,536,000	19,500	5	.02760			13.4	702	13,500 ¤	1.5
Nov.	36,809,000	4,230	4	.01148			2.9	12.6	151	.28
Dec.	46,006,000	20,400	6	.04440			14.0	6.4	48.3	.41
Yearly	1,002,033,000	2,107,387	61	0.2103	2.720		1,450.67	3,722.6	23,869.62	803.27

Samples and analyses by U. S. Section, Method A * Partly estimated ¤ Estimated

Rio Grande at Foster Ranch near Langtry, Texas and Rancho Santa Rosa, Coahuila

Period: 1969-1976

Jan.	59,578,000	2,650	31	0.004440			1.8	7.2	34.9	0.61
Feb.	41,314,000	1,210	29	.002920			.83	4.7	17.8	.57
Mar.	35,446,000	1,250	31	.003520			.86	12.2	49.2	.72
Apr.	32,826,000	3,820	30	.01164			2.6	7.5	22.1	.22
May	69,829,000	145,000	30	.2070	0.8458	0.02250	99.9	54.0	178	.60
June	98,880,000	187,000	30	.1888	1.237	.01690	129	208	657	24.6
July	297,522,000	1,271,000	30	.4272	2.131	.0644	875	532	875	51.0
Aug.	261,454,000	493,000	31	.1885	1.932	.07400	340	588	1,320	21.8
Sept.	195,114,000	696,000	30	.3568	2.388	.1202	479	823	1,660	81.3
Oct.	101,093,000	51,800	31	.05128			35.7	286	1,070	3.5
Nov.	61,313,000	6,820	30	.01112			4.7	18.3	91.6	.76
Dec.	69,084,000	55,400	31	.08016			38.2	8.4	16.1	.62
Yearly	1,323,453,000	2,914,950	364	0.2203	2.388		2,007.59	2,549.3	3,951.48	1,064.4

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

Pecos River near Langtry, Texas

Period: Nov. 1954-1976

Jan.	20,366,000	448	4	0.002200			0.31	0.29	1.1	0.05
Feb.	19,441,000	521	4	.002680			.36	.27	.90	.05
Mar.	18,754,000	458	5	.002440			.32	.28	.79	.05
Apr.	16,931,000	386	4	.002280			.27	9.3	167	.06
May	18,789,000	579	3	.003080			.40	18.9	407	.07
June	13,705,000	285	5	.002080			.20	2.3	41.7	.09
July	104,500,000	124,000	4	.1186			85.4	5.6	85.4	.05
Aug.	39,028,000	984	4	.002520			.68	1.6	23.8	.04
Sept.	36,195,000	898	4	.002480			.62	25.3	359	.09
Oct.	32,143,000	1,050	4	.003280			.73	6.6	59.8	.07
Nov.	35,820,000	645	5	.001800			.44	.42	2.5	.03
Dec.	27,339,000	656	4	.002400			.45	.25	1.1	.05
Yearly	383,011,000	130,910	50	0.03418			90.18	71.11	577.44	1.87

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

Rio Grande below Amistad Dam near Cd. Acuna, Coahuila and Del Rio, Texas

Period: 1968-1976

Jan.	96,815,000	1,160	13	0.001200			0.80	0.62	1.5	0.05
Feb.	176,244,000	2,400	12	.001360			1.7	1.4	2.8	.13
Mar.	225,127,000	2,430	13	.001080			1.7	1.3	5.0	.06
Apr.	120,206,000	1,730	13	.001440			1.2	1.0	2.1	.20
May	235,849,000	3,580	13	.001520			2.5	2.3	4.5	.25
June	106,126,000	1,570	13	.001480			1.1	.98	2.1	.23
July	132,894,000	2,450	12	.001840			1.7	2.7	16.4	.28
Aug.	899,997,000	13,300	13	.001480			9.2	2.7	9.2	.20
Sept.	415,542,000	4,160	12	.001000			2.9	10.1	79.9	.20
Oct.	104,669,000	1,340	12	.001280			.92	2.7	13.7	.05
Nov.	29,493,000	566	13	.001920			.39	1.4	7.5	.05
Dec.	41,855,000	502	9	.001200			.35	.77	2.3	.02
Yearly	2,584,817,000	35,188	148	0.001361			24.46	27.97	114.39	5.01

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

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1976							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

Rio Grande at Nuevo Laredo, Tamaulipas and Laredo, Texas

Period: #1953-1976

Jan.	154,780,000	2,970	31	0.001920			2.0	8.2	28.0	0.93
Feb.	189,298,000	5,380	29	.002840			3.7	18.1	109	.88
Mar.	266,655,000	12,500	31	.004680			8.6	10.7	26.8	.78
Apr.	178,617,000	29,200	30	.01632			20.1	147	1,920	.47
May	397,474,000	111,000	31	.02796			76.4	278	3,540	2.3
June	135,007,000	7,830	30	.005800			5.4	812	12,400	.56
July	1,139,607,000	582,000	31	.05104			401	516	3,440	1.3
Aug.	1,079,528,000	151,000	31	.01400			104	417	1,960	4.2
Sept.	707,120,000	52,000	30	.007360			35.8	920	5,010	9.0
Oct.	327,124,000	28,500	31	.008700			19.6	684	7,520	7.6
Nov.	217,420,000	7,480	30	.003440			5.2	80.8	1,190	1.6
Dec.	187,213,000	5,320	31	.002840			3.7	10.5	67.6	.83
Yearly	4,979,843,000	995,180	366	0.01998			685.5	3,902.3	19,257.72	143.94

Samples by Laredo Water Plant and analyses by U. S. Section, Method C # Some months missing

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

Period: July 1955-1976

Jan.	308,108,000	3,330	13	0.001080			2.3	2.0	6.7	0.14
Feb.	387,800,000	6,200	12	.001600			4.3	2.0	9.1	.06
Mar.	247,813,000	3,770	14	.001520			2.6	1.4	4.3	.15
Apr.	107,337,000	2,190	13	.002040			1.5	3.5	12.6	.25
May	129,928,000	2,910	13	.002240			2.0	4.0	10.5	.19
June	259,620,000	3,950	13	.001520			2.7	3.3	18.7	.21
July	411,079,000	6,410	13	.001560			4.4	1.4	7.8	.12
Aug.	2,009,627,000	47,400	13	.002360			32.6	3.7	32.6	.22
Sept.	380,182,000	7,910	13	.002080			5.4	2.4	12.9	0
Oct.	315,243,000	6,560	12	.002080			4.5	3.8	37.5	.18
Nov.	118,405,000	1,280	13	.001080			.88	1.2	5.5	.02
Dec.	326,738,000	3,920	9	.001200			2.7	1.6	14.7	.11
Yearly	5,001,880,000	95,830	151	0.001916			65.88	30.3	92.15	7.24

Samples and analyses by U. S. Section, Method A ∅ Discharge based on record of total releases from Falcon Reservoir

Río Alamo at Cd. Mier, Tamaulipas

Period: #1934-1976

Jan.	7,319,000	0	0	π 0			0	1.5	21.8	0
Feb.	2,937,000	0	0	π 0			0	2.5	48.6	0
Mar.	4,553,000	0	0	π 0			0	5.6	91.2	0
Apr.	18,254,000	51,500	2	0.282	0.4446	0	35.5	26.0	229	0
May	13,960,000	42,900	7	.307	.6232	.0044	29.5	41.1	281	0
June	12,658,000	40,300	5	.318	.4734	.0903	27.8	64.2	471	0
July	84,597,000	224,000	8	.265	.4046	.0683	154	26.5	213	0
Aug.	16,435,000	2,630	8	.016	.0544	0	1.8	112	1,610	0
Sept.	35,614,000	65,500	7	.184	.2644	0	45.1	208	2,920	0
Oct.	14,094,000	10,600	6	.075	.1607	.0066	7.3	76.6	753	0
Nov.	20,743,000	0	0	π 0			0	2.2	40.7	0
Dec.	17,124,000	0	0	π 0			0	1.3	33.7	0
Yearly	248,288,000	437,430	43	0.1762	0.6232	0	301.0	567.5	3,156.57	11.12

Samples and analyses by Mexican Section, Method B # Some months missing π Estimated

Rio Grande at Rio Grande City, Texas near Camargo, Tamaulipas

Period: May 1959-1976

Jan.	291,871,000	5,250	4	0.001800			3.6	9.3	32.6	0.43
Feb.	404,001,000	5,170	2	.001280			3.6	5.2	13.7	.35
Mar.	272,479,000	5,560	6	.002040			3.8	4.7	26.7	.39
Apr.	118,090,000	11,000	6	.009320			7.6	17.4	51.0	6.0
May	120,192,000	4,470	4	.003720			3.1	46.3	259	3.1
June	279,191,000	51,300	4	.01836			35.3	48.6	94.4	4.7
July	779,832,000	86,400	5	.01108			59.5	26.6	90.9	2.1
Aug.	2,042,245,000	179,000	7	.008760			123	58.8	510	1.2
Sept.	533,663,000	15,200	6	.002840			10.5	140	798	4.8
Oct.	600,195,000	13,200	4	.002200			9.1	65.1	552	2.6
Nov.	264,707,000	18,500	3	.007000			12.7	4.5	12.7	1.0
Dec.	496,866,000	9,540	2	.001920			6.6	3.5	12.1	.41
Yearly	6,203,332,000	404,590	53	0.006522			278.4	430.0	1,691.1	72.12

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

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1976							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

‡ Rio Grande at Los Ebanos, Texas near Cd. Diaz Ordaz, Tamaulipas

Period: May 1956-1976

Jan.	291,371,000	12,800	13	0.004400			8.8	17.7	107	0.50
Feb.	404,001,000	13,400	12	.003320			9.2	7.5	22.5	.68
Mar.	272,479,000	4,900	13	.001800			3.4	7.6	40.2	.65
Apr.	118,090,000	8,120	13	.006880			5.6	53.3	635	3.0
May	120,192,000	8,890	13	.007400			6.1	69.0	289	5.3
June	279,191,000	597,000	13	.02140			411	75.0	411	3.2
July	779,832,000	197,000	13	.02528			136	26.4	136	.74
Aug.	2,042,245,000	77,600	13	.003800			53.4	82.1	1,150	2.0
Sept.	533,663,000	27,500	13	.005160			18.9	108	459	3.5
Oct.	600,195,000	48,300	13	.008040			33.3	46.7	314	3.2
Nov.	264,707,000	8,890	13	.003360			6.1	8.3	75.1	.62
Dec.	496,866,000	15,900	14	.003200			11.0	4.7	16.3	.91
Yearly	6,203,332,000	1,020,300	156	0.01645			702.8	506.3	1,788.7	80.0

Samples and analyses by U. S. Section, Method A ‡ Discharge based on record of flow at Fort Ringgold

Rio Grande below Anzalduas Dam, Texas near Reynosa, Tamaulipas and Mission, Texas

Period: May 1956-1976

Jan.	151,705,000	4,250	31	0.002800			2.9	7.5	49.0	0.51
Feb.	134,760,000	3,070	29	.002280			2.1	2.6	11.9	.24
Mar.	122,213,000	2,250	31	.001840			1.5	3.2	27.3	.25
Apr.	67,516,000	2,030	30	.003000			1.4	32.0	279	1.4
May	95,878,000	2,490	31	.002600			1.7	24.7	79.9	1.4
June	200,922,000	6,590	30	.003280			4.5	41.1	414	1.2
July	757,032,000	210,000	31	.02772			145	33.9	333	.83
Aug.	1,641,569,000	280,000	31	.01704			193	48.7	502	.73
Sept.	467,729,000	67,900	30	.01452			46.8	146	1,480	.59
Oct.	525,037,000	84,200	31	.01604			58.0	93.2	676	.34
Nov.	258,801,000	13,000	30	.005040			9.0	17.5	274	.51
Dec.	578,604,000	20,400	31	.003520			14.0	9.6	135	.41
Yearly	5,001,766,000	696,180	366	0.01392			479.9	460.0	2,541.0	28.37

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

Rio Grande near San Benito, Texas and Ramirez, Tamaulipas

Period: April 1955-1976

Jan.	34,270,000	1,270	4	0.003720			0.87	10.0	121	0.13
Feb.	38,958,000	1,080	4	.002771			.74	7.2	97.8	.15
Mar.	26,445,000	569	4	.002151			.39	3.8	50.6	.11
Apr.	29,439,000	695	4	.002360			.48	5.1	17.9	.11
May	56,736,000	1,960	3	.003454			1.3	21.3	265	2.2
June	34,076,000	2,250	5	.006600			1.5	11.1	39.4	.72
July	608,708,000	440,000	3	.07235			303	22.6	303	.11
Aug.	1,124,096,000	143,000	4	.01272			98.5	17.3	136	.07
Sept.	503,202,000	77,300	1	.01536			53.2	53.2	218	.30
Oct.	499,292,000	41,700	2	.008360			28.7	60.6	636	.25
Nov.	206,840,000	43,200	6	.02088			29.8	19.2	247	.17
Dec.	566,443,000	62,500	6	.01104			43.0	12.9	163	.06
Yearly	3,728,505,000	815,524	46	0.02187			561.48	244.3	894.82	9.54

Sample and analyses by U. S. Section, Method A

Rio Grande near Brownsville, Texas and Matamoros, Tamaulipas

Period: April 1955-1976

Jan.	13,589,000	349	4	0.002570			0.24	5.1	67.4	0.02
Feb.	18,951,000	553	4	.002920			.38	8.5	80.6	.04
Mar.	14,522,000	651	4	.004480			.45	4.5	70.2	.08
Apr.	25,307,000	1,120	5	.004440			.77	3.1	27.7	.04
May	56,146,000	2,350	4	.004177			1.6	7.3	58.5	.28
June	10,772,000	245	5	.002271			.17	9.1	58.4	.17
July	539,397,000	56,100	3	.01040			38.6	25.4	292	.08
Aug.	1,103,610,000	935,000	4	.08470			644	41.9	644	.01
Sept.	533,529,000	211,000	2	.03960			145	55.6	255	0
Oct.	502,069,000	60,200	2	.01200			41.5	57.5	242	.03
Nov.	197,033,000	35,200	6	.01784			24.2	23.4	283	.12
Dec.	580,406,000	77,300	6	.01332			53.2	13.4	142	.02
Yearly	3,595,331,000	1,380,068	49	0.03839			950.11	254.8	1,072.26	1.97

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

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1976

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 the 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. Geological Survey, Water Resources Division, Austin, Texas. All other data were computed by the United States Section of the Commission.

To convert milligram equivalents to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: Ca, 20.04; Mg, 12.16; Na, 22.99; (CO_3 plus HCO_3) expressed as CO_3, 30.00; SO_4, 48.03; Cl, 35.45; NO_3, 62.00. 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 $ECx10^6$ at 25°C, is a relative measure of the total salt concentration.

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	$ECx10^6$ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at American Dam at El Paso, Texas

Sampling by U. S. Section

Jan.	20	1.41	22,000	1,560	0.20	8.0	56	31	4.99	1.81	8.70	4.13	7.08	5.08	0.03
Feb.	19	1.34	19,000	1,450	.16	7.9	54	28	4.99	1.73	7.83	4.30	6.66	4.23	.01
Mar.	18	.93	37,300	1,040	.17	7.5	49	26	4.09	1.32	5.22	3.48	4.37	2.82	.02
Apr.	16	.90	45,000	1,010	.19	7.7	48	23	3.99	1.23	4.78	3.28	4.58	2.37	
May	18	.80	48,000	961	.19	7.7	46	22	3.79	1.23	4.35	3.34	4.16	2.09	.01
June	18	.90	45,600	1,040	.17	7.8	49	22	4.04	1.32	5.22	3.57	4.79	2.40	.01
July	19	.99	48,100	1,110	.24	8.0	50	24	4.29	1.40	5.66	3.67	5.00	2.71	.01
Aug.	18	.94	54,000	1,060	.17	8.0	49	23	4.14	1.32	5.22	3.67	4.58	2.51	.02
Sept.	18	1.25	39,400	1,370	.26	8.1	53	26	4.79	1.65	7.40	4.10	6.25	3.67	.03
Oct.	13	1.84	26,400	2,060	.33	8.2	60	31	5.99	2.55	12.62	4.75	10.20	6.77	.02
Nov.	15	2.00	21,000	2,160	.35	8.1	60	34	5.99	2.63	13.05	4.43	10.41	7.62	.02
Dec.	16	2.08	20,800	2,260	.37	8.0	62	32	6.49	2.63	14.79	4.92	11.04	7.62	.02
Mean ⊕	∅208	1.06	∅ 426,600	1,190	0.21	7.9	50	26	4.36	1.47	5.78	3.70	5.39	3.13	
Period Avg.		1.10	441,000	1,220			52	29	4.39	1.57	6.54	3.54	5.50	3.63	
Tons of Constituents, 1976									47,900	9,790	72,800	60,800	142,000	60,800	
Avg. Tons, Period 1930-1976									48,000	10,400	82,000	57,900	144,000	70,100	

Rio Grande at Fort Quitman, Texas near Colonia Luis Leon, Chihuahua

Sampling by U. S. Section and U. S. Geological Survey

Jan.	31	4.27	16,700	4,710	0.45	8.2	65	55	11.98	5.10	31.76	5.24	17.49	28.21	0.30
Feb.	29	4.87	14,300	5,300	.76	7.9	65	59	13.47	6.25	36.10	4.38	18.32	33.85	.13
Mar.	31	5.16	13,900	5,710	.61	7.6	66	61	13.47	6.42	38.28	4.10	19.57	36.67	.09
Apr.	30	5.85	20,600	6,350	.66	7.9	66	61	14.97	7.08	42.63	4.20	20.82	39.49	
May	31	2.91	56,600	3,400	.38	8.0	62	54	8.98	3.78	20.88	4.20	11.45	18.62	.11
June	30	4.38	32,700	4,840	.55	8.1	64	57	12.48	5.59	32.19	4.52	16.24	28.21	.12
July	31	3.88	48,700	4,300	.54	8.0	65	56	10.48	4.69	27.84	4.26	15.20	24.54	.10
Aug.	31	6.58	18,000	7,080	.74	8.0	63	51	18.46	9.05	47.85	4.06	24.98	45.14	.06
Sept.	30	3.18	33,100	3,480	.42	8.0	63	51	8.98	3.70	21.75	4.52	13.32	18.62	.14
Oct.	31	4.05	36,100	4,450	.51	8.3	61	53	12.97	4.77	28.28	5.57	16.03	24.26	.19
Nov.	30	3.55	40,200	3,860	.45	7.9	62	52	11.48	4.20	26.10	5.24	13.95	21.44	.38
Dec.	31	3.48	37,400	3,800	.44	8.3	63	51	10.98	4.03	25.23	5.08	13.53	20.03	.42
Mean ⊕	∅366	3.81	∅ 368,300	4,220	0.49	8.0	63	55	11.20	4.67	27.47	4.67	14.86	24.00	0.20
Period Avg.		2.55	311,000	2,370			61	55	8.09	3.29	18.08	3.72	9.46	16.42	
Tons of Constituents, 1976									29,500	7,460	83,000	18,400	93,300	112,000	
Avg. Tons, Period 1930-1976									26,900	6,640	69,000	18,500	75,400	96,600	

** Percent of total cations *** Percent of total anions ⊕ Weighted mean ∅ Total

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1976

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Rio Grande above Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua															
Sampling by U. S. Section															
Jan.	3	4.08	14,700	4,560		8.2	66		10.48	4.85	30.02	4.52		27.65	
Feb.	4	4.94	12,400	5,330		7.6	67		12.48	5.76	36.98	4.46		31.03	
Mar.	5	4.39	3,570	4,730	0.64	8.0	65	55	11.98	5.68	32.19	4.03	19.16	28.21	0.02
Apr.	5	3.11	1,130	3,490		8.0	63		8.98	3.78	22.18	3.34		18.34	
May	4	2.69	4,060	3,120		7.9	64		7.98	3.21	19.53	3.48		15.52	
June	5	2.00	3,320	2,330		7.9	64		5.99	2.14	14.36	3.15		11.00	
July	8	1.16	8,250	1,300		7.9	52		4.99	.99	6.52	2.62		4.23	
Aug.	5	1.51	8,720	1,750		8.1	61		4.99	1.48	10.00	2.95		7.34	
Sept.	5	1.84	14,700	2,050	.32	8.2	61	47	5.99	1.73	12.18	2.79	8.12	9.59	.02
Oct.	5	3.02	25,200	3,460		8.2	67		8.48	3.37	23.92	3.44		18.06	
Nov.	5	3.42	27,500	3,780		8.0	67		9.48	4.03	26.97	3.93		21.44	
Dec.	6	3.37	32,500	3,870		8.3	64		10.48	4.11	26.10	4.59		21.44	
Mean ⊕	∅60	2.72	∅ 156,050	3,070		8.1	64		8.09	3.07	20.19	3.57		16.17	
Period Avg.		1.91	195,000	2,150			59		# 8.86		12.85	3.15		11.00	
Tons of Constituents, 1976									12,700	2,910	36,200	8,360		44,800	
Avg. Tons, Period 1935-1976											41,000	13,100		54,100	
Rio Conchos near Ojinaga, Chihuahua															
Sampling by Mexican Section															
Jan.	13	1.22	25,800	1,310		8.0	54		4.64	1.32	6.96	3.48		2.37	
Feb.	12	1.39	13,500	1,470		7.5	56		4.99	1.48	8.26	3.41		3.39	
Mar.	14	1.41	13,000	1,510	0.38	8.1	55	22	5.49	1.56	8.70	3.48	8.54	3.39	0.04
Apr.	12	1.47	8,180	1,570		8.0	55		5.49	1.56	8.70	3.41		3.67	
May	12	1.21	23,700	1,300		7.7	47		5.49	1.32	6.09	3.08		2.17	
June	13	1.13	81,100	1,180		7.7	52		4.29	1.23	6.09	3.02		1.52	
July	13	1.08	167,000	1,100		7.8	47		4.79	1.07	5.22	2.56		1.52	
Aug.	13	.98	158,000	1,020		7.9	52		3.79	.99	5.22	2.82		1.18	
Sept.	13	.97	77,500	1,010	.27	8.0	52	12	3.99	.90	5.22	3.02	6.04	1.27	.04
Oct.	9	1.06	34,100	1,140		8.2	54		4.19	1.07	6.09	2.79		1.92	
Nov.	10	1.35	20,000	1,410		8.0	57		4.69	1.48	8.26	2.95		3.10	
Dec.	9	1.21	23,600	1,280		8.2	51		4.94	1.32	6.52	3.12		2.74	
Mean ⊕	∅143	1.08	∅ 645,480	1,120		7.9	51		4.36	1.10	5.71	2.87		1.62	
Period Avg.		0.77	575,000	814			42		# 4.80		3.50	2.72		1.18	
Tons of Constituents, 1976									71,200	10,900	107,000	70,200		46,800	
Avg. Tons, Period 1935-1976											81,600	82,900		42,500	
Rio Grande at Johnson Ranch near Castolon, Texas and Santa Elena, Chihuahua															
Sampling by U. S. Section															
Jan.	4	1.65	42,900	1,800		7.9	56		5.99	1.89	10.00	3.54		5.36	
Feb.	4	2.04	27,700	2,130		7.6	57		6.99	2.22	12.13	3.34		7.62	
Mar.	5	1.96	19,700	2,070	0.45	7.9	56	29	6.99	2.14	11.74	3.21	12.08	6.21	0.02
Apr.	6	1.94	11,200	1,990		7.9	55		6.99	2.06	10.88	2.92		5.36	
May	4	1.36	31,300	1,470		7.8	50		5.99	1.40	7.40	2.82		3.10	
June	5	1.18	83,200	1,250		8.0	54		4.69	1.15	6.96	3.15		1.92	
July	7	1.03	200,000	1,050		7.8	42		4.99	.90	4.35	3.21		1.07	
Aug.	5	1.06	184,000	1,100		8.2	52		4.34	.99	5.66	3.08		1.55	
Sept.	6	1.07	115,000	1,110	.28	7.7	48	16	4.79	.90	5.22	3.15	6.25	1.86	.06
Oct.	5	1.40	72,700	1,520		8.0	55		5.49	1.40	8.26	3.28		4.23	
Nov.	4	1.96	53,100	2,080		7.9	59		6.49	2.14	12.18	3.28		8.18	
Dec.	6	1.88	63,600	2,040		8.1	57		6.99	2.06	12.18	3.44		7.90	
Mean ⊕	∅61	1.23	∅ 904,400	1,290		7.9	51		5.11	1.18	6.55	3.18		2.62	
Period Avg.		0.96	687,000	1,010			45		# 5.75		4.66	2.92		1.74	
Tons of Constituents, 1976									103,000	14,400	151,000	95,700		93,200	
Avg. Tons, Period 1948-1976											104,000	85,000		59,700	

** Percent of total cations *** Percent of total anions ⊕ Weighted mean ∅ Total

Sum of calcium and magnesium

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1976

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at Foster Ranch near Langtry, Texas and Rancho Santa Rosa, Coahuila

Sampling by U. S. Section and U. S. Geological Survey

Jan.	31	1.24	54,400	1,340	0.24	7.9	53	27	4.24	1.81	6.96	2.88	6.87	3.67	0.07
Feb.	29	1.16	35,300	1,300	.23	7.9	51	27	4.39	1.89	6.52	2.66	7.08	3.67	.07
Mar.	31	1.12	29,200	1,240	.27	7.9	50	27	4.14	1.98	6.09	2.85	6.25	3.39	.07
Apr.	30	.92	22,200	1,000	.24	8.0	44	21	3.99	1.65	4.35	2.95	5.20	2.20	
May	30	.79	40,600	902	.20	7.9	38	16	4.49	1.23	3.44	2.95	4.58	1.50	.09
June	30	1.06	77,100	1,110	.28	7.8	51	16	4.24	1.23	5.66	2.88	6.46	1.81	.07
July	30	.94	206,000	987	.19	7.9	45	11	4.59	.82	4.35	2.88	5.83	1.04	.11
Aug.	31	.97	187,000	1,040	.27	7.8	50	13	4.24	.99	5.22	2.88	6.25	1.36	.08
Sept.	30	.89	128,000	935	.22	8.0	46	14	3.99	.82	4.13	2.82	5.20	1.30	.09
Oct.	31	1.09	81,100	1,210	.24	8.3	52	25	4.29	1.40	6.09	2.95	6.04	3.10	.07
Nov.	30	1.43	64,500	1,540	.29	7.9	56	35	4.74	1.98	8.70	2.79	7.29	5.36	.05
Dec.	31	1.37	69,600	1,550	.25	8.1	55	33	4.84	1.89	8.26	2.95	7.29	5.08	.06
Mean ⊕	∅364	1.02	∅ 995,000	1,080	0.24	7.9	49	19	4.35	1.19	5.31	2.87	6.04	2.08	
Period Avg.		0.89	990,000	957			43	16	4.50	1.03	4.21	3.14	5.16	1.53	
Tons of Constituents, 1976									115,000	19,200	162,000	114,000	384,000	97,700	
Avg. Tons, Period 1968-1976									136,000	18,900	146,000	142,000	374,000	81,900	

Pecos River near Langtry, Texas

Sampling by U. S. Section

Jan.	4	3.35	50,200	3,650	0.20	7.9	60	64	7.98	6.34	21.75	3.21	9.37	22.85	0.12
Feb.	4	4.16	59,500	4,530	.26	7.6	62	66	9.48	8.14	28.71	3.15	12.49	31.03	.09
Mar.	5	3.69	50,000	4,080	.28	7.7	62	66	8.48	6.99	25.66	2.95	11.66	28.21	.09
Apr.	4	3.32	41,400	3,690	.29	7.5	61	66	7.98	6.34	22.62	2.66	9.79	24.26	
May	3	2.48	34,300	3,060	.25	7.7	60	64	6.49	5.35	17.84	2.62	8.12	18.90	.07
June	5	2.57	25,900	2,900	.28	7.6	61	65	5.99	4.94	17.40	2.43	7.29	18.06	.05
July	4	.65	50,000	718	.07	7.5	37	39	3.64	.90	2.70	3.08	1.23	2.82	.01
Aug.	4	1.62	46,500	1,970	.21	7.7	55	57	4.99	3.46	10.44	3.12	5.00	11.00	.14
Sept.	4	2.09	55,700	2,430	.25	8.2	59	61	5.49	4.03	13.48	2.95	6.46	14.67	.12
Oct.	4	1.97	46,600	2,310	.19	8.1	58	60	5.49	4.03	13.05	3.12	5.83	13.54	.13
Nov.	5	2.00	52,700	2,210	.18	8.0	57	60	5.49	3.70	12.13	3.28	5.41	13.26	.14
Dec.	4	2.67	53,700	3,050	.20	8.1	60	62	6.99	5.35	18.27	3.28	7.91	18.62	.14
Mean ⊕	∅50	2.01	∅ 567,400	2,290	0.18	7.8	58	61	5.70	3.86	12.98	3.05	5.81	13.80	
Period Avg.		1.94	459,000	2,250			57	61	5.81	3.75	12.60	2.72	6.05	13.56	
Tons of Constituents, 1976									43,800	18,000	114,000	35,100	107,000	188,000	
Avg. Tons, Period 1955-1976									37,500	14,700	93,400	26,300	93,700	155,000	

Rio Grande below Amistad Dam near Cd. Acuna, Coahuila and Del Rio, Texas

Sampling by U. S. Section

Jan.	13	0.89	63,400	1,050	0.14	7.7	50	35	3.69	1.48	5.22	2.49	4.16	3.67	0.03
Feb.	12	.92	119,000	1,050	.17	7.7	50	35	3.84	1.48	5.22	2.59	4.16	3.67	.01
Mar.	13	.92	152,000	1,060	.17	7.7	50	35	3.69	1.56	5.22	2.59	4.16	3.67	.01
Apr.	13	.97	85,800	1,110	.21	7.8	48	35	3.99	1.56	5.22	2.66	4.58	3.95	
May	13	.91	158,000	1,090	.16	7.8	50	36	3.69	1.56	5.22	2.56	4.37	3.95	0
June	13	.95	74,200	1,110	.26	7.7	49	37	3.79	1.65	5.22	2.56	4.16	3.95	.01
July	12	.94	91,900	1,080	.19	7.7	50	37	3.64	1.65	5.22	2.43	4.16	3.95	.03
Aug.	13	.86	570,000	1,010	.16	7.7	49	35	3.49	1.48	4.78	2.36	3.96	3.39	.01
Sept.	12	.85	260,000	1,000	.22	8.2	50	35	3.34	1.48	4.78	2.36	3.96	3.39	.01
Oct.	12	.85	65,500	1,010	.16	7.9	50	34	3.39	1.48	4.78	2.46	3.96	3.39	.02
Nov.	13	.91	19,700	1,020	.19	7.7	48	36	3.79	1.48	4.78	2.62	3.96	3.67	0
Dec.	9	.88	27,100	1,020	.15	8.0	48	36	3.74	1.48	4.78	2.62	3.96	3.67	.02
Mean ⊕	∅148	0.89	∅1,686,600	1,040	0.18	7.8	49	35	3.58	1.51	4.97	2.46	4.08	3.58	
Period Avg.		0.80	1,181,000	922			46	29	3.59	1.26	4.16	2.56	3.89	2.66	
Tons of Constituents, 1976									186,000	47,500	296,000	191,000	507,000	328,000	
Avg. Tons, Period 1969-1976									145,000	30,800	193,000	155,000	377,000	190,000	

** Percent of total cations *** Percent of total anions ⊕ Weighted mean ∅ Total

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1976

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	EC x 10^6 @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Rio Grande at Nuevo Laredo, Tamaulipas and Laredo, Texas															
Sampling by Laredo Water Plant															
Jan.	31	0.82	93,400	963		7.8	44		3.79	1.56	4.26	2.56		2.82	
Feb.	29	.92	128,000	1,040		8.0	47		3.74	1.56	4.78	2.56		3.67	
Mar.	31	.95	186,000	1,090	0.19	7.9	48	33	4.04	1.56	5.22	2.69	4.58	3.67	0.04
Apr.	30	.92	121,000	1,050		7.8	45		4.29	1.56	4.78	2.67		3.39	
May	31	.78	228,000	940		7.7	44		3.54	1.40	3.87	2.43		3.10	
June	30	.98	97,400	1,120		7.8	48		3.89	1.81	5.22	2.36		3.67	
July	31	.47	394,000	511		7.9	28		2.94	.68	1.39	2.56		1.13	
Aug.	31	.75	596,000	869		7.8	43		3.49	1.32	3.61	2.46		2.76	
Sept.	30	.80	416,000	897	.18	8.0	44	32	3.34	1.32	3.70	2.56	3.33	2.82	.02
Oct.	31	.65	156,000	778		8.0	41		3.24	1.15	3.04	2.62		2.23	
Nov.	30	.68	109,000	760		8.0	36		3.54	1.23	2.70	2.62		2.26	
Dec.	31	.74	102,000	810		8.2	37		3.74	1.40	3.04	2.62		2.34	
Mean ⊕	∅306	0.72	∅2,626,800	818		7.9	41		3.43	1.22	3.27	2.54		2.48	
Period Avg.		0.69	1,562,000	781			41		# 4.53		3.16	2.53		2.16	
Tons of Constituents, 1976									343,000	73,900	375,000	380,000		438,000	
Avg. Tons, Period 1956-1976											225,000	235,000		237,000	
Río Salado near Las Tortillas, Tamaulipas															
Sampling by Mexican Section															
Jan.	1	2.62	23,800	2,540		8.2	42		9.93	6.34	11.74	3.80		7.34	
Feb.	1	3.35	18,900	3,070		8.0	42		12.07	7.98	14.79	3.61		9.87	
Mar.	1	3.94	25,500	3,600	0.23	7.8	43	27	14.47	9.05	17.34	3.21	27.07	11.57	0.28
Apr.	1	4.27	67,700	3,810		7.7	45		13.97	9.87	19.14	2.36		10.44	
May	1	1.40	16,600	1,640		7.6	48		5.99	2.55	7.33	2.43		6.21	
June	1	2.45	11,000	2,490		7.8	48		7.98	5.35	12.18	2.16		9.02	
July	1	.90	172,000	957		8.0	33		4.94	1.65	3.22	3.74		2.23	
Aug. ‖	0	.80	168,000	700			36		3.72	1.50	2.93	3.40		2.03	
Sept.	1	.84	105,000	761	.20	8.0	30	17	3.69	1.65	2.26	2.75	3.75	1.36	.02
Oct. ‖	0	.95	83,900	800			30		4.96	2.22	3.04	3.70		1.83	
Nov.	1	.70	84,400	723		8.1	28		3.79	1.43	2.09	2.46		1.38	
Dec.	1	.79	102,000	796		8.2	32		3.79	1.65	2.52	2.62		1.69	
Mean ⊕	∅10	0.96	∅ 883,800	915			34		4.53	1.96	3.39	3.15		2.23	
Period Avg.		1.04	390,000	1,050			38		# 7.03		4.27	2.56		2.37	
Tons of Constituents, 1976									114,000	29,900	97,900	119,000		99,300	
Avg. Tons, Period 1955-1976											49,900	39,000		51,700	
‡ Rio Grande below Falcon Dam, Texas–U. S. Tailrace															
Sampling by U. S. Section															
Jan.	13	0.81	184,000	944	0.19	7.8	46	30	3.44	1.40	4.13	2.30	4.16	2.82	0.01
Feb.	12	.86	245,000	951	.18	7.7	46	30	3.49	1.43	4.31	2.33	4.16	2.82	0
Mar.	14	.87	159,000	979	.20	7.8	46	32	3.54	1.48	4.35	2.39	4.16	3.10	0
Apr.	13	.87	68,700	999	.24	7.7	45	31	3.74	1.56	4.35	2.43	4.37	3.10	
May	13	.83	79,300	1,010	.25	7.8	45	32	3.59	1.65	4.35	2.36	4.37	3.10	.01
June	13	.89	170,000	1,020	.24	7.9	47	31	3.64	1.65	4.78	2.43	4.37	3.10	.01
July	13	.90	272,000	1,030	.19	7.8	48	33	3.59	1.65	4.78	2.23	4.58	3.39	0
Aug.	13	.82	1,213,000	938	.20	7.7	45	31	3.39	1.56	4.00	2.23	3.96	2.82	.01
Sept.	13	.75	210,000	846	.22	7.7	43	31	3.14	1.32	3.31	2.30	3.33	2.54	.01
Oct.	12	.72	167,000	848	.16	7.9	45	31	3.24	1.40	3.70	2.30	3.33	2.57	0
Nov.	13	.80	69,700	852	.17	7.9	42	32	3.34	1.40	3.48	2.30	3.33	2.62	.01
Dec.	9	.74	178,000	845	.17	8.0	43	31	3.24	1.32	3.48	2.30	3.33	2.54	.01
Mean ⊕	∅151	0.82	∅3,015,700	936	0.20	7.8	45	31	3.40	1.51	4.05	2.28	3.95	2.85	
Period Avg.		0.73	1,081,000	841			43	30	3.36	1.28	3.55	2.28	3.55	2.44	
Tons of Constitutents, 1976									341,000	91,900	466,000	342,000	950,000	506,000	
Avg. Tons, Period 1956-1976									212,000	49,200	257,000	226,000	533,000	273,000	

** Percent of total cations *** Percent of total anions ⊕ Weighted mean ∅ Total
# Sum of calcium and magnesium ‡ Tonnage figures based on total release from reservoir
‖ Estimated

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1976

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at Rio Grande City, Texas near Camargo, Tamaulipas

Sampling by U. S. Section

Jan.	4	0.82	176,000	967	0.13	7.8	45	30	3.59	1.40	4.13	2.43	4.16	2.82	0
Feb.	2	.90	268,000	992	.20	8.0	46	32	3.64	1.48	4.31	2.43	4.16	3.10	0
Mar.	6	.88	176,000	1,010	.20	7.8	48	32	3.69	1.48	4.78	2.39	4.79	3.39	0
Apr.	6	.92	79,900	1,050	.30	8.0	46	32	3.99	1.56	4.78	2.75	4.37	3.39	
May	4	.88	77,800	1,070	.26	7.9	47	33	3.69	1.65	4.78	2.36	4.37	3.39	0
June	4	.93	191,000	1,040	.10	8.0	46	33	3.89	1.65	4.78	2.59	4.37	3.39	
July	5	.85	488,000	972	.19	8.1	44	33	3.69	1.65	4.13	2.36	3.96	3.10	0
Aug.	7	.81	1,217,000	926	.19	7.8	45	31	3.44	1.48	4.00	2.26	3.96	2.82	.01
Sept.	6	.79	310,000	884	.26	7.9	44	31	3.24	1.40	3.70	2.36	3.54	2.71	.02
Oct.	4	.74	327,000	863	.18	8.0	45	31	3.09	1.40	3.70	2.30	3.54	2.65	.01
Nov.	3	.79	154,000	953	.23	7.9	43	33	3.74	1.56	3.92	2.46	3.75	3.10	.02
Dec.	2	.77	232,000	869	.20	7.9	42	31	3.39	1.40	3.48	2.30	3.54	2.60	.02
Mean ⊕	ø53	0.82	ø3,746,700	939	0.20	7.9	45	32	3.50	1.49	4.04	2.35	3.93	2.91	
Period Avg.		0.75	2,152,000	870			44	30	3.47	1.28	3.72	2.33	3.61	2.61	
Tons of Constituents, 1976									435,000	112,000	577,000	438,000	1,172,000	641,000	
Avg. Tons, Period 1959-1976									271,000	60,800	334,000	278,000	676,000	361,000	

Morillo Drain in Mexico, 8.4 River Miles above Anzaldúas Dam

Sampling by Mexican Section

Jan.		No	Flow												
Feb.		No	Flow												
Mar.		No	Flow												
Apr.	3	7.86	3,790	8,720	1.9	7.5	74	60	14.97	9.87	69.60	4.72	33.31	56.42	
May	4	6.68	15,400	7,180	2.3	7.8	71	59	13.47	8.23	52.20	4.39	24.98	42.32	0.08
June	4	6.43	1,950	9,100	2.0	7.9	74	64	14.97	10.69	73.95	4.20	31.23	62.06	.10
July	3	8.95	9,310	9,550	2.0	7.4	74	62	16.47	10.69	78.30	4.66	35.39	64.88	.08
Aug. ‡	0	8.95	25,300	9,550	2.0	7.4	74	62	16.47	10.69	78.30	4.66	35.39	64.88	.08
Sept.	2	6.88	7,950	7,310	.84	7.9	72	61	12.48	9.05	56.55	3.74	27.07	47.96	.09
Oct.	31	6.72	13,600	8,210	4.0	8.2	72	63	14.97	9.87	65.25	3.61	29.15	56.42	.10
Nov.	30	7.82	1,610	8,650	1.8	8.1	73	66	15.47	10.69	69.60	3.61	29.15	64.88	.10
Dec.	31	10.40	193	10,480	1.9	7.9	74	67	17.46	13.16	87.00	2.74	35.39	76.17	.12
Mean ⊕	ø108	7.63	ø † 79,103	8,440	2.3	7.7	75	62	14.93	9.77	74.68	4.26	30.58	55.86	
Period Avg.		5.05	168,000	5,470			72	62	10.04	6.12	41.77	3.08	18.67	35.99	
Tons of Constituents, 1976 *									4,220	1,670	24,200	1,800	20,700	27,900	
Avg. Tons, Period 1970-1976									9,110	3,370	43,500	4,180	40,600	57,800	

Rio Grande below Anzalduas Dam near Reynosa, Tamaulipas and Mission, Texas

Sampling by U. S. Section

Jan.	31	0.98	109,000	1,140	0.24	7.8	51	37	3.84	1.65	5.66	2.43	4.79	4.23	0.02
Feb.	29	.98	97,200	1,070	.18	7.7	50	34	3.74	1.56	5.22	2.49	4.79	3.67	
Mar.	31	1.00	89,900	1,150	.28	7.9	50	34	3.94	1.73	5.66	2.49	5.00	3.95	.02
Apr.	30	1.31	65,100	1,470	.54	7.9	54	44	4.59	2.14	7.83	2.62	5.20	6.21	
May	31	1.25	88,200	1,490	.50	7.8	56	38	4.49	2.06	8.26	2.56	6.46	5.64	.02
June	30	1.06	157,000	1,210	.22	7.8	51	36	4.04	1.81	6.09	2.56	5.00	4.23	.01
July	31	.85	473,000	967	.21	7.8	45	33	3.64	1.65	4.35	2.30	3.86	3.10	.02
Aug.	31	.89	1,075,000	986	.21	7.3	45	32	3.69	1.56	4.35	2.43	4.16	3.10	.01
Sept.	30	.83	286,000	935	.24	7.8	48	33	3.39	1.40	4.35	2.46	3.75	3.10	.02
Oct.	31	.83	321,000	956	.22	8.0	46	36	3.49	1.56	4.35	2.30	3.75	3.39	.01
Nov.	30	1.01	192,000	1,130	.27	7.8	47	38	4.04	1.81	5.22	2.62	4.37	4.23	.04
Dec.	31	.82	349,000	936	.20	8.0	43	33	3.59	1.56	3.92	2.46	3.75	3.10	.02
Mean ⊕	ø366	0.90	ø3,302,400	1,010	0.23	7.8	47	34	3.69	1.61	4.63	2.43	4.16	3.40	
Period Avg.		0.91	1,694,000	1,070			49	38	3.78	1.50	5.12	2.41	4.11	4.00	
Tons of Constituents, 1976									370,000	98,000	533,000	365,000	1,000,000	603,000	
Avg. Tons, Period 1959-1976									191,000	46,000	297,000	182,000	498,000	357,000	

** Percent of total cations *** Percent of total anions ‡ Estimated ⊕ Weighted mean
ø Total † An additional 384,700 tons pumped to the gulf * Return to the Rio Grande, excluding storm runoff

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1976

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

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

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

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

Rio Grande at American Dam at El Paso, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		May		June		August		September		November	
5	2,290	11	1,740	26	984	11	1,050	25	974	5	1,070	20	1,730	10	2,150
6	2,300	12	1,670	29	896	12	1,140	28	993	6	1,060	21	1,730	11	2,180
7	2,260	13	1,630	30	894	13	1,140	29	993	9	990	22	1,620	15	2,080
8	2,330	17	1,610	31	883	17	915	30	1,000	10	1,040	23	1,510	16	2,120
9	2,350	18	1,450	April		18	960	July		11	1,030	27	1,350	18	2,190
12	2,260	19	1,600	1	979	20	895	1	992	12	1,030	28	1,340	19	2,160
13	2,330	20	1,820	5	952	21	895	6	966	13	1,030	29	1,500	22	2,120
14	2,330	23	1,460	6	1,050	24	894	7	966	16	1,030	30	1,500	23	2,210
15	2,320	24	1,580	7	1,050	25	936	8	965	17	952	October		24	2,100
16	2,310	25	1,490	8	1,050	26	925	9	977	19	1,040	1	1,680	29	2,260
19	2,150	26	1,590	12	1,010	27	954	12	964	20	1,040	4	1,890	30	2,310
20	2,150	27	1,700	13	984	28	922	13	998	24	1,160	5	1,900	December	
21	1,120	March		14	951	June		14	1,040	25	1,190	6	1,900	2	2,230
22	1,020	1	1,600	15	953	1	924	15	1,040	26	1,190	7	2,100	3	2,230
23	978	2	1,540	19	1,000	2	988	16	1,040	30	1,000	12	2,050	6	2,200
26	1,170	3	1,430	20	1,030	3	988	17	1,210	31	970	13	2,100	7	2,270
27	1,200	4	1,470	21	1,240	7	996	20	1,290	September		14	2,020	8	2,240
28	1,230	5	1,300	22	1,220	8	993	21	1,200	2	1,130	21	2,170	9	2,210
29	1,130	8	1,300	26	967	9	1,120	22	1,350	3	1,280	22	2,200	10	2,250
30	1,180	9	1,170	28	950	10	1,120	23	1,450	7	1,020	27	2,170	13	2,240
February		15	1,080	30	995	11	1,140	26	1,220	8	1,220	28	2,180	14	2,290
2	1,010	16	997	May		14	1,180	27	1,210	9	1,220	29	2,160	16	2,260
3	1,070	17	989	3	904	15	1,080	28	1,450	13	1,790	November		17	2,270
4	1,190	18	1,110	4	894	16	1,150	30	1,170	14	1,890	4	2,130	20	2,290
5	1,420	19	1,080	5	1,000	21	1,000	August		15	1,950	5	2,170	21	2,310
6	1,470	22	891	6	1,000	22	991	2	1,160	16	1,910	8	2,160	22	2,290
9	1,540	23	892	7	1,000	24	1,080	3	1,150	17	1,690	9	2,170	27	2,310
10	1,630	24	882	10	1,040									28	2,250

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

Rio Grande at Fort Quitman, Texas near Colonia Luis Leon, Chihuahua

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
1	4,010	16	5,030	1	3,490	16	4,820	1	7,960	16	8,490	1	6,320	16	3,600
2	4,150	17	5,560	2	4,740	17	4,850	2	8,290	17	8,850	2	5,330	17	3,500
3	4,120	18	6,090	3	5,310	18	4,970	3	7,830	18	8,390	3	5,130	18	3,280
4	3,970	19	7,250	4	6,380	19	2,110	4	7,310	19	8,240	4	4,080	19	3,480
5	4,020	20	7,250	5	5,880	20	2,100	5	6,950	20	8,660	5	4,190	20	3,550
6	* 4,190	21	7,570	6	5,090	21	* 2,880	6	6,510	21	7,810	6	4,490	21	3,600
6	4,160	22	7,500	7	5,640	21	3,010	7	6,510	22	8,670	7	4,290	22	3,900
7	4,270	23	7,830	8	6,840	22	4,100	8	8,540	23	3,920	8	* 4,740	23	4,070
8	4,360	24	8,120	9	* 6,730	23	5,360	9	8,230	24	4,610	8	4,710	24	3,970
9	4,160	25	7,980	9	6,750	24	3,680	10	7,870	25	6,420	9	5,000	25	3,860
10	4,780	26	7,560	10	7,490	25	3,630	11	6,580	26	7,150	10	4,380	26	4,040
11	4,870	27	7,580	11	7,170	26	4,420	12	* 6,240	27	7,860	11	4,150	27	3,990
12	5,170	28	8,110	12	6,960	27	5,950	12	6,560	28	8,360	12	4,620	28	3,900
13	5,430	29	8,650	13	7,570	28	6,810	13	6,230	29	8,290	13	4,750	29	3,890
14	5,330	March		14	7,740	29	6,760	14	5,910	30	6,430	14	4,460	30	3,850
15	5,550	1	7,440	15	7,410	30	3,810	15	1,290	31	8,640	15	4,650	December	
16	5,400	2	7,490	16	6,500	31	3,800	16	3.720	September		16	4,710	1	* 3,690
17	5,560	3	7,880	17	6,520	June		17	3,370	1	8,890	17	4,720	1	3,640
18	5,710	4	8,120	18	7,370	1	4,060	18	2,840	2	7,500	18	4,380	2	3,380
19	5,540	5	* 8,270	19	5,480	2	4,430	19	2.840	3	7,430	19	4,510	3	3,670
20	5,360	5	8,190	20	4,620	3	5,570	20	3.740	4	4,590	20	4,420	4	3,590
21	5,670	6	9,030	21	6,200	4	* 5,290	21	4,550	5	4,550	21	4,430	5	3,190
22	5,830	7	8,950	22	7,740	4	5,230	22	3,770	6	3,270	22	4,550	6	3,300
23	5,230	8	9,030	23	8,260	5	6,120	23	1,710	7	2,410	23	4,440	7	3,430
24	5,350	9	8,920	24	8,420	6	2,610	24	3,840	8	2,470	24	4,300	8	4,290
25	5,240	10	8,920	25	7,650	7	2,580	25	4,300	9	2,550	25	4,300	9	4,210
26	4,050	11	9,310	26	8,510	8	2,940	26	5,380	10	* 2,790	26	4,660	10	4,220
27	4,510	12	9,310	27	8,560	9	3,190	27	5,400	10	3,030	27	4,830	11	3,670
28	5,460	13	9,310	28	8,030	10	4,550	28	4,800	11	3,130	28	4,500	12	3,380
29	5,470	14	7,910	29	8,630	11	4,570	29	4,650	12	3,300	29	4,180	13	3,910
30	6,850	15	8,420	30	5,080	12	4,570	30	5,300	13	3,710	30	3,810	14	3,530
31	6,880	16	8,640	May		13	4,590	31	6,210	14	4,560	31	3,520	15	3,910
February		17	8,640	1	6,770	14	6,040	August		15	3,010	November		16	3,820
1	7,060	18	7,410	2	6,730	15	5,830	1	6,560	16	3,670	1	3,600	17	3,780
2	6,420	19	8,280	3	4,750	16	6,690	2	5,990	17	3,090	2	3,630	18	3,900
3	6,620	20	8,550	4	4,710	17	6,470	3	5,250	18	4,830	3	3,990	19	3,710
4	3,020	21	8,350	5	1,870	18	6,170	4	5,620	19	4,860	4	4,400	20	3,900
5	2,990	22	8,480	6	2,030	19	7,160	5	* 5,690	20	4,830	5	4,070	21	4,060
6	3,310	23	8,420	7	* 1,930	20	7,200	5	5,680	21	5,050	6	4,220	22	3,970
7	3,630	24	8,170	7	2,190	21	8,210	6	7,180	22	5,790	7	4,040	23	3,990
8	4,350	25	7,370	8	2,100	22	8,520	7	7,680	23	5,780	8	4,020	24	4,080
9	* 4,750	26	7,980	9	2,300	23	8,570	8	6,570	24	6,540	9	4,010	25	4,080
9	5,020	27	7,570	10	2,310	24	8,200	9	6,540	25	6,370	10	* 4,070	26	3,920
10	4,780	28	5,840	11	2,800	25	8,400	10	8,410	26	6,510	10	4,120	27	3,920
11	4,430	29	2,090	12	4,570	26	8,210	11	8,470	27	5,890	11	4,100	28	3,980
12	4,710	30	2,340	13	4,610	27	7,190	12	8.830	28	5,860	12	4,310	29	4,110
13	5,160	31	2,160	14	4,820	28	7,380	13	8.980	29	6,200	13	3,990	30	3,860
14	5,320			15	5,390	29	8,230	14	8.980	30	6,250	14	3,990	31	4,080
15	5,320					30	7,460	15	8.660			15	3,670		

Sampling by U. S. Geological Survey except those marked with * which were by the U. S. Section

Rio Grande near Candelaria, Texas and San Antonio del Bravo, Chihuahua

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		March		May		June		August		September		October		December	
2	3,780	3	6,330	4	5,430	16	3,080	3	1,270	15	2,410	6	5,630	1	3,950
21	4,870	17	6,800	11	4,030	July		16	4,200	20	2,850	18	3,940	6	3,900
February		April		12	2,820	1	802	24	4,100	23	3,040	November		17	3,390
3	4,920	1	7,330	18	2,820	14	2,120	September		29	1,750	1	4,510	23	3,850
18	4,760	7	2,920	June		21	3,200	2	3,740	October		15	4,020	29	3,960
25	5,010	20	6,520	2	4,630			9	1,180	1	4,250	23	3,280		

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

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

Rio Grande above Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		March		April		June		July		August		October		November	
5	4,680	1	5,620	12	3,840	1	4,210	13	975	16	1,710	1	2,720	22	3,990
19	4,350	8	6,030	19	4,270	7	1,090	15	977	23	1,950	4	2,270	29	4,000
26	4,780	16	6,940	30	3,180	14	2,710	19	1,030	30	1,060	12	4,380	December	
February		22	4,420	May		21	3,070	26	1,450	September		18	3,800	1	3,920
2	5,510	29	2,460	3	1,850	27	1,720	30	1,880	1	1,200	26	4,010	6	3,970
9	5,570	April		10	1,540	July		August		7	1,130	November		13	2,990
17	5,220	1	1,750	17	3,230	1	1,350	2	1,930	13	1,870	1	4,490	15	3,890
23	5,120	5	2,870	24	3,170	6	1,370	9	1,680	20	1,770	8	3,050	27	3,990
						12	1,190			27	2,670	15	3,920		

Sampling by U. S. Section

Rio Conchos near Ojinaga, Chihuahua

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		May		June		August		September		November	
2	1,310	16	1,480	31	1,540	17	1,160	30	1,150	6	1,110	17	1,010	3	1,470
5	1,240	18	1,500	April		19	1,330	July		9	1,120	20	992	5	1,470
7	1,320	20	1,480	2	1,580	21	1,200	2	1,190	11	1,070	22	1,010	8	1,390
9	1,320	23	1,450	5	1,570	24	1,030	5	1,170	13	1,070	24	991	11	1,460
12	1,310	25	1,480	7	1,570	26	1,170	7	1,190	16	1,040	27	985	15	1,380
14	1,310	27	1,490	9	1,510	28	1,290	9	1,190	18	1,030	30	985	18	1,380
16	1,270	March		12	1,560	31	1,250	12	1,170	20	873	October		22	1,420
19	1,310	2	1,480	14	1,590	June		14	1,090	23	971	1	983	25	1,420
21	1,310	3	1,470	19	1,560	2	1,250	16	946	25	955	4	974	29	1,410
23	1,310	5	1,470	21	1,530	4	1,060	19	1,020	27	955	8	1,050	December	
26	1,340	8	1,490	23	1,620	6	1,110	21	1,090	30	889	11	1,170	2	1,370
28	1,350	10	1,460	26	1,630	9	1,200	24	1,140	September		15	1,200	6	1,450
30	1,380	12	1,530	28	1,640	11	1,190	26	1,130	1	972	18	1,350	9	1,440
February		15	1,540	30	1,590	14	1,190	28	1,080	3	975	22	1,390	13	1,080
2	1,420	17	1,500	May		16	1,180	30	1,080	6	1,080	26	1,430	16	1,210
4	1,440	19	1,500	3	1,530	18	1,180	August		8	897	29	1,430	20	1,250
6	1,460	22	1,490	5	1,530	21	1,190	2	1,090	10	1,270	November		23	1,340
9	1,460	24	1,530	7	1,530	23	1,190	4	1,090	13	1,150	1	1,390	27	1,380
11	1,460	26	1,530	10	1,540	25	1,190			15	1,000			30	1,370
13	1,470	29	1,550	12	1,520	28	1,170								

Sampling by Mexican Section

Rio Grande below Rio Conchos near Presidio, Texas and Ojinaga, Chihuahua

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		March		April		June		July		August		October		November	
5	1,780	1	2,160	19	1,980	1	1,480	14	827	30	953	4	1,210	22	2,260
12	1,800	8	1,910	22	2,440	7	1,200	15	950	September		12	1,870	29	3,120
19	1,820	16	2,080	26	2,370	14	1,230	19	967	1	1,000	18	2,150	December	
26	1,850	22	2,050	30	2,000	21	1,260	26	1,140	7	979	22	2,230	1	2,580
February		29	2,040	May		27	1,180	30	1,080	13	1,190	26	2,300	6	2,390
2	2,180	April		3	1,710	July		August		15	1,110	November		13	1,440
9	2,270	1	1,940	10	1,830	1	1,190	2	1,040	20	1,110	1	2,340	15	2,030
17	2,460	5	1,840	17	1,500	7	1,120	9	1,170	27	1,240	8	1,380	20	2,320
23	2,390	12	1,880	18	1,430	12	1,260	16	1,050	October		15	2,390	27	2,360
				24	1,420	13	1,000	23	1,020	1	1,250				

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

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

Rio Grande at Johnson Ranch near Castolon, Texas and Santa Elena, Chihuahua

January		March		April		June		July		August		October		November	
5	1,750	2	2,210	20	1,810	1	1,490	13	995	30	945	1	1,270	27	2,070
12	1,810	9	2,070	26	2,070	9	1,270	16	983	September		5	1,230	December	
19	1,830	15	1,960	30	2,110	15	1,220	20	926	1	992	12	1,560	1	2,290
27	1,800	23	2,080	May		21	1,260	27	1,160	7	900	19	1,710	6	2,370
February		30	2,050	3	2,060	30	1,210	August		13	1,600	26	2,120	13	2,200
2	1,960	April		10	1,190	July		2	1,170	16	1,170	November		15	1,330
9	2,120	2	2,110	17	1,700	2	1,190	10	1,210	22	1,140	1	2,180	21	2,240
17	2,140	6	2,020	25	1,460	6	1,220	17	1,110	28	1,290	9	1,490	28	2,260
23	2,310	13	2,010			8	1,170	23	1,020			15	2,430		

Sampling by U. S. Section

Rio Grande at Foster Ranch near Langtry, Texas and Rancho Santa Rosa, Coahuila

January		February		April		May		July		August		October		November	
1	1,210	16	1,310	1	1,100	17	1,030	1	1,160	16	1,090	1	1,250	15	1,560
2	1,220	17	* 1,320	2	1,090	18	1,190	2	1,170	17	1,040	2	1,170	16	1,550
3	1,250	17	1,330	3	1,080	19	1,150	3	1,120	18	1,090	3	1,180	17	1,570
4	1,290	18	1,320	4	865	20	1,030	4	1,070	19	1,070	4	* 1,140	18	1,550
5	* 1,400	19	1,310	5	* 825	21	768	5	1,130	20	1,060	4	1,150	19	1,570
5	1,430	20	1,310	5	547	22	788	6	* 1,050	21	949	5	1,150	20	1,600
6	1,420	21	1,330	6	885	23	941	6	1,090	22	970	6	1,220	21	1,600
7	1,410	22	1,330	7	1,070	24	* 1,030	7	1,060	23	* 848	7	1,180	22	* 1,640
8	1,380	23	* 1,330	8	1,090	24	1,160	8	1,120	24	964	8	1,320	22	1,660
9	1,340	23	1,330	9	1,090	25	1,020	9	1,050	25	992	9	1,160	23	1,720
10	1,300	24	1,330	10	1,090	26	1,040	10	1,150	26	948	10	1,150	24	1,600
11	1,340	25	1,350	11	1,070	27	1,180	11	1,150	27	954	11	1,140	25	1,680
12	* 1,350	26	1,300	12	* 1,030	28	1,060	12	* 1,150	28	992	12	* 1,140	26	1,580
12	1,320	27	1,290	12	1,010	29	1,090	12	1,130	29	890	12	1,130	27	1,580
13	1,320	28	1,280	13	1,020	30	1,150	13	1,000	30	* 975	13	1,100	28	1,610
14	1,320	29	1,270	14	1,070	31	1,170	14	1,110	30	1,000	14	1,080	29	* 1,590
15	1,340	March		15	1,020	June		15	1,030	31	907	15	1,050	29	1,530
16	1,340	1	* 1,290	16	981	1	* 1,170	16	1,210	September		16	1,090	30	1,650
17	1,350	1	1,320	17	1,040	1	1,140	17	688	1	875	17	1,250	December	
18	1,340	2	1,230	18	1,010	2	1.160	19	* 808	2	952	18	* 1,210	1	1,650
19	* 1,350	3	1,270	19	* 1,110	3	1,190	19	937	3	945	18	1,330	2	1,660
19	1,350	4	1,260	19	1,150	4	1.240	20	965	4	831	19	1,150	3	1,570
20	1,350	5	1,320	20	1,150	5	1.230	21	830	5	879	20	823	4	1,580
21	1,350	6	1,340	21	1,130	6	1.170	22	948	6	894	21	1,140	5	1,580
22	1,360	7	1,300	22	1,190	7	* 1.170	23	1,020	7	* 902	22	1,260	6	* 1,560
23	1,350	8	* 1,310	23	1,140	7	1.190	24	758	7	671	23	1,280	6	1,550
24	1,340	8	1,310	24	1,100	8	1.200	25	985	8	803	24	1,360	7	1,540
25	1,360	9	1,310	25	1,080	9	1.240	26	* 1,000	9	1,000	25	1,220	8	1,570
26	* 1,350	10	1.280	26	* 1,080	10	1,340	26	917	10	848	26	* 1,180	9	1,550
26	1,350	11	1,280	26	1,060	11	1,290	27	1,140	11	805	26	1,250	10	1,610
27	1,330	12	1,280	27	1,040	12	1,130	28	1,130	12	995	27	1,400	11	1,730
28	1,350	13	1,280	28	1,030	13	1,090	29	1,100	13	* 1879	28	1,400	12	1,940
29	1,350	14	1,290	29	992	14	* 1.150	30	1,100	13	867	29	1,200	13	* 1,710
30	1,290	15	* 1,290	30	616	14	1,150	31	828	14	740	30	1,370	13	1,650
31	1,320	15	1,280	May		15	1.150	August		15	959	31	1,440	14	1,620
February		16	1,290	1	942	16	1,100	1	1,110	16	1.040	November		15	1,590
1	1,320	17	1,280	2	716	17	603	2	* 870	17	1,190	1	* 1,480	16	1,640
2	* 1,320	18	1,230	3	* 406	18	974	2	831	18	1,240	1	1,470	17	1,950
2	1,310	19	1,270	3	405	19	843	3	1,080	19	983	2	1,470	18	1,330
3	1,300	20	1,280	4	472	20	1,080	4	1,140	20	* 724	3	1,410	19	1,250
4	1,290	21	1,240	5	781	21	* 1,160	5	1,020	20	675	4	1,480	20	* 1,250
5	1,280	22	* 1,240	6	888	21	1,140	6	1,010	21	920	5	1,460	20	1,250
6	1,260	22	1,210	7	837	22	1,150	7	1,080	22	934	6	1,430	21	1,140
7	1,260	23	1,160	8	505	23	1,140	8	1,130	23	903	7	1,420	22	1,060
8	1,250	24	1,120	9	925	24	1,150	9	* 1,140	24	900	8	* 1,460	23	1,130
9	* 1,270	25	1,130	10	* 431	25	1,160	9	1,130	25	988	8	1,490	24	1,290
9	1,260	26	1,130	10	478	26	1,180	10	1,150	26	1,030	9	1,520	25	1,420
10	1,270	27	1,140	11	657	27	1,110	11	1,160	27	* 952	10	1,520	26	1,570
11	1,270	28	1,140	12	1,170	28	* 1,080	12	1,160	27	977	11	1,510	27	* 1,600
12	1,290	29	* 1,130	14	1,550	28	1,120	13	1,150	28	1,050	12	1,530	27	1,620
13	1,270	29	1,130	15	817	29	1,180	14	1,140	29	1,090	13	1,540	28	1,640
14	1,300	30	1,120	16	877	30	1,160	15	1,110	30	1,080	14	1,540	29	1,660
15	1,300	31	1,100	17	* 1,020			16	* 1,090			15	* 1,540	30	1,670
														31	1,650

Sampling by U. S. Geological Survey except those marked with * which were by the U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1976

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

Pecos River near Langtry, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
5	3,540	17	4,820	5	3,800	24	3,100	6	2,540	23	1,800	4	2,290	15	2,250
12	3,650	23	4,700	12	3,750	June		12	548	30	1,850	12	2,250	22	2,360
19	3,690	March		19	3,610	1	3,120	23	394	September		18	2,330	29	2,560
26	3,740	1	4,190	26	3,590	7	2,980	26	1,310	7	1,890	26	2,340	December	
February		8	4,160	May		14	2,940	August		13	2,860	November		6	2,830
2	3,830	15	4,150	10	2,970	21	2,800	2	2,290	20	2,800	1	1,820	13	3,020
9	4,550	22	4,010	17	3,110	28	2,700	9	1,880	27	2,230	8	2,080	20	3,100
		29	3,930											27	3,190

Sampling by U. S. Section

Devils River at Pafford Crossing near Comstock, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		June		August		September		November	
5	429	17	402	12	403	10	404	14	389	2	372	20	350	1	403
19	419	March		19	390	17	391	28	383	16	376	October		22	408
February		15	409	26	394	June		July		30	321	4	382	December	
2	429	29	405	May		1	384	7	381	September		18	396	6	411
				3	394					7	373			20	412

Sampling by U. S. Section

Rio Grande below Amistad Dam near Cd. Acuna, Coahuila and Del Rio, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		June		August		September		November	
2	1,030	17	1,040	2	1,080	17	1,090	30	1,110	13	1,040	29	1,010	10	1,020
5	1,040	18	1,030	5	1,070	19	1,090	July		16	1,030	October		12	1,010
7	1,040	20	1,030	7	1,080	21	1,100	2	1,110	18	1,000	1	1,010	15	1,010
9	1,030	23	1,050	9	1,070	24	1,100	5	1,090	20	1,000	3	1,010	17	1,020
12	1,040	25	1,060	12	1,080	26	1,100	7	1,070	23	1,010	6	1,010	19	1,020
14	1,040	27	1,050	14	1,100	28	1,090	9	1,080	25	1,010	8	1,010	22	1,060
16	1,050	March		16	1,100	31	1,100	12	1,070	27	993	12	1,010	24	1,060
19	1,050	1	1,060	19	1,100	June		14	1,080	30	985	14	1,020	26	1,060
21	1,040	4	1,090	21	1,100	2	1,110	16	1,080	September		18	1,010	29	1,060
23	1,040	5	1,040	23	1,110	4	1,100	19	1,070	1	1,010	20	1,020	December	
26	1,040	8	1,050	26	1,100	7	1,100	21	1,080	3	1,000	22	1,030	1	1,060
28	1,040	10	1,050	28	1,160	9	1,110	26	1,070	8	1,020	26	1,020	3	1,060
30	1,030	15	1,070	30	1,100	11	1,110	28	1,090	10	985	27	1,030	13	1,010
February		17	1,050	May		14	1,120	30	1,070	13	992	29	1,020	15	1,030
3	1,040	19	1,060	3	1,090	16	1,090	August		16	1,010	November		17	1,050
4	1,050	22	1,070	5	1,090	18	1,100	2	1,060	17	1,020	1	1,030	20	1,000
6	1,050	24	1,070	7	1,090	21	1,100	4	1,050	20	1,010	3	1,020	22	1,010
9	1,030	26	1,070	10	1,090	23	1,110	6	1,060	22	1,000	5	1,010	27	1,020
11	1,040	29	1,080	12	1,100	25	1,100	9	1,030	24	1,000	8	1,010	29	1,010
13	1,080	31	1,070	14	1,090	28	1,110	11	1,030	27	994				

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1976

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

* Rio Grande near Jimenez, Coahuila and Quemado, Texas

January		February		April		May		July		August		October		November	
1	1,010	15	1,060	1	1,020	17	1,090	1	1,090	16	1,000	1	958	16	939
2	1,010	16	1,080	2	1,020	18	1,080	2	1,090	17	1,040	2	944	17	938
3	1,010	17	1,050	3	1,040	19	1,200	3	1,100	18	1,020	3	992	18	954
4	1,020	18	1,040	4	994	20	1,080	4	1,080	19	1,010	4	994	19	932
5	1,010	19	1,010	5	1,010	21	1,080	5	998	20	1,010	5	976	20	966
6	1,020	20	997	6	1,010	22	1,080	6	1,040	21	1,020	6	1,010	21	957
7	1,020	21	997	7	1,020	23	1,080	7	1,020	22	1,010	7	992	22	848
8	1,020	22	987	8	1,020	24	1,080	8	1,040	23	1,010	8	991	23	837
9	1,010	23	974	9	1,020	25	1,070	9	1,080	24	1,010	9	999	24	925
10	1,010	24	976	10	1,110	26	1,060	10	1,080	25	1,010	10	1,030	25	901
11	1,030	25	987	11	1,040	27	1,070	11	1,160	26	992	11	1,010	26	896
12	1,020	26	985	12	1,020	28	1,060	12	630	27	1,000	12	1,020	27	838
13	1,010	27	985	13	1,080	29	1,060	13	707	28	994	13	1,020	28	778
14	1,020	28	1,060	14	1,010	30	1,080	14	681	29	993	14	1,030	29	888
15	1,010	29	1,090	15	1,040	31	1,060	15	992	30	988	15	982	30	886
16	1,010	March		16	1,030	June		16	868	31	987	16	1,000	December	
17	1,010	1	1,050	17	1,000	1	1,080	17	896	September		17	975	1	869
18	1,010	2	1,060	18	1,020	2	1,090	18	504	1	970	18	981	2	839
19	1,000	3	1,050	19	1,030	3	1,090	19	880	2	969	19	979	3	848
20	1,030	4	1,060	20	1,080	4	1,200	20	990	3	1,020	20	980	4	797
21	1,020	5	1,080	21	1,080	5	1,090	21	1,020	4	994	21	1,000	5	834
22	1,010	6	1,030	22	1,090	6	1,090	22	910	5	966	22	974	6	796
23	1,000	7	1,040	23	1,100	7	1,120	23	541	6	940	23	972	7	808
24	1,010	8	1,040	24	1,080	8	1,070	24	879	7	976	24	967	8	861
25	1,010	9	1,030	25	1,090	9	1,070	25	998	8	998	25	973	9	871
26	1,000	10	1,030	26	1,090	10	1,060	26	1,030	9	983	26	968	10	887
27	996	11	1,050	27	1,100	11	1,070	27	1,040	10	992	27	964	11	937
28	989	12	1,040	28	1,130	12	1,080	28	1,050	11	966	28	953	12	948
29	996	13	1,030	29	1,120	13	1,070	29	1,050	12	990	29	937	13	973
30	1,000	14	1,020	30	1,090	14	1,080	30	1,060	13	987	30	1,000	14	950
31	995	15	1,030	May		15	1,080	31	1,030	14	982	31	980	15	1,010
February		16	1,030	1	1,100	16	1,070	August		15	985	November		16	903
1	1,010	17	1,030	2	1,080	17	1,060	1	1,030	16	979	1	974	17	896
2	1,010	18	1,030	3	1,080	18	1,040	2	1,030	17	988	2	933	18	892
3	1,010	19	1,040	4	1,080	19	1,060	3	1,030	18	992	3	911	19	885
4	1,010	20	1,030	5	1,070	20	1,080	4	1,020	19	989	4	938	20	896
5	1,000	21	1,040	6	988	21	1,080	5	1,020	20	987	5	960	21	881
6	1,030	22	1,030	7	1,060	22	1,080	6	1,030	21	980	6	944	22	886
7	1,070	23	1,030	8	1,060	23	1,100	7	1,040	22	994	7	951	23	970
8	1,010	24	1,020	9	1,060	24	1,090	8	1,030	23	992	8	951	24	947
9	1,020	25	1,030	10	1,060	25	1,080	9	1,020	24	995	9	929	25	958
10	1,020	26	1,020	11	1,080	26	1,070	10	1,010	25	989	10	948	26	937
11	1,040	27	1,030	12	1,080	27	1,060	11	1,010	26	994	11	935	27	950
12	1,020	28	1,010	13	1,070	28	1,080	12	1,010	27	996	12	1,010	28	943
13	1,050	29	1,020	14	1,090	29	1,080	13	1,010	28	982	13	936	29	969
14	1,110	30	1,010	15	1,070	30	1,100	14	1,020	29	982	14	950	30	969
		31	1,020	16	1,090			15	1,010	30	998	15	922	31	994

Sampling by Maverick County Water Control and Improvement District #1
* Samples collected at the Maverick Canal Headgate

Rio Grande near El Indio, Texas and Villa Guerrero, Coahuila

January		February		April		May		July		September		October		November	
7	975	18	1,090	15	1,100	26	1,100	21	594	1	1,280	13	851	26	722
21	1,010	March		28	1,170	June		August		10	892	27	730	December	
February		3	1,110	May		9	1,120	4	790	15	829	November		7	774
4	1,010	17	1,120	12	1,060	23	1,110	18	974	29	896	11	741	22	797
		31	1,220												

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

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

Rio Grande at Nuevo Laredo, Tamaulipas and Laredo, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
1	891	16	1,040	1	1,250	16	1,020	1	1,120	16	662	1	884	17	703
2	892	17	1,040	2	1,210	17	1,070	2	1,150	17	685	2	839	18	762
3	893	18	1,060	3	1,270	18	1,030	3	1,150	18	663	3	773	19	789
4	901	19	1,060	4	1,270	19	1,030	4	1,110	19	906	4	818	20	760
5	844	20	1,070	5	1,230	20	966	5	1,110	20	951	5	804	21	805
6	777	21	1,110	6	1,190	21	948	6	1,080	21	950	6	682	22	856
7	864	22	1,120	7	1,150	22	1,010	7	834	22	951	7	749	23	872
8	906	23	1,160	8	1,140	23	884	8	492	23	963	8	719	24	795
9	921	24	1,190	9	1,040	24	1,060	9	605	24	962	9	700	25	890
10	938	25	1,200	10	799	25	1,040	10	695	25	953	10	811	26	795
11	927	26	1,190	11	706	26	1,070	11	719	26	962	11	823	27	783
12	999	27	1,230	12	779	27	1,060	12	844	27	966	12	826	28	741
13	994	28	1,240	13	963	28	985	13	920	28	970	13	823	29	725
14	996	29	1,270	14	972	29	1,050	14	439	29	976	14	817	30	749
15	978	March		15	841	30	1,110	15	364	30	956	15	823	December	
16	1,010	1	1,280	16	1,040	31	1,120	16	440	31	947	16	830	1	749
17	1,010	2	1,170	17	1,070	June		17	432	September		17	827	2	777
18	966	3	1,030	18	1,080	1	1,110	18	415	1	951	18	826	3	716
19	1,000	4	1,070	19	1,080	2	1,090	19	360	2	954	19	844	4	744
20	1,010	5	1,060	20	1,050	3	1,090	20	386	3	964	20	782	5	720
21	1,000	6	1,070	21	1,100	4	1,090	21	393	4	926	21	715	6	747
22	1,010	7	1,070	22	1,100	5	1,090	22	508	5	951	22	707	7	669
23	947	8	1,070	23	958	6	1,110	23	556	6	945	23	689	8	768
24	992	9	1,080	24	1,030	7	1,110	24	338	7	935	24	720	9	730
25	1,020	10	1,060	25	1,010	8	1,130	25	441	8	934	25	699	10	732
26	1,010	11	1,060	26	1,050	9	1,130	26	453	9	937	26	769	11	689
27	1,000	12	1,060	27	1,100	10	1,130	27	543	10	987	27	718	12	721
28	1,030	13	1,060	28	1,120	11	1,150	28	553	11	880	28	697	13	690
29	1,030	14	1,050	29	1,130	12	1,170	29	588	12	880	29	679	14	353
30	1,020	15	1,060	30	1,110	13	1,170	30	591	13	881	30	585	15	862
31	1,030	16	1,090	May		14	1,140	31	661	14	874	31	741	16	854
February		17	1,070	1	1,120	15	1,180	August		15	871	November		17	914
1	998	18	1,080	2	1,070	16	1,190	1	594	16	875	1	785	18	917
2	1,010	19	1,080	3	1,040	17	1,170	2	659	17	891	2	803	19	1,020
3	1,000	20	1,090	4	1,020	18	1,180	3	621	18	810	3	738	20	952
4	990	21	1,110	5	1,050	19	1,150	4	663	19	791	4	769	21	939
5	983	22	1,130	6	1,100	20	1,160	5	596	20	810	5	797	22	913
6	973	23	1,130	7	1,070	21	1,140	6	660	21	794	6	707	23	888
7	1,040	24	1,150	8	1,010	22	1,150	7	638	22	806	8	725	24	863
8	1,050	25	1,170	9	560	23	1,150	8	625	23	774	9	748	25	804
9	1,040	26	1,150	10	404	24	1,010	9	607	24	752	10	666	26	796
10	978	27	1,160	11	518	25	1,030	10	619	25	853	11	693	27	729
11	906	28	1,170	12	736	26	1,070	11	660	26	865	12	682	28	782
12	1,020	29	1,150	13	880	28	1,100	12	648	27	865	13	724	29	754
13	1,020	30	1,190	14	983	29	1,130	13	658	28	858	14	717	30	830
14	992	31	1,220	15	984	30	1,100	14	688	29	866	15	707	31	849
15	1,040							15	636	30	876	16	687		

Sampling by Laredo Water Plant

Río Salado near Las Tortillas, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		March		April		May		June		September		November		December	
7	2,530	4	3,590	8	3,820	6	1,630	2	2,490	14	755	10	722	9	796
February								July							
12	3,080							20	356						

Sampling by Mexican Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1976

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

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

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		June		August		September		November	
2	935	18	957	2	996	19	1,000	30	1,030	11	1,010	24	844	8	847
5	932	20	968	5	984	21	1,000	July		13	1,000	27	846	10	841
7	932	23	959	7	984	24	1,010	2	1,020	16	983	29	851	12	845
9	935	25	961	9	981	26	1,010	5	1,020	18	951	October		15	849
12	936	27	958	12	980	28	1,010	7	1,020	20	918	4	837	17	845
14	937	March		14	987	31	1,010	9	1,020	23	913	6	843	19	857
16	956	1	976	16	989	June		12	1,030	25	891	8	838	22	846
19	937	3	970	19	989	2	1,010	14	1,030	27	905	12	848	24	846
21	942	5	971	21	992	4	1,020	16	1,020	30	843	13	844	26	846
23	936	8	971	23	995	7	1,020	19	1,020	September		15	852	29	844
26	940	10	976	26	995	9	1,010	21	1,050	1	836	18	843	December	
28	941	12	976	28	992	11	1,010	23	1,030	3	841	20	843	1	851
30	940	15	974	30	993	14	1,020	26	1,030	6	841	22	850	3	845
February		17	979	May		16	1,020	28	1,030	8	865	25	847	6	845
2	946	19	979	3	1,010	18	1,020	30	1,020	10	851	27	847	8	845
4	942	22	987	5	1,000	21	1,020	August		13	848	29	845	10	845
6	940	24	985	7	1,000	23	1,020	2	1,010	15	841	November		13	845
9	944	26	983	10	1,000	25	1,030	4	995	17	842	1	884	15	846
11	946	29	983	12	1,000	28	1,020	6	1,010	20	846	3	857	17	844
13	947	31	988	14	1,000			9	985	22	839	5	850	20	844
17	953			17	1,000										

Sampling by U. S. Section

Rancherías Drain in Mexico, 69.3 River Miles above Anzaldúas Dam

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		May		June		September		October		November	
13	6,000	17	6,030	24	7,590	4	6,820	8	6,150	15	1,680	19	6,800	25	8,030
20	5,900	24	1,680	31	6,400	12	7,070	16	6,650	22	5,370	26	7,140	December	
27	3,310			April		19	5,700	23	6,740	29	6,530	November		10	8,090
February		March		7	6,970	26	5,360	30	6,550	October		4	6,980	15	8,210
3	5,850	2	6,840	14	6,480	June		September		6	3,120	10	7,260	22	8,000
10	5,170	9	6,970	21	5,820	2	5,920	8	6,980	15	6,950			29	8,010
		18	6,520												

Sampling by Mexican Section

Río San Juan at Camargo, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		April		May		June		October		December	
13	# 1,070	10	* 1,580	9	* 1,880	21	# 1,930	19	* 1,780	3	# 1,800	26	855	15	826
20	# 1,170	17	* 1,650	18	* 1,870	May		26	* 1,850	16	# 1,780	November		22	857
27	# 1,130	24	* 1,790	31	# 2,190	4	# 1,830	June		23	# 1,760	4	1,070	29	859
February		March		April		12	# 1,810	2	# 1,850	30	# 1,710				
3	* 917	2	* 1,820	14	# 1,990										

Sampling by Mexican Section # Below Marte R. Gomez Dam * 4 miles below Marte R. Gomez Dam

Rio Grande at Rio Grande City, Texas near Camargo, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		March		April		May		July		August		September		October	
9	971	1	996	9	1,220	7	1,680	2	1,050	12	959	10	862	26	969
16	974	8	999	12	1,320	13	1,070	14	890	19	959	13	859	November	
23	950	15	999	19	1,070	June		21	944	21	915	27	928	4	1,450
30	967	22	996	23	1,040	4	1,050	26	975	23	915	October		8	1,290
February		26	1,030	26	1,040	21	1,030	29	990	30	848	7	840	22	851
6	977	29	1,040	May		25	1,040	August		September		12	839	December	
17	1,000	April		3	1,110	28	1,030	3	991	3	945	18	889	6	871
		5	961					6	979	7	929			17	864

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

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

Puertecitos Drain in Mexico, 46.8 River Miles above Anzaldúas Dam

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		April		May		June		September		November	
13	4,390	11	4,420	10	4,830	14	4,600	26	3,820	23	4,530	29	4,210	10	4,450
20	3,980	18	4,320	18	4,790	21	4,540	June		30	4,510	October		December	
29	3,580	25	4,640	24	4,910	May		2	3,910	September		6	3,770	8	4,520
February		March		31	4,840	4	4,440	8	4,580	8	3,760	15	4,340	15	4,550
4	3,940	2	4,900	April		12	4,520	16	4,570	15	3,970	19	4,290	22	4,520
				7	4,540	19	3,220			22	4,040	26	4,320	29	4,550

Sampling by Mexican Section

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

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		April		June		August		September		November	
13	2,870	11	3,020	18	2,950	21	2,950	2	2,780	30	2,800	29	2,850	10	2,800
20	2,030	18	3,300	24	2,950	May		8	3,260	September		October		December	
29	2,900	25	3,030	31	2,900	4	3,260	16	3,130	8	2,840	6	2,820	8	2,780
February		March		April		12	3,130	23	3,070	15	2,820	15	2,850	15	2,750
4	2,870	2	3,020	7	2,950	19	3,060	30	3,020	22	2,860	19	2,790	22	2,780
		10	3,000	14	2,950	26	2,600					26	2,800	29	2,750

Sampling by Mexican Section

Huizache Drain in Mexico, 41.8 River Miles above Anzaldúas Dam

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		April		May		June		September		November	
13	2,820	25	3,380	24	2,870	21	3,140	26	3,940	30	4,250	29	3,290	10	3,980
29	3,370	March		31	2,850	May		June		September		October		December	
February		3	2,580	April		4	3,780	2	3,730	8	3,640	6	2,850	8	3,920
4	3,440	10	2,700	7	3,100	12	3,690	8	3,830	15	3,130	15	3,770	15	4,020
11	3,330	18	3,100	14	3,130	19	3,280	16	3,770	22	3,080	19	3,810	22	4,000
18	2,500							23	3,810			26	3,360	29	4,010

Sampling by Mexican Section

Rio Grande at Los Ebanos, Texas near Cd. Diaz Ordaz, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
2	1,170	18	1,030	5	1,140	21	1,100	5	1,090	20	981	4	1,010	19	1,120
5	1,150	20	1,060	7	1,110	24	1,490	7	965	23	942	6	847	22	878
7	1,130	23	1,030	9	1,920	26	1,490	9	802	25	920	8	847	24	932
9	1,090	25	1,030	12	1,880	28	1,500	12	810	27	1,000	11	848	26	862
12	983	27	1,040	14	1,970	31	1,290	14	891	30	950	13	845	29	876
14	984	March		16	2,090	June		16	832	September		15	914	December	
16	980	1	1,060	19	1,440	2	1,140	19	829	1	970	18	990	1	880
19	980	3	1,040	21	1,250	4	1,140	21	961	3	958	20	1,020	3	874
21	979	9	1,060	23	1,270	7	1,140	24	975	6	1,010	22	1,060	6	914
24	991	11	1,070	26	1,110	9	1,110	26	971	9	991	25	1,100	8	885
26	976	13	1,070	28	1,080	11	1,140	28	983	10	987	27	1,140	10	888
28	984	15	1,040	30	1,050	14	1,090	30	996	13	875	29	1,450	13	888
30	981	17	1,060	May		16	1,100	August		15	880	November		15	899
February		19	1,050	3	1,150	18	1,100	2	999	17	866	1	1,820	17	889
2	1,030	22	1,040	5	1,720	21	877	4	993	20	736	3	1,910	20	839
4	1,080	24	1,060	7	2,170	23	891	6	987	22	784	5	1,850	22	900
6	996	26	1,280	10	2,600	25	881	9	981	24	845	8	1,650	24	1,020
9	993	29	1,240	12	1,670	28	1,070	11	985	27	965	10	1,500	27	914
11	1,010	31	1,220	15	1,120	30	1,070	13	939	29	939	12	1,370	29	926
13	1,020	April		17	1,080	July		16	998	October		15	1,250	31	926
16	1,020	2	1,290	19	1,100	2	1,080	18	1,000	1	851	17	1,020		

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

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

Rio Grande at Penitas, Texas and Reynosa Diaz, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
2	1,380	18	1,070	2	1,260	19	1,140	2	1,150	18	1,000	1	1,120	17	1,580
5	1,260	20	1,120	5	1,490	21	1,120	5	1,120	20	989	4	1,060	19	1,400
7	1,240	23	1,120	7	1,510	24	1,090	7	1,100	23	944	6	920	22	1,570
9	1,280	25	1,090	9	1,140	26	1,540	9	831	25	933	8	919	24	1,090
12	1,090	27	1,080	12	1,430	28	1,670	12	814	27	946	11	937	26	1,270
14	1,020	March		14	1,860	31	1,380	14	838	30	939	13	990	29	1,250
16	1,070	1	1,110	16	2,130	June		16	942	September		15	956	December	
19	1,060	3	1,110	19	2,170	2	1,300	19	950	1	1,080	18	1,040	1	1,380
20	1,020	5	1,080	21	1,580	4	1,120	21	1,030	3	946	20	1,070	3	1,290
23	1,090	8	1,120	23	1,330	7	1,160	23	1,240	6	1,040	22	1,090	6	972
26	1,010	10	1,110	26	1,400	9	1,170	26	1,080	8	1,030	25	1,140	8	993
28	986	12	1,130	28	1,140	11	1,150	28	999	10	1,020	27	1,160	10	982
30	992	15	1,100	30	1,130	14	1,140	30	1,020	13	900	29	1,170	13	969
February		17	1,070	May		16	1,140	August		15	909	November		15	1,010
2	1,010	19	1,130	3	927	18	1,150	2	1,040	17	896	1	1,410	17	1,330
4	992	22	1,090	5	921	21	1,020	4	1,030	20	890	3	2,120	20	1,490
6	992	24	1,080	7	921	23	1,140	6	1,020	22	771	5	2,080	22	968
9	1,010	26	1,240	10	929	25	1,170	9	1,010	24	767	8	2,040	24	959
11	1,010	29	1,280	12	1,010	28	1,120	11	996	27	910	10	2,030	27	1,060
13	1,080	31	1,240	14	1,420	30	1,130	13	990	29	1,030	12	2,040	29	1,040
16	1,040			17	1,150			16	997			15	1,770	31	1,010

Sampling by U. S. Section

Rio Grande above Anzalduas Dam, South of Abram, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		September		November	
2	1,420	27	1,040	9	1,130	21	1,070	2	1,110	13	996	24	890	17	1,340
5	1,230	March		12	1,080	22	1,150	5	1,130	16	995	27	935	19	1,280
7	1,230	1	1,070	14	1,220	26	1,300	7	1,140	18	995	29	973	22	960
9	1,180	3	1,080	16	1,660	28	1,520	9	728	20	981	October		24	893
12	1,000	5	1,050	19	2,090	31	1,330	12	838	23	939	1	858	26	894
26	979	8	1,060	21	1,480	June		14	914	25	937	4	848	29	879
28	1,010	10	1,070	23	1,350	2	1,280	16	912	27	911	6	838	December	
30	999	12	1,090	26	1,200	4	1,200	19	851	30	984	8	847	1	886
February		15	1,070	28	1,230	7	1,190	21	955	September		11	856	3	877
2	971	17	1,060	30	1,070	9	1,110	23	992	1	888	13	869	6	910
4	986	19	1,220	May		11	1,070	26	966	3	953	15	918	8	889
6	970	22	1,060	4	862	14	1,080	28	973	6	1,070	18	1,010	10	896
9	1,000	24	1,040	5	876	16	1,070	30	990	8	1,040	20	1,040	13	898
11	1,040	26	1,330	7	936	18	1,080	August		10	1,030	22	1,080	15	910
13	1,030	29	1,390	10	965	21	989	2	1,000	13	902	25	1,130	17	899
16	1,010	31	1,240	12	1,960	23	1,030	4	997	15	944	27	1,170	20	914
18	1,040	April		14	1,700	25	1,140	6	994	17	884	29	1,120	22	912
20	1,090	2	1,290	17	1,110	28	1,100	9	1,010	20	913	November		24	1,010
23	1,070	5	1,400	19	1,090	30	1,080	11	981	22	741	15	1,450	27	933
25	1,050	7	1,100											29	940
														31	981

Sampling by U. S. Section

Morillo Drain in Mexico, 8.4 River Miles above Anzaldúas Dam

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		April		September		October		October		November		November		December	
1 a)	10,080	15 a)	9,300	22 a)	6,920	15 a)	9,700	30 a)	8,190	15 a)	9,880	30 a)	8,770	14 a)	10,040
8 a)	7,270	22 a)	8,080	October		16 a)	9,640	31 a)	8,660	16 a)	9,680	December		15 a)	9,520
15 a)	7,980	May		1	7,650	17 a)	9,750	November		17 a)	10,020	1 a)	9,030	16 a)	9,580
22 a)	6,770	6 a)	9,200	2	7,860	18 a)	9,110	1 a)	7,910	18 a)	8,500	2 a)	10,480	17 a)	10,700
29 a)	7,370	13 a)	7,410	3	8,160	19 a)	10,260	2 a)	8,640	19 a)	8,740	2	11,120	18 a)	11,300
February		20 a)	6,320	4	7,600	20 a)	9,070	3 a)	8,840	19	8,740	3 a)	10,770	19 a)	11,290
5 a)	8,300	27 a)	6,110	5	7,390	21 a)	9,700	4 a)	9,500	20	8,280	3	10,790	20 a)	11,730
12 a)	8,560	June		6	4,890	22 a)	9,350	5 a)	9,310	20 a)	8,280	4 a)	10,290	21 a)	11,520
19 a)	9,230	3 a)	6,820	7	6,770	23 a)	9,230	6 a)	9,320	21 a)	8,100	5 a)	10,320	22 a)	11,440
26 a)	9,550	10 a)	9,140	8	8,220	24 a)	9,230	7 a)	9,440	22 a)	8,300	6 a)	9,720	23 a)	11,460
March		17 a)	9,900	9	8,780	25 a)	8,800	8 a)	9,170	23 a)	8,560	7 a)	9,800	24 a)	11,540
4 a)	10,340	24 a)	10,000	10	9,030	26 a)	8,380	9 a)	9,460	24 a)	8,350	8 a)	10,550	25 a)	11,640
11 a)	10,040	July		11	9,370	27 a)	8,810	10 a)	9,630	25 a)	9,650	9 a)	9,060	26 a)	11,400
18 a)	10,240	1 a)	10,340	12	9,550	28 a)	6,680	11 a)	9,700	26 a)	10,070	10 a)	10,350	27 a)	11,700
25 a)	10,140	8 a)	8,650	13	9,630	28	6,680	12 a)	9,390	27 a)	7,470	11 a)	9,580	28 a)	11,730
April		15 a)	9,490	14	9,460	29	7,340	13 a)	9,340	28 a)	7,550	12 a)	9,620	29 a)	11,610
1 a)	8,670	September		14 a)	9,460	29 a)	7,340	14 a)	9,590	29 a)	6,330	13 a)	10,220	30 a)	11,700
		15 a)	7,730											31 a)	11,460

Sampling by Mexican Section a) Morillo Drain Diversion Canal

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1976

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

Rio Grande below Anzalduas Dam near Reynosa, Tamaulipas and Mission, Texas

January		February		April		May		July		August		October		November	
1	1,480	16	1,030	1	1,390	17	1,270	1	1,180	16	1,090	1	929	16	1,630
2	1,550	17	1,110	2	1,300	18	1,250	2	1,180	17	1,020	2	898	17	1,540
3	1,580	18	1,060	3	1,310	19	1,250	3	1,180	18	985	3	886	18	1,410
4	1,560	19	1,020	4	1,340	20	1,350	4	1,260	19	968	4	905	19	1,350
5	1,440	20	1,160	5	1,400	21	1,440	5	1,240	20	970	5	914	20	1,400
6	1,360	21	1,100	6	1,770	22	1,370	6	1,140	21	948	6	934	21	1,250
7	1,270	22	1,170	7	1,430	23	1,270	7	1,140	22	939	7	928	22	1,090
8	1,330	23	1,170	8	1,300	24	1,270	8	969	23	945	8	947	23	964
9	1,270	24	1,100	9	1,350	25	1,350	9	898	24	974	9	894	24	900
10	1,270	25	1,080	10	1,310	26	1,480	10	991	25	958	10	905	25	979
11	1,340	26	1,100	11	1,270	27	1,600	11	1,030	26	938	11	907	26	917
12	1,150	27	1,120	12	1,280	28	1,910	12	806	27	931	12	897	27	883
13	1,030	28	1,120	13	1,300	29	2,160	13	931	28	948	13	901	28	878
14	1,060	29	1,130	14	1,310	30	1,900	14	900	29	923	14	946	29	877
15	1,080	March		15	1,350	31	2,040	15	886	30	929	15	932	30	907
16	1,110	1	1,100	16	1,370	June		16	858	31	911	16	1,050	December	
17	1,080	2	1,160	17	1,420	1	1,760	17	834	September		17	1,130	1	931
18	1,080	3	1,150	18	1,400	2	1,830	18	849	1	927	18	1,080	2	925
19	1,070	4	1,150	19	1,600	3	1,940	19	856	2	977	19	1,160	3	891
20	1,090	5	1,070	20	2,070	4	1,430	20	834	3	1,010	20	1,080	4	897
21	1,100	6	1,070	21	2,120	5	1,350	21	953	4	1,050	21	1,130	5	907
22	1,090	7	1,070	22	2,090	6	1,240	22	1,010	5	1,120	22	1,150	6	933
23	1,120	8	1,080	23	1,850	7	1,210	23	1,010	6	1,180	23	1,150	7	944
24	1,100	9	1,100	24	1,550	8	1,250	24	1,020	7	1,200	24	1,190	8	921
25	1,080	10	1,080	25	1,480	9	1,200	25	995	8	1,220	25	1,200	9	901
26	1,030	11	1,100	26	1,550	10	1,200	26	985	9	1,150	26	1,180	10	924
27	1,020	12	1,130	27	1,470	11	1,200	27	1,010	10	1,050	27	1,210	11	909
28	1,040	13	1,160	28	1,240	12	1,230	28	1,020	11	1,020	28	1,190	12	909
29	1,040	14	1,160	29	1,240	13	1,350	29	1,030	12	923	29	1,200	13	906
30	1,040	15	1,130	30	1,500	14	1,200	30	1,020	13	904	30	1,260	14	910
31	1,030	16	1,120	May		15	1,140	31	1,030	14	896	31	1,420	15	915
February		17	1,080	1	1,370	16	1,150	August		15	912	November		16	918
1	1,030	18	1,080	2	1,410	17	1,160	1	1,050	16	943	1	1,460	17	902
2	1,020	19	1,160	3	1,410	18	1,220	2	1,060	17	856	2	1,450	18	930
3	1,030	20	1,250	4	1,320	19	1,200	3	1,080	18	889	3	1,450	19	930
4	1,060	21	1,140	5	1,330	20	1,150	4	1,040	19	886	4	1,420	20	935
5	1,060	22	1,090	6	1,430	21	1,130	5	1,070	20	877	5	1,400	21	959
6	1,030	23	1,080	7	1,580	22	1,020	6	1,060	21	631	6	1,500	22	935
7	1,030	24	1,070	8	1,530	23	999	7	1,070	22	716	7	1,580	23	986
8	1,020	25	1,080	9	1,540	24	1,200	8	1,040	23	817	8	1,800	24	1,090
9	1,030	26	1,120	10	1,570	25	1,210	9	1,050	24	848	9	2,000	25	1,060
10	1,020	27	1,150	11	1,530	26	1,190	10	1,020	25	844	10	2,110	26	956
11	1,020	28	1,300	12	1,660	27	1,160	11	1,020	26	871	11	2,000	27	1,000
12	1,020	29	1,310	13	1,370	28	1,160	12	1,030	27	979	12	2,060	28	957
13	1,030	30	1,450	14	2,600	29	1,140	13	1,030	28	979	13	2,000	29	975
14	1,060	31	1,390	15	1,840	30	1,110	14	1,030	29	1,000	14	1,840	30	930
15	1,090			16	1,390			15	1,030	30	1,050	15	1,700	31	1,010

Sampling by U. S. Section

North Floodway near Sebastian, Texas

January		March		April		June		July		September		October		December	
2	5,390	8	4,970	2	5,220	3	6,400	12	2,180	8	3,290	15	3,200	2	5,040
February				May				August				November			
2	5,090			11	8,190			2	4,320			1	4,760		

Sampling by U. S. Section

Arroyo Colorado South of Harlingen, Texas

January		March		May		July		September		November		November		December	
2	4,880	9	4,340	14	5,340	22	3,970	9	3,730	3	3,110	26	4,820	2	5,210
February		April		June		August		October		22	2,590				
9	4,680	1	4,980	10	4,030	2	4,960	11	5,060						

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1976

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

Rio Grande at Mercedes Irrigation District Pumps near Mercedes, Texas and Rio Rico, Tamaulipas

January		February		April		May		July		August		October		November	
1	1,690	16	1,120	1	1,420	17	2,730	1	1,150	16	1,030	1	1,070	16	1,970
2	1,480	17	1,120	2	1,480	18	1,780	2	1,120	17	1,040	2	1,050	17	1,950
3	1,370	18	1,090	3	1,450	19	1,410	3	1,130	18	1,030	3	926	18	1,820
4	1,450	19	1,080	4	1,380	20	1,300	4	1,170	19	995	4	1,030	19	1,820
5	1,450	20	1,080	5	1,370	21	1,280	5	1,190	20	988	5	922	20	1,510
6	1,630	21	1,120	6	1,400	22	1,280	6	1,260	21	983	6	934	21	1,570
7	1,620	22	1,170	7	1,350	23	1,400	7	1,180	22	960	7	947	22	1,570
8	1,510	23	1,170	8	1,390	24	1,400	8	1,140	23	958	8	953	23	1,370
9	1,450	24	1,200	9	1,400	25	1,370	9	1,100	24	952	9	932	24	1,050
10	1,370	25	1,200	10	1,620	26	1,380	10	1,100	25	955	10	930	25	970
11	1,390	26	1,180	11	1,620	27	1,430	11	1,040	26	951	11	928	26	988
12	1,390	27	1,140	12	1,620	28	1,480	12	1,040	27	948	12	920	27	924
13	1,330	28	1,130	13	1,490	29	1,530	13	1,050	28	919	13	925	28	919
14	1,300	29	1,150	14	1,420	30	1,530	14	810	29	915	14	924	29	922
15	1,070	March		15	1,460	31	1,530	15	877	30	914	15	983	30	925
16	1,090	1	1,190	16	1,500	June		16	898	31	919	16	964	December	
17	1,110	2	1,150	17	1,630	1	1,540	17	880	September		17	971	1	916
18	1,280	3	1,160	18	1,630	2	2,130	18	882	1	921	18	973	2	981
19	1,110	4	1,200	19	1,630	3	2,060	19	881	2	922	19	1,000	3	975
20	1,090	5	1,220	20	1,510	4	1,840	20	867	3	967	20	1,010	4	1,010
21	1,090	6	1,190	21	1,630	5	1,870	21	876	4	1,020	21	1,230	5	992
22	1,110	7	1,160	22	1,550	6	1,580	22	876	5	1,080	22	1,150	6	1,020
23	1,140	8	1,130	23	1,560	7	1,470	23	986	6	1,080	23	1,190	7	962
24	1,160	9	1,150	24	1,880	8	1,310	24	1,020	7	1,030	24	1,190	8	940
25	1,140	10	1,170	25	1,890	9	1,270	25	1,020	8	1,210	25	1,190	9	953
26	1,140	11	1,180	26	1,890	10	1,250	26	1,020	9	1,110	26	1,210	10	917
27	1,110	12	1,180	27	2,010	11	1,230	27	1,000	10	1,110	27	1,230	11	932
28	1,040	13	1,170	28	1,600	12	1,250	28	987	11	1,200	28	1,100	12	926
29	1,030	14	1,210	29	1,600	13	1,250	29	1,010	12	1,080	29	1,120	13	923
30	1,050	15	1,230	30	1,570	14	1,220	30	1,010	13	1,060	30	1,150	14	947
31	1,060	16	1,240	May		15	1,270	31	1,030	14	958	31	1,150	15	949
February		17	1,210	1	1,270	16	1,230	August		15	942	November		16	939
1	1,070	18	1,210	2	1,490	17	1,170	1	1,040	16	933	1	1,170	17	938
2	1,060	19	1,170	3	1,490	18	1,150	2	1,030	17	936	2	1,200	18	931
3	1,070	20	1,140	4	1,480	19	1,150	3	1,040	18	928	3	1,180	19	929
4	1,060	21	1,140	5	1,470	20	1,170	4	1,030	19	935	4	1,180	20	931
5	1,050	22	1,190	6	1,480	21	1,190	5	1,040	20	931	5	1,160	21	960
6	1,050	23	1,170	7	1,480	22	1,180	6	1,040	21	903	6	1,140	22	960
7	1,080	24	1,150	8	1,480	23	1,150	7	1,030	22	901	7	1,140	23	952
8	1,170	25	1,140	9	1,490	24	1,030	8	1,030	23	719	8	1,130	24	1,040
9	1,170	26	1,140	10	1,490	25	931	9	1,030	24	1,030	9	1,570	25	1,050
10	1,050	27	1,150	11	1,610	26	1,170	10	1,010	25	1,030	10	1,660	26	1,050
11	1,060	28	1,180	12	1,670	27	1,230	11	1,010	26	1,030	11	1,840	27	1,040
12	1,090	29	1,190	13	1,620	28	1,240	12	1,010	27	1,040	12	1,970	28	1,010
13	1,100	30	1,220	14	1,570	29	1,200	13	1,010	28	908	13	1,960	29	1,010
14	1,100	31	1,390	15	1,540	30	1,170	14	1,010	29	906	14	1,970	30	1,020
15	1,120			16	1,970			15	1,010	30	1,030	15	1,960	31	1,020

Sampling by U. S. Section

Rio Grande near San Benito, Texas and Ramirez, Tamaulipas

January		February		April		May		July		August		November		December	
6	1,500	19	1,110	8	1,420	28	1,750	12	984	26	978	4	1,520	6	910
13	1,440	24	1,230	13	1,570	June		20	880	September		8	1,540	13	920
19	1,150	March		21	1,670	4	1,750	29	1,070	10	1,060	15	1,950	20	936
25	1,130	4	1,160	29	2,100	11	1,310	August		October		22	1,460	21	970
February		9	1,160	May		17	1,240	4	1,010	21	1,140	23	1,280	27	1,090
3	1,080	18	1,260	14	1,600	21	1,240	9	1,040	22	1,180	26	942	28	972
10	1,120	26	1,150	21	1,480	28	1,200	20	1,000						

Sampling by U. S. Section

Rio Grande near Brownsville, Texas and Matamoros, Tamaulipas

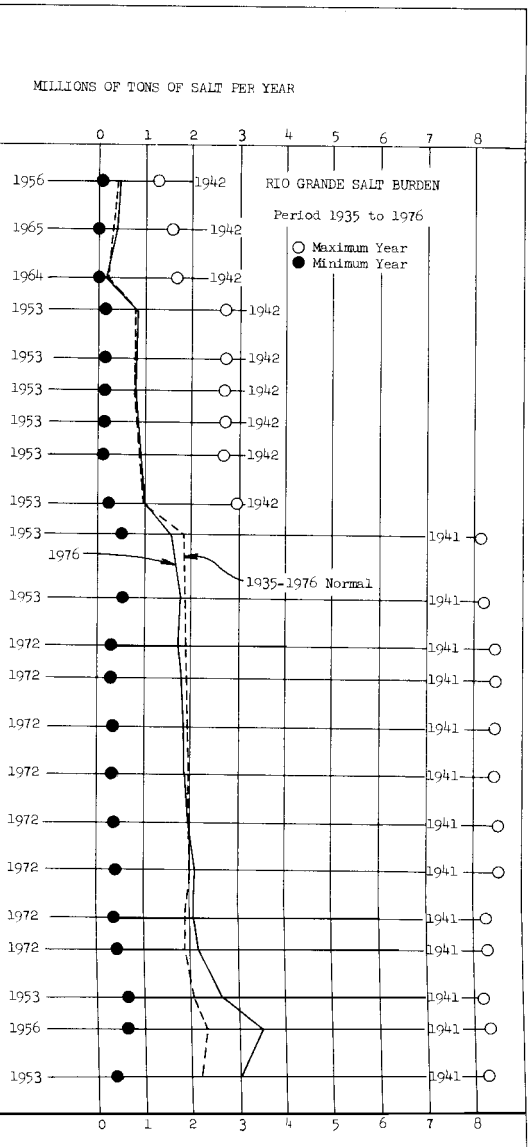
January		February		April		May		June		August		October		November	
6	1,690	19	1,210	2	1,350	14	1,600	21	1,720	4	959	21	1,250	29	950
13	1,730	24	1,360	8	1,450	20	1,320	28	1,340	9	1,040	26	1,220	December	
20	1,640	March		15	1,790	28	1,580	July		20	967	November		6	908
26	1,520	5	1,460	21	1,650	June		12	912	26	966	5	1,370	13	922
February		9	1,400	29	1,820	4	1,820	20	887	September		8	1,540	20	926
3	1,200	18	1,420	May		11	1,930	29	995	3	957	15	1,790	21	934
13	1,330	25	1,460	6	1,350	17	1,550			10	1,180	22	1,490	27	1,110
												26	1,020	28	1,140

Sampling by U. S. Section

RIO GRANDE SALT BURDEN

The term "salt", as used herein, means total dissolved solids. The 1976 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 1976 are the weighted means of the values determined for the 42-year period indicated.

CONCENTRATION Tons per Acre-Foot		
1976	Average 1935-1976	
* 1.06	1.08	EL PASO
* 3.81	2.52	FORT QUITMAN
* 2.72	1.91	ABOVE RIO CONCHOS
* 1.08	.77	RIO CONCHOS
.35	.31	ALAMITO CREEK
1.17	.90	BELOW RIO CONCHOS
.55	.62	TERLINGUA CREEK
* 1.23	.89	JOHNSON RANCH
* 1.02	.79	FOSTER RANCH
* 2.01	2.63	PECOS RIVER
.35	.29	DEVILS RIVER
* .89	.91	AMISTAD RESERVOIR BELOW AMISTAD DAM
.49	.49	ARROYO LAS VACAS
.48	.48	SAN FELIPE CREEK
.48	.48	PINTO CREEK
.31	.35	RIO SAN DIEGO
.20	.25	RIO SAN RODRIGO
.67	.82	EAGLE PASS
.46	.49	RIO ESCONDIDO
* .72	.79	LAREDO
* .96	.97	RIO SALADO
** .82	.81	FALCON RESERVOIR BELOW FALCON DAM



* Based on 1976 chemical analyses of samples collected at stations indicated
** Based on 1976 chemical analyses of samples collected at Falcon Dam - U. S. Tailrace

SANITARY ASPECTS OF WATER QUALITY

The United States and Mexican Sections of the 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," Fourteenth Edition (1975), 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 Cameron County Health Unit and the United States Section of the International Boundary and Water Commission.

Rio Grande at Laredo, Texas, Water Plant

Date 1976	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1976	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1976	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 12	60	115	June 14	110	200	Nov. 15	110	200
Feb. 9	60	95	July 12	110	870	Dec. 13	60	405
Mar. 8	620	425	Aug. 9	230	430			
Apr. 12	230	2,175	Sept. 13	110	1,300	Total	25,726	11,465
May 10	24,000	5,000	Oct. 4	26	250	Average	2,140	955

Samples and analyses by U. S. Section

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

Jan. 12	62,000	21,500	July 12	240,000	32,000	Dec. 13	36,000	15,000
Feb. 9	11,000	29,000	Aug. 9	36,000	32,000			
Mar. 9	28,000	11,500	Sept. 13	36,000	71,000			
Apr. 12	62,000	108,000	Oct. 4	36,000	50,500	Total	581,000	439,000
June 14	11,000	27,500	Nov. 15	23,000	41,000	Average	52,800	39,900

Samples by Mexican Section and analyses by U. S. Section

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

Jan. 12	2.6	30	May 10	0	35	Dec. 13	0	55
Feb. 9	2.6	45	Aug. 9	0	125			
Mar. 8	36.0	95	Oct. 4	2.6	80	Total	60.8	645
Apr. 12	6.0	50	Nov. 15	11.0	130	Average	6.8	72

Samples and analyses by U. S. Section

Rio Grande at Mercedes Irrigation District Pumps near Mercedes, Texas and Rio Rico, Tamaulipas

Jan. 8	530		June 21	3,500		Dec. 23	940	
Feb. 12	310		July 19	1,200				
Apr. 5	500		Oct. 18	230		Total	9,080	
May 20	370		Nov. 29	1,500		Average	1,010	

Samples by U. S. Section and analyses by Cameron County Health Unit

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Tabulated below, in approximate downstream order, are monthly records of United States rainfall stations with averages for their periods of record. With the exception of Las Cruces, New Mexico, all stations are located in Texas. 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 140 through 143 in this bulletin. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the office of the United States Section of the 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 1970 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 26, and Supplement 40A.

Month	Las Cruces, New Mexico		American Dam		Island Station		County Line Station		Fort Hancock Bridge	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.36	0.57	0.31	0.38	0.28	0.31	0.17	0.31	0.70	0.36
Feb.	.59	.47	.58	.38	0	.29	0	.21	.24	.31
Mar.	.26	.26	T	.33	0	.22	0	.25		.25
Apr.	.55	.28	.27	.19	.12	.14	0	.19	.64	.25
May	.26	.33	1.43	.23	1.35	.30	.24	.35	.09	.48
June	.92	.46		.56	0	.50	0	.56	.55	.84
July	2.70	1.72	3.76	1.58	.31	1.07	.54	1.15	2.13	1.36
Aug.	.80	1.81	.26	1.29	0	1.16	0	1.25	.30	1.65
Sept.	1.51	1.08	1.71	1.13	0	.88	0	.92	4.09	1.26
Oct.	.94	.78	.86	.69	0	.67	0	.87	1.12	.97
Nov.	.83	.55	.76	.26	.09	.24	.23	.27	.99	.33
Dec.	.48	.38	.22	.39	.35	.38	.34	.33	.58	.41
Yearly	10.20	9.31		7.41	2.50	6.16	1.52	6.66		8.47

Month	Guayuco Arroyo		Fort Quitman		Neely Ranch		96 Ranch Headquarters			
	1976	Average	1976	Average	1976	Average	1972	1973	1974	1975
Jan.	0.30	0.30	0	0.37	0.18	0.33	T	1.20	0.40	0.70
Feb.	.27	.20	.05	.25	.19	.19	0	2.70	0	.40
Mar.	2.08	.23	0	.22	.04	.13	0	1.80	0	.20
Apr.	.73	.19	.02	.22	.35	.14	0	T	T	0
May	2.88	.46	0	.39	.55	.37	2.00	2.00	.40	.10
June	.23	.58	0	.79	.62	.77	8.50	.50	0	0
July	.99	1.45		1.51	1.79	1.76	7.90	8.40	3.10	8.50
Aug.	1.14	1.78		1.69	.43	1.82	2.90	1.50	4.50	4.20
Sept.	1.37	1.09	1.15	1.06	2.86	1.34	8.20	1.00	10.60	7.40
Oct.	.53	1.03	.99	.85	1.60	1.02	1.30	1.00	1.30	T
Nov.	.16	.21	.29	.30	.27	.23	0	T	1.50	T
Dec.	.39	.37	.73	.37	.89	.41	T	0	T	1.20
Yearly	11.07	7.89		8.02	9.77	8.56	30.80	20.10	21.80	22.70

Month	96 Ranch Headquarters		Moody Bennett Ranch		La Nutria Station		Bill Shannon Ranch		Adobes Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.46	0	0.35	0.30	0.09	0.35	0.43	0.35	0.33
Feb.	0	.62	0	.38	T	.26	0	.38	0	.24
Mar.	0	.40	0	.21	0	.18	0	.38	0	.18
Apr.	0	T	0	.12	.10	.12	0	.13	0	.12
May	0	.90	.41	.72	.40	.29	.50	.73	.45	.69
June	2.90	2.38	.22	.83	1.10	.82	3.40	1.50	1.30	1.30
July	6.50	6.88	3.81	1.85	3.60	1.67	4.65	2.44	2.68	2.10
Aug.	2.60	3.14	0	1.78	1.60	2.18	1.45	2.31	1.48	1.84
Sept.	5.40	6.52	4.91	1.43	.90	1.81	5.70	2.40	3.13	2.27
Oct.	2.40	1.20	1.50	.99	.85	1.06	1.00	1.13	1.60	.69
Nov.	.40	.38	0	.34	.50	.36	.50	.39	0	.27
Dec.	2.40	.72	.95	.24	1.05	.26	.75	.42	.71	.27
Yearly	22.60	23.60	11.80	9.24	10.40	9.10	18.30	12.64	11.70	10.30

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Shafter		Shafter No. 2		Presidio (IB&WC Gage)		Presidio, IB&WC Construction Office		Quebec Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.10	0.51		0.10	0.25			0	0.41
Feb.	0	.41	.02		0	.22			.30	.33
Mar.	0	.40	0		0	.19			0	.30
Apr.	0	.34	0		T	.18			0	.24
May	.95	.66	1.02		1.45	.53	1.79		0	.82
June	5.00	2.96	4.36		1.55	1.22	2.09		2.60	1.66
July	5.00	4.23	4.46		2.35	1.56	2.67		4.75	2.72
Aug.	1.50	3.83	1.22		1.25	1.14	.82		2.10	2.50
Sept.	3.50	4.23	2.08		2.60	1.43	1.80		2.60	2.32
Oct.	1.00	1.22	1.03		.40	.60	.45		.90	.84
Nov.	0	.47	1.07		.70	.30	.79		.50	.35
Dec.	2.30	.26	1.86		1.35	.25	1.60		1.35	.33
Yearly	19.25	19.11	17.63		11.75	7.87			15.10	12.82

Month	Bloys Camp		Kerr Mitchell Ranch		H. T. Fletcher Ranch		H. M. Greenwood (Cienega Ranch)		Redford	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.23	0.68	0.10	0.46	0	0.74	0	0.56	0.15	0.29
Feb.	.08	.65	0	.35	.30	.33	0	.34	0	.22
Mar.	0	.54	0	.20	.15	.38	0	.35	0	.24
Apr.	.45	.43	.25	.43	.15	.42	0	.51	T	.24
May	.61	1.40	.48	1.11	.45	1.11	1.00	.82	.60	.49
June	2.18	2.45	1.87	1.76	1.80	1.57	1.10	2.03	.70	.85
July	9.11	3.73	6.12	2.14	8.65	3.07	4.50	2.53	4.20	1.46
Aug.	2.58	3.97	1.43	2.24	1.80	2.95	6.00	2.39	2.25	1.18
Sept.	3.36	2.89	5.30	2.04	2.70	2.37	2.00	2.73	.60	1.73
Oct.	1.76	1.52	.70	1.26	.30	1.46	2.00	1.41	1.50	.77
Nov.	.67	.62	.13	.35	.20	.44	1.50	.62	.40	.36
Dec.	1.11	.59	1.16	.38	1.00	.41	.60	.59	1.55	.24
Yearly	22.14	19.47	17.54	12.72	17.50	15.25	18.70	14.93	11.95	8.07

Month	Lajitas		Earl Hammond Ranch		Terlingua Creek Tex. Hwy. Dept. Camp		Villa de la Mina		Terlingua Creek Station	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.07	0	0.18	0	0.12	0	0.13	T	0.22
Feb.	0	.31	.20	.45	0	.30	0	.24	T	.23
Mar.	0	.32	0	.40	0	.23	1.73	.86	0	.16
Apr.	0	.39	.20	.35	0	.25	0	0	T	.32
May	2.13	.72	1.50	.61	2.18	.68	.53	.38	1.80	.67
June	0	1.30	.43	1.28	.44	1.05	1.73	1.38	.60	.99
July	.76	1.18	5.95	2.50	1.98	1.67	3.48	3.51	1.50	1.15
Aug.	0	1.42	1.33	2.58	0	1.30	.80	1.46	.30	1.14
Sept.	1.15	2.36	2.78	2.55	2.37	2.06	0	1.01	1.00	1.26
Oct.	1.15	.66	1.18	1.27	.50	.70	.95	.44	2.10	.69
Nov.	0	.21	1.00	.45	0	.25	0	.18	.30	.17
Dec.	1.70	.32	2.30	.52	.96	.28	1.31	.74	1.15	.29
Yearly	6.89	9.26	16.87	13.14	8.43	8.89	10.53	10.33	8.75	7.29

Month	Castolon		Johnson Ranch		J. F. Woodward Ranch		Yarborough Ranch		Elephant Mountain Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.09	0.21	0	0.32	0.08	0.45	0	0.20	0	0.44
Feb.	0	.35	0	.24	.03	.39	0	.42	.07	.31
Mar.	T	.30	0	.19	.04	.21	0	.30	0	.18
Apr.	.38	.30	.50	.40	.98	.51	0	.27	.11	.48
May	1.84	.90	1.55	1.02	.63	.99	.99	.82	.47	.81
June	1.13	1.33	1.80	1.03	2.54	1.84	2.19	1.56	1.65	1.29
July	4.53	1.95	1.00	1.11	4.94	2.28	6.03	3.08	4.10	1.90
Aug.	1.31	1.84	.50	.36	2.85	2.95	.56	3.01	1.55	1.77
Sept.	1.87	2.03	1.15	1.31	3.33	2.21	4.28	3.17	2.80	1.80
Oct.	2.18	.87	1.15	.66	1.48	1.00	.36	1.01	.85	.98
Nov.	.43	.19	.35	.19	1.89	.82	0	.59	0	.32
Dec.	.55	.26	1.05	.31	1.24	.28	1.86	.51	2.50	.46
Yearly	14.31	10.53	9.05	7.64	20.03	13.73	16.32	14.94	14.10	10.74

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Buttrill Ranch		A. M. Potter Ranch		Nitaville Mercantile		Black Gap Game Refuge - Hdqtrs.		Harold Wynne Ranch Headquarters	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.50	0.16	0.34	0	0.22	T	0.43	0	0.33
Feb.	0	.18	0	.46	0	.23	0	.47	0	.13
Mar.	0	.19	0	.21	0	.19	0	.28	0	.33
Apr.	1.06	.49	0	.22	.59	.20	.58	.35	0	.23
May	2.00	1.12	1.25	.99	1.85	.76	2.59	1.36	1.90	.37
June	1.30	1.39	.46	1.10	0	.10	.97	1.26	.20	.40
July	1.59	1.55	2.91	1.46	1.08	1.52	3.81	1.78	3.50	2.63
Aug.	1.50	1.52	.90	1.64	T	1.33	.12	1.33	1.20	3.23
Sept.	4.20	2.00	3.05	1.87	2.06	2.10	3.05	2.26	4.70	3.40
Oct.	1.31	.94	1.15	.57	.22	.52	1.86	1.13	2.30	1.37
Nov.	0	.28	0	.39	1.28	.53	1.00	.34	.60	.43
Dec.	1.70	.26	.88	.45	1.37	.71	1.53	.37	1.40	.80
Yearly	14.66	10.42	10.76	9.70	8.45	8.41	15.51	11.36	15.80	14.15

Month	Sheep Pasture		Heath Crossing		Mouth of Maravillas Creek		Dove Mountain Ranch		Slaughter Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	T	0.22	0	0.22	T	0.16	0	0.43		0.40
Feb.	0	.43	0	.48	0	.13	0	.39		.54
Mar.	0	.40	0	.33	0	.25	0	.24		.51
Apr.	.70	.21	T	.27	.53	.37	.82	.38		.63
May	3.07	1.31	1.74	.84	1.00	.88	1.80	1.02		1.16
June	1.25	1.46	.45	1.20	.30	1.46	.92	1.11		1.00
July	2.85	2.12	3.67	1.57	3.39	1.42	5.92	2.01		1.19
Aug.	0	1.53	2.14	1.47	3.35	2.09	.70	1.28		2.35
Sept.	4.00	3.04	4.20	2.73	3.00	1.59	3.25	1.57	4.52	2.62
Oct.	1.65	1.55	1.16	.91		1.05	1.20	1.33	1.90	1.69
Nov.	.85	.45	.40	.28		.37	.55	.33	.92	.66
Dec.	1.70	.45	.96	.32		.14	1.10	.40	.85	.46
Yearly	16.07	13.17	14.72	10.62		9.91	16.26	10.49		13.21

Month	Slaughter Ranch Martin Pens		Slaughter Ranch Keith Mill		Slaughter Ranch Ten Section		Slaughter Ranch * Cow Creek		Steve Stumberg Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.								0.57	0	0.50
Feb.								.29	0	.41
Mar.								.15	0	.45
Apr.								.50	1.06	.65
May								1.00	3.01	1.36
June								.91	1.62	1.69
July								.73	5.71	2.12
Aug.								.90	1.06	1.83
Sept.	4.40		5.00		5.00		4.00	1.39	3.62	2.28
Oct.	1.90		1.80		1.10		1.20	1.21	1.25	1.53
Nov.	0		0		0		0	.16	.65	.46
Dec.	.80		.80		.80		.80	.19	.49	.48
Yearly								8.00	18.47	13.76

Month	McGonagill Ranch Headquarters		McGonagill Ranch East Mill		E. W. Hardgrave Ranch		Lewis James Ranch		Dryden	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.31	0	0.33	0	0.49	0	0.33	0	0.50
Feb.	0	.53	0	.25	0	.83	0	.61	0	.51
Mar.	0	.47	0	.54	.19	.36	0	.36	.02	.43
Apr.	.60	.47	.50	.63	2.48	1.28	1.03	.75	2.14	.90
May	4.90	1.21	3.30	1.25	4.54	1.46	2.76	1.34	2.48	1.67
June	1.30	1.89	1.10	1.80	.95	1.52	1.52	.97	.22	1.10
July	4.20	2.30	7.20	1.63	4.66	1.31	3.78	1.76	4.50	1.15
Aug.	0	1.67	.50	1.87	.35	1.54	.56	2.11	0	1.33
Sept.	5.70	2.54	4.30	2.44	3.06	2.84	3.49	3.81	1.87	2.13
Oct.	1.20	1.07	1.20	1.11	3.30	1.75	2.49	1.63	2.42	1.35
Nov.	0	.22	0	.20	.82	.58	.83	.57	.62	.43
Dec.	.60	.15	.60	.20		.37	.82	.38	.92	.45
Yearly	18.50	12.83	18.70	12.25		14.13	17.28	14.82	15.19	11.95

T Trace * Formerly Garner Ranch

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Bricker Ranch		Ross Foster Ranch		W. A. Arledge Ranch		Hoffman Ranch		Owens Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.35	0.15	0.42	0	0.64	0	0.43	T	0.31
Feb.	0	.60	0	.50	0	.55	0	.42	.20	.67
Mar.	0	.42	0	.28	.05	.44	0	.33	.40	.90
Apr.	.57	.96	1.70	.84	1.76	1.27	.29	.30	1.55	1.46
May	2.02	1.26	1.30	1.34	4.01	1.86	.20	1.02	1.80	1.79
June	.65	1.30	.85	1.08	.16	1.63	1.76	1.94	.50	1.36
July	1.33	.78	2.30	.78	6.15	1.32	6.40	2.45	6.04	1.42
Aug.	0	1.10	0	1.41	0	1.34	3.14	2.30	1.35	1.88
Sept.	2.07	2.22	.10	2.04	2.24	2.14	4.83	2.26	2.70	2.92
Oct.	.21	1.04	2.20	1.11	3.51	1.61	.91	1.11	3.58	2.33
Nov.	0	.39	.65	.25	.60	.47	.10	.38	4.50	1.45
Dec.	1.04	.41	1.00	.35	.70	.51	.38	.30	.90	.57
Yearly	7.89	10.83	10.25	10.40	19.18	13.78	18.01	13.24	23.52	17.06

Month	Terrell Plant (E. P. N. G. Co.)		Calvin Hutto Ranch		Latham Ranch		Prosser Ranch No. 3		Ranchita (Continental)	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.		0.36	0		0	0.37	0.05	0.32	0.15	0.26
Feb.		.84	0		0	1.00	0	.84	0	.79
Mar.	.30	.60	T		0	.59	.10	.60	.10	.77
Apr.	1.08	1.59	2.29		0	1.62	1.60	1.36	1.90	1.14
May	3.22	1.56	3.30		3.30	3.09	4.75	2.08	3.15	1.89
June	.60	1.37	1.70		0	1.86	0	1.15	1.05	1.99
July	5.17	1.21	2.90	2.30	12.80	3.80	5.40	1.91	4.45	2.01
Aug.	1.60	1.36	1.50	2.82	1.20	3.34	.49	2.59	.15	3.26
Sept.	4.48	3.69	4.50	3.20	4.80	4.19	2.41	4.41	1.60	3.42
Oct.	3.10	1.81	4.20	3.00	4.20	2.09	3.75	2.02	3.74	2.54
Nov.	.39	.56	1.50	1.20		1.09	.45	.53	1.00	.73
Dec.	.44	.34	1.50	.75		.67	.50	.32	.80	.48
Yearly		15.29	23.39			23.71	19.50	18.13	18.09	19.28

Month	Rio Grande near Dryden		Pecos River near Langtry Station		Deadmans Canyon near Comstock		Prosser Ranch No. 1		Continental Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.			0.05	0.20	0	0.27	0.10	0.27	0.15	0.48
Feb.			0	.69	0	.63	0	.72	0	.91
Mar.			0	.54	0	.55	.10	.50	.20	.71
Apr.			1.80	1.04	2.00	1.17	1.90	1.41	1.90	1.36
May	.30		1.15	1.19	2.40	2.08	3.69	2.10	4.80	2.62
June	1.05		1.90	1.55	1.00	1.85	.05	1.49	.77	1.87
July	2.89		4.15	1.88	7.10	2.96	8.50	2.75	5.50	2.97
Aug.	0		.10	2.01	.57	2.33	.43	2.43	1.00	2.88
Sept.	.77		1.30	3.02	1.73	3.25	1.52	3.88	2.00	4.60
Oct.	1.17		2.90	1.46	3.10	2.30	2.33	2.01	3.65	2.68
Nov.	.36		.90	.55	.75	.53	.52	.55	1.30	.70
Dec.	.50		.52	.32	.85	.46	.60	.37	.80	.46
Yearly			14.77	14.45	19.50	18.48	19.74	18.48	22.07	22.24

Month	Martin King Ranch		Brotherton Ranch		Walker Ranch		Zuberbueler Ranch		P. W. Kelly Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.07	0.50	0.12	0.69	0.05	0.24	0.21		0.43	0.47
Feb.	0	.74	0	.89	0	.68	0	1.70	0	.77
Mar.	.03	.35	.03	.62	.30	.70	.07	.04	.29	.84
Apr.	1.99	.90	2.32	1.02	2.50	1.10	2.24	1.36	2.69	1.27
May	1.85	1.50	3.60	1.49	3.91	2.14	3.10	2.38	3.34	2.16
June	1.38	1.58	1.15	1.81	1.30	1.97	.74	.60	.16	2.11
July	6.39	1.54	7.73	1.72	5.20	2.63	7.93	6.85	7.79	2.70
Aug.	.32	1.50	0	2.05	.26	1.48	.05	.23	2.32	2.41
Sept.	.85	2.81	1.43	2.97	1.13	4.75	1.82	1.74	2.46	3.30
Oct.	2.81	2.33	3.22	2.03	3.10	2.44	3.42	1.99	.31	1.93
Nov.	.58	.47	.55	.44	.68	.56	.65	.38	2.78	.71
Dec.	1.01	.46	1.14	.34	.70	.43	1.15	.68	1.00	.32
Yearly	17.28	14.08	21.29	16.12	19.13	19.12	21.38		23.57	18.99

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Comstock		Cow Creek near Comstock		Goodenough Spring Raft		Amistad Reservoir near Comstock		Feely	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.20	0.59	0.15	0.32	0	0.36	0	0.26	T	0.40
Feb.	0	.80	0	.58	0	.52	0	.35	0	.76
Mar.	.10	.61	.05	.46		.34	0	.56	.05	.56
Apr.	2.10	1.38	1.20	1.14		1.30	4.43	1.17	1.20	1.31
May	2.26	1.89	2.70	1.18		1.03	0	1.04	4.40	1.92
June	.65	2.13	.70	1.43		1.77	.25	1.32	.20	1.94
July	9.00	1.38	12.00	2.07		.86	5.60	1.93	6.50	1.72
Aug.	.25	1.91	.25	2.49		1.61	0	2.06	1.10	2.23
Sept.	2.07	2.44	1.25	2.56		3.00	.90	2.53	.90	2.68
Oct.	3.29	1.94	3.10	1.93		2.20	3.40	2.79	4.25	2.40
Nov.	.63	.55	.45	.49		.38	.40	.18	.60	.33
Dec.	1.15	.66	1.10	.34		.34	1.15	.30	1.20	.39
Yearly	21.70	16.28	22.95	14.99		13.91	16.13	14.49	20.40	16.64

Month	Lock Store		W. E. Sawyer Ranch		Whitehead Brothers Ranch		Prosser Ranch No. 2		Devils River at Cauthorn Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.52	0	0.37	0.10	0.48	0.05	0.34		
Feb.	0	.98	0	.93	0	.72	0	.89		
Mar.	.67	.63	.30	.87	.20	.79	.12	.73		
Apr.	1.36	1.87	2.63	2.00	3.28	1.85	2.20	1.41	2.78	
May	1.80	2.06	2.12	2.03	3.17	2.66	5.25	2.09	3.11	
June	1.05	1.40	1.17	1.58	.47	1.33	0	1.39		
July	8.38	2.46	8.56	2.83	12.83	2.54	5.90	2.38		
Aug.	.40	2.71	1.70	3.44	.30	2.71	.71	2.89	0	
Sept.	2.35	4.35	9.81	3.95	2.90	3.52	2.33	4.42	.57	
Oct.	4.49	2.11	3.95	2.54	2.80	3.07	2.30	2.18	2.33	
Nov.	.48	.84	.05	.60	.48	.69	.50	.60	.35	
Dec.	.39	.35	.84	.57	.89	.45	.40	.35	.60	
Yearly	21.37	20.29	31.13	21.71	27.42	20.81	20.26	19.67		

Month	Bakers Crossing		Erekson Ranch		Vinegarone		Eugene Miller Ranch		Dolan Springs	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.04	0.75	0	0.90	0	0.50	T		0.10	0.44
Feb.	T	.96	0	1.21	0	.34	0		0	.79
Mar.	.27	.78	.73	.88	.60	.86	.34		.30	.83
Apr.	1.89	1.15	2.33	2.13	3.96	1.73	2.05		3.50	1.32
May	4.16	2.52	5.46	2.65	5.96	2.86	2.47		3.50	2.04
June	1.65	2.01	0	2.86	.30	1.58	.33		.46	1.73
July	6.84	1.84	13.09	2.58	16.00	2.96	14.82	9.76	12.04	2.70
Aug.	2.20	2.26	3.26	2.47	.30	3.30	.80	2.00	.20	3.57
Sept.	2.78	3.75	3.52	3.15	3.80	3.18	7.00	4.60	4.10	3.73
Oct.	2.39	1.35	2.35	2.69	2.50	3.04	3.94	2.72	2.80	2.64
Nov.	.61	.56	0	.79	.68	.73	.59	.92	.57	.62
Dec.		.66	2.00	.52	1.14	.49	.32	.27	1.13	.44
Yearly		19.09	37.74	22.83	35.24	21.87	32.66		28.70	21.35

Month	H. K. Fawcett Ranch		Ed Crane Ranch		H. T. Miers Ranch Headquarters		H. T. Miers Ranch No. 2		A. A. Baker Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.71	0.21	0.61	T	0.62	0.08	0.44	0.20	0.39
Feb.	0	.76	0	1.20	0	1.11	0	.92	0	.73
Mar.	0	.82	.26	.62	0	.76	.43	.90	.15	.54
Apr.	4.05	1.61	3.70	1.80	2.61	1.69	3.37	1.48	1.98	1.37
May	2.82	2.32	4.26	2.67	4.77	2.77	2.69	2.45	2.08	1.74
June	.40	1.43	.34	1.94	.20	2.76	.47	2.02	.47	1.75
July	13.35	1.92	8.89	2.22	13.72	2.02	7.47	1.77	8.83	1.92
Aug.	.20	2.56	0	1.08	.50	2.34	.88	3.10	.66	2.23
Sept.	3.20	3.59	3.22	2.98	4.40	2.90	5.22	3.35	3.03	3.42
Oct.	2.75	2.54	3.00	2.12	2.90	3.05	3.49	2.32	3.39	2.01
Nov.	.55	.54	.58	.73	.65	.72	.87	.70	.59	.93
Dec.	1.05	.46	1.01	.66	1.25	.58	1.35	.63	1.00	.40
Yearly	28.37	19.51	25.47	18.83	31.00	21.32	26.32	20.08	22.43	17.03

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

	Harlow Ranch		Gillis Ranch		Goldwire Ranch		Pafford Crossing		Big Satan Creek Station	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.26	0.11	0.47	0.05	0.52	T	0.50	0.20	0.53
Feb.	0	.48	0	.91	0	.66	0	.78	0	.56
Mar.	0	.42	0	.74	0	.71	0	.48	.45	1.04
Apr.	2.00	1.32	3.95	1.82	3.15	1.44	3.78	1.31	5.25	1.78
May	3.80	2.12	3.00	2.20	4.39	2.58	3.20	1.82	3.33	1.98
June	.48	1.90	.32	1.46	.70	1.94	.40	1.97	.49	1.47
July	6.92	2.12	7.96	2.16	14.12	3.62	14.56	2.14	13.76	3.18
Aug.	.30	2.14	1.47	1.96	.70	4.55	1.90	2.34	1.15	4.33
Sept.	2.05	3.48	3.47	3.82	3.80	3.22	2.50	3.57	3.10	3.16
Oct.	2.35	2.54	4.31	2.73	3.10	2.80	4.00	2.30	3.30	2.91
Nov.	.55	.46	.67	.81	.63	.64	.65	.48	.35	.60
Dec.	.80	.34	1.48	.70	1.35	.46	1.35	.50	1.40	.58
Yearly	19.25	17.58	26.74	19.78	31.99	23.14	32.34	18.19	32.78	22.22

	Cliff Lowry Ranch		Lowry Ranch No. 2		Tuffy Whitehead Ranch		Stewart Ranch		Rough Canyon near Del Rio	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.12	0.40	0.05	0.33	0.08	0.30	0.05	0.40	0	0.26
Feb.	0	1.08	0	.89	0	.75	0	.87	0	.88
Mar.	.21	.68	.13	.80	.05	.61	.14	.53	.07	.57
Apr.	5.06	1.90	4.92	1.96	2.92	1.44	5.97	1.79	4.32	1.57
May	2.84	2.52	2.57	2.17	1.96	1.56	2.46	1.56	2.48	1.79
June	.77	2.00	.49	1.76	.60	1.76	.26	2.18	.47	1.66
July	16.64	2.18	16.12	2.49	10.16	1.68	12.79	2.16	16.23	3.30
Aug.	.11	2.66	.14	3.10	1.13	1.77	.10	2.09	.68	3.31
Sept.	1.64	3.48	2.80	2.72	2.30	3.29	2.06	2.81	2.72	2.66
Oct.	2.94	2.30	3.03	2.16	4.10	2.09	2.92	2.22	3.75	2.80
Nov.	.80	.73	.61	.69	.56	.52	.83	.66	.80	.69
Dec.	1.21	.51	1.20	.54	1.33	.46	1.13	.52	1.40	.57
Yearly	32.34	20.44	32.06	19.61	25.19	16.23	28.71	17.89	32.92	20.06

	Devils Lake		Sellers Ranch		Evans Creek near Comstock		J. G. Brite Ranch		Hutto Ranch No. 1	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.64	0	0.36	0	0.17	0.03	0.34	0.05	0.51
Feb.	0	.85	0	.76	0	.71	0	.91	0	.91
Mar.	.06	.59	0	.51	0	.65	.09	.67	.12	.57
Apr.	3.54	1.67	2.97	1.45	3.14	1.31	2.75	1.74	5.33	2.12
May	2.53	1.84	3.02	1.50	2.52	1.07	2.86	2.05	3.80	1.77
June	.66	2.22	.18	2.11	.18	1.52	.26	1.70	.18	2.00
July	16.50	1.40	9.90	1.58	8.93	2.95	11.95	1.90	14.11	2.59
Aug.	.47	1.93	.10	2.22	.08	3.90	.05	2.62	.50	2.65
Sept.	2.44	2.45	3.22	2.78	1.31	3.63	1.84	3.60	2.10	3.10
Oct.	3.55	1.97	3.71	2.11	4.24	2.79	3.42	2.30	2.98	2.45
Nov.	.79	.63	.70	.48	.60	.52	.72	.62	.81	.71
Dec.	1.24	.71	1.05	.48	1.10	.40	1.33	.51	1.47	.55
Yearly	31.78	16.90	24.85	16.34	22.10	19.62	25.30	18.96	31.45	19.93

	Hutto Ranch No. 2		Middle Fork San Pedro		North Fork San Pedro		Long Ranch		Buoy No. 11	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.10	0.49	0.10	0.38	0.05	0.34	0.12	0.39	0.10	0.35
Feb.	0	.97	0	.74	0	.69	0	.59	0	.36
Mar.	.11	.57	.11	.59	.12	.66	.11	.68	0	.61
Apr.	2.66	2.23	4.10	1.84	4.47	1.70	3.73	1.87	4.05	1.37
May	2.68	1.60	3.20	2.03	2.40	1.76	2.73	1.59	.80	1.32
June	.16	1.98	.49	1.86	.45	1.88	.28	1.49	.20	1.74
July	14.75	2.58	16.36	4.06	16.30	3.92	10.21	3.65	8.80	2.84
Aug.	.18	2.49	.12	3.24	.10	3.19	.10	2.23	0	2.59
Sept.	1.01	3.88	1.68	1.72	1.40	2.20	1.22	2.60	1.25	3.01
Oct.	2.35	2.22	3.45	3.47	3.58	3.07	3.00	2.58	3.30	2.58
Nov.	.30	.80	1.30	.77	1.30	.82	.81	.44	.55	.18
Dec.	1.32	.47	1.80	.66	1.60	.61	1.27	.57	1.18	.46
Yearly	26.12	20.28	32.71	21.36	31.77	20.84	23.58	18.68	20.23	17.41

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Amistad Raft		Amistad Dam		Laughlin Air Force Base		Gillis Headquarters Ranch		Lewis Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.10	0.40	0.11	0.42	0.12	0.48	0.14	0.48		0.59
Feb.	0	.42	0	.81	.10	.94	0	1.03		1.14
Mar.	.05	.60	.09	.66	.15	.42	.18	.70		.67
Apr.	3.39	1.55	2.29	1.91	5.18	2.13	5.46	2.36	6.98	2.48
May	.80	1.67	2.09	1.93	3.45	1.84	2.40	2.31	4.50	2.42
June	.15	1.83	.18	1.69	1.88	2.66	.69	2.40	.60	2.38
July	13.15	3.44	14.61	2.30	15.17	2.91	13.42	3.69	11.53	2.07
Aug.	.11	3.96	.10	2.58	.08	2.15	1.44	3.87	2.00	2.89
Sept.	.94	2.73	1.04	4.21	1.93	2.87	2.33	2.83	1.45	3.66
Oct.	2.80	3.11	3.29	2.07	2.48	2.64	3.58	3.14	3.32	3.09
Nov.	.80	.60	.83	.60	.74	.76	.84	.92	.90	.76
Dec.	1.21	.50	1.39	.56	1.39	.58	1.63	.67	1.75	.66
Yearly	23.50	20.81	26.02	19.74	32.67	20.38	32.11	23.80		22.81

Month	Maverick County Canal Headgate		Sultenfuss Ranch		Pinto Creek Station		Las Moras Creek		Wipff Ranch	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.53	0	0.58	0.20	0.55	0.15	0.69	0.15	0.67
Feb.	0	1.00	0	1.45	0	.80	0	1.06	0	.84
Mar.	0	.57		.75	.15	.44	.15	.59	.15	.57
Apr.	1.10	1.58		2.65	5.05	1.48	3.35	1.50	5.10	1.66
May	4.60	2.13		2.57	5.55	2.01	4.41	2.24	5.40	2.20
June	.35	2.12		2.86	.30	2.51	2.93	2.76	.50	2.39
July	13.60	1.95		1.19	7.80	1.73	5.67	1.42	11.00	1.89
Aug.	0	1.67		4.22	.10	1.85	.07	2.23	.95	2.10
Sept.	1.30	2.88		3.96	1.30	3.22	3.01	3.74	.80	3.10
Oct.	4.60	2.19		3.74	4.90	2.22	5.86	2.74	5.55	2.43
Nov.	1.15	.70		1.06	1.70	.80	1.22	.99	1.20	.95
Dec.	2.35	.58		.84	1.50	.55	1.95	.66	1.50	.58
Yearly	29.05	17.90		25.87	28.55	18.16	28.77	20.62	32.30	19.38

Month	Lateral No. 2 Spill		Normandy		Lateral No. 12 Headgate		Lateral No. 15 Spill		Maverick Power Plant	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.15	0.60	0.11	0.73	0.10	0.57	0.10	0.60	0.29	0.68
Feb.	0	.74	0	.75	0	.62	0	.67	0	.78
Mar.	.20	.66	.19	.75	.15	.62	.25	.55	.63	.80
Apr.	3.85	1.63	4.39	1.81	3.55	1.60	2.95	1.40	4.06	1.79
May	5.45	2.57	6.78	2.72	6.35	2.61	4.90	2.51	4.01	2.67
June	2.60	2.45	2.09	2.14	.70	1.96	1.25	1.94	1.22	2.26
July	11.30	2.18	11.92	2.42	10.90	1.93	14.00	2.28	12.34	1.87
Aug.	T	2.29	.08	2.39	.45	1.97	T	1.86	.25	2.03
Sept.	1.75	3.34	.65	3.29	.75	3.13	.80	2.53	.73	2.78
Oct.	6.45	2.40	6.09	2.62	6.25	2.78	5.70	2.77	5.39	2.59
Nov.	1.40	.86	1.40	.86	1.30	.68	1.40	.62	1.45	.69
Dec.	1.50	.52	1.45	.75	1.45	.55	1.25	.56	1.78	.61
Yearly	34.65	20.24	35.15	21.23	31.95	19.02	32.60	18.29	32.15	19.55

Month	Cooper Ranch		Coal Mine		Elm Creek Station		Chittim Ranch		Eagle Pass	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.15	0.47	0.12	0.56	0.15	0.48	0.15	0.53	0.14	0.64
Feb.	0	.71	0	.79	0	.68	T	.84	.01	.94
Mar.	.20	.71	.18	.78	.20	.55	.30	.62	.32	.91
Apr.	3.10	1.54	3.22	1.67	2.85	1.64	4.45	1.77	4.41	1.61
May	5.30	2.42	5.53	2.79	5.90	2.98	6.10	3.09	5.45	3.70
June	.40	2.30	.45	1.61	.40	2.12	.80	2.04	2.03	2.82
July	8.50	2.27	9.13	2.61	9.90	2.29	11.40	2.36	13.23	2.43
Aug.	2.80	2.14	.27	1.87	.10	2.35	.50	2.35	.96	3.36
Sept.	.75	3.58	.63	3.47	1.55	3.08	1.40	3.14	1.50	3.78
Oct.	5.75	2.67	6.02	2.67	6.10	2.78	6.60	2.99	6.32	2.79
Nov.	1.30	.77	1.61	.66	1.65	.59	1.90	.63	2.01	.69
Dec.	1.50	.58	1.19	.46	1.20	.56	1.45	.60	1.52	.80
Yearly	30.25	20.16	28.35	19.94	30.00	20.10	35.05	20.96	37.90	24.47

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Canon Diablo		Rosita Creek Siphon		Weyrich Farm		Trees Farm		Rosita Creek Station	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.10	0.52	0.10	0.45	0.05	0.48	0.07	0.51	0.10	0.41
Feb.	0	.78	0	.79	0	.81	0	.84	0	.72
Mar.	.15	.74	.20	.65	.20	.54	.19	.49	.10	.53
Apr.	4.10	1.96	3.90	1.71	2.35	1.68	3.90	1.83	4.00	1.84
May	3.25	3.83	4.20	2.80	6.00	3.31	3.49	2.98	2.65	2.57
June	1.80	2.57	1.65	2.15	.90	1.88	1.45	1.70	.70	2.11
July	10.25	1.69	8.30	2.15	8.30	1.45	6.25	2.02	8.30	1.54
Aug.	1.05	2.69	1.00	1.92	2.00	2.09	.59	1.86	.55	1.87
Sept.	1.35	4.02	.80	3.13	1.40	3.14	.76	3.00	1.30	3.18
Oct.	4.70	2.56	4.85	2.54	4.40	2.00	5.31	3.27	4.45	2.92
Nov.	1.80	.73	1.90	.73	1.90	.70	1.95	.70	1.95	.70
Dec.	1.45	.60	1.60	.65	1.40	.61	1.80	.64	1.50	.59
Yearly	30.00	22.69	28.50	19.67	28.90	18.69	25.76	19.84	25.60	18.98

Month	Farias Ranch		Indio Ranch		El Indio		Van Dalsem Farm		Wuensche Farm	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.12	0.60	0.10	0.58	T	0.73	T	0.49	T	0.63
Feb.	0	1.10	0	.87	0	.94	0	.90	0	.98
Mar.	.30	.55	.32	.59	.32	.55	.10	.53	.09	.62
Apr.	2.92	1.92	2.88	2.02	3.08	1.68	2.85	1.82	2.35	1.68
May	2.74	3.04	2.38	2.55	3.16	3.23	3.35	2.67	3.07	2.68
June	2.15	1.99	.37	2.38	1.42	1.96	.10	1.36	.16	2.16
July	8.78	2.51	7.56	2.24	8.22	1.37	7.30	1.83	6.31	1.46
Aug.	1.51	2.28	.33	1.76	.71	2.03	.10	1.68	.92	1.85
Sept.	1.55	4.14	1.15	3.91	1.57	3.31	1.55	3.69	2.14	3.26
Oct.	7.38	3.20	5.23	2.89	6.37	2.40	4.50	2.73	4.74	2.37
Nov.	2.13	.85	2.06	.83	3.33	.73	2.10	.73	2.15	.74
Dec.	2.04	.79	1.69	.67	1.75	.64	1.55	.65	1.53	.61
Yearly	31.62	22.97	24.07	21.29	29.93	19.57	23.50	19.08	23.46	19.04

Month	Keisling Farm		Cuervo Creek Station		Apache Ranch		Laredo Water Plant		Fort McIntosh (Laredo)	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	T	0.53	T	0.59	0	0.63	0.23	0.74	0.35	0.72
Feb.	0	.91	0	.74	0	.95	T	.80	T	.87
Mar.	.11	.71	.05	.44	.80	.43	1.65	.60	1.73	.71
Apr.	2.83	1.82	2.00	1.51	4.40	1.54	2.71	1.10	3.32	1.29
May	3.39	2.56	3.10	2.20	4.80	2.42	1.67	2.37	2.12	2.64
June	.07	2.52	.10	2.14	0	1.89	.80	2.21	.96	2.28
July	5.74	1.62	5.40	1.43	5.50	2.27	4.47	1.29	6.69	1.48
Aug.	.34	1.90	.20	1.73	1.50	2.18	2.48	1.86	1.84	1.94
Sept.	2.14	3.11	2.40	3.30	0	3.61	3.12	3.22	3.52	3.00
Oct.	4.93	2.68	4.85	2.49	6.50	2.45	4.60	1.81	5.98	1.79
Nov.	2.17	.69	2.20	.71	0	.76	3.39	.91	3.27	1.16
Dec.	1.54	.81	1.55	.56	2.80	.79	2.93	.86	3.06	.87
Yearly	23.26	19.86	21.85	17.84	26.30	19.92	28.05	17.77	32.84	18.75

Month	Corralitos Ranch		Huisache Ranch		Zapata Water Plant		El Peyote Ranch		Arroyo Tigre Chiquito	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.70	0.57	0	0.66	0	0.75	0	0.97	0.40	0.76
Feb.	0	.79	0	.97	0	.87	0	1.21	.10	.87
Mar.	3.50	.48	1.90	.55	1.90	.53	.40	.56	0	.34
Apr.	3.55	1.11	.60	1.25	2.77	1.51	3.00	1.07	2.40	1.14
May	1.10	1.83	.50	2.13	.30	2.65	2.57	3.13	.87	2.36
June	2.00	2.52	7.50	2.64	4.74	2.29	4.70	4.16	3.25	2.32
July	5.25	1.26	6.70	1.33	5.94	1.40	5.65	2.18	4.78	1.29
Aug.	1.50	1.96	.80	1.60	1.17	1.85	.50	1.60	1.06	2.22
Sept.	3.20	3.58	3.40	4.44	3.77	4.97	2.25	5.85	3.03	4.95
Oct.	5.15	1.91	6.00	2.18	5.95	1.80	6.20	2.54	3.47	2.12
Nov.	3.90	.95	3.90	.98	3.85	1.05	3.47	.96	4.47	1.17
Dec.	1.60	.50	1.80	.65	2.10	.62	2.32	.66	.56	.53
Yearly	31.45	17.46	33.10	19.38	32.49	20.29	31.06	24.89	24.39	20.07

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Falcon Dam		Roma International Bridge		Garciasville		Los Ebanos		HCWCID #6, Goodwin Pump No. 4B	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.43	0.79	0	0.82	0.22	0.86	0.30	1.00	0.33	1.17
Feb.	0	.88	0	1.02	0	.91	0	.80	0	.93
Mar.	.83	.67	.73	.67	.80	.48	.75	.47	.35	.51
Apr.	2.33	1.19	3.41	1.42	2.65	1.13	2.20	1.63	2.53	1.10
May	.75	2.31	.42	1.72	.56	2.14	.80	1.92	1.56	2.10
June	2.75	2.76	1.50	2.18	1.65	2.42	2.47	2.30	.11	2.40
July	7.09	1.24	6.56	1.21	2.54	1.43	3.34	1.34	6.42	1.36
Aug.	1.20	2.55	2.80	2.07	2.06	2.01	2.80	2.07	2.90	1.50
Sept.	3.26	4.70	3.88	4.68	1.40	3.76	.90	3.42	2.73	3.62
Oct.	3.71	2.23	3.92	2.11	3.35	2.22	5.00	2.37	5.28	2.81
Nov.	4.80	1.23	3.42	.83	3.20	1.00	.60	.61	3.78	1.05
Dec.	1.57	.64	.27	.46	1.29	.66	.84	.58	.87	.78
Yearly	28.72	21.19	26.91	19.19	19.72	19.02	20.00	18.61	26.96	19.33

Month	HCWCID #6, Goodwin Pump No. 3		HCWCID #6, Goodwin Pump No. 5		HCWCID #6, Goodwin Pump No. 3A		HCWCID #6, Goodwin Pump No. 4		Penitas (Edinburg Pumping Plant)	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.28	1.22	0	1.26	0	1.15	0.42	1.59	0.25	1.22
Feb.	0	1.03	0	1.02	0	1.02	0	.99	0	.96
Mar.	.75	.66	.61	.66	0	.64	.96	.59	.41	.54
Apr.	2.26	1.33	2.87	1.32	7.40	1.64	4.27	1.37	2.64	1.02
May	.89	2.28	1.82	2.56	1.00	2.09	1.20	2.30	1.01	2.26
June	.87	2.44	0	2.38	0	2.66	0	2.84	.45	2.99
July	7.90	1.70	6.06	1.38	9.95	1.71	6.96	1.88	6.56	1.60
Aug.	2.29	1.62	.95	2.27	3.58	1.92	2.20	1.76	.97	2.06
Sept.	.98	3.40	3.70	4.37	1.73	3.56	.51	4.02	.51	3.83
Oct.	6.11	3.00	3.56	2.81	5.32	3.05	5.64	3.12	4.34	2.88
Nov.	3.74	.98	3.47	1.05	3.88	1.02	2.65	1.03	3.47	1.05
Dec.	1.17	.91	1.00	.86	1.18	.82	1.17	1.01	.71	.97
Yearly	27.24	20.57	24.04	21.94	34.04	21.28	25.98	22.50	21.82	21.38

Month	New Mission Pumping Plant		O. C. Dale Farm		HCWCID #15 (Edinburg Office)		Edinburg Filtration Plant		La Feria Pumping Plant	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.25	0.74	0.96	1.57	0.60	1.33	0.81	1.41	0.60	1.57
Feb.	0	.72	0	1.18	0	1.04	0	1.11	0	1.67
Mar.	0	.79	.42	.85	.25	.66	.63	.75	1.00	.85
Apr.	7.17	1.42	3.93	1.74	2.82	1.65	3.97	1.59	8.05	2.10
May	.86	2.38	1.70	2.17	1.39	2.29	.83	2.23	2.02	3.22
June	0	2.93	1.20	3.07	.01	2.41	.67	2.72	0	3.51
July	4.90	1.84	8.07	1.77	9.24	1.63	9.10	1.44	8.20	2.54
Aug.	3.78	1.89	4.00	2.10	3.27	2.15	3.24	2.04	4.50	3.54
Sept.	.62	3.07	2.40	4.17	4.48	4.67	2.62	3.92	11.20	7.20
Oct.	4.91	2.46	5.69	3.27	3.46	2.74	5.57	2.64	8.80	4.38
Nov.	3.46	.72	4.29	1.29	3.05	1.10	3.18	1.16	4.80	1.93
Dec.	1.51	.75	1.79	1.06	1.17	.90	1.33	1.00	5.43	1.53
Yearly	27.46	19.71	34.45	24.26	29.74	22.57	31.95	22.01	54.60	34.19

Month	La Feria Materials Yard		CCWCID #19 (Adams Gardens)		San Benito Pump		Whipple Farm		* CCWID #11 Bayview Dist. Office	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.75	1.26	0.81	1.18	0.80	1.33	0.80	1.82	0.54	1.44
Feb.	0	1.37	.09	1.22	0	.95	0	1.88	.26	1.70
Mar.	.45	.85	.95	.78	1.20	.83	1.10	.70	.47	.71
Apr.	5.30	1.54	5.31	1.50	4.60	1.25	7.47	1.93	9.97	1.79
May	1.64	3.10	2.65	2.56	4.63	2.53	2.50	3.14	1.39	2.71
June	.66	3.77	.68	2.76	2.00	2.53	1.33	3.47	.91	2.41
July	7.70	2.22	9.86	1.71	6.68	1.78	8.55	2.36	7.51	1.90
Aug.	2.95	3.14	5.28	2.87	3.46	2.21	4.60	3.27	2.59	2.68
Sept.	3.00	5.50	3.04	4.26	4.32	4.48	8.80	6.08	5.16	5.51
Oct.	6.51	3.38	7.50	2.98	11.58	2.69	9.58	3.31	5.96	2.42
Nov.	3.70	1.44	4.97	1.47	5.00	1.10	3.15	1.54	4.37	1.48
Dec.	1.10	1.59	1.95	1.10	1.50	1.28	2.05	1.56	2.87	1.38
Yearly	33.76	29.16	43.09	24.39	45.77	22.96	49.93	31.06	42.00	26.13

* Average of 18 gages

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Tabulated below, in approximate downstream order, are monthly records of Mexican rainfall stations with averages for their periods of record. For location, elevation, period of record, type of gage in use, watershed subdivision in which the station is located, and the observer, see alphabetical listing of these stations shown on pages 144 through 148 in this bulletin. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the office of the Mexican Section of the Commission.

Detailed listings of the months and years for which records are available through 1970 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 22, 26, and Supplement 40A.

Month	Juarez, Chihuahua		El Sauzal D. B., Chihuahua		Garita Km. 28, Chihuahua		Samalayuca, Chihuahua		San Agustin, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.43	0.40	0.43	0.51	0.67	0.54	0.51	0.38	0.12	0.36
Feb.	.59	.45	.43	.51	.39	.42	1.26	.55	.16	.37
Mar.	T	.37	T	.09	0	.30	0	.35	0	.26
Apr.	.20	.29	.24	.07	.47	.09	.28	.12	.24	.12
May	1.46	.34	.98	.29	1.38	.24	.20	.17	1.42	.29
June	.55	.65	.24	.52	.91	.78	.39	.82	.47	.62
July	3.39	1.61	1.18	1.35	2.99	1.96	3.66	2.20	2.17	1.70
Aug.	.12	1.44	.12	1.11	1.61	1.67	.31	1.83	.16	1.17
Sept.	1.97	1.42	2.28	2.10	.71	1.80	1.73	2.07	.71	1.43
Oct.	1.30	.97	1.18	.84	1.54	.91	.67	.55	1.22	.65
Nov.	.43	.51	.63	.24	.83	.43	.51	.38	.87	.31
Dec.	.39	.54	.79	.47	1.34	.61	.55	.46	.79	.53
Yearly	10.83	8.99	8.50	8.10	12.84	9.75	10.07	9.88	8.33	7.81

Month	Guadalupe, Chihuahua		Tinajas, Chihuahua		Praxedis Guerrero, Chihuahua		San Antonio, Chihuahua		Porvenir, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.20	0.37	1.18	0.31	0.12	0.31		0.34	0.24	0.36
Feb.	.24	.38	.16	.29	0	.25	0.20	.31	.08	.39
Mar.	0	.38	.94	.36	0	.25	0	.28	0	.26
Apr.	.16	.09		.06	.12	.05	0	.05	.08	.10
May	1.02	.27		.30	.63	.27	5.35	.61	.71	.43
June	2.24	.77	.47	.66	.28	.61	1.61	1.23	1.02	.85
July	1.85	1.98	1.42	1.87	1.50	1.99	2.01	2.47	3.43	1.86
Aug.	.24	1.48	.59	1.64	.20	1.30	2.05	2.24	.47	1.82
Sept.	1.89	1.44	1.18	1.65	2.24	1.37	3.31	1.89	1.69	1.66
Oct.	1.42	.90	.31	.94	.59	.78		.96	.94	.90
Nov.	0	.36	.75	.39	.59	.35		.45	.43	.45
Dec.	.28	.33	1.02	.34	.67	.39		.40	.51	.50
Yearly	9.54	8.75		8.81	6.94	7.92		11.23	9.60	9.58

Month	Vado de Cedillos, Chihuahua		Los Barriles, Chihuahua		Banderas, Chihuahua		Luis L. Leon, Chihuahua		El Cuervo, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.43	0.38	0.08	0.35	0	0.14	0.31	0.38	0.31	0.23
Feb.	.20	.35	T	.24	0	.30	.20	.26	0	.33
Mar.	0	.23	0	.23	0	.20	0	.23	0	.12
Apr.	.39	.15	0	.12	0	.11	.47	.16	0	.14
May	1.02	.39	.43	.40	0	.26	1.73	.42	.31	.45
June	.31	1.07	1.57	1.14	0	.89	1.22	1.24	2.36	1.29
July	1.93	1.90	T	2.13	1.18	1.39	3.19	2.01	4.49	2.53
Aug.	.43	1.78	.12	2.22	.16	2.08	.75	2.16	1.54	2.49
Sept.	1.46	1.73	.67	1.66	2.60	1.54	2.80	1.54	5.83	2.44
Oct.	.91	1.02	.31	1.12	.16	.82	.98	1.10	.24	.85
Nov.	.55	.40	0	.51	0	.33	.16	.43	1.10	.25
Dec.	.59	.53	.28	.34	.08	.25	.51	.38	1.22	.16
Yearly	8.22	9.93	3.46	10.46	4.18	8.31	12.32	10.34	17.40	11.28

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Carichic, Chihuahua		El Vergel, Chihuahua		El Sitio, Chihuahua		La Boquilla, Chihuahua		San Antonio, Durango	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.20	0.38	0.67	1.36	0	0.19	0.04	0.29	0.28	0.30
Feb.	.08	.54	.08	.81	0	.38	0	.19	0	.17
Mar.	0	.13	.12	.54	0	.13	0	.16	0	.08
Apr.	.20	.16	T	.43	0	.17	.28	.18	.31	.23
May	.12	.37	.08	.75	0.16	.39	2.39	.55	1.57	.58
June	5.43	1.68	6.86	3.01	5.12	1.64	2.36	1.41	8.74	1.97
July	5.24	6.29	10.87	6.99	5.59	4.53	4.61	2.98	6.81	4.53
Aug.	1.69	4.91	2.05	6.55	1.65	4.79	1.30	2.97	1.93	3.97
Sept.	6.57	3.39	6.22	4.68	2.99	3.55	5.04	2.97	4.49	4.36
Oct.	.67	1.06	3.31	1.72	1.06	.75	.98	.88	1.42	1.18
Nov.	1.30	.62	1.26	.73	.51	.43	.91	.33	1.42	.29
Dec.	.79	.65	.39	1.44	.47	.37	.67	.37	.12	.27
Yearly	22.29	20.18	31.94	29.01	17.55	17.32	18.55	13.28	27.09	17.93

Month	Estacion Rosario, Durango		Ojo Caliente, Chihuahua		Villa Coronado, Chihuahua		Santa Barbara, Chihuahua		Valle Allende, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.04	0.23	0.04	0.18	0.43	0.24	0	0.26	0.08	0.17
Feb.	0	.36	0	.24	0	.35	0	.56	0	.23
Mar.	0	.14	0	.17	0	.18	0	.22	0	.07
Apr.	.24	.17	.04	.16	.63	.24	.08	.12	.20	.17
May	.28	.87	1.14	.52	.31	.49	.12	.83	.51	.61
June	4.69	2.49	2.17	1.64	5.47	2.90	7.28	2.48	2.60	1.73
July	6.97	4.69	7.44	3.37	8.27	4.29		4.18	7.13	4.12
Aug.	4.17	5.17	.67	2.71	2.99	4.60	1.22	5.43	1.57	4.54
Sept.	7.64	5.52	4.80	2.65	5.43	3.81	2.56	4.68	4.26	3.95
Oct.	1.38	1.18	1.30	1.08	1.73	1.20	1.22	.93	1.81	.95
Nov.	.87	.44	.91	.20	1.26	.50	1.50	.42	1.65	.34
Dec.	.12	.45	.43	.27	.94	.48	.12	.37	.67	.35
Yearly	26.40	21.71	18.94	13.19	27.46	19.18		20.48	20.51	17.23

Month	Escalon, Chihuahua		Jimenez, Chihuahua		Parral, Chihuahua		Camargo, Chihuahua		Victoria, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.16	0.34	0	0.21	0.20	0.19	T	0.33	T	0.27
Feb.	0	.20	0	.16	0	.23	0	.33	0	.71
Mar.	0	.11	0	.08	0	.10	0	.12	0	.17
Apr.	.31	.26	0.12	.11	.24	.20	0.04	.17	0.24	.22
May	.31	.61	.39	.43	1.34	.44	1.26	.62	1.97	.89
June	3.19	1.59	2.44	1.11	2.99	1.74	1.42	1.53	1.50	1.95
July	8.50	2.63	3.46	3.44	11.34	4.42	6.81	3.34	7.72	3.36
Aug.	2.48	2.88	2.13	2.37	4.09	4.32	.63	2.75	.87	2.94
Sept.	2.05	2.83	5.20	2.40	4.72	4.35	.51	2.67	3.82	2.86
Oct.	2.05	1.15	2.20	1.30	2.38	1.16	1.46	.95	1.57	.65
Nov.	.79	.27	1.10	.27	1.14	.50	.98	.39	.55	.22
Dec.	.53	.36	.83	.26	.51	.39	.38	.38	.39	.35
Yearly	20.47	13.23	17.87	12.14	28.93	18.04	13.50	13.58	18.63	14.59

Month	Tacubaya, Chihuahua		Rosetilla, Chihuahua		Novoava, Chihuahua		San Lorenzo, Chihuahua		Villalba, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.12	0.20	0.08	0.36	T	0.10	0	0.15	0.16	0.30
Feb.	0	.53	0	.17	T	.46	0	.21	0	.16
Mar.	0	.13	0	.10	0	.19	0	.01	0	.06
Apr.	0	.15	T	.26	T	.19	.03	.07	0	.16
May	.75	1.08	.59	.35	0.31	.39	.71	.53	.79	.37
June	1.54	1.59	2.05	1.09	2.99	1.93	3.11	1.59	2.52	1.15
July	7.95	4.50	5.75	2.30	4.41	5.70	6.10	4.14	6.38	3.65
Aug.	.79	2.16	1.50	2.77	1.54	3.03	2.40	4.48	1.06	2.98
Sept.	5.20	3.12	3.53	2.20	4.57	2.74	7.28	4.70	3.82	2.73
Oct.	1.42	.63	.59	.73	.98	1.00	.51	.75	.91	.91
Nov.	.87	.27	.79	.21	1.22	.50	.55	.49	1.02	.23
Dec.	1.89	.60	.87	.36	.24	.39	.47	.46	.43	.38
Yearly	20.53	15.06	15.30	11.45	16.26	16.63	21.21	17.53	17.06	13.19

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Las Virgenes, Chihuahua		Km. 135, Chihuahua		Km. 99, Chihuahua		Delicias, Chihuahua		Lazaro Cardenas, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.04	0.24	0.03	0.07	0	0.08	0.03	0.31	0.03	0.21
Feb.	0	.14	0	.26	0	.26	0	.17	.39	.30
Mar.	0	.05	0	.09	0	.08	0	.12	.04	.10
Apr.	0	.19	0	.26	0	.18	0	.26	0	.24
May	1.10	.33	1.61	.60	1.50	.51	1.10	.34	0	.45
June	1.34	1.05	1.14	1.11	1.10	1.34	3.54	1.14	.16	1.19
July	5.75	2.66	4.96	2.54	4.72	2.95	5.12	2.55	3.93	3.16
Aug.	2.28	2.56	1.30	2.55	1.02	2.61	1.65	2.48	1.77	2.43
Sept.	3.23	2.31	2.13	3.12	3.39	2.64	2.72	2.18	.94	2.48
Oct.	.63	.77	.24	.77	.79	.75	.59	.77	.08	.87
Nov.	.43	.23	.33	.27	.71	.25	.55	.26	.63	.31
Dec.	.75	.35	1.10	.32	.51	.37	.67	.38	0	.21
Yearly	15.55	10.88	13.39	11.96	13.74	12.02	16.02	10.96	8.07	11.95

Month	Meoqui, Chihuahua		Las Burras, Chihuahua		Ciudad Guerrero, Chihuahua		Bachiniva, Chihuahua		La Trasquila, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.12	0.14	0.12	0.21	0.75	0.58	0.67	0.40	0.87	0.27
Feb.	0	.24	0	.20	.16	.41	.04	.19	0	.34
Mar.	0	.08	0	.12	0	.20	0	.31	0	.12
Apr.	T	.39	.03	.13	.35	.20	.28	.10	.04	.13
May	1.81	.53	1.46	.41	.35	.31	.31	.23	.87	.36
June	2.28	1.12	2.24	1.09	3.70	1.52	2.13	1.42	2.13	1.38
July	6.34	2.80	4.25	2.87	7.40	4.85	6.81	5.75	3.94	3.77
Aug.	2.99	2.58	3.31	2.54	1.81	5.24	1.97	4.60	1.18	2.69
Sept.	3.39	2.26	3.31	2.39	5.04	3.09	3.98	2.62	3.54	3.38
Oct.	.63	.86	.39	.70	.16	1.18	.20	1.11	.71	.68
Nov.	.98	.21	.75	.20	.24	.51	.51	.35	.39	.34
Dec.	.67	.37	.79	.36	.39	.69	.37	.41	.55	.32
Yearly	19.21	11.58	16.70	11.18	20.35	18.78	17.77	17.49	14.22	13.78

Month	Cuauhtemoc, Chihuahua		Colonia Anahuac, Chihuahua		Presa Chihuahua, Chihuahua		Chihuahua, Chihuahua		Majalca, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.31	0.28	0	0.28	0.08	0.15	0.03	0.26	0.16	0.29
Feb.	T	.16	0	.33	0	.26	T	.20	0	.40
Mar.	0	.11	0	.11	0	.13	T	.19	0	.22
Apr.	.16	.19	0	.21	T	.18	.24	.18	.12	.31
May	1.10	.37	2.05	.61	4.80	1.02	3.31	.45	1.02	.83
June	2.36	1.46	2.44	1.44	2.91	2.12	.75	1.44	2.60	2.47
July	5.35	4.72	4.49	4.94	6.77	4.85	3.43	3.57	5.59	6.74
Aug.	2.99	4.17	2.91	4.72	2.68	4.28	1.31	3.33	2.52	5.92
Sept.	2.56	2.70	7.44	3.78	4.80	3.31	6.77	2.86	6.85	4.19
Oct.	.08	1.06	.20	.94	.39	.31	.24	.80	.43	.85
Nov.	.47	.31	.16	.36	1.22	.36	1.14	.43	.98	.40
Dec.	.43	.38	.31	.24	.83	.34	1.33	.36	1.42	.37
Yearly	16.01	15.91	20.00	17.96	24.48	17.81	19.15	14.07	21.69	22.99

Month	Planta Zootecnica, Chihuahua		Villa Aldama, Chihuahua		Presa Luis L. Leon, Chihuahua		El Anteojo, Chihuahua		Maclovio Herrera, (Falomir), Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.16	0.22	0.16	0.17	0	0.06	T	0.01	0.39	0.31
Feb.	0	.25	0	.21	0	.13	0	.22	0	.21
Mar.	0	.14	0	.16	0	.13	0	.03	0	.14
Apr.	.43	.28	.16	.19	0.04	.18	0.24	.28	.03	.30
May	5.20	.67	1.73	.49	.59	.23	.71	.47	3.32	.60
June	.71	1.46	2.17	1.70	.35	.04	.43	1.53	2.60	1.13
July	3.31	3.69	3.27	3.10	3.31	2.33	2.68	2.42	3.15	2.97
Aug.	1.57	3.82	1.73	2.73	.43	2.39	1.89	2.22	.67	2.56
Sept.	4.76	2.79	6.46	3.23	2.80	2.59	2.91	2.54	2.32	3.22
Oct.	.39	.99	.55	.57	0	.52	.31	.78	.55	.75
Nov.	1.06	.33	.87	.34	.79	.24	.94	.24	.91	.31
Dec.	1.30	.35	.67	.37	2.32	.32	.91	.35	1.18	.51
Yearly	18.89	15.04	17.77	13.31	10.67	10.11	11.02	11.09	15.67	13.11

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Parrita, Chihuahua		Maijoma, Chihuahua		Coyame, Chihuahua		Gallego, Chihuahua		El Sueco, Chihuahua	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.31	0.14	0.16	0.38	0.24	0.15	0.79	0.31	0.55	0.41
Feb.	0	.28	0	.37	.04	.38	0	.42	.20	.46
Mar.	0	.08	0	.18	0	.17	0	.16	0	.24
Apr.	.04	.42	.12	.23	T	.23	0	.15	0	.17
May	.28	.33	3.86	.82	.87	.61	.83	.31	1.50	.32
June	2.01	1.84	2.36	1.56	1.69	1.23	.55	.94	.55	.78
July	3.74	2.64	6.34	3.16	4.41	2.76	5.04	3.35	4.41	3.13
Aug.	.98	2.90	1.38	3.20	.28	1.78	.55	3.03	.83	3.34
Sept.	.67	3.11	2.99	2.66	1.81	2.70	2.05	2.58	2.72	2.88
Oct.	.55	.91	.94	.94	.94	.79	.59	1.27	1.10	1.13
Nov.	.94	.27	.59	.35	1.02	.39	.71	.31	1.10	.44
Dec.	1.18	.20	1.46	.41	.51	.18	.67	.26	1.14	.32
Yearly	10.70	13.12	20.20	14.26	11.81	11.37	11.78	13.09	14.10	13.62

Month	Ojinaga (IB&WC), Chihuahua		Ojinaga (M.S. of Mexico), Chihuahua		Potrero del Llano, Chihuahua		Manuel Benavides, Chihuahua		Sierra Mojada, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.12	0.32	0	0.30	0.16	0.10	0.39	0.15	0.08	0.50
Feb.	0	.26	0	.24	0	.26	0	.26	0	.30
Mar.	0	.20	0	.22	0	.34	0	.31	T	.28
Apr.	T	.22	T	.26	0	.10	T	.21	.63	.26
May	1.18	.47	1.42	.60	0	.25	1.22	1.11	1.10	1.01
June	2.24	1.27	1.10	1.10		1.29	1.77	1.27	2.76	2.27
July	4.33	1.85	4.76	1.66		2.35	2.24	2.47	7.40	2.93
Aug.	1.18	1.50	1.65	1.55		2.15	1.30	2.50	1.14	2.91
Sept.	2.95	1.66	1.85	1.62		1.31	4.41	2.92	4.09	3.05
Oct.	.75	.98	.43	.98		.45	2.05	.89	1.97	1.28
Nov.	.83	.39	.63	.39		.14	.55	.25	1.02	.50
Dec.	1.69	.33	1.81	.42		.24	1.22	.35	1.81	.63
Yearly	15.27	9.45	13.65	9.34		8.98	15.15	12.69	22.00	15.92

Month	Mina La Borrada, Coahuila		Ejido Eutimias, Coahuila		Ejido La Rosita, * Coahuila		Santa Rosa, Coahuila		San Fernando, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.20	0	0.30	0.16	0.05	0	0.75	0.28	0.28
Feb.	0	.40		.25	0	0	0	.89	0	.63
Mar.	0	.21	0	.02	0	.08	0	.62	0	.42
Apr.	.12	.30	.87	.21	1.34	.63	1.97	1.00	.98	1.04
May	.94	.91	T	.71	.31	.37	1.73	1.35	3.62	1.29
June	0	1.54	1.02	.76	.98	.57	1.97	1.76	.08	1.15
July	3.62	1.25	4.65	2.35	1.46	.74	6.85	1.64	5.04	1.40
Aug.	.87	2.06	0	.17	.12	.62	0	1.82	.79	1.62
Sept.	3.74	2.25	1.10	1.16	1.69	.35	1.06	2.71	.59	3.22
Oct.	2.36	1.14	1.61	.49	2.05	.94	4.25	2.43	3.11	1.93
Nov.	.39	.36	.43	.26	.63	.32	.79	.79	.30	.42
Dec.	.71	.29	1.50	.90	.83	1.68	1.14	.45	1.06	.41
Yearly	12.75	10.91		7.58	9.57	6.85	19.76	16.21	16.45	13.81

Month	Hacienda San Miguel, Coahuila		Rcho. La Chuparrosa, Coahuila		Presa Centenario, Coahuila		Amistad Res. near Tlaloc, Coahuila		Represa Amistad, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.28	0.04	0.12	0.12	0.53	0	0.36	0.04	0.27
Feb.	0	.61	0	.37	0	.84	0	.56	0	.51
Mar.	0	.51	0	.53	.08	.46	.10	.72	0	.60
Apr.	4.09	1.75	2.66	1.05	4.02	1.51	2.11	1.39	2.60	1.28
May	4.84	2.29	.41	1.14	4.13	1.69	1.75	1.65	.67	1.06
June	.98	1.99	.62	1.34	.39	2.05	0	1.04	0	.83
July	8.31	2.05	10.30	2.96	11.85	1.85	12.80	3.95	10.71	3.11
Aug.	0	1.77	0	2.46	.91	3.00	.10	3.38	.35	2.30
Sept.	1.06	3.35	1.26	2.96	3.07	4.46	.65	4.03	.67	3.18
Oct.	.51	1.82	3.20	2.77	3.66	2.63	3.20	2.19	2.87	3.00
Nov.	3.15	.52	.45	.18	.91	.79	.70	.24	.67	.56
Dec.	1.02	.34	1.02	.31	1.42	.57	1.45	.46	1.14	.35
Yearly	23.96	17.23	19.96	16.19	30.56	20.38	22.86	20.93	19.72	17.05

T Trace * Formerly La Rosita, Coahuila

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Ciudad Acuna, Coahuila		Presa Cabeceras, Coahuila		Presa San Miguel, Coahuila		Palestina, Coahuila		Chupadero, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.16	0.53	0.20	0.51	0.12	0.45	0.12	0.88	0	0.47
Feb.	T	.87	0	.76	.08	.82	0	.98	0	.96
Mar.	.16	.70	0.16	.55	.24	.54	.51	.65	.20	.50
Apr.	2.52	1.60	5.28	1.59	4.65	1.25	5.31	1.72	5.63	1.92
May	2.20	2.25	3.46	2.53	6.30	2.44	3.94	2.36	5.75	2.13
June	.16	2.23	2.80	2.24	1.22	2.12	.24	2.29	3.82	2.35
July	12.60	1.88	15.16	3.39	10.51	2.16	10.51	2.12	13.82	2.33
Aug.	.28	2.02	.75	3.48	.67	2.89	.28	2.31	.39	2.29
Sept.	2.01	3.30	.79	5.28	.71	4.32	2.60	3.27	.55	3.67
Oct.	3.62	2.53	4.45	3.21	3.74	2.49	3.50	2.12	4.29	2.25
Nov.	.98	.58	1.30	.87	1.10	.70	1.10	.72	.71	.70
Dec.	1.61	.56	1.42	.51	0	.46	1.38	.77	2.17	.55
Yearly	26.30	19.05	35.77	24.92	29.34	20.64	29.49	20.19	37.33	20.12

Month	Ejido San Miguel, Coahuila		Emiliano Zapata, Coahuila		Jimenez, Coahuila		El Remolino, Coahuila		Piedras Negras, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.					0.08	0.66	0	0.36	0.20	0.72
Feb.	0				0	.93	0	.66	T	1.00
Mar.	0		0		.43	.72	0	.33	.31	.69
Apr.	T		4.96		4.41	1.79	1.97	1.38	4.45	1.93
May	.67		6.18		4.02	2.55	4.33	2.39	4.17	3.23
June	.83		2.60		1.30	2.67	1.18	3.48	1.14	2.37
July			15.08		9.65	1.83	19.09	2.86	12.68	2.38
Aug.	1.22		1.02		.20	1.87	2.36	1.90	.24	2.74
Sept.	2.56		2.52		2.83	3.24	3.94	3.93	.91	3.35
Oct.	2.20		4.72		6.50	2.71	3.94	3.19	6.14	3.08
Nov.	.37		1.06		1.57	.87	2.24	.61	1.81	.75
Dec.	.83		2.01		1.02	.66	1.46	.45	1.57	.68
Yearly					32.01	20.50	40.51	21.54	33.62	22.92

Month	Allende, Coahuila		Villa Guerrero, Coahuila		Rancho San Diego, Coahuila		Villa Hidalgo, Coahuila		Colombia (IB&WC), Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.61	0	0.55	0	0.25	0.08	0.73	T	0.24
Feb.	0	.98	0	.78	0	.56	0	.98	0	.72
Mar.	.12	.43	.28	.46	0	.39	.35	.60	0.55	.64
Apr.		1.09	2.16	1.45	1.57	1.16	3.90	1.53	3.39	1.41
May		2.31	3.98	2.43	2.56	2.71	4.06	2.72	3.11	2.80
June		2.26	.16	2.48	0	1.83	.98	2.25	.79	1.83
July	9.53	1.91	12.68	1.88	1.97	1.29	5.91	1.20	4.33	1.23
Aug.	.47	2.74	0	2.28	.20	1.45	.59	2.06	T	2.68
Sept.	2.91	3.70	3.35	4.02	1.38	3.39	1.97	3.63	3.07	4.32
Oct.	3.23	2.16	4.45	2.97	.79	1.47	8.43	2.13	5.55	2.05
Nov.	3.90	.74	2.40	.66	1.18	.75	2.95	1.03	3.31	1.20
Dec.	.75	.66	1.42	.60	.98	.55	2.28	.78	1.97	.61
Yearly		19.59	30.88	20.61	10.63	15.80	31.50	19.64	26.07	19.78

Month	Colombia(Hydr.Res.), Nuevo Leon		Rancho Los Vidrios, Tamaulipas		Nv. Laredo (M. S. of Mexico), Tamps.		Nv. Laredo (IB&WC), Tamaulipas		Nuevo Laredo (Sur), Tamaulipas	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.			T	0.72	0.16	0.79	0.31	0.63	0.24	
Feb.			0	.95	0	.92	0	.95	T	
Mar.			.75	.51	1.34	.63	1.02	.47	.87	
Apr.			2.83	1.36		1.17	2.99	1.17	2.32	
May			1.18	2.92	1.97	2.43	2.91	2.63	3.23	3.93
June			.79	2.02	1.10	2.30	1.06	2.71	1.57	2.24
July			4.72	1.60		1.37	7.48	1.48	8.58	7.09
Aug.			T	2.05	.83	1.65	1.65	2.38	.79	.91
Sept.	4.72		2.60	3.60	1.77	3.07	3.15	3.60	3.98	3.53
Oct.	5.55		5.79	2.61	4.80	1.61	6.61	2.06	5.67	4.00
Nov.	3.23		3.15	1.26	3.15	1.00	3.23	1.06	3.27	1.64
Dec.	2.17		2.44	.93	2.76	.88	2.48	.74		
Yearly			24.25	20.53		17.82	32.89	19.88		

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Nuevo Laredo Km.26, SSW, Tamaulipas		Rancho Las Espuelas, Tamaulipas		San Ignacio, Tamaulipas		Rancho San Juan de la Palma, Tamps.		El Treinta, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.98	0.65	0.39	0.56	0	0.55	0.67	0.70	0	0.27
Feb.	0	1.15	0	1.02	0	1.02	0	.98	0	.50
Mar.	.59	.48	2.72	1.46	.59	.43	2.28	.68	0	.49
Apr.	3.27	1.63	2.09	1.21	3.74	1.37	1.02	1.68	2.56	1.19
May	2.44	2.67	1.10	3.76	.79	2.73	.16	1.95	1.38	2.46
June	1.57	2.29	2.40	3.18	1.18	2.33	3.43	2.30	1.42	3.10
July	10.24	2.04	8.82	4.60	8.07	1.41	10.94	1.52	16.26	3.18
Aug.	1.22	2.45	1.81	1.41	T	2.34	0	1.86	.51	2.02
Sept.	1.61	3.95	2.72	4.89	.94	4.30		4.68	2.48	4.35
Oct.	5.39	2.20	5.39	2.40	4.92	2.39		1.69	3.82	1.86
Nov.	3.35	1.14	4.21	1.39	3.54	1.18		.97	1.73	.42
Dec.	1.97	.66	2.80	.77	1.93	68		.68	1.46	.32
Yearly	32.63	21.31	34.45	26.65	25.70	20.73		19.69	31.62	20.16

Month	Muzquiz, Coahuila		Sabinas, Coahuila		Juarez, Coahuila		Cuatro Cienegas, Coahuila		Ocampo, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.76	T	0.58	0	0.57	0	0.31	0.31	0.35
Feb.	0	.58	0	.71	0	.54	0	.37	0	.30
Mar.	0	.83	T	.39	0	.40	0	.12	0	.21
Apr.	1.73	1.03	2.17	1.17	3.62	1.22	0.39	.29	.39	.63
May	3.19	3.81	2.01	2.47	2.36	1.94	1.22	.79	.39	1.18
June	2.52	3.44	1.42	2.05	.28	1.71	T	.71		1.39
July	15.04	2.83	5.63	1.42	3.74	1.07	2.17	.83		1.86
Aug.	1.18	2.48	3.23	2.19	0	1.37	.16	1.04		1.66
Sept.	1.61	5.03	2.72	3.41	.94	3.32	1.89	1.44		2.23
Oct.	3.50	2.25	2.68	1.79	3.62	1.69	2.32	.78		.96
Nov.	2.24	1.12	2.52	.63	3.23	.65	2.52	.42		.25
Dec.	.75	.87	1.69	.52	3.70	.44	2.05	.45		.34
Yearly	31.76	25.03	24.07	17.33	21.49	14.92	12.72	7.55		11.36

Month	San Buenaventura, Coahuila		Monclova, Coahuila		Progreso, Coahuila		Presa Carranza, Coahuila		Laguna de Salinillas, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	T	0.59	T	0.46	T	0.48	0	0.70		0.62
Feb.	.04	.50	.04	.49		.54	0	.65	0	.64
Mar.	T	.38	.04	.31	.12	.39	.24	.50	.08	.57
Apr.	2.95	.74	3.46	.63		1.13	3.03	1.20	4.02	1.05
May	1.57	1.48	.83	1.43	1.81	2.13	1.77	2.10	2.20	2.18
June	.20	1.60	.93	1.40	1.02	1.68	.24	1.79	.47	1.79
July	5.39	1.61	11.30	1.72	7.52	1.11		1.04	7.48	1.00
Aug.	7.36	1.81	.24	1.57	.87	1.87	.83	2.02	.43	2.44
Sept.	.79	2.47	1.18	2.98	3.43	3.08	1.50	3.05	.35	3.42
Oct.	2.48	1.36	2.60	1.25	3.62	1.83	3.54	1.71	3.23	1.90
Nov.	3.27	.59	4.76	.62	3.31	.62	1.46	.60	3.46	.76
Dec.	3.23	.67	3.62	.58	1.85	.52	2.20	.65	2.68	.60
Yearly	27.28	13.80	28.90	13.44	23.55	15.38	14.81	16.01	24.40	16.97

Month	Candela, Coahuila		Lampazos, Nuevo Leon		Anahuac, Nuevo Leon		Rio Salado, Carr. 85, N. L.		Bustamante, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.24	0	0.56	0.04	0.68	0.24	0.44	0	0.57
Feb.	0	.66	.04	.90	T	.63	0	.83	0	.84
Mar.	0	.19	.16	.56	.43	.51	1.69	.44	.71	.50
Apr.	1.81	.62	2.99	1.10	3.70	1.16	1.61	1.17	2.36	1.05
May	1.30	1.22	2.05	2.44	2.13	2.25	.71	2.39	2.13	1.49
June	0	2.05	3.31	3.00	.16	1.88	1.38	3.08	1.30	3.56
July	7.40	3.32	9.65	2.25	7.64	1.47	11.57	2.20	6.06	2.10
Aug.	.16	1.31	0	1.64	.47	2.20	.24	1.51	1.77	3.34
Sept.	3.19	3.67	2.83	5.54	1.65	3.35	1.61	5.02	4.65	6.15
Oct.	2.56	1.21	3.11	1.82	3.66	1.68	3.42	1.86	3.82	2.18
Nov.	2.32	.66	2.87	.77	2.72	.68	3.54	.85	3.94	.95
Dec.	2.44	.61	2.83	.62	2.72	.74	2.01	.63	2.28	.67
Yearly	21.18	15.76	29.94	21.20	25.32	17.23	28.02	20.42	29.02	23.40

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Sabinas Hidalgo, Nuevo Leon		Garza Ayala, Nuevo Leon		Vallecillo, Nuevo Leon		Las Tortillas, Tamaulipas		Rancho Bonanza, Tamaulipas	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.46	0.20	0.22	0.20	0.50	0.79	0.52	0.39	0.80
Feb.	.04	.83	0	.51	.04	.80	0	1.13	0	1.17
Mar.	.98	.80	.98	.67	2.09	.53	1.18	.61	2.91	1.48
Apr.	2.48	1.17	3.98	1.46	2.40	1.79	3.98	1.44	.51	.40
May	1.22	2.43	1.77	1.29	1.69	1.90	1.10	3.15	.79	3.75
June	1.69	4.56	2.91	2.06	2.01	3.36	7.09	3.24	2.01	3.13
July	14.45	3.26	8.07	8.19	8.39	1.97	1.18	1.26	14.41	5.62
Aug.	.98	2.57	.91	2.86	1.50	1.92	.20	1.99	.98	1.58
Sept.	3.11	7.26	2.72	5.33	.79	4.57	.79	4.58	.98	4.45
Oct.	3.66	2.82	2.09	5.07	5.20	2.38	4.65	1.87	4.02	2.58
Nov.	5.04	1.20	4.88	4.46	5.91	1.04	4.72	1.31	4.49	1.27
Dec.	.47	.58	.47	.46	1.89	.67	1.97	.78	2.52	.63
Yearly	34.12	27.94	28.98	32.58	32.11	21.43	27.65	21.88	34.01	26.86

Month	Rancho San Rafael, Bustamante, Tamps.		Rio Salado Riberena, Tamaulipas		Aniego 166, Tamaulipas		La Bandera, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.60	0	0.54	0.39	0.71	0.39	0.69	0.35	0.88
Feb.	0	1.45	0	1.06	0	1.05	0	.89	T	.92
Mar.	1.50	.70	.79	.61	1.97	.61	1.18	.76	1.18	.58
Apr.	2.95	1.12	1.97	1.18	2.36	1.15	3.15	1.49	1.89	1.26
May	.98	2.96	1.18	2.70	.79	3.14	2.76	3.00	3.62	2.12
June	.39	3.76	.20	2.58	4.13	3.15	3.94	3.68	2.83	2.84
July	6.69	2.25	9.06	1.81	7.87	1.33	7.87	2.04	8.19	1.34
Aug.	.43	2.98	.79	2.56	1.57	2.47	1.18	2.37	.83	2.08
Sept.	.31	5.36	.59	5.81	2.36	6.50	3.54	5.92	4.33	4.51
Oct.	5.51	3.68	2.05	2.14	3.94	1.90	3.94	1.92	3.78	2.11
Nov.	4.13	1.51	2.95	1.16	5.16	1.25	5.43	1.17	5.67	1.12
Dec.	1.57	.51	1.97	.82	1.10	.56	1.89	.66	1.38	.56
Yearly	24.46	26.88	21.55	22.97	31.64	23.82	35.27	24.59	34.05	20.32

Month	Hacienda El Alamo, Nuevo Leon		General Trevino, Nuevo Leon		Paras, Nuevo Leon		San Javier, Nuevo Leon		Cd. Mier, Km. 8, SW, Tamaulipas	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.24	0.60			0.47	0.29	0.39	0.72	0.39	0.72
Feb.	0	1.03			0	.47	0	1.04	0	1.12
Mar.	1.18	.39			1.42	.70	.98	.73	.98	.76
Apr.	3.94	1.04			1.50	.72	3.94	1.77	3.15	1.41
May	3.50	2.23			1.93	1.23	2.91	3.63	1.34	2.94
June	0	4.44			2.17	3.05	4.72	3.80	2.76	3.34
July	5.59	3.33			7.56	1.86	7.09	2.37	5.91	1.95
Aug.	1.26	3.10			1.65	1.84	1.38	3.19	1.97	2.86
Sept.	1.50	5.71			3.15	4.04	3.94	6.26	1.18	5.68
Oct.	5.08	3.38	3.27		3.70	2.60	3.74	2.38	3.94	2.50
Nov.	4.33	1.26	4.57		4.80	.92	5.00	1.27	4.80	1.24
Dec.	1.93	.69	1.22		1.73	.39	1.34	.69	1.02	.67
Yearly	28.55	27.20			30.08	18.11	35.43	27.85	27.44	25.19

Month	Cd. Mier, Tamaulipas		Miguel Aleman, Tamaulipas		Parras, Coahuila		General Cepeda, Coahuila		Reata, Coahuila	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.31	0.98	0.20	0.81	T	0.45	0.12	0.46	0.39	0.26
Feb.	0	1.18	0	1.03	0	.38	0	.49	0	.24
Mar.	.71	.69	.63	.42	0	.36	0	.29	.31	.29
Apr.	3.54	1.38	3.58	1.85	.91	.25	.59	.39	1.34	.36
May	.47	2.56	1.34	2.07	.94	.99	2.36	.85	.98	.79
June	.63	2.54	.28	2.35	.75	1.83	2.01	2.16	.98	1.04
July	5.83	1.18	5.91	1.87	10.51	2.78	6.50	3.30	6.97	1.19
Aug.	2.44	2.67	2.99	2.37	.94	3.12	3.46	3.12	.28	1.52
Sept.	.28	5.12	2.95	6.72	4.21	2.84	2.72	2.82	5.55	1.56
Oct.	3.86	2.29	5.00	1.86	1.30	1.25	1.06	1.28	1.77	.72
Nov.	5.04	1.25	3.82	1.08	4.96	.64	2.91	.52	3.78	.56
Dec.	1.26	.65	1.10	.60	1.14	.83	1.34	.56	2.24	.38
Yearly	24.37	22.49	27.80	23.03	25.66	15.72	23.07	16.24	24.59	8.91

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	San Antonio de Las Alazanas, Coahuila		Saltillo, Coahuila		Ramos Arizpe, Coahuila		Carbonera, Nuevo Leon		Icamole, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.47	0.95	0.24	0.57	0.08	0.47	T	0.78	0.24	0.24
Feb.	0	.78		.56	0	.38	0	.69		.29
Mar.	1.34	.51	.08	.41	0	.30	.08	.66	.04	.14
Apr.	.91	.88		.78	1.30	.46	1.06	.80		.26
May	2.72	1.90	1.85	1.17	1.42	.86	1.42	1.96	.79	.81
June	1.81	2.67	1.93	2.19	.98	1.07	.55	2.30	.16	1.01
July	6.30	3.40	5.04	2.62	2.80	1.43	8.35	3.08	2.09	.65
Aug.	1.22	2.96	1.30	2.53	.55	1.36	1.10	3.34	0	1.05
Sept.	3.31	2.77	2.52	2.72	2.91	1.76	4.53	3.01	1.65	2.26
Oct.	.71	1.87	1.26	1.26	.28	.75	1.34	1.64	.87	.93
Nov.		1.09	3.50	.84	3.39	.50	5.35	1.05	4.80	.65
Dec.		.96	1.26	.65	1.02	.52	2.83	.98	1.10	.47
Yearly		20.74		16.30	14.73	9.86	26.61	20.29		8.76

Month	Mina, Nuevo Leon		La Popa, Nuevo Leon		La Arena, Nuevo Leon		Cienega de Flores, Nuevo Leon		Hacienda Mamulique, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.20	0.44	0.08	0.41	0.16	0.74	0.59	1.22	0.87	0.52
Feb.	.04	.43	0	.87		1.00		.98	0	0
Mar.	.12	.11	.16	.27	1.77	.75	1.57	1.11	.24	.40
Apr.	2.56	.60	2.60	.52	1.46	1.14		1.53	3.07	1.13
May	1.50	.62	1.65	1.05		2.22	3.54	2.65	1.89	.88
June	.63	1.75	.59	1.90	5.31	4.10	7.95	3.44	.79	2.61
July	8.54	1.37	8.03	1.44	11.89	4.77	15.83	2.37	14.37	6.56
Aug.	.04	1.52	0	2.05	1.26	4.52	.91	4.36	1.14	1.72
Sept.	1.18	3.39	1.10	3.40	2.28	6.08	3.31	6.06	4.02	5.65
Oct.	1.02	1.11		.81	2.56	2.96	3.39	2.73	2.76	1.36
Nov.	5.71	.84	5.28	.76	5.12	1.16	7.99	1.25	8.03	2.23
Dec.	.87	.50	2.36	.67	.47	.53	2.24	1.15	.87	.70
Yearly	22.41	12.68		14.15		29.97		28.85	38.05	23.76

Month	Topo Chico, Nuevo Leon		Higueras, Nuevo Leon		Sombreretillo, Nuevo Leon		Los Ramones, Nuevo Leon		Cerro Prieto, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.08	0.38	0.20	0.65	0.31	1.89	0.39	0.66	0	0.34
Feb.	.12	.54	.24	.58	.12	2.22	0	.74	0	.67
Mar.	.71	.46	1.57	.67	1.26	1.25	.91	.65	1.42	.56
Apr.	2.05	.96	3.43	1.28	3.94	1.94	1.89	1.62	3.82	1.06
May	1.18	1.37	3.62	1.97	2.24	5.27	3.39	2.59	3.23	4.59
June	1.38	2.46	6.22	2.77	2.83	7.21	3.54	3.36	1.57	4.22
July	5.98	1.60	12.99	2.33	8.78	4.80	8.23	2.05	3.03	2.66
Aug.	2.44	2.97	2.76	3.30	.39	3.73	3.66	3.58	4.57	3.25
Sept.	5.59	4.64	3.19	4.95	3.31	13.52	7.05	5.43	4.96	4.74
Oct.	1.42	2.56	3.07	1.81	4.33	8.10	1.77	2.86	1.65	2.75
Nov.	4.80	.77	3.78	.83	5.75	2.17	4.33	.77	2.87	.56
Dec.	.59	.45	2.48	.68	1.81	1.68	.67	.48	.63	.41
Yearly	26.34	19.16	43.55	21.82	35.07	53.78	35.83	24.79	27.75	25.81

Month	Los Herrera, (La Tableta), N. L.		Madero (Los Aldamas), Nuevo Leon		Rinconada, Nuevo Leon		Santa Catarina, Nuevo Leon		Monterrey, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.28	0.56	0.67	0.98	T	0.27	0.20	0.62	0.12	0.60
Feb.		.66		1.09	0	.28	0	.43		.69
Mar.	1.18	.67	1.54	1.11	.08	.21	.35	.32	.59	.72
Apr.		1.31		.77	1.02	.43	1.10	.64		1.12
May	1.89	2.72	2.20	2.41	.79	.53	1.30	.90	1.10	1.56
June	3.43	2.79	4.17	5.23	.79	1.10	1.18	2.07	2.83	2.85
July	6.73	1.90	3.86	2.80	5.47	.58	7.52	1.27	14.37	2.50
Aug.	.43	2.74	3.19	5.84	0	1.23	1.22	2.82	1.22	3.19
Sept.	7.24	4.90	9.49	6.88	1.18	1.75	2.87	4.11	5.59	5.99
Oct.	2.20	2.44	2.76	2.26	.08	.88	2.13	1.69	1.85	3.17
Nov.	4.02	.71	2.87	.76	4.53	.41	5.83	.58	4.17	1.24
Dec.	.83	.48	1.26	.59	.91	.34	1.02	.52	.59	.69
Yearly		21.88		30.72	14.85	8.01	24.72	15.97		24.32

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Apodaca, Nuevo Leon		Agua Blanca Canoas, Nuevo Leon		Pajonal, Nuevo Leon		Cadereyta, Nuevo Leon		La Cruz, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.16	0.59	0.98	0.65	0.39	0.52	0.67	0.72	1.14	0.60
Feb.	.03	.83	0	.44	0	.61		.90	0	.45
Mar.	1.50	.62	.28	.32	.39	.25	2.87	1.16	.24	.27
Apr.	2.20	1.03	2.91	.66	1.93	.68		2.02	3.07	.59
May	1.77	2.01	3.11	1.49	4.49	1.74	2.83	2.47	3.62	1.47
June	3.98	3.12	1.14	2.55	1.10	2.49	2.09	3.65	1.30	2.48
July	15.98	2.77	12.28	2.80		2.42	11.65	2.68	16.89	3.16
Aug.	1.93	3.65	5.35	3.39		3.73	3.50	3.58	5.04	3.80
Sept.	3.94	6.23	3.66	4.56		4.64	6.22	5.36	4.29	4.62
Oct.	2.05	2.15	3.58	2.35		1.88	2.13	3.27	3.27	2.19
Nov.	3.62	.92	3.19	.96		.51	5.83	1.22	4.84	.96
Dec.	.71	.61	1.06	.58		.58	.39	.71	.91	.37
Yearly	37.92	24.53	37.54	20.75		20.05		27.74	44.61	20.96

Month	Tunel San Francisco, Nuevo Leon		Las Comitas, Nuevo Leon		La Boca, Nuevo Leon		Las Enramadas, Nuevo Leon		Adjuntas, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.04	0.87	T	0.31	0.16	0.89	0.24	0.86	0.24	0.33
Feb.	0	1.21	0	.39	T	1.00	0	.70	0	.53
Mar.	1.46	1.63	.16	.26	2.01	1.14	.71	.77	1.02	.45
Apr.	3.54	2.03	1.06	.70	3.50	1.68	1.54	1.83	2.91	1.19
May	2.99	2.94	1.46	.99	2.13	2.59	3.11	2.88	2.28	2.78
June	4.25	7.24	2.40	2.57	3.35	5.75	2.76	3.53	5.16	9.22
July	18.90	4.48	6.69	1.90	17.56	3.90	6.93	2.42	15.71	6.56
Aug.	9.72	7.43	3.74	3.33	6.02	6.22	3.11	3.78	9.21	4.59
Sept.	14.72	11.31	3.54	4.62	10.83	9.40	4.33	6.36	9.13	11.18
Oct.	4.80	5.56	.94	1.83	2.01	4.96	3.19	2.66	2.40	4.43
Nov.	7.24	2.03	4.84	.56	5.43	1.44	3.90	.82	5.39	1.14
Dec.	1.65	1.01	.79	.37	.91	.86	.43	.72	1.22	.48
Yearly	69.31	47.74	25.62	17.83	53.91	39.83	30.25	27.33	54.67	42.93

Month	Villa Allende, Nuevo Leon		San Juan, Nuevo Leon		Laguna de Sanchez, Nuevo Leon		Cerritos, Nuevo Leon		Casillas, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.47	0.94	0.24	0.48	0.08	0.61	0.67	0.52	0.94	0.52
Feb.		1.26	.12	.92	0	.61	.08	1.03	.35	.75
Mar.	2.05	1.36	1.18	.73	.79	.46	.31	.53	.94	.65
Apr.		2.49	6.02	1.94	2.60	1.20	3.98	.99	1.26	.83
May	3.19	3.63	6.02	2.51	2.17	1.92	1.50	3.43	.71	1.99
June	4.88	5.40	.71	3.17	2.83	3.58	4.02	8.50	.71	3.40
July	12.68	3.68	9.84	2.32	7.52	2.69	19.57	8.52	6.69	2.52
Aug.	4.88	5.61	1.89	3.74	4.84	4.39	3.70	4.84	1.65	2.87
Sept.	11.14	8.76	3.31	5.59	6.34	5.68	8.94	11.73	7.48	4.01
Oct.	3.15	5.55	3.50	3.11	1.81	2.72	.71	3.65	2.36	2.37
Nov.	6.18	1.71	5.67	1.01	4.33	.67	3.23	.65	2.72	.74
Dec.	1.22	.95	1.22	.55	1.54	.60	.87	.31		.61
Yearly		41.34	39.72	26.07	34.85	25.13	47.58	44.70		21.26

Month	Cienega del Toro, Nuevo Leon		Potrero Redondo, Nuevo Leon				Mimbres, Nuevo Leon		Rusio, Nuevo Leon	
	1976	Average	1975	1976	Average		1976	Average	1976	Average
Jan.	0	0.80	1.02	0.71	0.86		0.20	1.29	T	0.72
Feb.	0	.46	1.65	0	1.55		0	1.31	0	.60
Mar.	3.86	.91	2.32	.83	1.27		1.54	1.34	.39	.56
Apr.	2.01	.94	2.05	5.47	2.55		2.60	1.32	.67	1.06
May	4.29	2.15	9.92	5.39	3.93		3.03	2.08	1.42	1.85
June	3.94	2.59	4.57	5.75	8.42		2.64	3.04	.67	2.04
July	21.06	3.33	15.20	13.98	6.04		10.04	3.07	5.98	1.24
Aug.	1.02	2.76	10.87	6.69	8.05		3.19	3.55	0	1.42
Sept.	2.87	3.47	10.87	15.31	12.38		5.83	4.00	2.83	1.80
Oct.	3.82	2.17	3.19	7.01	5.02		2.05	1.99	1.42	1.26
Nov.	6.50	.92	.47	5.98	3.90		5.79	1.32	3.31	.78
Dec.	1.97	.72	2.76	1.14	.94		2.91	1.35	1.89	.85
Yearly	51.34	21.22	64.89	68.26	54.91		39.82	25.66	18.58	14.18

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Rayones, Nuevo Leon		Santa Rosa, Nuevo Leon		Potosi, Nuevo Leon		Galeana, Nuevo Leon		Iturbide, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.28	0.31	0.16	0.32	0.08	0.94	0.08	0.16	0.28	0.55
Feb.	0	.42	0	.15	0	.75	0	.52	0	.66
Mar.	1.18	.31	.35	.31	.59	.43	1.18	.39	1.61	.61
Apr.	2.36	.99	.83	.29	1.42	1.24	.98	.91	.83	1.10
May	1.81	1.80	4.57	2.00	2.13	1.63	1.77	1.25	1.61	1.92
June	1.61	2.15	.20	1.06	1.69	1.40	1.50	1.91	3.82	3.60
July	4.06	1.14	4.72	1.88	8.70	1.51	5.20	1.63	8.27	2.72
Aug.	1.77	2.72	.20	1.50	2.99	1.78	1.81	2.42	2.64	4.11
Sept.	2.44	3.08	7.36	1.71	4.33	1.53	3.07	2.60	6.65	5.59
Oct.	1.57	1.51	0	.33	3.50	1.48	1.50	1.23	1.38	2.51
Nov.	3.78	.44	3.43	.54	3.15	1.56	2.17	.32	2.17	.59
Dec.	.87	.33	2.87	.55	3.19	2.00	1.10	.48	.91	.49
Yearly	21.73	15.20	24.69	10.64	31.77	16.25	20.36	13.82	30.17	24.45

Month	Cabezones, Nuevo Leon		Linares, Nuevo Leon		Montemorelos, Nuevo Leon		Gral. Teran Exprmt. Station, N. L.		El Realito, Nuevo Leon	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.31	0.76	0.28	0.88	0.31	0.77	0.31	0.60	0.47	0.53
Feb.		.91		.86		.99	.04	.85	.08	.51
Mar.	2.32	1.32	2.40	1.10	2.20	1.17	1.73	1.37	2.80	.78
Apr.		2.32		2.28		2.20	2.40	1.39	1.89	.78
May	3.31	3.67	3.39	3.65	3.19	3.23	4.25	2.94	2.64	2.63
June	2.05	4.94	4.17	3.89	2.76	4.14	2.68	4.44	.43	3.22
July	11.02	3.60	10.24	2.80	10.24	2.26	5.98	2.71	6.14	3.76
Aug.	3.78	5.60	3.31	3.85	3.46	4.31	4.13	3.80	6.61	4.46
Sept.	12.40	8.26	11.77	6.40	9.69	6.05	4.25	7.67	5.43	6.76
Oct.	4.96	3.53	2.36	3.38	3.46	3.95	3.15	4.10	4.45	2.14
Nov.	4.09	1.16	4.09	1.18	4.33	1.65	4.17	1.16	4.13	.72
Dec.	1.73	.72	.83	1.01	1.02	.87	1.02	.63	.67	.56
Yearly		36.79		31.28		31.59	34.11	31.66	35.74	26.85

Month	San Rafael, Nuevo Leon		El Cuchillo, Nuevo Leon		Gral. Bravo, Nuevo Leon		Cerralvo, Nuevo Leon		Comales, Tamaulipas	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0	0.80	0.08	0.60	0.16	0.74	0.35	0.66	0.24	0.83
Feb.	0	1.00		.54	T	.55	T	.61	0	.75
Mar.	2.52	.73	.51	.52	.55	.58	.91	.55	.98	.67
Apr.	1.14	.68		1.26	2.01	1.44	3.19	1.86	2.60	1.51
May	2.80	1.62	4.02	2.24	3.07	2.88	2.87	2.97	1.02	2.04
June	2.36	2.13	4.06	2.63	4.13	2.72	4.92	3.32	.12	2.14
July	7.56	2.77	5.87	2.02	4.45	2.31	10.39	1.90	4.96	1.39
Aug.	2.36	2.63	2.20	2.83	2.95	2.71	2.83	3.41	1.73	2.74
Sept.	3.46	2.38	6.50	4.43	6.46	4.43	3.03	5.36	5.04	4.20
Oct.	3.15	1.43	1.54	2.01	2.91	2.06	3.23	2.69	3.54	2.39
Nov.	6.02	1.06	2.99	.58	3.39	.88	4.17	.75	3.54	.76
Dec.	2.76	.89	.83	.47	.75	.72	.79	.47	1.30	.71
Yearly	34.13	18.12		20.13	30.83	22.02	36.68	24.55	25.07	20.21

Month	Camargo, Tamaulipas		Valadeces, Tamaulipas		Bajo Rio San Juan, Tamps. No. 2-29		Cd. Dias Ordaz, Tamaulipas		Reynosa Km. 22 SW, Tamaulipas	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.35	0.96	0.31	1.11	0.94	1.18	0.47	0.87	0.39	0.97
Feb.	0	.92	0	.04	0	.91	0	.90	0	.30
Mar.	.87	.56	.08	.61	.98	.50	.63	.56	.39	.68
Apr.	3.70	1.71	4.09	1.64	3.66	1.55	3.35	1.61	5.12	1.47
May	4.25	2.19	2.68	2.87	1.81	3.57	2.44	2.43	.79	2.67
June	.79	2.49	0	3.52	.67	3.00	.63	2.38	.39	2.83
July	4.57	1.58	4.69	1.96	4.53	1.73	4.09	1.42	5.91	2.30
Aug.	1.18	2.10	.39	2.00	.91	3.05	1.26	2.14	2.56	2.26
Sept.	6.73	5.00	3.02	5.10	3.23	4.94	4.38	4.05	2.36	4.81
Oct.	4.33	1.97	3.39	2.49	4.06	2.59	4.25	2.72	.47	2.13
Nov.	3.19	1.15	4.09	1.32	3.07	1.06	3.46	1.05	3.54	1.06
Dec.	1.97	.71	1.61	.82	1.54	.35	1.34	.32	1.38	1.15
Yearly	31.93	21.40	24.95	24.98	25.40	24.93	26.30	20.95	23.30	23.13

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	Bajo Rio San Juan, Tamps. No. 2-38		Bajo Rio San Juan, Tamps. No. 2-33		Arguelles. Tamaulipas		Presa Anzalduas, Tamaulipas		Reynosa, Tamaulipas	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.75	1.09	0.39	1.17	0.39	1.12	0.12	0.65	0.71	1.03
Feb.	0	.84	0	.90	0	1.15	0	.50	.12	.85
Mar.	.24	.54	.55	.54	.39	.57	.24	.58	.59	.72
Apr.	3.31	1.33	4.49	1.56	3.94	1.48	4.21	1.47	3.94	1.26
May	1.18	3.70	2.17	3.86	1.57	2.74	1.02	2.42	.91	2.21
June	.79	3.41	0	3.12	.79	2.70	.63	2.38	.35	2.21
July	5.51	2.15	3.36	2.17	4.33	1.84	6.73	1.79	6.85	1.59
Aug.	2.52	3.58	1.65	3.13	2.44	1.68	5.35	1.83	4.80	1.61
Sept.	1.89	4.41	.55	4.81	2.36	4.47	1.38	3.93	1.46	3.56
Oct.	3.70	1.89	3.98	2.51	.28	1.76	2.44	2.34	4.53	2.24
Nov.	4.29	1.31	3.54	1.17	5.31	1.14	2.01	.69	3.50	.95
Dec.	1.34	.85	1.06	1.05	1.38	1.12	1.42	.69	1.22	.77
Yearly	25.52	25.10	22.24	25.99	23.18	21.77	25.55	19.27	28.98	19.00

	Bajo Rio San Juan, Tamps., No. 3-55		Bajo Rio San Juan, Tamps., No. 3-58		Bajo Rio San Juan, Tamps., No. 3-60		Bajo Rio San Juan, Tamps., No. 3-47		Bajo Rio San Juan, Tamps., No. 3-63	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	1.02	1.66	0.79	1.44	0.71	1.30	1.14	1.75	0.47	1.46
Feb.	0	1.26	0	1.11	0	1.14	0	1.13	0	1.32
Mar.	.94	.74	.79	.72	.63	.69	.63	.64	1.18	.73
Apr.	10.59	2.27	7.32	1.78	1.89	1.60	6.22	1.87	4.06	1.31
May	1.18	2.53	1.34	2.45	1.54	2.44	1.38	3.46	1.85	2.34
June	2.52	3.53	1.06	3.06	2.20	3.31	1.06	3.68	2.44	3.41
July	13.54	3.62	13.70	3.65	8.27	2.73	8.62	3.12	10.39	3.01
Aug.	2.09	2.79	1.89	2.98	2.80	2.50	2.32	2.50	3.62	2.93
Sept.	2.99	4.50	3.15	4.77	3.70	4.76	5.83	5.10	3.07	5.06
Oct.	5.20	3.43	4.09	3.15	4.57	3.19		2.84	4.65	2.65
Nov.	4.09	.91	3.82	1.14	5.12	1.18	3.23	1.13	3.62	.96
Dec.	1.46	.81	1.65	.88	1.50	.79	1.14	.92	1.81	.72
Yearly	45.62	28.05	39.60	27.13	32.93	25.63		28.14	37.16	25.90

	Rio Bravo, Tamaulipas		Retamal, Tamaulipas		Bajo Rio Bravo, Tamps., No. 3-15		Bajo Rio Bravo, Tamps., No. 4-16		Bajo Rio Bravo, Tamps., No. 3-14	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.71	1.12	0.91	0.90	1.10	1.59	0.94	1.34	0.55	1.30
Feb.	0	1.14	0	.87	0	1.39	0	1.17	0	.93
Mar.	.71	.70	.63	.71	1.34	.89	1.73	.81	.79	.59
Apr.	6.22	1.72	3.78	1.47	9.69	2.06	7.13	1.79	5.12	1.41
May	1.18	2.32	.79	2.33	2.09	2.77	4.65	2.72	1.06	2.80
June	2.28	2.86	.55	2.73	.59	3.71	1.14	3.62	.08	2.76
July	7.80	2.51	11.50	1.76	9.61	3.26	10.04	2.81	12.40	3.00
Aug.	2.32	2.58		2.51	4.41	3.19	5.12	3.91	3.31	2.62
Sept.	7.28	4.94		3.36	9.41	4.25	6.10	4.84	6.50	4.14
Oct.	6.73	2.90		2.57	6.10	2.88	5.67	2.79	7.05	2.74
Nov.	4.25	1.19	3.78	1.20	4.25	1.26	3.62	1.51	4.09	.95
Dec.	1.81	.84	2.95	.91	2.68	1.20	1.61	1.06	1.85	.94
Yearly	41.29	24.82		21.32	51.27	28.45	47.75	28.37	42.80	24.18

	Bajo Rio Bravo, Tamps., No. 3-17		Bajo Rio Bravo, Tamps., No. 2-8		Bajo Rio Bravo, Tamps., No. 2-6		Bajo Rio Bravo, Tamps., No. 2-10		Valle Hermoso, Tamaulipas	
Month	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.63	1.56	0.55	1.40	4.06	2.03	0.94	1.36	0.94	1.03
Feb.	0	1.28	0	1.25	0	1.37	0	1.74	0	1.20
Mar.	.94	.72	1.30	1.01	.59	.97	1.14	1.27	1.26	.75
Apr.	5.94	1.47	10.00	2.17	5.79	1.67	6.50	1.78	7.32	1.83
May	1.18	2.75	5.94	2.94	2.80	2.95	4.65	2.55	2.68	2.66
June	0	3.03	1.06	3.00	.28	2.74	.83	2.99	1.26	3.10
July	11.73	3.18	15.87	3.81	14.69	3.31	15.16	3.38	12.05	2.27
Aug.	5.47	3.46	6.97	4.30	4.57	3.43	3.36	2.99	4.69	2.19
Sept.	5.79	5.14	7.24	5.91	7.52	5.20	7.24	5.40	6.65	5.46
Oct.	7.91	2.34	4.76	3.07	5.12	2.81	5.79	2.43	6.22	2.53
Nov.	3.74	1.33	1.50	1.61	5.51	1.40	3.43	1.37	3.74	1.49
Dec.	1.89	1.14	2.09	1.14	.59	1.23	2.05	.94	1.85	.94
Yearly	45.22	27.90	57.23	31.61	51.52	28.91	51.59	28.29	48.66	25.50

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

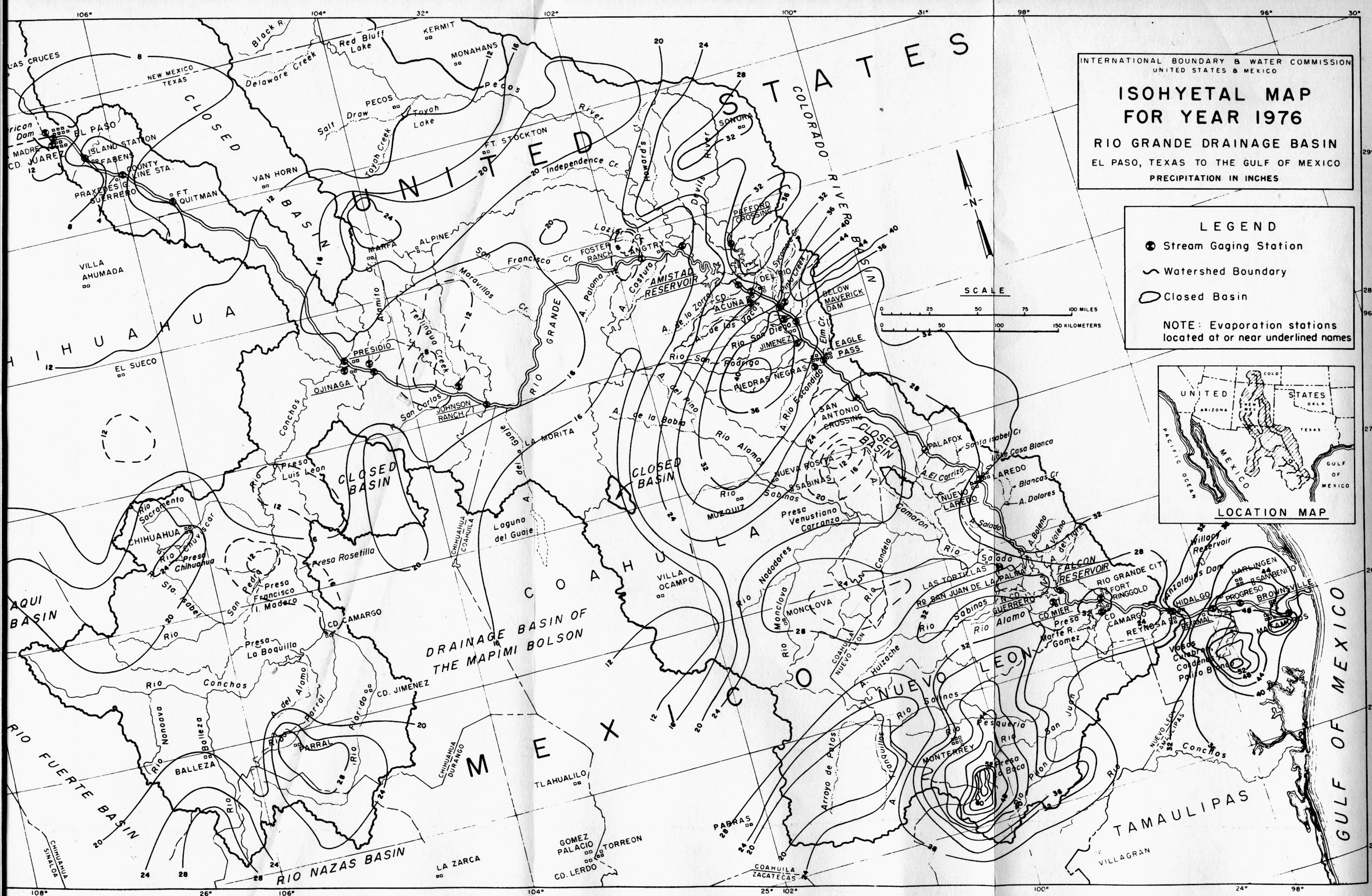
In Inches

Month	Control Tamaulipas		Bajo Rio Bravo, Tamps., No. 2-5		Bajo Rio Bravo, Tamps., No. 2-11		Bajo Rio Bravo, Tamps., No. 1-2		Bajo Rio Bravo, Tamps., No. 2-7	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.31	1.23	0.94	1.77	0.94	1.50	0.39	1.63	0.91	1.39
Feb.	0	1.04	0	1.35	0	1.04	0	1.84	0	1.20
Mar.	.79	.65	1.18	1.29	1.10	.74	.94	.55	1.14	.81
Apr.	6.61	1.59	7.01	1.85	6.10	2.40	5.20	1.34	7.32	2.27
May	3.39	2.83	2.44	2.65	3.23	2.98	3.94	3.33	2.40	2.98
June	1.22	3.03	1.22	3.16	2.36	3.99	.51	3.78	1.89	3.33
July	7.05	1.68	11.46	2.65	14.17	3.26	5.35	2.16	11.42	2.76
Aug.	2.83	3.02	3.43	3.56	5.83	3.66	5.35	3.74	5.67	3.95
Sept.	5.20	5.18	4.72	5.20	4.88	5.56	4.49	5.47	6.26	5.22
Oct.	10.12	2.71	5.94	2.68	6.69	3.23	9.57	3.03	5.87	2.50
Nov.	3.43	1.23	4.84	1.41	2.44	1.23	4.09	1.35	2.99	1.63
Dec.	1.50	.92	2.28	1.21	2.76	1.27	1.57	.95	1.54	1.12
Yearly	42.45	25.11	45.46	28.78	50.50	30.86	41.40	29.17	47.41	29.16

Month	Bajo Rio Bravo, Tamps., No. 1-4		Bajo Rio Bravo, Tamps., No. 1-18		Bajo Rio Bravo, Tamps., No. 1-3		Bajo Rio Bravo, Tamps., No. 1-13		Bajo Rio Bravo, Tamps., No. 1-12	
	1976	Average	1976	Average	1976	Average	1976	Average	1976	Average
Jan.	0.28	1.74	0.39	1.45	0.31	1.49	0.59	1.39	0.20	1.75
Feb.	0	1.19	0	1.29	0	1.17	0	1.19	0	1.44
Mar.	1.14	.83	1.65	.50	.83	.56	1.10	.65	1.10	.60
Apr.	7.72	1.98	6.22	1.44	6.46	1.73	4.41	1.58	6.10	1.58
May	3.11	2.67	5.51	2.60	2.60	2.65	1.34	1.84	7.72	3.10
June	3.23	3.37	3.31	3.62	.16	3.28	2.52	3.55	.94	3.19
July	9.53	2.05	10.24	2.51	8.19	2.28	8.31	2.26	7.58	2.42
Aug.	5.16	3.39	4.05	3.36	2.83	2.84	4.45	3.23	2.80	2.61
Sept.	3.46	5.40	2.64	4.58	5.75	5.26	5.67	5.54	2.99	5.39
Oct.	7.32	2.84	8.50	3.43	9.61	3.05	5.59	2.54	11.42	3.69
Nov.	4.49	1.28	2.56	1.39	3.78	1.61	1.57	1.16	3.27	1.26
Dec.	1.77	1.18	1.50	1.20	1.97	1.09	1.06	1.03	1.77	1.23
Yearly	47.21	27.92	46.58	27.37	42.49	27.01	36.61	25.96	45.99	28.26

Month	Matamoros, Tamaulipas									
	1976	Average								
Jan.	0.71	1.73								
Feb.	T	1.79								
Mar.	1.57	.58								
Apr.	6.73	1.82								
May	5.43	2.66								
June	2.17	3.87								
July	11.22	2.33								
Aug.	7.17	3.94								
Sept.	3.66	6.25								
Oct.	12.24	3.91								
Nov.	2.83	1.38								
Dec.	2.17	1.60								
Yearly	55.90	31.86								

T Trace



INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO
ISOHYETAL MAP
FOR YEAR 1976
RIO GRANDE DRAINAGE BASIN
EL PASO, TEXAS TO THE GULF OF MEXICO
PRECIPITATION IN INCHES
LEGEND
Stream Gaging Station
Watershed Boundary
Closed Basin
NOTE: Evaporation stations located at or near underlined names
SCALE
0 25 50 75 100 MILES
0 50 100 150 KILOMETERS
LOCATION MAP
UNITED STATES
MEXICO
PACIFIC OCEAN
GULF OF MEXICO
UNITED STATES
MEXICO
CHIHUAHUA
COAHUILA
NUEVO LEON
TAMAULIPAS
GULF OF MEXICO
CLOSED BASIN
DRAINAGE BASIN OF THE MAPIMI BOLSON
RIO NAZAS BASIN
RIO FUERTE BASIN
COLORADO RIVER BASIN
EL PASO
CD. JUAREZ
FABENS
FT. QUITMAN
VAN HORN
MARFA
ALPINE
PRESIDIO
OJINAGA
JOHNSON RANCH
FOSTER RANCH
LANGTRY
AMISTAD RESERVOIR
DEL RIO
CD. ACUÑA
EAGLE PASS
PIEDRAS NEGRAS
LAREDO
NUEVO LAREDO
FALCON RESERVOIR
RIO GRANDE CITY
REYNOSA
HIDALGO
BROWNSVILLE
MATAMOROS
MONTERREY
MONCLOVA
CHIHUAHUA
CD. CAMARGO
CD. JIMENEZ
PARRAL
TORREON
GOMEZ PALACIO
CD. LERDO
PARRAS
VILLAGRAN

AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED

With Averages for the 106 Years 1871-1976, Inclusive

In Inches

The precipitation records of all stations on or adjacent to the watershed subdivisions listed below have been used, with proper weighting for area, in calculating the average rainfalls shown here. The drainage area for each subdivision is shown in parentheses. The hundreds of individual records are delineated in the various "Indexes to Precipitation Records" shown in Water Bulletins Nos. 10, 14, 22, 26, and Supplement 40A.

Month	El Paso to Fort Quitman (2,677 Square Miles)		Fort Quitman to Above Rio Conchos (3,022 Square Miles)		* Above Rio Conchos to Johnson Ranch (3,816 Square Miles)		Johnson Ranch to Foster Ranch (12,982 Square Miles)	
	1976	Period Average	1976	Period Average	1976	Period Average	1976	Period Average
Jan.	0.42	0.44	0.19	0.39	0.19	0.34	0.05	0.48
Feb.	.30	.38	.06	.27	.01	.29	T	.38
Mar.	.24	.33	.02	.25	.02	.20	.02	.41
Apr.	.24	.26	.13	.34	.09	.39	.69	.80
May	1.34	.41	.51	.60	1.90	.77	2.11	1.50
June	.70	.80	1.28	1.19	1.61	1.11	1.21	1.70
July	2.09	2.32	3.30	2.99	4.04	1.89	3.65	1.90
Aug.	.60	1.90	.87	2.41	1.40	1.88	.71	2.10
Sept.	1.72	1.42	3.50	1.94	2.68	1.56	2.64	2.22
Oct.	.92	.91	1.34	1.03	1.43	.84	1.57	1.21
Nov.	.51	.43	.29	.41	.52	.34	.42	.58
Dec.	.61	.59	.85	.53	1.39	.41	.89	.55
Total	9.69	10.19	12.34	12.35	15.28	10.02	13.96	13.83

Month	Pecos River below Sheffield (3,390 Square Miles)		# Foster Ranch to Amistad Dam (2,799 Square Miles)		Devils River (4,305 Square Miles)		‡ Amistad Dam to Eagle Pass (1,625 Square Miles)	
	1976	Period Average	1976	Period Average	1976	Period Average	1976	Period Average
Jan.	0.02	0.69	0.10	0.51	0.04	0.67	0.12	0.74
Feb.	.03	.87	0	.64	.01	.72	.03	.91
Mar.	.24	.76	.02	.76	.40	1.06	.20	.99
Apr.	1.38	1.85	2.45	1.33	2.58	1.78	4.32	1.71
May	2.76	1.81	3.34	1.96	2.96	2.58	4.50	2.91
June	.76	2.43	.66	2.19	.73	2.64	.90	2.48
July	6.58	1.90	7.16	1.29	11.02	1.84	11.98	1.94
Aug.	1.22	2.01	.33	1.66	1.10	2.15	.66	2.00
Sept.	3.98	2.52	1.09	2.39	5.04	3.02	1.61	3.12
Oct.	3.65	1.86	2.42	1.48	4.14	2.22	4.52	2.08
Nov.	.95	.92	1.46	.74	.47	1.51	1.28	1.01
Dec.	.50	.73	1.03	.63	.85	.99	1.46	.87
Total	22.07	18.35	20.06	15.58	29.34	21.18	31.58	20.76

Month	⊕ Eagle Pass to Laredo (3,795 Square Miles)		8 Laredo to Falcon Dam (3,369 Square Miles)		† Falcon Dam to Rio Grande City (468 Square Miles)		United States Side below Rio Grande City (986 Square Miles)	
	1976	Period Average	1976	Period Average	1976	Period Average	1976	Period Average
Jan.	0.04	0.72	0.32	0.75	0.29	0.89	0.51	1.25
Feb.	0	.81	.01	.30	.03	.83	.01	1.08
Mar.	.43	.92	1.16	.30	.53	.95	.78	1.05
Apr.	3.16	1.58	2.35	1.40	2.36	1.21	4.32	1.37
May	3.59	3.11	1.59	3.19	1.51	2.43	1.77	2.80
June	.45	2.45	2.39	2.00	2.65	2.13	1.14	2.54
July	6.46	1.49	6.75	2.12	5.70	1.94	7.79	1.82
Aug.	.68	2.31	1.03	1.86	1.48	2.16	3.46	2.33
Sept.	1.71	3.07	2.62	3.14	3.29	3.51	3.55	4.41
Oct.	4.95	1.90	5.29	1.65	4.36	1.98	6.25	2.57
Nov.	1.47	.97	3.73	1.56	4.06	.81	3.53	1.33
Dec.	1.86	.98	2.03	.82	1.23	.67	1.61	1.24
Total	25.30	20.31	30.37	20.09	27.99	19.61	35.14	23.84

* Excluding Rio Conchos, Alamito Creek, and Terlingua Creek
‡ Excluding Arroyo Las Vacas, San Felipe Creek, Pinto Creek, Rio San Diego, and Rio San Rodrigo
⊕ Excluding Rio Escondido
† Excluding Rio Alamo and Rio San Juan
\# Excluding Pecos and Devils Rivers
8 Excluding Rio Salado above Old Co. Guerrero

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The precipitation records of stations listed below begin on the date shown and extend through 1976. 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, 26, and Supplement 40A. With the exception of Las Cruces, New Mexico, all United States precipitation stations listed below are in Texas, while those in Mexico are in the indicated state as shown.

In United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Adobes Ranch	S	29° 46'	104° 34'	2,550	1950	Fort Quitman - Above Rio Conchos	T. C. Davis
American Dam	S	31° 47'	106° 32'	3,730	1938	El Paso - Fort Quitman	I. B. & W. C.
Amistad Dam	R	29° 28'	101° 02'	1,150	July 1962	Langtry - Below Amistad Dam	I. B. & W. C.
Amistad Raft	C	29° 27'	101° 03'	‡‡	Dec. 1968	Langtry - Amistad Dam	I. B. & W. C.
Amistad Reservoir near Comstock	C	29° 33'	101° 13'	1,130	1970	Langtry - Amistad Dam	I. B. & W. C.
Apache Ranch	C	27° 56'	99° 56'	500	# 1953	Eagle Pass - Laredo	Ranch Foreman
Arledge, W. A. Ranch	S	29° 58'	101° 38'	1,950	June 1933	Johnson Ranch - Langtry	W. A. Arledge
Arroyo Tigre Chiquito	C	26° 41'	99° 07'	314	Apr. 1954	Laredo - Falcon Dam	I. B. & W. C.
Baker, A. A. Ranch	R	29° 44'	101° 09'	1,720	July 1962	Devils River	I. B. & W. C.
Bakers Crossing	S	29° 58'	101° 09'	1,520	#Apr. 1955	Devils River	James Baker
Bennett, Moody Ranch	S	30° 37'	104° 55'	3,175	#July 1956	Fort Quitman - Above Rio Conchos	Moody Bennett
Big Satan Creek Station	C	29° 40'	100° 58'	1,150	Nov. 1968	Devils River	I. B. & W. C.
Black Gap Game Refuge	S	29° 34'	102° 57'	2,325	# 1952	Johnson Ranch - Langtry	Texas Parks & Wildlife
Bloys Camp	S	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	Lenamae Bricker
Brite, J. G. Ranch	R	29° 33'	101° 01'	1,150	Sept. 1962	Devils River	I. B. & W. C.
Brotherton Ranch	V	29° 42'	101° 19'	1,400	1961	Langtry - Below Amistad Dam	Perry Calk
Buoy No. 11	C	29° 31'	101° 10'	‡‡	Dec. 1969	Langtry - Amistad Dam	I. B. & W. C.
Buttrill Ranch	S	30° 00'	103° 16'	3,500	Mar. 1952	Johnson Ranch - Langtry	Tom B. Leary
Canon Diablo	C	28° 39'	100° 27'	700	1964	Eagle Pass - Laredo	I. B. & W. C.
Castolon	S	29° 08'	103° 31'	2,100	#Mar. 1953	Above Rio Conchos - Johnson Ranch	National Park Service
CCWID #11 (Bayview Dist. Off.) Avg. 18 Gages	S	26° 08'	97° 21'	25	1952	Lower Rio Grande Valley	CCWID #11
CCWCID #19 (Adams Gardens)	S	26° 10'	97° 47'	50	1952	Lower Rio Grande Valley	CCWCID #19
Chittim Ranch	C	28° 44'	100° 28'	810	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Coal Mine	R	28° 48'	100° 28'	770	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Comstock	S	29° 41'	101° 10'	1,530	May 1939	Langtry - Below Amistad Dam	I. B. & W. C.
Continental Ranch	S	29° 51'	101° 18'	1,560	Mar. 1965	Pecos River Below Sheffield	Julio Crowder
Cooper Ranch	C	28° 50'	100° 27'	800	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Corralitos Ranch	C	27° 07'	99° 25'	346	1953	Laredo - Falcon Dam	I. B. & W. C.
County Line Station	R	31° 23'	105° 59'	3,550	1938	El Paso - Fort Quitman	I. B. & W. C.
Cow Creek near Comstock	R	29° 36'	101° 12'	1,210	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Crane, Ed Ranch	S	29° 51'	101° 05'	1,630	# 1955	Devils River	Ed Crane
Cuervo Creek Station	C	28° 21'	100° 19'	620	1954	Eagle Pass - Laredo	I. B. & W. C.
Dale, O. C. Farm	S	26° 15'	98° 16'	130	1952	Lower Rio Grande Valley	O. C. Dale
Dead Mans Canyon near Comstock	C	29° 47'	101° 19'	1,320	Sept. 1967	Pecos River below Sheffield	I. B. & W. C.
Devils Lake	R	29° 35'	100° 59'	1,146	May 1939	Devils River	I. B. & W. C.
Devils River at Cauthorn Ranch	S	30° 05'	100° 07'	1,656	#Apr. 1976	Devils River	I. B. & W. C.
Dolan Springs	C	29° 54'	100° 59'	1,360	Feb. 1966	Devils River	I. B. & W. C.
Dove Mountain Ranch	S	29° 48'	102° 54'	2,880	#Mar. 1952	Johnson Ranch - Langtry	Sam Cavness
Dryden	S	30° 03'	102° 07'	2,130	# 1931	Johnson Ranch - Langtry	Lewis Cash
Eagle Pass	S	28° 42'	100° 30'	815	1964	Eagle Pass - Laredo	I. B. & W. C.
Edinburg Filtration Plant	S	26° 18'	98° 10'	100	1952	Lower Rio Grande Valley	City of Edinburg
Elephant Mountain Ranch	S	30° 01'	103° 34'	4,150	# 1952	Johnson Ranch - Langtry	R. Schoenfeldt
El Indio	S	28° 31'	100° 19'	725	# 1941	Eagle Pass - Laredo	Glen Stidham
Elm Creek Station	C	28° 46'	100° 30'	720	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
El Peyote Ranch	C	27° 07'	98° 58'	650	1966	Laredo - Falcon Dam	F. J. Saldana
Erekson Ranch	S	29° 56'	100° 34'	2,330	# 1955	Devils River	Bob Erekson
Evans Creek near Comstock	C	29° 32'	101° 00'	1,180	July 1969	Devils River	I. B. & W. C.
Falcon Dam	S	26° 33'	99° 08'	323	Apr. 1950	Laredo - Falcon Dam	I. B. & W. C.
Farias Ranch	R	28° 36'	100° 20'	720	Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Fawcett, H. K. Ranch	C	29° 53'	100° 54'	1,550	# 1941	Devils River	H. K. Fawcett

S Standard R Recording C Cumulative V Visual ‡‡ Reservoir surface
Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Feely	C	29° 34'	101° 07'	1,250	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Fletcher, H. T. Ranch	S	30° 12'	104° 16'	5,100	# 1939	Alamito Creek	Hayes Mitchell, Jr.
Fort Hancock Bridge	S	31° 16'	105° 51'	3,500	Apr. 1940	El Paso - Fort Quitman	I. B. & W. C.
Fort McIntosh (Laredo)	V	27° 30'	99° 31'	410	# 1850	Eagle Pass - Laredo	I. B. & W. C.
Fort Quitman	R	31° 05'	105° 36'	3,430	# 1937	Fort Quitman - Above Rio Conchos	I. B. & W. C.
Foster, Ross Ranch	C	29° 47'	101° 45'	1,230	May 1961	Johnson Ranch - Langtry	I. B. & W. C.
Garciasville	R	26° 20'	98° 41'	200	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Gillis Headquarters Ranch	S	29° 37'	100° 47'	1,410	1968	Amistad Dam - Eagle Pass	Jake Schiller
Gillis Ranch	S	29° 41'	101° 03'	1,440	# 1965	Devils River	Walter Gillis
Goldwire Ranch	C	29° 44'	100° 57'	1,685	Nov. 1968	Devils River	Jake Schiller
Goodenough Spring Raft	C	29° 32'	101° 16'	‡‡	Aug. 1958	Langtry - Amistad Dam	I. B. & W. C.
Greenwood, H. M. (Cienega Ranch)	S	29° 48'	104° 13'	4,000	#Mar. 1941	Alamito Creek	H. M. Greenwood
Guayuco Arroyo	R	31° 10'	105° 40'	3,600	#May 1940	El Paso - Fort Quitman	I. B. & W. C.
Hammond, Earl Ranch	S	29° 41'	103° 51'	3,700	Apr. 1963	Terlingua Creek	Earl Hammond
Hardgrave, E. W. Ranch	S	30° 18'	102° 09'	2,650	#Apr. 1952	Johnson Ranch - Langtry	Jack Hardgrave
Harlow Ranch	C	29° 50'	101° 11'	1,695	Mar. 1969	Devils River	I. B. & W. C.
HCWCID #6 Goodwin Pump No. 3	S	26° 16'	98° 24'	175	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 3A	S	26° 14'	98° 22'	130	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 4	S	26° 16'	98° 21'	185	1958	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 4B	S	26° 18'	98° 23'	210	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 5	S	26° 22'	98° 21'	225	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #15 (Edinburg Office)	S	26° 23'	98° 09'	85	1952	Lower Rio Grande Valley	HCWCID #15
Heath Crossing	S	29° 27'	102° 50'	1,775	#July 1966	Johnson Ranch - Langtry	Dow Chemical
Hoffman Ranch	S	30° 38'	103° 51'	4,650	#June 1955	Pecos River Above Sheffield	Dr. A.J. Hoffman
Huisache Ranch	C	26° 57'	99° 21'	383	Aug. 1953	Laredo - Falcon Dam	I. B. & W. C.
Hutto, Calvin Ranch	S	30° 04'	101° 49'	1,990	July 1975	Pecos River	I. B. & W. C.
Hutto Ranch No. 1	R	29° 30'	100° 50'	1,240	Jan. 1964	Devils River	I. B. & W. C.
Hutto Ranch No. 2	R	29° 29'	100° 54'	1,210	Jan. 1964	Devils River	I. B. & W. C.
Indio Ranch	S	28° 31'	100° 22'	700	1959	Eagle Pass - Laredo	Earnest Scales
Island Station	R	31° 32'	106° 14'	3,630	1939	El Paso - Fort Quitman	I. B. & W. C.
James, Lewis Ranch	S	30° 11'	102° 07'	2,275	1966	Johnson Ranch - Langtry	Lewis James
Johnson Ranch	C	29° 01'	103° 23'	2,050	#July 1933	Johnson Ranch - Langtry	I. B. & W. C.
Keisling Farm	S	28° 23'	100° 17'	740	Dec. 1958	Eagle Pass - Laredo	Robert Smith
Kelly, P. W. Ranch	S	29° 46'	101° 12'	1,750	1965	Langtry - Below Amistad Dam	Bobby Kelly
King, Martin Ranch	R	29° 44'	101° 22'	1,460	Nov. 1954	Langtry - Below Amistad Dam	I. B. & W. C.
La Feria Materials Yard	V	26° 10'	97° 50'	60	1960	Lower Rio Grande Valley	CCWCID #3
La Feria Pumping Plant	S	26° 03'	97° 50'	60	1952	Lower Rio Grande Valley	CCWCID #3
Lajitas	S	29° 16'	103° 48'	2,320	June 1967	Above Rio Conchos - Johnson Ranch	Ben Simmons
La Nutria Station	C	30° 14'	104° 43'	2,880	Mar. 1967	Fort Quitman - Above Rio Conchos	I. B. & W. C.
Laredo Water Plant	S	27° 33'	99° 31'	410	# 1930	Eagle Pass - Laredo	Laredo Water Plant
Las Cruces, New Mexico	S	32° 19'	106° 47'	3,893	Jan. 1975	Caballo Dam - El Paso	I. B. & W. C.
Las Moras Creek	S	29° 00'	100° 38'	800	1958	Below Amistad Dam - Eagle Pass	Lou McGee
Lateral No. 2 Spill	C	28° 56'	100° 38'	760	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Lateral No. 12 Headgate	C	28° 54'	100° 34'	800	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Lateral No. 15 Spill	C	28° 51'	100° 34'	740	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Latham Ranch	S	30° 13'	101° 22'	2,120	1965	Pecos River below Sheffield	John & Bob Latham
Laughlin Air Force Base	S	29° 22'	100° 47'	1,030	Dec. 1958	Below Amistad Dam - Eagle Pass	U. S. A. F.
Lewis, Billie C., Jr. Ranch	S	29° 33'	100° 40'	1,400	1967	Below Amistad Dam - Eagle Pass	Billie C. Lewis, Jr.
Lock Store	S	30° 40'	100° 57'	2,400	#Oct. 1962	Devils River	Claud Ward
Long Ranch	R	29° 28'	100° 57'	1,140	Oct. 1971	Devils River	I. B. & W. C.
Los Ebanos	C	26° 16'	98° 33'	150	#Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Lowry, Cliff Ranch	R	29° 39'	100° 52'	1,490	June 1962	Devils River	I. B. & W. C.
Lowry Ranch No. 2	R	29° 37'	100° 56'	1,160	May 1965	Devils River	I. B. & W. C.
Maverick County Canal Headgate	S	29° 10'	100° 46'	870	Mar. 1948	Below Amistad Dam - Eagle Pass	MCWCID #1
Maverick Power Plant	S	28° 50'	100° 33'	800	June 1952	Below Amistad Dam - Eagle Pass	C. P. & L. Co.
McGonagill Ranch - Headquarters	S	30° 20'	102° 58'	4,150	Apr. 1952	Johnson Ranch - Langtry	W. E. McGonagill

C Cumulative S Standard V Visual R Recording # Some months missing
‡‡ Reservoir surface

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
McGonagill Ranch - East Mill	V	30° 21'	102° 55'	4,050	#May 1952	Johnson Ranch - Langtry	W. E. McGonagill
Middle Fork San Pedro	C	29° 30'	100° 53'	1,170	June 1969	Devils River	I. B. & W. C.
Miers, H. T. Ranch - Headquarters	C	29° 44'	100° 51'	1,760	# 1957	Devils River	I. B. & W. C.
Miers, H. T. Ranch No. 2	R	29° 44'	100° 53'	1,600	Apr. 1964	Devils River	I. B. & W. C.
Miller, Eugene Ranch	S	30° 25'	101° 10'	2,150	July 1975	Devils River	I. B. & W. C.
Mitchell, Kerr Ranch	S	30° 13'	104° 00'	4,450	# 1941	Alamito Creek	Mrs. K. Mitchell
Mouth of Maravillas Creek	S	29° 34'	102° 47'	1,650	#Oct. 1949	Johnson Ranch - Langtry	Texas Parks & Wildlife
Neely Ranch	S	30° 59'	105° 32'	3,350	Aug. 1941	Fort Quitman - Above Rio Conchos	Mrs. Tom Neely
New Mission Pump. Plant	S	26° 11'	98° 24'		Aug. 1961	Lower Rio Grande Valley	HCWCID #14
96 Ranch Headquarters	V	30° 40'	104° 50'	3,870	1972	Fort Quitman - Above Rio Conchos	Walter Paschal
Nitaville Mercantile	S	29° 37'	103° 34'	3,332	Mar. 1973	Terlingua Creek	W. Terrison
Normandy	S	28° 55'	100° 36'	780	Dec. 1958	Below Amistad Dam - Eagle Pass	Fannin G. Lowe
North Fork San Pedro	C	29° 31'	100° 53'	1,144	June 1969	Devils River	I. B. & W. C.
Owens Ranch	S	30° 45'	101° 40'	2,170	July 1963	Pecos River Below Sheffield	Jeff Owens
Pafford Crossing	C	29° 41'	101° 00'	1,180	Feb. 1960	Devils River	I. B. & W. C.
Pecos River near Langtry Station	C	29° 48'	101° 27'	1,260	July 1967	Pecos River Below Sheffield	I. B. & W. C.
Penitas (Edinburg Pumping Plant)	S	26° 14'	98° 27'	100	July 1957	Lower Rio Grande Valley	B. Leadbetter
Pinto Creek Station	C	29° 09'	100° 43'	870	Dec. 1958	Below Amistad Dam - 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 (IB&WC Gage)	C	29° 34'	104° 23'	2,550	Oct. 1949	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Prosser Ranch No. 1	C	29° 54'	101° 14'	1,710	Mar. 1965	Pecos River Below Sheffield	I. B. & W. C.
Presidio, IB&WC Construction Office	S	29° 35'	104° 22'	2,595	May 1976	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Prosser Ranch No. 2	C	29° 59'	101° 16'	1,350	Mar. 1965	Devils River	I. B. & W. C.
Prosser Ranch No. 3	C	30° 02'	101° 16'	2,020	#Mar. 1965	Pecos River Below Sheffield	I. B. & W. C.
Quebec Ranch	V	30° 31'	104° 25'	4,600	1949	Adjacent to Alamito Creek	George Jones
Ranchita (Continental)	S	29° 50'	101° 20'	1,540	1969	Pecos River	Julio Crowder
Redford	C	29° 29'	104° 13'	2,500	July 1954	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Rio Grande near Dryden	S	28° 30'	102° 09'	1,350	May 1976	Johnson Ranch - Langtry	I. B. & W. C.
Roma (Internat'l Bridge)	S	26° 24'	99° 01'	230	1941	Falcon Dam - Rio Grande City	Starr County Bridge Co.
Rosita Creek Siphon	C	28° 41'	100° 24'	760	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Rosita Creek Station	C	28° 36'	100° 24'	700	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Rough Canyon nr. Del Rio	C	29° 35'	100° 58'	1,147	June 1969	Devils River	I. B. & W. C.
San Benito Pump	S	26° 03'	97° 45'	50	Oct. 1953	Lower Rio Grande Valley	I. B. & W. C.
Sawyer, W. E. Ranch	S	30° 28'	100° 47'	2,100	June 1966	Devils River	Geo. Powell
Sellers Ranch	C	29° 34'	101° 02'	1,190	#Feb. 1960	Devils River	I. B. & W. C.
Shafter	V	29° 49'	104° 19'	3,300	July 1968	Above Rio Conchos - Johnson Ranch	Rosa Munoz
Shafter No. 2	S	29° 49'	104° 18'	3,850	1976	Above Rio Conchos - Johnson Ranch	Raymond Wylie
Shannon, Bill Ranch	C	29° 57'	104° 40'	2,680	#July 1956	Fort Quitman - Above Rio Conchos	Bill Shannon
Sheep Pasture	S	29° 33'	102° 55'	2,210	#May 1965	Johnson Ranch - Langtry	Black Gap Game Refuge
Slaughter Ranch	V	29° 57'	102° 41'	2,560	# 1965	Johnson Ranch - Langtry	Mike Wood
Slaughter Ranch - Cow Creek	V	29° 56'	102° 39'	2,500	# 1949	Johnson Ranch - Langtry	Mike Wood
Slaughter Ranch - Keith Mill	V	29° 59'	102° 38'	2,610	Sept.1976	Johnson Ranch - Langtry	Mike Wood
Slaughter Ranch - Martin Pens	V	29° 59'	102° 44'	2,320	Sept.1976	Johnson Ranch - Langtry	Mike Wood
Slaughter Ranch - Ten Section	V	29° 59'	102° 44'	2,750	Sept.1976	Johnson Ranch - Langtry	Mike Wood
Stewart Ranch	R	29° 35'	100° 52'	1,330	Feb. 1960	Devils River	I. B. & W. C.
Stumberg, Steve Ranch	R	30° 11'	102° 53'	4,300	# 1943	Johnson Ranch - Langtry	I. B. & W. C.
Sultenfuss Ranch	S	29° 21'	100° 37'	1,110	1965	Pinto Creek	Otto Sultenfuss
Terlingua Creek Station	C	29° 12'	103° 36'	2,215	Mar. 1952	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Terlingua Creek, Texas Highway Dept. Camp	S	29° 19'	103° 32'	2,550	Aug. 1967	Terlingua Creek	M. Hernandez
Terrell Plant (El Paso Nat. Gas Co.)	R	30° 22'	101° 50'	2,510	#July 1962	Pecos River Below Sheffield	Bob Norred
Trees Farm	S	28° 38'	100° 25'	720	#Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Van Damsem Farm	C	28° 27'	100° 19'	700	1959	Eagle Pass - Laredo	I. B. & W. C.
Villa de la Mina	S	29° 45'	103° 40'	3,274	Sept.1974	Terlingua Creek	Glenn Pepper
Vinegarone	C	29° 57'	100° 46'	1,730	May 1966	Devils River	I. B. & W. C.

S Standard C Cumulative R Recording V Visual # Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Walker Ranch	C	29° 49'	101° 14'	1,530	July 1969	Devils River	I. B. & W. C.
Weyrich Farm	C	28° 40'	100° 24'	760	Sept.1962	Eagle Pass - Laredo	I. B. & W. C.
Whipple Farm	S	26° 04'	97° 29'	25	# 1952	Lower Rio Grande Valley	Harry Whipple
Whitehead Bros. Ranch	S	30° 02'	100° 52'	1,900	May 1966	Devils River	I. B. & W. C.
Whitehead, Tuffy Ranch	R	29° 38'	101° 07'	1,420	July 1962	Devils River	I. B. & W. C.
Wipff Ranch	C	29° 00'	100° 35'	840	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Woodward, J. F. Ranch	S	30° 08'	103° 36'	4,750	1954	Johnson Ranch - Langtry	J. F. Woodward
Wuensche Farm	S	28° 24'	100° 19'	670	# 1952	Eagle Pass - Laredo	I. B. & W. C.
Wynne, Harold Ranch Hdq.	S	29° 29'	103° 23'	3,610	Jan. 1974	Johnson Ranch - Langtry	H. Wynne
Yarborough Ranch	S	30° 06'	103° 36'	4,550	# 1966	Johnson Ranch - Langtry	F. L. Hillhouse
Zapata Water Plant	S	26° 54'	99° 16'	380	May 1953	Laredo - Falcon Dam	Zapata Water Plant
Zuberbuler Ranch	S	29° 41'	101° 14'	1,460	Feb. 1975	Langtry - Amistad Dam	J. U. Zuberbuler

C Cumulative S Standard R Recording # Some months or years missing

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
A. Blanca Canoas, Nuevo Leon	S	25° 32'	100° 30'	†	# 1958	Rio San Juan	Hydr. Resources
Adjuntas, Nuevo Leon	S	25° 18'	100° 03'	†	# 1958	Rio San Juan	Monterrey Wtrwrks
Allende, Coahuila	S	28° 21'	100° 51'	1,170	# 1947	Eagle Pass - Laredo	Hydr. Resources
Amistad Reservoir near Tlaloc, Coahuila	C	29° 26'	101° 07'	1,200	1970	Langtry - Amistad Dam	I. B. & W. C.
Anahuac, Nuevo Leon	S	27° 15'	100° 08'	656	#June 1933	Rio Salado	Hydr. Resources
Aniego 166, Tamaulipas	C	26° 46'	99° 15'	310	Jan. 1964	Laredo - Falcon Dam	I. B. & W. C.
Apodaca, Nuevo Leon	S	25° 46'	100° 11'	1,330	Feb. 1964	Rio San Juan	Hydr. Resources
Arguelles, Tamaulipas	C	26° 11'	98° 28'	†	1962	Lower Rio Grande Valley	I. B. & W. C.
Bachiniva, Chihuahua	S	28° 46'	107° 15'	6,250	# 1952	Adjacent to Rio Conchos	Meteor. Service of Mexico
Bajo Rio Bravo, Tamaulipas							
No. 1-2	S	25° 56'	97° 46'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-3	S	25° 50'	97° 42'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-4	S	25° 51'	97° 45'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-12	S	25° 56'	97° 38'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-13	S	25° 44'	97° 40'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-18	S	25° 49'	97° 42'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-5	S	25° 48'	97° 49'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-6	S	25° 44'	97° 53'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-7	S	25° 39'	97° 42'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-8	S	25° 40'	97° 55'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-10	S	25° 36'	97° 52'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-11	S	25° 35'	97° 46'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-14	S	25° 56'	97° 59'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-15	S	25° 46'	98° 01'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-17	S	25° 49'	97° 58'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 4-16	S	25° 35'	98° 00'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Bajo Rio San Juan, Tamaulipas							
No. 2-29	S	26° 10'	98° 38'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-33	S	26° 10'	98° 28'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-38	S	26° 06'	98° 34'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-47	S	25° 58'	98° 07'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-55	S	25° 52'	98° 12'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-58	S	25° 50'	98° 11'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-60	S	25° 46'	98° 10'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-63	S	25° 41'	98° 06'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Banderas, Chihuahua	S	31° 01'	105° 35'	†	1963	Fort Quitman - Above Rio Conchos	Hydr. Resources
Bustamente, Nuevo Leon	S	26° 32'	100° 31'	1,450	# 1958	Rio Salado	Hydr. Resources
Cabezones, Nuevo Leon	S	24° 59'	99° 45'	†	1962	Adjacent to Rio San Juan	Hydr. Resources
Cadereyta, Nuevo Leon	S	25° 35'	100° 00'	1,180	#Sept.1904	Rio San Juan	Hydr. Resources
Camargo, Chihuahua	S	27° 42'	105° 10'	3,950	Oct. 1956	Rio Conchos	Hydr. Resources
Camargo, Tamaulipas	S	26° 19'	98° 50'	220	# 1953	Falcon Dam - Rio Grande City	Hydr. Resources
Candela, Coahuila	S	26° 50'	100° 40'	†	# 1970	Rio Salado	Hydr. Resources
Carbonera, Nuevo Leon	S	24° 49'	100° 47'	†	# 1958	Rio San Juan	Hydr. Resources
Cariehic, Chihuahua	S	27° 55'	107° 04'		#May 1961	Rio Conchos	Meteor. Service of Chihuahua
Casillas, Nuevo Leon	S	25° 12'	100° 12'	4,060	# 1958	Rio San Juan	Hydr. Resources
Cd. Acuna, Coahuila	S	29° 20'	100° 57'	900	1951	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Cd. Diaz Ordaz	S	26° 14'	98° 36'	130	# 1953	Lower Rio Grande Valley	Hydr. Resources
Cd. Guerrero, Chihuahua	S	28° 33'	107° 29'	6,560	#May 1903	Adjacent to Rio Conchos	Meteor. Service of Mexico
Cd. Mier, Tamaulipas	S	26° 26'	99° 09'	260	Oct. 1955	Falcon Dam - Rio Grande City	I. B. & W. C.
Cd. Mier Km. 8, SW, Tamaulipas	C	26° 23'	99° 14'	†	1962	Rio Alamo	I. B. & W. C.
Cerralvo, Nuevo Leon	R	26° 05'	99° 37'	1,130	#Nov. 1938	Rio San Juan	Hydr. Resources
Cerritos, Nuevo Leon	S	25° 31'	100° 12'	†	# 1958	Rio San Juan	Hydr. Resources
Cerro Prieto, Nuevo Leon	S	25° 56'	99° 23'	890	#May 1958	Rio San Juan	Hydr. Resources
Chihuahua, Chihuahua	S	28° 38'	106° 04'	4,690	# 1900	Rio Conchos	Meteor. Service of Mexico
Chupadero, Coahuila	S	29° 05'	100° 51'	980	1961	Rio San Diego	F. Jakubesch
Cienega de Flores, Nuevo Leon	R	25° 57'	100° 10'	1,770	Apr. 1938	Rio San Juan	Hydr. Resources
Cienega del Toro, Nuevo Leon	S	25° 05'	100° 20'	7,010	# 1958	Rio San Juan	Hydr. Resources
Colombia, Nuevo Leon	C	27° 42'	99° 46'	†	Jan. 1964	Eagle Pass - Laredo	I. B. & W. C.
Colombia, Nuevo Leon	S	27° 42'	99° 45'	†	Sept.1976	Eagle Pass - Laredo	Hydr. Resources
Colonia Anahuac, Chihuahua	S	28° 29'	105° 44'	6,550	1961	Rio Conchos	Celulosa de Chihuahua,S.A.
Comales, Tamaulipas	R	26° 11'	98° 55'	200	#Mar. 1938	Rio San Juan	Hydr. Resources
Control, Tamaulipas	S	25° 58'	97° 49'	59	#June 1942	Lower Rio Grande Valley	Hydr. Resources
Coyame, Chihuahua	S	29° 23'	105° 06'	†	Nov. 1961	Rio Conchos	Meteor. Service of Chihuahua

S Standard C Cumulative R Recording † Not available # Some months or years missing

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
Cuatro Cienegas, Coahuila	S	26° 59'	102° 04'	2,430	# 1923	Rio Salado	Hydr. Resources
Cuauhtemoc, Chihuahua	S	28° 24'	106° 52'	7,250	#June 1923	Adjacent to Rio Conchos	Meteor. Service of Mexico
Delicias, Chihuahua	S	28° 11'	105° 28'	3,710	#Aug. 1933	Rio Conchos	Hydr. Resources
Ejido Eutimias, Coahuila	S	28° 20'	102° 45'	3,440	#Apr. 1972	Johnson Ranch - Langtry	Hydr. Resources
Ejido La Rosita, Coahuila	S	28° 27'	103° 18'	3,440	# 1974	Johnson Ranch - Langtry	Hydr. Resources
Ejido San Miguel, Coahuila	S	29° 02'	100° 58'	†	Feb. 1976	Eagle Pass - Laredo	Hydr. Resources
El Anteojo, Chihuahua	S	28° 44'	104° 42'	4,130	1963	Adjacent to Rio Conchos	Meteor. Service of Mexico
El Cuchillo, Nuevo Leon	S	25° 43'	99° 16'	590	#June 1938	Rio San Juan	Hydr. Resources
El Cuervo, Chihuahua	S	30° 15'	105° 03'	3,840	# 1961	Adjacent to Ft. Quitman Above Rio Conchos	Hydr. Resources
El Realito, Nuevo Leon	S	25° 18'	99° 21'	†	# 1970	Rio San Juan	Hydr. Resources
El Remolino, Coahuila	S	28° 45'	101° 05'	1,310	June 1958	Rio San Rodrigo	I. B. & W. C.
El Sitio, Chihuahua	S	27° 34'	106° 16'	†	July 1955	Rio Conchos	Meteor. Service of Chihuahua
El Sueco, Chihuahua	S	29° 54'	106° 24'	5,090	1958	Adjacent to Rio Conchos	Meteor. Service of Chihuahua
El Treinta, Coahuila	S	28° 19'	101° 24'	†	1961	Rio Salado	I. B. & W. C.
El Vergel, Chihuahua	S	26° 22'	106° 30'	7,350	# 1957	Rio Conchos	Meteor. Service of Mexico
Emiliano Zapata, Coahuila	S	29° 01'	100° 49'	†	Mar. 1976	Eagle Pass - Laredo	Hydr. Resources
Escalon, Chihuahua	S	26° 45'	104° 20'	4,160	# 1957	Adjacent to Rio Conchos	Meteor. Service of Mexico
Estacion Rosario, Durango	S	26° 30'	105° 38'	†	July 1962	Rio Conchos	Hydr. Resources
Galeana, Nuevo Leon	S	24° 50'	100° 04'	5,430	# 1958	Adjacent to Rio San Juan	Meteor. Service of Mexico
Gallego, Chihuahua	S	29° 50'	106° 23'	5,100	1958	Adjacent to Rio Conchos	Meteor. Service of Chihuahua
Garita Km. 28, Chihuahua	S	31° 33'	106° 28'	3,990	May 1958	El Paso - Ft. Quitman	I. B. & W. C.
Garza Ayala, Nuevo Leon	S	26° 29'	100° 03'	†	# 1968	Rio Salado	Hydr. Resources
General Trevino, Nuevo Leon	S	26° 13'	99° 29'	†	Oct. 1976	Rio Alamo	Hydr. Resources
Gral. Bravo, Nuevo Leon	S	25° 48'	99° 11'	590	#Sept.1906	Rio San Juan	Hydr. Resources
Gral. Cepeda, Coahuila	S	25° 23'	101° 29'	4,920	#Aug. 1926	Rio San Juan	Hydr. Resources
Gral. Teran (Experiment Station), Nv. Leon	S	25° 16'	99° 33'	1,090	# 1958	Rio San Juan	Agriculture and Livestock Dept.
Guadalupe, Chihuahua	S	31° 23'	106° 06'	3,650	1958	El Paso - Ft. Quitman	I. B. & W. C.
Hacienda El Alamo, Nuevo Leon	S	26° 29'	99° 46'	†	1968	Rio Alamo	I. B. & W. C.
Hacienda Mamulique, Nuevo Leon	S	26° 07'	100° 14'	†	#Sept.1973	Rio San Juan	Hydr. Resources
Hacienda San Miguel, Coahuila	S	29° 13'	101° 30'	†	1961	Langtry - Below Amistad Dam	I. B. & W. C.
Higueras, Nuevo Leon	S	25° 58'	100° 01'	1,640	#Sept.1906	Rio San Juan	Meteor. Service of Mexico
Icamole, Nuevo Leon	S	25° 55'	100° 43'	4,900	# 1958	Rio San Juan	Hydr. Resources
Iturbide, Nuevo Leon	S	24° 44'	99° 54'	†	1941	Adjacent to Rio San Juan	Hydr. Resources
Jimenez, Chihuahua	S	27° 03'	104° 55'	4,490	# 1951	Rio Conchos	Hydr. Resources
Jimenez, Coahuila	S	29° 04'	100° 40'	810	# 1951	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Juarez, Chihuahua	S	31° 44'	106° 29'	3,740	# 1903	El Paso - Ft. Quitman	Hydr. Resources
Juarez, Coahuila	S	27° 37'	100° 44'	1,000	# 1943	Rio Salado	Hydr. Resources
Km. 99, Chihuahua	S	28° 03'	105° 35'	3,440	# 1962	Rio Conchos	Hydr. Resources
Km. 135, Chihuahua	S	28° 22'	105° 37'	3,940	# 1962	Rio Conchos	Hydr. Resources
La Arena, Nuevo Leon	S	25° 46'	100° 01'	†	# 1968	Rio San Juan	Hydr. Resources
La Bandera, Tamaulipas	C	26° 42'	99° 22'	†	1962	Laredo - Falcon Dam	I. B. & W. C.
La Boca, Nuevo Leon	S	25° 25'	100° 09'	1,460	# 1932	Rio San Juan	Hydr. Resources
La Boquilla, Chihuahua	S	27° 32'	105° 25'	4,330	# 1910	Rio Conchos	Electric Industry of Mexico
La Cruz, Nuevo Leon	S	25° 28'	100° 26'	†	# 1958	Rio San Juan	Hydr. Resources
La Popa, Nuevo Leon	S	26° 10'	100° 50'	3,230	# 1958	Rio San Juan	Hydr. Resources
La Trasquila, Chihuahua	S	29° 08'	107° 03'	†	# 1962	Adjacent to Rio Conchos	Hydr. Resources
Laguna de Salinillas, Nuevo Leon	S	27° 26'	100° 23'	750	# 1940	Rio Salado	Hydr. Resources
Laguna de Sanchez, N. L.	R	25° 22'	100° 17'	6,500	Apr. 1941	Rio San Juan	Hydr. Resources
Lampazos, Nuevo Leon	S	27° 02'	100° 30'	1,120	# 1958	Rio Salado	Meteor. Service of Mexico
Las Burras, Chihuahua	S	28° 31'	105° 26'	3,590	July 1949	Rio Conchos	Hydr. Resources
Las Comitas, Nuevo Leon	S	25° 30'	100° 24'	1,670	# 1940	Rio San Juan	Hydr. Resources
Las Enramadas, Nuevo Leon	S	25° 30'	99° 31'	730	#Sept.1926	Rio San Juan	Hydr. Resources
Las Tortillas, Tamaulipas	C	26° 50'	99° 34'	360	May 1961	Laredo - Falcon Dam	I. B. & W. C.
Las Virgenes, Chihuahua	S	28° 10'	105° 38'	4,070	# 1943	Rio Conchos	Hydr. Resources
Lazaro Cardenas, Chihuahua	S	28° 23'	105° 37'	3,940	# 1961	Rio Conchos	Meteor. Service of Mexico
Linares, Nuevo Leon	R	24° 52'	99° 34'	1,180	# 1900	Adjacent to Rio San Juan	Hydr. Resources
Loma Blanca, Chihuahua	S	31° 35'	106° 18'	3,650	July 1970	El Paso - Ft. Quitman	Hydr. Resources

S Standard R Recording C Cumulative † Not available # Some months or years missing

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
Los Barriles, Chihuahua	S	30° 55'	105° 45'	4,860	July 1958	El Paso - Ft. Quitman	I. B. & W. C.
Los Herrera(La Tableta), Nuevo Leon	R	25° 54'	99° 24'	820	#Sept.1939	Rio San Juan	Hydr. Resources
Los Ramones, Nuevo Leon	R	25° 42'	99° 38'	260	#Sept.1939	Rio San Juan	Hydr. Resources
Luis L. Leon, Chihuahua	S	31° 05'	105° 38'	3,460	Apr. 1958	El Paso - Ft. Quitman	I. B. & W. C.
Maclovio Herrera (Falomir), Chihuahua	S	29° 04'	105° 09'	3,220	# 1924	Rio Conchos	Meteor. Service of Mexico
Madero (Los Aldama), Nuevo Leon	S	26° 02'	99° 12'	†	#May 1970	Rio San Juan	Hydr. Resources
Maijoma, Chihuahua	S	28° 55'	104° 21'	4,270	Aug. 1955	Rio Conchos	Meteor. Service of Chihuahua
Majalca, Chihuahua	S	28° 53'	106° 21'	6,860	June 1963	Rio Conchos	Meteor. Service of Mexico
Manuel Benavides, Chihuahua	S	29° 06'	103° 54'	†	Oct. 1961	Above Rio Conchos - Johnson Ranch	Meteor. Service of Mexico
Matamoros, Tamaulipas	S	25° 52'	97° 30'	33	# 1958	Lower Rio Grande Valley	Hydr. Resources
Meoqui, Chihuahua	S	28° 16'	105° 29'	3,790	1961	Rio Conchos	Meteor. Service of Mexico
Miguel Aleman, Tamaulipas	S	26° 24'	99° 02'	180	1964	Falcon Dam - Rio Grande City	Hydr. Resources
Mimbres, Nuevo Leon	S	24° 58'	100° 16'	†	# 1958	Rio San Juan	Hydr. Resources
Mina, Nuevo Leon	S	26° 00'	100° 32'	†	# 1958	Rio San Juan	Hydr. Resources
Mina La Borrada, Coahuila	S	29° 21'	102° 36'	†	Aug. 1961	Johnson Ranch - Langtry	I. B. & W. C.
Monclova, Coahuila	S	26° 54'	101° 25'	1,920	# 1897	Rio Salado	Hydr. Resources
Montemorelos, Nuevo Leon	S	25° 12'	99° 50'	1,420	#Aug. 1904	Rio San Juan	Hydr. Resources
Monterrey, Nuevo Leon	S	25° 40'	100° 18'	1,740	# 1896	Rio San Juan	Hydr. Resources
Muzquiz, Coahuila	S	27° 53'	101° 31'	1,650	# 1923	Rio Salado	Hydr. Resources
Noncava, Chihuahua	S	27° 29'	106° 44'	†	# 1963	Rio Conchos	Meteor. Service of Chihuahua
Nueva Cd. Guerrero, Tamaulipas	S	26° 34'	99° 14'	350	#May 1954	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamaulipas	S	27° 30'	99° 30'	430	1950	Eagle Pass - Laredo	I. B. & W. C.
Nuevo Laredo, Tamaulipas	S	27° 30'	99° 30'	430	# 1909	Eagle Pass - Laredo	Meteor. Service of Mexico
Nuevo Laredo Km. 26. SSW, Tamaulipas	C	27° 17'	99° 37'	†	#Apr. 1961	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo (Sur), Tamaulipas	S	27° 26'	99° 32'	413	#May 1975	Laredo - Falcon Dam	I. B. & W. C.
Ocampo, Coahuila	S	27° 19'	102° 24'	3,770	# 1960	Adjacent to Rio Salado	Hydr. Resources
Ojinaga, Chihuahua	S	29° 34'	104° 24'	2,590	#Apr. 1954	Rio Conchos	I. B. & W. C.
Ojinaga, Chihuahua	S	29° 34'	104° 25'	2,620	#Nov. 1906	Rio Conchos	Meteor. Service of Mexico
Ojo Caliente, Chihuahua	S	27° 41'	105° 12'	4,010	1942	Rio Conchos	Hydr. Resources
Pajonal, Nuevo Leon	S	25° 29'	100° 23'	5,020	1958	Rio San Juan	Hydr. Resources
Palestina, Coahuila	S	29° 09'	100° 59'	1,080	# 1931	Rio San Diego	Hydr. Resources
Paras, Nuevo Leon	S	26° 30'	99° 31'	541	# 1958	Rio Alamo	Hydr. Resources
Parral, Chihuahua	S	26° 56'	105° 39'	5,450	# 1903	Rio Conchos	Meteor. Service of Mexico
Parras, Coahuila	S	25° 27'	102° 10'	5,510	1958	Adjacent to Rio San Juan	Hydr. Resources
Parrita, Chihuahua	S	29° 25'	106° 29'	†	# 1958	Adjacent to Rio Conchos	Hydr. Resources
Piedras Negras, Coahuila	S	28° 43'	100° 31'	820	# 1951	Below Amistad Dam - Eagle Pass	Meteor. Service of Mexico
Planta Zootecnica, Chihuahua	S	28° 41'	106° 04'	4,770	# 1957	Rio Conchos	Meteor. Service of Mexico
Porvenir, Chihuahua	S	31° 14'	105° 52'	3,530	1958	El Paso - Ft. Quitman	I. B. & W. C.
Potosi, Nuevo Leon	S	24° 51'	100° 19'	6,260	# 1958	Adjacent to Rio San Juan	Hydr. Resources
Potrero del Llano, Chihuahua	S	29° 13'	104° 26'	3,540	#June 1964	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Potrero Redondo, Nuevo Leon	S	25° 16'	100° 10'	†	# 1958	Rio 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 Anzalduas, Tamaulipas	V	26° 03'	98° 20'	105	Apr. 1960	Lower Rio Grande Valley	I. B. & W. C.
Presa Cabeceras, Coahuila	S	29° 02'	101° 05'	†	1964	Below Amistad Dam - Eagle Pass	Hydr. Resources
Presa Carranza, Coahuila	S	27° 31'	100° 37'	790	#June 1927	Rio Salado	Hydr. Resources
Presa Centenario, Coahuila	S	29° 13'	100° 57'	†	1964	Arroyo Las Vacas	Hydr. Resources
Presa Chihuahua, Chihuahua	S	28° 34'	106° 10'	5,230	Oct. 1961	Rio Conchos	Hydr. Resources
Presa Luis L. Leon, Chihuahua	S	23° 57'	105° 17'	†	Oct. 1964	Rio Conchos	Hydr. Resources
Presa San Miguel, Coahuila	S	29° 02'	100° 57'	1,000	1964	Rio San Diego	Hydr. Resources
Progreso, Coahuila	S	27° 25'	101° 00'	1,210	#Feb. 1943	Rio Salado	Hydr. Resources
Ramos Arizpe, Coahuila	S	25° 32'	100° 57'	4,590	#Apr. 1907	Rio San Juan	Meteor. Service of Mexico

S Standard R Recording V Visual C Cumulative † Not available
Some months or years missing

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
Rancho Bonanza, Tamaulipas	S	26° 50'	99° 26'	†	1973	Laredo - Falcon Dam	Delfino Garcia P.
Rancho La Chuparrosa, Coahuila	R	29° 30'	101° 15'	1,150	1970	Langtry - Amistad Dam	I. B. & W. C.
Rancho Las Espuelas, Tamaulipas	S	27° 07'	99° 27'	†	Nov. 1971	Laredo - Falcon Dam	Delfino Garcia P.
Rancho Los Vidrios, Tamaulipas	C	27° 35'	99° 37'	450	#Sept.1956	Eagle Pass - Laredo	I. B. & W. C.
Rancho Mercedes, Coahuila	S	28° 02'	100° 01'	540	May 1959	Eagle Pass - Laredo	I. B. & W. C.
Rancho San Diego, Coahuila	S	28° 03'	100° 35'	†	May 1959	Eagle Pass - Laredo	I. B. & W. C.
Rancho San Juan de la Palma, Tamaulipas	S	26° 54'	99° 20'	350	Apr. 1955	Laredo - Falcon Dam	I. B. & W. C.
Rancho San Rafael Bustamante, Tamps.	C	26° 54'	99° 30'	†	Nov. 1967	Rio Salado	I. B. & W. C.
Rayones, Nuevo Leon	S	25° 01'	100° 05'	1,970	#Oct. 1926	Rio San Juan	Hydr. Resources
Reata, Coahuila	S	26° 08'	101° 06'	3,070	#July 1944	Rio San Juan	Hydr. Resources
Represa Amistad, Coahuila	R	29° 26'	101° 02'	918	#June 1969	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Retamal, Tamaulipas	S	26° 02'	98° 03'	82	Oct. 1949	Lower Rio Grande Valley	I. B. & W. C.
Reynosa, Tamaulipas	R	26° 06'	98° 19'	130	# 1941	Lower Rio Grande Valley	Hydr. Resources
Reynosa Km. 22, SW, Tamaulipas	C	26° 00'	98° 30'	†	# 1962	Lower Rio Grande Valley	I. B. & W. C.
Rinconada, Nuevo Leon	S	25° 41'	100° 42'	4,790	#Apr. 1944	Rio San Juan	Hydr. Resources
Rio Bravo, Tamaulipas	S	25° 59'	98° 06'	85	#Sept.1950	Lower Rio Grande Valley	Hydr. Resources
Rio Salado Carr. 85, Nuevo Leon	S	26° 53'	99° 49'	390	#May 1958	Rio Salado	I. B. & W. C.
Rio Salado Riberena, Tamaulipas	S	26° 48'	99° 25'	330	July 1964	Laredo - Falcon Dam	I. B. & W. C.
Rosetilla, Chihuahua	S	28° 15'	105° 18'	3,780	1940	Rio Conchos	Electric Industry of Mexico
Rusio, Nuevo Leon	S	24° 42'	100° 26'	6,570	#June 1956	Adjacent to Rio San Juan	Hydr. Resources
Sabinas, Coahuila	S	27° 51'	101° 07'	1,120	#May 1922	Rio Salado	Hydr. Resources
Sabinas Hidalgo, Nuevo Leon	S	26° 30'	100° 10'	1,030	May 1958	Rio Salado	I. B. & W. C.
Saltillo, Coahuila	S	25° 26'	101° 00'	5,280	# 1886	Rio San Juan	Hydr. Resources
Samalayuca, Chihuahua	S	31° 21'	106° 28'	4,180	1958	El Paso - Ft. Quitman	Meteor. Service of Mexico
San Agustin, Chihuahua	S	31° 31'	106° 15'	3,650	1958	El Paso - Ft. Quitman	I. B. & W. C.
San Antonio de las Alazanas, Coahuila	S	25° 16'	100° 35'	†	1958	Rio 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	Rio Conchos	Hydr. Resources
San Buenaventura, Coahuila	S	27° 04'	101° 33'	2,300	#Dec. 1926	Rio Salado	Meteor. Service of Mexico
San Fernando, Coahuila	S	29° 25'	101° 43'	†	Aug. 1961	Langtry - Below Amistad Dam	I. B. & W. C.
San Ignacio, Tamaulipas	C	27° 04'	99° 28'	†	1964	Laredo - Falcon Dam	I. B. & W. C.
San Javier, Nuevo Leon	C	26° 16'	99° 25'	†	1962	Rio Alamo	I. B. & W. C.
San Juan, Nuevo Leon	S	25° 33'	99° 50'	890	#Nov. 1943	Rio San Juan	Hydr. Resources
San Lorenzo, Chihuahua	S	28° 10'	106° 29'	3,770	# 1961	Rio Conchos	Hydr. Resources
San Rafael, Nuevo Leon	S	25° 02'	100° 33'	†	# 1959	Adjacent to Rio San Juan	Hydr. Resources
Santa Barbara, Chihuahua	S	26° 48'	105° 49'	6,460	1964	Rio Conchos	Hydr. Resources
Santa Catarina, Nuevo Leon	R	25° 40'	100° 29'	2,230	#Oct. 1937	Rio San Juan	Hydr. Resources
Santa Rosa, Coahuila	V	29° 38'	101° 28'	†	# 1958	Langtry - Below Amistad Dam	Ind. Co-operator
Santa Rosa, Nuevo Leon	S	24° 10'	100° 18'	†	1970	Adjacent to Rio San Juan	Hydr. Resources
Sierra Mojada, Coahuila	S	27° 17'	103° 42'	4,120	# 1897	Adjacent to Johnson Ranch - Langtry	Hydr. Resources
Sombreretillo, Nuevo Leon	S	26° 18'	99° 58'	†	1970	Rio Alamo	Hydr. Resources
Tacubaya, Chihuahua	S	28° 03'	104° 23'	5,150	#July 1962	Adjacent to Rio Conchos	Meteor. Service of Mexico
Tinajas, Chihuahua	S	31° 08'	106° 05'	4,210	1958	El Paso - Ft. Quitman	I. B. & W. C.
Topo Chico, Nuevo Leon	R	25° 44'	100° 20'	1,640	#Aug. 1939	Rio San Juan	Hydr. Resources
Tunel San Francisco, Nuevo Leon	S	25° 25'	100° 10'	†	# 1958	Rio San Juan	Hydr. Resources
Vado de Cedillos, Chihuahua	S	31° 13'	105° 48'	3,500	Apr. 1958	El Paso - Ft. Quitman	I. B. & W. C.
Valadeces, Tamaulipas	S	26° 14'	98° 40'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Vallecillo, Nuevo Leon	S	26° 40'	99° 59'	900	#June 1958	Rio Salado	Hydr. Resources
Valle Allende, Chihuahua	S	26° 56'	105° 23'	†	Mar. 1962	Rio Conchos	Meteor. Service of Chihuahua
Valle Hermoso, Tamaulipas	S	25° 41'	97° 48'	52	#June 1949	Lower Rio Grande Valley	Hydr. Resources

S Standard R Recording C Cumulative V Visual † Not available
Some months or years missing

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
Victoria, Chihuahua	S	27° 58'	104° 33'	4,810	June 1963	Adjacent to Rio Conchos	Meteor. Service of Mexico
Villa Aldama, Chihuahua	S	28° 50'	105° 55'	4,140	1961	Rio Conchos	Meteor. Service of Mexico
Villa Allende, Nuevo Leon	S	25° 17'	100° 01'	2,210	#Nov. 1938	Rio San Juan	Hydr. Resources
Villa Coronado, Chihuahua	S	26° 44'	105° 08'	4,790	Aug. 1964	Rio Conchos	Hydr. Resources
Villa Guerrero, Coahuila	S	28° 19'	100° 23'	690	#June 1958	Eagle Pass - Laredo	I. B. & W. C.
Villa Hidalgo, Coahuila	S	27° 47'	99° 52'	660	1951	Eagle Pass - Laredo	I. B. & W. C.
Villalba, Chihuahua	S	27° 59'	105° 47'	3,940	Oct. 1940	Rio Conchos	Hydr. Resources

S Standard # Some months or years missing

EVAPORATION IN THE RIO GRANDE BASIN IN THE UNITED STATES

In Inches

Tabulated below are records of evaporation observed at eight stations in Texas operated by the United States Section of the Commission from Presidio to Brownsville. At all stations, the exposure to wind was uniform and relatively unimpeded. The sites were kept cleared of all high brush and trees within 150 feet, and all brush, tall weeds, and other obstructions within 100 feet of the fenced enclosures. Within the enclosures all vegetation has been eradicated or kept trimmed to within 3 inches of the ground surface. For specific location of these stations refer to data opposite same station name shown in "Location of Rainfall Stations on the Rio Grande Watershed," pages 140 through 143 in this bulletin.

Records were obtained by means of:

1. Standard National Weather Service pan. A circular pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, is set on a wooden platform with the rim of the pan 16 inches above the ground. The water level is maintained between 2 and 3 inches below the rim of the pan and is measured with a micrometer gage. This type of pan was in operation at Amistad Dam and Falcon Dam.

2. A circular pan, 2 feet in diameter and 36 inches deep, made of 22-gage galvanized iron, is set in the ground with the rim of the pan 3 inches above the ground surface and the top covered with a circular screen of No. 4 (1/4" mesh) galvanized hardware cloth. The water level is maintained between 2.5 and 3.5 inches below the rim of the pan. This type of pan was in operation at Falcon Dam. This same type of pan, equipped with an automatic feed tank that maintains the water at a level 3 inches below the rim of the pan, was in operation at Martin King Ranch and Eagle Pass.

3. An evaporometer, developed by the United States Section of the Commission and calibrated against a 2-foot pan described above, was in operation at Presidio, Johnson Ranch, and at a site 7 miles east of Brownsville. On October 1, 1971, the Wardlaw Ranch station was relocated to the Long Ranch, about 1.5 miles west, where an evaporometer was installed to replace the pan at the former location.

Month	Presidio		Johnson Ranch		Martin King Ranch		Long Ranch	
	1976	Average 1950-1976	1976	Average 1950-1976	1976	# Average 1956-1976	1976	Average October 1971-1976
Jan.	5.31	3.86	2.35	3.35	3.21	3.04	2.53	2.41
Feb.	4.87	5.17	4.52	4.87	4.72	3.65	3.72	3.13
Mar.	8.46	8.25	7.42	8.22	6.22	6.19	4.98	4.88
Apr.	9.31	10.07	8.12	10.46	5.84	7.34	4.01	5.47
May	9.93	11.82	9.98	11.87	5.76	8.26	4.01	5.58
June	11.38	12.80	9.76	12.21	9.80	10.06	8.09	7.59
July	7.63	11.91	7.59	12.08	8.11	10.98	3.72	7.17
Aug.	10.03	11.17	9.45	11.14	8.48	10.33	6.31	6.63
Sept.	6.15	9.39	5.13	8.93	6.71	7.42	7.50	5.60
Oct.	5.60	7.47	3.96	7.06	4.80	5.27	3.27	3.17
Nov.	2.56	4.81	1.80	4.48	2.56	3.78	2.16	3.00
Dec.	2.00	3.57	1.70	3.29	2.28	3.06	1.34	2.08
Total	83.23	100.29	71.78	97.96	68.49	79.38	51.64	56.71

Month	Amistad Dam		Eagle Pass		Falcon Dam				Brownsville	
					2-Foot Pan		4-Foot Pan			
	1976	Average March 1963-1976	1976	# Average 1964-1976	1976	# Average 1950-1976	1976	# Average 1956-1976	1976	# Average 1958-1976
Jan.	4.62	4.04	4.54	3.22	4.20	3.52	4.52	4.11	5.06	2.60
Feb.	6.73	5.00	4.68	3.72	5.34	4.46	7.92	5.48	4.19	3.49
Mar.	8.94	8.62	6.78	5.69	6.27	6.65	7.54	8.46	2.69	4.43
Apr.	7.97	10.15	4.89	6.58	7.07	7.88	8.82	10.48	5.67	5.44
May	8.44	10.98	8.06	7.01	7.71	9.29	9.32	11.98	3.84	5.19
June	13.02	13.22	9.44	9.49	9.88	10.88	12.66	13.48	7.50	5.82
July	8.64	14.86	8.97	10.69	7.34	12.54	10.19	15.37	4.07	6.40
Aug.	12.19	13.36	7.36	9.51	9.54	11.30	11.61	14.10	4.08	6.12
Sept.	8.51	9.47	8.21	7.03	7.02	8.01	9.00	9.94	6.45	4.92
Oct.	5.89	7.06	5.63	5.79	5.06	6.42	5.80	7.44	3.94	4.22
Nov.	3.05	4.76	2.98	3.73	2.69	4.79	2.70	5.33	2.07	3.37
Dec.	3.06	3.74	2.67	3.42	2.42	3.72	2.64	3.98	2.34	2.75
Total	91.06	105.26	74.21	75.88	74.54	89.46	92.72	110.15	51.90	54.75

Some months missing

EVAPORATION IN THE RIO GRANDE BASIN IN MEXICO

In Inches

Tabulated below are records of evaporation observed at nine stations operated and maintained by the Mexican Section of the Commission. Eight stations are along the Rio Grande from Cd. Acuna, Coahuila to Retamal, Tamaulipas and one is located on the Rio 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 Rio 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 144 through 148 in this bulletin.

The type of pan used at all these stations was a standard National Weather Service-type 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 No. 46 published by the Mexican Section of the Commission.

Month	Ojinaga, Chihuahua		Cd. Acuna, Coahuila		Jimenez, Coahuila		Hidalgo, Coahuila		Nuevo Laredo, Tamaulipas	
	1976	#Avg. April 1954-1976	1976	#Average 1951-1976	1976	#Average 1951-1976	1976	#Average 1951-1976	1976	Avg. Aug. 1964-1976
Jan.	3.70	3.78	4.25	3.53	5.47	3.66	4.21	4.02	5.35	4.13
Feb.	5.71	5.15	5.67	4.77	7.09	4.62	6.73	5.33	7.36	5.28
Mar.	9.25	8.78	7.76	7.94	9.33	7.18	6.85	8.09	8.11	8.20
Apr.	10.75	11.20	7.01	8.95	7.24	7.85	7.91	10.09	8.19	9.98
May	11.06	13.36	7.80	9.94	7.60	8.96	7.99	11.94	10.00	10.92
June	13.07	13.90	11.65	11.75	11.65	10.86	12.60	13.66	13.86	12.63
July	9.06	12.93	7.40	13.14	7.56	12.00	11.38	15.11	10.24	13.55
Aug.	10.75	11.36	9.84	11.96	10.31	10.95	11.02	13.83	13.19	12.63
Sept.	6.54	9.02	6.81	8.59	8.23	7.77	8.07	9.90	9.76	9.69
Oct.	6.30	7.28	4.68	6.12	5.55	5.40	5.16	7.34	6.54	7.30
Nov.	3.11	4.49	2.87	3.96	3.07	3.64	2.24	4.78	3.35	4.95
Dec.	2.60	3.40	2.60	3.16	3.43	3.09	2.05	3.72	3.39	3.92
Total	91.90	104.65	78.34	93.81	86.53	85.98	86.21	107.81	99.34	103.18

Month	Rancho San Juan de la Palma, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas		Retamal, Tamaulipas	
	1976	#Avg. April 1955-1976	1976	#Avg. June 1954-1976	1976	#Avg. Oct. 1955-1976	1976	#Average 1951-1976
Jan.	3.54	3.74	3.82	3.57	4.09	3.77	7.05	4.11
Feb.	5.87	4.94	5.79	4.50	6.34	4.94	6.30	4.81
Mar.	6.50	7.53	6.06	7.21	7.72	7.88	7.13	6.58
Apr.	6.89	9.46	7.05	9.00	8.07	9.64	5.63	7.94
May	8.50	11.21	8.46	10.45	9.53	10.99	7.05	8.48
June	11.89	12.01	11.30	11.52	12.87	12.22	9.61	9.07
July	7.91	13.25	7.99	13.15	9.13	14.13	9.88	9.84
Aug.	8.11	12.69	10.39	12.13	10.79	12.96		9.70
Sept.		9.60	7.76	8.84	8.35	9.63		7.35
Oct.		6.93	5.04	6.57	5.47	7.36		6.00
Nov.		4.77	2.09	4.64	2.44	4.87	4.21	4.42
Dec.		3.74	2.20	3.45	2.32	3.71	4.33	3.84
Total		99.87	77.95	95.03	87.12	102.10		82.14

Some months missing

TEMPERATURE, HUMIDITY AND WIND

The maximum and minimum temperatures shown for the stations in Mexico are from daily maximum and minimum thermometer observations. The mean monthly temperatures are averages of these daily maximum and minimum temperatures.

The mean monthly temperatures and relative humidities shown for stations in the United States were integrated from continuous records of hygrothermographs, housed in louvered shelters, with the sensing elements of the instruments 16 inches above the ground and 9 feet southwest of either a 2 or 4-foot diameter evaporation pan. The maximum and minimum temperatures shown below are the extreme temperatures for the month as recorded on the charts except for Falcon Dam and Amistad Dam where the readings are based on daily maximum and minimum thermometer observations.

Monthly mean wind velocities are based on the total miles of wind movement indicated by a standard 3-cup anemometer installed and operated according to specifications for a Class A National Weather Service evaporation station.

Temperature - Degrees Fahrenheit

In United States

Month	Amistad Dam, Texas				Eagle Pass, Texas				Falcon Dam, Texas			
	Mean 1976	Average March 1963-1976	1976 Max.	1976 Min.	Mean 1976	#Average 1964-1976	1976 Max.	1976 Min.	Mean 1976	Average July 1950-1976	1976 Max.	1976 Min.
Jan.	50.5	50.7	74	20	49.8	51.7	78	22	53.1	56.2	88	22
Feb.	61.8	53.6	85	35	64.1	55.3	91	30	63.0	60.0	91	34
Mar.	65.3	62.8	92	42	66.4	64.1	96	41	66.5	67.1	100	44
Apr.	70.5	71.5	93	48	70.3	73.0	91	44	72.2	75.1	99	51
May	75.2	76.5	97	51	73.7	77.3	96	50	75.1	79.8	102	50
June	85.4	82.1	100	59	83.8	82.7	103	68	82.0	83.8	104	67
July	80.0	84.3	97	65	79.1	85.1	102	70	78.8	85.6	99	67
Aug.	81.4	83.2	98	65	82.9	84.2	100	68	81.0	85.4	99	66
Sept.	78.1	77.8	95	59	80.8	78.4	99	60	78.6	80.9	100	66
Oct.	63.0	69.1	91	38	63.6	69.3	92	36	65.0	73.2	93	41
Nov.	52.9	59.6	79	26	52.5	60.2	78	24	53.8	63.7	86	37
Dec.	48.9	51.7	75	26	49.8	53.6	73	27	50.4	57.4	75	34
Yearly	67.8	68.6	100	20	68.1	69.6	103	22	68.3	72.4	104	22

In Mexico

Month	Cd. Juarez, Chihuahua				Ojinaga, Chihuahua				Cd. Acuna, Coahuila			
	Mean 1976	#Average July 1960-1976	1976 Max.	1976 Min.	Mean 1976	#Average April 1954-1976	1976 Max.	1976 Min.	Mean 1976	#Average April 1951-1976	1976 Max.	1976 Min.
Jan.	44.6	45.2	73	21	48.2	49.3	79	23	48.2	49.7	82	10
Feb.	55.4	49.9	82	25	60.8	54.2	90	23	60.8	54.8	97	19
Mar.	59.0	57.1	84	27	64.4	61.7	91	36	66.2	63.4	99	34
Apr.	66.2	64.1	90	34	71.6	71.0	97	36	69.8	72.2	100	36
May	71.6	73.3	99	43	75.2	79.4	102	50	73.4	78.4	102	41
June	80.6	81.1	104	55	86.0	85.1	108	63	82.4	84.6	108	63
July	80.6	82.8	100	64	82.4	85.4	99	66	84.2	87.1	100	61
Aug.	82.4	80.4	104	63	84.2	84.0	104	68	82.4	86.6	106	61
Sept.	73.4	74.7	95	50	78.8	79.5	100	59	78.8	81.2	102	54
Oct.	60.8	64.7	86	34	66.2	70.3	100	37	62.6	71.2	95	28
Nov.	46.4	52.3	79	9	51.8	58.0	81	18	48.2	58.8	81	16
Dec.	44.6	46.3	70	23	48.2	50.6	75	21	46.4	51.3	73	19
Yearly	63.8	64.3	104	9	68.2	69.0	108	18	67.0	69.9	108	10

Month	Chupadero, Coahuila				Jimenez, Coahuila				El Remolino, Coahuila			
	Mean 1976	#Average 1961-1976	1976 Max.	1976 Min.	Mean 1976	#Average March 1951-1976	1976 Max.	1976 Min.	Mean 1976	Average June 1958-1976	1976 Max.	1976 Min.
Jan.	42.8	48.6	73	12	59.0	52.8	90	25	60.8	56.9	93	34
Feb.	53.6	53.6	84	21	62.6	56.9	88	28	62.6	60.1	90	36
Mar.	62.6	62.9	90	41	69.8	63.2	91	41	68.0	66.0	100	36
Apr.	64.4	71.7	86	37	68.0	71.1	99	43	75.2	74.8	104	50
May	68.0	76.3	95	52	71.6	77.1	95	50	78.8	79.2	106	50
June	78.8	82.2	97	57	82.4	83.2	104	63	84.2	84.2	108	61
July	75.2	85.0	91	55	80.6	85.3	95	57	84.2	86.1	108	64
Aug.	78.8	83.8	95	63	80.6	85.0	95	64	84.2	85.6	111	61
Sept.	77.0	78.9	95	57	78.8	80.6	95	59	80.6	81.8	104	54
Oct.	59.0	69.4	88	32	60.8	71.3	95	28	75.2	74.0	100	41
Nov.	48.2	58.7	79	21	57.2	61.0	88	27	71.6	66.9	99	45
Dec.	44.6	51.7	64	23	53.6	54.2	79	28	60.8	60.1	95	25
Yearly	62.8	68.6	97	12	68.8	70.1	104	25	73.8	73.0	111	25

Some months missing

TEMPERATURE, HUMIDITY AND WIND

Temperature - Degrees Fahrenheit

In Mexico

Month	Piedras Negras, Coahuila				Guerrero, Coahuila				Villa Hidalgo, Coahuila			
	Mean 1976	#Average April 1951-1976	1976 Max.	1976 Min.	Mean 1976	#Average 1958-1976	1976 Max.	1976 Min.	Mean 1976	#Average August 1951-1976	1976 Max.	1976 Min.
Jan.	50.0	51.3	79	19	53.6	51.5	79	19	50.0	54.0	75	32
Feb.	64.4	55.9	93	30	62.6	55.3	95	28	59.0	58.0	86	32
Mar.	68.0	63.1	97	41	69.8	65.9	102	34	66.2	65.5	91	36
Apr.	71.6	71.9	91	45	77.0	73.3	95	41	71.6	75.5	91	39
May	73.4	77.5	99	50	75.2	78.9	97	54	73.4	80.0	100	45
June	82.4	83.7	102	64	86.0	83.6	104	68	82.4	85.7	102	63
July	78.8	86.0	100	68	82.4	85.4	100	70	78.8	86.8	99	64
Aug.	84.2	85.4	102	66	86.0	85.7	102	68	82.4	87.2	100	63
Sept.	80.6	79.5	99	61	82.4	80.4	102	63	80.6	82.5	99	59
Oct.	64.4	70.1	104	36	64.4	70.4	95	39	62.6	73.8	90	36
Nov.	53.6	59.0	32	25	57.2	61.2	84	28	51.8	61.2	81	23
Dec.	50.0	52.6	73	28	53.6	54.0	77	32	48.2	56.0	72	25
Yearly	68.4	69.7	104	19	70.8	70.5	104	19	67.2	72.2	102	23

Month	Nuevo Laredo, Tamps., C.I.L.A.				Nuevo Laredo, Tamps., M.S. of M.				El Treinta, Coahuila			
	Mean 1976	Average August 1964-1976	1976 Max.	1976 Min.	Mean 1976	#Average 1945-1976	1976 Max.	1976 Min.	Mean 1976	Average 1961-1976	1976 Max.	1976 Min.
Jan.	57.2	55.2	86	27	55.4	56.2	81	23	46.4	50.1	79	14
Feb.	69.8	59.4	97	36	64.4	60.8	91	32	57.2	55.1	95	27
Mar.	71.6	69.0	104	46	78.3	67.7	95	45	66.2	64.4	97	37
Apr.	77.0	77.2	104	54		75.5			68.0	73.4	93	37
May	78.8	81.2	106	54	77.0	80.7	97	50	73.4	77.4	104	48
June	87.8	85.2	106	72	84.2	84.6	108	64	80.6	81.3	102	59
July	86.0	87.0	106	68		87.5			75.2	82.6	99	59
Aug.	89.6	87.0	106	73	84.2	87.1	100	72	80.6	82.6	99	61
Sept.	86.0	83.0	106	68	82.4	81.4	99	64	77.0	77.6	99	57
Oct.	71.6	74.9	95	48	66.2	73.1	90	45	60.8	69.2	90	36
Nov.	59.0	65.9	93	30	60.8	64.2	81	23	48.2	59.0	79	19
Dec.	55.4	59.3	79	36	51.8	50.3	72	39	44.6	51.7	70	23
Yearly	74.2	73.7	106	27		72.4		23	64.8	68.7	104	14

Month	Sabinas Hidalgo, Nuevo Leon				Nueva Cd. Guerrero, Tamaulipas				Cd. Mier, Tamaulipas			
	Mean 1976	Average October 1961-1976	1976 Max.	1976 Min.	Mean 1976	Average 1958-1976	1976 Max.	1976 Min.	Mean 1976	#Average October 1955-1976	1976 Max.	1976 Min.
Jan.	57.2	57.1	86	23	59.0	55.7	86	27	55.4	55.4	88	30
Feb.	66.2	60.7	90	39	66.2	59.3	90	37	66.2	59.5	95	34
Mar.	69.8	67.3	104	48	68.0	66.8	97	45	68.0	67.4	102	41
Apr.	73.4	75.7	100	50	75.2	76.0	99	52	75.2	75.7	99	52
May	75.2	79.5	102	52	77.0	80.5	100	52	77.0	80.2	102	54
June	84.2	84.0	102	64	84.2	84.6	102	66	84.2	84.3	102	68
July	78.8	84.3	100	59	80.6	85.8	99	68	82.4	85.9	99	68
Aug.	84.2	84.6	100	68	84.2	86.0	100	68	84.2	86.0	102	68
Sept.	80.6	80.2	100	64	82.4	81.9	99	66	82.4	81.8	99	66
Oct.	71.6	73.8	102	43	68.0	74.4	91	46	69.8	74.1	93	45
Nov.	57.2	64.6	84	27	57.2	65.1	90	32	57.2	64.6	88	32
Dec.	57.2	59.2	77	32	53.6	57.7	82	32	53.6	58.0	77	30
Yearly	71.3	72.6	104	23	71.3	72.8	102	27	71.3	72.7	102	30

Month	Retamal, Tamaulipas			
	Mean 1976	#Average 1951-1976	1976 Max.	1976 Min.
Jan.	59.0	60.5	95	27
Feb.	64.4	63.1	93	36
Mar.	71.6	69.5	97	43
Apr.	73.4	76.5	100	48
May	68.0	79.8	93	50
June	82.4	83.6	97	64
July	80.6	85.2	97	66
Aug.		86.0		
Sept.		82.9		
Oct.		76.7		
Nov.	57.2	67.9	97	34
Dec.	55.4	61.9	84	32
Yearly		74.5		

Some months missing

TEMPERATURE, HUMIDITY AND WIND

Mean Wind Speed - Miles Per Hour
In United States

Month	Martin King Ranch, Texas		Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1976	Average 1957-1976	1976	#Average March 1963-1976	1976	#Average December 1963-1976	1976	#Average July 1950-1976
Jan.	3.6	3.8	3.1	3.3		2.3	4.4	3.9
Feb.	4.3	4.7	3.4	3.9		3.0	4.6	4.5
Mar.	5.2	6.2	3.9	4.7	2.6	3.4	4.9	4.9
Apr.	6.5	6.2	4.3	4.7	2.7	3.4	5.7	5.6
May	4.7	6.7	3.2	4.6	2.0	3.3	3.9	5.6
June	6.6	7.2	4.1	5.1	2.6	3.3	4.4	5.9
July	5.9	6.7	3.7	4.7	2.1	3.2	5.1	6.1
Aug.	4.9	5.9	3.1	4.1	1.3	2.8	3.3	5.1
Sept.	4.2	5.0	3.1	3.7	1.6	2.4	2.7	4.0
Oct.	4.5	4.7	3.3	3.5	1.7	2.0	2.6	3.5
Nov.	3.1	4.0	2.8	3.2	1.3	1.9	2.3	3.8
Dec.	3.1	3.5	3.0	3.1	1.6	1.9	2.8	3.5
Yearly	4.7	5.4	3.4	4.0		2.7	3.9	4.7

Mean Relative Humidity-Percent
In United States

Month	Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1976	Average March 1963-1976	1976	#Average 1964-1976	1976	Average July 1950-1976
Jan.	51.1	59.9	54.4	63.2	54.7	66.1
Feb.	50.3	58.7	51.9	60.6	50.8	63.2
Mar.	48.5	54.2	54.9	58.1	59.9	61.6
Apr.	66.9	58.3	72.7	61.9	63.6	61.6
May	70.4	63.8	71.4	67.9	58.7	64.2
June	59.8	62.0	63.7	63.4	54.4	63.4
July	80.5	60.2	78.3	62.6	71.4	60.4
Aug.	60.1	61.0	64.0	64.2	56.3	61.3
Sept.	65.6	67.5	70.0	71.5	60.0	66.0
Oct.	67.0	67.3	69.8	70.2	60.6	66.6
Nov.	72.7	63.9	74.4	68.4	68.8	66.4
Dec.	66.0	62.3	68.4	65.8	66.1	64.9
Yearly	63.2	61.6	66.2	64.8	60.4	63.8

In Mexico

Month	Nueva Cd. Guerrero, Tamaulipas	
	1976	Average August 1961-1976
Jan.	68	78
Feb.	65	77
Mar.	69	73
Apr.	68	73
May	70	78
June	72	77
July	78	75
Aug.	73	75
Sept.	78	80
Oct.	79	79
Nov.	83	78
Dec.	79	79
Yearly	74	77

Some months missing

DRAINAGE BASIN AND IRRIGATED AREAS

Along the Rio Grande and Tributaries – 1976

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 noncontributing areas constitute about 47 percent of the total area, leaving 176,333 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.

On the United States side only the areas irrigated in 1976 are shown, except that, in the reaches below Falcon Dam, the figures shown represent acreages which were subject to irrigation in 1976 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 1976. The irrigated area data tabulated are the best data that could be obtained.

DESIGNATION 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	92,874	0	92,874
Above El Paso Gaging Station	29,267	0	29,267	92,874	0	92,874
El Paso Station to American Dam	4	0	4	13,014	0	13,014
Above American Dam	29,271	0	29,271	105,888	0	105,888
American Dam to Clint Station	187	285	472	31,863	14,851	46,714
Above Clint Gaging Station	29,458	285	29,743	137,751	14,851	152,602
Clint Station to Acala Station	485	259	744	0	0	0
American Dam to Acala Station - Total	672	544	1,216	31,863	14,851	46,714
Above Acala Gaging Station	29,943	544	30,487	137,751	14,851	152,602
Acala Station to Fort Quitman Station	663	794	1,457	15,242	0	15,242
Above Fort Quitman Gaging Station	30,606	1,338	31,944	152,993	14,851	167,844
Fort Quitman Station to Above Presidio Station	1,621	1,401	3,022	a,b) 1,260	a) 2,261	3,521
Above Presidio Station above Rio Conchos	32,227	2,739	34,966	154,253	17,112	171,365
Rio Conchos above Boquilla Dam	0	8,131	8,131	0	c) 12,355	12,355
Rio Conchos above Luis L. Leon Dam	0	22,992	22,992	0	378,324	378,324
Rio Conchos - Total	0	26,404	26,404	0	390,679	390,679
Alamito Creek above Gaging Station	1,504	0	1,504	240	0	240
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - excluding above tributaries	367	98	465	2,876	390	3,266
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - Total	1,871	26,502	28,373	3,116	391,069	394,185
Above Presidio Station below Rio Conchos	34,098	29,241	63,339	157,369	408,181	565,550
Terlingua Creek above Gaging Station	1,070	0	1,070	d) 1,150	0	1,150
Presidio Station below Rio Conchos to Johnson Ranch Station - excluding Terlingua Creek	1,093	2,258	3,351	1,126	1,542	2,668
Presidio Station below Rio Conchos to Johnson Ranch Station - Total	2,163	2,258	4,421	2,276	1,542	3,818
Above Johnson Ranch Gaging Station	36,261	31,499	67,760	159,645	409,723	569,368
Johnson Ranch Station to Foster Ranch Station	6,412	6,570	12,982	e) 3,515	0	3,515
Above Foster Ranch Gaging Station	42,673	38,069	80,742	163,160	409,723	572,883
Foster Ranch Station to Langtry Station	182	505	687	0	0	0
Above Langtry Gaging Station (Discontinued)	42,855	38,574	81,429	163,160	409,723	572,883
Pecos River above Girvin	29,562	0	29,562		0	
Pecos River, Girvin to Station near Langtry	5,617	0	5,617	0	0	0
Pecos River above Station at Mouth (Discontinued)	35,308	0	35,308	0	0	0
Devils River above Pafford Crossing Station	3,961	0	3,961	0	0	0
Devils River above Station near Mouth (Discontinued)	4,305	0	4,305	0	0	0
Langtry Station to Amistad Dam - excluding above tributaries	217	1,875	2,092	0	0	0
Langtry Station to Amistad Dam - Total	39,830	1,875	41,705	0	0	0

DRAINAGE BASIN AND IRRIGATED AREAS

Along the Rio Grande and Tributaries – 1976

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Above Amistad Dam	82,685	40,449	123,134	163,160	409,723	572,883
Amistad Dam to Below Amistad Dam Gaging Station	5	4	9	0	0	0
Above the Below Amistad Dam Gaging Station	82,690	40,453	123,143	163,160	409,723	572,883
Below Amistad Dam Station to Del Rio Station	60	100	160	472	0	472
Above Del Rio Gaging Station	82,750	40,553	123,303	163,632	409,723	573,355
Arroyo Las Vacas above Gaging Station	0	350	350	0	363	363
San Felipe Creek above Gaging Station	46	0	46	2,300	0	2,300
Pinto Creek above Gaging Station	249	0	249	400	0	400
Rio San Diego above Gaging Station	0	853	853	0	12,076	12,076
Rio San Diego - Total	0	859	859	0	13,282	13,282
Del Rio Station to Jimenez Station - excluding above tributaries	669	110	779	f)39,293	3,353	42,646
Del Rio Station to Jimenez Station - Total	964	1,319	2,283	41,993	16,998	58,991
Above the Jimenez Gaging Station	83,714	41,872	125,586	205,625	426,721	632,346
Rio San Rodrigo above Gaging Station	0	1,049	1,049	0	6,116	6,116
Rio San Rodrigo - Total	0	1,049	1,049	0	6,116	6,116
Jimenez Station to Maverick Power Plant - excluding Rio San Rodrigo	287	114	401	1,530	0	1,530
Jimenez Station to Maverick Power Plant - Total	287	1,163	1,450	1,530	6,116	7,646
Above Maverick Power Plant	84,001	43,035	127,036	207,155	432,837	639,992
Maverick Power Plant to Piedras Negras Station	244	32	276	240	1,238	1,478
Above Piedras Negras Gaging Station	84,245	43,067	127,312	207,395	434,075	641,470
Rio Escondido above Gaging Station	0	1,459	1,459	0	10,334	10,334
Rio Escondido - Total	0	1,471	1,471	0	10,334	10,334
Piedras Negras Station to El Indio Station - excluding Rio Escondido	237	206	443	275	343	618
Piedras Negras Station to El Indio Station - Total	237	1,677	1,914	275	10,677	10,952
Above El Indio Gaging Station	84,482	44,744	129,226	207,670	444,752	652,422
El Indio Station to Villa Hidalgo Station	629	1,683	2,312	987	1,280	2,267
Above Villa Hidalgo Gaging Station	85,111	46,427	131,538	208,657	446,032	654,689
Villa Hidalgo Station to Nuevo Laredo Station	607	433	1,040	4,513	3,299	7,812
Above Nuevo Laredo Gaging Station	85,718	46,860	132,578	213,170	449,331	662,501
Rio Salado above Venustiano Carranza Dam	0	15,831	15,831	0	61,282	61,282
Rio Salado above Las Tortillas Gaging Station	0	23,155	23,155	0	123,572	123,572
Rio Salado above River Road Crossing	0	23,323	23,323	0	123,572	123,572
Nuevo Laredo Station to Falcon Dam - excluding Rio Salado	2,042	1,327	3,369	g) 8,806	3,247	12,053
Nuevo Laredo Station to Falcon Dam - Total	2,042	24,650	26,692	8,806	126,819	135,625
Amistad Dam to Falcon Dam - excluding above tributaries	4,780	4,009	8,789	56,116	12,760	68,876
Above Falcon Dam	87,760	71,510	159,270	221,976	576,150	798,126
Rio Alamo above Gaging Station	0	1,675	1,675	0	7,660	7,660
Rio San Juan above Marte Gomez Dam	0	12,745	12,745	0	102,548	102,548
Rio San Juan - Marte Gomez Dam to Camargo Gaging Station	0	195	195	0	158,727	158,727
Rio San Juan - Total	0	12,949	12,949	0	261,275	261,275
Falcon Dam to Rio Grande City Station - excluding above tributaries	222	246	468	5,925	4,201	10,126
Falcon Dam to Rio Grande City Station - Total	222	14,870	15,092	5,925	273,136	279,061
Above Rio Grande City Gaging Station	87,982	86,380	174,362	227,901	849,286	1,077,187
Rio Grande City Station to Anzalduas Dam	952	798	1,750	178,407	421,646	600,053
Above Anzalduas Dam	88,934	87,178	176,112	406,308	1,270,932	1,677,240
Anzalduas Dam to Progreso Station	13	163	176	140,407	6,534	146,941
Above Progreso Gaging Station	88,947	87,341	176,288	546,715	1,277,466	1,824,181
Progreso Station to San Benito Station	7	9	16	314,687	3,254	317,941
Above San Benito Gaging Station	88,954	87,350	176,304	861,402	1,280,720	2,142,122
San Benito Station to Brownsville Station	14	15	29	100,191	3,292	103,483
Falcon Dam to Brownsville Station - excluding Rio Alamo and Rio San Juan	1,203	1,231	2,439	739,617	438,927	1,178,544
Above Brownsville Gaging Station	88,968	87,365	176,333	961,593	1,284,012	2,245,605
Brownsville Station to Gulf of Mexico				4,212	141	4,353

DRAINAGE BASIN AND IRRIGATED AREAS

Along the Rio Grande and Tributaries – 1976

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Falcon Dam to Gulf of Mexico - excluding Rio Alamo and Rio San Juan				743,829	439,068	1,182,897
Amistad Dam to Gulf of Mexico - excluding above tributaries				799,945	451,828	1,251,773
Above Gulf of Mexico				965,805	1,284,153	2,249,958

a) Total area irrigated from the Rio Grande at least once during the year; additional irrigations from this source dependent on availability of river water in this reach
b) Includes 163 acres dry-farmed
c) Includes area above Madero Reservoir
d) Includes 1,000 acres irrigated by spreader dams
e) Includes 3,360 acres irrigated by spreader dams
f) Includes 37,100 acres irrigated from the Maverick Canal below Mile 13 gaging station
g) Includes 110 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 1976 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 1971-1972 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 1976 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	431	1,320	1,300	901	3,920	3,780	2,160	15,700	24,300	6,250	5,010	4,480
2	1,590	1,190	2,900	593	4,170	2,270	2,020	13,600	21,000	4,630	4,480	2,070
3	1,360	1,640	4,270	1,510	2,830	1,460	2,000	12,700	21,400	4,980	5,160	3,340
4	1,170	2,460	8,260	2,330	2,160	1,220	2,210	11,800	22,200	5,260	4,130	5,720
5	1,550	2,840	5,790	576	3,220	1,230	5,620	10,700	17,700	9,850	3,600	3,600
6	1,580	1,300	3,880	1,250	3,340	1,320	11,900	10,400	14,800	5,050	4,170	3,390
7	2,330	565	4,060	2,540	5,650	1,440	14,100	10,400	12,300	6,570	3,990	2,590
8	791	961	4,240	2,890	6,070	1,120	14,700	8,900	9,430	5,230	4,030	3,290
9	2,350	2,530	4,730	2,060	16,200	876	13,100	8,190	9,010	5,120	4,170	3,110
10	1,960	5,090	3,710	1,680	5,300	678	15,700	7,880	9,040	5,190	4,060	4,480
11	1,660	4,730	4,030	1,090	3,380	742	8,260	7,800	8,370	5,260	4,770	4,520
12	1,700	4,660	4,520	1,330	4,730	1,010	10,000	7,240	8,120	8,120	5,190	3,990
13	2,440	4,170	4,520	1,700	6,640	667	15,300	7,030	9,390	4,770	2,460	4,940
14	1,530	4,170	4,030	2,210	5,080	710	37,100	7,950	8,230	4,060	2,540	4,270
15	2,980	4,200	4,730	2,620	5,760	1,390	28,000	8,510	6,290	5,400	3,110	5,370
16	1,230	4,940	4,630	2,460	5,620	533	20,000	8,860	6,320	4,700	6,780	5,010
17	957	4,800	4,200	2,790	5,230	1,830	29,300	11,400	5,930	3,880	7,450	5,400
18	968	4,200	3,430	2,640	4,910	12,500	28,900	14,300	9,290	2,270	4,730	4,910
19	3,640	4,030	2,900	2,530	6,180	2,770	34,400	24,600	8,120	3,160	7,310	4,910
20	1,810	1,940	3,500	2,450	6,110	2,330	29,700	24,200	9,390	2,400	7,060	4,480
21	1,390	3,670	2,870	1,530	5,190	685	13,000	22,500	3,920	1,880	4,380	1,400
22	1,930	929	1,210	1,840	5,010	1,320	14,900	25,900	4,630	2,510	2,610	2,640
23	2,170	848	3,570	2,560	4,170	1,820	19,800	27,100	8,580	3,350	4,630	4,840
24	2,390	625	1,700	4,520	2,570	2,070	36,400	26,900	9,500	3,710	5,720	5,760
25	2,670	494	1,510	4,630	3,190	1,130	28,800	27,000	8,900	2,180	2,600	4,730
26	1,140	434	2,290	5,300	5,720	1,440	17,700	28,000	11,200	3,420	5,230	3,850
27	360	918	1,640	4,840	3,780	2,020	14,900	27,400	6,890	10,700	6,500	4,060
28	1,270	622	1,800	3,780	2,140	1,270	15,200	27,100	11,200	11,400	6,530	4,560
29	1,180	770	1,790	4,980	2,490	872	15,800	26,100	6,820	6,110	2,380	4,340
30	1,340		508	3,390	2,500	294	16,000	23,300	5,830	5,790	2,560	4,380
31	1,980		491		3,290		15,800	22,500		5,900		3,990
Sum	51,847	71,046	103,009	75,520	146,600	52,797	532,770	515,960	318,100	159,100	137,340	128,420

Month	Current Year 1976: Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High: Day	High	∅ Extreme Second-Feet Low: Day	Low	Average Second-Feet	Total Acre-Feet	Period 1968-1976 Acre-Feet: Average	Maximum	Minimum
Jan.			19	3,640	27	360	1,670	102,847	94,297	160,824	50,635
Feb.			10	5,090	26	434	2,450	140,918	156,542	453,053	54,934
Mar.			4	8,260	31	491	3,320	204,315	131,111	243,527	53,064
Apr.			26	5,300	5	576	2,520	149,771	126,210	351,929	49,911
May			9	16,200	28	2,140	4,730	290,884	213,269	381,866	101,854
June			18	12,500	30	294	1,760	104,797	230,401	770,709	46,609
July			14	37,100	3	2,000	17,200	1,056,340	347,835	1,056,340	33,481
Aug.			26	28,000	13	7,030	16,600	1,023,293	307,056	1,023,293	64,413
Sept.			1	24,300	21	3,920	10,600	630,828	535,302	1,442,682	137,408
Oct.			28	11,400	21	1,880	5,120	315,575	440,477	1,365,884	122,189
Nov.			17	7,450	29	2,380	4,590	272,399	191,677	538,929	45,260
Dec.			24	5,760	21	1,400	4,130	254,797	129,271	281,211	42,870
				37,100		294	6,250	4,546,764	2,903,448	6,234,950	1,280,067
Yearly	Meters		Cubic Meters per Second					Thousands of Cubic Meters			
				1,050		8.33	177	5,608,374	3,581,365	7,690,727	1,578,946

∅ Mean daily

CORRECTIONS TO PREVIOUS WATER BULLETINS

Water Bulletin and Page Numbers	Heading	Reference	Published As				Correction	
Summary Water Bulletin #1 Page 58	Stored Water in Large Reservoirs of the Rio Grande Basin	Elephant Butte Reservoir - 1950	Jan.	8.4	July	4.8	607.5	397.9
			Feb.	8.5	Aug.	2.6	650.6	354.5
			Mar.	8.7	Sept.	2.1	655.9	333.4
			Apr.	9.2	Oct.	1.9	616.6	329.5
			May	8.0	Nov.	2.1	541.5	323.2
			June	7.0	Dec.	2.4	457.5	335.4
34-48 35-51 36-51 37-55 38-52 39-49 40-49 41-53 42-53 43-49 44-55	Rio Grande at Eagle Pass, Texas*	DESCRIPTION paragraph - latitude	29°42' 50"				28°42' 50"	
37-77 41-76 43-70	Retamal Canal near Rio Bravo, Tamaulipas	DESCRIPTION paragraph - longitude	90°02' 00"				98°02' 00"	
39-11	Rio Grande below American Dam at El Paso, Texas**	Annual Summary, Total Acre-Feet for February	2,160				2,106	
39-27 40-27 41-27 42-26 43-26 44-34 45-32	Rio Grande below Amistad Dam near Del Rio, Texas †	EXTREME FLOWS FROM RECORDS paragraph, Momentary minimum from records	48.0 second-feet on Dec. 21, 1968 with a gage height of 1.20 feet				22.2 second-feet on Feb. 14, 1969 with a gage height of 1.08 feet	

41-169 42-145 43-146 44-151	Evaporation in the Rio Grande Basin in the United States	Long Ranch	1971	1972	1973	1974	1971	1972	1973	1974
		Jan.		2.09	2.36	1.69		2.53	2.76	2.21
		Feb.		2.82	1.27	4.45		3.13	1.87	4.46
		Mar.		6.18	5.64	3.82		5.87	5.43	3.94
		Apr.		7.24	5.40	6.89		6.90	5.23	6.51
		May		4.73	8.18	7.05		4.68	7.99	6.69
		June		7.88	5.18	10.39		7.65	5.06	10.54
		July		8.59	6.78	10.71		8.45	6.38	10.91
		Aug.		6.44	7.38	8.01		6.16	7.07	7.80
		Sept.		5.63	5.60	4.31		5.42	5.40	4.34
		Oct.	2.45	3.27	2.78	3.18	2.82	3.50	3.10	2.09
		Nov.	2.35	2.64	2.55	1.54	2.76	2.98	2.90	3.42
		Dec.	1.87	1.49	2.25	1.27	2.36	2.05	2.68	1.87
		Year		59.00	55.37	63.31		59.32	55.87	64.78

44-81 45-79	Outfalls from Sewers into the Rio Grande	Eagle Pass Sewage Outfall	1974	1975	1974	1975
		Jan.		212		105
		Feb.		153		66.4
		Mar.		182		88.3
		Apr.		217		80.0
		May		254		81.0
		June		203		68.0
		July		220		73.8
		Aug.		255		94.4
		Sept.	188	263	61.0	81.6
		Oct.	240	225	71.6	90.5
		Nov.	239	202	80.6	100
		Dec.	292	209	84.9	98.6
		Year	1,920.8	2,595	1,259.9	1,027.6

45-31	Lourdes, Hilda, Ernestina, and Rosita Springs near Cd. Acuna, Coahuila	REMARKS paragraph, Lourdes Spring, volume for year	1,288.6 second-feet	1,288.6 acre-feet

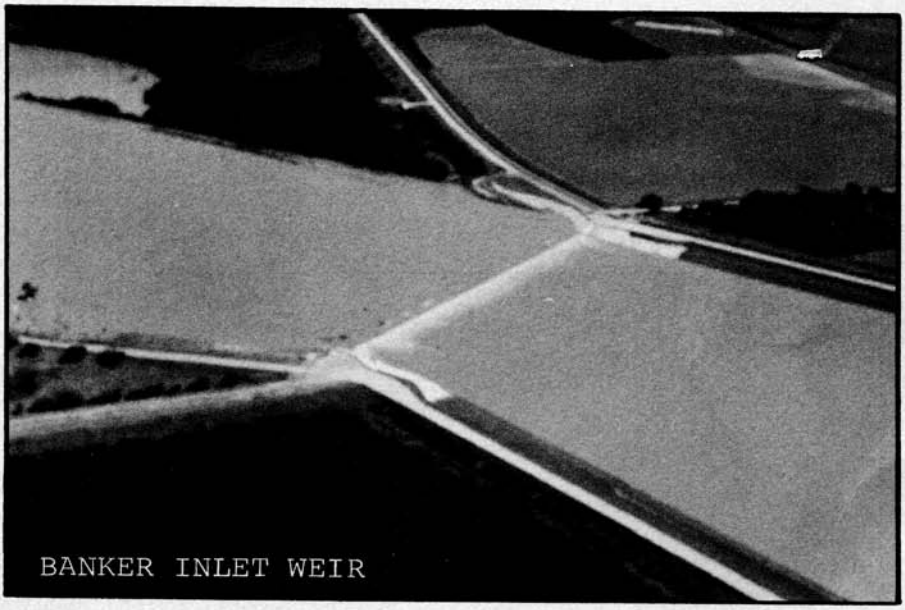
* Beginning with 1976, the name of this station was changed to "Rio Grande at Piedras Negras, Coahuila and Eagle Pass, Texas"

** Beginning with 1976 bulletin, the name of this station was changed to "Rio Grande below American Dam at El Paso, Texas and Cd. Juarez, Chihuahua"

† Beginning with 1976 bulletin, the name of this station was changed to "Rio Grande below Amistad Dam near Cd. Acuna, Coahuila and Del Rio, Texas"

Flow of the Rio Grande and Related Data

1976



UNITED STATES OF AMERICA
DEPARTMENT OF STATE

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

WATER BULLETIN NUMBER 46

COVER PHOTOGRAPH

Banker Inlet Weir, approximately 0.81 mile (1.30 kilometers) upstream from Anzalduas Dam, entered into operation in August 1976. The weir was constructed by the United States as part of the International Flood Control Project, Lower Rio Grande, to divert one-half of the total floodwaters from the Rio Grande that cannot be carried safely in the river at Brownsville and Matamoros.

The picture was taken on August 24, 1976. Flow at that time was approximately 11,000 cubic feet per second (310 cubic meters per second).