

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

UNITED STATES SECTION

NARENDRA N. GUNAJI
Commissioner
4171 North Mesa Street
El Paso, Texas 79902

MEXICAN SECTION

J. ARTURO HERRERA SOLIS
Commissioner
Apartado Postal 1612D
Cd. Juarez, Chihuahua

WATER BULLETIN NUMBER 62

**Flow of the Rio Grande
and
Related Data**

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

1992

STORAGE IN MAJOR RESERVOIRS
SOURCES OF RIVER FLOW
DIVERSIONS
QUALITY OF WATER
CLIMATOLOGICAL DATA
DRAINAGE BASIN AND IRRIGATED AREAS

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FOREWORD

This bulletin presents the sixty-second compilation of the stream discharges and related data concerning the international portion of the Rio Grande, prepared jointly by the United States and Mexican Sections of the International Boundary and Water Commission. The streamflow 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 information for the year 1992.

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 1992 the United States Section of the Commission operated the stream-gaging stations on the Rio Grande at El Paso, Below American Dam, Fort Quitman, Candelaria, Above Rio Conchos, Below Rio Conchos, Johnson Ranch, Foster Ranch, Del Rio, El Indio, Laredo, 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, and Below Anzalduas Dam. The station at Below 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.

In 1976 the names of several gaging stations were changed, pursuant to agreement between the two Sections of the Commission. Where it was decided that some confusion might result from this change, a note giving the former name was added to the descriptive heading of the gaging station.

The total drainage area within the outer rim of the Rio Grande Basin is 868,945 square kilometers. However, about half of this area yields no runoff to the river, the estimated productive area of the watershed being 456,701 square kilometers. Reservoirs in the basin have a total storage capacity of approximately 14,452,000 thousand cubic meters, in addition to the International Amistad and Falcon Reservoirs, which have a combined conservation capacity of 7,464,202 thousand cubic meters. In the Rio Grande basin, a total of 883,629 hectares is irrigated below Elephant Butte Dam on the Rio Grande and above 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 3,207,048 thousand cubic meters per year for the period 1934-1952. For the period 1954-1992, this flow has averaged 974,099 thousand cubic meters 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 National Geodetic Vertical Datum of 1929.

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, the National Park Service, 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 Commission; the Middle Rio Grande Conservancy District; the Red Bluff Water Power Control District; State of Colorado, Division of Water Resources; the Rio Grande Compact Commission; the Delta Lake Irrigation District; 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 Control and Improvement District No. 1; the Ministry of Agriculture and Hydraulic Resources 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; 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 International 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

This Bulletin is published in System International (SI) units which are based on the metric system. The following conversion constants may be used to convert to the English system of measurement. Data collected by the Mexican Section are computed and published in a Spanish version of the water bulletin in metric units.

METRIC TO ENGLISH CONVERSION CONSTANTS

METRIC UNITS			ENGLISH UNITS	
<u>LENGTH</u>				
1	Millimeter	x	0.03937	= Inch
1	Meter	x	3.28084	= Feet
1	Kilometer	x	0.62137	= Mile
<u>AREA</u>				
1	Square Meter	x	10.76391	= Square Feet
1	Hectare	x	2.47105	= Acre
1	Square Kilometer	x	0.38610	= Square Mile
<u>VOLUME</u>				
1	Cubic Meter	x	35.31467	= Cubic Feet
1,000	Cubic Meters	x	0.81071	= Acre-Feet
<u>WEIGHT</u>				
1	Kilogram	x	2.20462	= Pounds
1	Megagram	x	1.10231	= Tons (2,000 lbs.)
<u>TEMPERATURE</u>				
1	Degree Celsius	x	1.8 + 32	= Degree Fahrenheit

GENERAL HYDROLOGIC CONDITIONS FOR 1992

Along and Adjacent to the International Portion of the Rio Grande

During the year 1992, temperatures were near average on the watershed of the Rio Grande below El Paso, Texas. Evaporation was 92% of average. Precipitation was 95% of average from El Paso to Amistad Dam, 149% of average from Amistad Dam to Falcon Dam, 120% of average from Falcon Dam to Rio Grande City, and 119% of average in the lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande was above average from El Paso to the confluence of the Rio Conchos with the Rio Grande and above average from the Rio Conchos confluence to the Gulf of Mexico. In the reach between El Paso and the confluence of the Rio Conchos, the flow was 128% of average, ranging from 96% of average at Candelaria to 177% at Fort Quitman; in the reach between the Confluence of the Rio Conchos and Amistad Reservoir, where most of the flows originate from releases from Luis L. Leon Reservoir (El Granero) on the Rio Conchos, the flow was 139% of average; and in the reach between Amistad Dam and Falcon Reservoir, where flows mostly originate from releases from Amistad Reservoir, the flow was 152% of average. Most of the flows passing the Rio Grande Stations below Falcon Dam originated from releases from Falcon Reservoir, which in 1992 amounted to 4,130,527 thousand cubic meters, or 136% of the average for the thirty-nine years of operation, 1954-1992. The estimated volume of flow passing to the Gulf of Mexico was 1,946,991 thousand cubic meters, which is 200% of the average for this thirty-nine year period.

The total annual flow of all measured tributaries below Fort Quitman was 105% of average. The total flow of these tributaries in the United States was 864,447 thousand cubic meters, or 112% of average. For Mexico, the measured tributary flow, excluding Rio Alamo and Rio San Juan, was 2,412,830 thousand cubic meters, or 133% of average. The flows of the Rio Alamo and Rio San Juan were 10% and 0.2% of their respective averages.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 1,031,074 thousand cubic meters, or 119% of the twenty-five year average. Return flow to the Rio Grande through various drains in the Maverick County Irrigation District, excluding storm inflow, amounted to 67,588 thousand cubic meters, or 53% of the twenty-five year average.

No significant flooding occurred on the Rio Grande in 1992. The highest peak flows recorded on the Rio Grande were, above Falcon Dam, 450 cubic meters per second at Johnson Ranch; and, below Falcon Dam, 368 cubic meters per second at Rio Grande City.

For all reservoirs in the Rio Grande basin having a capacity greater than 18,500 thousand cubic meters, excepting Amistad and Falcon International Reservoirs, the average amount of water in storage in 1992 was 8,620,500 thousand cubic meters, or 138% of the average 6,228,400 thousand cubic meters. In the United States, stored water in these reservoirs was 169% of average, while in Mexico it was 121% of average.

In International Amistad Reservoir there was a decrease in storage during the year of 245,100 thousand cubic meters. Storage ranged from a high of 4,882,500 thousand cubic meters on February 10 to a low of 4,181,400 thousand cubic meters on September 30 and averaged 4,363,600 thousand cubic meters during the year, or 118% of the average for the period 1969 through 1992. In International Falcon Reservoir, there was a decrease in storage during the year of 204,100 thousand cubic meters. The storage ranged from a high of 3,499,700 thousand cubic meters on April 2 to a low of 3,131,600 thousand cubic meters on November 8 and averaged 3,350,100 thousand cubic meters during the year, or 138% of the average for the period 1954 through 1992.

Diversions from the Rio Grande in the United States were 99% of average. Diversions into the American Canal were 140% of average, into the Maverick Canal, 106% of average and in the United States below Falcon Dam, 80% of the average for the thirty-five years, 1958-1992. In Mexico, diversions were 114% of average. Diversions into the Acequia Madre were 116% of average, while diversions through the Anzalduas Canal in Mexico were 113% of the thirty-nine year average.

In 1992, the total reported irrigated area from the Rio Grande and its tributaries below El Paso, Texas showed a 7% increase from the previous year. On the United States side, there was a decrease of about 1% above Falcon Dam and a decrease of about 0.3% below Falcon Dam, for an overall average decrease of 0.4%. On the Mexican side, there was an increase of about 25% reported above Falcon Dam and an increase of about 5% below Falcon Dam.

08-3610.00 RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Concrete wall control, bubbler gage, water-stage recorder, and data collection platform located on the left bank 30 meters upstream from the cableway at latitude 33°08'45", longitude 107°12'20", and river kilometer 2,236; 1.6 river kilometers downstream from Elephant Butte Dam, 2.4 river kilometers upstream from Cuchillo Negro River, and 217 river kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,292.68 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 current-meter measurements during the year and a continuous record of gage heights. Records were furnished by the United States Geological Survey. Records available: 1915 through 1992.

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. The data collection platform is operated by U. S. Geological Survey and relays gage height data by radio via satellite.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second					
Daily:	Max. 233	May 22, 1942			Min. 0	Occasionally	
Monthly:	Max. 215	May 1942			Min. 0.03	Nov. 1971	
Yearly:	Max. 71.1	1942			Min. 7.16	1964	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.37	0.48	40.5	54.7	* 32.9	* 61.5	* 55.5	36.2	* 37.4	1.81	0.42	1.02
2	.37	.48	40.5	* 54.9	32.9	61.2	55.8	36.2	37.4	1.64	.62	.27
3	* .40	* .51	40.5	55.2	32.9	63.7	56.4	* 36.2	37.4	1.59	1.25	.27
4	.37	.51	43.0	55.2	32.9	80.4	56.6	36.2	37.4	1.59	* 1.70	.28
5	.37	.51	42.2	55.2	46.4	87.5	56.9	36.2	37.4	* 1.61	1.64	.27
6	.37	.51	* 41.1	55.2	53.2	84.4	56.9	36.2	37.4	1.64	1.64	.25
7	.34	.51	41.1	39.4	52.7	83.5	56.1	36.2	37.4	1.56	1.64	.25
8	.22	.51	40.8	33.4	52.4	85.2	55.8	36.0	37.4	1.59	1.56	* .25
9	.23	.51	41.1	33.7	52.1	68.8	56.1	36.0	37.4	1.59	1.61	.25
10	.23	.51	47.0	34.0	51.8	58.1	54.7	36.0	37.7	1.59	1.53	.26
11	.24	.51	50.4	34.3	51.5	58.1	54.1	36.0	37.7	1.53	1.56	.25
12	.25	.51	50.1	34.3	51.3	58.1	53.8	36.0	37.7	1.53	1.56	.24
13	.25	.51	49.3	* 34.6	51.3	58.3	53.2	35.7	37.7	.93	1.56	.24
14	.25	.51	49.8	34.6	51.5	58.3	* 53.5	35.7	37.9	1.05	1.47	.24
15	.25	.51	49.8	34.3	51.5	58.3	53.8	35.7	37.9	12.2	1.44	.24
16	.34	.51	* 49.6	34.0	51.5	58.3	53.8	35.7	* 37.9	17.3	1.47	.25
17	.40	.51	49.6	34.0	51.5	58.3	53.5	* 35.7	38.2	17.2	1.47	.24
18	.40	.51	49.6	34.0	51.5	58.6	53.2	35.7	38.2	17.1	1.47	.25
19	.40	.51	49.6	34.0	* 51.5	* 58.9	53.2	36.0	38.5	17.1	1.44	.23
20	.42	12.5	52.1	34.6	51.5	59.5	53.2	35.7	38.8	* 17.1	1.44	.23
21	* .37	19.5	53.5	34.0	42.8	60.0	53.0	35.7	27.4	17.1	1.42	.23
22	.31	19.6	53.5	33.4	38.5	60.6	53.0	36.0	2.10	5.98	1.42	* .23
23	.34	19.7	49.8	33.1	38.8	60.6	53.0	36.0	1.93	.37	1.42	.23
24	.34	* 19.7	54.1	33.1	38.8	59.8	42.2	36.2	1.98	.31	* 1.50	.23
25	.34	19.7	54.1	33.1	38.8	59.5	36.5	36.2	1.95	.31	1.50	.23
26	.34	19.8	54.4	33.1	38.8	56.4	36.5	36.5	1.93	.31	1.42	.23
27	.40	19.8	50.4	33.1	36.0	56.1	36.5	36.5	1.93	.31	1.47	.23
28	.45	20.2	54.7	33.1	34.6	55.8	36.5	36.8	1.98	.31	1.47	.23
29	.45	33.1	54.7	32.9	34.8	55.5	36.5	36.8	1.95	.31	1.39	.23
30	.48		54.7	32.9	52.1	55.5	36.5	37.1	1.98	.34	1.47	.23
31	.48		54.7		61.5		36.2	37.1		.48		.23
Sum	10.77	213.23	1,506.3	1,145.4	1,410.3	1,898.8	1,552.5	1,120.2	799.93	145.38	42.97	8.31

Current Year 1992

Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume—Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			130	0.48	8	0.22	0.35	931	30,677	147,406	24.7
Feb.			29	33.1	1	.48	7.35	18,423	51,242	207,297	232
Mar.			128	54.7	1	40.5	48.6	130,144	88,167	174,074	1,261
April			13	55.2	129	32.9	38.2	98,963	103,374	199,454	13,824
May			31	61.5	1	32.9	45.5	121,850	111,317	576,485	632
June			5	87.5	129	55.5	63.3	164,056	120,732	447,576	20,862
July			15	56.9	31	36.2	50.1	134,136	119,114	261,049	51,006
Aug.			130	37.1	113	35.7	36.1	96,785	92,761	173,511	11,761
Sept.			20	38.8	123	1.93	26.7	69,114	42,629	159,174	201
Oct.			16	17.3	124	.31	4.69	12,561	19,388	54,731	183
Nov.			4	1.70	1	.42	1.43	3,713	18,469	195,408	91.5
Dec.			1	1.02	119	.23	.27	718	24,816	160,055	170
Yearly				87.5		0.22	26.9	851,394	822,686	2,243,367	226,236

* Discharge measurement made on this day

φ Mean daily

! And other days

08-3625.00 RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Cableway, gravity well, water-stage recorder, and data collection platform located on the left bank at latitude 32°53'05", longitude 107°17'30", and river kilometer 2,190; 1.3 river kilometers downstream from Caballo Dam, about 5.0 kilometers northeast of Arrey, New Mexico, 8.0 kilometers south of Caballo, New Mexico, and 172 river kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,262.15 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 45 current-meter measurements during the year and a continuous record of gage heights. Records were furnished by the El Paso office of the United States Bureau of Reclamation. Records available: 1938 through 1992.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 791 TCM of water were diverted in 1992 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 2.4 kilometers downstream from this station. Small accretions to the river take place between the station and Percha Dam. The data collection platform is operated by U. S. Bureau of Reclamation and relays gage heights and flow data by radio via satellite.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second

Daily:	Max.	217	May 20, 1942	Min.	0	1954, 1955 and 1972
Monthly:	Max.	190	May 1942	Min.	0	Nov. 1955
Yearly:	Max.	70.2	1942	Min.	8.04	1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.06	4.42	45.8	52.0	41.5	31.4	64.5	35.4	50.5	33.5	0.11	0.08
2	.08	4.42	* 45.2	52.7	41.3	34.6	64.1	29.7	* 52.8	32.4	.11	.08
3	1.42	4.33	45.2	44.1	41.3	* 37.2	58.5	29.3	52.8	31.5	.11	.08
4	.08	4.28	45.2	36.7	41.0	37.2	54.3	29.3	47.7	31.3	.11	.08
5	.08	4.33	44.3	36.7	41.3	41.0	54.0	* 29.5	44.1	31.0	.11	.08
6	.08	4.33	45.5	* 36.7	* 41.4	46.4	54.0	29.7	44.1	* 29.3	.11	.08
7	.08	4.33	45.5	36.6	36.3	46.7	61.1	32.8	44.1	* 27.9	.11	.08
8	.08	4.33	45.2	36.3	33.4	46.1	* 65.6	35.7	43.8	28.3	.11	.08
9	5.32	4.33	44.6	36.3	33.7	47.9	63.3	35.7	* 40.0	31.5	.11	* .06
10	* 10.6	4.33	44.3	36.1	33.9	* 53.2	62.9	35.7	35.7	* 37.6	* .11	.06
11	10.6	4.33	* 44.3	35.8	33.9	53.2	62.2	45.9	35.2	36.9	.08	.06
12	10.6	4.33	45.2	35.8	39.6	51.4	62.2	* 50.2	36.9	33.5	.08	.06
13	10.5	* 4.33	46.0	35.8	* 44.3	49.1	61.8	* 44.7	39.4	* 29.7	.08	.06
14	* 10.4	4.33	46.7	36.1	44.3	49.4	57.8	49.8	39.4	18.7	.08	.06
15	10.4	4.33	47.6	* 36.2	41.5	49.4	* 56.0	55.1	37.4	5.92	.08	.06
16	10.4	4.33	48.2	36.2	39.9	55.4	56.0	54.4	* 32.4	* 7.48	.08	.06
17	5.24	4.33	47.6	36.8	40.2	* 60.7	58.2	54.1	29.3	* 7.70	* .08	.06
18	.08	4.33	* 47.3	37.1	40.4	60.7	60.0	54.1	28.3	7.70	.08	.06
19	.08	7.08	47.3	37.1	43.8	60.7	60.0	* 54.1	27.7	7.70	.08	.06
20	.08	* 11.0	48.8	37.3	* 44.3	60.7	60.0	49.8	27.9	3.06	.08	.06
21	6.94	18.8	50.7	36.6	43.2	60.7	60.4	45.9	27.9	.08	.08	.06
22	10.4	23.5	51.4	* 36.2	31.0	60.7	* 56.9	45.6	28.7	.08	.08	.06
23	10.4	23.5	51.4	36.2	23.5	61.3	56.5	45.3	29.7	.08	.08	.06
24	* 6.97	* 23.5	50.4	36.2	24.2	* 61.8	54.1	41.3	32.4	.08	.08	.06
25	4.45	29.9	49.4	36.3	24.4	61.8	54.0	43.0	33.7	.08	.08	.06
26	4.45	* 35.6	50.1	36.6	21.0	59.6	54.0	* 47.8	31.5	.08	.08	.06
27	* 4.45	36.3	50.4	36.6	* 19.0	56.8	54.0	47.4	31.3	.08	.08	.06
28	4.45	41.3	51.1	39.3	19.7	56.8	47.7	47.4	31.0	.08	.08	.06
29	4.45	46.4	51.1	* 41.9	25.9	56.8	* 42.7	46.8	32.6	.08	.08	.06
30	4.45	51.1	51.1	41.9	31.4	60.7	42.1	46.8	* 33.7	.08	.08	* .06
31	4.45	51.1	51.1		31.4		42.7	46.8		.08		.06
Sum	152.12	374.95	1,478.0	1,146.2	1,092.0	1,569.4	1,761.6	1,339.1	1,102.0	473.54	2.70	2.02

Current Year 1992

Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High		Average	Total	Average	Maximum	Minimum	
				Day	φ Low						
Jan.			110	10.6	1	0.06	4.91	13,143	5,045	146,403	23.7
Feb.			29	46.4	4	4.28	12.9	32,396	15,481	138,207	14.4
Mar.			22	51.4	5	44.3	47.7	127,699	109,738	200,839	30,675
April			2	52.7	111	35.8	38.2	99,032	100,213	261,905	31,417
May			113	44.3	27	19.0	35.2	94,349	99,238	508,691	92.8
June			124	61.8	1	31.4	52.3	135,596	132,206	436,371	31,193
July			8	65.6	30	42.1	56.8	152,202	140,665	292,684	34,748
Aug.			15	55.1	13	29.3	43.2	115,698	125,970	220,412	25,320
Sept.			12	52.8	19	27.7	36.7	95,213	63,200	223,812	8,335
Oct.			10	37.6	121	.08	15.3	40,914	9,262	151,369	19.1
Nov.			1	.11	111	.08	.09	233	4,031	101,642	8.8
Dec.			1	.08	19	.06	.07	175	5,530	180,557	7.5
Yearly				65.6		0.06	28.7	906,650	810,579	2,215,231	254,198

* Discharge measurement made on this day

φ Mean daily

! And other days

08-3640.00 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 kilometer 2,021; 8.9 river kilometers upstream from the Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua and 2.7 kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,134.56 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Mean daily discharges in 1992 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. In 1992, 10 current-meter measurements were made at this station. Records available: 1889 through 1992.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 680 CMS 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 382 CMS on September 3, 1925.

		Average Flow in Cubic Meters per Second					
Daily:	Max.	671	June 12, 1905		Min.	0	Occasionally
Monthly:	Max.	405	June 1905		Min.	0	Occasionally
Yearly:	Max.	78.7	1905		Min.	1.99	1902

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.40	7.11	24.0	27.8	17.6	27.3	26.3	29.3	26.1	16.2	7.15	4.75
2	4.20	7.11	26.4	30.9	16.1	26.0	25.5	40.9	25.4	14.7	6.84	5.29
3	4.14	7.31	27.5	33.3	19.4	24.3	25.6	35.5	24.8	15.4	6.70	5.86
4	4.14	7.16	29.2	33.2	22.9	22.7	26.3	28.4	24.3	17.4	6.81	5.89
5	4.11	6.90	30.4	29.3	23.2	24.2	28.7	27.1	25.3	18.4	6.57	5.86
6	4.20	6.80	30.0	23.1	24.6	22.3	28.1	24.6	26.1	17.4	6.82	5.86
7	4.48	7.07	29.3	22.0	28.2	23.8	26.1	24.5	26.1	17.3	6.84	5.77
8	4.17	7.59	31.9	21.5	32.1	28.4	25.8	22.7	26.0	14.9	7.02	5.72
9	3.81	7.55	32.7	19.9	30.0	29.1	28.6	22.8	23.6	14.2	6.83	5.47
10	3.83	7.49	31.3	18.2	28.8	27.2	28.0	24.6	22.6	14.8	6.82	5.15
11	9.08	7.52	31.2	18.1	28.7	25.7	28.0	22.5	18.5	14.8	6.86	4.78
12	9.90	7.47	30.1	17.1	26.9	24.2	32.0	24.8	15.9	20.5	6.59	4.72
13	12.8	5.78	29.1	16.2	25.9	24.6	33.6	30.5	17.9	23.2	6.35	4.61
14	13.1	6.17	28.4	* 16.4	21.4	23.5	33.4	29.1	19.2	22.0	6.11	4.67
15	12.7	6.10	28.2	17.8	22.5	22.9	31.4	24.2	19.8	20.7	5.89	4.61
16	12.7	6.49	28.6	18.1	22.9	21.7	27.9	25.3	24.4	25.7	* 5.80	* 4.47
17	12.9	6.66	25.2	18.8	24.5	20.5	25.2	31.3	29.0	18.2	5.75	4.38
18	12.1	6.28	26.3	18.9	23.3	23.8	26.0	31.8	27.7	15.4	5.35	3.08
19	10.5	5.97	23.7	22.8	23.6	28.5	29.5	30.2	23.3	14.9	5.49	3.64
20	8.92	6.00	20.1	27.4	23.8	29.8	32.4	30.8	22.9	14.7	5.31	3.66
21	7.72	5.63	19.4	25.7	23.8	30.6	* 36.4	28.7	21.4	14.2	5.06	3.64
22	6.72	5.57	23.0	23.9	23.6	32.6	30.2	28.1	20.4	14.0	4.83	3.63
23	* 6.15	7.42	24.4	21.7	25.8	32.4	27.9	26.6	19.0	12.0	5.34	3.61
24	7.87	12.7	25.1	20.5	31.4	32.5	26.8	26.9	17.4	10.8	6.59	3.61
25	11.1	13.7	25.9	20.2	25.2	* 29.8	29.2	28.5	17.4	10.2	6.28	3.60
26	11.5	12.4	24.0	19.0	24.8	28.0	30.7	24.6	18.0	9.34	5.82	3.59
27	9.11	14.2	21.3	20.9	* 22.2	27.4	33.6	* 22.9	20.5	8.75	6.30	3.57
28	7.92	* 19.9	22.3	19.3	18.8	27.2	34.9	24.9	* 19.8	8.44	4.87	3.57
29	7.41	21.7	24.4	19.8	14.8	29.7	37.2	25.1	19.8	8.10	4.55	3.57
30	7.36	27.5	18.2	15.0	15.0	29.7	27.5	25.8	19.0	7.76	4.55	3.57
31	7.22	27.9			20.6		22.0	26.3		7.40		3.65
Sum	246.26	249.75	828.8	660.0	732.4	800.4	904.8	849.3	661.6	461.79	182.09	137.85

Current Year 1992

Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.	1.14	0.86	14	13.1	9	3.81	7.94	21,277	10,867	150,048	271
Feb.	1.37	.92	29	21.7	22	5.57	8.61	21,578	12,363	122,304	167
Mar.	1.67	1.30	9	32.7	21	19.4	26.7	71,608	46,977	140,433	2,204
April	1.66	1.21	3	33.3	13	16.2	22.0	57,024	52,090	171,563	8,414
May	1.70	1.18	8	32.1	29	14.8	23.6	63,279	56,697	439,894	644
June	1.67	1.35	22	32.6	17	20.5	26.7	69,155	66,651	375,353	7,421
July	1.85	1.43	29	37.2	31	22.0	29.2	78,175	75,829	244,070	11,904
Aug.	1.87	1.37	2	40.9	11	22.5	27.4	73,380	70,625	194,405	6,007
Sept.	1.61	1.23	17	29.0	12	15.9	22.1	57,162	48,042	211,481	2,995
Oct.	1.55	1.01	16	25.7	31	7.40	14.9	39,899	21,267	163,710	186
Nov.	1.01	.90	1	7.15	129	4.55	6.07	15,733	12,578	124,457	282
Dec.	1.02	.86	4	5.89	18	3.08	4.45	11,910	13,013	197,341	254
Yearly	1.87	0.86		40.9		3.08	18.3	580,180	486,999	1,923,317	70,867

* Discharge measurement made on this day

φ Mean daily

! And other days

08-3645.00 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 gate, water-stage recorder, and binary decimal transmitter located on the right bank of the concrete-lined canal at El Paso, Texas, latitude 31°46' 40", longitude 106°31'35", and about 0.7 kilometer downstream from the headgates of the American Dam which are located at river kilometer 2,018. The zero of the gage is 1,131.45 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 12 current-meter measurements during the year, a stable rating curve at medium and high flows, and a continuous record of gage heights. Records available: June 2, 1938 through 1992.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 52.1 CMS on March 27, 1944. Min. frequently no flow.

		Average Flow in Cubic Meters per Second					
Daily:	Max.	42.8	Aug. 13, 1945	Min.	0	Frequently	
Monthly:	Max.	34.3	Aug. 1943	Min.	0	frequently since 1952	
Yearly:	Max.	21.2	1943	Min.	0.24	1990	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.11	6.71	23.5	22.2	12.4	23.2	21.1	21.8	* 21.0	15.3	6.51	0.08
2	3.91	6.71	* 25.9	* 25.3	10.8	23.1	* 20.2	25.0	20.6	* 13.8	* 6.23	.08
3	3.85	* 6.91	27.0	27.7	13.8	21.4	20.2	25.2	20.0	14.5	6.09	.08
4	3.85	6.77	28.6	27.6	17.3	* 19.8	20.9	* 21.6	19.4	16.6	4.39	.08
5	3.82	6.51	28.3	23.8	* 17.6	21.3	23.2	20.2	20.2	17.6	6.03	.08
6	* 3.91	6.40	28.3	17.6	19.0	19.7	22.7	17.8	20.9	16.6	6.34	.08
7	4.19	6.66	27.9	16.3	22.5	20.8	20.6	17.4	20.9	16.5	6.40	.08
8	3.88	7.19	28.6	15.8	26.3	23.1	20.2	16.2	22.0	14.1	6.60	.08
9	3.51	7.14	28.6	14.2	24.4	23.9	20.2	16.6	20.4	13.4	6.46	* .06
10	3.51	7.08	28.9	12.5	23.3	22.1	22.5	18.9	17.4	14.0	6.46	.08
11	8.75	7.11	28.6	12.5	23.2	20.5	22.4	17.1	15.3	14.0	6.54	.08
12	9.57	7.05	28.6	11.6	21.5	19.1	26.4	19.3	15.1	19.7	6.29	.08
13	12.4	5.38	27.8	10.7	20.4	19.4	27.8	23.7	17.1	22.4	6.06	.08
14	12.7	5.78	27.2	10.8	15.9	18.2	27.9	22.8	18.4	21.2	5.83	.08
15	12.3	5.69	26.9	12.2	17.0	17.7	25.9	18.8	19.0	19.9	5.61	.08
16	12.3	6.09	27.3	12.5	17.5	16.4	22.7	19.7	23.6	24.8	5.52	.08
17	12.5	6.26	23.9	13.1	19.3	15.0	19.6	25.7	22.0	17.4	5.47	.08
18	11.7	5.86	25.0	13.3	18.0	18.0	20.4	26.3	25.8	14.7	5.07	.08
19	10.1	5.55	22.4	17.2	17.9	22.5	23.8	24.7	21.9	14.2	5.21	3.26
20	8.52	5.58	18.6	21.8	18.2	24.3	26.2	25.3	21.7	14.0	5.04	3.26
21	7.33	5.21	17.8	20.2	18.2	25.3	26.4	23.1	20.2	13.5	4.79	3.26
22	6.34	5.15	21.3	18.5	18.0	27.2	23.3	22.7	19.2	13.2	4.56	3.26
23	5.78	7.00	21.4	16.6	20.1	27.0	21.5	21.4	17.9	11.3	1.91	3.26
24	7.48	12.2	22.0	15.3	25.6	27.1	20.6	21.7	16.3	10.1	1.32	3.26
25	10.7	13.2	22.1	14.5	20.1	24.5	22.6	23.1	16.3	9.52	1.15	3.26
26	11.1	11.9	18.8	13.2	19.3	22.5	24.1	19.4	16.9	8.64	.95	3.26
27	8.72	13.7	15.9	15.1	16.7	21.8	26.5	17.6	19.4	8.07	1.54	3.26
28	7.53	19.4	16.7	13.7	13.3	21.5	26.7	19.5	18.7	7.76	.31	3.26
29	7.02	21.2	18.9	14.3	9.46	23.8	25.5	20.0	18.7	7.42	.08	3.26
30	6.97		22.0	13.0	9.37	24.3	21.0	20.6	18.0	7.08	.08	3.26
31	6.83		22.4		14.7		15.0	21.1		6.74		3.34
Sum	235.18	237.39	751.2	493.1	561.13	654.5	710.9	654.3	584.3	438.03	134.84	43.88

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	2.08	1.28	14	13.3	10	3.14	7.59	20,320	4,819	51,241	0
Feb.	2.55	1.37	29	21.7	13	3.77	8.19	20,510	8,295	62,253	0
Mar.	2.91	2.15	9	29.7	27	14.9	24.2	64,904	38,957	69,130	0
April	2.81	1.83	4	28.3	14	10.1	16.4	42,604	36,179	87,408	0
May	2.91	1.75	24	29.7	30	8.27	18.1	48,482	34,236	85,163	0
June	2.93	2.17	22	29.2	17	14.2	21.8	56,549	44,574	80,984	0
July	2.94	2.18	12	28.9	31	13.6	22.9	61,422	52,485	87,171	0
Aug.	2.93	2.26	13	28.2	9	15.0	21.1	56,532	50,977	92,064	0
Sept.	2.90	1.85	18	27.7	17	8.61	19.5	50,484	35,076	77,877	0
Oct.	2.90	1.68	16	27.9	31	6.57	14.1	37,846	16,416	59,131	0
Nov.	1.71	.69	6	7.00	129	.08	4.49	11,650	8,542	37,208	0
Dec.	1.37	.68	31	3.82	9	.06	1.42	3,791	8,435	55,112	0
Yearly	2.94	0.68		29.7		0.06	15.0	475,094	338,991	668,068	7,603

* Discharge measurement made on this day ! And other days

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3650.00 RIO GRANDE BELOW AMERICAN DAM AT EL PASO, TEXAS
AND CD. JUAREZ, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the river at latitude 31°46'35", longitude 106°31'20", and river kilometer 2,017; 2.4 river kilometers upstream from the International Dam, 5.0 river kilometers upstream from the Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua, and 1.0 river kilometer downstream from the American Dam. The zero of the gage is 1,131.51 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 60 current-meter measurements during the year, and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 1992.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The operation of the American Dam began June 2, 1938. Part of the flow above the dam is diverted into the American Canal, and the remainder, including excess flood flows, passes below the dam.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 320 CMS on September 14, 1958 with a gage height of 4.42 meters. Min. occasionally no flow.

Average Flow in Cubic Meters per Second							
Daily:	Max.	171	May 20,	1942	Min.	0	Occasionally
Monthly:	Max.	138	May	1942	Min.	0	Occasionally
Yearly:	Max.	42.8		1942	Min.	0.39	Occasionally 1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.29	0.40	0.47	5.58	* 5.18	* 4.08	* 5.15	7.45	5.10	* 0.89	0.64	4.67
2	.29	.40	* .49	5.55	5.32	2.89	5.30	15.9	4.81	.89	* .61	5.21
3	.29	.40	.54	* 5.61	5.55	2.89	5.41	* 10.3	4.76	.88	2.42	* 5.78
4	.29	* .39	.60	5.64	* 5.61	2.89	5.38	6.83	* 4.87	.84	2.42	5.81
5	.29	.39	2.12	5.47	5.58	* 2.86	5.47	6.94	5.13	.84	.54	5.78
6	.29	.40	1.71	* 5.47	5.61	2.59	* 5.41	* 6.83	5.18	.84	.48	5.78
7	* .29	.41	1.36	5.66	* 5.69	3.00	5.52	* 7.05	5.24	.83	.44	5.69
8	.29	.40	3.31	5.69	5.78	* 5.32	5.55	6.49	3.96	* .84	.42	5.64
9	.30	.41	4.05	5.66	5.61	5.24	5.64	6.20	* 3.17	.81	.37	5.41
10	.32	.41	2.42	* 5.66	5.49	5.10	5.49	* 5.72	5.18	.84	.36	5.07
11	.33	.41	2.59	5.58	5.49	5.21	5.55	5.44	3.23	.79	.32	4.70
12	.33	.42	1.48	5.47	5.44	5.10	5.58	5.47	.79	.80	.30	4.64
13	.35	.40	1.29	* 5.49	5.52	5.21	* 5.83	6.80	.83	.80	.29	4.53
14	.35	.39	1.24	5.58	5.47	5.27	5.49	* 6.32	.80	.82	.28	4.59
15	.37	.41	1.25	5.64	* 5.52	* 5.15	* 5.52	* 5.41	* .79	.78	.28	4.53
16	.38	.40	1.27	5.61	5.35	5.32	5.15	5.55	.84	.85	.28	4.39
17	* .39	.40	1.27	* 5.66	5.18	5.47	5.61	* 5.61	6.97	.75	.28	4.30
18	.40	.42	1.31	5.55	* 5.27	5.81	5.61	5.49	1.91	.72	.28	3.00
19	.39	.42	1.30	5.55	5.66	* 5.98	5.66	5.49	1.38	.71	.28	3.08
20	.40	.42	1.46	* 5.61	5.58	5.52	* 6.15	5.52	1.23	.72	.27	.40
21	.39	.42	1.55	5.47	5.58	5.30	9.97	* 5.55	1.19	.73	.27	.38
22	.38	.42	1.65	5.35	* 5.58	* 5.35	6.88	5.38	1.19	.75	.27	.37
23	.37	.42	* 2.95	5.13	5.66	5.38	6.40	5.21	* 1.11	.69	3.43	.35
24	.39	.45	* 3.14	* 5.21	5.81	5.35	* 6.15	* 5.24	1.06	.70	5.27	.35
25	.40	.45	* 3.77	5.66	5.10	5.32	6.57	5.44	1.06	.70	5.13	.34
26	.40	.45	* 5.24	5.75	5.49	* 5.49	6.57	5.24	1.09	.70	4.87	.33
27	.39	.45	* 5.44	* 5.81	5.52	5.58	7.05	5.27	1.08	.68	4.76	.31
28	.39	.45	5.64	5.58	5.49	5.72	8.21	* 5.35	1.07	.68	4.56	.31
29	.39	.46	5.47	5.47	* 5.38	* 5.92	* 11.7	5.13	* 1.06	* .68	4.47	.31
30	.39		* 5.47	5.21	5.58	5.44	6.54	5.21	.97	.68	* 4.47	.31
31	.39		5.52		5.92		6.97	* 5.15		.66		.31
Sum	10.91	12.07	77.37	166.37	171.01	145.75	193.51	194.98	77.05	23.89	47.25	93.97

Current Year 1992

Period 1939-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Low		Average	Total	Average	Maximum	Minimum
					Day	Low					
Jan.	1.51	1.48	118	0.40	6	0.28	0.35	943	5,999	98,781	0
Feb.	1.51	1.49	29	.47	1	.38	.42	1,043	3,903	60,041	0
Mar.	1.99	1.50	9	7.82		.45	2.50	6,685	7,884	79,572	99.8
April	1.92	1.79	2	7.87	123	4.81	5.55	14,374	15,362	91,915	2,752
May	2.06	1.79	24	11.3	118	4.70	5.52	14,775	21,885	369,945	31.1
June	1.95	1.69	22	8.84	16	2.36	4.86	12,593	21,509	308,855	0
July	2.26	1.75	29	20.7	16	3.88	6.24	16,719	22,968	191,605	1,193
Aug.	2.34	1.77	2	24.5	126	4.81	6.29	16,846	19,378	140,115	46.3
Sept.	2.23	1.51	17	20.5	12	.74	2.57	6,657	12,466	152,960	66.4
Oct.	1.55	1.51	2	.94	31	.63	.77	2,064	4,622	104,679	22.2
Nov.	1.84	1.44	4	7.11	120	.27	1.58	4,082	3,890	87,256	0
Dec.	1.83	1.47	3	6.03	129	.30	3.03	8,119	4,443	142,194	0
Yearly	2.34	1.44		24.5		0.27	3.32	104,900	144,309	1,349,111	12,337

* Discharge measurement made on this day ! And other days

08-3655.00 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 Cd. Juarez, Chihuahua, latitude 31°45'40", longitude 106°30'30", about 80 meters downstream from the canal intake at the International Dam at Cd. Juarez, Chihuahua, which is located at river kilometer 2,015 and 3.4 river kilometers downstream from the American Dam at El Paso, Texas.

RECORDS: Flow records provided by Mexican Section. Records available: 1938 through 1992. These records, showing the water 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 the 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" on the preceding page of this bulletin.

REMARKS: In 1992 all of the 71,641,000 TCM tabulated below were distributed to land irrigated in the first unit under the canal.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 13.6 CMS on July 21, 1944 with a gage height of 1.83 meters. Min. no flow during several months throughout the year.

		Average Flow in Cubic Meters per Second				
Daily:	Max. 9.61	May 10, 1942	Min. 0	Several months each year		
Monthly:	Max. 8.00	May 1938	Min. 0	Several months each year		
Yearly:	Max. 3.28	1942	Min. 0.26	1964		

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	* 5.09	5.01	* 2.62	* 5.06	5.41	* 5.07	0	0	0
2	0	0	0	5.28	5.00	2.53	5.31	5.93	* 4.96	0	0	0
3	0	0	0	* 5.27	5.08	* 2.63	* 5.30	* 5.50	4.94	0	0	0
4	0	0	0	5.28	* 5.07	2.60	5.16	5.61	* 4.96	0	0	0
5	0	0	0	5.14	5.02	* 2.77	5.18	* 5.91	5.20	0	0	0
6	0	0	0	* 5.11	* 4.69	2.68	* 5.12	5.92	5.25	0	0	0
7	0	0	0	5.38	3.13	2.76	5.38	* 5.99	* 5.25	0	0	0
8	0	0	0	* 5.26	* 2.72	* 4.16	5.49	5.93	4.63	0	0	0
9	0	0	0	5.22	2.58	5.12	5.61	5.94	* 1.93	0	0	0
10	0	0	0	* 5.22	2.50	* 4.97	* 5.54	* 5.91	4.90	0	0	0
11	0	0	0	5.25	* 2.46	5.04	5.48	* 4.99	* 3.45	0	0	0
12	0	0	0	4.96	3.88	* 4.06	5.61	* 5.34	0	0	0	0
13	0	0	0	* 5.03	* 4.90	4.81	* 5.89	4.82	0	0	0	0
14	0	0	0	5.21	5.02	4.91	5.62	* 5.30	0	0	0	0
15	0	0	0	* 5.34	* 5.14	* 5.00	* 5.46	4.97	0	0	0	0
16	0	0	0	5.37	5.11	5.11	5.32	5.05	0	0	0	0
17	0	0	0	4.73	5.09	* 5.20	* 5.46	* 5.60	0	0	0	0
18	0	0	0	3.50	1.93	5.46	5.48	5.15	0	0	0	0
19	0	0	0	3.44	0	* 5.79	5.53	* 5.11	0	0	0	0
20	0	0	0	* 5.11	* 1.39	5.07	* 6.09	5.41	0	0	0	0
21	0	0	0	4.87	3.01	4.83	* 6.34	* 5.36	0	0	0	0
22	0	0	0	* 4.94	* 2.90	* 5.12	* 6.15	5.52	0	0	0	0
23	0	0	* 1.79	4.86	2.87	5.19	6.37	5.12	0	0	0	0
24	0	0	* 2.98	* 4.97	2.83	* 5.11	* 6.15	* 5.27	0	0	0	0
25	0	0	* 3.52	5.36	2.83	5.09	6.21	5.69	0	0	0	0
26	0	0	4.36	6.32	2.82	* 5.29	* 6.38	* 5.14	0	0	0	0
27	0	0	* 4.81	* 5.51	* 2.89	5.25	* 6.45	5.46	0	0	0	0
28	0	0	4.94	5.18	2.77	5.39	6.34	* 5.40	0	0	0	0
29	0	0	4.95	* 5.13	* 2.77	* 5.59	* 6.23	5.16	0	0	0	0
30	0	0	* 4.87	5.01	2.88	5.15	6.26	5.22	0	0	0	0
31	0	0	4.90		2.96		* 6.29	* 5.24	0	0	0	0
Sum	0	0	37.12	152.34	107.25	135.30	178.26	168.37	50.54	0	0	0

Current Year 1992 Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	High		Low	Total		Average	Maximum	Minimum	
			Day	Day							
Jan.	0	0	1 1	0	1 1	0	0	45.5	2,504	0	
Feb.	0	0	1 1	0	1 1	0	0	168	9,263	0	
Mar.	1.80	0	27	5.07	1 1	0	1.20	3,207	2,155	9,807	
April	0	0	26	6.32	8	0	5.08	13,162	10,429	15,274	
May	2.03	0	21	5.94	19	0	3.46	9,266	11,002	21,438	
June	0	0	19	5.79	2	0	4.51	11,690	10,744	19,366	
July	2.13	0	21	7.88	21	0	2.53	5.75	15,402	11,068	18,712
Aug.	2.19	1.32	12	8.33	13	3.39	5.43	14,547	10,729	15,567	
Sept.	1.67	0	6	5.37	8	0	1.68	4,367	5,539	15,270	
Oct.	0	0	1 1	0	1 1	0	0	66.3	1,743	0	
Nov.	0	0	1 1	0	1 1	0	0	0	0	0	
Dec.	0	0	1 1	0	1 1	0	0	0	0	0	
Yearly				8.33	0	2.27	71,641	61,946	103,526	8,206	

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

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3705.00 RIO GRANDE AT FORT QUITMAN, TEXAS
NEAR COLONIA LUIS LEON, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°05'10", longitude 105°36'30", and river kilometer 1,888; 2.4 river kilometers downstream from Old Fort Quitman, 14.5 kilometers southeast of Esperanza, Texas, and 28.2 kilometers southeast of McNary, Texas. The zero of the gage is 1,052.35 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1992.

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

EXTREME FLOWS FROM RECORDS:** Momentary: Max. 300 CMS October 5, 1946 with a gage height of 3.05 meters. Min. frequently no flow.

		Average Flow in Cubic Meters per Second**					
Daily:	Max. 167	May 19, 1942	Min. 0				
Monthly:	Max. 142	May 1942	Min. 0	Frequently			
Yearly:	Max. 49.8	1942	Min. 0.07	Several months since 1951			
				1965			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.75	9.60	14.7	* 7.14	4.87	9.97	3.85	8.78	4.02	13.3	13.1	* 8.35
2	9.03	9.20	22.0	7.56	4.87	11.5	3.17	8.44	* 3.88	12.6	11.7	* 10.1
3	9.20	9.15	19.5	10.6	4.98	* 14.6	3.06	8.13	3.43	9.29	10.3	12.3
4	9.29	10.1	20.6	13.9	4.70	13.8	2.83	7.84	3.29	8.84	* 10.9	12.7
5	10.2	* 10.1	* 21.8	19.8	4.59	12.2	3.68	* 7.42	3.29	* 10.1	11.2	15.4
6	10.2	9.60	26.6	25.8	* 5.18	7.84	3.68	5.69	3.62	12.1	11.0	13.9
7	10.3	8.67	21.7	15.4	8.50	9.09	3.00	4.59	4.96	11.2	9.03	14.1
8	* 10.6	8.18	12.5	10.6	20.8	10.1	* 2.41	3.74	5.10	10.8	11.0	18.6
9	9.83	7.36	11.3	9.40	43.9	9.74	2.24	3.31	4.84	11.5	11.0	18.0
10	9.01	8.30	9.46	8.44	19.3	6.60	2.27	3.65	3.82	10.7	10.3	18.2
11	11.2	6.60	7.08	7.48	12.6	5.78	2.17	3.17	3.54	11.2	11.6	19.6
12	15.0	7.14	1.29	6.15	13.8	4.28	2.60	4.28	4.64	12.6	11.2	19.0
13	* 14.6	7.59	.85	6.37	15.1	3.46	3.17	6.97	4.50	12.2	10.3	18.2
14	16.7	7.05	1.20	6.34	15.6	3.60	2.30	5.66	4.76	15.9	10.8	16.5
15	14.6	5.81	2.22	* 5.81	14.0	5.10	2.44	7.53	6.15	19.1	10.4	15.5
16	11.5	5.81	3.03	5.27	9.32	* 3.91	2.71	9.52	5.55	21.2	9.74	* 11.2
17	11.7	6.26	2.71	5.13	10.4	* 3.06	3.34	7.42	5.49	28.9	* 9.06	13.0
18	12.4	6.94	* 5.30	5.41	11.3	2.34	2.61	6.40	5.47	22.5	* 9.03	14.0
19	11.6	6.23	7.00	6.57	10.1	2.29	2.80	* 6.26	5.61	12.5	9.06	13.6
20	12.8	4.64	7.02	8.89	* 19.0	2.21	3.46	7.48	9.26	12.5	9.15	12.9
21	12.1	* 4.30	6.49	9.63	17.1	2.42	2.92	4.47	* 14.4	14.8	10.2	13.5
22	10.6	3.96	5.75	9.74	14.9	2.34	* 4.73	4.11	14.2	13.4	11.9	12.8
23	9.29	3.62	7.50	8.92	32.0	1.88	5.78	4.16	11.3	* 14.4	10.6	13.2
24	9.77	3.14	6.60	6.71	11.5	2.31	4.70	4.16	11.2	18.5	8.75	13.9
25	10.1	2.64	5.47	6.60	20.5	2.05	3.65	4.11	12.3	18.4	10.5	15.0
26	14.8	5.66	5.04	6.29	12.5	2.54	4.53	3.20	11.3	15.7	12.2	14.8
27	15.7	6.51	4.98	6.15	10.6	2.62	9.88	3.51	11.6	14.1	11.4	13.9
28	14.7	6.00	5.13	5.61	10.4	2.27	11.1	3.46	11.9	10.9	10.8	14.2
29	* 11.8	7.31	4.53	* 4.96	9.18	3.40	9.80	4.08	12.2	11.9	10.2	14.3
30	9.86		6.00	4.90	9.86	4.42	9.52	3.85	12.6	13.5	9.26	14.6
31	10.2		5.83		9.88		9.06	3.20		12.9		15.7
Sum	357.43	197.47	281.18	261.57	411.33	167.72	133.46	168.59	218.22	437.53	315.68	451.05

Current Year 1992

Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Low	Total		Average	Maximum	Minimum	
											Day
Jan.	1.64	1.32	14	18.1	! 2	7.19	11.5	30,882	9,955	96,674	0
Feb.	1.64	1.15	! 4	12.5	25	2.17	6.81	17,061	7,876	68,720	0
Mar.	2.02	.86	5	30.0	14	.48	9.07	24,294	7,859	72,889	0
April	1.95	1.22	6	28.2	30	4.64	8.72	22,600	9,663	94,942	0
May	2.80	1.23	23	90.6	5	4.30	13.3	35,539	15,861	381,665	0
June	1.76	1.08	4	15.6	23	1.64	5.59	14,491	13,115	295,595	0
July	1.59	1.09	27	12.6	! 9	1.94	4.31	11,531	17,549	173,266	4.7
Aug.	1.51	1.16	16	10.1	28	2.66	5.44	14,566	18,355	158,563	20.6
Sept.	1.71	1.17	25	15.9	4	2.80	7.27	18,854	20,725	181,266	0
Oct.	2.10	1.45	17	36.8	! 3	8.33	14.1	37,803	18,662	114,377	0
Nov.	1.72	1.37	7	15.4	7	6.77	10.5	27,275	12,742	106,523	0
Dec.	1.83	1.34	31	25.9	2	7.53	14.6	38,971	13,541	152,593	0
Yearly	2.80	0.86		90.6		0.48	9.29	293,867	165,903	1,569,390	2,050

* Discharge measurement made on this day

! And other days

** Period 1924-1992

08-3712.00 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 San Antonio Diversion Dam, latitude 30°10'30" N, longitude 104°41'10" W and river kilometer 1,672, 0.5 river kilometer upstream from Capote Creek and about 4.0 kilometers north of Candelaria, Texas and San Antonio, Chihuahua. The zero of the gage is 871.11 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: November 19, 1975 through 1992.

REMARKS: Reservoirs, diversions, and drainage returns modify the flow at this station. Prior to June 1979 the zero of the gage was 871.07 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 561 CMS on September 30, 1978 with a gage height of 3.31 meters. Min. frequently no flow.

		Average Flow in Cubic Meters per Second**					
Daily:	Max.	222	Dec. 23, 1986	Min.	0	Frequently	
Monthly:	Max.	72.2	Dec. 1986	Min.	0	Frequently	
Yearly:	Max.	37.7	1987	Min.	0.59	1977	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.37	12.5	6.29	9.01	4.70	18.3	2.12	7.08	2.97	5.83	12.3	11.2
2	9.26	12.7	6.34	9.29	4.45	19.3	2.08	7.87	* 3.14	* 6.12	* 12.0	11.3
3	9.06	12.3	6.29	* 9.52	4.33	19.6	2.89	7.50	2.50	6.40	11.7	11.4
4	8.89	11.2	* 6.34	9.26	4.33	* 19.0	3.43	* 7.53	2.31	6.57	11.4	11.4
5	8.72	* 10.3	6.77	9.09	* 4.47	12.8	2.89	6.97	2.40	6.88	11.1	11.4
6	8.64	9.88	7.25	9.23	5.18	10.9	* 2.47	7.14	2.23	7.16	10.8	11.5
7	* 8.55	9.97	7.79	9.32	7.00	10.1	2.31	7.50	2.01	7.19	10.4	11.8
8	8.69	10.0	8.30	9.37	5.92	9.69	2.25	7.65	1.92	7.14	9.97	11.9
9	8.86	9.88	8.78	9.35	6.29	9.35	2.55	7.00	1.81	7.39	9.74	12.2
10	9.01	9.71	9.29	9.29	6.77	8.21	2.47	6.32	1.99	7.67	9.80	12.7
11	9.40	9.46	9.69	9.20	7.67	7.70	2.28	5.81	3.09	7.90	9.94	* 13.1
12	9.77	9.18	10.1	9.03	8.58	7.48	2.06	5.47	2.44	8.07	9.88	13.0
13	10.1	9.01	10.5	8.18	9.32	6.88	1.95	5.81	2.19	8.24	9.91	12.7
14	10.3	8.89	10.6	7.25	10.2	6.17	1.86	6.23	1.85	8.38	9.91	12.6
15	10.6	8.47	11.0	6.60	11.0	5.27	1.79	6.40	1.78	8.52	9.97	12.3
16	11.1	8.38	11.5	6.12	11.9	4.42	1.68	6.03	* 3.09	3.09	8.72	10.1
17	11.6	8.21	11.6	5.78	12.9	* 3.91	2.04	* 5.83	3.34	8.92	10.1	11.5
18	12.3	7.90	11.8	5.38	14.2	3.85	5.72	5.64	2.76	9.18	10.3	11.2
19	12.9	7.50	11.6	4.90	* 15.5	3.77	4.53	5.83	3.12	* 9.43	* 10.4	11.1
20	13.7	* 7.45	* 11.4	4.53	14.8	3.31	4.30	5.75	3.62	9.71	10.3	10.9
21	14.5	7.36	10.8	4.30	14.3	2.86	3.48	5.30	4.05	10.0	10.2	* 10.8
22	15.2	7.31	10.3	* 4.33	14.4	3.29	* 2.58	4.96	4.42	10.3	10.2	10.8
23	15.9	6.83	10.0	4.81	14.7	4.16	2.89	4.98	4.79	10.6	10.2	10.7
24	* 16.5	6.40	10.0	5.07	14.9	3.65	3.34	4.59	5.18	10.8	10.3	10.7
25	16.0	6.15	9.60	5.27	13.8	2.77	3.91	4.13	5.44	10.8	10.6	10.6
26	15.5	5.89	9.83	5.32	15.7	2.38	4.59	3.99	5.75	11.1	10.9	10.5
27	14.8	5.72	9.88	5.15	14.0	2.08	4.98	3.79	5.89	11.4	11.0	10.4
28	13.5	5.47	9.57	4.84	15.1	2.08	7.25	3.74	5.98	11.5	10.9	10.3
29	12.8	5.83	9.32	4.84	16.3	2.00	5.75	3.09	5.89	11.8	11.0	10.3
30	12.5		9.15	4.70	14.3	2.16	6.00	2.66	5.75	12.0	11.2	10.2
31	12.3		9.20		14.2		6.60	2.72		12.2		10.2
Sum	360.32	249.85	290.88	208.33	331.21	217.44	105.04	175.31	103.70	277.92	316.52	352.6

Current Year 1992

Period 1975-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters					
	High	Low	Day	High	Day		Average	Total	Average	Maximum	Minimum	
					Day	Low						
Jan.	1.72	1.59	24	17.5	7	8.27	11.6	31,132	20,934	183,420	0	
Feb.	1.74	1.51	1	13.5	28	5.30	8.62	21,587	15,103	122,892	0	
Mar.	1.74	1.52	18	12.2	3	5.98	9.38	25,132	13,920	101,919	0	
April	1.67	1.50	3	9.66	121	4.22	6.94	18,000	14,631	91,771	10.5	
May	1.76	1.49	29	20.0	1	3	4.25	10.7	28,617	19,136	169,009	0
June	1.82	1.40	4	24.0	128	2.00	7.25	18,787	20,636	186,724	178	
July	2.01	1.37	28	18.3	16	1.62	3.39	9,075	24,026	148,433	97.6	
Aug.	1.60	1.40	2	8.58	130	2.57	5.66	15,147	28,045	188,466	755	
Sept.	1.65	1.38	11	6.09	15	1.62	3.46	8,960	35,881	166,806	447	
Oct.	1.64	1.50	31	12.3	1	5.72	8.97	24,012	33,730	125,676	537	
Nov.	1.64	1.56	1	12.5	9	9.54	10.6	27,347	21,751	132,602	0	
Dec.	1.64	1.57	11	13.4	130	10.1	11.4	30,465	22,463	187,408	0	
Yearly	2.01	1.37		24.0		1.62	8.17	258,261	270,256	1,191,590	18,685	

* Discharge measurement made on this day

! And other days

** Period November 1975-1992

08-3715.00 RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS
AND OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder (graphic and digital) located on the left bank at latitude 29°36'15", longitude 104°27'05", and river kilometer 1,551; 8.0 river kilometers upstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua and 3.8 river kilometers upstream from the confluence with the Rio Conchos. The zero of the gage is 784.29 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1992.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Prior to 1978 the zero of the gage was 785.37 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 396 CMS on June 14, 1905. Highest flow recorded since 1924 was 146 CMS, with a gage height of 3.22 meters, on May 26, 1942. Min. frequently no flow.

Average Flow in Cubic Meters per Second**

Daily:	Max.	388	June 13 & 14, 1905	Min.	0	Frequently
Monthly:	Max.	287	June 1905	Min.	0	Frequently
Yearly:	Max.	55.8	1907	Min.	0.04	1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.2	13.8	5.30	* 5.47	* 5.18	* 18.9	2.30	5.38	* 2.73	* 5.72	8.78	7.93
2	14.2	14.9	6.46	5.27	4.96	19.4	* 2.40	10.0	* 5.44	* 4.93	8.81	7.93
3	* 14.0	17.3	* 7.16	4.93	5.07	19.2	2.06	7.16	3.29	4.50	8.75	7.84
4	13.9	31.2	7.65	5.24	4.50	19.4	1.91	* 6.17	3.14	4.87	8.41	7.65
5	13.4	* 24.7	7.99	5.64	3.96	20.0	2.02	5.49	2.83	5.61	* 8.30	7.84
6	12.6	17.0	8.47	6.03	3.88	20.5	2.31	5.13	2.40	5.64	8.41	7.70
7	11.9	12.9	8.95	6.12	4.16	20.2	2.06	4.36	2.45	5.78	8.58	7.59
8	11.6	11.2	10.0	6.46	6.85	15.8	1.76	4.81	2.26	6.09	8.55	* 7.45
9	11.2	10.9	10.8	7.02	8.72	12.9	2.09	5.69	2.02	6.03	8.33	7.79
10	10.9	10.7	11.7	7.73	5.98	12.4	1.92	6.06	1.87	5.49	8.01	7.96
11	11.6	10.5	12.0	7.99	5.47	11.8	1.99	5.07	2.59	5.41	8.04	8.33
12	11.6	10.1	12.5	8.04	5.86	10.8	3.99	4.33	2.01	5.92	8.01	8.84
13	11.1	10.0	13.5	8.52	6.43	9.88	2.35	4.28	3.09	5.98	* 7.82	9.35
14	11.0	9.63	14.6	9.06	7.53	9.43	1.89	3.82	2.22	6.00	7.73	9.71
15	11.0	9.26	15.5	8.16	8.24	* 8.27	1.69	3.74	* 1.75	6.03	7.79	9.60
16	10.7	8.84	15.4	6.97	9.86	7.33	1.51	4.39	2.97	6.20	8.07	9.40
17	10.6	8.27	* 15.2	5.89	10.1	5.86	1.53	4.39	1.60	6.37	7.70	9.06
18	10.9	7.82	15.4	5.49	9.66	4.87	2.45	3.99	2.73	6.23	7.90	* 9.26
19	11.5	* 7.65	15.1	5.13	10.5	4.50	3.99	3.94	2.92	6.46	7.76	9.29
20	12.4	7.25	14.4	4.79	* 11.5	4.50	* 6.66	4.90	2.40	6.54	7.87	9.06
21	* 13.4	7.00	13.2	* 4.13	15.0	4.67	6.00	* 4.22	2.75	* 6.71	8.04	8.64
22	14.4	7.00	11.2	3.88	13.3	15.0	4.19	4.45	2.69	6.77	7.76	8.38
23	15.7	7.08	9.63	3.68	12.3	8.52	2.89	3.68	3.12	7.90	7.50	8.89
24	16.3	7.25	8.33	4.08	11.2	5.15	2.40	3.40	3.99	20.4	7.25	9.15
25	16.6	6.57	7.70	5.01	12.3	5.69	3.34	3.57	4.73	10.6	6.94	8.89
26	16.2	6.03	7.16	5.47	13.6	4.22	3.31	3.00	5.24	8.92	7.05	8.89
27	16.2	5.98	6.77	5.92	15.5	3.43	7.59	2.78	5.66	7.96	7.56	8.92
28	16.0	5.98	7.05	6.37	19.1	3.00	3.46	2.86	5.92	8.18	8.04	8.72
29	15.9	5.55	7.05	5.89	19.0	2.66	7.53	2.92	5.78	8.33	8.10	8.69
30	15.9		6.37	5.38	18.0	2.39	8.41	2.89	5.66	8.41	7.96	8.50
31	14.5		5.81		18.6		4.33	2.95		8.61		8.27
Sum	412.4	312.36	318.35	179.76	306.31	310.67	102.33	139.82	98.25	218.59	239.82	265.52

Current Year 1992

Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	1.16	0.89	24	17.4	16	10.6	13.3	35,631	11,276	183,346	0
Feb.	1.60	.68	4	32.6	29	5.13	10.8	26,988	8,611	119,491	0
Mar.	1.14	.67	15	15.9	1	5.07	10.3	27,505	6,924	91,778	0
April	.90	.59	14	9.49	23	3.60	5.99	15,531	6,265	87,920	0
May	1.44	.55	16	26.5	7	3.71	9.88	26,465	12,304	295,521	0
June	1.83	.43	22	41.3	30	2.31	10.4	26,842	13,623	267,019	0
July	1.19	.34	27	18.7	16	1.44	3.30	8,841	16,877	191,983	0
Aug.	1.15	.44	2	17.2	127	2.72	4.51	12,080	18,382	164,116	0
Sept.	.97	.34	2	13.0	10	1.44	3.28	8,489	21,737	185,694	0
Oct.	1.54	.57	24	30.3	3	4.42	7.05	18,886	21,744	129,311	0
Nov.	.83	.73	11	9.01	25	6.88	7.99	20,720	11,191	125,343	0
Dec.	.87	.74	14	10.3	8	7.31	8.57	22,941	11,721	167,944	0
Yearly	1.83	0.34		41.3		1.44	7.93	250,919	160,655	1,450,617	1,174

* Discharge measurement made on this day ! And other days
** Period June 1900-March 1914; September 1919-March 1920; and 1924-1992

08-3730.00 RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 29°34'55", longitude 106°25'52", 1.0 river kilometer from the confluence with the Rio Grande, 4.0 kilometers northwest of Ojinaga, Chihuahua, and 6.0 kilometers northwest of Presidio, Texas. This stream enters the Rio Grande at river kilometer 1,547, 18.7 river kilometers upstream from the "Rio Grande below Rio Conchos" Gaging Station. The zero of the gage is 780 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 187 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1896 through 1992. Prior to April 4, 1954, 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 405, 393, 302, and 183 river kilometers, respectively, upstream from this station. Francisco I. Madero Reservoir is located on the Rio San Pedro, a tributary which enters the Rio Conchos 283 river kilometers 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. Leon, none. The station was relocated on January 20, 1978 incident to the Rio Grande channel rectification in the Presidio-Ojinaga area.

EXTREME FLOWS FROM RECORDS: Momentary: Max. (period 1968-1992) 2,020 CMS, on September 30, 1978. The greatest recorded flow occurred September 11, 1904 with a peak flow estimated at 4,590 CMS.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,490	Oct. 1, 1991	Min.	0.65	Dec. 19, 1973
Monthly:	Max.	496	Sept. 1991	Min.	1.64	Feb. 1968
Yearly:	Max.	85.6	1991	Min.	13.9	1983

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	54.7	117	40.5	* 27.0	38.5	132 *	137 *	37.0	* 32.6	12.2	13.5	* 10.0
2	55.5	117	* 40.5	27.0	38.5	134 *	144	36.6	* 35.9	* 12.2	* 13.5	* 8.50
3	* 55.4	154 *	* 40.5	* 27.0	38.5	149 *	128	* 31.6	39.4	12.2	* 13.5	* 7.23
4	55.0	140 *	* 40.5	27.0	* 38.5	149	129	* 30.5	* 33.6	12.2	* 13.1	* 6.79
5	54.4	* 95.7	40.3	27.0	39.5	154 *	96.6	31.6	20.8	* 12.4	13.5	5.66
6	* 53.6	* 90.0	* 40.0	* 27.0	* 40.7	161	* 71.8	31.5	15.4	* 12.4	* 13.5	5.40
7	* 53.3	* 85.5	39.5	* 27.0	41.3	150	* 68.5	* 28.3	* 13.1	* 12.3	13.5	* 5.40
8	* 52.1	83.3	38.5	* 27.0	* 65.4	152 *	40.0	28.7	* 12.7	12.2	13.5	* 5.40
9	51.4	82.5	* 38.0	27.0	56.0	150 *	35.0	28.4	* 12.7	* 12.2	* 13.5	* 5.40
10	* 49.8	* 84.0	* 37.8	* 28.5	50.3	147 *	* 34.1	28.3	13.5	12.2	* 13.5	5.40
11	* 58.9	* 85.5	* 37.5	33.0	* 66.3	134	32.7	* 28.2	* 15.2	12.2	* 13.5	* 5.40
12	55.1	* 85.5	37.3	33.0	* 88.0	128 *	32.2	* 72.5	30.1	12.2	13.5	5.40
13	* 53.6	85.5	37.0	33.0	* 94.3	140	* 32.7	68.3	20.1	* 12.2	* 13.5	5.40
14	* 57.9	* 80.0	35.0	33.0	100	137	* 33.2	* 65.1	* 14.7	* 12.2	13.5	* 5.40
15	* 96.9	80.0	33.0	33.0	* 96.0	134 *	* 33.2	71.9	* 13.2	12.2	13.5	* 5.40
16	130 *	84.8	* 33.0	33.0	88.0	134 *	33.2	61.0	19.0	* 12.2	* 13.5	* 5.40
17	194 *	* 83.3	* 32.0	33.0	92.2	134 *	* 33.2	* 51.5	18.0	12.2	* 13.5	5.40
18	199	* 82.5	* 30.0	33.0	* 90.0	134	33.2	* 52.5	* 18.8	12.2	* 13.5	5.40
19	202 *	* 82.5	29.0	33.0	* 89.3	134 *	33.6	* 48.0	13.1	* 12.2	15.0	5.40
20	193 *	77.9	* 29.0	33.0	* 89.3	132	* 33.1	40.6	12.3	* 12.2	* 17.5	5.40
21	161 *	* 75.2	29.0	33.0	103	150	* 30.3	* 31.5	* 12.3	* 12.2	16.4	5.40
22	131 *	63.2	29.0	33.0	* 90.7	150 *	* 31.3	28.8	* 12.3	12.2	16.3	5.40
23	107	61.8	* 29.0	33.0	89.3	136 *	35.2	27.8	* 12.3	* 12.2	* 16.0	5.40
24	111 *	* 60.6	* 29.0	33.0	88.0	137 *	* 37.1	* 27.8	16.4	16.8	* 16.4	5.40
25	109	* 61.8	29.0	33.0	* 89.3	142	36.5	* 27.3	* 14.4	23.5	* 16.0	5.40
26	111	* 61.8	29.0	33.0	* 89.3	135 *	31.3	* 26.0	12.3	* 14.7	15.3	5.40
27	110	60.0	* 28.5	* 33.0	* 89.3	136	* 29.3	25.2	12.3	* 12.3	* 15.0	5.40
28	109 *	58.2	28.0	* 31.5	90.7	134	* 29.8	* 25.2	* 12.3	* 12.2	15.0	5.40
29	109 *	57.0	27.5	* 31.0	* 95.6	126 *	* 28.6	31.1	* 12.3	12.2	15.0	5.40
30	109 *		* 27.0	31.0	130	123 *	30.1	33.2	* 12.3	* 12.0	* 14.5	5.40
31	109 *		* 27.0		149		* 30.6	* 33.8		12.0		5.40
Sum	3,051.6	2,436.1	1,040.9	926.0	2,444.8	4,188	1,564.4	1,189.8	533.4	396.8	431.0	178.58

Current Year 1992 Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
											Day
Jan.	2.77	1.58	20	241	10	48.8	98.4	263,658	49,040	263,658	14,030
Feb.	3.35	1.65	3	265	29	56.4	86.0	210,479	46,592	210,479	4,115
Mar.	1.55	1.38	1	40.5	31	27.0	33.6	89,934	59,617	248,200	5,145
April	1.49	1.35	22	35.5	10	24.5	30.9	80,006	53,119	110,859	6,864
May	2.45	1.40	31	161	1	38.5	78.9	211,231	64,661	211,231	13,484
June	2.36	1.87	22	240	12	72.8	140	361,843	77,060	361,843	7,411
July	1.95	1.27	2	149	26	24.0	50.5	135,164	84,407	190,649	20,542
Aug.	1.95	1.15	12	91.0	4	21.6	38.4	102,799	160,409	708,497	39,136
Sept.	1.59	1.11	12	47.7	8	12.3	17.8	46,086	228,230	1,285,546	22,069
Oct.	1.36	1.10	25	29.3	1	12.0	12.8	34,284	142,775	809,122	20,825
Nov.	1.21		19	21.6	4	13.1	14.4	37,238	52,940	169,499	9,231
Dec.	.90	.70	1	10.0	6	5.40	5.76	15,429	34,381	81,371	9,107
Yearly	3.35			265		5.40	50.2	1,588,151	1,053,231	2,636,721	439,776

* Discharge measurement made on this day † Mean daily ‡ And other days § Estimated

08-3740.00 ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and digital water-stage recorder located on the left bank 91 meters upstream from the highway bridge on Farm-to-Market Road 170 at latitude 29°31'25", longitude 104°17'15", about 610 meters from the confluence with the Rio Grande, and about 9.7 kilometers southeast of Presidio, Texas. This stream enters the Rio Grande near the lower end of the Presidio Valley at river kilometer 1,529, 13.8 river kilometers downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua. Measurements of high flows are made from the highway bridge. The zero of the gage is 774.68 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 52 current-meter measurements during the year at low and medium flows, a high flow rating curve determined by slope-area calculations, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1992.

REMARKS: A small irrigation reservoir (San Esteban) 16.9 kilometers 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 991 CMS.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,600 CMS, determined by slope-area calculations, on September 2, 1962, with a gage height of 4.13 meters. Min. no flow occasionally.

		Average Flow in Cubic Meters per Second			
Daily:	Max.	351	Sept. 21, 1974	Min.	0
Monthly:	Max.	28.3	Sept. 1974	Min.	0.01
Yearly:	Max.	2.75	1974	Min.	0.07
					Occasionally July 1980 1992

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.05	0.10	0.06	* 0.05	* 0.03	* 0.03	* 0.03	0.03	* 0.03	0.04	* 0.02	0.03
2	.05	.11	.07	.05	.03	.03	* .03	.03	* .03	.03	* .03	.03
3	* .05	* .14	* .08	.05	.03	.05	.03	* .04	.03	.03	.02	.03
4	.05	.17	.08	.05	.03	.06	.03	.04	.03	.03	.03	.03
5	.05	.12	.07	.05	.03	.07	.03	.04	.03	* .03	.03	.03
6	.05	.10	.07	* .05	.03	.08	* .03	.03	.03	.03	.03	.03
7	.05	.09	.07	.05	.04	.11	.03	.03	.03	.03	.03	.03
8	.05	.08	.07	.05	.04	.10	.03	.03	* .03	.03	.04	.03
9	.05	.08	* .06	.05	.04	.08	.03	.03	.03	.03	* .03	.04
10	.05	.08	.06	.05	.04	.06	.03	* .03	.03	.03	.03	* .04
11	.06	.08	.06	.05	* .04	.04	.03	.03	.03	.03	.03	.04
12	.06	.07	.06	.04	.03	.04	.03	.03	.03	.03	.03	.04
13	* .05	.07	.06	.04	.04	.03	* .04	.04	.04	* .03	* .03	.05
14	.05	.07	.06	.05	.04	.03	.04	.04	* .07	.04	.03	.05
15	.05	.06	.06	.04	.03	* .02	.03	.03	.04	.04	.03	* .05
16	.05	.07	* .06	.04	.04	.04	.03	.03	.02	.03	.03	.05
17	.05	.06	.06	.05	.04	.10	.03	* .03	.02	.03	.03	.04
18	.05	* .06	.06	.05	* .03	.23	.03	.03	.03	.04	.03	.05
19	.05	.05	.06	.04	.03	.49	.03	.03	.02	* .04	.03	.05
20	.05	.05	.06	* .04	.04	1.79	* .03	.04	.03	.05	.03	.05
21	* .05	.05	.06	.04	.03	1.90	.03	.04	* .03	.06	.03	* .05
22	.05	.05	.06	.04	.03	* 2.50	.03	.04	.03	.06	.03	.05
23	.05	* .05	.06	.04	.03	1.54	.04	.04	.02	.05	* .03	.05
24	.06	* .07	.06	.04	.03	.70	.03	* .04	.05	.04	.03	.04
25	.06	.06	.06	.04	.03	.38	.04	.04	.03	.03	.03	.05
26	.08	.05	.06	.04	* .03	.21	* .03	.03	.03	* .03	.03	.05
27	* .08	.05	.05	.04	.03	.11	* .04	.04	.03	.03	.03	.05
28	.08	.05	.06	* .04	.03	* .05	.04	.03	* .04	.03	.03	.05
29	.08	.06	.05	.04	.03	.04	.03	.03	.04	.03	.03	.04
30	.08		* .05	.03	.03	.03	.04	.03	.04	.03	.03	.05
31	.08		.05		.03		.03	* .03		.03		.05
Sum	1.77	2.20	1.91	1.33	1.04	10.93	1.00	1.05	0.95	1.09	0.89	1.32

Current Year 1992

Period 1932-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	2.22	2.20	126	0.08	12	0.05	0.06	153	160	370	57.2
Feb.	2.25	2.20	3	.31	121	.05	.08	190	213	3,853	51.2
Mar.	2.22	2.20	13	.08	129	.05	.06	165	178	1,256	57.2
April	2.23	2.21	16	.06	30	.03	.04	115	306	4,550	49.7
May	2.25	2.21	16	.07	122	.03	.03	89.9	989	10,530	42.8
June	2.35	2.15	20	10.5	114	.02	.36	944	2,206	15,607	29.9
July	2.21	2.17	23	.06	11	.03	.03	86.4	3,467	22,813	11.7
Aug.	2.25	2.20	125	.05	17	.03	.03	90.7	3,735	20,167	60.2
Sept.	2.32	2.13	14	.76	23	.01	.03	82.1	5,301	73,241	46.3
Oct.	2.25	2.18	122	.09	18	.02	.04	94.2	2,161	23,731	45.5
Nov.	2.24	2.21	8	.05	1	.02	.03	76.9	223	3,150	44.0
Dec.	2.24	2.22	113	.05	11	.03	.04	114	169	503	48.5
Yearly	2.35	2.13		10.5		0.01	0.07	2,201	19,108	86,682	2,201

* Discharge measurement made on this day ! And other days

08-3742.00 RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS
AND OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, water-stage recorders (graphic and digital) and data collection platform located on the left bank at latitude 29°31'10", longitude 104°17'10", and river kilometer 1,529; 0.6 river kilometer downstream from Alamito Creek and 14.4 river kilometers downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua. The zero of the gage is 771.75 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 58 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1955 through 1992. Records are also available from 1896 through June 13, 1932 for a station located about 19.5 river kilometers downstream from the Rio Conchos and 2.1 kilometers upstream from Alamito Creek; and from June 14, 1932 through 1954 for a station about 3.2 river kilometers downstream from the Rio Conchos and 18.3 river kilometers upstream from Alamito Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The data collection platform, operated in cooperation with the National Weather Service, relays gage height data upon interrogation by telephone via commercial circuits. Prior to December 1, 1979 the zero of the gage was 772.97 meters above mean sea level, U. S. C. & G. S. datum. A concrete control weir at this station was removed in December 1991.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,730 CMS on September 30, 1978, with a gage height of 4.70 meters. The greatest recorded flow occurred September 11, 1904, with a peak flow estimated at 4,590 CMS at a station 19.0 kilometers upstream. Min. 0.01 CMS several days in July 1955 and June 30, 1958.

Average Flow in Cubic Meters per Second**			
Daily:	Max. 1,510	Oct. 1, 1978	Min. 0.37
Monthly:	Max. 544	Sept. 1991	Min. 2.11
Yearly:	Max. 98.1	1991	Min. 17.0
			March 27, 1968
			March 1968
			1983

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	64.6	111	45.6	* 31.2	* 33.7	137 *	140 *	32.9	* 32.6	* 16.9	22.9	14.5
2	65.7	110	46.2	29.5	32.3	143 *	147	35.4	38.5	16.7	22.9	13.3
3	* 66.6	116 *	46.2	28.6	31.4	147	133	35.4	34.6	17.4	* 22.8	12.5
4	66.3	234 *	* 47.3	27.7	32.0	168	121	* 30.6	25.9	18.3	23.6	11.7
5	65.7	107	48.4	26.3	32.6	168	87.5	31.2	20.9	19.5	24.1	11.4
6	64.9	127	48.4	25.2	* 34.8	169	70.0	32.9	19.7	* 19.9	22.3	10.9
7	63.4	110	49.8	30.3	35.7	188	* 53.0	33.7	19.1	* 19.8	23.0	10.6
8	62.0	107	50.4	31.4	40.2	174	36.0	34.3	18.3	18.9	23.0	10.5
9	61.2	105	51.5	33.7	70.5	164	34.6	35.7	17.8	19.2	23.1	* 10.5
10	66.6	102	53.0	* 33.4	48.7	157 *	34.6	36.5	* 19.1	19.1	22.5	* 10.8
11	92.0	99.4	54.1	33.4	* 79.6	145 *	33.4	36.2	27.7	19.1	22.1	11.0
12	81.8	97.1	55.8	34.0	* 89.2	134	44.5	63.2	20.9	19.2	21.7	11.5
13	* 63.4	94.9	53.2	35.1	90.6	125	31.2	71.6	20.0	19.3	22.0	11.8
14	68.8	92.9	51.8	36.0	93.7	142	* 27.6	68.5	* 20.3	19.1	* 22.0	12.3
15	69.7	90.9	53.8	36.2	* 92.6	142	27.0	76.5	* 23.5	18.9	22.0	12.3
16	110	88.6	* 55.2	38.5	95.4	138 *	28.0	66.6	22.7	18.7	22.5	12.0
17	131	86.4	52.4	39.6	104	132	30.0	60.9	18.5	18.8	* 22.1	11.9
18	197	* 86.1	47.6	40.5	101 *	137	68.0	60.9	18.1	18.5	22.4	11.8
19	194	* 90.6	43.9	41.1	100	133	35.7	* 53.0	18.4	19.2	24.0	11.9
20	210	53.8 *	* 41.3	* 41.1	99.7	131	36.5	45.6	18.0	19.0	23.0	11.9
21	163 *	* 58.9	39.9	* 36.0	114	185	* 35.4	35.4	19.3	19.3	22.6	11.8
22	138 *	58.6	37.7	35.4	101 *	212	33.1	32.9	19.6	* 19.2	22.1	11.3
23	114	53.8	35.7	34.6	98.3	140 *	28.9	30.3	16.3	19.4	21.8	* 11.3
24	119	55.2	* 33.4	34.6	95.7	134	27.3	29.5	17.2	28.6	21.2	11.6
25	117	54.1	33.1	35.1	96.0	142	28.6	28.3	17.5	28.0	20.2	11.4
26	118	51.5	32.9	35.1	* 95.2	133	32.3	27.6	17.8	23.5	19.8	11.4
27	117 *	50.4	33.1	36.0	94.0	133	39.1	27.3	18.0	22.0	19.7	11.6
28	120 *	48.4	33.4	* 36.2	* 96.3	136	35.4	27.1	18.1	22.0	19.9	11.7
29	118	47.0	33.7	35.4	* 96.3	129	* 38.8	30.9	* 17.8	22.3	19.3	11.6
30	112 *		33.4	34.3	100	124	38.5	33.7	17.4	22.5	16.3	11.5
31	112		* 33.1		129		35.7	33.7		22.6		11.4
Sum	3,212.7	2,587.6	1,375.3	1,025.5	2,453.5	4,442	1,591.7	1,278.3	633.6	624.9	656.9	361.7

Current Year 1992 Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second					Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day		Low		Total	Average	Maximum	Minimum
					Day	Low						
Jan.	1.87	1.15	18	234	10	59.8	104	277,577	63,884	277,577	19,820	
Feb.	2.40	1.03	4	365	120	45.6	89.2	223,569	56,794	223,569	5,853	
Mar.	1.08	.92	112	56.4	31	32.0	44.4	118,826	69,328	275,997	5,653	
April	1.23	.90	20	42.8	6	23.3	34.2	88,603	63,034	199,909	8,014	
May	1.81	1.12	31	155	2	31.2	79.1	211,982	75,539	243,287	14,983	
June	2.08	1.46	2	320	13	72.8	148	383,789	93,522	383,789	7,311	
July	1.74	1.01	18	167	23	25.9	51.3	137,523	106,348	276,193	23,118	
Aug.	1.47	1.01	12	88.9	4	24.7	41.2	110,445	193,323	866,134	37,455	
Sept.	1.30	.96	2	47.6	23	15.6	21.1	54,743	265,373	1,410,221	27,740	
Oct.	1.26	1.02	24	34.3	2	16.4	20.2	53,991	181,935	871,689	20,688	
Nov.	1.15	1.01	4	27.2	30	15.3	21.9	56,756	68,539	197,536	10,782	
Dec.	1.01	.94	1	15.3	8	10.1	11.7	31,251	51,455	229,318	13,618	
Yearly	2.40	0.90		365		10.1	55.3	1,749,055	1,289,074	3,092,559	537,182	

* Discharge measurement made on this day

! And other days

** Period 1968-1992

08-3745.00 TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Gravity well and water-stage recorder (graphic and digital) located on the left bank at latitude 29°11'50", longitude 103°36'20", 4.2 creek kilometers from the confluence with the Rio Grande, and about 13.7 kilometers south of Terlingua, Brewster County, Texas. This creek enters the Rio Grande at river kilometer 1,425, the lower end of Santa Helena Canyon. The zero of the gage is 670.76 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1992.

REMARKS: Irrigation diversions modify the flow of this spring-fed creek at this station. Cableway was removed on October 29, 1992.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 988 CMS on May 24, 1935 with a gage height of 5.36 meters on a gage 0.5 kilometer downstream. Min. no flow on several occasions in 1986.

		Average Flow in Cubic Meters per Second					
Daily:	Max.	487	June 1, 1937	Min.	0	August 14 and 15, 1986	
Monthly:	Max.	32.6	Sept. 1974	Min.	0.02	October 1934	
Yearly:	Max.	4.28	1990	Min.	0.16	1943	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	* 0.13	0.14	0.09	0.07	0.07	0.11	0.08	0.60	0.09	0.10	0.08	0.09
2	.14	.44	.10	* .07	.07	.10	.08	1.50	.57	.10	.08	.09
3	.15	1.38	.09	.08	.07	* .10	.08	.74	.15	.10	.08	.09
4	.16	1.51	.09	.08	.08	.09	.07	.57	* .18	.10	.08	.09
5	.16	1.49	* .09	.10	.08	.09	.07	* .28	.11	.10	.08	.09
6	.17	* .92	.09	.08	.09	.08	.07	.18	.11	.10	.08	.09
7	.14	.60	.09	.09	.09	.12	.07	.11	.11	.10	.08	.09
8	.14	.41	.09	.09	* .37	.10	* .07	.10	.11	* .09	.09	.09
9	.13	.33	.09	.10	.05	.45	.07	.10	.14	.09	.09	.09
10	.12	.25	.09	.10	.04	.35	.07	.10	.13	.08	* .09	.09
11	.12	.20	.09	.10	.05	.09	.24	.09	.11	.07	.09	.09
12	.12	.17	.09	.11	.04	.09	.12	.09	.10	.07	.09	.09
13	.11	.14	.09	.67	.03	.08	.10	.93	.10	.06	.09	.09
14	.11	.13	.09	2.08	.03	.08	.08	.33	.10	* .05	.09	* .09
15	.11	.12	.09	.11	.03	.08	.07	.11	1.33	.05	* .09	.09
16	.11	.11	.09	.11	.03	.08	.06	.10	1.80	.05	.09	.09
17	.11	.11	.09	.23	.03	.08	.05	.09	* .66	.05	.09	.09
18	.11	.11	.09	.05	.03	* .08	5.61	.08	.20	.05	.09	.09
19	.11	.11	* .08	.04	.03	.08	1.75	.08	.11	.05	.09	.09
20	.11	.10	.08	.04	.19	.07	.65	* .08	.11	* .05	.09	.08
21	.11	.10	.08	.04	* 9.94	.07	.26	.08	.10	.05	.09	.08
22	.10	.10	.08	.04	47.0	5.49	.15	.08	.10	.15	.09	.08
23	* .10	.10	.08	.04	39.4	.13	* .23	.08	.10	.08	.09	.08
24	.11	.10	.08	.04	1.70	.10	.61	.08	.10	.07	.09	.08
25	.11	.10	.08	.05	1.66	.09	.13	.09	.10	.07	.09	.08
26	.11	.10	.08	.05	.58	.16	.13	.10	.10	.07	.09	.08
27	.11	.10	.08	.05	5.81	1.75	.15	.11	.10	.07	.09	.08
28	.11	.10	.08	.06	.55	.11	.16	.10	.10	.07	.09	.08
29	.11	.10	.08	* .06	.16	.10	.76	.09	.10	.07	.09	.08
30	.12	.08	.08	.06	.18	.09	1.67	.08	.10	.07	.09	.08
31	.13	.07	.07	.12	.12	.12	1.41	.08	.08	.08	.08	.08
Sum	3.78	9.67	2.66	4.89	108.60	10.49	15.12	7.23	7.32	2.36	2.63	2.66

Current Year 1992

Period 1932-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Low			Total	Average	Maximum	Minimum
					Day	Low					
Jan.	1.14	1.12	! 6	0.18	!21	0.10	0.12	327	235	1,079	102
Feb.	1.28	1.13	3	1.73	!27	.09	.33	835	289	5,431	90.5
Mar.	1.18	1.14	! 1	.10	31	.07	.09	230	297	2,978	89.3
April	1.99	.80	13	25.7	18	.03	.16	422	1,705	23,016	67.7
May	3.12	.60	22	464	!17	.03	3.50	9,383	4,409	32,095	100
June	2.02	.93	22	33.7	!21	.07	.35	906	8,236	67,640	73.4
July	1.89	.96	18	16.9	!17	.05	.49	1,306	9,841	35,429	141
Aug.	1.68	1.13	2	7.56	!20	.08	.23	625	9,251	79,182	152
Sept.	1.40	1.11	15	2.83	!1	.09	.24	632	11,043	84,339	152
Oct.	1.41	1.11	22	1.50	!14	.05	.08	204	4,552	34,414	62.7
Nov.	1.16	1.14	!10	.09	! 1	.08	.09	227	581	7,015	80.1
Dec.	1.16	1.15	! 4	.09	128	.08	.09	230	372	3,800	111
Yearly	3.12	0.60		464		0.03	0.48	15,327	50,811	135,031	4,885

* Discharge measurement made on this day ! And other days

08-3750.00 RIO GRANDE AT JOHNSON RANCH NEAR CASTOLON, TEXAS
AND SANTA ELENA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, digital water-stage recorder, and G.O.E.S. Data Collection Platform located on the left bank at latitude 29°02'05", longitude 103°23'25", and river kilometer 1,388; 2.2 river kilometers upstream from the old Johnson Ranch headquarters, 9.7 river kilometers downstream from Smoky Creek, and 14.8 river kilometers upstream from Chizos Crossing and the Chihuahua-Coahuila state line. The zero of the gage is 623.41 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 22 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 1992.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The Data Collection Platform transmits gage heights by radio via NWS G.O.E.S. satellite to NWS computer bank.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 2,040 CMS, on September 30, 1978 with a gage height of 8.66 meters. A flow estimated at 2,750 CMS with a stage of 7.50 meters occurred at this station site on October 3, 1932. Min. no flow several days in 1953, 1955, 1957, and 1958.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,850	Oct. 1, 1978	Min.	0.78	Sept. 9, 1968
Monthly:	Max.	470	Sept. 1991	Min.	2.74	April 1976
Yearly:	Max.	97.0	1991	Min.	15.8	1983

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	67.1	119	45.6	40.8	35.1	151	148	36.5	34.0	19.2	22.7	15.4
2	66.6	124	45.0	* 39.6	33.7	152	162	53.2	43.3	19.4	22.8	14.9
3	66.3	128	45.0	39.1	32.0	148 *	157	40.8	* 38.5	19.0	22.9	14.5
4	66.8	289	45.3	38.8	30.3	157	148	36.5	36.0	18.8	22.9	14.3
5	66.8	223	* 45.0	39.6	30.3	175	126	* 33.7	29.2	19.0	23.2	14.0
6	65.1	121 *	45.6	39.4	29.7	175	93.7	32.0	23.4	19.7	25.5	13.8
7	63.7	102	45.6	38.8	32.9	181	75.0	32.3	21.9	* 19.8	23.3	13.6
8	* 61.7	93.7	46.2	37.9	* 33.4	210	* 58.6	34.3	21.1	* 19.7	23.8	13.4
9	59.5	90.6	46.2	37.1	64.6	189	41.6	34.0	20.6	19.2	24.0	13.2
10	57.2	90.3	46.7	37.4	81.8	184	37.4	35.1	20.3	19.2	* 24.2	13.0
11	55.8	90.6	47.6	37.4	49.6	176	37.4	36.2	52.1	19.1	23.2	12.9
12	67.1	90.1	48.1	36.5	84.7	172	42.2	36.5	26.3	19.0	22.1	12.7
13	64.0	89.8	49.6	36.8	87.5	144	53.5	66.3	25.5	19.0	21.2	12.6
14	60.3	89.8	47.0	44.2	90.6	152	37.4	74.5	21.3	19.1	20.8	* 12.5
15	59.5	89.8	45.0	37.9	94.6	158	32.0	70.2	24.4	19.2	* 20.4	12.7
16	103	90.3	45.9	36.5	94.3	153	30.0	77.6	27.2	18.9	19.6	12.7
17	161	89.8	47.0	41.3	105	146	38.2	67.7	* 22.5	18.7	19.1	12.7
18	264	89.5	46.4	43.6	103	142 *	106	60.6	20.6	18.9	18.3	12.7
19	267	89.2	* 45.3	39.9	97.1	150	77.0	60.0	18.8	18.8	17.7	12.7
20	268	88.6	45.0	39.9	99.4	147	42.5	* 53.0	18.7	* 19.1	19.0	12.7
21	240	68.0	45.0	40.2	125 *	179	39.4	47.6	18.9	19.2	17.7	12.8
22	191	60.0	44.7	39.1	168	253	38.5	37.4	18.7	19.3	17.1	12.8
23	140 *	57.8	43.9	38.5	203	240	* 35.1	35.1	20.2	22.5	16.9	12.7
24	117	53.2	42.8	36.8	106	170	32.6	30.6	18.8	21.1	16.8	12.7
25	120	53.5	41.3	35.4	99.4	169	28.9	29.5	18.3	25.1	16.6	12.7
26	122	51.5	41.1	36.2	92.6	174	28.6	34.8	18.5	28.2	16.3	12.7
27	122	49.3	40.8	36.5	112	182	29.7	30.6	19.1	25.7	16.2	12.7
28	121	48.1	40.5	37.1	92.0	169	38.8	27.4	19.3	22.9	16.1	12.7
29	121	46.7	40.5	* 37.4	92.3	166	37.4	26.8	19.5	22.4	15.9	12.7
30	120		40.5	36.5	91.5	153	43.9	27.8	19.5	22.6	15.9	12.7
31	119		40.8		113		41.1	32.6		22.9		12.7
Sum	3,543.5	2,766.2	1,385.0	1,156.2	2,604.4	5,117	1,937.5	1,329.2	736.5	634.7	602.2	406.9

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Low	Day		Total	Average	Maximum	Minimum
Jan.	3.01	2.05	120	270	11	55.2	114	306,158	65,024	306,158	18,506
Feb.	3.47	1.89	4	348	29	44.7	95.4	239,000	56,279	239,000	9,551
Mar.	1.90	1.73	113	49.8	127	40.2	44.7	119,664	66,483	261,098	7,484
April	2.05	1.70	14	74.8	25	34.8	38.5	99,896	60,725	183,591	7,111
May	4.11	1.69	22	450	6	28.9	84.0	225,020	78,005	228,534	17,829
June	3.29	2.29	22	340	13	101	171	442,109	100,764	442,109	7,202
July	3.59	1.58	18	413	125	28.1	62.5	167,400	116,407	247,268	15,373
Aug.	2.25	1.55	2	118	30	26.0	42.9	114,843	197,663	818,986	37,853
Sept.	2.55	1.46	11	187	124	17.7	24.6	63,634	261,783	1,217,635	34,240
Oct.	1.66	1.48	25	30.6	1	18.7	20.5	54,838	206,159	927,275	21,926
Nov.	1.58	1.52	6	26.2	30	15.7	20.1	52,030	71,497	183,566	16,365
Dec.	1.54	1.41	1	15.7	19	12.3	13.1	35,156	53,107	220,460	14,934
Yearly	4.11	1.41		450		12.3	60.7	1,919,748	1,333,896	3,058,852	499,282

* Discharge measurement made on this day

! And other days

** Period 1968-1992

08-3772.00 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS
AND RANCHO SANTA ROSA, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorder (graphic and digital) located on the left bank at latitude 29°46'50", longitude 101°45'30", and river kilometer 1,058; 152 meters downstream from the Terrell-Val Verde County line, 8.8 kilometers downstream from Lozier Canyon, and about 19.8 kilometers west of Langtry, Texas. The zero of the gage is 352.71 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 48 current-meter measurements during the year, 24 by the United States Section and 24 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for medium and high flows by shifting control methods. Low flow computations based on a stable control weir rating curve defined by current-meter measurements. Records available: September 1961 through 1992.

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. A computerized radio telemetry system relays gage height data to the Amstard Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 4,190 CMS on November 5, 1978 with a gage height of 11.63 meters. Min. 5.32 CMS on August 19, 1965.

Average Flow in Cubic Meters per Second**					
Daily:	Max. 2,310	Sept. 20, 1974	Min. 6.15	July 1, 1968	
Monthly:	Max. 443	Sept. 1991	Min. 9.12	March 1968	
Yearly:	Max. 110	1991	Min. 23.9	1983	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	56.9	120	66.3	49.8	57.8	150 *	176	* 50.1	33.4	28.0	31.4	33.1
2	62.3	130	* 66.8	49.0	58.9	185	170	50.7	36.5	28.0	* 31.7	32.9
3	* 67.1	136 *	63.7	* 49.0	59.8	200	164 *	* 51.8	41.6	27.7	32.0	32.9
4	69.1	118	59.2	48.7	* 60.3	198	165	74.5	45.9	27.4	31.4	* 30.6
5	67.4	228	58.3	48.1	50.4	206	139	54.4	45.3	* 27.6	31.7	28.3
6	67.4	248	60.0	* 48.1	47.0	203	133 *	50.1	45.9	27.7	32.6	27.3
7	66.8	195 *	59.5	51.0	43.6	193	97.7	* 48.7	41.6	27.5	33.4	* 26.2
8	61.7	148	59.8	50.1	43.6	190	65.4	44.5	* 36.0	27.1	34.3	25.3
9	58.9	120	59.8	49.0	43.3	200	56.7	43.0	32.3	28.0	35.7	24.4
10	57.5	107	59.2	49.3	45.0	191	47.3	43.0	30.6	28.3	34.6	24.3
11	56.9	101	59.8	49.6	63.7	177	39.4	42.8	32.6	28.6	35.1	23.8
12	55.8	99.4	60.9	49.0	90.9	166 *	35.7	41.9	29.5	27.9	* 34.6	23.2
13	54.1	102	63.2	49.3	54.9	169	39.4	43.0	42.8	27.8	34.3	22.5
14	62.6	104	66.8	49.0	90.9	177	43.0	44.5	42.8	27.6	34.3	21.6
15	64.6	106	71.9	56.6	* 98.3	156 *	44.2	69.4	36.2	27.6	34.0	21.1
16	58.9	108	68.3	62.0	104	179	40.2	87.8	32.6	27.5	* 33.7	21.4
17	58.6	107	* 62.9	53.8	113	179	36.5	78.7	30.0	27.2	34.0	22.1
18	58.9	110 *	61.5	51.5	110 *	183	34.6	83.5	35.1	27.4	34.3	22.4
19	151	115	62.6	51.5	132	181	93.5	77.3	34.3	* 27.6	33.7	22.9
20	200	116	60.9	* 57.5	127	178	115 *	64.9	31.7	27.6	34.0	23.0
21	206 *	114	58.3	56.1	125	176	65.7	61.2	* 28.9	27.8	34.3	* 23.2
22	211	110	57.5	55.2	169	172	47.0	56.4	* 27.4	27.3	34.0	23.3
23	181	87.8	57.2	55.8	174	205	41.3	51.8	27.5	27.4	35.4	23.2
24	167	76.5	56.6	55.8	266	235	41.9	47.0	28.2	27.9	34.8	22.9
25	102	71.4	56.1	56.4	204	197	40.5	41.1	27.6	28.1	34.3	22.4
26	103	67.7	54.9	56.4	191	175	38.8	44.2	29.5	32.0	33.7	22.0
27	111	67.4	53.0	56.6	186	179	37.1	38.8	28.2	30.3	34.0	21.7
28	115	67.4	52.4	56.6	169	185	35.4	39.9	27.5	36.2	33.7	21.6
29	116	66.8	51.8	81.6	147	171	36.8	40.5	27.2	37.7	33.1	22.2
30	116		51.0	60.0	113	174	40.5	36.2	28.0	34.6	32.9	21.9
31	119		50.1		114		50.1	34.3		32.3		21.5
Sum	3,003.5	3,347.4	1,850.3	1,612.4	3,352.4	5,530	2,208.7	1,636.0	1,016.7	895.7	1,011.0	755.3

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Low			Total	Average	Maximum	Minimum
					Day	Day					
Jan.	1.54	1.07	22	215	113	54.1	96.9	259,502	83,341	259,502	38,661
Feb.	1.83	1.00	6	255	27	64.0	115	289,215	75,699	289,215	27,673
Mar.	1.00	.89	15	75.9	31	49.8	59.7	159,866	86,693	277,246	24,409
April	1.01	.87	29	91.5	4	47.9	53.7	139,311	83,363	192,692	24,916
May	2.29	.86	24	405	9	42.2	108	289,647	103,559	289,647	35,297
June	1.57	1.09	24	240	1	118	184	477,792	130,319	477,792	27,708
July	1.28	.79	19	191	12	34.3	71.2	190,832	136,472	270,029	29,447
Aug.	1.03	.80	4	94.9	31	33.4	52.8	141,350	223,772	929,405	56,093
Sept.	.97	.72	13	57.5	29	26.7	33.9	87,843	284,053	1,147,133	59,971
Oct.	.82	.71	28	38.8	4	27.1	28.9	77,388	262,235	1,112,382	39,637
Nov.	.79	.75	9	36.0	30	29.2	33.7	87,350	108,552	441,434	37,497
Dec.	.80	.67	2	33.7	115	20.8	24.4	65,258	74,803	217,549	39,502
Yearly	2.29	0.67		405		20.8	71.6	2,265,354	1,652,861	3,465,652	754,478

* Discharge measurement made on this day ! And other days ** Period 1968-1992

08-4474.10 PECOS RIVER NEAR LANGTRY, TEXAS

DESCRIPTION: Cableway, 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 12.1 kilometers east of Langtry, Texas, 15.3 river kilometers upstream from the Pecos High Railroad Bridge; 24.1 river kilometers upstream from its confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 991, 38.0 river kilometers downstream from Langtry, Texas. The zero of the gage is 345.36 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 44 current-meter measurements during the year, 20 by the United States Section and 24 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 current-meter measurements. Records available: July 1967 through 1992. Records are also available for Pecos River near Comstock, 15.3 river kilometers downstream, from March 17 through December 3, 1898 and May 1900 through October 7, 1954; for Pecos River near Shumla, 5.6 river kilometers 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. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 16,300 CMS on September 20, 1974, with a gage height of 22.95 meters. The greatest flood of record, which exceeded a gage height of 30.5 meters at this station, occurred on June 28, 1954. The peak discharge was 26,800 CMS at the gaging station located near the railroad bridge 15.3 river kilometers downstream. Min. 1.65 CMS on July 27, 1974 with a gage height of 0.45 meters.

		Average Flow in Cubic Meters per Second				
Daily:	Max.	4,330	Sept. 20, 1974	Min.	1.69	Aug. 20, 21, & 22, 1970
Monthly:	Max.	382	Sept. 1974	Min.	1.93	August 1970
Yearly:	Max.	42.5	1974	Min.	3.71	1970

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.92	6.15	7.79	6.12	4.93	18.4	8.27	7.65	6.00	5.69	5.55	6.06
2	5.89	6.40	7.65	6.20	5.30	17.4	8.04	7.31	6.09	5.69	5.61	6.00
3	5.83	6.60	7.62	6.29	11.0	15.8	7.82	7.48	6.00	5.78	5.64	6.06
4	5.89	15.6	7.67	6.17	18.7	14.7	7.62	7.19	5.83	5.81	5.66	6.06
5	6.00	12.3	7.45	6.23	7.28	13.7	7.53	7.05	5.78	5.66	5.69	6.09
6	5.92	11.5	7.33	6.32	6.54	13.1	7.42	6.74	5.75	5.52	5.61	5.98
7	5.92	10.3	7.28	6.06	6.29	12.7	7.48	6.54	5.72	5.55	5.64	6.09
8	5.92	9.32	7.22	5.98	6.34	13.0	7.42	6.43	5.78	5.47	5.69	6.03
9	5.78	8.81	7.53	5.81	5.83	14.6	7.31	6.29	5.69	5.47	5.81	6.06
10	5.75	8.52	7.00	5.92	5.55	14.5	7.19	6.09	5.69	5.58	5.89	5.98
11	5.69	8.41	6.83	6.06	5.49	14.9	7.11	6.29	5.72	5.61	5.78	5.89
12	5.72	8.24	6.94	6.00	5.32	14.1	7.05	6.29	5.58	5.61	5.72	5.92
13	5.64	8.13	6.97	5.81	5.13	13.3	7.05	6.23	5.41	5.66	5.49	6.06
14	5.52	8.07	6.85	5.72	6.63	12.7	7.05	6.32	5.35	5.55	5.49	6.17
15	5.47	7.87	6.80	5.72	5.15	12.5	7.08	6.17	5.52	5.66	5.52	6.06
16	5.44	7.70	6.68	5.52	5.21	12.0	6.83	6.32	5.32	5.69	5.78	6.06
17	5.61	7.62	6.83	5.81	5.95	11.5	6.57	7.73	5.21	5.61	5.86	6.06
18	5.95	7.45	6.85	6.57	6.15	11.0	113	7.39	5.21	5.66	5.98	6.06
19	5.86	7.25	6.57	7.14	5.69	10.7	81.6	6.85	5.24	5.69	6.12	6.12
20	5.72	7.16	6.46	8.75	6.60	10.3	11.1	6.60	5.83	5.66	6.23	6.12
21	5.64	7.05	6.49	7.08	23.9	9.69	26.0	6.37	8.30	5.69	6.15	6.03
22	5.69	7.16	6.66	6.23	16.7	9.57	28.6	6.17	5.89	5.69	5.98	6.09
23	5.64	7.16	6.46	5.69	97.1	9.46	10.4	6.09	5.72	5.83	6.06	6.17
24	5.55	12.5	6.54	5.55	84.1	9.18	9.20	5.98	5.92	5.83	6.12	6.20
25	5.55	12.0	6.88	5.38	18.7	9.01	8.64	5.92	5.86	5.72	5.95	6.20
26	6.32	8.75	6.91	5.27	22.5	8.64	8.30	5.95	5.86	5.66	5.89	6.26
27	6.85	8.35	6.91	4.93	30.6	9.43	8.07	6.06	5.95	5.66	5.86	6.26
28	6.74	8.10	7.00	4.90	17.8	9.77	7.90	6.37	5.92	5.66	5.89	6.26
29	6.60	7.99	6.94	4.98	17.2	9.37	7.82	6.40	5.86	5.72	5.98	6.26
30	6.37		6.54	4.98	16.8	8.67	7.62	6.12	5.86	5.78	6.00	6.29
31	6.23		6.06		17.5		7.70	6.12	5.72			6.29
Sum	182.62	252.46	215.71	179.19	498.08	363.99	460.79	202.51	173.86	175.58	174.64	189.24

Current Year 1992 Period 1967-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High		Low	Average	Total	Average	Maximum	Minimum
				Day	Day						
Jan.	0.65	0.60	27	7.05	114	5.41	5.89	15,778	15,951	36,067	9,324
Feb.	.85	.62	4	21.0	1	6.06	8.71	21,813	14,345	31,348	8,649
Mar.	.68	.62	1	7.87	31	5.98	6.96	18,637	14,407	27,290	8,546
April	.72	.58	19	9.91	127	4.79	5.97	15,482	16,939	64,098	8,633
May	3.50	.58	23	609	1	4.79	16.1	43,034	20,379	56,812	7,808
June	.83	.69	1	18.8	126	8.41	12.1	31,449	16,452	46,702	6,752
July	3.34	.64	18	564	17	6.54	14.9	39,812	21,607	96,844	5,290
Aug.	.68	.59	1	7.87	11	5.15	6.53	17,497	23,256	199,892	5,153
Sept.	.77	.59	21	14.0	20	4.96	5.80	15,022	58,946	992,293	6,313
Oct.	.65	.60	22	6.27	1	5.32	5.66	15,170	28,913	140,507	8,786
Nov.	.63	.60	119	6.26	1	5.41	5.82	15,089	19,098	73,681	8,127
Dec.	.63	.62	128	6.34	12	5.89	6.10	16,350	16,776	46,697	9,451
Yearly	3.50	0.58		609		4.79	8.38	265,133	267,069	1,341,805	116,791

* Discharge measurement made on this day † And other days

08-4474.20 DEAD MANS CANYON NEAR COMSTOCK, TEXAS

To determine storm runoff previously included with flows measured on the Pecos River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at Dead Mans Canyon in 1968.

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", 3.7 kilometers upstream from its confluence with the Pecos River, which is 15.3 kilometers upstream from the Pecos River confluence with the Rio Grande. The zero of the gage is 359.05 meters 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 1992.

REMARKS: This stream is normally dry, its flow being confined to periods of storm runoff from its 228 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,070 CMS on September 17, 1974, with a gage height of 3.90 meters. Maximum volumes: Monthly, 35,973 TCM in September 1974; yearly, 37,654 TCM in 1974.

		Average Flow in Cubic Meters per Second			
Daily:	Max.	166	Sept. 18, 1974	Min.	
Monthly:	Max.	13.9	Sept. 1974	Min.	see REMARKS
Yearly:	Max.	1.20	1974	Min.	

Mean Daily Discharge in CMS 1992

Month and Day					
Feb. 29	0.08	May 21	8.81	July 18	16.1

Annual Summary

Month	Maximum Gage and Discharge			Thousands of Cubic Meters
	Day	Meters	CMS	
Feb.	29	0.37	0.85	6.9
May	21	0.98	58.9	1,191
July	18	1.53	167	2,436
Yearly		1.53	167	3,654

08-4494.00 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS

DESCRIPTION: Concrete control wall with rectangular notch opening of 25.5 CMS capacity, cableway, bubbler gage, water-stage recorders (graphic & digital), located on the left bank at latitude 29°40'35"N, longitude 101°00'00"W, about 18.5 kilometers east of Comstock, Val Verde County, Texas, and 41.0 river kilometers upstream from its confluence with the Rio Grande. The confluence is located at river kilometer 925, 1.1 river kilometer upstream from Amistad Dam. The zero of the gage is 345.00 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 47 current-meter measurements during the year, 23 by the United States Section and 24 by the Mexican Section of the Commission, a stable rating curve based on current-meter measurements, and a continuous record of gage heights. Records available: 1960 through 1992. Records are also available from May 1900 through March 1914 for a station 38.3 river kilometers downstream; from December 1923 through September 1932 for a station 36.7 river kilometers downstream; from September 2, 1932 through August 1957 for a station 33.8 river kilometers downstream; from August 7, 1954 through January 1958 for a station 8.7 river kilometers upstream; and from August 1954 through May 31, 1968 for a station at the mouth 39.8 river kilometers 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. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,080 CMS on September 18, 1974 with a gage height of 6.04 meters. Min. 1.38 CMS on August 20, 1969.

Average Flow in Cubic Meters per Second

Daily:	Max. 3,480	Sept. 18, 1974	Min. 1.52	August 20, 1969
Monthly:	Max. 240	Sept. 1974	Min. 1.82	August 1964
Yearly:	Max. 27.7	1974	Min. 2.83	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.8	12.4	17.0	14.2	12.7	* 16.5	13.4	15.2	12.3	11.3	10.8	11.0
2	11.7	12.7	* 16.9	13.8	12.7	17.2	13.2	15.2	12.4	11.3	* 10.8	10.9
3	11.6	* 13.4	17.3	14.0	19.1	18.1	13.1	* 15.0	12.3	11.3	10.6	10.8
4	11.6	15.6	17.9	14.0	* 15.2	17.1	13.0	14.8	12.2	11.3	10.4	10.8
5	11.8	16.5	17.1	14.4	15.1	16.7	13.0	14.4	12.1	* 11.2	10.6	10.6
6	11.5	16.3	16.6	* 14.6	14.2	16.5	* 12.9	14.3	11.9	11.3	10.8	10.8
7	11.5	16.0	16.1	14.1	13.6	16.2	12.6	14.2	11.8	11.2	10.8	* 10.9
8	11.4	15.6	16.1	13.9	13.3	16.1	12.5	14.0	* 11.9	10.9	10.8	10.6
9	11.2	15.2	16.1	13.8	13.3	16.4	12.7	13.9	11.8	11.0	11.1	10.8
10	11.1	14.9	15.7	14.0	13.4	16.1	12.7	13.7	11.8	11.2	11.3	* 10.6
11	10.9	14.6	15.4	13.9	13.5	15.9	12.6	14.3	11.8	11.1	11.2	10.6
12	11.0	14.3	15.5	13.8	13.3	15.7	12.7	14.4	11.8	11.3	11.1	10.6
13	10.8	14.1	15.3	13.7	13.1	15.5	12.7	15.0	11.9	11.3	10.8	10.9
14	10.8	13.9	15.3	13.5	13.1	15.3	12.7	14.5	11.8	11.2	10.8	11.3
15	10.7	13.8	15.1	13.6	13.1	* 15.2	12.4	14.2	11.8	11.4	10.8	10.8
16	10.6	13.5	15.0	14.6	14.0	14.8	12.2	14.1	11.8	11.4	* 10.9	10.8
17	* 11.1	13.5	* 15.2	16.4	13.7	14.6	12.4	* 13.9	* 11.7	11.0	11.0	10.8
18	11.3	* 13.3	15.3	14.5	* 13.5	14.5	16.3	13.7	11.7	11.2	11.5	10.8
19	10.9	13.1	14.8	14.0	13.4	* 14.5	17.8	13.7	11.6	* 11.2	12.5	10.9
20	10.7	13.0	* 14.6	* 13.6	26.1	14.3	* 30.6	13.4	11.9	11.1	11.6	10.6
21	* 10.8	* 13.0	14.5	13.5	70.8	14.1	34.3	* 13.4	* 11.9	11.3	10.9	* 10.6
22	10.7	13.7	14.8	13.4	30.6	14.0	22.6	13.3	11.5	11.2	10.8	10.8
23	10.7	13.0	14.4	13.4	22.5	13.9	19.6	13.1	14.4	11.2	11.0	10.8
24	10.6	36.5	14.3	* 13.6	25.2	13.8	17.9	13.0	12.0	11.1	11.1	10.6
25	10.8	33.4	14.6	13.3	22.4	13.7	17.2	13.0	11.6	11.0	10.8	10.6
26	13.2	22.6	14.4	13.1	20.2	13.7	16.8	12.9	11.6	10.9	* 10.8	10.6
27	14.1	19.7	14.5	13.0	18.9	13.6	16.4	12.9	11.6	10.8	10.8	10.6
28	13.3	18.1	14.5	12.9	17.7	13.8	16.1	12.7	11.6	11.0	10.9	10.5
29	13.1	17.6	14.4	13.0	* 17.0	13.8	16.0	12.7	11.5	11.0	11.0	10.5
30	12.9		14.2	12.9	16.7	13.7	* 15.7	12.6	11.4	11.2	11.0	10.6
31	12.6		14.0		16.9		* 15.4	12.4		11.0		10.6
Sum	356.8	473.3	476.9	414.5	568.3	455.3	550.4	427.9	357.6	345.9	329.3	332.7

Current Year 1992 Period 1960-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Low		Average	Total	Average	Maximum	Minimum
					Day	Low					
Jan.	0.68	0.60	126	14.4	115	10.2	11.5	30,828	19,935	35,576	5,732
Feb.	1.01	.64	24	64.3	1	12.2	16.3	40,893	17,685	40,893	4,933
Mar.	.79	.67	3	21.4	130	13.9	15.4	41,204	17,595	41,204	5,163
April	.87	.65	16	33.7	128	12.7	13.8	35,813	17,950	47,831	5,575
May	1.13	.65	21	103	1	12.5	18.3	49,101	19,854	49,101	5,572
June	.77	.66	3	19.9	27	13.2	15.2	39,338	22,790	67,011	5,253
July	1.20	.64	19	136	116	12.0	17.8	47,555	28,911	230,071	4,976
Aug.	.71	.64	11	16.1	31	12.2	13.8	36,971	46,466	504,380	4,878
Sept.	.83	.62	23	27.4	122	11.2	11.9	30,897	56,776	621,065	6,167
Oct.	.63	.61	12	11.9	8	10.6	11.2	29,886	39,269	272,093	6,172
Nov.	.65	.60	19	12.9	1	10.3	11.0	28,452	21,694	40,721	5,590
Dec.	.63	.61	13	11.7	1	10.5	10.7	28,745	20,941	38,316	5,794
Yearly	1.20	0.60		136		10.2	13.9	439,683	329,866	872,184	89,420

* Discharge measurement made on this day † And other days

08-4494.40 BIG SATAN CREEK NEAR COMSTOCK, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was re-located upstream due to completion of Amistad Dam, a gaging station was established at Big Satan Creek in 1968.

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", 1.8 kilometers upstream from its confluence with the Devils River, which is 34.1 kilometers upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 345.64 meters 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 1992.

REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 109 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,590 CMS on August 15, 1971, with a gage height of 3.75 meters. Maximum volumes: Monthly, 15,053 TCM in August 1971; yearly, 15,449 TCM in 1971.

Average Flow in Cubic Meters per Second

Daily:	Max.	127	Aug. 15, 1971	Min.	
Monthly:	Max.	5.61	Aug. 1971	Min.	see REMARKS
Yearly:	Max.	0.49	1971	Min.	

Mean Daily Discharge in CMS 1992

Month and Day					
June	9	7.05			

Annual Summary

Month	Maximum Gage and Discharge			Thousands of Cubic Meters
	Day	Meters	CMS	
June	9	0.77	107	609
Yearly		0.77	107	609

08-4494.80 ROUGH CANYON NEAR DEL RIO, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was re-located upstream due to completion of Amistad Dam, a gaging station was established at Rough Canyon in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank at latitude 29°34'40", longitude 100°56'00", 6.3 kilometers upstream from its confluence with the Devils River, which is 17.9 kilometers upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 314.12 meters 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 1992.

REMARKS: This stream is normally dry, its flow being confined to periods of storm runoff from its 62.2 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 199 CMS on August 12, 1972, with a gage height of 2.07 meters. Maximum volumes: Monthly, 10,152 TCM in August 1971; yearly, 10,154 TCM in 1971.

Average Flow in Cubic Meters per Second

Daily:	60.6	Aug. 16, 1971	Min.	
Monthly:	3.79	Aug. 1971	Min.	see REMARKS
Yearly:	0.32	1971	Min.	

Mean Daily Discharge in CMS 1992

Month and Day					
Mar.	4	0.14			

Annual Summary

Month	Maximum Gage and Discharge			Thousands of Cubic Meters
	Day	Meters	CMS	
Mar.	4	0.40	2.19	12.1
Yearly		0.40	2.19	12.1

08-4494.85 NORTH FORK SAN PEDRO CREEK NEAR DEL RIO, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was re-located upstream due to completion of Amistad Dam, a gaging station was established at the north fork of San Pedro Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank of the creek at latitude 29°31'20", longitude 100°53'00", 4.8 kilometers upstream from its confluence with the Middle Fork Branch, which is 10.1 kilometers upstream from its confluence with Devils River which itself is 7.2 river kilometers above Devils River confluence with the Rio Grande. The zero of the gage is 343.49 meters 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 1992.

REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 44 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 144 CMS on August 12, 1972, with a gage height of 2.57 meters. Maximum volumes: Monthly, 4,198 TCM in October 1969; yearly, 5,010 TCM in 1969.

		Average Flow in Cubic Meters per Second			
Daily:	Max.	35.1	Oct. 4, 1969	Min.	
Monthly:	Max.	1.57	Oct. 1969	Min.	see REMARKS
Yearly:	Max.	0.16	1969	Min.	

Mean Daily Discharge in CMS 1992

Month and Day			
No flow during 1992			

Annual Summary

Month	Maximum Gage and Discharge			Thousands of Cubic Meters
	Day	Meters	CMS	
Yearly				

08-4494.90 MIDDLE FORK SAN PEDRO CREEK NEAR DEL RIO, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was re-located upstream due to completion of Amistad Dam, a gaging station was established at the middle fork of San Pedro Creek in 1968.

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", 5.1 kilometers upstream from its confluence with the North Fork Branch, which is 10.1 kilometers above the confluence with Devils River, which itself is 7.2 river kilometers above the Devils River confluence with the Rio Grande. The zero of the gage is 346.56 meters 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 1992.

REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 31 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 289 CMS on July 17, 1972, with a gage height of 1.78 meters. Maximum volumes: Monthly, 4,596 TCM in July 1975; yearly, 7,118 TCM in 1990.

		Average Flow in Cubic Meters per Second			
Daily:	Max.	39.4	July 17, 1975	Min.	
Monthly:	Max.	1.72	July 1975	Min.	see REMARKS
Yearly:	Max.	0.23	1990	Min.	

Mean Daily Discharge in CMS 1992

Month and Day			
Feb. 8	0.02	Mar. 1	0.01

Annual Summary

Month	Maximum Gage and Discharge			Thousands of Cubic Meters
	Day	Meters	CMS	
Feb.	5	0.42	0.04	29.4
Mar.	6	0.32	0.01	7.8
Yearly		0.42	0.04	37.2

08-4495.90 EVANS CREEK NEAR COMSTOCK, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was re-located upstream due to completion of Amistad Dam, a gaging station was established at Evans Creek in 1968.

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", 17.7 kilometers upstream from its confluence with the Devils River, which is 5.1 kilometers upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 354.34 meters 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 1992.

REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 192 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 493 CMS on June 2, 1971, with a gage height of 1.83 meters. Maximum volumes: Monthly, 11,448 TCM in August 1971; yearly, 17,767 TCM in 1971.

Average Flow in Cubic Meters per Second

Daily:	112	Aug. 15, 1971	Min.	
Monthly:	4.28	Aug. 1971	Min.	see REMARKS
Yearly:	0.56	1971	Min.	

Mean Daily Discharge in CMS 1992

Month and Day			
No flow during 1992			

Annual Summary

Month	Maximum Gage and Discharge			Thousands of Cubic Meters
	Day	Meters	CMS	
Yearly				

08-4508.05 CARMINA SPRINGS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 2.0 CMS capacity and staff gage located on a creek about 40 meters upstream from its confluence with the Rio Grande, at latitude 29°42'50" N, longitude 101°03'35" W, and about 17.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 923, 0.4 river kilometer downstream from Amistad Dam and 20.3 river kilometers upstream from the International highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 1992.

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 CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.74	1.76	1.76	1.73	1.68	1.68	1.68	1.65	1.65	1.61	1.60	1.62
2	1.74	1.79	1.76	1.72	1.68	1.68	1.68	1.65	1.63	1.61	1.60	1.62
3	1.74	1.79	1.76	1.73	1.68	1.68	1.68	1.64	1.64	1.61	1.60	1.62
4	1.74	1.79	1.78	1.70	1.68	1.69	1.68	1.62	1.64	1.61	1.60	1.62
5	1.74	1.79	1.76	1.72	1.65	1.69	1.68	1.62	1.63	1.61	1.60	1.62
6	1.74	1.79	1.76	1.72	1.65	1.68	1.68	1.62	1.64	1.62	1.60	1.62
7	1.74	1.79	1.76	1.72	1.65	1.68	1.68	1.62	1.64	1.62	1.60	1.62
8	* 1.74	1.79	1.76	* 1.72	1.65	1.68	* 1.68	1.62	1.64	1.62	1.62	1.65
9	1.74	1.79	1.75	1.72	1.65	1.70	1.68	1.62	1.63	1.62	1.62	* 1.65
10	1.74	1.79	1.75	1.72	1.65	* 1.73	1.68	1.62	1.62	1.62	1.62	1.65
11	1.74	1.79	* 1.76	1.72	1.65	1.74	1.68	* 1.62	1.62	1.62	* 1.62	1.65
12	1.74	* 1.79	1.74	1.72	1.65	1.75	1.68	* 1.62	1.62	1.62	1.60	1.65
13	1.74	1.79	1.74	1.70	* 1.68	1.76	1.68	1.63	1.62	1.61	1.60	1.65
14	1.74	1.79	1.74	1.70	1.68	1.76	1.68	1.62	* 1.62	* 1.62	1.60	1.65
15	1.74	1.79	1.74	1.70	1.68	1.76	1.68	1.62	1.62	1.62	1.60	1.65
16	1.74	1.79	1.74	1.68	1.68	1.74	1.68	1.62	1.62	1.62	1.62	1.65
17	1.74	1.76	1.74	1.68	1.68	1.72	1.68	1.62	1.62	1.62	1.62	1.62
18	1.74	1.76	1.74	1.65	1.68	1.69	1.68	1.62	1.62	1.62	1.62	1.62
19	1.74	1.76	1.74	1.65	1.68	1.69	1.68	1.62	1.62	1.62	1.62	1.62
20	1.74	1.76	1.74	1.65	1.68	1.69	1.68	1.62	1.62	1.62	1.62	1.62
21	1.74	1.76	1.74	1.65	1.68	1.69	1.68	1.62	1.61	1.62	1.62	1.62
22	1.74	1.76	1.74	1.65	1.68	1.69	1.68	1.62	1.60	1.62	1.62	1.62
23	1.74	1.76	1.74	1.65	1.68	1.68	1.68	1.63	1.60	1.62	1.62	1.62
24	1.74	1.76	1.74	1.65	1.68	1.68	1.68	1.64	1.60	1.62	1.62	1.62
25	1.74	1.76	1.74	1.65	1.68	1.69	1.68	1.64	1.60	1.62	1.62	1.62
26	1.74	1.76	1.74	1.65	1.68	1.69	1.66	1.64	1.60	1.62	1.62	1.62
27	1.76	1.76	1.74	1.67	1.68	1.69	1.65	1.65	1.60	1.62	1.62	1.62
28	1.76	1.76	1.74	1.68	1.68	1.69	1.65	1.64	1.60	1.62	1.62	1.62
29	1.76	1.76	1.74	1.68	1.68	1.68	1.65	1.64	1.60	1.62	1.62	1.62
30	1.76	1.76	1.74	1.68	1.68	1.68	1.65	1.64	1.60	1.62	1.62	1.62
31	1.76	1.76	1.74	1.68	1.68	1.68	1.65	1.64	1.60	1.62	1.62	1.62
Sum	54.04	51.49	54.16	50.66	51.84	51.05	51.91	50.50	48.57	50.15	48.38	50.49

Current Year 1992 Period 1969-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High		Average	Total	Average	Maximum	Minimum
				Day	φ Low					
Jan.	0.46	0.45	127	1.76	1.1	1.74	4,669	3,624	5,155	449
Feb.	.46	.45	1	1.79	1.1	1.76	4,449	3,278	4,603	460
Mar.	.46	.45	4	1.79	1.9	1.74	4,679	3,572	5,046	648
April	.45	.43	1	1.74	1.8	1.65	4,377	3,370	4,406	776
May	.44	.43	1	1.68	1.5	1.65	4,479	3,342	4,553	875
June	.46	.44	112	1.76	1.1	1.68	4,411	3,278	4,411	738
July	.44	.43	1	1.68	1.26	1.65	4,170	3,370	4,553	657
Aug.	.43	.42	1	1.65	1.7	1.60	4,363	3,409	4,460	666
Sept.	.43	.42	1	1.65	1.16	1.60	4,196	3,404	4,199	731
Oct.	.43	.42	1	1.62	1.1	1.60	4,333	3,715	4,750	1,024
Nov.	.43	.42	1	1.62	1.1	1.60	4,180	3,634	4,701	1,189
Dec.	.43	.43	1	1.65	1.1	1.62	4,362	3,798	5,019	1,328
Yearly	0.46	0.42		1.79		1.60	52,983	41,794	52,983	11,200

* Discharge measurement made on this day ! And other days φ Mean daily

LOURDES AND HILDA SPRINGS NEAR CD. ACUNA, COAHUILA

08-4508.20 LOURDES SPRING

DESCRIPTION: Rectangular sharp-crested weir of 0.82 CMS 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 17.9 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 922, 19.6 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 282.33 meters 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 1992.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted.

Month	Current Year 1992						Period 1969-1992				
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day		φ Low	Total	Average	Maximum	Minimum
Jan.	0.11	0.10	123	0.07	1	0.06	0.06	168	149	199	107
Feb.	.11	.10	1	.07	123	.06	.07	169	137	228	96.8
Mar.	.10	.10	1	.06	1	.06	.06	161	150	258	107
April	.10	.10	1	.06	1	.06	.06	156	145	171	104
May	.10	.10	1	.06	1	.06	.06	161	148	176	91.6
June	.10	.10	1	.06	1	.06	.06	156	144	181	114
July	.10	.10	1	.06	1	.06	.06	161	149	187	107
Aug.	.10	.10	1	.06	1	.06	.06	161	151	187	117
Sept.	.10	.10	1	.06	1	.06	.06	156	146	181	104
Oct.	.10	.10	1	.06	1	.06	.06	161	150	187	107
Nov.	.10	.10	1	.06	1	.06	.06	156	146	181	101
Dec.	.10	.10	1	.06	1	.06	.06	161	148	187	80.4
Yearly	0.11	0.10		0.07		0.06	0.06	1,927	1,763	2,085	1,421

φ Mean daily 1 And other days

08-4508.30 HILDA SPRING

DESCRIPTION: Rectangular sharp-crested weir of 1.50 CMS capacity and staff gage located on a creek about 100 meters upstream from its confluence with the Rio Grande, at latitude 29°26'20", longitude 101°03'35", and about 17.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 922, 19.0 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 276.80 meters 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 1992.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted.

Month	Current Year 1992						Period 1969-1992				
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day		φ Low	Total	Average	Maximum	Minimum
Jan.	0.11	0.09	130	0.09	1	0.07	0.08	205	209	321	71.0
Feb.	.11	.10	1	.09	123	.08	.09	219	188	290	48.0
Mar.	.10	.09	1	.08	121	.07	.08	205	200	297	54.0
April	.11	.09	128	.09	1	.07	.08	201	190	278	54.0
May	.11	.10	120	.10	1	.09	.09	251	193	268	76.0
June	.11	.11	1	.10	1	.10	.10	259	184	259	72.0
July	.11	.06	1	.10	128	.05	.07	199	185	285	75.0
Aug.	.07	.06	1	.05	3	.04	.04	120	182	295	80.1
Sept.	.07	.07	1	.05	1	.05	.05	130	180	289	97.9
Oct.	.07	.07	1	.05	1	.05	.05	134	198	299	107
Nov.	.08	.07	118	.06	1	.05	.05	141	198	311	104
Dec.	.08	.08	1	.06	1	.06	.06	161	208	321	107
Yearly	0.11	0.06		0.10		0.04	0.07	2,225	2,315	3,345	1,074

φ Mean daily 1 And other days

08-4509.00 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), located on the left bank at latitude 29°25'30", longitude 101°02'25", and river kilometer 920, 3.3 river kilometers downstream from Amistad Dam and 17.4 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 274.00 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 107 current-meter measurements during the year, 96 by the Mexican Section and 11 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 current-meter measurements. Records available: September 1954 through 1992. Records are also available from May 1900 through April 1915 for a station 3.1 kilometers upstream; from December 1919 through March 1920 for a station 2.7 kilometers 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 1992 for a station approximately 17.1 kilometers 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, 3.3 river kilometers upstream. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 32,790 CMS on June 28, 1954, determined by slope-area computation, with a gage height of 16.98 meters at the old station site 152 meters downstream. This is the greatest rate of discharge recorded at any point on the Rio Grande. Max. since Amistad Dam, 1,760 CMS on Sept. 21, 1974. Min. 0.63 CMS on February 14, 1969, with a gage height of 0.33 meters.

		Average Flow in Cubic Meters per Second			
Daily:	Max. 1,730	Sept. 22, 1974	Min. 1.32	April 13, 1971	
Monthly:	Max. 609	Sept. 1974	Min. 1.72	October 1971	
Yearly:	Max. 139	1974	Min. 16.3	1972	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.90	105	165	240	131	210	172	59.5	61.6	31.8	39.5	40.6
2	10.2	105	167	239	132	168	171	58.0	48.2	31.2	40.2	42.0
3	10.4	103	166	240	131	166	173	61.1	48.0	33.0	39.2	42.4
4	10.4	105	167	218	129	169	172	59.7	47.5	31.4	39.8	45.1
5	10.4	105	166	218	127	169	172	60.8	48.7	32.4	38.2	42.9
6	11.0	106	189	218	131	170	173	60.8	48.0	13.3	37.9	43.6
7	11.6	104	188	216	129	170	113	60.8	48.1	19.8	37.7	43.2
8	* 11.0	103	190	214 *	130	172	* 80.8	60.7	48.7	18.0	38.5	43.6
9	10.1	100	189	207	62.3	171	39.3	61.0	* 49.2	18.4	* 38.8	* 44.2
10	9.18	100	188	207	61.3	171 *	39.0	60.0	50.0	18.6	38.2	43.5
11	9.42	159	190 *	206	62.1	170	37.9	58.2	47.8	18.6	* 38.5	43.4
12	9.42	162 *	190	206	63.6	171	41.3	* 60.8	46.7	18.6	38.2	44.4
13	9.42	163	192	216	* 63.1	170	40.1	61.1	46.3	18.3	37.7	32.8
14	9.42	162	188	223	63.1	173	40.8	125	* 48.6	* 18.5	37.5	33.4
15	* 9.42	162	189	216 *	63.8	173	* 40.6	127	47.8	18.6	41.7	34.1
16	9.33	162	187	219	61.7	176	40.4	127	47.5	17.7	42.0	* 32.2
17	9.44	149	187	217	60.6	175 *	41.0	125	* 46.8	17.4	41.6	* 33.4
18	8.95	163	185 *	216	60.0	225	66.8	128	47.5	17.7	* 42.4	36.0
19	8.95	161 *	183 *	216	* 68.6	234 *	84.4	128 *	48.0	17.4	* 41.7	32.8
20	8.95	168	186 *	222	134 *	234	121	122 *	50.2	17.4	41.5	25.6
21	9.18	164 *	186	220	185 *	233	129	124	48.6	* 17.4	41.5	26.2
22	* 9.66	164	187	221 *	244	232	151	123	48.4	* 17.5	41.2	25.7
23	9.42	165	188	219	245	232	150	124	* 48.3	17.4	41.0	* 26.1
24	9.42	165	238	126	244	234 *	152	122	48.3	17.4	41.0	25.5
25	9.51	164	244 *	124	243	233	150	124	47.7	17.1	* 40.5	25.2
26	9.90	162 *	242	121	240	234	146	123 *	47.4	16.8	42.1	26.0
27	9.66	163	242	124	258 *	177	149	64.9	48.0	25.8	41.0	25.3
28	9.42	164	240	126	295	175	152	60.9	47.9	* 41.1	40.9	25.4
29	102 *	162	240	130 *	264	174	150 *	61.7	47.5	39.1	40.0	* 25.5
30	105	241	132	237	172	172	150	62.0	* 46.2	39.0	39.8	* 25.1
31	106	240		240			64.0	62.2		38.0		25.0
Sum	586.07	4,120	6,140	5,917	4,559.2	5,733	3,402.4	2,716.2	1,453.5	714.7	1,199.8	1,060.2

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Low		Average	Total	Average	Maximum	Minimum
					Day	Low					
Jan.	0.89	0.14	31	177	31	4.35	18.9	50,636	118,404	258,801	6,560
Feb.	1.05	1.30	126	241	10	4.00	14.2	355,968	164,059	576,284	15,378
Mar.	1.07	.56	24	252	10	70.9	198	530,496	192,378	530,496	8,969
April	1.08	.50	113	256	129	56.8	197	511,229	189,319	511,229	34,007
May	1.17	.12	28	299	9	3.35	147	393,915	265,428	665,708	29,773
June	1.07	.71	30	252	16	112	191	495,331	209,122	495,331	20,251
July	1.06	.13	1	247	9	3.68	110	293,967	175,738	452,033	28,595
Aug.	.92	.12	25	188	1	3.35	87.6	234,680	200,380	816,829	19,229
Sept.	.73	.13	1	121	1	3.68	48.5	125,582	259,340	1,578,952	21,717
Oct.	.72	.11	4	116	31	2.47	23.1	61,750	233,706	1,002,321	4,606
Nov.	.70	.10	4	116	24	1.96	40.0	103,663	127,218	619,571	5,599
Dec.	.73	1.05	4	120	1	2.47	34.2	91,601	104,106	266,784	5,993
Yearly	1.17	0.10		299		1.96	103	3,248,818	2,239,198	4,398,671	514,100

* Discharge measurement made on this day

! And other days

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4509.04 SPRING M-15 NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Rectangular sharp-crested weir of 0.23 CMS capacity and staff gage located at latitude 29°25'20" N, Longitude 101°02'40" W, about 0.4 kilometer upstream from its confluence with the Rio Grande and about 15.1 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 919, 16.5 river kilometers upstream from the international highway bridge between Del Rio, Texas, and Cd. Acuna, Coahuila. The zero of the gage is 281.98 meters 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 1992.

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.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.02	0.06	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
2	.02	.06	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02
3	.02	.06	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02
4	.02	.07	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02
5	.02	.07	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02
6	.02	.07	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
7	.02	.07	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
8	.02	.07	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
9	.02	.07	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
10	.03	.07	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
11	.03	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
12	.03	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
13	.03	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
14	.03	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
15	.03	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
16	.04	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
17	.04	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
18	.04	.06	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
19	.04	.05	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
20	.04	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
21	.04	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
22	.04	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
23	.05	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
24	.05	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
25	.05	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
26	.05	.05	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
27	.05	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
28	.05	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
29	.06	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
30	.06	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
31	.06	.04	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02
Sum	1.12	1.67	0.98	0.79	0.62	0.60	0.62	0.62	0.60	0.62	0.60	0.62

Current Year 1992

Period 1969-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.	0.17	0.09	129	0.06	11	0.02	0.04	96.8	93.0	162	26.0
Feb.	.19	.12	14	.07	127	.04	.06	144	84.6	152	24.1
Mar.	.12	.09	11	.04	16	.03	.03	84.7	82.2	150	27.0
April	.09	.08	11	.03	120	.02	.03	68.3	77.9	130	26.0
May	.08	.08	11	.02	11	.02	.02	53.6	82.8	139	27.0
June	.08	.08	11	.02	11	.02	.02	51.8	71.6	149	26.0
July	.08	.08	11	.02	11	.02	.02	53.6	72.5	131	26.0
Aug.	.08	.08	11	.02	11	.02	.02	53.6	74.0	150	0
Sept.	.08	.08	11	.02	11	.02	.02	51.8	79.0	204	0
Oct.	.08	.08	11	.02	11	.02	.02	53.6	94.0	402	0
Nov.	.09	.08	11	.02	11	.02	.02	51.8	88.3	249	26.0
Dec.	.08	.08	11	.02	11	.02	.02	53.6	87.1	162	27.0
Yearly	0.19	0.08		0.07		0.02	0.03	817	987	1,680	317

φ Mean daily

! And other days

DESCRIPTION: Cipolletti weir of 2.00 CMS capacity and staff gage located at latitude 29°24'25", longitude 101°02'20", about 200 meters upstream from its confluence with the Rio Grande, and about 13.8 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 918, 15.3 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 discharge determined by prorating between readings. Records available: 1969 through 1992.

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 CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.74	1.80	1.82	1.82	1.61	1.65	1.56	1.58	1.51	1.52	1.55	1.60
2	1.73	1.80	1.82	1.81	1.61	1.65	1.56	1.58	1.50	1.53	1.55	1.60
3	1.73	1.80	1.82	1.81	1.61	1.64	1.56	1.57	1.50	1.53	1.54	1.60
4	1.73	1.80	1.82	1.80	1.61	1.64	1.56	1.57	1.50	1.53	1.54	1.59
5	1.73	1.80	1.82	1.79	1.60	1.64	1.56	1.56	1.50	1.53	1.55	1.59
6	1.73	1.80	1.81	1.78	1.60	1.64	1.56	1.57	1.50	1.54	1.56	1.59
7	1.73	1.80	1.81	1.78	1.60	1.64	1.56	1.57	1.50	1.54	1.57	1.59
8	1.73	1.80	1.80	1.77	1.60	1.64	1.56	1.58	1.50	1.54	1.57	1.58
9	1.73	1.80	1.80	1.76	1.60	1.64	1.56	1.58	1.50	1.54	1.58	1.58
10	1.73	1.80	1.79	1.76	1.60	1.64	1.55	1.59	1.50	1.54	1.59	1.59
11	1.73	1.80	1.79	1.75	1.60	1.65	1.55	1.59	1.51	1.55	1.60	1.59
12	1.73	1.80	1.79	1.75	1.60	1.67	1.55	1.60	1.52	1.55	1.60	1.60
13	1.73	1.80	1.79	1.74	1.60	1.68	1.55	1.59	1.52	1.55	1.60	1.60
14	1.73	1.80	1.79	1.74	1.62	1.69	1.54	1.57	1.53	1.55	1.60	1.61
15	* 1.73	1.80	1.80	* 1.73	1.64	1.70	1.54	1.56	1.53	1.55	1.60	1.61
16	1.74	1.81	1.80	1.72	1.66	1.72	1.55	1.54	1.54	1.55	1.60	* 1.62
17	1.74	1.81	1.80	1.72	1.67	* 1.73	1.56	1.53	* 1.54	1.55	1.60	1.62
18	1.75	1.81	* 1.80	1.71	1.69	1.72	1.57	1.51	1.54	1.56	1.60	1.62
19	1.75	* 1.81	1.80	1.70	1.71	1.71	* 1.57	* 1.50	1.54	1.56	1.60	1.62
20	1.76	1.81	1.81	1.69	* 1.73	1.70	1.58	1.51	1.54	1.56	1.60	1.62
21	1.76	1.81	1.81	1.69	1.72	1.69	1.59	1.52	1.54	1.56	1.60	1.62
22	1.77	1.81	1.81	1.68	1.72	1.68	1.60	1.53	1.54	1.56	1.60	1.62
23	1.77	1.81	1.81	1.67	1.71	1.67	1.60	1.53	1.54	1.56	1.60	1.62
24	1.78	1.81	1.82	1.66	1.70	1.66	1.60	1.54	1.54	1.56	1.60	1.62
25	1.78	1.81	1.82	1.65	1.69	1.65	1.60	1.55	1.53	1.56	* 1.60	1.61
26	1.79	1.81	1.82	1.65	1.69	1.63	1.60	1.56	1.53	1.56	1.60	1.61
27	1.79	1.81	1.82	1.64	1.68	1.62	1.60	1.55	1.53	1.56	1.60	1.61
28	1.80	1.81	1.82	1.63	1.67	1.60	1.60	1.54	1.53	* 1.56	1.60	1.61
29	1.80	1.81	1.82	1.62	1.67	1.59	1.60	1.53	1.52	1.56	1.60	1.60
30	1.80		1.82	1.62	1.66	1.57	1.59	1.53	1.52	1.55	1.60	1.60
31	1.80		1.82		1.66		1.59	1.52		1.55		1.61
Sum	54.34	52.34	56.07	51.64	51.13	49.75	48.72	48.15	45.64	48.01	47.60	49.75

Current Year 1992

Period 1969-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.	0.62	0.60	128	1.80	12	1.73	1.75	4,695	4,204	5,822	430
Feb.	.62	.62	126	1.81	1	1.80	1.80	4,522	3,824	5,189	470
Mar.	.62	.62	1	1.82	110	1.79	1.81	4,844	4,137	5,642	649
April	.62	.58	1	1.82	129	1.62	1.72	4,462	3,907	5,359	784
May	.60	.57	20	1.73	15	1.60	1.65	4,418	3,934	5,600	889
June	.60	.56	17	1.73	130	1.57	1.66	4,298	3,681	5,021	836
July	.57	.56	122	1.60	114	1.54	1.57	4,209	3,705	5,387	949
Aug.	.57	.55	12	1.60	19	1.50	1.55	4,160	3,728	5,330	965
Sept.	.55	.55	116	1.54	12	1.50	1.52	3,943	3,779	5,448	965
Oct.	.56	.55	118	1.56	1	1.52	1.55	4,148	4,170	6,428	1,353
Nov.	.57	.56	111	1.60	12	1.54	1.59	4,113	4,182	5,979	1,581
Dec.	.58	.57	116	1.62	18	1.58	1.60	4,298	4,341	5,808	1,724
Yearly	0.62	0.55		1.82		1.50	1.65	52,110	47,592	63,942	12,150

* Discharge measurement made on this day

! And other days

φ Mean daily

08-4509.06 SPRING M-5 NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Rectangular sharp-crested weir of 0.50 CMS capacity and staff gage located at latitude 29°25'20", longitude 101°02'35", at the base of the high bank of the Rio Grande, and about 14.8 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 919, 16.2 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 284.19 meters 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 1992.

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.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.06	0.07	0.07	0.06	0.06	0.06	0.07	0.08	0.06	0.06	0.06	0.06
2	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
3	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
4	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
5	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
6	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
7	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
8	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
9	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
10	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
11	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
12	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
13	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
14	.06	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06
15	.06	.07	.07	.06	.06	.06	.07	.07	.06	.06	.06	.06
16	.06	.07	.07	.06	.06	.06	.07	.07	.06	.06	.06	.06
17	.06	.07	.07	.06	.06	.06	.07	.07	.06	.06	.06	.06
18	.06	.07	.07	.06	.06	.06	.07	.07	.06	.06	.06	.06
19	.06	.07	.07	.06	.06	.06	.07	.07	.06	.06	.06	.06
20	.06	.07	.07	.06	.06	.06	.07	.07	.06	.06	.06	.06
21	.06	.07	.06	.06	.06	.07	.08	.07	.06	.06	.06	.06
22	.06	.07	.06	.06	.06	.07	.08	.07	.06	.06	.06	.06
23	.07	.07	.06	.06	.06	.07	.08	.07	.06	.06	.06	.06
24	.07	.07	.06	.06	.06	.07	.08	.07	.06	.06	.06	.06
25	.07	.07	.06	.06	.06	.07	.08	.07	.06	.06	.06	.06
26	.07	.07	.06	.06	.06	.07	.08	.07	.06	.06	.06	.06
27	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06	.06
28	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06	.06
29	.07	.07	.06	.06	.06	.07	.08	.06	.06	.06	.06	.06
30	.07	.06	.06	.06	.06	.07	.08	.06	.06	.06	.06	.06
31	.07	.06	.06	.06	.06	.06	.08	.06	.06	.06	.06	.06
Sum	1.95	2.03	2.06	1.80	1.86	1.94	2.28	2.26	1.80	1.86	1.80	1.86

Current Year 1992

Period 1969-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High		Day		φ Low	Total	Average	Maximum	Minimum
				Day	φ Low							
Jan.			!23	0.07	! 1	0.06	0.06	168	190	241	107	
Feb.			! 1	.07	! 1	.07	.07	175	172	213	97.0	
Mar.			! 1	.07	!21	.06	.07	178	186	227	80.1	
April			! 1	.06	! 1	.06	.06	156	180	220	78.0	
May			! 1	.06	! 1	.06	.06	161	187	229	80.1	
June			!17	.07	! 1	.06	.06	168	178	223	78.0	
July			!21	.08	! 1	.07	.07	197	181	213	54.0	
Aug.			! 1	.08	!27	.06	.07	195	185	241	54.0	
Sept.			! 1	.06	! 1	.06	.06	156	182	233	52.1	
Oct.			! 1	.06	! 1	.06	.06	161	189	241	54.0	
Nov.			! 1	.06	! 1	.06	.06	156	183	233	78.0	
Dec.			! 1	.06	! 1	.06	.06	161	190	241	80.1	
Yearly				0.08		0.06	0.06	2,032	2,203	2,650	892	

φ Mean daily

! And other days

08-4509.10 ARROYO DEL BUEY NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 1.00 CMS capacity, located at latitude 29°24'20", longitude 101°02'25", 0.3 kilometer upstream from its confluence with the Rio Grande, and about 13.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 918, 5.6 river kilometers downstream from Amistad Dam and 15.1 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 1992.

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 0.5 creek kilometer 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 566 CMS.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.19	0.25	0.23	0.19	0.19	0.19	0.18	0.19	0.18	0.18	0.18	0.18
2	.19	.25	.23	.19	.19	.19	.18	.19	.18	.18	.18	.18
3	.19	.25	.23	.19	.19	.19	.18	.19	.18	.18	.18	.18
4	.19	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
5	.19	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
6	.19	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
7	.19	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
8	.19	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
9	.20	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
10	.20	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
11	.20	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
12	.20	.25	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
13	.20	.24	.22	.19	.19	.19	.18	.19	.18	.18	.18	.18
14	.21	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
15	.21	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
16	.21	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
17	.21	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
18	.21	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
19	.21	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
20	.22	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
21	.22	.24	.21	.19	.19	.19	.18	.19	.18	.18	.18	.18
22	.22	.24	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
23	.22	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
24	.22	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
25	.23	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
26	.23	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
27	.23	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
28	.23	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
29	.23	.23	.20	.19	.19	.19	.18	.19	.18	.18	.18	.18
30	.24	.19	.19	.19	.19	.19	.18	.19	.18	.18	.18	.18
31	.24	.19	.19	.19	.19	.19	.18	.19	.18	.18	.18	.18
Sum	6.51	7.01	6.55	5.70	5.89	5.56	5.71	5.76	5.40	5.58	5.40	5.58

Current Year 1992

Period 1961-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Cubic Meters per Second		Average	Total	Average	Maximum	Minimum		
			Day	High						Day	Low
Jan.			130	0.24	1	0.19	0.21	562	431	651	8.4
Feb.			1	.25	123	.23	.24	606	396	624	6.7
Mar.			1	.23	130	.19	.21	566	431	725	11.5
April			1	.19	1	.19	.19	492	455	937	7.8
May			1	.19	1	.19	.19	509	491	1,092	13.4
June			1	.19	117	.18	.19	480	431	664	7.8
July			119	.19	1	.18	.18	493	417	657	8.0
Aug.			1	.19	119	.18	.19	498	440	653	8.3
Sept.			1	.18	1	.18	.18	467	454	648	8.1
Oct.			1	.18	1	.18	.18	482	475	671	8.0
Nov.			1	.18	1	.18	.18	467	433	638	7.8
Dec.			1	.18	1	.18	.18	482	439	664	8.0
Yearly				0.25		0.18	0.19	6,104	5,293	7,674	268

φ Mean daily

! And other days

08-4511.20 MARIS SPRING NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 3.00 CMS capacity and staff gage located at the spring about 30 meters from the right bank of the Rio Grande at latitude 29°24'00", longitude 101°01'40", and about 12.9 kilometers northwest of Cd. Acuna, Coahuila. This spring enters the Rio Grande from Mexico at river kilometer 917, 14.3 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila and 6.4 river kilometers downstream from Amistad Dam. 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 February 1984 and September 1985 through 1992.

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 may 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 a 0.32 CMS capacity. Beginning March 1, 1984, discharge computations were temporarily discontinued due to leakage under the weir. Discharge computations were resumed on August 14, 1985.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.38	0.40	0.40	0.39	0.41	0.40	0.44	0.42	0.42	0.42	0.39	0.38
2	.38	.40	.40	.39	.41	.40	.44	.42	.42	.42	.39	.38
3	.38	.40	.40	.39	.41	.40	.44	.42	.42	.42	.39	.38
4	.38	.40	.40	.39	.41	.40	.44	.42	.42	.42	.39	.37
5	.38	.40	.40	.40	.41	.41	.44	.42	.42	.42	.39	.37
6	.38	.40	.40	.40	.41	.41	.44	.42	.43	.42	.39	.37
7	.38	.40	.40	.40	.41	.41	.44	.42	.43	.42	.39	.37
8	.38	.40	.39	.40	.41	.41	.44	.42	.43	.42	.38	.36
9	.38	.40	.39	.40	.41	.42	.44	.41	* .43	.41	.38	.36
10	.38	.40	.39	.40	.41	.42	.44	.41	.43	.41	.38	.36
11	.38	.40	.39	.40	.41	.43	.44	.41	.44	.41	.38	.36
12	.38	.40	.39	.40	.41	.44	.44	.41	.44	.41	.38	.36
13	.38	.40	.39	.40	.41	.45	.44	.41	.44	.40	.37	.36
14	.38	.40	.39	.40	.41	.46	.44	.41	.44	.40	.37	.36
15	.38	.40	.39	.40	.41	.47	* .44	.41	.44	.40	.37	.36
16	.38	.40	.39	.40	.41	.48	.44	.40	.45	.40	.37	.36
17	.38	.40	.39	.40	.40	* .49	.44	.40	.45	.40	.36	.36
18	.38	.40	.39	.40	.40	.48	.44	.40	.45	.40	* .36	.36
19	.38	.40	.39	.40	.40	.48	.44	.40	.44	.40	.36	.36
20	.38	.40	.39	.40	.40	.47	.44	.40	.44	.40	.36	.36
21	* .38	.40	.39	.40	.40	.46	.44	.41	.44	* .40	.36	.36
22	.38	.40	.39	.40	.40	.45	.44	.41	.43	.40	.37	.36
23	.38	.40	.39	.40	.40	.45	.44	.41	* .43	.40	.37	* .36
24	.39	.40	.39	.40	.40	.44	.43	.41	.43	.40	.37	.36
25	.39	.40	.39	.40	.40	.44	.43	.42	.43	.39	.37	.36
26	.39	* .40	.39	.41	.40	.44	.43	.42	.43	.39	.37	.36
27	.39	.40	.39	.41	.40	.44	.43	.42	.42	.39	.37	.36
28	.40	.40	.39	.41	.40	.44	.42	.42	.42	.39	.37	.36
29	.40	.40	.39	* .41	.40	.44	.42	.42	.42	.39	.38	.36
30	.40	.40	.39	.41	.40	.44	.42	.42	.42	.39	.38	.36
31	.40	.40	.39	.40	.40	.44	.42	.42	.42	.39	.38	.36
Sum	11.90	11.60	12.16	12.01	12.56	13.17	13.52	12.81	12.95	12.53	11.26	11.26

Current Year 1992

Period 1961-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	φ High		φ Low	Total		Average	Maximum	Minimum	
			Day	Day							
Jan.	0.19	0.18	129	0.40	115	0.38	1,028	687	1,152	5.4	
Feb.	.19	.19	126	.40	111	.40	1,002	615	1,136	5.1	
Mar.	.19	.19	111	.40	111	.39	1,051	673	1,179	6.0	
April	.20	.19	126	.41	111	.39	1,038	683	1,217	5.2	
May	.20	.19	111	.41	117	.40	1,085	776	1,624	10.7	
June	.24	.19	117	.49	111	.40	1,138	748	1,719	7.4	
July	.22	.21	111	.44	128	.42	1,168	751	1,694	9.7	
Aug.	.20	.19	111	.42	116	.40	1,107	777	1,525	7.6	
Sept.	.22	.20	116	.45	111	.42	1,119	831	1,435	6.7	
Oct.	.21	.19	111	.42	129	.39	1,083	882	1,752	5.7	
Nov.	.19	.17	111	.39	117	.36	973	814	1,650	5.2	
Dec.	.18	.17	111	.38	118	.36	973	726	1,464	5.4	
Yearly	0.24	0.17		0.49		0.36	12,765	8,963	16,060	180	

* Discharge measurement made on this day

φ Mean daily

! And other days

08-4511.30 EIGHT MILE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete wall with 90° V-notch weir of 0.20 CMS capacity at latitude 29°24'00", longitude 101°00'55", 1.3 creek kilometers upstream from its confluence with the Rio Grande, and about 12.9 kilometers northwest of Del Rio, Texas. This stream enters the Rio Grande from the United States at river kilometer 916, 7.4 river kilometers downstream from Amistad Dam and 13.3 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The elevation of the zero of the gage is 278.58 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 12 current-meter measurements during the year. Mean daily discharges determined by prorating between measurements. Records available: March 1961 through 1992.

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. Bubbler gage and water-stage recorder were removed April 1, 1985.

EXTREME FLOWS FROM RECORDS:

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

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.13	0.18	* 0.08	0.07	0.06	* 0.05	0.06	0.05	0.05	0.05	0.06
2	.08	.13	.19	.08	.07	.06	.05	.06	.05	.05	.05	* .06
3	.08	.14	.19	.08	.07	* .06	.05	.06	* .05	.05	.05	.06
4	.08	.14	* .19	.08	.07	.06	.05	.06	.05	.05	* .05	.06
5	.08	.14	.19	.08	.07	.06	.05	* .06	.05	.05	.05	.06
6	.08	.14	.18	.08	* .07	.06	.05	.06	.05	.05	.05	.06
7	.08	* .14	.18	.08	.07	.06	.05	.06	.05	* .05	.05	.06
8	* .08	.15	.18	.08	.07	.06	.05	.06	.05	.05	.05	.06
9	.08	.15	.17	.08	.07	.06	.05	.06	.05	.05	.05	.06
10	.08	.15	.17	.08	.07	.06	.06	.06	.05	.05	.05	.06
11	.08	.15	.16	.08	.07	.06	.06	.06	.05	.05	.05	.06
12	.09	.15	.16	.08	.07	.06	.06	.06	.05	.05	.06	.06
13	.09	.16	.16	.08	.07	.06	.06	.06	.05	.05	.06	.06
14	.09	.16	.15	.08	.07	.06	.06	.06	.05	.05	.06	.06
15	.09	.16	.15	.08	.07	.06	.06	.06	.05	.05	.06	.06
16	.10	.16	.14	.08	.07	.06	.06	.06	.05	.05	.06	.06
17	.10	.16	.14	.08	.07	.06	.06	.06	.05	.05	.06	.06
18	.10	.16	.14	.08	.07	.06	.06	.06	.05	.05	.06	.06
19	.10	.16	.13	.07	.07	.06	.06	.06	.05	.05	.06	.06
20	.10	.17	.13	.07	.06	.06	.06	.05	.05	.05	.06	.06
21	.11	.17	.13	.07	.06	.06	.06	.05	.05	.05	.06	.06
22	.11	.17	.12	.07	.06	.06	.06	.05	.05	.05	.06	.06
23	.11	.17	.12	.07	.06	.06	.06	.05	.05	.05	.06	.06
24	.11	.17	.12	.07	.06	.06	.06	.05	.05	.05	.06	.06
25	.12	.18	.11	.07	.06	.06	.06	.05	.05	.05	.06	.06
26	.12	.18	.11	.07	.06	.06	.06	.05	.05	.05	.06	.06
27	.12	.18	.10	.07	.06	.05	.06	.05	.05	.05	.06	.06
28	.12	.18	.10	.07	.06	.05	.06	.05	.05	.05	.06	.06
29	.12	.18	.10	.07	.06	.05	.06	.05	.05	.05	.06	.07
30	.13	.09	.09	.07	.06	.05	.06	.05	.05	.05	.06	.07
31	.13	.09	.09	.07	.06	.06	.06	.05	.05	.05	.06	.07
Sum	3.04	4.58	4.47	2.28	2.05	1.76	1.77	1.74	1.50	1.55	1.69	1.89

Current Year 1992 Period 1961-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day	φ Low	Average	Total	Average	Maximum	Minimum
Jan.			!30	0.13	! 1	0.08	0.10	263	164	363	0
Feb.			!25	.18	! 1	.13	.16	396	153	396	0
Mar.			! 2	.19	!30	.09	.14	386	158	386	0
April			! 1	.08	!19	.07	.08	197	145	313	0
May			! 1	.07	!20	.06	.07	177	149	412	0
June			! 1	.06	!27	.05	.06	152	128	264	0
July			!10	.06	! 1	.05	.06	153	131	481	0
Aug.			! 1	.06	!20	.05	.06	150	128	369	0
Sept.			! 1	.05	! 1	.05	.05	130	126	296	0
Oct.			! 1	.05	! 1	.05	.05	134	143	412	0
Nov.			!12	.06	! 1	.05	.06	146	145	396	0
Dec.			!29	.07	! 1	.06	.06	163	153	349	0
Yearly				0.19		0.05	0.08	2,447	1,723	3,567	4.2

* Discharge measurement made on this day φ Mean daily ! And other days

08-4511.40 MCKEE SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: This spring is located on the left flood plain of the Rio Grande at latitude 29°23'35", longitude 101°01'15", about 46 meters from the edge of the low-flow channel and about 12.9 kilometers northwest of Del Rio, Texas. Water from this spring enters the Rio Grande from the United States at river kilometer 916, 7.7 river kilometers downstream from Amistad Dam.

RECORDS: Based on 12 current-meter measurements during the year. Mean daily discharges determined by prorating between measurements. Records available: November 1961 through 1992.

REMARKS: The flow of this spring is uniform during periods of dry weather and is modified by periodic residential pumping. It is estimated that backwater from the Rio Grande will reach the emergence of this spring when the river flow is approximately 396 CMS. 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 Cubic Meters per Second					
Daily:	Max. 0.31	Feb. 16, 1983			Min. 0		Occasionally
Monthly:	Max. 0.26	Feb. 1983			Min. 0		Occasionally
Yearly	Max. 0.22	1979			Min. 0		1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.14	0.22	0.20	* 0.23	0.17	0.17	* 0.13	0.20	0.12	0.14	0.10	0.14
2	.14	.22	.20	.22	.17	.17	.14	.20	.12	.14	.10	* .14
3	.14	.22	.20	.22	.16	* .17	.14	.20	* .11	.14	.10	.14
4	.14	.23	* .20	.22	.16	.17	.14	.20	.11	.14	* .10	.14
5	.14	.23	.20	.22	.16	.17	.14	* .20	.12	.14	.10	.14
6	.14	.24	.20	.22	* .16	.17	.14	.20	.12	.14	.10	.14
7	.14	* .24	.20	.22	.16	.16	.14	.20	.12	* .14	.10	.14
8	* .14	.24	.20	.21	.16	.16	.15	.20	.12	.14	.10	.14
9	.14	.24	.20	.21	.16	.16	.15	.19	.12	.14	.10	.14
10	.14	.23	.20	.21	.16	.16	.15	.19	.12	.14	.10	.14
11	.15	.23	.20	.21	.16	.16	.15	.18	.12	.14	.11	.14
12	.15	.23	.20	.20	.16	.16	.16	.18	.12	.13	.11	.14
13	.15	.23	.21	.20	.16	.16	.16	.18	.12	.13	.11	.14
14	.16	.23	.21	.20	.16	.16	.16	.18	.12	.13	.11	.14
15	.16	.22	.21	.20	.16	.15	.16	.17	.12	.13	.11	.14
16	.16	.22	.21	.20	.16	.15	.16	.17	.12	.13	.11	.14
17	.17	.22	.21	.20	.16	.15	.16	.17	.12	.12	.12	.15
18	.17	.22	.21	.19	.16	.15	.17	.16	.12	.12	.12	.15
19	.17	.22	.21	.19	.16	.15	.17	.16	.13	.12	.12	.15
20	.18	.22	.21	.19	.16	.15	.17	.16	.13	.12	.12	.15
21	.18	.22	.22	.19	.16	.15	.17	.15	.13	.12	.12	.15
22	.18	.21	.22	.19	.16	.14	.18	.15	.13	.12	.12	.15
23	.19	.21	.22	.18	.16	.14	.18	.15	.13	.12	.12	.15
24	.19	.21	.22	.18	.17	.14	.18	.14	.13	.11	.13	.15
25	.19	.21	.22	.18	.17	.14	.18	.14	.13	.11	.13	.15
26	.20	.21	.22	.18	.17	.14	.18	.14	.13	.11	.13	.15
27	.20	.20	.22	.18	.17	.14	.19	.14	.13	.11	.13	.15
28	.20	.20	.22	.17	.17	.14	.19	.13	.13	.11	.13	.15
29	.21	.20	.22	.17	.17	.14	.19	.13	.14	.10	.13	.15
30	.21	.20	.22	.17	.17	.13	.19	.12	.14	.10	.14	.15
31	.22	.20	.23	.17	.17	.19	.19	.12	.10	.10	.14	.15
Sum	5.19	6.42	6.51	5.95	5.06	4.60	5.06	5.20	3.72	3.88	3.42	4.49

Current Year 1992

Period 1961-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			31	0.22	1	0.14	0.17	448	336	649	0
Feb.			1	.6	127	.20	.22	555	321	628	0
Mar.			31	.23	1	.20	.21	562	346	650	0
April			1	.23	128	.17	.20	514	340	604	0
May			1	.17	1	.16	.16	437	369	633	.7
June			1	.17	30	.13	.15	397	336	580	0
July			127	.19	1	.13	.16	437	349	692	0
Aug.			1	.20	130	.12	.17	449	346	622	0
Sept.			129	.14	1	.11	.12	321	334	591	0
Oct.			1	.14	129	.10	.13	335	349	640	0
Nov.			30	.14	1	.10	.11	295	327	636	0
Dec.			17	.15	1	.14	.14	388	334	596	0
Yearly				0.24		0.10	0.16	5,138	4,087	6,978	0.7

* Discharge measurement made on this day φ Mean daily ! And other days

08-4511.50 ARROYO DE LA TREINTA Y UNA NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 1.0 CMS capacity, located at latitude 29°22'35", longitude 101°01'15", 966 creek meters upstream from its confluence with the Rio Grande, and about 10.5 kilometers northwest of Cd. Acuna, Coahuila. This stream enters the Rio Grande from Mexico at river kilometer 913, 10.1 river kilometers downstream from Amistad Dam and 10.6 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 1992.

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 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. It is estimated that backwater from the Rio Grande will affect the flow at this station only during times of extremely high release.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.11	0.11	0.08	0.09	0.09	0.09	0.10	0.09	0.09	0.08	0.08
2	.08	.11	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
3	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
4	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
5	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
6	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
7	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
8	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
9	.08	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
10	.09	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
11	.09	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
12	.09	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
13	.09	.12	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08
14	.09	.12	.10	.08	.09	.09	.09	.10	.09	.09	.08	.08
15	.09	.12	.10	.08	.09	.09	.09	.10	.09	.09	.08	.08
16	.09	.12	.10	.08	.09	.09	.09	.10	.09	.09	.08	.08
17	.09	.12	.10	.08	.09	.09	.09	.10	.09	.09	.08	.08
18	.10	.12	.10	.08	.09	.09	.09	.10	.09	.09	.08	.08
19	.10	.12	.10	.08	.09	.09	.10	.09	.09	.09	.08	.08
20	.10	.12	.10	.09	.09	.09	.10	.09	.09	.09	.08	.08
21	.10	.12	.10	.09	.09	.09	.10	.09	.09	.08	.08	.08
22	.10	.12	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
23	.10	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
24	.10	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
25	.10	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
26	.11	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
27	.11	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
28	.11	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
29	.11	.11	.09	.09	.09	.09	.10	.09	.09	.08	.08	.08
30	.11	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08	.08
31	.11	.11	.08	.09	.09	.09	.10	.09	.09	.08	.08	.08
Sum	2.90	3.39	3.11	2.51	2.79	2.70	2.92	2.97	2.70	2.68	2.40	2.48

Current Year 1992

Period 1961-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			126	0.11	1	0.08	0.09	251	206	348	18.7
Feb.			13	.12	1	.11	.12	293	190	317	17.1
Mar.			1	.11	130	.08	.10	269	207	403	17.5
April			120	.09	1	.08	.08	217	221	373	15.0
May			1	.09	1	.09	.09	241	215	323	7.3
June			1	.09	1	.09	.09	233	205	313	5.2
July			119	.10	1	.09	.09	252	198	312	0
Aug.			1	.10	119	.09	.10	237	202	398	0
Sept.			1	.09	1	.09	.09	233	212	337	16.2
Oct.			1	.09	121	.08	.09	232	228	348	14.9
Nov.			1	.08	1	.08	.08	207	213	382	17.5
Dec.			1	.08	1	.08	.08	214	216	382	18.7
Yearly				0.12		0.08	0.09	2,899	2,513	4,026	308

φ Mean daily

1 And other days

08-4513.00 CANTU SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete enclosure 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 4.0 kilometers northwest of Del Rio, Texas and 5.6 creek kilometers upstream from the confluence of Cienegas Creek with the Rio Grande. Cienegas Creek enters the Rio Grande at river kilometer 906, 3.0 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila.

RECORDS: Based on 12 current-meter measurements during the year. Mean daily discharges determined by prorating between measurements. Records available: March 1961 through 1992.

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 Cubic Meters per Second				
Daily:	Max.	0.37	March 2, 1989	Min.	0	Occasionally
Monthly:	Max.	0.34	March 1989	Min.	0	Occasionally
Yearly:	Max.	0.24	1989	Min.	0	1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.20	0.22	0.26	* 0.26	0.21	0.24	* 0.21	0.24	0.26	0.25	0.32	0.25
2	.20	.22	.26	.25	.20	.24	.21	.24	.26	.25	.33	* .25
3	.20	.22	.26	.25	.20	* .24	.22	.24	* .26	.25	.33	.25
4	.20	.22	* .27	.25	.20	.24	.22	.24	.26	.25	* .33	.25
5	.20	.22	.27	.25	.20	.24	.22	* .24	.26	.25	.33	.25
6	.20	.22	.27	.25	* .20	.24	.22	.24	.26	.25	.33	.25
7	* .20	.22	.27	.25	.20	.24	.22	.24	* .26	.25	.32	.25
8	.20	* .23	.26	.24	.20	.24	.22	.25	.26	.25	.32	.25
9	.20	.23	.26	.24	.20	.24	.22	.25	.26	.25	.32	.25
10	.20	.23	.26	.24	.20	.24	.22	.25	.26	.26	.31	.25
11	.20	.23	.26	.24	.21	.24	.22	.25	.26	.26	.31	.25
12	.20	.23	.26	.24	.21	.23	.22	.25	.26	.26	.31	.25
13	.20	.23	.26	.24	.21	.23	.22	.25	.26	.27	.31	.25
14	.21	.24	.26	.24	.21	.23	.22	.25	.26	.27	.30	.25
15	.21	.24	.26	.24	.21	.23	.22	.25	.26	.27	.30	.25
16	.21	.24	.26	.23	.22	.23	.23	.25	.25	.27	.30	.25
17	.21	.24	.26	.23	.22	.23	.23	.25	.25	.28	.29	.25
18	.21	.24	.26	.23	.22	.23	.23	.25	.25	.25	.29	.25
19	.21	.24	.26	.23	.22	.23	.23	.25	.25	.28	.29	.25
20	.21	.25	.26	.23	.22	.22	.23	.25	.25	.28	.28	.25
21	.21	.25	.26	.22	.22	.22	.23	.25	.25	.29	.28	.25
22	.21	.25	.26	.22	.22	.22	.23	.25	.25	.29	.28	.25
23	.21	.25	.26	.22	.23	.22	.23	.25	.25	.29	.27	.25
24	.21	.25	.26	.22	.23	.22	.23	.25	.25	.30	.27	.25
25	.22	.25	.26	.22	.23	.22	.24	.25	.25	.30	.27	.25
26	.22	.25	.26	.22	.23	.22	.24	.25	.25	.30	.27	.25
27	.22	.26	.26	.21	.23	.22	.24	.26	.25	.31	.26	.25
28	.22	.26	.26	.21	.24	.22	.24	.26	.25	.31	.26	.25
29	.22	.26	.26	.21	.24	.22	.24	.26	.25	.31	.26	.25
30	.22	.26	.26	.21	.24	.21	.24	.26	.25	.31	.25	.25
31	.22	.26	.26	.21	.24	.24	.24	.26	.25	.32	.25	.25
Sum	6.45	6.89	8.11	7.00	6.71	6.89	7.03	7.73	7.65	8.53	8.89	7.75

Current Year 1992

Period 1961-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters					
	High	Low	Day	φ High	Day	φ Low	Average	Total	Average	Maximum	Minimum	
Jan.			125	0.22	1	1	0.20	0.21	557	426	697	0
Feb.			127	.26	1	1	.22	.24	595	382	749	0
Mar.			1	.27	1	1	.26	.26	701	416	907	0
April			1	.26	127	1	.21	.23	605	394	780	0
May			128	.24	1	2	.20	.22	580	399	750	0
June			1	.24	30	1	.21	.23	595	374	675	0
July			125	.24	1	1	.21	.23	607	387	671	0
Aug.			127	.26	1	1	.24	.25	668	390	668	0
Sept.			1	.26	116	1	.25	.26	661	396	661	0
Oct.			31	.32	1	1	.25	.28	737	441	777	0
Nov.			1	.33	30	1	.25	.30	768	419	768	0
Dec.			1	.25	1	1	.25	.25	670	428	734	0
Yearly				0.33			0.20	0.24	7,744	4,852	8,063	0

* Discharge measurement made on this day φ Mean daily ! And other days

08-4515.00 CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Measurement sections, one each, located on Cienegas Creek at latitude 29°21'10", longitude 100°56'35", 0.8 creek kilometer upstream from its confluence with the Rio Grande; and for the Briggs Farm ditch, latitude 29°21'40", longitude 100°56'30", 884 meters downstream from the ditch intake which branches off the right bank of Cienegas Creek immediately upstream of a small diversion dam across the creek, and about 4.0 kilometers west of Del Rio, Texas. The point of diversion is 2.9 creek kilometers upstream from the confluence of Cienegas Creek with the Rio Grande. Cienegas Creek enters the Rio Grande at river kilometer 906, 3.0 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila.

RECORDS: Based on 12 current-meter measurements each at Cienegas Creek and Briggs Farm ditch, respectively, during the year. Mean daily discharge computations determined by combining the two records for the total yield of the springs. Records available: March 1965 through 1992. Discharge measurement data available since November 1962. Records are also available from September 1931 through June 1935 for a station 0.5 creek kilometer downstream. The station was moved 0.3 creek kilometer upstream in June 1983.

REMARKS: Low flow of this stream is from springs, one of which is Cantu Spring, whose discharge is shown on the previous page. The flow of this stream is modified by irrigation diversions through the Briggs Farm ditch. 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 Cubic Meters per Second

Daily:	Max.	1.21	August 12, 1972	Min.	0.01	April 21, 1966
Monthly:	Max.	0.70	July 1976	Min.	0.02	August 1967
Yearly:	Max.	0.51	1977	Min.	0.03	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.44	0.54	0.67	* 0.45	0.43	0.44	* 0.34	0.39	0.45	0.44	0.43	0.46
2	.44	.55	.68	.45	.43	.44	.34	.39	.45	.44	.43	* .46
3	.44	.55	.68	.45	.43	* .44	.34	.40	* .45	.44	.43	.46
4	.44	.56	* .69	.45	.43	.44	.34	.40	.45	.44	* .43	.46
5	.44	.56	.68	.45	.42	.44	.35	* .40	.45	.44	.43	.46
6	.45	* .56	.67	.45	* .42	.43	.35	.40	.45	* .44	.44	.46
7	.45	.57	.66	.45	.42	.43	.35	.40	.45	* .44	.44	.46
8	* .45	.57	.65	.45	.43	.42	.35	.40	.45	.44	.44	.46
9	.45	.57	.64	.45	.43	.42	.35	.40	.45	.44	.44	.46
10	.46	.58	.63	.45	.43	.42	.35	.41	.45	.44	.44	.45
11	.46	.59	.63	.44	.43	.41	.36	.41	.45	.44	.44	.45
12	.47	.59	.62	.44	.43	.41	.36	.41	.45	.44	.44	.45
13	.47	.59	.61	.44	.43	.40	.36	.41	.45	.44	.44	.45
14	.47	.60	.60	.44	.43	.40	.36	.41	.44	.44	.44	.45
15	.48	.60	.59	.44	.43	.40	.36	.42	.45	.44	.44	.45
16	.48	.61	.59	.44	.43	.39	.37	.42	.45	.44	.44	.45
17	.49	.61	.58	.44	.43	.39	.37	.42	.44	.44	.44	.45
18	.49	.62	.57	.44	.43	.39	.37	.42	.44	.44	.45	.45
19	.49	.62	.56	.44	.44	.38	.37	.42	.44	.44	.45	.45
20	.50	.63	.55	.44	.43	.38	.37	.43	.44	.44	.45	.44
21	.50	.63	.55	.44	.43	.37	.37	.43	.44	.44	.45	.44
22	.51	.63	.54	.44	.44	.37	.38	.43	.44	.44	.44	.44
23	.51	.64	.53	.44	.44	.37	.38	.43	.44	.44	.45	.44
24	.51	.64	.52	.43	.44	.36	.38	.43	.44	.43	.45	.44
25	.52	.65	.51	.43	.44	.36	.38	.44	.44	.44	.45	.44
26	.52	.65	.50	.43	.44	.35	.38	.44	.44	.44	.45	.44
27	.52	.66	.50	.43	.44	.35	.39	.44	.44	.43	.46	.44
28	.53	.66	.48	.43	.44	.35	.39	.44	.44	.44	.46	.44
29	.53	.67	.48	.43	.44	.34	.39	.44	.44	.43	.46	.44
30	.54	.67	.47	.43	.44	.34	.39	.44	.44	.43	.46	.44
31	.54	.66	.46	.44	.44	.39	.44	.44	.44	.44	.46	.44
Sum	14.99	17.50	18.09	13.23	13.41	11.83	11.33	12.96	13.35	13.60	13.32	13.92

Current Year 1992

Period 1965-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day	φ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 30	0.54	! 1	0.44	0.48	1,295	992	1,532	163
Feb.			29	.67	! 1	.54	.60	1,512	931	1,512	121
Mar.			! 1	.69	31	.46	.58	1,565	964	1,563	85.6
April			! 1	.45	124	.43	.44	1,143	884	1,388	59.2
May			! 19	.44	! 5	.42	.43	1,159	888	1,430	81.7
June			! 1	.44	129	.34	.39	1,022	833	1,322	18.1
July			! 27	.39	! 1	.34	.37	979	823	1,884	9.3
Aug.			! 25	.44	! 1	.39	.42	1,120	829	1,531	8.0
Sept.			! 1	.45	114	.44	.45	1,153	815	1,287	16.2
Oct.			! 1	.44	124	.43	.44	1,175	949	1,400	19.1
Nov.			! 27	.46	! 1	.43	.44	1,151	920	1,378	31.1
Dec.			! 1	.46	120	.44	.45	1,203	968	1,441	78.6
Yearly				0.69		0.34	0.46	14,475	10,796	15,992	856

* Discharge measurement made on this day

φ Mean daily

! And other days

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4518.00 RIO GRANDE AT DEL RIO, TEXAS AND CD. ACUNA, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, water-stage recorders (graphic and digital) and data collection platform located on the left bank at latitude 29°20'07", longitude 100°55'41", and river kilometer 903, 360 meters upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila and 20.4 river kilometers downstream from Amistad Dam. The zero of the gage is 264.93 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 36 current-meter measurements during the year, 11 by the United States Section and 25 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 current-meter measurements. Records available: December 1923 through July 2, 1941 and January 1968 through 1992. Records are available from May 1900 through April 1915 for a station 19.6 kilometers upstream; from December 1919 through March 1920 for a station 14.0 kilometers upstream near McKee's Switch; from July 2, 1941 through 1954 and October 1960 through 1967 for a station 360 meters downstream at the international highway bridge; and from September 1954 through 1992 for a station, Rio Grande below Amistad Dam, 17.0 kilometers 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 data collection platform, 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 32,300 CMS occurred on June 28, 1954, with a gage height of 11.66 meters at a station 360 meters downstream. The lowest recorded flow was 3.51 CMS which occurred March 5 and 6, 1969, with a gage height of 0.38 meters.

		Average Flow in Cubic Meters per Second**				
Daily:	Max.	1,810	Sept. 22, 1974	Min.	4.64	Aug. 13, 1971
Monthly:	Max.	632	Sept. 1974	Min.	5.32	October 1971
Yearly:	Max.	146	1974	Min.	19.9	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.2	106	162	232	119	220	168	64.0	59.8	26.1	39.6	46.2
2	13.1	105	162	238	120	166	165	64.0	51.5	30.3	37.1	45.6
3	13.1	105	162	238	123	166	169	60.9	46.7	30.0	37.9	42.5
4	13.3	106	166	220	120	164	169	61.5	45.3	30.9	39.6	41.3
5	13.1	105	159	223	119	161	168	62.0	46.2	29.7	41.3	42.5
6	13.6	104	180	226	122	162	167	64.0	46.2	16.2	38.2	44.2
7	14.3	101	179	224	125	165	126	61.7	46.2	17.3	38.5	42.2
8	13.6	103	176	227	129	167	81.6	61.7	46.4	18.0	37.1	41.9
9	13.4	101	172	227	75.3	171	39.1	60.3	47.0	18.5	36.0	42.8
10	12.1	95.7	173	230	62.9	171	37.9	58.9	47.3	16.7	34.6	* 44.2
11	12.7	136	185	233	62.6	171	36.5	60.9	47.9	16.9	36.5	42.2
12	13.6	150	178	239	62.6	174	36.8	60.0	46.4	17.4	38.5	41.1
13	13.2	150	179	244	63.4	176	39.6	62.0	46.7	16.8	41.1	39.1
14	13.2	153	176	266	65.4	179	38.5	103	47.9	16.4	39.9	36.8
15	* 15.2	153	176	265	65.7	184	37.9	123	47.9	16.0	43.9	42.2
16	19.9	153	178	262	64.6	191	* 37.4	126	47.0	16.3	41.9	34.6
17	* 19.9	142	176	270	63.7	187	38.2	123	* 45.6	17.6	43.3	* 35.7
18	19.4	161	176	272	67.7	244	60.6	128	43.3	17.4	44.2	37.4
19	18.0	146	170	272	69.1	261 *	85.0	121	42.2	* 17.4	* 50.1	29.7
20	17.6	163	173 *	283	127	259	110	122	42.8	17.4	45.3	25.6
21	16.9	162 *	170	283 *	177 *	256	132	117 *	42.2	17.2	44.7	26.9
22	16.7	158	170	270	245	253	148	118	40.8	16.9	45.9	25.8
23	16.5	157	163 *	253	246	250	149	120	41.6	17.0	44.5	25.9
24	16.8	161	198	152 *	243	248	149	118	40.5	17.6	44.2	26.0
25	16.5	159	207	136	243	244	149	121	41.1	18.1	47.3	26.7
26	17.6	160	210	121	242	241	148	121	38.8	17.8	* 47.6	27.2
27	16.0	158	214	113	253	192	147	66.8	38.5	21.7	52.7	26.9
28	15.5	157	219	110	295	171	150	60.3	38.8	38.5	48.4	26.2
29	85.8	160	216	113	277 *	175	150	59.5	38.2	39.4	47.3	25.3
30	108	216	116	245	168	148	148	58.3	37.7	* 39.1	44.7	24.7
31	106		223		244		* 79.6	60.3		35.4		25.5
Sum	728.8	3,970.7	5,664	6,558	4,537.0	5,937	3,360.7	2,668.1	1,338.5	682.0	1,271.9	1,084.9

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Low	Total		Average	Maximum	Minimum	
											Day
Jan.	1.00	0.46	29	167	2	10.6	23.5	62,968	125,054	272,866	17,882
Feb.	1.12	.49	24	229	3	14.8	137	343,068	167,803	552,852	22,983
Mar.	1.13	.81	110	235	10	89.5	183	489,370	196,671	489,370	21,337
April	1.27	.70	21	320	29	55.8	219	566,611	197,026	566,611	41,748
May	1.26	.50	29	309	11	15.6	146	391,997	268,890	669,284	38,149
June	1.19	.88	19	267	6	114	198	512,957	213,499	512,957	28,546
July	1.12	.46	13	230	17	10.6	108	290,364	180,919	452,566	38,823
Aug.	1.03	.47	18	180	30	12.1	86.1	230,524	205,292	827,137	37,556
Sept.	.86	.45	1	108	28	9.94	44.6	115,646	268,912	1,637,441	45,921
Oct.	.87	.41	29	109	3	6.20	22.0	58,295	242,152	1,005,540	14,281
Nov.	.89	.41	19	120	2	5.92	42.4	109,892	135,516	650,690	16,830
Dec.	.88	.42	1	115	23	7.05	35.0	93,735	109,995	282,187	17,168
Yearly	1.27	0.41		320		5.92	103	3,266,057	2,311,729	4,617,893	627,328

* Discharge measurement made on this day ! And other days ** Period 1968-1992

Values for January 1968 are Rio Grande near Del Rio less Arroyo de las Vacas flow

08-4520.00 ARROYO DE LAS VACAS AT CD. ACUNA, COAHUILA

DESCRIPTION: Cableway, concrete wall with a V-shape concrete control weir of 10 CMS 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 2.9 creek kilometers upstream from its confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 903 on the upstream side of the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila and 20.7 river kilometers downstream from Amistad Dam. The zero of the gage is 270.00 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 21 current-meter measurements during the year, a stable rating curve up to 10 CMS, which is the capacity of the weir, and a continuous record of gage heights. Computations by shifting control methods for flows exceeding the capacity of the weir. Records available: Occasional estimates from June 1935 to March 19, 1938 and a continuous record from March 20, 1938 through 1992.

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 10 CMS, constructed at this station, started operating December 14, 1961. On June 28, 1954, backwater from the Rio Grande reached an elevation of 275.08 meters 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. 1,800 CMS with a gage height of 7.70 meters on June 17, 1961. Min. no flow on several occasions.

Average Flow in Cubic Meters per Second**			
Daily:	Max. 678	June 17, 1961	Min. 0 Dec. 23, 1956
Monthly:	Max. 29.8	June 1961	Min. 0.01 Oct. 1952
Yearly:	Max. 2.74	1961	Min. 0.08 1952

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.52	0.47	0.48	0.53	0.22	0.84	0.20	0.72	0.24	0.15	0.26	0.28
2	.54	.42	.48	.56	.36	.83	.19	.72	.19	.16	.25	.26
3	.54	1.82	2.29	.51	3.29	.72	.19	.72	.20	.16	.23	.35
4	.56	5.49	4.83	.50	.76	.68	.18	.70	.21	.16	.24	.33
5	.57	2.18	1.76	.56	.49	.83	.18	.63	.21	.16	.26	.34
6	.56	1.22	1.04	.55	.39	.72	.18	.51	.19	.27	.27	.30
7	.56	.88	.85	.47	.35	2.53	1.17	.47	.20	.35	.27	.29
8	.54	.82	1.18	.45	* .32	.70	.15	.46	.23	.36	.27	.30
9	* .49	.75	2.47	.47	.31	4.48	.15	.33	.16	.37	.26	.32
10	.45	.70	1.07	.46	.36	1.25	.15	.24	* .16	.39	.26	.30
11	.46	.66	.92	.45	.36	* .83	.14	.24	.16	.38	.26	.30
12	.48	.64	* .87	.44	.36	.72	.14	.25	.16	.34	.26	.30
13	.44	* .64	.83	.39	.38	.66	.13	.25	.18	.39	.28	.31
14	.42	.64	.76	.34	5.42	.64	.13	.27	.20	.25	.25	.32
15	.43	.56	.72	.35	.91	.64	.12	.21	.19	.20	.29	.41
16	.42	.46	.72	.32	2.95	.62	.12	.20	.18	.19	.32	.42
17	.49	.46	.96	.55	1.07	.53	.11	.18	.17	.18	.32	* .42
18	.58	.40	.82	.37	.86	.52	.13	.16	.16	.18	.28	.44
19	.48	.36	.68	.31	.78	.48	6.33	.22	.16	.21	* .26	.44
20	.45	.37	.64	.28	.84	.48	1.52	* .14	.18	.23	.34	.42
21	.48	.42	.64	.28	.68	.48	17.4	* .14	.23	.22	.30	.43
22	.46	.44	.64	.33	.74	.46	25.5	.15	.20	.22	.29	.38
23	.42	.42	.58	* .32	.61	.45	3.45	.14	.19	.22	.29	.35
24	.42	3.01	.58	.32	.93	.36	1.94	.16	* .18	.22	.28	.36
25	.44	.83	.56	.36	.80	.33	1.43	.18	.19	.23	.30	.35
26	1.18	* .62	* .53	.42	.82	.27	1.17	* .27	.19	.22	* .29	.34
27	.84	* .55	* .57	.34	2.38	.25	.97	* .20	.18	.22	* .32	.39
28	.64	.51	.58	.26	1.04	.24	* .87	.22	.17	.22	.32	.35
29	.57	.48	.58	.24	.76	.22	.67	.20	.16	* .29	.32	.40
30	* .52		.54	.23	.72	.22	.71	.19	.16	.34	* .40	.40
31	.48		.50		1.25		.72	.20		.26		.40
Sum	16.43	27.22	30.67	11.96	31.51	22.98	65.44	9.67	5.58	7.74	8.56	11.00

Current Year 1992 Period 1938-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.32	0.20	26	1.73	113	0.42	0.53	1,420	509	1,420	38.9
Feb.	.68	.19	24	13.4	118	.36	.94	2,352	628	7,339	41.1
Mar.	.69	.20	3	14.0	1	.45	.99	2,650	733	3,214	73.0
April	.34	.15	17	2.05	30	.20	.40	1,033	1,661	20,488	93.0
May	.75	.15	14	17.5	2	.20	1.02	2,722	1,543	11,200	111
June	.80	.15	9	21.1	129	.20	.77	1,985	2,832	77,117	54.0
July	1.48	.12	22	89.8	115	.10	2.11	5,654	1,695	20,240	33.1
Aug.	.24	.12	1	.72	18	.11	.31	835	1,507	24,531	52.1
Sept.	.18	.13	1	.32	1	.9	.14	482	3,172	61,139	46.0
Oct.	.25	.13	29	.86	1	.12	.25	669	1,952	25,217	27.9
Nov.	.21	.16	19	.48	3	.22	.22	740	523	3,522	25.9
Dec.	.20	.17	16	.45	1	.1	.26	950	473	1,372	27.1
Yearly	1.48	0.12		89.8		0.10	0.68	21,492	17,228	86,376	2,550

* Discharge measurement made on this day

! And other days

** Period 1938-1992

08-4528.00 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, 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 1.0 creek kilometer downstream from the source of the springs and 6.3 creek kilometers upstream 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 91 meters 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 kilometer 902, 0.8 river kilometer downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zeros of the gages for the two stations are, respectively, 287.30 meters and 283.70 meters 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 24 current-meter measurements at each station respectively, by wading during the year, and continuous records of gage heights. Computations by shifting control methods. Records for the Del Rio Pumping Plant are furnished by the city of Del Rio Water Department. Records available: Total yield of the springs, February 1961 through 1992.

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 Cubic Meters per Second					
Daily:	Max. 4.84	July 23, 1976	Min. 0.83	July 29, 1964	
Monthly:	Max. 4.33	December 1976	Min. 0.97	August 1964	
Yearly:	Max. 4.22	1977	Min. 1.43	1963	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.62	3.77	3.57	3.29	3.82	4.05	4.25	3.82	* 4.16	3.77	3.79	* 3.62
2	3.60	3.71	3.57	3.31	3.88	* 3.96	4.13	3.82	4.08	3.77	3.82	3.68
3	3.48	3.65	* 3.54	3.34	3.88	3.91	4.05	3.71	4.11	3.79	* 3.77	3.65
4	3.60	3.54	3.62	3.29	3.85	3.96	3.94	* 3.65	4.11	3.79	3.68	3.71
5	3.79	* 3.54	3.77	3.31	* 3.88	4.05	3.91	3.68	4.05	3.85	3.68	3.77
6	3.46	3.48	3.57	3.46	3.85	4.02	3.94	3.94	4.05	* 3.85	3.68	3.74
7	* 3.74	3.54	3.37	* 3.48	3.82	3.91	* 3.88	3.91	4.08	3.91	3.65	3.71
8	3.85	3.54	3.46	3.46	3.82	4.02	3.99	3.74	4.16	3.85	3.62	3.65
9	3.85	3.51	3.46	3.57	3.88	4.11	3.88	3.82	4.08	3.94	3.65	3.68
10	3.88	3.54	3.37	3.57	3.88	4.05	3.96	3.62	4.11	3.94	3.65	3.65
11	3.88	3.62	3.37	3.54	3.94	4.05	3.91	4.08	3.91	3.54	3.65	3.74
12	3.85	3.65	3.43	3.40	4.11	4.02	3.82	3.91	3.94	3.85	3.62	3.74
13	3.82	3.74	3.34	3.51	4.08	4.16	4.19	3.94	3.77	3.82	3.71	3.79
14	3.82	3.74	3.34	3.54	3.88	4.08	4.30	3.91	3.74	3.79	3.77	3.77
15	3.88	3.77	3.37	3.40	3.88	4.02	4.53	3.85	* 3.85	3.82	3.62	3.79
16	3.88	3.85	* 3.31	3.40	3.85	* 4.02	4.59	3.94	3.91	3.96	3.74	* 3.74
17	3.91	3.91	3.40	3.62	3.94	4.05	4.56	3.88	4.08	3.85	* 3.74	3.82
18	3.94	3.96	3.43	3.54	3.96	4.05	4.53	* 3.91	4.16	3.85	3.71	3.88
19	3.88	* 3.88	3.46	3.65	* 3.99	3.99	3.91	3.99	3.99	4.02	3.65	3.88
20	3.88	3.88	3.37	3.60	3.96	4.02	4.13	3.91	3.88	4.02	* 3.91	3.62
21	3.85	3.88	3.51	* 3.62	3.65	3.96	4.36	3.94	3.91	3.96	3.65	3.77
22	* 3.74	3.82	3.40	3.65	3.65	4.08	* 4.33	4.05	3.96	3.85	3.62	3.77
23	3.68	3.79	3.51	3.62	3.79	4.02	4.36	4.11	3.96	3.96	3.65	3.77
24	3.74	3.71	3.51	3.60	3.88	4.05	4.02	3.99	3.79	3.91	3.62	3.82
25	3.57	3.71	3.51	3.57	3.88	4.02	3.85	4.16	3.74	3.82	3.60	3.85
26	3.51	3.57	3.34	3.60	3.91	4.05	3.82	4.13	3.77	3.94	3.65	3.79
27	3.48	3.60	3.48	3.77	3.96	3.94	3.71	4.05	3.77	3.82	3.62	3.79
28	3.85	3.57	3.43	3.88	3.94	3.99	3.65	3.85	3.68	3.85	3.65	3.79
29	3.51	3.57	3.43	3.91	4.05	4.19	3.62	3.99	3.74	3.85	3.68	3.91
30	3.60		3.46	3.91	4.02	4.28	3.85	4.08	3.71	3.85	3.71	3.94
31	3.31		3.37		4.08		3.82	4.13		3.82		3.91
Sum	115.45	107.04	107.07	106.41	120.96	121.08	125.79	121.40	118.39	119.50	110.27	116.94

Current Year 1992

Period 1961-1992

Month	Extreme Gage Meters		Extreme Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High		Day		φ Low	Total	Average	Maximum	Minimum
				Day	φ							
Jan.			18	3.94	31	3.31	3.72	9,975	8,641	11,558	2,805	
Feb.			18	3.96	6	3.48	3.69	9,248	7,672	10,129	2,614	
Mar.			5	3.77	16	3.31	3.45	9,251	8,401	11,137	2,917	
April			129	3.91	1	3.29	3.55	9,194	8,106	10,610	2,826	
May			12	4.11	121	3.65	3.90	10,451	8,534	11,471	3,506	
June			30	4.28	3	3.91	4.04	10,461	8,272	11,162	3,060	
July			16	4.59	29	3.62	4.06	10,868	8,496	11,523	2,731	
Aug.			25	4.16	10	3.62	3.92	10,489	8,482	11,751	2,608	
Sept.			1	4.16	28	3.68	3.95	10,229	8,283	11,038	3,152	
Oct.			19	4.02	11	3.54	3.85	10,325	8,740	11,408	3,094	
Nov.			2	3.82	25	3.60	3.68	9,527	8,415	11,058	2,941	
Dec.			30	3.94	1	3.62	3.77	10,104	8,764	11,633	2,948	
Yearly				4.59		3.29	3.80	120,122	100,806	133,083	45,119	

* Discharge measurement made on this day φ Mean daily ! And other days

08-4530.00 SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 29°19'50", longitude 100°53'20", immediately upstream from the Silos Farm road bridge, 1.8 creek kilometers upstream from its confluence with the Rio Grande, and about 3.2 kilometers south-southeast of Del Rio, Texas. This stream enters the Rio Grande at river kilometer 902, 0.8 river kilometer downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 267.44 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 48 current-meter measurements during the year, 24 by the United States Section and 24 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 1992.

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 at Del Rio reaches a stage of 4.6 meters, or a flow of about 1,700 CMS. On June 28, 1954 combined creek flow and backwater from the Rio Grande reached a stage of 7.47 meters, the highest of record, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,270 CMS on June 14, 1935, with a gage height of 7.07 meters. Min. 0.01 CMS on July 20, 1953.

		Average Flow in Cubic Meters per Second				
Daily:	Max.	459	June 14, 1935	Min.	0.04	July 21, 1953
Monthly:	Max.	22.8	June 1935	Min.	0.13	July 1953
Yearly:	Max.	3.85	June 1935	Min.	0.71	July 1953

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.71	3.00	3.29	3.00	3.03	3.91	3.03	2.47	* 3.46	3.03	4.11	* 3.23
2	3.74	3.00	3.23	3.03	3.06	* 3.91	3.14	2.46	3.29	3.06	3.40	3.23
3	3.71	3.29	* 3.96	3.00	3.31	3.88	3.26	2.45	3.14	2.97	* 3.60	3.29
4	3.77	4.13	4.30	2.92	3.26	3.82	3.31	* 2.61	3.12	2.97	3.65	2.95
5	3.77	* 3.31	3.37	3.03	* 3.31	3.85	3.26	2.70	3.12	2.95	3.71	3.00
6	3.77	3.14	3.06	* 2.95	3.43	3.88	* 3.12	2.74	3.12	* 3.06	3.77	3.12
7	* 3.71	3.17	3.06	* 2.97	3.48	4.42	* 3.12	2.72	3.14	3.14	3.74	3.17
8	3.71	3.23	3.20	2.92	3.57	3.94	3.09	2.83	3.17	3.03	3.74	3.26
9	3.79	3.23	3.14	2.89	3.60	9.43	3.17	2.89	3.20	3.17	3.71	3.29
10	* 3.77	3.31	3.06	* 2.92	3.62	4.90	3.23	2.86	3.14	3.17	3.71	3.48
11	3.74	3.34	3.06	2.92	3.57	4.70	3.31	2.74	3.23	3.20	3.74	3.46
12	3.68	3.29	2.97	2.95	3.43	* 3.82	3.34	2.81	3.23	3.17	3.74	3.40
13	3.71	3.62	* 2.97	2.92	3.37	3.40	3.12	2.69	3.23	* 3.20	* 3.48	3.40
14	3.71	* 3.71	2.83	2.95	4.25	3.43	3.23	2.66	3.17	3.23	3.51	3.40
15	3.68	3.71	2.86	3.00	3.85	3.37	3.29	2.89	* 3.09	3.26	3.43	3.43
16	3.62	3.68	* 2.89	2.92	4.05	* 3.37	3.29	3.03	3.14	3.14	3.40	* 3.48
17	3.68	3.71	3.03	3.00	3.91	3.34	3.37	3.12	* 3.06	3.14	* 3.37	3.46
18	3.71	3.82	2.89	2.95	4.25	3.31	3.43	* 3.14	3.03	3.17	3.29	3.40
19	3.62	* 3.82	2.89	3.00	* 4.16	3.31	5.24	3.23	3.00	3.29	3.34	3.40
20	3.62	3.77	2.92	2.95	4.02	3.37	4.59	3.23	3.09	* 3.29	3.31	3.54
21	3.71	3.77	3.00	* 2.92	4.08	3.34	5.61	3.31	3.17	3.20	3.17	3.54
22	* 3.74	3.68	2.97	2.89	* 3.94	3.29	* 4.28	3.23	3.14	3.17	3.14	3.65
23	3.57	3.60	2.82	2.89	3.96	3.31	3.99	3.31	3.23	3.34	3.29	3.62
24	3.51	5.32	2.63	3.03	3.94	3.20	* 3.88	* 3.34	3.29	3.51	3.29	3.65
25	3.54	3.82	2.60	3.12	3.96	3.14	3.79	3.14	3.26	3.54	3.29	3.60
26	3.82	3.65	2.66	3.12	3.99	3.17	3.65	3.29	3.26	3.54	3.29	3.60
27	3.29	3.51	2.82	3.03	4.30	3.29	3.54	3.40	3.23	3.51	3.43	3.62
28	3.20	3.40	2.83	3.00	4.02	3.26	3.43	3.46	3.20	3.60	3.43	3.77
29	3.17	3.34	2.89	3.00	3.94	3.00	3.37	3.40	3.12	3.82	3.46	3.71
30	3.12		2.89	2.97	3.91	2.97	2.81	3.40	3.12	3.74	3.43	3.77
31	3.06		2.92		4.19		2.55	3.43		3.68		* 3.88
Sum	111.95	103.37	94.01	89.16	116.76	113.33	108.84	92.98	95.19	101.29	104.97	106.82

Current Year 1992 Period 1932-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.42	0.32	26	4.33	31	3.03	3.61	9,672	6,647	10,985	1,152
Feb.	1.17	.33	24	16.5	3	2.95	3.56	8,931	5,528	10,642	601
Mar.	1.05	.32	3	12.0	25	2.47	3.03	8,122	5,339	10,304	850
April	.41	.30	5	3.37	23	2.59	2.97	7,703	5,680	12,836	698
May	.17	.14	14	8.18	22	2.06	3.77	10,088	6,528	21,697	912
June	1.93	.28	9	35.1	124	2.77	3.78	9,792	6,701	59,059	370
July	.86	.26	19	10.3	130	2.33	3.51	9,404	5,716	27,232	352
Aug.	.40	.26	21	3.74	3	2.18	3.00	8,033	5,189	9,355	432
Sept.	.39	.32	2	3.62	3	2.95	3.17	8,224	6,648	35,373	1,076
Oct.	.51	.31	29	4.90	5	2.80	3.27	8,751	6,795	17,551	1,233
Nov.	.69	.34	1	7.19	21	2.86	3.50	9,069	5,911	10,567	649
Dec.	.44	.34	28	4.05	4	2.92	3.45	9,229	6,133	10,660	612
Yearly	1.93	0.17		35.1		2.06	3.38	107,018	72,815	121,046	22,441

* Discharge measurement made on this day ! And other days

08-4539.00 DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL AT MILE 13 NEAR QUEMADO, TEXAS

DESCRIPTION: Foot bridge for making current-meter measurements, and water-stage recorder (graphic), located on the left bank of a gunnite-lined section of the canal at latitude 29°03'00", longitude 100°39'40", 0.8 canal kilometer downstream from the Tequesquite Creek Siphon, 5.6 canal kilometers upstream from the Las Moras Siphon, about 12.1 kilometers north-northwest of Quemado, Maverick County, Texas and 20.6 kilometers from the canal intake. The canal intake is at river kilometer 875, 28.0 river kilometers downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 24 current-meter 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 1992.

REMARKS: At canal kilometer 51.2 a portion of the diverted water returns to the river through the Maverick Power Plant, and the remainder enters the Maverick Canal Extension. In 1992, 5,184 hectares of land were irrigated between this station and the power plant, and 10,279 hectares were irrigated from the extension, making a total of 15,463 hectares. A total of 1,099 TCM returned to the Rio Grande at the power plant and through irrigation system returns published in following pages of this bulletin.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 52.4 CMS on February 15, 1989. Min. no flow several days in June, July, and November 1954; and October 1978.

Average Flow in Cubic Meters per Second**						
Daily:	Max.	50.4	Aug. 19, 1990	Min.	0	Oct. 2 & 3, 1978
Monthly:	Max.	47.5	April 1990	Min.	8.35	Feb. 1977
Yearly:	Max.	42.2	1980	Min.	17.9	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.2	45.9	46.7	46.4	40.5	42.8	42.8	38.5	* 39.9	* 37.4	36.2	* 38.5
2	20.2	46.4	46.7	46.2	39.1	43.6	43.3	36.8	40.8	35.1	36.5	38.5
3	20.0	* 46.4	45.9	46.4	38.5	43.3	43.6	4.39	39.4	34.8	36.2	37.9
4	20.1	40.2	* 42.8	46.2	* 39.4	* 43.3	43.3	* 5.01	38.5	34.6	* 36.5	38.5
5	20.7	41.3	46.2	45.9	39.4	44.2	43.6	31.4	38.5	34.0	36.8	37.9
6	20.6	41.9	46.7	* 46.4	39.1	43.6	43.0	39.6	39.4	33.7	37.1	38.2
7	* 21.1	45.3	46.4	45.9	38.8	44.5	42.8	40.5	39.6	24.5	37.1	38.8
8	21.3	45.6	46.4	46.2	39.4	45.3	* 42.2	40.2	39.1	25.5	37.7	37.9
9	20.4	45.6	46.2	45.9	39.4	45.0	39.6	40.5	39.1	25.5	37.9	37.7
10	19.7	45.0	46.7	45.3	39.1	43.9	35.4	40.2	39.4	25.8	38.5	37.7
11	19.1	45.6	46.4	45.3	37.9	45.9	34.3	39.9	39.6	26.0	38.2	37.9
12	9.91	46.2	45.6	45.0	37.1	46.2	34.8	40.2	39.6	25.8	38.2	37.1
13	6.09	46.7	45.6	44.7	36.8	46.4	35.7	40.2	39.4	25.8	37.9	36.5
14	4.45	46.7	45.3	45.3	38.5	46.4	34.8	40.8	39.6	25.1	37.9	36.0
15	17.7	47.0	46.2	45.0	39.4	* 46.2	34.3	42.8	* 39.4	25.3	38.2	* 35.1
16	18.9	45.3	45.3	45.0	38.8	45.9	34.0	43.3	39.4	24.2	40.2	35.4
17	18.7	46.2	45.0	42.8	38.5	45.0	35.7	* 41.3	39.1	25.1	* 39.4	34.3
18	19.4	* 46.7	* 44.5	43.0	* 38.5	45.3	36.8	42.8	37.4	24.5	39.4	35.1
19	19.6	46.2	45.6	45.3	37.1	44.7	41.3	43.0	38.2	* 24.0	39.6	34.3
20	20.2	47.0	45.0	* 44.7	40.2	44.7	* 42.8	43.3	37.7	24.8	39.6	34.3
21	20.3	47.3	46.2	45.0	41.1	44.7	41.9	43.9	39.4	24.5	39.4	31.2
22	* 19.7	46.7	45.3	44.7	41.6	44.5	40.5	43.9	39.1	24.6	39.1	30.3
23	19.8	46.2	44.7	43.9	42.5	43.9	40.2	43.9	39.1	24.7	39.1	30.3
24	19.9	43.3	45.6	43.6	42.5	44.2	40.2	44.7	39.1	24.9	39.4	31.2
25	19.9	42.2	46.4	43.3	42.8	44.2	40.8	44.5	39.4	24.6	39.4	30.3
26	22.1	46.7	46.4	42.8	42.5	44.7	40.5	44.2	39.4	24.7	39.9	30.6
27	23.6	46.7	45.9	41.6	42.2	43.9	40.5	44.7	38.8	25.1	39.9	30.0
28	20.8	46.4	45.9	41.9	42.8	43.9	40.5	42.8	38.8	27.1	40.5	31.2
29	24.1	46.7	41.3	42.2	43.0	42.5	40.2	41.3	38.2	31.7	39.9	30.9
30	43.3	45.0	45.9	40.5	42.5	42.8	40.5	41.9	37.9	34.8	38.5	30.9
31	45.0		45.9		42.8		39.9	41.3		35.4		30.3
Sum	636.85	1,319.4	1,414.7	1,336.4	1,242.3	1,335.5	1,229.8	1,211.80	1,172.3	863.6	1,154.2	1,074.8

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	2.96	0.79	130	46.2	14	4.33	20.5	55,024	87,773	120,225	25,730
Feb.	3.03	2.60	3	48.4	4	37.1	45.5	113,996	86,197	113,996	20,233
Mar.	3.03	2.63	! 3	47.6	13	38.2	45.6	122,230	96,381	122,230	34,141
April	3.26	2.94	1	47.0	30	36.8	44.5	115,465	97,024	123,103	50,229
May	3.28	2.87	124	43.3	19	33.1	40.1	107,335	101,961	126,490	49,910
June	3.21	3.00	14	47.0	29	39.9	44.5	115,387	99,553	116,310	38,497
July	3.27	2.61	5	44.2	17	27.6	39.7	106,255	100,580	120,518	44,129
Aug.	3.00	2.64	126	45.0	3	1.53	39.1	104,700	101,787	119,784	45,279
Sept.	2.87	2.33	! 12	42.8	20	31.4	39.1	101,287	97,553	117,876	40,659
Oct.	2.73	1.92	1	40.8	7	22.3	27.9	74,615	95,764	121,971	27,426
Nov.	2.81	2.29	16	43.9	1	29.5	38.5	99,723	86,211	115,209	27,737
Dec.	2.74	2.02	7	41.3	25	23.9	34.7	92,863	85,522	120,494	29,007
Yearly	3.28	0.64		48.4		1.53	38.2	1,208,880	1,136,306	1,337,047	565,712

* Discharge measurement made on this day

! And other days

** Period 1968-1992

08-4550.00 PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: 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". 2.6 creek kilometers upstream from its confluence with the Rio Grande, and about 30.6 kilometers southeast of Del Rio, Texas. This stream enters the Rio Grande at river kilometer 864, 9.1 river kilometers downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam. The zero of the gage is 248.01 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 36 current-meter measurements during the year, 12 by the United States Section and 24 by the Mexican Section of the Commission, and a continuous record of gage heights. Records available: September 1955 through 1992 at this station, and November 22, 1928 through August 1955 at a site 6.3 kilometers 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 2,270 CMS, backwater may reach this station. Backwater from the Rio Grande flood of June 1954 reached a gage height of 8.78 meters, or an elevation of 256.79 meters above mean sea level, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 5,270 CMS on June 24, 1948 with a gage height of 9.75 meters. Min. frequently no flow.

		Average Flow in Cubic Meters per Second				
Daily:	Max.	799	June 24, 1948	Min.	0	Frequently
Monthly:	Max.	27.0	June 1948	Min.	0	Frequently
Yearly:	Max.	2.97	June 1932	Min.	0.04	1980

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.62	0.28	0.44	0.58	0.51	1.12	0.85	0.71	* 0.82	0.62	0.25	0.39
2	.64	.31	.44	.59	.52	* 1.26	.84	.71	.82	.61	.26	* .39
3	.66	.46	.56	.59	.87	1.10	.82	.71	.82	.59	.32	.36
4	.65	6.29	1.18	.60	1.11	1.02	.80	.67	.79	.56	* .31	.37
5	.65	* 1.31	.67	.68	* .93	1.00	.79	* .65	.76	.56	.27	.36
6	.65	.72	.52	.69	.85	1.02	.77	.62	.75	* .48	.31	.35
7	* .56	.54	.50	* .65	.80	1.04	* .74	.59	.74	.40	.37	.34
8	.21	.48	.53	.65	.99	1.11	.71	.59	.76	.36	.37	.33
9	.21	.45	* 1.61	.65	.91	2.46	.68	.59	.75	.31	.40	.35
10	* .22	.44	.68	* .64	.87	1.94	.63	.59	.75	.38	.42	.36
11	.23	.43	.61	.62	.89	1.53	.61	.57	.83	.38	.41	.37
12	.26	.43	.62	.60	.86	* 1.40	.59	.59	.80	.38	.40	.35
13	.38	.42	* .62	.58	.77	1.33	.57	.57	.81	* .41	* .39	.36
14	.35	* .42	.60	.56	1.32	1.28	.57	.52	.81	.42	.38	.40
15	.35	.41	.56	.55	.95	1.28	.44	.47	.69	.41	.38	.41
16	.34	.39	.54	.63	.92	1.23	.55	.53	.53	.47	.39	.41
17	.36	.39	.60	1.98	.95	1.20	.53	.65	* .56	.53	.40	.39
18	.43	.39	.71	1.00	.95	1.16	.62	.55	.46	.53	.40	.38
19	.44	.39	.66	.76	1.28	1.12	.78	.55	.41	.51	.39	.38
20	.40	.38	.57	.64	1.28	1.12	.80	.58	.40	.51	.40	.38
21	.36	.38	.56	.61	* 1.33	1.08	1.44	.74	.40	.46	.39	.37
22	.35	.40	.57	.59	* 1.27	1.07	1.22	1.06	.39	.41	.37	.37
23	.33	.40	.56	.57	1.26	1.06	.97	.91	.40	.49	.37	.37
24	.30	.54	.56	.57	1.12	1.04	* .86	* .88	.41	.42	.38	.39
25	.29	.55	.56	.71	1.06	.99	.84	.87	.40	.38	.38	.38
26	.54	.46	.56	.64	1.07	.95	.82	.86	.42	.35	.38	.38
27	.60	.46	.57	.61	1.47	.93	.80	.85	.42	.33	.38	.37
28	.41	.46	.61	.57	1.34	.91	.80	.83	.42	.36	.34	.38
29	.34	.44	.63	.55	1.09	.89	.79	.82	.40	.32	.33	.39
30	.31	.44	.60	.54	1.02	.87	.77	.83	.41	.30	.36	.39
31	.29	.44	.57	.64	1.12	.99	.74	.83	.41	.32	* .39	.39
Sum	12.73	19.42	19.57	20.20	31.68	35.51	23.74	21.49	18.13	13.56	10.90	11.61

Current Year 1992

Period 1929-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High		Average	Total	Average	Maximum	Minimum	
				Day	Low						
Jan.	0.44	0.28	26	0.68	9	0.20	0.41	1,100	693	2,784	0
Feb.	1.40	.36	4	26.4	1	.27	.67	1,678	731	7,106	0
Mar.	.77	.39	9	3.74	1	.44	.63	1,691	658	3,085	0
April	.79	.37	17	4.47	30	.51	.67	1,745	1,524	33,464	0
May	.55	.37	19	1.71	1	.50	1.02	2,737	2,217	36,248	0
June	.78	.43	9	4.25	30	.84	1.18	3,068	4,727	69,981	0
July	.58	.33	21	2.05	15	.35	.77	2,051	1,756	37,030	0
Aug.	.46	.34	121	1.19	113	.44	.69	1,857	1,779	60,070	0
Sept.	.42	.32	11	.91	121	.39	.60	1,566	2,458	60,397	0
Oct.	.37	.29	1	.63	9	.26	.44	1,172	1,252	11,022	0
Nov.	.35	.30	1	.42	1	.22	.36	942	616	3,196	0
Dec.	.35	.33	14	.42	7	.33	.37	1,003	711	3,041	0
Yearly	1.40	0.28		26.4		0.20	0.65	20,610	19,122	94,053	1,178

* Discharge measurement made on this day

! And other days

08-4555.00 RIO SAN DIEGO NEAR JIMENEZ, COAHUILA

DESCRIPTION: Cableway, masonry and concrete Cipolletti weir of 22 CMS 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 22°04'20", longitude 100°47'35", about 6.0 kilometers west of Jimenez, Coahuila, and 7.0 river kilometers upstream from its 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 kilometer 856, 16.8 river kilometers downstream from Maverick County Water Control and Improvement District No. 1 diversion dam and 46.4 river kilometers downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 253.51 meters 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 78 current-meter measurements during the year, and a continuous record of gage heights. The flow tabulated below includes the flow of the canal, and prior to 1964, records do not include this flow. Records available: 1922 through 1992. 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 0.80 meters; in November 1961 an additional 0.06 meters, and the capacity of the weir was increased from 20 CMS to 22 CMS.

EXTREME FLOWS FROM RECORDS:** Momentary: Max. 2,320 CMS on June 17, 1961 with a gage height of 6.31 meters. Min. no flow occurred on several occasions.

		Average Flow in Cubic Meters per Second**					
Daily:	Max.	1,040	July 18, 1975		Min.	0	Occasionally
Monthly:	Max.	67.5	Oct. 1932		Min.	0.23	July 1956
Yearly:	Max.	17.6	1976		Min.	0.68	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.8	7.73	10.5	8.27	8.50	23.5	12.5	21.9	13.5	11.9	7.74	6.54
2	10.6	7.73	10.5	8.39	8.50	* 24.4	11.7	21.4	13.5	11.9	7.86	6.54
3	10.4	9.29	10.9	8.10	20.9	23.6	11.3	21.2	13.5	11.9	* 7.71	6.54
4	10.4	* 13.5	15.8	7.98	14.5	23.3	11.2	* 20.6	13.4	11.9	7.50	6.54
5	10.4	13.0	12.3	8.05	11.5	23.2	10.9	20.2	13.2	11.9	7.50	6.54
6	10.2	13.5	11.2	7.94	10.6	23.0	* 10.8	19.8	13.2	11.9	7.27	6.54
7	* 10.1	13.8	10.8	* 7.83	* 10.0	23.3	* 10.6	19.5	13.2	11.8	7.27	6.29
8	9.80	13.3	10.8	7.54	10.0	21.7	10.4	19.2	* 13.2	11.3	7.15	* 6.29
9	9.80	12.9	11.6	7.54	9.71	* 22.9	10.2	19.2	13.2	11.3	7.02	6.29
10	9.80	12.6	* 11.4	7.54	9.70	21.8	10.1	18.7	13.2	11.3	* 6.64	6.29
11	9.65	* 12.4	10.8	7.54	9.82	21.4	10.2	* 18.0	13.4	10.4	6.34	6.29
12	9.50	12.2	10.8	7.28	* 9.89	21.0	10.2	17.7	13.2	10.4	6.46	6.29
13	9.34	12.2	10.2	7.28	9.71	20.6	10.0	17.4	13.2	* 10.2	* 6.46	6.31
14	9.19	12.2	9.73	* 7.28	12.8	20.6	9.92	16.9	12.9	10.1	6.46	6.31
15	9.19	12.1	9.50	* 7.28	11.3	20.4	9.74	16.4	12.8	10.2	6.46	6.31
16	9.19	11.9	9.30	7.32	10.6	* 19.2	9.44	16.1	12.6	10.1	6.02	6.31
17	9.57	11.9	* 9.30	8.03	10.3	18.1	9.43	15.7	12.6	10.1	5.36	6.31
18	9.42	11.6	9.14	9.18	10.4	17.5	9.54	* 15.1	12.2	10.1	5.24	6.31
19	9.19	11.6	8.99	8.99	* 11.0	17.3	111	14.9	11.9	10.1	5.71	5.93
20	9.04	11.4	8.99	8.72	11.4	15.7	28.3	14.4	11.9	* 10.1	5.47	5.72
21	* 8.88	11.2	8.99	* 8.54	16.2	15.0	123 *	14.3	11.9	10.1	5.03	5.55
22	8.57	11.2	8.87	8.43	20.2	14.7	* 56.7	14.1	* 11.8	10.1	4.80	* 5.55
23	8.57	11.0	8.68	8.43	19.4	* 13.7	36.9	14.1	11.6	9.82	4.80	5.55
24	8.57	13.0	* 8.39	8.50	19.3	13.3	31.5	14.1	11.9	9.82	* 4.80	5.55
25	8.60	* 11.9	8.39	10.2	20.0	13.0	28.9	* 14.1	11.9	9.52	4.72	5.32
26	9.47	11.2	8.17	9.10	* 21.2	13.0	26.7	14.1	11.9	9.36	5.83	5.32
27	9.19	10.8	8.68	8.73	26.8	13.0	25.2	14.1	11.9	* 9.21	6.82	5.32
28	* 8.80	10.7	8.95	* 8.49	25.5	13.0	* 24.6	13.7	11.9	8.57	6.82	5.32
29	8.57	10.5	8.64	8.49	24.3	12.7	23.7	13.5	11.8	8.14	6.82	5.32
30	8.40		8.39	8.49	23.8	12.7	23.1	13.5	11.9	8.19	4.65	5.32
31	7.92		8.22		24.0		22.2	13.5		7.87		5.19
Sum	291.12	338.35	306.92	245.48	461.83	556.6	749.97	517.4	378.3	319.60	188.73	185.80

Current Year 1992

Period 1933-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High		Average	Total	Average	Maximum	Minimum	
				Day	Low						
Jan.	0.25	0.20	1	10.8	31	7.73	9.39	25,153	10,694	44,936	2,294
Feb.	.31	.20	1	15.1	1	7.73	11.7	29,233	8,506	31,774	1,307
Mar.	.36	.20	4	19.2	126	8.10	9.90	26,518	7,401	33,353	1,653
April	.26	.19	25	11.6	112	7.28	8.18	21,209	8,608	49,672	1,369
May	.52	.21	3	34.7	1	8.50	14.9	39,902	14,758	148,018	1,062
June	.53	.27	6	35.9	129	12.7	18.6	48,090	14,692	133,586	670
July	1.91		21	284	17	9.43	24.2	64,797	17,724	167,937	604
Aug.	.41	.29	1	21.9	128	13.5	16.7	44,703	14,762	112,553	910
Sept.	.30	.26	11	13.8	122	11.6	12.6	32,685	21,669	116,770	1,459
Oct.	.27	.20	1	11.9	130	7.87	10.3	27,613	24,094	88,601	2,094
Nov.	.20	.13	1	7.87	25	4.52	6.29	16,306	17,166	79,017	990
Dec.	.17		1	6.54	31	5.19	5.99	16,053	12,458	55,901	1,394
Yearly	1.91			284		4.52	12.4	392,262	172,532	557,474	21,500

* Discharge measurement made on this day

φ Mean daily

! And other days

** Period 1932-1992

08-4557.00 RIO GRANDE NEAR JIMENEZ, COAHUILA AND QUEMADO, TEXAS

DESCRIPTION: Cableway, control weir of 36 CMS capacity, gravity well, and water-stage recorder located on the right bank at latitude 29°03'00", longitude 100°39'50", and river kilometer 853; 2.4 kilometers south-southeast of Jimenez, Coahuila, 3.0 river kilometers downstream from Rio San Diego, about 12.1 kilometers north-northwest of Quemado, Maverick County, Texas, 19.8 river kilometers downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, and 49.4 river kilometers downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 234.39 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 32 current-meter measurements during the year, 25 by the Mexican Section and 7 by the United States Section of the Commission, 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 current-meter measurements. Records available 1965 through 1992. Records, excluding some high flow periods, are also available from 1956 through May 1965 for a station 14.0 river kilometers upstream. Records prior to 1976 were published under 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 21.5 river kilometers upstream largely control the flow at this station. The weir was placed in operation June 1, 1967, at which time the zero of the gage was set 1.00 meter higher.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 2,260 CMS on July 18, 1975 with a gage height of 7.68 meters. Min. 0.08 CMS several days in April 1983, with a gage height of 0.06 meters.

Average Flow in Cubic Meters per Second

Daily:	Max.	1,900	July 18, 1975	Min.	0.08	April 25 and 26, 1983
Monthly:	Max.	602	Sept. 1974	Min.	0.80	June 1969
Yearly:	Max.	124	1974	Min.	8.11	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.9	74.8	146	229	129	249	151	56.7	45.0	* 26.3	19.6	18.2
2	10.9	75.7	146	226	131	160	159	53.5	42.9	15.8	19.1	21.3
3	10.8	80.7	151	230	155	167	148	88.9	33.0	16.3	19.1	21.5
4	10.6	115	168	204	140	166	150	88.2	31.2	17.0	21.9	21.0
5	10.6	97.5	150 *	203	137	167	151	56.2	30.8	16.6	16.2	23.8
6	10.4	87.0	166	198	123	160	150	53.6	30.8	16.7	18.0	21.2
7	10.2	84.7	171	201	137	174	132	51.1	30.4	11.9	17.8	21.4
8	9.92	82.7	175	240	125	170 *	69.6	51.0	31.2	10.6	17.9	21.5
9	9.53	82.0	186	188	136	205	53.4	50.6	* 30.4	10.6	* 17.8	22.2
10	9.53	* 82.9	165	195	49.5	219	25.9	50.2	30.2	10.7	17.6	21.7
11	9.32	111	176	195	* 48.3	172	25.4	* 49.2	31.2	10.0	16.9	20.8
12	19.5	143	170	201	52.5	169	23.4	46.4	29.4	9.86	16.9	21.7
13	24.5	142	171	200 *	53.5	165	23.1	* 48.8	29.0	9.64	16.4	23.3
14	* 27.2	143	170	222	63.1	167	* 24.5	72.2	27.9	9.53	15.8	* 14.4
15	9.64	141	168	226	54.8	168	25.2	108	29.4	9.53	15.8	14.7
16	9.19	140	170	215	56.1	171	24.2	110	28.7	9.39	18.4	* 16.0
17	9.44	141	169	233	52.0	164	* 22.8	110	* 28.9	9.19	19.6	13.6
18	9.98	150	171	227	50.6	216	22.4	109	30.1	9.19	17.8	13.7
19	9.44	112	163	220	55.8	232	152	110	29.2	* 9.19	* 20.8	16.4
20	9.19	144	165	225	92.7	228	123	108	29.6	9.19	20.7	14.0
21	9.19	138	168	227	157	226	242 *	104	30.4	9.02	19.4	9.60
22	9.16	136	170	226	279	226 *	191 *	105	29.2	* 8.85	19.0	10.5
23	8.85	139	167 *	227	272	223	166	106	28.9	8.85	* 18.8	10.2
24	8.71	158 *	218	166	266	223	158	104 *	28.8	8.85	19.2	9.56
25	8.77	148	226	118	264 *	223	155	104 *	28.3	8.52	18.2	9.94
26	10.6	144	228	109	262	222	150 *	107	28.2	8.52	18.2	9.43
27	* 10.5	143	228	113 *	273	178	145 *	80.3	28.2	8.20	21.5	9.84
28	* 9.58	143	229	114	312	148	147	47.8	28.4	12.8	19.8	* 9.10
29	15.8	144	232	113	308	171	148	46.2	27.9	24.2	20.7	9.34
30	78.6		224	125	255	133	146	46.2	27.5	21.0	21.8	9.03
31	65.7		225		256		110	45.4		19.9		9.34
Sum	476.24	3,523.0	5,632	5,816	4,743.9	5,662	3,413.9	2,367.5	915.1	385.92	560.7	488.28

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	High		Average	Total	Average	Maximum	Minimum		
			Day	Day							
Jan.			30	78.6	124	8.52	15.4	41,147	65,798	216,587	6,459
Feb.	1.25	.28	125	216	1	14.0	121	304,387	110,213	495,044	7,139
Mar.	1.46	.80	9	269	10	94.5	182	486,605	125,286	486,605	7,245
April	1.50	.59	8	278	30	49.0	194	502,502	131,136	502,502	6,204
May	1.67	.34	28	320	11	19.3	153	409,873	198,372	608,339	8,109
June	1.99	.82	10	402	30	99.4	189	489,197	145,956	489,197	2,061
July	2.02	.24	21	409	18	10.9	110	294,961	130,483	384,576	2,864
Aug.	1.08	.32	17	173	30	17.3	76.4	204,552	149,055	876,843	14,623
Sept.	.80	.27	1	94.5	30	12.8	30.5	79,065	213,815	1,559,252	16,872
Oct.	.70	.19	1	69.4	28	7.55	12.4	33,343	207,465	1,025,389	13,827
Nov.	.68	.15	30	66.6	122	5.00	18.7	48,444	91,145	615,683	10,932
Dec.	.70	.16	5	69.4	124	5.32	15.8	42,187	59,866	223,394	9,234
Yearly		0.15		409		5.00	92.9	2,936,263	1,628,529	3,909,891	256,561

* Discharge measurement made on this day

φ Mean daily

! And other days

08-4571.00 RIO SAN RODRIGO AT EL MORAL, COAHUILA

DESCRIPTION: Bubbler gage and water-stage recorder located on the left bank of El Moral, Coahuila, latitude 28°53'20", longitude 100°37'55", 1.6 river kilometers from the confluence with the Rio Grande, and about 25 kilometers northwest of Piedras Negras, Coahuila. This stream enters the Rio Grande at river kilometer 834, 39.3 river kilometers downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam and 35.2 river kilometers upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila. The zero of the gage is 228.89 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 47 current-meter measurements during the year, 45 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: 1962 through 1992.

REMARKS: Prior to 1976 this station was published under the heading "Rio San Rodrigo near Mouth at El Moral, Coahuila." 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, and the station was relocated on October 15, 1976.

EXTREME FLOWS FROM RECORDS:** Momentary: Max. 3,970 CMS on July 18, 1975, with a gage height of 5.62 meters. Min. frequently no flow.

		Average Flow in Cubic Meters per Second					
Daily:	Max.	1,260	July 18,	1975	Min.	0	Frequently
Monthly:	Max.	209	July	1976	Min.	0	Frequently
Yearly:	Max.	23.7		1976	Min.	0.15	1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.16	1.80	2.43	2.06	3.09	14.6	7.02	18.8	5.75	7.00	0.82	4.47
2	2.16	1.80	* 2.39	2.06	3.09	13.2	6.92	17.5	5.75	7.00	.88	4.47
3	2.16	* 2.63	2.34	2.06	3.09	12.5	6.81	* 16.8	5.73	7.00	* .88	4.47
4	2.38	7.59	2.25	2.06	3.09	* 12.2	6.81	16.4	5.58	7.00	.95	4.47
5	2.43	6.40	2.25	2.05	3.09	16.7	6.81	15.3	5.71	7.00	.96	4.47
6	* 2.43	3.65	2.17	* 1.97	3.09	12.2	* 6.81	14.3	5.92	6.36	1.02	4.47
7	2.38	2.47	2.16	1.88	* 3.20	21.5	6.72	13.2	5.92	6.35	1.02	4.47
8	2.34	2.27	2.16	1.88	3.42	11.2	6.42	12.0	* 5.92	6.64	1.02	* 4.47
9	2.28	2.24	* 3.35	1.88	3.70	* 11.2	6.28	11.0	5.75	2.39	1.02	4.47
10	2.16	* 2.48	2.06	1.88	3.70	24.2	6.28	* 10.2	5.75	1.41	* 1.02	4.47
11	2.10	2.43	2.06	1.80	3.70	6.28	6.28	9.53	5.75	1.05	3.64	4.35
12	1.99	2.47	2.06	1.80	3.70	6.28	6.28	8.46	5.75	.74	4.86	4.35
13	2.42	2.52	2.06	1.73	3.70	6.28	6.10	7.85	5.75	* .64	5.17	4.35
14	* 2.92	2.52	2.06	* 1.53	3.70	6.28	* 6.10	7.72	5.75	.55	5.26	4.35
15	1.34	2.55	2.06	1.46	3.61	* 6.28	6.08	6.93	* 5.75	.56	5.38	* 4.41
16	1.04	2.43	* 2.06	1.50	3.44	6.28	5.92	6.37	5.92	.58	5.44	4.47
17	1.04	* 2.25	2.06	9.95	3.36	6.28	5.92	* 6.06	5.92	.44	* 5.65	4.47
18	1.56	* 2.25	2.06	1.81	* 3.31	6.28	5.92	5.84	5.92	.42	5.65	4.47
19	2.50	2.25	2.06	2.31	4.16	6.10	55.4	5.45	5.92	* .47	5.80	4.40
20	* 1.76	2.09	2.06	* 2.52	5.09	6.10	21.4	5.08	5.92	.50	5.80	2.56
21	1.63	1.97	2.06	2.52	5.09	6.10	160 *	4.88	* 5.92	.53	5.80	1.83
22	1.63	2.33	2.06	2.56	5.09	6.10	154	4.58	* 5.92	.59	5.80	* 1.57
23	1.63	2.45	2.06	2.75	5.09	* 6.10	96.2	4.54	5.92	.63	5.80	1.42
24	1.63	* 6.54	2.06	2.83	5.09	6.10	46.2	4.39	5.65	.63	* 5.70	1.38
25	1.63	7.94	2.06	2.83	5.09	6.28	34.6	* 4.26	5.40	.63	5.57	1.37
26	1.97	3.27	2.06	2.83	5.12	6.28	33.6	4.45	5.40	* .62	4.52	1.30
27	* 3.08	2.43	2.06	2.88	9.79	6.39	* 31.8	6.19	5.40	.59	4.47	1.28
28	2.65	2.43	2.06	* 2.96	35.0	6.63	27.3	5.83	* 5.40	.58	4.47	1.28
29	2.28	2.43	2.06	2.96	37.5	6.82	24.6	5.75	* 5.40	.61	4.47	* 1.28
30	2.08	2.06	3.01	3.01	18.9	7.02	22.1	5.75	5.40	.72	4.47	1.28
31	1.97		* 2.06		16.0		20.0	5.75		.82		1.28
Sum	63.73	88.88	66.82	74.32	218.09	275.76	842.68	271.16	171.94	71.05	113.25	102.15

Current Year 1992

Period 1962-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.68	0.52	113	4.43	116	1.04	2.06	5,506	5,298	20,066	0
Feb.	.86	.59	124	11.6	1	1.80	3.06	7,679	3,626	12,251	0
Mar.	.75	.58	9	6.81	9	2.06	2.16	5,773	2,805	9,653	0
April	1.28	.55	17	43.8	114	1.46	2.48	6,421	5,931	46,663	100
May	1.26	.63	28	41.9	1	3.09	7.04	18,843	5,347	36,113	21.0
June	1.51	.73	10	65.2	119	6.10	9.19	23,826	7,899	127,224	0
July	3.74	.73	21	365	115	5.92	27.2	72,808	37,409	560,793	0
Aug.	.99	.67	1	19.6	26	4.10	8.75	23,428	13,566	109,801	0
Sept.	.73	.71	1	5.92	124	5.40	5.73	14,856	20,589	65,176	0
Oct.	.74	.31	8	7.75	117	.40	2.29	6,139	18,412	80,464	0
Nov.	.67	.39	119	5.80	1	.82	3.78	9,785	12,028	103,631	0
Dec.	.62	.44	1	4.47	126	1.28	3.30	8,826	7,491	25,993	0
Yearly	3.74	0.31		365		0.40	6.45	203,890	140,401	748,138	4,750

* Discharge measurement made on this day

! And other days

** Period 1961-1992

08-4575.00 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 14.5 kilometers north-northwest of Eagle Pass, Texas, and about 51.8 canal kilometers downstream from the point of diversion. The return enters the Rio Grande at river kilometer 816.

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 24 current-meter measurements made during the year. Records available: 1949 through 1992.

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 Cubic Meters per Second**					
Daily:	Max.	48.1	April 28,	1990	Min.	0	Occasionally
Monthly:	Max.	44.4	April	1990	Min.	1.20	Dec. 1971
Yearly:	Max.	36.7		1990	Min.	6.57	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.8	42.8	44.2	41.6	39.1	40.2	32.9	37.4	* 31.2	* 29.7	28.3	* 28.2
2	19.0	43.3	43.9	42.2	37.1	40.8	32.3	35.7	30.6	27.6	* 29.7	28.6
3	18.5	43.6	43.3	42.5	36.5	* 40.5	32.3	35.7	31.4	26.5	28.3	29.2
4	18.5	39.4	39.9	42.2	* 37.1	40.2	32.6	* 0	30.6	27.5	28.9	29.7
5	18.5	38.8	* 41.9	42.8	37.7	40.5	32.6	24.4	30.0	27.3	28.9	30.0
6	18.5	39.1	42.8	* 43.0	37.4	39.9	32.0	30.0	31.7	25.6	28.9	30.9
7	18.7	* 42.2	42.8	43.3	36.2	40.5	* 31.4	32.3	31.7	19.8	29.2	31.7
8	* 19.5	43.3	43.0	43.0	36.5	40.2	30.0	32.3	31.2	17.1	31.2	30.3
9	18.6	43.0	42.8	43.3	37.4	40.5	28.3	35.4	29.7	18.4	30.6	30.0
10	18.3	43.0	42.8	42.8	37.1	38.5	24.4	32.9	29.5	18.4	30.0	30.0
11	17.5	42.8	42.8	42.5	35.1	40.5	23.4	30.9	30.0	19.2	29.2	30.6
12	11.7	43.6	41.9	42.5	32.9	40.8	24.2	31.2	31.7	18.9	29.5	30.6
13	10.2	43.9	41.1	41.6	31.7	41.1	24.8	30.9	31.7	18.2	29.2	30.6
14	8.5	44.5	41.6	41.3	32.0	40.8	23.0	30.6	32.3	18.3	29.2	29.2
15	14.0	44.7	42.5	41.3	34.0	40.5	23.2	33.1	* 31.4	17.4	29.2	* 28.6
16	16.7	43.3	41.6	41.3	34.0	* 39.9	22.6	34.6	31.7	17.7	30.9	29.7
17	16.9	43.9	39.9	42.8	34.8	39.1	23.0	* 32.9	31.7	18.5	* 28.9	28.3
18	17.7	* 44.5	* 39.1	41.3	* 34.6	39.1	24.1	32.9	30.6	19.6	29.2	29.2
19	17.4	44.5	39.6	43.9	35.4	37.9	27.9	33.1	29.7	* 18.5	30.0	29.7
20	16.9	44.5	38.5	* 43.6	36.2	37.4	* 31.7	33.4	30.3	17.6	30.6	29.5
21	16.7	44.7	39.4	43.6	39.4	38.2	33.1	33.7	31.4	17.0	30.3	26.6
22	16.9	44.7	39.9	43.6	39.9	36.5	37.1	33.1	31.2	17.2	30.3	23.6
23	* 17.2	44.2	39.4	42.5	40.5	35.7	39.1	33.4	31.2	16.8	29.7	23.3
24	17.2	43.6	39.6	41.3	41.1	35.4	39.4	35.7	31.7	17.5	28.6	24.6
25	17.2	38.8	39.9	41.9	41.3	34.3	39.6	33.7	31.7	17.8	29.2	24.7
26	18.4	43.6	39.9	41.3	41.1	33.7	39.4	33.7	31.7	18.9	31.2	24.7
27	21.8	44.5	39.4	40.8	41.1	33.1	39.1	33.4	32.0	18.0	30.3	24.5
28	19.9	43.9	40.8	40.5	41.1	34.0	39.4	32.3	31.4	18.7	31.2	25.2
29	19.0	44.2	37.7	40.8	41.1	33.4	38.5	31.2	30.0	21.6	31.7	24.6
30	35.1		40.2	39.4	40.5	33.1	38.5	31.7	29.7	25.9	29.5	24.7
31	42.8		39.9		41.1		37.9	31.7		26.2		24.4
Sum	568.95	1,250.9	1,272.1	1,264.5	1,161.0	1,146.3	977.8	966.7	930.7	637.4	891.9	865.5

Current Year 1992 Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	φ High		Average	Total	Average	Maximum	Minimum		
			Day	φ Low							
Jan.			31	42.8	14	0.85	18.4	49,157	71,159	116,090	6,108
Feb.			15	44.7	5	38.8	43.1	108,078	70,247	108,078	6,008
Mar.			1	44.2	29	37.7	41.0	109,909	71,140	109,909	7,047
April			19	63.9	30	39.4	42.2	109,253	70,197	115,145	5,305
May			25	41.3	13	31.7	37.5	100,310	78,124	113,668	17,131
June			13	41.1	127	33.1	38.2	99,040	70,447	102,070	8,162
July			25	39.6	16	22.6	31.5	84,482	69,072	96,639	6,830
Aug.			1	37.4	4	0	31.2	83,523	71,629	97,044	22,766
Sept.			14	32.3	10	29.5	31.0	80,412	76,807	111,197	16,949
Oct.			1	29.7	23	16.8	20.6	55,071	77,221	109,382	13,750
Nov.			29	31.7	1	28.3	29.7	77,060	68,742	106,644	3,951
Dec.			7	31.7	23	23.3	27.9	74,779	68,772	112,566	3,217
Yearly				44.7		0	32.6	1,031,074	863,557	1,158,234	207,661

* Discharge measurement made on this day φ Mean daily ! And other days
** Period 1968-1992

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4576.00 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 1.6 kilometers downstream from the heading of this canal extension, about 14.5 kilometers north-northwest of Eagle Pass, Texas, and about 52.8 canal kilometers downstream from the point of diversion from the Rio Grande, which is located at river kilometer 874.9. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 12 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1939 through 1992.

REMARKS: The main Maverick Canal divides into two branches at a point about 14.5 kilometers north-northwest of Eagle Pass, Texas, and about 51.2 canal kilometers 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 1992, 10,319 hectares of land north and south of Eagle Pass were irrigated. A total of 29,625 TCM of water from this canal extension returned to the river through the irrigation system which extends approximately 108 canal kilometers downstream.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 16.4 CMS on July 25, 1964. Min. occasionally no flow.

		Average Flow in Cubic Meters per Second**					
Daily:	Max.	15.6	June 6 & 7, 1968	Min.	0	Occasionally	
Monthly:	Max.	14.9	June 1968	Min.	0.51	Jan. 1985	
Yearly:	Max.	8.33	1972	Min.	1.65	1986	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.31	0.74	0.95	2.80	1.82	1.82	4.25	1.88	* 5.07	* 4.02	3.85	* 3.99
2	1.31	.75	.96	2.74	1.86	1.76	4.67	1.99	5.07	4.02	* 3.91	4.05
3	1.31	.75	.97	2.95	2.56	* 1.72	5.18	2.10	5.10	4.28	3.96	4.11
4	1.31	.75	1.42	2.78	* 2.55	1.87	5.64	* 1.87	5.10	4.25	3.99	3.85
5	1.31	1.74	* 1.74	2.53	2.49	2.19	5.86	1.19	5.10	4.16	4.02	3.60
6	1.31	.76	1.73	* 2.31	2.45	2.43	* 6.09	1.48	5.13	4.25	4.08	3.60
7	1.32	* .83	1.74	2.39	2.41	2.66	* 6.26	1.72	5.13	4.22	4.11	3.40
8	* 1.32	.89	1.73	2.52	2.38	2.71	6.29	1.99	5.13	4.16	4.13	3.40
9	1.30	.90	1.71	2.54	2.37	2.60	6.23	2.27	5.13	4.19	4.16	3.40
10	1.27	.90	1.70	2.57	2.45	1.79	5.81	2.56	5.10	4.22	4.19	3.46
11	1.14	.90	1.69	2.59	2.89	.58	5.75	2.86	5.13	4.22	4.19	3.48
12	1.08	.90	1.91	2.63	3.68	.17	5.69	3.20	5.10	4.08	4.19	3.51
13	.92	.90	1.98	2.73	4.08	.18	5.83	3.54	5.10	3.99	4.19	3.54
14	.12	.91	1.91	2.89	4.47	.22	5.92	3.88	5.07	3.96	4.22	3.51
15	.31	.91	1.91	2.92	4.56	.29	5.98	4.25	4.98	3.99	4.22	3.57
16	.69	.92	1.91	3.20	4.30	.50	6.00	4.64	4.76	3.94	4.25	3.23
17	.70	.92	2.11	2.23	4.11	.63	6.12	4.90	4.73	3.79	4.25	2.82
18	.70	.93	2.26	.30	3.77	.71	6.46	4.98	4.67	3.79	4.25	2.86
19	.70	.93	2.36	.25	3.26	1.30	6.49	4.98	4.62	3.77	4.25	2.89
20	.71	.94	2.60	.23	2.20	1.86	6.37	4.98	4.62	3.77	4.28	2.89
21	.71	.93	2.59	.23	2.21	2.01	5.81	4.98	4.59	3.77	4.25	2.92
22	.71	.93	2.42	.22	2.20	2.14	2.40	4.98	4.53	3.74	4.25	2.95
23	.72	.94	2.27	.68	2.17	2.17	.60	5.01	4.50	3.74	4.25	2.97
24	.72	.94	2.27	2.30	2.13	2.21	.90	5.01	4.45	3.71	4.25	3.03
25	.72	.93	2.28	1.85	2.10	2.79	.84	5.04	4.42	3.74	4.08	3.06
26	.73	.95	2.31	1.21	2.06	3.40	1.28	5.04	4.33	3.71	3.98	3.09
27	.73	.95	2.58	1.20	2.03	3.60	1.37	5.07	4.28	3.68	3.96	3.12
28	.73	.95	2.77	1.25	1.97	3.65	1.47	5.07	4.22	3.68	3.99	3.14
29	.73	.96	2.76	1.83	1.93	3.74	1.57	5.07	4.13	3.71	4.02	3.17
30	.74	.96	2.79	1.82	1.91	3.91	1.67	5.07	4.08	3.85	3.99	3.20
31	.74	.96	2.82	1.87	1.87	1.77	1.77	5.07	4.08	3.85	3.99	3.20
Sum	28.12	25.67	63.15	58.69	83.24	57.61	136.57	116.67	143.37	122.25	123.67	103.01

Current Year 1992

Period 1968-1992

Month	Average Rainfall*** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	1992	1939-1992	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	84	21	1	1.34	15	0.02	0.91	2,430	10,074	22,494	1,369
Feb.	81	25	29	.97	1	.74	.89	2,218	9,272	22,210	1,560
Mar.	4	16	31	2.83	1	.94	2.04	5,456	14,879	28,860	1,777
April	148	47	16	3.62	22	.22	1.96	5,071	16,528	31,947	2,638
May	60	76	14	4.62	1	1.80	2.69	7,192	14,856	34,773	2,811
June	64	59	30	4.02	12	.14	1.92	4,978	17,214	37,218	2,552
July	116	38	19	6.63	24	.57	4.41	11,800	19,391	35,591	7,940
Aug.	12	49	31	5.13	17	.59	3.76	10,080	17,751	30,017	5,289
Sept.	23	71	11	5.30	30	4.02	4.78	12,387	11,990	21,821	1,911
Oct.	24	54	2	4.30	27	3.62	3.94	10,562	10,711	20,357	1,664
Nov.	1	19	20	4.33	1	3.79	4.12	10,685	10,556	23,181	1,616
Dec.	25	20	3	4.16	17	2.79	3.32	8,900	10,133	20,752	2,891
Yearly	642	495		6.63		0.02	2.90	91,759	163,355	262,901	52,016

* Discharge measurement made on this day † And other days ** Period 1968-1992
*** On the United States side from Maverick Power Plant to Cuervo Creek

08-4577.00 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 Hughes Ranch, Lateral 1, Lateral 2 Spill, Canon Grande, Quemado Creek, Lateral 15 Spill, Houchin Spill, and Elm Creek; and a Parshall flume at the Lateral 2 Sand Trap Spill into Las Moras Creek immediately below the canal siphon. Gate leakage at Las Moras Creek which is measured periodically and mean daily discharges are determined by prorating between current-meter measurements.

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 1992. 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 shown on a prior page of this bulletin.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second**				
Daily:	Max.	26.3	Sept. 29, 1975	Min.	0.07	Aug. 4 & 8, 1985
Monthly:	Max.	4.36	June 1968	Min.	0.14	Sept. 1985
Yearly:	Max.	3.57	June 1968	Min.	0.41	1985

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.68	1.03	1.28	1.63	1.13	0.88	1.56	1.09	1.37	1.21	2.46	1.73
2	.69	1.09	1.27	1.51	1.16	.88	1.58	.96	1.42	1.20	1.98	1.79
3	.69	1.15	1.33	1.49	.97	.88	1.36	.72	1.61	1.26	2.38	1.76
4	.69	1.19	1.24	1.54	.91	.88	1.29	.66	1.33	1.21	2.04	1.89
5	.69	1.20	1.27	1.50	.88	.96	1.23	.97	1.41	1.34	2.17	1.74
6	.73	1.23	1.16	1.32	.78	1.02	1.28	1.08	1.14	1.56	1.99	1.63
7	.77	1.25	1.14	1.15	.80	1.09	1.18	1.09	1.06	1.55	1.70	1.51
8	.77	1.25	1.16	1.20	.88	1.12	1.40	1.17	1.26	1.37	1.38	1.73
9	.75	1.23	1.10	1.13	.79	1.17	1.51	.95	1.15	1.37	1.24	2.09
10	.73	1.23	1.18	1.68	.79	1.20	1.36	.91	1.20	1.42	1.50	1.71
11	.69	1.23	1.06	1.70	.83	1.25	1.10	1.20	1.43	1.54	1.99	1.60
12	.56	1.24	1.30	1.70	.79	1.29	.97	1.06	1.25	1.52	2.11	1.29
13	.51	1.23	1.25	1.66	.89	1.33	1.14	1.28	1.10	1.61	1.91	1.52
14	.56	1.26	1.16	1.63	.88	1.35	1.18	1.03	.89	1.59	1.86	1.56
15	.73	1.27	1.17	1.66	.86	1.35	1.17	1.13	1.09	1.78	2.03	1.50
16	.70	1.25	1.27	1.64	.83	1.34	1.26	1.15	1.15	1.93	1.91	1.38
17	.71	1.24	1.43	1.54	.84	1.42	1.24	1.04	1.16	1.83	2.05	1.27
18	.72	1.22	1.49	1.55	.92	1.38	1.31	1.29	1.30	1.52	1.88	1.24
19	.69	1.20	1.38	1.55	.90	1.48	1.58	1.70	1.43	1.54	1.71	1.26
20	.68	1.21	1.32	1.55	.93	1.34	1.50	1.23	1.22	1.53	1.51	1.07
21	.65	1.24	1.67	1.52	.94	1.24	1.46	1.04	1.07	1.52	1.60	1.03
22	.61	1.24	1.70	1.48	.93	1.37	1.41	1.08	1.07	1.44	1.40	1.39
23	.61	1.23	1.85	1.40	.94	1.34	1.20	1.05	1.26	1.53	1.44	1.62
24	.61	1.26	1.76	1.26	.90	1.32	1.13	1.13	1.37	1.50	1.69	1.49
25	.66	1.25	1.78	1.23	.87	1.61	1.17	1.30	1.40	1.37	1.58	1.23
26	.73	1.30	1.71	1.11	.86	1.64	1.22	1.22	1.40	1.68	1.48	1.17
27	.78	1.30	1.99	1.04	.84	2.11	1.32	1.09	1.34	1.96	1.53	1.03
28	.82	1.30	2.13	1.01	.85	1.60	1.29	1.41	1.25	1.60	1.60	1.13
29	.89	1.29	1.95	.96	.87	1.46	1.27	1.35	1.36	1.80	1.14	1.13
30	.91		1.95	1.04	.88	1.44	1.31	1.18	1.33	2.17	1.38	1.14
31	.95		1.84		.87		1.31	1.12		2.39		1.12
Sum	21.96	35.61	45.29	42.38	27.51	38.74	40.29	34.68	37.82	48.84	52.64	44.75

Current Year 1992 Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters					
	High	Low	Day	φ High		Average	Total	Average	Maximum	Minimum		
				Day	φ Low							
Jan.			31	0.95	13	0.51	0.71	1,897	3,629	9,424	1,252	
Feb.			126	1.30	1	1.03	1.23	3,077	3,407	7,556	1,158	
Mar.			28	2.13	11	1.06	1.46	3,913	4,494	7,940	1,383	
April			111	1.70	29	.96	1.41	3,662	4,554	9,615	1,016	
May			2	1.16	6	.78	.89	2,377	4,312	10,087	1,048	
June			27	2.11	1	1.1	.88	1.29	3,347	4,489	11,334	640
July			19	1.58	12	.97	1.30	3,481	4,653	10,060	405	
Aug.			1	1.70	4	.66	1.12	2,996	4,680	11,423	486	
Sept.			3	1.61	14	.89	1.26	3,268	3,958	9,472	356	
Oct.			31	2.39	2	1.20	1.58	4,220	4,011	8,097	1,337	
Nov.			1	2.46	29	1.14	1.75	4,548	3,870	10,726	1,019	
Dec.			9	2.09	121	1.03	1.44	3,866	3,457	7,122	1,277	
Yearly				2.46		0.51	1.29	40,652	49,514	112,857	12,834	

φ Mean daily ! And other days ** Period 1968-1992

08-4580.00 RIO GRANDE AT PIEDRAS NEGRAS, COAHUILA AND EAGLE PASS, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and data collection platform located on the left bank at latitude 28°42'50", longitude 100°30'25", and river kilometer 800, 1.0 river kilometer upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila and 124 river kilometers downstream from Amistad Dam. The zero of the gage is 208.15 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 33 discharge measurements during the year, 22 by the Mexican Section and 11 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 1992. 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 data collection platform is coupled to leased telephone circuits. This system is operated in cooperation with the National Weather Service.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 27,300 CMS, determined by slope-area calculations, on June 29, 1954, with a gage height of 16.31 meters. Well-authenticated information indicates the occurrence of a flood in June 1865 with an estimated discharge of 35,000 CMS and a gage height of 17.07 meters on the present gage, and also that these were the only floods since 1745 with flows greater than 23,400 CMS. Min. 0.69 CMS on June 22, 1953, with a gage height of 0.02 meters.

Average Flow in Cubic Meters per Second**

Daily:	Max.	2,870	July 19, 1975	Min.	4.90	April 25, 1984
Monthly:	Max.	622	Sept. 1974	Min.	9.16	June 1969
Yearly:	Max.	147	1974	Min.	27.5	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECONO 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	35.7	130	187	243	156	292 *	184	128	95.4	63.8	47.8	72.9
2	36.4	131	184 *	244	159	242	181	114	92.0	52.4	50.5	75.3
3	35.3	132 *	187	245	171	218	186	115 *	85.0	48.7	48.8	76.4
4	35.4	166	209	237	172 *	213	187	117	79.1	49.4	49.4	78.2
5	35.7	164	197	228	164	224	187	102	76.2	49.8	* 49.1	82.5
6	* 35.7	144	191	230 *	159	216	188	104	77.6	47.2	48.6	82.1
7	35.0	139	208	228	160	280	183	102	* 76.8	44.3	48.4	* 83.3
8	35.7	137	208	225	155	249	133	100	76.3	33.7	50.5	81.6
9	34.2	136	219	222	157	227	103	100	74.0	32.9	50.6	82.9
10	33.5	134	208	220	98.2	281	60.7	98.5	68.9	29.1	50.6	82.1
11	32.1	136	203	221	87.8	222	56.6	95.6	74.4	29.2	50.8	81.2
12	30.6	186	205	223	86.1	214	54.8	91.2	74.5	27.8	54.1	82.5
13	32.6	189	204	223	* 85.2	208	53.8	94.7	72.4	26.6	54.3	84.1
14	35.4	190	204	232	94.4	207	54.0	93.5	72.2	26.6	54.4	76.6
15	27.0	189	202	239	97.2	207 *	54.2	151	71.8	* 25.6	55.3	70.8
16	29.2	190	202 *	233	90.1	206	51.6	159 *	71.4	26.0	* 59.2	73.2
17	30.0	190 *	201	304	89.5	204	50.5	152 *	70.6	25.8	59.6	* 70.2
18	31.9	186	202 *	257	* 88.5	210	* 50.8	150	69.2	27.4	61.1	70.1
19	32.6	181 *	197 *	240	93.4	253	167	152	68.9	26.6	62.4	71.7
20	* 30.4	187	194	232 *	101	251	205 *	152	67.6	25.6	66.0	70.8
21	29.7	189	196	239 *	172	248	295	148	* 70.8	* 26.3	64.4	64.6
22	29.4	189	199	236	236	245	585	148	68.8	26.5	63.7	53.7
23	29.7	188	198	235	276	242	463	149	67.9	26.4	* 64.3	54.1
24	29.7	228 *	211	229	275	242	280	151	* 68.4	27.2	64.8	* 55.5
25	29.7	215	242 *	170	275	242	247	151	67.2	26.8	66.0	55.0
26	36.1	191	242	159	277	239	230	154	66.4	* 27.4	67.4	55.1
27	* 40.1	187	242	152	292 *	230	217	156	66.2	24.5	70.7	53.8
28	36.6	186	245	151	331	192	213	101	65.8	25.0	73.7	54.6
29	33.2	186	246	150	356	198	211	93.2	63.7	39.4	73.6	52.3
30	101	242	154	311	182	206	198	93.6	62.2	49.0	74.1	52.6
31	129	242 *	154	294	182	198	94.6	94.6	62.2	48.0	74.1	52.0
Sum	1,188.6	4,996	6,520	6,601	5,559.4	6,884	5,536.0	3,810.9	2,181.7	1,065.0	1,754.2	2,151.8

Month	Current Year 1992						Period 1968-1992				
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Day		Total	Average	Maximum	Minimum	
Jan.	1.57	0.68	31	161	15	18.0	102,695	151,844	352,873	32,306	
Feb.	2.37	1.10	24	324	1	76.0	431,654	191,964	552,784	43,917	
Mar.	2.17	1.49	9	277	21	146	210	563,328	206,947	563,328	25,778
April	2.62	1.27	17	387	30	107	220	570,326	209,771	570,326	29,641
May	2.50	.99	128	358	13	58.3	179	480,332	286,827	726,361	44,643
June	2.61	1.50	10	384	29	147	229	594,778	239,986	594,778	32,749
July	4.24	.87	22	882	16	41.0	179	478,310	250,213	961,964	32,194
Aug.	1.82	1.04	29	207	27	66.0	123	329,262	237,537	916,828	70,131
Sept.	1.41	.93	1	131	30	49.5	72.7	188,499	315,776	1,611,956	99,541
Oct.	1.15	.73	1	85.5	27	23.5	34.4	92,016	308,294	1,099,952	72,334
Nov.	1.22	.86	29	97.6	7	39.6	58.5	151,563	179,758	704,157	56,497
Dec.	1.31	.92	5	113	129	48.0	69.4	185,916	148,095	356,398	32,313
Yearly	4.24	0.68		882		18.0	.132	4,168,679	2,727,012	4,629,360	870,430

* Discharge measurement made on this day ! And other days ** Period 1968-1992

08-4581.50 RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir of 50 CMS capacity and water-stage recorder located on the right bank of the Rio Escondido on the outskirts of Villa de Fuente, Coahuila, at latitude 28°40'05" N, longitude 100°31'00" W, about 5.0 kilometers southwest of Piedras Negras, Coahuila, 6.0 river kilometers from the confluence with the Rio Grande, and 10.9 river kilometers downstream from the confluence of Rio San Antonio with Rio Escondido. Rio Escondido enters the Rio Grande at river kilometer 794, 5.0 river kilometers downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila. The zero of the gage is 218.96 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 25 discharge measurements during the year, 23 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Records available: 1922 through 1992. 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 222.48 meters 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. 680 CMS on June 29, 1936 with a gage height of 5.83 meters. Min. frequently no flow.

		Average Flow in Cubic Meters per Second**				
Daily:	Max.	371	Sept. 24, 1964	Min.	0	Occasionally
Monthly:	Max.	23.4	Sept. 1964	Min.	0.01	Sept. 1965
Yearly:	Max.	7.28	1987	Min.	0.07	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	3.48	3.63	3.57	2.20	4.40	* 5.77	3.81	11.4	5.77	* 4.52	3.12	2.73	
2	3.59	3.69	* 3.62	2.20	4.34	5.78	3.76	11.0	5.69	4.46	3.12	2.73	
3	3.43	* 3.78	3.62	2.27	6.39	5.60	3.67	* 10.5	5.60	4.34	3.13	2.65	
4	3.46	5.19	3.62	2.34	* 4.92	5.77	3.58	10.1	5.55	4.30	3.12	2.65	
5	3.57	4.87	3.58	2.78	4.93	6.82	3.51	9.75	5.42	4.28	* 3.18	2.57	
6	* 3.48	4.48	3.49	* 2.48	4.90	5.68	* 3.43	9.46	5.34	4.18	3.25	2.57	
7	3.43	4.26	3.43	2.34	4.80	5.60	3.40	9.14	* 5.22	4.13	3.25	* 2.62	
8	3.43	4.24	3.43	2.27	4.80	5.44	3.30	8.87	5.17	3.99	3.16	2.57	
9	3.43	4.13	3.41	2.28	4.80	5.38	3.25	8.70	5.10	3.96	3.16	2.57	
10	3.43	4.13	3.35	2.38	4.76	5.38	3.22	8.39	5.02	3.91	3.10	2.57	
11	3.38	4.02	3.25	2.33	4.68	5.38	3.20	8.10	5.39	3.86	3.07	2.57	
12	3.43	4.02	3.26	2.22	4.64	5.34	3.14	8.00	5.44	3.76	2.96	2.57	
13	3.43	4.02	3.21	2.13	4.53	5.31	3.07	7.98	5.20	3.66	2.90	2.58	
14	3.38	4.02	3.31	2.07	5.26	* 5.11	3.04	7.74	5.14	3.57	2.90	2.60	
15	3.29	4.02	3.37	2.25	4.82	5.06	3.05	7.52	5.14	3.58	3.07	2.73	
16	3.34	4.02	* 3.24	2.22	4.70	4.96	2.94	* 7.49	5.28	3.64	* 3.06	2.70	
17	3.42	* 3.87	3.06	12.9	4.61	4.74	2.79	* 7.21	5.19	3.43	2.98	2.61	
18	3.62	3.68	3.06	4.37	* 4.76	4.68	2.81	7.01	5.14	3.46	2.90	2.65	
19	3.59	3.62	3.06	3.51	4.86	4.64	3.00	6.91	5.14	* 3.52	2.96	2.60	
20	* 3.44	3.62	2.87	* 3.43	6.28	4.53	* 3.38	6.75	5.14	3.48	2.98	2.57	
21	3.68	3.62	2.57	3.43	6.70	4.46	5.77	6.68	5.16	3.43	2.90	2.49	
22	3.81	3.62	2.59	3.43	5.52	4.40	* 98.0	6.56	5.14	3.48	2.86	2.49	
23	3.69	3.56	2.57	3.43	5.34	4.29	51.0	6.38	5.14	3.52	2.90	2.49	
24	3.62	* 4.77	2.48	3.47	5.33	4.24	18.8	6.14	5.44	3.52	2.86	* 2.57	
25	3.66	4.09	2.42	10.7	5.32	4.21	15.4	6.14	5.44	3.52	2.85	2.57	
26	4.09	3.87	2.39	5.08	6.59	4.13	14.1	6.11	5.38	3.48	2.90	2.57	
27	3.89	3.68	2.34	4.66	6.86	4.02	13.5	6.02	5.38	3.38	2.90	2.57	
28	3.65	3.61	2.34	4.75	6.01	4.10	12.8	5.99	* 5.23	3.30	2.84	2.57	
29	3.50	3.52	2.41	4.57	5.84	4.00	12.6	5.90	5.04	3.30	2.81	* 2.57	
30	3.44	2.30	4.57	5.77	3.90	12.2	5.86	4.68	3.30	2.73	2.57	2.57	
31	3.43	2.20	5.77	5.77	3.90	11.8	5.77	4.68	3.30	2.73	2.57	2.57	
Sum		115.65		109.06		148.72		239.57		158.11		89.92	80.44
	109.51		93.42		163.23		331.32		158.11		89.92		

Current Year 1992

Period 1933-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume--Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.53	0.48	26	4.24	15	3.25	3.53	9,462	4,232	23,350	54.0
Feb.	.63	.49	24	6.70	1	3.52	3.99	9,992	3,268	17,803	48.0
Mar.	.50	.41	1	3.62	31	2.20	3.01	8,071	2,710	14,070	114
April	1.25	.40	25	38.6	113	2.07	3.64	9,423	3,007	27,075	100
May	.82	.53	20	13.6	1	4.34	5.27	14,103	4,799	31,417	190
June	.79	.51	5	12.1	30	3.81	4.96	12,849	3,721	31,888	74.4
July	2.77	.45	22	243	116	2.73	10.7	28,626	3,395	32,693	65.0
Aug.	.77	.59	1	11.5	130	5.77	7.73	20,699	4,645	37,135	24.1
Sept.	.59	.54	1	5.77	30	4.57	5.27	13,661	6,483	60,665	22.0
Oct.	.54	.47	1	4.57	31	3.16	3.72	9,976	6,018	35,302	54.0
Nov.	.48	.45	1	3.25	30	2.73	3.00	7,769	4,753	31,737	54.0
Dec.	.45	.43	1	2.73	121	2.49	2.59	6,950	4,217	27,140	83.0
Yearly	2.77	0.40		243		2.07	4.79	151,581	51,248	229,996	2,165

* Discharge measurement made on this day

1 And other days

** Period 1933-1992

08-4586.00 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 El Indio 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 Canon Diablo, Lateral 50 Spill, Rosita Creek, Lateral 60-K Spill, Sauz Creek, Indio Creek, 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 1992. 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 Cubic Meters per Second**					
Daily:	Max.	9.91	July 5,	1968	Min.	0.04	April 22, 1986
Monthly:	Max.	7.00	July	1968	Min.	0.12	April 1986
Yearly:	Max.	5.10		1971	Min.	0.42	1986

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.94	0.58	0.44	0.39	0.42	0.93	0.80	0.97	1.03	1.13	1.12	1.38
2	.94	.59	.52	.44	.57	.95	.84	.86	.99	.76	1.42	1.40
3	.96	.61	.41	.48	.50	.92	.87	.91	.97	1.13	1.75	1.41
4	1.01	.65	.36	.50	.64	.93	.85	.72	1.08	.86	1.46	1.22
5	1.05	.69	.35	.56	.78	.87	.91	.44	1.16	.91	1.32	1.26
6	1.02	.72	.35	.63	.76	.79	.95	.44	1.26	1.03	1.29	1.38
7	.96	.66	.31	.72	.78	.72	.84	.55	1.17	1.23	1.29	1.46
8	.90	.63	.31	.75	.76	.66	.91	.61	1.26	1.22	1.61	1.17
9	.89	.62	.40	.72	.79	.63	.94	.70	.98	1.34	1.42	1.28
10	.88	.62	.34	1.00	.63	.58	1.00	.70	1.07	1.10	1.24	1.51
11	.86	.62	.29	1.08	.54	.45	1.06	.59	1.20	1.05	1.18	1.06
12	.85	.59	.30	1.14	.42	.36	.95	.43	1.11	1.25	1.03	1.19
13	.81	.57	.30	.92	.26	.32	.86	.39	1.44	1.26	1.04	1.37
14	.74	.55	.29	.64	.32	.31	.86	.35	1.68	1.35	1.18	1.56
15	.65	.52	.27	.46	.32	.33	.75	.66	1.48	1.28	1.20	1.50
16	.48	.47	.26	.43	.32	.34	.53	1.08	1.81	1.46	1.34	1.38
17	.38	.43	.24	.42	.32	.39	.49	1.07	1.83	1.48	1.37	1.54
18	.35	.40	.25	.40	.46	.47	.52	.93	1.72	1.37	1.42	1.97
19	.31	.37	.26	.40	.40	.51	.52	.85	1.79	1.25	1.43	1.79
20	.30	.32	.28	.36	.58	.45	.66	.76	1.65	1.18	1.58	1.83
21	.33	.28	.34	.35	.55	.52	.69	.78	1.44	1.16	1.61	1.83
22	.35	.26	.80	.35	.50	.58	.75	.81	1.24	1.30	1.61	1.84
23	.38	.24	1.18	.44	.53	.56	.63	1.15	1.20	1.28	1.36	1.72
24	.41	.27	1.09	.48	.51	.61	.37	1.41	1.23	1.16	1.21	1.83
25	.46	.29	.63	.39	.48	.64	.89	1.11	1.17	1.22	1.09	1.83
26	.61	.33	.29	.37	.56	.67	1.24	.80	1.28	1.36	1.40	1.56
27	.59	.37	.25	.39	.61	.70	1.07	.69	1.15	1.57	1.58	1.55
28	.52	.41	.26	.41	.69	.80	.85	.68	.97	1.43	1.40	1.42
29	.54	.42	.31	.40	.74	.80	.94	.81	.91	1.23	1.26	1.31
30	.55		.33	.36	.81	.76	.87	.90	1.11	1.07	1.43	1.43
31	.57		.35		.87		.96	.98		.98		1.48
Sum	20.59	14.08	12.36	16.38	17.42	18.55	25.37	24.13	38.38	37.40	40.64	46.46

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			5	1.05	20	0.30	0.66	1,779	6,484	15,700	454
Feb.			6	.72	23	.24	.49	1,217	5,409	13,204	699
Mar.			23	1.18	17	.24	.40	1,068	7,070	14,401	392
April			12	1.14	121	.35	.55	1,415	7,728	18,066	317
May			31	.87	13	.26	.56	1,505	7,176	17,672	698
June			2	.95	14	.31	.62	1,603	7,472	17,742	655
July			26	1.24	24	.37	.82	2,192	7,352	18,723	967
Aug.			24	1.41	14	.35	.78	2,085	6,789	14,290	756
Sept.			17	1.83	29	.91	1.28	3,316	5,818	11,301	765
Oct.			27	1.57	2	.76	1.21	3,231	5,398	10,138	1,087
Nov.			3	1.75	12	1.03	1.35	3,511	5,646	13,309	451
Dec.			18	1.97	11	1.06	1.50	4,014	5,916	15,785	943
Yearly				1.97		0.24	0.85	26,936	78,258	161,048	13,217

φ Mean daily

! And other days

** Period 1968-1992

08-4587.00 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°20'45", longitude 100°18'35", and river kilometer 741, 0.9 river kilometer downstream from Cuervo Creek, which marks the lower end of the Maverick County Water Control and Improvement District No. 1, 3.1 river kilometers upstream from Tovar Creek, 8.0 kilometers northeast of Villa Guerrero, Coahuila, about 18.5 kilometers south of El Indio, Texas, and 57.8 river kilometers downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila. The zero of the gage is 176.78 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 13 current-meter 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 derived by meter measurements. Records available: March, April, May, October, November, and December 1952 with some days missing; January through August 20, 1953; September 23, 1953 through June 14, 1954; and May 27, 1955 through 1992 with several days missing prior to September 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. 25.80 CMS in June 1954, determined by slope-area computation, with an elevation of 190.29 meters. Min. 1.54 CMS on June 24, 1953 with an elevation of 177.38 meters at a station 518 meters upstream from the present site.

Average Flow in Cubic Meters per Second**						
Daily:	Max.	2,730	July 19, 1975	Min.	9.26	June 29 & 30, 1972
Monthly:	Max.	617	Sept. 1974	Min.	14.2	June 1969
Yearly:	Max.	150	1974	Min.	34.8	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	47.0	135	195	239	161 *	250	171	190	109	86.0	50.7	71.7
2	50.4	136	192	253	163	235	164	186	108 *	82.7	53.7	69.2
3	47.3	137	193	251	174	236	161	127	103	76.4	52.5	68.6
4	45.9	174	206	247	181	226	163	117	98.0	74.7	53.0	67.2
5	46.7	165 *	208	225	170	233	157	117 *	94.4	72.1	57.9	64.9
6	46.4	154	195 *	227	165	234	150	109	93.7	69.5	55.4	68.9
7	43.9	141	215	220 *	161	225	145	119	93.9	66.9	58.6	68.0
8	43.6	134	210	216	161	234 *	120 *	132	93.7	61.9	60.2	66.8
9	48.4	137	221	216	162	218	94.9	128	93.1	61.9	61.7	64.9
10	49.3	133	223	214	135	233	91.8	124	89.9	57.9	60.5	64.1
11	49.0	132	215	214	98.6	232	91.5	116	89.5	54.4	62.7	64.9
12	46.2	169	221	216	94.6	231	92.3	108	92.8	52.8	63.4	65.8
13	45.0	197	210	219	93.5	234	90.6	102	91.7	50.8	66.9	65.9
14	49.0	196	208	221	99.1	235	87.2	104	90.2	48.7	69.5	63.8
15	48.4	201	204	235	112	238	85.2	122	89.6	46.7	70.8	63.8
16	40.5	197	202	234	103	242	84.4	134	88.8	42.9	73.9	62.3
17	44.5	204	202	343	103	248	83.0	130	82.5	40.2	74.7	61.3
18	46.2	203	201	280	104	248	81.0	128	83.1	42.6	80.4	61.2
19	46.4	215	201	250	106	250	83.0	127	82.1	42.6	79.6	58.9
20	44.7	185	194	246	112	253	81.3	126	81.9	41.5	78.6	56.3
21	41.3	202	192	246	170	251	88.1	124	81.2	40.8	78.6	58.4
22	40.5	198	193	241	220	252	521	125	79.3	42.1	78.8	56.3
23	41.6	198	198	240	257	242	776 *	123	81.8	44.1	79.2	56.4
24	41.3	238	193	236	264	233	530	120	83.9	44.5	76.4	54.0
25	41.6	249	233	222	272	223	351	120	83.6	45.4	76.9	54.6
26	48.7	212	238	178	276	211	276	119	82.2	45.6	80.4	54.8
27	52.4	201	236	161	262	203	255	114	81.6	45.7	80.6	54.1
28	49.8	199	244	161	248	198	228	112	82.9	46.8	78.5	54.5
29	45.3	195	245	158	246	192	231	107	84.6	49.1	75.2	54.1
30	62.0		239	161	235	177	204	105	85.3	49.1	75.0	53.1
31	131		251	238			212	107		49.5		52.6
Sum	1,524.3	5,237	6,568	6,770	5,346.8	6,917	5,949.3	3,822	2,675.3	1,676.9	2,062.3	1,901.4
Current Year 1992											Period 1968-1992	
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.	2.44	1.94	31	158	16	36.5	49.2	131,700	164,284	344,184	58,194	
Feb.	2.73	2.22	24	354	1	90.6	181	452,477	199,458	548,741	63,322	
Mar.	2.63	2.43	9	274	21	144	212	567,475	213,701	567,475	46,184	
April	2.83	2.33	17	447	30	119	226	584,928	221,738	584,928	46,115	
May	2.74	2.14	26	351	12	72.2	172	461,964	306,540	740,332	62,566	
June	2.70	2.43	1	314	30	150	231	597,629	264,570	681,150	36,768	
July	3.71	2.11	22	1,120	18	71.6	192	514,020	267,364	972,830	45,920	
Aug.	2.58	2.20	1	239	14	81.8	123	330,221	356,173	1,016,428	82,422	
Sept.	2.36	2.19	1	121	20	74.2	89.2	231,146	332,753	1,598,663	102,781	
Oct.	2.28	1.98	1	94.6	17	35.4	94.1	144,884	326,088	1,068,503	81,268	
Nov.	2.24	2.09	18	88.1	1	45.9	68.7	178,183	197,653	681,981	58,933	
Dec.	2.19	2.03	1	75.6	31	51.0	61.3	164,281	160,383	341,125	61,451	
Yearly	3.71	1.94		1,120		35.4	138	4,358,908	2,910,705	4,731,321	1,105,710	

* Discharge measurement made on this day

** Period 1968-1992

08-4590.00 RIO GRANDE AT LAREDO, TEXAS
AND NUEVO LAREDO, TAMAUPLIPAS

DESCRIPTION: Bubbler gage and water-stage recorder located at the Lincoln Juarez International Bridge on the left bank at latitude 27°30'05", longitude 99°30'13" and river kilometer 580. The zero of the gage is 107.12 meters above mean sea level U. S. C. & G. datum.

RECORDS: Based on 29 current-meter measurements during the year made from the bridge and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through 1913; (gage height records only) January through March 1914; May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June, November, and December 1922; 1923 through March 2, 1989 at a station 1.3 kilometers downstream of present site; March 3, 1989 through May 1990 at a station 0.5 kilometers upstream of present site; and June 1990 through December 1992 at the present site.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. This station also serves as a flood warning station for the National Weather Service.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 20,300 CMS on June 30, 1954 determined by slope-area calculations, with a gage height of 18.44 meters at a site 0.5 kilometers upstream. Much well authenticated information established the occurrence of a greater flood in 1865 with a gage height of 19.05 meters on a gage 1.3 kilometers downstream with a discharge of approximately 27,000 CMS and that these were the only floods since 1745 with flows greater than 17,000 CMS. Min. No flow several days in June and July 1953, and July 24, 1956.

		Average Flow in Cubic Meters per Second**				
Daily:	Max.	3,270	June 30, 1971	Min.	7.00	July 2, 1972
Monthly:	Max.	579	Sept. 1974	Min.	14.1	June 1969
Yearly:	Max.	152	1974	Min.	38.2	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	42.5	146	206	265	158	326	206	223	* 96.9	65.7	61.2	* 76.7
2	49.0	157	208	267	158	323 *	195	161	96.0	* 63.2	60.6	73.9
3	46.7	159	206 *	272 *	188	295	200	130	94.0	62.3	* 61.2	69.1
4	47.0	161 *	207	267	186	246	201	125 *	90.3	49.8	66.8	70.0
5	45.6	197	221	265	189 *	371	199	129	79.6	48.4	62.9	71.4
6	45.6	203	221	251	173	331	199	117	74.2	49.0	61.7	70.2
7	* 46.4	181	209	251	167	272	200 *	108	70.5	48.4	62.3	73.9
8	46.7	173	228	246	162	300	198	110	71.9	47.6	62.6	73.6
9	46.4	170	228	241	160	292	162	108	70.8	45.0	63.2	75.9
10	46.7	168	233	238	162	256	114	106	70.2	41.6	66.0	73.6
11	46.7	165	230	234	140	309	99.7	105	69.7	41.3	64.0	74.5
12	45.6	163	223	234	93.5	261	57.5	104	83.5	40.5	61.5	72.5
13	44.7	205	229	233	86.4	246	36.6	101	81.6	40.5	59.8	72.5
14	43.0	220	225	231 *	84.1	239	55.8	103	78.4	* 39.4	62.3	75.0
15	43.0	219	226	238	120	232	56.4	99.7	* 74.8	* 36.8	62.9	* 81.0
16	48.1	219	225	248	106	226 *	55.8	135	73.3	37.7	64.0	66.0
17	45.3	216	219 *	295	96.3	223	55.8	164	73.3	38.8	63.4	59.5
18	42.2	212	217	391	109	223	54.9	165 *	73.3	41.1	* 70.8	61.5
19	45.3	203 *	218	292	* 97.1	218	54.7	162	71.9	39.1	96.9	58.6
20	45.3	215	214	257	96.0	264	71.6	162	69.4	* 39.4	96.0	59.2
21	45.9	197	209	248	99.7	270	272 *	164	70.5	39.4	75.9	61.5
22	* 44.5	212	212	248	153	268	245	160	74.8	39.9	78.2	60.0
23	43.6	209	216	246	223	266	685 *	156	96.9	40.8	72.5	55.2
24	43.9	208	216	244	289	262	634 *	155	78.7	41.1	71.6	49.3
25	45.0	253	215	300	292	261	346	155	75.9	41.3	70.0	48.4
26	52.1	252	258	243	362	261	281	155	77.6	41.3	67.7	48.7
27	53.8	215	265	185	391	257	259	155	74.8	41.6	66.8	48.7
28	61.2	209	265	160	425 *	255	244	156	75.6	41.9	70.2	49.0
29	60.3	208	272	161	368	218	236	154	73.6	41.9	75.0	48.4
30	56.1	271	271	158	408	205	233	111	68.8	41.6	79.0	49.3
31	51.5		264		354		231	88.9		50.4		49.0
Sum	1,469.7	5,715	7,056	7,409	6,096.1	7,976	6,158.8	4,227.6	2,330.8	1,376.8	2,057.0	1,976.1

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume--Thousands of Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
											Day
Jan.	0.32	0.14	28	64.0	18	38.2	47.4	126,982	167,482	352,918	61,395
Feb.	1.65	.27	25	326	1	56.9	197	493,776	205,970	555,809	48,383
Mar.	1.43	.91	29	281	1	172	228	609,638	219,993	609,638	45,757
April	2.23	.76	18	433	30	131	247	640,138	230,705	640,138	43,304
May	2.53	.44	28	504	14	70.5	197	526,703	328,422	817,599	110,911
June	2.60	.92	5	518	30	172	266	689,126	303,407	857,878	36,616
July	3.69	.28	23	750	18	51.3	199	532,120	275,947	1,034,298	39,804
Aug.	1.28	.42	1	248	130	72.8	136	365,265	265,982	979,770	81,016
Sept.	.59	.34	1	106	111	56.4	77.7	201,381	341,635	1,500,845	100,872
Oct.	.44	.05	1	78.7	115	35.4	44.4	118,956	370,227	1,180,391	69,266
Nov.	.46	.19	119	103	13	51.8	68.6	177,725	203,700	723,165	55,719
Dec.	.42	.17	15	93.7	26	47.0	63.7	170,735	163,834	379,380	63,297
Yearly	3.69	0.05		750		35.4	147	4,652,545	3,077,304	4,799,562	1,209,723

* Discharge measurement made on this day

! And other days

** Period 1968-1992

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4597.00 RIO SALADO NEAR LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Cableway, control weir with notch opening of 72 CMS capacity, gravity well, and water-stage recorder located on the right bank at latitude 26°50'10", longitude 99°33'50", 3 river kilometers downstream from the confluence of Rio Sabinas with Rio Salado, 10 kilometers southeast of the town of Las Tortillas, Tamaulipas, and 39.9 river kilometers from the confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 482,39.8 river kilometers upstream from Falcon Dam. The zero of the gage is 99.28 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 20 discharge measurements during the year, 16 by the Mexican Section and 4 by the United States Section of the Commission, a stable rating curve up to 72 CMS, and a continuous record of gage heights. Computations by shifting control methods for flows greater than 72 CMS. Records available: September 9, 1953, through 1992. Records are also available for a station at old Cd. Guerrero, 35 kilometers downstream, from 1900 through 1913 and 1923 through September 8, 1953.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,840 CMS on September 16, 1971, with a gage height of 12.31 meters. Min. frequently no flow. The maximum discharge was measured at the highway bridge 20.9 river kilometers 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 Cubic Meters per Second**			
Daily:	Max. 1,780	Sept. 16, 1971		Min. 0	Frequently
Monthly:	Max. 384	Sept. 1971		Min. 0	Frequently
Yearly:	Max. 93.6	1971		Min. 1.61	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.16	1.18	0.08	0.57	1.47	2.46	* 0.63	0.04	* 2.77	* 1.26	0.06	* 0.35
2	1.33	1.22	.04	.73	1.62	2.40	.52	.02	1.16	2.36	.06	.25
3	1.33	1.24	.02	.55	2.34	2.34	.54	* .45	.69	1.36	* .05	.04
4	1.36	1.27	.02	.84	1.93	2.07	.44	.20	.47	1.12	.09	0
5	1.27	2.29	.03	1.16	1.71	2.06	.63	.23	.48	1.19	.06	0
6	1.24	* 1.68	.04	* 1.46	2.74	2.74	.93	.42	.37	.86	.02	0
7	1.24	1.81	.03	1.00	1.50	17.9	.73	.06	.14	.47	.04	0
8	1.24	1.75	.01	.71	1.16	71.8	.46	.04	.25	.24	.04	0
9	1.24	1.36	.02	.62	1.00	23.0	.44	.04	.31	.16	.03	.01
10	1.26	1.24	.03	.56	1.19	15.1	.23	.02	.07	.29	.04	.04
11	1.30	1.20	.03	.39	1.37	10.6	.07	.05	.23	.16	.08	.06
12	1.26	1.14	.24	.31	1.38	4.80	.09	.06	1.75	.14	.05	.17
13	1.22	1.16	.20	.64	1.36	3.81	.30	.13	1.40	.33	.03	.25
14	1.18	* 1.17	.09	* 1.07	1.35	2.98	* .40	1.25	1.08	.13	.01	.25
15	* 1.18	1.15	.07	1.12	1.98	2.58	.40	.80	.61	* .05	.01	.25
16	1.18	1.02	.12	1.68	9.86	2.32	.26	1.74	1.11	.04	.20	* .25
17	1.21	1.00	.11	2.66	3.12	2.06	.31	* 2.43	.60	.02	.85	.14
18	1.30	1.00	.06	3.59	* 4.95	1.65	.58	10.8	* .31	.04	.99	.13
19	1.30	.96	.20	13.8	3.77	1.42	.53	6.77	.42	.04	.87	.24
20	1.30	.88	* .11	5.85	3.93	1.38	.32	9.91	.46	.06	.76	.12
21	1.30	.78	.05	2.22	3.21	1.45	.97	2.05	.48	.09	.73	.34
22	1.28	.67	.02	1.44	2.61	1.51	2.53	1.06	5.97	.07	.66	.64
23	1.22	.60	.03	.92	2.14	1.48	2.85	1.20	8.42	.59	.64	.55
24	1.18	.44	.47	.90	1.82	1.33	6.04	.76	22.0	1.32	.43	.66
25	1.20	.21	.48	1.82	1.72	* 1.27	1.97	.45	31.4	.60	.45	.98
26	1.27	.09	.20	4.60	1.70	1.32	2.05	.34	13.5	.54	.34	1.18
27	1.24	.10	.80	4.74	17.1	1.37	1.10	.16	3.89	.36	.14	1.10
28	1.24	.16	.78	6.76	9.93	1.32	.68	.11	2.17	.10	.12	1.06
29	1.22	.14	.87	3.33	3.31	1.38	.76	.27	1.37	.05	.15	1.03
30	1.22	.94	1.77	2.89	1.24	1.24	.31	.17	1.58	.06	.30	.86
31	1.22	.17	.74	2.52	2.82	2.82	.17	1.71	.04	.04	.04	.82
Sum	38.69	28.91	6.93	67.81	98.68	189.14	28.24	43.74	105.46	14.14	8.30	11.77

Month	Current Year 1992							Period 1954-1992			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.19	0.16	2	1.48	1	1.12	1.25	3,343	11,331	73,777	0
Feb.	.28	.09	5	3.32	26	φ	1.00	2,498	9,487	82,495	0
Mar.	.16	.01	30	1.06	122	.01	.22	599	5,755	36,622	0
April	.64	.08	19	22.8	12	.20	2.26	5,859	14,253	250,371	0
May	.77	.14	27	37.2	9	.88	3.18	8,526	32,270	447,498	0
June	1.08	.16	8	90.6	30	1.12	6.30	16,342	36,120	304,449	0
July	.48	.05	23	11.4	31	.07	.91	2,440	34,042	544,632	0
Aug.	.63	.01	20	21.4	110	.01	1.41	3,779	25,323	259,069	0
Sept.	.79	.02	25	39.8	10	.02	3.52	9,112	101,430	996,178	2,651
Oct.	.27	.01	2	3.21	117	.01	.46	1,222	63,227	679,326	136
Nov.	.16	0	18	.99	14	0	.28	717	32,255	416,916	0
Dec.	.17	0	26	1.24	4	0	.38	1,017	19,728	217,216	0
Yearly	1.08	0		90.6		0	1.75	55,454	385,221	2,961,034	50,866

* Discharge measurement made on this day φ Mean daily † And other days
 ** Period September 1953-1992

08-4613.00 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°33'35", longitude 99°10'00", and river kilometer 442; about 11.3 kilometers southwest of Falcon, Texas and 139 river kilometers downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas. A gravity well and water-stage recorder located 4.1 river kilometers downstream and a cableway located 1.6 kilometer 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 spillway gate operations. During 1992 there were 5 current-meter measurements made by the United States Section of the Commission. Records available: 1958 through 1992. Records are also available from December 17, 1952 through 1957 for a station at Chapeno, 4.1 kilometers 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. 2,340 CMS on September 18, 1971. Min. 0.04 CMS on March 24 and 25, 1957 (at Chapeno gaging station).

		Average Flow in Cubic Meters per Second**					
Daily:	Max. 2,160	Sept. 18, 1971	Min. 0.04			March 24 & 25, 1957	
Monthly:	Max. 920	Oct. 1958	Min. 0.67			Nov. 1973	
Yearly:	Max. 196	1958	Min. 44.7			1970	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	49.3	142	200	247	238	283	157	157	104	55.2	43.9	22.4
2	45.9	142	200	247	239	283	156	155	66.3	61.7	43.6	12.7
3	43.0	142	201	252	238 *	282	157	156	66.0	77.0	38.2	8.47
4	43.3	142	200	255	239	281	155	156	66.0	87.8	24.8	9.91
5	41.3	144	200	255	239	283	157	156	74.5	96.9	25.8	11.4
6	38.2	143	219	255	240 *	283	156	156	83.0	105	27.8	11.6
7	38.2	142	222	255	239	283	150	156	83.0	89.2	34.3	13.8
8	37.9	144	223	254	240	283	135	157	88.4	92.6	34.3	16.7
9	35.7	142	221	255	141	283	117	157	90.9	107	34.8	16.8
10	32.9	142	221	233	142	309	114	167	88.6	134	.51	17.0
11	32.3	201	221	234	142	340	99.1	167	78.4	132	14.4	19.6
12	33.1	201	220	234	143	340	99.1	149	86.9	118	14.9	21.8
13	32.9	200	220	234	142 *	340	107	135	75.3	112	14.6	21.8
14	33.1	201	143	234	149	340	138	142	62.0	100	26.6	18.9
15	28.9	202	142	234	156	340	127	142	42.2	101	32.0	18.9
16	17.3	200	142	234	170	357	116	142	41.9	110	13.4	21.8
17	* 5.75	200	142	234	170	368	102	142	43.9	119	9.91	24.6
18	* 29.5	201	141	234	157	368	104	142	56.4	113	12.8	22.6
19	28.9	200	142	234	142	360	114	142	57.8	113	8.35	17.8
20	28.9	201	142	234	167	352	114	142	57.5	101	8.38	17.5
21	28.9	200	142	235	167	238	90.9	142	55.5	82.1	8.35	19.4
22	28.6	200	142	234	167	239	90.6	142	55.2	45.3	16.7	28.9
23	29.7	200	142	235	168	240	96.0	142	35.7	26.9	16.7	28.6
24	28.9	200	142	235	169	238	97.1	99.1	31.2	17.1	16.8	28.9
25	28.9	84.7	142	236	167	238	97.1	56.6	26.5	18.2	18.1	42.2
26	28.9	85.5	142	283	202	225	97.1	57.5	45.3	23.9	20.4	42.5
27	28.6	201	142	237	262	225	109	142	45.3	35.1	16.8	53.0
28	39.9	199	142	236	286	225	129	143	45.0	37.9	11.3	47.9
29	144	200	246	236	283	206	157	141	49.0	32.6	15.3	38.2
30	141		252	236	283	185	155	142	52.1	32.9	16.3	37.7
31	142		252	236	283	185	155	142	52.1	43.9	16.3	49.3
Sum	1,345.75	5,002.2	5,648	7,251	6,170	8,517	3,848.0	4,367.2	1,853.8	2,421.3	620.10	762.68

Current Year 1992

Period 1958-1992

Month	Extreme Gate Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			29	144	17	5.75	43.4	116,273	268,297	664,934	12,802
Feb.			15	202	25	84.7	172	432,190	186,289	453,153	13,796
Mar.			!30	252	18	141	182	487,987	170,468	487,987	27,900
April			26	283	10	233	242	626,486	382,302	750,828	97,418
May			28	286	9	141	199	533,088	468,797	882,257	26,611
June			!17	368	30	185	284	735,869	333,859	830,101	24,322
July			! 1	157	22	90.6	124	332,467	195,953	482,117	15,837
Aug.			!10	167	25	56.6	141	377,326	275,126	1,823,919	74,233
Sept.			1	104	25	26.5	61.8	160,168	206,606	1,333,232	1,761
Oct.			10	134	24	17.1	78.1	209,200	278,768	2,463,696	2,383
Nov.			1	43.9	10	.51	20.7	53,577	140,378	1,391,291	1,727
Dec.			27	53.0	3	8.47	24.6	65,896	121,129	573,923	10,807
Yearly				368		0.51	131	4,130,527	3,027,972	6,188,898	1,410,843

* Discharge measurement made on this day φ Mean daily ! And other days

** Period 1968-1992

08-4620.00 RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Cableway, reinforced concrete weir of 5 CMS capacity, gravity well, and water-stage recorder located on the right bank at a point called "El Paso del Cantaro," latitude 26°27'00", longitude 99°09'05", about 1.0 kilometer north of Cd. Mier, Tamaulipas, and 8.0 river kilometers from the confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 422, 20.0 river kilometers downstream from Falcon Dam. The weir is located about 91 meters downstream from the recorder. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 5 discharge measurements made at high flows during the year, 5 by the Mexican Section and 0 by the United States Section of the Commission, 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 1992.

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 0.40 meters to make it coincide with the weir crest elevation. Prior to January 1, 1969, the zero of the gage was 57.41 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 4,100 CMS on September 11, 1948, with a gage height of 10.23 meters. Min. periods of no flow have occurred at times during all years of record except 1934, 1935, 1968, 1972, 1974, 1976, 1977, 1979, and 1981.

		Average Flow in Cubic Meters per Second**				
Daily:	Max. 2,470	Sept. 11, 1948	Min. 0	Frequently		
Monthly:	Max. 207	Sept. 1967	Min. 0	Frequently		
Yearly:	Max. 23.7	1967	Min. 0.47	Frequently	1929	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0.79	0	0	0.02	0.16	0	0
2	0	0	0	0	0	.47	0	0	0	.04	0	0
3	0	.09	0	0	0	.30	0	0	0	.01	0	0
4	0	.58	0	0	0	.17	0	0	0	0	0	0
5	0	.65	0	0	0	.10	0	0	0	0	0	0
6	0	.27	0	0	0	.05	0	0	0	0	0	0
7	0	.09	0	0	0	.93	0	0	0	0	0	0
8	0	.03	0	0	0	.36	0	0	0	0	0	0
9	0	.01	0	0	0	2.28	0	0	0	0	0	0
10	0	0	0	0	0	2.14	0	0	0	0	0	0
11	0	0	0	0	0	.58	0	0	0	0	0	0
12	0	0	0	0	0	.18	0	0	0	0	0	0
13	0	0	0	0	0	.06	0	0	0	0	0	0
14	0	0	0	0	0	.01	0	16.6	0	0	0	0
15	0	0	0	0	0	0	0	19.1	0	0	0	0
16	0	0	0	0	0	0	0	16.4	0	0	0	0
17	0	0	0	0	0	0	0	* 14.0	0	2.27	0	0
18	0	0	0	0	0	0	0	6.58	0	.65	0	0
19	0	0	0	0	.84	0	0	2.55	0	.15	7.22	0
20	0	0	0	0	.84	0	0	5.68	0	0	.75	0
21	0	0	0	0	.26	0	0	3.61	0	0	.24	0
22	0	0	0	0	.08	0	0	.87	0	0	.08	0
23	0	0	0	0	0	0	0	.46	12.1	.03	.02	0
24	0	0	0	0	0	0	0	.29	6.44	0	0	0
25	0	0	0	0	0	0	0	.20	1.03	0	0	0
26	0	0	0	0	0	0	0	.12	.32	0	0	0
27	0	0	0	0	5.99	0	0	.05	.11	0	0	0
28	0	0	0	0	.92	0	0	.02	.03	0	0	0
29	0	0	0	0	20.1	0	0	.02	.73	0	0	0
30	0	0	0	0	3.79	0	0	.13	.57	0	0	0
31	0	0	0	0	1.41	0	0	.10	0	0	0	0
Sum	0	1.72	0	0	34.23	8.42	0	86.78	21.35	3.31	8.31	0

Month	Current Year 1992							Period 1924-1992			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0	0	! 1	0	! 1	0	0	0	3,611	43,048	0
Feb.	57.70	0	! 3	3.18	! 1	0	.06	149	3,703	65,959	0
Mar.	0	0	! 1	0	! 1	0	0	0	2,691	24,423	0
April	0	0	! 1	0	! 1	0	0	0	6,679	44,664	0
May	58.59	57.16	29	69.3	! 1	0	1.10	2,957	13,627	168,987	0
June	58.04	57.41	9	16.3	! 4	0	.28	727	14,133	102,663	0
July	0	0	! 1	0	! 1	0	0	0	8,569	76,779	0
Aug.	58.26	57.05	14	33.4	! 1	0	2.80	7,498	17,603	253,727	0
Sept.	58.18	57.41	23	27.3	! 1	0	.71	1,845	44,857	535,808	167
Oct.	57.85	57.41	17	7.16	! 3	0	.11	286	19,729	238,925	0
Nov.	58.14	57.41	19	23.7	! 1	0	.28	718	4,618	31,041	0
Dec.	0	0	! 1	0	! 1	0	0	0	3,755	19,713	0
Yearly	58.59	0		69.3		0	0.45	14,180	143,575	747,092	14,180

* Discharge measurement made on this day ! And other days ** Period 1924-1992

08-4642.00 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°18'40", longitude 98°50'15", 5.0 river kilometers from the confluence with the Rio Grande, and 15.0 river kilometers downstream from Marte R. Gomez Dam. This stream enters the Rio Grande at river kilometer 384; 6.0 river kilometers upstream from the Rio Grande gaging station at Rio Grande City, 58.1 river kilometers downstream from Falcon Dam. The zero is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 15 discharge measurements during the year, 15 by the Mexican Section and 0 by the United States Section of the Commission, 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 1992.

REMARKS: Except for storm inflow, diversions, 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 39.76 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 3,270 CMS on September 25, 1967 with a gage height of 12.81 meters. Min. no flow on several occasions in 1989, 1990 and 1991.

		Average Flow in Cubic Meters per Second					
Daily:	Max.	3,250	Sept. 25, 1967	Min.	0	July 5, 1989	
Monthly:	Max.	894	Sept. 1967	Min.	0	July 1990	
Yearly:	Max.	113	1967	Min.	0.05	1990	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.02	0.01	* 0.01	0.03	0	* 0.02	0.04	0	* 0.03	0	0.03
2	.04	.02	.01	* .01	.03	0	* .02	.04	0	* .03	0	* .03
3	.04	.02	.01	* .01	.03	0	.02	.03	0	.03	0	.03
4	.04	.02	* .01	.01	.03	.01	.02	.02	0	.03	0	.03
5	.04	.01	.01	.01	.04	.01	.02	* .02	0	.02	0	.03
6	.04	.01	.01	.01	.04	.01	.02	.02	.01	.02	0	.03
7	* .04	.01	.01	.01	* .04	.02	.02	.03	.01	.02	0	.03
8	.04	.01	.01	.01	.04	.02	.02	.03	.01	.02	0	.03
9	.04	.01	.01	0	.04	.02	.03	.04	.01	.02	.01	.03
10	.04	.01	.01	0	.03	.03	.03	.04	.01	.01	.01	.03
11	.04	.01	.01	0	.03	.03	.03	.04	.01	.01	.01	.03
12	.04	.01	.01	0	.03	.04	.03	.05	.02	.01	.01	.03
13	.03	.01	.01	0	.02	.04	.03	.05	.02	.01	.01	.03
14	.03	0	.01	0	.02	.04	.03	.05	.02	.01	.01	.03
15	.03	0	.01	0	* .02	.05	* .03	.06	* .02	0	.01	* .03
16	.03	0	* .01	0	.02	* .05	.03	.06	.02	0	.01	.03
17	.03	0	.01	0	.02	.05	.03	.07	.02	0	.01	.03
18	.03	0	.01	.01	.02	.05	.03	* .07	.02	0	.02	.03
19	.03	0	.01	.01	.02	.04	.04	.07	.02	0	.02	.02
20	.03	0	.01	.01	.01	.04	.04	.06	.02	0	.02	.02
21	.03	0	.01	.01	.01	.04	.04	.06	.02	0	.02	.02
22	.03	0	.01	.01	.01	.04	.04	.05	.02	0	.02	.02
23	.03	0	.01	.01	.01	.04	.04	.05	.02	0	.02	.02
24	.03	0	.01	.02	.01	.04	.04	.04	.03	0	.02	.02
25	.02	0	.01	.02	.01	.03	.04	.04	.03	0	.02	.02
26	.02	.01	.01	.02	.01	.03	.04	.03	.03	0	.02	.02
27	.02	.01	.01	.02	.01	.03	.05	.03	.03	0	.02	.01
28	.02	.01	.01	.02	.01	.03	.05	.02	.03	0	.03	.01
29	.02	.01	.01	.03	0	.03	.05	.02	.03	0	.03	.01
30	.02	.01	.01	.03	0	.02	* .05	.01	.03	0	.03	.01
31	* .02	.01	.01	0	0	.02	.04	.01	0	0	.03	.01
Sum	0.98	0.21	0.31	0.30	0.64	0.88	1.02	1.25	0.51	0.27	0.38	0.75

Current Year 1992

Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.			! 1	0.04	!25	0.02	0.03	84.7	10,628	118,255	72.6
Feb.			! 1	.02	!14	0	.01	18.1	6,275	79,341	18.1
Mar.			! 1	.01	! 1	.01	.01	26.8	3,213	30,236	26.8
April			!29	.03	! 9	0	.01	25.9	2,867	44,252	25.9
May			! 5	.04	!29	0	.02	55.3	3,925	35,412	42.3
June			!15	.05	! 1	0	.03	76.0	17,266	412,732	76.0
July			!27	.05	! 1	.02	.03	88.1	29,452	421,146	.9
Aug.			!17	.07	!30	.01	.04	108	21,749	337,855	56.2
Sept.			!24	.03	! 1	0	.02	44.1	132,930	2,316,976	44.1
Oct.			! 1	.03	!15	0	.01	23.3	113,408	1,111,982	23.3
Nov.			!28	.03	! 1	0	.01	32.8	31,414	283,824	26.8
Dec.			! 1	.03	!27	.01	.02	64.8	18,758	190,900	15.6
Yearly				0.07		0	0.02	648	391,885	3,566,105	648

* Discharge measurement made on this day ! And other days

08-4645.00 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 20.0 river kilometers upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river kilometer 384. 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 the Rio Grande City Station and Anzalduas Dam through Puertecitos, Los Indios, Muizache, 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.

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, 5.0 river kilometers upstream from the confluence with the Rio Grande. The discharge through Rancherias Drain was determined by prorating between 23 current meter measurements made during the year. There were no drainage flows through Los Fresnos Drain in 1992. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: 1953 through 1992. Records prior to 1976 include Rio San Juan flow.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.25	0.31	0.25	0.19	0.27	1.02	0.19	0.19	0.09	0.18	0.04	0.09
2	.26	.31	.25	* .19	.29	* 1.04	* .17	.18	* .08	* .19	.04	* .09
3	.27	.30	.26	.18	.30	1.00	.16	.18	.08	.18	.04	.09
4	.28	.29	* .26	.18	.31	.97	.15	.18	.08	.17	* .04	.09
5	.30	.29	.25	.17	.32	.93	.14	* .17	.08	.16	.04	.09
6	.31	.28	.24	.16	.33	.89	.14	.17	.08	.15	.04	.09
7	* .32	.27	.24	.16	* .34	.85	.13	.17	.08	.14	.05	.09
8	.32	.27	.23	.15	.38	.82	.12	.17	.08	.13	.05	.09
9	.32	.26	.22	.14	.43	.78	.11	.18	.07	.12	.05	.09
10	.32	.25	.22	.13	.47	.74	.10	.18	.07	.12	.05	.09
11	.32	.25	.21	.13	.52	.71	.09	.18	.07	.11	.05	.09
12	.32	.24	.20	.12	.56	.67	.09	.18	.07	.10	.05	.09
13	.32	.23	.19	.11	.60	.63	.08	.18	.07	.09	.06	.09
14	.32	.23	.18	.11	.65	.59	.07	.18	.07	.08	.06	.09
15	.32	.22	.18	* .10	* .69	.56	* .06	.19	.07	.07	.06	* .09
16	.32	.21	* .17	.11	.71	* .52	.07	.19	.08	* .06	.06	.11
17	.32	.21	.17	.12	.73	.50	.08	.19	.08	.06	.06	.13
18	.32	* .20	.17	.13	.75	.48	.09	* .19	.09	.06	.06	.16
19	.32	.20	.17	.14	.77	.45	.10	.18	.10	.06	.07	.18
20	.32	.21	.17	.15	.79	.43	.11	.18	.11	.06	.07	.20
21	.32	.21	.18	.17	.81	.41	.12	.17	.11	.05	.07	.22
22	.32	.22	.18	.18	.83	.39	.13	.16	.12	.05	.07	.24
23	.32	.22	.18	.19	.85	.37	.13	.15	.13	.05	.07	.26
24	.32	.22	.18	.20	.86	.34	.14	.15	.13	.05	.08	.29
25	.32	.23	.18	.21	.88	.32	.15	.14	.14	.05	.08	.31
26	.32	.23	.18	.22	.90	.30	.16	.13	.15	.05	.08	.33
27	.32	.24	.18	.23	.92	.28	.17	.12	.15	.05	.08	.35
28	.32	.24	.18	.24	.94	.26	.18	.12	.16	.05	.08	.37
29	.32	.24	.19	.25	.96	.24	.19	.11	.17	.05	.08	.39
30	.32	.24	.19	.26	.98	.21	* .20	.10	.18	.05	.09	.42
31	* .32	.21	.19		1.00		.20	.09		.04		.44
Sum	9.67	7.08	6.24	5.02	20.14	17.70	4.02	5.05	3.04	2.83	1.82	5.75

Current Year 1992

Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum	
												Day
Jan.			! 7	0.32	1	0.25	0.31	835	322	1,127	0	
Feb.			! 1	.31	! 18	.20	.24	612	439	1,157	0	
Mar.			! 3	.26	! 16	.17	.20	539	329	952	31.9	
April			30	.26	15	.10	.17	434	412	1,338	23.9	
May			31	1.00	1	.27	.65	1,740	802	1,777	77.1	
June			2	1.04	30	.21	.59	1,529	722	1,550	68.7	
July			! 30	.20	15	.06	.13	347	350	692	40.1	
Aug.			! 1	.19	31	.09	.16	436	265	612	32.1	
Sept.			30	.18	! 9	.07	.10	263	297	1,296	19.1	
Oct.			2	.19	31	.04	.09	245	262	1,321	23.9	
Nov.			30	.09	! 1	.04	.06	157	207	783	8.0	
Dec.			31	.44	! 1	.09	.19	497	192	636	22.0	
Yearly						1.04	0.04	0.24	7,634	4,599	8,237	611

* Discharge measurement made on this day φ Mean Daily ! And other days

08-4646.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, FALCON DAM TO RIO GRANDE CITY

Beginning June 1971, the Texas Water Rights Commission, now the Texas Water 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 1992, 1,799 irrigable hectares and several towns and rural homes were allotted Rio Grande water in the river reach between Falcon Dam and the Rio Grande City gaging station. Such irrigable area was 0.6% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1992 in this river reach was 13,892 TCM, or 1.4% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flow meters. 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 Cubic Meters per Second					
Daily:	Max. 3.51	April 6-9, 1984	Min. 0	Occasionally			
Monthly:	Max. 1.58	April 1984	Min. 0.06	March 1957			
Yearly:	Max. 0.65	April 1989	Min. 0.20	1968			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.30	0.82	0.65	0.75	0.91	0.20	0.96	0.97	0.57	1.06	0.25	0.43
2	.35	.14	1.03	.49	1.19	.20	.90	.40	.48	.87	.32	.37
3	.29	.16	.84	.45	.63	.20	.95	.48	.56	.54	.48	.39
4	.24	.16	.75	.33	.39	.20	.59	.65	.59	.40	.46	.24
5	.19	.21	.89	.25	.35	.20	.46	.62	.46	.76	.41	.27
6	.33	.32	1.08	.33	.40	.20	.63	.65	.28	.75	.40	.28
7	.33	.48	.96	.54	.33	.19	.49	.63	.39	.78	.30	.25
8	.40	.23	.50	.62	.43	.19	.61	.61	.55	.74	.24	.30
9	.40	.15	.64	.64	.45	.19	.57	.41	.53	.81	.39	.32
10	.33	.21	.74	.62	.26	.19	.52	.61	.45	.84	.49	.36
11	.18	.40	.58	.45	.67	.19	.49	.71	.48	.50	.43	.28
12	.18	.51	.70	.24	.78	.19	.45	.71	.37	.63	.50	.30
13	.18	.49	.65	.53	.80	.19	.59	.68	.29	.89	.42	.17
14	.18	.59	.59	.58	.66	.21	.69	.89	.46	1.01	.42	.27
15	.20	.51	.27	.65	.49	.21	.78	.56	.54	.86	.33	.48
16	.18	.39	.55	.65	.41	.22	.62	.50	.46	.95	.23	.42
17	.18	.63	.83	.48	.35	.41	.67	.38	.40	.82	.24	.54
18	.18	.68	.89	.42	.43	.46	.45	.43	.45	.50	.24	.52
19	.19	.65	.80	.33	.50	.56	.35	.42	.42	.69	.23	.55
20	.20	.48	1.05	.70	.31	.32	.57	.39	.32	.84	.27	.41
21	.20	.48	.97	.93	.40	.32	.60	.39	.50	.71	.27	.54
22	.20	.41	.62	.97	.56	.54	.56	.37	.51	.60	.20	.51
23	.27	.31	.90	.91	.58	.51	.58	.34	.39	.51	.16	.49
24	.35	.33	.99	.94	.31	.56	.58	.42	.44	.39	.16	.29
25	.27	.56	.94	.60	.60	.41	.62	.44	.40	.36	.16	.16
26	.02	.57	1.05	.01	.52	.45	.01	.40	.41	.36	.16	.16
27	.02	.75	.86	.01	.35	.36	.01	.54	0	.41	.18	0
28	.02	1.21	.55	.01	.23	0	.01	.61	0	.52	.20	0
29	.02	.89	0	.01	.23	0	.01	.53	0	.52	0	0
30	.02	0	0	.01	.23	0	.01	.06	0	.60	0	0
31	.02	0	0	0	.23	0	.01	.06	0	.58	0	0
Sum	6.42	13.72	21.87	14.45	14.75	8.07	15.34	15.86	11.70	20.78	8.54	9.30

Current Year 1992

Period 1960-1992

Month	Average Rainfall(**) Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters					
	1992-1992		φ High		φ Low		Average					
	1992	1960-1992	Day	φ High	Day	φ Low	Total	Average	Maximum	Minimum		
Jan.	98	27	1	8	0.40	126	0.02	0.21	555	891	1,828	196
Feb.	62	29	28	1	1.21	2	0.14	.47	1,185	1,101	2,198	275
Mar.	13	12	6	1	1.08	129	0	.71	1,890	1,531	2,558	549
April	56	38	22	1	.97	126	0.01	.48	1,248	1,628	4,088	440
May	97	70	2	1	1.19	31	0	.48	1,274	1,217	3,237	260
June	44	65	119	1	.56	128	0	.27	697	1,149	3,217	258
July	4	39	1	1	.96	126	0.01	.49	1,325	923	1,703	343
Aug.	49	59	1	1	.97	130	0.06	.51	1,370	901	1,798	343
Sept.	30	111	4	1	.59	127	0	.39	1,011	743	1,745	220
Oct.	67	48	1	1	1.06	125	0.36	.67	1,795	1,037	2,109	448
Nov.	48	27	12	1	.50	129	0	.28	738	775	1,793	260
Dec.	22	24	19	1	.55	127	0	.30	804	712	1,490	179
Yearly	590	549			1.21		0	0.44	13,892	12,608	20,497	6,154

φ Mean daily

! And other days

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

08-4647.00 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°22'00"N, longitude 98°48'10"W, and river kilometer 378; about 1.6 kilometer downstream from Rio Grande City, Texas, and 6.0 river kilometers downstream from Rio San Juan. The zero of the gage is 30.48 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 27 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 1992. Records prior to 1976 were published under the title "Rio Grande at Fort Ringgold, Rio Grande City, Texas." Records composed of the addition of discharges of the Rio Grande at Roma, Texas and the Rio San Juan at Santa Rosalia, Tamaulipas are available for May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September 1923; and 1924 through 1931. Records are also available for the station "Rio Grande near Rio Grande City" 4.8 kilometers 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, 64.1 river kilometers upstream. The transmitter relays gage height data via radio to the Mercedes Office of the Commission, and to the Anzalduas Dam control room, where it is recorded automatically.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,230 CMS on September 22 and 23, 1967, with a gage height of 18.71 meters. Min. no flow occurred several days in June and July 1953.

	Max.	5,860	Average Flow in Cubic Meters per Second**	Min.	0.36	March 5, 1985
Daily:	Max.	1,400	Sept. 23, 1967	Min.	6.66	March 1957
Monthly:	Max.	259	Oct. 1958	Min.	49.6	1970
Yearly:	Max.		1958			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	53.0	148	200	249	234	300	183	153	141	* 56.1	47.9	17.2
2	* 51.0	148	200 *	250 *	235	286 *	158	154	* 94.6	57.5	* 53.5	23.5
3	49.8	148 *	200	248	243	282	156	154	71.4	64.6	49.6	* 15.2
4	46.7	160	199	256	243	281	156	153 *	70.2	82.7	38.5	11.8
5	47.6	151	197	257	243 *	281	168	155	69.7	93.5	30.9	9.52
6	44.7	154	202	256	239	282	157 *	156	81.6	103	32.3	12.1
7	41.1	148	214	255	236	286	154	158	84.1	110	36.8	12.9
8	41.1	147	212	255	235	295	141	160	83.3	96.3	47.3	13.7
9	41.6	147	212	252	208	297	129	161	90.9	93.7	54.4	18.1
10	41.1	147	208	249	145	323	114	160	89.2	108	45.9	18.6
11	37.9	165	208	238	133	329	109	182	84.7	119	26.3	19.1
12	36.8	202	207	238	143	343	98.6	163	80.1	122	* 15.7	21.3
13	34.8	203	204	238	138	343	100	150	85.2	108	* 16.9	25.5
14	35.1	202	178	240	145	343	107	154	* 76.2	108	17.0	24.2
15	* 35.4	204	135	240	150	346 *	138	167	58.6	95.7	32.0	21.6
16	31.2	205	133 *	238 *	160	346	126	165	45.6	100 *	39.4	22.2
17	21.0	204	135	234	167	362	112	166	45.0	113	25.0	* 22.9
18	12.6	206	134	234	170	365	102	157	44.5	118	* 15.8	27.0
19	20.6	205 *	133	233	147	368	108	151	58.1	114	18.3	27.6
20	31.4	206	135	231	160 *	331	115 *	151	58.1	110	21.2	19.3
21	32.0	208	137	232	169	256	110	155 *	56.6	101	14.8	20.1
22	31.7	207	138	232	169	253	92.9	148	54.4	82.7	12.3	22.4
23	32.0	206	139	233	167	250	94.0	147	52.7	58.9	16.4	33.7
24	32.9	207	139	233	166	250	97.7	144	51.3	34.6	22.7	34.0
25	33.7	170	141	248	168	249	99.4	93.5	34.0	20.9	20.0	35.7
26	36.2	94.0	142	256	173	242	98.8	64.6	27.5	20.3	24.4	46.2
27	34.6	124	143	260	241	233	99.4	81.0	41.9	27.8	23.8	48.7
28	36.0	198	144	236	309	232	118	131	46.7	43.9	21.0	58.1
29	65.7	199	182	234	340	231	138	140	50.7	38.2	13.6	54.7
30	145 *		242	232	317	197	152	141	53.5	36.0	17.6	45.0
31	148		247		303		152	138		36.5		44.2
Sum	1,382.3	5,113.0	5,440	7,287	6,296	8,782	3,883.8	4,553.1	1,981.4	2,473.9	851.3	826.12
Current Year 1992										Period 1954-1992		

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	High		Average	Total	Average	Maximum	Minimum		
			Day	Day							
Jan.	8.88	7.74	31	152	18	8.58	44.6	119,431	279,554	628,819	20,625
Feb.	9.17	8.43	22	216	26	88.6	176	441,763	213,501	464,530	31,488
Mar.	9.35	8.49	31	249	17	86.1	175	470,016	175,585	470,016	17,787
April	9.48	9.24	25	281	120	229	243	629,597	358,080	709,848	92,665
May	10.03	8.42	29	362	11	85.0	203	543,974	471,340	850,281	45,271
June	10.05	9.04	19	368	30	188	293	758,765	371,774	811,943	97,028
July	9.09	8.34	3	196	18	74.8	125	335,560	225,243	707,768	27,479
Aug.	9.03	8.13	17	191	27	52.7	147	393,388	291,670	1,853,522	30,778
Sept.	8.92	7.95	1	168	26	24.1	66.0	171,193	379,355	3,466,077	52,327
Oct.	8.94	7.86	12	161	26	18.5	79.8	213,745	396,197	3,758,177	37,009
Nov.	8.21	7.61	9	64.3	29	11.1	28.4	73,552	176,022	1,778,975	36,109
Dec.	8.26	7.67	28	68.8	5	8.41	26.6	71,377	148,761	665,515	39,434
Yearly	10.05	7.61		368		8.41	134	4,222,361	3,487,082	8,165,042	1,565,582

* Discharge measurement made on this day

! And other days

** Period 1955-1992

08-4683.00 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, Tamulipas and is irrigated with water impounded by Marte R. Gomez Dam situated on the Rio San Juan, 20.0 river kilometers upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river kilometer 384. 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, Rancherías Drain, and Los Fresnos Drain; and between the Rio Grande City 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.

RECORDS: Drain water reaching the Rio Grande through Morillo Drain was determined by hourly staff gage readings and the weir discharge table, and through Puertecitos and Los Indios Drains by prorating between frequent current meter measurements. All storm water measured at these drains was deducted and is not included in the tabulation below. In 1992, 46% of the drain water from this irrigation district reaching the Rio Grande through the Rio Grande City Gaging Station and Anzalduas Dam was contributed by Morillo Drain. Records available: 1953 through 1992.

REMARKS: 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 1992, 35,193,DDD TCM were diverted.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.68	1.55	0.78	0.95	2.73	2.22	1.04	1.18	1.08	0.32	0.17	0.18
2	.74	1.48	.82	1.46	2.19	2.27	.99	1.09	.99	.32	.16	.18
3	.97	1.41	.85	.99	7.85	2.21	.94	1.01	.85	.32	.15	.18
4	1.10	1.34	.89	1.10	6.79	2.13	.90	.87	.74	.33	.14	.18
5	1.03	1.33	.85	.97	4.36	2.07	.86	.77	.74	.33	.14	.18
6	1.19	1.20	.81	1.01	2.97	2.01	.81	.79	.75	.33	.14	.19
7	1.46	1.13	.77	.89	2.57	1.93	.77	.82	.63	.33	.14	.19
8	1.22	1.06	.72	.89	1.76	1.87	.73	.85	.61	.34	.14	.19
9	2.53	.99	.68	1.01	1.78	1.79	.68	.98	.66	.34	.14	.18
10	3.11	.92	.63	1.16	1.45	1.73	.64	1.10	.51	.34	.14	.19
11	4.67	.85	.60	.81	1.60	1.67	.60	.96	.38	.35	.16	.19
12	3.36	.78	.56	.89	1.49	1.59	.55	1.15	.35	.35	.16	.19
13	3.04	.71	.51	2.13	1.54	1.53	.51	1.33	.35	.35	.16	.19
14	2.23	.64	.48	1.48	1.67	1.47	.47	1.54	.41	.35	.16	.20
15	1.63	.57	.43	1.23	2.30	1.39	.43	1.63	.59	.36	.16	.20
16	1.97	.50	.39	1.45	3.20	1.33	.46	1.93	.59	.36	.16	.22
17	1.91	.43	.42	1.31	2.58	1.31	.50	2.15	.59	.35	.16	.24
18	3.07	.36	.45	1.45	5.28	1.29	.53	1.87	.48	.34	.16	.27
19	3.01	.40	.49	1.62	6.99	1.26	.56	1.61	.53	.33	.16	.29
20	1.67	.43	.52	2.89	7.25	1.24	.60	1.95	.58	.32	.16	.31
21	1.56	.47	.54	3.88	6.24	1.22	.63	1.84	.46	.30	.16	.33
22	1.35	.50	.57	3.60	5.16	1.19	.66	1.75	.33	.41	.16	.35
23	1.38	.54	.61	3.15	5.04	1.17	.69	1.45	.33	.33	.16	.37
24	1.41	.58	.64	2.68	4.62	1.16	.81	1.46	.34	.27	.16	.40
25	1.44	.61	.67	5.02	4.98	1.14	1.12	1.45	.34	.26	.18	.42
26	1.47	.65	.70	7.20	5.32	1.12	1.27	1.58	.33	.24	.18	.44
27	1.59	.67	.74	5.72	11.7	1.09	1.29	1.41	.33	.23	.18	.47
28	1.53	.71	.77	4.49	15.3	1.07	1.21	1.39	.33	.22	.18	.49
29	1.56	.75	.79	3.94	23.2	1.05	1.24	1.22	.33	.21	.18	.51
30	1.59	.82	3.00	15.8	1.02	1.21	1.10	1.10	.32	.20	.18	.54
31	1.62	.86		10.1		.96	1.09		.18		.56	
Sum	57.09	23.56	20.36	68.37	175.81	45.54	24.66	41.32	15.85	9.61	4.78	9.02

Current Year 1992

Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume--Thousands of Cubic Meters			
	High	Low	Day		Average	Total		Average	Maximum	Minimum	
			Day	High							
Jan.			11	4.67	1	0.68	1.84	4,933	3,199	9,405	575
Feb.			1	1.55	18	.36	.81	2,036	3,808	8,707	574
Mar.			4	.89	16	.39	.66	1,759	2,536	6,526	643
April			26	7.20	11	.81	2.28	5,907	4,072	7,602	1,109
May			29	23.2	10	1.45	5.67	15,190	9,901	37,225	1,921
June			2	2.27	30	1.02	1.52	3,935	10,112	106,020	1,455
July			27	1.29	15	.43	.80	2,131	5,282	60,172	1,109
Aug.			17	2.15	5	.77	1.33	3,570	2,759	16,395	513
Sept.			1	1.08	30	.32	.53	1,369	2,690	13,905	654
Oct.			22	.41	31	.18	.31	830	3,216	12,126	351
Nov.			125	.18	14	.14	.16	413	2,263	12,903	413
Dec.			31	.56	1	.18	.29	779	2,732	41,991	575
Yearly				23.2		0.14	1.36	42,852	52,570	221,387	16,605

φ Mean daily

! And other days

08-4684.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, RIO GRANDE CITY TO ANZALDUAS DAM

Beginning June 1971, the Texas Water Rights Commission, now the Texas Water 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 1992, 73,956 irrigable hectares and several towns and rural homes were allotted Rio Grande water in the river between the gaging station at Rio Grande City and Anzalduas Dam. Such irrigable area was 25.7% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1992 in this river reach was 245,775 TCM, or 25.0% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flumeteters and by a deflection meter developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second				
Daily:	Max.	34.6	June 21, 1960	Min.	0	Occasionally
Monthly:	Max.	28.6	June 1960	Min.	0.29	March 1957
Yearly:	Max.	13.5	1989	Min.	5.32	1966

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.11	1.38	7.62	12.9	9.71	2.18	22.0	14.2	18.8	10.1	6.40	3.85
2	2.46	1.28	9.57	6.77	4.45	1.16	19.5	12.3	19.5	8.72	8.38	4.47
3	1.75	2.70	9.23	4.84	4.39	2.15	17.1	16.3	19.1	5.75	8.55	5.61
4	1.25	.93	9.80	2.92	3.31	1.30	14.6	17.7	18.5	6.06	9.23	4.81
5	.09	1.92	12.0	2.62	2.06	2.02	10.3	16.9	13.2	10.6	7.99	1.79
6	.09	1.25	10.3	4.90	1.50	1.23	15.6	13.7	12.3	14.1	7.56	1.32
7	.35	3.12	7.36	3.91	1.49	1.15	17.8	15.7	15.0	11.2	4.84	2.40
8	2.49	2.11	7.59	4.19	3.00	1.62	15.4	11.0	16.8	13.2	4.19	3.85
9	2.31	1.84	11.2	4.59	1.39	.51	17.6	10.3	19.6	12.1	7.42	3.06
10	.77	2.57	13.8	7.36	1.73	2.10	15.8	14.4	18.4	9.49	7.16	3.14
11	.80	2.97	10.4	6.57	2.92	2.41	12.0	15.9	16.8	10.7	7.67	3.82
12	.88	5.72	8.72	4.50	3.43	2.78	13.0	16.7	9.26	11.8	8.41	3.23
13	2.46	2.74	12.6	8.98	7.53	1.82	17.4	15.0	10.5	14.6	8.44	3.12
14	2.53	4.42	8.98	12.7	8.95	1.85	17.1	11.3	11.6	15.0	6.57	5.41
15	3.26	3.48	8.84	13.8	3.88	6.26	18.0	8.10	11.3	15.3	4.62	3.74
16	3.17	3.03	11.6	14.0	2.74	7.65	18.9	8.35	9.52	14.1	4.87	4.93
17	2.32	6.43	14.5	10.6	2.75	10.1	18.1	9.77	11.6	7.96	2.50	4.98
18	1.37	7.14	17.0	4.30	4.05	11.1	11.3	9.18	10.8	8.35	2.78	3.85
19	1.38	7.87	17.3	3.31	4.02	10.5	12.4	11.3	5.78	12.9	2.10	3.23
20	2.38	7.79	15.9	7.22	3.37	7.53	16.6	9.40	7.28	14.3	1.72	3.51
21	.71	6.63	9.35	9.15	3.88	8.33	14.2	9.35	8.78	14.5	1.41	5.69
22	2.59	3.79	11.2	12.8	2.89	15.4	14.8	8.18	12.5	8.27	1.36	3.71
23	3.09	3.20	14.3	12.3	2.17	17.1	15.1	10.0	6.17	5.01	5.30	7.22
24	1.59	4.16	17.1	11.6	2.04	19.9	14.3	10.7	7.25	3.65	5.13	3.34
25	1.23	4.19	19.1	5.52	3.40	17.8	11.7	11.9	3.48	2.78	3.54	.09
26	.79	7.19	19.6	1.62	6.63	16.5	10.9	16.2	2.92	4.22	2.02	3.96
27	1.18	9.23	17.2	3.09	6.91	14.7	11.5	15.3	2.10	4.64	2.50	2.01
28	.93	9.46	11.2	2.05	2.22	11.8	12.7	15.3	4.39	5.24	2.79	4.36
29	1.31	6.88	7.96	3.82	2.12	14.7	14.4	11.3	4.50	6.00	2.13	2.59
30	.92		11.8	1.61	.82	18.4	13.7	10.5	6.26	5.52	5.86	4.84
31	1.82		11.3		.46		11.5	14.2		5.38		3.74
Sum	48.38	125.42	374.42	204.54	110.21	232.05	465.3	390.43	333.99	291.54	153.44	115.67
Current Year 1992										Period 1960-1992		
Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters					
	1992	1960-1992	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum	
Jan.	89	31	15	3.26	15	0.09	1.56	4,180	16,192	35,458	2,479	
Feb.	24	29	28	9.46	4	.93	4.32	10,836	17,316	47,610	4,040	
Mar.	4	15	26	19.6	7	7.36	12.1	32,350	29,007	51,495	8,288	
April	64	35	16	14.0	30	1.61	6.82	17,672	33,227	53,085	9,608	
May	157	70	1	9.71	31	.46	3.56	9,522	27,514	55,732	3,919	
June	43	67	24	19.9	9	.51	7.74	20,049	28,333	73,847	6,181	
July	20	40	1	22.0	5	10.3	15.0	40,202	27,298	57,262	8,330	
Aug.	31	55	4	17.7	15	8.10	12.6	33,733	28,432	44,751	8,469	
Sept.	31	97	9	19.6	27	2.10	11.1	28,857	18,940	42,873	5,102	
Oct.	41	56	15	15.3	25	2.78	9.40	25,189	22,882	46,570	4,358	
Nov.	49	23	4	9.23	22	1.36	5.11	13,257	19,003	33,940	3,614	
Dec.	24	26	23	7.22	25	.09	3.73	9,994	15,692	30,837	3,091	
Yearly	577	544		22.0		0.09	7.77	245,841	283,836	424,806	168,318	

φ Mean daily

! And other days

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

08-4686.00 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°07'50", longitude 98°20'10", 0.8 canal kilometer from the canal intake, and about 8.0 kilometers northwest of Reynosa, Tamaulipas. The canal intake is immediately upstream from Anzalduas Dam at river kilometer 274, 165 river kilometers downstream from Falcon Dam. The zero of the gage is 26.31 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 244 discharge measurements during the year, 235 by the Mexican Section and 9 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1992.

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 37.0 canal kilometers downstream from this station. For area irrigated during 1992 see the tabulation under the heading of "Drainage Basin and Irrigated Areas" in this Bulletin. Flow at this canal station is affected by backwater from the operation of canal gates 7.2 kilometers, 18.2 kilometers, and 36.2 kilometers below this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 310 CMS on June 2, 1957, with a gage height of 4.88 meters. Min. no flow occurs frequently.

		Average Flow in Cubic Meters per Second			Min.	Frequently
Daily:	Max. 265	April 23, 1983			0	
Monthly:	Max. 198	May 1988			0	Several months
Yearly:	Max. 60.4	1989			4.26	1952

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.3	72.5	41.9	44.5	54.6	80.7	66.7	74.3	65.3	30.7	14.4	4.10
2	* 12.8	72.5	* 44.7	* 58.2	54.8	* 71.6	* 66.7	85.2	* 65.3	* 35.0	14.4	* 4.50
3	* 12.2	* 71.9	* 45.7	* 57.9	54.9	* 70.5	* 46.2	* 87.2	* 17.8	36.8	* 13.0	* 4.60
4	* 11.6	* 72.0	* 42.4	57.7	* 66.7	* 69.4	46.2	* 90.7	* 17.8	44.7	* 11.8	* 6.70
5	11.0	72.0	* 42.6	58.0	77.8	* 74.5	44.3	* 83.2	18.3	* 48.0	* 12.0	6.80
6	* 11.1	* 70.0	* 41.6	* 55.4	* 71.0	85.5	* 39.2	* 82.4	18.6	* 48.6	* 12.0	7.00
7	* 10.2	* 66.6	41.7	* 56.2	* 71.6	85.5	* 34.7	* 83.4	* 18.4	* 47.2	11.5	* 4.30
8	* 11.4	64.0	41.1	* 55.6	* 71.4	* 93.2	* 34.4	83.4	19.2	* 57.5	11.1	* 4.30
9	* 11.0	64.0	* 44.4	* 55.8	71.4	102 *	* 34.5	84.1	* 17.7	* 64.5	0	* 4.10
10	* 10.7	* 59.6	* 42.9	* 54.1	71.4	104 *	* 32.4	* 83.3	* 20.7	62.8	0	* 4.90
11	10.4	* 55.1	* 42.9	52.5	* 69.9	107 *	31.6	* 87.3	* 25.1	62.4	0	* 8.99
12	10.4	* 56.2	* 42.8	52.5	* 72.2	106 *	31.6	* 81.6	31.6	62.4	* 5.10	8.99
13	* 11.3	* 55.5	* 43.5	* 54.1	* 94.7	106	* 31.3	* 69.3	31.6	* 52.0	* 9.10	8.99
14	* 11.1	* 54.6	44.2	* 52.8	* 95.0	106	* 30.2	* 66.5	* 31.5	* 54.0	10.1	* 9.70
15	* 11.0	54.1	44.1	* 55.3	108*	104 *	* 32.3	66.7	* 31.0	* 54.4	9.80	* 10.4
16	* 8.20	55.1	* 44.0	54.0	125	* 99.8	* 37.7	61.7	26.2	* 55.7	* 9.86	* 10.4
17	* 6.50	* 56.1	* 42.2	54.2	128	100 *	* 39.4	* 64.2	* 20.7	56.6	* 9.91	* 10.9
18	6.50	* 56.7	* 41.2	54.3	* 96.7	101 *	* 39.4	* 78.3	* 21.1	56.6	* 7.92	10.4
19	6.60	* 56.2	42.1	54.2	* 65.2	101 *	* 40.4	78.3	21.6	* 56.1	6.97	10.0
20	* 6.23	* 55.4	* 42.0	* 53.3	* 65.2	100	* 40.4	* 74.8	18.7	* 54.2	7.23	10.2
21	* 7.10	* 56.1	41.9	* 53.3	* 57.1	93.0	* 41.5	* 75.3	* 17.7	* 46.8	7.49	* 10.0
22	* 11.2	56.7	42.0	* 52.1	* 42.8	* 88.0	* 41.7	76.9	* 17.4	* 41.6	7.49	10.0
23	* 12.8	56.7	41.7	* 52.2	39.0	96.5	* 36.8	76.9	* 18.7	* 41.5	* 7.49	* 18.6
24	* 11.7	* 53.5	* 40.6	* 54.5	28.0	104 *	* 32.7	* 74.9	* 17.9	38.6	* 7.58	21.5
25	11.7	* 54.4	* 40.4	54.5	* 29.7	* 83.8	34.4	* 73.6	* 24.8	29.3	* 11.1	21.5
26	11.8	* 42.7	* 42.4	54.7	* 37.6	* 64.7	34.4	* 18.5	25.8	* 25.2	12.3	21.7
27	* 12.0	* 41.4	* 41.6	* 52.4	* 45.8	64.7	* 38.6	* 18.5	28.9	21.3	* 15.2	21.8
28	* 12.2	40.9	41.2	* 53.0	* 50.7	64.5	41.0	* 42.0	* 29.9	* 19.3	11.3	* 21.4
29	* 12.1	42.0	40.8	* 53.2	* 86.6	* 64.5	* 58.8	66.0	* 30.8	* 19.1	4.70	* 21.4
30	* 11.8	* 40.8	* 40.8	* 54.3	110	* 64.5	* 70.3	66.0	* 32.1	* 14.2	* 4.60	* 20.4
31	* 58.9		* 38.2		96.6		* 69.8	* 62.6		14.4		* 20.5
Sum	381.83	1,684.5	1,309.6	1,624.8	2,209.4	2,655.9	1,299.6	2,217.1	782.2	1,351.5	265.44	359.07

Current Year 1992

Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum	
Jan.			31	58.9	20	6.23	12.3	32,990	140,316	439,093	1,875	
Feb.			!	72.5	28	40.9	58.1	145,541	116,261	310,244	1,340	
Mar.			3	45.7	31	38.2	42.2	113,149	46,605	182,432	1,391	
April			2	58.2	1	44.5	54.2	140,383	175,305	457,270	28,840	
May			17	128	24	28.0	71.3	190,892	277,463	531,530	34,896	
June			11	107	128	64.5	88.5	229,470	133,541	333,903	17,541	
July			30	70.3	14	30.2	41.9	112,285	55,891	200,317	7,068	
Aug.			4	90.7	126	18.5	71.5	191,557	105,607	333,640	8,275	
Sept.			!	65.3	22	17.4	26.1	67,582	67,451	204,511	2,685	
Oct.			9	64.5	30	14.2	43.6	116,770	65,867	258,525	0	
Nov.			27	15.2	!	9	0	22,934	16,404	103,230	0	
Dec.			27	21.8	!	1	4.10	11.6	31,024	28,122	205,621	803
Yearly				128		0	44.1	1,394,577	1,228,833	1,903,255	680,814	

* Discharge measurement made on this day φ Mean daily ! And other days

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4692.00 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°07'50", longitude 98°19'55", and river kilometer 273; 0.8 river kilometer downstream from Anzalduas Dam, about 7.0 kilometers northwest of Reynosa, Tamaulipas, and 16.6 river kilometers upstream from the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum. RECORDS: Based on 106 discharge measurements during the year, 96 by the Mexican Section and 9 by the United States Section of the Commission, and a continuous record of gage heights. Records available: 1952 through 1992.

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 25.18 meters 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. 3,700 CMS on September 24, 1967, with a gage height of 9.30 meters. Min. periods of no flow have occurred on several occasions in 1953, 1954, 1956, and 1957.

Average Flow in Cubic Meters per Second

Daily:	Max.	3,440	Sept. 25, 1967	Min.	0	Occasionally
Monthly:	Max.	1,070	Oct. 1958	Min.	0.16	March 1957
Yearly:	Max.	182	1958	Min.	4.49	1957

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.1	64.8	144	203	185	266	110	63.2	* 55.2	10.2	14.6	* 8.65
2	18.5	68.3	148	194	187	272 *	98.4	61.0	49.3	* 10.3	17.4	7.59
3	29.5	68.0	147	199 *	208	269	* 97.0	56.7	48.2	9.95	* 20.6	4.67
4	27.8	* 74.0	150 *	202	230	260	90.5	* 52.4	* 35.7	17.5	19.7	* 7.04
5	27.8	78.8	146	210	100	240 *	100	55.3	34.6	24.3	14.1	6.51
6	27.3	76.8	145 *	210	190	215	105	55.6	43.8	* 27.2	* 10.8	4.96
7	* 25.4	* 78.8	162	208 *	184	214	107 *	* 59.4	47.3	25.7	10.0	5.97
8	21.0	78.6	177	204	177 *	210	105	57.2	* 49.1	21.8	15.8	* 4.82
9	* 21.8	78.2	176	205	176	201 *	92.8	63.9	53.4	* 18.1	25.4	6.71
10	29.6	78.5	167 *	208 *	136	216	* 86.1	64.4	56.3	22.1	* 26.6	9.98
11	28.5	* 82.6	168	203	83.7	232	77.6	* 60.4	* 48.4	42.7	22.2	* 4.91
12	24.9	109	170	192	* 58.0	244 *	71.8	68.1	39.3	56.2	12.4	4.78
13	22.1	133	169 *	186	* 40.1	260	66.7	70.7	39.2	* 57.2	* 10.3	6.74
14	19.1	137 *	172	177 *	31.5	266	* 64.1	* 66.3	26.2	48.5	4.96	10.6
15	19.0	140	146	171	* 34.1	261	63.8	72.4	* 26.7	42.9	8.05	* 10.0
16	21.0	141	108	170	27.8	259 *	68.8	89.8	17.4	* 45.3	* 9.03	9.92
17	21.5	140	* 97.8	176	36.0	261 *	* 67.6	89.4	14.0	48.5	* 6.80	7.10
18	17.0	138 *	94.1	187	67.1	280	58.4	* 76.9	* 11.8	52.0	9.26	* 7.11
19	9.69	136	90.4	191	105 *	292 *	61.9	68.9	15.4	48.8	7.95	6.90
20	13.8	137	* 89.4	187	81.6	301	55.0	67.8	20.9	* 43.8	5.75	9.65
21	* 22.6	141 *	98.3	179 *	98.8	260	* 58.6	* 69.4	30.3	41.7	9.25	9.49
22	* 17.5	145	98.7	173 *	121 *	293	55.2	69.1	* 32.1	42.2	5.13	* 8.60
23	15.1	147	92.2	171	130	146	50.0	62.5	27.7	* 33.6	4.55	6.25
24	* 16.8	146	* 90.2	172 *	137	117	* 41.1	58.6	23.8	16.2	* 4.32	* 5.55
25	18.4	155	87.9	191	136	141 *	45.8	* 46.0	* 16.1	5.70	4.40	4.20
26	21.7	121	* 85.9	228	126 *	166	46.1	46.8	5.93	5.41	4.40	7.56
27	20.7	54.3	* 89.3	248	141	161	* 45.6	* 30.9	7.62	7.54	4.40	12.1
28	* 19.3	* 62.8	97.5	231 *	244	154	* 47.1	* 43.4	8.62	16.0	4.40	17.0
29	20.0	133	98.4	204	311 *	150	49.0	57.0	* 10.1	16.6	9.41	* 13.5
30	61.0	139	194 *	194 *	317 *	140	58.4	66.2	* 9.11	* 10.9	8.95	9.84
31	* 75.9	193 *	193 *	282	282		* 68.7	61.3		11.3		7.82
Sum	749.39	3,143.5	4,037.1	5,874	4,381.7	6,647	2,213.1	1,931.0	903.58	880.20	330.91	246.52

Current Year 1992 Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			31	75.9	19	9.69	24.2	64,747	118,849	401,559	1,344
Feb.		23.74	25	155	23	5.20	108	271,598	92,926	341,105	1,024
Mar.		23.69	31	193	2	3.80	130	348,805	102,758	348,805	418
April		23.91	27	248	13	10.4	196	507,514	146,953	507,514	3,898
May		23.66	30	317	11	3.20	141	378,579	190,184	591,517	43,616
June		25.16	20	301	14	77.0	222	574,301	235,269	838,792	9,683
July		24.15	1	110	14	19.3	71.4	191,212	160,328	687,075	2,467
Aug.		24.24	16	89.8	14	23.3	62.3	166,838	160,308	1,489,874	1,163
Sept.	25.02		4	67.3	26	5.93	30.1	78,069	266,361	2,297,796	4,835
Oct.	25.02		7	67.3	-26	5.41	28.4	76,049	306,919	2,869,074	2,134
Nov.	24.85		9	56.3	24	4.32	11.0	28,591	150,654	1,773,744	1,764
Dec.	24.97		17	64.1	25	4.20	7.95	21,299	111,022	666,203	1,850
Yearly				317		3.20	85.6	2,707,602	2,042,531	5,724,541	141,541

* Discharge measurement made on this day φ Mean daily

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 40.6 kilometers downstream at the Main Floodway Station on Farm Road No. 88 bridge south of Weslaco. At a point 4.8 kilometers 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 diversion, 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.

In 1992, no flood flow was diverted through this floodway system.

On the Mexican Side

Part of the excess water from floods entering the Lower Rio Grande Valley is diverted from the river through the Mexican floodway system, with the inlet located 59.7 kilometers downstream from Anzalduas Dam.

Floodwater entering the system through the Retamal Inlet flows into Culebron and Villa Cardenas Reservoirs through the Retamal Floodway, while floodwater entering the canal at Anzalduas Dam reaches these lakes via the Culebron and Retamal Canals. From that point it flows in a southeastwardly direction via Floodway No. 1 into the Gulf of Mexico.

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

In 1992, no flood flow was diverted through Retamal Floodway or Anzalduas Canal.

08-4732.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, ANZALDUAS DAM TO PROGRESO

Beginning June 1971, the Texas Water Rights Commission, now the Texas Water 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 1992, 48,318 hectares 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 16.8% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1992 in this river reach was 197,564 TCM, or 20.1% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flowmeters and by deflection meters which were developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second				
Daily:	Max.	33.4	June 1, 1990	Min.	0	Occasionally
Monthly:	Max.	23.1	June 1990	Min.	0.38	May 1972
Yearly:	Max.	12.6	1989	Min.	4.73	1970

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.24	0.34	3.82	9.83	1.15	0.69	22.3	7.93	13.1	7.82	0.76	3.79
2	3.51	.03	6.88	3.22	.87	1.01	24.4	8.38	13.2	4.96	5.75	3.37
3	2.50	.79	9.01	2.77	.13	.37	20.1	12.9	12.4	1.37	5.95	3.17
4	.74	.86	9.26	1.80	2.56	.62	11.9	12.5	14.9	3.29	5.13	2.95
5	0	.89	7.93	.85	1.01	2.67	16.1	15.1	6.51	6.12	4.50	.65
6	1.05	1.14	6.77	3.26	1.41	.28	19.3	17.2	8.95	7.00	3.26	.48
7	1.76	.88	3.94	2.26	.97	.01	17.8	17.4	14.9	8.75	2.42	5.04
8	3.29	.51	4.39	2.44	.72	2.73	18.0	9.88	17.2	9.80	1.71	5.04
9	3.29	.05	10.3	3.40	.06	3.06	18.0	12.1	16.9	8.69	6.68	4.79
10	1.48	4.93	10.2	2.32	.02	4.05	16.1	16.0	15.4	2.71	7.62	2.35
11	.41	4.90	12.5	1.96	1.02	5.86	8.01	17.4	10.4	7.59	2.10	2.08
12	.19	5.38	11.8	2.12	.91	6.34	12.5	16.1	5.27	14.6	7.25	.61
13	1.06	4.33	7.84	8.35	4.53	2.42	14.5	13.7	4.36	14.4	1.78	.41
14	2.39	2.48	2.97	8.44	5.92	4.47	15.8	14.0	6.32	13.4	1.21	2.63
15	1.42	.69	2.23	7.70	3.74	10.4	15.7	5.24	4.28	11.8	.93	3.57
16	1.24	.74	10.1	6.09	1.26	14.2	15.6	3.77	3.09	9.69	2.33	3.14
17	1.05	3.03	13.0	4.67	.45	15.6	16.8	10.8	2.41	4.28	1.97	3.12
18	.33	6.71	14.3	1.48	2.16	20.3	9.97	10.3	2.72	7.50	.88	5.35
19	.45	6.20	15.4	.23	2.62	18.7	14.6	9.29	1.57	12.8	4.62	.66
20	1.02	3.85	16.8	1.06	2.89	17.9	14.4	8.13	1.09	12.2	3.57	1.32
21	1.17	1.87	8.84	1.25	1.52	22.3	10.8	7.76	9.20	13.0	.29	4.73
22	1.12	1.14	12.5	5.55	1.38	23.3	10.0	3.17	10.9	5.24	.23	5.52
23	1.07	.89	15.9	6.03	1.57	24.0	8.72	4.64	2.69	4.33	2.61	4.56
24	2.69	1.40	15.4	5.72	1.70	25.5	8.24	10.0	6.40	1.75	3.37	3.31
25	.82	1.96	14.6	1.58	4.59	24.5	3.17	9.80	5.32	1.04	3.71	0
26	.74	1.82	15.8	.99	4.67	19.6	3.09	9.88	.15	1.51	.52	0
27	5.01	5.01	12.6	.99	6.40	12.5	8.86	10.9	0	1.89	1.82	3.03
28	5.10	6.06	7.19	1.01	2.62	13.8	10.5	7.90	2.63	9.29	.23	4.87
29	3.79	1.82	3.43	.98	1.59	18.9	11.2	4.53	4.47	9.26	.22	5.24
30	1.81		12.3	1.64	.57	14.5	10.6	4.30	7.76	5.04	3.37	3.82
31	.80		12.5		0		11.0	8.27		1.11		1.57
Sum	51.54	70.70	310.50	100.59	60.81	330.58	418.06	319.27	224.49	222.23	86.79	91.17

Current Year 1992 Period 1960-1992

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	1992	1960-1992	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.	87	36	28	5.10	5	0	1.66	4,453	16,487	43,121	892
Feb.	32	34	18	6.71	2	.03	2.44	6,108	13,482	35,196	2,522
Mar.	4	15	20	16.8	15	2.23	10.0	26,827	23,429	44,562	7,923
April	120	38	1	9.83	19	.23	3.35	8,691	26,571	48,447	8,691
May	190	78	27	6.40	31	0	1.96	5,254	27,093	53,225	1,008
June	14	66	24	25.5	7	.01	11.0	28,562	33,614	59,901	5,184
July	33	44	2	24.4	26	3.09	13.5	36,120	28,434	49,928	8,137
Aug.	27	62	1	17.4	22	3.17	10.3	27,585	21,640	33,973	9,192
Sept.	81	109	8	17.2	127	0	7.48	19,396	15,319	34,885	3,964
Oct.	50	59	12	14.6	25	1.04	7.17	19,201	18,907	38,509	2,540
Nov.	50	28	10	7.62	29	.22	2.89	7,499	14,571	28,146	1,252
Dec.	10	30	22	5.52	125	0	2.94	7,877	12,653	24,623	2,284
Yearly	698	599		25.5		0	6.25	197,573	252,290	398,520	149,260

φ Mean daily

! And other days

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

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4736.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, PROGRESO TO SAN BENITO

Beginning June 1971, the Texas Water Rights Commission, now the Texas Water 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 1992, 128,513 hectares and several towns and rural homes were allotted Rio Grande water in the river reach between Progreso and the gaging station at San Benito. Such irrigable area was 44.6% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1992 in this river reach was 412,372 TCM, or 42.0% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flowmeters, by open channel rating stations, and by deflection meters which were developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second					
Daily:	Max.	82.4	June 5, 1990	Min.	0	Occasionally	
Monthly:	Max.	62.6	June 1990	Min.	1.52	March 1957	
Yearly:	Max.	27.6	1989	Min.	10.4	1968	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.82	1.93	0.99	15.8	4.64	4.22	60.6	25.9	24.4	5.58	4.79	5.72
2	1.92	0	7.25	11.7	2.49	3.68	62.0	25.8	27.0	4.73	7.79	3.46
3	2.05	7.28	7.79	4.11	1.41	7.67	61.5	33.4	26.7	3.77	10.5	3.29
4	2.22	8.52	6.57	5.66	0	6.66	58.3	36.2	26.2	2.45	10.3	2.15
5	2.23	9.66	3.71	5.35	1.82	10.1	56.4	36.8	20.4	4.42	10.8	.05
6	5.07	7.50	3.31	3.65	2.28	6.12	56.1	37.7	19.6	5.95	10.6	1.12
7	5.95	3.23	4.30	5.58	2.36	4.84	49.0	36.5	24.2	4.73	4.70	2.65
8	5.15	2.30	1.37	5.27	2.76	5.89	46.4	29.5	27.2	9.54	5.21	3.48
9	4.87	0	9.54	2.62	.98	5.58	45.9	29.7	27.9	13.0	6.46	3.60
10	3.79	1.74	12.3	3.62	.71	4.45	41.9	33.7	27.0	12.0	7.14	3.40
11	.48	3.99	12.0	1.76	.99	7.14	39.6	36.0	22.8	12.9	7.73	2.86
12	1.11	4.28	12.0	1.69	3.34	3.17	39.1	36.0	24.4	27.9	7.59	2.14
13	2.10	.73	12.2	1.58	10.2	1.99	39.9	32.9	11.6	35.4	8.10	2.13
14	1.76	1.25	9.12	1.72	11.3	1.31	34.6	28.9	11.2	35.7	5.27	3.62
15	2.86	2.72	8.98	3.03	10.3	9.88	33.1	25.3	11.0	34.8	4.47	7.67
16	2.86	1.09	10.2	9.09	.90	11.8	33.4	18.4	8.89	35.7	5.58	7.99
17	2.83	9.37	9.18	9.26	.14	11.6	32.6	26.5	11.1	26.0	5.55	7.99
18	2.21	12.7	11.1	7.02	.54	14.5	31.2	18.2	9.15	27.1	5.55	7.62
19	.02	12.5	19.7	8.64	.76	24.7	28.6	17.6	7.59	27.8	5.04	3.91
20	.79	2.89	21.4	10.5	.06	28.1	30.3	13.3	7.14	28.0	5.41	3.94
21	2.86	1.75	21.3	10.4	2.48	27.4	27.4	13.3	16.7	27.1	2.17	6.34
22	2.72	3.40	21.4	9.12	1.87	38.2	28.9	9.80	17.1	25.9	2.11	7.25
23	.79	1.32	26.5	9.29	.74	52.4	30.3	9.12	10.6	16.7	3.23	8.98
24	.02	3.09	28.3	6.97	0	55.2	30.3	12.7	6.32	5.04	5.15	5.83
25	2.25	6.06	29.7	1.07	.71	58.9	25.6	13.5	9.37	3.09	4.22	4.59
26	.02	5.95	30.6	.03	1.23	64.0	25.4	14.1	2.86	4.25	3.23	5.47
27	5.61	2.53	30.3	3.48	3.20	66.8	25.1	14.6	.07	3.54	3.23	4.56
28	7.48	.98	26.6	5.58	9.26	58.3	22.2	14.2	3.31	3.26	2.16	6.77
29	7.11	2.92	22.7	7.22	10.6	55.8	22.5	11.2	6.43	4.08	2.14	8.47
30	5.27	24.3	6.26	5.15	55.2	23.6	9.97	4.84	5.83	3.77	3.77	9.69
31	1.59	21.6		4.11		26.0	12.7		3.37			8.52
Sum	86.81	121.68	466.31	177.07	97.33	705.60	1,167.8	713.49	453.07	459.63	169.99	155.26

Current Year 1992

Period 1960-1992

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	1992	1960-1992	High		Average	Total	Average	Maximum	Minimum		
			Day	Day							
Jan.	84	41	28	7.48	! 19	0.02	2.80	7,500	50,495	119,807	6,010
Feb.	42	41	18	12.7	! 2	0	4.20	10,513	27,635	75,228	5,929
Mar.	3	20	26	30.6	1	.99	15.0	40,289	35,707	84,858	9,551
April	101	47	1	15.8	26	.03	5.90	15,299	60,042	125,384	15,299
May	151	77	14	11.3	! 4	0	3.14	8,409	67,448	136,226	8,409
June	42	55	27	66.8	14	1.31	23.5	60,964	85,481	162,181	13,724
July	25	2	2	62.0	28	22.2	37.7	100,898	56,933	110,240	13,947
Aug.	35	72	6	37.7	23	9.12	23.0	61,646	43,101	79,218	15,710
Sept.	132	134	9	27.9	27	.07	15.1	39,145	29,216	68,815	5,314
Oct.	40	66	114	35.7	4	2.45	14.8	39,712	31,953	71,743	6,347
Nov.	99	38	5	10.8	22	2.11	5.67	14,687	24,645	54,715	5,986
Dec.	16	35	30	9.69	5	.05	5.01	13,414	24,683	55,789	8,217
Yearly	767	700		66.8		0	13.0	412,476	537,339	868,544	328,940

φ Mean daily

! And other days

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

08-4737.00 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°01'50", longitude 97°43'40", and river kilometer 156, 6.3 river kilometers downstream from San Benito pumping plant and about 15.3 kilometers southwest of San Benito, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 current-meter 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 current-meter measurements. Records available: November 26, 1952 through August 23, 1953, and December 1953 through 1992.

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, 286 river kilometers 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 Mercedes office of the Commission, and to the Anzalduas Dam Control Room, where it is recorded automatically. 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. 708 CMS on September 29, 1967 with a gage height of 18.61 meters. Min. no flow occurs occasionally.

Average Flow in Cubic Meters per Second**

Daily:	Max.	702	Sept. 29, 1967	Min.	0	Occasionally
Monthly:	Max.	405	Oct. 1971	Min.	1.12	Dec. 1956
Yearly:	Max.	107	1976	Min.	5.66	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.7	65.7	111	118	179	235	* 64.6	30.3	37.7	* 7.11	6.68	6.20
2	16.5	62.3	125	148 *	175	232	43.3	30.3	* 20.7	4.36	* 7.14	6.40
3	17.6	61.2	128 *	167	173	225 *	22.2	* 25.0	14.2	4.64	5.72	6.17
4	25.6	* 56.6	127	176	182 *	222	19.5	9.46	10.5	5.24	4.47	* 5.72
5	32.9	58.3	128	180	193	224	25.2	3.99	8.27	7.56	6.15	6.26
6	* 27.6	62.0	127	186	191	213	34.0	4.93	5.89	11.8	5.35	6.54
7	26.3	64.0	125	188	186	205	39.6	5.69	10.7	15.5	4.50	6.00
8	25.1	70.5	128	185	181	197	51.0	13.3	4.96	16.9	5.32	4.56
9	19.4	74.8	134	183	176	194	48.7	19.1	3.79	6.68	6.03	2.77
10	18.7	75.0	133	182	170	187	40.8	23.3	5.30	3.99	12.3	1.65
11	26.8	71.4	127	183	156	185	33.7	17.0	10.9	2.68	14.2	1.87
12	33.4	75.6	123	183	102	196	34.0	14.7	17.0	7.36	15.2	5.66
13	28.3	89.2	122	178	67.1	199	31.7	18.2	25.1	9.29	12.1	5.35
14	26.3	110	123	170	43.9	204	20.6	26.6	* 28.9	* 10.6	5.81	4.84
15	19.9	119	125	159 *	32.3	213 *	17.6	34.3	22.2	* 6.29	4.22	2.86
16	17.3	123	121	143	34.0	214	15.4	46.2	19.8	1.58	* 4.16	* 3.20
17	17.7	126	* 97.7	137	37.1	204	20.2	62.6	16.7	5.95	5.66	2.32
18	21.1	121	75.6	143	39.6	199	29.5	65.4	12.0	18.6	5.61	1.93
19	21.9	118	64.3	151	56.1	198	28.1	* 54.4	8.78	20.2	6.23	3.17
20	16.9	126 *	53.8	155	89.2	194	30.3	46.2	9.52	15.5	9.12	3.43
21	* 11.0	124	51.3	157	* 81.0	195	23.9	45.6	9.23	11.2	5.89	2.55
22	14.6	128	58.9	154	87.2	192	* 26.9	48.7	10.6	11.8	5.18	2.59
23	18.0	133	61.2	149	104	143	32.0	56.1	19.1	20.4	7.22	2.01
24	13.0	137	52.4	146	124	* 82.4	28.9	49.0	28.9	29.7	5.10	.95
25	9.46	137	48.4	146	132	48.4	25.0	38.5	22.2	22.6	2.10	1.69
26	10.3	138	46.7	159	135	50.1	28.9	32.0	18.9	13.0	1.21	.49
27	10.5	132	46.4	176	128	69.1	31.4	27.7	17.3	6.20	1.08	.21
28	6.32	95.4	49.6	192	125	78.4	18.0	17.5	12.7	5.47	2.29	.44
29	2.95	77.3	63.7	195	159	78.7	13.9	22.9	8.89	6.26	3.88	1.73
30	2.25		71.1	188 *	200	70.8	14.2	37.7	8.81	4.96	4.50	3.96
31	23.4		87.5	228	228		21.3	48.7		6.43		1.33
Sum	576.78	2,831.3	2,935.6	4,977	3,966.5	5,147.9	914.4	975.37	449.54	319.85	184.42	104.85

Current Year 1992

Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	11.87	10.69	31	59.5	30	1.85	18.6	49,834	57,856	393,481	3,601
Feb.	14.33	11.83	126	140	4	54.9	97.6	244,624	58,744	447,576	4,168
Mar.	14.52	11.39	10	136	26	45.6	94.7	253,636	50,173	444,640	3,164
April	15.91	13.13	29	197	1	102	166	430,013	60,620	430,013	9,689
May	16.72	11.01	31	237	15	30.3	128	342,706	90,937	472,420	20,813
June	16.72	11.52	2	237	25	39.1	172	444,779	102,437	647,984	19,815
July	12.32	10.76	1	66.8	15	13.4	29.5	79,004	86,745	552,547	5,790
Aug.	12.36	10.49	18	70.2	6	2.36	31.5	84,272	89,548	1,020,220	3,827
Sept.	11.41	10.52	1	43.6	9	3.40	15.0	38,840	156,164	787,894	9,513
Oct.	11.01	10.43	24	30.6	16	.67	10.3	27,635	193,914	1,086,522	4,737
Nov.	10.80	10.45	12	16.1	126	.92	6.15	15,934	93,578	816,665	6,954
Dec.	10.64	10.39	6	7.22	28	.06	3.38	9,059	76,455	591,018	2,992
Yearly	16.72	10.39		237		0.06	63.9	2,020,336	1,117,171	3,383,956	179,397

* Discharge measurement made on this day

! And other days

** Period 1954-1992

08-4749.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, SAN BENITO TO BROWNSVILLE

Beginning June 1971, the Texas Water Rights Commission, now the Texas Water 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 1992, 33,024 hectares and several towns and rural homes were allotted Rio Grande water in the river reach between gaging stations near San Benito and Brownsville. Such irrigable area was 11.5% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1992 in this river reach was 109,937 TCM, or 11.2% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversion in this river reach were determined by means of flowmeters, and by deflection meters which were developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second				
Daily:	Max.	22.1	June 14, 1963	Min.	0	Occasionally
Monthly:	Max.	15.3	June 1965	Min.	0.52	Feb. 1966
Yearly:	Max.	6.32	1965	Min.	2.78	1981

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.02	0.83	1.05	2.97	0.89	2.29	12.1	13.7	2.07	6.09	1.41	1.29
2	.74	.89	1.14	3.00	1.18	2.00	11.4	11.5	3.31	9.46	1.81	.62
3	.78	.80	1.34	2.92	.67	2.53	12.7	9.06	3.06	6.54	1.87	.73
4	1.67	.71	1.55	.78	1.70	2.55	12.7	9.15	5.92	2.61	1.44	.13
5	1.90	.89	1.25	1.17	3.54	2.02	9.66	7.84	3.71	3.06	2.63	.32
6	1.92	.89	.94	.94	5.01	2.59	9.09	8.27	3.43	2.25	2.78	.43
7	2.25	.73	.95	.86	9.88	1.42	7.48	6.88	2.97	5.98	2.31	.40
8	6.85	.92	.75	.92	5.98	1.12	9.94	3.34	8.41	11.2	1.25	.46
9	8.89	.75	7.93	.89	3.00	1.11	12.1	3.40	10.3	11.5	.84	.79
10	1.68	.82	8.18	.81	2.78	.58	12.3	8.04	6.03	5.18	5.55	.90
11	.88	.91	1.56	1.16	2.25	1.11	11.5	10.6	3.96	1.78	9.35	.99
12	.77	.93	1.78	.87	5.01	.59	11.6	9.15	7.99	1.62	8.78	1.01
13	.88	1.93	1.83	7.33	7.53	1.16	11.4	6.00	9.29	3.12	2.47	.43
14	.87	.87	3.60	9.83	7.28	1.26	10.9	3.51	7.65	6.20	1.05	.93
15	.82	1.03	1.50	7.05	3.88	1.59	9.77	2.70	3.12	9.94	1.38	1.98
16	.86	1.04	1.62	1.50	1.39	2.32	7.99	2.76	1.04	7.42	.80	2.56
17	.87	1.04	3.43	1.80	1.18	1.76	7.70	2.35	1.06	1.64	1.02	1.22
18	.85	1.11	9.23	1.50	1.20	1.63	7.16	2.58	.62	1.84	.63	1.39
19	.61	.84	9.35	1.57	1.40	8.89	7.90	3.23	1.20	5.44	.79	1.64
20	.79	1.00	1.35	1.18	1.51	11.8	8.72	2.83	.76	9.09	.84	1.45
21	.85	.92	1.53	2.15	.94	11.4	8.58	2.48	3.40	5.61	.87	1.46
22	.87	.89	1.61	5.66	1.47	7.65	9.20	2.08	7.05	3.09	.62	1.27
23	.87	.86	2.27	5.69	1.06	9.18	9.29	1.73	1.43	3.60	1.22	1.13
24	.83	.92	2.25	1.44	1.08	7.90	6.03	7.16	2.33	2.14	.59	2.40
25	.80	.91	8.52	.63	.59	9.52	4.39	13.0	2.32	1.61	.63	2.27
26	.88	.96	8.98	1.14	1.68	11.7	2.75	10.3	1.23	2.04	.82	1.06
27	.85	.99	4.02	.62	.67	12.8	3.00	7.19	.63	1.52	.82	.73
28	.75	.90	3.31	1.15	.20	12.4	3.62	2.53	.48	1.72	.84	1.00
29	.85	.99	1.12	.88	2.06	9.26	9.60	2.48	.63	1.53	1.21	1.03
30	.88	1.07	1.14	1.14	2.01	11.3	12.0	2.01	2.16	2.03	.63	.72
31	.88		1.06		2.01		11.8	2.17		.92		.44
Sum	45.21	27.25	96.07	69.55	81.03	153.43	284.37	180.02	107.56	137.77	57.25	33.18

Current Year 1992

Period 1960-1992

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	1992	1960-1992	φ High		φ Low		Average	Total	Average	Maximum	Minimum
			Day	Day	Day	Day					
Jan.	74	45	9	8.89	19	0.61	1.46	3,906	13,586	30,303	1,871
Feb.	71	38	13	1.93	4	.71	.94	2,354	8,913	25,442	1,268
Mar.	12	17	19	9.35	8	.75	3.10	8,300	9,308	18,745	1,777
April	110	52	14	9.83	27	.62	2.32	6,009	14,203	34,233	3,613
May	161	79	7	9.88	28	.20	2.61	7,001	17,561	34,571	1,956
June	87	73	27	12.8	10	.58	5.11	13,256	21,027	39,816	4,612
July	5	50	13	12.7	26	2.75	9.17	24,570	15,482	29,633	4,548
Aug.	41	77	1	13.7	23	1.73	5.81	15,554	11,219	17,955	4,021
Sept.	104	147	9	10.3	28	.48	3.59	9,293	7,413	14,796	1,081
Oct.	37	66	9	11.5	31	.92	4.44	11,903	7,446	14,503	1,962
Nov.	145	39	11	9.35	24	.59	1.91	4,946	5,780	11,127	2,215
Dec.	30	39	16	2.56	4	.13	1.07	2,867	6,240	11,785	2,484
Yearly	877	722		13.7		0.13	3.48	109,959	138,178	199,208	87,788

φ Mean daily

! And other days

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

08-4750.00 RIO GRANDE NEAR BROWNSVILLE, TEXAS
AND MATAMOROS, TAMAULIPAS

DESCRIPTION: Cableway, bubbler gage, water-stage recorders (graphic and digital), and digital transmitter located on the left bank at latitude 25°52'35", longitude 97°27'20", and river kilometer 78.3, 0.3 river kilometer downstream from El Jardin pumping plant, and 11.2 river kilometers downstream from the international highway bridge (gateway) between Brownsville, Texas and Matamoros, Tamaulipas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 1992.

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, 364 river kilometers upstream. Excessive upstream flood flows are partly diverted into the United States and Mexican floodway systems before reaching this station. The transmitter relays gage height data via radio to the Mercedes office of the Commission, and to the Anzalduas Dam Control Room, where it is recorded automatically.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 898 CMS on October 8, 1945 with a gage height of 9.60 meters. Min. no flow occurs frequently.

Average Flow in Cubic Meters per Second**

Daily:	Max.	459	Oct. 19 & 20, 1971	Min.	0	Frequently
Monthly:	Max.	408	Oct. 1971	Min.	0.10	Aug. 1957
Yearly:	Max.	103	1976	Min.	1.19	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.5	37.1	73.3	* 88.9	180 *	208 *	* 66.3	5.95	* 41.1	8.21	5.30	5.13
2	14.1	62.0	96.9	115	174	223	56.9	14.2	33.4	* 3.43	* 6.66	6.32
3	13.8	* 63.7	113	140	170	223	34.8	* 25.7	21.9	1.62	* 6.71	6.80
4	13.6	63.4	124 *	156	169	220	20.6	22.1	15.5	2.14	5.55	* 7.19
5	18.3	59.8	127	165	172	217	19.7	13.2	13.3	3.48	3.85	7.05
6	* 24.1	62.6	129	169	179	214	24.4	7.96	11.4	5.83	4.50	7.16
7	23.8	65.4	129	172	176 *	206	28.9	5.10	10.0	8.84	5.81	7.62
8	22.4	67.4	128	172	170	198	33.4	6.00	12.8	7.45	6.68	7.28
9	17.0	71.6	132	170	167	192	38.2	12.5	5.24	6.63	7.59	6.54
10	16.1	74.5	131	167 *	164	190	36.0	17.8	2.83	3.06	6.46	4.73
11	19.1	73.6	136	166	159	186	31.7	17.0	5.86	3.71	4.73	3.14
12	24.5	70.2	136	168	144	182	29.7	12.8	14.0	3.62	5.52	2.45
13	29.7	73.1	135	168	109	185	28.6	14.3	16.4	4.11	8.10	3.60
14	27.1	88.4	134	162	73.6	193	22.5	21.5	20.3	* 6.66	11.5	4.93
15	* 24.5	104	137	155 *	52.1	199	18.5	28.6	* 24.7	4.47	8.69	* 4.30
16	20.6	114	141	149	43.3	207 *	18.3	33.1	23.2	2.83	6.29	3.43
17	18.1	121	134	141	42.2	203	* 15.6	* 47.0	21.2	2.68	* 5.04	3.62
18	18.5	125	106 *	137	44.2	197	17.5	64.6	18.6	4.13	5.78	3.12
19	20.8	120	75.3	136	47.6	190	20.6	66.6	14.9	12.8	6.85	2.80
20	21.5	115	65.1	142	* 70.2	183	19.0	57.2	12.3	11.3	10.1	2.89
21	18.3	116 *	56.9	148	92.9	182	17.4	50.7	10.8	10.5	9.74	3.71
22	13.6	122	56.1	150	91.2	183	13.9	49.3	7.25	9.86	7.62	3.65
23	15.8	128	62.6	144	95.4	173	15.5	53.2	8.18	11.7	6.20	3.03
24	20.0	133	60.0	145	104	140	17.0	55.2	15.8	18.3	7.31	2.72
25	18.2	135	50.7	144	111	96.6	16.2	42.2	22.8	24.9	6.77	2.48
26	17.2	135	38.5	146	118	55.5	15.2	34.0	20.7	21.2	4.56	3.23
27	18.7	134	41.1	153	123	53.0	14.2	26.6	17.5	14.6	3.34	3.14
28	20.1	122	43.0	165	121	68.5	16.8	26.3	16.6	8.84	2.83	2.47
29	16.7	86.7	51.3	179	125	76.5	19.0	20.6	13.8	6.77	2.83	2.65
30	13.0		65.7	183	150	74.8	15.3	22.6	10.5	6.03	4.56	3.03
31	12.5		72.2		184		7.28	36.0		5.30		4.93
Sum	585.2	2,743.5	2,978.7	4,595.9	3,821.7	5,118.9	748.98	909.91	482.86	245.00	187.47	135.14

Current Year 1992

Period 1954-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	2.41	1.45	13	30.0	31	12.1	18.9	50,561	46,398	407,379	349
Feb.	5.99	1.62	26	137	1	15.0	94.6	237,038	51,950	446,279	1,303
Mar.	6.16	2.65	16	141	26	36.0	96.1	257,360	43,518	445,080	2,532
April	7.22	4.12	30	184	1	77.9	153	397,086	44,931	397,086	1,079
May	7.48	2.85	31	197	17	40.8	123	330,195	71,981	438,873	5,104
June	7.80	3.22	2	225	26	47.6	171	442,273	80,907	600,151	2,996
July	4.08	1.13	1	70.5	31	5.66	24.2	64,712	75,018	539,704	1,383
Aug.	3.77	1.00	18	68.8	1	4.33	29.4	78,616	77,194	1,001,626	269
Sept.	3.02	.85	1	42.5	10	2.56	16.1	41,719	140,427	784,150	1,171
Oct.	2.26	.80	25	25.4	3	.34	7.90	21,168	180,687	1,094,351	933
Nov.	1.54	.91	14	12.1	128	2.69	6.25	16,197	87,550	650,763	1,587
Dec.	1.26	.87	7	7.82	25	2.17	4.36	11,676	73,538	591,508	646
Yearly	7.80	0.80		225		0.34	61.6	1,948,601	974,099	3,263,087	37,722

* Discharge measurement made on this day

! And other days

** Period 1954-1992

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4753.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, BROWNSVILLE TO THE GULF OF MEXICO

Beginning June 1971, the Texas Water Rights Commission, now the Texas Water 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 1992, 2,293 hectares 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 0.8% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1992 in this river reach was 1,610 TCM, or 0.2% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined 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 Cubic Meters per Second				
Daily:	Max.	1.92	May 1, 1984	Min.	0	Frequently
Monthly:	Max.	0.66	June 1965	Min.	0	Occasionally
Yearly:	Max.	0.20	1965	Min.	0.02	1976

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0.01	0	0	0.81	0.01	0	0	0.23	0.16
2	0	0	0	0.01	0	0	.59	.01	0	0	.09	.16
3	.14	0	0	0.01	0	0	.50	.01	0	0	.09	.16
4	.14	0	0	0.01	0	0	.53	.01	0	0	.09	.16
5	.14	0	0	0.01	0	0	.16	.01	0	0	.09	0
6	.10	0	0	0.01	0	0	.08	.01	0	0	.09	0
7	.10	0	0	0.01	0	0	.16	.01	0	0	.09	0
8	.19	0	0	0.01	0	0	.26	.01	.04	0	.09	0
9	.19	0	0	0.01	0	0	.26	.01	.10	0	.09	0
10	.19	0	0	0.01	0	0	.36	.01	.08	0	.09	0
11	.19	0	0	0.01	0	0	.31	.07	.06	0	.09	0
12	.19	0	0	0.01	0	0	.19	.07	.06	0	.09	0
13	.08	0	0	0.01	0	0	.50	.07	.06	.05	.20	0
14	.08	0	0	0.01	0	0	.42	.01	0	.05	.10	0
15	.15	0	0	0.01	0	0	.33	.01	0	.04	.10	0
16	.08	0	0	0.01	0	0	.20	.01	0	0	.10	0
17	.14	0	0	0.01	0	0	.35	.01	0	0	.10	0
18	.06	0	0	0.01	0	0	.15	.01	0	0	.10	0
19	.06	0	0	0.01	0	0	.12	.01	0	.06	.10	0
20	.02	0	.12	0.01	0	0	.12	.01	0	.04	.10	0
21	.02	0	.12	0.01	0	.19	.12	.01	0	0	.11	0
22	0	0	.12	0.01	0	.21	.12	.01	0	.04	.11	0
23	0	0	.12	0.01	0	.37	.11	.01	0	0	.11	0
24	0	0	0	0.01	0	.37	.11	.01	0	0	.11	0
25	0	0	0	0.01	0	.44	.11	.01	0	0	.11	0
26	0	0	.12	0.01	0	.65	.02	.01	0	0	.11	0
27	0	0	.12	0.01	0	.64	.02	.01	0	0	.11	0
28	0	0	.12	0.01	0	0	.02	.01	0	0	.15	0
29	0	0	0	0.01	0	0	.02	.01	0	0	0	0
30	0	0	0	0.01	0	0	.02	.01	0	.21	0	0
31	0	0	0	0	0	0	.02	.01	0	.21	0	0
Sum	2.26	0	0.84	0.30	0	2.87	7.09	0.49	0.40	0.70	3.04	0.64

Current Year 1992

Period 1960-1992

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	1992	1960-1992	Day	φ High		Average	Total	Average	Maximum	Minimum	
				Day	φ Low						
Jan.	108	48	1 8	0.19	1 1	0	0.07	195	453	1,573	0
Feb.	56	36	1 1	0	1 1	0	0	0	287	1,113	0
Mar.	2	15	120	.12	1 1	0	.03	72.6	162	782	0
April	104	52	1 1	.01	1 1	.01	.01	25.9	317	1,187	22.4
May	131	73	1 1	0	1 1	0	0	0	463	1,673	0
June	45	67	26	.65	1 1	0	.10	248	592	1,718	0
July	8	51	1	.81	126	.02	.23	613	249	960	0
Aug.	97	75	111	.07	1 1	.01	.02	42.3	120	391	16.9
Sept.	86	150	9	.10	1 1	0	.01	34.6	51.6	199	0
Oct.	39	69	130	.21	1 1	0	.02	60.5	66.7	224	0
Nov.	173	44	1	.23	129	0	.10	263	74.4	311	0
Dec.	54	40	1 1	.16	1 5	0	.02	55.3	115	613	0
Yearly	903	720		0.81		0	0.05	1,610	2,951	6,212	670

φ Mean daily

! And other days

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

08-4754.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, FALCON DAM TO THE GULF OF MEXICO

Beginning June 1971 the Texas Water Rights Commission, now the Texas Water 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 1992, 287,903 hectares, 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 981,150 TCM. Records of diversion from the Rio Grande were determined by means of flowmeters, by open channel rating stations and by deflection meters developed by the International Boundary and Water Commission. 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 "Divisions from the Rio Grande-United States Side below Rio Grande City" for the period 1922 through 1957 may be found in previous issues of these Water Bulletins. The area irrigated below Rio Grande City is about 99% of the total acreage irrigated on the United States side below Falcon Dam.

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

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second						
Daily:	Max.	159	June 1, 1960	Min.	0.08	Aug. 10, 1980
Monthly:	Max.	123	June 1960	Min.	2.89	Mar. 1957
Yearly:	Max.	59.8	1989	Min.	24.9	1970

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.49	5.30	14.1	42.2	17.3	9.57	119	62.9	58.9	30.6	13.8	15.3
2	8.98	2.35	25.9	25.8	10.2	8.04	119	58.3	63.4	28.6	24.2	12.5
3	7.50	11.7	28.2	15.1	7.22	12.9	113	72.2	61.7	18.0	27.5	13.3
4	6.26	11.2	27.9	11.5	7.96	11.3	98.6	76.5	66.0	14.8	26.7	10.5
5	4.56	13.6	25.8	10.3	8.78	17.0	93.2	77.3	44.2	25.0	26.4	3.09
6	8.55	11.1	22.4	13.1	10.6	10.4	101	77.6	44.5	30.0	24.7	3.62
7	10.7	8.44	17.5	13.1	15.0	7.62	92.6	77.3	57.5	31.4	14.7	10.7
8	18.4	6.06	14.6	13.5	12.9	11.6	90.6	54.4	70.2	44.5	12.7	13.1
9	20.0	2.77	39.6	12.1	5.89	10.5	94.6	56.1	75.3	46.2	21.9	12.5
10	8.24	10.3	45.3	14.7	5.49	11.4	86.9	72.8	67.4	30.3	28.1	10.2
11	2.95	13.2	37.1	11.9	7.84	16.7	71.9	80.7	54.4	33.4	27.4	10.0
12	3.31	16.8	34.8	9.43	13.5	13.1	76.7	78.7	47.3	56.4	32.6	7.31
13	6.77	10.2	35.1	26.8	30.6	7.59	84.1	68.3	36.0	68.5	21.4	6.26
14	7.82	9.60	25.3	33.1	34.0	9.12	79.6	58.6	37.4	71.4	14.6	12.9
15	8.72	8.44	21.8	32.3	22.2	28.3	77.6	41.9	30.3	72.8	11.8	17.4
16	8.41	6.29	34.0	31.2	6.71	36.2	76.7	33.7	23.0	68.0	13.9	19.0
17	7.39	20.5	41.1	26.9	4.87	39.6	76.2	49.8	26.6	40.8	11.4	17.8
18	4.98	28.3	52.4	14.7	8.38	47.9	60.3	40.8	23.7	45.3	10.2	18.7
19	2.71	28.1	62.6	14.1	9.32	63.2	64.0	41.9	16.6	59.8	12.9	10.0
20	5.18	16.0	56.6	20.7	8.13	65.7	70.8	34.0	16.6	64.6	11.9	10.6
21	5.81	11.7	42.2	23.8	9.23	70.0	61.7	33.1	38.5	60.9	5.13	18.7
22	7.50	9.63	47.6	34.3	8.18	85.2	63.4	23.6	48.1	43.0	4.64	18.3
23	6.09	6.57	60.0	34.3	6.12	104	64.0	25.9	21.3	30.0	12.6	22.4
24	5.49	9.91	64.0	26.7	5.13	109	59.5	41.1	22.7	12.9	14.5	15.2
25	5.38	13.7	72.8	9.40	9.88	112	45.6	48.7	20.9	8.86	12.4	7.11
26	2.44	16.5	76.2	3.79	14.7	113	42.2	51.0	7.56	12.4	6.85	10.6
27	12.7	18.5	65.1	8.18	17.5	108	48.4	48.7	2.80	12.0	8.64	10.3
28	14.3	18.6	49.0	9.80	14.5	96.3	49.0	40.5	10.8	20.0	6.37	17.0
29	13.1	13.5	35.1	12.9	16.6	98.6	57.8	30.0	16.0	21.4	5.72	17.3
30	8.89		49.6	10.7	8.58	99.4	59.8	26.9	21.0	19.2	13.6	19.1
31	5.10		46.4		6.57		60.3	37.4		11.6		14.3
Sum	240.72	358.86	1,270.1	566.40	363.88	1,433.24	2,358.1	1,620.7	1,130.66	1,132.66	479.25	405.09

Current Year 1992

Period 1958-1992

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	1992	1958-1992	Day		Average	Total	Average	Maximum	Minimum		
			Day	High							
Jan.	74	39	9	20.0	2.44	7.77	20,798	94,184	224,987	11,984	
Feb.	33	37	18	28.3	2.35	12.4	31,006	65,912	155,700	14,537	
Mar.	5	15	26	76.2	1	14.1	109,737	95,489	193,098	19,538	
April	76	40	1	42.2	26	3.79	18.9	48,937	135,241	258,994	48,937
May	127	70	14	36.0	17	4.87	11.7	31,439	143,574	282,261	19,823
June	31	68	26	113	13	7.59	47.8	123,832	172,641	319,179	32,671
July	14	45	1	119	26	42.2	76.1	203,740	131,269	242,015	38,857
Aug.	33	60	11	80.7	22	23.6	52.3	140,028	106,435	176,740	44,662
Sept.	65	112	9	75.3	27	2.80	37.7	97,689	74,141	168,349	15,676
Oct.	37	65	15	72.8	25	8.86	36.5	97,862	81,291	162,305	16,023
Nov.	67	30	12	32.6	22	4.64	16.0	41,407	63,914	120,842	15,633
Dec.	20	30	23	22.4	5	3.09	13.1	35,000	61,393	113,823	17,311
Yearly	582	611		119		2.35	31.0	981,475	1,225,484	1,879,991	785,513

φ Mean daily

! And other days

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

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Thousands of Cubic Meters

EL PASO SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande through the outfall of the Haskell R. Street Wastewater Treatment Plant located 11.4 river kilometers downstream from the American Dam. The outfall from this plant consists of flows measured by a Sparling propeller meter and estimates of amounts which bypass the meter. The records are furnished by the City of El Paso, Texas.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1992	2,705	2,722	2,694	2,536	2,928	1,647	2,726	2,969	2,438	2,476	2,393	2,460	30,694
Average	2,449	2,351	2,470	2,384	2,501	2,384	2,660	2,786	2,618	2,525	2,421	2,402	29,951

Period average 1983-1992

EAGLE PASS SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at river kilometer 798 and about 183 meters upstream from the Eagle Pass-Piedras Negras International Railroad Bridge. The records are based on weekly current meter measurements and estimates by personnel of the International Boundary and Water Commission.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1992	244	223	206	217	226	223	249	252	258	271	235	250	2,854
Average	221	195	208	214	219	210	200	204	211	223	213	221	2,539

Period average 1983-1992

LAREDO SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande from two sewage treatment plants, Zacate Creek Sewage Treatment Plant and Southside Sewage Treatment Plant. These sewage outfalls enter the Rio Grande at river kilometers 579 and 573, 1.4 and 7.9 river kilometers respectively downstream from the old international highway bridge Laredo, Texas and Nuevo Laredo, Tamaulipas. The records are furnished by the Laredo Water Treatment Plant in Laredo, Texas.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1992	1,315	1,388	1,377	1,357	1,428	1,343	1,391	1,398	1,368	1,385	1,207	1,087	16,044
Average	1,158	1,062	1,159	1,130	1,234	1,198	1,244	1,235	1,235	1,236	1,161	1,125	14,177

Period average 1983-1992

BROWNSVILLE SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at river kilometer 75.3, 14.3 river kilometers downstream from the Gateway Bridge between Brownsville, Texas and Matamoros, Tamaulipas and 3.1 river kilometers downstream from the Brownsville Gaging station. Records are furnished by the City of Brownsville.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1992	724	676	740	714	745	738	722	739	755	777	712	717	8,759
Average	686	630	676	669	709	678	702	693	729	722	672	682	8,248

Period average 1983-1992

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousands of Cubic Meters

Tabulated below are monthly and yearly amounts of water pumped from the Rio Grande directly into municipal distribution systems of cities along the border, except for the city of Del Rio, whose main 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. 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 prior pages of this bulletin. Population data were provided by the Chamber of Commerce for each city in the United States, except El Paso, which were provided by the City Planning Office; Falcon Village, estimated by the International Boundary and Water Commission; Del Rio, by the Middle Rio Grande Development Counsel; Laughlin Air Force Base, by the U. S. Air Force; Laredo, by the Laredo Development Foundation; and Rio Bravo and San Ygnacio, which are based on utilities connections.

In the United States

Month	EL PASO (Pop. 540,203)				DEL RIO (Pop. 32,045)			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	316	42.0	316	0	813	774	1,032	566
Feb.	1,764	278	1,764	0	788	742	1,031	570
Mar.	5,387	1,719	5,387	315	933	1,050	1,494	697
April	5,283	3,292	5,292	1,776	876	1,143	1,715	791
May	5,321	4,872	5,811	4,083	854	1,232	1,684	854
June	5,348	4,978	5,463	4,161	1,020	1,220	1,753	754
July	5,076	5,271	5,524	5,042	1,432	1,476	1,853	942
Aug.	5,432	4,997	5,432	4,040	1,399	1,649	2,322	1,016
Sept.	5,076	4,799	5,244	4,149	1,304	1,275	1,555	866
Oct.	3,544	1,161	3,544	0	1,222	1,027	1,373	557
Nov.	0	14.9	149	0	824	841	1,062	445
Dec.	0	0	0	0	820	792	934	643
Yearly	42,547	31,424	42,547	25,649	12,285	13,221	15,254	10,150

Month	EAGLE PASS (Pop. 27,000)				LAREDO (Pop. 140,000)			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	348	321	380	236	2,242	1,636	2,242	1,332
Feb.	344	307	359	241	2,093	1,849	2,420	1,525
Mar.	417	374	443	310	2,772	2,352	3,362	1,895
April	374	395	495	331	2,410	2,539	3,476	1,996
May	433	419	481	306	2,768	2,758	3,660	2,128
June	517	461	596	302	3,196	2,859	3,903	2,020
July	613	506	613	402	3,855	3,130	3,855	2,572
Aug.	597	537	597	419	3,594	3,268	4,207	2,626
Sept.	608	459	608	338	3,242	2,615	3,242	2,251
Oct.	588	403	588	268	3,170	2,508	3,440	1,867
Nov.	489	349	489	242	2,458	2,212	3,007	1,759
Dec.	462	349	462	233	2,318	2,104	2,468	1,648
Yearly	5,790	4,880	5,790	3,911	34,118	30,030	37,625	25,151

Month	LAREDO POWER STATION				RIO BRAVO (Pop. 5,000)			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	123	79.7	123	37.0	32.2	22.6	45.1	5.6
Feb.	91.0	84.3	124	49.0	40.0	23.0	45.9	0
Mar.	118	116	175	55.3	51.1	30.0	56.5	1.0
April	114	115	154	67.1	52.7	31.1	61.4	5.3
May	130	149	212	106	50.3	34.1	61.8	6.8
June	163	175	245	99.2	68.6	41.4	83.3	10.5
July	252	177	252	125	87.1	39.6	87.1	5.8
Aug.	170	189	257	148	83.4	50.6	89.2	13.6
Sept.	179	155	207	97.4	78.9	37.0	78.9	12.2
Oct.	189	118	189	75.7	75.5	37.1	75.5	7.4
Nov.	56.7	73.9	133	37.4	64.4	33.6	64.4	4.1
Dec.	115	76.9	138	8.1	39.9	20.9	42.4	0
Yearly	1,701	1,509	1,833	957	724	401	724	114

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousands of Cubic Meters

In the United States

Month	SAN YGNACIO (Pop. 788)				NEW ZAPATA (Pop. 9,500)			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	8.3	13.6	26.5	8.3	93.4	104	130	51.3
Feb.	10.5	14.3	23.1	9.1	125	110	134	71.2
Mar.	12.7	17.8	30.5	10.5	132	137	176	111
April	11.2	19.5	32.8	11.2	125	156	249	113
May	12.6	19.5	32.3	12.6	163	139	169	109
June	20.8	20.6	28.9	12.5	163	159	231	115
July	21.7	21.1	34.3	14.9	215	172	221	142
Aug.	20.4	22.4	38.4	16.6	242	188	270	132
Sept.	19.5	18.4	25.2	10.4	171	147	178	105
Oct.	19.6	17.1	24.9	13.6	206	145	206	106
Nov.	16.8	14.6	22.2	10.2	140	120	158	50.0
Dec.	15.9	13.5	21.1	9.4	128	122	153	99.8
Yearly	190	212	302	159	1,903	1,699	1,903	1,456

Month	FALCON VILLAGE (Pop. 80)				ROMA (Pop. 8,059)			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	7.4	9.5	12.6	6.9	131	124	176	83.9
Feb.	7.6	9.1	12.1	6.5	131	119	173	77.5
Mar.	7.6	10.4	13.7	6.5	175	152	234	99.5
April	7.6	11.3	15.2	7.6	171	160	231	119
May	8.5	12.0	15.4	8.5	181	177	240	133
June	8.1	12.4	16.4	8.1	207	180	276	110
July	11.5	13.4	17.4	10.9	254	193	259	114
Aug.	10.1	13.6	18.9	10.1	217	195	279	132
Sept.	9.4	11.6	14.3	9.1	211	172	233	121
Oct.	8.6	11.3	13.3	8.6	186	147	216	64.4
Nov.	7.2	10.1	13.3	7.2	158	143	190	109
Dec.	7.2	9.7	12.3	7.2	147	138	195	104
Yearly	101	134	157	101	2,169	1,900	2,479	1,317

Month	RIO GRANDE CITY (Pop. 40,000)				BROWNSVILLE (Pop. 115,000)			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	180	172	204	132	1,786	1,709	1,851	1,578
Feb.	179	167	235	125	1,617	1,543	1,745	1,422
Mar.	229	211	252	177	1,941	1,894	2,279	1,684
April	208	206	278	134	1,763	1,948	2,188	1,763
May	213	240	437	121	1,948	1,916	2,191	987
June	212	238	343	176	2,112	2,035	2,383	1,768
July	315	250	315	173	2,553	2,131	2,553	1,513
Aug.	280	251	310	195	2,456	2,346	2,650	1,872
Sept.	252	231	287	150	2,210	1,964	2,307	1,567
Oct.	238	225	287	162	2,287	1,997	2,287	1,642
Nov.	191	192	233	153	1,967	1,846	2,025	1,640
Dec.	222	185	222	135	1,995	1,800	1,995	1,569
Yearly	2,719	2,568	3,075	2,041	24,635	23,129	24,635	20,831

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousands of Cubic Meters

In Mexico

Month	CD. ACUNA, COAHUILA				PIEDRAS NEGRAS, COAHUILA			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	306	297	310	273	740	755	798	617
Feb.	287	275	295	248	702	709	842	566
Mar.	308	299	310	274	779	752	862	576
April	308	292	308	264	717	747	850	564
May	298	299	311	274	791	824	942	643
June	298	294	302	265	888	862	992	680
July	308	304	319	274	979	940	1,046	756
Aug.	309	303	316	274	973	961	1,053	819
Sept.	297	296	305	265	914	893	955	820
Oct.	307	302	310	274	927	882	972	799
Nov.	296	293	306	265	891	812	891	744
Dec.	306	304	316	273	854	798	860	702
Yearly	3,628	3,558	3,651	3,224	10,155	9,935	10,663	8,436

Month	NUEVO LAREDO, TAMAULIPAS				NUEVA CD. GUERRERO, TAMAULIPAS			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	2,682	2,506	3,346	1,645	53.2	51.4	67.5	36.6
Feb.	2,668	2,381	3,184	1,778	54.8	45.4	66.4	31.9
Mar.	2,660	2,587	3,593	1,846	53.6	50.1	73.5	39.0
April	3,283	2,955	3,533	2,345	55.5	51.8	74.0	37.1
May	2,751	2,729	3,593	1,813	54.0	58.9	72.0	43.0
June	2,941	2,818	3,618	2,006	59.3	62.7	94.2	48.8
July	3,151	2,984	3,629	2,251	62.9	58.4	72.9	43.9
Aug.	3,202	2,981	3,639	2,224	64.1	56.5	69.9	46.7
Sept.	3,258	2,974	3,546	2,368	48.9	54.9	69.6	41.3
Oct.	3,129	2,893	3,644	2,224	52.8	57.4	67.6	41.2
Nov.	3,650	2,833	3,650	1,642	50.7	53.7	67.0	40.5
Dec.	3,744	2,935	3,744	2,233	48.5	50.8	62.0	39.0
Yearly	37,119	33,576	41,571	25,417	658	652	791	582

Month	CD. MIER, TAMAULIPAS				CD. MIGUEL ALEMAN, TAMAULIPAS			
	1992	Period 1983 - 1992			1992	Period 1983 - 1992		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	63.9	49.2	68.5	37.3	212	138	212	50.8
Feb.	49.5	43.1	70.4	31.5	103	130	169	91.0
Mar.	49.0	51.0	74.5	36.3	218	159	218	128
April	57.1	55.0	75.2	42.2	208	160	208	127
May	72.2	58.2	73.6	40.7	215	169	215	132
June	64.3	56.7	73.1	42.1	238	171	238	143
July	75.8	57.5	79.6	36.8	241	178	241	143
Aug.	67.1	64.0	78.0	49.2	230	178	230	132
Sept.	66.3	58.7	72.2	47.2	224	166	224	134
Oct.	60.8	58.7	74.3	35.3	229	168	229	121
Nov.	59.2	58.1	74.5	41.2	225	165	225	117
Dec.	71.8	53.1	71.8	43.1	213	153	213	107
Yearly	757	663	868	543	2,556	1,935	2,556	1,506

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Millions of Cubic Meters

Data are presented below for all storage reservoirs in the Rio Grande basin in the United States and Mexico that exceed 18.5 million cubic meters in capacity. The monthly figures represent the water in storage on the last day of each month, in millions of cubic meters. 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 Sanchez from the State of Colorado, Division of Water Resources; Platoro, Heron, El Vado, Elephant Butte, and Caballo from the United States Bureau of Reclamation; Costilla from the New Mexico Interstate Stream Commission; Abiquiu, Cochiti, and Santa Rosa from the United States Corps of Engineers; Bluewater, Lake Sumner, and Brantley from the United States Geological Survey; Storrie from the State Engineer Office of New Mexico; Red Bluff from the Red Bluff Water Power Control District; Lake Casa Blanca from Webb County Office; Delta Lake from the Delta Lake Irrigation District; 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, Rodrigo Gomez (La Boca), Marte R. Gomez, Culebron, Villa Cardenas, and Palito Blanco from the Ministry of Agriculture and Hydraulic Resources of Mexico; Amistad Reservoir (International) and Falcon Reservoir (International) from the International Boundary and Water Commission.

In the United States

Month	RIO GRANDE (Capacity 63.0)		CONTINENTAL (Capacity 28.0)		SANTA MARIA (Capacity 55.6)		TERRACE (Capacity 21.2)		MOUNTAIN HOME (Capacity 22.9)	
	1992	Average 1927-1992	1992	Average 1928-1992	1992	Average 1928-1992	1992	Average 1925-1992	1992	Average 1924-1992
Jan.	10.7	17.2	1.9	6.0	7.3	9.5	6.5	5.2	4.6	4.5
Feb.	12.5	18.5	2.3	6.5	7.5	10.0	7.6	5.7	4.9	4.9
Mar.	14.4	20.3	3.0	7.1	8.0	10.6	8.8	6.4	5.3	5.3
April	19.1	21.8	4.7	7.9	8.6	11.7	12.2	6.9	6.3	5.9
May	19.6	24.9	7.0	9.4	8.8	15.0	11.3	8.1	8.1	7.9
June	7.0	27.8	6.9	9.9	5.9	17.6	10.2	9.7	9.7	8.4
July	0.7	19.0	7.3	7.4	1.4	14.3	5.6	7.9	6.0	6.1
Aug.	0.9	11.5	3.0	4.9	6.3	9.5	6.5	5.3	5.9	3.8
Sept.	0.7	10.0	3.1	4.4	6.5	7.8	6.7	4.2	4.4	3.4
Oct.	1.2	10.5	3.2	4.5	6.4	7.9	5.1	4.2	3.1	3.4
Nov.	4.1	12.8	4.1	4.7	6.9	8.6	6.0	4.5	3.9	3.8
Dec.	6.5	15.5	4.9	5.4	7.3	9.1	7.0	4.8	4.3	4.1
Avg.	8.1	17.5	4.3	6.5	6.7	11.0	7.8	6.1	5.5	5.1
Max.	19.6	67.6	7.3	32.9	8.8	51.9	12.2	21.8	9.7	20.2
Min.	0.7	0	1.9	0	1.4	0	5.1	0	3.1	0

Month	SANCHEZ (Capacity 127.3)		PLATORO (Capacity 73.5)		COSTILLA (Capacity 19.4)		HERON (Capacity 495.0)		EL VADO (Capacity 229.8)	
	1992	Average 1927-1992	1992	Average 1952-1992	1992	Average 1922-1992	1992	Average 1971-1992	1992	Average 1935-1992
Jan.	24.2	17.3	24.3	16.9	7.9	5.6	485.7	309.6	131.6	70.1
Feb.	24.2	17.5		16.5	8.3	6.1	486.4	305.4	122.1	68.0
Mar.	25.8	18.1		16.7	5.6	6.7	475.6	298.2	140.7	70.9
April	26.4	19.3	28.6	17.2	7.3	8.0	431.8	297.9	210.8	109.7
May	26.5	22.6	41.9	19.9	10.9	10.3	488.2	335.2	221.0	151.0
June	32.1	24.3	55.1	27.4	10.7	9.6	494.3	367.7	219.7	142.5
July	28.2	19.9	43.0	25.4	6.5	6.5	493.5	371.5	173.1	122.5
Aug.	27.0	16.1	40.6	23.4	3.5	4.3	492.0	370.2	135.4	100.3
Sept.	24.9	15.6	37.0	23.2	2.0	3.7	472.2	366.0	130.5	86.9
Oct.	24.7	16.5	30.0	22.7	2.7	4.2	469.7	365.6	120.8	81.8
Nov.	25.5	16.9	30.1	18.7	3.3	4.7	467.6	363.0	111.1	72.3
Dec.	26.0	17.4	30.7	18.7	4.1	5.1	467.4	335.2	101.8	71.5
Avg.	26.3	18.5		20.6	6.1	6.2	477.0	340.5	151.6	95.6
Max.	32.1	77.0		68.2	10.9	18.6	494.3	495.0	221.0	251.0
Min.	24.2	0		0	2.0	0	431.8	0.7	101.8	0

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Millions of Cubic Meters

In the United States

Month	ABIQUIU (Capacity 1,481.4)		COCHITI (Capacity 619.6)		BLUEWATER (Capacity 47.5)		ELEPHANT BUTTE (Capacity 2,547.1)		CABALLO (Capacity 408.9)	
	1992	Average 1965-1992	1992	Average 1973-1992	1992	Average 1927-1992	1992	Average 1915-1992	1992	Average 1938-1992
Jan.	197.1	91.0	56.6	74.0	5.6	10.6	2,183.4	1,075.8	42.4	120.4
Feb.	198.7	88.5	73.9	68.0	6.0	11.4	2,224.1	1,081.8	33.7	151.6
Mar.	181.4	84.7	101.1	68.2	11.8	16.0	2,169.0	1,045.1	43.9	126.5
April	221.0	97.0	92.5	78.9	14.2	20.2	2,282.8	1,038.3	51.4	126.3
May	249.5	147.0	61.8	108.3	12.1	18.1	2,472.9	1,139.9	85.5	132.9
June	197.9	138.5	61.2	117.0	9.6	15.3	2,447.7	1,171.7	119.4	116.7
July	196.4	124.3	61.1	87.1	7.3	13.4	2,320.7	1,106.4	97.6	94.0
Aug.	198.7	119.8	60.2	76.6	6.3	12.0	2,247.2	1,042.1	77.5	64.7
Sept.	166.6	114.7	60.9	75.8	5.9	11.3	2,190.7	1,014.6	55.5	50.4
Oct.	141.6	110.5	62.0	79.9	5.7	10.9	2,193.1	1,016.5	30.5	63.0
Nov.	150.0	100.8	61.7	79.7	5.6	10.6	2,229.0	1,040.0	37.1	77.9
Dec.	156.5	98.7	63.4	78.6	5.7	10.4	2,288.2	1,070.1	42.7	97.6
Avg.	188.0	109.6	68.0	82.7	8.0	13.3	2,270.7	1,070.2	59.8	101.8
Max.	249.5	493.8	101.1	471.2	14.2	58.1	2,472.9	2,840.5	119.4	427.5
Min.	141.6	0	56.6	4.4	5.6	0	2,169.0	4.1	30.5	0

Month	STORRIE (Capacity 28.7)		SANTA ROSA (Capacity 542.6)		LAKE SUMMER (Capacity 116.8)		BRANTLEY (Capacity 69.4)		RED BLUFF (Capacity 357.3)	
	1992	Average 1939-1992	1992	Average 1980-1992	1992	Average 1937-1992	1992	Average 1988-1992	1992	Average 1936-1992
Jan.	16.9	10.4	115.8	63.2	76.0	73.1	35.4	21.5	155.7	121.9
Feb.	17.0	10.4	117.4	63.9	74.9	77.7	39.1	23.0	162.9	124.3
Mar.	16.7	11.2	120.1	65.9	52.5	66.3	55.3	28.1	159.6	121.0
April	15.9	11.8	120.3	67.8	53.9	57.8	52.5	24.4	152.1	107.2
May	18.1	12.5	120.1	66.6	54.1	57.4	57.2	35.3	160.5	108.0
June	17.1	11.1	120.0	70.0	53.9	51.1	56.2	31.6	192.7	109.9
July	16.3	10.9	120.3	64.7	50.2	49.0	33.6	25.9	189.2	99.8
Aug.	15.2	11.6	120.1	69.5	47.0	53.3	22.6	20.1	183.7	95.5
Sept.	14.4	11.2	119.8	68.3	27.3	55.1	17.6	22.5	178.5	100.0
Oct.	12.5	10.8	111.1	69.5	17.6	57.9	17.9	21.3	184.8	109.3
Nov.	10.6	10.8	111.5	70.2	22.9	62.0	22.3	21.7	187.2	113.3
Dec.	10.2	10.1	112.6	71.0	29.2	67.6	26.6	19.7	190.3	119.0
Avg.	15.1	11.1	117.4	67.5	46.6	60.7	36.4	24.6	174.8	110.8
Max.	18.1	32.3	120.3	143.5	76.0	192.8	57.2	57.2	192.7	404.0
Min.	10.2	0	111.1	0	17.6	0.5	17.6	1.1	152.1	12.3

Month	LAKE CASA BLANCA (Capacity 22.9)		DELTA LAKE (Capacity 30.8)				TOTAL IN U.S. RESERVOIRS (Capacity 7,408.7)	
	1992	Average 1962-1992	1992	Average 1939-1992			1992	Estimated Average
Jan.	19.6	16.4	20.7	19.3			3,629.9	2,159.4
Feb.	21.0	16.1	18.7	18.6			3,662.2	2,194.2
Mar.	22.9	16.0	21.3	17.8			3,641.8	2,127.1
April	23.4	16.3	22.3	17.9			3,858.1	2,170.3
May	23.4	17.1	21.3	18.5			4,179.8	2,466.0
June	21.5	17.2	19.4	18.6			4,168.2	2,513.6
July	20.7	16.6	22.6	18.5			3,901.3	2,311.1
Aug.	20.2	16.5	22.3	17.6			3,742.1	2,148.7
Sept.	19.6	17.7	21.8	19.1			3,566.6	2,085.8
Oct.	18.7	17.7	22.7	18.9			3,485.1	2,107.7
Nov.	18.6	17.3	21.1	18.9			3,540.2	2,133.2
Dec.	18.1	16.9	18.5	18.5			3,622.0	2,165.0
Avg.	20.6	16.8	21.1	18.5			3,749.8	2,215.2
Max.	23.4	34.8	22.7	27.9			4,179.8	
Min.	18.1	4.3	18.5	0			3,485.1	

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Millions of Cubic Meters

In Mexico

Month	SAN GABRIEL (Capacity 255.4)		LA BOQUILLA (Capacity 2,903.4)		LA COLINA (Capacity 24.1)		ROSETILLA (Capacity 19.0)		FRANCISCO I. MADERO (Capacity 348.0)	
	1992	Average 1990-1992	1992	Average 1914-1992	1992	Average 1940-1992	1992	Average 1940-1992	1992	Average 1948-1992
Jan.	264.3	202.7	2,931.6	1,857.6	24.6	22.7	17.1	15.9	349.0	271.1
Feb.	262.5	196.8	2,883.1	1,808.6	24.9	23.2	17.1	15.8	345.4	265.2
Mar.	252.3	185.9	2,746.4	1,733.2	25.0	23.3	17.1	15.1	328.6	246.2
April	237.2	170.2	2,587.8	1,634.6	25.1	23.7	17.1	14.9	291.2	205.9
May	218.6	150.6	2,441.0	1,539.0	25.0	23.4	17.1	14.9	262.9	170.8
June	196.2	131.1	2,277.6	1,455.4	25.1	23.5	17.1	15.3	185.5	148.5
July	180.0	147.8	2,096.5	1,501.1	25.0	23.5	17.1	15.2	146.1	170.5
Aug.	167.6	203.5	2,134.6	1,734.6	25.0	23.2	17.1	16.1	156.3	216.9
Sept.	153.8	215.4	2,061.1	1,944.3	25.0	22.9	17.1	16.4	146.9	260.9
Oct.	146.6	221.9	1,957.2	1,953.7	24.7	22.7	17.1	16.3	153.5	268.8
Nov.	144.3	220.8	1,929.8	1,916.2	24.4	21.0	17.1	15.7	157.8	269.8
Dec.	143.1	220.8	1,916.1	1,903.1	25.3	22.8	17.1	16.1	164.2	268.9
Avg.	197.2	189.0	2,330.2	1,748.4	24.9	23.0	17.1	15.6	224.0	230.3
Max.	264.3	475.5	2,931.6	3,402.1	25.3	27.8	17.1	23.9	349.0	452.2
Min.	143.1	42.5	1,916.1	20.8	24.4	14.3	17.1	0	146.1	1.7

Month	CHIHUAHUA (Capacity 31.9)		LUIS L. LEON (Capacity 850.1)		CENTENARIO and SAN MIGUEL (Capacity 24.5)		LA FRAGUA (Capacity 45.0)		VENUSTIANO CARRANZA (Capacity 1,385.0)	
	1992	Average 1961-1992	1992	Average 1968-1992	1992	Average 1934-1992	1992	Average 1991-1992	1992	Average 1930-1992
Jan.	23.3	10.1	802.1	485.7	42.2	17.7	45.9	45.9	840.7	623.7
Feb.	23.5	9.7	807.7	480.8	42.0	17.6	45.8	45.8	855.2	599.2
Mar.	22.2	9.1	806.0	454.5	42.4	14.4	45.8	23.7	790.5	565.3
April	21.3	8.7	792.2	423.4	42.4	12.6	45.9	25.0	796.2	548.1
May	21.0	7.9	692.7	394.0	41.5	13.3	46.0	25.9	810.4	524.5
June	20.0	7.4	401.3	378.1	41.7	11.5	42.7	24.7	863.9	501.5
July	18.2	7.8	373.6	395.6	38.5	10.8	46.0	26.7	887.0	514.7
Aug.	17.4	9.7	357.8	391.9	39.7	11.5	44.6	26.7	926.3	522.7
Sept.	16.3	12.1	404.7	461.3	35.5	13.8	39.6	42.8	951.8	588.3
Oct.	15.3	11.8	448.3	488.8	33.5	16.0	43.8	44.9	931.1	632.0
Nov.	14.1	11.4	468.2	496.6	32.6	16.4	40.5	43.2	927.9	643.2
Dec.	13.3	10.8	515.3	510.1	38.3	16.9	35.7	40.8	900.9	639.9
Avg.	18.8	9.7	572.5	446.7	39.2	14.4	43.5	34.7	873.5	575.3
Max.	23.5	32.7	807.7	928.9	42.4	42.4	46.0	46.0	951.8	1,435.0
Min.	13.3	0.2	357.8	4.7	32.6	0	35.7	35.7	790.5	1.2

Month	LAGUNA DE SALINILLAS (Capacity 19.0)		RODRIGO GOMEZ (Capacity 41.0)		MARTE R. GOMEZ (Capacity 1,096.9)		TOTAL IN MEXICAN RESERVOIRS (Capacity 7,043.3)	
	1992	Average 1931-1992	1992	Average 1963-1992	1992	Average 1943-1992	1992	Estimated Average
Jan.	14.6	9.5	32.3	33.1	477.5	749.8	5,865.2	4,345.6
Feb.	12.3	11.3	29.5	32.4	549.5	706.3	5,898.5	4,212.7
Mar.	17.3	9.6	26.6	31.0	547.6	675.7	5,667.8	3,987.1
April	15.0	11.1	24.7	29.9	482.6	618.7	5,378.7	3,726.6
May	14.3	11.1	22.8	29.3	468.3	565.8	5,081.6	3,470.3
June	13.9	10.2	21.0	28.9	499.8	574.0	4,605.8	3,310.0
July	14.0	9.7	20.2	28.5	465.2	563.5	4,327.4	3,415.3
Aug.	13.4	9.7	17.0	28.5	458.1	603.4	4,374.9	3,798.3
Sept.	11.6	10.5	24.2	32.8	459.1	754.9	4,346.7	4,376.4
Oct.	14.5	9.8	16.6	33.9	476.5	800.7	4,278.7	4,521.3
Nov.	13.8	9.5	24.6	33.8	507.9	804.2	4,303.0	4,501.7
Dec.	16.4	9.3	24.4	33.4	510.2	800.8	4,320.3	4,493.7
Avg.	14.3	10.1	23.7	31.3	491.9	684.8	4,870.7	4,013.2
Max.	17.3	19.5	32.3	45.4	549.5	1,308.0	5,898.5	
Min.	11.6	0	16.6	0	458.1	22.0	4,278.7	

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 river kilometer 924, 20.8 river kilometers upstream from Del Rio, Texas and Cd. Acuna, Coahuila.

Maximum storage for period of record: 5,994.6 million cubic meters on September 22, 1974 with an elevation of 346.150 meters above mean sea level, U. S. C. & G. S. datum. The elevation-area-capacity table, based on the 1980 survey, became effective November 1, 1981.

Storage Capacities
(1980 Survey)

Elevation Meters	Description	At Indicated Elevation		Between Indicated Elevations	
		Reservoir Capacity Thousands of Cubic Meters	Reservoir Area Hectares	Storage Volume Thousands of Cubic Meters	Type of Storage
273.710	Original River Bed at Dam Axis	0	0		
283.465	Lowest Outlet (United States Penstocks)	0	0		
340.462	Top of Conservation Storage *	4,174,047	26,247	4,174,047	Silt & Conservation
347.595	Top of Spillway Gates	6,325,617	34,140	2,151,570	Ordinary Flood
349.025	Maximum Water Surface	6,826,548	36,007	500,931	Surcharge

STORAGE IN MILLIONS OF CUBIC METERS AT 24:00 HOURS 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4,502.3	4,801.4	4,821.6	4,531.3	4,229.0	4,243.5	4,236.9	4,250.2	4,186.7	4,181.4	4,223.6	4,221.0
2	4,507.8	4,802.8	4,815.8	4,514.7	4,229.0	4,244.9	4,234.3	4,251.5	4,186.7	4,181.4	4,223.6	4,219.7
3	4,514.7	4,815.8	4,817.3	4,500.9	4,227.6	4,246.2	4,231.6	4,250.2	4,186.7	4,181.4	4,225.0	4,221.0
4	4,521.6	4,831.7	4,810.0	4,487.1	4,227.6	4,247.5	4,227.6	4,250.2	4,186.7	4,181.4	4,221.0	4,223.6
5	4,529.9	4,843.3	4,804.3	4,481.6	4,223.6	4,250.2	4,225.0	4,250.2	4,186.7	4,181.4	4,218.3	4,221.0
6	4,535.5	4,862.1	4,797.1	4,469.2	4,217.0	4,252.8	4,221.0	4,250.2	4,186.7	4,181.4	4,215.7	4,218.3
7	4,546.6	4,870.8	4,787.0	4,458.2	4,211.7	4,254.1	4,221.0	4,250.2	4,189.3	4,184.1	4,214.4	4,218.3
8	4,555.0	4,875.2	4,782.7	4,447.2	4,203.8	4,258.1	4,222.3	4,250.2	4,186.7	4,182.7	4,215.7	4,218.3
9	4,561.9	4,878.1	4,772.7	4,436.3	4,202.5	4,264.8	4,227.6	4,250.2	4,186.7	4,182.7	4,215.7	4,218.3
10	4,567.5	4,882.5	4,761.2	4,424.0	4,202.5	4,268.8	4,231.6	4,248.8	4,186.7	4,185.4	4,217.0	4,218.3
11	4,573.1	4,881.0	4,751.2	4,414.4	4,206.5	4,271.5	4,234.3	4,251.5	4,185.4	4,185.4	4,221.0	4,218.3
12	4,578.7	4,879.6	4,741.1	4,403.5	4,210.4	4,274.1	4,236.9	4,251.5	4,184.1	4,186.7	4,222.3	4,218.3
13	4,585.6	4,876.7	4,732.6	4,391.3	4,221.0	4,275.5	4,236.9	4,250.2	4,184.1	4,186.7	4,221.0	4,221.0
14	4,588.4	4,875.2	4,724.0	4,379.1	4,225.0	4,278.2	4,240.9	4,244.9	4,184.1	4,190.6	4,221.0	4,221.0
15	4,596.8	4,872.3	4,715.5	4,365.5	4,230.3	4,276.8	4,243.5	4,239.5	4,184.1	4,194.6	4,219.7	4,218.3
16	4,602.5	4,869.4	4,706.9	4,354.7	4,234.3	4,276.8	4,246.2	4,235.6	4,184.1	4,197.2	4,219.7	4,221.0
17	4,613.7	4,866.5	4,701.2	4,345.3	4,239.5	4,275.5	4,247.5	4,231.6	4,184.1	4,198.6	4,219.7	4,218.3
18	4,624.9	4,863.6	4,692.7	4,333.1	4,244.9	4,271.5	4,266.2	4,227.6	4,184.1	4,199.9	4,223.6	4,221.0
19	4,633.3	4,859.2	4,682.8	4,319.7	4,250.2	4,266.2	4,292.8	4,223.6	4,184.1	4,199.9	4,227.6	4,223.6
20	4,650.3	4,856.3	4,672.9	4,306.3	4,274.1	4,258.1	4,295.5	4,218.3	4,190.6	4,199.9	4,226.3	4,225.0
21	4,668.6	4,853.4	4,664.4	4,292.8	4,279.5	4,252.8	4,306.3	4,215.7	4,192.0	4,202.5	4,226.3	4,225.0
22	4,680.5	4,850.5	4,655.9	4,278.2	4,274.1	4,248.8	4,308.9	4,210.4	4,190.6	4,205.1	4,222.3	4,227.6
23	4,704.1	4,844.7	4,644.6	4,268.8	4,276.8	4,244.9	4,300.9	4,205.1	4,189.3	4,209.1	4,225.0	4,230.3
24	4,716.9	4,859.2	4,631.9	4,264.8	4,286.2	4,244.9	4,294.2	4,198.6	4,186.7	4,210.4	4,225.0	4,230.3
25	4,734.0	4,850.5	4,619.3	4,259.5	4,284.8	4,242.2	4,287.5	4,195.9	4,185.4	4,213.1	4,223.6	4,234.3
26	4,754.0	4,844.7	4,605.3	4,254.1	4,287.5	4,236.9	4,282.2	4,194.6	4,184.1	4,215.7	4,222.3	4,234.3
27	4,766.9	4,838.9	4,594.0	4,247.5	4,284.8	4,236.9	4,279.5	4,192.0	4,185.4	4,217.0	4,219.7	4,236.9
28	4,778.4	4,834.6	4,581.5	4,243.5	4,274.1	4,236.9	4,266.2	4,190.6	4,184.1	4,217.0	4,218.3	4,239.5
29	4,784.1	4,828.8	4,571.7	4,239.5	4,262.1	4,239.5	4,258.1	4,190.6	4,184.1	4,222.3	4,221.0	4,240.9
30	4,788.5		4,555.0	4,234.3	4,252.8	4,236.9	4,250.2	4,189.3	4,181.4	4,223.6	4,219.7	4,243.5
31	4,791.3		4,542.4		4,244.9		4,250.2	4,188.0		4,223.6		4,247.5

Month	1992						Period 1969-1992			
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Mean Monthly Storage			
	Elevation	Storage	Day	Elevation	Storage	Day	Average Storage	Average	Maximum	Minimum
Jan.	342.705	4,791.3	31	341.645	4,492.6	1	4,631.1	3,781.3	4,971.4	891.3
Feb.	343.020	4,882.5	10	342.705	4,791.3	1	4,854.1	3,762.0	4,952.1	971.6
Mar.	342.835	4,828.8	1	341.825	4,542.4	31	4,701.8	3,712.9	4,954.1	1,062.9
April	341.825	4,542.4	1	340.690	4,234.3	30	4,364.9	3,654.9	4,910.5	1,187.6
May	340.890	4,287.5	26	340.570	4,202.5	9	4,242.5	3,571.2	4,723.6	1,281.1
June	340.855	4,278.2	14	340.700	4,236.9	26	4,255.9	3,514.7	4,696.8	1,127.9
July	340.970	4,308.9	22	340.640	4,221.0	6	4,255.0	3,493.2	4,745.6	1,171.3
Aug.	340.755	4,251.5	2	340.515	4,188.0	31	4,227.3	3,590.2	4,861.4	1,189.0
Sept.	340.530	4,192.0	21	340.490	4,181.4	30	4,186.1	3,682.7	5,078.5	1,275.4
Oct.	340.650	4,223.6	30	340.490	4,181.4	1	4,197.5	3,871.1	5,515.1	1,489.2
Nov.	340.665	4,227.6	19	340.615	4,214.4	7	4,221.2	3,894.3	5,231.7	1,558.1
Dec.	340.740	4,247.5	31	340.630	4,218.3	6	4,225.6	3,903.4	4,970.7	1,591.8
Yearly	343.020	4,882.5		340.490	4,181.4		4,363.6	3,702.7	4,873.4	1,290.5

* 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 139 river kilometers downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas and 442 river kilometers upstream from the Gulf of Mexico.

Maximum storage for period of record: 4,305.6 million cubic meters on October 19, 1958 with an elevation of 93.910 meters above mean sea level, U. S. C. & G. S. datum.

Storage Capacities
(1971 - 1972 Survey)

Elevation Meters	Description	At Indicated Elevation		Between Indicated Elevations	
		Reservoir Capacity Thousands of Cubic Meters	Reservoir Area Hectares	Storage Volume Thousands of Cubic Meters	Type of Storage
53.340	Original River Bed at Dam Axis	0	0		
61.965	Lowest Outlet (Mexican Penstock)	83	36	83	Dead
91.805	Top of Conservation Storage *	3,290,155	35,142	3,290,072	Silt & Conservation
93.480	Top of Spillway Gates	3,918,027	39,860	627,872	Ordinary Flood
95.770	Maximum Water Surface	4,908,164	46,710	990,137	Surcharge

STORAGE IN MILLIONS OF CUBIC METERS AT 24:00 HOURS 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,466.2	3,471.8	3,462.9	3,497.5	3,435.2	3,449.5	3,331.3	3,393.3	3,289.3	3,288.3	3,139.8	3,203.4
2	3,468.4	3,467.3	3,458.4	3,499.7	3,432.9	3,448.4	3,331.3	3,392.2	3,288.3	3,287.2	3,137.8	3,205.5
3	3,468.4	3,467.3	3,456.2	3,496.3	3,429.6	3,446.2	3,330.2	3,384.6	3,287.2	3,281.9	3,137.8	3,209.7
4	3,468.4	3,471.8	3,456.2	3,494.1	3,425.2	3,440.7	3,330.2	3,378.0	3,282.9	3,275.4	3,133.6	3,214.0
5	3,469.5	3,480.7	3,456.2	3,494.1	3,418.6	3,440.7	3,330.2	3,373.7	3,279.7	3,272.2	3,131.6	3,217.1
6	3,466.2	3,476.2	3,450.7	3,488.5	3,410.9	3,442.9	3,327.0	3,362.8	3,279.7	3,264.8	3,131.6	3,219.2
7	3,467.3	3,477.3	3,448.4	3,482.9	3,399.9	3,451.8	3,328.1	3,356.2	3,274.4	3,262.7	3,132.6	3,222.4
8	3,468.4	3,477.3	3,448.4	3,481.8	3,393.3	3,464.0	3,327.0	3,348.6	3,271.2	3,258.4	3,131.6	3,225.5
9	3,469.5	3,476.2	3,448.4	3,479.6	3,390.1	3,472.9	3,324.8	3,344.3	3,265.8	3,249.9	3,134.7	3,230.8
10	3,478.5	3,477.3	3,446.2	3,476.2	3,387.9	3,471.8	3,319.4	3,335.6	3,265.8	3,239.3	3,137.8	3,234.0
11	3,479.6	3,474.0	3,441.8	3,474.0	3,386.8	3,467.3	3,315.1	3,325.9	3,264.8	3,229.8	3,140.9	3,235.1
12	3,480.7	3,469.5	3,434.0	3,471.8	3,381.3	3,456.2	3,310.8	3,322.7	3,263.7	3,218.2	3,142.9	3,236.1
13	3,476.2	3,467.3	3,435.2	3,469.5	3,378.0	3,444.0	3,299.0	3,318.4	3,260.5	3,207.6	3,144.0	3,238.2
14	3,475.1	3,467.3	3,436.3	3,466.2	3,374.7	3,429.6	3,294.7	3,318.4	3,258.4	3,198.2	3,146.1	3,253.1
15	3,479.6	3,466.2	3,437.4	3,459.5	3,378.0	3,414.2	3,281.9	3,316.2	3,263.7	3,189.8	3,154.4	3,246.7
16	3,478.5	3,465.1	3,441.8	3,455.1	3,374.7	3,401.0	3,273.3	3,317.3	3,264.8	3,186.7	3,159.5	3,249.9
17	3,485.2	3,465.1	3,449.5	3,460.6	3,372.6	3,387.9	3,266.9	3,315.1	3,263.7	3,179.3	3,161.6	3,249.9
18	3,489.6	3,464.0	3,451.8	3,465.1	3,368.2	3,369.3	3,259.5	3,314.0	3,262.7	3,170.0	3,163.7	3,253.1
19	3,487.4	3,460.6	3,454.0	3,474.0	3,363.8	3,351.9	3,252.0	3,311.9	3,261.6	3,159.5	3,179.3	3,255.2
20	3,484.0	3,457.3	3,459.5	3,477.3	3,355.1	3,351.9	3,244.6	3,314.0	3,260.5	3,152.3	3,183.5	3,258.4
21	3,485.2	3,455.1	3,460.6	3,475.1	3,347.5	3,351.9	3,245.7	3,314.0	3,259.5	3,148.1	3,184.6	3,259.5
22	3,485.2	3,454.0	3,461.8	3,474.0	3,340.0	3,349.7	3,256.3	3,310.8	3,269.0	3,149.2	3,186.7	3,259.5
23	3,484.0	3,454.0	3,464.0	3,472.9	3,338.9	3,347.5	3,287.2	3,307.6	3,278.6	3,151.2	3,189.8	3,262.7
24	3,484.0	3,455.1	3,468.4	3,476.2	3,342.1	3,346.5	3,322.7	3,306.5	3,282.9	3,150.2	3,192.9	3,263.7
25	3,486.3	3,457.3	3,472.9	3,479.6	3,360.6	3,344.3	3,349.7	3,314.0	3,286.1	3,149.2	3,194.0	3,263.7
26	3,489.6	3,465.1	3,477.3	3,478.5	3,376.9	3,341.0	3,372.6	3,320.5	3,290.4	3,149.2	3,194.0	3,263.7
27	3,498.6	3,467.3	3,484.0	3,470.7	3,402.1	3,338.9	3,379.1	3,320.5	3,292.6	3,147.1	3,195.0	3,264.8
28	3,497.5	3,466.2	3,489.6	3,460.6	3,423.0	3,336.7	3,385.7	3,317.3	3,295.8	3,145.0	3,196.1	3,262.7
29	3,489.6	3,465.1	3,496.3	3,459.5	3,435.2	3,334.6	3,390.1	3,311.9	3,292.6	3,144.0	3,198.2	3,262.7
30	3,479.6	3,493.0	3,493.0	3,445.1	3,441.8	3,333.5	3,392.2	3,303.3	3,290.4	3,140.9	3,203.4	3,262.7
31	3,476.2		3,490.7		3,445.1		3,392.2	3,294.7		3,139.8		3,262.7

Month	1992						Period 1954-1992			
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day		Average	Maximum	Minimum
Jan.	92.385	3,498.6	27	92.295	3,466.2	1	3,479.4	2,617.5	3,787.8	269.8
Feb.	92.335	3,480.7	5	92.265	3,454.0	12	3,466.9	2,503.4	3,712.2	192.7
Mar.	92.380	3,496.3	29	92.210	3,434.0	12	3,459.1	2,500.4	3,689.1	279.6
April	92.390	3,499.7	2	92.240	3,445.1	30	3,475.2	2,402.9	3,644.4	401.6
May	92.240	3,445.1	31	91.945	3,338.9	23	3,390.6	2,232.9	3,540.0	604.5
June	92.315	3,472.9	9	91.930	3,333.5	30	3,400.9	2,137.1	3,440.3	337.6
July	92.090	3,392.2	13	91.675	3,244.6	20	3,317.8	2,212.3	3,321.4	258.9
Aug.	92.095	3,393.3	1	91.820	3,294.7	31	3,331.1	2,191.8	3,418.5	256.6
Sept.	91.820	3,295.8	28	91.715	3,258.4	14	3,274.9	2,302.1	3,541.4	316.0
Oct.	91.800	3,290.4	1	91.370	3,139.8	31	3,199.5	2,574.1	4,009.2	380.3
Nov.	91.555	3,203.4	30	91.345	3,131.6	5	3,162.0	2,670.5	3,854.0	482.2
Dec.	91.735	3,264.8	27	91.555	3,203.4	1	3,243.4	2,712.3	3,860.4	423.6
Yearly	92.390	3,499.7		91.345	3,131.6		3,350.1	2,421.4	3,410.6	672.9

* When necessary, the Commission may set temporary conservation levels

! And other days

QUALITY OF WATER - 1992

08-3640.00 RIO GRANDE AT EL PASO, TEXAS

LOCATION: At gaging station on Courchesne Bridge at river kilometer 2,021, 2.7 river kilometers upstream from American Dam, and 8.9 kilometers upstream from Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua.

RECORDS: Chemical analyses, February 1930 through current year (prior to July 1986 sampling at American Dam); biochemical analyses, September 1943 through 1972 and February 1976 through current year (prior to 1976 samples taken from Franklin Canal at El Paso, Texas); specific conductance, 1930 through 1932 and 1937 through current year (prior to July 1986 samples taken at American Dam); suspended silt, 1947 through 1976 (samples taken at American Dam).

REMARKS: Sampling by International Boundary and Water Commission; chemical analyses by U. S. Geological Survey, biochemical analyses by Haskell R. Street Wastewater Treatment Plant laboratory in El Paso; specific conductance determinations by International Boundary and Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by U. S. Geological Survey.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance	pH	Water Temper- ature	Hardness, Total (as CaCO ₃)	Hardness, Noncarbonate (as CaCO ₃)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved
			Micro- siemens	Units	Deg C	mg/L	mg/L	mg/L	mg/L
Jan. 16	0750	12.5	1,340	7.6	1.0	300	100	87	19
Feb. 20	0820	5.66	1,670	7.8	2.0	340	120	100	22
Mar. 19	0800	23.2	1,060	7.7	11.0	230	72	67	16
April 16	0800	17.8	1,130	7.8	18.0	260	76	76	17
May 14	0805	21.9	1,180	7.7	18.0	260	81	78	17
June 18	0800	22.4	1,050	7.8	21.0	250	71	74	16
July 16	0800	28.9	1,060	7.7	22.0	260	96	77	17
Aug. 20	0825	31.2	1,070	7.6	21.5	250	88	72	17
Sept. 17	0810	27.8	1,070	7.7	21.0	240	75	70	16
Oct. 15	1235	20.1	1,170	7.8	18.0	270	94	78	18
Nov. 19	0810	4.81	1,900	8.0		420	170	120	29
Dec. 18	0710	4.08	1,970	7.9	3.5	420	160	120	29

1992 Date	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved	Alkalinity Total (as CaCO ₃)	Sulfate ion (SO ₄) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO ₂) Dissolved	Solids Dissolved (Calculated)
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 16	170	4	0.20	192	260	150	17	819
Feb. 20	220	5	8.1	223	320	200	18	1,020
Mar. 19	130	4	9.6	161	220	110	11	661
April 16	140	4	8.2	184	230	110	11	703
May 14	140	4	7.7	184	250	110	12	726
June 18	130	4	7.5	180	210	96	12	654
July 16	130	3	6.5	166	220	99	10	660
Aug. 20	130	4	7.2	162	230	110	11	675
Sept. 17	130	4	7.2	166	230	100	13	666
Oct. 15	140	4	7.8	175	240	120	13	722
Nov. 19	270	6	10	251	390	220	25	1,220
Dec. 18	280	6	10	264	420	230	25	1,270

QUALITY OF WATER - 1992

RIO GRANDE AT RIVERSIDE CANAL HEADING NEAR EL PASO, TEXAS AND CD. JUAREZ, CHIHUAHUA

LOCATION: At river kilometer 1,991, 15.3 kilometers downstream from the Haskell R. Street Wastewater Treatment Plant and 26.8 river kilometers downstream from the American Dam at El Paso, Texas.

RECORDS: Biochemical analyses, February 1976 through current year. Samples also collected quarterly and analyses made by the Texas Water Commission at a location one mile upstream at Ysleta-Zaragoza Bridge, 1937 through 1972 and May 1975 through current year.

REMARKS: Sampling by International Boundary and Water Commission. Analyses by the Haskell R. Street Wastewater Treatment Plant Laboratory in El Paso.

1992						1992					
Date	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	pH Units	Coli-form, Fecal Colonies /100 mL	Oxygen Demand Bio-Chemical (BOD) 5 Day mg/L	Date	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	pH Units	Coli-form, Fecal Colonies /100 mL	Oxygen Demand Bio-Chemical (BOD) 5 Day mg/L
Jan. 9	5.5	10.3	7.7	10	10	July 2	27.7	7.4	7.7	210	8
16	1.1	12.3	8.4	290	4	9	23.3	7.2	8.0	200	8
23	6.6	10.5	7.7	650	13	16	27.7	7.3	8.1	450	7
30	10.0	9.8	7.8	100	15	23	24.4	7.0	7.9	280	6
Feb. 6	3.3	9.8	7.7	0	9	28	25.5	7.2	8.0	300	12
13	11.6	9.4	7.6	40	15	Aug. 6	25.5	7.0	7.7	560	8
20	13.3	9.6	7.6	440	10	13	23.3	7.5	7.9	1,140	10
27	3.3	9.6	7.7	30	11	20	24.4	7.2	7.3	1,080	10
Mar. 5	11.7	9.6	7.9	470	11	27	22.7	7.3	7.8	250	10
12	10.0	9.6	7.4	110	4	Sept. 3	22.2	7.4	7.9	420	11
19	6.7	9.4	7.3	90	5	10	22.2	7.6	7.8	120	8
26	14.4	8.7	7.9	30	7	17	24.4	7.2	7.9	920	7
Apr. 2	13.3	9.0	8.0	80	7	24	20.0	7.9	7.8	230	10
9	16.6	8.2	7.7	20	7	Oct. 1	17.7	8.2	7.8	160	10
16	16.6	8.2	7.7	160	8	8	13.3	8.8	7.8	50	11
23	17.7	8.2	7.9	400	7	15	16.6	8.4	8.0	140	4
30	21.1	7.6	7.8	200	8	22	18.8	8.1	8.1	200	11
May 7	20.0	7.9	7.9	0	9	29	16.6	8.4	7.9	30	7
14	15.6	7.7	7.9	1,700	7	Nov. 5	8.9	9.8	7.9	20	7
21	21.1	7.7	8.0	0	8	12	11.1	9.6	7.8	0	10
28	18.8	8.1	7.8	250	12	19	14.4	9.0	7.7	0	15
June 4	24.4	7.6	7.9	190	8	Dec. 3	7.8	10.3	8.0	90	5
11	23.3	7.4	7.9	190	8	10	5.5	10.8	8.1	240	10
18	23.3	7.4	7.8	80	8	15	4.4	11.3	8.2	70	8
25	23.3	7.3	7.5	220	5	22	6.6	10.5	8.0	80	7
						30	12.2	9.4	8.1	160	8

08-3705.00 RIO GRANDE AT FORT QUITMAN, TEXAS NEAR COLONIA LUIS LEON, CHIHUAHUA

LOCATION: Gaging station at river kilometer 1,888, 2.4 river kilometers downstream from old Fort Quitman.

RECORDS: Chemical analyses, February 1938 through current year; biochemical analyses, October 1974 through current year; specific conductance (daily), October 1974 through 1977.

REMARKS: Sampling and analyses by U. S. Geological Survey. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey. Sampling prior to 1977 by the International Boundary and Water Commission.

1992		Stream flow, Momentary	Specific Conductance	pH	Water Temperature	Hardness, Total (as CaCO ₃)	Hardness, Noncarbonate (as CaCO ₃)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio (SAR)	Potassium ion (K) Dissolved
Date	Time Std.	CMS	Microsiemens	Units	Deg C	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L
Jan. 29	1126	13.0	2,500	7.9	9.5	456	216	130	32	340	7.0	11
April 30	1120	4.90	4,250	8.4	23.0	783	536	220	57	620	11.0	13
July 14	1010	2.35	5,200	8.4	23.5	986	717	270	76	810	12.0	14
Sept. 23	1115	11.8	2,570	8.3	21.0	464	248	130	34	360	7.0	10
Nov. 11	1135	11.3	2,770	8.1	14.5	523	250	150	36	410	8.0	12

1992		Alkalinity Total (as CaCO ₃)	Sulfate ion (SO ₄) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO ₂), Dissolved	Oxygen, Dissolved (DO)	Coli-form, Fecal	Turbidity	Solids Dissolved (Calculated)	Solids Dissolved (Residue @ 180 Deg C)	Suspended Sediment
Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Cols./100 mL	NTU	mg/L	Deg C	mg/L
Jan. 29	240	410	410	24	7.2	> 6,000	96	1,502	1,510	443	
April 30	248	700	840	20	10.0	110	52	2,619	2,720	166	
July 14	270	830	1,000	25	8.7	290	27	3,188	3,330	123	
Sept. 23	216	440	420	20	7.4	310	190	1,544	1,600	580	
Nov. 11	273	470	440	27	6.3	1,100	37	1,709	1,800		

> Actual value is known to be greater than the value shown

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-3730.00 RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

LOCATION: At gaging station, 2.5 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 1,547.

RECORDS: Chemical analyses, February 1935 through 1981; suspended silt, 1956 through 1979, specific conductance, 1935 through current year.

REMARKS: Sampling and determinations for suspended silt and specific conductance by the International Boundary and Water Commission; chemical analyses by the U. S. Geological Survey.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1				709		798	724		2,330			
2			738	655					1,130		1,100	
3		828	704	781				904				
4			879		790			872			1,070	
5		654	763									
6	656	658	830	746	783		754					
7	650	656		735			750	918	713			
8	650			706	806							
9									1,160		1,020	
10	671	820	802	720			697				1,060	
11	651	828	892		810			921	1,160			
12		830			777			870				
13	662				809		766				1,070	
14		832										
15	739								1,120			
16	737		791								1,050	
17	736										1,070	
18		655						930	1,200		1,140	
19	737	538										
20		829								1,160		
21		838					716	953	1,150	1,070		
22					770		741					
23									1,160		1,070	
24		825					711				995	
25		832			760			866	1,120		1,740	
26		856			750						1,080	
27					772		716		1,140	1,070	1,140	
28							746					
29					749		726				1,020	
30									1,160	1,060	1,730	
31								899				

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-3742.00 RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

LOCATION: Gaging station at river kilometer 1,259; 0.6 river kilometer downstream from Alamito Creek and 18.7 river kilometers downstream from the Rio Conchos.

RECORDS: Specific conductance, 1956 through current year.

REMARKS: Sampling and determinations for specific conductance by the International Boundary and Water Commission. Results of biochemical analyses by the International Boundary and Water Commission and the Texas Water Commission, November 1977 through current year, available upon request.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January		March		May		July		September		November	
3	1,260	4	1,550	1	1,320	1	883	1	1,150	3	1,680
21	862	16	1,520	6	1,290	7	1,080	10	1,410	14	1,760
22	884	20	1,550	15	907	14	1,410	15	1,350	17	1,750
27	983	24	1,590	18	896	21	1,410	29	1,500		
28	984			22	985	29	1,130				
30	1,000			26	945						
				28	985						
February		April		June		August		October		December	
3	1,010	1	1,660	1	900	4	1,270	7	1,640	23	2,550
21	1,290	10	1,710	10	915	19	1,110	22	1,570		
		20	1,350	16	904						
		28	1,500	23	861						

08-3772.00 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS AND RANCHO SANTA ROSA, COAHUILA

LOCATION: Gaging station at river kilometer 1,058, about 20.8 kilometers west of Langtry, Texas.

RECORDS: Chemical analyses, March 1969 through 1970 and October 1974 through current year; biochemical, October 1974 through current year; suspended silt, 1969 through current year; specific conductance, 1969 through 1981, 1983, 1985 through current year.

REMARKS: Sampling and analyses by U. S. Geological Survey; sampling and determinations for suspended silt and specific conductance by the International Boundary and Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey.

1992	Time	Stream flow, Momentary	Specific Conductance	pH	Water Temperature	Hardness, Total (as CaCO ₃)	Hardness, Noncarbonate (as CaCO ₃)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio (SAR)	Potassium ion (K) Dissolved
Date	Std.	CMS	Microsiemens	Units	Deg C	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L
Jan 29	1140	195	953	8.4	13.5	260	91	82	13	110	3	5.0
May 20	1245	120	950	8.4	24.0	230	82	73	12	100	3	5.4
Aug 25	1105	46.2	984	8.3	26.0	230	87	68	14	120	3	6.0
Dec 2	1110	36.8	1,380	8.5	12.5	310	140	88	21	170	4	6.2

1992	Alkalinity Total (as CaCO ₃)	Sulfate ion (SO ₄) Dissolved	Chloride ion (Cl) Dissolved	Silica (SiO ₂), Dissolved	Oxygen, Dissolved (DO)	Coliform, Fecal	Oxygen Demand, Biochemical (BOD) 5 Day	Turbidity	Solids Dissolved (Calculated)	Solids Dissolved (Residue @ 180 Deg C)	Suspended Sediment
Date	mg/L	mg/L	mg/L	mg/L	mg/L	Col./100 mL	mg/L	NTU	mg/L	mg/L	mg/L
Jan 29	168	200	85	25	10.7	K 80	0.6	200	628	620	1,500
May 20	152	190	82	19	7.8	440	1.7	320	578	625	1,950
Aug 25	142	230	68	29	7.8	K 18	1.5	65	627	610	212
Dec 2	164	300	160	17	12.8	K 4	4.8	45	864	862	113

k Results based on colony count outside the acceptance range (non-ideal colony count)

SUSPENDED SILT - 1992

1992	Time	Stream flow, Momentary	Gravimetric Percent	1992	Time	Stream flow, Momentary	Gravimetric Percent	1992	Time	Stream flow, Momentary	Gravimetric Percent
Date	Std.	CMS		Date	Std.	CMS		Date	Std.	CMS	
Jan. 16	1140	112	0.0427	May 4	1015	62.3	0.0694	Sept. 8	945	35.9	0.2498
21	1200	206	0.3084	18	1045	106	0.0737	21	955	28.9	0.0509
Feb. 3	1115	135	0.0533	June 1	1115	152	0.1028	Oct. 5	1015	27.6	0.0154
18	1115	113	0.0413	15	1130	137	0.0930	19	1030	27.2	0.0124
Mar. 2	1115	69.0	0.0403	July 6	945	140	0.0824	Nov. 2	1115	31.2	0.0393
17	1030	63.3	0.0108	20	1045	120	0.7349	16	1100	33.5	0.0207
April 6	1115	48.0	0.0076	Aug. 3	1015	53.2	0.0400	Dec. 7	1130	26.0	0.0101
20	1200	59.2	0.2537					21	1100	23.5	0.0715

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-3772.00 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS AND RANCHO SANTA ROSA, COAHUILA

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January	March	May	July	September	November
6 1,280	2 1,320	4 918	6 850	8 830	2 1,340
21 871	16 1,280	18 906	20 1,000	21 1,170	16 1,420
February	April	June	August	October	December
3 992	6 1,440	1 920	3 1,200	5 1,230	6 1,320
18 1,120	20 1,450	15 882	17 1,280	19 1,310	21 1,640

08-4474.10 PECOS RIVER NEAR LANGTRY, TEXAS

LOCATION: At gaging station, 24.1 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 991.4.

RECORDS: Chemical analyses, 1967 through current year; biochemical analyses, October 1974 through current year; suspended silt, November 1954 through 1976; specific conductance daily, 1969 through September 1985 and biweekly through current year.

REMARKS: Sampling and analyses by U.S. Geological Survey; sampling and determinations for specific conductance by the International Boundary and Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey.

1992	Time	Stream flow, Momentary	Specific Conductance	pH	Water Temperature	Hardness, Total (as CaCO3)	Hardness, Noncarbonate (as CaCO3)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio (SAR)	Potassium ion (K) Dissolved
Date	Std.	CMS	Microsiemens	Units	Deg C	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L
Jan. 28	1230	6.85	4,710	8.3	12.5	870	710	190	94	700	10	8.4
Mar. 30	1322	6.17	5,080	8.2	21.5	1,000	880	210	120	750	10	11
May 21	1040	25.2	2,350	8.2	22.5	420	310	93	44	290	6	5.0
Aug. 24	1328	6.26	4,490	8.1	26.0	840	700	180	93	650	10	11
Dec. 3	0945	6.06	4,110	8.2	12.0	810	640	180	86	590	9	9.9

1992	Alkalinity Total (as CaCO3)	Sulfate ion (SO4) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO2), Dissolved	Oxygen, Dissolved (DO)	Coliform, Fecal	Oxygen Demand, Bio-Chemical (BOD) 5 Day	Turbidity	Solids Dissolved (Calculated)	Solids Dissolved (Residue @ 180 Deg C)	Suspended Sediment
Date	mg/L	mg/L	mg/L	mg/L	mg/L	Cols./100 mL	mg/L	NTU	mg/L	mg/L	mg/L
Jan. 28	160	590	1,100	11	9.9	K 6	0.5	1.4	2,800	2,860	7
Mar. 30	139	720	1,300	8.3	8.9	K 6	0.5	0.90	3,210	3,200	12
May 21	103	270	470	9.8	7.5	K 3,300	1.3	16	1,250	1,300	76
Aug. 24	133	630	1,100	11	7.2	K 4	0.8	1.9	2,760	3,010	9
Dec. 3	166	570	900	14	10.4	K 10	0.5	0.50	2,460	2,610	7

K Results based on colony count outside the acceptance range (non-ideal colony count)

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January	March	May	July	September	November
6 4,690	2 4,740	4 1,660	6 3,580	8 3,030	2 3,720
22 5,050	16 5,330	18 3,500	26 1,610	21 3,660	16 3,700
February	April	June	August	October	December
3 4,960	6 5,170	1 4,750	3 3,900	5 4,100	7 4,080
18 4,810	20 4,950	15 4,260	17 3,910	19 4,260	21 4,190

08-4494.00 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS

LOCATION: At gaging station 41.0 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 925.

RECORDS: Daily specific conductance, 1968 through September 1985; biweekly specific conductance through current year.

REMARKS: Sampling and determinations for specific conductance by the U. S. Geological Survey through September 1985. Sampling prior to 1978 and since October 1985 by the International Boundary and Water Commission. Chemical and biochemical analyses, 1978 through current year, available from U. S. Geological Survey.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January	March	May	July	September	November
6 402	2 384	4 313	6 396	8 289	2 298
21 363	16 396	18 306	21 377	21 377	16 387
February	April	June	August	October	December
3 426	6 400	1 348	17 374	5 282	7 399
18 400	20 331	15 359	19 387	19 387	21 420

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4509.00 RIO GRANDE BELOW AMISTAD DAM NEAR CD. ACUNA, COAHUILA AND DEL RIO, TEXAS

LOCATION: Gaging station at river kilometer 920.3, 3.4 river kilometers downstream from Amistad Dam.

RECORDS: Chemical analyses, July 1968 through current year; suspended silt, 1969 through 1976; specific conductance 1968 through current year.

REMARKS: Sampling for chemical analyses by the International Boundary and Water Commission, analyses by the U. S. Geological Survey. Sampling and determinations for specific conductance by the International Boundary and Water Commission.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens	pH Units	Water Temper- ature Deg C	Hardness, Total (as CaCO ₃) mg/L	Hardness, Noncarbonate (as CaCO ₃) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 15	0800	9.91	1,010	7.9	20.0	240	110	71	15
Feb. 19	0800	112	1,060	7.8	11.0	260	120	77	16
Mar. 18	1010	118	1,010	7.8	11.5	250	110	73	16
April 17	0650	241	991	7.8	15.0	240	110	73	14
May 20	0755	118	994	7.8	18.0	240	110	73	15
June 24	0745	232	1,040	7.8	18.5	260	120	76	16
July 15	0645	7.11	1,040	7.6	19.5	270	130	80	17
Aug. 20	0650	83.8	1,000	7.6	21.5	260	120	78	16
Sept. 16	0640	11.0	1,000	7.7	22.0	240	110	72	15
Oct. 21	0650	17.4	993	7.8	23.0	230	110	65	16
Nov. 18	0745	15.5	1,010	7.9		240	120	69	17

1992 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO ₃) mg/L	Sulfate ion (SO ₄) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO ₂) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 15	110	3	4.7	130	200	110	17	607
Feb. 19	120	3	5.0	138	220	120	19	661
Mar. 18	110	3	7.4	135	210	110	17	625
April 17	110	3	5.1	131	200	110	17	609
May 20	110	3	4.9	135	200	110	18	613
June 24	120	3	4.9	138	210	120	18	648
July 15	120	3	4.6	139	210	120	16	652
Aug. 20	110	3	4.9	136	210	110	17	628
Sept. 16	110	3	4.7	136	200	110	19	613
Oct. 21	110	3	5.1	120	210	110	17	606
Nov. 18	120	3	5.3	118	220	120	18	641

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1				1,020	1,010	1,040						
2												
3	975	1,120	1,010	995		972	1,070		980	980	1,000	995
4					997							
5		1,070				996		985	990	1,000	992	1,020
6	971			982	989		1,040					
7		1,070						1,050			989	
8				983		1,050			1,020	1,020		1,010
9	1,000		1,040							1,010	1,020	1,030
10	1,060	1,080		1,010		1,050		1,050	1,020			
11			1,020		1,040							1,030
12		1,120				1,040		1,020		1,000		
13	1,160		1,010	963	1,020		1,070				990	
14		1,150						1,020	990	990		1,030
15	1,030			1,000	1,000	1,070	1,060					
16		1,090	1,030						1,000	1,000	999	1,030
17	1,010			1,010			1,050	1,060		1,000		1,040
18			1,050		1,000				1,020		1,010	
19			1,010			1,050				1,020		
20				990	1,010		1,040	1,030			1,020	
21		1,110						1,030	1,000	1,020		1,070
22	982			967	1,030	1,020	1,040					1,040
23			1,020						1,010	1,060	1,020	
24	976	1,030		1,010		1,070	1,070	1,050				
25			1,030						1,000		1,010	
26		991			1,020	1,060		1,030		1,020		
27	977		1,030	998	999		1,060				1,010	
28		1,000						1,000		1,010		1,100
29	971			1,030	1,000	1,010	1,060					
30			1,010						1,010	1,030	1,030	1,140
31	1,020						1,060	1,030				

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4557.00 RIO GRANDE NEAR JIMENEZ, COAHUILA AND QUEMADO, TEXAS

LOCATION: Near gaging station at Maverick Canal Headgates. The canal intake is at river kilometer 875, 21.5 river kilometers above the gaging station.

RECORDS: Specific conductance, 1954 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,020	1,010	975	945	1,000	1,030	992	1,040	978	935	983	996
2	1,010	1,040	988	976	983	1,000	1,020	994	999	960	998	1,000
3	2,140	1,050	1,030	965	1,010	1,040	1,040	994	1,010	967	995	1,010
4	2,180	1,000	1,030	1,020	960	1,050	1,050	987	958	977	1,010	1,030
5	2,200	1,010	1,020	998	970	1,040	1,050	996	1,020	928	986	1,010
6	2,060	1,010	1,030	1,010	990	1,080	969	993	949	963	991	1,030
7	1,010	999	1,010	1,010	956	904	1,030	985	991	934	1,010	1,030
8	997	1,060	999	994	993	940	978	1,020	994	954	998	1,030
9	995	1,060	1,030	952	972	917	1,050	1,020	989	970	993	1,040
10	994	1,060	1,020	1,010	1,040	930	1,030	979	991	925	1,030	1,040
11	988	1,060	989	981	1,040	1,010	1,050	966	998	911	1,040	1,020
12	993	1,060	976	991	1,040	1,020	1,040	989	945	908	1,040	1,000
13	980	1,060	989	959	1,050	1,050	1,020	1,000	948	1,010	1,040	1,010
14	982	1,070	990	942	978	1,000	1,050	991	966	1,000	1,010	987
15	2,200	1,070	1,040	999	979	1,040	1,030	996	1,010	1,010	1,000	1,040
16	2,120	1,000	1,020	1,020	968	1,060	1,050	1,000	1,010	1,010	1,020	1,000
17	2,190	1,000	1,040	1,020	980	1,040	1,020	990	978	970	1,040	998
18	2,220	999	1,030	1,010	1,010	1,040	1,030	1,000	1,010	952	1,020	977
19	1,050	998	1,010	1,010	1,000	1,040	1,040	1,010	999	965	1,010	1,010
20	1,000	1,070	1,010	989	1,010	1,030	1,000	1,010	990	945	998	1,000
21	992	1,090	1,000	1,000	1,020	1,030	1,010	995	983	972	1,010	991
22	991	1,070	1,010	956	1,040	1,020	1,040	1,030	992	973	1,020	1,020
23	980	1,080	991	1,000	1,040	993	1,040	1,010	998	970	1,020	1,020
24	980	1,080	989	980	1,040	940	1,040	1,030	1,000	951	1,030	1,020
25	991	1,020	993	1,010	1,040	1,040	1,030	1,030	1,010	1,020	2,180	995
26	980	991	988	1,000	1,010	1,070	1,020	1,000	1,010	1,000	1,060	1,010
27	2,180	989	1,010	990	1,020	1,060	1,030	1,020	1,000	1,000	1,020	1,000
28	2,010	996	1,010	1,010	1,020	1,050	1,030	1,020	1,020	1,000	1,010	981
29	982		1,000	994	1,010	1,050	1,030	1,000	1,020	1,000	1,020	1,000
30	978		1,020	1,010	1,020	1,050	1,040	1,030	1,020	1,000	990	1,020
31	986		1,000		1,040			1,020		1,010		1,030

08-4587.00 RIO GRANDE NEAR EL INDIO, TEXAS AND VILLA GUERRERO, COAHUILA

LOCATION: Gaging station at river kilometer 741, 57.8 river kilometers downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila.

RECORDS: Specific conductance 1954 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January	February	March	April	May	June	July	August	September	October	November	December
9 874		6 977	1 977	8 893	5 804	2 912	11 833	18 863			
22 856		19 1,020	19 882	23 573	16 833						
5 1,030		7 982	8 825	5 804	2 826						
19 1,070		16 987	22 891	18 935	20 863						

QUALITY OF WATER - 1992

08-4590.00 RIO GRANDE AT LAREDO WATER PLANT, LAREDO, TEXAS AND NUEVO LAREDO, TAMAULIPAS

SUSPENDED SILT - 1992

Month	Monthly Weight Megagrams		Number of Samples	Gravimetric Percentages			* Silt Volume - Thousand Cubic Meters			
	Water	Silt		Average	Maximum Sample	Minimum Sample	Total	Period		
								Average	Maximum	Minimum
Jan.	126,982,000	2,667	31	0.0021	0.0036	0.0012	2.5	6.6	25.8	1.2
Feb.	493,776,000	30,120	29	0.0061	0.0077	0.0051	28.2	15.8	134.0	1.1
Mar.	609,638,000	37,797	31	0.0062	0.0092	0.0045	35.4	15.0	77.3	2.2
April	640,138,000	70,415	30	0.011	0.0244	0.0046	65.9	37.4	310.0	0.9
May	526,703,000	42,136	31	0.008	0.108	0.0062	39.4	49.4	204.0	1.4
June	689,126,000	108,882	30	0.0158	0.0350	0.0047	101.9	73.7	849.0	0.7
July	532,120,000	168,150	31	0.0316	0.0803	0.0034	157.4	66.5	516.0	1.6
Aug.	365,265,000	24,107	31	0.0066	0.0104	0.0021	22.6	53.7	386.0	2.8
Sept.	201,381,000	8,659	30	0.0043	0.0054	0.0034	8.1	79.7	863.0	4.1
Oct.	118,956,000	10,230	31	0.0086	0.0166	0.0043	9.6	68.8	353.0	2.1
Nov.	177,725,000	6,931	30	0.0039	0.0086	0.0003	6.5	9.6	33.7	1.0
Dec.	170,735,000	5,122	31	0.0030	0.0043	0.0016	4.8	11.2	95.5	0.8
Year	4,652,545,000	515,216	366				482.3		2,007.0	117.0

* Volume calculated at 1.068 megagrams per cubic meter

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	940	969	990	1,050	975	981	988	860	840	898	916	933
2	966	864	981	1,040	1,020	926	956	870	830	962	925	927
3	914	922	988	1,000	955	947	976	870	840	817	937	915
4	922	968	986	993	924	915	964	660	840	926	899	917
5	918	969	987	1,010	973	882	974	790	800	844	878	912
6	872	999	991	980	965	722	957	770	830	960	938	886
7	844	1,030	990	995	906	806	986	820	850	822	935	920
8	849	1,020	997	980	957	853	992	770	850	845	934	910
9	822	1,020	1,010	979	971	881	971	740	850	848	925	908
10	866	1,020	991	978	957	810	965	790	800	926	932	903
11	852	1,000	983	976	1,030	903	955	800	820	786	937	885
12	894	994	981	976	1,020	890	970	790	820	950	878	913
13	851	1,010	1,000	999	966	829	957	810	820	961	922	931
14	865	1,020	1,000	987	1,050	930	954	790	810	828	947	907
15	839	1,030	999	1,000	998	967	975	810	830	823	909	898
16	798	1,050	991	987	849	975	964	840	800	904	924	912
17	898	1,050	987	967	960	972	930	810	820	916	929	892
18	890	1,050	978	917	928	947	894	850	840	815	937	924
19	904	1,060	986	845	967	922	894	920	840	825	887	922
20	787	1,050	1,020	878	975	924	866	940	840	797	762	938
21	795	1,060	1,010	971	926	958	876	920	780	799	870	935
22	858	1,060	1,020	981	996	939	816	860	840	808	914	922
23	880	1,020	1,020	982	964	979	581	900	790	834	897	919
24	961	1,040	997	990	970	970	490	900	810	812	895	929
25	912	1,030	998	951	959	1,000	556	880	790	915	932	927
26	829	1,040	1,010	887	994	977	681	900	810	937	920	932
27	858	959	1,000	940	1,000	976	775	940	830	830	879	937
28	797	1,000	1,030	900	957	1,010	837	900	820	797	923	971
29	829		1,020	983	989	990	867	920	830	810	916	987
30	854		995	991	1,010	1,010	887	950	830	817	922	962
31	864		989		883		903	910		949		973

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4590.00 RIO GRANDE AT LAREDO, TEXAS AND NUEVO LAREDO TAMAULIPAS

LOCATION: Samples for biochemical analyses, specific conductance, and suspended silt collected at the Laredo Water Plant, river kilometer 586.

RECORDS: Chemical analyses, 1955 through 1976; chemical and biochemical analyses, 1973 through September 1986; biochemical analyses, September 1968 through current year; suspended silt, 1953 through current year; specific conductance, 1948-1949 and 1955 through current year.

REMARKS: Field parameter samples for biochemical analyses, suspended silt and specific conductance collected and analyzed by the International Boundary and Water Commission and the Texas Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, available from U. S. Geological Survey through September 1986.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens	pH Units	Water Temper- ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 16	1030	32.6	880	8.0	10.0	270	120	83	16
Feb. 19	1505	164	1,040	7.9	16.5	270	120	81	16
Mar. 17	1045	190	969	7.8	18.0	260	120	77	16
April 14	1130	212	976	7.9		250	130	74	15
May 19	1105	110	825	7.7	23.5	220	98	68	13
June 16	1040	198	956	7.9	29.0	260	110	78	15
July 21	1155	273	866	7.8	30.5	250	120	75	16
Aug. 18	1145	135	855	7.9	28.5	250	110	78	14
Sept. 15	1055	74.8	823	7.8	23.0	220	94	67	14
Oct. 20	1420	39.6	844	7.8	26.5	240	110	70	16
Nov. 18	1055	56.6	909	7.9	18.0	250	120	75	16
Dec. 15	1120	56.6	929	7.9	13.0	260	120	75	17

1992 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 16	76	2	2.8	157	170	89	12	543
Feb. 19	110	3	4.6	148	210	110	18	639
Mar. 17	100	3	4.3	141	210	100	15	608
April 14	100	3	4.6	112	200	100	15	577
May 19	79	2	4.3	125	160	86	13	499
June 16	100	3	4.3	146	190	110	15	601
July 21	88	2	3.7	136	170	93	16	544
Aug. 18	85	2	3.8	138	170	90	16	540
Sept. 15	79	2	3.5	131	160	83	17	503
Oct. 20	82	2	3.5	131	170	87	15	523
Nov. 18	97	3	4.0	136	180	95	16	565
Dec. 15	100	3	4.1	138	190	110	13	593

1992 Date	Time Std.	Stream- flow, Momen- tary CMS	Specific Conduct- ance Micro- siemens	pH Units	Water Temper- ature Deg C	Oxygen, Dis- solved (DO) mg/L	Coli- form, Fecal Cols./ 100 mL	Oxygen, Demand, Bio- Chemical (BOD) 5 Day mg/L	Alka- linity Total (as CaCO3) mg/L	Sulfate ion (SO4), Dis- solved mg/L	Chloride ion (Cl), Dis- solved mg/L	Solids Dis- solved (Residue @ 180 Deg C) mg/L	Sus- pended Solids mg/L
Jan. 16	1105	32.6	990	8.2	10.0	6.8	100	2.0	158	174	86	556	27
Feb. 25	1110	215	1,060	8.2	15.9	7.0	110	2.0	148	214	110	650	39
Mar. 10	1245	176	1,000	9.0	18.8	9.0	17						
April 7	1105	241	940	8.2	19.2	7.1	240	1.0	140	208	104	596	26
May 12	1110	113	960	8.1	25.5	7.3	120	< 0.5	143	216	103	612	19
June 8	1510	247	940	8.2	27.6	7.0	85						
July 14	1115	53.8	900	8.3	27.1	7.1	60	0.5	129	192	99	576	17
Aug. 11	1110	118	740	8.0	28.9	7.0	60	0.5	137	143	74	472	30
Sept. 22	1100	76.5	850	8.0	28.9	7.2	110	0.5	130	164	84	526	18
Oct. 19	1535	9.63	860	8.2	25.3	8.0	< 9						
Nov. 10	1110	49.8	890	8.2	19.4	7.9	60	0.5	137	192	98	604	37
Dec. 8	1105	52.4	930	8.4	13.6	7.0	140	0.5	139	184	98	572	11

< Actual value is known to be less than the value shown

QUALITY OF WATER - 1992

08-4613.00 RIO GRANDE BELOW FALCON DAM NEAR FALCON, TEXAS AND NUEVA CD. GUERRERO, TAMAILIPAS

LOCATION: Chemical and specific conductance samples from Falcon Reservoir at Falcon Dam, river kilometer 442.3, and biochemical sampling at the Chapeno gaging station 4.1 river kilometers below Falcon Dam; latitude 26°31'45", longitude 99°09'30".

RECORDS: Chemical analyses, July 1955 through current year; biochemical analyses, July 1975 through current year; suspended silt, July 1955 through 1976; specific conductance 1955 through current year.

REMARKS: Sampling for chemical analyses by the International Boundary and Water Commission at Falcon Village Water Plant, analyses by the U. S. Geological Survey; sampling and determinations for specific conductance by the International Boundary and Water Commission at Falcon Dam Power Plant tailrace; biochemical analyses, collected and analyzed by the International Boundary and Water Commission and the Texas Water Commission.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance	pH Units	Water Temper- ature Deg C	Hardness, Total (as CaCO3)	Hardness, Noncarbonate (as CaCO3)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved
			Micro- siemens			mg/L	mg/L	mg/L	mg/L
Jan. 17	1300	0.10	1,050	7.9	14.5	250	120	71	17
Feb. 18	1130	200	1,050	7.8	14.5	250	130	74	17
Mar. 16	1130	142	1,030	7.8	16.5	260	130	75	18
April 13	1130	240	1,030	7.8	18.0	250	120	73	16
May 18	1100	170	1,010	7.8	23.5	250	120	72	17
June 15	1030	340	989	7.7	25.5	250	120	73	16
July 15	1000	125	970	7.8	26.5	250	130	72	16
Aug. 17	1125	142	979	7.7	25.5	250	130	72	17
Sept. 15	1100	41.9	968	7.8	24.5	230	100	65	16
Oct. 15	1130	101	959	7.7	23.5	230	120	63	17
Nov. 16	0930	15.0	960	7.9	18.5	230	120	66	17
Dec. 17	1030	21.2	960	7.9	15.0	240	120	67	17

1992 Date	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved	Alkalinity Total (as CaCO3)	Sulfate ion (SO4) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO2) Dissolved	Solids Dissolved (Calculated)
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 17	110	3	5.3	125	230	110	15	634
Feb. 18	120	3	5.3	125	230	110	15	647
Mar. 16	110	3	5.0	131	230	110	14	641
April 13	120	3	5.4	125	230	110	14	644
May 18	110	3	5.1	125	220	110	16	626
June 15	110	3	5.0	128	210	110	16	617
July 15	110	3	4.6	118	220	110	15	619
Aug. 17	110	3	5.0	116	210	110	15	610
Sept. 15	110	3	5.1	128	210	100	15	598
Oct. 15	110	3	5.2	110	210	110	14	596
Nov. 16	110	3	5.3	113	210	110	15	602
Dec. 17	110	3	5.2	115	210	110	15	604

1992 Date	Time Std.	Stream- flow, Momen- tary CMS	Specific Conduct- ance	pH Units	Water Temper- ature Deg C	Oxygen, Dis- solved (DO)	Coli- form, Fecal Cols./ 100 mL	Oxygen, Demand, Bio- Chemical (BOD) 5 Day mg/L	Sulfate ion (SO4), Dis- solved mg/L	Chloride ion (Cl), Dis- solved mg/L	Solids Dis- solved (Residue @ 180 Deg C) mg/L	Sus- pended Solids mg/L
			Micro- siemens			mg/L	100 mL	mg/L	mg/L	mg/L	mg/L	
Mar. 12	0915	331	1,068	8.8	18.0	8.3	33	136	239	114		5
June 9	0930	408	1,091	8.1	26.0	6.4	14	118	212	108		3
Oct. 19	1105	261	979	8.1	25.1	6.9	640	116	217	115		6

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4613.00 RIO GRANDE BELOW FALCON DAM NEAR FALCON, TEXAS AND NUEVA CD. GUERRERO, TAMAULIPAS

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,080			1,060	1,040	1,040	1,010					
2			1,060						1,000	980	973	
3	1,080	1,080		1,050		1,030	1,010	1,010				
4			1,060		1,040				1,000		981	988
5		1,070				1,030		1,010		970		
6	1,080		1,060	1,040	1,040		1,020				973	
7		1,070						1,000	993	970		972
8	1,080			1,060	1,040	1,040	1,020					
9			1,080						996	970	990	986
10	1,080	1,080		1,060		1,040	1,010	1,000				
11			1,060		1,050				960		972	
12						1,050		1,000		990		970
13	1,080		1,060	1,060	1,040		1,000				964	
14		1,070						1,010	980	970		963
15	1,080		1,060	1,060	1,040	1,020	1,000					
16			1,060						980	980	966	989
17	1,080	1,070		1,030		1,000	1,010	1,010				
18			1,060		1,040				1,000		965	971
19		1,070				1,020		1,010		980		
20	1,080		1,080	1,040	1,040		1,010				965	
21		1,060						1,000	970	990		970
22	1,090			1,050	1,040	1,010	1,010					
23			1,060						980	970	963	972
24	1,080	1,060		1,050		1,010	1,000	1,000				
25			1,050		1,040				970		961	968
26		1,060				1,010		1,000		980		
27	1,070		1,060	1,040			1,010				963	
28		1,060						997	980	980		974
29	1,080			1,040	1,030	1,020	1,010					
30			1,060						970	949	972	967
31	1,080						1,010	1,000				

08-4642.00 RIO SAN JUAN AT CAMARGO, TAMAULIPAS

LOCATION: At gaging station, 5.1 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 384.

RECORDS: Specific conductance, 1960 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January	March	May	July	September	November
7 3,630	4 3,780	7 5,150	2 3,260	15 2,450	
31 4,120	16 3,790	15 4,310	15 3,830		
February	April	June	August	October	December
	15 3,500	16 2,640	5 3,310	2 3,080	2 4,920
			18 1,780		15 3,640

08-4645.00 RANCHERIAS DRAIN NEAR CAMARGO, TAMAULIPAS

LOCATION: At a point about 600 meters from the confluence with the Rio Grande, which is located at river kilometer 389. This drain carries waste water from the Lower Rio San Juan Irrigation District in Mexico.

RECORDS: Specific conductance, 1948 and 1960 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

January	March	May	July	September	November
7 5,210	4 5,680	7 5,620	2 5,440	2 5,390	4 5,530
31 6,150	16 5,230	15 3,680	15 5,350	15 4,970	
	April	June	30 5,030	August	October
18 6,150	2 6,050	2 6,180	5 5,220	2 5,140	2 4,850
	15 5,050	16 5,810	18 5,260	16 4,960	15 4,590

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4647.00 RIO GRANDE AT RIO GRANDE CITY, TEXAS NEAR CAMARGO, TAMAULIPAS

LOCATION: Gaging station at river kilometer 378, 6.0 river kilometers downstream from Rio San Juan.

RECORDS: Chemical analyses, 1959 through current year; specific conductance, 1958 through current year; suspended silt, 1959 through 1977.

REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U.S. Geological Survey; specific conductance determinations by the International Boundary and Water Commission.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance	pH Units	Water Temper- ature Deg C	Hardness, Total (as CaCO3)	Hardness, Noncarbonate (as CaCO3)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved
			Micro- siemens			mg/L	mg/L	mg/L	mg/L
Jan. 15	1045	35.4	1,200	7.9	14.5	270	140	78	19
Feb. 19	0930	202	1,080	7.4	16.5	260	130	78	17
Mar. 16	0920	139	1,050	7.8	23.0	260	140	76	18
April 16	0900	234	1,040	7.8	21.5	250	150	74	17
May 26	1045	156	1,040	7.8	29.5	250	120	71	17
June 15	1000	340	1,000	7.7	24.5	250	120	72	17
July 16	1145	128	1,000	7.8	28.5	260	140	74	18
Aug. 17	0935	165.4	1,080	7.7	27.0	260	140	75	17
Sept. 14	1015	84.4	998	7.8	28.0	230	120	67	16
Oct. 16	1000	131	970	7.9	26.0	230	120	65	17
Nov. 18	1045	10.8	1,330	7.9	21.0	290	170	80	21
Dec. 17	1100	19.3	1,270	7.7	16.5	280	150	79	21

1992 Date	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved	Alkalinity Total (as CaCO3)	Sulfate ion (SO4) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO2) Dissolved	Solids Dissolved (Calculated)
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 15	140	4	5.5	131	260	130	15	727
Feb. 19	120	3	5.7	131	230	110	15	655
Mar. 16	110	3	5.1	121	230	120	14	646
April 16	110	3	5.4	102	230	110	14	622
May 26	110	3	5.1	128	220	110	16	627
June 15	110	3	5.2	125	220	110	16	626
July 16	120	3	5.1	123	210	110	15	627
Aug. 17	130	4	5.4	115	210	140	14	661
Sept. 14	110	3	5.0	115	210	110	15	603
Oct. 16	110	3	5.1	110	210	110	14	598
Nov. 18	170	4	5.7	121	250	190	15	805
Dec. 17	160	4	5.6	130	260	170	14	788

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1				1,160	1,120	1,140	1,140					
2			1,200	1,160								
3	1,140	1,210				1,120	1,140	1,090				
4			1,220		1,140				1,080		1,150	
5		1,220				1,100		1,100		1,050		
6	1,240		1,220	1,160	1,120		1,140				1,180	
7		1,250						1,100	1,090	1,050		
8	1,260		1,130	1,160		1,110	1,150					
9				1,120		1,110		1,100	1,090	1,050	1,210	
10	1,260	1,250										
11			1,140			1,130			1,090		1,220	1,250
12		1,250						1,100		1,050		
13	1,240		1,180	1,120					1,080	1,070	1,320	
14		1,210						1,110				1,310
15	1,240			1,200	1,150	1,130						
16			1,180						1,080	1,050	1,350	1,260
17	1,310	1,200		1,160		1,130	1,190	1,120				
18			1,180		1,160				1,080		1,350	1,270
19		1,200				1,130		1,110		1,050		
20	1,320		1,180	1,160	1,150		1,180				1,310	
21		1,230						1,150	1,090	1,050		1,280
22	1,320			1,120	1,140	1,130	1,180					
23			1,180					1,090	1,070		1,300	1,270
24	1,310	1,230		1,160			1,110	1,150	1,050			
25			1,180		1,150						1,310	1,070
26		1,220				1,130				1,080		
27	1,350		1,160	1,160	1,160		1,100	1,150	1,050	1,090	1,310	1,070
28		1,170										
29	1,350			1,140	1,130	1,140	1,110		1,060	1,180	1,310	1,060
30			1,160					1,100				
31	1,210							1,060				

QUALITY OF WATER - 1992

PUERTECITOS DRAIN AND LOS INDIOS DRAIN NEAR CD. DIAZ ORDAZ, TAMAULIPAS

LOCATION: For Puertecitos Drain, at a point about 2,600 meters from the confluence with the Rio Grande, which is located at river kilometer 353; and, for Los Indios Drain, at a point about 650 meters from its confluence with Puertecitos Drain. These two drains join at a point about 1,300 meters from the confluence with the Rio Grande. These drains carry waste water from the lower Rio San Juan Irrigation District in Mexico.

RECORDS: Specific conductance, 1960 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

1992 Date	Puertecitos Drain	Los Indios Drain									
Jan. 7	2,820	2,230	May 7	2,810	2,590	Aug. 5	2,980	2,500	Dec. 2	2,800	2,420
31	3,050	2,520	15	2,670	2,330	18	3,470	2,330	15	2,750	2,350
Feb. 18	2,950	2,430	Jun. 2	2,980	2,820	Sep. 2	2,750	2,590			
Mar. 4	2,970	2,410	15	2,700	2,670	15	2,670	2,480			
16	2,960	2,470	Jul. 2	3,130	2,500	Oct. 2	2,770				
Apr. 2	2,330	2,330	15	3,140	2,570	16	2,720	2,510			
15	2,570	1,940	30	3,010	2,470	Nov. 4	2,800	2,500			

08-4663.00 RIO GRANDE AT LOS EBANOS, TEXAS NEAR CD. DIAZ ORDAZ, TAMAULIPAS

LOCATION: Gaging station at river kilometer 329, 54.7 river kilometers upstream from Anzalduas Dam.

RECORDS: Chemical analyses, June 1977 through current year; specific conductance, 1956 through current year.

REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U. S. Geological Survey; specific conductance determinations by the International Boundary and Water Commission.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance		pH Units	Water Temper- ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
			Micro- siemens							
Jan. 15	1400	37.4	1,370	7.9	15.0	290	140	78	22	
Feb. 19	1330	190	1,070	7.9	18.5	260	140	75	18	
Mar. 16	1345	156	1,230	7.8	22.0	290	160	83	21	
April 16	1230	234	1,050	7.8	24.0	260	130	76	17	
May 26	1145	217	1,100	7.8	25.0	260	140	76	17	
June 15	1345	334	1,030	7.7	26.0	250	120	74	18	
July 16	1305	156	1,040	7.8	29.0	260	140	75	18	
Aug. 17	1300	181	985	7.6	28.0	250	130	71	17	
Sept. 14	1400	97.7	1,050	7.8	29.5	240	130	70	17	
Oct. 16	1355	102	1,020	7.8	28.5	240	130	67	18	
Nov. 18	1415	20.4	1,300	7.9	24.0	300	180	83	23	
Dec. 17	1445	34.8	1,300	7.9	18.0	310	180	87	23	

1992 Date	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved	Alkalinity Total (as CaCO3)	Sulfate ion (SO4) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO2) Dissolved	Solids Dissolved (Calculated)
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 15	160	4	6.0	143	290	150	16	809
Feb. 19	130	3	5.2	125	240	120	15	679
Mar. 16	140	4	5.4	138	280	140	14	767
April 16	110	3	5.4	130	230	110	14	641
May 26	120	3	5.2	128	240	120	16	673
June 15	120	3	5.6	131	220	110	16	642
July 16	120	3	5.0	125	230	120	15	659
Aug. 17	110	3	5.5	113	210	110	14	606
Sept. 14	120	3	5.2	116	220	130	15	647
Oct. 16	120	3	5.2	108	220	110	15	621
Nov. 18	160	4	5.6	125	270	180	15	812
Dec. 17	160	4	5.7	135	280	180	14	831

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4663.00 RIO GRANDE AT LOS EBANOS, TEXAS NEAR CD. DIAZ ORDAZ, TAMAULIPAS

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,500	1,120	1,060	1,110	1,090	1,030	1,130	927	1,020	1,040	1,310	1,310
2	1,260	1,120	1,080	1,120	1,060	1,010	1,090	913	1,030	1,030	1,290	1,300
3	1,500	1,090	1,100	1,110	1,060	940	993	925	1,020	1,030	1,310	1,320
4	1,600	1,090	1,090	1,120	1,050	938	991	919	1,030	1,040	1,270	1,310
5	1,600	1,110	1,090	1,120	1,030	1,010	990	924	1,020	1,030	1,310	1,310
6	1,130	1,120	1,080	1,110	1,050	947	993	925	1,040	1,030	1,350	1,290
7	1,600	1,120	1,080	1,100	1,060	1,060	1,000	922	1,020	1,030	1,320	1,300
8	1,590	1,120	1,100	1,300	1,050	1,040	990	912	1,010	1,030	1,300	1,290
9	1,610	1,120	1,080	1,130	1,070	1,020	999	928	1,020	1,020	1,240	1,300
10	1,270	1,120	1,080	1,110	1,070	1,040	925	914	1,030	1,050	1,260	1,300
11	1,610	1,120	1,080	1,110	1,070	1,010	976	926	1,020	1,020	1,270	1,290
12	1,600	1,120	1,100	1,120	1,070	1,000	974	868	1,020	1,030	1,320	1,290
13	1,610	1,120	1,080	1,110	1,080	1,020	986	871	1,130	1,040	1,280	1,300
14	1,270	1,120	1,080	1,300	1,080	1,020	988	873	1,140	1,030	1,220	1,300
15	1,600	1,120	1,100	1,300	1,080	1,020	993	895	1,170	1,050	1,290	1,290
16	1,600	1,120	1,080	1,320	1,100	1,020	1,110	878	1,170	1,040	1,320	1,290
17	1,120	1,120	1,110	1,310	1,120	1,020	1,100	881	1,160	1,040	1,540	1,280
18	1,110	1,090	1,110	1,310	1,120	1,020	1,090	882	1,140	1,030	1,590	1,320
19	1,110	1,090	1,100	1,310	1,120	1,040	1,090	879	1,140	1,030	1,610	1,280
20	1,600	1,090	1,100	1,300	1,100	1,050	1,090	873	1,150	1,040	1,570	1,310
21	1,120	1,090	1,100	1,300	1,080	1,050	1,090	878	1,160	1,040	1,600	1,290
22	1,110	1,090	1,100	1,310	1,100	1,050	1,100	889	1,120	1,040	1,660	1,320
23	1,110	1,070	1,100	1,310	1,090	1,050	1,100	885	1,120	1,030	1,600	1,310
24	1,120	1,090	1,080	1,090	1,100	1,050	1,110	1,190	1,120	1,030	1,620	1,290
25	1,600	1,070	1,100	1,290	1,090	1,050	1,110	1,210	1,110	1,050	1,630	1,320
26	1,280	1,090	1,100	1,300	983	1,050	1,120	1,200	1,130	1,060	1,660	1,290
27	1,270	1,100	1,090	1,300	982	1,040	1,110	1,210	1,130	1,050	1,660	1,320
28	1,270	1,090	1,100	1,310	982	1,060	1,100	1,210	1,150	1,060	1,700	1,310
29	1,270	1,100	1,100	1,310	981	1,060	1,100	1,200	1,140	1,070	1,660	1,270
30	1,590	1,110	1,160	982	1,050	1,100	1,100	1,210	1,140	1,060	1,650	1,290
31	1,120	1,080	981	1,100	1,050	1,110	1,100	1,200	1,060	1,060	1,310	1,310

08-4675.00 RIO GRANDE AT PENITAS, TEXAS AND REYNOSA DIAZ, TAMAULIPAS

LOCATION: At the H.C.W.C. & I. District No. 1 (Edinburg) pumping plant, river kilometer 300, 26.2 river kilometers upstream from Anzalduas Dam.

RECORDS: Specific conductance, 1963 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,250			1,080	1,100	1,040	1,060					
2									1,030	1,190	1,400	1,520
3	1,280	1,200	1,100	1,070		1,050	1,070	1,060				
4			1,090		1,110				1,050		1,410	1,500
5		1,130				1,080				1,160		
6	1,320		1,090	1,080	1,100		1,010				1,240	
7		1,110						1,050	1,100	1,070		1,580
8	1,350			1,080	1,110	1,080	1,060					
9			1,090						1,090	1,030	1,220	1,540
10	1,400	1,160		1,080		1,080	1,100	1,030				
11			1,090		1,150				1,060		1,380	1,660
12		1,170		1,300		1,060		1,050		1,040		
13			1,090	1,090	1,110		1,100				1,280	
14	1,420	1,110		1,080	1,140	1,070	1,120	1,040	1,080	1,010		1,500
15	1,550											
16	1,650		1,150						1,100	1,030	1,300	1,460
17		1,140		1,090		1,060	1,070	970				
18			1,130		1,110				1,090		1,800	1,430
19		1,100				1,090		1,040		1,030		
20			1,140	1,080			1,100				1,530	
21	1,540	1,100			1,110			1,060	1,240	1,030		1,400
22				1,070	1,100	1,070	1,080					
23	1,480		1,140						1,140	1,030	1,720	1,350
24		1,100		1,080		1,070	1,110	1,030			1,520	
25	1,440		1,120		1,200				1,140		1,640	1,350
26		1,100				1,070		1,020		1,200		
27	1,480		1,120	1,060	1,150		1,090		1,030	1,200		1,130
28		1,220										
29	1,470			1,100	1,030	1,060	1,080					
30			1,120					1,240	1,380		1,540	
31	1,480						1,070	1,020				1,120

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4678.00 MORILLO DRAIN NEAR ANZALDUAS DAM

LOCATION: At the Morillo Drain Project pumping plant located about 0.6 river kilometer from the confluence with the Rio Grande or at the gaging station on the bypass canal 0.6 kilometer from the pumping plant. Morillo Drain enters the Rio Grande at river kilometer 288, 14.2 river kilometers upstream from Anzalduas Dam. This drain carries waste water from the lower Rio San Juan Irrigation District in Mexico and surface runoff during periods of heavy precipitation.

RECORDS: Chemical analyses, 1962 through current year; specific conductance, 1956 through current year. REMARKS: Sampling by the International Boundary and Water Commission and chemical analyses by the U. S. Geological Survey. Determinations for specific conductance by International Boundary and Water Commission.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance	pH	Water Temper- ature Deg C	Hardness, Total (as CaCO ₃)	Hardness, Noncarbonate (as CaCO ₃)	Calcium ion (Ca), Dissolved	Magnesium ion (Mg), Dissolved
			Micro- siemens			mg/L	mg/L	mg/L	mg/L
Jan. 17	0820	1.98	6,060	8.0	11.5	970	740	250	84
Feb. 20	0845	.99	6,010	7.9	17.0	970	730	250	84
Mar. 18	0820	2.01	6,580	7.8	21.5	960	720	230	94
April 15	0720	1.98	4,540	7.8	23.5	750	580	190	67
May 20	0720	5.66	4,480	7.8	25.5	730	510	190	61
June 22	1000		6,760	7.9	28.0	1,000	740	250	92
July 24	0720	2.83	6,860	7.9	26.0	980	770	230	99
Aug. 19	0830	1.02	5,500	7.8	26.5	940	720	210	100
Sept. 21	0735	.91	6,600	7.9	27.0	980	770	230	98
Oct. 14	0720	.99	3,820	7.9	22.0	640	460	160	58
Nov. 18	0820	.99	6,500	7.9	21.0	990	760	240	95
Dec. 18	0820	.99	5,840	7.8	15.0	910	690	220	88

1992 Date	Sodium ion (Na), Dissolved	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved	Alkalinity Total (as CaCO ₃)	Sulfate ion (SO ₄) Dissolved	Chloride ion (Cl), Dissolved	Silica (SiO ₂) Dissolved	Solids Dissolved (Calculated)
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 17	1,000	14	8.1	230	1,300	1,200	34	4,020
Feb. 20	1,000	14	8.3	236	1,300	1,200	31	4,020
Mar. 18	1,200	17	2.3	239	1,400	1,300	26	4,400
April 15	710	11	7.5	174	1,000	750	27	2,860
May 20	730	12	8.0	220	990	770	30	2,910
June 22	1,200	16	8.2	266	1,400	1,300	41	4,450
July 24	1,300	18	8.1	215	1,500	1,400	40	4,710
Aug. 19	1,000	14	9.5	213	1,200	1,100	33	3,780
Sept. 21	1,200	17	7.4	205	1,500	1,300	39	4,500
Oct. 14	630	11	6.6	177	850	640	25	2,480
Nov. 18	1,200	17	8.2	230	1,400	1,300	36	4,420
Dec. 18	1,100	16	1.4	217	1,300	1,200	31	4,070

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1				6,410		5,530	7,120		6,620	6,590		6,740
2	4,460		5,410	6,570		6,130	7,080		6,630	6,720		6,630
3	4,410	7,640	7,860	6,230		4,410	7,120	7,180	6,700		6,650	6,970
4		7,900	7,780		2,450	3,690		6,980	6,690		6,680	6,930
5		7,100	7,650			5,650		7,090		6,800	6,540	
6	5,020	7,230	7,440	5,880	5,760		7,080	6,950		6,730	6,610	
7	5,030	8,180		5,340	6,240		7,090	7,090	6,760	6,780		6,950
8	5,240			5,390	6,510	6,580	7,060		6,760	6,790		6,980
9	5,200		5,910	5,350		6,680	7,100		6,770	6,450	6,730	6,890
10	4,300	7,030	6,080	5,130		6,610	7,070	5,730	6,780		6,590	6,970
11		6,780	7,150		6,780	5,220		6,070	6,840		6,740	6,960
12		8,060	7,270		6,650	6,100		6,410			6,830	
13	5,660	8,050	7,280	5,000	6,770		7,120	6,550		4,960		
14	6,020	8,140		4,690	6,230		7,130	6,160	6,660	5,620		6,800
15	5,860			4,700	5,870	6,690	7,190		6,670	5,800		6,600
16	6,420		7,410			6,880	7,250			5,590		6,620
17	6,380	6,980	7,550			6,830	7,130		5,160	6,650		5,540
18		8,030	7,510		4,810	6,940		5,420	6,660			6,990
19		7,870	7,600		3,540	6,930		5,750		5,000		
20	6,730	8,010	7,600	4,990	4,760		7,190	5,630	6,770	5,010		
21	7,020	7,910		4,900	4,820		7,260	5,450	6,900	5,560		6,970
22	7,250			5,100	4,880		7,130		6,740	5,910		6,380
23	7,260		7,740	4,920		7,070	7,140		6,820	4,700		
24	7,210	7,130	7,740	4,900		7,130	7,180		6,230	7,230		6,870
25		6,800	7,670		5,120	7,060		6,180	6,590			
26		8,040	7,530		5,100	7,020		6,010		6,260		
27	7,160	7,930	7,650	2,070	4,810		7,010	5,130		6,320		
28	7,510	7,950		4,070	2,610		7,060	6,160	6,300	6,460		5,840
29	7,510				4,920	7,090	7,020		6,370	6,550		5,190
30	7,020		7,370		5,500	7,130	7,120		6,480	6,540		4,970
31	7,770		6,530				7,000	6,610				4,830

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4692.00 RIO GRANDE BELOW ANZALDUAS DAM NEAR REYNOSA, TAMAULIPAS AND MISSION, TEXAS

LOCATION: At Anzalduas Dam, 0.8 river kilometer above the gaging station, located at river kilometer 273.
 RECORDS: Chemical analyses, March 1959 through current year; specific conductance 1948 and 1956 through current year; suspended silt, May 1956 through 1977.
 REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U. S. Geological Survey; determinations for specific conductance by the International Boundary and Water Commission.

1992	Time	Streamflow	Specific		Water	Hardness,	Hardness,	Calcium	Magnesium
Date	Standard	Momentary	Conductance	pH	Temperature	Total	Noncarbonate	ion (Ca),	ion (Mg),
		CMS	Micro-	Units	Deg C	(as CaCO3)	(as CaCO3)	Dissolved	Dissolved
			siemens			mg/L	mg/L	mg/L	mg/L
Jan. 17	0945	22.7	1,500	8.0	13.0	320	180	90	24
Feb. 20	0820	138	1,070	7.8	18.0	260	130	74	18
Mar. 18	0930	85.8	1,090	7.9	25.5	270	140	77	19
April 15	0800	172	1,090	7.9	22.0	270	140	77	18
May 20	0900	73.6	1,220	8.0	25.0	280	150	81	20
June 22	1030	195	1,140	8.0	28.0	270	140	77	19
July 24	0815	62.6	1,150	8.0	28.0	280	150	79	20
Aug. 19	0830	65.1	1,020	7.8	28.0	250	130	72	17
Sept. 21	0830	29.5	1,390	7.9	26.5	300	180	84	23
Oct. 14	0808	48.1	1,020	7.8	25.5	240	130	67	18
Nov. 18	0850	11.5	1,290	7.9	21.0	300	170	84	23
Dec. 18	0850	7.8	1,730	7.9	16.5	400	240	110	31

1992	Sodium	Sodium	Potassium	Alkalinity	Sulfate	Chloride	Silica	Solids
Date	ion (Na),	Adsorption	ion (K)	Total	ion (SO4)	ion (Cl),	(SiO2)	Dissolved
	Dissolved	Ratio(SAR)	Dissolved	(as CaCO3)	Dissolved	Dissolved	Dissolved	(Calculated)
	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 17	190	5	6.2	143	330	190	16	933
Feb. 20	120	3	5.2	125	240	120	15	668
Mar. 18	120	3	4.9	135	240	120	14	677
April 15	120	3	5.6	131	240	120	14	624
May 20	150	4	5.5	135	270	150	16	774
June 22	140	4	5.2	131	250	150	16	736
July 24	140	4	4.7	128	260	150	15	746
Aug. 19	120	3	5.2	115	220	120	14	638
Sept. 21	170	4	5.7	128	290	190	17	857
Oct. 14	120	3	5.1	112	230	120	15	643
Nov. 18	160	4	5.4	131	270	180	16	818
Dec. 18	220	5	6.3	162	350	270	15	1,100

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,530	1,190	1,100	1,080	1,130	1,180	1,140	1,160	1,080	1,280	1,440	1,610
2	1,430	1,130	1,100	1,110	1,130	1,200	1,150	1,090	1,110	1,300	1,640	1,660
3	1,370	1,130	1,100	1,090	1,130	1,200	1,190	1,080	1,110	1,220	1,450	1,740
4	1,310	1,140	1,090	1,090	1,120	1,210	1,160	1,090	1,140	1,210	1,320	1,760
5	1,280	1,140	1,090	1,100	1,180	1,200	1,140	1,090	1,160	1,190	1,320	1,760
6	1,280	1,120	1,090	1,120	1,150	1,190	1,170	1,110	1,180	1,170	1,310	1,770
7	1,270	1,090	1,100	1,100	1,140	1,190	1,170	1,150	1,300	1,120	1,270	1,680
8	1,280	1,130	1,090	1,110	1,160	1,200	1,160	1,120	1,250	1,100	1,200	1,630
9	1,310	1,120	1,080	1,110	1,130	1,170	1,170	1,130	1,230	1,070	1,190	1,520
10	1,350	1,130	1,080	1,100	1,120	1,180	1,140	1,110	1,230	1,020	1,140	1,520
11	1,340	1,130	1,090	1,100	1,130	1,140	1,180	1,110	1,220	1,050	1,220	1,490
12	1,560	1,120	1,090	1,110	1,170	1,130	1,180	1,120	1,210	1,020	1,270	1,520
13	1,570	1,120	1,090	1,120	1,220	1,130	1,190	1,090	1,190	1,020	1,360	1,560
14	1,530	1,100	1,080	1,130	1,210	1,130	1,220	1,110	1,170	1,040	1,390	1,620
15	1,640	1,100	1,090	1,120	1,190	1,120	1,250	1,150	1,180	1,020	1,390	1,590
16	1,560	1,100	1,090	1,120	1,210	1,120	1,210	1,100	1,170	1,020	1,310	1,620
17	1,660	1,100	1,120	1,130	1,200	1,110	1,170	1,070	1,260	1,030	1,350	1,750
18	1,590	1,100	1,150	1,130	1,170	1,100	1,170	1,020	1,210	1,050	1,310	1,800
19	1,620	1,110	1,120	1,110	1,350	1,100	1,160	1,050	1,270	1,120	1,290	1,660
20	1,570	1,100	1,130	1,120	1,250	1,080	1,180	1,040	1,360	1,040	1,300	1,680
21	1,620	1,100	1,130	1,130	1,250	1,100	1,210	1,130	1,400	1,040	1,340	1,590
22	1,680	1,100	1,150	1,130	1,230	1,150	1,200	1,130	1,400	1,030	1,570	1,520
23	1,840	1,110	1,120	1,120	1,200	1,130	1,190	1,120	1,280	1,000	1,700	1,430
24	1,790	1,110	1,130	1,120	1,200	1,110	1,200	1,110	1,180	1,080	1,720	1,400
25	1,650	1,100	1,120	1,160	1,190	1,120	1,220	1,130	1,140	1,050	1,690	1,410
26	1,790	1,110	1,130	1,170	1,210	1,100	1,200	1,130	1,140	1,050	1,640	1,430
27	1,740	1,110	1,150	1,100	1,220	1,130	1,200	1,170	1,140	1,080	1,530	1,390
28	1,510	1,140	1,120	1,190	1,200	1,110	1,200	1,280	1,150	1,080	1,400	1,490
29	1,470		1,120	1,160	1,160	1,110	1,180	1,320	1,180	1,190	1,410	1,400
30	1,610		1,100	1,160	1,090	1,120	1,150	1,170	1,200	1,280	1,540	1,360
31	1,450		1,100		991		1,090	1,120	1,280			1,270

QUALITY OF WATER - 1992

08-4733.90 RIO GRANDE AT MERCEDES IRRIGATION DISTRICT PUMPS NEAR MERCEDES, TEXAS AND RIO RICO, TAMAULIPAS

LOCATION: At river kilometer 190, 84.6 river kilometers downstream from Anzalduas Dam.

RECORDS: Specific conductance, 1945 through current year.

REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1992

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,640	1,500	1,280	1,150	1,180	1,090	1,140	1,180	1,110	1,440	1,440	2,000
2	1,760	1,510	1,120	1,110	1,170	1,150	1,150	1,130	1,130	1,450	1,440	1,970
3	1,910	1,210	1,110	1,100	1,140	1,200	1,160	1,120	1,170	1,460	1,520	1,710
4	1,850	1,170	1,110	1,120	1,150	1,240	1,180	1,130	1,150	1,510	1,490	1,630
5	1,510	1,190	1,110	1,100	1,200	1,220	1,210	1,150	1,150	1,600	1,720	1,710
6	1,410	1,190	1,110	1,100	1,210	1,210	1,230	1,170	1,200	1,570	1,640	1,800
7	1,380	1,200	1,110	1,130	1,210	1,200	1,210	1,150	1,230	1,400	1,490	1,820
8	1,380	1,250	1,110	1,110	1,180	1,210	1,180	1,150	1,240	1,310	1,480	2,000
9	1,390	1,180	1,100	1,110	1,180	1,200	1,180	1,140	1,360	1,260	1,510	1,980
10	1,410	1,160	1,100	1,110	1,150	1,210	1,160	1,140	1,330	1,260	1,510	1,940
11	1,400	1,180	1,100	1,100	1,150	1,220	1,170	1,150	1,270	1,280	1,380	1,930
12	1,400	1,180	1,100	1,100	1,180	1,190	1,190	1,130	1,230	1,280	1,310	2,000
13	1,480	1,180	1,100	1,100	1,200	1,120	1,200	1,150	1,250	1,140	1,240	2,060
14	1,570	1,150	1,100	1,120	1,210	1,140	1,230	1,130	1,250	1,080	1,310	1,970
15	1,700	1,130	1,090	1,140	1,290	1,150	1,240	1,140	1,240	1,090	1,330	1,780
16	1,730	1,130	1,100	1,130	1,250	1,150	1,250	1,150	1,250	1,070	1,440	1,790
17	1,710	1,130	1,110	1,130	1,270	1,130	1,270	1,160	1,270	1,090	1,590	1,760
18	1,780	1,130	1,120	1,120	1,290	1,130	1,190	1,150	1,270	1,090	1,650	1,720
19	1,660	1,120	1,130	1,130	1,330	1,110	1,220	1,140	1,410	1,080	1,630	1,800
20	1,690	1,130	1,160	1,140	1,240	1,100	1,220	1,130	1,350	1,170	1,590	1,780
21	1,720	1,120	1,130	1,150	1,280	1,100	1,210	1,100	1,340	1,120	1,590	1,830
22	1,840	1,130	1,130	1,140	1,300	1,110	1,240	1,110	1,360	1,100	1,650	1,880
23	1,730	1,120	1,130	1,140	1,300	1,160	1,220	1,130	1,280	1,070	1,630	1,930
24	1,720	1,130	1,120	1,120	1,280	1,180	1,210	1,140	1,430	1,040	1,750	1,860
25	1,880	1,120	1,120	1,140	1,260	1,160	1,240	1,160	1,400	1,100	1,780	1,850
26	1,900	1,120	1,120	1,220	1,280	1,150	1,270	1,170	1,380	1,160	1,660	1,820
27	1,900	1,120	1,130	1,180	1,260	1,150	1,270	1,200	1,360	1,240	1,630	1,880
28	1,730	1,150	1,130	1,250	1,240	1,140	1,270	1,200	1,340	1,330	1,750	1,940
29	1,910		1,120	1,160	1,230	1,160	1,270	1,250	1,400	1,450	1,870	1,720
30	1,930		1,120	1,150	1,160	1,150	1,270	1,340	1,470	1,570	2,060	1,580
31	1,730		1,120		1,100		1,270	1,350		1,530		1,560

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 1992

08-4750.00 RIO GRANDE NEAR BROWNSVILLE, TEXAS AND MATAMOROS, TAMAULIPAS

LOCATION: Gaging station at river kilometer 78.3, 0.3 river kilometer downstream from El Jardin pumping plant and 11.2 river kilometers downstream from the international highway bridge between Brownsville, Texas and Matamoros, Tamaulipas.

RECORDS: Chemical and biochemical analyses, October 1967 through January 1968 and October 1974 through current year; biochemical, December 1976 through current year; specific conductance, 1955 through September 1983; suspended silt, 1955 through 1977.

REMARKS: Sampling and analyses by the U. S. Geological Survey. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey. Sampling and determinations for specific conductance prior to 1978 by the International Boundary and Water Commission.

1992 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens	pH Units	Water Temper- ature Deg C	Hardness, Total (as CaCO ₃) mg/L	Hardness, Noncarbonate (as CaCO ₃) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Feb. 11	1405	58.3	1,150	7.9	17.0	270	140	76	18
April 6	1755	180	1,080	8.0	20.0	260	120	73	18
June 10	1105	189	1,190	8.3	28.5	280	150	80	19
Aug. 26	1620	33.7	1,130	8.4	30.0	270	140	75	19
Oct. 14	1000	12.1	1,710	8.0	26.0	430	210	120	32

1992 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO ₃) mg/L	Sulfate ion (SO ₄) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO ₂) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Feb. 11	130	3	5.6	125	240	140	14	702
April 6	120	3	6.0	133	240	120	13	673
June 10	140	4	5.1	130	240	140	14	718
Aug. 26	130	3	5.6	125	240	140	14	702
Oct. 14	190	4	6.7	224	320	240	18	1,060

WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

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 following rainfall data 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		Fort Hancock Bridge		Guayuco Arroyo		Bill Shannon Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	52	17	37	11		10	26	8	12	11
Feb.	2	12	6	9		8	5	6	48	10
Mar.	12	6	14	8		6	8	6	1	7
April	8	7	9	5		7	2	5	0	7
May	31	14	43	8		11	46	12	56	19
June	5	18	10	15		21	9	15	33	42
July	9	26	4	37	16	33	21	36	45	52
Aug.	61	74	47	39	24	42	38	43	15	67
Sept.	17	33	25	29	15	36	3	31	3	64
Oct.	18	25	7	20	28	26	18	23	11	34
Nov.	0	17	3	8	22	10	8	7	10	11
Dec.	36	26	47	13	17	12	6	10	8	12
Yearly	251	275	252	202		222	190	202	242	336

Month	H. T. Fletcher Ranch		Adobes Ranch		Shafter		Kerr Mitchell Ranch		Presidio (18&W C Gage)	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	34	17	63	10	38	8	42	13	38	9
Feb.	33	10	5	6	32	13	22	10	76	8
Mar.	7	8	0	4	0	7	3	5	6	4
April	6	13	5	4	0	17	35	15	6	6
May	123	29	39	17	145	33	96	31	85	16
June	31	47	16	34	26	61	65	48	26	34
July	97	81	40	53	10	75	52	57	32	40
Aug.	31	85	13	48	33	67	26	59	5	36
Sept.	13	66	0	57	0	78	23	54	4	40
Oct.	13	37	0	18	6	37	12	34	1	20
Nov.	27	12	0	7	13	10	18	10	21	8
Dec.	28	13	3	8	14	12	13	12	12	10
Yearly	436	418	184	266	317	418	407	348	312	231

Month	Redford		La Mota Ranch		Study Butte		Terlingua Creek Station		Johnson Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	63	9	13	14	30	12	78	9	59	9
Feb.	7	5	41	7	57	9	5	6	5	5
Mar.	0	4	8	5	3	2	0	3	0	4
April	6	7	20	17	17	12	3	8	5	11
May	26	16	58	25	100	36	31	19	28	25
June	0	25	15	40	21	32	0	28	5	28
July	44	42	18	47	20	44	26	36	48	30
Aug.	14	35	79	54	0	43	13	33	11	25
Sept.	0	47	5	58	0	39	8	35	0	36
Oct.	0	21	20	27	1	27	0	20	0	19
Nov.	25	9	25	11	0	7	0	6	0	6
Dec.	6	8	10	12	2	7	4	7	2	8
Yearly	184	228	312	317	251	270	168	210	163	206

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Owens Ranch		Lewis James Ranch		Rio Grande near Dryden		Ross Foster Ranch		Jones Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	47	15	29	13	22	15	15	10	50	25
Feb.	49	20	59	17	48	13	56	15	38	30
Mar.	49	24	21	8	3	3	19	7	41	21
April	198	51	43	29	20	19	13	20	67	46
May	134	60	153	47	58	28	76	31	114	67
June	38	52	33	32	57	33	56	36	79	53
July	36	39	72	34	20	22	42	16	39	59
Aug.	92	52	21	45	33	43	18	30	0	62
Sept.	12	67	45	79	14	56	29	37	1	84
Oct.	21	56	5	39	7	26	0	27	1	59
Nov.	8	29	0	17	5	13	0	17	48	25
Dec.	10	18	0	14	1	13	5	12	0	18
Yearly	694	483	481	374	281	284	329	258	478	549

Month	Eugene Miller Ranch		Prosser Ranch No. 3		Pecos River near Langtry Station		Prosser Ranch No. 2		W. E. Sawyer Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	49	18	53	13		9	42	11	47	14
Feb.	72	25	82	23	51	20	57	25	99	31
Mar.	22	20	49	15	3	10	37	15	48	27
April	39	37	43	30	0	25	35	31		45
May	58	78	226	60	88	39	183	63		62
June	55	52	269	47	80	50	218	50		54
July	109	66	201	48	248	51	189	53		45
Aug.	36	48	47	47	6	34	0	52		67
Sept.	12	88	13	78	18	58	0	72		77
Oct.	7	61	0	46	0	42	0	41		68
Nov.	24	23	6	18	3	17	0	17		24
Dec.	16	18	18	15	4	14	12	13		26
Yearly	499	534	1,007	440		369	773	443		540

Month	Devils River at Cauthorn Ranch		Dead Man's Canyon near Comstock		Martin King Ranch		Prosser Ranch No. 1		Walker Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	47	14		11	39	14	45	12	42	12
Feb.	59	22	49	19	84	20	56	21	57	21
Mar.	22	18		12	14	10	33	13	76	15
April	10	24		30	21	24	25	31	24	27
May	139	58	56	55	146	46	130	65	150	69
June	36	50	98	57	32	44	155	46	150	59
July	7	24	83	65	89	39	183	58	168	50
Aug.	34	30	67	41	21	37	0	42	9	28
Sept.	1	53	0	60	0	67	10	68	0	69
Oct.	9	59		49	10	49	0	42	0	38
Nov.	23	15		19	13	15	0	19	10	18
Dec.	7	17		14	7	14	11	12	11	14
Yearly	387	384		432	476	379	648	429	697	420

Month	Brotherton Ranch		Harlow Ranch		Zuberbueter Ranch		Ed Crane Ranch		A. A. Baker Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	44	17	46	11	48	17	57	21	49	13
Feb.	96	25	70	19	109	30	93	28	59	20
Mar.	42	15	38	9	24	15	21	15	26	15
April	30	25	12	27	28	29	27	39	17	29
May	175	48	131	53	183	62	159	69	156	52
June	20	46	16	57	20	53	19	52	17	46
July	61	39	66	40	130	63	122	50	110	48
Aug.	12	39	10	36	26	23	39	28	14	38
Sept.	10	68	0	61	19	72	16	73	27	75
Oct.	4	42	6	47	9	36	3	50	18	44
Nov.	18	15	23	16	21	21	39	22	35	18
Dec.	6	12	13	14	10	21	17	21	14	14
Yearly	518	391	431	390	627	442	612	468	542	412

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WATER BULLETIN NUMBER 62 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Cow Creek near Comstock		Comstock		Amistad Reservoir near Comstock		Tuffy Whitehead Ranch		Gillis Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	140	22	49	15	50	11	47	11	49	14
Feb.		10	78	21	85	18	69	20	77	25
Mar.		11	24	16	6	10	45	18	46	22
April	140	33	25	33	42	30	30	32	74	38
May	125	39	128	50	125	43	122	47	113	62
June		33	3	53	3	38	21	46	21	54
July		47	80	41	74	31	150	45	158	60
Aug.		41	8	40	5	32	11	32	12	34
Sept.		60	6	62	9	54	6	71	31	75
Oct.		42	0	44	18	40	3	41	4	44
Nov.		18	36	16	16	16	56	18	43	24
Dec.		19	15	16	7	9	17	14	28	21
Yearly		375	452	407	440	332	577	395	656	473

Month	Goldwire Ranch		H. K. Fawcett Ranch		Pafford Crossing		Buoy No. 11		H. T. Miers Ranch No. 2	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	34	15	41	18	33	15	54	13	42	13
Feb.	80	20	78	21	74	21	80	19	63	24
Mar.	33	18	33	19	28	15	17	14	45	22
April	76	43	22	40	80	36	21	38	51	38
May	89	62	103	61	100	50	148	54	71	66
June	38	54	38	37	23	53	3	50	36	56
July	78	58	76	46	136	54	83	41	71	46
Aug.	15	54	29	53	1	47	2	33	26	50
Sept.	23	55	10	77	104	70	16	57	16	73
Oct.	3	51	2	56	3	51	10	40	6	51
Nov.	42	27	28	21	27	22	22	16	7	23
Dec.	33	17	23	16	28	17	21	11	31	20
Yearly	544	474	483	465	637	451	477	386	465	482

Month	Vinegarone		Evans Creek near Comstock		H. T. Miers Ranch Headquarters		J. G. Brite Ranch		Big Satan Creek Station	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	44	17	53	10	15	15	49	12	28	16
Feb.	99	24	66	20	105	27	71	22	98	21
Mar.	41	18	20	14	46	20	47	17		
April	33	36	33	28	58	44	32	36	17	42
May	192	74	58	44	122	64	59	56	83	57
June	47	54	8	44	25	63	51	56	48	52
July	35	67	61	4	133	44	101	43	135	60
Aug.	69	69	0	43	83	47	13	42	1	58
Sept.	6	68	0	66	14	62	17	77	66	60
Oct.	10	63	3	47	3	64	18	49	3	54
Nov.	12	24	13	20	34	23	33	19	41	25
Dec.	31	20	15	14	29	18	22	15	35	20
Yearly	619	534	330	404	667	491	513	444		487

Month	Sellers Ranch		Lowry Ranch No. 2		Devils Lake		Rough Canyon near Del Rio		Cliff Lowry Ranch No. 1	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	60	11	49	13	47	16	46	11	21	14
Feb.	38	18	61	21	75	22	46	24	40	26
Mar.	20	13	43	20	46	16	38	19	44	21
April	19	31	14	39	23	40	51	31	23	41
May	38	47	40	60	63	55	41	66	83	68
June	35	61	73	58	13	61	57	59	82	59
July	88	38	102	51	111	39	90	53	96	50
Aug.	6	36	8	50	0	39	18	44	29	48
Sept.	6	59	59	66	36	62	13	72	60	83
Oct.	18	49	13	48	8	48	18	61	11	54
Nov.	25	19	31	24	36	20	33	26	37	26
Dec.	15	14	20	17	23	19	25	20	19	17
Yearly	368	396	513	467	481	437	476	486	545	507

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Amistad Dam		Stewart Ranch		North Fork San Pedro		Long Ranch		Middle Fork San Pedro	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	57	15	40	13	46	13	48	15	48	12
Feb.	71	24	79	24	46	22	95	26	48	24
Mar.	45	20	19	18	36	19	43	20	61	21
April	31	43	20	38	32	39	26	42	10	36
May	58	61	59	51	24	62	91	61	22	61
June	22	56	17	56	70	61	39	60	41	58
July	82	49	105	51	88	68	88	57	81	57
Aug.	30	47	40	39	45	45	50	35	76	43
Sept.	15	90	41	68	22	65	21	62	20	64
Oct.	4	47	29	51	10	53	4	45	13	59
Nov.	55	24	39	23	15	25	23	23	5	21
Dec.	12	18	13	16	17	19	12	18	9	18
Yearly	482	494	501	448	451	491	540	464	434	474

Month	Hutto Ranch No. 2		Gillis Headquarters Ranch		Hutto Ranch No. 1		Lewis Ranch		Laughlin Air Force Base	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	49	15	50	19	41	14	59	17	59	16
Feb.	84	27	112	30	87	24	69	30	83	26
Mar.	47	18	43	24	66	19	62	23	53	16
April	26	48	34	46	30	44	52	52	63	52
May	103	54	93	74	93	59	152	63	140	57
June	49	60	68	69	72	61	130	74	87	72
July	116	55	125	66	93	57	58	45	110	65
Aug.	100	48	45	57	38	43	55	52	22	44
Sept.	32	82	43	62	42	74	27	68	28	66
Oct.	24	49	7	61	32	53	34	66	42	63
Nov.	18	24	37	32	15	22	31	30	19	25
Dec.	9	16	27	23	11	16	15	21	11	17
Yearly	657	496	684	563	620	486	744	541	717	519

Month	Maverick County Canal Headgate		Wardlaw Standart Ranch		Pinto Creek Station		Las Moras Creek		Normandy	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	43	15	70	24	3	12	51	19	55	20
Feb.	130	27	115	35	2	18	85	27	95	24
Mar.	33	15	68	29	10	14	5	17	19	19
April	55	44	83	47		44	95	41	218	54
May	142	57	122	71	152	60	83	55	86	71
June	86	56	58	80	91	59	173	71	124	65
July	140	47	99	46	111	42	66	40	63	54
Aug.	0	37	13	26	63	40	5	44	4	47
Sept.	0	64	33	56		64	11	81	20	74
Oct.	0	54	11	49		52	0	57	0	59
Nov.	0	25	6	35		27	0	25	0	25
Dec.	0	18	9	24		15	15	20	12	20
Yearly	629	459	687	522		447	589	497	696	532

Month	Lateral No. 12 Headgate		Coal Mine		Eagle Pass		Trees Farm		Farias Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	58	16	69	17	88	23	88	17	78	19
Feb.	107	21	112	24	116	28	99	24	71	29
Mar.	3	14	3	16	6	18	2	11	5	13
April	183	49	90	45	180	51	141	49	145	52
May	56	64	49	66	60	91	50	75	47	75
June	178	64	179	64	88	80	39	59	47	60
July	64	42	112	52	252	54	122	40	115	50
Aug.	0	38	11	38	12	58	9	41	14	46
Sept.	20	69	14	79	14	79	26	64	23	80
Oct.	0	59	14	60	3	57	8	65	36	65
Nov.	0	22	0	19	3	23	1	20	2	20
Dec.	14	18	21	17	24	23	24	20	26	22
Yearly	683	476	674	497	846	585	609	485	609	531

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Month	Indio Ranch		El Indio		Van Dalsem Farm		Keisling Farm		Apache Ranch	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	88	20	87	21	87	18	89	20	138	20
Feb.	59	24	76	27	61	25	56	26	20	22
Mar.	4	14	3	14	5	13	7	16	18	10
April	126	54	145	49	172	56	188	53	158	47
May	98	77	46	82	60	77	69	71	193	65
June	50	63	37	59	32	55	38	68	82	52
July	89	46	80	35	79	37	76	36	58	53
Aug.	15	40	32	49	3	41	7	39	43	46
Sept.	31	76	48	73	15	70	14	64	38	77
Oct.	41	60	40	58	21	59	31	57	122	66
Nov.	2	20	0	19	0	20	0	19	68	23
Dec.	27	21	28	20	25	21	26	23	65	22
Yearly	630	515	622	506	560	492	594	492	1,003	503

Month	Laredo Water Plant		Corralitos Ranch		Huisache Ranch		Zapata Water Plant		Falcon Dam	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	96	21	145	22	139	24	119	25	95	24
Feb.	15	22	162	24	139	26	119	25	65	26
Mar.	28	14	52	14	34	16	23	14	11	15
April	161	33	63	31	68	35	63	39	67	35
May	85	62	154	58	162	60	161	70	106	67
June	14	53	0	55	3	62	0	59	26	63
July	30	30	37	37	15	38	10	42	4	35
Aug.	7	47	112	51	100	41	107	50	48	60
Sept.	39	73	91	75	71	92	60	101	39	103
Oct.	19	45	75	52	66	55	77	47	76	51
Nov.	15	21	85	23	54	22	57	24	48	28
Dec.	27	24	58	19	39	23	33	25	21	21
Yearly	545	445	1,034	461	890	494	829	521	606	528

Month	Roma (Int'l. Bridge)		Garciasville		Los Ebanos		La Joya		Penitas (Edinburg Pumping Plant)	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	108	24	75	25	86	27	66	27	88	34
Feb.	59	27	15	27	11	24	3	26	24	28
Mar.	16	14	4	11	4	11	0	11	2	15
April	60	36	30	30	66	33	61	25	59	32
May	73	52	191	68	100	58	108	57	201	66
June	34	57	46	62	65	64	76	66	17	70
July	7	34	10	34	46	33	18	28	29	38
Aug.	46	48	21	45	33	44	0	34	27	57
Sept.	44	103	72	83	48	79	3	77	34	90
Oct.	87	50	17	42	24	44	51	43	51	64
Nov.	39	21	52	23	99	22	18	20	55	23
Dec.	21	15	21	19	19	21	48	23	34	27
Yearly	594	481	554	469	601	460	452	437	621	544

Month	United Irrigation District		Edinburg Filtration Plant		La Feria Materials Yard		La Feria Pumping Plant		CCWCID #19 (Adams Gardens)	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	103	33	107	39	119	46	109	47	76	35
Feb.	24	31	29	31	0	53	0	46	42	42
Mar.	0	22	9	18	0	21	0	23	4	21
April	109	35	94	39	137	52	117	58	116	47
May	217	81	155	63	84	69	94	75	183	69
June	15	65	10	62	28	88	25	80	45	68
July	24	41	27	41	23	65	20	58	19	49
Aug.	36	54	7	56	13	71	36	82	44	69
Sept.	0	76	39	93	127	130	150	155	62	110
Oct.	51	59	53	54	48	76	46	93	49	65
Nov.	8	19	50	24	112	38	124	49	90	39
Dec.	0	26	14	31	19	42	23	40	14	31
Yearly	587	542	594	551	710	751	744	806	744	645

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RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	San Benito Pump		CCWCID #11 (Bayview Dist. Off.)						
	1992	Average	1992	Average					
Jan.	24	36	110	47					
Feb.	97	29	41	42					
Mar.	5	20	0	18					
April	104	37	70	49					
May	252	71	82	65					
June	110	64	79	58					
July	0	41	0	46					
Aug.	27	61	56	66					
Sept.	127	111	84	143					
Oct.	0	64	71	59					
Nov.	106	32	290	43					
Dec.	0	34	61	40					
Yearly	852	600	944	676					

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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 following rainfall data. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the offices 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	Samalayuca, Chihuahua		Luis L. Leon, Chihuahua		San Juanito, Chihuahua		Balleza, Chihuahua		Estacion Rosario, Durango	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	39	12	8	9	27	50	60	12	91	12
Feb.	8	11	18	6	11	31	19	9	5	6
Mar.	15	10	6	5	17	15	7	4	0	3
April	12	5	2	5	11	23	12	6	0	7
May	76	9	32	13	9	17	41	7	18	16
June	27	21	5	28	7	59	8	7	18	52
July	61	51	7	52	36	220	64	120	76	120
Aug.	58	51	13	54	24	177	70	121	82	121
Sept.	21	49	29	47	17	103	45	82	0	111
Oct.	23	23		28		60	14	22	8	27
Nov.	14	12		11		33	2	11	0	8
Dec.	38	12		10		53	10	12	0	11
Yearly	392	266		271		841	352	448	280	494

Month	Hidalgo del Parral, Chihuahua		El Sitio, Chihuahua		Jimenez, Chihuahua		Ojo Caliente, Chihuahua		Camargo, Chihuahua	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	29	5	71	10	18	8	20	8	21	10
Feb.	6	5	42	9	16	4	4	5	3	6
Mar.	2	2	8	4	2	3	4	4	2	5
April	1	5	29	7	1	4	1	4	2	6
May	20	12	62	14	12	13	23	12	18	13
June	6	43	21	43	0	36	5	42	4	38
July	26	108	87	108	2	82	21	82	9	75
Aug.	22	111	130	123	2	65	19	73	33	70
Sept.	53	113	82	84	57	58	42	67	21	66
Oct.	14	28	33	25	1	27	0	27	2	24
Nov.	4	12	1	9	1	6	5	6	5	11
Dec.	4	10	1	9	0	6	1	7	0	11
Yearly	182	454	567	445	110	312	145	337	120	335

Month	Las Virgenes, Chihuahua		Delicias, Chihuahua		Meoqui, Chihuahua		Presa Chihuahua, Chihuahua		Chihuahua, Chihuahua	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	28	8	30	9	25	9	34	8		8
Feb.	13	3	14	4	9	4	15	5		5
Mar.	4	2	2	3	3	3	1	4		5
April	4	7	3	8	12	11	4	8		7
May	20	9	23	10	28	13	18	21		13
June	8	29	5	31	4	31	11	49		39
July	53	68	4	63	16	64	41	102		91
Aug.	24	68	32	65	40	77	38	117		91
Sept.	38	61	19	59	23	59	13	89	42	74
Oct.	20	22	3	22	11	25		26	48	24
Nov.	3	6	4	7	0	7		8	6	10
Dec.	5	9	2	9	0	11		10	10	11
Yearly	220	292	141	290	171	314		447		378

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IN MEXICO

IN MILLIMETERS

Month	Posta Zootecnica, Chihuahua		Villa Aldama, Chihuahua		Presa Luis L. Leon, Chihuahua		Maclovio Herrera, Chihuahua		Coyame, Chihuahua	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	25	10	61	8	8	7	6	8	40	8
Feb.	18	6	20	5	18	4	21	5	57	9
Mar.	2	4	0	5	7	3	7	3	7	3
April	4	11	3	9	2	7	2	9	5	9
May	6	18	25	11	32	16	7	14	77	18
June	12	36	9	35	5	34	3	32	15	44
July	38	83	16	68	7	57	4	68	59	62
Aug.	50	100	55	74	13	71	44	71	6	62
Sept.	52	81	15	71	29	55	0	76	14	67
Oct.		30	71	27	24	22	0	22	30	27
Nov.		9	12	13	13	8	0	9	19	10
Dec.		9	5	9	2	9	0	14	6	8
Yearly		397	292	335	153	293	87	331	328	327

Month	Ojinaga (IB&WC), Chihuahua		Ojinaga (M.S. of Mexico), Chihuahua		Manuel Benavides, Chihuahua		Sierra Mojada, Coahuila		El Guaje, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	58	10	17	8	45	6	41	17	48	30
Feb.	49	8	33	6	75	8	28	8	45	13
Mar.	10	4	0	5	2	5	0	6	16	9
April		9	9	8	9	9	42	9	49	25
May	96	15	22	15	75	30	41	27	61	28
June	51	36	27	32	37	42	25	56	3	20
July	45	42	22	39	51	50	45	71		73
Aug.	7	44	4	40	50	63	45	76		51
Sept.	7	44	1	42	36	65	22	75		95
Oct.	6	25	5	26	18	26	1	33		21
Nov.		10	8	10	14	9	0	13		9
Dec.		10		11	4	10	7	17		6
Yearly		257		242	416	323	311	408		380

Month	La Chuparrosa, Coahuila		Amistad Res. near Tlaloc, Coahuila		La Amistad, Coahuila		Represa Amistad, Coahuila		Cd. Acuna, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	43	9		11	52	18	49	11	68	16
Feb.	60	15	92	20	74	26	12	15	105	24
Mar.	11	11	30	19	38	20	42	14	62	20
April	31	31	33	30	27	40	17	26	27	46
May	158	39	107	49	79	65	67	44	167	62
June	5	36	8	47	8	61	9	39	93	57
July	3	35	170	72	105	49	110	51	143	48
Aug.	5	42	0	42	20	16	24	33	18	40
Sept.	5	59	38	74	21	74	16	65	11	82
Oct.	18	37	9	44	5	47	9	45	10	60
Nov.	14	16	35	21		30		17		20
Dec.	7	9	19	15		19		10		17
Yearly	360	339		444		465		370		492

Month	Presa Centenario, Coahuila		Palestina, Coahuila		Presa San Miguel, Coahuila		Ejido San Miguel, Coahuila		Jimenez, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	63	15	49	21	50	15	0	18	53	18
Feb.	104	21	96	26	100	24	27	7	83	24
Mar.	100	22	103	20	18	16	27	6	54	20
April	46	43	86	47	80	43	13	21	79	46
May	137	62	227	67	193	65	77	33	113	62
June	70	62	44	59	61	63	9	45	135	66
July	198	45	359	56	466	64	5	31	72	45
Aug.	1	57	11	56		62	49	50	5	42
Sept.	3	83		83	7	93	20	35	14	75
Oct.	6	62	16	56	7	56	0	13	4	59
Nov.	10	26	22	23	30	31	0	10		27
Dec.		17	23	19	19	18	0	6		19
Yearly		515		533		550	227	275		503

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IN MEXICO

IN MILLIMETERS

Month	Piedras Negras, Coahuila		Zaragoza, Coahuila		Allende, Coahuila		Villa Hidalgo, Coahuila		Colombia (CNA), Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	54	20	58	33	63	14	99	22	89	27
Feb.	90	24	91	26	127	24	14	23	11	26
Mar.	9	15	24	16	25	10	7	17	35	17
April	206	54	159	64	286	44	209	50	108	53
May	192	94	81	84	70	68	208	71	179	81
June	75	68	7	69	45	55	59	58	80	50
July	286	60	238	58	117	44	10	33	20	38
Aug.	1	57	18	53	0	58	26	52	19	19
Sept.	27	79	63	70	78	77	32	78	140	40
Oct.	3	67	3	43	0	45	23	51	26	57
Nov.	2	23	8	26	0	20	0	23	52	22
Dec.	10	18	42	22	0	17	0	20	53	28
Yearly	955	579	792	564	811	476	498	498	812	458

Month	Nv. Laredo (IB&WC), Tamaulipas		Jarita, Nuevo Leon		Muzquiz, Coahuila		Sabinas, Coahuila		Ejido 1ro de Mayo, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	93	22	105	21	21	21	28	15	35	29
Feb.	13	26	20	30	31	16	41	18	5	9
Mar.	25	14	8	13	11	19	26	10	0	5
April	104	38	210	49	120	32	118	34	28	40
May	138	78	120	82	139	95	107	69	58	39
June	23	66	31	44	42	83	33	55	39	38
July	65	37	33	38	120	76	118	43	12	38
Aug.	12	55	50	14	75	45	45	52	0	17
Sept.	38	78	67	138	125	41	86	37	31	31
Oct.	17	57	47	22	53	3	46	13	31	31
Nov.	33	29	27	11	28	20	16	0	5	5
Dec.	31	22	24	14	20	25	13	18	6	6
Yearly	592	522	492	683	643	605	457	245	288	288

Month	Juarez, Coahuila		Progreso, Coahuila		Presa Carranza, Coahuila		Lag. de Salinillas, Nuevo Leon		Anahuac, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	68	16	38	13	51	19	68	19	62	19
Feb.	19	15	32	19	7	18	18	19	16	19
Mar.	12	10	1	9	4	12	3	13	8	13
April	177	39	40	31	71	33	74	34	47	32
May	57	56	45	53	49	53	47	61	72	64
June	76	45	87	56	112	47	42	50	45	52
July	31	23	60	30	95	27	15	24	20	37
Aug.	0	31	16	48	9	48	119	56	59	59
Sept.	36	77	101	76	61	77	63	79	130	81
Oct.	16	41	35	44	3	43	6	50	43	43
Nov.	8	15	13	16	35	15	26	17	19	19
Dec.	35	14	22	13	42	16	47	18	19	19
Yearly	535	382	490	408	539	408	528	440	457	457

Month	Lampazos, Nuevo Leon		Ocampo, Coahuila		Cuatro Ciénegas, Coahuila		Monclova, Coahuila		Castanos, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	73	19	33	13	68	10	53	12	2	16
Feb.	35	18	21	8	30	9	16	13	0	14
Mar.	8	13	0	4	0	4	5	7	0	5
April	32	30	36	19	5	10	17	15	153	28
May	23	49	92	33	69	20	27	36	29	50
June	35	54	53	43	68	19	43	34	55	52
July	65	44	0	39	17	26	36	45	14	45
Aug.	50	36	31	40	56	32	29	60	57	57
Sept.	98	119	36	50	0	37	111	80	68	68
Oct.	28	52	2	26	0	19	1	31	40	40
Nov.	22	26	11	11	0	11	11	15	0	8
Dec.	11	19	70	13	3	12	26	16	0	7
Yearly	480	479	299	316	209	375	364	390	390	390

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Espinazo, Nuevo Leon		Reata, Coahuila		La Popa, Nuevo Leon		Hacienda Mamulique, Nuevo Leon		Villaldama, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	81	36	73	13	26	12	81	28	59	34
Feb.	23	16	13	7	0	13	14	10	16	13
Mar.	2	3	0	6	0	5	4	11	6	7
April	16	34	4	15	0	13	0	44	37	40
May	20	58	39	23	18	24	68	44	119	54
June	3	30	1	29	1	33	0	75	53	69
July	12	39		27	0	27	0	67	55	53
Aug.		38		39	25	38	56	75	36	65
Sept.	29	56		41	1	62	60	108	89	126
Oct.	25	33		23	0	16	54	41	20	29
Nov.	11	9		12	4	14	32	26	34	17
Dec.	27	16		10	25	16	25	26	23	17
Yearly		368		245	99	273	394	555	547	524

Month	El Alamo, Nuevo Leon		Ojo de Agua (Sabinas), N. L.		Sabinas Hidalgo, Nuevo Leon		Garza Ayala, Nuevo Leon		Vallecillo, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	90	41	49	36	64	22	74	25	70	22
Feb.	55	21		21	17	20	19	17	13	20
Mar.	0	12		8	9	15	4	11	0	12
April	49	57		42	57	34	44	42		48
May	106	83		88	155	70	91	53	43	51
June	111	67		51	15	84	24	57	51	79
July	0	24		45	26	63	5	85	17	40
Aug.	52	45		73	65	57	21	61		52
Sept.		84		56	153	154	81	102		107
Oct.		36		36	31	59	24	53		49
Nov.		12		12	29	23	31	35		20
Dec.	16	32		12	31	17	30	17		18
Yearly		514		480	652	618	448	558		518

Month	Sombrettillo, Nuevo Leon		La Escondida, Nuevo Leon		Agualeguas, Nuevo Leon		Cerralvo, Nuevo Leon		General Trevino, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	92	53	161	47	92	44	116	22	86	36
Feb.	58	22	16	27		21	24	17	27	27
Mar.	0	15	7	19		14	10	17	0	15
April	59	62	54	67		46	93	43	26	53
May	78	46	76	48		64	153	87	58	79
June	17	85	40	79		60	4	88	6	54
July	0	64	10	47	T	39	18	50	0	29
Aug.	19	61	55	108	29	73	111	91	T	66
Sept.	102	156	105	109	0	55	71	133	73	99
Oct.	39	39	39	45	39	48	15	60	15	40
Nov.	41	30	56	20	40	20	61	17	4	15
Dec.	18	25	17	44	19	25	10	15	2	30
Yearly	523	658	636	660		509	686	640	297	543

Month	Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas		Comales, Tamaulipas		Presa Marte Gomez, Tamaulipas		Camargo, Tamaulipas	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	85	26	97	28	101	25	24	31	90	28
Feb.	34	27	25	31	30	23	24	36	36	29
Mar.	2	12	7	14	3	14	T	8	14	17
April	52	39	43	39	104	43	91	44	54	38
May	102	71	174	70	41	57	125	67	256	72
June	29	66	48	68	58	59	103	71	70	73
July	2	35	9	32	0	38	80	62	0	36
Aug.	12	52	70	64	69	63		25	62	45
Sept.	77	97	38	106	25	107		81	49	114
Oct.	122	49	54	50	15	59		23	23	53
Nov.	78	27	47	25	66	22		17	70	30
Dec.	11	21	16	23	18	24		34	18	29
Yearly	606	522	628	550	530	534		479	742	564

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Parras, Coahuila		General Cepeda, Coahuila		San Juan de Vaqueria, Coahuila		Hipolito, Coahuila		Saltillo, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	124	21	79	14	117	36	36	19	108	17
Feb.	14	9	15	12	17	14	12	9	8	13
Mar.	15	7	0	7	6	7	3	9	5	8
April	19	11	5	13	10	26	0	15	10	17
May	48	32	63	23	84	49	10	13	44	29
June	10	44	7	51	16	53	0	8	4	50
July	43	65	63	79	37	83	0	12	43	65
Aug.	30	69	63	72	82	80	0	14	48	61
Sept.		68	79	72	56	65	9	24	26	64
Oct.		33	4	30	11	44	12	17	5	31
Nov.		16	32	13	23	11	23	10	28	20
Dec.		18	0	14	3	7	0	5	23	16
Yearly		393	410	400	462	475	105	155	352	391

Month	Ramos Arizpe, Coahuila		Gomez Farias, Coahuila		Carbonera, Nuevo Leon		Rusio, Nuevo Leon		Huachichil, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	111	14	180	50	10	23	133	22	400	106
Feb.	18	10	39	21	0	13	21	17	160	52
Mar.	7	7	4	4	10	11	12	13	9	12
April	10	14	10	26	7	27	16	33	42	37
May	78	24	103	51	10	44	169	49	441	112
June	16	26	34	54	11	61	53	51	200	87
July	40	37	16	54	0	73	81	47	60	106
Aug.	7	33	54	61	0	75	47	49	64	63
Sept.	6	46	29	59	0	64	20	49	147	82
Oct.	9	20	27	27	0	40	27	34	0	33
Nov.	21	12	12	12	0	21	45	19	47	18
Dec.	14	13	16	23	0	22	14	22	44	31
Yearly	330	256		442	48	474	648	405	1,614	739

Month	San Antonio de las Alazanas, Coahuila		San Rafael, Nuevo Leon		Potosi, Nuevo Leon		Cienega del Toro, Nuevo Leon		Potrero de Abrego, Coahuila	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	207	35	318	33	146	28	209	38		37
Feb.	42	20	94	23	17	17	54	17		22
Mar.	17	12	14	14	20	9	56	20		23
April	19	26	72	25	25	33	26	41		42
May	105	50	0	42	205	50	93	66		48
June	44	64	0	52	19	28	43	56	61	37
July	57	82		62	33	37	53	75	25	28
Aug.	37	78		66	24	37	51	78	25	58
Sept.	68	67	25	55	20	39	51	84	79	67
Oct.	29	44	48	45	29	35	47	48	56	31
Nov.	58	25	85	28	61	30	66	20	53	36
Dec.	18	25	19	24	17	37	40	20		39
Yearly	701	528		469	616	380	789	563		468

Month	Cienega de La Purisima, Coahuila		La Huasteca, Nuevo Leon		Laguna de Sanchez, Nuevo Leon		Rinconada, Nuevo Leon		Icamole, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	47	62	53	19	200	23	76	12	59	12
Feb.	0	53	8	4	11	16	6	8	11	8
Mar.	0	16	9	5	21	10	22	5	1	3
April	82	39	26	16	28	30	10	14	21	10
May	0	75	52	50	126	49	51	18	22	19
June	79	80	4	36	5	81	0	26	4	23
July	211	101	4	36	28	64	9	15	3	15
Aug.	148	119	29	36	59	105	59	29	6	20
Sept.	128	132	66	95	140	166	64	54	12	49
Oct.	34	85	15	27	82	63	22	16	16	23
Nov.	120	45	10	6	165	21	9	19	19	15
Dec.	0	46	9	18	44	17		10	10	13
Yearly	849	853	284	348	909	645		222	184	210

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Mina, Nuevo Leon		Santa Catarina, Nuevo Leon		Agua Blanco, Nuevo Leon		La Cruz, Nuevo Leon		Las Comitas, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.		15	71	19	141	25	144	34	63	11
Feb.	16	10	20	11	40	13		17	22	11
Mar.	2	4	5	8	22	11		11	6	6
April	181	22	24	21	37	21		33	19	20
May	46	21	32	27	141	49		51	96	32
June	14	37	24	47	41	54		78	0	56
July	11	29	0	41	77	81	126	85	11	42
Aug.	12	41	33	67	111	85	134	108	74	79
Sept.	97	81	62	118	88	129	68	168	50	123
Oct.	31	26	11	41	61	56	26	56	T	41
Nov.	13	15	13	13	51	22	40	22	T	12
Dec.	23	13	20	14	44	17	29	18	T	9
Yearly		314	315	427	854	563		681	341	442

Month	Pajonal, Nuevo Leon		Casillas, Nuevo Leon		Rayones, Nuevo Leon		Galeana, Nuevo Leon		Linares, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	73	19	178	28	120	14	136	20	117	25
Feb.	8	16	33	15	10	10	23	17	9	22
Mar.	4	8	8	13	22	8	19	11	59	26
April	41	30	41	29	20	27	43	31	65	56
May	74	54	104	58	105	48	188	51	169	94
June	24	63	28	80	12	53	55	57	62	101
July	35	63	42	65	3	31	35	48	3	68
Aug.	51	88	155	82	58	70	110	66	190	97
Sept.	56	136	124	112	78	90	42	86	100	161
Oct.	24	47	33	61	50	40	37	41	73	84
Nov.	28	13	59	19	36	11	37	17	31	28
Dec.	24	16	27	15	9	11	10	20	13	28
Yearly	442	553	832	577	523	413	735	465	891	790

Month	La Pomona, Nuevo Leon		Vaqueria, Nuevo Leon		Cabezones, Nuevo Leon		Montemorelos, Nuevo Leon		Villa Allende, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	77	37	103	43	126	32	140	25	143	32
Feb.	8	17	27	23	22	21	29	25	34	32
Mar.	70	25	11	25	32	27	47	28	40	32
April	70	57	33	44	39	64	44	58	137	71
May	90	105	177	100	105	100	146	87	101	100
June	90	81	52	70	44	102	11	98	2	137
July	45	57	10	34	9	69	2	61	0	86
Aug.	77	70	50	64	148	146	220	107	211	135
Sept.	28	116	85	102	58	208	89	175	212	237
Oct.	138	35	122	46	143	84	73	93	129	127
Nov.	42	15	53	18	49	26	40	39	48	40
Dec.	13	33	67	46	18	20	20	24	39	29
Yearly	748	648	790	615	793	899	861	820	1,096	1,058

Month	Rodrigo Gomez Res., Nuevo Leon		Cerritos, Nuevo Leon		Monterrey, Nuevo Leon		Topo Chico, Nuevo Leon		San Nicolas, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	54	25	89	27	67	17	79	15	75	29
Feb.	22	24	21	16	13	17	19	14	16	26
Mar.	12	26	25	15	7	18	15	13	19	18
April	143	49	129	49	70	31	33	30	25	41
May	92	74	91	100	88	46	127	44	125	77
June	9	137	2	144	13	69	2	56	3	58
July	6	99	14	122	1	57	5	42	6	48
Aug.	191	151		141	26	80		74	58	48
Sept.	138	250		297	76	154		123	45	57
Oct.	77	123		99	42	77		74	34	56
Nov.	34	32		19	24	29		18	22	13
Dec.	T	23		16	12	18		13	11	24
Yearly	778	1,013		1,045	439	613		516	439	495

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Mimbres, Nuevo Leon		Cienega de Flores, Nuevo Leon		San Bartolo, Nuevo Leon		La Arena, Nuevo Leon		Ejido Marin, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	219	44	69	30	96	62	75	24	79	35
Feb.	48	29	14	23	31	20	17	19	18	18
Mar.	46	26	13	23	24	12	10	14	3	12
April	62	42	34	36	50	41	55	33	57	33
May	126	72	109	65	210	78	168	72	102	65
June	60	81	8	82	13	63	0	74	4	58
July	79	73	29	58	17	46	6	69	1	49
Aug.	91	87	96	106	42	42	71	78	22	60
Sept.	47	95	73	136	74	85	45	127	19	102
Oct.		51	57	62	65	57	69	60	52	37
Nov.	61	31	31	27	42	21	31	19	32	15
Dec.	76	34	11	29	25	35	10	18	21	34
Yearly		665	544	677	689	562	557	607	410	518

Month	Higueras, Nuevo Leon		Dr. Gonzales, Nuevo Leon		San Juan, Nuevo Leon		Tepehuaje, Nuevo Leon		El Realito, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	115	21	109	43	118	18	119	43	113	33
Feb.	20	16	14	14	30	23	24	19	13	13
Mar.	14	17	7	12	11	17	6	15	6	15
April	77	32	114	43	91	56	110	52	68	42
May	121	54	169	74	58	65	81	91	107	76
June	7	67	9	71	1	76	4	79	40	75
July	27	56	0	41	1	55	3	50	0	57
Aug.	107	85	10	69	40	88	31	79	83	85
Sept.	188	126	15	75	101	137	63	123	33	118
Oct.	66	47	45	30	67	78	87	49	89	45
Nov.	46	20	61	21	42	25	36	17	34	11
Dec.	41	20	113	56	16	18	6	25	3	24
Yearly	829	561	666	549	575	656	570	642	589	594

Month	Las Enramadas, Nuevo Leon		Los Ramones, Nuevo Leon		Una de Gato, Nuevo Leon		Pobladores, Nuevo Leon		El Cuchillo, Nuevo Leon	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	124	26	103	23	109	40	111	52	1	18
Feb.	0	17	17	19	17	17	13	24	33	15
Mar.	4	16	4	16	8	12	3	14	4	12
April	55	44	67	37	93	55	65	50	77	35
May	139	73	94	72	88	80	103	63	80	61
June	0	80	42	82	28	104		60	6	66
July	7	57	19	47	16	56	0	32	0	46
Aug.	140	93	26	85	34	76	66	42	158	74
Sept.	17	156	11	140	117	123	128	103	47	110
Oct.	80	65	81	63	25	72	188	44	83	56
Nov.	43	19	54	18	40	19	54	17	60	15
Dec.	0	21	7	17	0	40	14	50	6	15
Yearly	609	667	525	619	575	694		551	554	523

Month	Cerro Prieto, Nuevo Leon		Madero(Los Aldamas), Nuevo Leon		General Bravo, Nuevo Leon		El Brasil, Nuevo Leon		Reynosa, Tamaulipas	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	130	31	127	33	76	22	100	33	99	32
Feb.	15	17	25	23	26	16	29	28	31	30
Mar.	46	16	16	17	11	14	0	8	2	17
April	67	38	59	37	83	37	91	45	152	34
May	163	109	102	79	59	73	87	66	103	73
June	58	101	2	81	4	68	27	48	28	59
July	12	48	3	55	2	53	0	44	39	41
Aug.	43	79	40	99	105	69	45	47	30	47
Sept.	35	126	71	128	59	111	68	92	113	93
Oct.	37	59	44	36	100	48	109	39	81	60
Nov.	37	19	59	15	90	22	62	17	64	23
Dec.	18	27	3	25	4	20	10	20	17	25
Yearly	661	670	551	628	619	553	628	487	759	534

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Bajo Rio San Juan, Tamps., No. 3-63		Bajo Rio San Juan, Tamps., No. 3-60		Bajo Rio San Juan, Tamps., No. 3-58		Bajo Rio San Juan, Tamps., No. 3-55		Bajo Rio San Juan, Tamps., 3-48A	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	109	49	129	44	133	50	174	52	123	51
Feb.	25	44	27	34	28	37	40	42	53	47
Mar.	0	13	0	15	2	16	0	16	0	13
April	170	41	143	44	102	41	130	49	90	34
May	170	73	143	75	102	75	158	72	139	73
June	28	86	23	85	43	76	20	76	5	60
July	28	51	23	52	83	68	41	62	25	33
Aug.	39	67	21	56	12	59	55	63	4	27
Sept.	73	124	93	129	115	128	143	110	136	100
Oct.	112	69	36	72	37	71	52	70	69	61
Nov.	138	25	123	27	85	25	80	23	124	34
Dec.	27	32	31	33	45	32	29	32	20	36
Yearly	919	674	792	666	787	678	922	667	788	569

Month	Bajo Rio San Juan, Tamps., No. 3-47		Bajo Rio Bravo, Tamps., No. 3-15		Bajo Rio Bravo, Tamps., No. 3-17		Bajo Rio Bravo, Tamps., No. 3-14		Control, Tamaulipas	
	1992	Average	1992	Average	1992	Average	1992	Average	1992	Average
Jan.	130	49	97	47	78	44	113	40	94	37
Feb.	46	36	25	35	31	35	49	38	27	29
Mar.	0	14		19		16		14	T	16
April	139	43	114	49	128	39	134	39	126	43
May	204	87	160	72	160	70	156	86	178	74
June	15	79	8	85	8	69	15	67	69	70
July	35	55	13	61	50	57	46	58	7	45
Aug.	26	59	19	85	25	82	20	61	103	81
Sept.	110	110	41	104	54	117	17	93	55	126
Oct.	68	60	51	63	68	61	65	61	94	67
Nov.	129	26	122	30	45	30	170	27	145	33
Dec.	18	31	13	36	5	33	12	35	14	29
Yearly	920	649		686		653		619	912	650

Month	Valle Hermoso, Tamaulipas								
	1992	Average							
Jan.	82	32							
Feb.	20	31							
Mar.	3	16							
April	187	54							
May	197	68							
June	0	74							
July	33	52							
Aug.	10	65							
Sept.	68	125							
Oct.	56	67							
Nov.	5	32							
Dec.	10	25							
Yearly	671	641							

AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED
With Averages for the 122 Years 1871 - 1992, Inclusive

In Millimeters

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 (6,933 Square Km)		Fort Quitman to Above Rio Conchos (7,915 Square Km)		* Above Rio Conchos to Johnson Ranch (9,795 Square Km)		Johnson Ranch to Foster Ranch (33,623 Square Km)	
	1992	Period Average	1992	Period Average	1992	Period Average	1992	Period Average
Jan.	34	12	33	10	47	9	36	12
Feb.	6	10	16	7	46	8	32	10
Mar.	14	8	6	6	2	5	4	10
April	7	7	5	9	9	10	19	20
May	55	11	74	16	58	20	75	38
June	7	20	18	31	21	30	32	43
July	13	56	41	72	40	48	26	46
Aug.	43	48	50	62	33	49	21	52
Sept.	14	37	10	51	16	42	18	56
Oct.	17	23	11	27	9	22	1	32
Nov.	9	11	19	11	15	9	9	15
Dec.	20	15	6	14	5	10	2	14
Yearly	239	258	289	316	301	262	275	348

Month	Pecos River below Sheffield (8,780 Square Km)		# Foster Ranch to Amistad Dam (7,249 Square Km)		Devlis River (11,150 Square Km)		* Amistad Dam to Eagle Pass (4,209 Square Km)	
	1992	Period Average	1992	Period Average	1992	Period Average	1992	Period Average
Jan.	43	18	34	19	50	18	48	19
Feb.	73	22	63	23	70	20	95	24
Mar.	27	19	18	24	35	26	29	25
April	41	45	25	43	34	44	74	44
May	174	48	132	73	123	66	89	73
June	110	61	24	63	70	66	100	64
July	105	47	36	47	58	47	85	48
Aug.	29	50	10	47	33	54	17	48
Sept.	18	64	15	76	19	75	16	77
Oct.	3	47	9	52	7	56	7	52
Nov.	8	23	12	26	27	37	3	26
Dec.	15	19	7	22	22	25	10	22
Yearly	646	463	385	515	548	534	573	522

Month	! Eagle Pass to Laredo (9,829 Square Km)		** Laredo to Falcon Dam (8,726 Square Km)		## Falcon Dam to Rio Grande City (1,212 Square Km)		United States Side Below Rio Grande City (2,554 Square Km)	
	1992	Period Average	1992	Period Average	1992	Period Average	1992	Period Average
Jan.	101	19	121	21	95	24	91	33
Feb.	45	21	108	22	60	23	31	29
Mar.	20	22	32	20	12	22	3	25
April	171	43	81	37	52	32	99	36
May	130	78	139	81	110	62	160	72
June	62	63	6	52	50	54	39	64
July	72	38	22	52	3	47	22	45
Aug.	19	56	83	48	52	53	38	59
Sept.	56	75	64	76	24	88	81	110
Oct.	53	48	65	44	57	49	47	63
Nov.	33	24	56	38	52	20	88	34
Dec.	40	25	38	22	22	18	20	32
Yearly	802	512	815	513	589	492	719	602

* Excluding Rio Conchos, Alamito Creek, and Terlingua Creek

Excluding Pecos and Devils Rivers

+ Excluding Arroyo Las Vacas, San Felipe Creek, Pinto Creek, Rio San Diego, and Rio San Rodrigo

! Excluding Rio Escondido

** Excluding Rio Salado above old Cd. Guerrero

Excluding Rio Alamo and Rio San Juan

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The precipitation records of stations listed below began on the date shown and extend through 1992. 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 THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
A.A. Baker Ranch	R	29° 44'	101° 08'	524	July 1962	Devils River	I. B. & W. C.
Adobes Ranch	C	29° 46'	104° 34'	777	# 1950	Fort Quitman - Above Rio Conchos	I. B. & W. C.
American Dam	S	31° 47'	106° 32'	1,137	# 1938	El Paso - Fort Quitman	I. B. & W. C.
Amistad Dam	R	29° 27'	101° 01'	351	July 1962	Foster Ranch - Amistad Dam	I. B. & W. C.
Amistad Reservoir near Comstock	C	29° 32'	101° 12'	344	# 1970	Foster Ranch - Amistad Dam	I. B. & W. C.
Apache Ranch	C	27° 56'	99° 56'	152	#May 1953	Eagle Pass - Laredo	Ranch Foreman
Big Satan Creek Station	C	29° 34'	100° 57'	351	Nov. 1968	Devils River	I. B. & W. C.
Bill Shannon Ranch	C	29° 57'	104° 40'	817	#July 1956	Fort Quitman - Above Rio Conchos	Bill Shannon
Brotherton Ranch	S	29° 42'	101° 19'	427	1961	Langtry - Below Amistad Dam	Perry Calk
Buoy No. 11	C	29° 30'	101° 10'	**	#Dec. 1969	Foster Ranch - Amistad Dam	I. B. & W. C.
CCWID No. 19 (Adams Gardens)	S	26° 10'	97° 47'	15	1952	Lower Rio Grande Valley	CCWID #19
CCWID # 11 (Bayview Dist. Off.)	S	26° 08'	97° 21'	8	# 1952	Lower Rio Grande Valley	CCWID #11
Cliff Lowry Ranch No. 1	R	29° 28'	100° 52'	454	July 1962	Devils River	I. B. & W. C.
Coal Mine	R	28° 48'	100° 28'	235	#Mar. 1959	Amistad Dam - Eagle Pass	I. B. & W. C.
Comstock	R	29° 41'	101° 10'	466	#May 1939	Foster Ranch - Amistad Dam	I. B. & W. C.
Corraltos Ranch	C	27° 07'	99° 25'	105	1953	Laredo - Falcon Dam	I. B. & W. C.
Cow Creek near Comstock	C	29° 36'	101° 12'	399	April 1965	Foster Ranch - Amistad Dam	I. B. & W. C.
Dead Man's Canyon near Comstock	C	29° 47'	101° 19'	399	Sept. 1967	below Sheffield	I. B. & W. C.
Devils Lake	R	29° 34'	100° 58'	349	#May 1939	Devils River	I. B. & W. C.
Devils River at Cauthorn Ranch	S	30° 04'	101° 06'	505	#April 1976	Devils River	I. B. & W. C.
Eagle Pass	S	28° 42'	100° 30'	248	1964	Eagle Pass - Laredo	I. B. & W. C.
Ed Crane Ranch	S	29° 50'	101° 05'	497	# 1955	Devils River	E. J. Crane Jr.
Edinburg City Plant	S	26° 18'	98° 10'	30	1934	Lower Rio Grande Valley	City of Edinburg
El Indio	S	28° 31'	100° 19'	221	#June 1941	Eagle Pass - Laredo	Mrs. Courtney
Eugene Miller Ranch	S	30° 25'	101° 09'	655	July 1975	Devils River	Mr. Miller
Evans Creek near Comstock	C	29° 32'	101° 06'	360	#July 1969	Devils River	I. B. & W. C.
Falcon Dam	S	26° 33'	99° 08'	98	April 1950	Laredo - Falcon Dam	I. B. & W. C.
Fariars Ranch	R	28° 36'	100° 20'	219	#Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Fort Hancock Bridge	S	31° 16'	105° 51'	1,067	#April 1947	El Paso - Fort Quitman	I. B. & W. C.
Garciasville	R	26° 20'	98° 41'	61	#April 1950	Lower Rio Grande Valley	I. B. & W. C.
Gillis Headquarters	S	29° 36'	100° 47'	430	1968	Amistad Dam - Eagle Pass	Jake Schiller
Gillis Ranch	S	29° 40'	101° 03'	439	# 1965	Devils River	Walter Gillis
Goldwire Ranch	R	29° 44'	100° 57'	514	Nov. 1968	Devils River	I. B. & W. C.
Guayuco Arroyo	R	31° 10'	105° 40'	1,097	#May 1940	El Paso - Fort Quitman	I. B. & W. C.
H.K. Fawcett Ranch	C	29° 52'	100° 53'	488	# 1941	Devils River	I. B. & W. C.
H.T. Fletcher Ranch	S	30° 12'	104° 16'	1,554	# 1939	Alamito Creek	Hayes Mitchell Jr.
H.T. Miers Ranch Headquarters	C	29° 44'	100° 50'	536	# 1957	Devils River	I. B. & W. C.
H.T. Miers Ranch No. 2	R	29° 43'	100° 53'	488	April 1964	Devils River	I. B. & W. C.
Harlow Ranch	C	29° 49'	101° 10'	517	#Mar. 1969	Devils River	I. B. & W. C.
Huaisache Ranch	C	26° 57'	99° 21'	117	Aug. 1953	Laredo - Falcon Dam	I. B. & W. C.
Hutto Ranch No. 1	R	29° 30'	100° 50'	378	# 1964	Devils River	I. B. & W. C.
Hutto Ranch No. 2	R	29° 38'	100° 54'	369	# 1964	Devils River	I. B. & W. C.
Indio Ranch	S	28° 31'	100° 22'	213	1959	Eagle Pass - Laredo	I. B. & W. C.
J.G. Brite Ranch	R	29° 33'	101° 01'	351	#Sept. 1962	Devils River	I. B. & W. C.
Johnson Ranch	C	29° 01'	103° 23'	625	#July 1933	Johnson Ranch - Foster Ranch	I. B. & W. C.
Jones Ranch	S	30° 43'	100° 58'	732	#Oct. 1962	Devils River	Mrs. Jones
Keisling Ranch	S	28° 23'	100° 17'	226	Dec. 1958	Eagle Pass - Laredo	I. B. & W. C.
Kerr Mitchell Ranch	S	30° 13'	104° 00'	1,356	#Mar. 1941	Alamito Creek	Mrs. Kerr Mitchell
La Feria Materials Yard	V	26° 10'	97° 50'	18	# 1960	Lower Rio Grande Valley	CCWID #3
La Feria Pumping Plant	S	26° 03'	97° 50'	18	# 1952	Lower Rio Grande Valley	CCWID #3
La Joya	C	26° 15'	98° 29'	46	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
La Mota Ranch	S	29° 33'	103° 59'	1,175	#Feb. 1943	Alamito Creek	John Rice
Laredo Water Plant	S	27° 33'	99° 31'	125	# 1930	Eagle Pass - Laredo	Laredo Water Plant
Las Cruces	S	32° 19'	106° 47'	1,187	1975	Caballo Dam - El Paso	I. B. & W. C.
Las Moras Creek	S	29° 00'	100° 38'	244	1958	Amistad Dam - Eagle Pass	I. B. & W. C.
Lateral No. 12 Headgate	C	28° 54'	100° 34'	244	1959	Amistad Dam - Eagle Pass	I. B. & W. C.
Laughlin Air Force Base	S	29° 21'	100° 47'	329	Dec. 1958	Amistad Dam - Eagle Pass	U. S. A. F.
Lewis Billie C. Jr. Ranch	S	29° 32'	100° 40'	427	# 1964	Amistad Dam - Eagle Pass	Billie C. Lewis Jr.

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 THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Lewis James Ranch	S	30° 11'	102° 07'	998	# 1966	Johnson Ranch - Foster Ranch	Lewis James
Long Ranch	R	29° 27'	100° 56'	347	Oct. 1971	Devils River	I. B. & W. C.
Los Ebanos	C	26° 14'	98° 34'	46	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
Lowry Ranch No. 2	R	29° 37'	100° 55'	354	May 1965	Devils River	I. B. & W. C.
Martin King Ranch	R	29° 43'	101° 02'	445	#Nov. 1954	Foster Ranch - Amistad Dam	I. B. & W. C.
Maverick County Canal Headgate	S	29° 10'	100° 46'	265	#Mar. 1948	Amistad Dam - Eagle Pass	MCWCID #1
Middle Fork San Pedro	C	29° 29'	100° 52'	357	#June 1969	Devils River	I. B. & W. C.
Normandy	S	28° 55'	100° 36'	238	#Dec. 1958	Amistad Dam - Eagle Pass	Fannin G. Lowe
North Fork San Pedro	C	29° 31'	100° 53'	349	#June 1969	Devils River	I. B. & W. C.
Owens Ranch	S	30° 48'	102° 42'	686	#July 1963	Pecos River below Sheffield	Mrs. W. Owens
Pafford Crossing	C	29° 40'	101° 00'	360	Mar. 1960	Devils River	I. B. & W. C.
Pecos River near Langtry Station	C	29° 48'	101° 26'	384	July 1967	Pecos River below Sheffield	I. B. & W. C.
Penitas (Edinburg Pumping Plant)	S	26° 14'	98° 27'	30	July 1957	Lower Rio Grande Valley	M. Stevens
Pinto Creek Station	C	29° 09'	100° 43'	265	#Dec. 1958	Amistad Dam - Eagle Pass	I. B. & W. C.
Presidio (IBWC Gage)	S	29° 34'	104° 23'	792	#Nov. 1949	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Prosser Ranch No. 1	C	29° 53'	101° 14'	521	Mar. 1965	Pecos River below Sheffield	I. B. & W. C.
Prosser Ranch No. 2	C	29° 48'	101° 15'	564	#Mar. 1965	Devils River	I. B. & W. C.
Prosser Ranch No. 3	C	30° 02'	101° 16'	616	#Mar. 1965	Pecos River below Sheffield	I. B. & W. C.
Redford	C	29° 29'	104° 13'	762	#July 1954	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Rio Grande near Dryden	R	29° 48'	102° 08'	411	May 1976	Johnson Ranch - Foster Ranch	National Weather Service
Roma (International Bridge)	S	26° 24'	99° 01'	70	# 1941	Falcon Dam - Rio Grande City	I. B. & W. C.
Ross Foster Ranch	C	29° 45'	101° 46'	375	May 1961	Johnson Ranch - Foster Ranch	I. B. & W. C.
Rough Canyon near Del Rio	C	29° 34'	100° 56'	350	#June 1969	Devils River	I. B. & W. C.
San Benito City	S	26° 03'	97° 45'	15	Oct. 1933	Lower Rio Grande Valley	I. B. & W. C.
Sellers Ranch	C	29° 34'	101° 02'	363	#Mar. 1960	Devils River	I. B. & W. C.
Shafter	S	29° 49'	104° 19'	1,195	#July 1968	Above Rio Conchos - Johnson Ranch	Raymond Wylie
Stewart Ranch	R	29° 35'	100° 52'	405	#April 1960	Devils River	I. B. & W. C.
Study Butte	S	29° 19'	103° 32'	777	July 1977	Terlingua Creek	Shirley Willard
Terlingua Creek Station	C	29° 12'	103° 36'	675	#Mar. 1952	Terlingua Creek	I. B. & W. C.
Trees Farm	R	28° 38'	100° 25'	219	#Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Tuffy Whitehead Ranch	R	29° 37'	101° 07'	433	July 1962	Devils River	I. B. & W. C.
United Irrigation District	S	26° 11'	98° 24'	!	#Aug. 1961	Lower Rio Grande Valley	United Irrigation District
Van Dalsem Farm	C	28° 27'	100° 19'	213	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Vinegarone	C	29° 56'	100° 45'	543	#May 1966	Devils River	I. B. & W. C.
W.E. Sawyer Ranch	S	30° 28'	100° 47'	640	#July 1966	Devils River	I. B. & W. C.
Walker Ranch	C	29° 49'	101° 13'	466	#Aug. 1969	Devils River	I. B. & W. C.
Wardlaw Standart Ranch	S	29° 18'	100° 38'	326	April 1977	Pinto Creek	Hadly Wardlaw
Zapata Water Plant	S	26° 54'	99° 16'	116	#May 1953	Laredo - Falcon Dam	I. B. & W. C.
Zuberbueler Ranch	S	29° 41'	101° 14'	445	#Feb. 1975	Foster Ranch - Amistad Dam	J. U. Zuberbueler

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. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Agua Blanca, Nuevo Leon	S	25° 30'	100° 30'	2,690	1958	Rio San Juan	C. N. A.
Agualeguas, Nuevo Leon	S	26° 19'	99° 33'	184	#	1979 Rio Alamo	C. N. A.
Allende, Coahuila	S	28° 21'	100° 51'	357	1947	Amistad-Laredo	C. N. A.
Amistad Reservoir near Tlaloc, Coahuila	C	29° 26'	101° 07'	366	#	1970 Amistad Dam	I. B. & W. C.
Anahuac, Nuevo Leon	S	27° 15'	100° 08'	200	#June	1933 Rio Salado	C. N. A.
Bajo Rio Bravo, Tamps. No. 3-14	S	25° 56'	97° 59'	!	1964	Lower Rio Grande Valley	C. N. A.
No. 3-15	S	25° 46'	98° 01'	!	1964	Lower Rio Grande Valley	C. N. A.
No. 3-17	S	25° 49'	97° 58'	!	1964	Lower Rio Grande Valley	C. N. A.
Bajo Rio San Juan, Tamps. No. 3-47	S	25° 58'	98° 07'	!	1964	Rio San Juan	C. N. A.
No. 3-48A	S	25° 52'	98° 05'	28	1983	Rio San Juan	C. N. A.
No. 3-55	S	25° 52'	98° 12'	!	1964	Rio San Juan	C. N. A.
No. 3-58	S	25° 50'	98° 11'	!	#	1964 Rio San Juan	C. N. A.
No. 3-60	S	25° 46'	98° 10'	!	#	1964 Rio San Juan	C. N. A.
No. 3-63	S	25° 41'	98° 06'	!	#	1964 Rio San Juan	C. N. A.
Balleza, Chihuahua	S	26° 57'	106° 21'	1,790	#May	1903 Rio Conchos	Meteor. Service of Chihuahua
Cabezones, Nuevo Leon	S	24° 59'	99° 45'	!	#	1962 Adjacent to Rio San Juan	C. N. A.
Camargo, Chihuahua	S	27° 42'	105° 10'	1,204	#May	1903 Rio Conchos	Meteor. Service of Chihuahua
Camargo, Tamaulipas	S	26° 19'	98° 50'	68	#	1921 Rio San Juan	C. N. A.
Carbonera, Nuevo Leon	S	24° 49'	100° 47'	!	#	1958 Rio San Juan	C. N. A.
Casillas, Nuevo Leon	S	25° 12'	100° 12'	1,237	#	1952 Rio San Juan	C. N. A.
Castanos, Coahuila	S	26° 47'	101° 27'	2,440	#Oct.	1938 Rio Salado	Meteor. Service of Mexico
Cd. Acuna, Coahuila	S	29° 20'	100° 53'	274	!	1951 Amistad Dam - Eagle Pass	I. B. & W. C.
Cd. Mier, Tamaulipas	S	26° 26'	99° 09'	80	#Oct.	1955 Falcon Dam - Rio Grande City	I. B. & W. C.
Cerralvo, Nuevo Leon	R	26° 05'	99° 37'	345	#Nov.	1938 Rio San Juan	S. A. R. H.
Cerritos, Nuevo Leon	S	25° 31'	100° 12'	!	#	1958 Rio San Juan	C. N. A.
Cerro Prieto, Nuevo Leon	S	25° 56'	99° 23'	270	#May	1959 Rio San Juan	C. N. A.
Chihuahua, Chihuahua	S	28° 38'	106° 04'	1,450	1900	Rio Conchos	C. N. A.
Cienega de Flores, Nuevo Leon	R	25° 57'	100° 10'	540	#April	1938 Rio San Juan	S. A. R. H.
Cienega del Toro, Nuevo Leon	S	25° 05'	100° 20'	2,137	#	1958 Rio San Juan	C. N. A.
Cienega de La Purisima, Coahuila	S	25° 20'	100° 32'	!	1980	Rio San Juan	C. N. A.
Colombia, Nuevo Leon	S	27° 42'	99° 45'	!	#Sept.	1976 Eagle Pass - Laredo	C. N. A.
Comales, Tamaulipas	R	26° 11'	98° 55'	80	#	1940 Rio San Juan	C. N. A.
Control, Tamaulipas	S	25° 58'	97° 49'	18	!	1942 Lower Rio Grande	C. N. A.
Coyame, Chihuahua	S	29° 28'	105° 06'	!	#Nov.	1961 Rio Conchos	Meteor. Service of Chihuahua
Cuatro Cienegas, Coahuila	S	26° 59'	102° 04'	742	1923	Rio Salado	C. N. A.
Delicias, Chihuahua	S	28° 11'	105° 28'	1,130	#Aug.	1933 Rio Conchos	C. N. A.
Dr. Gonzales, Nuevo Leon	S	25° 48'	99° 52'	318	1978	Rio San Juan	C. N. A.
Ejido Marin, Nuevo Leon	S	25° 50'	100° 00'	!	#Mar.	1979 Rio San Juan	C. N. A.
Ejido San Miguel, Coah.	S	29° 02'	100° 58'	!	1976	Amistad-Laredo	C. N. A.
Ejido 1ro de Mayo, Coah.	S	27° 13'	101° 13'	!	1980	Rio Salado	C. N. A.
El Alamo, Nuevo Leon	S	26° 24'	100° 24'	!	1980	Rio Salado	C. N. A.
El Brasil, Nuevo Leon	S	25° 53'	98° 59'	!	#July	1979 Rio San Juan	C. N. A.
El Cuchillo, Nuevo Leon	S	25° 43'	99° 16'	180	#June	1938 Rio San Juan	C. N. A.
El Guaje, Coahuila	S	28° 05'	103° 15'	970	1979	Johnson Ranch-Langtry	C. N. A.
El Realito, Nuevo Leon	S	25° 18'	99° 21'	!	#	1971 Rio San Juan	C. N. A.
El Sitio, Chihuahua	S	27° 31'	106° 16'	!	July	1955 Rio Conchos	Meteor. Service of Chihuahua
Espinazo, Nuevo Leon	S	26° 15'	101° 05'	!	#	1980 Rio Salado	C. N. A.
Estacion Rosario, Durango	S	26° 30'	105° 38'	!	#July	1962 Rio Conchos	C. N. A.
Galeana, Nuevo Leon	S	24° 50'	100° 04'	1,656	#Oct.	1904 Adjacent to Rio San Juan	C. N. A.
Garza Ayala, Nuevo Leon	S	26° 29'	100° 03'	!	1968	Rio San Juan	C. N. A.
General Bravo, Nuevo Leon	S	25° 48'	99° 11'	180	#Sept.	1906 Rio San Juan	C. N. A.
General Cepeda, Coahuila	S	25° 34'	101° 29'	1,485	1926	Rio San Juan	C. N. A.
General Trevino, Nuevo Leon	S	26° 13'	99° 28'	!	#Oct.	1976 Rio Alamo	C. N. A.
Gomez Farias, Coahuila	S	24° 58'	101° 03'	!	1979	Rio San Juan	C. N. A.
Gran Hacienda Mamulique, Nuevo Leon	S	26° 07'	100° 14'	!	#Sept.	1973 Rio San Juan	C. N. A.
Hidalgo del Parral, Chihuahua	S	26° 56'	105° 39'	1,750	#Mar.	1903 Rio Conchos	Meteor. Service of Chihuahua
Higuera, Nuevo Leon	S	25° 58'	100° 01'	500	#Sept.	1906 Rio San Juan	Meteor. Service of Mexico
Hipolito, Coahuila	S	25° 42'	101° 24'	!	1980	Rio San Juan	C. N. A.
Huachichil, Coahuila	S	25° 12'	100° 50'	2,100	1980	Rio San Juan	C. N. A.
Icamole, Nuevo Leon	S	25° 55'	100° 43'	1,494	#	1958 Rio San Juan	C. N. A.
Iturbide, Nuevo Leon	S	24° 44'	99° 54'	!	1941	Adjacent to Rio San Juan	C. N. A.
Jarita, Nuevo Leon	C	27° 26'	99° 48'	207	#Mar.	1961 Laredo - Falcon Dam	C. N. A.
Jimenez, Chihuahua	S	27° 08'	104° 56'	1,377	#	1951 Rio Conchos	Meteor. Service of Chihuahua
Jimenez, Coahuila	S	29° 04'	100° 40'	248	#	1951 Amistad Dam - Eagle Pass	I. B. & W. C.
Juarez, Coahuila	S	27° 37'	100° 44'	275	1969	Rio Salado	C. N. A.
La Amistad, Coahuila	S	29° 27'	101° 05'	316	#Feb.	1977 Amistad Dam - Eagle Pass	I. B. & W. C.
La Arena, Nuevo Leon	S	25° 46'	100° 01'	!	#	1968 Rio San Juan	C. N. A.
La Boquilla, Chihuahua	S	27° 32'	105° 25'	1,320	#June	1910 Rio Conchos	C. N. A.
La Chuparroza, Coahuila	R	29° 30'	101° 15'	350	#	1970 Foster Ranch-Amistad Dam	I. B. & W. C.
La Cruz, Nuevo Leon	S	25° 28'	100° 26'	1,500	#	1958 Rio San Juan	C. N. A.
La Escondida, Nuevo Leon	S	26° 16'	99° 46'	300	#Feb.	1979 Rio San Juan	C. N. A.
La Huasteca, Nuevo Leon	S	25° 32'	100° 30'	!	#	1979 Rio San Juan	C. N. A.
La Pomona, Nuevo Leon	S	24° 59'	99° 12'	!	#Mar.	1979 Rio San Juan	C. N. A.

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	LATI- TUDE	LONGI- TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
La Popa, Nuevo Leon	S	26° 10'	100° 50'	984	# 1958	Rio San Juan	C. N. A.
Lag. de Salinillas, NL	S	27° 23'	100° 26'	230	# 1940	Rio Salado	C. N. A.
Laguna de Sanchez, NL	R	25° 21'	100° 16'	1,600	#April 1941	Rio Salado	C. N. A.
Lampazos, Nuevo Leon	S	27° 02'	100° 30'	341	#May 1903	Rio Salado	Meteor. Service of Mexico
Las Comitas, Nuevo Leon	S	25° 30'	100° 24'	1,220	# 1940	Rio San Juan	C. N. A.
Las Enramadas, Nuevo Leon	S	25° 48'	99° 16'	222	#Sept. 1926	Rio San Juan	C. N. A.
Las Virgenes, Chihuahua	S	28° 09'	105° 38'	1,220	# 1943	Rio Conchos	C. N. A.
Linares, Nuevo Leon	R	24° 52'	99° 34'	360	# 1900	Adjacent to Rio San Juan	C. N. A.
Los Ramones, Nuevo Leon	R	25° 42'	99° 38'	80	#Sept. 1939	Rio San Juan	S. A. R. H.
Luis L. Leon, Chihuahua	S	31° 05'	105° 38'	1	#Apr. 1958	El Paso-Ft. Quitman	Meteor. Service of Chihuahua
Maclovio Herrera, Chihuahua	S	29° 04'	105° 09'	982	# 1924	Rio Conchos	Meteor. Service of Chihuahua
Madero (Los Aldamas), NL	S	26° 02'	99° 12'	1	#May 1970	Rio San Juan	C. N. A.
Manuel Benavides, Chihuahua	S	29° 06'	103° 54'	1	#Oct. 1961	Above Rio Conchos- Johnson Ranch	Meteor. Service of Chihuahua
Meoqui, Chihuahua	S	28° 16'	105° 28'	1,155	#Nov. 1926	Rio Conchos	Meteor. Service of Chihuahua
Mimbres, Nuevo Leon	S	24° 58'	100° 16'	1,750	# 1958	Rio San Juan	C. N. A.
Mina, Nuevo Leon	S	26° 00'	100° 31'	500	# 1958	Rio San Juan	C. N. A.
Monclova, Coahuila	S	26° 54'	101° 25'	586	1897	Rio Salado	C. N. A.
Montemorelos, Nuevo Leon	S	25° 12'	99° 50'	433	#Mar. 1904	Rio San Juan	C. N. A.
Monterrey, Nuevo Leon	S	25° 40'	100° 18'	530	# 1896	Rio San Juan	C. N. A.
Muzquiz, Coahuila	S	27° 53'	101° 31'	504	1923	Rio Salado	C. N. A.
Nueva Cd. Guerrero, Tamps	S	26° 35'	99° 15'	106	#May 1954	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamaulipas	S	27° 30'	99° 30'	126	# 1950	Eagle Pass - Laredo	I. B. & W. C.
Ojinaga (M.S. of Mexico), Chihuahua	S	29° 34'	104° 25'	799	#Nov. 1906	Rio Conchos	Meteor. Service of Chihuahua
Ojinaga, Chihuahua	S	29° 34'	104° 25'	788	#April 1954	Rio Conchos	I. B. & W. C.
Ojo Caliente, Chihuahua	S	27° 37'	105° 16'	1,222	# 1942	Rio Conchos	C. N. A.
Ojo de Agua(Sabinas), NL	S	26° 30'	100° 11'	1	# 1980	Rio Salado	C. N. A.
Pajonal, Nuevo Leon	S	25° 29'	100° 23'	1,531	# 1958	Rio San Juan	C. N. A.
Paletstina, Coahuila	S	29° 09'	100° 59'	330	1931	Amistad-Laredo	S. A. R. H.
Parras, Coahuila	S	25° 27'	102° 10'	1,680	1958	Rio San Juan	S. A. R. H.
Piedras Negras, Coahuila	S	28° 43'	100° 31'	249	1907	Amistad-Laredo	Meteor. Service of Mexico
Pobladores, Nuevo Leon	S	25° 31'	99° 24'	1	1980	Rio San Juan	S. A. R. H.
Posta Zootecnica, Chihuahua	S	28° 41'	106° 04'	1,445	#Mar. 1957	Rio Conchos	Meteor. Service of Chihuahua
Potosi, Nuevo Leon	S	24° 51'	100° 19'	1,908	# 1958	Adjacent to Rio San Juan	C. N. A.
Potrero de Abrego, Coah.	S	25° 17'	100° 21'	1	1980	Rio San Juan	S. A. R. H.
Presa Carranza, Coahuila	S	27° 31'	100° 37'	240	1927	Rio Salado	C. N. A.
Presa Centenario, Coah.	S	29° 13'	100° 57'	1	1964	Amistad-Laredo	C. N. A.
Presa Chihuahua, Chih.	S	28° 34'	105° 10'	1,595	Oct. 1961	Rio Conchos	C. N. A.
Presa Luis L. Leon, Chih.	S	28° 57'	105° 17'	1	Oct. 1964	Rio Conchos	C. N. A.
Presa Marte Gomez, Tamaulipas	S	26° 10'	98° 53'	83	1984	Rio San Juan	City of Camargo, Tamaulipas
Presa San Miguel, Coah.	S	29° 02'	100° 57'	1	1964	Amistad-Laredo	C. N. A.
Progreso, Coahuila	S	27° 25'	101° 00'	370	1943	Rio Salado	C. N. A.
Ramos Arizpe, Coahuila	S	25° 32'	100° 57'	1,400	1907	Rio San Juan	C. N. A.
Rayones, Nuevo Leon	S	25° 01'	100° 05'	600	#Oct. 1926	Rio San Juan	C. N. A.
Reata, Coahuila	S	26° 08'	101° 05'	936	#July 1944	Rio San Juan	S. A. R. H.
Represa Amistad, Coahuila	R	29° 26'	101° 02'	280	#June 1969	Amistad Dam - Eagle Pass	I. B. & W. C.
Reynosa, Tamaulipas	R	26° 06'	98° 19'	40	# 1941	Lower Rio Grande Valley	C. N. A.
Rinconada, Nuevo Leon	S	25° 41'	100° 42'	1,460	#April 1944	Rio San Juan	C. N. A.
Rodrigo Gomez Reservoir, Nuevo Leon	S	25° 25'	100° 07'	445	# 1923	Rio San Juan	C. N. A.
Rusio, Nuevo Leon	S	24° 42'	100° 26'	2,004	#June 1956	Rio San Juan	C. N. A.
Sabinas Hidalgo, NL	S	26° 30'	100° 10'	314	#May 1958	Rio Salado	I. B. & W. C.
Sabinas, Coahuila	S	27° 51'	101° 07'	340	1922	Rio Salado	C. N. A.
Salttillo, Coahuila	S	25° 26'	101° 00'	1,610	1886	Rio San Juan	C. N. A.
Samalayuca, Chihuahua	S	31° 21'	106° 28'	1,275	1958	El Paso- FT. Quitman	Meteor. Service of Mexico
San Antonio de las Alazanas, Coahuila	S	25° 15'	105° 35'	2,170	1958	Rio San Juan	C. N. A.
San Bartolo, Nuevo Leon	S	25° 34'	100° 00'	1	1984	Rio San Juan	C. N. A.
San Juan de Vaqueria, Coah	S	25° 15'	101° 13'	1	1980	Rio San Juan	C. N. A.
San Juan, Nuevo Leon	S	25° 33'	99° 50'	268	#Nov. 1943	Rio San Juan	C. N. A.
San Juanito, Chihuahua	S	27° 58'	107° 36'	1	1959	Rio Conchos	Meteor. Service of Chihuahua
San Nicolas, Nuevo Leon	S	25° 45'	100° 17'	1	#Sept. 1978	Rio San Juan	C. N. A.
San Rafael, Nuevo Leon	S	25° 02'	100° 33'	1,714	1958	Rio San Juan	C. N. A.
Santa Catarina, NL	R	25° 40'	100° 28'	880	#Oct. 1937	Rio San Juan	C. N. A.
Sierra Mojada, Coahuila	S	27° 07'	103° 42'	1,256	1897	Johnson Ranch-Langtry	C. N. A.
Sombrenetillo, Nuevo Leon	S	26° 20'	99° 56'	300	1984	Rio Atamo	C. N. A.
Tepehuaje, Nuevo Leon	S	25° 30'	99° 46'	1	#June 1979	Rio San Juan	C. N. A.
Topo Chico, Nuevo Leon	R	25° 44'	100° 20'	555	#Aug. 1939	Rio San Juan	S. A. R. H.
Una de Gato, Nuevo Leon	S	25° 58'	99° 41'	320	# 1979	Rio San Juan	C. N. A.
Valle Hermoso, Tamaulipas	S	25° 41'	97° 48'	16	#June 1948	Lower Rio Grande Valley	C. N. A.
Vallecillo, Nuevo Leon	S	26° 40'	99° 59'	274	#June 1958	Rio Salado	C. N. A.
Vaqueria, Nuevo Leon	S	25° 08'	99° 04'	1	#Mar. 1979	Rio San Juan	C. N. A.
Villa Aldama, Chihuahua	S	28° 50'	105° 55'	1,262	#Aug. 1906	Rio Conchos	Meteor. Service of Chihuahua
Villa Allende, Nuevo Leon	S	25° 17'	100° 01'	447	#Nov. 1938	Rio San Juan	C. N. A.
Villa Hidalgo, Coahuila	S	27° 47'	99° 52'	200	# 1951	Eagle Pass - Laredo	I. B. & W. C.
Villaladama, Nuevo Leon	S	26° 30'	100° 25'	469	#April 1979	Rio Salado	C. N. A.
Zaragoza, Coahuila	S	23° 58'	99° 46'	1,370	#Aug. 1977	Eagle Pass - Laredo	C. N. A.

S Standard R Recording ! Not Available # Some months or years missing

EVAPORATION IN THE RIO GRANDE BASIN
IN THE UNITED STATES

In Millimeters

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 46 meters, and all brush, tall weeds, and other obstructions within 30 meters of the fenced enclosures. Within the enclosures all vegetation has been eradicated or kept trimmed to within 0.10 meter 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," on preceding pages of this bulletin.

Records were obtained by means of:

1. Standard National Weather Service pan. A circular pan, 1.22 meters in diameter and 0.25 meter deep, made of 22-gage galvanized iron, is set on a wooden platform with the rim of the pan 0.41 meter above the ground. The water level is maintained between 0.05 and 0.08 meter 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, 0.61 meter in diameter and 0.91 meter deep, made of 22-gage galvanized iron, is set in the ground with the rim of the pan 0.08 meter above the ground surface and the top covered with a circular screen of No. 4 (6 millimeter) galvanized hardware cloth. This type of pan, equipped with an automatic feed tank that maintains the water at a level 0.08 meter below the rim of the pan, was in operation at Martin King Ranch and Eagle Pass.

3. An evaporimeter, developed by the United States Section of the Commission and calibrated against a 0.61 meter pan described above, was in operation at Presidio, Johnson Ranch, Long Ranch, and at a site 11.3 kilometers east of Brownsville.

Month	Presidio		Johnson Ranch		Martin King Ranch		Long Ranch	
	1992	Average 1949-1992	1992	Average 1949-1992	1992	Average 1956-1992	1992	Average 1971-1992
Jan.	30	85	85	85	66	79	47	56
Feb.	44	116	118	122	114	95	57	69
Mar.	52	185	171	203	144	159	77	118
April	106	227	274	251	199	194	89	141
May	113	264	240	286	297	217	100	157
June	179	285	460	298	264	259	149	191
July	143	267	340	296	336	291	194	214
Aug.	159	246	344	269	293	283	172	199
Sept.	132	203	376	224	298	212	151	152
Oct.	119	161	272	174	262	158	140	113
Nov.	73	111	203	116	142	107	64	69
Dec.	64	81	141	83	93	79	44	51
Total	1,214	2,231	3,024	2,407	2,508	2,133	1,284	1,530

Month	Amistad Dam		Eagle Pass		Falcon Dam		Brownsville	
	1992	Average 1963-1992	1992	Average 1964-1992	1992	Average 1956-1992	1992	Average 1958-1992
Jan.	69	94	66	83	77	100	99	77
Feb.	99	120	107	95	113	130	78	92
Mar.	164	206	136	150	147	210	101	125
April	177	249	170	185	192	254	106	150
May	210	273	169	198	207	289	98	153
June	302	322	198	251	281	335	103	162
July	325	365	275	285	398	381	141	185
Aug.	304	338	211	267	330	351	131	178
Sept.	282	250	231	204	272	248	151	142
Oct.	226	189	179	160	184	191	140	125
Nov.	152	127	140	110	117	134	86	100
Dec.	85	92	80	87	83	99	80	81
Total	2,395	2,625	1,962	2,075	2,401	2,722	1,314	1,570

EVAPORATION IN THE RIO GRANDE BASIN
IN MEXICO

In Millimeters

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 46 meters and of all brush and tall weeds within 30 meters of the fenced enclosures. The Ojinaga station is 9 meters landward of the east Rio Conchos levee with a concrete V-shaped irrigation ditch and road between the levee and the 8 x 8-meter woven wire pen, which encloses a 150-cm evaporation pan and a 70 x 50-cm shelter with thermometers. Inside the enclosures, all vegetation has been eradicated or kept trimmed to within 0.08 meter of the ground surface. 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."

The type of pan used at all these stations was a standard National Weather Service-type pan, 1.22 meters in diameter and 254 millimeters inches deep, made of 22-gage galvanized iron, set on a wooden platform with the rim of the pan 406 millimeters above the ground. The water level was maintained between 51 and 76 millimeters 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 a Spanish water bulletin published by the Mexican Section of the Commission.

Month	Ojinaga, Chihuahua		La Amistad, Coahuila		Cd. Acuna, Coahuila		Jimenez, Coahuila	
	1992	Average 1954-1992	1992	Average 1977-1992	1992	Average 1951-1992	1992	Average 1951-1992
Jan.	129	87	65	86	58	82	68	92
Feb.	233	125	93	115	79	111	114	120
Mar.	115	205	151	185	130	188	156	185
April		253	161	227	131	216	124	206
May	225	310	195	245	160	241	166	232
June	191	323	271	292	221	283	231	278
July	260	316	296	334	248	319	277	313
Aug.	256	271	281	316	226	292	270	289
Sept.	200	212	254	239	199	212	241	213
Oct.	140	161	176	177	160	151	179	153
Nov.		101		115		95		101
Dec.		81		83		74		82
Total		2,445		2,414		2,264		2,264

Month	Villa Hidalgo, Coahuila		Nuevo Laredo, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas	
	1992	Average 1951-1992	1992	Average 1964-1992	1992	Average 1954-1992	1992	Average 1955-1992
Jan.	52	91	52	100	48	83	53	88
Feb.	75	120	84	130	94	107	101	119
Mar.	132	183	146	212	142	182	163	195
April	138	230	166	260	169	216	178	232
May	152	262	183	287	189	250	204	263
June	186	309	258	334	285	289	294	306
July	237	348	298	371	380	328	406	347
Aug.	204	320	280	345	299	305	310	314
Sept.	173	235	201	256	258	220	259	237
Oct.	124	177	169	195		165	169	183
Nov.		116		132		115	107	121
Dec.		88		97		84	61	90
Total		2,479		2,719		2,344	2,305	2,495

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 0.41 meters above the ground and 2.74 meters southwest of either a 0.61 or 1.22-meter 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 kilometers 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 - In Degrees Celsius

In The United States

Month	Amistad Dam, Texas				Eagle Pass, Texas				Falcon Dam, Texas			
	Mean 1992	Average 1963-1992	1992		Mean 1992	Average 1964-1992	1992		Mean 1992	Average 1950-1992	1992	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	11	10	21	-2	12	11	22	-1	12	13	22	1
Feb.	15	12	27	4	15	13	27	3	17	15	29	6
Mar.	19	17	29	2	18	18	30	4	18	20	33	6
April	21	22	35	7	21	23	33	7	22	24	36	8
May	24	25	37	13	23	26	33	13	24	27	37	13
June	29	28	40	17	28	28	41	17	29	29	42	19
July	30	29	40	19	29	30	43	20	29	30	43	22
Aug.	29	29	38	18	28	30	38	19	28	30	41	20
Sept.	28	26	39	13	28	27	39	14	27	27	40	17
Oct.	24	21	34	10	23	22	36	9	23	23	37	12
Nov.	15	16	33	-1	16	16	34	-2	16	18	34	1
Dec.	13	11	24	0	13	12	26	1	14	14	29	5
Yearly	22	21	40	-2	21	21	43	-2		23	43	1

In Mexico

Month	Cd. Juarez, Chihuahua				Ojinaga, Chihuahua				La Amistad, Coahuila			
	Mean 1992	Average 1960-1992	1992		Mean 1992	Average 1954-1992	1992		Mean 1992	Average 1977-1992	1992	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	4		10	-2	13	10	30	-4	11	11	22	-1
Feb.	7		16	-1	13	13	26	0	16	13	27	4
Mar.	13		22	3	16	17	29	2	17	17	30	3
April	19		31	8	16	20	26	5	22	22	36	8
May	22		32	13	25	26	39	11	26	26	39	14
June	27		40	15	29	30	44	14	30	29	42	18
July	31		41	20	30	30	46	14	32	30	42	21
Aug.	28		38	17	28	29	40	16	30	31	40	19
Sept.	25		36	14	30	26	41	19	27	27	40	14
Oct.	19		32	4	20	22	36	3	23	22	36	11
Nov.	10		21	7	14	16	30	-3	15	17	31	-2
Dec.					8	11	18	-2	13	13	25	1
Yearly					20	19	46	-4	22	22	42	-2

Month	Cd. Acuna, Coahuila				Jimenez, Coahuila				Villa Hidalgo, Coahuila			
	Mean 1992	Average 1951-1992	1992		Mean 1992	Average 1951-1992	1992		Mean 1992	Average 1951-1992	1992	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	11	11	23	-1	12	13	24	-2	13	12	26	0
Feb.	14	13	27	2	15	14	27	1	15	15	29	1
Mar.	16	17	30	1	20	17	31	4	18	19	32	4
April	22	21	37	7	24	22	39	5	20	22	32	8
May	24	25	34	14	27	25	38	12	26	26	38	14
June	28	28	39	17	29	28	42	16	30	29	42	17
July	30	30	41	19	29	30	42	21	32	30	42	22
Aug.	29	30	38	19	31	30	39	19	30	30	40	19
Sept.	25	26	38	12	26	26	40	12	27	27	40	13
Oct.	21	21	34	7	23	21	38	5	21	22	36	6
Nov.	13	15	30	-4	13	17	34	-2	15	17	31	-1
Dec.	13	12	25	1	13	13			17	13	32	1
Yearly	20	18	41	-4	22	20			22	23	42	-1

TEMPERATURE, HUMIDITY, AND WIND

Temperature - In Degrees Celsius

In Mexico

Month	Nuevo Laredo, Tamaulipas (13-20)				Nuevo Cd. Guerrero, Tamaulipas				Cd. Mier, Tamaulipas			
	Mean 1992	Average 1964-1992	1992		Mean 1992	Average 1958-1992	1992		Mean 1992	Average 1955-1992	1992	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	12	15	22	2	15	14	28	1	14	15	25	2
Feb.	16	17	28	3	17	17	29	5	18	17	31	4
Mar.	20	21	33	7	20	20	33	6	20	21	34	5
April	20	25	32	7	21	25	33	8	24	25	37	10
May	26	28	36	16	25	28	35	14	27	28	38	15
June	29	31	39	19	31	30	41	20	32	31	43	21
July	31	32	40	23	33	31	42	23	35	32	45	24
Aug.	30	32	39	20	31	31	40	21	32	32	42	22
Sept.	28	29	39	17	28	28	39	17	29	29	41	16
Oct.	20	24	36	7	24	24	36	11	23	24	36	10
Nov.	14	19	28	1	18	20	35	1	18	19	36	0
Dec.	15	15	27	2		16				15		
Yearly	22	23	40	1		21				21		

TEMPERATURE, HUMIDITY AND WIND

Mean Wind Speed - Kilometers Per Hour

In the United States

Month	Martin King Ranch, Texas		Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1992	Average 1956-1992	1992	Average 1963-1992	1992	Average 1963-1992	1992	Average 1950-1992
Jan.	5.1	6.0	4.2	4.8	5.0	4.5	2.9	5.6
Feb.	6.8	7.3	4.8	5.6	6.0	5.8	3.4	6.4
Mar.	7.4	9.4	4.7	6.5	5.3	6.3	3.9	7.2
April	8.0	9.8	4.8	6.6	4.2	6.4	4.3	7.9
May	7.7	10.5	5.3	6.6	6.4	6.3	3.7	8.1
June	8.5	11.4	5.5	6.9	6.1	6.3	2.9	8.4
July	10.6	10.7	6.4	6.6	8.7	6.3	6.0	8.7
Aug.	8.7	9.9	5.0	5.8	5.8	5.7	5.1	7.6
Sept.	7.7	8.1	5.3	5.4	6.3	5.0	4.8	5.9
Oct.	6.9	7.5	4.3	5.0	5.0	4.2	2.6	5.1
Nov.	6.0	6.4	6.0	4.8	6.4	4.2	2.4	5.4
Dec.	6.0	5.7	4.8	4.7	5.1	4.0	1.0	5.0
Yearly	7.5	8.6	5.1	5.8	5.9	5.4	3.6	6.8

Mean Relative Humidity - Percent

In the United States

Month	Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1992	Average 1963-1992	1992	Average 1964-1992	1992	Average 1950-1992
Jan.	61.7	62.3	75.0	61.5	84.0	67.5
Feb.	62.3	59.5	73.0	60.5	74.5	65.0
Mar.	57.2	54.4	70.0	56.3		62.2
April	66.7	57.8	74.0	58.9	69.6	62.8
May	71.3	64.4	74.0	64.6	71.5	66.4
June	75.8	63.6	68.0	63.2	64.6	64.9
July	74.8	60.3	64.0	59.5	58.3	61.8
Aug.	67.5	59.9	65.0	60.8	62.6	62.4
Sept.	60.0	64.4	63.0	66.3	64.3	66.7
Oct.	56.6	63.6	63.0	66.4	65.7	66.4
Nov.	51.5	62.0	57.0	65.9	64.0	66.7
Dec.	59.0	60.9	74.0	66.5	79.4	67.6
Yearly	63.7	61.1	68.3	62.5		65.0

In Mexico

Nueva Cd. Guerrero, Tamaulipas		
Month	1992	Average 1961-1992
Jan.		
Feb.		
Mar.		
April		
May		
June		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		
Yearly		

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries - 1992

The total area within the outer rim of the Rio Grande basin is about 868,945 square kilometers, 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 456,701 square kilometers of productive watershed which is listed in the tabulation 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 1992 are shown, except that in the reaches below Falcon Dam, the figures shown represent acreages which were subject to irrigation in 1992 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 1992. The irrigated area data tabulated are the best data that could be obtained.

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Kilometers			Irrigated Areas - Hectares		
	United States	Mexico	Total	United States	Mexico	Total
Above Elephant Butte Dam	67,141	0	67,141	0	0	0
Elephant Butte Dam to Caballo Dam	3,354	0	3,354	0	0	0
Above Caballo Dam	70,495	0	70,495	0	0	0
Caballo Dam to American Dam	5,317	0	5,317	33,807	0	33,807
Above American Dam	75,812	0	75,812	33,807	0	33,807
American Dam to Acala Station	1,740	1,409	3,149	19,097	6,016	25,113
Above Acala Gaging Station	77,552	1,409	78,961	52,904	6,016	58,920
Acala Station to Fort Quitman Station	1,717	2,056	3,773	6,912	0	6,912
Above Fort Quitman Gaging Station	79,269	3,465	82,734	59,816	6,016	65,832
Fort Quitman Station to Above Presidio Station	4,263	3,652	7,915	75	84	159
Above Presidio Station above Rio Conchos	83,532	7,117	90,649	59,891	6,100	65,991
Rio San Pedro above Francisco I. Madero Dam	0	10,778	10,778	0	12,917	12,917
Rio Conchos above Boquilla Dam	0	10,282	10,282	0	53,912	53,912
Boquilla Dam to Luis L. Leon Dam	0	38,490	38,490	0	96,029	96,029
Rio Conchos - Total	0	68,387	68,387	0	162,858	162,858
Alamito Creek above Gaging Station	3,895	0	3,895	0	0	0
Presidio Station Above Rio Conchos to Presidio Station below Rio Conchos - excluding above tributaries	881	235	1,116	836	127	963
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - Total	4,776	68,622	73,398	836	162,985	163,821
Above Presidio Station below Rio Conchos	88,308	75,739	164,047	60,727	169,085	229,812
Terlingua Creek above Gaging Station	2,771	0	2,771	0	0	0
Presidio Station below Rio Conchos to Johnson Ranch Station - excluding Terlingua Creek	2,831	5,848	8,679	272	450	722
Presidio Station below Rio Conchos to Johnson Ranch Station - Total	5,602	5,848	11,450	272	450	722
Above Johnson Ranch Gaging Station	93,910	81,587	175,497	60,999	169,535	230,534
Johnson Ranch Station to Foster Ranch Station	16,607	17,016	33,623	22	0	22
Above Foster Ranch Gaging Station	110,517	98,603	209,120	61,021	169,535	230,556
Foster Ranch Station to Langtry Station	471	1,308	1,779	0	0	0
Above Langtry Gaging Station (Discontinued)	110,988	99,911	210,899	61,021	169,535	230,556
Pecos River above Girvin(In the State of Texas)	76,566	0	76,566	2,008	0	2,008
Pecos River, Girvin to Station near Langtry	14,548	0	14,548	0	0	0
Station near Langtry to Station at Mouth (Discontinued)	334	0	334	0	0	0
Pecos River - Total	91,448	0	91,448	2,008	0	2,008
Devils River above Pafford Crossing	10,259	0	10,259	0	0	0
Pafford Crossing to Station at Mouth (Discontinued)	891	0	891	0	0	0
Devils River - Total	11,150	0	11,150	0	0	0
Langtry Station to Amistad Dam - excluding above tributaries	562	4,856	5,418	0	0	0
Langtry Station to Amistad Dam - Total	103,160	4,856	108,016	2,008	0	2,008
Above Amistad Dam	214,148	104,767	318,915	63,029	169,535	232,564
Amistad Dam to Below Amistad Dam Gaging Station	13	10	23	0	0	0
Above the Below Amistad Dam Gaging Station	214,161	104,777	318,938	63,029	169,535	232,564
Below Amistad Dam Station to Del Rio Station	155	259	414	95	0	95
Above Del Rio Gaging Station	214,316	105,036	319,352	63,124	169,535	232,659
Arroyo Las Vacas above Gaging Station	0	906	906	0	171	171
San Felipe Creek above Gaging Station	119	0	119	660	0	660

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries - 1992

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Kilometers			Irrigated Areas - Hectares		
	United States	Mexico	Total	United States	Mexico	Total
Pinto Creek Above Gaging Station	645	0	645	101	0	101
Rio San Diego above Gaging Station	0	2,209	2,209	0	10,474	10,474
Gaging Station to mouth of river	0	16	16	0	282	282
Rio San Diego - Total	0	2,225	2,225	0	10,756	10,756
Del Rio Station to Jimenez Station - excluding above tributaries	1,733	285	2,018	b) 16,038	7,879	23,917
Del Rio Station to Jimenez Station - Total	2,497	3,416	5,913	16,799	18,806	35,605
Above the Jimenez Gaging Station	216,813	108,452	325,265	79,923	188,341	268,264
Rio San Rodrigo above Gaging Station	0	2,717	2,717	0	0	0
Rio San Rodrigo - Total	0	2,717	2,717	0	0	0
Jimenez Station to Piedras Negras Gaging Station -excluding Rio San Rodrigo	1,375	378	1,753	498	864	1,362
Jimenez Station to Piedras Negras Gaging Station-Total	1,375	3,095	4,470	498	864	1,362
Above Piedras Negras Gaging Station	218,188	111,547	329,735	80,421	189,205	269,626
Rio Escondido above Gaging Station	0	3,779	3,779	0	80	80
Rio Escondido - Total	0	3,810	3,810	0	80	80
Piedras Negras Station to El Indio Station - excluding Rio Escondido	614	533	1,147	129	1,952	2,081
Piedras Negras Station to El Indio Station - Total	614	4,343	4,957	129	2,032	2,161
Above El Indio Gaging Station	218,802	115,890	334,692	80,550	192,237	271,787
El Indio Gaging Station to Villa Hidalgo Station (Discontinued)	1,629	4,360	5,989	435	1,962	2,397
Above Villa Hidalgo Gaging Station	220,431	120,250	340,681	80,985	193,199	274,184
Villa Hidalgo Station to Laredo Station	1,572	1,121	2,693	1,379	3,239	4,618
Above Laredo Gaging Station	222,003	121,371	343,374	82,364	196,438	278,802
Rio Salado above Venustiano Carranza Dam	0	41,002	41,002	0	2,165	2,165
Rio Salado above Las Tortillas Gaging Station	0	59,971	59,971	0	22,607	22,607
Rio Salado above River Road Crossing	0	60,406	60,406	0	24,772	24,772
Laredo Station to Falcon Dam - excluding Rio Salado	5,289	3,437	8,726	c) 1,892	844	2,736
Laredo Station to Falcon Dam - Total	5,289	63,843	69,132	1,892	25,616	27,508
Amistad Dam to Falcon Dam - excluding above tributaries	12,380	10,383	22,763	20,466	16,740	37,206
Above Falcon Dam	227,292	185,214	412,506	84,256	213,178	297,434
Rio Alamo above Gaging Station	0	4,339	4,339	0	4,050	4,050
Rio San Juan above Marte Gomez Dam	0	33,010	33,010	0	4,804	4,804
Rio San Juan - Marte Gomez Dam to Camargo Gaging Station	0	505	505	0	73,555	73,555
Rio San Juan - Total	0	33,538	33,538	0	78,359	78,359
Falcon Dam to Rio Grande City Station - excluding above tributaries	575	637	1,212	1,799	2,082	3,881
Falcon Dam to Rio Grande City Station - Total	575	38,514	39,089	1,799	84,491	86,290
Above Rio Grande City Gaging Station	227,867	223,728	451,595	86,055	297,669	383,724
Rio Grande City Station to Anzalduas Dam	2,466	2,067	4,533	73,956	9,014	82,970
Anzalduas Canal				0	201,674	201,674
Above Anzalduas Dam	230,333	225,795	456,128	160,011	508,357	668,368
Anzalduas Dam to Progreso Station(Discontinued)	34	423	457	48,318	704	49,022
Above Progreso Gaging Station	230,367	226,218	456,585	208,329	509,061	717,390
Progreso Station to San Benito Station	18	23	41	128,513	1,675	130,188
Above San Benito Gaging Station	230,385	226,241	456,626	336,842	510,736	847,578
San Benito Station to Brownsville Station	36	39	75	33,024	734	33,758
Above Brownsville Gaging Station	230,421	226,280	456,701	369,866	511,470	881,336
Brownsville Station to Gulf of Mexico				2,293	0	2,293
Falcon Dam to Gulf of Mexico - excluding Rio Alamo and Rio San Juan				287,903	215,883	503,786
Amistad Dam to Gulf of Mexico excluding above tributaries				308,369	232,623	540,992
Above Gulf of Mexico				372,159	511,470	883,629

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 15,463 hectares irrigated from the Maverick Canal below Mile 13 gaging station.
 c) Includes 45 hectares irrigated from small reservoirs.

08-4507.00 SUPPLEMENTARY DATA - INTERNATIONAL AMISTAD RESERVOIR
DEDUCED INFLOWS

Considering that a knowledge of the mean daily inflows reaching the International Amistad Reservoir would serve a useful purpose, such data have been deduced for 1992 showing the flows as closely as they can be approximated. These data are based on the daily operation of the International Amistad Reservoir, taking into account: a) record of gage heights at the dam; b) releases; c) filtrations; d) elevation-area-capacity tables based on 1981 survey; and e) rate of evaporation measured at the dam.

Flow contributions from different sources, 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 Foster Ranch, Pecos River near Langtry, and Devils River at Pafford Crossing.

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 Amistad Reservoir.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	96.7	183	129	113	91.5	208	203	93.8	73.6	65.6	72.1	49.3
2	99.5	192	102	104	116	238	178	95.1	77.4	58.4	70.4	51.7
3	108	212	120	97.6	140	236	177	88.6	80.3	57.4	71.1	50.0
4	106	211	118	102	158	213	166	103	80.7	53.1	63.1	51.1
5	108	305	118	115	121	220	151	77.4	77.3	55.7	50.1	47.5
6	106	327	120	108	103	222	150	78.7	76.5	52.1	43.6	45.3
7	111	270	117	119	88.5	215	133	86.4	84.0	55.8	40.9	47.9
8	108	217	127	119	77.4	224	110	85.5	71.6	49.2	43.5	48.8
9	106	186	125	122	75.9	257	117	86.5	72.7	47.6	44.5	45.8
10	100	175	106	104	75.1	251	117	82.9	65.2	51.5	43.0	47.7
11	94.7	162	105	109	111	235	108	93.4	73.2	52.7	55.6	46.9
12	94.5	165	103	107	142	222	102	92.7	64.9	48.7	61.0	49.1
13	93.8	158	103	104	144	221	93.0	94.3	72.9	51.6	62.1	50.4
14	98.1	148	108	104	173	231	101	86.3	74.8	60.3	64.2	46.6
15	100	151	104	109	182	199	99.4	103	71.7	63.7	60.1	45.3
16	95.5	148	101	113	146	215	105	119	71.7	69.7	60.9	51.2
17	96.7	147	105	111	152	199	93.8	104	72.7	68.9	59.8	48.3
18	101	151	106	107	144	201	250	109	78.2	72.4	61.3	51.2
19	185	154	105	102	163	198	373	106	77.0	63.2	66.6	53.9
20	232	153	100	110	263	189	264	92.3	101	53.8	66.5	53.6
21	238	149	99.0	102	335	187	242	100	107	54.1	66.5	52.0
22	244	143	101	88.8	319	190	200	95.6	99.8	56.5	61.3	53.5
23	212	119	97.0	95.5	308	230	168	96.1	72.2	67.0	67.0	52.8
24	199	155	93.1	98.9	376	261	125	80.2	56.4	66.1	66.3	51.4
25	140	141	95.7	99.1	251	220	27.0	90.1	55.1	72.1	56.4	57.6
26	156	123	97.1	98.1	258	203	106	111	56.9	75.0	47.3	53.5
27	162	121	102	97.2	265	208	121	104	70.9	71.2	45.4	58.6
28	160	121	103	90.9	228	209	95.9	89.9	70.2	71.2	43.1	57.4
29	170	123	109	112	174	206	89.2	76.4	75.7	84.5	53.6	55.8
30	172		107	91.5	136	198	71.6	76.7	60.6	81.6	47.1	57.2
31	175		107		149		98.5	77.2		77.1		61.5
Sum	4,268.5	5,010	3,332.9	3,153.6	5,465.4	6,506	4,505.4	2,875.1	2,242.2	1,923.5	1,714.4	1,592.9
Current Year 1992										Period 1977-1992		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters					
	High	Low	Day	φ High	Day	φ Low	Average	Total	Average	Maximum	Minimum	
Jan.			22	244	13	93.8	138	368,798	168,391	368,798	104,028	
Feb.			6	327	23	119	173	432,864	165,873	432,864	103,343	
Mar.			1	129	24	93.1	108	287,963	185,033	322,164	115,807	
April			9	122	22	88.8	105	272,471	206,306	437,055	112,640	
May			24	376	10	75.1	176	472,211	258,599	472,211	160,977	
June			24	261	21	187	217	562,118	279,879	562,118	136,012	
July			19	373	30	71.6	145	389,267	258,129	415,273	107,307	
Aug.			16	119	29	76.4	92.7	248,409	366,621	1,037,318	159,859	
Sept.			21	107	25	55.1	74.7	193,726	420,093	1,624,752	114,484	
Oct.			29	84.5	9	47.6	62.0	166,190	440,560	1,172,715	110,732	
Nov.			1	72.1	7	40.9	57.1	148,124	193,099	560,631	99,013	
Dec.			31	61.5	6	45.3	51.4	137,627	149,509	321,211	98,905	
Yearly				376		40.9	116	3,679,768	3,092,092	5,003,493	1,734,955	

φ Mean daily

! And other days

08-4611.00 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 1992 showing the flows as closely 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 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 CUBIC METERS PER SECOND 1992 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	70.0	97.0	186	333	73.3	154	172	210	82.8	54.9	65.6	29.7
2	78.5	95.8	158	277	122	288	191	186	95.1	71.1	39.5	45.9
3	48.4	198	193	217	127	284	173	100	89.2	37.6	64.8	63.5
4	47.9	256	215	233	109	246	186	121	53.5	33.8	19.2	67.3
5	60.0	109	214	266	156	304	193	148	75.4	80.4	2.45	53.0
6	7.50	169	175	209	196	334	163	71.4	114	36.6	21.9	41.0
7	55.2	154	212	207	198	406	204	123	39.3	56.8	50.3	54.7
8	55.7	141	233	263	140	447	165	114	112	84.1	27.0	58.0
9	54.5	166	255	243	275	411	137	142	53.0	18.9	77.8	85.2
10	139	135	207	207	119	317	90.6	108	69.7	27.9	44.1	63.3
11	48.6	185	154	226	117	314	92.8	91.3	119	39.2	57.1	43.7
12	51.2	92.3	160	227	175	236	89.2	136	82.1	8.82	58.5	41.8
13	20.7	246	250	232	151	227	8.21	97.0	62.4	11.9	38.2	54.7
14	3.50	199	169	220	135	203	130	161	87.7	10.2	35.9	113
15	82.8	202	178	174	131	197	22.0	143	113	24.9	158	16.1
16	7.75	208	179	205	130	238	57.0	169	73.0	94.7	77.8	92.0
17	89.2	201	263	318	133	247	66.2	141	59.1	45.3	41.0	36.3
18	83.5	188	190	305	164	187	53.2	156	76.7	23.2	47.6	69.0
19	8.33	162	183	372	121	190	51.5	143	78.3	8.32	197	52.1
20	8.75	185	218	301	120	287	52.7	181	78.0	37.2	64.9	66.0
21	37.2	191	169	238	122	269	132	165	69.8	41.3	34.3	38.0
22	36.2	208	177	251	146	246	243	129	187	64.8	50.5	35.2
23	28.9	218	185	243	178	246	371	137	155	60.2	59.9	72.4
24	34.5	221	203	297	172	257	675	122	95.8	19.2	71.6	46.8
25	57.6	132	211	282	253	242	449	166	80.3	22.0	45.4	47.5
26	71.7	190	204	278	231	227	399	162	110	38.3	29.3	47.2
27	129	242	231	142	168	232	223	175	87.4	24.7	39.8	69.9
28	45.2	201	215	174	171	236	244	131	108	23.4	34.9	27.7
29	61.6	203	339	245	146	214	249	109	34.4	35.4	47.3	44.8
30	32.4		263	99.4	172	211	227	76.7	54.9	12.6	83.7	44.1
31	111		206		1,390		197	75.6		46.8		56.8
Sum	1,666.33	5,195.1	6,395	7,284.4	6,041.3	7,897	5,706.41	4,190.0	2,595.9	1,194.54	1,685.35	1,676.7

Current Year 1992

Period 1968-1992

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousands of Cubic Meters				
	High	Low	Day	φ High	Day	φ Low	Average	Total	Average	Maximum	Minimum
Jan.			10	139	14	3.50	53.8	143,971	174,580	311,600	62,457
Feb.			4	256	12	92.3	179	448,857	217,699	558,832	67,760
Mar.			29	339	11	154	206	552,528	226,377	552,528	65,453
April			19	372	30	99.4	243	629,372	260,887	705,201	61,564
May			31	1,390	1	73.3	195	521,968	398,398	948,235	125,635
June			8	447	1	154	263	682,301	372,545	950,654	57,491
July			24	675	13	8.21	184	493,034	344,651	1,302,974	41,298
Aug.			1	210	6	71.4	135	362,016	308,846	1,262,211	79,452
Sept.			22	187	29	34.4	86.5	224,286	465,264	1,779,519	128,942
Oct.			16	94.7	19	8.32	38.5	103,208	426,750	1,684,791	69,890
Nov.			19	197	5	2.45	56.2	145,614	212,269	664,758	50,153
Dec.			14	113	15	16.1	54.1	144,867	172,420	376,045	52,879
Yearly				1,390		2.45	141	4,452,022	3,580,686	7,690,686	1,578,937

φ Mean daily